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## 1.3 akkahttp 10.0.9

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```
/*
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 */

package akka

import sbt._, Keys._
import de.heikoseeberger.sbtheader.{ CommentCreator, HeaderPlugin }

object CopyrightHeader extends AutoPlugin {
  import HeaderPlugin.autoImport._
  import ValidatePullRequest.{ additionalTasks, ValidatePR }

  override def requires = HeaderPlugin
  override def trigger = allRequirements

  override def projectSettings = Def.settings(
    Seq(Compile, Test).flatMap { config =>
      inConfig(config)(
        Seq(
          headerLicense := Some(HeaderLicense.Custom(headerFor(CurrentYear))),
          headerMappings := headerMappings.value ++ Map(
            HeaderFileType.scala    -> cStyleComment,
            HeaderFileType.java     -> cStyleComment,
            HeaderFileType("template") -> cStyleComment
          )
        )
      )
    },
    additionalTasks in ValidatePR += headerCheck in Compile,
    additionalTasks in ValidatePR += headerCheck in Test
  )

  val CurrentYear = java.time.Year.now.getValue.toString
  val CopyrightPattern = "Copyright \\([Cc]\\) (\\d{4}(-\\d{4})?) (Lightbend|Typesafe) Inc. <.*>".r
  val CopyrightHeaderPattern = s"(?s).*${CopyrightPattern}.*".r

  def headerFor(year: String): String =
    s"Copyright (C) $year Lightbend Inc. <https://www.lightbend.com>"
}
```

```

val cStyleComment = HeaderCommentStyle.cStyleBlockComment.copy(commentCreator = new
CommentCreator() {
  import HeaderCommentStyle.cStyleBlockComment.commentCreator

  def updateLightbendHeader(header: String): String = header match {
    case CopyrightHeaderPattern(years, null, _) =>
      if (years != CurrentYear)
        CopyrightPattern.replaceFirstIn(header, headerFor(years + "-" + CurrentYear))
      else
        CopyrightPattern.replaceFirstIn(header, headerFor(years))
    case CopyrightHeaderPattern(years, endYears, _) =>
      CopyrightPattern.replaceFirstIn(header, headerFor(years.replace(endYears, "-" + CurrentYear)))
    case _ =>
      header
  }

  override def apply(text: String, existingText: Option[String]): String = {
    existingText
      .map(updateLightbendHeader)
      .getOrElse(commentCreator(text, existingText))
      .trim
  }
})
}

```

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# 1.5 akkahttpjackson 10.0.9

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## 1.12 babel-cli 6.26.0

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## 1.18 babel-plugin-transform-async-to-generator 6.24.1

## 1.19 babel-plugin-transform-class-properties 6.24.1

# 1.20 babel-plugin-transform-regenerator

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# 1.21 babel-preset-es2015 6.24.1

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## 1.24 babel-preset-react 6.24.1

## 1.25 babel-preset-stage-2 6.24.1

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# 1.31 classnames 2.2.5

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```
 *
```

```
 * Contributors:
```

```
 * Kevin Sawicki (GitHub Inc.) - initial API and implementation
```

```
 ****
```

```
package org.eclipse.egit.github.core;
```

```
import java.io.Serializable;
```

```
/**
```

```
 * Repository contributor model class
```

```
 */
```

```
public class Contributor implements Serializable {
```

```
    /** serialVersionUID */
```

```
    private static final long serialVersionUID = -8434028880839230626L;
```

```

/**
 * Anonymous contributor type value
 */
public static final String TYPE_ANONYMOUS = "Anonymous"; //$NON-NLS-1$

private int contributions;

private int id;

private String avatarUrl;

private String login;

private String name;

private String type;

private String url;

/**
 * @return contributions
 */
public int getContributions() {
    return contributions;
}

/**
 * @param contributions
 * @return this contributor
 */
public Contributor setContributions(int contributions) {
    this.contributions = contributions;
    return this;
}

/**
 * @return id
 */
public int getId() {
    return id;
}

/**
 * @param id
 * @return this contributor
 */
public Contributor setId(int id) {

```

```

    this.id = id;
    return this;
}

/**
 * @return avatarUrl
 */
public String getAvatarUrl() {
    return avatarUrl;
}

/**
 * @param avatarUrl
 * @return this contributor
 */
public Contributor setAvatarUrl(String avatarUrl) {
    this.avatarUrl = avatarUrl;
    return this;
}

/**
 * @return login
 */
public String getLogin() {
    return login;
}

/**
 * @param login
 * @return this contributor
 */
public Contributor setLogin(String login) {
    this.login = login;
    return this;
}

/**
 * @return name
 */
public String getName() {
    return name;
}

/**
 * @param name
 * @return this contributor
 */
public Contributor setName(String name) {

```

```

    this.name = name;
    return this;
}

/**
 * @return type
 */
public String getType() {
    return type;
}

/**
 * @param type
 * @return this contributor
 */
public Contributor setType(String type) {
    this.type = type;
    return this;
}

/**
 * @return url
 */
public String getUrl() {
    return url;
}

/**
 * @param url
 * @return this contributor
 */
public Contributor setUrl(String url) {
    this.url = url;
    return this;
}
}

```

## 1.41 elasticsearch-http-client 6.2.1

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The binary file of the original library has been modified by Atlassian in such way that classes have changed their package names from 'org.apache.velocity' to 'clover.org.apache.velocity'. This was necessary to avoid potential name conflicts during instrumentation of a code using the original library when using Clover. No source code of the original library was modified.

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The primary ANTLR guy:

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parrt@antlr.org

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The binary file of the original library has been modified by Atlassian in such way that classes have changed their package names from 'com.keypoint/org.jfree' to 'clover.com.keypoint/clover.org.jfree'. This was necessary to avoid potential name conflicts during instrumentation of a code using the original library when using Clover. No source code of the original library was modified.

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Version 2.1, February 1999

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File: Core.js

Description:

Provides common utility functions and the Class object used internally by the library.

Also provides the <TreeUtil> object for manipulating JSON tree structures

Some of the Basic utility functions and the Class system are based in the MooTools Framework  
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thisgetInstance&()Lclover/org/jfree/ui/about/Licences;
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```
getGPL()Ljava/lang/String;getLGPL
ConstantValueCodeLocalVariableTableLineNumberTable
SourceFile!
```

```
/*9 4
```

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Y$%- 1-;
```

```
./%clover/org/jfree/ui/about/Contributorjava/lang/ObjectContributor.javanameLjava/lang/String;email<init>'(Ljava/l
ang/String;Ljava/lang/String;)V()V
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(Ljava/lang/Object;)Ljava/lang/StringBuilder;&org/apache/tools/ant/types/Permissions!&'(*)+),-./
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Modified by Atlassian

The binary file of the original library has been modified by Atlassian in such way that classes have changed their package names from 'com.keypoint/org.jfree' to 'clover.com.keypoint/clover.org.jfree'. This was necessary to avoid potential name conflicts during instrumentation of a code using the original library when using Clover. No source code of the original library was modified.

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File: Core.js

Description:

Provides common utility functions and the Class object used internally by the library.

Also provides the <TreeUtil> object for manipulating JSON tree structures

Some of the Basic utility functions and the Class system are based in the MooTools Framework <<http://mootools.net>>. Copyright (c) 2006-2009 Valerio Proietti, <<http://mad4milk.net/>>. MIT license <<http://mootools.net/license.txt>>.

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1.1.2

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That's all there is to it!

```
singleton$Lclover/org/jfree/ui/about/Licences;<init>()V
```

```
thisgetInstance&()Lclover/org/jfree/ui/about/Licences;
```

```
getGPL()Ljava/lang/String;getLGPL
```

```
ConstantValueCodeLocalVariableTableLineNumberTable
```

```
SourceFile!
```

```
/*9 4
```

```
Y$%' - 1-;
```

```
.%clover/org/jfree/ui/about/Contributorjava/lang/ObjectContributor.javanameLjava/lang/String;email<init>'(Ljava/lang/String;Ljava/lang/String;)V()V
```

this'Lclover/org/jfree/ui/about/Contributor;getName()Ljava/lang/String;getEmailCodeLocalVariableTableLineNumberTable  
SourceFile!  
Y\*  
\*+\*, DE FG/\*O/\*X

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java/io/InputStreamclose  
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generatePublic7(Ljava/security/spec/KeySpec;)Ljava/security/PublicKey;
keyfisLjava/io/InputStream;
contextLoaderLjava/lang/ClassLoader;encKey[B
pubKeySpecLjava/security/spec/X509EncodedKeySpec;
keyFactoryLjava/security/KeyFactory;(clover/com/atlassian/license/LicensePairisNG()Z
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getProduct+()Lclover/com/atlassian/extras/api/Product;getNamec
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: getDescriptionc;
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getOrganisation0()Lclover/com/atlassian/extras/api/Organisation;clover/com/atlassian/extras/api/Organisation>
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getSupportEntitlementNumbercD getMaintenanceExpiryDate()Ljava/util/Date;java/util/DategetTime()J
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getExpiryDate= getCreationDate~< License registered to .? 6You have $daysleft day(s) before your license
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java/util/HashSet
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TFG !java/util/StringTokenizer#, %'(Ljava/lang/String;Ljava/lang/String;)VR'
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hasMoreTokens*
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#+ nextToken-c
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$.add(Ljava/lang/Object;)Z01
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2equalsIgnoreCase(Ljava/lang/String;)Z45
6E 8I :Invalid license data [E1300]. <
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## 1.64 jsonpath 0.11.2

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## 1.66 jsreport 1.10.0

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# 1.69 less 2.7.3

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## 1.70 less-loader 4.0.5

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# 1.71 logbackclassic 1.2.3

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"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta http-equiv="content-type" content="text/html; charset=iso-8859-1" />
  <title>License</title>
  <link rel="stylesheet" type="text/css" href="css/common.css" />
  <link rel="stylesheet" type="text/css" href="css/screen.css" media="screen" />
  <link rel="stylesheet" type="text/css" href="css/_print.css" media="print" />
</head>
<body>
  <script type="text/javascript">prefix=";</script>

  <script src="templates/header.js" type="text/javascript"></script>
  <div id="left">
    <script src="templates/left.js" type="text/javascript"></script>
  </div>
  <div id="right">
    <script type="text/javascript" src="templates/right.js" ></script>
```

</div>

<div id="content">

<div class="section">

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</div>

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<script src="templates/footer.js" type="text/javascript"></script>

</div>

</body>

</html>

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## 1.72 method-override 2.3.9

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## 1.73 mocha 5.0.0

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```
#!/usr/bin/env node

/**
 * This script updates the "contributors" property of the root `package.json`.
 * It modifies `package.json` in place!
 *
 * See `.mailmap` for username/email mappings.
 */

'use strict';

const exec = require('child_process').exec;
const path = require('path');
const fs = require('fs');

// list of authors/emails that should not appear in the contributors list, e.g. bots
const BLACKLIST = [
  'greenkeeperio-bot <support@greenkeeper.io>',
  'greenkeeper[bot] <greenkeeper[bot]@users.noreply.github.com>',
  'TJ Holowaychuk <tj@vision-media.ca>' // author
];

const ROOT = path.join(__dirname, '..');
const PKG_FILEPATH = path.join(ROOT, 'package.json');

const pkg = JSON.parse(fs.readFileSync(PKG_FILEPATH, 'utf8'));
const contributorCount = pkg.contributors.length;

// could use `| sort | uniq` here but didn't want to assume 'nix
// see `man git-log` for info about the format
exec('git log --format="%aN <%aE>"', {cwd: ROOT}, (err, gitOutput) => {
```

```

if (err) {
  throw err;
}

// result will be many lines of contributors, one or more per commit.
// we wrap it in a `Set` to get unique values, then attempt to get
// a consistent sort.
const contributors = Array.from(new Set(gitOutput.trim().split(/\r?\n/)))
  .filter(contributor => BLACKLIST.indexOf(contributor) < 0)
  .sort((a, b) => a.localeCompare(b, 'en', {sensitivity: 'accent'}));

const newContributorCount = contributors.length;

if (newContributorCount !== contributorCount) {
  pkg.contributors = contributors;
  fs.writeFileSync(PKG_FILEPATH, JSON.stringify(pkg, null, 2));

  console.log(
    newContributorCount < contributorCount
    ? `WARNING: Reducing contributor count by ${contributorCount -
      newContributorCount}! Hopefully it's because you updated .mailmap.`
    : `Wrote ${newContributorCount -
      contributorCount} new contributors to package.json.`
  );
} else {
  console.log('No new contributors; nothing to do.');
```

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## 1.74 mock-local-storage 1.0.5

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## 1.77 moment-timezone 0.5.16

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## 1.78 mongodb-migrations 0.8.5

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## 1.79 mongoose 4.11.12

## 1.80 multer 1.3.0

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## 1.81 nock 9.2.5

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## 1.82 node-promise 0.5.12

## 1.83 node-sass 4.5.3

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## 1.84 node-sass-chokidar 0.0.03

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# 1.85 nodemon 1.17.3

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## 1.86 nodemon 1.12.1

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## 1.90 powermockapimockito 1.7.3

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## 1.92 prop-types 15.5.10

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## 1.94 ratelimit4j-inmemory 0.4.0

## 1.95 ratelimit4j-redis 0.4.0

## 1.96 ratelimit4jcore 0.4.0

# 1.97 react 16.2.0

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\*

\* @flow

\*/

'use strict';

module.exports = require('./server.node');

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## 1.103 react-scrollspy 3.3.4

## 1.104 react-test-renderer 16.2.0

## 1.105 redux 3.5.2

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## 1.111 request-local 1.0.5

## 1.112 reselect 3.0.1

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## 1.113 sanitize-html-react 1.13.0

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## 1.114 sass-loader 6.0.6

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## 1.115 seamless-immutable 7.1.3

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## 1.116 sinon 5.0.7

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## 1.117 snakeyaml 1.2

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## 1.118 sonarqube 2.6.2

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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
@ParametersAreNonnullByDefault
package org.sonarqube.ws.client.permission;

import javax.annotation.ParametersAreNonnullByDefault;
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonarqube.ws.client.permission;

public class PermissionsWsParameters {
    public static final String CONTROLLER = "api/permissions";
}
```

```

public static final String PARAM_PERMISSION = "permission";
public static final String PARAM_ORGANIZATION = "organization";
public static final String PARAM_GROUP_NAME = "groupName";
public static final String PARAM_GROUP_ID = "groupId";
public static final String PARAM_PROJECT_ID = "projectId";
public static final String PARAM_PROJECT_KEY = "projectKey";
public static final String PARAM_USER_LOGIN = "login";
public static final String PARAM_TEMPLATE_ID = "templateId";
public static final String PARAM_TEMPLATE_NAME = "templateName";
public static final String PARAM_ID = "id";
public static final String PARAM_NAME = "name";
public static final String PARAM_DESCRIPTION = "description";
public static final String PARAM_PROJECT_KEY_PATTERN = "projectKeyPattern";
public static final String PARAM_QUALIFIER = "qualifier";

```

```

private PermissionsWsParameters() {
    // static utils only
}
}

```

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\*/

package com.sonarsource.plugins.license.api;

```

public interface FooBar {

```



```

}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
import * as React from 'react';
import { FormattedMessage } from 'react-intl';
import Tooltip from '../../components/controls/Tooltip';
import { translate } from '../../helpers/l10n';

interface Props {
  license?: string;
}

export default function PluginLicense({ license }: Props) {
  if (!license) {
    return null;
  }
  return (
    <Tooltip overlay={license}>
      <li className="little-spacer-bottom marketplace-plugin-license">
        <FormattedMessage
          defaultMessage={translate('marketplace.licensed_under_x')}
          id="marketplace.licensed_under_x"
          values={{
            license: <span className="js-plugin-license">{license}</span>
          }}
        />
      </li>
    </Tooltip>
  );
}

```

```
// Jest Snapshot v1, https://goo.gl/fbAQLP
```

```
exports[`should display the license field 1`] = `
<Tooltip
  overlay="SonarSource license"
>
  <li
    className="little-spacer-bottom marketplace-plugin-license"
  >
    <FormattedMessage
      defaultMessage="marketplace.licensed_under_x"
      id="marketplace.licensed_under_x"
      values={
        Object {
          "license": <span
            className="js-plugin-license"
          >
            SonarSource license
          </span>,
        }
      }
    />
  </li>
</Tooltip>
`;
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
import * as React from 'react';
import { shallow } from 'enzyme';
import PluginLicense from '../PluginLicense';
```

```

it('should display the license field', () => {
  expect(shallow(<PluginLicense license="SonarSource license" />)).toMatchSnapshot();
});

it('should not display anything', () => {
  expect(shallow(<PluginLicense />).type()).toBeNull();
});
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 *
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
import { shape, arrayOf, string, number, func } from 'prop-types';

export const PermissionType = shape({
  key: string.isRequired,
  name: string.isRequired,
  description: string.isRequired,
  usersCount: number.isRequired,
  groupsCount: number.isRequired
});

export const PermissionTemplateType = shape({
  id: string.isRequired,
  name: string.isRequired,
  description: string,
  permissions: arrayOf(PermissionType).isRequired,
  defaultFor: arrayOf(string).isRequired
});

export const CallbackType = func.isRequired;
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```

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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
import { lazyLoad } from '../components/lazyLoad';

const routes = [
  {
    indexRoute: { component: lazyLoad(() => import('./components/AppContainer')) }
  }
];

export default routes;
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
import { sortBy } from 'lodash';

export const PERMISSIONS_ORDER = ['user', 'codeviewer', 'issueadmin', 'admin', 'scan'];

```

```

/**
 * Sort list of permissions based on predefined order
 * @param {Array} permissions
 * @returns {Array}
 */
export function sortPermissions(permissions) {
  return sortBy(permissions, p => PERMISSIONS_ORDER.indexOf(p.key));
}

/**
 * Populate permissions' details in the list of permission templates
 * @param {Array} permissionTemplates
 * @param {Array} basePermissions
 * @returns {Array}
 */
export function mergePermissionsToTemplates(permissionTemplates, basePermissions) {
  return permissionTemplates.map(permissionTemplate => {
    // it's important to keep the order of the permission template's permissions
    // the same as the order of base permissions
    const permissions = basePermissions.map(basePermission => {
      const projectPermission = permissionTemplate.permissions.find(
        p => p.key === basePermission.key
      );
      return { usersCount: 0, groupsCount: 0, ...basePermission, ...projectPermission };
    });

    return { ...permissionTemplate, permissions };
  });
}

/**
 * Mark default templates
 * @param {Array} permissionTemplates
 * @param {Array} defaultTemplates
 * @returns {Array}
 */
export function mergeDefaultsToTemplates(permissionTemplates, defaultTemplates = []) {
  return permissionTemplates.map(permissionTemplate => {
    const defaultFor = [];

    defaultTemplates.forEach(defaultTemplate => {
      if (defaultTemplate.templateId === permissionTemplate.id) {
        defaultFor.push(defaultTemplate.qualifier);
      }
    });

    return { ...permissionTemplate, defaultFor };
  });
}

```

```

}
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 */
import * as React from 'react';
import * as PropTypes from 'prop-types';
import { difference } from 'lodash';
import DeleteForm from './DeleteForm';
import Form from './Form';
import {
  setDefaultPermissionTemplate,
  deletePermissionTemplate,
  updatePermissionTemplate
} from '../..../api/permissions';
import { PermissionTemplate } from '../..../app/types';
import ActionsDropdown, { ActionsDropdownItem } from '../..../components/controls/ActionsDropdown';
import QualifierIcon from '../..../components/icons-components/QualifierIcon';
import { translate } from '../..../helpers/i10n';

export interface Props {
  fromDetails?: boolean;
  organization?: { isDefault?: boolean; key: string };
  permissionTemplate: PermissionTemplate;
  refresh: () => void;
  topQualifiers: string[];
}

interface State {
  deleteForm: boolean;
  updateModal: boolean;
}

```

```

export default class ActionsCell extends React.PureComponent<Props, State> {
  mounted = false;

  static contextTypes = {
    router: PropTypes.object
  };

  state: State = { deleteForm: false, updateModal: false };

  componentDidMount() {
    this.mounted = true;
  }

  componentWillUnmount() {
    this.mounted = false;
  }

  handleUpdateClick = () => {
    this.setState({ updateModal: true });
  };

  handleCloseUpdateModal = () => {
    if (this.mounted) {
      this.setState({ updateModal: false });
    }
  };

  handleSubmitUpdateModal = (data: {
    description: string;
    name: string;
    projectKeyPattern: string;
  }) => {
    return updatePermissionTemplate({ id: this.props.permissionTemplate.id, ...data }).then(
      this.props.refresh
    );
  };

  handleDeleteClick = () => {
    this.setState({ deleteForm: true });
  };

  handleCloseDeleteForm = () => {
    if (this.mounted) {
      this.setState({ deleteForm: false });
    }
  };

  handleDeleteSubmit = () => {

```

```

return deletePermissionTemplate({ templateId: this.props.permissionTemplate.id }).then(() => {
  const pathname = this.props.organization
    ? `~/organizations/${this.props.organization.key}/permission_templates`
    : '/permission_templates';
  this.context.router.replace(pathname);
  this.props.refresh();
});
};

setDefault = (qualifier: string) => () => {
  setDefaultPermissionTemplate(this.props.permissionTemplate.id, qualifier).then(
    this.props.refresh,
    () => {}
  );
};

getAvailableQualifiers() {
  const topQualifiers =
    this.props.organization && !this.props.organization.isDefault
      ? ['TRK']
      : this.props.topQualifiers;
  return difference(topQualifiers, this.props.permissionTemplate.defaultFor);
}

renderSetDefaultsControl() {
  const availableQualifiers = this.getAvailableQualifiers();

  if (availableQualifiers.length === 0) {
    return null;
  }

  return this.props.topQualifiers.length === 1
    ? this.renderIfSingleTopQualifier(availableQualifiers)
    : this.renderIfMultipleTopQualifiers(availableQualifiers);
}

renderSetDefaultLink(qualifier: string, child: React.ReactNode) {
  return (
    <ActionsDropdownItem
      className="js-set-default"
      data-qualifier={qualifier}
      key={qualifier}
      onClick={this.setDefault(qualifier)}>
      {child}
    </ActionsDropdownItem>
  );
}

```



```

renderIfSingleTopQualifier(availableQualifiers: string[]) {
  return availableQualifiers.map(qualifier =>
    this.renderSetDefaultLink(
      qualifier,
      <span>{translate('permission_templates.set_default')}</span>
    )
  );
}

renderIfMultipleTopQualifiers(availableQualifiers: string[]) {
  return availableQualifiers.map(qualifier =>
    this.renderSetDefaultLink(
      qualifier,
      <span>
        {translate('permission_templates.set_default_for')}{' '}
        <QualifierIcon qualifier={qualifier} /> {translate('qualifiers', qualifier)}
      </span>
    )
  );
}

render() {
  const { permissionTemplate: t, organization } = this.props;

  const pathname = organization
    ? `~/organizations/${organization.key}/permission_templates`
    : '/permission_templates';

  return (
    <>
    <ActionsDropdown>
      {this.renderSetDefaultsControl()}

      {!this.props.fromDetails && (
        <ActionsDropdownItem to={{ pathname, query: { id: t.id } }}>
          {translate('edit_permissions')}
        </ActionsDropdownItem>
      )}

      <ActionsDropdownItem className="js-update" onClick={this.handleUpdateClick}>
        {translate('update_details')}
      </ActionsDropdownItem>

      {t.defaultFor.length === 0 && (
        <ActionsDropdownItem
          className="js-delete"
          destructive={true}
          onClick={this.handleDeleteClick}>

```

```

        {translate('delete')}
      </ActionsDropdownItem>
    )}
  </ActionsDropdown>

  {this.state.updateModal && (
    <Form
      confirmButtonText={translate('update_verb')}
      header={translate('permission_template.edit_template')}
      onClose={this.handleCloseUpdateModal}
      onSubmit={this.handleSubmitUpdateModal}
      permissionTemplate={t}
    />
  )}

  {this.state.deleteForm && (
    <DeleteForm
      onClose={this.handleCloseDeleteForm}
      onSubmit={this.handleDeleteSubmit}
      permissionTemplate={t}
    />
  )}
</>
);
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
import React from 'react';
import PropTypes from 'prop-types';
import { Link } from 'react-router';

```

```

import ActionsCell from './ActionsCell';
import { translate } from '../helpers/110n';

export default class TemplateHeader extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    template: PropTypes.object.isRequired,
    loading: PropTypes.bool.isRequired,
    refresh: PropTypes.func.isRequired,
    topQualifiers: PropTypes.array.isRequired
  };

  render() {
    const { template, organization } = this.props;

    const pathname = organization
      ? `~/organizations/${organization.key}/permission_templates`
      : '/permission_templates';

    return (
      <header id="project-permissions-header" className="page-header">
        <div className="note spacer-bottom">
          <Link to={pathname} className="text-muted">
            {translate('permission_templates.page')}
          </Link>
        </div>

        <h1 className="page-title">{template.name}</h1>

        {this.props.loading && <i className="spinner" />}

        <div className="pull-right">
          <ActionsCell
            organization={this.props.organization}
            permissionTemplate={this.props.template}
            topQualifiers={this.props.topQualifiers}
            refresh={this.props.refresh}
            fromDetails={true}
          />
        </div>
      </header>
    );
  }
}
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```

```

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*/
import * as React from 'react';
import * as PropTypes from 'prop-types';
import Form from './Form';
import { createPermissionTemplate } from '../api/permissions';
import { Button } from '../components/ui/buttons';
import { translate } from '../helpers/i10n';

interface Props {
  organization?: { key: string };
  ready?: boolean;
  refresh: () => Promise<void>;
}

interface State {
  createModal: boolean;
}

export default class Header extends React.PureComponent<Props, State> {
  mounted = false;

  static contextTypes = {
    router: PropTypes.object
  };

  state: State = { createModal: false };

  componentDidMount() {
    this.mounted = true;
  }

  componentWillUnmount() {
    this.mounted = false;
  }
}

```

```

handleCreateClick = () => {
  this.setState({ createModal: true });
};

handleCreateModalClose = () => {
  if (this.mounted) {
    this.setState({ createModal: false });
  }
};

handleCreateModalSubmit = (data: {
  description: string;
  name: string;
  projectKeyPattern: string;
}) => {
  const organization = this.props.organization && this.props.organization.key;
  return createPermissionTemplate({ ...data, organization }).then(response => {
    this.props.refresh().then(() => {
      const pathname = organization
        ? `~/organizations/${organization}/permission_templates`
        : '/permission_templates';
      this.context.router.push({ pathname, query: { id: response.permissionTemplate.id } });
    });
  });
};

render() {
  return (
    <header className="page-header" id="project-permissions-header">
      <h1 className="page-title">{translate('permission_templates.page')}</h1>

      {!this.props.ready && <i className="spinner" />}

      <div className="page-actions">
        <Button onClick={this.handleCreateClick}>{translate('create')}</Button>

        {this.state.createModal && (
          <Form
            confirmButtonText={translate('create')}
            header={translate('permission_template.new_template')}
            onClose={this.handleCreateModalClose}
            onSubmit={this.handleCreateModalSubmit}
          />
        )}
      </div>

      <p className="page-description">{translate('permission_templates.page.description')}</p>

```

```

    </header>
  );
}
}
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 */
import React from 'react';
import PropTypes from 'prop-types';
import HelpTooltip from '../components/controls/HelpTooltip';
import { translate } from '../helpers/i10n';
import InstanceMessage from '../components/common/InstanceMessage';

export default class ListHeader extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    permissions: PropTypes.array.isRequired
  };

  renderTooltip = permission =>
    permission.key === 'user' || permission.key === 'codeviewer' ? (
      <div>
        <InstanceMessage message={translate('projects_role', permission.key, 'desc')} />
        <div className="alert alert-warning spacer-top">
          {translate('projects_role.public_projects_warning')}
        </div>
      </div>
    ) : (
      <InstanceMessage message={translate('projects_role', permission.key, 'desc')} />
    );

  render() {

```

```

const cells = this.props.permissions.map(permission => (
  <th className="permission-column" key={permission.key}>
    <span className="text-middle">{translate('projects_role', permission.key)}</span>
    <HelpTooltip className="spacer-left" overlay={this.renderTooltip(permission)} />
  </th>
));

return (
  <thead>
    <tr>
      <th>&nbsp;</th>
      {cells}
      <th className="thin nowrap text-right">&nbsp;</th>
    </tr>
  </thead>
);
}
}
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*/
import React from 'react';
import PropTypes from 'prop-types';
import Home from './Home';
import Template from './Template';
import OrganizationHelmet from '.././././components/common/OrganizationHelmet';
import Suggestions from '.././././app/components/embed-docs-modal/Suggestions';
import { getPermissionTemplates } from '.././././api/permissions';
import { sortPermissions, mergePermissionsToTemplates, mergeDefaultsToTemplates } from '../././utils';
import { translate } from '../././helpers/110n';
import '../././permissions/styles.css';

```

```

export default class App extends React.PureComponent {
  static propTypes = {
    location: PropTypes.object.isRequired,
    organization: PropTypes.object,
    topQualifiers: PropTypes.array.isRequired
  };

  state = {
    ready: false,
    permissions: [],
    permissionTemplates: []
  };

  componentDidMount() {
    this.mounted = true;
    this.requestPermissions();
  }

  componentWillUnmount() {
    this.mounted = false;
  }

  requestPermissions = () => {
    const { organization } = this.props;
    const request = organization
      ? getPermissionTemplates(organization.key)
      : getPermissionTemplates();
    return request.then(r => {
      if (this.mounted) {
        const permissions = sortPermissions(r.permissions);
        const permissionTemplates = mergeDefaultsToTemplates(
          mergePermissionsToTemplates(r.permissionTemplates, permissions),
          r.defaultTemplates
        );
        this.setState({
          ready: true,
          permissionTemplates,
          permissions
        });
      }
    });
  };

  renderTemplate(id) {
    if (!this.state.ready) {
      return null;
    }
  }
}

```



```

const template = this.state.permissionTemplates.find(t => t.id === id);
return (
  <Template
    organization={this.props.organization}
    template={template}
    refresh={this.requestPermissions}
    topQualifiers={this.props.topQualifiers}
  />
);
}

```

```

renderHome() {
return (
  <Home
    organization={this.props.organization}
    topQualifiers={this.props.topQualifiers}
    permissions={this.state.permissions}
    permissionTemplates={this.state.permissionTemplates}
    ready={this.state.ready}
    refresh={this.requestPermissions}
  />
);
}

```

```

render() {
const { id } = this.props.location.query;
return (
  <div>
    <Suggestions suggestions="permission_templates" />
    <OrganizationHelmet
      title={translate('permission_templates.page')}
      organization={this.props.organization}
    />

    {id && this.renderTemplate(id)}
    {!id && this.renderHome()}
  </div>
);
}
}
/*

```

```

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*/
import React from 'react';
import PropTypes from 'prop-types';
import Defaults from './Defaults';

export default class TemplateDetails extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    template: PropTypes.object.isRequired
  };

  render() {
    const { template } = this.props;

    return (
      <div className="big-spacer-bottom">
        {template.defaultFor.length > 0 && (
          <div className="spacer-top js-defaults">
            <Defaults permissionTemplate={template} organization={this.props.organization} />
          </div>
        )}

        {!!template.description && (
          <div className="spacer-top js-description">{template.description}</div>
        )}

        {!!template.projectKeyPattern && (
          <div className="spacer-top js-project-key-pattern">
            Project Key Pattern: <code>{template.projectKeyPattern}</code>
          </div>
        )}
      </div>
    );
  }
}
/*
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 \*/

```
import React from 'react';
import PropTypes from 'prop-types';
import ListHeader from './ListHeader';
import ListItem from './ListItem';
import { PermissionTemplateType, CallbackType } from './propTypes';

export default class List extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    permissionTemplates: PropTypes.arrayOf(PermissionTemplateType).isRequired,
    permissions: PropTypes.array.isRequired,
    topQualifiers: PropTypes.array.isRequired,
    refresh: CallbackType
  };

  render() {
    const permissionTemplates = this.props.permissionTemplates.map(p => (
      <ListItem
        key={p.id}
        organization={this.props.organization}
        permissionTemplate={p}
        topQualifiers={this.props.topQualifiers}
        refresh={this.props.refresh}
      />
    ));

    return (
      <div className="boxed-group boxed-group-inner">
        <table id="permission-templates" className="data zebra permissions-table">
          <ListHeader organization={this.props.organization} permissions={this.props.permissions} />
          <tbody>{permissionTemplates}</tbody>
        </table>
      </div>
    );
  }
}
```

```

    </div>
  );
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
import React from 'react';
import PropTypes from 'prop-types';
import Helmet from 'react-helmet';
import { debounce } from 'lodash';
import TemplateHeader from './TemplateHeader';
import TemplateDetails from './TemplateDetails';
import HoldersList from '../permissions/shared/components/HoldersList';
import SearchForm from '../permissions/shared/components/SearchForm';
import { PERMISSIONS_ORDER_FOR_PROJECT } from '../permissions/project/constants';
import * as api from '../api/permissions';
import { translate } from '../helpers/i10n';

export default class Template extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    template: PropTypes.object.isRequired,
    refresh: PropTypes.func.isRequired,
    topQualifiers: PropTypes.array.isRequired
  };

  state = {
    loading: false,
    users: [],
    groups: [],
    query: "",

```

```

    filter: 'all',
    selectedPermission: null
  };

  componentDidMount() {
    this.mounted = true;
    this.requestHolders();
  }

  componentWillUnmount() {
    this.mounted = false;
  }

  requestHolders = realQuery => {
    this.setState({ loading: true });

    const { template } = this.props;
    const { query, filter, selectedPermission } = this.state;
    const requests = [];

    const finalQuery = realQuery !== null ? realQuery : query;

    if (filter !== 'groups') {
      requests.push(api.getPermissionTemplateUsers(template.id, finalQuery, selectedPermission));
    } else {
      requests.push(Promise.resolve([]));
    }

    if (filter !== 'users') {
      requests.push(api.getPermissionTemplateGroups(template.id, finalQuery, selectedPermission));
    } else {
      requests.push(Promise.resolve([]));
    }

    return Promise.all(requests).then(responses => {
      if (this.mounted) {
        this.setState({
          users: responses[0],
          groups: responses[1],
          loading: false
        });
      }
    });
  };

  handleToggleUser = (user, permission) => {
    if (user.login === '<creator>') {
      return this.handleToggleProjectCreator(user, permission);
    }
  };

```

```

    }
    const { template, organization } = this.props;
    const hasPermission = user.permissions.includes(permission);
    const data = {
      templateId: template.id,
      login: user.login,
      permission
    };
    if (organization) {
      data.organization = organization.key;
    }
    const request = hasPermission
      ? api.revokeTemplatePermissionFromUser(data)
      : api.grantTemplatePermissionToUser(data);
    return request.then(() => this.requestHolders()).then(this.props.refresh);
  };

  handleToggleProjectCreator = (user, permission) => {
    const { template } = this.props;
    const hasPermission = user.permissions.includes(permission);
    const request = hasPermission
      ? api.removeProjectCreatorFromTemplate(template.id, permission)
      : api.addProjectCreatorToTemplate(template.id, permission);
    return request.then(() => this.requestHolders()).then(this.props.refresh);
  };

  handleToggleGroup = (group, permission) => {
    const { template, organization } = this.props;
    const hasPermission = group.permissions.includes(permission);
    const data = {
      templateId: template.id,
      groupName: group.name,
      permission
    };
    if (organization) {
      Object.assign(data, { organization: organization.key });
    }
    const request = hasPermission
      ? api.revokeTemplatePermissionFromGroup(data)
      : api.grantTemplatePermissionToGroup(data);
    return request.then(() => this.requestHolders()).then(this.props.refresh);
  };

  handleSearch = query => {
    this.setState({ query });
    this.requestHolders(query);
  };

```

```

handleFilter = filter => {
  this.setState({ filter }, this.requestHolders);
};

handleSelectPermission = selectedPermission => {
  if (selectedPermission === this.state.selectedPermission) {
    this.setState({ selectedPermission: null }, this.requestHolders);
  } else {
    this.setState({ selectedPermission }, this.requestHolders);
  }
};

shouldDisplayCreator = creatorPermissions => {
  const { filter, query, selectedPermission } = this.state;
  const CREATOR_NAME = translate('permission_templates.project_creators');

  const isFiltered = filter !== 'all';

  const matchQuery = !query || CREATOR_NAME.toLocaleLowerCase().includes(query.toLowerCase());

  const matchPermission =
    selectedPermission === null || creatorPermissions.includes(selectedPermission);

  return !isFiltered && matchQuery && matchPermission;
};

render() {
  const permissions = PERMISSIONS_ORDER_FOR_PROJECT.map(p => ({
    key: p,
    name: translate('projects_role', p),
    description: translate('projects_role', p, 'desc')
  }));

  const allUsers = [...this.state.users];

  const creatorPermissions = this.props.template.permissions
    .filter(p => p.withProjectCreator)
    .map(p => p.key);

  if (this.shouldDisplayCreator(creatorPermissions)) {
    const creator = {
      login: '<creator>',
      name: translate('permission_templates.project_creators'),
      permissions: creatorPermissions
    };

    allUsers.unshift(creator);
  }
}

```

```

return (
  <div className="page page-limited">
    <Helmet title={this.props.template.name} />

    <TemplateHeader
      loading={this.state.loading}
      organization={this.props.organization}
      refresh={this.props.refresh}
      template={this.props.template}
      topQualifiers={this.props.topQualifiers}
    />

    <TemplateDetails organization={this.props.organization} template={this.props.template} />

    <HoldersList
      groups={this.state.groups}
      onSelectPermission={this.handleSelectPermission}
      onToggleGroup={this.handleToggleGroup}
      onToggleUser={this.handleToggleUser}
      permissions={permissions}
      selectedPermission={this.state.selectedPermission}
      showPublicProjectsWarning={true}
      users={allUsers}>
      <SearchForm
        filter={this.state.filter}
        onFilter={this.handleFilter}
        onSearch={this.handleSearch}
        query={this.state.query}
      />
    </HoldersList>
  </div>
);
}
}
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*/
import React from 'react';
import PropTypes from 'prop-types';
import { Link } from 'react-router';
import Defaults from './Defaults';
import { PermissionTemplateType } from './propTypes';

export default class NameCell extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    permissionTemplate: PermissionTemplateType.isRequired
  };

  render() {
    const { permissionTemplate: t, organization } = this.props;

    const pathname = organization
      ? `~/organizations/${organization.key}/permission_templates`
      : '/permission_templates';

    return (
      <td>
        <Link to={{ pathname, query: { id: t.id } }}>
          <strong className="js-name">{t.name}</strong>
        </Link>

        {t.defaultFor.length > 0 && (
          <div className="spacer-top js-defaults">
            <Defaults
              permissionTemplate={this.props.permissionTemplate}
              organization={organization}
            />
          </div>
        )}

        {!!t.description && <div className="spacer-top js-description">{t.description}</div>}

        {!!t.projectKeyPattern && (
          <div className="spacer-top js-project-key-pattern">
            Project Key Pattern: <code>{t.projectKeyPattern}</code>
          </div>
        )}
      </td>
    );
  }
}

```

```

    );
  }
}
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 */
import React from 'react';
import { PermissionType } from '../propTypes';
import { translate } from '../helpers/110n';

export default class PermissionCell extends React.PureComponent {
  static propTypes = {
    permission: PermissionType.isRequired
  };

  render() {
    const { permission: p } = this.props;

    return (
      <td className="permission-column" data-permission={p.key}>
        <div className="permission-column-inner">
          <ul>
            {p.withProjectCreator && (
              <li className="little-spacer-bottom">
                {translate('permission_templates.project_creators')}
              </li>
            )}
            <li className="little-spacer-bottom">
              <strong>{p.usersCount}</strong>
              { ' user(s) ' }
            </li>
            <li>

```

```

        <strong>{p.groupsCount}</strong>
        { ' group(s)'}
    </li>
</ul>
</div>
</td>
);
}
}
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*/
import * as React from 'react';
import { PermissionTemplate } from '../..../app/types';
import SimpleModal from '../..../components/controls/SimpleModal';
import DeferredSpinner from '../..../components/common/DeferredSpinner';
import { SubmitButton, ResetButtonLink } from '../..../components/ui/buttons';
import { translate, translateWithParameters } from '../..../helpers/110n';

interface Props {
  onClose: () => void;
  onSubmit: () => Promise<void>;
  permissionTemplate: PermissionTemplate;
}

export default function DeleteForm({ onClose, onSubmit, permissionTemplate: t }: Props) {
  const header = translate('permission_template.delete_confirm_title');

  return (
    <SimpleModal header={header} onClose={onClose} onSubmit={onSubmit}>
      ({ onCloseClick, onFormSubmit, submitting }) => (
        <form onSubmit={onFormSubmit}>

```

```

<header className="modal-head">
  <h2>{header}</h2>
</header>

<div className="modal-body">
  {translateWithParameters(
    'permission_template.do_you_want_to_delete_template_XXX',
    t.name
  )}
</div>

<footer className="modal-foot">
  <DeferredSpinner className="spacer-right" loading={submitting} />
  <SubmitButton className="button-red" disabled={submitting}>
    {translate('delete')}
  </SubmitButton>
  <ResetButtonLink disabled={submitting} onClick={onCloseClick}>
    {translate('cancel')}
  </ResetButtonLink>
</footer>
</form>
  )}
</SimpleModal>
);
}
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*/
import React from 'react';
import PropTypes from 'prop-types';
import { sortBy } from 'lodash';
import { translate, translateWithParameters } from '../helpers/110n';

```

```

import { PermissionTemplateType } from './propTypes';

export default class Defaults extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    permissionTemplate: PermissionTemplateType.isRequired
  };

  render() {
    const qualifiersToDisplay =
      this.props.organization && !this.props.organization.isDefault
        ? ['TRK']
        : this.props.permissionTemplate.defaultFor;

    const qualifiers = sortBy(qualifiersToDisplay)
      .map(qualifier => translate('qualifiers', qualifier))
      .join(', ');

    return (
      <div>
        <span className="badge spacer-right">
          {translateWithParameters('permission_template.default_for', qualifiers)}
        </span>
      </div>
    );
  }
}
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 */
import { connect } from 'react-redux';
import App from './App';

```

```

import forSingleOrganization from '../organizations/forSingleOrganization';
import { getAppState } from '../store/rootReducer';
import { getRootQualifiers } from '../store/appState/duck';

const mapStateToProps = state => ({
  // treat applications as portfolios
  topQualifiers: getRootQualifiers(getAppState(state)).filter(q => q !== 'APP')
});

export default forSingleOrganization(connect(mapStateToProps)(App));
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
import * as React from 'react';
import DeferredSpinner from '../components/common/DeferredSpinner';
import SimpleModal from '../components/controls/SimpleModal';
import { translate } from '../helpers/l10n';
import { SubmitButton, ResetButtonLink } from '../components/ui/buttons';

interface Props {
  confirmButtonText: string;
  header: string;
  permissionTemplate?: { description?: string; name: string; projectKeyPattern?: string };
  onClose: () => void;
  onSubmit: (
    data: { description: string; name: string; projectKeyPattern: string }
  ) => Promise<void>;
}

interface State {
  description: string;
  name: string;
}

```

```

projectKeyPattern: string;
}

export default class Form extends React.PureComponent<Props, State> {
  mounted = false;

  constructor(props: Props) {
    super(props);
    this.state = {
      description: (props.permissionTemplate && props.permissionTemplate.description) || "",
      name: (props.permissionTemplate && props.permissionTemplate.name) || "",
      projectKeyPattern:
        (props.permissionTemplate && props.permissionTemplate.projectKeyPattern) || ""
    };
  }

  handleSubmit = () => {
    return this.props
      .onSubmit({
        description: this.state.description,
        name: this.state.name,
        projectKeyPattern: this.state.projectKeyPattern
      })
      .then(this.props.onClose);
  };

  handleNameChange = (event: React.ChangeEvent<HTMLInputElement>) => {
    this.setState({ name: event.currentTarget.value });
  };

  handleDescriptionChange = (event: React.ChangeEvent<HTMLTextAreaElement>) => {
    this.setState({ description: event.currentTarget.value });
  };

  handleProjectKeyPatternChange = (event: React.ChangeEvent<HTMLInputElement>) => {
    this.setState({ projectKeyPattern: event.currentTarget.value });
  };

  render() {
    return (
      <SimpleModal
        header={this.props.header}
        onClose={this.props.onClose}
        onSubmit={this.handleSubmit}>
        ({ onCloseClick, onFormSubmit, submitting }) => (
          <form id="permission-template-form" onSubmit={onFormSubmit}>
            <header className="modal-head">
              <h2>{this.props.header}</h2>

```

```

</header>

<div className="modal-body">
  <div className="modal-field">
    <label htmlFor="permission-template-name">
      {translate('name')}
      <em className="mandatory">*</em>
    </label>
    <input
      autoFocus={true}
      id="permission-template-name"
      maxLength={256}
      name="name"
      onChange={this.handleNameChange}
      required={true}
      type="text"
      value={this.state.name}
    />
    <div className="modal-field-description">{translate('should_be_unique')}</div>
  </div>

  <div className="modal-field">
    <label htmlFor="permission-template-description">{translate('description')}</label>
    <textarea
      id="permission-template-description"
      name="description"
      onChange={this.handleDescriptionChange}
      value={this.state.description}
    />
  </div>

  <div className="modal-field">
    <label htmlFor="permission-template-project-key-pattern">
      {translate('permission_template.key_pattern')}
    </label>
    <input
      id="permission-template-project-key-pattern"
      maxLength={500}
      name="projectKeyPattern"
      onChange={this.handleProjectKeyPatternChange}
      type="text"
      value={this.state.projectKeyPattern}
    />
    <div className="modal-field-description">
      {translate('permission_template.key_pattern.description')}
    </div>
  </div>
</div>

```



```

    <footer className="modal-foot">
      <DeferredSpinner className="spacer-right" loading={submitting} />
      <SubmitButton disabled={submitting} id="permission-template-submit">
        {this.props.confirmButtonText}
      </SubmitButton>
      <ResetButtonLink
        disabled={submitting}
        id="permission-template-cancel"
        onClick={onCloseClick}>
        {translate('cancel')}
      </ResetButtonLink>
    </footer>
  </form>
  )}
</SimpleModal>
);
}
}

```

// Jest Snapshot v1, <https://goo.gl/fbAQLP>

```
exports[`should render one qualifier 1`] = `
```

```

<div>
  <span
    className="badge spacer-right"
  >
    permission_template.default_for.qualifiers.DEV
  </span>
</div>
`;

```

```
exports[`should render only projects for custom organization 1`] = `
```

```

<div>
  <span
    className="badge spacer-right"
  >
    permission_template.default_for.qualifiers.TRK
  </span>
</div>
`;

```

```
exports[`should render several qualifiers 1`] = `
```

```

<div>
  <span
    className="badge spacer-right"
  >
    permission_template.default_for.qualifiers.TRK, qualifiers.VW
  </span>

```

```

</div>
`;

exports[`should render several qualifiers for default organization 1`] = `
<div>
  <span
    className="badge spacer-right"
  >
    permission_template.default_for.qualifiers.TRK, qualifiers.VW
  </span>
</div>
`;
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 */
import * as React from 'react';
import { shallow } from 'enzyme';
import ActionsCell, { Props } from '../ActionsCell';

const SAMPLE = {
  createdAt: '2018-01-01',
  id: 'id',
  name: 'name',
  permissions: [],
  defaultFor: []
};

function renderActionsCell(props?: Partial<Props>) {
  return shallow(
    <ActionsCell
      permissionTemplate={SAMPLE}
      refresh={() => true}
    />
  );
}

```

```

    topQualifiers={['TRK', 'VW']}
    {...props}
  />
);
}

```

```

it('should set default', () => {
  const setDefault = renderActionsCell().find('.js-set-default');
  expect(setDefault.length).toBe(2);
  expect(setDefault.at(0).prop('data-qualifier')).toBe('TRK');
  expect(setDefault.at(1).prop('data-qualifier')).toBe('VW');
});

```

```

it('should not set default', () => {
  const permissionTemplate = { ...SAMPLE, defaultFor: ['TRK', 'VW'] };
  const setDefault = renderActionsCell({ permissionTemplate }).find('.js-set-default');
  expect(setDefault.length).toBe(0);
});

```

```

it('should display all qualifiers for default organization', () => {
  const organization = { isDefault: true, key: 'org' };
  const setDefault = renderActionsCell({ organization }).find('.js-set-default');
  expect(setDefault.length).toBe(2);
  expect(setDefault.at(0).prop('data-qualifier')).toBe('TRK');
  expect(setDefault.at(1).prop('data-qualifier')).toBe('VW');
});

```

```

it('should display only projects for custom organization', () => {
  const organization = { isDefault: false, key: 'org' };
  const setDefault = renderActionsCell({ organization }).find('.js-set-default');
  expect(setDefault.length).toBe(1);
  expect(setDefault.at(0).prop('data-qualifier')).toBe('TRK');
});

```

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\* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.  
\*/

```
import { shallow } from 'enzyme';  
import React from 'react';  
import Defaults from '../Defaults';
```

```
const SAMPLE = {  
  id: 'id',  
  name: 'name',  
  permissions: []  
};
```

```
it('should render one qualifier', () => {  
  const sample = { ...SAMPLE, defaultFor: ['DEV'] };  
  const output = shallow(<Defaults permissionTemplate={sample} />);  
  expect(output).toMatchSnapshot();  
});
```

```
it('should render several qualifiers', () => {  
  const sample = { ...SAMPLE, defaultFor: ['TRK', 'VW'] };  
  const output = shallow(<Defaults permissionTemplate={sample} />);  
  expect(output).toMatchSnapshot();  
});
```

```
it('should render several qualifiers for default organization', () => {  
  const sample = { ...SAMPLE, defaultFor: ['TRK', 'VW'] };  
  const organization = { isDefault: true };  
  const output = shallow(<Defaults permissionTemplate={sample} organization={organization} />);  
  expect(output).toMatchSnapshot();  
});
```

```
it('should render only projects for custom organization', () => {  
  const sample = { ...SAMPLE, defaultFor: ['TRK', 'VW'] };  
  const organization = { isDefault: false };  
  const output = shallow(<Defaults permissionTemplate={sample} organization={organization} />);  
  expect(output).toMatchSnapshot();  
});
```

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*/

```

```

import React from 'react';
import PropTypes from 'prop-types';
import Helmet from 'react-helmet';
import Header from './Header';
import List from './List';
import { translate } from '../helpers/110n';

export default class Home extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    topQualifiers: PropTypes.array.isRequired,
    permissions: PropTypes.array.isRequired,
    permissionTemplates: PropTypes.array.isRequired,
    ready: PropTypes.bool.isRequired,
    refresh: PropTypes.func.isRequired
  };

  render() {
    return (
      <div className="page page-limited">
        <Helmet title={translate('permission_templates.page')} />

        <Header
          organization={this.props.organization}
          ready={this.props.ready}
          refresh={this.props.refresh}
        />

        <List
          organization={this.props.organization}
          permissionTemplates={this.props.permissionTemplates}
          permissions={this.props.permissions}
          topQualifiers={this.props.topQualifiers}
          refresh={this.props.refresh}
        />
      </div>
    );
  }
}

```

```

}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
import React from 'react';
import PropTypes from 'prop-types';
import NameCell from './NameCell';
import PermissionCell from './PermissionCell';
import ActionsCell from './ActionsCell';
import { PermissionTemplateType, CallbackType } from '../propTypes';

export default class ListItem extends React.PureComponent {
  static propTypes = {
    organization: PropTypes.object,
    permissionTemplate: PermissionTemplateType.isRequired,
    topQualifiers: PropTypes.array.isRequired,
    refresh: CallbackType
  };

  render() {
    const permissions = this.props.permissionTemplate.permissions.map(p => (
      <PermissionCell key={p.key} permission={p} />
    ));

    return (
      <tr data-id={this.props.permissionTemplate.id} data-name={this.props.permissionTemplate.name}>
        <NameCell
          organization={this.props.organization}
          permissionTemplate={this.props.permissionTemplate}
          topQualifiers={this.props.topQualifiers}
        />

```

```

    {permissions}

    <td className="nowrap thin text-right">
      <ActionsCell
        organization={this.props.organization}
        permissionTemplate={this.props.permissionTemplate}
        topQualifiers={this.props.topQualifiers}
        refresh={this.props.refresh}
      />
    </td>
  </tr>
);
}
}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 100,
    "total": 3
  },
  "groups": [
    {
      "name": "Anyone",
      "permissions": []
    },
    {
      "id": "1",
      "name": "sonar-administrators",
      "description": "System administrators",
      "permissions": []
    },
    {
      "id": "2",
      "name": "sonar-users",
      "description": "Any new users created will automatically join this group",
      "permissions": []
    }
  ]
}
{
  "permissionTemplate": {
    "id": "af8cb8cc-1e78-4c4e-8c00-ee8e814009a5",
    "name": "Finance",
    "description": "Permissions for financially related projects",
    "projectKeyPattern": ".*\\.finance\\..*",
    "createdAt": "2001-09-09T03:46:40+0200",
    "updatedAt": "2015-08-25T16:18:48+0200"
  }
}

```

```

}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 20,
    "total": 2
  },
  "users": [
    {
      "login": "admin",
      "name": "Administrator",
      "email": "admin@admin.com",
      "avatar": "64e1b8d34f425d19e1ee2ea7236d3028",
      "permissions": ["codeviewer"]
    },
    {
      "login": "george.orwell",
      "name": "George Orwell",
      "email": "george.orwell@1984.net",
      "avatar": "583af86a274c1027ef078cada831babf",
      "permissions": ["admin", "codeviewer"]
    }
  ]
}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 20,
    "total": 3
  },
  "groups": [
    {
      "name": "Anyone",
      "permissions": [
        "issueadmin",
        "user"
      ]
    },
    {
      "name": "sonar-administrators",
      "description": "System administrators",
      "permissions": [
        "issueadmin"
      ]
    },
    {
      "name": "sonar-users",
      "description": "Any new users created will automatically join this group",

```



```

    "permissions": [
      "issueadmin"
    ]
  }
]
}
{
"permissionTemplates": [
  {
    "id": "AU-Tpxb--iU5OvuD2FLy",
    "name": "Default template for Projects",
    "description": "Template for new projects",
    "createdAt": "2001-09-09T03:46:40+0200",
    "updatedAt": "2001-09-09T03:46:40+0200",
    "permissions": [
      {
        "key": "admin",
        "usersCount": 0,
        "groupsCount": 1,
        "withProjectCreator": true
      },
      {
        "key": "codeviewer",
        "usersCount": 1,
        "groupsCount": 0,
        "withProjectCreator": false
      },
      {
        "key": "issueadmin",
        "usersCount": 3,
        "groupsCount": 0,
        "withProjectCreator": false
      },
      {
        "key": "scan",
        "usersCount": 0,
        "groupsCount": 0,
        "withProjectCreator": false
      },
      {
        "key": "user",
        "usersCount": 0,
        "groupsCount": 0,
        "withProjectCreator": false
      }
    ]
  },
  {

```

```

"id": "AU-TpxcA-iU5OvuD2FLz",
"name": "Default template for Views",
"description": "Template for new views",
"projectKeyPattern": ".*sonar.views.*",
"createdAt": "2001-09-09T03:46:40+0200",
"updatedAt": "2004-11-09T12:33:20+0100",
"permissions": [
  {
    "key": "admin",
    "usersCount": 0,
    "groupsCount": 0,
    "withProjectCreator": false
  },
  {
    "key": "codeviewer",
    "usersCount": 0,
    "groupsCount": 0,
    "withProjectCreator": false
  },
  {
    "key": "issueadmin",
    "usersCount": 0,
    "groupsCount": 3,
    "withProjectCreator": false
  },
  {
    "key": "scan",
    "usersCount": 0,
    "groupsCount": 0,
    "withProjectCreator": false
  },
  {
    "key": "user",
    "usersCount": 2,
    "groupsCount": 0,
    "withProjectCreator": false
  }
]
},
"defaultTemplates": [
  {
    "templateId": "AU-Tpxb--iU5OvuD2FLy",
    "qualifier": "TRK"
  },
  {
    "templateId": "AU-TpxcA-iU5OvuD2FLz",
    "qualifier": "VW"
  }
]

```

```

    }
  ]
}
{
  "permissionTemplate": {
    "name": "Finance",
    "description": "Permissions for financially related projects",
    "projectKeyPattern": ".*\\.finance\\.\\.*)"
  }
}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 25,
    "total": 3
  },
  "projects": [
    {
      "id": "0bd7b1e7-91d6-439e-a607-4a3a9aad3c6a",
      "key": "net.java.openjdk:jdk7",
      "name": "JDK 7",
      "qualifier": "TRK",
      "permissions": [
        {
          "key": "admin",
          "usersCount": 3,
          "groupsCount": 4
        },
        {
          "key": "issueadmin",
          "usersCount": 1,
          "groupsCount": 0
        }
      ]
    },
    {
      "id": "ce4c03d6-430f-40a9-b777-ad877c00aa4d",
      "key": "clang",
      "name": "Clang",
      "qualifier": "TRK",
      "permissions": [
        {
          "key": "issueadmin",
          "usersCount": 1,
          "groupsCount": 0
        }
      ]
    }
  ],
}

```

```

{
  "id": "752d8bfd-420c-4a83-a4e5-8ab19b13c8fc",
  "key": "Java",
  "name": "Java",
  "qualifier": "VW",
  "permissions": [
    {
      "key": "admin",
      "usersCount": 0,
      "groupsCount": 1
    },
    {
      "key": "issueadmin",
      "usersCount": 1,
      "groupsCount": 0
    }
  ]
},
{
  "permissions": [
    {
      "key": "user",
      "name": "Browse",
      "description": "Ability to access a project, browse its measures, and create/edit issues for it."
    },
    {
      "key": "admin",
      "name": "Administer",
      "description": "Ability to access project settings and perform administration tasks. (Users will also need
\\\"Browse\\\" permission)"
    },
    {
      "key": "issueadmin",
      "name": "Administer Issues",
      "description": "Grants the permission to perform advanced editing on issues: marking an issue False Positive /
Won\u0027t Fix or changing an Issue\u0027s severity. (Users will also need \\\"Browse\\\" permission)"
    },
    {
      "key": "codeviewer",
      "name": "See Source Code",
      "description": "Ability to view the project\u0027s source code. (Users will also need \\\"Browse\\\" permission)"
    }
  ]
},
{
  "permissions": [
    {
      "key": "admin",

```

```

    "name": "Administer System",
    "description": "Ability to perform all administration functions for the instance: global configuration and
personalization of default dashboards.",
    "usersCount": 0,
    "groupsCount": 1
  },
  {
    "key": "profileadmin",
    "name": "Administer Quality Profiles",
    "description": "Ability to perform any action on the quality profiles.",
    "usersCount": 2,
    "groupsCount": 0
  },
  {
    "key": "gateadmin",
    "name": "Administer Quality Gates",
    "description": "Ability to perform any action on the quality gates.",
    "usersCount": 2,
    "groupsCount": 0
  },
  {
    "key": "scan",
    "name": "Execute Analysis",
    "description": "Ability to execute analyses, and to get all settings required to perform the analysis, even the
secured ones like the scm account password, the jira account password, and so on.",
    "usersCount": 0,
    "groupsCount": 2
  },
  {
    "key": "provisioning",
    "name": "Create Projects",
    "description": "Ability to initialize project structure before first analysis.",
    "usersCount": 1,
    "groupsCount": 1
  }
]
}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 20,
    "total": 2
  },
  "users": [
    {
      "login": "admin",
      "name": "Administrator",
      "email": "admin@admin.com",

```

```

    "avatar": "64e1b8d34f425d19e1ee2ea7236d3028",
    "permissions": ["admin", "gateadmin", "profileadmin"]
  },
  {
    "login": "george.orwell",
    "name": "George Orwell",
    "email": "george.orwell@1984.net",
    "avatar": "583af86a274c1027ef078cada831babf",
    "permissions": ["scan"]
  }
]
}
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 */
@ParametersAreNonnullByDefault
package org.sonar.server.permission;

import javax.annotation.ParametersAreNonnullByDefault;
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*/
package org.sonar.server.permission;

import javax.annotation.Nullable;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;

public class GroupPermissionChange extends PermissionChange {

    private final GroupIdOrAnyone groupId;

    public GroupPermissionChange(Operation operation, String permission, @Nullable ProjectId projectId,
        GroupIdOrAnyone groupId) {
        super(operation, groupId.getOrganizationUuid(), permission, projectId);
        this.groupId = groupId;
    }

    public GroupIdOrAnyone getGroupIdOrAnyone() {
        return groupId;
    }
}
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*/
@ParametersAreNonnullByDefault
package org.sonar.server.permission.ws;

import javax.annotation.ParametersAreNonnullByDefault;

```

```

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 */
package org.sonar.server.permission.ws;

import java.util.Optional;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.server.permission.PermissionChange;
import org.sonar.server.permission.PermissionUpdater;
import org.sonar.server.permission.ProjectId;
import org.sonar.server.permission.UserId;
import org.sonar.server.permission.UserPermissionChange;
import org.sonar.server.user.UserSession;

import static java.util.Arrays.asList;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkProjectAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createUserLoginParameter;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

public class RemoveUserAction implements PermissionsWsAction {

    public static final String ACTION = "remove_user";

```



```

private final DbClient dbClient;
private final UserSession userSession;
private final PermissionUpdater permissionUpdater;
private final PermissionWsSupport support;

public RemoveUserAction(DbClient dbClient, UserSession userSession, PermissionUpdater permissionUpdater,
PermissionWsSupport support) {
    this.dbClient = dbClient;
    this.userSession = userSession;
    this.permissionUpdater = permissionUpdater;
    this.support = support;
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context.createAction(ACTION)
        .setDescription("Remove permission from a user.<br /> " +
            "This service defaults to global permissions, but can be limited to project permissions by providing project id or
project key.<br /> " +
            "Requires one of the following permissions:" +
            "<ul>" +
            "<li>'Administer System'</li>" +
            "<li>'Administer' rights on the specified project</li>" +
            "</ul>")
        .setSince("5.2")
        .setPost(true)
        .setHandler(this);

    createPermissionParameter(action);
    createUserLoginParameter(action);
    createProjectParameters(action);
    createOrganizationParameter(action).setSince("6.2");
}

@Override
public void handle(Request request, Response response) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        UserId user = support.findUser(dbSession, request.mandatoryParam(PARAM_USER_LOGIN));
        Optional<ProjectId> projectId = support.findProjectId(dbSession, request);
        OrganizationDto org = support.findOrganization(dbSession, request.param(PARAM_ORGANIZATION));

        checkProjectAdmin(userSession, org.getUuid(), projectId);

        PermissionChange change = new UserPermissionChange(
            PermissionChange.Operation.REMOVE,
            org.getUuid(),
            request.mandatoryParam(PARAM_PERMISSION),

```

```

        projectId.orElse(null),
        user);
    permissionUpdater.apply(dbSession, asList(change));
    response.noContent();
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws;

import org.sonar.api.server.ws.WebService.NewAction;
import org.sonar.api.server.ws.WebService.NewParam;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.core.util.Uuids;

import static java.lang.String.format;
import static org.sonar.server.ws.KeyExamples.KEY_PROJECT_EXAMPLE_001;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_DESCRIPTION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY_PATTERN;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

```

```

public class PermissionsWsParametersBuilder {

    private static final String PERMISSION_PARAM_DESCRIPTION = format("Permission" +
        "<ul>" +
        "<li>Possible values for global permissions: %s</li>" +
        "<li>Possible values for project permissions %s</li>" +
        "</ul>",
        GlobalPermissions.ALL_ON_ONE_LINE,
        ProjectPermissions.ALL_ON_ONE_LINE);
    public static final String PROJECT_PERMISSION_PARAM_DESCRIPTION = format("Permission" +
        "<ul>" +
        "<li>Possible values for project permissions %s</li>" +
        "</ul>",
        ProjectPermissions.ALL_ON_ONE_LINE);

    private PermissionsWsParametersBuilder() {
        // static methods only
    }

    public static NewParam createPermissionParameter(NewAction action) {
        return action.createParam(PARAM_PERMISSION)
            .setDescription(PERMISSION_PARAM_DESCRIPTION)
            .setRequired(true);
    }

    public static NewParam createProjectPermissionParameter(NewAction action, boolean required) {
        return action.createParam(PARAM_PERMISSION)
            .setDescription(PROJECT_PERMISSION_PARAM_DESCRIPTION)
            .setPossibleValues(ProjectPermissions.ALL)
            .setRequired(required);
    }

    public static NewParam createProjectPermissionParameter(NewAction action) {
        return createProjectPermissionParameter(action, true);
    }

    public static void createGroupNameParameter(NewAction action) {
        action.createParam(PARAM_GROUP_NAME)
            .setDescription("Group name or 'anyone' (case insensitive)")
            .setExampleValue("sonar-administrators");
    }

    public static NewParam createOrganizationParameter(NewAction action) {
        return action.createParam(PARAM_ORGANIZATION)
            .setDescription("Key of organization, used when group name is set")
            .setExampleValue("my-org")
            .setInternal(true);
    }
}

```

```

}

public static void createGroupIdParameter(NewAction action) {
    action.createParam(PARAM_GROUP_ID)
        .setDescription("Group id")
        .setExampleValue("42");
}

public static void createProjectParameters(NewAction action) {
    createProjectIdParameter(action);
    createProjectKeyParameter(action);
}

private static void createProjectIdParameter(NewAction action) {
    action.createParam(PARAM_PROJECT_ID)
        .setDescription("Project id")
        .setExampleValue("ce4c03d6-430f-40a9-b777-ad877c00aa4d");
}

private static void createProjectKeyParameter(NewAction action) {
    action.createParam(PARAM_PROJECT_KEY)
        .setDescription("Project key")
        .setExampleValue(KEY_PROJECT_EXAMPLE_001);
}

public static void createUserLoginParameter(NewAction action) {
    action.createParam(PARAM_USER_LOGIN)
        .setRequired(true)
        .setDescription("User login")
        .setExampleValue("g.hopper");
}

public static void createTemplateParameters(NewAction action) {
    createTemplateIdParameter(action);
    createOrganizationParameter(action);
    createTemplateNameParameter(action);
}

private static void createTemplateIdParameter(NewAction action) {
    action.createParam(PARAM_TEMPLATE_ID)
        .setDescription("Template id")
        .setExampleValue(Uuids.UUID_EXAMPLE_01);
}

private static void createTemplateNameParameter(NewAction action) {
    action.createParam(PARAM_TEMPLATE_NAME)
        .setDescription("Template name")
        .setExampleValue("Default Permission Template for Projects");
}

```

```

}

public static void createTemplateProjectKeyPatternParameter(NewAction action) {
    action.createParam(PARAM_PROJECT_KEY_PATTERN)
        .setDescription("Project key pattern. Must be a valid Java regular expression")
        .setExampleValue(".*\\finance\\.");
}

public static void createTemplateDescriptionParameter(NewAction action) {
    action.createParam(PARAM_DESCRIPTION)
        .setDescription("Description")
        .setExampleValue("Permissions for all projects related to the financial service");
}

public static void createIdParameter(NewAction action) {
    action.createParam(PARAM_ID)
        .setRequired(true)
        .setDescription("Id")
        .setExampleValue("af8cb8cc-1e78-4c4e-8c00-ee8e814009a5");
}
}
}
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 */
@ParametersAreNonnullByDefault
package org.sonar.server.permission.ws.template;

import javax.annotation.ParametersAreNonnullByDefault;
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```

```

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*/
package org.sonar.server.permission.ws.template;

```

```

import java.util.Collection;
import java.util.HashSet;
import java.util.List;
import org.sonar.api.i18n.I18n;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.resources.ResourceTypes;
import org.sonar.api.server.ws.Change;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.server.ws.WebService.Param;
import org.sonar.db.DatabaseUtils;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.PermissionTemplateService;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.project.Visibility;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static java.util.Collections.singleton;
import static java.util.Objects.requireNonNull;
import static java.lang.String.format;
import static org.sonar.api.utils.DateUtils.parseDateOrDateTime;
import static org.sonar.core.util.Protobuf.setNullable;

```

```

import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.permission.ws.template.WsTemplateRef.newTemplateRef;
import static org.sonar.server.ws.KeyExamples.KEY_PROJECT_EXAMPLE_001;
import static org.sonar.server.ws.KeyExamples.KEY_PROJECT_EXAMPLE_002;
import static org.sonar.server.ws.WsParameterBuilder.QualifierParameterContext.newQualifierParameterContext;
import static org.sonar.server.ws.WsParameterBuilder.createRootQualifiersParameter;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_QUALIFIER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_ANALYZED_BEFORE;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_ON_PROVISIONED_ONLY;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_PROJECTS;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_QUALIFIERS;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_VISIBILITY;

public class BulkApplyTemplateAction implements PermissionsWsAction {

    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionTemplateService permissionTemplateService;
    private final PermissionWsSupport wsSupport;
    private final I18n i18n;
    private final ResourceTypes resourceTypes;

    public BulkApplyTemplateAction(DbClient dbClient, UserSession userSession, PermissionTemplateService
permissionTemplateService, PermissionWsSupport wsSupport, I18n i18n,
ResourceTypes resourceTypes) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.permissionTemplateService = permissionTemplateService;
        this.wsSupport = wsSupport;
        this.i18n = i18n;
        this.resourceTypes = resourceTypes;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("bulk_apply_template")
            .setDescription("Apply a permission template to several projects.<br /> +
                "The template id or name must be provided.<br /> +
                "Requires the following permission: 'Administer System'.")
            .setPost(true)
            .setSince("5.5")
            .setChangelog(new Change("6.7.2", format("Parameter %s accepts maximum %d values", PARAM_PROJECTS,
DatabaseUtils.PARTITION_SIZE_FOR_ORACLE)))
            .setHandler(this);
    }
}

```

```

action.createParam(Param.TEXT_QUERY)
    .setDescription("Limit search to: <ul>" +
        "<li>project names that contain the supplied string</li>" +
        "<li>project keys that are exactly the same as the supplied string</li>" +
        "</ul>")
    .setExampleValue("apac");

createRootQualifiersParameter(action, newQualifierParameterContext(i18n, resourceTypes))
    .setDefaultValues(Qualifiers.PROJECT)
    .setDeprecatedKey(PARAM_QUALIFIER, "6.6");

createTemplateParameters(action);

action
    .createParam(PARAM_PROJECTS)
    .setDescription("Comma-separated list of project keys")
    .setSince("6.6")
    // Limitation of ComponentDao#selectByQuery(), max 1000 values are accepted.
    // Restricting size of HTTP parameter allows to not fail with SQL error
    .setMaxValuesAllowed(DatabaseUtils.PARTITION_SIZE_FOR_ORACLE)
    .setExampleValue(String.join(",", KEY_PROJECT_EXAMPLE_001, KEY_PROJECT_EXAMPLE_002));

action.createParam(PARAM_VISIBILITY)
    .setDescription("Filter the projects that should be visible to everyone (%s), or only specific user/groups (%s).<br/>" +
        "If no visibility is specified, the default project visibility of the organization will be used.",
        Visibility.PUBLIC.getLabel(), Visibility.PRIVATE.getLabel())
    .setRequired(false)
    .setInternal(true)
    .setSince("6.6")
    .setPossibleValues(Visibility.getLabels());

action.createParam(PARAM_ANALYZED_BEFORE)
    .setDescription("Filter the projects for which last analysis is older than the given date (exclusive).<br>" +
        "Either a date (server timezone) or datetime can be provided.")
    .setSince("6.6")
    .setExampleValue("2017-10-19 or 2017-10-19T13:00:00+0200")
    ;

action.createParam(PARAM_ON_PROVISIONED_ONLY)
    .setDescription("Filter the projects that are provisioned")
    .setBooleanPossibleValues()
    .setDefaultValues("false")
    .setSince("6.6");
}

@Override

```



```

public void handle(Request request, Response response) throws Exception {
    doHandle(toBulkApplyTemplateWsRequest(request));
    response.noContent();
}

private void doHandle(BulkApplyTemplateRequest request) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        PermissionTemplateDto template = wsSupport.findTemplate(dbSession, new TemplateRef(
            request.getTemplateId(), request.getOrganization(), request.getTemplateName()));
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        ComponentQuery componentQuery = buildDbQuery(request);
        List<ComponentDto> projects = dbClient.componentDao().selectByQuery(dbSession,
            template.getOrganizationUuid(), componentQuery, 0, Integer.MAX_VALUE);

        permissionTemplateService.applyAndCommit(dbSession, template, projects);
    }
}

private static BulkApplyTemplateRequest toBulkApplyTemplateWsRequest(Request request) {
    return new BulkApplyTemplateRequest()
        .setOrganization(request.param(PARAM_ORGANIZATION))
        .setTemplateId(request.param(PARAM_TEMPLATE_ID))
        .setTemplateName(request.param(PARAM_TEMPLATE_NAME))
        .setQualifiers(request.mandatoryParamAsStrings(PARAM_QUALIFIERS))
        .setQuery(request.param(Param.TEXT_QUERY))
        .setVisibility(request.param(PARAM_VISIBILITY))
        .setOnProvisionedOnly(request.mandatoryParamAsBoolean(PARAM_ON_PROVISIONED_ONLY))
        .setAnalyzedBefore(request.param(PARAM_ANALYZED_BEFORE))
        .setProjects(request.paramAsStrings(PARAM_PROJECTS));
}

private static ComponentQuery buildDbQuery(BulkApplyTemplateRequest request) {
    Collection<String> qualifiers = request.getQualifiers();
    ComponentQuery.Builder query = ComponentQuery.builder()
        .setQualifiers(qualifiers.toArray(new String[qualifiers.size()]));

    setNullable(request.getQuery(), q -> {
        query.setNameOrKeyQuery(q);
        query.setPartialMatchOnKey(true);
        return query;
    });
    setNullable(request.getVisibility(), v -> query.setPrivate(Visibility.isPrivate(v)));
    setNullable(request.getAnalyzedBefore(), d -> query.setAnalyzedBefore(parseDateOrDateTime(d).getTime()));
    setNullable(request.isOnProvisionedOnly(), query::setOnProvisionedOnly);
    setNullable(request.getProjects(), keys -> query.setComponentKeys(new HashSet<>(keys)));

    return query.build();
}

```

```

}

private static class BulkApplyTemplateRequest {
    private String templateId;
    private String organization;
    private String templateName;
    private String query;
    private Collection<String> qualifiers = singleton(Qualifiers.PROJECT);
    private String visibility;
    private String analyzedBefore;
    private boolean onProvisionedOnly = false;
    private Collection<String> projects;

    @CheckForNull
    public String getTemplateId() {
        return templateId;
    }

    public BulkApplyTemplateRequest setTemplateId(@Nullable String templateId) {
        this.templateId = templateId;
        return this;
    }

    @CheckForNull
    public String getOrganization() {
        return organization;
    }

    public BulkApplyTemplateRequest setOrganization(@Nullable String s) {
        this.organization = s;
        return this;
    }

    @CheckForNull
    public String getTemplateName() {
        return templateName;
    }

    public BulkApplyTemplateRequest setTemplateName(@Nullable String templateName) {
        this.templateName = templateName;
        return this;
    }

    @CheckForNull
    public String getQuery() {
        return query;
    }
}

```

```

public BulkApplyTemplateRequest setQuery(@Nullable String query) {
    this.query = query;
    return this;
}

public Collection<String> getQualifiers() {
    return qualifiers;
}

public BulkApplyTemplateRequest setQualifiers(Collection<String> qualifiers) {
    this.qualifiers = requireNonNull(qualifiers);
    return this;
}

@CheckForNull
public String getVisibility() {
    return visibility;
}

public BulkApplyTemplateRequest setVisibility(@Nullable String visibility) {
    this.visibility = visibility;
    return this;
}

@CheckForNull
public String getAnalyzedBefore() {
    return analyzedBefore;
}

public BulkApplyTemplateRequest setAnalyzedBefore(@Nullable String analyzedBefore) {
    this.analyzedBefore = analyzedBefore;
    return this;
}

public boolean isOnProvisionedOnly() {
    return onProvisionedOnly;
}

public BulkApplyTemplateRequest setOnProvisionedOnly(boolean onProvisionedOnly) {
    this.onProvisionedOnly = onProvisionedOnly;
    return this;
}

@CheckForNull
public Collection<String> getProjects() {
    return projects;
}

```

```

public BulkApplyTemplateRequest setProjects(@Nullable Collection<String> projects) {
    this.projects = projects;
    return this;
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.utils.System2;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDao;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static java.util.Objects.requireNonNull;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPermission;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;

```

```

import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

```

```

public class RemoveProjectCreatorFromTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final PermissionWsSupport wsSupport;
    private final UserSession userSession;
    private final System2 system;

    public RemoveProjectCreatorFromTemplateAction(DbClient dbClient, PermissionWsSupport wsSupport,
UserSession userSession, System2 system) {
        this.dbClient = dbClient;
        this.wsSupport = wsSupport;
        this.userSession = userSession;
        this.system = system;
    }

```

```

private static RemoveProjectCreatorFromTemplateRequest toWsRequest(Request request) {
    RemoveProjectCreatorFromTemplateRequest wsRequest =
RemoveProjectCreatorFromTemplateRequest.builder()
        .setPermission(request.mandatoryParam(PARAM_PERMISSION))
        .setTemplateId(request.param(PARAM_TEMPLATE_ID))
        .setOrganization(request.param(PARAM_ORGANIZATION))
        .setTemplateName(request.param(PARAM_TEMPLATE_NAME))
        .build();
    validateProjectPermission(wsRequest.getPermission());
    return wsRequest;
}

```

@Override

```

public void define(WebService.NewController context) {
    WebService.NewAction action = context.createAction("remove_project_creator_from_template")
        .setDescription("Remove a project creator from a permission template.<br>" +
            "Requires the following permission: 'Administer System'.")
        .setSince("6.0")
        .setPost(true)
        .setHandler(this);

    createTemplateParameters(action);
    createProjectPermissionParameter(action);
}

```

@Override

```

public void handle(Request request, Response response) throws Exception {
    doHandle(toWsRequest(request));
    response.noContent();
}

```

```

}

private void doHandle(RemoveProjectCreatorFromTemplateRequest request) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        PermissionTemplateDto template = wsSupport.findTemplate(dbSession, WsTemplateRef.newTemplateRef(
            request.getTemplateId(), request.getOrganization(), request.getTemplateName());
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        PermissionTemplateCharacteristicDao dao = dbClient.permissionTemplateCharacteristicDao();
        dao.selectByPermissionAndTemplateId(dbSession, request.getPermission(), template.getId())
            .ifPresent(permissionTemplateCharacteristicDto -> updateTemplateCharacteristic(dbSession,
permissionTemplateCharacteristicDto));
    }
}

private void updateTemplateCharacteristic(DbSession dbSession, PermissionTemplateCharacteristicDto
templatePermission) {
    PermissionTemplateCharacteristicDto targetTemplatePermission = templatePermission
        .setUpdatedAt(system.now())
        .setWithProjectCreator(false);
    dbClient.permissionTemplateCharacteristicDao().update(dbSession, targetTemplatePermission);
    dbSession.commit();
}

private static class RemoveProjectCreatorFromTemplateRequest {
    private final String templateId;
    private final String organization;
    private final String templateName;
    private final String permission;

    private RemoveProjectCreatorFromTemplateRequest(Builder builder) {
        this.templateId = builder.templateId;
        this.organization = builder.organization;
        this.templateName = builder.templateName;
        this.permission = requireNonNull(builder.permission);
    }

    @CheckForNull
    public String getTemplateId() {
        return templateId;
    }

    @CheckForNull
    public String getOrganization() {
        return organization;
    }

    @CheckForNull

```

```

public String getTemplateName() {
    return templateName;
}

public String getPermission() {
    return permission;
}

public static Builder builder() {
    return new Builder();
}
}

public static class Builder {
    private String templateId;
    private String organization;
    private String templateName;
    private String permission;

    private Builder() {
        // enforce method constructor
    }

    public Builder setTemplateId(@Nullable String templateId) {
        this.templateId = templateId;
        return this;
    }

    public Builder setOrganization(@Nullable String s) {
        this.organization = s;
        return this;
    }

    public Builder setTemplateName(@Nullable String templateName) {
        this.templateName = templateName;
        return this;
    }

    public Builder setPermission(@Nullable String permission) {
        this.permission = permission;
        return this;
    }

    public RemoveProjectCreatorFromTemplateRequest build() {
        return new RemoveProjectCreatorFromTemplateRequest(this);
    }
}
}

```

```

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 */
package org.sonar.server.permission.ws.template;

import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.DefaultTemplates;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.permission.ws.template.WsTemplateRef.newTemplateRef;
import static org.sonar.server.ws.WsUtils.checkFoundWithOptional;
import static org.sonar.server.ws.WsUtils.checkRequest;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class DeleteTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionWsSupport finder;

```



```

private final DefaultTemplatesResolver defaultTemplatesResolver;

public DeleteTemplateAction(DbClient dbClient, UserSession userSession, PermissionWsSupport support,
DefaultTemplatesResolver defaultTemplatesResolver) {
    this.dbClient = dbClient;
    this.userSession = userSession;
    this.finder = support;
    this.defaultTemplatesResolver = defaultTemplatesResolver;
}

private static DeleteTemplateRequest toDeleteTemplateWsRequest(Request request) {
    return new DeleteTemplateRequest()
        .setTemplateId(request.param(PARAM_TEMPLATE_ID))
        .setOrganization(request.param(PARAM_ORGANIZATION))
        .setTemplateName(request.param(PARAM_TEMPLATE_NAME));
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context.createAction("delete_template")
        .setDescription("Delete a permission template.<br />" +
            "Requires the following permission: 'Administer System'.")
        .setSince("5.2")
        .setPost(true)
        .setHandler(this);

    createTemplateParameters(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    userSession.checkLoggedIn();
    doHandle(toDeleteTemplateWsRequest(request));
    response.noContent();
}

private void doHandle(DeleteTemplateRequest request) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        PermissionTemplateDto template = finder.findTemplate(dbSession, new TemplateRef(
            request.getTemplateId(), request.getOrganization(), request.getTemplateName()));
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        DefaultTemplates defaultTemplates = retrieveDefaultTemplates(dbSession, template);

        checkTemplateUuidIsNotDefault(template, defaultTemplates);
        dbClient.permissionTemplateDao().deleteById(dbSession, template.getId());
        updateViewDefaultTemplateWhenGovernanceIsNotInstalled(dbSession, template, defaultTemplates);
    }
}

```

```

        dbSession.commit();
    }
}

/**
 * The default template for view can be removed when Governance is not installed. To avoid keeping a reference
 * to a non existing template, we update the default templates.
 */
private void updateViewDefaultTemplateWhenGovernanceIsNotInstalled(DbSession dbSession,
PermissionTemplateDto template, DefaultTemplates defaultTemplates) {
    String viewDefaultTemplateUuid = defaultTemplates.getViewUuid();
    if (viewDefaultTemplateUuid != null && viewDefaultTemplateUuid.equals(template.getUuid())) {
        defaultTemplates.setViewUuid(null);
        dbClient.organizationDao().setDefaultTemplates(dbSession, template.getOrganizationUuid(), defaultTemplates);
    }
}

private DefaultTemplates retrieveDefaultTemplates(DbSession dbSession, PermissionTemplateDto template) {
    return checkFoundWithOptional(
        dbClient.organizationDao().getDefaultTemplates(dbSession, template.getOrganizationUuid()),
        "Can't find default templates of Organization with uuid '%s' to which template with uuid '%s' belongs",
        template.getOrganizationUuid(), template.getUuid());
}

private void checkTemplateUuidIsNotDefault(PermissionTemplateDto template, DefaultTemplates
defaultTemplates) {
    DefaultTemplatesResolverImpl.ResolvedDefaultTemplates resolvedDefaultTemplates =
defaultTemplatesResolver.resolve(defaultTemplates);
    checkRequest(!resolvedDefaultTemplates.getProject().equals(template.getUuid()),
        "It is not possible to delete the default permission template for projects");
    resolvedDefaultTemplates.getView()
        .ifPresent(viewDefaultTemplateUuid -> checkRequest(
            !viewDefaultTemplateUuid.equals(template.getUuid()),
            "It is not possible to delete the default permission template for views"));
}

private static class DeleteTemplateRequest {
    private String templateId;
    private String organization;
    private String templateName;

    @CheckForNull
    public String getTemplateId() {
        return templateId;
    }
}

public DeleteTemplateRequest setTemplateId(@Nullable String templateId) {
    this.templateId = templateId;
}

```

```

    return this;
}

@CheckForNull
public String getOrganization() {
    return organization;
}

public DeleteTemplateRequest setOrganization(@Nullable String s) {
    this.organization = s;
    return this;
}

@CheckForNull
public String getTemplateName() {
    return templateName;
}

public DeleteTemplateRequest setTemplateName(@Nullable String templateName) {
    this.templateName = templateName;
    return this;
}
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import java.util.Date;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

```

```

import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.utils.System2;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions.PermissionTemplate;
import org.sonarqube.ws.Permissions.UpdateTemplateWsResponse;

import static com.google.common.base.MoreObjects.firstNonNull;
import static java.lang.String.format;
import static java.util.Objects.requireNonNull;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static
org.sonar.server.permission.ws.PermissionRequestValidator.MSG_TEMPLATE_WITH_SAME_NAME;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPattern;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateTemplateNameFormat;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createIdParameter;
import static
org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateDescriptionParameter;
import static
org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateProjectKeyPatternParameter;
import static
org.sonar.server.permission.ws.template.PermissionTemplateDtoToPermissionTemplateResponse.toPermissionTem
plateResponse;
import static org.sonar.server.ws.WsUtils.checkRequest;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_DESCRIPTION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY_PATTERN;

public class UpdateTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final UserSession userSession;
    private final System2 system;
    private final PermissionWsSupport wsSupport;

    public UpdateTemplateAction(DbClient dbClient, UserSession userSession, System2 system,
PermissionWsSupport wsSupport) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.system = system;
        this.wsSupport = wsSupport;
    }

```

```

}

private static UpdateTemplateRequest toUpdateTemplateWsRequest(Request request) {
    return new UpdateTemplateRequest()
        .setId(request.mandatoryParam(PARAM_ID))
        .setName(request.param(PARAM_NAME))
        .setDescription(request.param(PARAM_DESCRIPTION))
        .setProjectKeyPattern(request.param(PARAM_PROJECT_KEY_PATTERN));
}

private static UpdateTemplateWsResponse buildResponse(PermissionTemplateDto permissionTemplate) {
    PermissionTemplate permissionTemplateBuilder = toPermissionTemplateResponse(permissionTemplate);
    return UpdateTemplateWsResponse.newBuilder().setPermissionTemplate(permissionTemplateBuilder).build();
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context.createAction("update_template")
        .setDescription("Update a permission template.<br />" +
            "Requires the following permission: 'Administer System'.")
        .setResponseExample(getClass().getResource("update_template-example.json"))
        .setSince("5.2")
        .setPost(true)
        .setHandler(this);

    createIdParameter(action);

    action.createParam(PARAM_NAME)
        .setDescription("Name")
        .setExampleValue("Financial Service Permissions");

    createTemplateProjectKeyPatternParameter(action);
    createTemplateDescriptionParameter(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    UpdateTemplateWsResponse updateTemplateWsResponse = doHandle(toUpdateTemplateWsRequest(request));
    writeProtobuf(updateTemplateWsResponse, request, response);
}

private UpdateTemplateWsResponse doHandle(UpdateTemplateRequest request) {
    String uuid = request.getId();
    String nameParam = request.getName();
    String descriptionParam = request.getDescription();
    String projectPatternParam = request.getProjectKeyPattern();

    try (DbSession dbSession = dbClient.openSession(false)) {

```

```

    PermissionTemplateDto templateToUpdate = getAndBuildTemplateToUpdate(dbSession, uuid, nameParam,
descriptionParam, projectPatternParam);
    checkGlobalAdmin(userSession, templateToUpdate.getOrganizationUuid());

    validateTemplate(dbSession, templateToUpdate);
    PermissionTemplateDto updatedTemplate = updateTemplate(dbSession, templateToUpdate);
    dbSession.commit();

    return buildResponse(updatedTemplate);
}
}

private void validateTemplate(DbSession dbSession, PermissionTemplateDto templateToUpdate) {
    validateTemplateNameForUpdate(dbSession, templateToUpdate.getOrganizationUuid(),
templateToUpdate.getName(), templateToUpdate.getId());
    validateProjectPattern(templateToUpdate.getKeyPattern());
}

private PermissionTemplateDto getAndBuildTemplateToUpdate(DbSession dbSession, String uuid, @Nullable
String newName, @Nullable String newDescription,
@Nullable String newProjectKeyPattern) {
    PermissionTemplateDto templateToUpdate = wsSupport.findTemplate(dbSession,
WsTemplateRef.newTemplateRef(uuid, null, null));
    templateToUpdate.setName(firstNonNull(newName, templateToUpdate.getName()));
    templateToUpdate.setDescription(firstNonNull(newDescription, templateToUpdate.getDescription()));
    templateToUpdate.setKeyPattern(firstNonNull(newProjectKeyPattern, templateToUpdate.getKeyPattern()));
    templateToUpdate.setUpdatedAt(new Date(system.now()));

    return templateToUpdate;
}

private PermissionTemplateDto updateTemplate(DbSession dbSession, PermissionTemplateDto
templateToUpdate) {
    return dbClient.permissionTemplateDao().update(dbSession, templateToUpdate);
}

private void validateTemplateNameForUpdate(DbSession dbSession, String organizationUuid, String name, long
id) {
    validateTemplateNameFormat(name);

    PermissionTemplateDto permissionTemplateWithSameName =
dbClient.permissionTemplateDao().selectByName(dbSession, organizationUuid, name);
    checkRequest(permissionTemplateWithSameName == null || permissionTemplateWithSameName.getId() == id,
format(MSG_TEMPLATE_WITH_SAME_NAME, name));
}

private static class UpdateTemplateRequest {
    private String id;

```

```

private String description;
private String name;
private String projectKeyPattern;

public String getId() {
    return id;
}

public UpdateTemplateRequest setId(String id) {
    this.id = requireNonNull(id);
    return this;
}

@CheckForNull
public String getDescription() {
    return description;
}

public UpdateTemplateRequest setDescription(@Nullable String description) {
    this.description = description;
    return this;
}

@CheckForNull
public String getName() {
    return name;
}

public UpdateTemplateRequest setName(@Nullable String name) {
    this.name = name;
    return this;
}

@CheckForNull
public String getProjectKeyPattern() {
    return projectKeyPattern;
}

public UpdateTemplateRequest setProjectKeyPattern(@Nullable String projectKeyPattern) {
    this.projectKeyPattern = projectKeyPattern;
    return this;
}
}
}
}
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```

```

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*/

```

```
package org.sonar.server.permission.ws.template;
```

```

import java.util.Date;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.utils.System2;
import org.sonar.core.util.Uuids;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions.CreateTemplateWsResponse;
import org.sonarqube.ws.Permissions.PermissionTemplate;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static java.lang.String.format;
import static java.util.Objects.requireNonNull;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static
org.sonar.server.permission.ws.PermissionRequestValidator.MSG_TEMPLATE_WITH_SAME_NAME;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPattern;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateTemplateNameFormat;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static
org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateDescriptionParameter;
import static
org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateProjectKeyPatternParameter;

```



```

import static
org.sonar.server.permission.ws.template.PermissionTemplateDtoToPermissionTemplateResponse.toPermissionTem
plateResponse;
import static org.sonar.server.ws.WsUtils.checkRequest;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_DESCRIPTION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY_PATTERN;

public class CreateTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final UserSession userSession;
    private final System2 system;
    private final PermissionWsSupport wsSupport;

    public CreateTemplateAction(DbClient dbClient, UserSession userSession, System2 system, PermissionWsSupport
wsSupport) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.system = system;
        this.wsSupport = wsSupport;
    }

    private static CreateTemplateRequest toCreateTemplateWsRequest(Request request) {
        return new CreateTemplateRequest()
            .setName(request.mandatoryParam(PARAM_NAME))
            .setDescription(request.param(PARAM_DESCRIPTION))
            .setProjectKeyPattern(request.param(PARAM_PROJECT_KEY_PATTERN))
            .setOrganization(request.param(PARAM_ORGANIZATION));
    }

    private static CreateTemplateWsResponse buildResponse(PermissionTemplateDto permissionTemplateDto) {
        PermissionTemplate permissionTemplateBuilder = toPermissionTemplateResponse(permissionTemplateDto);
        return CreateTemplateWsResponse.newBuilder().setPermissionTemplate(permissionTemplateBuilder).build();
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("create_template")
            .setDescription("Create a permission template.<br />" +
                "Requires the following permission: 'Administer System'.")
            .setResponseExample(getClass().getResource("create_template-example.json"))
            .setSince("5.2")
            .setPost(true)
            .setHandler(this);

        action.createParam(PARAM_NAME)

```

```

        .setRequired(true)
        .setDescription("Name")
        .setExampleValue("Financial Service Permissions");

createTemplateProjectKeyPatternParameter(action);
createTemplateDescriptionParameter(action);
createOrganizationParameter(action).setSince("6.2");
}

@Override
public void handle(Request request, Response response) throws Exception {
    CreateTemplateWsResponse createTemplateWsResponse = doHandle(toCreateTemplateWsRequest(request));
    writeProtobuf(createTemplateWsResponse, request, response);
}

private CreateTemplateWsResponse doHandle(CreateTemplateRequest request) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        OrganizationDto org = wsSupport.findOrganization(dbSession, request.getOrganization());
        checkGlobalAdmin(userSession, org.getUuid());

        validateTemplateNameForCreation(dbSession, org, request.getName());
        validateProjectPattern(request.getProjectKeyPattern());

        PermissionTemplateDto permissionTemplate = insertTemplate(dbSession, org, request);

        return buildResponse(permissionTemplate);
    }
}

private void validateTemplateNameForCreation(DbSession dbSession, OrganizationDto org, String name) {
    validateTemplateNameFormat(name);

    PermissionTemplateDto permissionTemplateWithSameName = dbClient.permissionTemplateDao()
        .selectByName(dbSession, org.getUuid(), name);
    checkRequest(permissionTemplateWithSameName == null, format(MSG_TEMPLATE_WITH_SAME_NAME,
name));
}

private PermissionTemplateDto insertTemplate(DbSession dbSession, OrganizationDto org,
CreateTemplateRequest request) {
    Date now = new Date(system.now());
    PermissionTemplateDto template = dbClient.permissionTemplateDao().insert(dbSession, new
PermissionTemplateDto()
        .setUuid(Uuids.create())
        .setOrganizationUuid(org.getUuid())
        .setName(request.getName())
        .setDescription(request.getDescription())
        .setKeyPattern(request.getProjectKeyPattern())

```

```

        .setCreatedAt(now)
        .setUpdatedAt(now));
dbSession.commit();
return template;
}

private static class CreateTemplateRequest {
    private String description;
    private String name;
    private String projectKeyPattern;
    private String organization;

    @CheckForNull
    public String getDescription() {
        return description;
    }

    public CreateTemplateRequest setDescription(@Nullable String description) {
        this.description = description;
        return this;
    }

    public String getName() {
        return name;
    }

    public CreateTemplateRequest setName(String name) {
        this.name = requireNonNull(name);
        return this;
    }

    @CheckForNull
    public String getProjectKeyPattern() {
        return projectKeyPattern;
    }

    public CreateTemplateRequest setProjectKeyPattern(@Nullable String projectKeyPattern) {
        this.projectKeyPattern = projectKeyPattern;
        return this;
    }

    @CheckForNull
    public String getOrganization() {
        return organization;
    }

    public CreateTemplateRequest setOrganization(@Nullable String s) {
        this.organization = s;
    }
}

```

```

    return this;
}
}
}
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 */
package org.sonar.server.permission.ws.template;

import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;

import static java.lang.String.format;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupIdParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupNameParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.permission.ws.template.WsTemplateRef.fromRequest;
import static org.sonar.server.ws.WsUtils.checkRequest;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class AddGroupToTemplateAction implements PermissionsWsAction {

```

```

private final DbClient dbClient;
private final PermissionWsSupport support;
private final UserSession userSession;

public AddGroupToTemplateAction(DbClient dbClient, PermissionWsSupport support, UserSession userSession) {
    this.dbClient = dbClient;
    this.support = support;
    this.userSession = userSession;
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context
        .createAction("add_group_to_template")
        .setPost(true)
        .setSince("5.2")
        .setDescription("Add a group to a permission template.<br /> " +
            "The group id or group name must be provided. <br />" +
            "Requires the following permission: 'Administer System'.")
        .setHandler(this);

    createTemplateParameters(action);
    createProjectPermissionParameter(action);
    createGroupIdParameter(action);
    createGroupNameParameter(action);
}

@Override
public void handle(Request request, Response response) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        String permission = request.mandatoryParam(PARAM_PERMISSION);
        GroupIdOrAnyone groupId = support.findGroup(dbSession, request);
        checkRequest(!SYSTEM_ADMIN.equals(permission) || !groupId.isAnyone(),
            format("It is not possible to add the '%s' permission to the group 'Anyone'.", permission));

        PermissionTemplateDto template = support.findTemplate(dbSession, fromRequest(request));
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        if (!groupAlreadyAdded(dbSession, template.getId(), permission, groupId)) {
            dbClient.permissionTemplateDao().insertGroupPermission(dbSession, template.getId(), groupId.getId(),
                permission);
            dbSession.commit();
        }
    }
    response.noContent();
}

private boolean groupAlreadyAdded(DbSession dbSession, long templateId, String permission, GroupIdOrAnyone

```

```

group) {
    return dbClient.permissionTemplateDao().hasGroupsWithPermission(dbSession, templateId, permission,
group.getId());
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import org.sonar.api.resources.Qualifiers;
import org.sonar.api.resources.ResourceType;
import org.sonar.api.resources.ResourceTypes;
import org.sonar.db.organization.DefaultTemplates;

import static java.util.Optional.ofNullable;

public class DefaultTemplatesResolverImpl implements DefaultTemplatesResolver {
    private final ResourceTypes resourceTypes;

    public DefaultTemplatesResolverImpl(ResourceTypes resourceTypes) {
        this.resourceTypes = resourceTypes;
    }

    @Override
    public ResolvedDefaultTemplates resolve(DefaultTemplates defaultTemplates) {
        String projectDefaultTemplate = defaultTemplates.getProjectUuid();

        return new ResolvedDefaultTemplates(
            projectDefaultTemplate,
            isViewsEnabled(resourceTypes) ? ofNullable(defaultTemplates.getViewUuid()).orElse(projectDefaultTemplate)
            : null);
    }
}

```

```

}

private static boolean isViewsEnabled(ResourceTypes resourceTypes) {
    return resourceTypes.getRoots()
        .stream()
        .map(ResourceType::getQualifier)
        .anyMatch(Qualifiers.VIEW::equals);
}

}
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 */
package org.sonar.server.permission.ws.template;

import com.google.common.collect.Multimap;
import com.google.common.collect.Ordering;
import com.google.common.collect.TreeMultimap;
import java.util.List;
import java.util.stream.Collectors;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.server.ws.WebService.Param;
import org.sonar.api.utils.Paging;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateUserDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.issue.ws.AvatarResolver;

```

```

import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions;
import org.sonarqube.ws.Permissions.UsersWsResponse;

import static com.google.common.base.Strings.emptyOrNull;
import static org.sonar.api.server.ws.WebService.Param.PAGE;
import static org.sonar.api.server.ws.WebService.Param.PAGE_SIZE;
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
import static org.sonar.core.util.ProtoBuf.setNullable;
import static org.sonar.db.permission.PermissionQuery.DEFAULT_PAGE_SIZE;
import static org.sonar.db.permission.PermissionQuery.RESULTS_MAX_SIZE;
import static org.sonar.db.permission.PermissionQuery.SEARCH_QUERY_MIN_LENGTH;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPermission;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.ws.WsUtils.writeProtoBuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class TemplateUsersAction implements PermissionsWsAction {

    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionWsSupport support;
    private final AvatarResolver avatarResolver;

    public TemplateUsersAction(DbClient dbClient, UserSession userSession, PermissionWsSupport support,
AvatarResolver avatarResolver) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.support = support;
        this.avatarResolver = avatarResolver;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context
            .createAction("template_users")
            .setSince("5.2")
            .setDescription("Lists the users with their permission as individual users rather than through group affiliation on
the chosen template. <br />" +
                "This service defaults to all users, but can be limited to users with a specific permission by providing the desired
permission.<br>" +
                "Requires the following permission: 'Administer System'.")
            .addPagingParams(DEFAULT_PAGE_SIZE, RESULTS_MAX_SIZE)
            .setInternal(true)

```



```

        .setResponseExample(getClass().getResource("template_users-example.json"))
        .setHandler(this);

    action.createParam(Param.TEXT_QUERY)
        .setMinimumLength(SEARCH_QUERY_MIN_LENGTH)
        .setDescription("Limit search to user names that contain the supplied string. <br/>" +
            "When this parameter is not set, only users having at least one permission are returned.")
        .setExampleValue("eri");
    createProjectPermissionParameter(action).setRequired(false);
    createTemplateParameters(action);
}

@Override
public void handle(Request wsRequest, Response wsResponse) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        WsTemplateRef templateRef = WsTemplateRef.fromRequest(wsRequest);
        PermissionTemplateDto template = support.findTemplate(dbSession, templateRef);
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        PermissionQuery query = buildQuery(wsRequest, template);
        int total = dbClient.permissionTemplateDao().countUserLoginsByQueryAndTemplate(dbSession, query,
            template.getId());
        Paging paging =
            Paging.forPageIndex(wsRequest.mandatoryParamAsInt(PAGE))
                .withPageSize(wsRequest.mandatoryParamAsInt(PAGE_SIZE))
                .andTotal(total);
        List<UserDto> users = findUsers(dbSession, query, template);
        List<PermissionTemplateUserDto> permissionTemplateUsers =
            dbClient.permissionTemplateDao().selectUserPermissionsByTemplateIdAndUserLogins(dbSession,
                template.getId(),
                users.stream().map(UserDto::getLogin).collect(Collectors.toList()));
        Permissions.UsersWsResponse templateUsersResponse = buildResponse(users, permissionTemplateUsers,
            paging);
        writeProtobuf(templateUsersResponse, wsRequest, wsResponse);
    }
}

private static PermissionQuery buildQuery(Request wsRequest, PermissionTemplateDto template) {
    String textQuery = wsRequest.param(TEXT_QUERY);
    String permission = wsRequest.param(PARAM_PERMISSION);
    PermissionQuery.Builder query = PermissionQuery.builder()
        .setOrganizationUuid(template.getOrganizationUuid())
        .setTemplate(template.getUuid())
        .setPermission(permission != null ? validateProjectPermission(permission) : null)
        .setPageIndex(wsRequest.mandatoryParamAsInt(PAGE))
        .setPageSize(wsRequest.mandatoryParamAsInt(PAGE_SIZE))
        .setSearchQuery(textQuery);
    if (textQuery == null) {
        query.withAtLeastOnePermission();
    }
}

```

```

    }
    return query.build();
}

private Permissions.UsersWsResponse buildResponse(List<UserDto> users, List<PermissionTemplateUserDto>
permissionTemplateUsers, Paging paging) {
    Multimap<Integer, String> permissionsByUserId = TreeMultimap.create();
    permissionTemplateUsers.forEach(userPermission -> permissionsByUserId.put(userPermission.getUserId(),
userPermission.getPermission()));

    UsersWsResponse.Builder responseBuilder = UsersWsResponse.newBuilder();
    users.forEach(user -> {
        Permissions.User.Builder userResponse = responseBuilder.addUsersBuilder()
            .setLogin(user.getLogin())
            .addAllPermissions(permissionsByUserId.get(user.getId()));
        setNullable(user.getEmail(), userResponse::setEmail);
        setNullable(user.getName(), userResponse::setName);
        setNullable(emptyOrNull(user.getEmail()), u -> userResponse.setAvatar(avatarResolver.create(user)));
    });
    responseBuilder.getPagingBuilder()
        .setPageIndex(paging.pageIndex())
        .setPageSize(paging.pageSize())
        .setTotal(paging.total())
        .build();
    return responseBuilder.build();
}

private List<UserDto> findUsers(DbSession dbSession, PermissionQuery query, PermissionTemplateDto template)
{
    List<String> orderedLogins =
dbClient.permissionTemplateDao().selectUserLoginsByQueryAndTemplate(dbSession, query, template.getId());
    return
    Ordering.explicit(orderedLogins).onResultOf(UserDto::getLogin).immutableSortedCopy(dbClient.userDao().select
ByLogins(dbSession, orderedLogins));
}

}
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*/

```

```
package org.sonar.server.permission.ws.template;
```

```

import java.util.Optional;
import javax.annotation.Nullable;
import javax.annotation.concurrent.Immutable;
import org.sonar.db.organization.DefaultTemplates;

```

```

import static java.util.Objects.requireNonNull;
import static java.util.Optional.ofNullable;

```

```

public interface DefaultTemplatesResolver {
    /**
     * Resolve the effective default templates uuid for the specified { @link DefaultTemplates}.
     * <ul>
     * <li>{ @link ResolvedDefaultTemplates#project } is always the same as { @link
DefaultTemplates#projectUuid }</li>
     * <li>when Governance is not installed, { @link ResolvedDefaultTemplates#view } is always { @code null}</li>
     * <li>when Governance is not installed, { @link ResolvedDefaultTemplates#view } is { @link
DefaultTemplates#viewUuid }
     *     when it is non { @code null }, otherwise it is { @link DefaultTemplates#projectUuid }</li>
     * </ul>
     */
    ResolvedDefaultTemplates resolve(DefaultTemplates defaultTemplates);
}

```

```
@Immutable
```

```

final class ResolvedDefaultTemplates {
    private final String project;
    private final String view;
}

```

```

ResolvedDefaultTemplates(String project, @Nullable String view) {
    this.project = requireNonNull(project, "project can't be null");
    this.view = view;
}

```

```

public String getProject() {
    return project;
}

```

```

public Optional<String> getView() {
    return ofNullable(view);
}

```

```

    }
  }
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import java.util.List;
import java.util.Locale;

import com.google.common.collect.Lists;
import com.google.common.collect.Table;
import com.google.common.collect.TreeBasedTable;
import org.sonar.api.i18n.I18n;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.server.ws.WebService.Param;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.DefaultTemplates;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.CountByTemplateAndPermissionDto;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions;

```

```

import org.sonarqube.ws.Permissions.Permission;
import org.sonarqube.ws.Permissions.PermissionTemplate;
import org.sonarqube.ws.Permissions.SearchTemplatesWsResponse;
import org.sonarqube.ws.Permissions.SearchTemplatesWsResponse.TemplateIdQualifier;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static org.sonar.api.utils.DateUtils.formatDateTime;
import static org.sonar.core.util.Protobuf.setNullable;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.template.SearchTemplatesData.builder;
import static org.sonar.server.ws.WsUtils.checkFoundWithOptional;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;

public class SearchTemplatesAction implements PermissionsWsAction {
    private static final String PROPERTY_PREFIX = "projects_role.";
    private static final String DESCRIPTION_SUFFIX = ".desc";

    private final DbClient dbClient;
    private final UserSession userSession;
    private final I18n i18n;
    private final PermissionWsSupport support;
    private final DefaultTemplatesResolver defaultTemplatesResolver;

    public SearchTemplatesAction(DbClient dbClient, UserSession userSession, I18n i18n, PermissionWsSupport
support, DefaultTemplatesResolver defaultTemplatesResolver) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.i18n = i18n;
        this.support = support;
        this.defaultTemplatesResolver = defaultTemplatesResolver;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("search_templates")
            .setDescription("List permission templates.<br />" +
                "Requires the following permission: 'Administer System'.")
            .setResponseExample(getClass().getResource("search_templates-example.json"))
            .setSince("5.2")
            .addSearchQuery("defau", "permission template names")
            .setHandler(this);

        createOrganizationParameter(action).setSince("6.2");
    }
}

```

```

@Override
public void handle(Request wsRequest, Response wsResponse) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        OrganizationDto org = support.findOrganization(dbSession, wsRequest.param(PARAM_ORGANIZATION));
        SearchTemplatesRequest request = new SearchTemplatesRequest()
            .setOrganizationUuid(org.getUuid())
            .setQuery(wsRequest.param(Param.TEXT_QUERY));
        checkGlobalAdmin(userSession, request.getOrganizationUuid());

        SearchTemplatesWsResponse searchTemplatesWsResponse = buildResponse(load(dbSession, request));
        writeProtobuf(searchTemplatesWsResponse, wsRequest, wsResponse);
    }
}

private static void buildDefaultTemplatesResponse(SearchTemplatesWsResponse.Builder response,
SearchTemplatesData data) {
    TemplateIdQualifier.Builder templateUuidQualifierBuilder = TemplateIdQualifier.newBuilder();

    DefaultTemplatesResolverImpl.ResolvedDefaultTemplates resolvedDefaultTemplates = data.defaultTemplates();
    response.addDefaultTemplates(templateUuidQualifierBuilder
        .setQualifier(Qualifiers.PROJECT)
        .setTemplateId(resolvedDefaultTemplates.getProject()));

    resolvedDefaultTemplates.getView()
        .ifPresent(viewDefaultTemplate -> response.addDefaultTemplates(
            templateUuidQualifierBuilder
                .clear()
                .setQualifier(Qualifiers.VIEW)
                .setTemplateId(viewDefaultTemplate)));
}

private static void buildTemplatesResponse(Permissions.SearchTemplatesWsResponse.Builder response,
SearchTemplatesData data) {
    Permission.Builder permissionResponse = Permission.newBuilder();
    PermissionTemplate.Builder templateBuilder = PermissionTemplate.newBuilder();

    for (PermissionTemplateDto templateDto : data.templates()) {
        templateBuilder
            .clear()
            .setId(templateDto.getUuid())
            .setName(templateDto.getName())
            .setCreatedAt(formatDateTime(templateDto.getCreatedAt()))
            .setUpdatedAt(formatDateTime(templateDto.getUpdatedAt()));
        setNullable(templateDto.getKeyPattern(), templateBuilder::setProjectKeyPattern);
        setNullable(templateDto.getDescription(), templateBuilder::setDescription);
        for (String permission : ProjectPermissions.ALL) {
            templateBuilder.addPermissions(

```

```

        permissionResponse
            .clear()
            .setKey(permission)
            .setUsersCount(data.userCount(templateDto.getId(), permission))
            .setGroupsCount(data.groupCount(templateDto.getId(), permission))
            .setWithProjectCreator(data.withProjectCreator(templateDto.getId(), permission));
    }
    response.addPermissionTemplates(templateBuilder);
}
}

private Permissions.SearchTemplatesWsResponse buildResponse(SearchTemplatesData data) {
    SearchTemplatesWsResponse.Builder response = SearchTemplatesWsResponse.newBuilder();

    buildTemplatesResponse(response, data);
    buildDefaultTemplatesResponse(response, data);
    buildPermissionsResponse(response);

    return response.build();
}

private void buildPermissionsResponse(SearchTemplatesWsResponse.Builder response) {
    Permission.Builder permissionResponse = Permission.newBuilder();
    for (String permissionKey : ProjectPermissions.ALL) {
        response.addPermissions(
            permissionResponse
                .clear()
                .setKey(permissionKey)
                .setName(i18nName(permissionKey))
                .setDescription(i18nDescriptionMessage(permissionKey)));
    }
}

private String i18nDescriptionMessage(String permissionKey) {
    return i18n.message(Locale.ENGLISH, PROPERTY_PREFIX + permissionKey + DESCRIPTION_SUFFIX, "");
}

private String i18nName(String permissionKey) {
    return i18n.message(Locale.ENGLISH, PROPERTY_PREFIX + permissionKey, permissionKey);
}

private SearchTemplatesData load(DbSession dbSession, SearchTemplatesRequest request) {
    SearchTemplatesData.Builder data = builder();
    List<PermissionTemplateDto> templates = searchTemplates(dbSession, request);
    List<Long> templateIds = Lists.transform(templates, PermissionTemplateDto::getId);

    DefaultTemplates defaultTemplates = checkFoundWithOptional(
        dbClient.organizationDao().getDefaultTemplates(dbSession, request.getOrganizationUuid()),

```

```

        "No Default templates for organization with uuid '%s'", request.getOrganizationUuid());
    DefaultTemplatesResolver.ResolvedDefaultTemplates resolvedDefaultTemplates =
defaultTemplatesResolver.resolve(defaultTemplates);

    data.templates(templates)
        .defaultTemplates(resolvedDefaultTemplates)
        .userCountByTemplateIdAndPermission(userCountByTemplateIdAndPermission(dbSession, templateIds))
        .groupCountByTemplateIdAndPermission(groupCountByTemplateIdAndPermission(dbSession,
templateIds))
.withProjectCreatorByTemplateIdAndPermission(withProjectCreatorsByTemplateIdAndPermission(dbSession, tem
plateIds));

    return data.build();
}

private List<PermissionTemplateDto> searchTemplates(DbSession dbSession, SearchTemplatesRequest request) {
    return dbClient.permissionTemplateDao().selectAll(dbSession, request.getOrganizationUuid(),
request.getQuery());
}

private Table<Long, String, Integer> userCountByTemplateIdAndPermission(DbSession dbSession, List<Long>
templateIds) {
    final Table<Long, String, Integer> userCountByTemplateIdAndPermission = TreeBasedTable.create();

    dbClient.permissionTemplateDao().usersCountByTemplateIdAndPermission(dbSession, templateIds, context -> {
        CountByTemplateAndPermissionDto row = context.getResultObject();
        userCountByTemplateIdAndPermission.put(row.getTemplateId(), row.getPermission(), row.getCount());
    });

    return userCountByTemplateIdAndPermission;
}

private Table<Long, String, Integer> groupCountByTemplateIdAndPermission(DbSession dbSession, List<Long>
templateIds) {
    final Table<Long, String, Integer> userCountByTemplateIdAndPermission = TreeBasedTable.create();

    dbClient.permissionTemplateDao().groupsCountByTemplateIdAndPermission(dbSession, templateIds, context ->
{
        CountByTemplateAndPermissionDto row = context.getResultObject();
        userCountByTemplateIdAndPermission.put(row.getTemplateId(), row.getPermission(), row.getCount());
    });

    return userCountByTemplateIdAndPermission;
}

private Table<Long, String, Boolean> withProjectCreatorsByTemplateIdAndPermission(DbSession dbSession,
List<Long> templateIds) {
    final Table<Long, String, Boolean> templatePermissionsByTemplateIdAndPermission = TreeBasedTable.create();

```



```

    List<PermissionTemplateCharacteristicDto> templatePermissions =
dbClient.permissionTemplateCharacteristicDao().selectByTemplateIds(dbSession, templateIds);
    templatePermissions.stream()
        .forEach(templatePermission ->
templatePermissionsByTemplateIdAndPermission.put(templatePermission.getTemplateId(),
templatePermission.getPermission(),
        templatePermission.getWithProjectCreator());

    return templatePermissionsByTemplateIdAndPermission;
}

```

```

private static class SearchTemplatesRequest {
    private String query;
    private String organizationUuid;

```

```

    @CheckForNull
    public String getQuery() {
        return query;
    }

```

```

    public SearchTemplatesRequest setQuery(@Nullable String query) {
        this.query = query;
        return this;
    }

```

```

    public String getOrganizationUuid() {
        return organizationUuid;
    }

```

```

    public SearchTemplatesRequest setOrganizationUuid(String s) {
        this.organizationUuid = s;
        return this;
    }
}

```

```

}
}

```

```

/*

```

```

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```

```

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```

```

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```

```

*

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 \*/

```
package org.sonar.server.permission.ws.template;
```

```
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.UserId;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
```

```
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;
```

```
import static java.util.Objects.requireNonNull;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPermission;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createUserLoginParameter;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;
```

```
public class RemoveUserFromTemplateAction implements PermissionsWsAction {
  private final DbClient dbClient;
  private final PermissionWsSupport wsSupport;
  private final UserSession userSession;
```

```
  public RemoveUserFromTemplateAction(DbClient dbClient, PermissionWsSupport wsSupport, UserSession
  userSession) {
    this.dbClient = dbClient;
    this.wsSupport = wsSupport;
    this.userSession = userSession;
  }
```

```
  private static RemoveUserFromTemplateRequest toRemoveUserFromTemplateWsRequest(Request request) {
```

```

return new RemoveUserFromTemplateRequest()
    .setPermission(request.mandatoryParam(PARAM_PERMISSION))
    .setLogin(request.mandatoryParam(PARAM_USER_LOGIN))
    .setTemplateId(request.param(PARAM_TEMPLATE_ID))
    .setOrganization(request.param(PARAM_ORGANIZATION))
    .setTemplateName(request.param(PARAM_TEMPLATE_NAME));
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context
        .createAction("remove_user_from_template")
        .setPost(true)
        .setSince("5.2")
        .setDescription("Remove a user from a permission template.<br /> " +
            "Requires the following permission: 'Administer System'.")
        .setHandler(this);

    createTemplateParameters(action);
    createProjectPermissionParameter(action);
    createUserLoginParameter(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    doHandle(toRemoveUserFromTemplateWsRequest(request));
    response.noContent();
}

private void doHandle(RemoveUserFromTemplateRequest request) {
    String permission = request.getPermission();
    String userLogin = request.getLogin();

    try (DbSession dbSession = dbClient.openSession(false)) {
        validateProjectPermission(permission);
        PermissionTemplateDto template = wsSupport.findTemplate(dbSession, WsTemplateRef.newTemplateRef(
            request.getTemplateId(), request.getOrganization(), request.getTemplateName()));
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        UserId user = wsSupport.findUser(dbSession, userLogin);

        dbClient.permissionTemplateDao().deleteUserPermission(dbSession, template.getId(), user.getId(), permission);
        dbSession.commit();
    }
}

private static class RemoveUserFromTemplateRequest {
    private String login;

```

```

private String permission;
private String templateId;
private String organization;
private String templateName;

public String getLogin() {
    return login;
}

public RemoveUserFromTemplateRequest setLogin(String login) {
    this.login = requireNonNull(login);
    return this;
}

public String getPermission() {
    return permission;
}

public RemoveUserFromTemplateRequest setPermission(String permission) {
    this.permission = requireNonNull(permission);
    return this;
}

@CheckForNull
public String getTemplateId() {
    return templateId;
}

public RemoveUserFromTemplateRequest setTemplateId(@Nullable String templateId) {
    this.templateId = templateId;
    return this;
}

@CheckForNull
public String getOrganization() {
    return organization;
}

public RemoveUserFromTemplateRequest setOrganization(@Nullable String s) {
    this.organization = s;
    return this;
}

@CheckForNull
public String getTemplateName() {
    return templateName;
}

```

```

public RemoveUserFromTemplateRequest setTemplateName(@Nullable String templateName) {
    this.templateName = templateName;
    return this;
}
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import java.util.List;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.UserId;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static java.util.Objects.requireNonNull;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;

```

```

import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createUserLoginParameter;
import static org.sonar.server.permission.ws.template.WsTemplateRef.newTemplateRef;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

public class AddUserToTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final PermissionWsSupport wsSupport;
    private final UserSession userSession;

    public AddUserToTemplateAction(DbClient dbClient, PermissionWsSupport wsSupport, UserSession userSession)
    {
        this.dbClient = dbClient;
        this.wsSupport = wsSupport;
        this.userSession = userSession;
    }

    private static AddUserToTemplateRequest toAddUserToTemplateWsRequest(Request request) {
        return new AddUserToTemplateRequest()
            .setLogin(request.mandatoryParam(PARAM_USER_LOGIN))
            .setPermission(request.mandatoryParam(PARAM_PERMISSION))
            .setTemplateId(request.param(PARAM_TEMPLATE_ID))
            .setOrganization(request.param(PARAM_ORGANIZATION))
            .setTemplateName(request.param(PARAM_TEMPLATE_NAME));
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context
            .createAction("add_user_to_template")
            .setPost(true)
            .setSince("5.2")
            .setDescription("Add a user to a permission template.<br /> " +
                "Requires the following permission: 'Administer System'.")
            .setHandler(this);

        createTemplateParameters(action);
        createProjectPermissionParameter(action);
        createUserLoginParameter(action);
    }

    @Override
    public void handle(Request request, Response response) throws Exception {
        doHandle(toAddUserToTemplateWsRequest(request));
        response.noContent();
    }
}

```

```

}

private void doHandle(AddUserToTemplateRequest request) {
    String permission = request.getPermission();
    String userLogin = request.getLogin();

    try (DbSession dbSession = dbClient.openSession(false)) {
        PermissionTemplateDto template = wsSupport.findTemplate(dbSession, new TemplateRef(
            request.getTemplateId(), request.getOrganization(), request.getTemplateName()));
        OrganizationDto organizationDto = wsSupport.findOrganization(dbSession, request.getOrganization());
        checkGlobalAdmin(userSession, organizationDto.getUuid());
        UserId user = wsSupport.findUser(dbSession, userLogin);
        wsSupport.checkMembership(dbSession, organizationDto, user);

        if (!isUserAlreadyAdded(dbSession, organizationDto, template.getId(), userLogin, permission)) {
            dbClient.permissionTemplateDao().insertUserPermission(dbSession, template.getId(), user.getId(), permission);
            dbSession.commit();
        }
    }
}

private boolean isUserAlreadyAdded(DbSession dbSession, OrganizationDto organizationDto, long templateId,
String userLogin, String permission) {
    PermissionQuery permissionQuery =
PermissionQuery.builder().setOrganizationUuid(organizationDto.getUuid()).setPermission(permission).build();
    List<String> usersWithPermission =
dbClient.permissionTemplateDao().selectUserLoginsByQueryAndTemplate(dbSession, permissionQuery,
templateId);
    return usersWithPermission.stream().anyMatch(s -> s.equals(userLogin));
}

private static class AddUserToTemplateRequest {
    private String login;
    private String permission;
    private String templateId;
    private String organization;
    private String templateName;

    public String getLogin() {
        return login;
    }

    public AddUserToTemplateRequest setLogin(String login) {
        this.login = requireNonNull(login);
        return this;
    }

    public String getPermission() {

```

```

    return permission;
}

public AddUserToTemplateRequest setPermission(String permission) {
    this.permission = requireNonNull(permission);
    return this;
}

@CheckForNull
public String getTemplateId() {
    return templateId;
}

public AddUserToTemplateRequest setTemplateId(@Nullable String templateId) {
    this.templateId = templateId;
    return this;
}

@CheckForNull
public String getTemplateName() {
    return templateName;
}

public AddUserToTemplateRequest setTemplateName(@Nullable String templateName) {
    this.templateName = templateName;
    return this;
}

@CheckForNull
public String getOrganization() {
    return organization;
}

public AddUserToTemplateRequest setOrganization(@Nullable String s) {
    this.organization = s;
    return this;
}
}
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;
import org.sonar.api.server.ws.Request;

import static org.sonar.server.ws.WsUtils.checkRequest;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

/**
 * Reference to a template as defined by WS request. Guaranties one of template id or
 * template name is provided, not both.
 */
public class WsTemplateRef {

    private final String uuid;
    private final String organization;
    private final String name;

    private WsTemplateRef(@Nullable String uuid, @Nullable String organization, @Nullable String name) {
        checkRequest(uuid != null ^ name != null, "Template name or template id must be provided, not both.");

        this.uuid = uuid;
        this.organization = organization;
        this.name = name;
    }

    public static WsTemplateRef fromRequest(Request wsRequest) {
        String uuid = wsRequest.param(PARAM_TEMPLATE_ID);
        String organization = wsRequest.param(PARAM_ORGANIZATION);
        String name = wsRequest.param(PARAM_TEMPLATE_NAME);

        return new WsTemplateRef(uuid, organization, name);
    }

    public static WsTemplateRef newTemplateRef(@Nullable String uuid, @Nullable String organization, @Nullable

```

```

String name) {
    return new WsTemplateRef(uuid, organization, name);
}

@CheckForNull
public String uuid() {
    return this.uuid;
}

@CheckForNull
public String getOrganization() {
    return this.organization;
}

@CheckForNull
public String name() {
    return this.name;
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import com.google.common.base.Function;
import javax.annotation.Nonnull;
import org.sonar.api.utils.DateUtils;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonarqube.ws.Permissions.PermissionTemplate;

import static org.sonar.core.util.Protobuf.setNullable;

```

```

public class PermissionTemplateDtoToPermissionTemplateResponse {

    private PermissionTemplateDtoToPermissionTemplateResponse() {
        // prevent instantiation
    }

    public static PermissionTemplate toPermissionTemplateResponse(PermissionTemplateDto dto) {
        return Singleton.INSTANCE.apply(dto);
    }

    private enum Singleton implements Function<PermissionTemplateDto, PermissionTemplate> {
        INSTANCE;
        @Override
        public PermissionTemplate apply(@Nonnull PermissionTemplateDto permissionTemplate) {
            PermissionTemplate.Builder permissionTemplateBuilder = PermissionTemplate.newBuilder()
                .setId(permissionTemplate.getUuid())
                .setName(permissionTemplate.getName())
                .setCreatedAt(DateUtils.formatDateTime(permissionTemplate.getCreatedAt()))
                .setUpdatedAt(DateUtils.formatDateTime(permissionTemplate.getUpdatedAt()));
            setNullable(permissionTemplate.getDescription(), permissionTemplateBuilder::setDescription);
            setNullable(permissionTemplate.getKeyPattern(), permissionTemplateBuilder::setProjectKeyPattern);
            return permissionTemplateBuilder.build();
        }
    }
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import org.sonar.api.i18n.I18n;
import org.sonar.api.resources.Qualifiers;

```

```

import org.sonar.api.resources.ResourceTypes;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.DefaultTemplates;
import org.sonar.db.organization.OrganizationDao;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateQualifier;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.permission.ws.template.WsTemplateRef.newTemplateRef;
import static org.sonar.server.ws.WsParameterBuilder.QualifierParameterContext.newQualifierParameterContext;
import static org.sonar.server.ws.WsParameterBuilder.createDefaultTemplateQualifierParameter;
import static org.sonar.server.ws.WsUtils.checkFoundWithOptional;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_QUALIFIER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class SetDefaultTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final PermissionWsSupport wsSupport;
    private final ResourceTypes resourceTypes;
    private final UserSession userSession;
    private final Integer i18n;

    public SetDefaultTemplateAction(DbClient dbClient, PermissionWsSupport wsSupport, ResourceTypes
resourceTypes,
    UserSession userSession, Integer i18n) {
        this.dbClient = dbClient;
        this.wsSupport = wsSupport;
        this.resourceTypes = resourceTypes;
        this.userSession = userSession;
        this.i18n = i18n;
    }

    private static SetDefaultTemplateRequest toSetDefaultTemplateWsRequest(Request request) {
        return new SetDefaultTemplateRequest()
            .setQualifier(request.param(PARAM_QUALIFIER))

```

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        .setTemplateId(request.param(PARAM_TEMPLATE_ID))
        .setOrganization(request.param(PARAM_ORGANIZATION))
        .setTemplateName(request.param(PARAM_TEMPLATE_NAME));
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("set_default_template")
            .setDescription("Set a permission template as default.<br />" +
                "Requires the following permission: 'Administer System'.")
            .setPost(true)
            .setSince("5.2")
            .setHandler(this);

        createTemplateParameters(action);
        createDefaultTemplateQualifierParameter(action, new QualifierParameterContext(i18n, resourceTypes))
            .setDefaultValue(Qualifiers.PROJECT);
    }

    @Override
    public void handle(Request request, Response response) throws Exception {
        doHandle(toSetDefaultTemplateWsRequest(request));
        response.noContent();
    }

    private void doHandle(SetDefaultTemplateRequest request) {
        try (DbSession dbSession = dbClient.openSession(false)) {
            String qualifier = request.getQualifier();
            PermissionTemplateDto template = findTemplate(dbSession, request);
            checkGlobalAdmin(userSession, template.getOrganizationUuid());
            validateQualifier(qualifier, resourceTypes);
            setDefaultTemplateUuid(dbSession, template, qualifier);
            dbSession.commit();
        }
    }

    private PermissionTemplateDto findTemplate(DbSession dbSession, SetDefaultTemplateRequest request) {
        return wsSupport.findTemplate(dbSession, new TemplateRef(request.getTemplateId(),
            request.getOrganization(), request.getTemplateName()));
    }

    private void setDefaultTemplateUuid(DbSession dbSession, PermissionTemplateDto permissionTemplateDto,
        String qualifier) {
        String organizationUuid = permissionTemplateDto.getOrganizationUuid();
        OrganizationDao organizationDao = dbClient.organizationDao();

        DefaultTemplates defaultTemplates = checkFoundWithOptional(
            organizationDao.getDefaultTemplates(dbSession, organizationUuid),

```

```

        "No Default templates for organization with uuid '%s'", organizationUuid);
    if (Qualifiers.PROJECT.equals(qualifier)) {
        defaultTemplates.setProjectUuid(permissionTemplateDto.getUuid());
    } else if (Qualifiers.VIEW.equals(qualifier)) {
        defaultTemplates.setViewUuid(permissionTemplateDto.getUuid());
    }
    organizationDao.setDefaultTemplates(dbSession, organizationUuid, defaultTemplates);
}

```

```

private static class SetDefaultTemplateRequest {
    private String qualifier;
    private String templateId;
    private String organization;
    private String templateName;

    @CheckForNull
    public String getQualifier() {
        return qualifier;
    }

    public SetDefaultTemplateRequest setQualifier(@Nullable String qualifier) {
        this.qualifier = qualifier;
        return this;
    }

    @CheckForNull
    public String getTemplateId() {
        return templateId;
    }

    public SetDefaultTemplateRequest setTemplateId(@Nullable String templateId) {
        this.templateId = templateId;
        return this;
    }

    @CheckForNull
    public String getOrganization() {
        return organization;
    }

    public SetDefaultTemplateRequest setOrganization(@Nullable String s) {
        this.organization = s;
        return this;
    }

    @CheckForNull
    public String getTemplateName() {
        return templateName;
    }
}

```

```

    }

    public SetDefaultTemplateRequest setTemplateName(@Nullable String templateName) {
        this.templateName = templateName;
        return this;
    }
}
}
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 */
package org.sonar.server.permission.ws.template;

import com.google.common.collect.Table;
import java.util.List;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.template.DefaultTemplatesResolver.ResolvedDefaultTemplates;

import static com.google.common.base.MoreObjects.firstNonNull;
import static com.google.common.base.Preconditions.checkState;
import static com.google.common.collect.ImmutableList.copyOf;
import static com.google.common.collect.ImmutableTable.copyOf;

class SearchTemplatesData {
    private final List<PermissionTemplateDto> templates;
    private final ResolvedDefaultTemplates defaultTemplates;
    private final Table<Long, String, Integer> userCountByTemplateIdAndPermission;
    private final Table<Long, String, Integer> groupCountByTemplateIdAndPermission;
    private final Table<Long, String, Boolean> withProjectCreatorByTemplateIdAndPermission;

    private SearchTemplatesData(Builder builder) {
        this.templates = copyOf(builder.templates);

```

```

    this.defaultTemplates = builder.defaultTemplates;
    this.userCountByTemplateIdAndPermission = copyOf(builder.userCountByTemplateIdAndPermission);
    this.groupCountByTemplateIdAndPermission = copyOf(builder.groupCountByTemplateIdAndPermission);
    this.withProjectCreatorByTemplateIdAndPermission =
copyOf(builder.withProjectCreatorByTemplateIdAndPermission);
}

public static Builder builder() {
    return new Builder();
}

public List<PermissionTemplateDto> templates() {
    return templates;
}

public ResolvedDefaultTemplates defaultTemplates() {
    return defaultTemplates;
}

public int userCount(long templateId, String permission) {
    return firstNonNull(userCountByTemplateIdAndPermission.get(templateId, permission), 0);
}

public int groupCount(long templateId, String permission) {
    return firstNonNull(groupCountByTemplateIdAndPermission.get(templateId, permission), 0);
}

public boolean withProjectCreator(long templateId, String permission) {
    return firstNonNull(withProjectCreatorByTemplateIdAndPermission.get(templateId, permission), false);
}

public static class Builder {
    private List<PermissionTemplateDto> templates;
    private ResolvedDefaultTemplates defaultTemplates;
    private Table<Long, String, Integer> userCountByTemplateIdAndPermission;
    private Table<Long, String, Integer> groupCountByTemplateIdAndPermission;
    private Table<Long, String, Boolean> withProjectCreatorByTemplateIdAndPermission;

    private Builder() {
        // prevents instantiation outside main class
    }

    public SearchTemplatesData build() {
        checkState(templates != null);
        checkState(defaultTemplates != null);
        checkState(userCountByTemplateIdAndPermission != null);
        checkState(groupCountByTemplateIdAndPermission != null);
        checkState(withProjectCreatorByTemplateIdAndPermission != null);
    }
}

```



```

    return new SearchTemplatesData(this);
}

public Builder templates(List<PermissionTemplateDto> templates) {
    this.templates = templates;
    return this;
}

public Builder defaultTemplates(ResolvedDefaultTemplates defaultTemplates) {
    this.defaultTemplates = defaultTemplates;
    return this;
}

public Builder userCountByTemplateIdAndPermission(Table<Long, String, Integer>
userCountByTemplateIdAndPermission) {
    this.userCountByTemplateIdAndPermission = userCountByTemplateIdAndPermission;
    return this;
}

public Builder groupCountByTemplateIdAndPermission(Table<Long, String, Integer>
groupCountByTemplateIdAndPermission) {
    this.groupCountByTemplateIdAndPermission = groupCountByTemplateIdAndPermission;
    return this;
}

public Builder withProjectCreatorByTemplateIdAndPermission(Table<Long, String, Boolean>
withProjectCreatorByTemplateIdAndPermission) {
    this.withProjectCreatorByTemplateIdAndPermission = withProjectCreatorByTemplateIdAndPermission;
    return this;
}
}
}
}
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```

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\* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.  
\*/

```
package org.sonar.server.permission.ws.template;
```

```
import org.sonar.api.server.ws.Request;  
import org.sonar.api.server.ws.Response;  
import org.sonar.api.server.ws.WebService;  
import org.sonar.db.DbClient;  
import org.sonar.db.DbSession;  
import org.sonar.db.permission.template.PermissionTemplateDto;  
import org.sonar.server.permission.ws.PermissionWsSupport;  
import org.sonar.server.permission.ws.PermissionsWsAction;  
import org.sonar.server.user.UserSession;  
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;
```

```
import static com.google.common.base.Preconditions.checkNotNull;  
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;  
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupIdParameter;  
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupNameParameter;  
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;  
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
```

```
public class RemoveGroupFromTemplateAction implements PermissionsWsAction {  
    private final DbClient dbClient;  
    private final PermissionWsSupport wsSupport;  
    private final UserSession userSession;
```

```
    public RemoveGroupFromTemplateAction(DbClient dbClient, PermissionWsSupport wsSupport, UserSession  
userSession) {  
        this.dbClient = dbClient;  
        this.wsSupport = wsSupport;  
        this.userSession = userSession;  
    }
```

```
@Override
```

```
public void define(WebService.NewController context) {  
    WebService.NewAction action = context  
        .createAction("remove_group_from_template")  
        .setPost(true)  
        .setSince("5.2")  
        .setDescription("Remove a group from a permission template.<br /> " +  
            "The group id or group name must be provided. <br />" +  
            "Requires the following permission: 'Administer System'.")  
        .setHandler(this);
```

```

createTemplateParameters(action);
createProjectPermissionParameter(action);
createGroupIdParameter(action);
createGroupNameParameter(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        String permission = request.mandatoryParam(PARAM_PERMISSION);
        PermissionTemplateDto template = wsSupport.findTemplate(dbSession, WsTemplateRef.fromRequest(request));
        checkGlobalAdmin(userSession, template.getOrganizationUuid());
        GroupIdOrAnyone groupId = wsSupport.findGroup(dbSession, request);
        checkArgument(groupId.getOrganizationUuid().equals(template.getOrganizationUuid()), "Group and template
are on different organizations");

        dbClient.permissionTemplateDao().deleteGroupPermission(dbSession, template.getId(), groupId.getId(),
permission);
        dbSession.commit();
    }
    response.noContent();
}
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import com.google.common.collect.Multimap;
import com.google.common.collect.Ordering;
import com.google.common.collect.TreeMultimap;
import java.util.List;

```

```

import java.util.stream.Collectors;
import org.sonar.api.security.DefaultGroups;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.utils.Paging;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateGroupDto;
import org.sonar.db.user.GroupDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions;

import static org.sonar.api.server.ws.WebService.Param.PAGE;
import static org.sonar.api.server.ws.WebService.Param.PAGE_SIZE;
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
import static org.sonar.core.util.Protobuf.setNullable;
import static org.sonar.db.permission.PermissionQuery.DEFAULT_PAGE_SIZE;
import static org.sonar.db.permission.PermissionQuery.RESULTS_MAX_SIZE;
import static org.sonar.db.permission.PermissionQuery.SEARCH_QUERY_MIN_LENGTH;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPermission;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class TemplateGroupsAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionWsSupport support;

    public TemplateGroupsAction(DbClient dbClient, UserSession userSession, PermissionWsSupport support) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.support = support;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("template_groups")
            .setSince("5.2")
            .setInternal(true)
            .setDescription("Lists the groups with their permission as individual groups rather than through user affiliation on

```

the chosen template.<br />" +

"This service defaults to all groups, but can be limited to groups with a specific permission by providing the desired permission.<br>" +

"Requires the following permission: 'Administer System'.")

.addPagingParams(DEFAULT\_PAGE\_SIZE, RESULTS\_MAX\_SIZE)

.setResponseExample(getClass().getResource("template\_groups-example.json"))

.setHandler(this);

action.createParam(TEXT\_QUERY)

.setMinimumLength(SEARCH\_QUERY\_MIN\_LENGTH)

.setDescription("Limit search to group names that contain the supplied string. <br/>" +

"When this parameter is not set, only group having at least one permission are returned.")

.setExampleValue("eri");

createProjectPermissionParameter(action, false);

createTemplateParameters(action);

}

@Override

public void handle(Request wsRequest, Response wsResponse) throws Exception {

try (DbSession dbSession = dbClient.openSession(false)) {

WsTemplateRef templateRef = WsTemplateRef.fromRequest(wsRequest);

PermissionTemplateDto template = support.findTemplate(dbSession, templateRef);

checkGlobalAdmin(userSession, template.getOrganizationUuid());

PermissionQuery query = buildPermissionQuery(wsRequest, template);

int total = dbClient.permissionTemplateDao().countGroupNamesByQueryAndTemplate(dbSession, query,  
template.getOrganizationUuid(), template.getId());

Paging paging =

Paging.forPageIndex(wsRequest.mandatoryParamAsInt(PAGE)).withPageSize(wsRequest.mandatoryParamAsInt(PAGE\_SIZE)).andTotal(total);

List<GroupDto> groups = findGroups(dbSession, query, template);

List<PermissionTemplateGroupDto> groupPermissions = findGroupPermissions(dbSession, groups, template);

Permissions.WsGroupsResponse groupsResponse = buildResponse(groups, groupPermissions, paging);

writeProtobuf(groupsResponse, wsRequest, wsResponse);

}

}

private static PermissionQuery buildPermissionQuery(Request request, PermissionTemplateDto template) {

String textQuery = request.param(TEXT\_QUERY);

String permission = request.param(PARAM\_PERMISSION);

PermissionQuery.Builder permissionQuery = PermissionQuery.builder()

.setOrganizationUuid(template.getOrganizationUuid())

.setPermission(permission != null ? validateProjectPermission(permission) : null)

.setPageIndex(request.mandatoryParamAsInt(PAGE))

.setPageSize(request.mandatoryParamAsInt(PAGE\_SIZE))

.setSearchQuery(textQuery);

if (textQuery == null) {

```

    permissionQuery.withAtLeastOnePermission();
}
return permissionQuery.build();
}

private static Permissions.WsGroupsResponse buildResponse(List<GroupDto> groups,
List<PermissionTemplateGroupDto> groupPermissions, Paging paging) {
    Multimap<Integer, String> permissionsByGroupId = TreeMultimap.create();
    groupPermissions.forEach(groupPermission -> permissionsByGroupId.put(groupPermission.getGroupId(),
groupPermission.getPermission()));
    Permissions.WsGroupsResponse.Builder response = Permissions.WsGroupsResponse.newBuilder();

    groups.forEach(group -> {
        Permissions.Group.Builder wsGroup = response.addGroupsBuilder()
            .setName(group.getName());
        if (group.getId() != 0) {
            wsGroup.setId(String.valueOf(group.getId()));
        }
        setNullable(group.getDescription(), wsGroup::setDescription);
        wsGroup.addAllPermissions(permissionsByGroupId.get(group.getId()));
    });

    response.getPagingBuilder()
        .setPageIndex(paging.pageIndex())
        .setPageSize(paging.pageSize())
        .setTotal(paging.total());
    return response.build();
}

private List<GroupDto> findGroups(DbSession dbSession, PermissionQuery dbQuery, PermissionTemplateDto
template) {
    List<String> orderedNames =
dbClient.permissionTemplateDao().selectGroupNamesByQueryAndTemplate(dbSession, dbQuery,
template.getId());
    List<GroupDto> groups = dbClient.groupDao().selectByNames(dbSession, template.getOrganizationUuid(),
orderedNames);
    if (orderedNames.contains(DefaultGroups.ANYONE)) {
        groups.add(0, new GroupDto().setId(0).setName(DefaultGroups.ANYONE));
    }
    return Ordering.explicit(orderedNames).onResultOf(GroupDto::getName).immutableSortedCopy(groups);
}

private List<PermissionTemplateGroupDto> findGroupPermissions(DbSession dbSession, List<GroupDto>
groups, PermissionTemplateDto template) {
    List<String> names = groups.stream().map(GroupDto::getName).collect(Collectors.toList());
    return dbClient.permissionTemplateDao().selectGroupPermissionsByTemplateIdAndGroupNames(dbSession,
template.getId(), names);
}

```

```

}
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 */
package org.sonar.server.permission.ws.template;

import java.util.Collections;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.PermissionTemplateService;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonar.server.permission.ws.ProjectWsRef.newWsProjectRef;
import static org.sonar.server.permission.ws.template.WsTemplateRef.newTemplateRef;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

```

```

public class ApplyTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionTemplateService permissionTemplateService;
    private final PermissionWsSupport wsSupport;

    public ApplyTemplateAction(DbClient dbClient, UserSession userSession, PermissionTemplateService
permissionTemplateService,
    PermissionWsSupport wsSupport) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.permissionTemplateService = permissionTemplateService;
        this.wsSupport = wsSupport;
    }

    private static ApplyTemplateRequest toApplyTemplateWsRequest(Request request) {
        return new ApplyTemplateRequest()
            .setProjectId(request.param(PARAM_PROJECT_ID))
            .setProjectKey(request.param(PARAM_PROJECT_KEY))
            .setTemplateId(request.param(PARAM_TEMPLATE_ID))
            .setTemplateName(request.param(PARAM_TEMPLATE_NAME))
            .setOrganization(request.param(PARAM_ORGANIZATION));
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("apply_template")
            .setDescription("Apply a permission template to one project.<br>" +
                "The project id or project key must be provided.<br>" +
                "The template id or name must be provided.<br>" +
                "Requires the following permission: 'Administer System'.")
            .setPost(true)
            .setSince("5.2")
            .setHandler(this);

        createTemplateParameters(action);
        createProjectParameters(action);
    }

    @Override
    public void handle(Request request, Response response) throws Exception {
        doHandle(toApplyTemplateWsRequest(request));
        response.noContent();
    }

    private void doHandle(ApplyTemplateRequest request) {
        try (DbSession dbSession = dbClient.openSession(false)) {

```



```

PermissionTemplateDto template = wsSupport.findTemplate(dbSession, newTemplateRef(
    request.getTemplateId(), request.getOrganization(), request.getTemplateName()));

ComponentDto project = wsSupport.getRootComponentOrModule(dbSession,
newWsProjectRef(request.getProjectId(), request.getProjectKey()));
checkGlobalAdmin(userSession, template.getOrganizationUuid());

    permissionTemplateService.applyAndCommit(dbSession, template, Collections.singletonList(project));
}
}

private static class ApplyTemplateRequest {
    private String projectId;
    private String projectKey;
    private String templateId;
    private String organization;
    private String templateName;

    @CheckForNull
    public String getProjectId() {
        return projectId;
    }

    public ApplyTemplateRequest setProjectId(@Nullable String projectId) {
        this.projectId = projectId;
        return this;
    }

    @CheckForNull
    public String getProjectKey() {
        return projectKey;
    }

    public ApplyTemplateRequest setProjectKey(@Nullable String projectKey) {
        this.projectKey = projectKey;
        return this;
    }

    @CheckForNull
    public String getTemplateId() {
        return templateId;
    }

    public ApplyTemplateRequest setTemplateId(@Nullable String templateId) {
        this.templateId = templateId;
        return this;
    }
}

```

```

@CheckForNull
public String getOrganization() {
    return organization;
}

public ApplyTemplateRequest setOrganization(@Nullable String s) {
    this.organization = s;
    return this;
}

@CheckForNull
public String getTemplateName() {
    return templateName;
}

public ApplyTemplateRequest setTemplateName(@Nullable String templateName) {
    this.templateName = templateName;
    return this;
}
}
}
}
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 */
package org.sonar.server.permission.ws.template;

import java.util.Optional;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.utils.System2;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;

```

```

import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.permission.ws.PermissionsWsAction;
import org.sonar.server.user.UserSession;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static java.util.Objects.requireNonNull;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPermission;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createTemplateParameters;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class AddProjectCreatorToTemplateAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final PermissionWsSupport wsSupport;
    private final UserSession userSession;
    private final System2 system;

    public AddProjectCreatorToTemplateAction(DbClient dbClient, PermissionWsSupport wsSupport, UserSession
userSession, System2 system) {
        this.dbClient = dbClient;
        this.wsSupport = wsSupport;
        this.userSession = userSession;
        this.system = system;
    }

    private static AddProjectCreatorToTemplateRequest toWsRequest(Request request) {
        AddProjectCreatorToTemplateRequest wsRequest = AddProjectCreatorToTemplateRequest.builder()
            .setPermission(request.mandatoryParam(PARAM_PERMISSION))
            .setTemplateId(request.param(PARAM_TEMPLATE_ID))
            .setOrganization(request.param(PARAM_ORGANIZATION))
            .setTemplateName(request.param(PARAM_TEMPLATE_NAME))
            .build();
        validateProjectPermission(wsRequest.getPermission());
        return wsRequest;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("add_project_creator_to_template")
            .setDescription("Add a project creator to a permission template.<br>" +

```

```

    "Requires the following permission: 'Administer System'.")
    .setSince("6.0")
    .setPost(true)
    .setHandler(this);

createTemplateParameters(action);
createProjectPermissionParameter(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    doHandle(toWsRequest(request));
    response.noContent();
}

private void doHandle(AddProjectCreatorToTemplateRequest request) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        PermissionTemplateDto template = wsSupport.findTemplate(dbSession, WsTemplateRef.newTemplateRef(
            request.getTemplateId(), request.getOrganization(), request.getTemplateName()));
        checkGlobalAdmin(userSession, template.getOrganizationUuid());

        Optional<PermissionTemplateCharacteristicDto> templatePermission =
            dbClient.permissionTemplateCharacteristicDao()
                .selectByPermissionAndTemplateId(dbSession, request.getPermission(), template.getId());
        if (templatePermission.isPresent()) {
            updateTemplatePermission(dbSession, templatePermission.get());
        } else {
            addTemplatePermission(dbSession, request, template);
        }
    }
}

private void addTemplatePermission(DbSession dbSession, AddProjectCreatorToTemplateRequest request,
    PermissionTemplateDto template) {
    long now = system.now();
    dbClient.permissionTemplateCharacteristicDao().insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(request.getPermission())
        .setTemplateId(template.getId())
        .setWithProjectCreator(true)
        .setCreatedAt(now)
        .setUpdatedAt(now));
    dbSession.commit();
}

private void updateTemplatePermission(DbSession dbSession, PermissionTemplateCharacteristicDto
    templatePermission) {
    PermissionTemplateCharacteristicDto targetTemplatePermission = templatePermission
        .setUpdatedAt(system.now())

```

```

        .setWithProjectCreator(true);
        dbClient.permissionTemplateCharacteristicDao().update(dbSession, targetTemplatePermission);
        dbSession.commit();
    }

```

```

private static class AddProjectCreatorToTemplateRequest {
    private final String templateId;
    private final String organization;
    private final String templateName;
    private final String permission;

```

```

    private AddProjectCreatorToTemplateRequest(Builder builder) {
        this.templateId = builder.templateId;
        this.organization = builder.organization;
        this.templateName = builder.templateName;
        this.permission = requireNonNull(builder.permission);
    }

```

```

    @CheckForNull
    public String getTemplateId() {
        return templateId;
    }

```

```

    @CheckForNull
    public String getOrganization() {
        return organization;
    }

```

```

    @CheckForNull
    public String getTemplateName() {
        return templateName;
    }

```

```

    public String getPermission() {
        return permission;
    }

```

```

    public static Builder builder() {
        return new Builder();
    }
}

```

```

private static class Builder {
    private String templateId;
    private String organization;
    private String templateName;
    private String permission;

```

```

private Builder() {
    // enforce method constructor
}

public Builder setTemplateId(@Nullable String templateId) {
    this.templateId = templateId;
    return this;
}

public Builder setOrganization(@Nullable String s) {
    this.organization = s;
    return this;
}

public Builder setTemplateName(@Nullable String templateName) {
    this.templateName = templateName;
    return this;
}

public Builder setPermission(@Nullable String permission) {
    this.permission = permission;
    return this;
}

public AddProjectCreatorToTemplateRequest build() {
    return new AddProjectCreatorToTemplateRequest(this);
}
}
}
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 */

```

```

package org.sonar.server.permission.ws;

import java.util.Optional;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.server.permission.GroupPermissionChange;
import org.sonar.server.permission.PermissionChange;
import org.sonar.server.permission.PermissionUpdater;
import org.sonar.server.permission.ProjectId;
import org.sonar.server.user.UserSession;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;

import static java.util.Arrays.asList;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkProjectAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupIdParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupNameParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class AddGroupAction implements PermissionsWsAction {

    public static final String ACTION = "add_group";

    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionUpdater permissionUpdater;
    private final PermissionWsSupport support;

    public AddGroupAction(DbClient dbClient, UserSession userSession, PermissionUpdater permissionUpdater,
PermissionWsSupport support) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.permissionUpdater = permissionUpdater;
        this.support = support;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction(ACTION)
            .setDescription("Add permission to a group.<br /> " +
                "This service defaults to global permissions, but can be limited to project permissions by providing project id or
project key.<br /> " +
                "The group name or group id must be provided. <br />" +

```

```

    "Requires one of the following permissions:" +
    "<ul>" +
    "<li>'Administer System'</li>" +
    "<li>'Administer' rights on the specified project</li>" +
    "</ul>")
    .setSince("5.2")
    .setPost(true)
    .setHandler(this);

    createPermissionParameter(action);
    createOrganizationParameter(action).setSince("6.2");
    createGroupNameParameter(action);
    createGroupIdParameter(action);
    createProjectParameters(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        GroupIdOrAnyone group = support.findGroup(dbSession, request);
        Optional<ProjectId> projectId = support.findProjectId(dbSession, request);

        checkProjectAdmin(userSession, group.getOrganizationUuid(), projectId);

        PermissionChange change = new GroupPermissionChange(
            PermissionChange.Operation.ADD,
            request.mandatoryParam(PARAM_PERMISSION),
            projectId.orElse(null),
            group);
        permissionUpdater.apply(dbSession, asList(change));
    }
    response.noContent();
}

}
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*/
package org.sonar.server.permission.ws;

import org.sonar.server.ws.WsAction;

public interface PermissionsWsAction extends WsAction {
    // marker interface
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws;

import com.google.common.collect.FluentIterable;
import java.util.Set;
import java.util.regex.Pattern;
import java.util.regex.PatternSyntaxException;
import javax.annotation.Nullable;
import org.sonar.api.resources.ResourceType;
import org.sonar.api.resources.ResourceTypes;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;

import static com.google.common.base.Strings.isNullOrEmpty;
import static java.lang.String.format;

```

```

import static org.apache.commons.lang.StringUtils.isBlank;
import static org.sonar.server.ws.WsUtils.checkRequest;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY_PATTERN;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_QUALIFIER;

public class PermissionRequestValidator {
    public static final String MSG_TEMPLATE_WITH_SAME_NAME = "A template with the name '%s' already
exists (case insensitive).";
    public static final String MSG_TEMPLATE_NAME_NOT_BLANK = "The template name must not be blank";

    private PermissionRequestValidator() {
        // static methods only
    }

    public static String validateProjectPermission(String permission) {
        checkRequest(ProjectPermissions.ALL.contains(permission),
            format("The '%s' parameter for project permissions must be one of %s. '%s' was passed.",
PARAM_PERMISSION, ProjectPermissions.ALL_ON_ONE_LINE, permission));
        return permission;
    }

    public static void validateGlobalPermission(String permission) {
        checkRequest(GlobalPermissions.ALL.contains(permission),
            format("The '%s' parameter for global permissions must be one of %s. '%s' was passed.",
PARAM_PERMISSION, GlobalPermissions.ALL_ON_ONE_LINE, permission));
    }

    public static void validateNotAnyoneAndAdminPermission(String permission, GroupIdOrAnyone group) {
        checkRequest(!GlobalPermissions.SYSTEM_ADMIN.equals(permission) || !group.isAnyone(),
            format("It is not possible to add the '%s' permission to group 'Anyone'.", permission));
    }

    public static void validateTemplateNameFormat(String name) {
        checkRequest(!isBlank(name), MSG_TEMPLATE_NAME_NOT_BLANK);
    }

    public static void validateQualifier(String qualifier, Set<String> rootQualifiers) {
        checkRequest(rootQualifiers.contains(qualifier),
            format("The '%s' parameter must be one of %s. '%s' was passed.", PARAM_QUALIFIER, rootQualifiers,
qualifier));
    }

    public static void validateQualifier(@Nullable String qualifier, ResourceTypes resourceTypes) {
        if (qualifier == null) {
            return;
        }
        Set<String> rootQualifiers = FluentIterable.from(resourceTypes.getRoots())

```

```

        .transform(ResourceType::getQualifier)
        .toSet();
    checkRequest(rootQualifiers.contains(qualifier),
        format("The '%s' parameter must be one of %s. '%s' was passed.", PARAM_QUALIFIER, rootQualifiers,
qualifier));
    }

    public static void validateProjectPattern(@Nullable String projectPattern) {
        if (isNullOrEmpty(projectPattern)) {
            return;
        }

        try {
            Pattern.compile(projectPattern);
        } catch (PatternSyntaxException e) {
            throw BadRequestException.create(format("The '%s' parameter must be a valid Java regular expression. '%s' was
passed", PARAM_PROJECT_KEY_PATTERN, projectPattern));
        }
    }
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws;

import com.google.common.collect.FluentIterable;
import com.google.common.collect.Iterables;
import com.google.common.collect.Ordering;
import com.google.common.collect.Table;
import java.util.List;
import java.util.Set;
import org.sonar.api.utils.Paging;

```

```

import org.sonar.db.component.ComponentDto;

import static com.google.common.base.MoreObjects.firstNonNull;
import static com.google.common.base.Preconditions.checkNotNull;
import static com.google.common.collect.ImmutableList.copyOf;
import static com.google.common.collect.ImmutableTable.copyOf;

class SearchProjectPermissionsData {
    private final List<ComponentDto> rootComponents;
    private final Paging paging;
    private final Table<Long, String, Integer> userCountByProjectIdAndPermission;
    private final Table<Long, String, Integer> groupCountByProjectIdAndPermission;

    private SearchProjectPermissionsData(Builder builder) {
        this.rootComponents = copyOf(builder.projects);
        this.paging = builder.paging;
        this.userCountByProjectIdAndPermission = copyOf(builder.userCountByProjectIdAndPermission);
        this.groupCountByProjectIdAndPermission = copyOf(builder.groupCountByProjectIdAndPermission);
    }

    static Builder newBuilder() {
        return new Builder();
    }

    List<ComponentDto> rootComponents() {
        return rootComponents;
    }

    Paging paging() {
        return paging;
    }

    int userCount(long rootComponentId, String permission) {
        return firstNonNull(userCountByProjectIdAndPermission.get(rootComponentId, permission), 0);
    }

    int groupCount(long rootComponentId, String permission) {
        return firstNonNull(groupCountByProjectIdAndPermission.get(rootComponentId, permission), 0);
    }

    Set<String> permissions(long rootComponentId) {
        return FluentIterable.from(
            Iterables.concat(
                userCountByProjectIdAndPermission.row(rootComponentId).keySet(),
                groupCountByProjectIdAndPermission.row(rootComponentId).keySet())
            .toSortedSet(Ordering.natural());
    }
}

```

```

static class Builder {
    private List<ComponentDto> projects;
    private Paging paging;
    private Table<Long, String, Integer> userCountByProjectIdAndPermission;
    private Table<Long, String, Integer> groupCountByProjectIdAndPermission;

    private Builder() {
        // prevents instantiation outside main class
    }

    SearchProjectPermissionsData build() {
        checkState(projects != null);
        checkState(userCountByProjectIdAndPermission != null);
        checkState(groupCountByProjectIdAndPermission != null);

        return new SearchProjectPermissionsData(this);
    }

    Builder rootComponents(List<ComponentDto> projects) {
        this.projects = projects;
        return this;
    }

    Builder paging(Paging paging) {
        this.paging = paging;
        return this;
    }

    Builder userCountByProjectIdAndPermission(Table<Long, String, Integer>
userCountByProjectIdAndPermission) {
        this.userCountByProjectIdAndPermission = userCountByProjectIdAndPermission;
        return this;
    }

    Builder groupCountByProjectIdAndPermission(Table<Long, String, Integer>
groupCountByProjectIdAndPermission) {
        this.groupCountByProjectIdAndPermission = groupCountByProjectIdAndPermission;
        return this;
    }
}
}
}
}
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 \*/

```
package org.sonar.server.permission.ws;
```

```
import org.sonar.core.platform.Module;
import org.sonar.server.permission.ws.template.AddGroupToTemplateAction;
import org.sonar.server.permission.ws.template.AddProjectCreatorToTemplateAction;
import org.sonar.server.permission.ws.template.AddUserToTemplateAction;
import org.sonar.server.permission.ws.template.ApplyTemplateAction;
import org.sonar.server.permission.ws.template.BulkApplyTemplateAction;
import org.sonar.server.permission.ws.template.CreateTemplateAction;
import org.sonar.server.permission.ws.template.DeleteTemplateAction;
import org.sonar.server.permission.ws.template.RemoveGroupFromTemplateAction;
import org.sonar.server.permission.ws.template.RemoveProjectCreatorFromTemplateAction;
import org.sonar.server.permission.ws.template.RemoveUserFromTemplateAction;
import org.sonar.server.permission.ws.template.SearchTemplatesAction;
import org.sonar.server.permission.ws.template.SetDefaultTemplateAction;
import org.sonar.server.permission.ws.template.TemplateGroupsAction;
import org.sonar.server.permission.ws.template.TemplateUsersAction;
import org.sonar.server.permission.ws.template.UpdateTemplateAction;
```

```
public class PermissionsWsModule extends Module {
  @Override
  protected void configureModule() {
    add(
      PermissionsWs.class,
      // actions
      AddGroupAction.class,
      AddUserAction.class,
      RemoveGroupAction.class,
      RemoveUserAction.class,
      UsersAction.class,
      GroupsAction.class,
      SearchGlobalPermissionsAction.class,
      SearchProjectPermissionsAction.class,
      RemoveUserFromTemplateAction.class,
      AddUserToTemplateAction.class,
      AddGroupToTemplateAction.class,
```

```

AddProjectCreatorToTemplateAction.class,
RemoveProjectCreatorFromTemplateAction.class,
RemoveGroupFromTemplateAction.class,
CreateTemplateAction.class,
UpdateTemplateAction.class,
DeleteTemplateAction.class,
ApplyTemplateAction.class,
SetDefaultTemplateAction.class,
SearchTemplatesAction.class,
TemplateUsersAction.class,
TemplateGroupsAction.class,
BulkApplyTemplateAction.class,
// utility classes
PermissionWsSupport.class);
}
}
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 */
package org.sonar.server.permission.ws;

import java.util.Optional;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.permission.PermissionChange;
import org.sonar.server.permission.PermissionUpdater;

```

```

import org.sonar.server.permission.ProjectId;
import org.sonar.server.permission.UserId;
import org.sonar.server.permission.UserPermissionChange;
import org.sonar.server.user.UserSession;

import static com.google.common.base.Preconditions.checkNotNull;
import static java.util.Collections.singletonList;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkProjectAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createUserLoginParameter;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

public class AddUserAction implements PermissionsWsAction {

    public static final String ACTION = "add_user";

    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionUpdater permissionUpdater;
    private final PermissionWsSupport support;

    public AddUserAction(DbClient dbClient, UserSession userSession, PermissionUpdater permissionUpdater,
PermissionWsSupport support) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.permissionUpdater = permissionUpdater;
        this.support = support;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction(ACTION)
            .setDescription("Add permission to a user.<br /> " +
                "This service defaults to global permissions, but can be limited to project permissions by providing project id or
project key.<br /> " +
                "Requires one of the following permissions:" +
                "<ul> " +
                "<li>'Administer System'</li> " +
                "<li>'Administer' rights on the specified project</li> " +
                "</ul>")
            .setSince("5.2")
            .setPost(true)

```



```

        .setHandler(this);

        createPermissionParameter(action);
        createUserLoginParameter(action);
        createProjectParameters(action);
        createOrganizationParameter(action)
            .setSince("6.2")
            .setDescription("Key of organization, cannot be used at the same time with %s and %s",
PARAM_PROJECT_ID, PARAM_PROJECT_KEY);
    }

    @Override
    public void handle(Request request, Response response) throws Exception {
        try (DbSession dbSession = dbClient.openSession(false)) {
            UserId user = support.findUser(dbSession, request.mandatoryParam(PARAM_USER_LOGIN));
            Optional<ComponentDto> project = support.findProject(dbSession, request);
            String organizationKey = request.param(PARAM_ORGANIZATION);
            checkArgument(!project.isPresent() || organizationKey == null, "Organization must not be set when project is
set.");
            OrganizationDto org = project
                .map(dto -> dbClient.organizationDao().selectByUuid(dbSession, dto.getOrganizationUuid()))
                .orElseGet(() -> Optional.ofNullable(support.findOrganization(dbSession, organizationKey)))
                .orElseThrow(() -> new NotFoundException(String.format("Organization with key '%s' not found",
organizationKey)));
            support.checkMembership(dbSession, org, user);

            Optional<ProjectId> projectId = project.map(ProjectId::new);
            checkProjectAdmin(userSession, org.getUuid(), projectId);

            PermissionChange change = new UserPermissionChange(
                PermissionChange.Operation.ADD,
                org.getUuid(),
                request.mandatoryParam(PARAM_PERMISSION),
                projectId.orElse(null),
                user);
            permissionUpdater.apply(dbSession, singletonList(change));
        }
        response.noContent();
    }
}
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```

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\*/

```
package org.sonar.server.permission.ws;
```

```
import java.util.List;  
import java.util.Locale;  
import java.util.Optional;
```

```
import com.google.common.collect.Collections2;  
import com.google.common.collect.Lists;  
import com.google.common.collect.Table;  
import com.google.common.collect.TreeBasedTable;  
import org.sonar.api.i18n.I18n;  
import org.sonar.api.resources.ResourceType;  
import org.sonar.api.resources.ResourceTypes;  
import org.sonar.api.server.ws.Request;  
import org.sonar.api.server.ws.Response;  
import org.sonar.api.server.ws.WebService;  
import org.sonar.api.server.ws.WebService.Param;  
import org.sonar.api.utils.Paging;  
import org.sonar.core.permission.ProjectPermissions;  
import org.sonar.db.DbClient;  
import org.sonar.db.DbSession;  
import org.sonar.db.component.ComponentDto;  
import org.sonar.db.component.ComponentQuery;  
import org.sonar.db.permission.CountPerProjectPermission;  
import org.sonar.server.permission.PermissionPrivilegeChecker;  
import org.sonar.server.permission.ProjectId;  
import org.sonar.server.user.UserSession;  
import org.sonarqube.ws.Common;  
import org.sonarqube.ws.Permissions.Permission;  
import org.sonarqube.ws.Permissions.SearchProjectPermissionsWsResponse;  
import org.sonarqube.ws.Permissions.SearchProjectPermissionsWsResponse.Project;  
  
import javax.annotation.CheckForNull;  
import javax.annotation.Nullable;  
  
import static java.util.Collections.singletonList;  
import static org.sonar.api.utils.Paging.forPageIndex;
```

```

import static org.sonar.server.permission.ws.PermissionRequestValidator.validateQualifier;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonar.server.permission.ws.ProjectWsRef.newOptionalWsProjectRef;
import static org.sonar.server.permission.ws.SearchProjectPermissionsData.newBuilder;
import static org.sonar.server.ws.WsParameterBuilder.createRootQualifierParameter;
import static org.sonar.server.ws.WsParameterBuilder.QualifierParameterContext.newQualifierParameterContext;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_QUALIFIER;

public class SearchProjectPermissionsAction implements PermissionsWsAction {
    private static final String PROPERTY_PREFIX = "projects_role.";
    private static final String DESCRIPTION_SUFFIX = ".desc";

    private final DbClient dbClient;
    private final UserSession userSession;
    private final I18n i18n;
    private final ResourceTypes resourceTypes;
    private final PermissionWsSupport wsSupport;
    private final String[] rootQualifiers;

    public SearchProjectPermissionsAction(DbClient dbClient, UserSession userSession, I18n i18n, ResourceTypes
resourceTypes,
    PermissionWsSupport wsSupport) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.i18n = i18n;
        this.resourceTypes = resourceTypes;
        this.wsSupport = wsSupport;
        this.rootQualifiers = Collections2.transform(resourceTypes.getRoots(), ResourceType::getQualifier).toArray(new
String[resourceTypes.getRoots().size()]);
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction("search_project_permissions")
            .setDescription("List project permissions. A project can be a technical project, a view or a developer.<br />" +
                "Requires one of the following permissions:" +
                "<ul>" +
                "<li>'Administer System'</li>" +
                "<li>'Administer' rights on the specified project</li>" +
                "</ul>")
            .setResponseExample(getClass().getResource("search_project_permissions-example.json"))
            .setSince("5.2")
            .setDeprecatedSince("6.5")
            .addPagingParams(25)
            .setHandler(this);
    }
}

```

```

action.createParam(Param.TEXT_QUERY)
    .setDescription("Limit search to: <ul>" +
        "<li>project names that contain the supplied string</li>" +
        "<li>project keys that are exactly the same as the supplied string</li>" +
        "</ul>")
    .setExampleValue("apac");
createProjectParameters(action);
createRootQualifierParameter(action, newQualifierParameterContext(i18n, resourceTypes))
    .setSince("5.3");
}

@Override
public void handle(Request wsRequest, Response wsResponse) throws Exception {
    SearchProjectPermissionsWsResponse searchProjectPermissionsWsResponse =
doHandle(toSearchProjectPermissionsWsRequest(wsRequest));
    writeProtobuf(searchProjectPermissionsWsResponse, wsRequest, wsResponse);
}

private SearchProjectPermissionsWsResponse doHandle(SearchProjectPermissionsRequest request) {
    try (DbSession dbSession = dbClient.openSession(false)) {
        checkAuthorized(dbSession, request);
        validateQualifier(request.getQualifier(), resourceTypes);
        SearchProjectPermissionsData data = load(dbSession, request);
        return buildResponse(data);
    }
}

private static SearchProjectPermissionsRequest toSearchProjectPermissionsWsRequest(Request request) {
    return new SearchProjectPermissionsRequest()
        .setProjectId(request.param(PARAM_PROJECT_ID))
        .setProjectKey(request.param(PARAM_PROJECT_KEY))
        .setQualifier(request.param(PARAM_QUALIFIER))
        .setPage(request.mandatoryParamAsInt(Param.PAGE))
        .setPageSize(request.mandatoryParamAsInt(Param.PAGE_SIZE))
        .setQuery(request.param(Param.TEXT_QUERY));
}

private void checkAuthorized(DbSession dbSession, SearchProjectPermissionsRequest request) {
    com.google.common.base.Optional<ProjectWsRef> projectRef =
newOptionalWsProjectRef(request.getProjectId(), request.getProjectKey());
    if (projectRef.isPresent()) {
        ComponentDto project = wsSupport.getRootComponentOrModule(dbSession, projectRef.get());
        PermissionPrivilegeChecker.checkProjectAdmin(userSession, project.getOrganizationUuid(), Optional.of(new
ProjectId(project)));
    } else {
        userSession.checkLoggedIn().checkIsSystemAdministrator();
    }
}

```

```

}

private SearchProjectPermissionsWsResponse buildResponse(SearchProjectPermissionsData data) {
    SearchProjectPermissionsWsResponse.Builder response = SearchProjectPermissionsWsResponse.newBuilder();
    Permission.Builder permissionResponse = Permission.newBuilder();

    Project.Builder rootComponentBuilder = Project.newBuilder();
    for (ComponentDto rootComponent : data.rootComponents()) {
        rootComponentBuilder
            .clear()
            .setId(rootComponent.uuid())
            .setKey(rootComponent.getDbKey())
            .setQualifier(rootComponent.qualifier())
            .setName(rootComponent.name());
        for (String permission : data.permissions(rootComponent.getId())) {
            rootComponentBuilder.addPermissions(
                permissionResponse
                    .clear()
                    .setKey(permission)
                    .setUsersCount(data.userCount(rootComponent.getId(), permission))
                    .setGroupsCount(data.groupCount(rootComponent.getId(), permission)));
        }
        response.addProjects(rootComponentBuilder);
    }

    for (String permissionKey : ProjectPermissions.ALL) {
        response.addPermissions(
            permissionResponse
                .clear()
                .setKey(permissionKey)
                .setName(i18nName(permissionKey))
                .setDescription(i18nDescriptionMessage(permissionKey)));
    }

    Paging paging = data.paging();
    response.setPaging(
        Common.Paging.newBuilder()
            .setPageIndex(paging.pageIndex())
            .setPageSize(paging.pageSize())
            .setTotal(paging.total()));

    return response.build();
}

private String i18nDescriptionMessage(String permissionKey) {
    return i18n.message(Locale.ENGLISH, PROPERTY_PREFIX + permissionKey + DESCRIPTION_SUFFIX, "");
}

```

```

private String i18nName(String permissionKey) {
    return i18n.message(Locale.ENGLISH, PROPERTY_PREFIX + permissionKey, permissionKey);
}

private SearchProjectPermissionsData load(DbSession dbSession, SearchProjectPermissionsRequest request) {
    SearchProjectPermissionsData.Builder data = new Builder();
    int countRootComponents = countRootComponents(dbSession, request);
    List<ComponentDto> rootComponents = searchRootComponents(dbSession, request, paging(request,
countRootComponents));
    List<Long> rootComponentIds = Lists.transform(rootComponents, ComponentDto::getId);

    data.rootComponents(rootComponents)
        .paging(paging(request, countRootComponents))
        .userCountByProjectIdAndPermission(userCountByRootComponentIdAndPermission(dbSession,
rootComponentIds))
        .groupCountByProjectIdAndPermission(groupCountByRootComponentIdAndPermission(dbSession,
rootComponentIds));

    return data.build();
}

private static Paging paging(SearchProjectPermissionsRequest request, int total) {
    return forPageIndex(request.getPage())
        .withPageSize(request.getPageSize())
        .andTotal(total);
}

private int countRootComponents(DbSession dbSession, SearchProjectPermissionsRequest request) {
    return dbClient.componentDao().countByQuery(dbSession, toDbQuery(request));
}

private List<ComponentDto> searchRootComponents(DbSession dbSession, SearchProjectPermissionsRequest
request, Paging paging) {
    com.google.common.base.Optional<ProjectWsRef> project = new OptionalWsProjectRef(request.getProjectId(),
request.getProjectKey());

    if (project.isPresent()) {
        return singletonList(wsSupport.getRootComponentOrModule(dbSession, project.get()));
    }

    return dbClient.componentDao().selectByQuery(dbSession, toDbQuery(request), paging.offset(),
paging.pageSize());
}

private ComponentQuery toDbQuery(SearchProjectPermissionsRequest wsRequest) {
    return ComponentQuery.builder()
        .setQualifiers(qualifiers(wsRequest.getQualifier()))
        .setNameOrKeyQuery(wsRequest.getQuery())

```

```

        .build();
    }

    private String[] qualifiers(@Nullable String requestQualifier) {
        return requestQualifier == null
            ? rootQualifiers
            : (new String[] {requestQualifier});
    }

    private Table<Long, String, Integer> userCountByRootComponentIdAndPermission(DbSession dbSession,
    List<Long> rootComponentIds) {
        final Table<Long, String, Integer> userCountByRootComponentIdAndPermission = TreeBasedTable.create();

        dbClient.userPermissionDao().countUsersByProjectPermission(dbSession, rootComponentIds).forEach(
            row -> userCountByRootComponentIdAndPermission.put(row.getComponentId(), row.getPermission(),
            row.getCount()));

        return userCountByRootComponentIdAndPermission;
    }

    private Table<Long, String, Integer> groupCountByRootComponentIdAndPermission(DbSession dbSession,
    List<Long> rootComponentIds) {
        final Table<Long, String, Integer> userCountByRootComponentIdAndPermission = TreeBasedTable.create();

        dbClient.groupPermissionDao().groupsCountByComponentIdAndPermission(dbSession, rootComponentIds,
        context -> {
            CountPerProjectPermission row = (CountPerProjectPermission) context.getResultObject();
            userCountByRootComponentIdAndPermission.put(row.getComponentId(), row.getPermission(),
            row.getCount());
        });

        return userCountByRootComponentIdAndPermission;
    }

    private static class SearchProjectPermissionsRequest {
        private String projectId;
        private String projectKey;
        private String qualifier;
        private Integer page;
        private Integer pageSize;
        private String query;

        @CheckForNull
        public String getProjectId() {
            return projectId;
        }

        public SearchProjectPermissionsRequest setProjectId(@Nullable String projectId) {

```

```

    this.projectId = projectId;
    return this;
}

@CheckForNull
public String getProjectKey() {
    return projectKey;
}

public SearchProjectPermissionsRequest setProjectKey(@Nullable String projectKey) {
    this.projectKey = projectKey;
    return this;
}

@CheckForNull
public Integer getPage() {
    return page;
}

public SearchProjectPermissionsRequest setPage(int page) {
    this.page = page;
    return this;
}

@CheckForNull
public Integer getPageSize() {
    return pageSize;
}

public SearchProjectPermissionsRequest setPageSize(int pageSize) {
    this.pageSize = pageSize;
    return this;
}

@CheckForNull
public String getQuery() {
    return query;
}

public SearchProjectPermissionsRequest setQuery(@Nullable String query) {
    this.query = query;
    return this;
}

@CheckForNull
public String getQualifier() {
    return qualifier;
}
}

```



```

public SearchProjectPermissionsRequest setQualifier(@Nullable String qualifier) {
    this.qualifier = qualifier;
    return this;
}
}
}
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 */
package org.sonar.server.permission.ws;

import java.util.Optional;
import javax.annotation.Nullable;
import org.sonar.api.server.ws.Request;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.component.ComponentFinder;
import org.sonar.server.permission.ProjectId;
import org.sonar.server.permission.UserId;
import org.sonar.server.permission.ws.template.WsTemplateRef;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;
import org.sonar.server.usergroups.ws.GroupWsRef;
import org.sonar.server.usergroups.ws.GroupWsSupport;
import org.sonarqube.ws.client.permission.PermissionsWsParameters;

import static com.google.common.base.Preconditions.checkArgument;
import static org.sonar.server.ws.WsUtils.checkFound;

```

```

import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;

public class PermissionWsSupport {

    private final DbClient dbClient;
    private final ComponentFinder componentFinder;
    private final GroupWsSupport groupWsSupport;

    public PermissionWsSupport(DbClient dbClient, ComponentFinder componentFinder, GroupWsSupport
groupWsSupport) {
        this.dbClient = dbClient;
        this.componentFinder = componentFinder;
        this.groupWsSupport = groupWsSupport;
    }

    public OrganizationDto findOrganization(DbSession dbSession, @Nullable String organizationKey) {
        return groupWsSupport.findOrganizationByKey(dbSession, organizationKey);
    }

    public Optional<ProjectId> findProjectId(DbSession dbSession, Request request) {
        return findProject(dbSession, request)
            .map(ProjectId::new);
    }

    public Optional<ComponentDto> findProject(DbSession dbSession, Request request) {
        String uuid = request.param(PermissionsWsParameters.PARAM_PROJECT_ID);
        String key = request.param(PermissionsWsParameters.PARAM_PROJECT_KEY);
        if (uuid != null || key != null) {
            ProjectWsRef ref = ProjectWsRef.newWsProjectRef(uuid, key);
            return Optional.of(componentFinder.getRootComponentByUuidOrKey(dbSession, ref.uuid(), ref.key()));
        }
        return Optional.empty();
    }

    public ComponentDto getRootComponentOrModule(DbSession dbSession, ProjectWsRef projectRef) {
        return componentFinder.getRootComponentByUuidOrKey(dbSession, projectRef.uuid(), projectRef.key());
    }

    public GroupIdOrAnyone findGroup(DbSession dbSession, Request request) {
        Integer groupId = request.paramAsInt(PARAM_GROUP_ID);
        String orgKey = request.param(PARAM_ORGANIZATION);
        String groupName = request.param(PARAM_GROUP_NAME);
        GroupWsRef groupRef = GroupWsRef.create(groupId, orgKey, groupName);
        return groupWsSupport.findGroupOrAnyone(dbSession, groupRef);
    }
}

```

```

public UserId findUser(DbSession dbSession, String login) {
    UserDto dto = dbClient.userDao().selectActiveUserByLogin(dbSession, login);
    checkFound(dto, "User with login '%s' is not found", login);
    return new UserId(dto.getId(), dto.getLogin());
}

public PermissionTemplateDto findTemplate(DbSession dbSession, WsTemplateRef ref) {
    if (ref.uuid() != null) {
        return checkFound(
            dbClient.permissionTemplateDao().selectByUuid(dbSession, ref.uuid()),
            "Permission template with id '%s' is not found", ref.uuid());
    } else {
        OrganizationDto org = findOrganization(dbSession, ref.getOrganization());
        return checkFound(
            dbClient.permissionTemplateDao().selectByName(dbSession, org.getUuid(), ref.name()),
            "Permission template with name '%s' is not found (case insensitive) in organization with key '%s'", ref.name(),
            org.getKey());
    }
}

public void checkMembership(DbSession dbSession, OrganizationDto organization, UserId user) {
    checkArgument(dbClient.organizationMemberDao().select(dbSession, organization.getUuid(),
        user.getId()).isPresent(),
        "User '%s' is not member of organization '%s'", user.getLogin(), organization.getKey());
}
}
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*/
package org.sonar.server.permission.ws;

import org.sonar.api.server.ws.WebService;

```

```

import static org.sonarqube.ws.client.permission.PermissionsWsParameters.CONTROLLER;

public class PermissionsWs implements Webservice {
private final PermissionsWsAction[] actions;

public PermissionsWs(PermissionsWsAction... actions) {
    this.actions = actions;
}

@Override
public void define(Context context) {
    NewController controller = context.createController(CONTROLLER);
    controller.setDescription("Manage permission templates, and the granting and revoking of permissions at the
global and project levels.");
    controller.setSince("3.7");

    for (PermissionsWsAction action : actions) {
        action.define(controller);
    }

    controller.done();
}
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws;

import java.util.Locale;
import org.sonar.api.i18n.I18n;
import org.sonar.api.server.ws.Request;

```

```

import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.OrganizationPermission;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions.Permission;
import org.sonarqube.ws.Permissions.WsSearchGlobalPermissionsResponse;

import static org.sonar.server.permission.PermissionPrivilegeChecker.checkGlobalAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.Permissions.Permission.newBuilder;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;

public class SearchGlobalPermissionsAction implements PermissionsWsAction {

    public static final String ACTION = "search_global_permissions";
    private static final String PROPERTY_PREFIX = "global_permissions.";
    private static final String DESCRIPTION_SUFFIX = ".desc";

    private final DbClient dbClient;
    private final UserSession userSession;
    private final I18n i18n;
    private final PermissionWsSupport support;

    public SearchGlobalPermissionsAction(DbClient dbClient, UserSession userSession, I18n i18n,
    PermissionWsSupport support) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.i18n = i18n;
        this.support = support;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction(ACTION)
            .setDescription("List global permissions. <br />" +
                "Requires the following permission: 'Administer System'")
            .setResponseExample(getClass().getResource("search_global_permissions-example.json"))
            .setSince("5.2")
            .setDeprecatedSince("6.5")
            .setHandler(this);

        createOrganizationParameter(action).setSince("6.2");
    }
}

```

```

@Override
public void handle(Request wsRequest, Response wsResponse) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        OrganizationDto org = support.findOrganization(dbSession, wsRequest.param(PARAM_ORGANIZATION));
        checkGlobalAdmin(userSession, org.getUuid());

        WsSearchGlobalPermissionsResponse response = buildResponse(dbSession, org);
        writeProtobuf(response, wsRequest, wsResponse);
    }
}

private WsSearchGlobalPermissionsResponse buildResponse(DbSession dbSession, OrganizationDto org) {
    WsSearchGlobalPermissionsResponse.Builder response = WsSearchGlobalPermissionsResponse.newBuilder();
    Permission.Builder permission = newBuilder();

    OrganizationPermission.all()
        .map(OrganizationPermission::getKey)
        .forEach(permissionKey -> {
            PermissionQuery query = permissionQuery(permissionKey, org);
            response.addPermissions(
                permission
                    .clear()
                    .setKey(permissionKey)
                    .setName(i18nName(permissionKey))
                    .setDescription(i18nDescriptionMessage(permissionKey))
                    .setUsersCount(countUsers(dbSession, query))
                    .setGroupsCount(countGroups(dbSession, org, permissionKey)));
        });

    return response.build();
}

private String i18nDescriptionMessage(String permissionKey) {
    return i18n.message(Locale.ENGLISH, PROPERTY_PREFIX + permissionKey + DESCRIPTION_SUFFIX, "");
}

private String i18nName(String permissionKey) {
    return i18n.message(Locale.ENGLISH, PROPERTY_PREFIX + permissionKey, permissionKey);
}

private int countGroups(DbSession dbSession, OrganizationDto org, String permission) {
    PermissionQuery query =
    PermissionQuery.builder().setOrganizationUuid(org.getUuid()).setPermission(permission).build();
    return dbClient.groupPermissionDao().countGroupsByQuery(dbSession, query);
}

private int countUsers(DbSession dbSession, PermissionQuery permissionQuery) {

```

```

return dbClient.userPermissionDao().countUsersByQuery(dbSession, permissionQuery);
}

private static PermissionQuery permissionQuery(String permissionKey, OrganizationDto org) {
return PermissionQuery.builder()
.setOrganizationUuid(org.getUuid())
.setPermission(permissionKey)
.withAtLeastOnePermission()
.build();
}
}
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*/
package org.sonar.server.permission.ws;

import com.google.common.base.Optional;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

import static org.sonar.server.ws.WsUtils.checkRequest;

/**
* Reference to a project <b>as defined by web service callers</b>. It allows to reference a project
* by its (functional) key or by its (technical) id. It's then converted to { @link org.sonar.server.permission.ProjectId}.
*
* <p>Factory methods guarantee that the project id and project key are not provided at the same time.</p>
*/
public class ProjectWsRef {
private static final String MSG_ID_OR_KEY_MUST_BE_PROVIDED = "Project id or project key can be
provided, not both.";
private final String uuid;

```

```

private final String key;

private ProjectWsRef(@Nullable String uuid, @Nullable String key) {
    this.uuid = uuid;
    this.key = key;
    checkRequest(this.uuid != null ^ this.key != null, MSG_ID_OR_KEY_MUST_BE_PROVIDED);
}

public static Optional<ProjectWsRef> newOptionalWsProjectRef(@Nullable String uuid, @Nullable String key) {
    if (uuid == null && key == null) {
        return Optional.absent();
    }

    return Optional.of(new ProjectWsRef(uuid, key));
}

public static ProjectWsRef newWsProjectRef(@Nullable String uuid, @Nullable String key) {
    return new ProjectWsRef(uuid, key);
}

@CheckForNull
public String uuid() {
    return this.uuid;
}

@CheckForNull
public String key() {
    return this.key;
}
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```



```

*/
package org.sonar.server.permission.ws;

import com.google.common.collect.Multimap;
import com.google.common.collect.Ordering;
import com.google.common.collect.TreeMultimap;
import com.google.common.io.Resources;
import java.util.List;
import java.util.Optional;
import org.sonar.api.security.DefaultGroups;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.server.ws.WebService.Param;
import org.sonar.api.utils.Paging;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.GroupPermissionDto;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.user.GroupDto;
import org.sonar.server.permission.ProjectId;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions.Group;
import org.sonarqube.ws.Permissions.WsGroupsResponse;

import static java.util.Collections.emptyList;
import static org.sonar.core.util.Protobuf.setNullable;
import static org.sonar.db.permission.PermissionQuery.DEFAULT_PAGE_SIZE;
import static org.sonar.db.permission.PermissionQuery.RESULTS_MAX_SIZE;
import static org.sonar.db.permission.PermissionQuery.SEARCH_QUERY_MIN_LENGTH;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkProjectAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class GroupsAction implements PermissionsWsAction {
    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionWsSupport support;

    public GroupsAction(DbClient dbClient, UserSession userSession, PermissionWsSupport support) {
        this.dbClient = dbClient;
        this.userSession = userSession;
    }

```

```

    this.support = support;
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context.createAction("groups")
        .setSince("5.2")
        .setInternal(true)
        .setDescription("Lists the groups with their permissions.<br>" +
            "This service defaults to global permissions, but can be limited to project permissions by providing project id or project key.<br>" +
            "This service defaults to all groups, but can be limited to groups with a specific permission by providing the desired permission.<br>" +
            "Requires one of the following permissions:" +
            "<ul>" +
            "<li>'Administer System'</li>" +
            "<li>'Administer' rights on the specified project</li>" +
            "</ul>")
        .addPagingParams(DEFAULT_PAGE_SIZE, RESULTS_MAX_SIZE)
        .setResponseExample(Resources.getResource(getClass(), "groups-example.json"))
        .setHandler(this);

    action.createSearchQuery("sonar", "names")
        .setDescription("Limit search to group names that contain the supplied string. When this parameter is not set, only groups having at least one permission are returned.")
        .setMinimumLength(SEARCH_QUERY_MIN_LENGTH);

    createOrganizationParameter(action).setSince("6.2");
    createPermissionParameter(action).setRequired(false);
    createProjectParameters(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        OrganizationDto org = support.findOrganization(dbSession, request.param(PARAM_ORGANIZATION));
        Optional<ProjectId> projectId = support.findProjectId(dbSession, request);
        checkProjectAdmin(userSession, org.getUuid(), projectId);

        PermissionQuery query = buildPermissionQuery(request, org, projectId);
        // TODO validatePermission(groupsRequest.getPermission(), wsProjectRef);
        List<GroupDto> groups = findGroups(dbSession, org, query);
        int total = dbClient.groupPermissionDao().countGroupsByQuery(dbSession, query);
        List<GroupPermissionDto> groupsWithPermission = findGroupPermissions(dbSession, org, groups, projectId);
        Paging paging =
            Paging.forPageIndex(request.mandatoryParamAsInt(Param.PAGE)).withPageSize(query.getPageSize()).andTotal(total);
        WsGroupsResponse groupsResponse = buildResponse(groups, groupsWithPermission, paging);
    }
}

```

```

        writeProtobuf(groupsResponse, request, response);
    }
}

private static PermissionQuery buildPermissionQuery(Request request, OrganizationDto org, Optional<ProjectId>
project) {
    String textQuery = request.param(Param.TEXT_QUERY);
    PermissionQuery.Builder permissionQuery = PermissionQuery.builder()
        .setOrganizationUuid(org.getUuid())
        .setPermission(request.param(PARAM_PERMISSION))
        .setPageIndex(request.mandatoryParamAsInt(Param.PAGE))
        .setPageSize(request.mandatoryParamAsInt(Param.PAGE_SIZE))
        .setSearchQuery(textQuery);
    if (project.isPresent()) {
        permissionQuery.setComponentUuid(project.get().getUuid());
    }
    if (textQuery == null) {
        permissionQuery.withAtLeastOnePermission();
    }
    return permissionQuery.build();
}

private static WsGroupsResponse buildResponse(List<GroupDto> groups, List<GroupPermissionDto>
groupPermissions, Paging paging) {
    Multimap<Integer, String> permissionsByGroupId = TreeMultimap.create();
    groupPermissions.forEach(groupPermission -> permissionsByGroupId.put(groupPermission.getGroupId(),
groupPermission.getRole()));
    WsGroupsResponse.Builder response = WsGroupsResponse.newBuilder();

    groups.forEach(group -> {
        Group.Builder wsGroup = response.addGroupsBuilder()
            .setName(group.getName());
        if (group.getId() != 0) {
            wsGroup.setId(String.valueOf(group.getId()));
        }
        setNullable(group.getDescription(), wsGroup::setDescription);
        wsGroup.addAllPermissions(permissionsByGroupId.get(group.getId()));
    });

    response.getPagingBuilder()
        .setPageIndex(paging.pageIndex())
        .setPageSize(paging.pageSize())
        .setTotal(paging.total());

    return response.build();
}

private List<GroupDto> findGroups(DbSession dbSession, OrganizationDto org, PermissionQuery dbQuery) {

```

```

List<String> orderedNames = dbClient.groupPermissionDao().selectGroupNamesByQuery(dbSession, dbQuery);
List<GroupDto> groups = dbClient.groupDao().selectByNames(dbSession, org.getUuid(), orderedNames);
if (orderedNames.contains(DefaultGroups.ANYONE)) {
    groups.add(0, new
GroupDto().setId(0).setName(DefaultGroups.ANYONE).setOrganizationUuid(org.getUuid()));
}
return Ordering.explicit(orderedNames).onResultOf(GroupDto::getName).immutableSortedCopy(groups);
}

private List<GroupPermissionDto> findGroupPermissions(DbSession dbSession, OrganizationDto org,
List<GroupDto> groups, Optional<ProjectId> project) {
    if (groups.isEmpty()) {
        return emptyList();
    }
    List<Integer> ids = groups.stream().map(GroupDto::getId).collect(MoreCollectors.toList(groups.size()));
    return dbClient.groupPermissionDao().selectByGroupIds(dbSession, org.getUuid(), ids, project.isPresent() ?
project.get().getId() : null);
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws;

import java.util.Optional;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.server.permission.GroupPermissionChange;
import org.sonar.server.permission.PermissionChange;

```

```

import org.sonar.server.permission.PermissionUpdater;
import org.sonar.server.permission.ProjectId;
import org.sonar.server.user.UserSession;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;

import static java.util.Arrays.asList;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkProjectAdmin;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupIdParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createGroupNameParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class RemoveGroupAction implements PermissionsWsAction {

    public static final String ACTION = "remove_group";

    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionUpdater permissionUpdater;
    private final PermissionWsSupport support;

    public RemoveGroupAction(DbClient dbClient, UserSession userSession, PermissionUpdater permissionUpdater,
PermissionWsSupport support) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.permissionUpdater = permissionUpdater;
        this.support = support;
    }

    @Override
    public void define(WebService.NewController context) {
        WebService.NewAction action = context.createAction(ACTION)
            .setDescription("Remove a permission from a group.<br /> " +
                "This service defaults to global permissions, but can be limited to project permissions by providing project id or
project key.<br /> " +
                "The group id or group name must be provided, not both.<br /> " +
                "Requires one of the following permissions:" +
                "<ul>" +
                "<li>'Administer System'</li>" +
                "<li>'Administer' rights on the specified project</li>" +
                "</ul>")
            .setSince("5.2")
            .setPost(true)
            .setHandler(this);

        createPermissionParameter(action);
    }
}

```

```

createOrganizationParameter(action).setSince("6.2");
createGroupNameParameter(action);
createGroupIdParameter(action);
createProjectParameters(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        GroupIdOrAnyone group = support.findGroup(dbSession, request);
        Optional<ProjectId> projectId = support.findProjectId(dbSession, request);

        checkProjectAdmin(userSession, group.getOrganizationUuid(), projectId);

        PermissionChange change = new GroupPermissionChange(
            PermissionChange.Operation.REMOVE,
            request.mandatoryParam(PARAM_PERMISSION),
            projectId.orElse(null),
            group);
        permissionUpdater.apply(dbSession, asList(change));
    }
    response.noContent();
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws;

import com.google.common.collect.Multimap;
import com.google.common.collect.Ordering;
import com.google.common.collect.TreeMultimap;

```

```

import java.util.List;
import java.util.Optional;
import java.util.stream.Collectors;
import org.sonar.api.server.ws.Request;
import org.sonar.api.server.ws.Response;
import org.sonar.api.server.ws.WebService;
import org.sonar.api.server.ws.WebService.Param;
import org.sonar.api.utils.Paging;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.UserPermissionDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.issue.ws.AvatarResolver;
import org.sonar.server.permission.ProjectId;
import org.sonar.server.user.UserSession;
import org.sonarqube.ws.Permissions;
import org.sonarqube.ws.Permissions.UsersWsResponse;

import static com.google.common.base.Strings.emptyOrNull;
import static java.util.Collections.emptyList;
import static org.sonar.core.util.Protobuf.setNullable;
import static org.sonar.db.permission.PermissionQuery.DEFAULT_PAGE_SIZE;
import static org.sonar.db.permission.PermissionQuery.RESULTS_MAX_SIZE;
import static org.sonar.db.permission.PermissionQuery.SEARCH_QUERY_MIN_LENGTH;
import static org.sonar.server.permission.PermissionPrivilegeChecker.checkProjectAdmin;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateGlobalPermission;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateProjectPermission;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createOrganizationParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createPermissionParameter;
import static org.sonar.server.permission.ws.PermissionsWsParametersBuilder.createProjectParameters;
import static org.sonar.server.ws.WsUtils.writeProtobuf;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;

public class UsersAction implements PermissionsWsAction {

    private final DbClient dbClient;
    private final UserSession userSession;
    private final PermissionWsSupport support;
    private final AvatarResolver avatarResolver;

    public UsersAction(DbClient dbClient, UserSession userSession, PermissionWsSupport support, AvatarResolver
avatarResolver) {
        this.dbClient = dbClient;
        this.userSession = userSession;
        this.support = support;
    }

```

```

    this.avatarResolver = avatarResolver;
}

@Override
public void define(WebService.NewController context) {
    WebService.NewAction action = context.createAction("users")
        .setSince("5.2")
        .setDescription("Lists the users with their permissions as individual users rather than through group
affiliation.<br>" +
            "This service defaults to global permissions, but can be limited to project permissions by providing project id or
project key.<br>" +
            "This service defaults to all users, but can be limited to users with a specific permission by providing the desired
permission.<br>" +
            "Requires one of the following permissions:" +
            "<ul>" +
            "<li>'Administer System'</li>" +
            "<li>'Administer' rights on the specified project</li>" +
            "</ul>")
        .addPagingParams(DEFAULT_PAGE_SIZE, RESULTS_MAX_SIZE)
        .setInternal(true)
        .setResponseExample(getClass().getResource("users-example.json"))
        .setHandler(this);

    action.createParam(Param.TEXT_QUERY)
        .setMinimumLength(SEARCH_QUERY_MIN_LENGTH)
        .setDescription("Limit search to user names that contain the supplied string. <br/>" +
            "When this parameter is not set, only users having at least one permission are returned.")
        .setExampleValue("eri");

    createOrganizationParameter(action).setSince("6.2");
    createPermissionParameter(action).setRequired(false);
    createProjectParameters(action);
}

@Override
public void handle(Request request, Response response) throws Exception {
    try (DbSession dbSession = dbClient.openSession(false)) {
        OrganizationDto org = support.findOrganization(dbSession, request.param(PARAM_ORGANIZATION));
        Optional<ProjectId> projectId = support.findProjectId(dbSession, request);
        checkProjectAdmin(userSession, org.getUuid(), projectId);

        PermissionQuery query = buildPermissionQuery(request, org, projectId);
        List<UserDto> users = findUsers(dbSession, query);
        int total = dbClient.userPermissionDao().countUsersByQuery(dbSession, query);
        List<UserPermissionDto> userPermissions = findUserPermissions(dbSession, org, users, projectId);
        Paging paging =
            Paging.forPageIndex(request.mandatoryParamAsInt(Param.PAGE)).withPageSize(query.getPageSize()).andTotal(to
            tal);
    }
}

```



```

UsersWsResponse usersWsResponse = buildResponse(users, userPermissions, paging);
writeProtobuf(usersWsResponse, request, response);
}
}

private static PermissionQuery buildPermissionQuery(Request request, OrganizationDto organization,
Optional<ProjectId> project) {
String textQuery = request.param(Param.TEXT_QUERY);
String permission = request.param(PARAM_PERMISSION);
PermissionQuery.Builder permissionQuery = PermissionQuery.builder()
.setOrganizationUuid(organization.getUuid())
.setPermission(permission)
.setPageIndex(request.mandatoryParamAsInt(Param.PAGE))
.setPageSize(request.mandatoryParamAsInt(Param.PAGE_SIZE))
.setSearchQuery(textQuery);
project.ifPresent(projectId -> permissionQuery.setComponentUuid(projectId.getUuid()));
if (permission != null) {
if (project.isPresent()) {
validateProjectPermission(permission);
} else {
validateGlobalPermission(permission);
}
}
if (textQuery == null) {
permissionQuery.withAtLeastOnePermission();
}
return permissionQuery.build();
}

private UsersWsResponse buildResponse(List<UserDto> users, List<UserPermissionDto> userPermissions, Paging
paging) {
Multimap<Integer, String> permissionsByUserId = TreeMultimap.create();
userPermissions.forEach(userPermission -> permissionsByUserId.put(userPermission.getUserId(),
userPermission.getPermission()));

UsersWsResponse.Builder response = UsersWsResponse.newBuilder();
users.forEach(user -> {
Permissions.User.Builder userResponse = response.addUsersBuilder()
.setLogin(user.getLogin())
.addAllPermissions(permissionsByUserId.get(user.getId()));
setNullable(user.getEmail(), userResponse::setEmail);
setNullable(emptyOrNull(user.getEmail()), u -> userResponse.setAvatar(avatarResolver.create(user)));
setNullable(user.getName(), userResponse::setName);
});

response.getPagingBuilder()
.setPageIndex(paging.pageIndex())
.setPageSize(paging.pageSize())

```

```

        .setTotal(paging.total())
        .build();

    return response.build();
}

private List<UserDto> findUsers(DbSession dbSession, PermissionQuery query) {
    List<Integer> orderedIds = dbClient.userPermissionDao().selectUserIdsByQuery(dbSession, query);
    return
    Ordering.explicit(orderedIds).onResultOf(UserDto::getId).immutableSortedCopy(dbClient.userDao().selectByIds(d
    bSession, orderedIds));
}

private List<UserPermissionDto> findUserPermissions(DbSession dbSession, OrganizationDto org, List<UserDto>
users, Optional<ProjectId> project) {
    if (users.isEmpty()) {
        return emptyList();
    }
    List<Integer> userIds = users.stream().map(UserDto::getId).collect(Collectors.toList());
    PermissionQuery query = PermissionQuery.builder()
        .setOrganizationUuid(org.getUuid())
        .setComponentUuid(project.map(ProjectId::getUuid).orElse(null))
        .withAtLeastOnePermission()
        .build();
    return dbClient.userPermissionDao().selectUserPermissionsByQuery(dbSession, query, userIds);
}
}
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 */
package org.sonar.server.permission;

```

```

import java.util.ArrayList;
import java.util.Collection;
import java.util.List;
import java.util.Optional;
import org.sonar.db.DbSession;
import org.sonar.server.es.ProjectIndexer;
import org.sonar.server.es.ProjectIndexers;

/**
 * Add or remove global/project permissions to a group. This class
 * does not verify that caller has administration right on the related
 * organization or project.
 */
public class PermissionUpdater {

    private final ProjectIndexers projectIndexers;
    private final UserPermissionChanger userPermissionChanger;
    private final GroupPermissionChanger groupPermissionChanger;

    public PermissionUpdater(ProjectIndexers projectIndexers,
        UserPermissionChanger userPermissionChanger, GroupPermissionChanger groupPermissionChanger) {
        this.projectIndexers = projectIndexers;
        this.userPermissionChanger = userPermissionChanger;
        this.groupPermissionChanger = groupPermissionChanger;
    }

    public void apply(DbSession dbSession, Collection<PermissionChange> changes) {
        List<String> projectOrViewUuids = new ArrayList<>();
        for (PermissionChange change : changes) {
            boolean changed = doApply(dbSession, change);
            Optional<ProjectId> projectId = change.getProjectId();
            if (changed && projectId.isPresent()) {
                projectOrViewUuids.add(projectId.get().getUuid());
            }
        }
        projectIndexers.commitAndIndexByProjectUuids(dbSession, projectOrViewUuids,
            ProjectIndexer.Cause.PERMISSION_CHANGE);
    }

    private boolean doApply(DbSession dbSession, PermissionChange change) {
        if (change instanceof UserPermissionChange) {
            return userPermissionChanger.apply(dbSession, (UserPermissionChange) change);
        }
        if (change instanceof GroupPermissionChange) {
            return groupPermissionChanger.apply(dbSession, (GroupPermissionChange) change);
        }
        throw new UnsupportedOperationException("Unsupported permission change: " + change.getClass());
    }
}

```

```

}
}
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 */
@ParametersAreNonnullByDefault
package org.sonar.server.permission.index;

import javax.annotation.ParametersAreNonnullByDefault;
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 */
package org.sonar.server.permission.index;

/**
 * An { @link NeedAuthorizationIndexer } defines how

```

```

* a {@link org.sonar.server.es.ProjectIndexer} populates
* the type named {@link AuthorizationTypeSupport#TYPE_AUTHORIZATION}, which
* is used to verify that a user can access to projects.
*/
public interface NeedAuthorizationIndexer {

    /**
     * Returns the metadata required by {@link PermissionIndexer} to
     * populate "authorization" types.
     */
    AuthorizationScope getAuthorizationScope();

}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.index;

import java.util.function.Predicate;
import javax.annotation.concurrent.Immutable;
import org.sonar.server.es.IndexType;

import static java.util.Objects.requireNonNull;

@Immutable
public final class AuthorizationScope {
    private final IndexType indexType;
    private final Predicate<PermissionIndexerDao.Dto> projectPredicate;

    public AuthorizationScope(IndexType indexType, Predicate<PermissionIndexerDao.Dto> projectPredicate) {
        this.indexType = AuthorizationTypeSupport.getAuthorizationIndexType(indexType);
        this.projectPredicate = requireNonNull(projectPredicate);
    }

```

```

}

/**
 * Identifier of the authorization type (in the same index than the original IndexType, passed into the constructor).
 */
public IndexType getIndexType() {
    return indexType;
}

/**
 * Predicates that filters the projects to be involved in
 * authorization.
 */
public Predicate<PermissionIndexerDao.Dto> getProjectPredicate() {
    return projectPredicate;
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.index;

import com.google.common.collect.ImmutableList;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.ArrayList;
import java.util.Collection;
import java.util.Collections;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

```

```

import org.apache.commons.lang.StringUtils;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;

import static org.apache.commons.lang.StringUtils.repeat;
import static org.sonar.db.DatabaseUtils.executeLargeInputs;

/**
 * No streaming because of union of joins -> no need to use ResultSetIterator
 */
public class PermissionIndexerDao {

    public static final class Dto {
        private final String projectUuid;
        private final String qualifier;
        private final List<Integer> userIds = new ArrayList<>();
        private final List<Integer> groupIds = new ArrayList<>();
        private boolean allowAnyone = false;

        public Dto(String projectUuid, String qualifier) {
            this.projectUuid = projectUuid;
            this.qualifier = qualifier;
        }

        public String getProjectUuid() {
            return projectUuid;
        }

        public String getQualifier() {
            return qualifier;
        }

        public List<Integer> getUserIds() {
            return userIds;
        }

        public Dto addUserId(int l) {
            userIds.add(l);
            return this;
        }

        public Dto addGroupId(int id) {
            groupIds.add(id);
            return this;
        }

        public List<Integer> getGroupIds() {
            return groupIds;
        }
    }
}

```

```

}

public void allowAnyone() {
    this.allowAnyone = true;
}

public boolean isAllowAnyone() {
    return allowAnyone;
}
}

private enum RowKind {
    USER, GROUP, ANYONE, NONE
}

private static final String SQL_TEMPLATE = "SELECT " +
    " project_authorization.kind as kind, " +
    " project_authorization.project as project, " +
    " project_authorization.user_id as user_id, " +
    " project_authorization.group_id as group_id, " +
    " project_authorization.qualifier as qualifier " +
    "FROM ( " +

// users

    " SELECT " + RowKind.USER + " as kind," +
    " projects.uuid AS project, " +
    " projects.qualifier AS qualifier, " +
    " user_roles.user_id AS user_id, " +
    " NULL AS group_id " +
    " FROM projects " +
    " INNER JOIN user_roles ON user_roles.resource_id = projects.id AND user_roles.role = 'user' " +
    " WHERE " +
    " (projects.qualifier = 'TRK' " +
    " or projects.qualifier = 'VW' " +
    " or projects.qualifier = 'APP') " +
    " AND projects.copy_component_uuid is NULL " +
    " {projectsCondition} " +
    " UNION " +

// groups

    " SELECT " + RowKind.GROUP + " as kind," +
    " projects.uuid AS project, " +
    " projects.qualifier AS qualifier, " +
    " NULL AS user_id, " +
    " groups.id AS group_id " +
    " FROM projects " +

```



```

" INNER JOIN group_roles ON group_roles.resource_id = projects.id AND group_roles.role = 'user' " +
" INNER JOIN groups ON groups.id = group_roles.group_id " +
" WHERE " +
" (projects.qualifier = 'TRK' " +
" or projects.qualifier = 'VW' " +
" or projects.qualifier = 'APP') " +
" AND projects.copy_component_uuid is NULL " +
" {projectsCondition} " +
" AND group_id IS NOT NULL " +
" UNION " +

```

```
// public projects are accessible to any one
```

```

" SELECT "" + RowKind.ANYONE + "" as kind," +
" projects.uuid AS project, " +
" projects.qualifier AS qualifier, " +
" NULL AS user_id, " +
" NULL AS group_id " +
" FROM projects " +
" WHERE " +
" (projects.qualifier = 'TRK' " +
" or projects.qualifier = 'VW' " +
" or projects.qualifier = 'APP') " +
" AND projects.copy_component_uuid is NULL " +
" AND projects.private = ? " +
" {projectsCondition} " +
" UNION " +

```

```
// private project is returned when no authorization
```

```

" SELECT "" + RowKind.NONE + "" as kind," +
" projects.uuid AS project, " +
" projects.qualifier AS qualifier, " +
" NULL AS user_id, " +
" NULL AS group_id " +
" FROM projects " +
" WHERE " +
" (projects.qualifier = 'TRK' " +
" or projects.qualifier = 'VW' " +
" or projects.qualifier = 'APP') " +
" AND projects.copy_component_uuid is NULL " +
" AND projects.private = ? " +
" {projectsCondition} " +

" ) project_authorization";

```

```

List<Dto> selectAll(DbClient dbClient, DbSession session) {
    return doSelectByProjects(dbClient, session, Collections.emptyList());
}

```

```

List<Dto> selectByUuids(DbClient dbClient, DbSession session, Collection<String> projectOrViewUuids) {
    return executeLargeInputs(projectOrViewUuids, subProjectOrViewUuids -> doSelectByProjects(dbClient,
session, subProjectOrViewUuids));
}

private static List<Dto> doSelectByProjects(DbClient dbClient, DbSession session, List<String> projectUuids) {
    try {
        Map<String, Dto> dtosByProjectUuid = new HashMap<>();
        try (PreparedStatement stmt = createStatement(dbClient, session, projectUuids);
            ResultSet rs = stmt.executeQuery()) {
            while (rs.next()) {
                processRow(rs, dtosByProjectUuid);
            }
            return ImmutableList.copyOf(dtosByProjectUuid.values());
        }
    } catch (SQLException e) {
        throw new IllegalStateException("Fail to select authorizations", e);
    }
}

private static PreparedStatement createStatement(DbClient dbClient, DbSession session, List<String>
projectUuids) throws SQLException {
    String sql;
    if (projectUuids.isEmpty()) {
        sql = StringUtils.replace(SQL_TEMPLATE, "{projectsCondition}", "");
    } else {
        sql = StringUtils.replace(SQL_TEMPLATE, "{projectsCondition}", " AND projects.uuid in (" + repeat("?", " ", ", ",
projectUuids.size()) + ")");
    }
    PreparedStatement stmt = dbClient.getMyBatis().newScrollingSelectStatement(session, sql);
    int index = 1;
    // query for RowKind.USER
    index = populateProjectUuidPlaceholders(stmt, projectUuids, index);
    // query for RowKind.GROUP
    index = populateProjectUuidPlaceholders(stmt, projectUuids, index);
    // query for RowKind.ANYONE
    index = setPrivateProjectPlaceholder(stmt, index, false);
    index = populateProjectUuidPlaceholders(stmt, projectUuids, index);
    // query for RowKind.NONE
    index = setPrivateProjectPlaceholder(stmt, index, true);
    populateProjectUuidPlaceholders(stmt, projectUuids, index);
    return stmt;
}

private static int populateProjectUuidPlaceholders(PreparedStatement stmt, List<String> projectUuids, int index)
throws SQLException {
    int newIndex = index;

```

```

for (String projectUuid : projectUuids) {
    stmt.setString(newIndex, projectUuid);
    newIndex++;
}
return newIndex;
}

```

```

private static int setPrivateProjectPlaceholder(PreparedStatement stmt, int index, boolean isPrivate) throws
SQLException {
    int newIndex = index;
    stmt.setBoolean(newIndex, isPrivate);
    newIndex++;
    return newIndex;
}

```

```

private static void processRow(ResultSet rs, Map<String, Dto> dtosByProjectUuid) throws SQLException {
    RowKind rowKind = RowKind.valueOf(rs.getString(1));
    String projectUuid = rs.getString(2);

```

```

    Dto dto = dtosByProjectUuid.get(projectUuid);
    if (dto == null) {
        String qualifier = rs.getString(5);
        dto = new Dto(projectUuid, qualifier);
        dtosByProjectUuid.put(projectUuid, dto);
    }
    switch (rowKind) {
        case NONE:
            break;
        case USER:
            dto.addUserId(rs.getInt(3));
            break;
        case GROUP:
            dto.addGroupId(rs.getInt(4));
            break;
        case ANYONE:
            dto.allowAnyone();
            break;
    }
}
}
}

```

/\*

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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.index;

```

```

import com.google.common.collect.ImmutableMap;
import java.util.Optional;
import org.elasticsearch.index.query.BoolQueryBuilder;
import org.elasticsearch.index.query.QueryBuilder;
import org.elasticsearch.index.query.QueryBuilders;
import org.elasticsearch.join.query.JoinQueryBuilders;
import org.sonar.api.ce.ComputeEngineSide;
import org.sonar.api.server.ServerSide;
import org.sonar.db.user.GroupDto;
import org.sonar.server.es.IndexType;
import org.sonar.server.es.NewIndex;
import org.sonar.server.user.UserSession;

import static com.google.common.base.Preconditions.checkNotNull;
import static java.util.Objects.requireNonNull;
import static org.elasticsearch.index.query.QueryBuilders.boolQuery;
import static org.elasticsearch.index.query.QueryBuilders.termQuery;

@ServerSide
@ComputeEngineSide
public class AuthorizationTypeSupport {

    public static final String TYPE_AUTHORIZATION = "authorization";
    public static final String FIELD_GROUP_IDS = "groupIds";
    public static final String FIELD_USER_IDS = "userIds";

    /**
     * When true, then anybody can access to the project. In that case
     * it's useless to store granted groups and users. The related
     * fields are empty.
     */
    public static final String FIELD_ALLOW_ANYONE = "allowAnyone";

    private final UserSession userSession;

```

```

public AuthorizationTypeSupport(UserSession userSession) {
    this.userSession = userSession;
}

/**
 * @return the identifier of the Elasticsearch type (including it's index name), that corresponds to a certain
document type
 */
public static IndexType getAuthorizationIndexType(IndexType indexType) {
    requireNonNull(indexType);
    requireNonNull(indexType.getIndex());
    checkArgument(!AuthorizationTypeSupport.TYPE_AUTHORIZATION.equals(indexType.getType()),
"Authorization types do not have authorization on their own.");
    return new IndexType(indexType.getIndex(), AuthorizationTypeSupport.TYPE_AUTHORIZATION);
}

/**
 * Creates a type that requires to verify that user has the read permission
 * when searching for documents.
 * It relies on a parent type named "authorization" that is automatically
 * populated by { @link org.sonar.server.permission.index.PermissionIndexer }.
 *
 * Both types { @code typeName } and "authorization" are created. Documents
 * must be created with _parent and _routing having the parent uuid as values.
 *
 * @see NewIndex.NewIndexType#requireProjectAuthorization()
 */
public static NewIndex.NewIndexType enableProjectAuthorization(NewIndex.NewIndexType type) {
    type.setAttribute("_parent", ImmutableMap.of("type", TYPE_AUTHORIZATION));
    type.setAttribute("_routing", ImmutableMap.of("required", true));

    NewIndex.NewIndexType authType = type.getIndex().createType(TYPE_AUTHORIZATION);
    authType.setAttribute("_routing", ImmutableMap.of("required", true));
    authType.createLongField(FIELD_GROUP_IDS);
    authType.createLongField(FIELD_USER_IDS);
    authType.createBooleanField(FIELD_ALLOW_ANYONE);
    authType.setEnableSource(false);
    return type;
}

/**
 * Build a filter to restrict query to the documents on which
 * user has read access.
 */
public QueryBuilder createQueryFilter() {
    if (userSession.isRoot()) {
        return QueryBuilders.matchAllQuery();
    }
}

```

```

Integer userId = userSession.getUserId();
BoolQueryBuilder filter = boolQuery();

// anyone
filter.should(QueryBuilders.termQuery(FIELD_ALLOW_ANYONE, true));

// users
Optional.ofNullable(userId)
    .map(Integer::longValue)
    .ifPresent(id -> filter.should(termQuery(FIELD_USER_IDS, id)));

// groups
userSession.getGroups()
    .stream()
    .map(GroupDto::getId)
    .forEach(groupId -> filter.should(termQuery(FIELD_GROUP_IDS, groupId)));

return JoinQueryBuilders.hasParentQuery(
    TYPE_AUTHORIZATION,
    QueryBuilders.boolQuery().filter(filter),
    false);
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.index;

import com.google.common.annotations.VisibleForTesting;
import java.util.Arrays;
import java.util.Collection;

```

```

import java.util.HashMap;
import java.util.List;
import java.util.Map;
import java.util.Set;
import java.util.stream.Collectors;
import java.util.stream.Stream;
import org.elasticsearch.action.index.IndexRequest;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.es.EsQueueDto;
import org.sonar.server.es.BulkIndexer;
import org.sonar.server.es.BulkIndexer.Size;
import org.sonar.server.es.EsClient;
import org.sonar.server.es.IndexType;
import org.sonar.server.es.IndexingResult;
import org.sonar.server.es.OneToOneResilientIndexingListener;
import org.sonar.server.es.ProjectIndexer;
import org.sonar.server.permission.index.PermissionIndexerDao.Dto;

import static java.util.Collections.emptyList;
import static org.sonar.core.util.stream.MoreCollectors.toArrayList;
import static org.sonar.core.util.stream.MoreCollectors.toSet;

/**
 * Populates the types "authorization" of each index requiring project
 * authorization.
 */
public class PermissionIndexer implements ProjectIndexer {

    private final DbClient dbClient;
    private final EsClient esClient;
    private final Collection<AuthorizationScope> authorizationScopes;
    private final Set<IndexType> indexTypes;

    public PermissionIndexer(DbClient dbClient, EsClient esClient, NeedAuthorizationIndexer...
needAuthorizationIndexers) {
        this(dbClient, esClient, Arrays.stream(needAuthorizationIndexers)
            .map(NeedAuthorizationIndexer::getAuthorizationScope)
            .collect(MoreCollectors.toList(needAuthorizationIndexers.length)));
    }

    @VisibleForTesting
    public PermissionIndexer(DbClient dbClient, EsClient esClient, Collection<AuthorizationScope>
authorizationScopes) {
        this.dbClient = dbClient;
        this.esClient = esClient;
        this.authorizationScopes = authorizationScopes;
    }

```

```

    this.indexTypes = authorizationScopes.stream()
        .map(AuthorizationScope::getIndexType)
        .collect(toSet(authorizationScopes.size()));
}

@Override
public Set<IndexType> getIndexTypes() {
    return indexTypes;
}

@Override
public void indexOnStartup(Set<IndexType> uninitializedIndexTypes) {
    // TODO do not load everything in memory. Db rows should be scrolled.
    List<Dto> authorizations = getAllAuthorizations();
    Stream<AuthorizationScope> scopes = getScopes(uninitializedIndexTypes);
    index(authorizations, scopes, Size.LARGE);
}

@Override
public void index(List<Dto> authorizations) {
    index(authorizations, authorizationScopes.stream(), Size.REGULAR);
}

@Override
public void indexOnAnalysis(String branchUuid) {
    // nothing to do, permissions don't change during an analysis
}

@Override
public Collection<EsQueueDto> prepareForRecovery(DbSession dbSession, Collection<String> projectUuids,
ProjectIndexer.Cause cause) {
    switch (cause) {
        case MEASURE_CHANGE:
        case PROJECT_KEY_UPDATE:
        case PROJECT_TAGS_UPDATE:
            // nothing to change. Measures, project key and tags are not part of this index
            return emptyList();

        case PROJECT_CREATION:
        case PROJECT_DELETION:
        case PERMISSION_CHANGE:
            return insertIntoEsQueue(dbSession, projectUuids);

        default:
            // defensive case
            throw new IllegalStateException("Unsupported cause: " + cause);
    }
}
}

```



```

private Collection<EsQueueDto> insertIntoEsQueue(DbSession dbSession, Collection<String> projectUids) {
    List<EsQueueDto> items = indexTypes.stream()
        .flatMap(indexType -> projectUids.stream().map(projectUuid -> EsQueueDto.create(indexType.format(),
projectUuid, null, projectUuid)))
        .collect(toArrayList());

    dbClient.esQueueDao().insert(dbSession, items);
    return items;
}

private void index(Collection<PermissionIndexerDao.Dto> authorizations, Stream<AuthorizationScope> scopes,
Size bulkSize) {
    if (authorizations.isEmpty()) {
        return;
    }

    // index each authorization in each scope
    scopes.forEach(scope -> {
        IndexType indexType = scope.getIndexType();

        BulkIndexer bulkIndexer = new BulkIndexer(esClient, indexType, bulkSize);
        bulkIndexer.start();

        authorizations.stream()
            .filter(scope.getProjectPredicate())
            .map(dto -> newIndexRequest(dto, indexType))
            .forEach(bulkIndexer::add);

        bulkIndexer.stop();
    });
}

@Override
public IndexingResult index(DbSession dbSession, Collection<EsQueueDto> items) {
    IndexingResult result = new IndexingResult();

    List<BulkIndexer> bulkIndexers = items.stream()
        .map(EsQueueDto::getDocType)
        .distinct()
        .map(IndexType::parse)
        .filter(indexTypes::contains)
        .map(indexType -> new BulkIndexer(esClient, indexType, Size.REGULAR, new
OneToOneResilientIndexingListener(dbClient, dbSession, items)))
        .collect(Collectors.toList());

    if (bulkIndexers.isEmpty()) {
        return result;
    }
}

```

```

    }

    bulkIndexers.forEach(BulkIndexer::start);

    PermissionIndexerDao permissionIndexerDao = new PermissionIndexerDao();
    Set<String> remainingProjectUuids =
items.stream().map(EsQueueDto::getDocId).collect(MoreCollectors.toHashSet());
    permissionIndexerDao.selectByUuids(dbClient, dbSession, remainingProjectUuids).forEach(p -> {
        remainingProjectUuids.remove(p.getProjectUuid());
        bulkIndexers.forEach(bi -> bi.add(new IndexRequest(p, bi.getIndexType())));
    });

    // the remaining references on projects that don't exist in db. They must
    // be deleted from index.
    remainingProjectUuids.forEach(projectUuid -> bulkIndexers.forEach(bi -> bi.addDeletion(bi.getIndexType(),
projectUuid, projectUuid)));

    bulkIndexers.forEach(b -> result.add(b.stop()));

    return result;
}

private static IndexRequest newIndexRequest(PermissionIndexerDao.Dto dto, IndexType indexType) {
    Map<String, Object> doc = new HashMap<>();
    if (dto.isAllowAnyone()) {
        doc.put(AuthorizationTypeSupport.FIELD_ALLOW_ANYONE, true);
        // no need to feed users and groups
    } else {
        doc.put(AuthorizationTypeSupport.FIELD_ALLOW_ANYONE, false);
        doc.put(AuthorizationTypeSupport.FIELD_GROUP_IDS, dto.getGroupIds());
        doc.put(AuthorizationTypeSupport.FIELD_USER_IDS, dto.getUserIds());
    }
    return new IndexRequest(indexType.getIndex(), indexType.getType())
        .id(dto.getProjectUuid())
        .routing(dto.getProjectUuid())
        .source(doc);
}

private Stream<AuthorizationScope> getScopes(Set<IndexType> indexTypes) {
    return authorizationScopes.stream()
        .filter(scope -> indexTypes.contains(scope.getIndexType()));
}

private List<Dto> getAllAuthorizations() {
    try (DbSession dbSession = dbClient.openSession(false)) {
        return new PermissionIndexerDao().selectAll(dbClient, dbSession);
    }
}
}

```

```

}
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 */
package org.sonar.server.permission;

import javax.annotation.concurrent.Immutable;
import org.sonar.db.component.ComponentDto;
import org.sonar.server.permission.ws.ProjectWsRef;

import static java.util.Objects.requireNonNull;

/**
 * Reference to a project by its db id or uuid. The field "id" should
 * be removed as soon as backend is fully based on uuids.
 *
 * @see ProjectWsRef
 */
@Immutable
public class ProjectId {

    private final long id;
    private final String uuid;
    private final boolean isPrivate;

    public ProjectId(ComponentDto project) {
        this.id = requireNonNull(project.getId());
        this.uuid = requireNonNull(project.uuid());
        this.isPrivate = project.isPrivate();
    }

    public long getId() {

```

```

    return id;
}

public String getUuid() {
    return uuid;
}

public boolean isPrivate() {
    return isPrivate;
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

import java.util.List;

import static org.apache.commons.lang.StringUtils.isNotBlank;
import static org.sonar.server.ws.WsUtils.checkRequest;

public class ApplyPermissionTemplateQuery {

    private final String templateUuid;
    private List<String> componentKeys;

    private ApplyPermissionTemplateQuery(String templateUuid, List<String> componentKeys) {
        this.templateUuid = templateUuid;
        this.componentKeys = componentKeys;
        validate();
    }
}

```

```

public static ApplyPermissionTemplateQuery create(String templateUuid, List<String> componentKeys) {
    return new ApplyPermissionTemplateQuery(templateUuid, componentKeys);
}

public String getTemplateUuid() {
    return templateUuid;
}

public List<String> getComponentKeys() {
    return componentKeys;
}

private void validate() {
    checkRequest(isNotBlank(templateUuid), "Permission template is mandatory");
    checkRequest(componentKeys != null && !componentKeys.isEmpty(), "No project provided. Please provide at
least one project.");
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission;

import java.util.Optional;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.core.permission.ProjectPermissions;

import static java.util.Objects.requireNonNull;
import static org.sonar.server.ws.WsUtils.checkRequest;

```

```

public abstract class PermissionChange {

    public enum Operation {
        ADD, REMOVE
    }

    private final Operation operation;
    private final String organizationUuid;
    private final String permission;
    private final ProjectId projectId;

    public PermissionChange(Operation operation, String organizationUuid, String permission, @Nullable ProjectId
projectId) {
        this.operation = requireNonNull(operation);
        this.organizationUuid = requireNonNull(organizationUuid);
        this.permission = requireNonNull(permission);
        this.projectId = projectId;
        if (projectId == null) {
            checkRequest(GlobalPermissions.ALL.contains(permission), "Invalid global permission '%s'. Valid values are
%s", permission, GlobalPermissions.ALL);
        } else {
            checkRequest(ProjectPermissions.ALL.contains(permission), "Invalid project permission '%s'. Valid values are
%s", permission, ProjectPermissions.ALL);
        }
    }

    public Operation getOperation() {
        return operation;
    }

    public String getOrganizationUuid() {
        return organizationUuid;
    }

    public String getPermission() {
        return permission;
    }

    public Optional<ProjectId> getProjectId() {
        return Optional.ofNullable(projectId);
    }

    /**
     * Shortcut based on {@link #getProjectId()}
     */
    @CheckForNull
    public String getProjectUuid() {
        return projectId == null ? null : projectId.getUuid();
    }
}

```

```

}

/**
 * Shortcut based on {@link #getProjectId()}
 */
@CheckForNull
public Long getNullableProjectId() {
    return projectId == null ? null : projectId.getId();
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

import java.util.Optional;
import org.sonar.api.web.UserRole;
import org.sonar.db.permission.OrganizationPermission;
import org.sonar.server.user.UserSession;

import static org.sonar.server.user.AbstractUserSession.insufficientPrivilegesException;

public class PermissionPrivilegeChecker {
    private PermissionPrivilegeChecker() {
        // static methods only
    }

    public static void checkGlobalAdmin(UserSession userSession, String organizationUuid) {
        userSession
            .checkLoggedIn()
            .checkPermission(OrganizationPermission.ADMINISTER, organizationUuid);
    }
}

```

```

/**
 * Checks that user is administrator of the specified project, or of the specified organization if project is not
 * defined.
 * @throws org.sonar.server.exceptions.ForbiddenException if user is not administrator
 */
public static void checkProjectAdmin(UserSession userSession, String organizationUuid, Optional<ProjectId>
projectId) {
    userSession.checkLoggedIn();

    if (userSession.hasPermission(OrganizationPermission.ADMINISTER, organizationUuid)) {
        return;
    }

    if (projectId.isPresent()) {
        userSession.checkComponentUuidPermission(UserRole.ADMIN, projectId.get().getUuid());
    } else {
        throw insufficientPrivilegesException();
    }
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

import javax.annotation.Nullable;

import static java.util.Objects.requireNonNull;

public class UserPermissionChange extends PermissionChange {

```



```

private final UserId userId;

public UserPermissionChange(Operation operation, String organizationUuid, String permission, @Nullable
ProjectId projectId,
    UserId userId) {
    super(operation, organizationUuid, permission, projectId);
    this.userId = requireNonNull(userId);
}

public UserId getUserId() {
    return userId;
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

import java.text.MessageFormat;
import java.util.ArrayList;
import java.util.Collection;
import java.util.Iterator;
import java.util.List;
import java.util.Set;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;
import org.apache.commons.lang.StringUtils;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.server.ServerSide;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;

```

```

import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.DefaultTemplates;
import org.sonar.db.permission.GroupPermissionDto;
import org.sonar.db.permission.OrganizationPermission;
import org.sonar.db.permission.UserPermissionDto;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateGroupDto;
import org.sonar.db.permission.template.PermissionTemplateUserDto;
import org.sonar.server.es.ProjectIndexer;
import org.sonar.server.es.ProjectIndexers;
import org.sonar.server.permission.ws.template.DefaultTemplatesResolver;
import org.sonar.server.permission.ws.template.DefaultTemplatesResolverImpl;
import org.sonar.server.user.UserSession;

import static com.google.common.base.Preconditions.checkNotNull;
import static java.lang.String.format;
import static java.util.Arrays.asList;
import static java.util.Collections.singletonList;
import static org.sonar.api.security.DefaultGroups.isAnyone;

@ServerSide
public class PermissionTemplateService {

    private final DbClient dbClient;
    private final ProjectIndexers projectIndexers;
    private final UserSession userSession;
    private final DefaultTemplatesResolver defaultTemplatesResolver;

    public PermissionTemplateService(DbClient dbClient, ProjectIndexers projectIndexers, UserSession userSession,
        DefaultTemplatesResolver defaultTemplatesResolver) {
        this.dbClient = dbClient;
        this.projectIndexers = projectIndexers;
        this.userSession = userSession;
        this.defaultTemplatesResolver = defaultTemplatesResolver;
    }

    public boolean wouldUserHaveScanPermissionWithDefaultTemplate(DbSession dbSession,
        String organizationUuid, @Nullable Integer userId,
        String projectKey, String qualifier) {
        if (userSession.hasPermission(OrganizationPermission.SCAN, organizationUuid)) {
            return true;
        }

        ComponentDto dto = new
        ComponentDto().setOrganizationUuid(organizationUuid).setDbKey(projectKey).setQualifier(qualifier);
        PermissionTemplateDto template = findTemplate(dbSession, organizationUuid, dto);
        if (template == null) {

```

```

    return false;
}

List<String> potentialPermissions =
dbClient.permissionTemplateDao().selectPotentialPermissionsByUserIdAndTemplateId(dbSession, userId,
template.getId());
return potentialPermissions.contains(OrganizationPermission.SCAN.getKey());
}

/**
 * Apply a permission template to a set of projects. Authorization to administrate these projects
 * is not verified. The projects must exist, so the "project creator" permissions defined in the
 * template are ignored.
 */
public void applyAndCommit(DbSession dbSession, PermissionTemplateDto template,
Collection<ComponentDto> projects) {
    if (projects.isEmpty()) {
        return;
    }

    for (ComponentDto project : projects) {
        copyPermissions(dbSession, template, project, null);
    }
    projectIndexers.commitAndIndex(dbSession, projects, ProjectIndexer.Cause.PERMISSION_CHANGE);
}

/**
 * Apply the default permission template to project. The project can already exist (so it has permissions) or
 * can be provisioned (so has no permissions yet).
 * @param projectCreatorUserId id of the user who creates the project, only if project is provisioned. He will
 */
public void applyDefault(DbSession dbSession, String organizationUuid, ComponentDto component, @Nullable
Integer projectCreatorUserId) {
    PermissionTemplateDto template = findTemplate(dbSession, organizationUuid, component);
    checkArgument(template != null, "Cannot retrieve default permission template");
    copyPermissions(dbSession, template, component, projectCreatorUserId);
}

public boolean hasDefaultTemplateWithPermissionOnProjectCreator(DbSession dbSession, String
organizationUuid, ComponentDto component) {
    PermissionTemplateDto template = findTemplate(dbSession, organizationUuid, component);
    return hasProjectCreatorPermission(dbSession, template);
}

private boolean hasProjectCreatorPermission(DbSession dbSession, @Nullable PermissionTemplateDto template)
{
    return template != null && dbClient.permissionTemplateCharacteristicDao().selectByTemplateIds(dbSession,
singletonList(template.getId())).stream()

```

```

        .anyMatch(PermissionTemplateCharacteristicDto::getWithProjectCreator);
    }

    private void copyPermissions(DbSession dbSession, PermissionTemplateDto template, ComponentDto project,
    @Nullable Integer projectCreatorUserId) {
        dbClient.groupPermissionDao().deleteByRootComponentId(dbSession, project.getId());
        dbClient.userPermissionDao().deleteProjectPermissions(dbSession, project.getId());

        List<PermissionTemplateUserDto> usersPermissions =
        dbClient.permissionTemplateDao().selectUserPermissionsByTemplateId(dbSession, template.getId());
        String organizationUuid = template.getOrganizationUuid();
        usersPermissions
            .stream()
            .filter(up -> permissionValidForProject(project, up.getPermission()))
            .forEach(up -> {
                UserPermissionDto dto = new UserPermissionDto(organizationUuid, up.getPermission(), up.getUserId(),
                project.getId());
                dbClient.userPermissionDao().insert(dbSession, dto);
            });

        List<PermissionTemplateGroupDto> groupsPermissions =
        dbClient.permissionTemplateDao().selectGroupPermissionsByTemplateId(dbSession, template.getId());
        groupsPermissions
            .stream()
            .filter(gp -> groupNameValidForProject(project, gp.getGroupName()))
            .filter(gp -> permissionValidForProject(project, gp.getPermission()))
            .forEach(gp -> {
                GroupPermissionDto dto = new GroupPermissionDto()
                    .setOrganizationUuid(organizationUuid)
                    .setGroupId(isAnyone(gp.getGroupName()) ? null : gp.getGroupId())
                    .setRole(gp.getPermission())
                    .setResourceId(project.getId());
                dbClient.groupPermissionDao().insert(dbSession, dto);
            });

        List<PermissionTemplateCharacteristicDto> characteristics =
        dbClient.permissionTemplateCharacteristicDao().selectByTemplateIds(dbSession, asList(template.getId()));
        if (projectCreatorUserId != null) {
            Set<String> permissionsForCurrentUserAlreadyInDb = usersPermissions.stream()
                .filter(userPermission -> projectCreatorUserId.equals(userPermission.getUserId()))
                .map(PermissionTemplateUserDto::getPermission)
                .collect(java.util.stream.Collectors.toSet());
            characteristics.stream()
                .filter(PermissionTemplateCharacteristicDto::getWithProjectCreator)
                .filter(up -> permissionValidForProject(project, up.getPermission()))
                .filter(characteristic -> !permissionsForCurrentUserAlreadyInDb.contains(characteristic.getPermission()))
                .forEach(c -> {
                    UserPermissionDto dto = new UserPermissionDto(organizationUuid, c.getPermission(), projectCreatorUserId,

```

```

project.getId());
    dbClient.userPermissionDao().insert(dbSession, dto);
    });
}
}

private static boolean permissionValidForProject(ComponentDto project, String permission) {
    return project.isPrivate() || !ProjectPermissions.PUBLIC_PERMISSIONS.contains(permission);
}

private static boolean groupNameValidForProject(ComponentDto project, String groupName) {
    return !project.isPrivate() || !isAnyone(groupName);
}

/**
 * Return the permission template for the given component. If no template key pattern match then consider default
 * template for the component qualifier.
 */
@CheckForNull
private PermissionTemplateDto findTemplate(DbSession dbSession, String organizationUuid, ComponentDto
component) {
    List<PermissionTemplateDto> allPermissionTemplates = dbClient.permissionTemplateDao().selectAll(dbSession,
organizationUuid, null);
    List<PermissionTemplateDto> matchingTemplates = new ArrayList<>();
    for (PermissionTemplateDto permissionTemplateDto : allPermissionTemplates) {
        String keyPattern = permissionTemplateDto.getKeyPattern();
        if (StringUtils.isNotBlank(keyPattern) && component.getDbKey().matches(keyPattern)) {
            matchingTemplates.add(permissionTemplateDto);
        }
    }
    checkAtMostOneMatchForComponentKey(component.getDbKey(), matchingTemplates);
    if (matchingTemplates.size() == 1) {
        return matchingTemplates.get(0);
    }

    DefaultTemplates defaultTemplates = dbClient.organizationDao().getDefaultTemplates(dbSession,
organizationUuid)
        .orElseThrow(() -> new IllegalStateException(
            format("No Default templates defined for organization with uuid '%s'", organizationUuid)));

    String qualifier = component.qualifier();
    DefaultTemplatesResolverImpl.ResolvedDefaultTemplates resolvedDefaultTemplates =
defaultTemplatesResolver.resolve(defaultTemplates);
    switch (qualifier) {
        case Qualifiers.PROJECT:
            return dbClient.permissionTemplateDao().selectByUuid(dbSession, resolvedDefaultTemplates.getProject());
        case Qualifiers.VIEW:
        case Qualifiers.APP:
    }
}

```

```

String viewDefaultTemplateUuid = resolvedDefaultTemplates.getView().orElseThrow(
    () -> new IllegalStateException("Attempt to create a view when Governance plugin is not installed"));
return dbClient.permissionTemplateDao().selectByUuid(dbSession, viewDefaultTemplateUuid);
default:
    throw new IllegalArgumentException(format("Qualifier '%s' is not supported", qualifier));
}
}

private static void checkAtMostOneMatchForComponentKey(String componentKey,
List<PermissionTemplateDto> matchingTemplates) {
    if (matchingTemplates.size() > 1) {
        StringBuilder templatesNames = new StringBuilder();
        for (Iterator<PermissionTemplateDto> it = matchingTemplates.iterator(); it.hasNext();) {
            templatesNames.append("").append(it.next().getName()).append("\n");
            if (it.hasNext()) {
                templatesNames.append(", ");
            }
        }
        throw new IllegalStateException(MessageFormat.format(
            "The \"{0}\" key matches multiple permission templates: {1}."
            + " A system administrator must update these templates so that only one of them matches the key.",
            componentKey,
            templatesNames.toString()));
    }
}

}

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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

```

```

import java.util.List;
import java.util.Optional;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.UserPermissionDto;

import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.server.permission.PermissionChange.Operation.ADD;
import static org.sonar.server.permission.PermissionChange.Operation.REMOVE;
import static org.sonar.server.ws.WsUtils.checkRequest;

/**
 * Adds and removes user permissions. Both global and project scopes are supported.
 */
public class UserPermissionChanger {

    private final DbClient dbClient;

    public UserPermissionChanger(DbClient dbClient) {
        this.dbClient = dbClient;
    }

    public boolean apply(DbSession dbSession, UserPermissionChange change) {
        ensureConsistencyWithVisibility(change);
        if (isImplicitlyAlreadyDone(change)) {
            return false;
        }
        switch (change.getOperation()) {
            case ADD:
                return addPermission(dbSession, change);
            case REMOVE:
                return removePermission(dbSession, change);
            default:
                throw new UnsupportedOperationException("Unsupported permission change: " + change.getOperation());
        }
    }

    private static boolean isImplicitlyAlreadyDone(UserPermissionChange change) {
        return change.getProjectId()
            .map(projectId -> isImplicitlyAlreadyDone(projectId, change))
            .orElse(false);
    }

    private static boolean isImplicitlyAlreadyDone(ProjectId projectId, UserPermissionChange change) {
        return isAttemptToAddPublicPermissionToPublicComponent(change, projectId);
    }

```

```

private static boolean isAttemptToAddPublicPermissionToPublicComponent(UserPermissionChange change,
ProjectId projectId) {
    return !projectId.isPrivate()
        && change.getOperation() == ADD
        && ProjectPermissions.PUBLIC_PERMISSIONS.contains(change.getPermission());
}

private static void ensureConsistencyWithVisibility(UserPermissionChange change) {
    change.getProjectId()
        .ifPresent(projectId -> checkRequest(
            !isAttemptToRemovePublicPermissionFromPublicComponent(change, projectId),
            "Permission %s can't be removed from a public component", change.getPermission()));
}

private static boolean isAttemptToRemovePublicPermissionFromPublicComponent(UserPermissionChange
change, ProjectId projectId) {
    return !projectId.isPrivate()
        && change.getOperation() == REMOVE
        && ProjectPermissions.PUBLIC_PERMISSIONS.contains(change.getPermission());
}

private boolean addPermission(DbSession dbSession, UserPermissionChange change) {
    if (loadExistingPermissions(dbSession, change).contains(change.getPermission())) {
        return false;
    }
    UserPermissionDto dto = new UserPermissionDto(change.getOrganizationUuid(), change.getPermission(),
change.getUserId().getId(), change.getNullableProjectId());
    dbClient.userPermissionDao().insert(dbSession, dto);
    return true;
}

private boolean removePermission(DbSession dbSession, UserPermissionChange change) {
    if (!loadExistingPermissions(dbSession, change).contains(change.getPermission())) {
        return false;
    }
    checkOtherAdminsExist(dbSession, change);
    Optional<ProjectId> projectId = change.getProjectId();
    if (projectId.isPresent()) {
        dbClient.userPermissionDao().deleteProjectPermission(dbSession, change.getUserId().getId(),
change.getPermission(), projectId.get().getId());
    } else {
        dbClient.userPermissionDao().deleteGlobalPermission(dbSession, change.getUserId().getId(),
change.getPermission(), change.getOrganizationUuid());
    }
    return true;
}

private List<String> loadExistingPermissions(DbSession dbSession, UserPermissionChange change) {

```



```

Optional<ProjectId> projectId = change.getProjectId();
if (projectId.isPresent()) {
    return dbClient.userPermissionDao().selectProjectPermissionsOfUser(dbSession,
        change.getUserId().getId(),
        projectId.get().getId());
}
return dbClient.userPermissionDao().selectGlobalPermissionsOfUser(dbSession,
    change.getUserId().getId(),
    change.getOrganizationUuid());
}

private void checkOtherAdminsExist(DbSession dbSession, UserPermissionChange change) {
    if (SYSTEM_ADMIN.equals(change.getPermission()) && !change.getProjectId().isPresent()) {
        int remaining =
dbClient.authorizationDao().countUsersWithGlobalPermissionExcludingUserPermission(dbSession,
    change.getOrganizationUuid(), change.getPermission(), change.getUserId().getId());
        checkRequest(remaining > 0, "Last user with permission '%s'. Permission cannot be removed.",
SYSTEM_ADMIN);
    }
}
}
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission;

import javax.annotation.concurrent.Immutable;
import org.sonar.db.user.UserDto;

import static java.util.Objects.requireNonNull;

/**

```

```

* Reference a user by his technical (db) id or functional login.
* This is temporary class as long as services and DAOs do not
* use only technical id.
*/
@Immutable
public class UserId {

    private final int id;
    private final String login;

    public UserId(int userId, String login) {
        this.id = userId;
        this.login = requireNonNull(login);
    }

    public int getId() {
        return id;
    }

    public String getLogin() {
        return login;
    }

    public static UserId from(UserDto dto) {
        return new UserId(dto.getId(), dto.getLogin());
    }
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission;

```

```

import java.util.List;
import java.util.Optional;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.permission.GroupPermissionDto;

import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.server.permission.PermissionChange.Operation.ADD;
import static org.sonar.server.permission.PermissionChange.Operation.REMOVE;
import static org.sonar.server.permission.ws.PermissionRequestValidator.validateNotAnyoneAndAdminPermission;
import static org.sonar.server.ws.WsUtils.checkRequest;

public class GroupPermissionChanger {

    private final DbClient dbClient;

    public GroupPermissionChanger(DbClient dbClient) {
        this.dbClient = dbClient;
    }

    public boolean apply(DbSession dbSession, GroupPermissionChange change) {
        ensureConsistencyWithVisibility(change);
        if (isImplicitlyAlreadyDone(change)) {
            return false;
        }
        switch (change.getOperation()) {
            case ADD:
                return addPermission(dbSession, change);
            case REMOVE:
                return removePermission(dbSession, change);
            default:
                throw new UnsupportedOperationException("Unsupported permission change: " + change.getOperation());
        }
    }

    private static boolean isImplicitlyAlreadyDone(GroupPermissionChange change) {
        return change.getProjectId()
            .map(projectId -> isImplicitlyAlreadyDone(projectId, change))
            .orElse(false);
    }

    private static boolean isImplicitlyAlreadyDone(ProjectId projectId, GroupPermissionChange change) {
        return isAttemptToAddPublicPermissionToPublicComponent(change, projectId)
            || isAttemptToRemovePermissionFromAnyoneOnPrivateComponent(change, projectId);
    }

    private static boolean isAttemptToAddPublicPermissionToPublicComponent(GroupPermissionChange change,

```

```

ProjectId projectId) {
    return !projectId.isPrivate()
        && change.getOperation() == ADD
        && ProjectPermissions.PUBLIC_PERMISSIONS.contains(change.getPermission());
}

private static boolean isAttemptToRemovePermissionFromAnyoneOnPrivateComponent(GroupPermissionChange
change, ProjectId projectId) {
    return projectId.isPrivate()
        && change.getOperation() == REMOVE
        && change.getGroupIdOrAnyone().isAnyone();
}

private static void ensureConsistencyWithVisibility(GroupPermissionChange change) {
    change.getProjectId()
        .ifPresent(projectId -> {
            checkRequest(
                isAttemptToAddPermissionToAnyoneOnPrivateComponent(change, projectId),
                "No permission can be granted to Anyone on a private component");
            checkRequest(
                isAttemptToRemovePublicPermissionFromPublicComponent(change, projectId),
                "Permission %s can't be removed from a public component", change.getPermission());
        });
}

private static boolean isAttemptToAddPermissionToAnyoneOnPrivateComponent(GroupPermissionChange
change, ProjectId projectId) {
    return projectId.isPrivate()
        && change.getOperation() == ADD
        && change.getGroupIdOrAnyone().isAnyone();
}

private static boolean isAttemptToRemovePublicPermissionFromPublicComponent(GroupPermissionChange
change, ProjectId projectId) {
    return !projectId.isPrivate()
        && change.getOperation() == REMOVE
        && ProjectPermissions.PUBLIC_PERMISSIONS.contains(change.getPermission());
}

private boolean addPermission(DbSession dbSession, GroupPermissionChange change) {
    if (loadExistingPermissions(dbSession, change).contains(change.getPermission())) {
        return false;
    }
}

validateNotAnyoneAndAdminPermission(change.getPermission(), change.getGroupIdOrAnyone());
GroupPermissionDto addedDto = new GroupPermissionDto()
    .setRole(change.getPermission())
    .setOrganizationUuid(change.getOrganizationUuid())

```

```

        .setGroupId(change.getGroupIdOrAnyone().getId())
        .setResourceId(change.getNullableProjectId());
dbClient.groupPermissionDao().insert(dbSession, addedDto);
return true;
}

private boolean removePermission(DbSession dbSession, GroupPermissionChange change) {
    if (!loadExistingPermissions(dbSession, change).contains(change.getPermission())) {
        return false;
    }
    checkIfRemainingGlobalAdministrators(dbSession, change);
    dbClient.groupPermissionDao().delete(dbSession,
        change.getPermission(),
        change.getOrganizationUuid(),
        change.getGroupIdOrAnyone().getId(),
        change.getNullableProjectId());
    return true;
}

private List<String> loadExistingPermissions(DbSession dbSession, GroupPermissionChange change) {
    Optional<ProjectId> projectId = change.getProjectId();
    if (projectId.isPresent()) {
        return dbClient.groupPermissionDao().selectProjectPermissionsOfGroup(dbSession,
            change.getOrganizationUuid(),
            change.getGroupIdOrAnyone().getId(),
            projectId.get().getId());
    }
    return dbClient.groupPermissionDao().selectGlobalPermissionsOfGroup(dbSession,
        change.getOrganizationUuid(),
        change.getGroupIdOrAnyone().getId());
}

private void checkIfRemainingGlobalAdministrators(DbSession dbSession, GroupPermissionChange change) {
    if (SYSTEM_ADMIN.equals(change.getPermission()) &&
        !change.getGroupIdOrAnyone().isAnyone() &&
        !change.getProjectId().isPresent()) {
        // removing global admin permission from group
        int remaining = dbClient.authorizationDao().countUsersWithGlobalPermissionExcludingGroup(dbSession,
            change.getOrganizationUuid(), SYSTEM_ADMIN, change.getGroupIdOrAnyone().getId());
        checkRequest(remaining > 0, "Last group with permission '%s'. Permission cannot be removed.",
SYSTEM_ADMIN);
    }
}

}
{
    "paging": {
        "pageIndex": 1,

```

```

"pageSize": 20,
"total": 3
},
"groups": [
  {
    "name": "Anyone",
    "permissions": [
      "scan"
    ]
  },
  {
    "name": "group-1-name",
    "description": "group-1-description",
    "permissions": [
      "scan"
    ]
  },
  {
    "name": "group-2-name",
    "description": "group-2-description",
    "permissions": [
      "scan"
    ]
  }
]
}
{
"projects": [],
"permissions": [
  {
    "key": "user",
    "name": "Browse",
    "description": "Ability to access a project, browse its measures, and create/edit issues for it."
  },
  {
    "key": "admin",
    "name": "Administer",
    "description": "Ability to access project settings and perform administration tasks. (Users will also need
\"Browse\" permission)"
  },
  {
    "key": "issueadmin",
    "name": "Administer Issues",
    "description": "Grants the permission to perform advanced editing on issues: marking an issue False Positive /
Won't Fix or changing an Issue's severity. (Users will also need \"Browse\" permission)"
  },
  {
    "key": "codeviewer",

```

```

    "name": "See Source Code",
    "description": "Ability to view the project's source code. (Users will also need \"Browse\" permission)"
  }
],
"paging": {
  "pageIndex": 1,
  "pageSize": 25,
  "total": 0
}
}
{
  "projects": [],
  "paging": {
    "pageIndex": 1,
    "pageSize": 25,
    "total": 0
  }
}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 20,
    "total": 2
  },
  "users": [
    {
      "login": "login-1",
      "name": "name-1",
      "email": "email-1",
      "permissions": [
        "scan"
      ]
    },
    {
      "login": "login-2",
      "name": "name-2",
      "email": "email-2",
      "permissions": [
        "scan"
      ]
    }
  ]
}
}
{
  "paging": {
    "pageIndex": 1,
    "pageSize": 20,
    "total": 2
  }
}

```

```

},
"users": [
  {
    "login": "admin",
    "name": "Administrator",
    "email": "admin@admin.com",
    "permissions": [
      "admin",
      "gateadmin",
      "profileadmin"
    ]
  },
  {
    "login": "george.orwell",
    "name": "George Orwell",
    "email": "george.orwell@1984.net",
    "permissions": [
      "scan"
    ]
  }
]
}
[
  {
    "key": "secret.secured",
    "value": "password"
  },
  {
    "key": "plugin.licenseHash.secured",
    "value": "987654321"
  },
  {
    "key": "foo",
    "value": "one"
  },
  {
    "key": "plugin.license.secured",
    "value": "ABCD"
  }
]
[
  {
    "key": "plugin.licenseHash.secured",
    "value": "987654321"
  },
  {
    "key": "foo",
    "value": "one"
  }
]

```



```
},
{
  "key": "plugin.license.secured",
  "value": "ABCD"
},
{
  "key": "commercial.plugin",
  "value": "ABCD"
}
]
[
  {
    "key": "foo",
    "value": "1",
    "values": [
      "1"
    ]
  },
  {
    "key": "foo.1.key",
    "value": "key1"
  },
  {
    "key": "foo.1.plugin.license.secured",
    "value": "ABCD"
  },
  {
    "key": "foo.1.secret.secured",
    "value": "123456"
  }
]
[
  {
    "key": "foo",
    "value": "1",
    "values": [
      "1"
    ]
  },
  {
    "key": "foo.1.key",
    "value": "key1"
  }
]
[
  {
    "key": "foo",
    "value": "one"
  }
]
```

```

}
]
/*
 * SonarQube
 * Copyright (C) 2009-2018 SonarSource SA
 * mailto:info AT sonarsource DOT com
 *
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

import java.util.List;
import javax.annotation.Nullable;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.utils.internal.AlwaysIncreasingSystem2;
import org.sonar.api.web.UserRole;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDbTester;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.es.ProjectIndexers;
import org.sonar.server.es.TestProjectIndexers;
import org.sonar.server.permission.ws.template.DefaultTemplatesResolverRule;
import org.sonar.server.testers.UserSessionRule;

import static java.util.Collections.singletonList;
import static org.assertj.core.api.Assertions.assertThat;

```

```

import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;

public class PermissionTemplateServiceTest {

    @Rule
    public ExpectedException throwable = ExpectedException.none();
    @Rule
    public DbTester dbTester = DbTester.create(new AlwaysIncreasingSystem2());
    @Rule
    public DefaultTemplatesResolverRule defaultTemplatesResolver =
    DefaultTemplatesResolverRule.withGovernance();

    private UserSessionRule userSession = UserSessionRule.standalone();
    private PermissionTemplateDbTester templateDb = dbTester.permissionTemplates();
    private DbSession session = dbTester.getSession();
    private ProjectIndexers projectIndexers = new TestProjectIndexers();

    private PermissionTemplateService underTest = new PermissionTemplateService(dbTester.getDbClient(),
    projectIndexers, userSession, defaultTemplatesResolver);

    @Test
    public void apply_does_not_insert_permission_to_group_AnyOne_when_applying_template_on_private_project()
    {
        OrganizationDto organization = dbTester.organizations().insert();
        ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
        PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
        dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, "p1");

        underTest.applyAndCommit(session, permissionTemplate, singletonList(privateProject));

        assertThat(selectProjectPermissionsOfGroup(organization, null, privateProject)).isEmpty();
    }

    @Test
    public void
    apply_default_does_not_insert_permission_to_group_AnyOne_when_applying_template_on_private_project() {
        OrganizationDto organization = dbTester.organizations().insert();
        ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
        UserDto creator = dbTester.users().insertUser();
        PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
        dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, "p1");
        dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

        underTest.applyDefault(session, organization.getUuid(), privateProject, creator.getId());

        assertThat(selectProjectPermissionsOfGroup(organization, null, privateProject)).isEmpty();
    }
}

```

```

}

@Test
public void
apply_inserts_permissions_to_group_AnyOne_but_USER_and_CODEVIEWER_when_applying_template_on_public_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, perm));
    dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, "p1");

    underTest.applyAndCommit(session, permissionTemplate, singletonList(publicProject));

    assertThat(selectProjectPermissionsOfGroup(organization, null, publicProject))
        .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void
applyDefault_inserts_permissions_to_group_AnyOne_but_USER_and_CODEVIEWER_when_applying_template_on_public_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, perm));
    dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, "p1");
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), publicProject, null);

    assertThat(selectProjectPermissionsOfGroup(organization, null, publicProject))
        .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void apply_inserts_any_permissions_to_group_when_applying_template_on_private_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, perm));
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, "p1");

    underTest.applyAndCommit(session, permissionTemplate, singletonList(privateProject));
}

```

```

    assertThat(selectProjectPermissionsOfGroup(organization, group, privateProject))
        .containsOnly("p1", UserRole.USER, UserRole.CODEVIEWER, UserRole.ADMIN, UserRole.ISSUE_ADMIN,
GlobalPermissions.SCAN_EXECUTION);
}

```

```
@Test
```

```

public void applyDefault_inserts_any_permissions_to_group_when_applying_template_on_private_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    GroupDto group = dbTester.users().insertGroup(organization);
    ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, perm));
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, "p1");
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);
}

```

```

underTest.applyDefault(session, organization.getUuid(), privateProject, null);

```

```

    assertThat(selectProjectPermissionsOfGroup(organization, group, privateProject))
        .containsOnly("p1", UserRole.USER, UserRole.CODEVIEWER, UserRole.ADMIN, UserRole.ISSUE_ADMIN,
GlobalPermissions.SCAN_EXECUTION);
}

```

```
@Test
```

```

public void
apply_inserts_permissions_to_group_but_USER_and_CODEVIEWER_when_applying_template_on_public_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, perm));
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, "p1");
}

```

```

underTest.applyAndCommit(session, permissionTemplate, singletonList(publicProject));

```

```

    assertThat(selectProjectPermissionsOfGroup(organization, group, publicProject))
        .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

```

```
@Test
```

```

public void
applyDefault_inserts_permissions_to_group_but_USER_and_CODEVIEWER_when_applying_template_on_public_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
}

```

```

ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
GroupDto group = dbTester.users().insertGroup(organization);
ProjectPermissions.ALL
    .forEach(perm -> dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, perm));
dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, "p1");
dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

underTest.applyDefault(session, organization.getUuid(), publicProject, null);

assertThat(selectProjectPermissionsOfGroup(organization, group, publicProject))
    .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void
apply_inserts_permissions_to_user_but_USER_and_CODEVIEWER_when_applying_template_on_public_project(
) {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
    UserDto user = dbTester.users().insertUser();
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, perm));
    dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, "p1");

    underTest.applyAndCommit(session, permissionTemplate, singletonList(publicProject));

    assertThat(selectProjectPermissionsOfUser(user, publicProject))
        .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void
applyDefault_inserts_permissions_to_user_but_USER_and_CODEVIEWER_when_applying_template_on_public_
project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
    UserDto user = dbTester.users().insertUser();
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, perm));
    dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, "p1");
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), publicProject, null);

    assertThat(selectProjectPermissionsOfUser(user, publicProject))
        .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

```

```

}

@Test
public void apply_inserts_any_permissions_to_user_when_applying_template_on_private_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
    UserDto user = dbTester.users().insertUser();
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, perm));
    dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, "p1");

    underTest.applyAndCommit(session, permissionTemplate, singletonList(privateProject));

    assertThat(selectProjectPermissionsOfUser(user, privateProject))
        .containsOnly("p1", UserRole.USER, UserRole.CODEVIEWER, UserRole.ADMIN, UserRole.ISSUE_ADMIN,
GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void applyDefault_inserts_any_permissions_to_user_when_applying_template_on_private_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
    UserDto user = dbTester.users().insertUser();
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, perm));
    dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, "p1");
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), privateProject, null);

    assertThat(selectProjectPermissionsOfUser(user, privateProject))
        .containsOnly("p1", UserRole.USER, UserRole.CODEVIEWER, UserRole.ADMIN, UserRole.ISSUE_ADMIN,
GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void
applyDefault_inserts_permissions_to_ProjectCreator_but_USER_and_CODEVIEWER_when_applying_template_o
n_public_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto publicProject = dbTester.components().insertPublicProject(organization);
    UserDto user = dbTester.users().insertUser();
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addProjectCreatorToTemplate(permissionTemplate, perm));
    dbTester.permissionTemplates().addProjectCreatorToTemplate(permissionTemplate, "p1");

```

```

dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

underTest.applyDefault(session, organization.getUuid(), publicProject, user.getId());

assertThat(selectProjectPermissionsOfUser(user, publicProject))
    .containsOnly("p1", UserRole.ADMIN, UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void
applyDefault_inserts_any_permissions_to_ProjectCreator_when_applying_template_on_private_project() {
    OrganizationDto organization = dbTester.organizations().insert();
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    ComponentDto privateProject = dbTester.components().insertPrivateProject(organization);
    UserDto user = dbTester.users().insertUser();
    ProjectPermissions.ALL
        .forEach(perm -> dbTester.permissionTemplates().addProjectCreatorToTemplate(permissionTemplate, perm));
    dbTester.permissionTemplates().addProjectCreatorToTemplate(permissionTemplate, "p1");
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), privateProject, user.getId());

    assertThat(selectProjectPermissionsOfUser(user, privateProject))
        .containsOnly("p1", UserRole.USER, UserRole.CODEVIEWER, UserRole.ADMIN, UserRole.ISSUE_ADMIN,
GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void apply_template_on_view() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto view = dbTester.components().insertView(organization);
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, ADMINISTER.getKey());
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group,
PROVISION_PROJECTS.getKey());
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), view, null);

    assertThat(selectProjectPermissionsOfGroup(organization, group, view))
        .containsOnly(ADMINISTER.getKey(), PROVISION_PROJECTS.getKey());
}

@Test
public void apply_default_template_on_view() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto view = dbTester.components().insertView(organization);

```



```

    PermissionTemplateDto projectPermissionTemplate =
dbTester.permissionTemplates().insertTemplate(organization);
    PermissionTemplateDto viewPermissionTemplate =
dbTester.permissionTemplates().insertTemplate(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    dbTester.permissionTemplates().addGroupToTemplate(viewPermissionTemplate, group,
ADMINISTER.getKey());
    dbTester.permissionTemplates().addGroupToTemplate(viewPermissionTemplate, group,
PROVISION_PROJECTS.getKey());
    dbTester.organizations().setDefaultTemplates(organization, projectPermissionTemplate.getUuid(),
viewPermissionTemplate.getUuid());

    underTest.applyDefault(session, organization.getUuid(), view, null);

    assertThat(selectProjectPermissionsOfGroup(organization, group, view))
        .containsOnly(ADMINISTER.getKey(), PROVISION_PROJECTS.getKey());
}

@Test
public void apply_project_default_template_on_view_when_no_view_default_template() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto view = dbTester.components().insertView(organization);
    PermissionTemplateDto projectPermissionTemplate =
dbTester.permissionTemplates().insertTemplate(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    dbTester.permissionTemplates().addGroupToTemplate(projectPermissionTemplate, group,
PROVISION_PROJECTS.getKey());
    dbTester.organizations().setDefaultTemplates(organization, projectPermissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), view, null);

    assertThat(selectProjectPermissionsOfGroup(organization, group,
view)).containsOnly(PROVISION_PROJECTS.getKey());
}

@Test
public void apply_template_on_applications() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto application = dbTester.components().insertApplication(organization);
    PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group, ADMINISTER.getKey());
    dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, group,
PROVISION_PROJECTS.getKey());
    dbTester.organizations().setDefaultTemplates(organization, permissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), application, null);
}

```

```

    assertThat(selectProjectPermissionsOfGroup(organization, group, application))
        .containsOnly(ADMINISTER.getKey(), PROVISION_PROJECTS.getKey());
}

@Test
public void apply_default_view_template_on_application() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto application = dbTester.components().insertApplication(organization);
    PermissionTemplateDto projectPermissionTemplate =
dbTester.permissionTemplates().insertTemplate(organization);
    PermissionTemplateDto viewPermissionTemplate =
dbTester.permissionTemplates().insertTemplate(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    dbTester.permissionTemplates().addGroupToTemplate(viewPermissionTemplate, group,
ADMINISTER.getKey());
    dbTester.permissionTemplates().addGroupToTemplate(viewPermissionTemplate, group,
PROVISION_PROJECTS.getKey());
    dbTester.organizations().setDefaultTemplates(organization, projectPermissionTemplate.getUuid(),
viewPermissionTemplate.getUuid());

    underTest.applyDefault(session, organization.getUuid(), application, null);

    assertThat(selectProjectPermissionsOfGroup(organization, group, application))
        .containsOnly(ADMINISTER.getKey(), PROVISION_PROJECTS.getKey());
}

@Test
public void apply_project_default_template_on_application_when_no_application_default_template() {
    OrganizationDto organization = dbTester.organizations().insert();
    ComponentDto application = dbTester.components().insertApplication(organization);
    PermissionTemplateDto projectPermissionTemplate =
dbTester.permissionTemplates().insertTemplate(organization);
    GroupDto group = dbTester.users().insertGroup(organization);
    dbTester.permissionTemplates().addGroupToTemplate(projectPermissionTemplate, group,
PROVISION_PROJECTS.getKey());
    dbTester.organizations().setDefaultTemplates(organization, projectPermissionTemplate.getUuid(), null);

    underTest.applyDefault(session, organization.getUuid(), application, null);

    assertThat(selectProjectPermissionsOfGroup(organization, group,
application)).containsOnly(PROVISION_PROJECTS.getKey());
}

@Test
public void apply_permission_template() {
    OrganizationDto organization = dbTester.organizations().insert();
    UserDto user = dbTester.users().insertUser();
    ComponentDto project = dbTester.components().insertPrivateProject(organization);

```

```

GroupDto adminGroup = dbTester.users().insertGroup(organization);
GroupDto userGroup = dbTester.users().insertGroup(organization);
dbTester.users().insertPermissionOnGroup(adminGroup, "admin");
dbTester.users().insertPermissionOnGroup(userGroup, "user");
dbTester.users().insertPermissionOnUser(organization, user, "admin");
PermissionTemplateDto permissionTemplate = dbTester.permissionTemplates().insertTemplate(organization);
dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, adminGroup, "admin");
dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, adminGroup, "issueadmin");
dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, userGroup, "user");
dbTester.permissionTemplates().addGroupToTemplate(permissionTemplate, userGroup, "codeviewer");
dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, "user");
dbTester.permissionTemplates().addAnyoneToTemplate(permissionTemplate, "codeviewer");
dbTester.permissionTemplates().addUserToTemplate(permissionTemplate, user, "admin");

assertThat(selectProjectPermissionsOfGroup(organization, adminGroup, project)).isEmpty();
assertThat(selectProjectPermissionsOfGroup(organization, userGroup, project)).isEmpty();
assertThat(selectProjectPermissionsOfGroup(organization, null, project)).isEmpty();
assertThat(selectProjectPermissionsOfUser(user, project)).isEmpty();

underTest.applyAndCommit(session, permissionTemplate, singletonList(project));

assertThat(selectProjectPermissionsOfGroup(organization, adminGroup, project)).containsOnly("admin",
"issueadmin");
assertThat(selectProjectPermissionsOfGroup(organization, userGroup, project)).containsOnly("user",
"codeviewer");
assertThat(selectProjectPermissionsOfGroup(organization, null, project)).isEmpty();
assertThat(selectProjectPermissionsOfUser(user, project)).containsOnly("admin");
}

private List<String> selectProjectPermissionsOfGroup(OrganizationDto organizationDto, @Nullable GroupDto
groupDto, ComponentDto project) {
return dbTester.getClient().groupPermissionDao().selectProjectPermissionsOfGroup(session,
organizationDto.getUuid(), groupDto != null ? groupDto.getId() : null, project.getId());
}

private List<String> selectProjectPermissionsOfUser(UserDto userDto, ComponentDto project) {
return dbTester.getClient().userPermissionDao().selectProjectPermissionsOfUser(session,
userDto.getId(), project.getId());
}

@Test
public void would_user_have_scan_permission_with_default_permission_template() {
OrganizationDto organization = dbTester.organizations().insert();
GroupDto group = dbTester.users().insertGroup(organization);
UserDto user = dbTester.users().insertUser();
dbTester.users().insertMember(group, user);
PermissionTemplateDto template = templateDb.insertTemplate(organization);
dbTester.organizations().setDefaultTemplates(template, null);

```

```

templateDb.addProjectCreatorToTemplate(template.getId(), SCAN_EXECUTION);
templateDb.addUserToTemplate(template.getId(), user.getId(), UserRole.USER);
templateDb.addGroupToTemplate(template.getId(), group.getId(), UserRole.CODEVIEWER);
templateDb.addGroupToTemplate(template.getId(), null, UserRole.ISSUE_ADMIN);

// authenticated user
checkWouldUserHaveScanPermission(organization, user.getId(), true);

// anonymous user
checkWouldUserHaveScanPermission(organization, null, false);
}

@Test
public void would_user_have_scan_permission_with_unknown_default_permission_template() {
    dbTester.organizations().setDefaultTemplates(dbTester.getDefaultOrganization(),
"UNKNOWN_TEMPLATE_UUID", null);

    checkWouldUserHaveScanPermission(dbTester.getDefaultOrganization(), null, false);
}

@Test
public void would_user_have_scan_permission_with_empty_template() {
    PermissionTemplateDto template = templateDb.insertTemplate(dbTester.getDefaultOrganization());
    dbTester.organizations().setDefaultTemplates(template, null);

    checkWouldUserHaveScanPermission(dbTester.getDefaultOrganization(), null, false);
}

private void checkWouldUserHaveScanPermission(OrganizationDto organization, @Nullable Integer userId,
boolean expectedResult) {
    assertThat(underTest.wouldUserHaveScanPermissionWithDefaultTemplate(session, organization.getUuid(),
userId, "PROJECT_KEY", Qualifiers.PROJECT))
        .isEqualTo(expectedResult);
}

}
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*/
```

```
package org.sonar.server.permission.ws;
```

```
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.security.DefaultGroups;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
```

```
import static java.lang.String.format;
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.server.ws.WebService.Param.PAGE;
import static org.sonar.api.server.ws.WebService.Param.PAGE_SIZE;
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.db.component.ComponentTesting.newPrivateProjectDto;
import static org.sonar.db.component.ComponentTesting.newView;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonar.test.JsonAssert.assertJson;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
```

```
public class GroupsActionTest extends BasePermissionWsTest<GroupsAction> {
```

```
    private GroupDto group1;
    private GroupDto group2;
    private GroupDto group3;
```

```
    @Override
    protected GroupsAction buildWsAction() {
        return new GroupsAction(
            db.getDbClient(),
```

```

    userSession,
    newPermissionWsSupport());
}

```

@Before

```

public void setUp() {
    OrganizationDto defOrg = db.getDefaultOrganization();
    group1 = db.users().insertGroup(defOrg, "group-1-name");
    group2 = db.users().insertGroup(defOrg, "group-2-name");
    group3 = db.users().insertGroup(defOrg, "group-3-name");
    db.users().insertPermissionOnGroup(group1, SCAN);
    db.users().insertPermissionOnGroup(group2, SCAN);
    db.users().insertPermissionOnGroup(group3, ADMINISTER);
    db.users().insertPermissionOnAnyone(defOrg, SCAN);
    db.commit();
}

```

@Test

```

public void search_for_groups_with_one_permission() {
    loginAsAdmin(db.getDefaultOrganization());

    String json = newRequest()
        .setParam(PARAM_PERMISSION, SCAN.getKey())
        .execute()
        .getInput();
    assertJson(json).isSimilarTo("{\n" +
        "  \"paging\": {\n" +
        "    \"pageIndex\": 1,\n" +
        "    \"pageSize\": 20,\n" +
        "    \"total\": 3\n" +
        "  },\n" +
        "  \"groups\": [\n" +
        "    {\n" +
        "      \"name\": \"Anyone\",\n" +
        "      \"permissions\": [\n" +
        "        \"scan\"\n" +
        "      ]\n" +
        "    },\n" +
        "    {\n" +
        "      \"name\": \"group-1-name\",\n" +
        "      \"description\": \"\" + group1.getDescription() + "\",\n" +
        "      \"permissions\": [\n" +
        "        \"scan\"\n" +
        "      ]\n" +
        "    },\n" +
        "    {\n" +
        "      \"name\": \"group-2-name\",\n" +
        "      \"description\": \"\" + group2.getDescription() + "\",\n" +

```

```

        "  \"permissions\": [\n" +
        "    \"scan\"\n" +
        "  ]\n" +
        " }\n" +
        " ]\n" +
        " }\n");
    }

    @Test
    public void search_with_selection() {
        loginAsAdmin(db.getDefaultOrganization());
        String result = newRequest()
            .setParam(PARAM_PERMISSION, SCAN.getKey())
            .execute()
            .getInput();

        assertThat(result).containsSubsequence(DefaultGroups.ANYONE, "group-1", "group-2");
    }

    @Test
    public void search_groups_with_pagination() {
        loginAsAdmin(db.getDefaultOrganization());
        String result = newRequest()
            .setParam(PARAM_PERMISSION, SCAN.getKey())
            .setParam(PAGE_SIZE, "1")
            .setParam(PAGE, "3")
            .execute()
            .getInput();

        assertThat(result).contains("group-2")
            .doesNotContain("group-1")
            .doesNotContain("group-3");
    }

    @Test
    public void search_groups_with_query() {
        loginAsAdmin(db.getDefaultOrganization());
        String result = newRequest()
            .setParam(PARAM_PERMISSION, SCAN.getKey())
            .setParam(TEXT_QUERY, "group-")
            .execute()
            .getInput();

        assertThat(result)
            .contains("group-1", "group-2")
            .doesNotContain(DefaultGroups.ANYONE);
    }
}

```

```

@Test
public void search_groups_with_project_permissions() {
    OrganizationDto organizationDto = db.getDefaultOrganization();
    ComponentDto project = db.components().insertComponent(newPrivateProjectDto(organizationDto, "project-
uuid"));
    GroupDto group = db.users().insertGroup(organizationDto, "project-group-name");
    db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, project);

    ComponentDto anotherProject =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(organizationDto));
    GroupDto anotherGroup = db.users().insertGroup(organizationDto, "another-project-group-name");
    db.users().insertProjectPermissionOnGroup(anotherGroup, ISSUE_ADMIN, anotherProject);

    GroupDto groupWithoutPermission = db.users().insertGroup(organizationDto, "group-without-permission");

    userSession.logIn().addProjectPermission(ADMIN, project);
    String result = newRequest()
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .setParam(PARAM_PROJECT_ID, "project-uuid")
        .execute()
        .getInput();

    assertThat(result).contains(group.getName())
        .doesNotContain(anotherGroup.getName())
        .doesNotContain(groupWithoutPermission.getName());
}

```

```

@Test
public void return_also_groups_without_permission_when_search_query() {
    OrganizationDto organizationDto = db.getDefaultOrganization();
    ComponentDto project = db.components().insertComponent(newPrivateProjectDto(organizationDto, "project-
uuid"));
    GroupDto group = db.users().insertGroup(organizationDto, "group-with-permission");
    db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, project);

    GroupDto groupWithoutPermission = db.users().insertGroup(organizationDto, "group-without-permission");
    GroupDto anotherGroup = db.users().insertGroup(organizationDto, "another-group");

    loginAsAdmin(db.getDefaultOrganization());
    String result = newRequest()
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .setParam(PARAM_PROJECT_ID, "project-uuid")
        .setParam(TEXT_QUERY, "group-with")
        .execute()
        .getInput();

    assertThat(result).contains(group.getName())
        .doesNotContain(groupWithoutPermission.getName())

```



```

        .doesNotContain(anotherGroup.getName());
    }

    @Test
    public void return_only_groups_with_permission_when_no_search_query() {
        ComponentDto project = db.components().insertComponent(new PrivateProjectDto(db.getDefaultOrganization(),
"project-uuid"));
        GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "project-group-name");
        db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, project);

        GroupDto groupWithoutPermission = db.users().insertGroup(db.getDefaultOrganization(), "group-without-
permission");

        loginAsAdmin(db.getDefaultOrganization());
        String result = new Request()
            .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
            .setParam(PARAM_PROJECT_ID, project.uuid())
            .execute()
            .getInput();

        assertThat(result).contains(group.getName())
            .doesNotContain(groupWithoutPermission.getName());
    }

    @Test
    public void return_anyone_group_when_search_query_and_no_param_permission() {
        OrganizationDto organizationDto = db.organizations().insert();
        ComponentDto project = db.components().insertComponent(new PrivateProjectDto(organizationDto, "project-
uuid"));
        GroupDto group = db.users().insertGroup(organizationDto, "group-with-permission");
        db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, project);

        loginAsAdmin(db.getDefaultOrganization());
        String result = new Request()
            .setParam(PARAM_PROJECT_ID, project.uuid())
            .setParam(TEXT_QUERY, "nyo")
            .execute()
            .getInput();

        assertThat(result).contains("Anyone");
    }

    @Test
    public void search_groups_on_views() {
        ComponentDto view = db.components().insertComponent(new View(db.getDefaultOrganization(), "view-
uuid").setDbKey("view-key"));
        GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "project-group-name");
        db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, view);

```

```

loginAsAdmin(db.getDefaultOrganization());
String result = newRequest()
    .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
    .setParam(PARAM_PROJECT_ID, "view-uuid")
    .execute()
    .getInput();

assertThat(result).contains("project-group-name")
    .doesNotContain("group-1")
    .doesNotContain("group-2")
    .doesNotContain("group-3");
}

@Test
public void fail_if_not_logged_in() {
    expectedException.expect(UnauthorizedException.class);
    userSession.anonymous();

    newRequest()
        .setParam(PARAM_PERMISSION, SCAN.getKey())
        .execute();
}

@Test
public void fail_if_insufficient_privileges() {
    expectedException.expect(ForbiddenException.class);

    userSession.logIn("login");
    newRequest()
        .setParam(PARAM_PERMISSION, SCAN.getKey())
        .execute();
}

@Test
public void fail_if_project_uuid_and_project_key_are_provided() {
    db.components().insertComponent(newPrivateProjectDto(db.organizations().insert(), "project-
uuid").setDbKey("project-key"));

    expectedException.expect(BadRequestException.class);

    loginAsAdmin(db.getDefaultOrganization());
    newRequest()
        .setParam(PARAM_PERMISSION, SCAN_EXECUTION)
        .setParam(PARAM_PROJECT_ID, "project-uuid")
        .setParam(PARAM_PROJECT_KEY, "project-key")
        .execute();
}

```

```

@Test
public void fail_when_using_branch_uuid() {
    ComponentDto project = db.components().insertMainBranch();
    ComponentDto branch = db.components().insertProjectBranch(project);
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization());
    db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, project);
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project id '%s' not found", branch.uuid()));

    newRequest()
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .setParam(PARAM_PROJECT_ID, branch.uuid())
        .execute();
}

@Test
public void fail_when_using_branch_db_key() {
    ComponentDto project = db.components().insertMainBranch();
    ComponentDto branch = db.components().insertProjectBranch(project);
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization());
    db.users().insertProjectPermissionOnGroup(group, ISSUE_ADMIN, project);
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));

    newRequest()
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
        .execute();
}

}
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*/
package org.sonar.server.permission.ws;

import org.junit.Test;
import org.sonar.core.platform.ComponentContainer;

import static org.assertj.core.api.Assertions.assertThat;
import static
org.sonar.core.platform.ComponentContainer.COMPONENTS_IN_EMPTY_COMPONENT_CONTAINER;

public class PermissionsWsModuleTest {
    @Test
    public void verify_count_of_added_components() {
        ComponentContainer container = new ComponentContainer();
        new PermissionsWsModule().configure(container);
        assertThat(container.size()).isEqualTo(COMPONENTS_IN_EMPTY_COMPONENT_CONTAINER + 25);
    }
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws;

import com.google.common.collect.HashBasedTable;
import java.util.Collections;
import org.junit.Rule;

```

```

import org.junit.Test;
import org.junit.rules.ExpectedException;

public class SearchProjectPermissionsDataTest {
    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    @Test
    public void fail_if_no_projects() {
        expectedException.expect(IllegalStateException.class);

        SearchProjectPermissionsData.newBuilder()
            .groupByProjectIdAndPermission(HashBasedTable.create())
            .userCountByProjectIdAndPermission(HashBasedTable.create())
            .build();
    }

    @Test
    public void fail_if_no_group_count() {
        expectedException.expect(IllegalStateException.class);

        SearchProjectPermissionsData.newBuilder()
            .rootComponents(Collections.emptyList())
            .userCountByProjectIdAndPermission(HashBasedTable.create())
            .build();
    }

    @Test
    public void fail_if_no_user_count() {
        expectedException.expect(IllegalStateException.class);

        SearchProjectPermissionsData.newBuilder()
            .rootComponents(Collections.emptyList())
            .groupByProjectIdAndPermission(HashBasedTable.create())
            .build();
    }
}
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 \* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.  
 \*/

```
package org.sonar.server.permission.ws.template;
```

```
import java.util.List;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Test;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

public class RemoveUserFromTemplateActionTest extends
BasePermissionWsTest<RemoveUserFromTemplateAction> {

    private static final String DEFAULT_PERMISSION = CODEVIEWER;

    private UserDto user;
    private PermissionTemplateDto template;

    @Override
    protected RemoveUserFromTemplateAction buildWsAction() {
        return new RemoveUserFromTemplateAction(db.getDbClient(), newPermissionWsSupport(), userSession);
    }

    @Before
    public void setUp() {
        user = db.users().insertUser("user-login");
```

```

db.organizations().addMember(db.getDefaultOrganization(), user);
template = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
addUserToTemplate(user, template, DEFAULT_PERMISSION);
}

```

```

@Test
public void remove_user_from_template() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());
    newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);

    assertThat(getLoginsInTemplateAndPermission(template, DEFAULT_PERMISSION)).isEmpty();
}

```

```

@Test
public void remove_user_from_template_by_name_case_insensitive() {
    loginAsAdmin(db.getDefaultOrganization());
    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, DEFAULT_PERMISSION)
        .setParam(PARAM_TEMPLATE_NAME, template.getName().toUpperCase())
        .execute();

    assertThat(getLoginsInTemplateAndPermission(template, DEFAULT_PERMISSION)).isEmpty();
}

```

```

@Test
public void remove_user_from_template_twice_without_failing() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());
    newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);
    newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);

    assertThat(getLoginsInTemplateAndPermission(template, DEFAULT_PERMISSION)).isEmpty();
}

```

```

@Test
public void keep_user_permission_not_removed() throws Exception {
    addUserToTemplate(user, template, ISSUE_ADMIN);

    loginAsAdmin(db.getDefaultOrganization());
    newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);

    assertThat(getLoginsInTemplateAndPermission(template, DEFAULT_PERMISSION)).isEmpty();
    assertThat(getLoginsInTemplateAndPermission(template, ISSUE_ADMIN)).containsExactly(user.getLogin());
}

```

```

@Test
public void keep_other_users_when_one_user_removed() throws Exception {
    UserDto newUser = db.users().insertUser("new-login");
}

```

```

db.organizations().addMember(db.getDefaultOrganization(), newUser);
addUserToTemplate(newUser, template, DEFAULT_PERMISSION);

loginAsAdmin(db.getDefaultOrganization());
newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);

assertThat(getLoginsInTemplateAndPermission(template, DEFAULT_PERMISSION)).containsExactly("new-
login");
}

@Test
public void fail_if_not_a_project_permission() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(IllegalArgumentException.class);

newRequest(user.getLogin(), template.getUuid(), GlobalPermissions.PROVISIONING);
}

@Test
public void fail_if_insufficient_privileges() throws Exception {
userSession.logIn();

expectedException.expect(ForbiddenException.class);

newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);
}

@Test
public void fail_if_not_logged_in() throws Exception {
userSession.anonymous();

expectedException.expect(UnauthorizedException.class);

newRequest(user.getLogin(), template.getUuid(), DEFAULT_PERMISSION);
}

@Test
public void fail_if_user_missing() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(IllegalArgumentException.class);

newRequest(null, template.getUuid(), DEFAULT_PERMISSION);
}

@Test
public void fail_if_permission_missing() throws Exception {

```



```

loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(IllegalArgumentException.class);

newRequest(user.getLogin(), template.getUuid(), null);
}

@Test
public void fail_if_template_missing() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(BadRequestException.class);

newRequest(user.getLogin(), null, DEFAULT_PERMISSION);
}

@Test
public void fail_if_user_does_not_exist() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(NotFoundException.class);
expectedException.expectMessage("User with login 'unknown-login' is not found");

newRequest("unknown-login", template.getUuid(), DEFAULT_PERMISSION);
}

@Test
public void fail_if_template_key_does_not_exist() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(NotFoundException.class);
expectedException.expectMessage("Permission template with id 'unknown-key' is not found");

newRequest(user.getLogin(), "unknown-key", DEFAULT_PERMISSION);
}

private void newRequest(@Nullable String userLogin, @Nullable String templateKey, @Nullable String
permission) {
    TestRequest request = newRequest();
    if (userLogin != null) {
        request.setParam(PARAM_USER_LOGIN, userLogin);
    }
    if (templateKey != null) {
        request.setParam(org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID,
templateKey);
    }
    if (permission != null) {
        request.setParam(PARAM_PERMISSION, permission);
    }
}

```

```

    }

    request.execute();
}

private List<String> getLoginsInTemplateAndPermission(PermissionTemplateDto template, String permission) {
    PermissionQuery permissionQuery =
PermissionQuery.builder().setOrganizationUuid(template.getOrganizationUuid()).setPermission(permission).build()
;
    return db.getDbClient().permissionTemplateDao()
        .selectUserLoginsByQueryAndTemplate(db.getSession(), permissionQuery, template.getId());
}

private void addUserToTemplate(UserDto user, PermissionTemplateDto template, String permission) {
    db.getDbClient().permissionTemplateDao().insertUserPermission(db.getSession(), template.getId(), user.getId(),
permission);
    db.commit();
}

}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import java.util.List;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.api.web.UserRole;
import org.sonar.db.component.ComponentDto;

```

```

import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.es.TestProjectIndexers;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.permission.PermissionTemplateService;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;
import org.sonar.server.ws.TestResponse;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class ApplyTemplateActionTest extends BasePermissionWsTest<ApplyTemplateAction> {

    @Rule
    public DefaultTemplatesResolverRule defaultTemplatesResolver =
        DefaultTemplatesResolverRule.withoutGovernance();
    private UserDto user1;
    private UserDto user2;
    private GroupDto group1;
    private GroupDto group2;
    private ComponentDto project;
    private PermissionTemplateDto template1;
    private PermissionTemplateDto template2;

    private PermissionTemplateService permissionTemplateService = new
        PermissionTemplateService(db.getDbClient(),
            new TestProjectIndexers(), userSession, defaultTemplatesResolver);

    @Override
    protected ApplyTemplateAction buildWsAction() {
        return new ApplyTemplateAction(db.getDbClient(), userSession, permissionTemplateService,
            newPermissionWsSupport());
    }

    @Before
    public void setUp() {
        user1 = db.users().insertUser();
        db.organizations().addMember(db.getDefaultOrganization(), user1);
        user2 = db.users().insertUser();
    }
}

```

```

db.organizations().addMember(db.getDefaultOrganization(), user2);
group1 = db.users().insertGroup();
group2 = db.users().insertGroup();

// template 1
template1 = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
addUserToTemplate(user1, template1, UserRole.CODEVIEWER);
addUserToTemplate(user2, template1, UserRole.ISSUE_ADMIN);
addGroupToTemplate(group1, template1, UserRole.ADMIN);
addGroupToTemplate(group2, template1, UserRole.USER);
// template 2
template2 = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
addUserToTemplate(user1, template2, UserRole.USER);
addUserToTemplate(user2, template2, UserRole.USER);
addGroupToTemplate(group1, template2, UserRole.USER);
addGroupToTemplate(group2, template2, UserRole.USER);

project = db.components().insertPrivateProject();
db.users().insertProjectPermissionOnUser(user1, UserRole.ADMIN, project);
db.users().insertProjectPermissionOnUser(user2, UserRole.ADMIN, project);
db.users().insertProjectPermissionOnGroup(group1, UserRole.ADMIN, project);
db.users().insertProjectPermissionOnGroup(group2, UserRole.ADMIN, project);
}

@Test
public void apply_template_with_project_uuid() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest(template1.getUuid(), project.uuid(), null);

    assertTemplate1AppliedToProject();
}

@Test
public void apply_template_with_project_uuid_by_template_name() {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_TEMPLATE_NAME, template1.getName().toUpperCase())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .execute();

    assertTemplate1AppliedToProject();
}

@Test
public void apply_template_with_project_key() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

```

```

newRequest(template1.getUuid(), null, project.getDbKey());

assertTemplate1AppliedToProject();
}

@Test
public void fail_when_unknown_template() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with id 'unknown-template-uuid' is not found");

    newRequest("unknown-template-uuid", project.uuid(), null);
}

@Test
public void fail_when_unknown_project_uuid() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Project id 'unknown-project-uuid' not found");

    newRequest(template1.getUuid(), "unknown-project-uuid", null);
}

@Test
public void fail_when_unknown_project_key() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Project key 'unknown-project-key' not found");

    newRequest(template1.getUuid(), null, "unknown-project-key");
}

@Test
public void fail_when_template_is_not_provided() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest(null, project.uuid(), null);
}

@Test
public void fail_when_project_uuid_and_key_not_provided() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

```

```

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Project id or project key can be provided, not both.");

    newRequest(template1.getUuid(), null, null);
}

@Test
public void fail_when_not_admin_of_organization() throws Exception {
    userSession.logIn().addPermission(ADMINISTER, "otherOrg");

    expectedException.expect(ForbiddenException.class);

    newRequest(template1.getUuid(), project.uuid(), null);
}

private void assertTemplate1AppliedToProject() {
    assertThat(selectProjectPermissionGroups(project, UserRole.ADMIN)).containsExactly(group1.getName());
    assertThat(selectProjectPermissionGroups(project, UserRole.USER)).containsExactly(group2.getName());
    assertThat(selectProjectPermissionUsers(project, UserRole.ADMIN)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.CODEVIEWER)).containsExactly(user1.getId());
    assertThat(selectProjectPermissionUsers(project, UserRole.ISSUE_ADMIN)).containsExactly(user2.getId());
}

private TestResponse newRequest(@Nullable String templateUuid, @Nullable String projectUuid, @Nullable
String projectKey) {
    TestRequest request = newRequest();
    if (templateUuid != null) {
        request.setParam(PARAM_TEMPLATE_ID, templateUuid);
    }
    if (projectUuid != null) {
        request.setParam(PARAM_PROJECT_ID, projectUuid);
    }
    if (projectKey != null) {
        request.setParam(PARAM_PROJECT_KEY, projectKey);
    }

    return request.execute();
}

private void addUserToTemplate(UserDto user, PermissionTemplateDto permissionTemplate, String permission) {
    db.getClient().permissionTemplateDao().insertUserPermission(db.getSession(), permissionTemplate.getId(),
user.getId(), permission);
    db.commit();
}

private void addGroupToTemplate(GroupDto group, PermissionTemplateDto permissionTemplate, String
permission) {

```

```

    db.getClient().permissionTemplateDao().insertGroupPermission(db.getSession(), permissionTemplate.getId(),
group.getId(), permission);
    db.commit();
}

private List<String> selectProjectPermissionGroups(ComponentDto project, String permission) {
    PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(project.getOrganizationUuid()).setPermission(permission).setComp
onentUuid(project.uuid()).build();
    return db.getClient().groupPermissionDao().selectGroupNamesByQuery(db.getSession(), query);
}

private List<Integer> selectProjectPermissionUsers(ComponentDto project, String permission) {
    PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(project.getOrganizationUuid()).setPermission(permission).setComp
onentUuid(project.uuid()).build();
    return db.getClient().userPermissionDao().selectUserIdsByQuery(db.getSession(), query);
}
}
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import java.util.Date;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;

```

```

import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.mockito.Mockito.spy;
import static org.mockito.Mockito.when;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateDto;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonar.test.JsonAssert.assertJson;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_DESCRIPTION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY_PATTERN;

public class UpdateTemplateActionTest extends BasePermissionWsTest<UpdateTemplateAction> {

    private System2 system = spy(System2.INSTANCE);
    private PermissionTemplateDto template;

    @Override
    protected UpdateTemplateAction buildWsAction() {
        return new UpdateTemplateAction(db.getDbClient(), userSession, system, newPermissionWsSupport());
    }

    @Before
    public void setUp() {
        when(system.now()).thenReturn(1_440_512_328_743L);
        template = db.getDbClient().permissionTemplateDao().insert(db.getSession(), newPermissionTemplateDto()
            .setOrganizationUuid(db.getDefaultOrganization().getUuid())
            .setName("Permission Template Name")
            .setDescription("Permission Template Description")
            .setKeyPattern(".*\\.pattern\\..*")
            .setCreatedAt(new Date(1_000_000_000_000L))
            .setUpdatedAt(new Date(1_000_000_000_000L)));
        db.commit();
    }

    @Test
    public void update_all_permission_template_fields() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        String result = call(template.getUuid(), "Finance", "Permissions for financially related projects",
            ".*\\.finance\\..*");

        assertJson(result)
            .ignoreFields("id")

```



```

        .isSimilarTo(getClass().getResource("update_template-example.json"));
PermissionTemplateDto finance = selectTemplateInDefaultOrganization("Finance");
assertThat(finance.getName()).isEqualTo("Finance");
assertThat(finance.getDescription()).isEqualTo("Permissions for financially related projects");
assertThat(finance.getKeyPattern()).isEqualTo(".*\\.finance\\..*");
assertThat(finance.getUuid()).isEqualTo(template.getUuid());
assertThat(finance.getCreatedAt()).isEqualTo(template.getCreatedAt());
assertThat(finance.getUpdatedAt().getTime()).isEqualTo(1440512328743L);
}

@Test
public void update_with_the_same_values() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    call(template.getUuid(), template.getName(), template.getDescription(), template.getKeyPattern());

    PermissionTemplateDto reloaded = db.getClient().permissionTemplateDao().selectByUuid(db.getSession(),
template.getUuid());
    assertThat(reloaded.getName()).isEqualTo(template.getName());
    assertThat(reloaded.getDescription()).isEqualTo(template.getDescription());
    assertThat(reloaded.getKeyPattern()).isEqualTo(template.getKeyPattern());
}

@Test
public void update_name_only() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    call(template.getUuid(), "Finance", null, null);

    PermissionTemplateDto finance = selectTemplateInDefaultOrganization("Finance");
    assertThat(finance.getName()).isEqualTo("Finance");
    assertThat(finance.getDescription()).isEqualTo(template.getDescription());
    assertThat(finance.getKeyPattern()).isEqualTo(template.getKeyPattern());
}

@Test
public void fail_if_key_is_not_found() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with id 'unknown-key' is not found");

    call("unknown-key", null, null, null);
}

@Test
public void fail_if_name_already_exists_in_another_template() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

```

```

PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();

expectedException.expect(BadRequestException.class);
expectedException.expectMessage("A template with the name " + anotherTemplate.getName() + " already exists
(case insensitive).");

call(this.template.getUuid(), anotherTemplate.getName(), null, null);
}

@Test
public void fail_if_key_is_not_provided() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(IllegalArgumentException.class);

call(null, "Finance", null, null);
}

@Test
public void fail_if_name_empty() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(BadRequestException.class);
expectedException.expectMessage("The template name must not be blank");

call(template.getUuid(), "", null, null);
}

@Test
public void fail_if_name_has_just_whitespace() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(BadRequestException.class);
expectedException.expectMessage("The template name must not be blank");

call(template.getUuid(), " \r\n", null, null);
}

@Test
public void fail_if_regexp_if_not_valid() throws Exception {
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(BadRequestException.class);
expectedException.expectMessage("The 'projectKeyPattern' parameter must be a valid Java regular expression.
'[azerty' was passed");

call(template.getUuid(), "Finance", null, "[azerty");
}

```

```

@Test
public void fail_if_name_already_exists_in_database_case_insensitive() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());
    PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();

    String nameCaseInsensitive = anotherTemplate.getName().toUpperCase();
    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("A template with the name " + nameCaseInsensitive + " already exists (case insensitive).");

    call(this.template.getUuid(), nameCaseInsensitive, null, null);
}

```

```

@Test
public void fail_if_not_logged_in() throws Exception {
    expectedException.expect(UnauthorizedException.class);
    userSession.anonymous();

    call(template.getUuid(), "Finance", null, null);
}

```

```

@Test
public void fail_if_not_admin() throws Exception {
    userSession.logIn().addPermission(SCAN, db.getDefaultOrganization());

    expectedException.expect(ForbiddenException.class);

    call(template.getUuid(), "Finance", null, null);
}

```

```

private String call(@Nullable String key, @Nullable String name, @Nullable String description, @Nullable String
projectPattern) {
    TestRequest request = newRequest();
    if (key != null) {
        request.setParam(PARAM_ID, key);
    }
    if (name != null) {
        request.setParam(PARAM_NAME, name);
    }
    if (description != null) {
        request.setParam(PARAM_DESCRIPTION, description);
    }
    if (projectPattern != null) {
        request.setParam(PARAM_PROJECT_KEY_PATTERN, projectPattern);
    }

    return request.execute().getInput();
}

```

```

}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import java.util.List;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.web.UserRole;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.GroupDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.security.DefaultGroups.ANYONE;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

```

```

public class AddGroupToTemplateActionTest extends BasePermissionWsTest<AddGroupToTemplateAction> {

    private PermissionTemplateDto template;
    private GroupDto group;

    @Override
    protected AddGroupToTemplateAction buildWsAction() {
        return new AddGroupToTemplateAction(db.getDbClient(), newPermissionWsSupport(), userSession);
    }

    @Before
    public void setUp() {
        template = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
        group = db.users().insertGroup(db.getDefaultOrganization(), "group-name");
    }

    @Test
    public void add_group_to_template() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        newRequest(group.getName(), template.getUuid(), CODEVIEWER);

        assertThat(getGroupNamesInTemplateAndPermission(template,
CODEVIEWER)).containsExactly(group.getName());
    }

    @Test
    public void add_group_to_template_by_name() {
        loginAsAdmin(db.getDefaultOrganization());

        newRequest()
            .setParam(PARAM_GROUP_NAME, group.getName())
            .setParam(PARAM_PERMISSION, CODEVIEWER)
            .setParam(PARAM_TEMPLATE_NAME, template.getName().toUpperCase())
            .execute();

        assertThat(getGroupNamesInTemplateAndPermission(template,
CODEVIEWER)).containsExactly(group.getName());
    }

    @Test
    public void add_with_group_id() {
        loginAsAdmin(db.getDefaultOrganization());

        newRequest()
            .setParam(PARAM_TEMPLATE_ID, template.getUuid())
            .setParam(PARAM_PERMISSION, CODEVIEWER)

```

```

        .setParam(PARAM_GROUP_ID, String.valueOf(group.getId()))
        .execute();

    assertThat(getGroupNamesInTemplateAndPermission(template,
CODEVIEWER)).containsExactly(group.getName());
}

@Test
public void does_not_add_a_group_twice() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest(group.getName(), template.getUuid(), ISSUE_ADMIN);
    newRequest(group.getName(), template.getUuid(), ISSUE_ADMIN);

    assertThat(getGroupNamesInTemplateAndPermission(template,
ISSUE_ADMIN)).containsExactly(group.getName());
}

@Test
public void add_anyone_group_to_template() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest(ANYONE, template.getUuid(), CODEVIEWER);

    assertThat(getGroupNamesInTemplateAndPermission(template, CODEVIEWER)).containsExactly(ANYONE);
}

@Test
public void fail_if_add_anyone_group_to_admin_permission() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage(String.format("It is not possible to add the '%s' permission to the group
'Anyone'", UserRole.ADMIN));

    newRequest(ANYONE, template.getUuid(), ADMIN);
}

@Test
public void fail_if_not_a_project_permission() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest(group.getName(), template.getUuid(), GlobalPermissions.PROVISIONING);
}

@Test

```

```

public void fail_if_not_admin_of_default_organization() throws Exception {
    userSession.logIn();

    expectedException.expect(ForbiddenException.class);

    newRequest(group.getName(), template.getUuid(), CODEVIEWER);
}

@Test
public void fail_if_group_params_missing() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest(null, template.getUuid(), CODEVIEWER);
}

@Test
public void fail_if_permission_missing() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest(group.getName(), template.getUuid(), null);
}

@Test
public void fail_if_template_uuid_and_name_missing() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest(group.getName(), null, CODEVIEWER);
}

@Test
public void fail_if_group_does_not_exist() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("No group with name 'unknown-group-name'");

    newRequest("unknown-group-name", template.getUuid(), CODEVIEWER);
}

@Test
public void fail_if_template_key_does_not_exist() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());
}

```

```

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with id 'unknown-key' is not found");

    newRequest(group.getName(), "unknown-key", CODEVIEWER);
}

private void newRequest(@Nullable String groupName, @Nullable String templateKey, @Nullable String
permission) {
    TestRequest request = newRequest();
    if (groupName != null) {
        request.setParam(PARAM_GROUP_NAME, groupName);
    }
    if (templateKey != null) {
        request.setParam(PARAM_TEMPLATE_ID, templateKey);
    }
    if (permission != null) {
        request.setParam(PARAM_PERMISSION, permission);
    }

    request.execute();
}

private List<String> getGroupNamesInTemplateAndPermission(PermissionTemplateDto template, String
permission) {
    PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(template.getOrganizationUuid()).setPermission(permission).build()
;
    return db.getClient().permissionTemplateDao()
        .selectGroupNamesByQueryAndTemplate(db.getSession(), query, template.getId());
}
}
/*
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```



```

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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import java.util.Optional;
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.permission.ws.BasePermissionWsTest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.mockito.Mockito.spy;
import static org.mockito.Mockito.when;
import static org.sonar.core.permission.GlobalPermissions.QUALITY_GATE_ADMIN;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class AddProjectCreatorToTemplateActionTest extends
BasePermissionWsTest<AddProjectCreatorToTemplateAction> {

    private System2 system = spy(System2.INSTANCE);
    private PermissionTemplateDto template;

    @Override
    protected AddProjectCreatorToTemplateAction buildWsAction() {
        return new AddProjectCreatorToTemplateAction(db.getClient(), newPermissionWsSupport(), userSession,
system);
    }

    @Before
    public void setUp() {
        template = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
        when(system.now()).thenReturn(2_000_000_000L);
    }

    @Test
    public void insert_row_when_no_template_permission() {
        loginAsAdmin(db.getDefaultOrganization());

        newRequest()

```

```

        .setParam(PARAM_PERMISSION, UserRole.ADMIN)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .execute();

    assertThatProjectCreatorIsPresentFor(UserRole.ADMIN, template.getId());
}

@Test
public void update_row_when_existing_template_permission() {
    loginAsAdmin(db.getDefaultOrganization());
    PermissionTemplateCharacteristicDto characteristic =
db.getClient().permissionTemplateCharacteristicDao().insert(db.getSession(),
    new PermissionTemplateCharacteristicDto()
        .setTemplateId(template.getId())
        .setPermission(UserRole.USER)
        .setWithProjectCreator(false)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(1_000_000_000L));
    db.commit();
    when(system.now()).thenReturn(3_000_000_000L);

    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.USER)
        .setParam(PARAM_TEMPLATE_NAME, template.getName())
        .execute();

    assertThatProjectCreatorIsPresentFor(UserRole.USER, template.getId());
    PermissionTemplateCharacteristicDto reloaded = reload(characteristic);
    assertThat(reloaded.getCreatedAt()).isEqualTo(1_000_000_000L);
    assertThat(reloaded.getUpdatedAt()).isEqualTo(3_000_000_000L);
}

@Test
public void fail_when_template_does_not_exist() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.ADMIN)
        .setParam(PARAM_TEMPLATE_ID, "42")
        .execute();
}

@Test
public void fail_if_permission_is_not_a_project_permission() {
    loginAsAdmin(db.getDefaultOrganization());

```

```

expectedException.expect(IllegalArgumentException.class);

newRequest()
    .setParam(PARAM_PERMISSION, QUALITY_GATE_ADMIN)
    .setParam(PARAM_TEMPLATE_ID, template.getUuid())
    .execute();
}

@Test
public void fail_if_not_admin_of_default_organization() {
    userSession.logIn().addPermission(ADMINISTER_QUALITY_GATES, db.getDefaultOrganization());

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.ADMIN)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .execute();
}

private void assertThatProjectCreatorIsPresentFor(String permission, long templateId) {
    Optional<PermissionTemplateCharacteristicDto> templatePermission =
    db.getClient().permissionTemplateCharacteristicDao().selectByPermissionAndTemplateId(db.getSession(),
        permission,
        templateId);
    assertThat(templatePermission).isPresent();
    assertThat(templatePermission.get().getWithProjectCreator()).isTrue();
}

private PermissionTemplateCharacteristicDto reload(PermissionTemplateCharacteristicDto characteristic) {
    return
    db.getClient().permissionTemplateCharacteristicDao().selectByPermissionAndTemplateId(db.getSession(),
    characteristic.getPermission(), characteristic.getTemplateId()).get();
}
}
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*/
package org.sonar.server.permission.ws.template;

import com.google.common.collect.HashBasedTable;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;

import static java.util.Collections.singletonList;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateDto;

public class SearchTemplatesDataTest {
    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    SearchTemplatesData.Builder underTest = SearchTemplatesData.builder()
        .defaultTemplates(new DefaultTemplatesResolverImpl.ResolvedDefaultTemplates("template_uuid", null))
        .templates(singletonList(new PermissionTemplateDto()))
        .userCountByTemplateIdAndPermission(HashBasedTable.create())
        .groupCountByTemplateIdAndPermission(HashBasedTable.create())
        .withProjectCreatorByTemplateIdAndPermission(HashBasedTable.create());

    @Test
    public void fail_if_templates_is_null() {
        expectedException.expect(IllegalStateException.class);
        underTest.templates(null);

        underTest.build();
    }

    @Test
    public void fail_if_default_templates_are_null() {
        expectedException.expect(IllegalStateException.class);
        underTest.defaultTemplates(null);

        underTest.build();
    }

    @Test
    public void fail_if_user_count_is_null() {
        expectedException.expect(IllegalStateException.class);
        underTest.userCountByTemplateIdAndPermission(null);
    }
}

```

```

    underTest.build();
}

@Test
public void fail_if_group_count_is_null() {
    expectedException.expect(IllegalStateException.class);
    underTest.groupCountByTemplateIdAndPermission(null);

    underTest.build();
}

@Test
public void fail_if_with_project_creators_is_null() {
    expectedException.expect(IllegalStateException.class);
    underTest.withProjectCreatorByTemplateIdAndPermission(null);

    underTest.build();
}
}
}
/*
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import java.util.Date;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.web.UserRole;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;

```

```

import org.sonar.db.component.ResourceTypesRule;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.i18n.I18nRule;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;
import org.sonar.server.ws.WsActionTester;
import org.sonarqube.ws.Permissions;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
import static org.sonar.core.util.Uuids.UUID_EXAMPLE_01;
import static org.sonar.core.util.Uuids.UUID_EXAMPLE_02;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateDto;
import static org.sonar.test.JsonAssert.assertJson;

public class SearchTemplatesActionTest extends BasePermissionWsTest<SearchTemplatesAction> {

    private I18nRule i18n = new I18nRule();
    private DbClient dbClient = db.getDbClient();
    private DbSession dbSession = db.getSession();
    private ResourceTypesRule resourceTypesWithViews = new
ResourceTypesRule().setRootQualifiers(Qualifiers.PROJECT, Qualifiers.VIEW);
    private ResourceTypesRule resourceTypesWithoutViews = new
ResourceTypesRule().setRootQualifiers(Qualifiers.PROJECT);

    private WsActionTester underTestWithoutViews;

    @Override
    protected SearchTemplatesAction buildWsAction() {
        DefaultTemplatesResolver defaultTemplatesResolverWithViews = new
DefaultTemplatesResolverImpl(resourceTypesWithViews);
        SearchTemplatesAction searchTemplatesAction = new SearchTemplatesAction(dbClient, userSession, i18n,
newPermissionWsSupport(), defaultTemplatesResolverWithViews);
        return searchTemplatesAction;
    }

    @Before
    public void setUp() {
        DefaultTemplatesResolver defaultTemplatesResolverWithViews = new
DefaultTemplatesResolverImpl(resourceTypesWithoutViews);
        underTestWithoutViews = new WsActionTester(new SearchTemplatesAction(dbClient, userSession, i18n,
newPermissionWsSupport(), defaultTemplatesResolverWithViews));
    }
}

```

```

i18n.setProjectPermissions();
userSession.logIn().addPermission(ADMINISTER, db.getDefaultOrganization());
}

@Test
public void search_project_permissions() {
    OrganizationDto organization = db.getDefaultOrganization();
    PermissionTemplateDto projectTemplate = insertProjectTemplate(organization);
    PermissionTemplateDto viewsTemplate = insertViewsTemplate(organization);

    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();

    GroupDto group1 = db.users().insertGroup(organization);
    GroupDto group2 = db.users().insertGroup(organization);
    GroupDto group3 = db.users().insertGroup(organization);

    addUserToTemplate(projectTemplate.getId(), user1.getId(), UserRole.ISSUE_ADMIN);
    addUserToTemplate(projectTemplate.getId(), user2.getId(), UserRole.ISSUE_ADMIN);
    addUserToTemplate(projectTemplate.getId(), user3.getId(), UserRole.ISSUE_ADMIN);
    addUserToTemplate(projectTemplate.getId(), user1.getId(), UserRole.CODEVIEWER);
    addGroupToTemplate(projectTemplate.getId(), group1.getId(), UserRole.ADMIN);
    addPermissionTemplateWithProjectCreator(projectTemplate.getId(), UserRole.ADMIN);

    addUserToTemplate(viewsTemplate.getId(), user1.getId(), UserRole.USER);
    addUserToTemplate(viewsTemplate.getId(), user2.getId(), UserRole.USER);
    addGroupToTemplate(viewsTemplate.getId(), group1.getId(), UserRole.ISSUE_ADMIN);
    addGroupToTemplate(viewsTemplate.getId(), group2.getId(), UserRole.ISSUE_ADMIN);
    addGroupToTemplate(viewsTemplate.getId(), group3.getId(), UserRole.ISSUE_ADMIN);

    db.organizations().setDefaultTemplates(projectTemplate, viewsTemplate);

    String result = newRequest().execute().getInput();

    assertJson(result)
        .withStrictArrayOrder()
        .isSimilarTo(getClass().getResource("search_templates-example.json"));
}

@Test
public void empty_result_with_views() {
    db.organizations().setDefaultTemplates(db.getDefaultOrganization(), "AU-Tpxb--iU5OvuD2FLy", "AU-TpxcA-
iU5OvuD2FLz");
    String result = newRequest(wsTester).execute().getInput();

    assertJson(result)
        .withStrictArrayOrder()

```

```

.ignoreFields("permissions")
.isSimilarTo("{ " +
  " \"permissionTemplates\": []," +
  " \"defaultTemplates\": [" +
  " { " +
  "   \"templateId\": \"AU-Tpxb--iU5OvuD2FLy\"," +
  "   \"qualifier\": \"TRK\"" +
  " }," +
  " { " +
  "   \"templateId\": \"AU-TpxcA-iU5OvuD2FLz\"," +
  "   \"qualifier\": \"VW\"" +
  " }" +
  "]" +
  "}");
}

@Test
public void empty_result_without_views() {
    db.organizations().setDefaultTemplates(db.getDefaultOrganization(), "AU-Tpxb--iU5OvuD2FLy", "AU-TpxcA-
iU5OvuD2FLz");
    String result = newRequest(underTestWithoutViews).execute().getInput();

    assertJson(result)
        .withStrictArrayOrder()
        .ignoreFields("permissions")
        .isSimilarTo("{ " +
          " \"permissionTemplates\": []," +
          " \"defaultTemplates\": [" +
          " { " +
          "   \"templateId\": \"AU-Tpxb--iU5OvuD2FLy\"," +
          "   \"qualifier\": \"TRK\"" +
          " }" +
          "]" +
          "}");
}

@Test
public void search_by_name_in_default_organization() {
    db.organizations().setDefaultTemplates(db.permissionTemplates().insertTemplate(db.getDefaultOrganization()),
null);
    insertProjectTemplate(db.getDefaultOrganization());
    insertViewsTemplate(db.getDefaultOrganization());

    String result = newRequest(wsTester)
        .setParam(TEXT_QUERY, "views")
        .execute()
        .getInput();
}

```



```

assertThat(result).contains("Default template for Views")
    .doesNotContain("projects")
    .doesNotContain("developers");
}

@Test
public void search_in_organization() {
    OrganizationDto org = db.organizations().insert();
    PermissionTemplateDto projectDefaultTemplate = db.permissionTemplates().insertTemplate(org);
    db.organizations().setDefaultTemplates(projectDefaultTemplate, null);
    PermissionTemplateDto templateInOrg = insertProjectTemplate(org);
    insertProjectTemplate(db.getDefaultOrganization());
    db.commit();
    userSession.addPermission(ADMINISTER, org);

    Permissions.SearchTemplatesWsResponse result = new Request(underTestWithoutViews)
        .setParam("organization", org.getKey())
        .executeProtobuf(Permissions.SearchTemplatesWsResponse.class);

    assertThat(result.getPermissionTemplatesCount()).isEqualTo(2);
    assertThat(result.getPermissionTemplatesList())
        .extracting(Permissions.PermissionTemplate::getId)
        .containsOnly(projectDefaultTemplate.getUuid(), templateInOrg.getUuid());
}

@Test
public void fail_if_not_logged_in() {
    expectedException.expect(UnauthorizedException.class);
    userSession.anonymous();

    new Request().execute();
}

@Test
public void display_all_project_permissions() {
    db.organizations().setDefaultTemplates(db.permissionTemplates().insertTemplate(db.getDefaultOrganization()),
    null);

    String result = new Request().execute().getInput();

    assertThat(result)
        .withStrictArrayOrder()
        .ignoreFields("defaultTemplates", "permissionTemplates")
        .isSimilarTo(
            "{" +
            "  \"permissions\": [" +
            "    {" +
            "      \"key\": \"admin\", " +

```

```

    "  \"name\": \"Administer\",\" +
    "  \"description\": \"Ability to access project settings and perform administration tasks. (Users will also need
    \\\Browse\\\ permission)\",\" +
    "  },\" +
    "  {\" +
    "    \"key\": \"codeviewer\",\" +
    "    \"name\": \"See Source Code\",\" +
    "    \"description\": \"Ability to view the project's source code. (Users will also need \\\Browse\\\
    permission)\",\" +
    "  },\" +
    "  {\" +
    "    \"key\": \"issueadmin\",\" +
    "    \"name\": \"Administer Issues\",\" +
    "    \"description\": \"Grants the permission to perform advanced editing on issues: marking an issue False
    Positive / Won't Fix or changing an Issue's severity. (Users will also need \\\Browse\\\
    permission)\",\" +
    "  },\" +
    "  {\" +
    "    \"key\": \"scan\",\" +
    "    \"name\": \"Execute Analysis\",\" +
    "    \"description\": \"Ability to execute analyses, and to get all settings required to perform the analysis, even
    the secured ones like the scm account password, the jira account password, and so on.\",\" +
    "  },\" +
    "  {\" +
    "    \"key\": \"user\",\" +
    "    \"name\": \"Browse\",\" +
    "    \"description\": \"Ability to access a project, browse its measures, and create/edit issues for it.\",\" +
    "  }\" +
    " ]\" +
    "});
}

```

```

private PermissionTemplateDto insertProjectTemplate(OrganizationDto org) {
  return insertTemplate(new PermissionTemplateDto()
    .setOrganizationUuid(org.getUuid())
    .setUuid(UUID_EXAMPLE_01)
    .setName("Default template for Projects")
    .setDescription("Template for new projects")
    .setKeyPattern(null)
    .setCreatedAt(new Date(1_000_000_000_000L))
    .setUpdatedAt(new Date(1_000_000_000_000L)));
}

```

```

private PermissionTemplateDto insertViewsTemplate(OrganizationDto organization) {
  return insertTemplate(new PermissionTemplateDto()
    .setOrganizationUuid(organization.getUuid())

```

```

        .setUuid(UUID_EXAMPLE_02)
        .setName("Default template for Views")
        .setDescription("Template for new views")
        .setKeyPattern(".*sonar.views.*")
        .setCreatedAt(new Date(1_000_000_000_000L))
        .setUpdatedAt(new Date(1_100_000_000_000L));
    }

    private PermissionTemplateDto insertTemplate(PermissionTemplateDto template) {
        PermissionTemplateDto insert = dbClient.permissionTemplateDao().insert(db.getSession(), template);
        db.getSession().commit();
        return insert;
    }

    private void addGroupToTemplate(long templateId, @Nullable Integer groupId, String permission) {
        dbClient.permissionTemplateDao().insertGroupPermission(db.getSession(), templateId, groupId, permission);
        db.getSession().commit();
    }

    private void addUserToTemplate(long templateId, int userId, String permission) {
        dbClient.permissionTemplateDao().insertUserPermission(db.getSession(), templateId, userId, permission);
        db.getSession().commit();
    }

    private void addPermissionTemplateWithProjectCreator(long templateId, String permission) {
        dbClient.permissionTemplateCharacteristicDao().insert(dbSession, new PermissionTemplateCharacteristicDto()
            .setWithProjectCreator(true)
            .setTemplateId(templateId)
            .setPermission(permission)
            .setCreatedAt(1_000_000_000L)
            .setUpdatedAt(2_000_000_000L));
        db.commit();
    }

    private TestRequest newRequest(WsActionTester underTest) {
        return underTest.newRequest().setMethod("POST");
    }
}
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 *
 */

```

```

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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

```

```

import java.util.stream.Stream;
import org.junit.Test;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.resources.ResourceType;
import org.sonar.api.resources.ResourceTypeTree;
import org.sonar.api.resources.ResourceTypes;
import org.sonar.db.organization.DefaultTemplates;

import static org.assertj.core.api.Assertions.assertThat;

public class DefaultTemplatesResolverImplTest {

    private static final ResourceTypes RESOURCE_TYPES_WITHOUT_VIEWS = new ResourceTypes(new
ResourceTypeTree[] {
        ResourceTypeTree.builder().addType(ResourceType.builder(Qualifiers.PROJECT).build()).build()
    });
    private static final ResourceTypes RESOURCE_TYPES_WITH_VIEWS = new ResourceTypes(new
ResourceTypeTree[] {
        ResourceTypeTree.builder().addType(ResourceType.builder(Qualifiers.PROJECT).build()).build(),
        ResourceTypeTree.builder().addType(ResourceType.builder(Qualifiers.VIEW).build()).build()
    });
    private DefaultTemplatesResolverImpl underTestWithoutViews = new
DefaultTemplatesResolverImpl(RESOURCE_TYPES_WITHOUT_VIEWS);
    private DefaultTemplatesResolverImpl underTestWithViews = new
DefaultTemplatesResolverImpl(RESOURCE_TYPES_WITH_VIEWS);

    @Test
    public void project_is_project_of_DefaultTemplates_no_matter_if_views_is_installed() {
        Stream.of(
            new DefaultTemplates().setProjectUuid("foo").setViewUuid(null),
            new DefaultTemplates().setProjectUuid("foo").setViewUuid("bar")).forEach(
            defaultTemplates -> {
                assertThat(underTestWithoutViews.resolve(defaultTemplates).getProject()).isEqualTo("foo");
                assertThat(underTestWithViews.resolve(defaultTemplates).getProject()).isEqualTo("foo");
            });
    }
}

```

```

@Test
public void view_is_empty_no_matter_view_in_DefaultTemplates_if_views_is_not_installed() {
    DefaultTemplates defaultTemplatesNoView = new DefaultTemplates().setProjectUuid("foo").setViewUuid(null);
    DefaultTemplates defaultTemplatesView = new DefaultTemplates().setProjectUuid("foo").setViewUuid("bar");

    assertThat(underTestWithoutViews.resolve(defaultTemplatesNoView).getView()).isEmpty();
    assertThat(underTestWithoutViews.resolve(defaultTemplatesView).getView()).isEmpty();
}

@Test
public void view_is_project_of_DefaultTemplates_if_view_in_DefaultTemplates_is_null_and_views_is_installed()
{
    DefaultTemplates defaultTemplates = new DefaultTemplates().setProjectUuid("foo").setViewUuid(null);

    assertThat(underTestWithViews.resolve(defaultTemplates).getView()).contains("foo");
}

@Test
public void
view_is_view_of_DefaultTemplates_if_view_in_DefaultTemplates_is_not_null_and_views_is_installed() {
    DefaultTemplates defaultTemplates = new DefaultTemplates().setProjectUuid("foo").setViewUuid("bar");

    assertThat(underTestWithViews.resolve(defaultTemplates).getView()).contains("bar");
}
}
}
/*
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws.template;

import java.util.List;
import javax.annotation.Nullable;

```

```

import org.junit.Before;
import org.junit.Test;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_PROFILES;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

public class AddUserToTemplateActionTest extends BasePermissionWsTest<AddUserToTemplateAction> {

    private UserDto user;
    private PermissionTemplateDto permissionTemplate;

    @Override
    protected AddUserToTemplateAction buildWsAction() {
        return new AddUserToTemplateAction(db.getClient(), newPermissionWsSupport(), userSession);
    }

    @Before
    public void setUp() {
        user = db.users().insertUser("user-login");
        db.organizations().addMember(db.getDefaultOrganization(), user);
        permissionTemplate = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
    }

    @Test
    public void add_user_to_template() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        newRequest(user.getLogin(), permissionTemplate.getUuid(), CODEVIEWER);

        assertThat(getLoginsInTemplateAndPermission(permissionTemplate,
            CODEVIEWER)).containsExactly(user.getLogin());
    }
}

```

```

@Test
public void add_user_to_template_by_name() {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .setParam(PARAM_TEMPLATE_NAME, permissionTemplate.getName().toUpperCase())
        .execute();

    assertThat(getLoginsInTemplateAndPermission(permissionTemplate,
CODEVIEWER)).containsExactly(user.getLogin());
}

@Test
public void add_user_to_template_by_name_and_organization() {
    OrganizationDto organizationDto = db.organizations().insert();
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate(organizationDto);
    addUserAsMemberOfOrganization(organizationDto);
    loginAsAdmin(organizationDto);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .setParam(PARAM_TEMPLATE_NAME, permissionTemplate.getName().toUpperCase())
        .setParam(PARAM_ORGANIZATION, organizationDto.getKey())
        .execute();

    assertThat(getLoginsInTemplateAndPermission(permissionTemplate,
CODEVIEWER)).containsExactly(user.getLogin());
}

@Test
public void does_not_add_a_user_twice() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest(user.getLogin(), permissionTemplate.getUuid(), ISSUE_ADMIN);
    newRequest(user.getLogin(), permissionTemplate.getUuid(), ISSUE_ADMIN);

    assertThat(getLoginsInTemplateAndPermission(permissionTemplate,
ISSUE_ADMIN)).containsExactly(user.getLogin());
}

@Test
public void fail_if_not_a_project_permission() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

```

```

        expectedException.expect(IllegalArgumentException.class);

        newRequest(user.getLogin(), permissionTemplate.getUuid(), GlobalPermissions.PROVISIONING);
    }

    @Test
    public void fail_if_not_admin_of_default_organization() throws Exception {
        userSession.login().addPermission(ADMINISTER_QUALITY_PROFILES, db.getDefaultOrganization());

        expectedException.expect(ForbiddenException.class);

        newRequest(user.getLogin(), permissionTemplate.getUuid(), CODEVIEWER);
    }

    @Test
    public void fail_if_user_missing() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(IllegalArgumentException.class);

        newRequest(null, permissionTemplate.getUuid(), CODEVIEWER);
    }

    @Test
    public void fail_if_permission_missing() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(IllegalArgumentException.class);

        newRequest(user.getLogin(), permissionTemplate.getUuid(), null);
    }

    @Test
    public void fail_if_template_uuid_and_name_are_missing() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(BadRequestException.class);

        newRequest(user.getLogin(), null, CODEVIEWER);
    }

    @Test
    public void fail_if_user_does_not_exist() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(NotFoundException.class);
        expectedException.expectMessage("User with login 'unknown-login' is not found");
    }

```



```

    newRequest("unknown-login", permissionTemplate.getUuid(), CODEVIEWER);
}

@Test
public void fail_if_template_key_does_not_exist() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with id 'unknown-key' is not found");

    newRequest(user.getLogin(), "unknown-key", CODEVIEWER);
}

@Test
public void fail_if_organization_does_not_exist() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("No organization with key 'Unknown'");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .setParam(PARAM_TEMPLATE_NAME, permissionTemplate.getName().toUpperCase())
        .setParam(PARAM_ORGANIZATION, "Unknown")
        .execute(); }

@Test
public void fail_to_add_permission_when_user_is_not_member_of_given_organization() {
    // User is not member of given organization
    OrganizationDto otherOrganization = db.organizations().insert();
    addUserAsMemberOfOrganization(otherOrganization);
    OrganizationDto organization = db.organizations().insert(organizationDto ->
organizationDto.setKey("Organization key"));
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate(organization);
    loginAsAdmin(organization);

    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("User 'user-login' is not member of organization 'Organization key'");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .setParam(PARAM_TEMPLATE_NAME, permissionTemplate.getName().toUpperCase())
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .execute();
}

```

```

private void newRequest(@Nullable String userLogin, @Nullable String templateKey, @Nullable String
permission) {
    TestRequest request = newRequest();
    if (userLogin != null) {
        request.setParam(PARAM_USER_LOGIN, userLogin);
    }
    if (templateKey != null) {
        request.setParam(org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID,
templateKey);
    }
    if (permission != null) {
        request.setParam(PARAM_PERMISSION, permission);
    }

    request.execute();
}

private List<String> getLoginsInTemplateAndPermission(PermissionTemplateDto template, String permission) {
    PermissionQuery permissionQuery =
PermissionQuery.builder().setOrganizationUuid(template.getOrganizationUuid()).setPermission(permission).build()
;
    return db.getDbClient().permissionTemplateDao()
        .selectUserLoginsByQueryAndTemplate(db.getSession(), permissionQuery, template.getId());
}

private void addUserAsMemberOfOrganization(OrganizationDto organization) {
    db.organizations().addMember(organization, user);
}
}
/*
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/

```

```

package org.sonar.server.permission.ws.template;

import java.util.Arrays;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.utils.internal.AlwaysIncreasingSystem2;
import org.sonar.api.web.UserRole;
import org.sonar.db.DbClient;
import org.sonar.db.DbTester;
import org.sonar.db.component.ResourceTypesRule;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateTesting;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.GroupTesting;
import org.sonar.db.user.UserDto;
import org.sonar.db.user.UserTesting;
import org.sonar.server.component.ComponentFinder;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.organization.TestDefaultOrganizationProvider;
import org.sonar.server.permission.ws.PermissionWsSupport;
import org.sonar.server.testers.UserSessionRule;
import org.sonar.server.usergroups.DefaultGroupFinder;
import org.sonar.server.usergroups.ws.GroupWsSupport;
import org.sonar.server.ws.TestRequest;
import org.sonar.server.ws.TestResponse;
import org.sonar.server.ws.WsActionTester;

import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.fail;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class DeleteTemplateActionTest {

    @Rule
    public DbTester db = DbTester.create(new AlwaysIncreasingSystem2());
    @Rule
    public ExpectedException expectedException = ExpectedException.none();

```

```

private UserSessionRule userSession = UserSessionRule.standalone();
private DbClient dbClient = db.getDbClient();
private final ResourceTypesRule resourceTypes = new
ResourceTypesRule().setRootQualifiers(Qualifiers.PROJECT);
private final ResourceTypesRule resourceTypesWithViews = new
ResourceTypesRule().setRootQualifiers(Qualifiers.PROJECT, Qualifiers.VIEW);
private DefaultTemplatesResolver defaultTemplatesResolver = new
DefaultTemplatesResolverImpl(resourceTypes);
private DefaultTemplatesResolver defaultTemplatesResolverWithViews = new
DefaultTemplatesResolverImpl(resourceTypesWithViews);

private WsActionTester underTestWithoutViews;
private WsActionTester underTestWithViews;

@Before
public void setUp() throws Exception {
    GroupWsSupport groupWsSupport = new GroupWsSupport(dbClient, TestDefaultOrganizationProvider.from(db),
new DefaultGroupFinder(db.getDbClient()));
    this.underTestWithoutViews = new WsActionTester(new DeleteTemplateAction(dbClient, userSession,
new PermissionWsSupport(dbClient, new ComponentFinder(dbClient, resourceTypes), groupWsSupport),
defaultTemplatesResolver));
    this.underTestWithViews = new WsActionTester(new DeleteTemplateAction(dbClient, userSession,
new PermissionWsSupport(dbClient, new ComponentFinder(dbClient, resourceTypes), groupWsSupport),
defaultTemplatesResolverWithViews));
}

@Test
public void delete_template_in_db() throws Exception {
    runOnAllUnderTests((underTest) -> {
        OrganizationDto organization = db.organizations().insert();
        PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
        db.organizations().setDefaultTemplates(
            db.permissionTemplates().insertTemplate(organization),
            db.permissionTemplates().insertTemplate(organization));
        loginAsAdmin(organization);

        TestResponse result = newRequestByUuid(underTest, template.getUuid());

        assertThat(result.getInput()).isEmpty();
        assertTemplateDoesNotExist(template);
    });
}

@Test
public void delete_template_by_name_case_insensitive() throws Exception {
    runOnAllUnderTests((underTest) -> {
        OrganizationDto organization = db.organizations().insert();

```

```

    db.organizations().setDefaultTemplates(
        db.permissionTemplates().insertTemplate(organization),
        db.permissionTemplates().insertTemplate(organization));
    PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
    loginAsAdmin(organization);
    newRequestByName(underTest, organization, template);

    assertTemplateDoesNotExist(template);
});
}

@Test
public void
delete_template_by_name_returns_empty_when_no_organization_is_provided_and_templates_does_not_belong_to
_default_organization() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    db.organizations().setDefaultTemplates(
        db.permissionTemplates().insertTemplate(organization),
        db.permissionTemplates().insertTemplate(organization));
    PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
    loginAsAdmin(organization);

    runOnAllUnderTests((underTest) -> {
        try {
            newRequestByName(underTest, null, template);
            fail("NotFoundException should have been raised");
        } catch (NotFoundException e) {
            assertThat(e).hasMessage(
                "Permission template with name '" + template.getName() + "' is not found (case insensitive) in organization
with key '" + db.getDefaultOrganization().getKey() + "'");
        }
    });
}

@Test
public void delete_template_by_name_returns_empty_when_wrong_organization_is_provided() throws Exception
{
    OrganizationDto organization = db.organizations().insert();
    db.organizations().setDefaultTemplates(
        db.permissionTemplates().insertTemplate(organization),
        db.permissionTemplates().insertTemplate(organization));
    PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
    OrganizationDto otherOrganization = db.organizations().insert();
    loginAsAdmin(organization);

    runOnAllUnderTests((underTest) -> {
        try {
            newRequestByName(underTest, otherOrganization, template);

```

```

        fail("NotFoundException should have been raised");
    } catch (NotFoundException e) {
        assertThat(e)
            .hasMessage("Permission template with name '" + template.getName() + "' is not found (case insensitive) in
organization with key '" + otherOrganization.getKey() + "'");
    }
});
}

```

```

@Test
public void fail_if_uuid_is_not_known_without_views() throws Exception {
    userSession.login();

    expectedException.expect(NotFoundException.class);

    newRequestByUuid(underTestWithoutViews, "unknown-template-uuid");
}

```

```

@Test
public void fail_if_uuid_is_not_known_with_views() throws Exception {
    userSession.login();

    expectedException.expect(NotFoundException.class);

    newRequestByUuid(underTestWithViews, "unknown-template-uuid");
}

```

```

@Test
public void fail_to_delete_by_uuid_if_template_is_default_template_for_project_without_views() throws
Exception {
    fail_to_delete_by_uuid_if_template_is_default_template_for_project(this.underTestWithoutViews);
}

```

```

@Test
public void fail_to_delete_by_uuid_if_template_is_default_template_for_project_with_views() throws Exception {
    fail_to_delete_by_uuid_if_template_is_default_template_for_project(this.underTestWithViews);
}

```

```

private void fail_to_delete_by_uuid_if_template_is_default_template_for_project(WsActionTester underTest)
throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto projectTemplate = insertTemplateAndAssociatedPermissions(organization);
    db.organizations().setDefaultTemplates(projectTemplate,
        db.permissionTemplates().insertTemplate(organization));
    loginAsAdmin(organization);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("It is not possible to delete the default permission template for projects");
}

```

```

    newRequestByUuid(underTest, projectTemplate.getUuid());
}

@Test
public void fail_to_delete_by_name_if_template_is_default_template_for_project_without_views() throws
Exception {
    fail_to_delete_by_name_if_template_is_default_template_for_project(this.underTestWithoutViews);
}

@Test
public void fail_to_delete_by_name_if_template_is_default_template_for_project_with_views() throws Exception
{
    fail_to_delete_by_name_if_template_is_default_template_for_project(this.underTestWithViews);
}

private void fail_to_delete_by_name_if_template_is_default_template_for_project(WsActionTester underTest)
throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto projectTemplate = insertTemplateAndAssociatedPermissions(organization);
    db.organizations().setDefaultTemplates(projectTemplate,
db.permissionTemplates().insertTemplate(organization));
    loginAsAdmin(organization);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("It is not possible to delete the default permission template for projects");

    newRequestByName(underTest, organization.getKey(), projectTemplate.getName());
}

@Test
public void fail_to_delete_by_uuid_if_template_is_default_template_for_view_with_views() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
    db.organizations().setDefaultTemplates(db.permissionTemplates().insertTemplate(organization), template);
    loginAsAdmin(organization);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("It is not possible to delete the default permission template for views");

    newRequestByUuid(this.underTestWithViews, template.getUuid());
}

@Test
public void
default_template_for_views_can_be_deleted_by_uuid_if_views_is_not_installed_and_default_template_for_views_
is_reset() throws Exception {
    OrganizationDto organization = db.organizations().insert();

```

```

PermissionTemplateDto projectTemplate = db.permissionTemplates().insertTemplate(organization);
PermissionTemplateDto viewTemplate = insertTemplateAndAssociatedPermissions(organization);
db.organizations().setDefaultTemplates(projectTemplate, viewTemplate);
loginAsAdmin(organization);

newRequestByUuid(this.underTestWithoutViews, viewTemplate.getUuid());

assertTemplateDoesNotExist(viewTemplate);

assertThat(db.getDbClient().organizationDao().getDefaultTemplates(db.getSession(), organization.getUuid())
    .get().getViewUuid())
    .isNull();
}

@Test
public void fail_to_delete_by_uuid_if_not_logged_in_without_views() throws Exception {
    expectedException.expect(UnauthorizedException.class);

    newRequestByUuid(underTestWithoutViews, "uuid");
}

@Test
public void fail_to_delete_by_uuid_if_not_logged_in_with_views() throws Exception {
    expectedException.expect(UnauthorizedException.class);

    newRequestByUuid(underTestWithViews, "uuid");
}

@Test
public void fail_to_delete_by_name_if_not_logged_in_without_views() throws Exception {
    expectedException.expect(UnauthorizedException.class);

    newRequestByName(underTestWithoutViews, "whatever", "name");
}

@Test
public void fail_to_delete_by_name_if_not_logged_in_with_views() throws Exception {
    expectedException.expect(UnauthorizedException.class);

    newRequestByName(underTestWithViews, "whatever", "name");
}

@Test
public void fail_to_delete_by_uuid_if_not_admin_without_views() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
    userSession.logIn();
}

```



```

expectedException.expect(ForbiddenException.class);

newRequestByUuid(underTestWithoutViews, template.getUuid());
}

@Test
public void fail_to_delete_by_uuid_if_not_admin_with_views() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template = insertTemplateAndAssociatedPermissions(organization);
    userSession.login();

    expectedException.expect(ForbiddenException.class);

    newRequestByUuid(underTestWithViews, template.getUuid());
}

@Test
public void fail_to_delete_by_name_if_not_admin_without_views() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template = db.permissionTemplates().insertTemplate(organization);
    userSession.login();

    expectedException.expect(ForbiddenException.class);

    newRequestByName(underTestWithoutViews, organization.getKey(), template.getName());
}

@Test
public void fail_to_delete_by_name_if_not_admin_with_views() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template =
db.permissionTemplates().insertTemplate(PermissionTemplateTesting.newPermissionTemplateDto()
    .setOrganizationUuid(organization.getUuid())
    .setName("the name"));
    userSession.login();

    expectedException.expect(ForbiddenException.class);

    newRequestByName(underTestWithViews, organization, template);
}

@Test
public void fail_if_neither_uuid_nor_name_is_provided_without_views() throws Exception {
    userSession.login();

    expectedException.expect(BadRequestException.class);

    newRequestByUuid(underTestWithoutViews, null);
}

```

```

}

@Test
public void fail_if_neither_uuid_nor_name_is_provided_with_views() throws Exception {
    userSession.login();

    expectedException.expect(BadRequestException.class);

    newRequestByUuid(underTestWithViews, null);
}

@Test
public void fail_if_both_uuid_and_name_are_provided_without_views() {
    userSession.login();

    expectedException.expect(BadRequestException.class);

    underTestWithoutViews.newRequest().setMethod("POST")
        .setParam(PARAM_TEMPLATE_ID, "uuid")
        .setParam(PARAM_TEMPLATE_NAME, "name")
        .execute();
}

@Test
public void fail_if_both_uuid_and_name_are_provided_with_views() {
    userSession.login();

    expectedException.expect(BadRequestException.class);

    underTestWithViews.newRequest().setMethod("POST")
        .setParam(PARAM_TEMPLATE_ID, "uuid")
        .setParam(PARAM_TEMPLATE_NAME, "name")
        .execute();
}

// @Test
// public void delete_perm_tpl_characteristic_when_delete_template() throws Exception {
//     db.getClient().permissionTemplateCharacteristicDao().insert(db.getSession(), new
//     PermissionTemplateCharacteristicDto()
//         .setPermission(UserRole.USER)
//         .setTemplateId(template.getId())
//         .setWithProjectCreator(true)
//         .setCreatedAt(new Date().getTime())
//         .setUpdatedAt(new Date().getTime()));
//     db.commit();
// }
// newRequest(template.getUuid());
//

```

```

// assertThat(db.getDbClient().permissionTemplateCharacteristicDao().selectByTemplateIds(db.getSession(),
// asList(template.getId()))).isEmpty();
// }

private UserSessionRule loginAsAdmin(OrganizationDto organization) {
    return userSession.login().addPermission(ADMINISTER, organization);
}

private void runOnAllUnderTests(ConsumerWithException<WsActionTester> consumer) throws Exception {
    for (WsActionTester underTest : Arrays.asList(underTestWithoutViews, underTestWithViews)) {
        consumer.accept(underTest);
    }
}

private interface ConsumerWithException<T> {
    void accept(T e) throws Exception;
}

private PermissionTemplateDto insertTemplateAndAssociatedPermissions(OrganizationDto organization) {
    PermissionTemplateDto dto = db.permissionTemplates().insertTemplate(organization);
    UserDto user = db.getDbClient().userDao().insert(db.getSession(), UserTesting.newUserDto().setActive(true));
    GroupDto group = db.getDbClient().groupDao().insert(db.getSession(), GroupTesting.newGroupDto());
    db.getDbClient().permissionTemplateDao().insertUserPermission(db.getSession(), dto.getId(), user.getId(),
    UserRole.ADMIN);
    db.getDbClient().permissionTemplateDao().insertGroupPermission(db.getSession(), dto.getId(), group.getId(),
    UserRole.CODEVIEWER);
    db.commit();
    return dto;
}

private TestResponse newRequestByUuid(WsActionTester actionTester, @Nullable String id) {
    TestRequest request = actionTester.newRequest().setMethod("POST");
    if (id != null) {
        request.setParam(PARAM_TEMPLATE_ID, id);
    }
    return request.execute();
}

private TestResponse newRequestByName(WsActionTester actionTester, @Nullable OrganizationDto
organizationDto, @Nullable PermissionTemplateDto permissionTemplateDto)
throws Exception {
    return newRequestByName(
        actionTester,
        organizationDto == null ? null : organizationDto.getKey(),
        permissionTemplateDto == null ? null : permissionTemplateDto.getName());
}

private TestResponse newRequestByName(WsActionTester actionTester, @Nullable String organizationKey,

```

```

@Nullable String name) {
    TestRequest request = actionTester.newRequest().setMethod("POST");
    if (organizationKey != null) {
        request.setParam(PARAM_ORGANIZATION, organizationKey);
    }
    if (name != null) {
        request.setParam(PARAM_TEMPLATE_NAME, name);
    }

    return request.execute();
}

private void assertTemplateDoesNotExist(PermissionTemplateDto template) {
    assertThat(db.getClient().permissionTemplateDao().selectByUuid(db.getSession(),
template.getUuid())).isNull();
}

}
/*
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws.template;

import javax.annotation.Nullable;
import org.junit.Test;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateGroupDto;
import org.sonar.db.user.GroupDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;

```

```

import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonarqube.ws.Permissions.WsGroupsResponse;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.server.ws.WebService.Param.PAGE;
import static org.sonar.api.server.ws.WebService.Param.PAGE_SIZE;
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateGroupDto;
import static org.sonar.db.user.GroupTesting.newGroupDto;
import static org.sonar.test.JsonAssert.assertJson;
import static org.sonarqube.ws.MediaType.PROTOBUF;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class TemplateGroupsActionTest extends BasePermissionWsTest<TemplateGroupsAction> {

    @Override
    protected TemplateGroupsAction buildWsAction() {
        return new TemplateGroupsAction(db.getClient(), userSession, new PermissionWsSupport());
    }

    @Test
    public void template_groups_of_json_example() {
        GroupDto adminGroup = insertGroupOnDefaultOrganization("sonar-administrators", "System administrators");
        GroupDto userGroup = insertGroupOnDefaultOrganization("sonar-users", "Any new users created will
automatically join this group");

        PermissionTemplateDto template = addTemplateToDefaultOrganization();
        addGroupToTemplate(new PermissionTemplateGroup(ISSUE_ADMIN, template.getId(), adminGroup.getId()));
        addGroupToTemplate(new PermissionTemplateGroup(ISSUE_ADMIN, template.getId(), userGroup.getId()));
        // Anyone group
        addGroupToTemplate(new PermissionTemplateGroup(USER, template.getId(), null));
        addGroupToTemplate(new PermissionTemplateGroup(ISSUE_ADMIN, template.getId(), null));
        commit();
        loginAsAdmin(db.getDefaultOrganization());

        String response = newRequest()
            .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
            .setParam(PARAM_TEMPLATE_ID, template.getId())
            .execute()
            .getInput();
    }
}

```

```

assertJson(response)
    .ignoreFields("id")
    .withStrictArrayOrder()
    .isSimilarTo(getClass().getResource("template_groups-example.json"));
}

@Test
public void do_not_fail_when_group_name_exists_in_multiple_organizations() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();

    String groupName = "group-name";
    GroupDto group1 = db.users().insertGroup(db.getDefaultOrganization(), groupName);
    addGroupToTemplate(newPermissionTemplateGroup(CODEVIEWER, template.getId(), group1.getId()));
    addGroupToTemplate(newPermissionTemplateGroup(ADMIN, template.getId(), group1.getId()));

    OrganizationDto otherOrganization = db.organizations().insert();
    db.users().insertGroup(otherOrganization, groupName);

    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setMediaType(PROTOBUF)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .setParam(TEXT_QUERY, "-nam")
        .execute();
}

@Test
public void return_all_permissions_of_matching_groups() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();

    GroupDto group1 = db.users().insertGroup(db.getDefaultOrganization(), "group-1-name");
    addGroupToTemplate(newPermissionTemplateGroup(CODEVIEWER, template.getId(), group1.getId()));
    addGroupToTemplate(newPermissionTemplateGroup(ADMIN, template.getId(), group1.getId()));

    GroupDto group2 = db.users().insertGroup(db.getDefaultOrganization(), "group-2-name");
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group2.getId()));
    addGroupToTemplate(newPermissionTemplateGroup(ADMIN, template.getId(), group2.getId()));

    GroupDto group3 = db.users().insertGroup(db.getDefaultOrganization(), "group-3-name");

    // Anyone
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), null));
    addGroupToTemplate(newPermissionTemplateGroup(ISSUE_ADMIN, template.getId(), null));

    PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
    addGroupToTemplate(newPermissionTemplateGroup(ADMIN, anotherTemplate.getId(), group3.getId()));
}

```

```

commit();
loginAsAdmin(db.getDefaultOrganization());

WsGroupsResponse response = newRequest()
    .setParam(PARAM_TEMPLATE_ID, template.getUuid())
    .executeProtobuf(WsGroupsResponse.class);

assertThat(response.getGroupsList()).extracting("name").containsExactly("Anyone", "group-1-name", "group-2-
name");
assertThat(response.getGroups(0).getPermissionsList()).containsOnly("user", "issueadmin");
assertThat(response.getGroups(1).getPermissionsList()).containsOnly("codeviewer", "admin");
assertThat(response.getGroups(2).getPermissionsList()).containsOnly("user", "admin");
}

@Test
public void search_by_permission() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();

    GroupDto group1 = db.users().insertGroup(db.getDefaultOrganization(), "group-1-name");
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group1.getId()));
    addGroupToTemplate(newPermissionTemplateGroup(CODEVIEWER, template.getId(), group1.getId()));

    GroupDto group2 = db.users().insertGroup(db.getDefaultOrganization(), "group-2-name");
    addGroupToTemplate(newPermissionTemplateGroup(ADMIN, template.getId(), group2.getId()));

    GroupDto group3 = db.users().insertGroup(db.getDefaultOrganization(), "group-3-name");

    // Anyone
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), null));

    PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
    addGroupToTemplate(newPermissionTemplateGroup(ADMIN, anotherTemplate.getId(), group3.getId()));
    commit();
    loginAsAdmin(db.getDefaultOrganization());

    WsGroupsResponse response = newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .executeProtobuf(WsGroupsResponse.class);

    assertThat(response.getGroupsList()).extracting("name").containsExactly("Anyone", "group-1-name");
    assertThat(response.getGroups(0).getPermissionsList()).containsOnly("user");
    assertThat(response.getGroups(1).getPermissionsList()).containsOnly("user", "codeviewer");
}

@Test
public void search_by_template_name() {
    OrganizationDto defaultOrg = db.getDefaultOrganization();

```

```

GroupDto group1 = db.users().insertGroup(defaultOrg, "group-1-name");
GroupDto group2 = db.users().insertGroup(defaultOrg, "group-2-name");
GroupDto group3 = db.users().insertGroup(defaultOrg, "group-3-name");

PermissionTemplateDto template = addTemplateToDefaultOrganization();
addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group1.getId()));
addGroupToTemplate(newPermissionTemplateGroup(ADMIN, template.getId(), group2.getId()));
addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), null));

PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
addGroupToTemplate(newPermissionTemplateGroup(USER, anotherTemplate.getId(), group1.getId()));
commit();
loginAsAdmin(db.getDefaultOrganization());

WsGroupsResponse response = newRequest()
    .setParam(PARAM_TEMPLATE_NAME, template.getName())
    .executeProtobuf(WsGroupsResponse.class);

assertThat(response.getGroupsList()).extracting("name").containsExactly("Anyone", "group-1-name", "group-2-
name");
}

@Test
public void search_with_pagination() {
    OrganizationDto defaultOrg = db.getDefaultOrganization();
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    GroupDto group1 = db.users().insertGroup(defaultOrg, "group-1-name");
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group1.getId()));
    GroupDto group2 = db.users().insertGroup(defaultOrg, "group-2-name");
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group2.getId()));
    commit();
    loginAsAdmin(db.getDefaultOrganization());

    WsGroupsResponse response = newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .setParam(PARAM_TEMPLATE_NAME, template.getName())
        .setParam(PAGE, "2")
        .setParam(PAGE_SIZE, "1")
        .executeProtobuf(WsGroupsResponse.class);

    assertThat(response.getGroupsList()).extracting("name").containsExactly("group-2-name");
}

@Test
public void search_with_text_query() {
    OrganizationDto defaultOrg = db.getDefaultOrganization();
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    GroupDto group1 = db.users().insertGroup(defaultOrg, "group-1-name");

```



```

addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group1.getId()));
GroupDto group2 = db.users().insertGroup(defaultOrg, "group-2-name");
GroupDto group3 = db.users().insertGroup(defaultOrg, "group-3");
commit();
loginAsAdmin(db.getDefaultOrganization());

WsGroupsResponse response = newRequest()
    .setParam(PARAM_TEMPLATE_NAME, template.getName())
    .setParam(TEXT_QUERY, "-nam")
    .executeProtobuf(WsGroupsResponse.class);

assertThat(response.getGroupsList()).extracting("name").containsExactly("group-1-name", "group-2-name");
}

```

@Test

```

public void search_with_text_query_return_all_groups_even_when_no_permission_set() {
    OrganizationDto defaultOrg = db.getDefaultOrganization();
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    db.users().insertGroup(defaultOrg, "group-1-name");
    db.users().insertGroup(defaultOrg, "group-2-name");
    db.users().insertGroup(defaultOrg, "group-3-name");
    commit();
    loginAsAdmin(db.getDefaultOrganization());

```

```

WsGroupsResponse response = newRequest()
    .setParam(PARAM_TEMPLATE_ID, template.getUuid())
    .setParam(TEXT_QUERY, "-name")
    .executeProtobuf(WsGroupsResponse.class);

assertThat(response.getGroupsList()).extracting("name").containsExactly("group-1-name", "group-2-name",
"group-3-name");
assertThat(response.getGroups(0).getPermissionsList()).isEmpty();
assertThat(response.getGroups(1).getPermissionsList()).isEmpty();
assertThat(response.getGroups(2).getPermissionsList()).isEmpty();
}

```

@Test

```

public void search_with_text_query_return_anyone_group_even_when_no_permission_set() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "group");
    addGroupToTemplate(newPermissionTemplateGroup(USER, template.getId(), group.getId()));
    commit();
    loginAsAdmin(db.getDefaultOrganization());

```

```

WsGroupsResponse response = newRequest()
    .setParam(PARAM_TEMPLATE_ID, template.getUuid())
    .setParam(TEXT_QUERY, "nyo")
    .executeProtobuf(WsGroupsResponse.class);

```

```

    assertThat(response.getGroupsList()).extracting("name").containsExactly("Anyone");
    assertThat(response.getGroups(0).getPermissionsList()).isEmpty();
}

```

```

@Test
public void fail_if_not_logged_in() {
    PermissionTemplateDto template1 = addTemplateToDefaultOrganization();
    userSession.anonymous();

    expectedException.expect(UnauthorizedException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .execute();
}

```

```

@Test
public void fail_if_insufficient_privileges() {
    PermissionTemplateDto template1 = addTemplateToDefaultOrganization();
    userSession.login();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .execute();
}

```

```

@Test
public void fail_if_template_uuid_and_name_provided() {
    PermissionTemplateDto template1 = addTemplateToDefaultOrganization();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(PARAM_TEMPLATE_NAME, template1.getName())
        .execute();
}

```

```

@Test
public void fail_if_template_uuid_nor_name_provided() {
    loginAsAdmin(db.getDefaultOrganization());
}

```

```

    expectedException.expect(BadRequestException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .execute();
}

@Test
public void fail_if_template_is_not_found() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, USER)
        .setParam(PARAM_TEMPLATE_ID, "unknown-uuid")
        .execute();
}

@Test
public void fail_if_not_a_project_permission() {
    loginAsAdmin(db.getDefaultOrganization());
    PermissionTemplateDto template1 = addTemplateToDefaultOrganization();

    expectedException.expect(IllegalArgumentException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, GlobalPermissions.QUALITY_GATE_ADMIN)
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .execute();
}

private GroupDto insertGroupOnDefaultOrganization(String name, String description) {
    return
    db.users().insertGroup(newGroupDto().setName(name).setDescription(description).setOrganizationUuid(db.getDefaultOrganization().getUuid()));
}

private void addGroupToTemplate(PermissionTemplateGroupDto permissionTemplateGroup) {
    db.getClient().permissionTemplateDao().insertGroupPermission(db.getSession(), permissionTemplateGroup);
}

private static PermissionTemplateGroupDto newPermissionTemplateGroup(String permission, long templateId,
@Nullable Integer groupId) {
    return newPermissionTemplateGroupDto()
        .setPermission(permission)
        .setTemplateId(templateId)

```

```

        .setGroupId(groupId);
    }

    private void commit() {
        db.commit();
    }
}
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 */
package org.sonar.server.permission.ws.template;

import org.junit.Test;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.test.TestUtils.hasOnlyPrivateConstructors;

public class PermissionTemplateDtoToPermissionTemplateResponseTest {

    @Test
    public void only_private_constructors() {
        assertThat(hasOnlyPrivateConstructors(PermissionTemplateDtoToPermissionTemplateResponse.class)).isTrue();
    }
}
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```

```

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*/

```

```
package org.sonar.server.permission.ws.template;
```

```

import javax.annotation.Nullable;
import org.junit.Test;
import org.sonar.api.server.ws.WebService;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateUserDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.issue.ws.AvatarResolverImpl;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;
import org.sonarqube.ws.Permissions;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateUserDto;
import static org.sonar.db.user.UserTesting.newUserDto;
import static org.sonar.test.JsonAssert.assertJson;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class TemplateUsersActionTest extends BasePermissionWsTest<TemplateUsersAction> {

    @Override
    protected TemplateUsersAction buildWsAction() {
        return new TemplateUsersAction(db.getDbClient(), userSession, newPermissionWsSupport(), new
AvatarResolverImpl());
    }
}

```

```

}

@Test
public void search_for_users_with_response_example() {
    UserDto user1 =
insertUser(newUserDto().setLogin("admin").setName("Administrator").setEmail("admin@admin.com"));
    UserDto user2 = insertUser(newUserDto().setLogin("george.orwell").setName("George
Orwell").setEmail("george.orwell@1984.net"));

    PermissionTemplateDto template1 = addTemplateToDefaultOrganization();
    addUserToTemplate(newPermissionTemplateUser(CODEVIEWER, template1, user1));
    addUserToTemplate(newPermissionTemplateUser(CODEVIEWER, template1, user2));
    addUserToTemplate(newPermissionTemplateUser(ADMIN, template1, user2));
    loginAsAdmin(db.getDefaultOrganization());

    String result = newRequest(null, template1.getUuid()).execute().getInput();
    assertJson(result).isSimilarTo(getClass().getResource("template_users-example.json"));
}

@Test
public void search_for_users_by_template_name() {
    loginAsAdmin(db.getDefaultOrganization());

    UserDto user1 = insertUser(newUserDto().setLogin("login-1").setName("name-1").setEmail("email-1"));
    UserDto user2 = insertUser(newUserDto().setLogin("login-2").setName("name-2").setEmail("email-2"));
    UserDto user3 = insertUser(newUserDto().setLogin("login-3").setName("name-3").setEmail("email-3"));

    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    addUserToTemplate(newPermissionTemplateUser(USER, template, user1));
    addUserToTemplate(newPermissionTemplateUser(USER, template, user2));
    addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user1));
    addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user3));

    PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
    addUserToTemplate(newPermissionTemplateUser(USER, anotherTemplate, user1));

    Permissions.UsersWsResponse response = newRequest(null, null)
        .setParam(PARAM_TEMPLATE_NAME, template.getName())
        .executeProtobuf(Permissions.UsersWsResponse.class);

    assertThat(response.getUsersList()).extracting("login").containsExactly("login-1", "login-2", "login-3");
    assertThat(response.getUsers(0).getPermissionsList()).containsOnly("issueadmin", "user");
    assertThat(response.getUsers(1).getPermissionsList()).containsOnly("user");
    assertThat(response.getUsers(2).getPermissionsList()).containsOnly("issueadmin");
}

@Test
public void search_using_text_query() {

```

```

loginAsAdmin(db.getDefaultOrganization());

UserDto user1 = insertUser(newUserDto().setLogin("login-1").setName("name-1").setEmail("email-1"));
UserDto user2 = insertUser(newUserDto().setLogin("login-2").setName("name-2").setEmail("email-2"));
UserDto user3 = insertUser(newUserDto().setLogin("login-3").setName("name-3").setEmail("email-3"));

PermissionTemplateDto template = addTemplateToDefaultOrganization();
addUserToTemplate(newPermissionTemplateUser(USER, template, user1));
addUserToTemplate(newPermissionTemplateUser(USER, template, user2));
addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user1));
addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user3));

PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
addUserToTemplate(newPermissionTemplateUser(USER, anotherTemplate, user1));

Permissions.UsersWsResponse response = newRequest(null, null)
    .setParam(PARAM_TEMPLATE_NAME, template.getName())
    .setParam(WebService.Param.TEXT_QUERY, "ame-1")
    .executeProtobuf(Permissions.UsersWsResponse.class);

assertThat(response.getUsersList()).extracting("login").containsOnly("login-1");
}

@Test
public void search_using_permission() {
    UserDto user1 = insertUser(newUserDto().setLogin("login-1").setName("name-1").setEmail("email-1"));
    UserDto user2 = insertUser(newUserDto().setLogin("login-2").setName("name-2").setEmail("email-2"));
    UserDto user3 = insertUser(newUserDto().setLogin("login-3").setName("name-3").setEmail("email-3"));

    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    addUserToTemplate(newPermissionTemplateUser(USER, template, user1));
    addUserToTemplate(newPermissionTemplateUser(USER, template, user2));
    addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user1));
    addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user3));

    PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
    addUserToTemplate(newPermissionTemplateUser(USER, anotherTemplate, user1));

    loginAsAdmin(db.getDefaultOrganization());
    Permissions.UsersWsResponse response = newRequest(USER, template.getUuid())
        .executeProtobuf(Permissions.UsersWsResponse.class);
    assertThat(response.getUsersList()).extracting("login").containsExactly("login-1", "login-2");
    assertThat(response.getUsers(0).getPermissionsList()).containsOnly("issueadmin", "user");
    assertThat(response.getUsers(1).getPermissionsList()).containsOnly("user");
}

@Test
public void search_with_pagination() {

```

```

UserDto user1 = insertUser(newUserDto().setLogin("login-1").setName("name-1").setEmail("email-1"));
UserDto user2 = insertUser(newUserDto().setLogin("login-2").setName("name-2").setEmail("email-2"));
UserDto user3 = insertUser(newUserDto().setLogin("login-3").setName("name-3").setEmail("email-3"));

PermissionTemplateDto template = addTemplateToDefaultOrganization();
addUserToTemplate(newPermissionTemplateUser(USER, template, user1));
addUserToTemplate(newPermissionTemplateUser(USER, template, user2));
addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user1));
addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user3));

PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();
addUserToTemplate(newPermissionTemplateUser(USER, anotherTemplate, user1));

loginAsAdmin(db.getDefaultOrganization());
Permissions.UsersWsResponse response = newRequest(USER, null)
    .setParam(PARAM_TEMPLATE_NAME, template.getName())
    .setParam(WebService.Param.SELECTED, "all")
    .setParam(WebService.Param.PAGE, "2")
    .setParam(WebService.Param.PAGE_SIZE, "1")
    .executeProtobuf(Permissions.UsersWsResponse.class);

assertThat(response.getUsersList()).extracting("login").containsOnly("login-2");
}

@Test
public void users_are_sorted_by_name() {
    UserDto user1 = insertUser(newUserDto().setLogin("login-2").setName("name-2"));
    UserDto user2 = insertUser(newUserDto().setLogin("login-3").setName("name-3"));
    UserDto user3 = insertUser(newUserDto().setLogin("login-1").setName("name-1"));

    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    addUserToTemplate(newPermissionTemplateUser(USER, template, user1));
    addUserToTemplate(newPermissionTemplateUser(USER, template, user2));
    addUserToTemplate(newPermissionTemplateUser(ISSUE_ADMIN, template, user3));

    loginAsAdmin(db.getDefaultOrganization());
    Permissions.UsersWsResponse response = newRequest(null, null)
        .setParam(PARAM_TEMPLATE_NAME, template.getName())
        .executeProtobuf(Permissions.UsersWsResponse.class);

    assertThat(response.getUsersList()).extracting("login").containsExactly("login-1", "login-2", "login-3");
}

@Test
public void empty_result_when_no_user_on_template() {
    UserDto user = insertUser(newUserDto().setLogin("login-1").setName("name-1").setEmail("email-1"));
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    PermissionTemplateDto anotherTemplate = addTemplateToDefaultOrganization();

```



```

addUserToTemplate(newPermissionTemplateUser(USER, anotherTemplate, user));

loginAsAdmin(db.getDefaultOrganization());
Permissions.UsersWsResponse response = newRequest(null, null)
    .setParam(PARAM_TEMPLATE_NAME, template.getName())
    .executeProtobuf(Permissions.UsersWsResponse.class);

assertThat(response.getUsersList()).isEmpty();
}

@Test
public void fail_if_not_a_project_permission() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest(GlobalPermissions.PROVISIONING, template.getUuid())
        .execute();
}

@Test
public void fail_if_no_template_param() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest(null, null)
        .execute();
}

@Test
public void fail_if_template_does_not_exist() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);

    newRequest(null, "unknown-template-uuid")
        .execute();
}

@Test
public void fail_if_template_uuid_and_name_provided() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
}

```

```

newRequest(null, template.getUuid())
    .setParam(PARAM_TEMPLATE_NAME, template.getName())
    .execute();
}

@Test
public void fail_if_not_logged_in() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    userSession.anonymous();

    expectedException.expect(UnauthorizedException.class);

    newRequest(null, template.getUuid()).execute();
}

@Test
public void fail_if_insufficient_privileges() {
    PermissionTemplateDto template = addTemplateToDefaultOrganization();
    userSession.logIn().addPermission(SCAN, db.getDefaultOrganization());

    expectedException.expect(ForbiddenException.class);

    newRequest(null, template.getUuid()).execute();
}

private UserDto insertUser(UserDto userDto) {
    db.users().insertUser(userDto);
    db.organizations().addMember(db.getDefaultOrganization(), userDto);
    return userDto;
}

private void addUserToTemplate(PermissionTemplateUserDto dto) {
    db.getClient().permissionTemplateDao().insertUserPermission(db.getSession(), dto.getTemplateId(),
dto.getUserId(), dto.getPermission());
    db.commit();
}

private static PermissionTemplateUserDto newPermissionTemplateUser(String permission,
PermissionTemplateDto template, UserDto user) {
    return newPermissionTemplateUserDto()
        .setPermission(permission)
        .setTemplateId(template.getId())
        .setUserId(user.getId());
}

private TestRequest newRequest(@Nullable String permission, @Nullable String templateUuid) {
    TestRequest request = newRequest();
    if (permission != null) {

```

```

    request.setParam(PARAM_PERMISSION, permission);
}
if (templateUuid != null) {
    request.setParam(PARAM_TEMPLATE_ID, templateUuid);
}
return request;
}

}
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 */
package org.sonar.server.permission.ws.template;

import javax.annotation.Nullable;
import org.junit.Test;
import org.sonar.api.resources.Qualifiers;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.organization.DefaultTemplates;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.permission.template.PermissionTemplateTesting;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.i18n.I18nRule;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;

import static org.assertj.core.api.Assertions.assertThat;

```

```

import static org.sonar.api.resources.Qualifiers.APP;
import static org.sonar.api.resources.Qualifiers.PROJECT;
import static org.sonar.api.resources.Qualifiers.VIEW;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_QUALIFIER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class SetDefaultTemplateActionTest extends BasePermissionWsTest<SetDefaultTemplateAction> {

    private DbClient dbClient = db.getDbClient();
    private I18nRule i18n = new I18nRule();

    @Override
    protected SetDefaultTemplateAction buildWsAction() {
        return new SetDefaultTemplateAction(db.getDbClient(), newPermissionWsSupport(), newRootResourceTypes(),
userSession, i18n);
    }

    @Test
    public void update_project_default_template() throws Exception {
        PermissionTemplateDto viewDefaultTemplate =
db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
        db.organizations().setDefaultTemplates(db.permissionTemplates().insertTemplate(db.getDefaultOrganization()),
viewDefaultTemplate);
        PermissionTemplateDto template = insertTemplate(db.getDefaultOrganization());
        loginAsAdmin(db.getDefaultOrganization());

        newRequest(template.getUuid(), Qualifiers.PROJECT);

        assertDefaultTemplates(db.getDefaultOrganization(), template.getUuid(), viewDefaultTemplate.getUuid());
    }

    @Test
    public void update_project_default_template_without_qualifier_param() throws Exception {
        OrganizationDto organization = db.organizations().insert();
        db.organizations().setDefaultTemplates(organization, "any-project-template-uuid", "any-view-template-uuid");
        PermissionTemplateDto template = insertTemplate(organization);
        loginAsAdmin(organization);

        // default value is project qualifier's value
        newRequest(template.getUuid(), null);

        assertDefaultTemplates(organization, template.getUuid(), "any-view-template-uuid");
    }

    @Test
    public void update_project_default_template_by_template_name() {

```

```

OrganizationDto organization = db.organizations().insert();
PermissionTemplateDto viewDefaultTemplate = db.permissionTemplates().insertTemplate(organization);
db.organizations().setDefaultTemplates(db.permissionTemplates().insertTemplate(organization),
    viewDefaultTemplate);
PermissionTemplateDto template = insertTemplate(organization);
loginAsAdmin(organization);

newRequest()
    .setParam(PARAM_ORGANIZATION, organization.getKey())
    .setParam(PARAM_TEMPLATE_NAME, template.getName().toUpperCase())
    .execute();
db.getSession().commit();

assertDefaultTemplates(organization, template.getUuid(), viewDefaultTemplate.getUuid());
}

@Test
public void update_view_default_template() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto projectDefaultTemplate = db.permissionTemplates().insertTemplate(organization);
    db.organizations().setDefaultTemplates(projectDefaultTemplate, null);
    PermissionTemplateDto template = insertTemplate(organization);
    loginAsAdmin(organization);

    newRequest(template.getUuid(), VIEW);

    assertDefaultTemplates(organization, projectDefaultTemplate.getUuid(), template.getUuid());
}

@Test
public void fail_if_update_default_template_with_app_qualifier() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto projectDefaultTemplate = db.permissionTemplates().insertTemplate(organization);
    db.organizations().setDefaultTemplates(projectDefaultTemplate, null);
    PermissionTemplateDto template = insertTemplate(organization);
    loginAsAdmin(organization);

    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("Value of parameter 'qualifier' (APP) must be one of: [TRK, VW]");

    newRequest(template.getUuid(), APP);
}

@Test
public void fail_if_anonymous() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template = insertTemplate(organization);
    userSession.anonymous();
}

```

```

        expectedException.expect(UnauthorizedException.class);

        newRequest(template.getUuid(), PROJECT);
    }

    @Test
    public void fail_if_not_admin() throws Exception {
        OrganizationDto organization = db.organizations().insert();
        PermissionTemplateDto template = insertTemplate(organization);
        userSession.logIn();

        expectedException.expect(ForbiddenException.class);

        newRequest(template.getUuid(), null);
    }

    @Test
    public void fail_if_template_not_provided() throws Exception {
        expectedException.expect(BadRequestException.class);

        newRequest(null, PROJECT);
    }

    @Test
    public void fail_if_template_does_not_exist() throws Exception {
        expectedException.expect(NotFoundException.class);

        newRequest("unknown-template-uuid", PROJECT);
    }

    @Test
    public void fail_if_qualifier_is_not_root() throws Exception {
        OrganizationDto organization = db.organizations().insert();
        PermissionTemplateDto template = insertTemplate(organization);
        loginAsAdmin(organization);

        expectedException.expect(IllegalArgumentException.class);
        expectedException.expectMessage("Value of parameter 'qualifier' (FIL) must be one of: [TRK, VW]");

        newRequest(template.getUuid(), Qualifiers.FILE);
    }

    @Test
    public void fail_if_organization_has_no_default_templates() throws Exception {
        OrganizationDto organization = db.organizations().insert();
        PermissionTemplateDto template = insertTemplate(organization);
        loginAsAdmin(organization);
    }

```

```

        expectedException.expect(NotFoundException.class);
        expectedException.expectMessage("No Default templates for organization with uuid '" + organization.getUuid() +
        """);

        newRequest(template.getUuid(), null);
    }

    private String newRequest(@Nullable String templateUuid, @Nullable String qualifier) {
        TestRequest request = newRequest();
        if (templateUuid != null) {
            request.setParam(PARAM_TEMPLATE_ID, templateUuid);
        }
        if (qualifier != null) {
            request.setParam(PARAM_QUALIFIER, qualifier);
        }

        return request.execute().getInput();
    }

    private PermissionTemplateDto insertTemplate(OrganizationDto organization) {
        PermissionTemplateDto res = dbClient.permissionTemplateDao().insert(db.getSession(),
        PermissionTemplateTesting.newPermissionTemplateDto()
            .setOrganizationUuid(organization.getUuid())
            .setUuid("permission-template-uuid"));
        db.commit();
        return res;
    }

    private void assertDefaultTemplates(OrganizationDto organizationDto,
        @Nullable String projectDefaultTemplateUuid, @Nullable String viewDefaultTemplateUuid) {
        DbSession dbSession = db.getSession();
        DefaultTemplates defaultTemplates = db.getDbClient().organizationDao().getDefaultTemplates(dbSession,
        organizationDto.getUuid())
            .orElseThrow(() -> new IllegalStateException("No default templates for organization with uuid '" +
        organizationDto.getUuid() + """));

        assertThat(defaultTemplates.getProjectUuid()).isEqualTo(projectDefaultTemplateUuid);
        assertThat(defaultTemplates.getViewUuid()).isEqualTo(viewDefaultTemplateUuid);
    }
}
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```

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 \* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.  
 \*/

```
package org.sonar.server.permission.ws.template;
```

```
import java.util.List;
import javax.annotation.Nullable;
import org.junit.Before;
import org.junit.Test;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.GroupDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.security.DefaultGroups.ANYONE;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class RemoveGroupFromTemplateActionTest extends
BasePermissionWsTest<RemoveGroupFromTemplateAction> {

    private static final String PERMISSION = CODEVIEWER;

    private GroupDto group;
    private PermissionTemplateDto template;

    @Override
```



```

protected RemoveGroupFromTemplateAction buildWsAction() {
    return new RemoveGroupFromTemplateAction(db.getClient(), newPermissionWsSupport(), userSession);
}

@Before
public void setUp() {
    loginAsAdmin(db.getDefaultOrganization());

    group = db.users().insertGroup(db.getDefaultOrganization(), "group-name");
    template = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
    addGroupToTemplate(template, group.getId(), PERMISSION);
}

@Test
public void remove_group_from_template() throws Exception {
    newRequest(group.getName(), template.getUuid(), PERMISSION);

    assertThat(getGroupNamesInTemplateAndPermission(template, PERMISSION)).isEmpty();
}

@Test
public void remove_group_from_template_by_name_case_insensitive() {
    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, PERMISSION)
        .setParam(PARAM_TEMPLATE_NAME, template.getName().toUpperCase())
        .execute();

    assertThat(getGroupNamesInTemplateAndPermission(template, PERMISSION)).isEmpty();
}

@Test
public void remove_group_with_group_id() {
    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .setParam(PARAM_PERMISSION, PERMISSION)
        .setParam(PARAM_GROUP_ID, String.valueOf(group.getId()))
        .execute();

    assertThat(getGroupNamesInTemplateAndPermission(template, PERMISSION)).isEmpty();
}

@Test
public void remove_group_twice_without_error() throws Exception {
    newRequest(group.getName(), template.getUuid(), PERMISSION);
    newRequest(group.getName(), template.getUuid(), PERMISSION);

    assertThat(getGroupNamesInTemplateAndPermission(template, PERMISSION)).isEmpty();
}

```

```

}

@Test
public void remove_anyone_group_from_template() throws Exception {
    addGroupToTemplate(template, null, PERMISSION);

    newRequest(ANYONE, template.getUuid(), PERMISSION);

    assertThat(getGroupNamesInTemplateAndPermission(template,
PERMISSION)).containsExactly(group.getName());
}

@Test
public void fail_if_not_a_project_permission() throws Exception {
    expectedException.expect(IllegalArgumentException.class);

    newRequest(group.getName(), template.getUuid(), GlobalPermissions.PROVISIONING);
}

@Test
public void fail_if_insufficient_privileges() throws Exception {
    userSession.logIn().addPermission(SCAN, db.getDefaultOrganization());

    expectedException.expect(ForbiddenException.class);

    newRequest(group.getName(), template.getUuid(), PERMISSION);
}

@Test
public void fail_if_not_logged_in() throws Exception {
    expectedException.expect(UnauthorizedException.class);
    userSession.anonymous();

    newRequest(group.getName(), template.getUuid(), PERMISSION);
}

@Test
public void fail_if_group_params_missing() throws Exception {
    expectedException.expect(BadRequestException.class);

    newRequest(null, template.getUuid(), PERMISSION);
}

@Test
public void fail_if_permission_missing() throws Exception {
    expectedException.expect(IllegalArgumentException.class);

    newRequest(group.getName(), template.getUuid(), null);
}

```

```

}

@Test
public void fail_if_template_missing() throws Exception {
    expectedException.expect(BadRequestException.class);

    newRequest(group.getName(), null, PERMISSION);
}

@Test
public void fail_if_group_does_not_exist() throws Exception {
    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("No group with name 'unknown-group-name'");

    newRequest("unknown-group-name", template.getUuid(), PERMISSION);
}

@Test
public void fail_if_template_key_does_not_exist() throws Exception {
    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with id 'unknown-key' is not found");

    newRequest(group.getName(), "unknown-key", PERMISSION);
}

private void newRequest(@Nullable String groupName, @Nullable String templateKey, @Nullable String
permission) {
    TestRequest request = newRequest();
    if (groupName != null) {
        request.setParam(PARAM_GROUP_NAME, groupName);
    }
    if (templateKey != null) {
        request.setParam(PARAM_TEMPLATE_ID, templateKey);
    }
    if (permission != null) {
        request.setParam(PARAM_PERMISSION, permission);
    }

    request.execute();
}

private void addGroupToTemplate(PermissionTemplateDto template, @Nullable Integer groupId, String
permission) {
    db.getClient().permissionTemplateDao().insertGroupPermission(db.getSession(), template.getId(), groupId,
permission);
    db.commit();
}

```

```

private List<String> getGroupNamesInTemplateAndPermission(PermissionTemplateDto template, String
permission) {
    PermissionQuery permissionQuery =
PermissionQuery.builder().setOrganizationUuid(template.getOrganizationUuid()).setPermission(permission).build()
;
    return db.getDbClient().permissionTemplateDao()
        .selectGroupNamesByQueryAndTemplate(db.getSession(), permissionQuery, template.getId());
}
}
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*/
package org.sonar.server.permission.ws.template;

import javax.annotation.Nullable;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.api.utils.internal.TestSystem2;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.permission.ws.BasePermissionWsTest;
import org.sonar.server.ws.TestRequest;
import org.sonar.server.ws.TestResponse;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_PROFILES;
import static org.sonar.test.JsonAssert.assertJson;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_DESCRIPTION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY_PATTERN;

```

```

public class CreateTemplateActionTest extends BasePermissionWsTest<CreateTemplateAction> {

    private static final long NOW = 1_440_512_328_743L;
    private System2 system = new TestSystem2().setNow(NOW);

    @Override
    protected CreateTemplateAction buildWsAction() {
        return new CreateTemplateAction(db.getDbClient(), userSession, system, newPermissionWsSupport());
    }

    @Test
    public void create_full_permission_template() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        TestResponse result = newRequest("Finance", "Permissions for financially related projects", ".*\\.finance\\..*");

        assertJson(result.getInput())
            .ignoreFields("id")
            .isSimilarTo(getClass().getResource("create_template-example.json"));
        PermissionTemplateDto finance = selectTemplateInDefaultOrganization("Finance");
        assertThat(finance.getName()).isEqualTo("Finance");
        assertThat(finance.getDescription()).isEqualTo("Permissions for financially related projects");
        assertThat(finance.getKeyPattern()).isEqualTo(".*\\.finance\\..*");
        assertThat(finance.getUuid()).isNotEmpty();
        assertThat(finance.getCreatedAt().getTime()).isEqualTo(NOW);
        assertThat(finance.getUpdatedAt().getTime()).isEqualTo(NOW);
    }

    @Test
    public void create_minimalist_permission_template() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        newRequest("Finance", null, null);

        PermissionTemplateDto finance = selectTemplateInDefaultOrganization("Finance");
        assertThat(finance.getName()).isEqualTo("Finance");
        assertThat(finance.getDescription()).isNullOrEmpty();
        assertThat(finance.getKeyPattern()).isNullOrEmpty();
        assertThat(finance.getUuid()).isNotEmpty();
        assertThat(finance.getCreatedAt().getTime()).isEqualTo(NOW);
        assertThat(finance.getUpdatedAt().getTime()).isEqualTo(NOW);
    }

    @Test
    public void fail_if_name_not_provided() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(IllegalArgumentException.class);
    }
}

```

```

    newRequest(null, null, null);
}

@Test
public void fail_if_name_empty() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("The template name must not be blank");

    newRequest("", null, null);
}

@Test
public void fail_if_regexp_if_not_valid() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("The 'projectKeyPattern' parameter must be a valid Java regular expression.
'[azerty' was passed");

    newRequest("Finance", null, "[azerty");
}

@Test
public void fail_if_name_already_exists_in_database_case_insensitive() throws Exception {
    loginAsAdmin(db.getDefaultOrganization());
    PermissionTemplateDto template = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("A template with the name " + template.getName() + " already exists (case
insensitive).");

    newRequest(template.getName(), null, null);
}

@Test
public void fail_if_not_admin() throws Exception {
    userSession.logIn().addPermission(ADMINISTER_QUALITY_PROFILES, db.getDefaultOrganization());

    expectedException.expect(ForbiddenException.class);

    newRequest("Finance", null, null);
}

private TestResponse newRequest(@Nullable String name, @Nullable String description, @Nullable String
projectPattern) {

```

```

TestRequest request = newRequest();
if (name != null) {
    request.setParam(PARAM_NAME, name);
}
if (description != null) {
    request.setParam(PARAM_DESCRIPTION, description);
}
if (projectPattern != null) {
    request.setParam(PARAM_PROJECT_KEY_PATTERN, projectPattern);
}

return request.execute();
}
}
/*
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 */
package org.sonar.server.permission.ws.template;

import java.util.Optional;
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.permission.template.PermissionTemplateCharacteristicDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.permission.ws.BasePermissionWsTest;

```

```

import static org.assertj.core.api.Assertions.assertThat;
import static org.mockito.Mockito.mock;
import static org.mockito.Mockito.when;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;

public class RemoveProjectCreatorFromTemplateActionTest extends
BasePermissionWsTest<RemoveProjectCreatorFromTemplateAction> {

    private System2 system = mock(System2.class);
    private PermissionTemplateDto template;

    @Override
    protected RemoveProjectCreatorFromTemplateAction buildWsAction() {
        return new RemoveProjectCreatorFromTemplateAction(db.getDbClient(), newPermissionWsSupport(),
userSession, system);
    }

    @Before
    public void setUp() {
        loginAsAdmin(db.getDefaultOrganization());
        when(system.now()).thenReturn(2_000_000_000L);
        template = db.permissionTemplates().insertTemplate(db.getDefaultOrganization());
    }

    @Test
    public void update_template_permission() {
        PermissionTemplateCharacteristicDto characteristic =
db.getDbClient().permissionTemplateCharacteristicDao().insert(db.getSession(),
        new PermissionTemplateCharacteristicDto()
            .setTemplateId(template.getId())
            .setPermission(UserRole.USER)
            .setWithProjectCreator(false)
            .setCreatedAt(1_000_000_000L)
            .setUpdatedAt(1_000_000_000L));
        db.commit();
        when(system.now()).thenReturn(3_000_000_000L);

        newRequest()
            .setParam(PARAM_PERMISSION, UserRole.USER)
            .setParam(PARAM_TEMPLATE_NAME, template.getName())
            .execute();

        assertWithoutProjectCreatorFor(UserRole.USER);
        PermissionTemplateCharacteristicDto reloaded = reload(characteristic);
        assertThat(reloaded.getCreatedAt()).isEqualTo(1_000_000_000L);
        assertThat(reloaded.getUpdatedAt()).isEqualTo(3_000_000_000L);
    }
}

```



```

}

@Test
public void do_not_fail_when_no_template_permission() {
    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.ADMIN)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .execute();

    assertNoTemplatePermissionFor(UserRole.ADMIN);
}

@Test
public void fail_when_template_does_not_exist() {
    expectedException.expect(NotFoundException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.ADMIN)
        .setParam(PARAM_TEMPLATE_ID, "42")
        .execute();
}

@Test
public void fail_if_permission_is_not_a_project_permission() {
    expectedException.expect(IllegalArgumentException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, GlobalPermissions.QUALITY_GATE_ADMIN)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .execute();
}

@Test
public void fail_if_not_authenticated() {
    userSession.anonymous();

    expectedException.expect(UnauthorizedException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.ADMIN)
        .setParam(PARAM_TEMPLATE_ID, template.getUuid())
        .execute();
}

@Test
public void fail_if_insufficient_privileges() {
    userSession.logIn();
}

```

```

expectedException.expect(ForbiddenException.class);

newRequest()
    .setParam(PARAM_PERMISSION, UserRole.ADMIN)
    .setParam(PARAM_TEMPLATE_ID, template.getUuid())
    .execute();
}

private void assertWithoutProjectCreatorFor(String permission) {
    Optional<PermissionTemplateCharacteristicDto> templatePermission =
db.getClient().permissionTemplateCharacteristicDao().selectByPermissionAndTemplateId(db.getSession(),
    permission, template.getId());
    assertThat(templatePermission).isPresent();
    assertThat(templatePermission.get().getWithProjectCreator()).isFalse();
}

private void assertNoTemplatePermissionFor(String permission) {
    Optional<PermissionTemplateCharacteristicDto> templatePermission =
db.getClient().permissionTemplateCharacteristicDao().selectByPermissionAndTemplateId(db.getSession(),
    permission, template.getId());
    assertThat(templatePermission).isNotPresent();
}

private PermissionTemplateCharacteristicDto reload(PermissionTemplateCharacteristicDto characteristic) {
    return
db.getClient().permissionTemplateCharacteristicDao().selectByPermissionAndTemplateId(db.getSession(),
characteristic.getPermission(), characteristic.getTemplateId())
    .get();
}
}
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*/

```

```

*/
package org.sonar.server.permission.ws.template;

import org.junit.rules.ExternalResource;
import org.sonar.api.resources.ResourceType;
import org.sonar.api.resources.ResourceTypeTree;
import org.sonar.api.resources.ResourceTypes;
import org.sonar.db.organization.DefaultTemplates;

import static org.sonar.api.resources.Qualifiers.APP;
import static org.sonar.api.resources.Qualifiers.PROJECT;
import static org.sonar.api.resources.Qualifiers.VIEW;

public class DefaultTemplatesResolverRule extends ExternalResource implements DefaultTemplatesResolver {
    private static final DefaultTemplatesResolver WITH_GOV = new DefaultTemplatesResolverImpl(
        new ResourceTypes(new ResourceTypeTree[] {
            ResourceType.builder()
                .addType(ResourceType.builder(PROJECT).build())
                .build(),
            ResourceTypeTree.builder()
                .addType(ResourceType.builder(VIEW).build())
                .build(),
            ResourceTypeTree.builder()
                .addType(ResourceType.builder(APP).build())
                .build()
        }));
    private static final DefaultTemplatesResolver WITHOUT_GOV = new DefaultTemplatesResolverImpl(
        new ResourceTypes(new ResourceTypeTree[] {ResourceTypeTree.builder()
            .addType(ResourceType.builder(PROJECT).build())
            .build()}));

    private final boolean governanceInitiallyInstalled;
    private boolean governanceInstalled;

    private DefaultTemplatesResolverRule(boolean governanceInitiallyInstalled) {
        this.governanceInitiallyInstalled = governanceInitiallyInstalled;
        this.governanceInstalled = governanceInitiallyInstalled;
    }

    @Override
    protected void before() {
        this.governanceInstalled = governanceInitiallyInstalled;
    }

    public void installGovernance() {
        this.governanceInstalled = true;
    }
}

```

```

public void uninstallGovernance() {
    this.governanceInstalled = false;
}

public static DefaultTemplatesResolverRule withoutGovernance() {
    return new DefaultTemplatesResolverRule(false);
}

public static DefaultTemplatesResolverRule withGovernance() {
    return new DefaultTemplatesResolverRule(true);
}

@Override
public DefaultTemplatesResolverImpl.ResolvedDefaultTemplates resolve(DefaultTemplates defaultTemplates) {
    if (governanceInstalled) {
        return WITH_GOV.resolve(defaultTemplates);
    }
    return WITHOUT_GOV.resolve(defaultTemplates);
}
}
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 */
package org.sonar.server.permission.ws.template;

import java.util.Collections;
import java.util.List;
import org.apache.commons.lang.StringUtils;
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.server.ws.WebService.Param;

```

```

import org.sonar.api.web.UserRole;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.es.ProjectIndexers;
import org.sonar.server.es.TestProjectIndexers;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.i18n.I18nRule;
import org.sonar.server.permission.PermissionTemplateService;
import org.sonar.server.permission.ws.BasePermissionWsTest;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.utils.DateUtils.parseDate;
import static org.sonar.db.component.ComponentTesting.newApplication;
import static org.sonar.db.component.ComponentTesting.newView;
import static org.sonar.db.component.SnapshotTesting.newAnalysis;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_TEMPLATE_NAME;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_ANALYZED_BEFORE;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_ON_PROVISIONED_ONLY;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_PROJECTS;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_QUALIFIERS;
import static org.sonarqube.ws.client.project.ProjectsWsParameters.PARAM_VISIBILITY;

public class BulkApplyTemplateActionTest extends BasePermissionWsTest<BulkApplyTemplateAction> {

    @org.junit.Rule
    public DefaultTemplatesResolverRule defaultTemplatesResolver =
        DefaultTemplatesResolverRule.withoutGovernance();

    private UserDto user1;
    private UserDto user2;
    private GroupDto group1;
    private GroupDto group2;
    private OrganizationDto organization;
    private PermissionTemplateDto template1;
    private PermissionTemplateDto template2;
    private ProjectIndexers projectIndexers = new TestProjectIndexers();

    @Override
    protected BulkApplyTemplateAction buildWsAction() {
        PermissionTemplateService permissionTemplateService = new PermissionTemplateService(db.getDbClient(),

```

```

    projectIndexers, userSession, defaultTemplatesResolver);
    return new BulkApplyTemplateAction(db.getClient(), userSession, permissionTemplateService,
newPermissionWsSupport(), new I18nRule(), newRootResourceTypes());
}

```

@Before

```

public void setUp() {
    organization = db.organizations().insert();

    user1 = db.users().insertUser();
    user2 = db.users().insertUser();
    group1 = db.users().insertGroup(organization);
    group2 = db.users().insertGroup(organization);

    db.organizations().addMember(organization, user1);
    db.organizations().addMember(organization, user2);

    // template 1 for org 1
    template1 = db.permissionTemplates().insertTemplate(organization);
    addUserToTemplate(user1, template1, UserRole.CODEVIEWER);
    addUserToTemplate(user2, template1, UserRole.ISSUE_ADMIN);
    addGroupToTemplate(group1, template1, UserRole.ADMIN);
    addGroupToTemplate(group2, template1, UserRole.USER);
    // template 2
    template2 = db.permissionTemplates().insertTemplate(organization);
    addUserToTemplate(user1, template2, UserRole.USER);
    addUserToTemplate(user2, template2, UserRole.USER);
    addGroupToTemplate(group1, template2, UserRole.USER);
    addGroupToTemplate(group2, template2, UserRole.USER);
}

```

@Test

```

public void bulk_apply_template_by_template_uuid() {
    // this project should not be applied the template
    OrganizationDto otherOrganization = db.organizations().insert();
    db.components().insertPrivateProject(otherOrganization);

    ComponentDto privateProject = db.components().insertPrivateProject(organization);
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .execute();

    assertTemplate1AppliedToPrivateProject(privateProject);
    assertTemplate1AppliedToPublicProject(publicProject);
}

```

```

@Test
public void
request_throws_NotFoundException_if_template_with_specified_name_does_not_exist_in_specified_organization(
) {
    OrganizationDto otherOrganization = db.organizations().insert();
    loginAsAdmin(otherOrganization);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with name '" + template1.getName()
    + "' is not found (case insensitive) in organization with key '" + otherOrganization.getKey() + "'");

    newRequest()
        .setParam(PARAM_ORGANIZATION, otherOrganization.getKey())
        .setParam(PARAM_TEMPLATE_NAME, template1.getName())
        .execute();
}

```

```

@Test
public void request_throws_IAE_if_more_than_1000_projects() {
    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("'projects' can contains only 1000 values, got 1001");

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_TEMPLATE_NAME, template1.getName())
        .setParam(PARAM_PROJECTS, StringUtils.join(Collections.nCopies(1_001, "foo"), ","))
        .execute();
}

```

```

@Test
public void bulk_apply_template_by_template_name() {
    ComponentDto privateProject = db.components().insertPrivateProject(organization);
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_TEMPLATE_NAME, template1.getName())
        .execute();

    assertTemplate1AppliedToPrivateProject(privateProject);
    assertTemplate1AppliedToPublicProject(publicProject);
}

```

```

@Test
public void apply_template_by_qualifiers() {
    ComponentDto publicProject = db.components().insertPublicProject(organization);
}

```

```

ComponentDto privateProject = db.components().insertPrivateProject(organization);
ComponentDto view = db.components().insertComponent(new View(organization));
ComponentDto application = db.components().insertComponent(new Application(organization));
loginAsAdmin(organization);

newRequest()
    .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
    .setParam(PARAM_QUALIFIERS, String.join(",", Qualifiers.PROJECT, Qualifiers.APP))
    .execute();

assertTemplate1AppliedToPrivateProject(privateProject);
assertTemplate1AppliedToPublicProject(publicProject);
assertTemplate1AppliedToPublicProject(application);
assertNoPermissionOnProject(view);
}

@Test
public void apply_template_by_query_on_name_and_key_public_project() {
    ComponentDto publicProjectFoundByKey =
ComponentTesting.newPublicProjectDto(organization).setDbKey("sonar");
    db.components().insertProjectAndSnapshot(publicProjectFoundByKey);
    ComponentDto publicProjectFoundByName =
ComponentTesting.newPublicProjectDto(organization).setName("name-sonar-name");
    db.components().insertProjectAndSnapshot(publicProjectFoundByName);
    ComponentDto projectUntouched = ComponentTesting.newPublicProjectDto(organization).setDbKey("new-
sona").setName("project-name");
    db.components().insertProjectAndSnapshot(projectUntouched);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(Param.TEXT_QUERY, "SONAR")
        .execute();

    assertTemplate1AppliedToPublicProject(publicProjectFoundByKey);
    assertTemplate1AppliedToPublicProject(publicProjectFoundByName);
    assertNoPermissionOnProject(projectUntouched);
}

@Test
public void apply_template_by_query_on_name_and_key() {
    // partial match on key
    ComponentDto privateProjectFoundByKey =
ComponentTesting.newPrivateProjectDto(organization).setDbKey("sonarqube");
    db.components().insertProjectAndSnapshot(privateProjectFoundByKey);
    ComponentDto privateProjectFoundByName =
ComponentTesting.newPrivateProjectDto(organization).setName("name-sonar-name");
    db.components().insertProjectAndSnapshot(privateProjectFoundByName);

```



```

    ComponentDto projectUntouched = ComponentTesting.newPublicProjectDto(organization).setDbKey("new-sona").setName("project-name");
    db.components().insertProjectAndSnapshot(projectUntouched);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(Param.TEXT_QUERY, "SONAR")
        .execute();

    assertTemplate1AppliedToPrivateProject(privateProjectFoundByKey);
    assertTemplate1AppliedToPrivateProject(privateProjectFoundByName);
    assertNoPermissionOnProject(projectUntouched);
}

@Test
public void apply_template_by_project_keys() {
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    ComponentDto untouchedProject = db.components().insertPrivateProject(organization);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(PARAM_PROJECTS, String.join(", ", project1.getKey(), project2.getKey()))
        .execute();

    assertTemplate1AppliedToPrivateProject(project1);
    assertTemplate1AppliedToPrivateProject(project2);
    assertNoPermissionOnProject(untouchedProject);
}

@Test
public void apply_template_by_provisioned_only() {
    ComponentDto provisionedProject1 = db.components().insertPrivateProject(organization);
    ComponentDto provisionedProject2 = db.components().insertPrivateProject(organization);
    ComponentDto analyzedProject = db.components().insertPrivateProject(organization);
    db.components().insertSnapshot(new Analysis(analyzedProject));
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(PARAM_ON_PROVISIONED_ONLY, "true")
        .execute();

    assertTemplate1AppliedToPrivateProject(provisionedProject1);
    assertTemplate1AppliedToPrivateProject(provisionedProject2);
    assertNoPermissionOnProject(analyzedProject);
}

```

```

}

@Test
public void apply_template_by_analyzed_before() {
    ComponentDto oldProject1 = db.components().insertPrivateProject(organization);
    ComponentDto oldProject2 = db.components().insertPrivateProject(organization);
    ComponentDto recentProject = db.components().insertPrivateProject(organization);
    db.components().insertSnapshot(oldProject1, a -> a.setCreatedAt(parseDate("2015-02-03").getTime()));
    db.components().insertSnapshot(oldProject2, a -> a.setCreatedAt(parseDate("2016-12-11").getTime()));
    db.components().insertSnapshot(recentProject, a -> a.setCreatedAt(System.currentTimeMillis()));
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(PARAM_ANALYZED_BEFORE, "2017-09-07")
        .execute();

    assertTemplate1AppliedToPrivateProject(oldProject1);
    assertTemplate1AppliedToPrivateProject(oldProject2);
    assertNoPermissionOnProject(recentProject);
}

@Test
public void apply_template_by_visibility() {
    ComponentDto privateProject1 = db.components().insertPrivateProject(organization);
    ComponentDto privateProject2 = db.components().insertPrivateProject(organization);
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_TEMPLATE_ID, template1.getUuid())
        .setParam(PARAM_VISIBILITY, "private")
        .execute();

    assertTemplate1AppliedToPrivateProject(privateProject1);
    assertTemplate1AppliedToPrivateProject(privateProject2);
    assertNoPermissionOnProject(publicProject);
}

@Test
public void fail_if_no_template_parameter() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Template name or template id must be provided, not both.");

    newRequest().execute();
}

```

```

@Test
public void fail_if_template_name_is_incorrect() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("Permission template with id 'unknown-template-uuid' is not found");

    newRequest().setParam(PARAM_TEMPLATE_ID, "unknown-template-uuid").execute();
}

private void assertTemplate1AppliedToPublicProject(ComponentDto project) {
    assertThat(selectProjectPermissionGroups(project, UserRole.ADMIN)).containsExactly(group1.getName());
    assertThat(selectProjectPermissionGroups(project, UserRole.USER)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.ADMIN)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.CODEVIEWER)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.ISSUE_ADMIN)).containsExactly(user2.getId());
}

private void assertTemplate1AppliedToPrivateProject(ComponentDto project) {
    assertThat(selectProjectPermissionGroups(project, UserRole.ADMIN)).containsExactly(group1.getName());
    assertThat(selectProjectPermissionGroups(project, UserRole.USER)).containsExactly(group2.getName());
    assertThat(selectProjectPermissionUsers(project, UserRole.ADMIN)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.CODEVIEWER)).containsExactly(user1.getId());
    assertThat(selectProjectPermissionUsers(project, UserRole.ISSUE_ADMIN)).containsExactly(user2.getId());
}

private void assertNoPermissionOnProject(ComponentDto project) {
    assertThat(selectProjectPermissionGroups(project, UserRole.ADMIN)).isEmpty();
    assertThat(selectProjectPermissionGroups(project, UserRole.CODEVIEWER)).isEmpty();
    assertThat(selectProjectPermissionGroups(project, UserRole.ISSUE_ADMIN)).isEmpty();
    assertThat(selectProjectPermissionGroups(project, UserRole.USER)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.ADMIN)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.CODEVIEWER)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.ISSUE_ADMIN)).isEmpty();
    assertThat(selectProjectPermissionUsers(project, UserRole.USER)).isEmpty();
}

private void addUserToTemplate(UserDto user, PermissionTemplateDto permissionTemplate, String permission) {
    db.getClient().permissionTemplateDao().insertUserPermission(db.getSession(), permissionTemplate.getId(),
user.getId(), permission);
    db.commit();
}

private void addGroupToTemplate(GroupDto group, PermissionTemplateDto permissionTemplate, String
permission) {
    db.getClient().permissionTemplateDao().insertGroupPermission(db.getSession(), permissionTemplate.getId(),
group.getId(), permission);
}

```

```

    db.commit();
}

private List<String> selectProjectPermissionGroups(ComponentDto project, String permission) {
    PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(project.getOrganizationUuid()).setPermission(permission).setComponentUuid(project.uuid()).build();
    return db.getDbClient().groupPermissionDao().selectGroupNamesByQuery(db.getSession(), query);
}

private List<Integer> selectProjectPermissionUsers(ComponentDto project, String permission) {
    PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(project.getOrganizationUuid()).setPermission(permission).setComponentUuid(project.uuid()).build();
    return db.getDbClient().userPermissionDao().selectUserIdsByQuery(db.getSession(), query);
}
}
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws;

import org.junit.Test;
import org.sonar.api.web.UserRole;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;

```

```

import org.sonar.server.exceptions.ServerException;

import static java.lang.String.format;
import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.fail;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.component.ComponentTesting.newDirectory;
import static org.sonar.db.component.ComponentTesting.newFileDto;
import static org.sonar.db.component.ComponentTesting.newModuleDto;
import static org.sonar.db.component.ComponentTesting.newPrivateProjectDto;
import static org.sonar.db.component.ComponentTesting.newSubView;
import static org.sonar.db.component.ComponentTesting.newView;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_NAME;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;

public class AddGroupActionTest extends BasePermissionWsTest<AddGroupAction> {

    private static final String A_PROJECT_UUID = "project-uuid";
    private static final String A_PROJECT_KEY = "project-key";

    @Override
    protected AddGroupAction buildWsAction() {
        return new AddGroupAction(db.getDbClient(), userSession, newPermissionUpdater(),
newPermissionWsSupport());
    }

    @Test
    public void add_permission_to_group_referenced_by_its_name() {
        GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
        loginAsAdmin(db.getDefaultOrganization());

        newRequest()
            .setParam(PARAM_GROUP_NAME, "sonar-administrators")
            .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
            .execute();

        assertThat(db.users().selectGroupPermissions(group, null)).containsOnly(SYSTEM_ADMIN);
    }
}

```

```

@Test
public void reference_group_by_its_name_in_organization() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group = db.users().insertGroup(org, "the-group");
    loginAsAdmin(org);

    newRequest()
        .setParam(PARAM_ORGANIZATION, org.getKey())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, PROVISIONING)
        .execute();

    assertThat(db.users().selectGroupPermissions(group, null)).containsOnly(PROVISIONING);
}

@Test
public void add_permission_to_group_referenced_by_its_id() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_ID, group.getId().toString())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectGroupPermissions(group, null)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void add_permission_to_project_referenced_by_its_id() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    ComponentDto project = db.components().insertComponent(new PrivateProjectDto(db.getDefaultOrganization(),
A_PROJECT_UUID).setDbKey(A_PROJECT_KEY));
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, A_PROJECT_UUID)
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
    assertThat(db.users().selectGroupPermissions(group, project)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void add_permission_to_project_referenced_by_its_key() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");

```

```

    ComponentDto project = db.components().insertComponent(new PrivateProjectDto(db.getDefaultOrganization(),
A_PROJECT_UUID).setDbKey(A_PROJECT_KEY));
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_KEY, A_PROJECT_KEY)
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
    assertThat(db.users().selectGroupPermissions(group, project)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void add_with_view_uuid() {
    OrganizationDto organizationDto = db.getDefaultOrganization();
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    ComponentDto view = db.components().insertComponent(new View(organizationDto, "view-
uuid").setDbKey("view-key"));
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, view.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
    assertThat(db.users().selectGroupPermissions(group, view)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void fail_if_project_uuid_is_not_found() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, "not-found")
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_component_is_a_module() {
    ComponentDto module =

```

```

db.components().insertComponent(newModuleDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));

    failIfComponentIsNotAProjectOrView(module);
}

@Test
public void fail_when_component_is_a_directory() {
    ComponentDto file =
db.components().insertComponent(newDirectory(ComponentTesting.newPrivateProjectDto(db.organizations().insert()), "A/B"));

    failIfComponentIsNotAProjectOrView(file);
}

@Test
public void fail_when_component_is_a_file() {
    ComponentDto file =
db.components().insertComponent(newFileDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert()), null, "file-uuid"));

    failIfComponentIsNotAProjectOrView(file);
}

@Test
public void fail_when_component_is_a_subview() {
    ComponentDto file =
db.components().insertComponent(newSubView(ComponentTesting.newView(db.organizations().insert())));

    failIfComponentIsNotAProjectOrView(file);
}

private void failIfComponentIsNotAProjectOrView(ComponentDto file) {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Component " + file.getDbKey() + " (id: " + file.uuid() + ") must be a project or a view.");

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, file.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test

```



```

public void adding_a_project_permission_fails_if_project_is_not_set() throws Exception {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    executeRequest(group, UserRole.ISSUE_ADMIN);
}

@Test
public void adding_a_project_permission_fails_if_component_is_not_a_project() {
    OrganizationDto organizationDto = db.getDefaultOrganization();
    GroupDto group = db.users().insertGroup(organizationDto, "sonar-administrators");
    ComponentDto project = db.components().insertComponent(new PrivateProjectDto(organizationDto,
A_PROJECT_UUID).setDbKey(A_PROJECT_KEY));
    ComponentDto file = db.components().insertComponent(ComponentTesting.newFileDto(project, null, "file-
uuid"));
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, file.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_get_request() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(ServerException.class);

    newRequest()
        .setMethod("GET")
        .setParam(PARAM_GROUP_NAME, "sonar-administrators")
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_group_name_and_group_id_are_missing() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Group name or group id must be provided");
}

```

```

newRequest()
    .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
    .execute();
}

@Test
public void fail_when_permission_is_missing() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .execute();
}

@Test
public void fail_if_not_administrator_of_organization() {
    GroupDto group = db.users().insertGroup();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .execute();
}

@Test
public void fail_if_administrator_of_other_organization_only() {
    OrganizationDto org1 = db.organizations().insert();
    OrganizationDto org2 = db.organizations().insert();
    GroupDto group = db.users().insertGroup(org1, "the-group");
    loginAsAdmin(org2);

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_GROUP_ID, group.getId().toString())
        .setParam(PARAM_PERMISSION, PROVISIONING)
        .execute();
}

@Test
public void fail_when_project_uuid_and_project_key_are_provided() {
    GroupDto group = db.users().insertGroup();
    ComponentDto project =

```

```

db.components().insertComponent(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));
loginAsAdmin(db.getDefaultOrganization());

expectedException.expect(BadRequestException.class);
expectedException.expectMessage("Project id or project key can be provided, not both.");

newRequest()
    .setParam(PARAM_GROUP_NAME, group.getName())
    .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
    .setParam(PARAM_PROJECT_ID, project.uuid())
    .setParam(PARAM_PROJECT_KEY, project.getDbKey())
    .execute();
}

@Test
public void adding_global_permission_fails_if_not_administrator_of_organization() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    // user is administrator of another organization
    userSession.logIn().addPermission(ADMINISTER, "anotherOrg");

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, PROVISIONING)
        .execute();
}

@Test
public void adding_project_permission_fails_if_not_administrator_of_project() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
    ComponentDto project = db.components().insertPrivateProject();
    userSession.logIn();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, PROVISIONING)
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .execute();
}

/**
 * User is project administrator but not system administrator
 */
@Test
public void adding_project_permission_is_allowed_to_project_administrators() {

```

```

GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");
ComponentDto project = db.components().insertPrivateProject();
userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

newRequest()
    .setParam(PARAM_GROUP_NAME, group.getName())
    .setParam(PARAM_PROJECT_ID, project.uuid())
    .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
    .execute();

assertThat(db.users().selectGroupPermissions(group, project)).containsOnly(ISSUE_ADMIN);
}

@Test
public void fails_when_adding_any_permission_to_group_AnyOne_on_a_private_project() {
    ComponentDto project = db.components().insertPrivateProject();
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    ProjectPermissions.ALL
        .forEach(permission -> {
            try {
                newRequest()
                    .setParam(PARAM_GROUP_NAME, "anyone")
                    .setParam(PARAM_PROJECT_ID, project.uuid())
                    .setParam(PARAM_PERMISSION, permission)
                    .execute();
                fail("a BadRequestException should have been raised for " + permission);
            } catch (BadRequestException e) {
                assertThat(e).hasMessage("No permission can be granted to Anyone on a private component");
            }
        });
}

@Test
public void no_effect_when_adding_USER_permission_to_group_AnyOne_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    newRequest()
        .setParam(PARAM_GROUP_NAME, "anyone")
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, USER)
        .execute();

    assertThat(db.users().selectAnyonePermissions(organization, project)).isEmpty();
}

```

```

@Test
public void no_effect_when_adding_CODEVIEWER_permission_to_group_AnyOne_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    newRequest()
        .setParam(PARAM_GROUP_NAME, "anyone")
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .execute();

    assertThat(db.users().selectAnyonePermissions(organization, project)).isEmpty();
}

```

```

@Test
public void no_effect_when_adding_USER_permission_to_group_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, USER)
        .execute();

    assertThat(db.users().selectAnyonePermissions(organization, project)).isEmpty();
}

```

```

@Test
public void no_effect_when_adding_CODEVIEWER_permission_to_group_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .execute();

    assertThat(db.users().selectAnyonePermissions(organization, project)).isEmpty();
}

```

```

@Test
public void fail_when_using_branch_db_key() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();
}

@Test
public void fail_when_using_branch_uuid() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project id '%s' not found", branch.uuid()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_ID, branch.uuid())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();
}

private void executeRequest(GroupDto groupDto, String permission) {
    newRequest()
        .setParam(PARAM_GROUP_NAME, groupDto.getName())
        .setParam(PARAM_PERMISSION, permission)
        .execute();
}
}

```

```

/*
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws;

import org.junit.Before;
import org.junit.Test;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.GroupTesting;
import org.sonar.db.user.UserDto;
import org.sonar.db.user.UserTesting;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.i18n.I18nRule;
import org.sonarqube.ws.Permissions;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;
import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_PROFILES;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonar.test.JsonAssert.assertThat;

public class SearchGlobalPermissionsActionTest extends BasePermissionWsTest<SearchGlobalPermissionsAction>
{

```

```

private I18nRule i18n = new I18nRule();

@Override
protected SearchGlobalPermissionsAction buildWsAction() {
    return new SearchGlobalPermissionsAction(db.getDbClient(), userSession, i18n, newPermissionWsSupport());
}

@Before
public void setUp() {
    initI18nMessages();
}

@Test
public void search_in_organization() {
    OrganizationDto org = db.organizations().insert();
    loginAsAdmin(org);
    GroupDto adminGroup = db.users().insertGroup(newGroup(org, "sonar-admins", "Administrators"));
    GroupDto userGroup = db.users().insertGroup(newGroup(org, "sonar-users", "Users"));
    db.users().insertPermissionOnAnyone(org, SCAN);
    db.users().insertPermissionOnGroup(userGroup, SCAN);
    db.users().insertPermissionOnGroup(userGroup, PROVISIONING);
    db.users().insertPermissionOnGroup(adminGroup, ADMINISTER);
    UserDto user = db.users().insertUser(newUserDto("user", "user-name"));
    UserDto adminUser = db.users().insertUser(newUserDto("admin", "admin-name"));
    db.organizations().addMember(org, user);
    db.organizations().addMember(org, adminUser);
    db.users().insertPermissionOnUser(org, user, PROVISION_PROJECTS);
    db.users().insertPermissionOnUser(org, user, ADMINISTER_QUALITY_PROFILES);
    db.users().insertPermissionOnUser(org, adminUser, ADMINISTER_QUALITY_PROFILES);
    db.users().insertPermissionOnUser(org, user, ADMINISTER_QUALITY_GATES);
    db.users().insertPermissionOnUser(org, adminUser, ADMINISTER_QUALITY_GATES);

    // to be excluded, permission on another organization (the default one)
    db.users().insertPermissionOnUser(db.getDefaultOrganization(), adminUser,
ADMINISTER_QUALITY_GATES);

    String result = newRequest()
        .setParam("organization", org.getKey())
        .execute()
        .getInput();

    assertJson(result).isSimilarTo(getClass().getResource("search_global_permissions-example.json"));
}

@Test
public void search_in_default_organization_by_default() {
    OrganizationDto org = db.organizations().insert();
    loginAsAdmin(org, db.getDefaultOrganization());
}

```



```

UserDto user = db.users().insertUser();
db.users().insertPermissionOnUser(db.getDefaultOrganization(), user, SCAN);
db.organizations().addMember(db.getDefaultOrganization(), user);

// to be ignored, by default organization is used when searching for permissions
db.users().insertPermissionOnUser(org, user, ADMINISTER_QUALITY_GATES);
db.organizations().addMember(org, user);

Permissions.WsSearchGlobalPermissionsResponse result = newRequest()
    .executeProtobuf(Permissions.WsSearchGlobalPermissionsResponse.class);

assertThat(result.getPermissionsCount()).isEqualTo(GlobalPermissions.ALL.size());
for (Permissions.Permission permission : result.getPermissionsList()) {
    if (permission.getKey().equals(SCAN_EXECUTION)) {
        assertThat(permission.getUsersCount()).isEqualTo(1);
    } else {
        assertThat(permission.getUsersCount()).isEqualTo(0);
    }
}
}

@Test
public void supports_protobuf_response() {
    loginAsAdmin(db.getDefaultOrganization());

    Permissions.WsSearchGlobalPermissionsResponse result = newRequest()
        .executeProtobuf(Permissions.WsSearchGlobalPermissionsResponse.class);

    assertThat(result).isNotNull();
}

@Test
public void fail_if_not_admin_of_default_organization() {
    userSession.logIn();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .execute();
}

@Test
public void fail_if_not_admin_of_specified_organization() {
    OrganizationDto org = db.organizations().insert();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(ForbiddenException.class);
}

```

```

newRequest()
    .setParam("organization", org.getKey())
    .execute();
}

@Test
public void fail_if_not_logged_in() {
    userSession.anonymous();

    expectedException.expect(UnauthorizedException.class);

    newRequest().execute();
}

@Test
public void fail_if_organization_does_not_exist() {
    expectedException.expect(NotFoundException.class);

    newRequest()
        .setParam("organization", "does_not_exist")
        .execute();
}

private void initI18nMessages() {
    i18n.put("global_permissions.admin", "Administer System");
    i18n.put("global_permissions.admin.desc", "Ability to perform all administration functions for the instance: " +
        "global configuration and personalization of default dashboards.");
    i18n.put("global_permissions.profileadmin", "Administer Quality Profiles");
    i18n.put("global_permissions.profileadmin.desc", "Ability to perform any action on the quality profiles.");
    i18n.put("global_permissions.gateadmin", "Administer Quality Gates");
    i18n.put("global_permissions.gateadmin.desc", "Ability to perform any action on the quality gates.");
    i18n.put("global_permissions.scan", "Execute Analysis");
    i18n.put("global_permissions.scan.desc", "Ability to execute analyses, and to get all settings required to perform
the analysis, " +
        "even the secured ones like the scm account password, the jira account password, and so on.");
    i18n.put("global_permissions.provisioning", "Create Projects");
    i18n.put("global_permissions.provisioning.desc", "Ability to initialize project structure before first analysis.");
}

private static UserDto newUserDto(String login, String name) {
    return UserTesting.newUserDto().setLogin(login).setName(name).setActive(true);
}

private static GroupDto newGroup(OrganizationDto org, String name, String description) {
    return
    GroupTesting.newGroupDto().setName(name).setDescription(description).setOrganizationUuid(org.getUuid());
}

```

```

}
/*
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws;

import org.junit.Before;
import org.junit.Rule;
import org.junit.rules.ExpectedException;
import org.sonar.api.resources.Qualifiers;
import org.sonar.api.utils.internal.AlwaysIncreasingSystem2;
import org.sonar.db.DbClient;
import org.sonar.db.DbTester;
import org.sonar.db.component.ResourceTypesRule;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.template.PermissionTemplateDto;
import org.sonar.server.component.ComponentFinder;
import org.sonar.server.es.EsTester;
import org.sonar.server.es.ProjectIndexersImpl;
import org.sonar.server.organization.TestDefaultOrganizationProvider;
import org.sonar.server.permission.GroupPermissionChanger;
import org.sonar.server.permission.PermissionUpdater;
import org.sonar.server.permission.UserPermissionChanger;
import org.sonar.server.permission.index.FooIndexDefinition;
import org.sonar.server.permission.index.PermissionIndexer;
import org.sonar.server.testers.UserSessionRule;
import org.sonar.server.usergroups.DefaultGroupFinder;
import org.sonar.server.usergroups.ws.GroupWsSupport;
import org.sonar.server.ws.TestRequest;
import org.sonar.server.ws.WsActionTester;

import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;

```

```

import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateDto;

public abstract class BasePermissionWsTest<A extends PermissionsWsAction> {

    @Rule
    public DbTester db = DbTester.create(new AlwaysIncreasingSystem2());

    @Rule
    public EsTester es = EsTester.createCustom(new FooIndexDefinition());

    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    private TestDefaultOrganizationProvider defaultOrganizationProvider =
    TestDefaultOrganizationProvider.from(db);
    protected UserSessionRule userSession = UserSessionRule.standalone();
    protected WsActionTester wsTester;

    @Before
    public void initWsTester() {
        wsTester = new WsActionTester(buildWsAction());
    }

    protected abstract A buildWsAction();

    protected GroupWsSupport newGroupWsSupport() {
        return new GroupWsSupport(db.getDbClient(), defaultOrganizationProvider, new
    DefaultGroupFinder(db.getDbClient()));
    }

    protected PermissionWsSupport newPermissionWsSupport() {
        DbClient dbClient = db.getDbClient();
        return new PermissionWsSupport(dbClient, new ComponentFinder(dbClient, newRootResourceTypes()),
    newGroupWsSupport());
    }

    protected ResourceTypesRule newRootResourceTypes() {
        return new ResourceTypesRule().setRootQualifiers(Qualifiers.PROJECT, Qualifiers.VIEW, Qualifiers.APP);
    }

    protected PermissionUpdater newPermissionUpdater() {
        return new PermissionUpdater(
            new ProjectIndexersImpl(new PermissionIndexer(db.getDbClient(), es.client()),
            new UserPermissionChanger(db.getDbClient()),
            new GroupPermissionChanger(db.getDbClient()));
    }

    protected TestRequest newRequest() {

```

```

return wsTester.newRequest().setMethod("POST");
}

protected void loginAsAdmin(OrganizationDto org, OrganizationDto... otherOrgs) {
    userSession.logIn().addPermission(ADMINISTER, org);
    for (OrganizationDto otherOrg : otherOrgs) {
        userSession.addPermission(ADMINISTER, otherOrg);
    }
}

protected PermissionTemplateDto selectTemplateInDefaultOrganization(String name) {
    return db.getClient().permissionTemplateDao().selectByName(db.getSession(),
db.getDefaultOrganization().getUuid(), name);
}

protected PermissionTemplateDto addTemplate(OrganizationDto organizationDto) {
    PermissionTemplateDto dto = newPermissionTemplateDto()
        .setOrganizationUuid(organizationDto.getUuid());
    db.getClient().permissionTemplateDao().insert(db.getSession(), dto);
    db.commit();
    return dto;
}

protected PermissionTemplateDto addTemplateToDefaultOrganization() {
    return addTemplate(db.getDefaultOrganization());
}
}
}
/*
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.ws;

```

```

import org.junit.Before;
import org.junit.Test;
import org.sonar.api.web.UserRole;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.ServerException;

import static java.lang.String.format;
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.component.ComponentTesting.newDirectory;
import static org.sonar.db.component.ComponentTesting.newFileDto;
import static org.sonar.db.component.ComponentTesting.newModuleDto;
import static org.sonar.db.component.ComponentTesting.newPrivateProjectDto;
import static org.sonar.db.component.ComponentTesting.newSubView;
import static org.sonar.db.component.ComponentTesting.newView;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

public class AddUserActionTest extends BasePermissionWsTest<AddUserAction> {

    private UserDto user;

    @Before
    public void setUp() {
        user = db.users().insertUser("ray.bradbury");
        db.organizations().addMember(db.getDefaultOrganization(), user);
    }

    @Override
    protected AddUserAction buildWsAction() {
        return new AddUserAction(db.getDbClient(), userSession, newPermissionUpdater(),
            newPermissionWsSupport());
    }

    @Test

```

```

public void add_permission_to_user_on_default_organization_if_organization_is_not_specified() {
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectPermissionsOfUser(user, db.getDefaultOrganization())).containsOnly(ADMINISTER);
}

@Test
public void add_permission_to_user_on_specified_organization() {
    OrganizationDto organization = db.organizations().insert();
    addUserAsMemberOfOrganization(organization);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectPermissionsOfUser(user, organization)).containsOnly(ADMINISTER);
}

@Test
public void add_permission_to_project_referenced_by_its_id() {
    OrganizationDto organization = db.organizations().insert();
    addUserAsMemberOfOrganization(organization);
    ComponentDto project = db.components().insertPrivateProject(organization);
    loginAsAdmin(organization);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectPermissionsOfUser(user, organization)).isEmpty();
    assertThat(db.users().selectProjectPermissionsOfUser(user, project)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void add_permission_to_project_referenced_by_its_key() {
    ComponentDto project = db.components().insertPrivateProject();
    loginAsAdmin(db.getDefaultOrganization());

```

```

newRequest()
    .setParam(PARAM_USER_LOGIN, user.getLogin())
    .setParam(PARAM_PROJECT_KEY, project.getDbKey())
    .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
    .execute();

assertThat(db.users().selectPermissionsOfUser(user, db.getDefaultOrganization())).isEmpty();
assertThat(db.users().selectProjectPermissionsOfUser(user, project)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void add_permission_to_view() {
    ComponentDto view = db.components().insertComponent(new View(db.getDefaultOrganization(), "view-
uuid").setDbKey("view-key"));
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, view.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();

    assertThat(db.users().selectPermissionsOfUser(user, db.getDefaultOrganization())).isEmpty();
    assertThat(db.users().selectProjectPermissionsOfUser(user, view)).containsOnly(SYSTEM_ADMIN);
}

@Test
public void fail_when_project_uuid_is_unknown() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, "unknown-project-uuid")
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_component_is_a_module() {
    ComponentDto module =
db.components().insertComponent(new ModuleDto(ComponentTesting.newPrivateProjectDto(db.organizations().ins
ert())));

    failIfComponentIsNotAProjectOrView(module);
}

```



```

@Test
public void fail_when_component_is_a_directory() {
    ComponentDto file =
db.components().insertComponent(newDirectory(ComponentTesting.newPrivateProjectDto(db.organizations().insert(
t()), "A/B"));

    failIfComponentIsNotAProjectOrView(file);
}

@Test
public void fail_when_component_is_a_file() {
    ComponentDto file =
db.components().insertComponent(newFileDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert(
), null, "file-uuid"));

    failIfComponentIsNotAProjectOrView(file);
}

@Test
public void fail_when_component_is_a_subview() {
    ComponentDto file =
db.components().insertComponent(newSubView(ComponentTesting.newView(db.organizations().insert())));

    failIfComponentIsNotAProjectOrView(file);
}

private void failIfComponentIsNotAProjectOrView(ComponentDto file) {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Component " + file.getDbKey() + " (id: " + file.uuid() + ") must be a project
or a view.");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, file.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_project_permission_without_project() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())

```

```

        .setParam(PARAM_PERMISSION, UserRole.ISSUE_ADMIN)
        .execute();
    }

    @Test
    public void fail_when_component_is_not_a_project() {
        db.components().insertComponent(newFileDto(newPrivateProjectDto(db.organizations().insert(), "project-uuid"),
        null, "file-uuid"));
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(BadRequestException.class);

        newRequest()
            .setParam(PARAM_USER_LOGIN, user.getLogin())
            .setParam(PARAM_PROJECT_ID, "file-uuid")
            .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
            .execute();
    }

    @Test
    public void fail_when_get_request() {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(ServerException.class);

        newRequest()
            .setMethod("GET")
            .setParam(PARAM_USER_LOGIN, "george.orwell")
            .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
            .execute();
    }

    @Test
    public void fail_when_user_login_is_missing() {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(IllegalArgumentException.class);

        newRequest()
            .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
            .execute();
    }

    @Test
    public void fail_when_permission_is_missing() {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(NotFoundException.class);
    }

```

```

newRequest()
    .setParam(PARAM_USER_LOGIN, "jrr.tolkien")
    .execute();
}

@Test
public void fail_when_project_uuid_and_project_key_are_provided() {
    db.components().insertPrivateProject();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Project id or project key can be provided, not both.");

    newRequest()
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, "project-uuid")
        .setParam(PARAM_PROJECT_KEY, "project-key")
        .execute();
}

@Test
public void adding_global_permission_fails_if_not_administrator_of_organization() {
    userSession.login();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void adding_project_permission_fails_if_not_administrator_of_project() {
    ComponentDto project = db.components().insertPrivateProject();
    userSession.login();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .execute();
}

```

```

/**
 * User is project administrator but not system administrator
 */
@Test
public void adding_project_permission_is_allowed_to_project_administrators() {
    ComponentDto project = db.components().insertPrivateProject();

    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .setParam(PARAM_PERMISSION, UserRole.ISSUE_ADMIN)
        .execute();

    assertThat(db.users().selectProjectPermissionsOfUser(user, project)).containsOnly(ISSUE_ADMIN);
}

@Test
public void organization_parameter_must_not_be_set_on_project_permissions() {
    ComponentDto project = db.components().insertPrivateProject();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("Organization must not be set when project is set.");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .setParam(PARAM_ORGANIZATION, "an_org")
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();
}

@Test
public void fail_to_add_permission_when_user_is_not_member_of_given_organization() {
    // User is not member of given organization
    OrganizationDto otherOrganization = db.organizations().insert();
    addUserAsMemberOfOrganization(otherOrganization);
    OrganizationDto organization = db.organizations().insert(organizationDto ->
organizationDto.setKey("Organization key"));
    loginAsAdmin(organization);

    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("User 'ray.bradbury' is not member of organization 'Organization key'");

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())

```

```

        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
    }

```

@Test

```

public void no_effect_when_adding_USER_permission_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    addUserAsMemberOfOrganization(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

```

```

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, USER)
        .execute();

```

```

    assertThat(db.users().selectAnyonePermissions(organization, project)).isEmpty();
}

```

@Test

```

public void no_effect_when_adding_CODEVIEWER_permission_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    addUserAsMemberOfOrganization(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

```

```

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .execute();

```

```

    assertThat(db.users().selectAnyonePermissions(organization, project)).isEmpty();
}

```

@Test

```

public void fail_when_using_branch_db_key() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    addUserAsMemberOfOrganization(organization);
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

```

```

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));
}

```

```

newRequest()
    .setParam(PARAM_ORGANIZATION, organization.getKey())
    .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
    .setParam(PARAM_USER_LOGIN, user.getLogin())
    .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
    .execute();
}

@Test
public void fail_when_using_branch_uuid() {
    OrganizationDto organization = db.organizations().insert();
    addUserAsMemberOfOrganization(organization);
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project id '%s' not found", branch.uuid()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_ID, branch.uuid())
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

private void addUserAsMemberOfOrganization(OrganizationDto organization) {
    db.organizations().addMember(organization, user);
}

}
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```

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\*/

```
package org.sonar.server.permission.ws;
```

```
import org.junit.Before;
```

```
import org.junit.Test;
```

```
import org.sonar.api.resources.Qualifiers;
```

```
import org.sonar.api.web.UserRole;
```

```
import org.sonar.db.component.ComponentDbTester;
```

```
import org.sonar.db.component.ComponentDto;
```

```
import org.sonar.db.component.ComponentTesting;
```

```
import org.sonar.db.component.ResourceTypesRule;
```

```
import org.sonar.db.organization.OrganizationDto;
```

```
import org.sonar.db.user.GroupDto;
```

```
import org.sonar.db.user.UserDto;
```

```
import org.sonar.server.exceptions.ForbiddenException;
```

```
import org.sonar.server.exceptions.NotFoundException;
```

```
import org.sonar.server.exceptions.UnauthorizedException;
```

```
import org.sonar.server.i18n.I18nRule;
```

```
import org.sonarqube.ws.Permissions;
```

```
import static java.lang.String.format;
```

```
import static org.assertj.core.api.Assertions.assertThat;
```

```
import static org.sonar.api.server.ws.WebService.Param.PAGE;
```

```
import static org.sonar.api.server.ws.WebService.Param.PAGE_SIZE;
```

```
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
```

```
import static org.sonar.db.component.ComponentTesting.newPrivateProjectDto;
```

```
import static org.sonar.db.component.ComponentTesting.newProjectCopy;
```

```
import static org.sonar.db.component.ComponentTesting.newView;
```

```
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
```

```
import static org.sonar.test.JsonAssert.assertThat;
```

```
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
```

```
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
```

```
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_QUALIFIER;
```

```
public class SearchProjectPermissionsActionTest extends  
BasePermissionWsTest<SearchProjectPermissionsAction> {
```

```
    private ComponentDbTester componentDb = new ComponentDbTester(db);
```

```
    private I18nRule i18n = new I18nRule();
```

```
    @Before
```

```
    public void setUp() {
```

```
        i18n.setProjectPermissions();
```

```
        userSession.login().setSystemAdministrator();
```

```
    }
```

```

@Override
protected SearchProjectPermissionsAction buildWsAction() {
    i18n.setProjectPermissions();
    ResourceTypesRule rootResourceTypes = newRootResourceTypes();
    PermissionWsSupport wsSupport = newPermissionWsSupport();
    return new SearchProjectPermissionsAction(db.getClient(), userSession, i18n, rootResourceTypes, wsSupport);
}

@Test
public void
search_project_permissions_counts_0_users_and_0_groups_on_public_project_without_any_specified_permission_
in_DB() {
    ComponentDto project = db.components().insertPublicProject();

    String result = newRequest().execute().getInput();

    assertJson(result)
        .ignoreFields("permissions")
        .isSimilarTo("{ " +
            " \"paging\": { " +
            " \"pageIndex\": 1, " +
            " \"pageSize\": 25, " +
            " \"total\": 1 " +
            " }, " +
            " \"projects\": [ " +
            " { " +
            " \"id\": \"\" + project.uuid() + "\", " +
            " \"key\": \"\" + project.getDbKey() + "\", " +
            " \"name\": \"\" + project.name() + "\", " +
            " \"qualifier\": \"TRK\", " +
            " \"permissions\": [ " +
            " ] " +
            " } " +
            " ] " +
            "}");
}

@Test
public void
search_project_permissions_counts_0_users_and_0_groups_on_private_project_without_any_specified_permission_
_in_DB() {
    ComponentDto project = db.components().insertPrivateProject();

    String result = newRequest().execute().getInput();

    assertJson(result)
        .ignoreFields("permissions")
        .isSimilarTo("{ " +
            " \"paging\": { " +

```



```

    " \"pageIndex\": 1," +
    " \"pageSize\": 25," +
    " \"total\": 1" +
    " }," +
    " \"projects\": [" +
    " {" +
    "   \"id\": \"\" + project.uuid() + "\", " +
    "   \"key\": \"\" + project.getDbKey() + "\", " +
    "   \"name\": \"\" + project.name() + "\", " +
    "   \"qualifier\": \"TRK\", " +
    "   \"permissions\": []" +
    " }" +
    "]" +
    "});
}

```

@Test

```

public void search_project_permissions() {
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();

    ComponentDto jdk7 = insertJdk7();
    ComponentDto project2 = insertClang();
    ComponentDto view = insertView();
    insertProjectInView(jdk7, view);

    db.users().insertProjectPermissionOnUser(user1, UserRole.ISSUE_ADMIN, jdk7);
    db.users().insertProjectPermissionOnUser(user1, UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnUser(user2, UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnUser(user3, UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnUser(user1, UserRole.ISSUE_ADMIN, project2);
    db.users().insertProjectPermissionOnUser(user1, UserRole.ISSUE_ADMIN, view);
    // global permission
    db.users().insertPermissionOnUser(user1, ADMINISTER);

    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    GroupDto group3 = db.users().insertGroup();

    db.users().insertProjectPermissionOnAnyone(UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnGroup(group1, UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnGroup(group2, UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnGroup(group3, UserRole.ADMIN, jdk7);
    db.users().insertProjectPermissionOnGroup(group2, UserRole.ADMIN, view);

    db.commit();
}

```

```

String result = newRequest().execute().getInput();

assertJson(result)
    .ignoreFields("permissions")
    .isSimilarTo(getClass().getResource("search_project_permissions-example.json"));
}

@Test
public void empty_result() {
    String result = newRequest().execute().getInput();

    assertJson(result)
        .ignoreFields("permissions")
        .isSimilarTo(getClass().getResource("SearchProjectPermissionsActionTest/empty.json"));
}

@Test
public void search_project_permissions_with_project_permission() {
    ComponentDto project = db.components().insertComponent(new PrivateProjectDto(db.getDefaultOrganization(),
"project-uuid"));
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    String result = newRequest()
        .setParam(PARAM_PROJECT_ID, "project-uuid")
        .execute().getInput();

    assertThat(result).contains("project-uuid");
}

@Test
public void has_projects_ordered_by_name() {
    OrganizationDto organizationDto = db.organizations().insert();
    for (int i = 9; i >= 1; i--) {
        db.components().insertComponent(ComponentTesting.newPrivateProjectDto(organizationDto)
            .setName("project-name-" + i));
    }

    String result = newRequest()
        .setParam(PAGE, "1")
        .setParam(PAGE_SIZE, "3")
        .execute().getInput();

    assertThat(result)
        .contains("project-name-1", "project-name-2", "project-name-3")
        .doesNotContain("project-name-4");
}

@Test

```

```

public void search_by_query_on_name() {
componentDb.insertProjectAndSnapshot(ComponentTesting.newPrivateProjectDto(db.getDefaultOrganization()).set
tName("project-name"));
componentDb.insertProjectAndSnapshot(ComponentTesting.newPrivateProjectDto(db.getDefaultOrganization()).set
tName("another-name"));

String result = newRequest()
    .setParam(TEXT_QUERY, "project")
    .execute().getInput();

assertThat(result).contains("project-name")
    .doesNotContain("another-name");
}

@Test
public void search_by_query_on_key_must_match_exactly() {
    OrganizationDto organizationDto = db.organizations().insert();
componentDb.insertProjectAndSnapshot(ComponentTesting.newPrivateProjectDto(organizationDto).setDbKey("pr
oject-key"));
componentDb.insertProjectAndSnapshot(ComponentTesting.newPrivateProjectDto(organizationDto).setDbKey("an
other-key"));

String result = newRequest()
    .setParam(TEXT_QUERY, "project-key")
    .execute()
    .getInput();

assertThat(result).contains("project-key")
    .doesNotContain("another-key");
}

@Test
public void handle_more_than_1000_projects() {
    for (int i = 1; i <= 1001; i++) {
        componentDb.insertProjectAndSnapshot(newPrivateProjectDto(db.getDefaultOrganization(), "project-uuid-" +
i));
    }

String result = newRequest()
    .setParam(TEXT_QUERY, "project")
    .setParam(PAGE_SIZE, "1001")
    .execute()
    .getInput();

assertThat(result).contains("project-uuid-1", "project-uuid-999", "project-uuid-1001");
}

@Test

```

```

public void filter_by_qualifier() {
    OrganizationDto organizationDto = db.organizations().insert();
    db.components().insertComponent(new View(organizationDto, "view-uuid"));
    db.components().insertComponent(new PrivateProjectDto(organizationDto, "project-uuid"));

    Permissions.SearchProjectPermissionsWsResponse result = new Request()
        .setParam(PARAM_QUALIFIER, Qualifiers.PROJECT)
        .executeProtobuf(Permissions.SearchProjectPermissionsWsResponse.class);

    assertThat(result.getProjectsList())
        .extracting("id")
        .contains("project-uuid")
        .doesNotContain("view-uuid");
}

@Test
public void fail_if_not_logged_in() {
    userSession.anonymous();

    expectedException.expect(UnauthorizedException.class);

    new Request().execute();
}

@Test
public void fail_if_not_admin() {
    userSession.logIn();

    expectedException.expect(ForbiddenException.class);

    new Request().execute();
}

@Test
public void display_all_project_permissions() {
    String result = new Request().execute().getInput();

    assertThat(result)
        .ignoreFields("permissions")
        .isSimilarTo(getClass().getResource("SearchProjectPermissionsActionTest/display_all_project_permissions.json"));
}

@Test
public void fail_when_using_branch_db_key() throws Exception {
    ComponentDto project = db.components().insertMainBranch();
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);
}

```

```

expectedException.expect(NotFoundException.class);
expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));

newRequest()
    .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
    .execute();
}

private ComponentDto insertView() {
    return db.components().insertComponent(newView(db.getDefaultOrganization())
        .setUuid("752d8bfd-420c-4a83-a4e5-8ab19b13c8fc")
        .setName("Java")
        .setDbKey("Java"));
}

private ComponentDto insertProjectInView(ComponentDto project, ComponentDto view) {
    return db.components().insertComponent(newProjectCopy("project-in-view-uuid", project, view));
}

private ComponentDto insertClang() {
    return db.components().insertComponent(newPrivateProjectDto(db.getDefaultOrganization(), "project-uuid-2")
        .setName("Clang")
        .setDbKey("clang")
        .setUuid("ce4c03d6-430f-40a9-b777-ad877c00aa4d"));
}

private ComponentDto insertJdk7() {
    return db.components().insertComponent(ComponentTesting.newPublicProjectDto(db.getDefaultOrganization())
        .setName("JDK 7")
        .setDbKey("net.java.openjdk:jdk7")
        .setUuid("0bd7b1e7-91d6-439e-a607-4a3a9aad3c6a"));
}
}
}
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*
*/

```

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\*/

```
package org.sonar.server.permission.ws;
```

```
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.web.UserRole;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.ServerException;
```

```
import static java.lang.String.format;
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;
import static org.sonar.core.permission.GlobalPermissions.QUALITY_GATE_ADMIN;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.component.ComponentTesting.newDirectory;
import static org.sonar.db.component.ComponentTesting.newFileDto;
import static org.sonar.db.component.ComponentTesting.newModuleDto;
import static org.sonar.db.component.ComponentTesting.newPrivateProjectDto;
import static org.sonar.db.component.ComponentTesting.newSubView;
import static org.sonar.db.component.ComponentTesting.newView;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;
```

```
public class RemoveUserActionTest extends BasePermissionWsTest<RemoveUserAction> {
```

```
    private static final String A_PROJECT_UUID = "project-uuid";
    private static final String A_PROJECT_KEY = "project-key";
    private static final String A_LOGIN = "ray.bradbury";
```

```

private UserDto user;

@Before
public void setUp() {
    user = db.users().insertUser(A_LOGIN);
}

@Override
protected RemoveUserAction buildWsAction() {
    return new RemoveUserAction(db.getClient(), userSession, newPermissionUpdater(),
newPermissionWsSupport());
}

@Test
public void remove_permission_from_user() {
    db.users().insertPermissionOnUser(user, PROVISION_PROJECTS);
    db.users().insertPermissionOnUser(user, ADMINISTER_QUALITY_GATES);
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, QUALITY_GATE_ADMIN)
        .execute();

    assertThat(db.users().selectPermissionsOfUser(user,
db.getDefaultOrganization()).containsOnly(PROVISION_PROJECTS);
}

@Test
public void fail_to_remove_admin_permission_if_last_admin() {
    db.users().insertPermissionOnUser(user, ADMINISTER);
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Last user with permission 'admin'. Permission cannot be removed.");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, ADMIN)
        .execute();
}

@Test
public void remove_permission_from_project() {
    ComponentDto project = db.components().insertComponent(newPrivateProjectDto(db.organizations().insert(),
A_PROJECT_UUID).setDbKey(A_PROJECT_KEY));
    db.users().insertProjectPermissionOnUser(user, CODEVIEWER, project);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);
}

```

```

loginAsAdmin(db.getDefaultOrganization());

newRequest()
    .setParam(PARAM_USER_LOGIN, user.getLogin())
    .setParam(PARAM_PROJECT_ID, project.uuid())
    .setParam(PARAM_PERMISSION, CODEVIEWER)
    .execute();

assertThat(db.users().selectProjectPermissionsOfUser(user, project)).containsOnly(ISSUE_ADMIN);
}

@Test
public void remove_with_project_key() {
    ComponentDto project = db.components().insertComponent(new PrivateProjectDto(db.organizations().insert(),
A_PROJECT_UUID).setDbKey(A_PROJECT_KEY));
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);
    db.users().insertProjectPermissionOnUser(user, CODEVIEWER, project);
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();

    assertThat(db.users().selectProjectPermissionsOfUser(user, project)).containsOnly(CODEVIEWER);
}

@Test
public void remove_with_view_uuid() {
    ComponentDto view = db.components().insertComponent(new View(db.organizations().insert(), "view-
uuid").setDbKey("view-key"));
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, view);
    db.users().insertProjectPermissionOnUser(user, ADMIN, view);
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_KEY, view.getDbKey())
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();

    assertThat(db.users().selectProjectPermissionsOfUser(user, view)).containsOnly(ADMIN);
}

@Test
public void fail_when_project_does_not_exist() {
    loginAsAdmin(db.getDefaultOrganization());

```



```

expectedException.expect(NotFoundException.class);

newRequest()
    .setParam(PARAM_USER_LOGIN, user.getLogin())
    .setParam(PARAM_PROJECT_ID, "unknown-project-uuid")
    .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
    .execute();
}

@Test
public void fail_when_project_permission_without_permission() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();
}

@Test
public void fail_when_component_is_a_module() {
    ComponentDto module =
db.components().insertComponent(newModuleDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));

    failIfComponentIsNotAProjectOrView(module);
}

@Test
public void fail_when_component_is_a_directory() {
    ComponentDto file =
db.components().insertComponent(newDirectory(ComponentTesting.newPrivateProjectDto(db.organizations().insert()), "A/B"));

    failIfComponentIsNotAProjectOrView(file);
}

@Test
public void fail_when_component_is_a_file() {
    ComponentDto file =
db.components().insertComponent(newFileDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert()), null, "file-uuid"));

    failIfComponentIsNotAProjectOrView(file);
}

```

```

@Test
public void fail_when_component_is_a_subview() {
    ComponentDto file =
db.components().insertComponent(newSubView(ComponentTesting.newView(db.organizations().insert())));

    failIfComponentIsNotAProjectOrView(file);
}

private void failIfComponentIsNotAProjectOrView(ComponentDto file) {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Component " + file.getDbKey() + " (id: " + file.uuid() + ") must be a project
or a view.");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, file.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_get_request() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(ServerException.class);

    newRequest()
        .setMethod("GET")
        .setParam(PARAM_USER_LOGIN, "george.orwell")
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_user_login_is_missing() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test

```

```

public void fail_when_permission_is_missing() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .execute();
}

@Test
public void fail_when_project_uuid_and_project_key_are_provided() {
    ComponentDto project = db.components().insertComponent(newPrivateProjectDto(db.organizations().insert(),
A_PROJECT_UUID).setDbKey(A_PROJECT_KEY));
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Project id or project key can be provided, not both.");

    newRequest()
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .execute();
}

@Test
public void removing_global_permission_fails_if_not_administrator_of_organization() {
    userSession.logIn();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, PROVISIONING)
        .execute();
}

@Test
public void removing_project_permission_fails_if_not_administrator_of_project() {
    ComponentDto project = db.components().insertPrivateProject();
    userSession.logIn();

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())

```

```

        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .execute();
    }

/**
 * User is project administrator but not system administrator
 */
@Test
public void removing_project_permission_is_allowed_to_project_administrators() {
    ComponentDto project = db.components().insertPrivateProject();
    db.users().insertProjectPermissionOnUser(user, CODEVIEWER, project);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
        .execute();

    assertThat(db.users().selectProjectPermissionsOfUser(user, project)).containsOnly(CODEVIEWER);
}

@Test
public void fail_when_removing_USER_permission_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission user can't be removed from a public component");

    newRequest()
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, USER)
        .execute();
}

@Test
public void fail_when_removing_CODEVIEWER_permission_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission codeviewer can't be removed from a public component");
}

```

```

newRequest()
    .setParam(PARAM_USER_LOGIN, user.getLogin())
    .setParam(PARAM_PROJECT_ID, project.uuid())
    .setParam(PARAM_PERMISSION, CODEVIEWER)
    .execute();
}

@Test
public void fail_when_using_branch_db_key() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_using_branch_uuid() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project id '%s' not found", branch.uuid()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_ID, branch.uuid())
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}
}
/*
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```

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 \*/

```
package org.sonar.server.permission.ws;
```

```
import org.junit.Before;
import org.junit.Test;
import org.sonar.api.server.ws.WebService;
import org.sonar.db.DbClient;
import org.sonar.server.issue.ws.AvatarResolverImpl;
import org.sonar.server.permission.ws.template.TemplateGroupsAction;
import org.sonar.server.permission.ws.template.TemplateUsersAction;
import org.sonar.server.user.UserSession;
import org.sonar.server.ws.WsTester;

import static org.assertj.core.api.Assertions.assertThat;
import static org.mockito.Mockito.mock;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
```

```
public class PermissionsWsTest {

    WsTester ws;

    @Before
    public void setUp() {
        DbClient dbClient = mock(DbClient.class);
        UserSession userSession = mock(UserSession.class);
        PermissionWsSupport permissionWsSupport = mock(PermissionWsSupport.class);

        ws = new WsTester(new PermissionsWs(
            new TemplateUsersAction(dbClient, userSession, permissionWsSupport, new AvatarResolverImpl()),
            new TemplateGroupsAction(dbClient, userSession, permissionWsSupport)));
    }

    @Test
```

```

public void define_controller() {
    WebService.Controller controller = controller();
    assertThat(controller).isNotNull();
    assertThat(controller.description()).isNotEmpty();
    assertThat(controller.since()).isEqualTo("3.7");
    assertThat(controller.actions()).hasSize(2);
}

@Test
public void define_template_users() {
    WebService.Action action = controller().action("template_users");

    assertThat(action).isNotNull();
    assertThat(action.isPost()).isFalse();
    assertThat(action.isInternal()).isTrue();
    assertThat(action.since()).isEqualTo("5.2");
    assertThat(action.param(PARAM_PERMISSION).isRequired()).isFalse();
}

@Test
public void define_template_groups() {
    WebService.Action action = controller().action("template_groups");

    assertThat(action).isNotNull();
    assertThat(action.isPost()).isFalse();
    assertThat(action.isInternal()).isTrue();
    assertThat(action.since()).isEqualTo("5.2");
}

private WebService.Controller controller() {
    return ws.controller("api/permissions");
}
}
/*
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 */

```

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\*/

```
package org.sonar.server.permission.ws;
```

```
import org.junit.Before;  
import org.junit.Test;  
import org.sonar.api.web.UserRole;  
import org.sonar.core.permission.ProjectPermissions;  
import org.sonar.db.component.ComponentDto;  
import org.sonar.db.component.ComponentTesting;  
import org.sonar.db.organization.OrganizationDto;  
import org.sonar.db.permission.GroupPermissionDto;  
import org.sonar.db.user.GroupDto;  
import org.sonar.server.exceptions.BadRequestException;  
import org.sonar.server.exceptions.ForbiddenException;  
import org.sonar.server.exceptions.NotFoundException;
```

```
import static java.lang.String.format;  
import static org.assertj.core.api.Assertions.assertThat;  
import static org.sonar.api.web.UserRole.ADMIN;  
import static org.sonar.api.web.UserRole.CODEVIEWER;  
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;  
import static org.sonar.api.web.UserRole.USER;  
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;  
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;  
import static org.sonar.db.component.ComponentTesting.newDirectory;  
import static org.sonar.db.component.ComponentTesting.newFileDto;  
import static org.sonar.db.component.ComponentTesting.newModuleDto;  
import static org.sonar.db.component.ComponentTesting.newSubView;  
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;  
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_ID;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_GROUP_NAME;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;  
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
```

```
public class RemoveGroupActionTest extends BasePermissionWsTest<RemoveGroupAction> {
```

```
    private GroupDto aGroup;
```

```
    @Before
```

```
    public void setUp() {  
        aGroup = db.users().insertGroup(db.getDefaultOrganization(), "sonar-administrators");  
    }
```



```

@Override
protected RemoveGroupAction buildWsAction() {
    return new RemoveGroupAction(db.getDbClient(), userSession, newPermissionUpdater(),
newPermissionWsSupport());
}

@Test
public void remove_permission_using_group_name() {
    db.users().insertPermissionOnGroup(aGroup, ADMINISTER);
    db.users().insertPermissionOnGroup(aGroup, PROVISION_PROJECTS);
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_NAME, aGroup.getName())
        .setParam(PARAM_PERMISSION, PROVISIONING)
        .execute();

    assertThat(db.users().selectGroupPermissions(aGroup, null)).containsOnly(ADMINISTER.getKey());
}

@Test
public void remove_permission_using_group_id() {
    db.users().insertPermissionOnGroup(aGroup, ADMINISTER);
    db.users().insertPermissionOnGroup(aGroup, PROVISION_PROJECTS);
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_ID, aGroup.getId().toString())
        .setParam(PARAM_PERMISSION, PROVISION_PROJECTS.getKey())
        .execute();

    assertThat(db.users().selectGroupPermissions(aGroup, null)).containsOnly(ADMINISTER.getKey());
}

@Test
public void remove_project_permission() {
    ComponentDto project = db.components().insertPrivateProject();
    db.users().insertPermissionOnGroup(aGroup, ADMINISTER);
    db.users().insertProjectPermissionOnGroup(aGroup, ADMIN, project);
    db.users().insertProjectPermissionOnGroup(aGroup, ISSUE_ADMIN, project);
    loginAsAdmin(db.getDefaultOrganization());

    newRequest()
        .setParam(PARAM_GROUP_NAME, aGroup.getName())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, ADMIN)
        .execute();
}

```

```

assertThat(db.users().selectGroupPermissions(aGroup, null)).containsOnly(ADMINISTER.getKey());
assertThat(db.users().selectGroupPermissions(aGroup, project)).containsOnly(ISSUE_ADMIN);
}

```

@Test

```

public void remove_with_view_uuid() {
    ComponentDto view = db.components().insertView();
    db.users().insertPermissionOnGroup(aGroup, ADMINISTER);
    db.users().insertProjectPermissionOnGroup(aGroup, ADMIN, view);
    db.users().insertProjectPermissionOnGroup(aGroup, ISSUE_ADMIN, view);
    loginAsAdmin(db.getDefaultOrganization());

```

```

newRequest()
    .setParam(PARAM_GROUP_NAME, aGroup.getName())
    .setParam(PARAM_PROJECT_ID, view.uuid())
    .setParam(PARAM_PERMISSION, ADMIN)
    .execute();

```

```

assertThat(db.users().selectGroupPermissions(aGroup, null)).containsOnly(ADMINISTER.getKey());
assertThat(db.users().selectGroupPermissions(aGroup, view)).containsOnly(ISSUE_ADMIN);
}

```

@Test

```

public void remove_with_project_key() {
    ComponentDto project = db.components().insertPrivateProject();
    db.users().insertPermissionOnGroup(aGroup, ADMINISTER);
    db.users().insertProjectPermissionOnGroup(aGroup, ADMIN, project);
    db.users().insertProjectPermissionOnGroup(aGroup, ISSUE_ADMIN, project);
    loginAsAdmin(db.getDefaultOrganization());

```

```

newRequest()
    .setParam(PARAM_GROUP_NAME, aGroup.getName())
    .setParam(PARAM_PROJECT_KEY, project.getDbKey())
    .setParam(PARAM_PERMISSION, ADMIN)
    .execute();

```

```

assertThat(db.users().selectGroupPermissions(aGroup, null)).containsOnly(ADMINISTER.getKey());
assertThat(db.users().selectGroupPermissions(aGroup, project)).containsOnly(ISSUE_ADMIN);
}

```

@Test

```

public void fail_to_remove_last_admin_permission() throws Exception {
    db.users().insertPermissionOnGroup(aGroup, ADMINISTER);
    db.users().insertPermissionOnGroup(aGroup, PROVISION_PROJECTS);
    loginAsAdmin(db.getDefaultOrganization());

```

```

expectedException.expect(BadRequestException.class);

```

```

        expectedException.expectMessage("Last group with permission 'admin'. Permission cannot be removed.");

        executeRequest(aGroup, SYSTEM_ADMIN);
    }

    @Test
    public void fail_when_project_does_not_exist() {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(NotFoundException.class);
        expectedException.expectMessage("Project id 'unknown-project-uuid' not found");

        newRequest()
            .setParam(PARAM_GROUP_NAME, aGroup.getName())
            .setParam(PARAM_PROJECT_ID, "unknown-project-uuid")
            .setParam(PARAM_PERMISSION, ADMINISTER.getKey())
            .execute();
    }

    @Test
    public void fail_when_project_project_permission_without_project() throws Exception {
        loginAsAdmin(db.getDefaultOrganization());

        expectedException.expect(BadRequestException.class);
        expectedException.expectMessage("Invalid global permission 'issueadmin'. Valid values are [admin, profileadmin, gateadmin, scan, provisioning]");

        executeRequest(aGroup, ISSUE_ADMIN);
    }

    @Test
    public void fail_when_component_is_a_module() {
        ComponentDto module =
        db.components().insertComponent(newModuleDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));

        failIfComponentIsNotAProjectOrView(module);
    }

    @Test
    public void fail_when_component_is_a_directory() {
        ComponentDto file =
        db.components().insertComponent(newDirectory(ComponentTesting.newPrivateProjectDto(db.organizations().insert()), "A/B"));

        failIfComponentIsNotAProjectOrView(file);
    }

```

```

@Test
public void fail_when_component_is_a_file() {
    ComponentDto file =
db.components().insertComponent(newFileDto(ComponentTesting.newPrivateProjectDto(db.organizations().insert()
), null, "file-uuid"));

    failIfComponentIsNotAProjectOrView(file);
}

@Test
public void fail_when_component_is_a_subview() {
    ComponentDto file =
db.components().insertComponent(newSubView(ComponentTesting.newView(db.organizations().insert())));

    failIfComponentIsNotAProjectOrView(file);
}

private void failIfComponentIsNotAProjectOrView(ComponentDto file) {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Component " + file.getDbKey() + " (id: " + file.uuid() + ") must be a project
or a view.");

    newRequest()
        .setParam(PARAM_GROUP_NAME, aGroup.getName())
        .setParam(PARAM_PROJECT_ID, file.uuid())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_group_name_is_missing() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Group name or group id must be provided");

    newRequest()
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

@Test
public void fail_when_permission_name_and_id_are_missing() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);

```

```

expectedException.expectMessage("The 'permission' parameter is missing");

newRequest()
    .setParam(PARAM_GROUP_NAME, aGroup.getName())
    .execute();
}

@Test
public void fail_when_group_id_does_not_exist() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage("No group with id '999999'");

    newRequest()
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .setParam(PARAM_GROUP_ID, "999999")
        .execute();
}

@Test
public void fail_when_project_uuid_and_project_key_are_provided() {
    ComponentDto project = db.components().insertPrivateProject();
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Project id or project key can be provided, not both.");

    newRequest()
        .setParam(PARAM_GROUP_NAME, aGroup.getName())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PROJECT_KEY, project.getDbKey())
        .execute();
}

private void executeRequest(GroupDto groupDto, String permission) {
    newRequest()
        .setParam(PARAM_GROUP_NAME, groupDto.getName())
        .setParam(PARAM_PERMISSION, permission)
        .execute();
}

private void executeRequest(GroupDto groupDto, OrganizationDto organizationDto, String permission) {
    newRequest()
        .setParam(PARAM_GROUP_NAME, groupDto.getName())
        .setParam(PARAM_PERMISSION, permission)
        .setParam(PARAM_ORGANIZATION, organizationDto.getKey())

```

```

        .execute();
    }

    @Test
    public void removing_global_permission_fails_if_not_administrator_of_organization() {
        userSession.logIn();

        expectedException.expect(ForbiddenException.class);

        newRequest()
            .setParam(PARAM_GROUP_NAME, aGroup.getName())
            .setParam(PARAM_PERMISSION, PROVISIONING)
            .execute();
    }

    @Test
    public void removing_project_permission_fails_if_not_administrator_of_project() {
        ComponentDto project = db.components().insertPrivateProject();
        userSession.logIn();

        expectedException.expect(ForbiddenException.class);

        newRequest()
            .setParam(PARAM_GROUP_NAME, aGroup.getName())
            .setParam(PARAM_PERMISSION, PROVISIONING)
            .setParam(PARAM_PROJECT_KEY, project.getDbKey())
            .execute();
    }

    /**
     * User is project administrator but not system administrator
     */
    @Test
    public void removing_project_permission_is_allowed_to_project_administrators() {
        ComponentDto project = db.components().insertPrivateProject();
        db.users().insertProjectPermissionOnGroup(aGroup, CODEVIEWER, project);
        db.users().insertProjectPermissionOnGroup(aGroup, ISSUE_ADMIN, project);

        userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
        newRequest()
            .setParam(PARAM_GROUP_NAME, aGroup.getName())
            .setParam(PARAM_PROJECT_ID, project.uuid())
            .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
            .execute();

        assertThat(db.users().selectGroupPermissions(aGroup, project)).containsOnly(CODEVIEWER);
    }
}

```

```

@Test
public void no_effect_when_removing_any_permission_from_group_AnyOne_on_a_private_project() {
    ComponentDto project = db.components().insertPrivateProject();
    ProjectPermissions.ALL
        .forEach(perm -> unsafeInsertProjectPermissionOnAnyone(perm, project));
    userSession.login().addProjectPermission(UserRole.ADMIN, project);

    ProjectPermissions.ALL
        .forEach(permission -> {
            newRequest()
                .setParam(PARAM_GROUP_NAME, "anyone")
                .setParam(PARAM_PROJECT_ID, project.uuid())
                .setParam(PARAM_PERMISSION, permission)
                .execute();

            assertThat(db.users().selectAnyonePermissions(db.getDefaultOrganization(), project)).contains(permission);
        });
}

```

```

@Test
public void fail_when_removing_USER_permission_from_group_AnyOne_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.login().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission user can't be removed from a public component");

    newRequest()
        .setParam(PARAM_GROUP_NAME, "anyone")
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, USER)
        .execute();
}

```

```

@Test
public void fail_when_removing_CODEVIEWER_permission_from_group_AnyOne_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.login().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission codeviewer can't be removed from a public component");

    newRequest()
        .setParam(PARAM_GROUP_NAME, "anyone")
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, CODEVIEWER)

```

```

        .execute();
    }

@Test
public void fail_when_removing_USER_permission_from_group_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission user can't be removed from a public component");

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, USER)
        .execute();
}

@Test
public void fail_when_removing_CODEVIEWER_permission_from_group_on_a_public_project() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertPublicProject(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission codeviewer can't be removed from a public component");

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(PARAM_PERMISSION, CODEVIEWER)
        .execute();
}

@Test
public void fail_when_using_branch_db_key() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.logIn().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
}

```



```

expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));

newRequest()
    .setParam(PARAM_ORGANIZATION, organization.getKey())
    .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
    .setParam(PARAM_GROUP_NAME, group.getName())
    .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
    .execute();
}

@Test
public void fail_when_using_branch_uuid() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = db.components().insertMainBranch(organization);
    userSession.login().addProjectPermission(UserRole.ADMIN, project);
    ComponentDto branch = db.components().insertProjectBranch(project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project id '%s' not found", branch.uuid()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_ID, branch.uuid())
        .setParam(PARAM_GROUP_NAME, group.getName())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

private void unsafeInsertProjectPermissionOnAnyone(String perm, ComponentDto project) {
    GroupPermissionDto dto = new GroupPermissionDto()
        .setOrganizationUuid(project.getOrganizationUuid())
        .setGroupId(null)
        .setRole(perm)
        .setResourceId(project.getId());
    db.getDbClient().groupPermissionDao().insert(db.getSession(), dto);
    db.commit();
}
}
/*
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```

```

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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.server.permission.ws;

```

```

import org.junit.Test;
import org.sonar.api.server.ws.WebService.Param;
import org.sonar.api.server.ws.WebService.SelectionMode;
import org.sonar.api.web.UserRole;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.exceptions.ForbiddenException;
import org.sonar.server.exceptions.NotFoundException;
import org.sonar.server.exceptions.UnauthorizedException;
import org.sonar.server.issue.ws.AvatarResolverImpl;

import static java.lang.String.format;
import static org.apache.commons.lang.StringUtils.countMatches;
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.server.ws.WebService.Param.PAGE;
import static org.sonar.api.server.ws.WebService.Param.PAGE_SIZE;
import static org.sonar.api.server.ws.WebService.Param.TEXT_QUERY;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.component.ComponentTesting.newPrivateProjectDto;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_PROFILES;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonar.db.user.UserTesting.newUserDto;
import static org.sonar.test.JsonAssert.assertJson;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_ORGANIZATION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PERMISSION;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_ID;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_PROJECT_KEY;
import static org.sonarqube.ws.client.permission.PermissionsWsParameters.PARAM_USER_LOGIN;

```

```

public class UsersActionTest extends BasePermissionWsTest<UsersAction> {

    @Override
    protected UsersAction buildWsAction() {
        return new UsersAction(db.getDbClient(), userSession, newPermissionWsSupport(), new AvatarResolverImpl());
    }

    @Test
    public void search_for_users_with_response_example() {
        UserDto user1 =
db.users().insertUser(newUserDto().setLogin("admin").setName("Administrator").setEmail("admin@admin.com"));
        db.organizations().addMember(db.getDefaultOrganization(), user1);
        UserDto user2 = db.users().insertUser(newUserDto().setLogin("george.orwell").setName("George
Orwell").setEmail("george.orwell@1984.net"));
        db.organizations().addMember(db.getDefaultOrganization(), user2);
        db.users().insertPermissionOnUser(user1, ADMINISTER_QUALITY_PROFILES);
        db.users().insertPermissionOnUser(user1, ADMINISTER);
        db.users().insertPermissionOnUser(user1, ADMINISTER_QUALITY_GATES);
        db.users().insertPermissionOnUser(user2, SCAN);

        loginAsAdmin(db.getDefaultOrganization());
        String result = newRequest().execute().getInput();

        assertJson(result).withStrictArrayOrder().isSimilarTo(getClass().getResource("users-example.json"));
    }

    @Test
    public void search_for_users_with_one_permission() {
        insertUsersHavingGlobalPermissions();

        loginAsAdmin(db.getDefaultOrganization());
        String result = newRequest().setParam("permission", "scan").execute().getInput();

        assertJson(result).withStrictArrayOrder().isSimilarTo(getClass().getResource("UsersActionTest/users.json"));
    }

    @Test
    public void search_for_users_with_permission_on_project() {
        // User has permission on project
        ComponentDto project =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(db.getDefaultOrganization()));
        UserDto user = db.users().insertUser(newUserDto());
        db.organizations().addMember(db.getDefaultOrganization(), user);
        db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);

        // User has permission on another project
        ComponentDto anotherProject =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(db.getDefaultOrganization()));

```

```

    UserDto userHavePermissionOnAnotherProject = db.users().insertUser(newUserDto());
    db.organizations().addMember(db.getDefaultOrganization(), userHavePermissionOnAnotherProject);
    db.users().insertProjectPermissionOnUser(userHavePermissionOnAnotherProject, ISSUE_ADMIN,
anotherProject);

```

```

// User has no permission

```

```

UserDto withoutPermission = db.users().insertUser(newUserDto());
db.organizations().addMember(db.getDefaultOrganization(), withoutPermission);

```

```

userSession.logIn().addProjectPermission(SYSTEM_ADMIN, project);

```

```

String result = newRequest()
    .setParam(PARAM_PERMISSION, ISSUE_ADMIN)
    .setParam(PARAM_PROJECT_ID, project.uuid())
    .execute()
    .getInput();

```

```

assertThat(result).contains(user.getLogin())
    .doesNotContain(userHavePermissionOnAnotherProject.getLogin())
    .doesNotContain(withoutPermission.getLogin());
}

```

```

@Test

```

```

public void search_only_for_users_with_permission_when_no_search_query() {

```

```

    // User have permission on project
    ComponentDto project = db.components().insertPrivateProject();
    UserDto user = db.users().insertUser();
    db.organizations().addMember(db.getDefaultOrganization(), user);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);

```

```

// User has no permission

```

```

UserDto withoutPermission = db.users().insertUser();
db.organizations().addMember(db.getDefaultOrganization(), withoutPermission);

```

```

loginAsAdmin(db.getDefaultOrganization());

```

```

String result = newRequest()
    .setParam(PARAM_PROJECT_ID, project.uuid())
    .execute()
    .getInput();

```

```

assertThat(result)
    .contains(user.getLogin())
    .doesNotContain(withoutPermission.getLogin());
}

```

```

@Test

```

```

public void search_also_for_users_without_permission_when_filtering_name() {

```

```

    // User with permission on project

```

```

    ComponentDto project =

```

```

db.components().insertComponent(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));
    UserDto user = db.users().insertUser(newUserDto("with-permission-login", "with-permission-name", "with-
permission-email"));
    db.organizations().addMember(db.getDefaultOrganization(), user);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);

    // User without permission
    UserDto withoutPermission = db.users().insertUser(newUserDto("without-permission-login", "without-
permission-name", "without-permission-email"));
    db.organizations().addMember(db.getDefaultOrganization(), withoutPermission);
    UserDto anotherUser = db.users().insertUser(newUserDto("another-user", "another-user", "another-user"));
    db.organizations().addMember(db.getDefaultOrganization(), anotherUser);

    loginAsAdmin(db.getDefaultOrganization());
    String result = newRequest()
        .setParam(PARAM_PROJECT_ID, project.uuid())
        .setParam(TEXT_QUERY, "with")
        .execute()
        .getInput();

    assertThat(result).contains(user.getLogin(),
withoutPermission.getLogin()).doesNotContain(anotherUser.getLogin());
}

@Test
public void search_also_for_users_without_permission_when_filtering_email() {
    // User with permission on project
    ComponentDto project =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));
    UserDto user = db.users().insertUser(newUserDto("with-permission-login", "with-permission-name", "with-
permission-email"));
    db.organizations().addMember(db.getDefaultOrganization(), user);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);

    // User without permission
    UserDto withoutPermission = db.users().insertUser(newUserDto("without-permission-login", "without-
permission-name", "without-permission-email"));
    db.organizations().addMember(db.getDefaultOrganization(), withoutPermission);
    UserDto anotherUser = db.users().insertUser(newUserDto("another-user", "another-user", "another-user"));
    db.organizations().addMember(db.getDefaultOrganization(), anotherUser);

    loginAsAdmin(db.getDefaultOrganization());
    String result = newRequest().setParam(PARAM_PROJECT_ID, project.uuid()).setParam(TEXT_QUERY,
"email").execute().getInput();

    assertThat(result).contains(user.getLogin(),
withoutPermission.getLogin()).doesNotContain(anotherUser.getLogin());
}

```

```

@Test
public void search_also_for_users_without_permission_when_filtering_login() {
    // User with permission on project
    ComponentDto project =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(db.organizations().insert()));
    UserDto user = db.users().insertUser(newUserDto("with-permission-login", "with-permission-name", "with-
permission-email"));
    db.organizations().addMember(db.getDefaultOrganization(), user);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);

    // User without permission
    UserDto withoutPermission = db.users().insertUser(newUserDto("without-permission-login", "without-
permission-name", "without-permission-email"));
    db.organizations().addMember(db.getDefaultOrganization(), withoutPermission);
    UserDto anotherUser = db.users().insertUser(newUserDto("another-user", "another-user", "another-user"));
    db.organizations().addMember(db.getDefaultOrganization(), anotherUser);

    loginAsAdmin(db.getDefaultOrganization());
    String result = newRequest().setParam(PARAM_PROJECT_ID, project.uuid()).setParam(TEXT_QUERY,
"login").execute().getInput();

    assertThat(result).contains(user.getLogin(),
withoutPermission.getLogin()).doesNotContain(anotherUser.getLogin());
}

```

```

@Test
public void search_for_users_with_query_as_a_parameter() {
    insertUsersHavingGlobalPermissions();

    loginAsAdmin(db.getDefaultOrganization());
    String result = newRequest()
        .setParam("permission", "scan")
        .setParam(TEXT_QUERY, "ame-1")
        .execute()
        .getInput();

    assertThat(result).contains("login-1")
        .doesNotContain("login-2")
        .doesNotContain("login-3");
}

```

```

@Test
public void search_for_users_with_select_as_a_parameter() {
    insertUsersHavingGlobalPermissions();

    loginAsAdmin(db.getDefaultOrganization());
    String result = newRequest()

```

```

        .execute()
        .getInput();

    assertThat(result).contains("login-1", "login-2", "login-3");
}

@Test
public void search_for_users_is_paginated() {
    for (int i = 9; i >= 0; i--) {
        UserDto user = db.users().insertUser(new UserDto().setName("user-" + i));
        db.organizations().addMember(db.getDefaultOrganization(), user);
        db.users().insertPermissionOnUser(user, ADMINISTER);
        db.users().insertPermissionOnUser(user, ADMINISTER_QUALITY_GATES);
    }
    loginAsAdmin(db.getDefaultOrganization());

    assertThat(new Request().setParam(PAGE, "1").setParam(PAGE_SIZE,
"2").execute().getInput().withStrictArrayOrder().isSimilarTo("{\n" +
    "  \"paging\": {\n" +
    "    \"pageIndex\": 1,\n" +
    "    \"pageSize\": 2,\n" +
    "    \"total\": 10\n" +
    "  },\n" +
    "  \"users\": [\n" +
    "    {\n" +
    "      \"name\": \"user-0\"\n" +
    "    },\n" +
    "    {\n" +
    "      \"name\": \"user-1\"\n" +
    "    }\n" +
    "  ]\n" +
    "}"));

    assertThat(new Request().setParam(PAGE, "3").setParam(PAGE_SIZE,
"4").execute().getInput().withStrictArrayOrder().isSimilarTo("{\n" +
    "  \"paging\": {\n" +
    "    \"pageIndex\": 3,\n" +
    "    \"pageSize\": 4,\n" +
    "    \"total\": 10\n" +
    "  },\n" +
    "  \"users\": [\n" +
    "    {\n" +
    "      \"name\": \"user-8\"\n" +
    "    },\n" +
    "    {\n" +
    "      \"name\": \"user-9\"\n" +
    "    }\n" +
    "  ]\n" +
    "}"));
}

```

```

}

@Test
public void return_more_than_20_permissions() {
    loginAsAdmin(db.getDefaultOrganization());
    for (int i = 0; i < 30; i++) {
        UserDto user = db.users().insertUser(new UserDto().setLogin("user-" + i));
        db.organizations().addMember(db.getDefaultOrganization(), user);
        db.users().insertPermissionOnUser(user, SCAN);
        db.users().insertPermissionOnUser(user, PROVISION_PROJECTS);
    }
}

```

```

String result = newRequest()
    .setParam(PAGE_SIZE, "100")
    .execute()
    .getInput();

assertThat(countMatches(result, "scan")).isEqualTo(30);
}

```

```

@Test
public void fail_if_project_permission_without_project() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);

    newRequest()
        .setParam(PARAM_PERMISSION, UserRole.ISSUE_ADMIN)
        .setParam(Param.SELECTED, SelectionMode.ALL.value())
        .execute();
}

```

```

@Test
public void fail_if_insufficient_privileges() {
    userSession.login("login");

    expectedException.expect(ForbiddenException.class);

    newRequest()
        .setParam("permission", SYSTEM_ADMIN)
        .execute();
}

```

```

@Test
public void fail_if_not_logged_in() {
    userSession.anonymous();

    expectedException.expect(UnauthorizedException.class);
}

```



```

newRequest()
    .setParam("permission", SYSTEM_ADMIN)
    .execute();
}

@Test
public void fail_if_project_uuid_and_project_key_are_provided() {
    db.components().insertComponent(newPrivateProjectDto(db.organizations().insert(), "project-
uuid").setDbKey("project-key"));
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Project id or project key can be provided, not both.");

    newRequest()
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .setParam(PARAM_PROJECT_ID, "project-uuid")
        .setParam(PARAM_PROJECT_KEY, "project-key")
        .execute();
}

@Test
public void fail_if_search_query_is_too_short() {
    loginAsAdmin(db.getDefaultOrganization());

    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("'q' length (2) is shorter than the minimum authorized (3)");

    newRequest().setParam(TEXT_QUERY, "ab").execute();
}

@Test
public void fail_when_using_branch_db_key() throws Exception {
    OrganizationDto organization = db.organizations().insert();
    UserDto user = db.users().insertUser(new UserDto());
    ComponentDto project = db.components().insertMainBranch(organization);
    ComponentDto branch = db.components().insertProjectBranch(project);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);
    userSession.login().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project key '%s' not found", branch.getDbKey()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_KEY, branch.getDbKey())
        .setParam(PARAM_USER_LOGIN, user.getLogin())

```

```

        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
    }

@Test
public void fail_when_using_branch_uuid() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user = db.users().insertUser(new UserDto());
    ComponentDto project = db.components().insertMainBranch(organization);
    ComponentDto branch = db.components().insertProjectBranch(project);
    db.users().insertProjectPermissionOnUser(user, ISSUE_ADMIN, project);
    userSession.login().addProjectPermission(UserRole.ADMIN, project);

    expectedException.expect(NotFoundException.class);
    expectedException.expectMessage(format("Project id '%s' not found", branch.uuid()));

    newRequest()
        .setParam(PARAM_ORGANIZATION, organization.getKey())
        .setParam(PARAM_PROJECT_ID, branch.uuid())
        .setParam(PARAM_USER_LOGIN, user.getLogin())
        .setParam(PARAM_PERMISSION, SYSTEM_ADMIN)
        .execute();
}

private void insertUsersHavingGlobalPermissions() {
    UserDto user1 = db.users().insertUser(new UserDto("login-1", "name-1", "email-1"));
    db.organizations().addMember(db.getDefaultOrganization(), user1);
    UserDto user2 = db.users().insertUser(new UserDto("login-2", "name-2", "email-2"));
    db.organizations().addMember(db.getDefaultOrganization(), user2);
    UserDto user3 = db.users().insertUser(new UserDto("login-3", "name-3", "email-3"));
    db.organizations().addMember(db.getDefaultOrganization(), user3);
    db.users().insertPermissionOnUser(user1, SCAN);
    db.users().insertPermissionOnUser(user2, SCAN);
    db.users().insertPermissionOnUser(user3, ADMINISTER);
}

}
/*
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```

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 \* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.  
 \*/

```
package org.sonar.server.permission;
```

```
import java.util.Collections;
```

```
import org.junit.Rule;
```

```
import org.junit.Test;
```

```
import org.junit.rules.ExpectedException;
```

```
import org.sonar.server.exceptions.BadRequestException;
```

```
import static com.google.common.collect.Lists.newArrayList;
```

```
import static org.assertj.core.api.Assertions.assertThat;
```

```
import static org.sonar.server.permission.ApplyPermissionTemplateQuery.create;
```

```
public class ApplyPermissionTemplateQueryTest {
```

```
    @Rule
```

```
    public ExpectedException expectedException = ExpectedException.none();
```

```
    @Test
```

```
    public void should_populate_with_params() {
```

```
        ApplyPermissionTemplateQuery query = create("my_template_key", newArrayList("1", "2", "3"));
```

```
        assertThat(query.getTemplateUuid()).isEqualTo("my_template_key");
```

```
        assertThat(query.getComponentKeys()).containsOnly("1", "2", "3");
```

```
    }
```

```
    @Test
```

```
    public void should_invalidate_query_with_empty_name() {
```

```
        expectedException.expect(BadRequestException.class);
```

```
        expectedException.expectMessage("Permission template is mandatory");
```

```
        ApplyPermissionTemplateQuery.create("", newArrayList("1", "2", "3"));
```

```
    }
```

```
    @Test
```

```
    public void should_invalidate_query_with_no_components() {
```

```
        expectedException.expect(BadRequestException.class);
```

```
        expectedException.expectMessage("No project provided. Please provide at least one project.");
```

```
        ApplyPermissionTemplateQuery.create("my_template_key", Collections.emptyList());
```

```
    }
```

```

}
/*
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.index;

import java.util.ArrayList;
import java.util.Collection;
import java.util.List;
import java.util.Map;
import java.util.function.Function;
import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.GroupPermissionDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDbTester;
import org.sonar.db.user.UserDto;

import static java.util.Arrays.asList;
import static java.util.Collections.singletonList;
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.resources.Qualifiers.APP;

```

```

import static org.sonar.api.resources.Qualifiers.PROJECT;
import static org.sonar.api.resources.Qualifiers.VIEW;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.USER;

public class PermissionIndexerDaoTest {

    @Rule
    public DbTester dbTester = DbTester.create(System2.INSTANCE);

    private DbClient dbClient = dbTester.getDbClient();
    private DbSession dbSession = dbTester.getSession();

    private ComponentDbTester componentDbTester = new ComponentDbTester(dbTester);
    private UserDbTester userDbTester = new UserDbTester(dbTester);

    private OrganizationDto organization;
    private ComponentDto publicProject;
    private ComponentDto privateProject1;
    private ComponentDto privateProject2;
    private ComponentDto view1;
    private ComponentDto view2;
    private ComponentDto application;
    private UserDto user1;
    private UserDto user2;
    private GroupDto group;

    private PermissionIndexerDao underTest = new PermissionIndexerDao();

    @Before
    public void setUp() {
        organization = dbTester.organizations().insert();
        publicProject = componentDbTester.insertPublicProject(organization);
        privateProject1 = componentDbTester.insertPrivateProject(organization);
        privateProject2 = componentDbTester.insertPrivateProject(organization);
        view1 = componentDbTester.insertView(organization);
        view2 = componentDbTester.insertView(organization);
        application = componentDbTester.insertApplication(organization);
        user1 = userDbTester.insertUser();
        user2 = userDbTester.insertUser();
        group = userDbTester.insertGroup(organization);
    }

    @Test
    public void select_all() {
        insertTestDataForProjectsAndViews();

        Collection<PermissionIndexerDao.Dto> dtos = underTest.selectAll(dbClient, dbSession);
    }
}

```

```

assertThat(dtos).hasSize(6);

PermissionIndexerDao.Dto publicProjectAuthorization = getByProjectUuid(publicProject.uuid(), dtos);
isPublic(publicProjectAuthorization, PROJECT);

PermissionIndexerDao.Dto view1Authorization = getByProjectUuid(view1.uuid(), dtos);
isPublic(view1Authorization, VIEW);

PermissionIndexerDao.Dto applicationAuthorization = getByProjectUuid(application.uuid(), dtos);
isPublic(applicationAuthorization, APP);

PermissionIndexerDao.Dto privateProject1Authorization = getByProjectUuid(privateProject1.uuid(), dtos);
assertThat(privateProject1Authorization.getGroupIds()).containsOnly(group.getId());
assertThat(privateProject1Authorization.isAllowAnyone()).isFalse();
assertThat(privateProject1Authorization.getUserIds()).containsOnly(user1.getId(), user2.getId());
assertThat(privateProject1Authorization.getQualifier()).isEqualTo(PROJECT);

PermissionIndexerDao.Dto privateProject2Authorization = getByProjectUuid(privateProject2.uuid(), dtos);
assertThat(privateProject2Authorization.getGroupIds()).isEmpty();
assertThat(privateProject2Authorization.isAllowAnyone()).isFalse();
assertThat(privateProject2Authorization.getUserIds()).containsOnly(user1.getId());
assertThat(privateProject2Authorization.getQualifier()).isEqualTo(PROJECT);

PermissionIndexerDao.Dto view2Authorization = getByProjectUuid(view2.uuid(), dtos);
isPublic(view2Authorization, VIEW);
}

@Test
public void selectByUuids() {
    insertTestDataForProjectsAndViews();

    Map<String, PermissionIndexerDao.Dto> dtos = underTest
        .selectByUuids(dbClient, dbSession, asList(publicProject.uuid(), privateProject1.uuid(), privateProject2.uuid(),
view1.uuid(), view2.uuid(), application.uuid()))
        .stream()
        .collect(MoreCollectors.uniqueIndex(PermissionIndexerDao.Dto::getProjectUuid, Function.identity()));
    assertThat(dtos).hasSize(6);

    PermissionIndexerDao.Dto publicProjectAuthorization = dtos.get(publicProject.uuid());
    isPublic(publicProjectAuthorization, PROJECT);

    PermissionIndexerDao.Dto view1Authorization = dtos.get(view1.uuid());
    isPublic(view1Authorization, VIEW);

    PermissionIndexerDao.Dto applicationAuthorization = dtos.get(application.uuid());
    isPublic(applicationAuthorization, APP);

    PermissionIndexerDao.Dto privateProject1Authorization = dtos.get(privateProject1.uuid());

```

```

assertThat(privateProject1Authorization.getGroupIds()).containsOnly(group.getId());
assertThat(privateProject1Authorization.isAllowAnyone()).isFalse();
assertThat(privateProject1Authorization.getUserIds()).containsOnly(user1.getId(), user2.getId());
assertThat(privateProject1Authorization.getQualifier()).isEqualTo(PROJECT);

PermissionIndexerDao.Dto privateProject2Authorization = dtos.get(privateProject2.uuid());
assertThat(privateProject2Authorization.getGroupIds()).isEmpty();
assertThat(privateProject2Authorization.isAllowAnyone()).isFalse();
assertThat(privateProject2Authorization.getUserIds()).containsOnly(user1.getId());
assertThat(privateProject2Authorization.getQualifier()).isEqualTo(PROJECT);

PermissionIndexerDao.Dto view2Authorization = dtos.get(view2.uuid());
isPublic(view2Authorization, VIEW);
}

@Test
public void selectByUuids_returns_empty_list_when_project_does_not_exist() {
    insertTestDataForProjectsAndViews();

    List<PermissionIndexerDao.Dto> dtos = underTest.selectByUuids(dbClient, dbSession, asList("missing"));
    assertThat(dtos).isEmpty();
}

@Test
public void select_by_projects_with_high_number_of_projects() {
    List<String> projectUuids = new ArrayList<>();
    for (int i = 0; i < 350; i++) {
        ComponentDto project = ComponentTesting.newPrivateProjectDto(organization, Integer.toString(i));
        dbClient.componentDao().insert(dbSession, project);
        projectUuids.add(project.uuid());
        GroupPermissionDto dto = new GroupPermissionDto()
            .setOrganizationUuid(group.getOrganizationUuid())
            .setGroupId(group.getId())
            .setRole(USER)
            .setResourceId(project.getId());
        dbClient.groupPermissionDao().insert(dbSession, dto);
    }
    dbSession.commit();

    assertThat(underTest.selectByUuids(dbClient, dbSession, projectUuids))
        .hasSize(350)
        .extracting(PermissionIndexerDao.Dto::getProjectUuid)
        .containsAll(projectUuids);
}

@Test
public void return_private_project_without_any_permission_when_no_permission_in_DB() {
    List<PermissionIndexerDao.Dto> dtos = underTest.selectByUuids(dbClient, dbSession,

```

```

singletonList(privateProject1.uuid());

// no permissions
assertThat(dtos).hasSize(1);
PermissionIndexerDao.Dto dto = dtos.get(0);
assertThat(dto.getGroupIds()).isEmpty();
assertThat(dto.getUserIds()).isEmpty();
assertThat(dto.isAllowAnyone()).isFalse();
assertThat(dto.getProjectUuid()).isEqualTo(privateProject1.uuid());
assertThat(dto.getQualifier()).isEqualTo(privateProject1.qualifier());
}

@Test
public void return_public_project_with_only_AllowAnyone_true_when_no_permission_in_DB() {
    List<PermissionIndexerDao.Dto> dtos = underTest.selectByUuids(dbClient, dbSession,
singletonList(publicProject.uuid()));

    assertThat(dtos).hasSize(1);
    PermissionIndexerDao.Dto dto = dtos.get(0);
    assertThat(dto.getGroupIds()).isEmpty();
    assertThat(dto.getUserIds()).isEmpty();
    assertThat(dto.isAllowAnyone()).isTrue();
    assertThat(dto.getProjectUuid()).isEqualTo(publicProject.uuid());
    assertThat(dto.getQualifier()).isEqualTo(publicProject.qualifier());
}

@Test
public void
return_private_project_with_AllowAnyone_false_and_user_id_when_user_is_granted_USER_permission_directly(
) {
    dbTester.users().insertProjectPermissionOnUser(user1, USER, privateProject1);
    List<PermissionIndexerDao.Dto> dtos = underTest.selectByUuids(dbClient, dbSession,
singletonList(privateProject1.uuid()));

    assertThat(dtos).hasSize(1);
    PermissionIndexerDao.Dto dto = dtos.get(0);
    assertThat(dto.getGroupIds()).isEmpty();
    assertThat(dto.getUserIds()).containsOnly(user1.getId());
    assertThat(dto.isAllowAnyone()).isFalse();
    assertThat(dto.getProjectUuid()).isEqualTo(privateProject1.uuid());
    assertThat(dto.getQualifier()).isEqualTo(privateProject1.qualifier());
}

@Test
public void
return_private_project_with_AllowAnyone_false_and_group_id_but_not_user_id_when_user_is_granted_USER_p
ermission_through_group() {
    dbTester.users().insertMember(group, user1);

```



```

    dbTester.users().insertProjectPermissionOnGroup(group, USER, privateProject1);
    List<PermissionIndexerDao.Dto> dtos = underTest.selectByUuids(dbClient, dbSession,
singletonList(privateProject1.uuid()));

    assertThat(dtos).hasSize(1);
    PermissionIndexerDao.Dto dto = dtos.get(0);
    assertThat(dto.getGroupIds()).containsOnly(group.getId());
    assertThat(dto.getUserIds()).isEmpty();
    assertThat(dto.isAllowAnyone()).isFalse();
    assertThat(dto.getProjectUuid()).isEqualTo(privateProject1.uuid());
    assertThat(dto.getQualifier()).isEqualTo(privateProject1.qualifier());
}

private void isPublic(PermissionIndexerDao.Dto view1Authorization, String qualifier) {
    assertThat(view1Authorization.getGroupIds()).isEmpty();
    assertThat(view1Authorization.isAllowAnyone()).isTrue();
    assertThat(view1Authorization.getUserIds()).isEmpty();
    assertThat(view1Authorization.getQualifier()).isEqualTo(qualifier);
}

private static PermissionIndexerDao.Dto getByProjectUuid(String projectUuid,
Collection<PermissionIndexerDao.Dto> dtos) {
    return dtos.stream().filter(dto ->
dto.getProjectUuid().equals(projectUuid)).findFirst().orElseThrow(IllegalArgumentException::new);
}

private void insertTestDataForProjectsAndViews() {
    // user1 has USER access on both private projects
    userDbTester.insertProjectPermissionOnUser(user1, ADMIN, publicProject);
    userDbTester.insertProjectPermissionOnUser(user1, USER, privateProject1);
    userDbTester.insertProjectPermissionOnUser(user1, USER, privateProject2);
    userDbTester.insertProjectPermissionOnUser(user1, ADMIN, view1);
    userDbTester.insertProjectPermissionOnUser(user1, ADMIN, application);

    // user2 has USER access on privateProject1 only
    userDbTester.insertProjectPermissionOnUser(user2, USER, privateProject1);
    userDbTester.insertProjectPermissionOnUser(user2, ADMIN, privateProject2);

    // group1 has USER access on privateProject1 only
    userDbTester.insertProjectPermissionOnGroup(group, USER, privateProject1);
    userDbTester.insertProjectPermissionOnGroup(group, ADMIN, privateProject1);
    userDbTester.insertProjectPermissionOnGroup(group, ADMIN, view1);
    userDbTester.insertProjectPermissionOnGroup(group, ADMIN, application);
}
}
/*
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```

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 \*/

```
package org.sonar.server.permission.index;
```

```
import org.elasticsearch.index.query.MatchAllQueryBuilder;
import org.elasticsearch.index.query.QueryBuilder;
import org.elasticsearch.join.query.HasParentQueryBuilder;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.GroupTesting;
import org.sonar.server.testers.UserSessionRule;
```

```
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.test.JsonAssert.assertJson;
```

```
public class AuthorizationTypeSupportTest {
```

```
    @Rule
```

```
    public UserSessionRule userSession = UserSessionRule.standalone();
```

```
    private AuthorizationTypeSupport underTest = new AuthorizationTypeSupport(userSession);
```

```
    @Test
```

```
    public void createQueryFilter_does_not_include_permission_filters_if_user_is_flagged_as_root() {
        userSession.loggedIn().setRoot();
```

```
        QueryBuilder filter = underTest.createQueryFilter();
```

```
        assertThat(filter).isInstanceOf(MatchAllQueryBuilder.class);
```

```
    }
```

```
    @Test
```

```
    public void createQueryFilter_sets_filter_on_anyone_group_if_user_is_anonymous() {
```

```
userSession.anonymous();
```

```
HasParentQueryBuilder filter = (HasParentQueryBuilder) underTest.createQueryFilter();
```

```
assertJson(filter.toString()).isSimilarTo("{\"" +  
  "\"has_parent\" : {" +  
  "\"query\" : {" +  
  "\"bool\" : {" +  
  "\"filter\" : [{" +  
  "\"bool\" : {" +  
  "\"should\" : [{" +  
  "\"term\" : {" +  
  "\"allowAnyone\" : {\"value\" : true}" +  
  "}" +  
  "}" +  
  "}" +  
  "}" +  
  "}" +  
  "}," +  
  "\"parent_type\" : \"authorization\"" +  
  "}" +  
  "});  
}
```

```
@Test
```

```
public void createQueryFilter_sets_filter_on_anyone_and_user_id_if_user_is_logged_in_but_has_no_groups() {  
  userSession.logIn().setUserId(1234);
```

```
HasParentQueryBuilder filter = (HasParentQueryBuilder) underTest.createQueryFilter();
```

```
assertJson(filter.toString()).isSimilarTo("{\"" +  
  "\"has_parent\" : {" +  
  "\"query\" : {" +  
  "\"bool\" : {" +  
  "\"filter\" : [{" +  
  "\"bool\" : {" +  
  "\"should\" : [{" +  
  "{" +  
  "\"term\" : {" +  
  "\"allowAnyone\" : {\"value\" : true}" +  
  "}" +  
  "}," +  
  "{" +  
  "\"term\" : {" +  
  "\"userIds\" : {\"value\" : 1234}" +  
  "}" +  
  "}" +  
  "]" +
```

```

    }" +
    }]" +
    }" +
    }," +
    \\"parent_type\\": \\"authorization\\" +
    }" +
    }");
}

```

```
@Test
```

```
public void
```

```
createQueryFilter_sets_filter_on_anyone_and_user_id_and_group_ids_if_user_is_logged_in_and_has_groups() {
```

```
    GroupDto group1 = GroupTesting.newGroupDto().setId(10);
```

```
    GroupDto group2 = GroupTesting.newGroupDto().setId(11);
```

```
    userSession.logIn().setUserId(1234).setGroups(group1, group2);
```

```
    HasParentQueryBuilder filter = (HasParentQueryBuilder) underTest.createQueryFilter();
```

```
    assertJson(filter.toString()).isSimilarTo("{\"" +
```

```
        \\"has_parent\\": {" +
```

```
        \\"query\\": {" +
```

```
        \\"bool\\": {" +
```

```
        \\"filter\\": [{" +
```

```
            \\"bool\\": {" +
```

```
            \\"should\\": [" +
```

```
                {" +
```

```
                \\"term\\": {" +
```

```
                    \\"allowAnyone\\": {\\"value\\": true}" +
```

```
                }" +
```

```
            }," +
```

```
        {" +
```

```
        \\"term\\": {" +
```

```
        \\"userIds\\": {\\"value\\": 1234}" +
```

```
        }" +
```

```
    }," +
```

```
    {" +
```

```
    \\"term\\": {" +
```

```
    \\"groupIds\\": {\\"value\\": 10}" +
```

```
    }" +
```

```
    }," +
```

```
    {" +
```

```
    \\"term\\": {" +
```

```
    \\"groupIds\\": {\\"value\\": 11}" +
```

```
    }" +
```

```
    }" +
```

```
    ]" +
```

```
    }" +
```

```
    }]" +
```

```

    " }" +
    " }," +
    " \"parent_type\": \"authorization\"" +
    " }" +
    "}");
}
}
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 */
package org.sonar.server.permission.index;

import java.util.Collection;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.utils.System2;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.es.EsQueueDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.es.EsTester;
import org.sonar.server.es.IndexType;
import org.sonar.server.es.IndexingResult;
import org.sonar.server.es.ProjectIndexer;
import org.sonar.server.testers.UserSessionRule;

import static java.util.Arrays.asList;
import static java.util.Collections.singletonList;

```

```

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.server.es.ProjectIndexer.Cause.PERMISSION_CHANGE;

public class PermissionIndexerTest {

    private static final IndexType INDEX_TYPE_FOO_AUTH =
AuthorizationTypeSupport.getAuthorizationIndexType(FooIndexDefinition.INDEX_TYPE_FOO);

    @Rule
    public ExpectedException expectedException = ExpectedException.none();
    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);
    @Rule
    public EsTester es = EsTester.createCustom(new FooIndexDefinition());
    @Rule
    public UserSessionRule userSession = UserSessionRule.standalone();

    private FooIndex fooIndex = new FooIndex(es.client(), new AuthorizationTypeSupport(userSession));
    private FooIndexer fooIndexer = new FooIndexer(es.client());
    private PermissionIndexer underTest = new PermissionIndexer(db.getDbClient(), es.client(), fooIndexer);

    @Test
    public void indexOnStartup_grants_access_to_any_user_and_to_group_Anyone_on_public_projects() {
        ComponentDto project = createAndIndexPublicProject();
        UserDto user1 = db.users().insertUser();
        UserDto user2 = db.users().insertUser();

        indexOnStartup();

        verifyAnyoneAuthorized(project);
        verifyAuthorized(project, user1);
        verifyAuthorized(project, user2);
    }

    @Test
    public void deletion_resilience_will_deindex_projects() {
        ComponentDto project1 = createUnindexedPublicProject();
        ComponentDto project2 = createUnindexedPublicProject();
        //UserDto user1 = db.users().insertUser();
        indexOnStartup();
        assertThat(es.countDocuments(INDEX_TYPE_FOO_AUTH)).isEqualTo(2);

        // Simulate a indexation issue
        db.getDbClient().componentDao().delete(db.getSession(), project1.getId());
        underTest.prepareForRecovery(db.getSession(), asList(project1.uuid()),
ProjectIndexer.Cause.PROJECT_DELETION);
    }
}

```

```

    assertThat(db.countRowsOfTable(db.getSession(), "es_queue")).isEqualTo(1);
    Collection<EsQueueDto> esQueueDtos = db.getClient().esQueueDao().selectForRecovery(db.getSession(),
Long.MAX_VALUE, 2);

    underTest.index(db.getSession(), esQueueDtos);

    assertThat(db.countRowsOfTable(db.getSession(), "es_queue")).isEqualTo(0);
    assertThat(es.countDocuments(INDEX_TYPE_FOO_AUTH)).isEqualTo(1);
}

@Test
public void indexOnStartup_grants_access_to_user() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user1, USER, project);
    db.users().insertProjectPermissionOnUser(user2, ADMIN, project);

    indexOnStartup();

    // anonymous
    verifyAnyoneNotAuthorized(project);

    // user1 has access
    verifyAuthorized(project, user1);

    // user2 has not access (only USER permission is accepted)
    verifyNotAuthorized(project, user2);
}

@Test
public void indexOnStartup_grants_access_to_group_on_private_project() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    db.users().insertProjectPermissionOnGroup(group1, USER, project);
    db.users().insertProjectPermissionOnGroup(group2, ADMIN, project);

    indexOnStartup();

    // anonymous
    verifyAnyoneNotAuthorized(project);

    // group1 has access
    verifyAuthorized(project, user1, group1);
}

```

```

// group2 has not access (only USER permission is accepted)
verifyNotAuthorized(project, user2, group2);

// user3 is not in any group
verifyNotAuthorized(project, user3);
}

@Test
public void indexOnStartup_grants_access_to_user_and_group() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    GroupDto group = db.users().insertGroup();
    db.users().insertMember(group, user2);
    db.users().insertProjectPermissionOnUser(user1, USER, project);
    db.users().insertProjectPermissionOnGroup(group, USER, project);

    indexOnStartup();

    // anonymous
    verifyAnyoneNotAuthorized(project);

    // has direct access
    verifyAuthorized(project, user1);

    // has access through group
    verifyAuthorized(project, user1, group);

    // no access
    verifyNotAuthorized(project, user2);
}

@Test
public void indexOnStartup_does_not_grant_access_to_anybody_on_private_project() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user = db.users().insertUser();
    GroupDto group = db.users().insertGroup();

    indexOnStartup();

    verifyAnyoneNotAuthorized(project);
    verifyNotAuthorized(project, user);
    verifyNotAuthorized(project, user, group);
}

@Test
public void indexOnStartup_grants_access_to_anybody_on_public_project() {

```



```

ComponentDto project = createAndIndexPublicProject();
UserDto user = db.users().insertUser();
GroupDto group = db.users().insertGroup();

indexOnStartup();

verifyAnyoneAuthorized(project);
verifyAuthorized(project, user);
verifyAuthorized(project, user, group);
}

@Test
public void indexOnStartup_grants_access_to_anybody_on_view() {
    ComponentDto view = createAndIndexView();
    UserDto user = db.users().insertUser();
    GroupDto group = db.users().insertGroup();

    indexOnStartup();

    verifyAnyoneAuthorized(view);
    verifyAuthorized(view, user);
    verifyAuthorized(view, user, group);
}

@Test
public void indexOnStartup_grants_access_on_many_projects() {
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    ComponentDto project = null;
    for (int i = 0; i < 10; i++) {
        project = createAndIndexPrivateProject();
        db.users().insertProjectPermissionOnUser(user1, USER, project);
    }

    indexOnStartup();

    verifyAnyoneNotAuthorized(project);
    verifyAuthorized(project, user1);
    verifyNotAuthorized(project, user2);
}

@Test
public void public_projects_are_visible_to_anybody_whatever_the_organization() {
    ComponentDto projectOnOrg1 = createAndIndexPublicProject(db.organizations().insert());
    ComponentDto projectOnOrg2 = createAndIndexPublicProject(db.organizations().insert());
    UserDto user = db.users().insertUser();

    indexOnStartup();

```

```

verifyAnyoneAuthorized(projectOnOrg1);
verifyAnyoneAuthorized(projectOnOrg2);
verifyAuthorized(projectOnOrg1, user);
verifyAuthorized(projectOnOrg2, user);
}

@Test
public void indexOnAnalysis_does_nothing_because_CE_does_not_touch_permissions() {
    ComponentDto project = createAndIndexPublicProject();

    underTest.indexOnAnalysis(project.uuid());

    assertThatAuthIndexHasSize(0);
    verifyAnyoneNotAuthorized(project);
}

@Test
public void permissions_are_not_updated_on_project_tags_update() {
    ComponentDto project = createAndIndexPublicProject();

    indexPermissions(project, ProjectIndexer.Cause.PROJECT_TAGS_UPDATE);

    assertThatAuthIndexHasSize(0);
    verifyAnyoneNotAuthorized(project);
}

@Test
public void permissions_are_not_updated_on_project_key_update() {
    ComponentDto project = createAndIndexPublicProject();

    indexPermissions(project, ProjectIndexer.Cause.PROJECT_TAGS_UPDATE);

    assertThatAuthIndexHasSize(0);
    verifyAnyoneNotAuthorized(project);
}

@Test
public void index_permissions_on_project_creation() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, USER, project);

    indexPermissions(project, ProjectIndexer.Cause.PROJECT_CREATION);

    assertThatAuthIndexHasSize(1);
    verifyAuthorized(project, user);
}

```

```

@Test
public void index_permissions_on_permission_change() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user1, USER, project);
    indexPermissions(project, ProjectIndexer.Cause.PROJECT_CREATION);
    verifyAuthorized(project, user1);
    verifyNotAuthorized(project, user2);

    db.users().insertProjectPermissionOnUser(user2, USER, project);
    indexPermissions(project, PERMISSION_CHANGE);

    verifyAuthorized(project, user1);
    verifyAuthorized(project, user1);
}

```

```

@Test
public void delete_permissions_on_project_deletion() {
    ComponentDto project = createAndIndexPrivateProject();
    UserDto user = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, USER, project);
    indexPermissions(project, ProjectIndexer.Cause.PROJECT_CREATION);
    verifyAuthorized(project, user);

    db.getClient().componentDao().delete(db.getSession(), project.getId());
    indexPermissions(project, ProjectIndexer.Cause.PROJECT_DELETION);

    verifyNotAuthorized(project, user);
    assertThatAuthIndexHasSize(0);
}

```

```

@Test
public void errors_during_indexing_are_recovered() {
    ComponentDto project = createAndIndexPublicProject();
    es.lockWrites(INDEX_TYPE_FOO_AUTH);

    IndexingResult result = indexPermissions(project, PERMISSION_CHANGE);
    assertThat(result.getTotal()).isEqualTo(1L);
    assertThat(result.getFailures()).isEqualTo(1L);

    // index is still read-only, fail to recover
    result = recover();
    assertThat(result.getTotal()).isEqualTo(1L);
    assertThat(result.getFailures()).isEqualTo(1L);
    assertThatAuthIndexHasSize(0);
    assertThatEsQueueTableHasSize(1);
}

```

```

es.unlockWrites(INDEX_TYPE_FOO_AUTH);

result = recover();
assertThat(result.getTotal()).isEqualTo(1L);
assertThat(result.getFailures()).isEqualTo(0L);
verifyAnyoneAuthorized(project);
assertThatEsQueueTableHasSize(0);
}

private void assertThatAuthIndexHasSize(int expectedSize) {
    IndexType authIndexType = underTest.getIndexTypes().iterator().next();
    assertThat(es.countDocuments(authIndexType)).isEqualTo(expectedSize);
}

private void indexOnStartup() {
    underTest.indexOnStartup(underTest.getIndexTypes());
}

private void verifyAuthorized(ComponentDto project, UserDto user) {
    login(user);
    verifyAuthorized(project, true);
}

private void verifyAuthorized(ComponentDto project, UserDto user, GroupDto group) {
    login(user).setGroups(group);
    verifyAuthorized(project, true);
}

private void verifyNotAuthorized(ComponentDto project, UserDto user) {
    login(user);
    verifyAuthorized(project, false);
}

private void verifyNotAuthorized(ComponentDto project, UserDto user, GroupDto group) {
    login(user).setGroups(group);
    verifyAuthorized(project, false);
}

private void verifyAnyoneAuthorized(ComponentDto project) {
    userSession.anonymous();
    verifyAuthorized(project, true);
}

private void verifyAnyoneNotAuthorized(ComponentDto project) {
    userSession.anonymous();
    verifyAuthorized(project, false);
}

```

```

private void verifyAuthorized(ComponentDto project, boolean expectedAccess) {
    assertThat(fooIndex.hasAccessToProject(project.uuid())).isEqualTo(expectedAccess);
}

private UserSessionRule login(UserDto u) {
    userSession.login(u.getLogin()).setUserId(u.getId());
    return userSession;
}

private IndexingResult indexPermissions(ComponentDto project, ProjectIndexer.Cause cause) {
    DbSession dbSession = db.getSession();
    Collection<EsQueueDto> items = underTest.prepareForRecovery(dbSession, singletonList(project.uuid()), cause);
    dbSession.commit();
    return underTest.index(dbSession, items);
}

private ComponentDto createUnindexedPublicProject() {
    ComponentDto project = db.components().insertPublicProject();
    return project;
}

private ComponentDto createAndIndexPrivateProject() {
    ComponentDto project = db.components().insertPrivateProject();
    fooIndexer.indexOnAnalysis(project.uuid());
    return project;
}

private ComponentDto createAndIndexPublicProject() {
    ComponentDto project = db.components().insertPublicProject();
    fooIndexer.indexOnAnalysis(project.uuid());
    return project;
}

private ComponentDto createAndIndexView() {
    ComponentDto view = db.components().insertView();
    fooIndexer.indexOnAnalysis(view.uuid());
    return view;
}

private ComponentDto createAndIndexPublicProject(OrganizationDto org) {
    ComponentDto project = db.components().insertPublicProject(org);
    fooIndexer.indexOnAnalysis(project.uuid());
    return project;
}

private IndexingResult recover() {
    Collection<EsQueueDto> items = db.getDbClient().esQueueDao().selectForRecovery(db.getSession(),

```

```

System.currentTimeMillis() + 1_000L, 10);
    return underTest.index(db.getSession(), items);
}

private void assertThatEsQueueTableHasSize(int expectedSize) {
    assertThat(db.countRowsOfTable("es_queue").isEqualTo(expectedSize);
}

}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.index;

import org.sonar.api.config.internal.MapSettings;
import org.sonar.server.es.IndexDefinition;
import org.sonar.server.es.IndexType;
import org.sonar.server.es.NewIndex;

import static org.sonar.server.es.NewIndex.SettingsConfiguration.MANUAL_REFRESH_INTERVAL;
import static org.sonar.server.es.NewIndex.SettingsConfiguration.newBuilder;

public class FooIndexDefinition implements IndexDefinition {

    public static final String FOO_INDEX = "foos";
    public static final String FOO_TYPE = "foo";
    public static final IndexType INDEX_TYPE_FOO = new IndexType(FOO_INDEX, FOO_TYPE);
    public static final String FIELD_NAME = "name";
    public static final String FIELD_PROJECT_UUID = "projectUuid";

    @Override
    public void define(IndexDefinitionContext context) {

```

```

NewIndex index = context.create(FOO_INDEX, newBuilder(new
MapSettings().asConfig()).setRefreshInterval(MANUAL_REFRESH_INTERVAL).build());

NewIndex.NewIndexType type = index.createType(FOO_TYPE)
    .requireProjectAuthorization();

type.keywordFieldBuilder(FIELD_NAME).build();
type.keywordFieldBuilder(FIELD_PROJECT_UUID).build();
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.indexer;

import java.util.Arrays;
import java.util.stream.Stream;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.es.EsTester;

import static java.util.Arrays.asList;

public class PermissionIndexerTester {

    private final PermissionIndexer permissionIndexer;

    public PermissionIndexerTester(EsTester esTester, NeedAuthorizationIndexer indexer,
        NeedAuthorizationIndexer... others) {
        NeedAuthorizationIndexer[] indexers = Stream.concat(Stream.of(indexer),
            Arrays.stream(others)).toArray(NeedAuthorizationIndexer[]::new);

```

```

    this.permissionIndexer = new PermissionIndexer(null, esTester.client(), indexers);
}

public PermissionIndexerTester allowOnlyAnyone(ComponentDto project) {
    PermissionIndexerDao.Dto dto = new PermissionIndexerDao.Dto(project.uuid(), project.qualifier());
    dto.allowAnyone();
    permissionIndexer.index(asList(dto));
    return this;
}

public PermissionIndexerTester allowOnlyUser(ComponentDto project, UserDto user) {
    PermissionIndexerDao.Dto dto = new PermissionIndexerDao.Dto(project.uuid(), project.qualifier())
        .addUserId(user.getId());
    permissionIndexer.index(asList(dto));
    return this;
}

public PermissionIndexerTester allowOnlyGroup(ComponentDto project, GroupDto group) {
    PermissionIndexerDao.Dto dto = new PermissionIndexerDao.Dto(project.uuid(), project.qualifier())
        .addGroupId(group.getId());
    permissionIndexer.index(asList(dto));
    return this;
}

public PermissionIndexerTester allow(PermissionIndexerDao.Dto access) {
    permissionIndexer.index(asList(access));
    return this;
}
}
}
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 */

```



```

package org.sonar.server.permission.index;

import com.google.common.collect.ImmutableMap;
import com.google.common.collect.ImmutableSet;
import java.util.Collection;
import java.util.Set;
import org.sonar.db.DbSession;
import org.sonar.db.es.EsQueueDto;
import org.sonar.server.es.EsClient;
import org.sonar.server.es.IndexType;
import org.sonar.server.es.IndexingResult;
import org.sonar.server.es.ProjectIndexer;

import static org.sonar.server.permission.index.FooIndexDefinition.INDEX_TYPE_FOO;

public class FooIndexer implements ProjectIndexer, NeedAuthorizationIndexer {

    private static final AuthorizationScope AUTHORIZATION_SCOPE = new
    AuthorizationScope(INDEX_TYPE_FOO, p -> true);

    private final EsClient esClient;

    public FooIndexer(EsClient esClient) {
        this.esClient = esClient;
    }

    @Override
    public AuthorizationScope getAuthorizationScope() {
        return AUTHORIZATION_SCOPE;
    }

    @Override
    public void indexOnAnalysis(String branchUuid) {
        addToIndex(branchUuid, "bar");
        addToIndex(branchUuid, "baz");
    }

    @Override
    public Collection<EsQueueDto> prepareForRecovery(DbSession dbSession, Collection<String> projectUuids,
    Cause cause) {
        throw new UnsupportedOperationException();
    }

    private void addToIndex(String projectUuid, String name) {
        esClient.prepareIndex(INDEX_TYPE_FOO)
            .setRouting(projectUuid)
            .setParent(projectUuid)
            .setSource(ImmutableMap.of(

```

```

        FooIndexDefinition.FIELD_NAME, name,
        FooIndexDefinition.FIELD_PROJECT_UUID, projectUuid))
        .get();
    }

    @Override
    public void indexOnStartup(Set<IndexType> uninitializedIndexTypes) {
        throw new UnsupportedOperationException();
    }

    @Override
    public Set<IndexType> getIndexTypes() {
        return ImmutableSet.of(INDEX_TYPE_FOO);
    }

    @Override
    public IndexingResult index(DbSession dbSession, Collection<EsQueueDto> items) {
        throw new UnsupportedOperationException();
    }
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission.index;

import java.util.Arrays;
import java.util.List;
import org.elasticsearch.index.query.QueryBuilders;
import org.elasticsearch.search.SearchHits;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.server.es.EsClient;

```

```

import static org.sonar.server.permission.index.FooIndexDefinition.FOO_INDEX;
import static org.sonar.server.permission.index.FooIndexDefinition.FOO_TYPE;

public class FooIndex {

    private final EsClient esClient;
    private final AuthorizationTypeSupport authorizationTypeSupport;

    public FooIndex(EsClient esClient, AuthorizationTypeSupport authorizationTypeSupport) {
        this.esClient = esClient;
        this.authorizationTypeSupport = authorizationTypeSupport;
    }

    public boolean hasAccessToProject(String projectUuid) {
        SearchHits hits = esClient.prepareSearch(FOO_INDEX)
            .setTypes(FOO_TYPE)
            .setQuery(QueryBuilders.boolQuery()
                .must(QueryBuilders.termQuery(FooIndexDefinition.FIELD_PROJECT_UUID, projectUuid))
                .filter(authorizationTypeSupport.createQueryFilter()))
            .get()
            .getHits();
        List<String> names = Arrays.stream(hits.hits())
            .map(h -> h.getSource().get(FooIndexDefinition.FIELD_NAME).toString())
            .collect(MoreCollectors.toList());
        return names.size() == 2 && names.contains("bar") && names.contains("baz");
    }
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

```

```

import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.utils.System2;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.OrganizationPermission;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;

import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.QUALITY_GATE_ADMIN;
import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.SCAN;
import static org.sonar.server.permission.PermissionChange.Operation.ADD;
import static org.sonar.server.permission.PermissionChange.Operation.REMOVE;

public class UserPermissionChangerTest {
    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);

    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    private UserPermissionChanger underTest = new UserPermissionChanger(db.getDbClient());
    private OrganizationDto org1;
    private OrganizationDto org2;
    private UserDto user1;
    private UserDto user2;
    private ComponentDto privateProject;
    private ComponentDto publicProject;

    @Before
    public void setUp() throws Exception {
        org1 = db.organizations().insert();
        org2 = db.organizations().insert();
        user1 = db.users().insertUser();
    }

```

```

user2 = db.users().insertUser();
privateProject = db.components().insertPrivateProject(org1);
publicProject = db.components().insertPublicProject(org1);
}

@Test
public void apply_adds_any_organization_permission_to_user() {
    OrganizationPermission.all()
        .forEach(perm -> {
            UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), perm.getKey(), null,
                UserId.from(user1));

            apply(change);

            assertThat(db.users().selectPermissionsOfUser(user1, org1)).contains(perm);
        });
}

@Test
public void apply_removes_any_organization_permission_to_user() {
    // give ADMIN perm to user2 so that user1 is not the only one with this permission and it can be removed from
    user1
    db.users().insertPermissionOnUser(org1, user2, OrganizationPermission.ADMINISTER);
    OrganizationPermission.all()
        .forEach(perm -> db.users().insertPermissionOnUser(org1, user1, perm));
    assertThat(db.users().selectPermissionsOfUser(user1, org1)).containsOnly(OrganizationPermission.values());

    OrganizationPermission.all()
        .forEach(perm -> {
            UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), perm.getKey(), null,
                UserId.from(user1));

            apply(change);

            assertThat(db.users().selectPermissionsOfUser(user1, org1)).doesNotContain(perm);
        });
}

@Test
public void apply_has_no_effect_when_adding_permission_USER_on_a_public_project() {
    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), USER, new
    ProjectId(publicProject), UserId.from(user1));

    apply(change);

    assertThat(db.users().selectProjectPermissionsOfUser(user1, publicProject)).doesNotContain(USER);
}

```

```

@Test
public void apply_has_no_effect_when_adding_permission_CODEVIEWER_on_a_public_project() {
    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), CODEVIEWER, new
ProjectId(publicProject), UserId.from(user1));

    apply(change);

    assertThat(db.users().selectProjectPermissionsOfUser(user1, publicProject)).doesNotContain(CODEVIEWER);
}

@Test
public void apply_adds_permission_ADMIN_on_a_public_project() {
    applyAddsPermissionOnAPublicProject(ADMIN);
}

@Test
public void apply_adds_permission_ISSUE_ADMIN_on_a_public_project() {
    applyAddsPermissionOnAPublicProject(ISSUE_ADMIN);
}

@Test
public void apply_adds_permission_SCAN_EXECUTION_on_a_public_project() {
    applyAddsPermissionOnAPublicProject(SCAN_EXECUTION);
}

private void applyAddsPermissionOnAPublicProject(String permission) {
    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), permission, new
ProjectId(publicProject), UserId.from(user1));

    apply(change);

    assertThat(db.users().selectProjectPermissionsOfUser(user1, publicProject)).containsOnly(permission);
}

@Test
public void apply_fails_with_BadRequestException_when_removing_permission_USER_from_a_public_project()
{
    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), USER, new
ProjectId(publicProject), UserId.from(user1));

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission user can't be removed from a public component");

    apply(change);
}

@Test
public void

```

```

apply_fails_with_BadRequestException_when_removing_permission_CODEVIEWER_from_a_public_project() {
    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), CODEVIEWER, new
ProjectId(publicProject), UserId.from(user1));

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission codeviewer can't be removed from a public component");

    apply(change);
}

@Test
public void apply_removes_permission_ADMIN_from_a_public_project() {
    applyRemovesPermissionFromPublicProject(ADMIN);
}

@Test
public void apply_removes_permission_ISSUE_ADMIN_from_a_public_project() {
    applyRemovesPermissionFromPublicProject(ISSUE_ADMIN);
}

@Test
public void apply_removes_permission_SCAN_EXECUTION_from_a_public_project() {
    applyRemovesPermissionFromPublicProject(SCAN_EXECUTION);
}

private void applyRemovesPermissionFromPublicProject(String permission) {
    db.users().insertProjectPermissionOnUser(user1, permission, publicProject);
    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), permission, new
ProjectId(publicProject), UserId.from(user1));

    apply(change);

    assertThat(db.users().selectProjectPermissionsOfUser(user1, publicProject)).isEmpty();
}

@Test
public void apply_adds_any_permission_to_a_private_project() {
    ProjectPermissions.ALL
        .forEach(permission -> {
            UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), permission, new
ProjectId(privateProject), UserId.from(user1));

            apply(change);

            assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).contains(permission);
        });
}

```

```

@Test
public void apply_removes_any_permission_from_a_private_project() {
    ProjectPermissions.ALL
        .forEach(permission -> db.users().insertProjectPermissionOnUser(user1, permission, privateProject));

    ProjectPermissions.ALL
        .forEach(permission -> {
            UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), permission, new
ProjectId(privateProject), UserId.from(user1));

            apply(change);

            assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).doesNotContain(permission);
        });
}

@Test
public void add_global_permission_to_user() {
    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), SCAN_EXECUTION, null,
UserId.from(user1));

    apply(change);

    assertThat(db.users().selectPermissionsOfUser(user1, org1)).containsOnly(SCAN);
    assertThat(db.users().selectPermissionsOfUser(user1, org2)).isEmpty();
    assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).isEmpty();
    assertThat(db.users().selectPermissionsOfUser(user2, org1)).isEmpty();
    assertThat(db.users().selectProjectPermissionsOfUser(user2, privateProject)).isEmpty();
}

@Test
public void add_project_permission_to_user() {
    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), ISSUE_ADMIN, new
ProjectId(privateProject), UserId.from(user1));
    apply(change);

    assertThat(db.users().selectPermissionsOfUser(user1, org1)).isEmpty();
    assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).contains(ISSUE_ADMIN);
    assertThat(db.users().selectPermissionsOfUser(user2, org1)).isEmpty();
    assertThat(db.users().selectProjectPermissionsOfUser(user2, privateProject)).isEmpty();
}

@Test
public void do_nothing_when_adding_global_permission_that_already_exists() {
    db.users().insertPermissionOnUser(org1, user1, ADMINISTER_QUALITY_GATES);

    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(),
QUALITY_GATE_ADMIN, null, UserId.from(user1));

```



```

    apply(change);

    assertThat(db.users().selectPermissionsOfUser(user1, org1)).containsOnly(ADMINISTER_QUALITY_GATES);
}

@Test
public void fail_to_add_global_permission_on_project() {
    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Invalid project permission 'gateadmin'. Valid values are [admin, codeviewer,
issueadmin, scan, user]");

    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(),
QUALITY_GATE_ADMIN, new ProjectId(privateProject), UserId.from(user1));
    apply(change);
}

@Test
public void fail_to_add_project_permission_on_organization() {
    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Invalid global permission 'issueadmin'. Valid values are [admin, profileadmin,
gateadmin, scan, provisioning]");

    UserPermissionChange change = new UserPermissionChange(ADD, org1.getUuid(), ISSUE_ADMIN, null,
UserId.from(user1));
    apply(change);
}

@Test
public void remove_global_permission_from_user() {
    db.users().insertPermissionOnUser(org1, user1, QUALITY_GATE_ADMIN);
    db.users().insertPermissionOnUser(org1, user1, SCAN_EXECUTION);
    db.users().insertPermissionOnUser(org2, user1, QUALITY_GATE_ADMIN);
    db.users().insertPermissionOnUser(org1, user2, QUALITY_GATE_ADMIN);
    db.users().insertProjectPermissionOnUser(user1, ISSUE_ADMIN, privateProject);

    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(),
QUALITY_GATE_ADMIN, null, UserId.from(user1));
    apply(change);

    assertThat(db.users().selectPermissionsOfUser(user1, org1)).containsOnly(SCAN);
    assertThat(db.users().selectPermissionsOfUser(user1, org2)).containsOnly(ADMINISTER_QUALITY_GATES);
    assertThat(db.users().selectPermissionsOfUser(user2, org1)).containsOnly(ADMINISTER_QUALITY_GATES);
    assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).containsOnly(ISSUE_ADMIN);
}

@Test
public void remove_project_permission_from_user() {
    ComponentDto project2 = db.components().insertPrivateProject(org1);

```

```

db.users().insertPermissionOnUser(user1, ADMINISTER_QUALITY_GATES);
db.users().insertProjectPermissionOnUser(user1, ISSUE_ADMIN, privateProject);
db.users().insertProjectPermissionOnUser(user1, USER, privateProject);
db.users().insertProjectPermissionOnUser(user2, ISSUE_ADMIN, privateProject);
db.users().insertProjectPermissionOnUser(user1, ISSUE_ADMIN, project2);

UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), ISSUE_ADMIN, new
ProjectId(privateProject), UserId.from(user1));
apply(change);

assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).containsOnly(USER);
assertThat(db.users().selectProjectPermissionsOfUser(user2, privateProject)).containsOnly(ISSUE_ADMIN);
assertThat(db.users().selectProjectPermissionsOfUser(user1, project2)).containsOnly(ISSUE_ADMIN);
}

@Test
public void do_not_fail_if_removing_a_global_permission_that_does_not_exist() {
    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(),
QUALITY_GATE_ADMIN, null, UserId.from(user1));
    apply(change);

    assertThat(db.users().selectPermissionsOfUser(user1, org1)).isEmpty();
}

@Test
public void do_not_fail_if_removing_a_project_permission_that_does_not_exist() {
    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), ISSUE_ADMIN, new
ProjectId(privateProject), UserId.from(user1));
    apply(change);

    assertThat(db.users().selectProjectPermissionsOfUser(user1, privateProject)).isEmpty();
}

@Test
public void fail_to_remove_admin_global_permission_if_no_more_admins() {
    db.users().insertPermissionOnUser(org1, user1, SYSTEM_ADMIN);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Last user with permission 'admin'. Permission cannot be removed.");

    UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(), SYSTEM_ADMIN,
null, UserId.from(user1));
    underTest.apply(db.getSession(), change);
}

@Test
public void remove_admin_user_if_still_other_admins() {
    db.users().insertPermissionOnUser(org1, user1, ADMINISTER);

```

```

GroupDto admins = db.users().insertGroup(org1, "admins");
db.users().insertMember(admins, user2);
db.users().insertPermissionOnGroup(admins, ADMINISTER);

UserPermissionChange change = new UserPermissionChange(REMOVE, org1.getUuid(),
ADMINISTER.getKey(), null, UserId.from(user1));
underTest.apply(db.getSession(), change);

assertThat(db.users().selectPermissionsOfUser(user1, org1)).isEmpty();
}

private void apply(UserPermissionChange change) {
    underTest.apply(db.getSession(), change);
    db.commit();
}
}
/*
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.server.permission;

import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.core.permission.GlobalPermissions;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;

```

```

import org.sonar.db.permission.GroupPermissionDto;
import org.sonar.db.permission.OrganizationPermission;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;
import org.sonar.server.exceptions.BadRequestException;
import org.sonar.server.usergroups.ws.GroupIdOrAnyone;

import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.fail;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;

public class GroupPermissionChangerTest {

    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);
    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    private GroupPermissionChanger underTest = new GroupPermissionChanger(db.getDbClient());
    private OrganizationDto org;
    private GroupDto group;
    private ComponentDto privateProject;
    private ComponentDto publicProject;

    @Before
    public void setUp() throws Exception {
        org = db.organizations().insert();
        group = db.users().insertGroup(org, "a-group");
        privateProject = db.components().insertPrivateProject(org);
        publicProject = db.components().insertPublicProject(org);
    }

    @Test
    public void apply_adds_organization_permission_to_group() {
        GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

        apply(new GroupPermissionChange(PermissionChange.Operation.ADD,
        GlobalPermissions.QUALITY_GATE_ADMIN, null, groupId));

        assertThat(db.users().selectGroupPermissions(group,
        null)).containsOnly(GlobalPermissions.QUALITY_GATE_ADMIN);
    }

    @Test
    public void apply_adds_organization_permission_to_group_AnyOne() {
        GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

```

```

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD,
GlobalPermissions.QUALITY_GATE_ADMIN, null, groupId));

    assertThat(db.users().selectAnyonePermissions(org,
null)).containsOnly(GlobalPermissions.QUALITY_GATE_ADMIN);
}

@Test
public void
apply_fails_with_BadRequestException_when_adding_any_permission_to_group_AnyOne_on_private_project() {
    GroupIdOrAnyone anyOneGroupId = GroupIdOrAnyone.forAnyone(org.getUuid());
    ProjectPermissions.ALL
        .forEach(perm -> {
            try {
                apply(new GroupPermissionChange(PermissionChange.Operation.ADD, perm, new ProjectId(privateProject),
anyOneGroupId));
                fail("a BadRequestException should have been thrown");
            } catch (BadRequestException e) {
                assertThat(e).hasMessage("No permission can be granted to Anyone on a private component");
            }
        });
}

@Test
public void apply_has_no_effect_when_removing_any_permission_to_group_AnyOne_on_private_project() {
    ProjectPermissions.ALL
        .forEach(this::unsafeInsertProjectPermissionOnAnyone);

    GroupIdOrAnyone anyOneGroupId = GroupIdOrAnyone.forAnyone(org.getUuid());
    ProjectPermissions.ALL
        .forEach(perm -> {
            apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, perm, new
ProjectId(privateProject), anyOneGroupId));

            assertThat(db.users().selectAnyonePermissions(org, privateProject)).contains(perm);
        });
}

@Test
public void apply_adds_permission_USER_to_group_on_private_project() {
    applyAddsPermissionToGroupOnPrivateProject(UserRole.USER);
}

@Test
public void apply_adds_permission_CODEVIEWER_to_group_on_private_project() {
    applyAddsPermissionToGroupOnPrivateProject(UserRole.CODEVIEWER);
}

```

```

@Test
public void apply_adds_permission_ADMIN_to_group_on_private_project() {
    applyAddsPermissionToGroupOnPrivateProject(UserRole.ADMIN);
}

@Test
public void apply_adds_permission_ISSUE_ADMIN_to_group_on_private_project() {
    applyAddsPermissionToGroupOnPrivateProject(UserRole.ISSUE_ADMIN);
}

@Test
public void apply_adds_permission_SCAN_EXECUTION_to_group_on_private_project() {
    applyAddsPermissionToGroupOnPrivateProject(GlobalPermissions.SCAN_EXECUTION);
}

private void applyAddsPermissionToGroupOnPrivateProject(String permission) {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD, permission, new
ProjectId(privateProject), groupId));

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
    assertThat(db.users().selectGroupPermissions(group, privateProject)).containsOnly(permission);
}

@Test
public void apply_removes_permission_USER_from_group_on_private_project() {
    applyRemovesPermissionFromGroupOnPrivateProject(UserRole.USER);
}

@Test
public void apply_removes_permission_CODEVIEWER_from_group_on_private_project() {
    applyRemovesPermissionFromGroupOnPrivateProject(UserRole.CODEVIEWER);
}

@Test
public void apply_removes_permission_ADMIN_from_on_private_project() {
    applyRemovesPermissionFromGroupOnPrivateProject(UserRole.ADMIN);
}

@Test
public void apply_removes_permission_ISSUE_ADMIN_from_on_private_project() {
    applyRemovesPermissionFromGroupOnPrivateProject(UserRole.ISSUE_ADMIN);
}

@Test
public void apply_removes_permission_SCAN_EXECUTION_from_on_private_project() {

```

```

    applyRemovesPermissionFromGroupOnPrivateProject(GlobalPermissions.SCAN_EXECUTION);
}

private void applyRemovesPermissionFromGroupOnPrivateProject(String permission) {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);
    db.users().insertProjectPermissionOnGroup(group, permission, privateProject);

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD, permission, new
ProjectId(privateProject), groupId));

    assertThat(db.users().selectGroupPermissions(group, privateProject)).containsOnly(permission);
}

@Test
public void apply_has_no_effect_when_adding_USER_permission_to_group_AnyOne_on_a_public_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD, UserRole.USER, new
ProjectId(publicProject), groupId));

    assertThat(db.users().selectAnyonePermissions(org, publicProject)).isEmpty();
}

@Test
public void
apply_has_no_effect_when_adding_CODEVIEWER_permission_to_group_AnyOne_on_a_public_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD, UserRole.CODEVIEWER, new
ProjectId(publicProject), groupId));

    assertThat(db.users().selectAnyonePermissions(org, publicProject)).isEmpty();
}

@Test
public void
apply_fails_with_BadRequestException_when_adding_permission_ADMIN_to_group_AnyOne_on_a_public_proje
ct() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("It is not possible to add the 'admin' permission to group 'Anyone'");

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD, UserRole.ADMIN, new
ProjectId(publicProject), groupId));
}

@Test

```

```

public void apply_adds_permission_ISSUE_ADMIN_to_group_AnyOne_on_a_public_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD, UserRole.ISSUE_ADMIN, new
ProjectId(publicProject), groupId));

    assertThat(db.users().selectAnyonePermissions(org, publicProject)).containsOnly(UserRole.ISSUE_ADMIN);
}

@Test
public void apply_adds_permission_SCAN_EXECUTION_to_group_AnyOne_on_a_public_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD,
GlobalPermissions.SCAN_EXECUTION, new ProjectId(publicProject), groupId));

    assertThat(db.users().selectAnyonePermissions(org,
publicProject)).containsOnly(GlobalPermissions.SCAN_EXECUTION);
}

@Test
public void
apply_fails_with_BadRequestException_when_removing_USER_permission_from_group_AnyOne_on_a_public_p
roject() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission user can't be removed from a public component");

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, UserRole.USER, new
ProjectId(publicProject), groupId));
}

@Test
public void
apply_fails_with_BadRequestException_when_removing_CODEVIEWER_permission_from_group_AnyOne_on_a
_public_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission codeviewer can't be removed from a public component");

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, UserRole.CODEVIEWER, new
ProjectId(publicProject), groupId));
}

@Test
public void apply_removes_ADMIN_permission_from_group_AnyOne_on_a_public_project() {

```



```

    applyRemovesPermissionFromGroupAnyOneOnAPublicProject(UserRole.ADMIN);
}

@Test
public void apply_removes_ISSUE_ADMIN_permission_from_group_AnyOne_on_a_public_project() {
    applyRemovesPermissionFromGroupAnyOneOnAPublicProject(UserRole.ISSUE_ADMIN);
}

@Test
public void apply_removes_SCAN_EXECUTION_permission_from_group_AnyOne_on_a_public_project() {
    applyRemovesPermissionFromGroupAnyOneOnAPublicProject(GlobalPermissions.SCAN_EXECUTION);
}

private void applyRemovesPermissionFromGroupAnyOneOnAPublicProject(String permission) {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(org.getUuid());
    db.users().insertProjectPermissionOnAnyone(permission, publicProject);

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, permission, new
ProjectId(publicProject), groupId));

    assertThat(db.users().selectAnyonePermissions(org, publicProject)).isEmpty();
}

@Test
public void
apply_fails_with_BadRequestException_when_removing_USER_permission_from_a_group_on_a_public_project()
{
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission user can't be removed from a public component");

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, UserRole.USER, new
ProjectId(publicProject), groupId));
}

@Test
public void
apply_fails_with_BadRequestException_when_removing_CODEVIEWER_permission_from_a_group_on_a_public
_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Permission codeviewer can't be removed from a public component");

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, UserRole.CODEVIEWER, new
ProjectId(publicProject), groupId));
}

```

```

@Test
public void add_permission_to_anyone() {
    OrganizationDto defaultOrganization = db.getDefaultOrganization();
    GroupIdOrAnyone groupId = GroupIdOrAnyone.forAnyone(defaultOrganization.getUuid());

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD,
GlobalPermissions.QUALITY_GATE_ADMIN, null, groupId));

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
    assertThat(db.users().selectAnyonePermissions(defaultOrganization,
null)).containsOnly(GlobalPermissions.QUALITY_GATE_ADMIN);
}

@Test
public void do_nothing_when_adding_permission_that_already_exists() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);
    db.users().insertPermissionOnGroup(group, ADMINISTER_QUALITY_GATES);

    apply(new GroupPermissionChange(PermissionChange.Operation.ADD,
ADMINISTER_QUALITY_GATES.getKey(), null, groupId));

    assertThat(db.users().selectGroupPermissions(group,
null)).containsOnly(ADMINISTER_QUALITY_GATES.getKey());
}

@Test
public void fail_to_add_global_permission_but_SCAN_and_ADMIN_on_private_project() {

    OrganizationPermission.all()
        .map(OrganizationPermission::getKey)
        .filter(perm -> !UserRole.ADMIN.equals(perm) && !GlobalPermissions.SCAN_EXECUTION.equals(perm))
        .forEach(perm -> {
            try {
                apply(new GroupPermissionChange(PermissionChange.Operation.ADD, perm, new ProjectId(privateProject),
groupId));
                fail("a BadRequestException should have been thrown for permission " + perm);
            } catch (BadRequestException e) {
                assertThat(e).hasMessage("Invalid project permission '" + perm + "'. Valid values are [admin, codeviewer,
issueadmin, scan, user]");
            }
        });
}

@Test
public void fail_to_add_global_permission_but_SCAN_and_ADMIN_on_public_project() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

```

```

OrganizationPermission.all()
    .map(OrganizationPermission::getKey)
    .filter(perm -> !UserRole.ADMIN.equals(perm) && !GlobalPermissions.SCAN_EXECUTION.equals(perm))
    .forEach(perm -> {
        try {
            apply(new GroupPermissionChange(PermissionChange.Operation.ADD, perm, new ProjectId(publicProject),
groupId));
            fail("a BadRequestException should have been thrown for permission " + perm);
        } catch (BadRequestException e) {
            assertThat(e).hasMessage("Invalid project permission " + perm + ". Valid values are [admin, codeviewer,
issueadmin, scan, user]");
        }
    });
}

```

@Test

```

public void fail_to_add_project_permission_but_SCAN_and_ADMIN_on_global_group() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

```

```

ProjectPermissions.ALL
    .stream()
    .filter(perm -> !GlobalPermissions.SCAN_EXECUTION.equals(perm) &&
!OrganizationPermission.ADMINISTER.getKey().equals(perm))
    .forEach(permission -> {
        try {
            apply(new GroupPermissionChange(PermissionChange.Operation.ADD, permission, null, groupId));
            fail("a BadRequestException should have been thrown for permission " + permission);
        } catch (BadRequestException e) {
            assertThat(e).hasMessage("Invalid global permission " + permission + ". Valid values are [admin,
profileadmin, gateadmin, scan, provisioning]");
        }
    });
}

```

@Test

```

public void remove_permission_from_group() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);
    db.users().insertPermissionOnGroup(group, ADMINISTER_QUALITY_GATES);
    db.users().insertPermissionOnGroup(group, PROVISION_PROJECTS);

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE,
ADMINISTER_QUALITY_GATES.getKey(), null, groupId));

    assertThat(db.users().selectGroupPermissions(group, null)).containsOnly(PROVISION_PROJECTS.getKey());
}

```

@Test

```

public void remove_project_permission_from_group() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);
    db.users().insertPermissionOnGroup(group, ADMINISTER_QUALITY_GATES);
    db.users().insertProjectPermissionOnGroup(group, UserRole.ISSUE_ADMIN, privateProject);
    db.users().insertProjectPermissionOnGroup(group, UserRole.CODEVIEWER, privateProject);

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, UserRole.ISSUE_ADMIN, new
ProjectId(privateProject), groupId));

    assertThat(db.users().selectGroupPermissions(group,
null)).containsOnly(ADMINISTER_QUALITY_GATES.getKey());
    assertThat(db.users().selectGroupPermissions(group, privateProject)).containsOnly(UserRole.CODEVIEWER);
}

@Test
public void do_not_fail_if_removing_a_permission_that_does_not_exist() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, UserRole.ISSUE_ADMIN, new
ProjectId(privateProject), groupId));

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
    assertThat(db.users().selectGroupPermissions(group, privateProject)).isEmpty();
}

@Test
public void fail_to_remove_admin_permission_if_no_more_admins() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);
    db.users().insertPermissionOnGroup(group, ADMINISTER);

    expectedException.expect(BadRequestException.class);
    expectedException.expectMessage("Last group with permission 'admin'. Permission cannot be removed.");

    underTest.apply(db.getSession(), new GroupPermissionChange(PermissionChange.Operation.REMOVE,
ADMINISTER.getKey(), null, groupId));
}

@Test
public void remove_admin_group_if_still_other_admins() {
    GroupIdOrAnyone groupId = GroupIdOrAnyone.from(group);
    db.users().insertPermissionOnGroup(group, ADMINISTER);
    UserDto admin = db.users().insertUser();
    db.users().insertPermissionOnUser(org, admin, ADMINISTER);

    apply(new GroupPermissionChange(PermissionChange.Operation.REMOVE, ADMINISTER.getKey(), null,
groupId));

    assertThat(db.users().selectGroupPermissions(group, null)).isEmpty();
}

```

```

}

private void apply(GroupPermissionChange change) {
    underTest.apply(db.getSession(), change);
    db.commit();
}

private void unsafeInsertProjectPermissionOnAnyone(String perm) {
    GroupPermissionDto dto = new GroupPermissionDto()
        .setOrganizationUuid(privateProject.getOrganizationUuid())
        .setGroupId(null)
        .setRole(perm)
        .setResourceId(privateProject.getId());
    db.getClient().groupPermissionDao().insert(db.getSession(), dto);
    db.commit();
}
}

```

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Version 3, 29 June 2007

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```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN" "mybatis-3-mapper.dtd">
```

```
<mapper namespace="org.sonar.db.permission.UserPermissionMapper">
```

```
<select id="selectUserPermissionsByQueryAndUserIds" parameterType="map"
resultType="org.sonar.db.permission.UserPermissionDto">
```

```
select
  u.id as userId,
  ur.organization_uuid as organizationUuid,
```



```

    ur.resource_id as componentId,
    ur.role as permission
<include refid="sqlQueryJoins" />
<where>
    u.id in <foreach collection="userIds" open="(" close=")" item="userId"
separator=",">#{userId,jdbcType=INTEGER}</foreach>
    <include refid="sqlQueryFilters" />
</where>
</select>

<select id="selectUserIdsByQuery" parameterType="map" resultType="int">
select
    distinct u.id, lower(u.name) as lowerName
    <include refid="sqlQueryJoins" />
    <where>
        <include refid="sqlQueryFilters" />
    </where>
order by lowerName asc
</select>

<select id="countUsersByQuery" parameterType="map" resultType="int">
select count(distinct(u.id))
<include refid="sqlQueryJoins" />
<where>
    <include refid="sqlQueryFilters" />
</where>
</select>

<sql id="sqlQueryJoins">
from users u
left join user_roles ur on ur.user_id = u.id
left join projects p on ur.resource_id = p.id
inner join organization_members om on u.id=om.user_id and
om.organization_uuid=#{query.organizationUuid,jdbcType=VARCHAR}
</sql>

<sql id="sqlQueryFilters">
and u.active = ${_true}
<if test="query.searchQueryToSql != null">
and (
    lower(u.name) like #{query.searchQueryToSqlLowercase,jdbcType=VARCHAR} ESCAPE '/'
    or u.email like #{query.searchQueryToSql,jdbcType=VARCHAR} ESCAPE '/'
    or u.login like #{query.searchQueryToSql,jdbcType=VARCHAR} ESCAPE '/')
</if>
<!-- filter rows with user permissions -->
<if test="query.withAtLeastOnePermission()">
and ur.organization_uuid = om.organization_uuid
and ur.role is not null

```

```

<if test="query.componentUuid==null">
  and ur.resource_id is null
</if>
<if test="query.componentUuid!=null">
  and p.uuid = #{query.componentUuid,jdbcType=VARCHAR}
</if>
<if test="query.permission!=null">
  and ur.role = #{query.permission,jdbcType=VARCHAR}
</if>
</if>
</sql>

<select id="selectGlobalPermissionsOfUser" parameterType="map" resultType="string">
  select ur.role
  from user_roles ur
  where
  ur.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
  ur.user_id = #{userId,jdbcType=INTEGER} and
  ur.resource_id is null
</select>

<select id="selectProjectPermissionsOfUser" parameterType="map" resultType="string">
  select ur.role
  from user_roles ur
  where
  ur.user_id = #{userId,jdbcType=INTEGER} and
  ur.resource_id = #{projectId,jdbcType=BIGINT}
</select>

<select id="countUsersByProjectPermission" resultType="org.sonar.db.permission.CountPerProjectPermission">
  select ur.resource_id as componentId, ur.role as permission, count(u.login) as count
  from users u
  inner join user_roles ur on ur.user_id = u.id
  inner join projects p on p.id = ur.resource_id
  where u.active = ${_true}
  and p.id in <foreach collection="projectIds" open="(" close=")" item="projectId"
separator=",">#{projectId}</foreach>
  group by ur.resource_id, ur.role
</select>

<select id="selectUserIdsWithPermissionOnProjectBut" resultType="Integer">
  select
  distinct ur1.user_id
  from
  user_roles ur1
  where
  ur1.resource_id = #{projectId,jdbcType=BIGINT}
  and role <> #{permission,jdbcType=VARCHAR}

```

```

and not exists (
  select
    1
  from
    user_roles ur2
  where
    ur2.resource_id = ur1.resource_id
    and ur2.user_id = ur1.user_id
    and role = #{permission,jdbcType=VARCHAR}
)
</select>

<insert id="insert" parameterType="org.sonar.db.permission.UserPermissionDto" useGeneratedKeys="false">
insert into user_roles (
  organization_uuid,
  user_id,
  resource_id,
  role
) values (
  #{organizationUuid,jdbcType=VARCHAR},
  #{userId,jdbcType=INTEGER},
  #{componentId,jdbcType=BIGINT},
  #{permission,jdbcType=VARCHAR}
)
</insert>

<delete id="deleteGlobalPermission" parameterType="map">
delete from user_roles
where
  role = #{permission,jdbcType=VARCHAR} and
  user_id = #{userId,jdbcType=INTEGER} and
  organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
  resource_id is null
</delete>

<delete id="deleteProjectPermission" parameterType="map">
delete from user_roles
where
  role = #{permission,jdbcType=VARCHAR} and
  user_id = #{userId,jdbcType=INTEGER} and
  resource_id = #{projectId,jdbcType=BIGINT}
</delete>

<delete id="deleteProjectPermissions" parameterType="map">
delete from user_roles
where
  resource_id = #{projectId,jdbcType=BIGINT}
</delete>

```

```

<delete id="deleteProjectPermissionOfAnyUser" parameterType="map">
  delete from
    user_roles
  where
    resource_id = #{projectId,jdbcType=BIGINT}
    and role = #{permission,jdbcType=VARCHAR}
</delete>

<delete id="deleteByOrganization" parameterType="String">
  delete from
    user_roles
  where
    organization_uuid = #{organizationUuid,jdbcType=VARCHAR}
</delete>

<delete id="deleteOrganizationMemberPermissions" parameterType="map">
  delete from
    user_roles
  where
    organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
    user_id = #{userId,jdbcType=INTEGER}
</delete>

<delete id="deleteByUserId" parameterType="int">
  DELETE FROM user_roles WHERE user_id=#{userId,jdbcType=INTEGER}
</delete>
</mapper>
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN" "mybatis-3-mapper.dtd">
<mapper namespace="org.sonar.db.permission.template.PermissionTemplateCharacteristicMapper">
  <sql id="columns">
    ptc.id,
    ptc.template_id as templateId,
    ptc.permission_key as permission,
    ptc.with_project_creator as withProjectCreator,
    ptc.created_at as createdAt,
    ptc.updated_at as updatedAt
  </sql>

  <select id="selectById" parameterType="long" resultType="PermissionTemplateCharacteristic">
    select
      <include refid="columns" />
    from perm_tpl_characteristics ptc
    where ptc.id=#{id,jdbcType=BIGINT}
  </select>

  <select id="selectByTemplateIds" parameterType="long" resultType="PermissionTemplateCharacteristic">

```

```

select
<include refid="columns" />
from perm_tpl_characteristics ptc
where
ptc.template_id in
<foreach collection="templateIds" open="(" close=")" item="templateId" separator=",">
  #{templateId}
</foreach>
order by id
</select>

<select id="selectByPermissionAndTemplateId" parameterType="map"
resultType="PermissionTemplateCharacteristic">
  select
  <include refid="columns" />
  from perm_tpl_characteristics ptc
  where ptc.template_id=#{templateId}
  and ptc.permission_key=#{permission}
  order by id
</select>

<insert id="insert" parameterType="PermissionTemplateCharacteristic" keyColumn="id"
useGeneratedKeys="true" keyProperty="id">
  insert into perm_tpl_characteristics(template_id, permission_key, with_project_creator, created_at, updated_at)
  values(#{templateId, jdbcType=BIGINT}, #{permission, jdbcType=VARCHAR}, #{withProjectCreator,
jdbcType=BOOLEAN}, #{createdAt, jdbcType=BIGINT}, #{updatedAt, jdbcType=BIGINT})
</insert>

<update id="update" parameterType="PermissionTemplateCharacteristic" useGeneratedKeys="false">
  update perm_tpl_characteristics set
  with_project_creator=#{withProjectCreator, jdbcType=BOOLEAN},
  updated_at=#{updatedAt, jdbcType=BIGINT}
  where id=#{id}
</update>

<delete id="deleteByTemplateId" parameterType="long">
  DELETE FROM perm_tpl_characteristics
  WHERE template_id = #{permissionTemplateId}
</delete>

<delete id="deleteByTemplateIds" parameterType="long">
  delete from
  perm_tpl_characteristics
  where
  template_id in
  <foreach collection="templateIds" open="(" close=")" item="templateId" separator=",">
    #{templateId}
  </foreach>

```

```

</delete>
</mapper>
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN" "mybatis-3-mapper.dtd">

<mapper namespace="org.sonar.db.permission.template.PermissionTemplateMapper">

  <insert id="insert" parameterType="PermissionTemplate" keyColumn="id" useGeneratedKeys="true"
  keyProperty="id">
    INSERT INTO permission_templates (organization_uuid, name, kee, description, key_pattern, created_at,
  updated_at)
    VALUES (
      #{organizationUuid,jdbcType=VARCHAR},
      #{name,jdbcType=VARCHAR},
      #{kee,jdbcType=VARCHAR},
      #{description,jdbcType=VARCHAR},
      #{keyPattern,jdbcType=VARCHAR},
      #{createdAt},
      #{updatedAt})
  </insert>

  <update id="update" parameterType="PermissionTemplate">
    UPDATE permission_templates
    SET name = #{name}, description = #{description}, key_pattern = #{keyPattern}, updated_at = #{updatedAt}
    WHERE id = #{id}
  </update>

  <delete id="deleteById" parameterType="long">
    DELETE FROM permission_templates
    WHERE id = #{templateId}
  </delete>

  <delete id="deleteByIds" parameterType="long">
    delete from
      permission_templates
    where
      id in <foreach collection="templateIds" open="(" close=")" item="templateId" separator=",">
        #{templateId,jdbcType=BIGINT}
      </foreach>
  </delete>

  <delete id="deleteUserPermissionsByTemplateId" parameterType="long">
    delete from
      perm_templates_users
    where
      template_id = #{templateId,jdbcType=BIGINT}
  </delete>

```

```
<delete id="deleteUserPermissionsByTemplateIds">
  delete from
    perm_templates_users
  where
    template_id in <foreach collection="templateIds" open="(" close=")" item="templateId" separator=",">
      #{templateId,jdbcType=BIGINT}
    </foreach>
</delete>
```

```
<delete id="deleteUserPermission" parameterType="PermissionTemplateUser">
  DELETE FROM perm_templates_users
  WHERE template_id = #{templateId}
  AND user_id = #{userId}
  AND permission_reference = #{permission}
</delete>
```

```
<delete id="deleteUserPermissionsByOrganization" parameterType="map">
  delete from perm_templates_users
  where
    user_id = #{userId,jdbcType=INTEGER}
    and template_id in (select id from permission_templates where
organization_uuid=#{organizationUuid,jdbcType=VARCHAR})
</delete>
```

```
<delete id="deleteUserPermissionsByUserId" parameterType="integer">
  delete from perm_templates_users
  where
    user_id = #{userId,jdbcType=INTEGER}
</delete>
```

```
<delete id="deleteGroupPermissionsByTemplateId" parameterType="long">
  delete from
    perm_templates_groups
  where
    template_id = #{templateId,jdbcType=BIGINT}
</delete>
```

```
<delete id="deleteGroupPermissionsByTemplateIds">
  delete from
    perm_templates_groups
  where
    template_id in <foreach collection="templateIds" open="(" close=")" item="templateId" separator=",">
      #{templateId,jdbcType=BIGINT}
    </foreach>
</delete>
```

```
<delete id="deleteGroupPermission" parameterType="PermissionTemplateGroup">
  DELETE FROM perm_templates_groups
```

```

WHERE template_id = #{templateId}
AND permission_reference = #{permission}
AND
<choose>
  <when test="groupId != null">
    group_id = #{groupId}
  </when>
  <otherwise>
    group_id IS NULL
  </otherwise>
</choose>
</delete>

<insert id="insertUserPermission" parameterType="PermissionTemplateUser">
  INSERT INTO perm_templates_users (template_id, user_id, permission_reference, created_at, updated_at)
  VALUES (#{templateId}, #{userId}, #{permission}, #{createdAt}, #{updatedAt})
</insert>

<insert id="insertGroupPermission" parameterType="PermissionTemplateGroup">
  INSERT INTO perm_templates_groups (template_id, group_id, permission_reference, created_at, updated_at)
  VALUES (
    #{templateId,jdbcType=BIGINT},
    #{groupId,jdbcType=INTEGER},
    #{permission,jdbcType=VARCHAR},
    #{createdAt,jdbcType=TIMESTAMP},
    #{updatedAt,jdbcType=TIMESTAMP}
  )
</insert>

<delete id="deleteByGroupId" parameterType="int">
  delete from perm_templates_groups
  where group_id = #{groupId,jdbcType=INTEGER}
</delete>

<select id="selectUserLoginsByQueryAndTemplate" parameterType="map" resultType="string">
  SELECT u.login FROM
  (SELECT DISTINCT u.login AS login, u.name AS name
  <include refid="userLoginsByQueryAndTemplate"/>
  ) u
  ORDER BY u.name
</select>

<select id="countUserLoginsByQueryAndTemplate" parameterType="map" resultType="int">
  SELECT count(1)
  FROM (
  SELECT DISTINCT u.login AS login, u.name AS name
  <include refid="userLoginsByQueryAndTemplate"/>) u
</select>

```



```

<sql id="userLoginsByQueryAndTemplate">
  FROM users u
  LEFT JOIN perm_templates_users ptu ON ptu.user_id=u.id AND ptu.template_id=#{templateId}
  INNER JOIN organization_members om ON u.id=om.user_id AND
om.organization_uuid=#{query.organizationUuid}
  <where>
    u.active = ${_true}
    <if test="query.getSearchQueryToSql() != null">
      AND lower(u.name) like #{query.searchQueryToSqlLowercase} ESCAPE '/'
    </if>
    <if test="query.withAtLeastOnePermission()">
      and ptu.permission_reference is not null
      <if test="query.getPermission() != null">
        and ptu.permission_reference=#{query.permission}
      </if>
    </if>
  </where>
</sql>

```

```

<select id="selectGroupNamesByQueryAndTemplate" parameterType="map" resultType="string">
  SELECT DISTINCT groups.name, LOWER(groups.name), groups.group_id
  <include refid="groupNamesByQueryAndTemplate" />
  ORDER BY LOWER(groups.name), groups.name, groups.group_id
</select>

```

```

<select id="countGroupNamesByQueryAndTemplate" parameterType="map" resultType="int">
  SELECT COUNT(1)
  FROM (
    SELECT DISTINCT group_id
    <include refid="groupNamesByQueryAndTemplate" />) g
</select>

```

```

<sql id="groupNamesByQueryAndTemplate">
  FROM
  (SELECT
    g.id AS group_id,
    g.name AS name,
    ptg.permission_reference AS permission,
    ptg.template_id AS templateId
  FROM groups g
  LEFT JOIN perm_templates_groups ptg ON
    ptg.group_id=g.id
  where
    g.organization_uuid=#{query.organizationUuid,jdbcType=VARCHAR}
  UNION ALL
  SELECT
    0 AS group_id,

```

```

'Anyone' AS name,
ptg.permission_reference AS permission,
ptg.template_id AS templateId
FROM perm_templates_groups ptg
<where>
  <if test="query.withAtLeastOnePermission()">
    AND ptg.group_id IS NULL
  </if>
</where>
) groups
<where>
  <if test="query.searchQueryToSql != null">
    AND LOWER(groups.name) LIKE #{query.searchQueryToSqlLowercase} ESCAPE '/'
  </if>
  <if test="query.withAtLeastOnePermission()">
    AND groups.permission IS NOT NULL
    AND groups.templateId=#{templateId}
    <if test="query.permission != null">
      AND groups.permission=#{query.permission}
    </if>
  </if>
</where>
</sql>

<sql id="templateColumns">
  id, organization_uuid as organizationUuid, name, kee, description, key_pattern AS keyPattern, created_at AS
  createdAt, updated_at AS updatedAt
</sql>

<select id="selectByUuid" parameterType="String" resultType="PermissionTemplate">
  SELECT
  <include refid="templateColumns"/>
  FROM permission_templates
  WHERE kee=#{uuid}
</select>

<select id="selectAll" parameterType="map" resultType="PermissionTemplate">
  select
  <include refid="templateColumns"/>
  from permission_templates
  where
  organization_uuid = #{organizationUuid,jdbcType=VARCHAR}
  <if test="upperCaseNameLikeSql != null">
    and upper(name) like #{upperCaseNameLikeSql} escape '/'
  </if>
  order by upper(name), name
</select>

```

```

<select id="selectByName" parameterType="map" resultType="PermissionTemplate">
  select
  <include refid="templateColumns"/>
  from permission_templates
  where
  organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
  upper(name) = #{name,jdbcType=VARCHAR}
</select>

```

```

<sql id="permissionTemplateUserColumns">
  ptu.id,
  ptu.template_id as templateId,
  ptu.permission_reference AS permission,
  ptu.user_id AS userId,
  u.name AS userName,
  u.login AS userLogin,
  ptu.created_at AS createdAt,
  ptu.updated_at AS updatedAt
</sql>

```

```

<select id="selectUserPermissionsByTemplateIdAndUserLogins" parameterType="Long"
resultType="PermissionTemplateUser">
  SELECT
  <include refid="permissionTemplateUserColumns"/>
  FROM perm_templates_users ptu
  INNER JOIN users u ON u.id = ptu.user_id AND u.active = ${_true}
  <where>
  AND ptu.template_id = #{templateId}
  <if test="!logins.isEmpty()">
  AND u.login IN <foreach collection="logins" open="(" close=")" item="login" separator=",">
    #{login}
  </foreach>
  </if>
  </where>
</select>

```

```

<select id="selectGroupPermissionsByTemplateIdAndGroupNames" parameterType="Long"
resultType="PermissionTemplateGroup">
  SELECT
  sub.id,
  sub.templateId,
  sub.permission,
  sub.groupId,
  sub.groupName,
  sub.createdAt,
  sub.updatedAt
  FROM (
  SELECT

```

```

    ptg.id,
    ptg.template_id as templateId,
    ptg.permission_reference AS permission,
    ptg.group_id AS groupId,
    g.name AS groupName,
    ptg.created_at as createdAt,
    ptg.updated_at as updatedAt
FROM perm_templates_groups ptg
INNER JOIN groups g ON
    g.id=ptg.group_id
UNION ALL
SELECT
    ptg.id,
    ptg.template_id as templateId,
    ptg.permission_reference AS permission,
    0 AS groupId,
    'Anyone' AS groupName,
    ptg.created_at as createdAt,
    ptg.updated_at as updatedAt
FROM perm_templates_groups ptg
WHERE ptg.group_id IS NULL
) sub
<where>
sub.templateId=#{templateId}
<if test="!groups.isEmpty()">
    AND sub.groupName IN <foreach collection="groups" open="(" close=")" item="group" separator=",">
        #{group}
    </foreach>
</if>
</where>
</select>

<select id="selectPotentialPermissionsByUserIdAndTemplateId" parameterType="map" resultType="String">
<if test="userId!=null">
    -- from template users
    select ptu.permission_reference as permission_key
    from perm_templates_users ptu
    <where>
        and ptu.user_id=#{userId}
        and ptu.template_id=#{templateId}
    </where>
UNION
    -- from template groups except anyone group
    select ptg.permission_reference as permission_key
    from perm_templates_groups ptg
    inner join groups_users gu on ptg.group_id = gu.group_id
    <where>
        and gu.user_id=#{userId}

```

```

    and ptg.template_id=#{templateId}
</where>
UNION
-- from template characteristics
select ptc.permission_key as permission_key
from perm_tpl_characteristics ptc
<where>
    and with_project_creator = ${_true}
    and ptc.template_id = #{templateId}
</where>
UNION
</if>
-- from anyone group
select ptg.permission_reference as permission_key
from perm_templates_groups ptg
where ptg.template_id=#{templateId}
and ptg.group_id IS NULL
</select>

<select id="usersCountByTemplateIdAndPermission" parameterType="map"
    resultType="org.sonar.db.permission.template.CountByTemplateAndPermissionDto">
    SELECT ptu.template_id as templateId, ptu.permission_reference as permission, count(u.login) as count
    FROM users u
    INNER JOIN perm_templates_users ptu ON ptu.user_id=u.id
    AND ptu.template_id in
    <foreach collection="templateIds" open="(" close=")" item="id" separator=",">
        #{id}
    </foreach>
    <where>
        AND u.active = ${_true}
    </where>
    GROUP BY ptu.template_id, ptu.permission_reference
</select>

<select id="groupsCountByTemplateIdAndPermission" parameterType="map"
    resultType="org.sonar.db.permission.template.CountByTemplateAndPermissionDto">
    SELECT count(1) as count, permission, templateId
    FROM
    (SELECT g.name as name, ptg.permission_reference as permission, ptg.template_id as templateId
    FROM groups g
    INNER JOIN perm_templates_groups ptg ON ptg.group_id=g.id
    UNION
    -- Add Anyone group permission
    SELECT #{anyoneGroup} as name, ptg.permission_reference as permission, ptg.template_id as templateId
    FROM perm_templates_groups ptg
    <where>
        AND ptg.group_id IS NULL
    </where>

```

```

) groups
<where>
  AND groups.templateId in
  <foreach collection="templateIds" open="(" close=")" item="id" separator=",">
    #{id}
  </foreach>
</where>
GROUP BY groups.permission, groups.templateId
</select>

<select id="countGroupsWithPermission" resultType="int" parameterType="map">
  select count(1)
  from perm_templates_groups ptg
  where ptg.template_id = #{templateId}
  and ptg.permission_reference = #{permission}
  and
  <if test="groupId == null">
    ptg.group_id is null
  </if>
  <if test="groupId != null">
    ptg.group_id = #{groupId}
  </if>
</select>

<select id="selectTemplateIdsByOrganization" resultType="Long">
  select
    id
  from
    permission_templates
  where
    organization_uuid = #{organizationUuid,jdbcType=VARCHAR}
</select>

<select id="selectAllGroupPermissionTemplatesByGroupId" parameterType="Long"
resultType="PermissionTemplateGroup">
  SELECT
    ptg.id,
    ptg.template_id as templateId,
    ptg.permission_reference AS permission,
    ptg.group_id AS groupId,
    g.name AS groupName,
    ptg.created_at as createdAt,
    ptg.updated_at as updatedAt
  FROM perm_templates_groups ptg
  INNER JOIN groups g ON g.id=ptg.group_id
  <where>
    ptg.group_id=#{groupId,jdbcType=INTEGER}
  </where>

```

```

</select>
</mapper>
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN" "mybatis-3-mapper.dtd">

<mapper namespace="org.sonar.db.permission.GroupPermissionMapper">

<select id="groupsCountByProjectIdAndPermission" parameterType="map"
        resultType="org.sonar.db.permission.CountPerProjectPermission">
    SELECT
        count(1) as count,
        permission,
        componentId
    FROM (
        SELECT
            g.name as name,
            group_role.role as permission,
            group_role.resource_id as componentId
        FROM
            groups g
        INNER JOIN group_roles group_role ON
            group_role.group_id=g.id
        UNION
        -- Add Anyone group permission
        SELECT
            #{anyoneGroup} as name,
            group_role.role as permission,
            group_role.resource_id as componentId
        FROM
            group_roles group_role
        where
            group_role.group_id IS NULL
    ) groups
    where
        groups.componentId in
        <foreach collection="componentIds" open="(" close=")" item="id" separator=",">
            #{id,jdbcType=BIGINT}
        </foreach>
    GROUP BY
        groups.permission,
        groups.componentId
</select>

<select id="selectGroupNamesByQuery" parameterType="map" resultType="string">
    select distinct sub.name, lower(sub.name), sub.groupId
    <include refid="groupsByQuery" />
    order by lower(sub.name), sub.name, sub.groupId
</select>

```

```

<select id="countGroupsByQuery" parameterType="map" resultType="int">
  select count(1)
  from (
    select distinct sub.groupId
    <include refid="groupsByQuery" /> g
  </select>

<sql id="groupsByQuery">
  from (
    select g.id as groupId, g.name as name, gr.role as permission, gr.resource_id as componentId, gr.id as id
    from groups g
    left join group_roles gr on g.id = gr.group_id
    where
      g.organization_uuid = #{query.organizationUuid,jdbcType=VARCHAR}

  union all

  select 0 as groupId, 'Anyone' as name, gr.role as permission, gr.resource_id as componentId, gr.id as id
  from group_roles gr
  <if test="query.withAtLeastOnePermission()">
    where
      gr.organization_uuid = #{query.organizationUuid,jdbcType=VARCHAR} and
      gr.group_id is null
  </if>

  ) sub
  left join projects p on sub.componentId = p.id
  <where>
    <if test="query.searchQueryToSql != null">
      and lower(sub.name) like #{query.searchQueryToSqlLowercase,jdbcType=VARCHAR} ESCAPE '/'
    </if>
    <!-- filter rows with group permissions -->
    <if test="query.withAtLeastOnePermission()">
      and sub.permission is not null
      <if test="query.componentUuid==null">
        and sub.componentId is null
      </if>
      <if test="query.componentUuid!=null">
        and p.uuid = #{query.componentUuid,jdbcType=VARCHAR}
      </if>
      <if test="query.permission!=null">
        and sub.permission = #{query.permission,jdbcType=VARCHAR}
      </if>
    </if>
  </where>
</sql>

```



```

<select id="selectByGroupIds" parameterType="map" resultType="GroupPermission">
  select sub.groupId as groupId, sub.componentId as resourceId, sub.permission as role, sub.organizationUuid as
organizationUuid
  from
  (
    select gr.group_id as groupId, gr.resource_id as componentId, gr.role as permission, g.name as name,
gr.organization_uuid as organizationUuid
    from group_roles gr
    inner join groups g ON g.id = gr.group_id
    where gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
gr.group_id is not null

    union all

    select 0 as groupId, gr.resource_id as componentId, gr.role as permission, 'Anyone' as name,
gr.organization_uuid as organizationUuid
    from group_roles gr
    where
gr.group_id is null and
gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR}
  ) sub
  where
  sub.groupId in
  <foreach collection="groupIds" open="(" close=")" item="groupId" separator=",">
    #{groupId,jdbcType=INTEGER}
  </foreach>
  <if test="projectId != null">
    and sub.componentId=#{projectId,jdbcType=BIGINT}
  </if>
  <if test="projectId==null">
    and sub.componentId is null
  </if>
</select>

```

```

<select id="selectGlobalPermissionsOfGroup" parameterType="map" resultType="String">
  select gr.role
  from group_roles gr
  where
  gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
  gr.resource_id is null and
  <choose>
    <when test="groupId != null">
      gr.group_id = #{groupId,jdbcType=INTEGER}
    </when>
    <otherwise>
      gr.group_id is null
    </otherwise>
  </choose>

```

```
</select>
```

```
<select id="selectProjectPermissionsOfGroup" parameterType="map" resultType="String">
  select gr.role
  from group_roles gr
  where
  gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
  gr.resource_id = #{projectId,jdbcType=BIGINT} and
  <choose>
    <when test="groupId != null">
      gr.group_id = #{groupId,jdbcType=INTEGER}
    </when>
    <otherwise>
      gr.group_id is null
    </otherwise>
  </choose>
</select>
```

```
<select id="selectAllPermissionsByGroupId" parameterType="map" resultType="GroupPermission">
  select gr.group_id as groupId, gr.resource_id as resourceId, gr.role as role, gr.organization_uuid as
organizationUuid
  from group_roles gr
  where gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR}
  and gr.group_id = #{groupId,jdbcType=INTEGER}
</select>
```

```
<select id="selectGroupIdsWithPermissionOnProjectBut" resultType="Integer">
  select
  distinct gr1.group_id
  from
  group_roles gr1
  where
  gr1.resource_id = #{projectId,jdbcType=BIGINT}
  and gr1.group_id is not null
  and not exists (
    select
    1
  from
  group_roles gr2
  where
  gr2.resource_id = gr1.resource_id
  and gr2.group_id = gr1.group_id
  and gr2.role = #{role,jdbcType=VARCHAR}
  )
</select>
```

```
<insert id="insert" parameterType="GroupPermission" keyColumn="id" useGeneratedKeys="false"
keyProperty="id">
```

```

insert into group_roles (
organization_uuid,
group_id,
resource_id,
role
) values (
#{organizationUuid,jdbcType=VARCHAR},
#{groupId,jdbcType=INTEGER},
#{resourceId,jdbcType=BIGINT},
#{role,jdbcType=VARCHAR}
)
</insert>

<delete id="deleteByRootComponentId" parameterType="long">
delete from group_roles
where resource_id=#{rootComponentId,jdbcType=BIGINT}
</delete>

<delete id="deleteByRootComponentIdAndGroupId">
delete from
group_roles
where
resource_id=#{rootComponentId,jdbcType=BIGINT}
<choose>
<when test="groupId != null">
and group_id = #{groupId,jdbcType=INTEGER}
</when>
<otherwise>
and group_id is null
</otherwise>
</choose>
</delete>

<delete id="deleteByRootComponentIdAndPermission">
delete from
group_roles
where
resource_id=#{rootComponentId,jdbcType=BIGINT}
and role=#{permission,jdbcType=VARCHAR}
</delete>

<delete id="delete" parameterType="map">
delete from group_roles
where
role=#{permission,jdbcType=VARCHAR} and
organization_uuid=#{organizationUuid,jdbcType=VARCHAR} and
<choose>
<when test="rootComponentId != null">

```

```

    resource_id=#{rootComponentId,jdbcType=BIGINT}
  </when>
  <otherwise>
    resource_id is null
  </otherwise>
</choose>
and
<choose>
  <when test="groupId != null">
    group_id=#{groupId,jdbcType=INTEGER}
  </when>
  <otherwise>
    group_id is null
  </otherwise>
</choose>
</delete>

<delete id="deleteByOrganization" parameterType="String">
  delete from
    group_roles
  where
    organization_uuid=#{organizationUuid,jdbcType=VARCHAR}
</delete>

</mapper>
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN" "mybatis-3-mapper.dtd">

<mapper namespace="org.sonar.db.permission.AuthorizationMapper">

  <select id="selectOrganizationPermissions" parameterType="map" resultType="string">
    select gr.role
    from group_roles gr
    inner join groups_users gu on gr.group_id=gu.group_id
    where
      gr.organization_uuid=#{organizationUuid,jdbcType=VARCHAR} and
      gr.resource_id is null and
      gu.user_id=#{userId,jdbcType=INTEGER}

    union

    select gr.role
    from group_roles gr
    where
      gr.organization_uuid=#{organizationUuid,jdbcType=VARCHAR} and
      gr.group_id is null and
      gr.resource_id is null
  </select>

```

```

union

select ur.role
from user_roles ur
where
ur.organization_uuid=#{organizationUuid,jdbcType=VARCHAR} and
ur.user_id=#{userId,jdbcType=INTEGER}
and ur.resource_id is null
</select>

<select id="selectOrganizationPermissionsOfAnonymous" parameterType="map" resultType="string">
select gr.role
from group_roles gr
where
gr.organization_uuid=#{organizationUuid,jdbcType=VARCHAR} and
gr.resource_id is null and
gr.group_id is null
</select>

<select id="countUsersWithGlobalPermissionExcludingGroup" parameterType="map" resultType="int">
select count(1) from
(
select gu.user_id
from groups_users gu
inner join group_roles gr on gr.group_id = gu.group_id
where
gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
gr.role = #{permission,jdbcType=VARCHAR} and
gr.resource_id is null and
gr.group_id is not null and
gr.group_id != #{excludedGroupId,jdbcType=INTEGER}

union

select ur.user_id
from user_roles ur
where
ur.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
ur.resource_id is null and
ur.role = #{permission,jdbcType=VARCHAR}
) remaining
</select>

<select id="countUsersWithGlobalPermissionExcludingUser" parameterType="map" resultType="int">
select count(1) from
(
select gu.user_id
from groups_users gu

```

```

inner join group_roles gr on gr.group_id = gu.group_id
where
gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
gr.role = #{permission,jdbcType=VARCHAR} and
gr.resource_id is null and
gr.group_id is not null and
gu.user_id != #{excludedUserId,jdbcType=INTEGER}

union

select ur.user_id
from user_roles ur
where
ur.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
ur.resource_id is null and
ur.role = #{permission,jdbcType=VARCHAR} and
ur.user_id != #{excludedUserId,jdbcType=INTEGER}
) remaining
</select>

<select id="countUsersWithGlobalPermissionExcludingGroupMember" parameterType="map" resultType="int">
select count(1) from
(
select gu.user_id
from groups_users gu
inner join group_roles gr on gr.group_id = gu.group_id
where
gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
gr.role = #{permission,jdbcType=VARCHAR} and
gr.resource_id is null and
gr.group_id is not null and
(gu.group_id != #{groupId,jdbcType=INTEGER} or gu.user_id != #{userId,jdbcType=INTEGER})

union

select ur.user_id
from user_roles ur
where
ur.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
ur.resource_id is null and
ur.role = #{permission,jdbcType=VARCHAR}
) remaining
</select>

<select id="countUsersWithGlobalPermissionExcludingUserPermission" parameterType="map" resultType="int">
select count(1) from
(
select gu.user_id

```

```

from groups_users gu
inner join group_roles gr on gr.group_id = gu.group_id
where
gr.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
gr.role = #{permission,jdbcType=VARCHAR} and
gr.resource_id is null and
gr.group_id is not null

union

select ur.user_id
from user_roles ur
where
ur.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
ur.resource_id is null and
ur.role = #{permission,jdbcType=VARCHAR} and
ur.user_id != #{userId,jdbcType=INTEGER}
) remaining
</select>

<select id="selectOrganizationUuidsOfUserWithGlobalPermission" parameterType="map" resultType="String">
select gr.organization_uuid
from group_roles gr
inner join groups_users gu on gr.group_id = gu.group_id
where
gr.role = #{permission,jdbcType=VARCHAR} and
gr.resource_id is null and
gr.group_id is not null and
gu.user_id = #{userId,jdbcType=INTEGER}

union

select ur.organization_uuid
from user_roles ur
where
ur.resource_id is null and
ur.role = #{permission,jdbcType=VARCHAR} and
ur.user_id = #{userId,jdbcType=INTEGER}
</select>

<select id="keepAuthorizedProjectIdsForUser" parameterType="map" resultType="long">
select
gr.resource_id
from
group_roles gr
where
gr.role=#{role,jdbcType=VARCHAR}
and (

```

```

gr.group_id is null
or exists (
  select
    1
  from
    groups_users gu
  where
    gu.user_id = #{userId,jdbcType=INTEGER}
    and gr.group_id = gu.group_id
)
)
and <foreach collection="componentIds" open="(" close=")" item="element" index="index" separator=" or ">
  gr.resource_id=#{element,jdbcType=BIGINT}
</foreach>

union

select
  p.id
from
  user_roles ur
inner join projects p on
  p.id = ur.resource_id
where
  ur.role=#{role,jdbcType=VARCHAR}
  and ur.user_id=#{userId,jdbcType=INTEGER}
  and <foreach collection="componentIds" open="(" close=")" item="element" index="index" separator=" or ">
    p.id=#{element,jdbcType=BIGINT}
  </foreach>

union

<include refid="sqlSelectPublicProjectsIfRole"/>
</select>

<select id="keepAuthorizedProjectIdsForAnonymous" parameterType="map" resultType="long">
  select
    gr.resource_id
  from
    group_roles gr
  where
    gr.role=#{role,jdbcType=VARCHAR}
    and gr.group_id is null
    and <foreach collection="componentIds" open="(" close=")" item="element" index="index" separator=" or ">
      gr.resource_id=#{element,jdbcType=BIGINT}
    </foreach>

  union

```



```

    <include refid="sqlSelectPublicProjectsIfRole"/>
</select>

<sql id="sqlSelectPublicProjectsIfRole">
    select
    p.id
    from
    projects p
    where
    <foreach collection="componentIds" open="(" close=")" item="element" index="index" separator=" or ">
        p.id=#{element,jdbcType=BIGINT}
    </foreach>
    and p.private = ${_false}
    and #{role,jdbcType=VARCHAR} in ('user','codeviewer')
</sql>

<select id="keepAuthorizedProjectUuidsForUser" parameterType="map" resultType="String">
    select p.uuid
    from projects p
    inner join group_roles gr on p.id = gr.resource_id
    where
    gr.role = #{permission,jdbcType=VARCHAR}
    and (gr.group_id is null or exists (
        select 1 from groups_users gu
        where
        gu.user_id = #{userId, jdbcType=INTEGER}
        and gr.group_id = gu.group_id)
    )
    and p.uuid in <foreach collection="projectUuids" open="(" close=")" item="projectUuid" index="index"
separator=",">#{projectUuid,jdbcType=VARCHAR}</foreach>

    union

    select p.uuid
    from projects p
    inner join user_roles ur on p.id = ur.resource_id
    where
    ur.role=#{permission,jdbcType=VARCHAR}
    and ur.user_id=#{userId,jdbcType=INTEGER}
    and p.uuid in <foreach collection="projectUuids" open="(" close=")" item="projectUuid" index="index"
separator=",">#{projectUuid,jdbcType=VARCHAR}</foreach>

    <if test="permission == 'user' or permission == 'codeviewer'">
        union

        select p.uuid
        from projects p

```

```

    where
      p.uuid in <foreach collection="projectUuids" open="(" close=")" item="projectUuid" index="index"
separator=",">#{projectUuid,jdbcType=VARCHAR}</foreach>
      and p.private = ${_false}
    </if>
  </select>

<select id="keepAuthorizedProjectUuidsForAnonymous" parameterType="map" resultType="String">
  select p.uuid
  from projects p
  inner join group_roles gr on p.id = gr.resource_id
  where
    gr.role=#{permission,jdbcType=VARCHAR}
    and gr.group_id is null
    and p.uuid in <foreach collection="projectUuids" open="(" close=")" item="projectUuid" index="index"
separator=",">#{projectUuid,jdbcType=VARCHAR}</foreach>

  <if test="permission == 'user' or permission == 'codeviewer'">
    union

    select p.uuid
    from projects p
    where
      p.uuid in <foreach collection="projectUuids" open="(" close=")" item="projectUuid" index="index"
separator=",">#{projectUuid,jdbcType=VARCHAR}</foreach>
      and p.private = ${_false}
    </if>
  </select>

<select id="keepAuthorizedUsersForRoleAndProject" parameterType="map" resultType="int">
  select
    gu.user_id
  from
    groups_users gu
  inner join group_roles gr on
    gr.group_id=gu.group_id
  where
    gr.resource_id=#{componentId,jdbcType=BIGINT}
    and gr.role=#{role,jdbcType=VARCHAR}
    and gu.user_id in
      <foreach collection="userIds" open="(" close=")" item="id" separator=",">
        #{id,jdbcType=BIGINT}
      </foreach>

  union

  select
    ur.user_id

```

```

from
  user_roles ur
where
  ur.resource_id=#{componentId,jdbcType=BIGINT}
  and ur.role=#{role,jdbcType=VARCHAR}
  and ur.user_id IN
    <foreach collection="userIds" open="(" close=")" item="id" separator=",">
      #{id,jdbcType=BIGINT}
    </foreach>

union

select
  u.id
from
  users u
where
  u.id in
    <foreach collection="userIds" open="(" close=")" item="id" separator=",">
      #{id,jdbcType=BIGINT}
    </foreach>
  and exists (
    select
      1
    from
      projects p
    where
      p.id=#{componentId,jdbcType=BIGINT}
      and p.private = ${_false}
      and #{role,jdbcType=VARCHAR} in ('user','codeviewer')
    )
</select>

<select id="selectProjectPermissions" parameterType="map" resultType="String">
  select ur.role
  from user_roles ur
  inner join projects p on p.id = ur.resource_id
  where
    p.uuid = #{projectUuid,jdbcType=VARCHAR} and
    p.organization_uuid = ur.organization_uuid and
    ur.user_id = #{userId,jdbcType=BIGINT}

union

select gr.role
from group_roles gr
inner join groups_users gu on gr.group_id = gu.group_id
inner join projects p on p.id = gr.resource_id

```

```

where
  p.uuid = #{projectUuid,jdbcType=VARCHAR} and
  p.organization_uuid = gr.organization_uuid and
  gu.user_id = #{userId,jdbcType=BIGINT}

union

<include refid="sql_selectProjectPermissionsOfAnonymous"/>
</select>

<select id="selectProjectPermissionsOfAnonymous" parameterType="map" resultType="String">
  <include refid="sql_selectProjectPermissionsOfAnonymous"/>
</select>

<sql id="sql_selectProjectPermissionsOfAnonymous">
  select
    gr.role
  from
    group_roles gr
  inner join projects p on
    p.id = gr.resource_id
  where
    p.uuid = #{projectUuid,jdbcType=VARCHAR}
    and p.organization_uuid = gr.organization_uuid
    and gr.group_id is null
</sql>

<select id="selectLoginsWithGlobalPermission" parameterType="map" resultType="String">
  select u.login
  from user_roles ur
  inner join users u on u.id=ur.user_id
  where
    ur.role=#{permission,jdbcType=VARCHAR}
    and ur.resource_id is null

  union

  select u.login
  from group_roles gr
  inner join groups_users gu on gr.group_id = gu.group_id
  inner join users u on u.id=gu.user_id
  where
    gr.role = #{permission,jdbcType=VARCHAR} and
    gr.resource_id is null and
    gr.group_id is not null
</select>

<select id="keepAuthorizedLoginsOnProject" parameterType="map" resultType="String">

```

```

SELECT u.login
FROM users u
INNER JOIN user_roles ur ON ur.user_id = u.id
INNER JOIN projects p ON p.kee = #{projectKey,jdbcType=VARCHAR}
WHERE
    ur.organization_uuid = p.organization_uuid
    AND ur.resource_id = p.id
    AND ur.role = #{permission,jdbcType=VARCHAR}
    AND u.login IN <foreach collection="logins" open="(" close=")" item="login"
separator=",">#{login}</foreach>

```

UNION

```

SELECT u.login
FROM users u
INNER JOIN projects p ON p.kee = #{projectKey,jdbcType=VARCHAR}
INNER JOIN group_roles gr ON gr.organization_uuid = p.organization_uuid
INNER JOIN groups_users gu ON gr.group_id = gu.group_id
WHERE
    gu.user_id = u.id
    AND gr.role = #{permission,jdbcType=VARCHAR}
    AND u.login IN <foreach collection="logins" open="(" close=")" item="login"
separator=",">#{login}</foreach>

```

<if test="permission == 'user' or permission == 'codeviewer'">

UNION

```

SELECT u.login
FROM users u
INNER JOIN projects p ON p.kee = #{projectKey,jdbcType=VARCHAR}
WHERE
    p.private = ${_false}
    AND u.login IN <foreach collection="logins" open="(" close=")" item="login"
separator=",">#{login}</foreach>

```

</if>

</select>

</mapper>

/\*

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*/
@ParametersAreNonnullByDefault
package org.sonar.core.permission;

import javax.annotation.ParametersAreNonnullByDefault;
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.core.permission;

import com.google.common.base.Joiner;
import com.google.common.collect.ImmutableList;
import java.util.List;

/**
* Holds the constants representing the various global permissions that can be assigned to users & groups
*
* @deprecated replaced by enum { @link org.sonar.db.permission.OrganizationPermission}
*/
@Deprecated
public final class GlobalPermissions {

    public static final String SYSTEM_ADMIN = "admin";
    public static final String QUALITY_PROFILE_ADMIN = "profileadmin";
    public static final String QUALITY_GATE_ADMIN = "gateadmin";

```

```

public static final String SCAN_EXECUTION = "scan";
public static final String PROVISIONING = "provisioning";

/**
 * All the global permissions values, ordered from {@link #SYSTEM_ADMIN} to {@link #PROVISIONING}.
 */
public static final List<String> ALL = ImmutableList.of(
    SYSTEM_ADMIN, QUALITY_PROFILE_ADMIN, QUALITY_GATE_ADMIN, SCAN_EXECUTION,
    PROVISIONING);
public static final String ALL_ON_ONE_LINE = Joiner.on(", ").join(GlobalPermissions.ALL);

private GlobalPermissions() {
    // only static methods
}

}

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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.core.permission;

import com.google.common.base.Joiner;
import com.google.common.collect.ImmutableList;
import com.google.common.collect.ImmutableSet;
import java.util.List;
import java.util.Set;
import org.sonar.api.web.UserRole;

/**
 * Holds the constants representing the various component permissions that can be assigned to users & groups
 */
public final class ProjectPermissions {

```

```

/**
 * Permissions which are implicitly available for any user, any group and to group "AnyOne" on public
 components.
 */
public static final Set<String> PUBLIC_PERMISSIONS = ImmutableSet.of(UserRole.USER,
UserRole.CODEVIEWER);

/**
 * All the component permissions values, ordered from {@link UserRole#USER} to {@link
 GlobalPermissions#SCAN_EXECUTION}.
 */
public static final List<String> ALL = ImmutableList.of(UserRole.ADMIN, UserRole.CODEVIEWER,
UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION, UserRole.USER);

public static final String ALL_ON_ONE_LINE = Joiner.on(", ").join(ProjectPermissions.ALL);

private ProjectPermissions() {
 // static constants only
 }
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.Locale;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;
import javax.annotation.concurrent.Immutable;
import org.sonar.db.WildcardPosition;

import static com.google.common.base.MoreObjects.firstNonNull;

```



```

import static com.google.common.base.Preconditions.checkNotNull;
import static java.util.Objects.requireNonNull;
import static org.apache.commons.lang.StringUtils.defaultIfBlank;
import static org.sonar.api.utils.Paging.offset;
import static org.sonar.db.DaoUtils.buildLikeValue;

/**
 * Query used to get users and groups permissions
 */
@Immutable
public class PermissionQuery {
    public static final int RESULTS_MAX_SIZE = 100;
    public static final int SEARCH_QUERY_MIN_LENGTH = 3;
    public static final int DEFAULT_PAGE_SIZE = 20;
    public static final int DEFAULT_PAGE_INDEX = 1;

    // filter: return only the users or groups that are members of the organization
    private final String organizationUuid;
    // filter: return only the users or groups who have this permission
    private final String permission;
    // filter on project, else filter org permissions
    private final String componentUuid;
    private final String template;

    // filter on login, email or name of users or groups
    private final String searchQuery;
    private final String searchQueryToSql;
    private final String searchQueryToSqlLowercase;

    // filter users or groups who have at least one permission. It does make
    // sense when the filter "permission" is set.
    private final boolean withAtLeastOnePermission;

    private final int pageSize;
    private final int pageOffset;

    private PermissionQuery(Builder builder) {
        this.organizationUuid = builder.organizationUuid;
        this.permission = builder.permission;
        this.withAtLeastOnePermission = builder.withAtLeastOnePermission;
        this.componentUuid = builder.componentUuid;
        this.template = builder.template;
        this.searchQuery = builder.searchQuery;
        this.searchQueryToSql = builder.searchQuery == null ? null : buildLikeValue(builder.searchQuery,
WildcardPosition.BEFORE_AND_AFTER);
        this.searchQueryToSqlLowercase = searchQueryToSql == null ? null :
searchQueryToSql.toLowerCase(Locale.ENGLISH);
        this.pageSize = builder.pageSize;
    }

```

```

    this.pageOffset = offset(builder.pageIndex, builder.pageSize);
}

public String getOrganizationUuid() {
    return organizationUuid;
}

@CheckForNull
public String getPermission() {
    return permission;
}

public boolean withAtLeastOnePermission() {
    return withAtLeastOnePermission;
}

// TODO remove it, it should not be in the query, but set as a separate parameter
@Deprecated
public String template() {
    return template;
}

@CheckForNull
public String getComponentUuid() {
    return componentUuid;
}

@CheckForNull
public String getSearchQuery() {
    return searchQuery;
}

@CheckForNull
public String getSearchQueryToSql() {
    return searchQueryToSql;
}

@CheckForNull
public String getSearchQueryToSqlLowercase() {
    return searchQueryToSqlLowercase;
}

public int getPageSize() {
    return pageSize;
}

public int getPageOffset() {
    return pageOffset;
}

```

```

}

public static Builder builder() {
    return new Builder();
}

public static class Builder {
    private String permission;
    private String organizationUuid;
    private String componentUuid;
    private String template;
    private String searchQuery;
    private boolean withAtLeastOnePermission;

    private Integer pageIndex;
    private Integer pageSize;

    private Builder() {
        // enforce method constructor
    }

    public Builder setPermission(@Nullable String permission) {
        this.withAtLeastOnePermission = permission != null;
        this.permission = permission;
        return this;
    }

    public Builder setTemplate(@Nullable String template) {
        this.template = template;
        return this;
    }

    public Builder setComponentUuid(@Nullable String componentUuid) {
        this.componentUuid = componentUuid;
        return this;
    }

    public Builder setOrganizationUuid(String organizationUuid) {
        this.organizationUuid = organizationUuid;
        return this;
    }

    public Builder setSearchQuery(@Nullable String s) {
        this.searchQuery = defaultIfBlank(s, null);
        return this;
    }

    public Builder setPageIndex(@Nullable Integer i) {

```

```

        this.pageIndex = i;
        return this;
    }

    public Builder setPageSize(@Nullable Integer i) {
        this.pageSize = i;
        return this;
    }

    public Builder withAtLeastOnePermission() {
        this.withAtLeastOnePermission = true;
        return this;
    }

    public PermissionQuery build() {
        requireNonNull(organizationUuid, "Organization UUID cannot be null");
        this.pageIndex = firstNonNull(pageIndex, DEFAULT_PAGE_INDEX);
        this.pageSize = firstNonNull(pageSize, DEFAULT_PAGE_SIZE);
        checkArgument(searchQuery == null || searchQuery.length() >= SEARCH_QUERY_MIN_LENGTH, "Search
query should contains at least %s characters", SEARCH_QUERY_MIN_LENGTH);
        return new PermissionQuery(this);
    }
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
@ParametersAreNonnullByDefault
package org.sonar.db.permission;

import javax.annotation.ParametersAreNonnullByDefault;

```

```

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 */
@ParametersAreNonnullByDefault
package org.sonar.db.permission.template;

import javax.annotation.ParametersAreNonnullByDefault;
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 */
package org.sonar.db.permission.template;

import java.util.List;
import java.util.Optional;
import org.sonar.db.Dao;
import org.sonar.db.DbSession;

```

```

import static com.google.common.base.Preconditions.checkNotNull;
import static java.util.Collections.emptyList;
import static java.util.Objects.requireNonNull;

public class PermissionTemplateCharacteristicDao implements Dao {

    public List<PermissionTemplateCharacteristicDto> selectByTemplateIds(DbSession dbSession, List<Long>
templateIds) {
        return templateIds.isEmpty() ? emptyList() : mapper(dbSession).selectByTemplateIds(templateIds);
    }

    public Optional<PermissionTemplateCharacteristicDto> selectByPermissionAndTemplateId(DbSession dbSession,
String permission, long templateId) {
        PermissionTemplateCharacteristicDto dto = mapper(dbSession).selectByPermissionAndTemplateId(permission,
templateId);
        return Optional.ofNullable(dto);
    }

    public PermissionTemplateCharacteristicDto insert(DbSession dbSession, PermissionTemplateCharacteristicDto
dto) {
        checkArgument(dto.getCreatedAt() != 0L && dto.getUpdatedAt() != 0L);
        mapper(dbSession).insert(dto);
        return dto;
    }

    public PermissionTemplateCharacteristicDto update(DbSession dbSession, PermissionTemplateCharacteristicDto
templatePermissionDto) {
        requireNonNull(templatePermissionDto.getId());
        mapper(dbSession).update(templatePermissionDto);
        return templatePermissionDto;
    }

    private static PermissionTemplateCharacteristicMapper mapper(DbSession dbSession) {
        return dbSession.getMapper(PermissionTemplateCharacteristicMapper.class);
    }
}
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 \* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.  
 \*/

```
package org.sonar.db.permission.template;
```

```
import java.util.List;
```

```
import org.apache.ibatis.annotations.Param;
```

```
public interface PermissionTemplateCharacteristicMapper {
```

```
    PermissionTemplateCharacteristicDto selectById(@Param("id") long id);
```

```
    List<PermissionTemplateCharacteristicDto> selectByTemplateIds(@Param("templateIds") List<Long>  
    templateId);
```

```
    PermissionTemplateCharacteristicDto selectByPermissionAndTemplateId(@Param("permission") String  
    permission, @Param("templateId") long templateId);
```

```
    void insert(PermissionTemplateCharacteristicDto templatePermissionDto);
```

```
    void update(PermissionTemplateCharacteristicDto templatePermissionDto);
```

```
    void deleteByTemplateId(long id);
```

```
    void deleteByTemplateIds(@Param("templateIds") List<Long> subList);
```

```
}
```

```
/*
```

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```

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\*/

```
package org.sonar.db.permission.template;
```

```
import java.util.Date;
```

```
import javax.annotation.Nullable;
```

```
public class PermissionTemplateGroupDto {
```

```
    private Long id;
```

```
    private Long templateId;
```

```
    private Integer groupId;
```

```
    private String permission;
```

```
    private String groupName;
```

```
    private Date createdAt;
```

```
    private Date updatedAt;
```

```
    public Long getId() {
```

```
        return id;
```

```
    }
```

```
    public PermissionTemplateGroupDto setId(Long id) {
```

```
        this.id = id;
```

```
        return this;
```

```
    }
```

```
    public Long getTemplateId() {
```

```
        return templateId;
```

```
    }
```

```
    public PermissionTemplateGroupDto setTemplateId(Long templateId) {
```

```
        this.templateId = templateId;
```

```
        return this;
```

```
    }
```

```
    public Integer getGroupId() {
```

```
        return groupId;
```

```
    }
```

```
    public PermissionTemplateGroupDto setGroupId(@Nullable Integer groupId) {
```

```
        this.groupId = groupId;
```

```
        return this;
```

```
    }
```

```
    public String getPermission() {
```

```
        return permission;
```

```
    }
```

```
    public PermissionTemplateGroupDto setPermission(String permission) {
```



```

    this.permission = permission;
    return this;
}

public String getGroupName() {
    return groupName;
}

public PermissionTemplateGroupDto setGroupName(String groupName) {
    this.groupName = groupName;
    return this;
}

public Date getCreatedAt() {
    return createdAt;
}

public PermissionTemplateGroupDto setCreatedAt(Date createdAt) {
    this.createdAt = createdAt;
    return this;
}

public Date getUpdatedAt() {
    return updatedAt;
}

public PermissionTemplateGroupDto setUpdatedAt(Date updatedAt) {
    this.updatedAt = updatedAt;
    return this;
}
}
}
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```

```

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*/
package org.sonar.db.permission.template;

import static com.google.common.base.Preconditions.checkArgument;

public class PermissionTemplateCharacteristicDto {

    private static final int MAX_PERMISSION_KEY_LENGTH = 64;

    private Long id;
    private long templateId;
    private String permission;
    private boolean withProjectCreator;
    private long createdAt;
    private long updatedAt;

    public Long getId() {
        return id;
    }

    public PermissionTemplateCharacteristicDto setId(Long id) {
        this.id = id;
        return this;
    }

    public long getTemplateId() {
        return templateId;
    }

    public PermissionTemplateCharacteristicDto setTemplateId(long templateId) {
        this.templateId = templateId;
        return this;
    }

    public String getPermission() {
        return permission;
    }

    public PermissionTemplateCharacteristicDto setPermission(String permission) {
        checkArgument(permission.length() <= MAX_PERMISSION_KEY_LENGTH, "Permission key length (%s) is
longer than the maximum authorized (%s). '%s' was provided.",
            permission.length(), MAX_PERMISSION_KEY_LENGTH, permission);
        this.permission = permission;
        return this;
    }

    public boolean getWithProjectCreator() {

```

```

    return withProjectCreator;
}

public PermissionTemplateCharacteristicDto setWithProjectCreator(boolean withProjectCreator) {
    this.withProjectCreator = withProjectCreator;
    return this;
}

public long getCreatedAt() {
    return createdAt;
}

public PermissionTemplateCharacteristicDto setCreatedAt(long createdAt) {
    this.createdAt = createdAt;
    return this;
}

public long getUpdatedAt() {
    return updatedAt;
}

public PermissionTemplateCharacteristicDto setUpdatedAt(long updatedAt) {
    this.updatedAt = updatedAt;
    return this;
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission.template;

import java.util.Collections;

```

```

import java.util.Date;
import java.util.HashMap;
import java.util.List;
import java.util.Locale;
import java.util.Map;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;
import org.apache.ibatis.session.ResultHandler;
import org.apache.ibatis.session.RowBounds;
import org.sonar.api.utils.System2;
import org.sonar.db.Dao;
import org.sonar.db.DbSession;
import org.sonar.db.permission.CountPerProjectPermission;
import org.sonar.db.permission.PermissionQuery;

import static java.lang.String.format;
import static org.sonar.api.security.DefaultGroups.ANYONE;
import static org.sonar.db.DatabaseUtils.executeLargeInputs;
import static org.sonar.db.DatabaseUtils.executeLargeInputsWithoutOutput;

public class PermissionTemplateDao implements Dao {

    private static final String ANYONE_GROUP_PARAMETER = "anyoneGroup";

    private final System2 system;

    public PermissionTemplateDao(System2 system) {
        this.system = system;
    }

    /**
     * @return a paginated list of user logins.
     */
    public List<String> selectUserLoginsByQueryAndTemplate(DbSession session, PermissionQuery query, long
templateId) {
        return mapper(session).selectUserLoginsByQueryAndTemplate(query, templateId, new
RowBounds(query.getPageOffset(), query.getPageSize()));
    }

    public int countUserLoginsByQueryAndTemplate(DbSession session, PermissionQuery query, long templateId) {
        return mapper(session).countUserLoginsByQueryAndTemplate(query, templateId);
    }

    public List<PermissionTemplateUserDto> selectUserPermissionsByTemplateIdAndUserLogins(DbSession
dbSession, long templateId, List<String> logins) {
        return executeLargeInputs(logins, l ->
mapper(dbSession).selectUserPermissionsByTemplateIdAndUserLogins(templateId, l));
    }
}

```

```

public List<PermissionTemplateUserDto> selectUserPermissionsByTemplateId(DbSession dbSession, long
templateId) {
    return mapper(dbSession).selectUserPermissionsByTemplateIdAndUserLogins(templateId,
Collections.emptyList());
}

public List<String> selectGroupNamesByQueryAndTemplate(DbSession session, PermissionQuery query, long
templateId) {
    return mapper(session).selectGroupNamesByQueryAndTemplate(templateId, query, new
RowBounds(query.getPageOffset(), query.getPageSize()));
}

public int countGroupNamesByQueryAndTemplate(DbSession session, PermissionQuery query, String
organizationUuid, long templateId) {
    return mapper(session).countGroupNamesByQueryAndTemplate(organizationUuid, query, templateId);
}

public List<PermissionTemplateGroupDto> selectGroupPermissionsByTemplateIdAndGroupNames(DbSession
dbSession, long templateId, List<String> groups) {
    return executeLargeInputs(groups, g ->
mapper(dbSession).selectGroupPermissionsByTemplateIdAndGroupNames(templateId, g));
}

public List<PermissionTemplateGroupDto> selectGroupPermissionsByTemplateId(DbSession dbSession, long
templateId) {
    return mapper(dbSession).selectGroupPermissionsByTemplateIdAndGroupNames(templateId,
Collections.emptyList());
}

/**
 * @return {@code true} if template contains groups that are granted with {@code permission}, else {@code
false}
 */
public boolean hasGroupsWithPermission(DbSession dbSession, long templateId, String permission, @Nullable
Integer groupId) {
    return mapper(dbSession).countGroupsWithPermission(templateId, permission, groupId) > 0;
}

@CheckForNull
public PermissionTemplateDto selectByUuid(DbSession session, String templateUuid) {
    return mapper(session).selectByUuid(templateUuid);
}

public List<PermissionTemplateDto> selectAll(DbSession session, String organizationUuid, @Nullable String
nameMatch) {
    String upperCaseNameLikeSql = nameMatch != null ? toUpperCaseSqlQuery(nameMatch) : null;
    return mapper(session).selectAll(organizationUuid, upperCaseNameLikeSql);
}

```

```

}

private static String toUppercaseSqlQuery(String nameMatch) {
    String wildcard = "%";
    return format("%s%s%s", wildcard, nameMatch.toUpperCase(Locale.ENGLISH), wildcard);
}

public PermissionTemplateDto insert(DbSession session, PermissionTemplateDto dto) {
    mapper(session).insert(dto);
    return dto;
}

/**
 * Each row returns a #{ @link CountPerProjectPermission }
 */
public void usersCountByTemplateIdAndPermission(DbSession dbSession, List<Long> templateIds,
ResultHandler<CountByTemplateAndPermissionDto> resultHandler) {
    Map<String, Object> parameters = new HashMap<>(1);

    executeLargeInputsWithoutOutput(
        templateIds,
        partitionedTemplateIds -> {
            parameters.put("templateIds", partitionedTemplateIds);
            mapper(dbSession).usersCountByTemplateIdAndPermission(parameters, resultHandler);
        });
}

/**
 * Each row returns a #{ @link CountPerProjectPermission }
 */
public void groupsCountByTemplateIdAndPermission(DbSession dbSession, List<Long> templateIds,
ResultHandler<CountByTemplateAndPermissionDto> resultHandler) {
    Map<String, Object> parameters = new HashMap<>(2);
    parameters.put(ANYONE_GROUP_PARAMETER, ANYONE);

    executeLargeInputsWithoutOutput(
        templateIds,
        partitionedTemplateIds -> {
            parameters.put("templateIds", partitionedTemplateIds);
            mapper(dbSession).groupsCountByTemplateIdAndPermission(parameters, resultHandler);
        });
}

public List<PermissionTemplateGroupDto> selectAllGroupPermissionTemplatesByGroupId(DbSession dbSession,
long groupId) {
    return mapper(dbSession).selectAllGroupPermissionTemplatesByGroupId(groupId);
}

```

```

public void deleteById(DbSession session, long templateId) {
    PermissionTemplateMapper mapper = mapper(session);
    mapper.deleteUserPermissionsByTemplateId(templateId);
    mapper.deleteGroupPermissionsByTemplateId(templateId);
    session.getMapper(PermissionTemplateCharacteristicMapper.class).deleteByTemplateId(templateId);
    mapper.deleteById(templateId);
}

public PermissionTemplateDto update(DbSession session, PermissionTemplateDto permissionTemplate) {
    mapper(session).update(permissionTemplate);
    return permissionTemplate;
}

public void insertUserPermission(DbSession session, Long templateId, Integer userId, String permission) {
    PermissionTemplateUserDto permissionTemplateUser = new PermissionTemplateUserDto()
        .setTemplateId(templateId)
        .setUserId(userId)
        .setPermission(permission)
        .setCreatedAt(now())
        .setUpdatedAt(now());

    mapper(session).insertUserPermission(permissionTemplateUser);
    session.commit();
}

public void deleteUserPermission(DbSession session, Long templateId, Integer userId, String permission) {
    PermissionTemplateUserDto permissionTemplateUser = new PermissionTemplateUserDto()
        .setTemplateId(templateId)
        .setPermission(permission)
        .setUserId(userId);
    mapper(session).deleteUserPermission(permissionTemplateUser);
    session.commit();
}

public void deleteUserPermissionsByOrganization(DbSession dbSession, String organizationUuid, int userId) {
    mapper(dbSession).deleteUserPermissionsByOrganization(organizationUuid, userId);
}

public void deleteUserPermissionsByUserId(DbSession dbSession, int userId) {
    mapper(dbSession).deleteUserPermissionsByUserId(userId);
}

public void insertGroupPermission(DbSession session, long templateId, @Nullable Integer groupId, String
permission) {
    PermissionTemplateGroupDto permissionTemplateGroup = new PermissionTemplateGroupDto()
        .setTemplateId(templateId)
        .setPermission(permission)
        .setGroupId(groupId)

```

```

        .setCreatedAt(now())
        .setUpdatedAt(now());
    mapper(session).insertGroupPermission(permissionTemplateGroup);
}

public void insertGroupPermission(DbSession session, PermissionTemplateGroupDto permissionTemplateGroup)
{
    mapper(session).insertGroupPermission(permissionTemplateGroup);
}

public void deleteGroupPermission(DbSession session, Long templateId, @Nullable Integer groupId, String
permission) {
    PermissionTemplateGroupDto permissionTemplateGroup = new PermissionTemplateGroupDto()
        .setTemplateId(templateId)
        .setPermission(permission)
        .setGroupId(groupId);
    mapper(session).deleteGroupPermission(permissionTemplateGroup);
    session.commit();
}

public PermissionTemplateDto selectByName(DbSession dbSession, String organizationUuid, String name) {
    return mapper(dbSession).selectByName(organizationUuid, name.toUpperCase(Locale.ENGLISH));
}

public List<String> selectPotentialPermissionsByUserIdAndTemplateId(DbSession dbSession, @Nullable Integer
currentUserId, long templateId) {
    return mapper(dbSession).selectPotentialPermissionsByUserIdAndTemplateId(currentUserId, templateId);
}

/**
 * Remove a group from all templates (used when removing a group)
 */
public void deleteByGroup(DbSession session, int groupId) {
    session.getMapper(PermissionTemplateMapper.class).deleteByGroupId(groupId);
}

private Date now() {
    return new Date(system.now());
}

private static PermissionTemplateMapper mapper(DbSession session) {
    return session.getMapper(PermissionTemplateMapper.class);
}

public void deleteByOrganization(DbSession dbSession, String organizationUuid) {
    PermissionTemplateMapper templateMapper = mapper(dbSession);
    PermissionTemplateCharacteristicMapper templateCharacteristicMapper =
dbSession.getMapper(PermissionTemplateCharacteristicMapper.class);

```



```

List<Long> templateIds = templateMapper.selectTemplateIdsByOrganization(organizationUuid);
executeLargeInputsWithoutOutput(templateIds, subList -> {
    templateCharacteristicMapper.deleteByTemplateIds(subList);
    templateMapper.deleteGroupPermissionsByTemplateIds(subList);
    templateMapper.deleteUserPermissionsByTemplateIds(subList);
    templateMapper.deleteByIds(subList);
});
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission.template;

import java.util.Date;

public class PermissionTemplateUserDto {
    private Long id;
    private Long templateId;
    private Integer userId;
    private String permission;
    private String userName;
    private String userLogin;
    private Date createdAt;
    private Date updatedAt;

    public Long getId() {
        return id;
    }

    public PermissionTemplateUserDto setId(Long id) {
        this.id = id;
    }
}

```

```

    return this;
}

public Long getTemplateId() {
    return templateId;
}

public PermissionTemplateUserDto setTemplateId(Long templateId) {
    this.templateId = templateId;
    return this;
}

public Integer getUserId() {
    return userId;
}

public PermissionTemplateUserDto setUserId(Integer userId) {
    this.userId = userId;
    return this;
}

public String getUserName() {
    return userName;
}

public PermissionTemplateUserDto setUserName(String userName) {
    this.userName = userName;
    return this;
}

public String getUserLogin() {
    return userLogin;
}

public PermissionTemplateUserDto setUserLogin(String userLogin) {
    this.userLogin = userLogin;
    return this;
}

public String getPermission() {
    return permission;
}

public PermissionTemplateUserDto setPermission(String permission) {
    this.permission = permission;
    return this;
}

```

```

public Date getCreatedAt() {
    return createdAt;
}

public PermissionTemplateUserDto setCreatedAt(Date createdAt) {
    this.createdAt = createdAt;
    return this;
}

public Date getUpdatedAt() {
    return updatedAt;
}

public PermissionTemplateUserDto setUpdatedAt(Date updatedAt) {
    this.updatedAt = updatedAt;
    return this;
}
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.db.permission.template;

import java.util.Date;
import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

public class PermissionTemplateDto {

    private Long id;
    private String name;
    private String organizationUuid;

```

```

private String uuid;
private String description;
private String keyPattern;
private Date createdAt;
private Date updatedAt;

public Long getId() {
    return id;
}

public PermissionTemplateDto setId(Long id) {
    this.id = id;
    return this;
}

public String getOrganizationUuid() {
    return organizationUuid;
}

public PermissionTemplateDto setOrganizationUuid(String s) {
    this.organizationUuid = s;
    return this;
}

public String getName() {
    return name;
}

public PermissionTemplateDto setName(String name) {
    this.name = name;
    return this;
}

/**
 * @deprecated since 5.2 use {@link #getUuid()}
 */
@Deprecated
public String getKee() {
    return uuid;
}

/**
 * @deprecated since 5.2 use {@link #setUuid(String)}
 */
@Deprecated
public PermissionTemplateDto setKee(String kee) {
    this.uuid = kee;
    return this;
}

```

```

}

/**
 * @since 5.2 the kee column is a proper uuid. Before that it was build on the name + timestamp
 */
public String getUuid() {
    return uuid;
}

/**
 * @since 5.2 the kee column is a proper uuid. Before it was build on the name + timestamp
 */
public PermissionTemplateDto setUuid(String uuid) {
    this.uuid = uuid;
    return this;
}

@CheckForNull
public String getDescription() {
    return description;
}

public PermissionTemplateDto setDescription(@Nullable String description) {
    this.description = description;
    return this;
}

@CheckForNull
public String getKeyPattern() {
    return keyPattern;
}

public PermissionTemplateDto setKeyPattern(@Nullable String regexp) {
    this.keyPattern = regexp;
    return this;
}

public Date getCreatedAt() {
    return createdAt;
}

public PermissionTemplateDto setCreatedAt(Date createdAt) {
    this.createdAt = createdAt;
    return this;
}

public Date getUpdatedAt() {
    return updatedAt;
}

```

```

}

public PermissionTemplateDto setUpdatedAt(Date updatedAt) {
    this.updatedAt = updatedAt;
    return this;
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission.template;

import java.util.List;
import java.util.Map;
import javax.annotation.Nullable;
import org.apache.ibatis.annotations.Param;
import org.apache.ibatis.session.ResultHandler;
import org.apache.ibatis.session.RowBounds;
import org.sonar.db.permission.PermissionQuery;

/**
 * @since 3.7
 */
public interface PermissionTemplateMapper {

    void insert(PermissionTemplateDto permissionTemplate);

    void update(PermissionTemplateDto permissionTemplate);

    void deleteById(long templateId);

    void deleteByIds(@Param("templateIds") List<Long> templateIds);

```

```

void deleteUserPermissionsByTemplateId(long templateId);

void deleteUserPermissionsByTemplateIds(@Param("templateIds") List<Long> templateIds);

void deleteUserPermissionsByOrganization(@Param("organizationUuid") String organizationUuid,
@Param("userId") int userId);

void deleteUserPermissionsByUserId(@Param("userId") int userId);

void deleteUserPermission(PermissionTemplateUserDto permissionTemplateUser);

void deleteGroupPermissionsByTemplateId(long templateId);

void deleteGroupPermissionsByTemplateIds(@Param("templateIds") List<Long> templateIds);

void deleteGroupPermission(PermissionTemplateGroupDto permissionTemplateGroup);

PermissionTemplateDto selectByUuid(String templateUuid);

List<PermissionTemplateUserDto> selectUserPermissionsByTemplateIdAndUserLogins(@Param("templateId")
long templateId, @Param("logins") List<String> logins);

List<PermissionTemplateGroupDto>
selectGroupPermissionsByTemplateIdAndGroupNames(@Param("templateId") long templateId, @Param("groups")
List<String> groups);

void insertUserPermission(PermissionTemplateUserDto permissionTemplateUser);

void insertGroupPermission(PermissionTemplateGroupDto permissionTemplateGroup);

void deleteByGroupId(int groupId);

PermissionTemplateDto selectByName(@Param("organizationUuid") String organizationUuid, @Param("name")
String name);

List<String> selectUserLoginsByQueryAndTemplate(@Param("query") PermissionQuery query,
@Param("templateId") long templateId, RowBounds rowBounds);

int countUserLoginsByQueryAndTemplate(@Param("query") PermissionQuery query, @Param("templateId") long
templateId);

List<String> selectGroupNamesByQueryAndTemplate(@Param("templateId") long templateId, @Param("query")
PermissionQuery query, RowBounds rowBounds);

int countGroupNamesByQueryAndTemplate(@Param("organizationUuid") String organizationUuid,
@Param("query") PermissionQuery query, @Param("templateId") long templateId);

```

```

List<PermissionTemplateDto> selectAll(@Param("organizationUuid") String organizationUuid, @Nullable
@Param("upperCaseNameLikeSql") String upperCaseNameLikeSql);

void usersCountByTemplateIdAndPermission(Map<String, Object> parameters,
ResultHandler<CountByTemplateAndPermissionDto> resultHandler);

void groupsCountByTemplateIdAndPermission(Map<String, Object> parameters,
ResultHandler<CountByTemplateAndPermissionDto> resultHandler);

List<String> selectPotentialPermissionsByUserIdAndTemplateId(@Param("userId") @Nullable Integer
currentUserId, @Param("templateId") long templateId);

int countGroupsWithPermission(@Param("templateId") long templateId, @Param("permission") String permission,
@Nullable @Param("groupId") Integer groupId);

List<Long> selectTemplateIdsByOrganization(@Param("organizationUuid") String organizationUuid);

List<PermissionTemplateGroupDto> selectAllGroupPermissionTemplatesByGroupId(@Param("groupId") Long
groupId);

}
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*/
package org.sonar.db.permission.template;

public class CountByTemplateAndPermissionDto {
    private long templateId;
    private String permission;
    private int count;

    public long getTemplateId() {

```



```

    return templateId;
}

public void setTemplateId(long templateId) {
    this.templateId = templateId;
}

public String getPermission() {
    return permission;
}

public void setPermission(String permission) {
    this.permission = permission;
}

public int getCount() {
    return count;
}

public void setCount(int count) {
    this.count = count;
}
}
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import javax.annotation.Nullable;

public class GroupPermissionDto {

```

```

private String organizationUuid;
private Integer groupId;
private Long resourceId;
private String role;

public Integer getGroupId() {
    return groupId;
}

public String getOrganizationUuid() {
    return organizationUuid;
}

public GroupPermissionDto setOrganizationUuid(String s) {
    this.organizationUuid = s;
    return this;
}

/**
 * Null when Anyone
 */
public GroupPermissionDto setGroupId(@Nullable Integer groupId) {
    this.groupId = groupId;
    return this;
}

@Nullable
public Long getResourceId() {
    return resourceId;
}

public GroupPermissionDto setResourceId(@Nullable Long resourceId) {
    this.resourceId = resourceId;
    return this;
}

public String getRole() {
    return role;
}

public GroupPermissionDto setRole(String role) {
    this.role = role;
    return this;
}
}
}
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```

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 \*/

```
package org.sonar.db.permission;
```

```
import java.util.List;
import java.util.Map;
import java.util.Set;
import javax.annotation.Nullable;
import org.apache.ibatis.annotations.Param;
import org.apache.ibatis.session.ResultHandler;
import org.apache.ibatis.session.RowBounds;
```

```
public interface GroupPermissionMapper {
```

```
List<String> selectGroupNamesByQuery(@Param("query") PermissionQuery query, RowBounds rowBounds);
```

```
int countGroupsByQuery(@Param("query") PermissionQuery query);
```

```
List<GroupPermissionDto> selectByGroupIds(@Param("organizationUuid") String organizationUuid,
    @Param("groupIds") List<Integer> groupIds, @Nullable @Param("projectId") Long projectId);
```

```
void groupsCountByProjectIdAndPermission(Map<String, Object> parameters, ResultHandler resultHandler);
```

```
void insert(GroupPermissionDto dto);
```

```
void delete(@Param("permission") String permission, @Param("organizationUuid") String organizationUuid,
    @Nullable @Param("groupId") Integer groupId, @Nullable @Param("rootComponentId") Long
    rootComponentId);
```

```
List<String> selectGlobalPermissionsOfGroup(@Param("organizationUuid") String organizationUuid,
    @Nullable @Param("groupId") Integer groupId);
```

```
List<String> selectProjectPermissionsOfGroup(@Param("organizationUuid") String organizationUuid,
    @Nullable @Param("groupId") Integer groupId, @Param("projectId") long projectId);
```

```

void selectAllPermissionsByGroupId(@Param("organizationUuid") String organizationUuid,
    @Param("groupId") Integer groupId, ResultHandler resultHandler);

/**
 * Lists id of groups with at least one permission on the specified root component but which do not have the
 * specified
 * permission, <strong>excluding group "AnyOne"</strong> (which implies the returned { @code Set} can't contain
 * { @code null}).
 */
Set<Integer> selectGroupIdsWithPermissionOnProjectBut(@Param("projectId") long projectId, @Param("role")
String permission);

void deleteByOrganization(@Param("organizationUuid") String organizationUuid);

void deleteByRootComponentId(@Param("rootComponentId") long componentId);

int deleteByRootComponentIdAndGroupId(@Param("rootComponentId") long rootComponentId, @Nullable
@Param("groupId") Integer groupId);

int deleteByRootComponentIdAndPermission(@Param("rootComponentId") long rootComponentId,
@Param("permission") String permission);
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.Collection;
import java.util.List;
import java.util.Set;
import org.apache.ibatis.annotations.Param;

```

```

public interface UserPermissionMapper {

    List<UserPermissionDto> selectUserPermissionsByQueryAndUserIds(@Param("query") PermissionQuery query,
        @Param("userIds") Collection<Integer> userIds);

    List<Integer> selectUserIdsByQuery(@Param("query") PermissionQuery query);

    /**
     * Count the number of distinct users returned by { @link #selectUserIdsByQuery(PermissionQuery) }
     * { @link PermissionQuery#getPageOffset() } and { @link PermissionQuery#getPageSize() } are ignored.
     */
    int countUsersByQuery(@Param("query") PermissionQuery query);

    /**
     * Count the number of users per permission for a given list of projects.
     * @param projectIds a non-null and non-empty list of project ids
     */
    List<CountPerProjectPermission> countUsersByProjectPermission(@Param("projectIds") List<Long> projectIds);

    /**
     * select id of users with at least one permission on the specified project but which do not have the specified
     * permission.
     */
    Set<Integer> selectUserIdsWithPermissionOnProjectBut(@Param("projectId") long projectId,
        @Param("permission") String permission);

    void insert(UserPermissionDto dto);

    void deleteGlobalPermission(@Param("userId") int userId, @Param("permission") String permission,
        @Param("organizationUuid") String organizationUuid);

    void deleteProjectPermission(@Param("userId") int userId, @Param("permission") String permission,
        @Param("projectId") long projectId);

    void deleteProjectPermissions(@Param("projectId") long projectId);

    int deleteProjectPermissionOfAnyUser(@Param("projectId") long projectId, @Param("permission") String
        permission);

    List<String> selectGlobalPermissionsOfUser(@Param("userId") int userId, @Param("organizationUuid") String
        organizationUuid);

    List<String> selectProjectPermissionsOfUser(@Param("userId") int userId, @Param("projectId") long projectId);

    void deleteByOrganization(@Param("organizationUuid") String organizationUuid);

    void deleteOrganizationMemberPermissions(@Param("organizationUuid") String organizationUuid,

```

```

@Param("userId") int login);

void deleteByUserId(@Param("userId") int userId);
}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.HashMap;
import java.util.List;
import java.util.Map;
import java.util.Set;
import javax.annotation.Nullable;
import org.apache.ibatis.session.ResultHandler;
import org.apache.ibatis.session.RowBounds;
import org.sonar.api.security.DefaultGroups;
import org.sonar.db.Dao;
import org.sonar.db.DbSession;
import org.sonar.db.component.ComponentMapper;
import org.sonar.db.user.GroupMapper;

import static com.google.common.base.Preconditions.checkArgument;
import static org.sonar.db.DatabaseUtils.executeLargeInputs;
import static org.sonar.db.DatabaseUtils.executeLargeInputsWithoutOutput;

public class GroupPermissionDao implements Dao {

    private static final String ANYONE_GROUP_PARAMETER = "anyoneGroup";

    /**
     * Returns the names of the groups that match the given query, for the given organization.

```

```

* The virtual group "Anyone" may be returned as the value {@link DefaultGroups#ANYONE}.
* @return group names, sorted in alphabetical order
*/
public List<String> selectGroupNamesByQuery(DbSession dbSession, PermissionQuery query) {
    return mapper(dbSession).selectGroupNamesByQuery(query, new RowBounds(query.getPageOffset(),
query.getPageSize()));
}

/**
* Count the number of groups returned by {@link #selectGroupNamesByQuery(DbSession, PermissionQuery)},
* without applying pagination.
*/
public int countGroupsByQuery(DbSession dbSession, PermissionQuery query) {
    return mapper(dbSession).countGroupsByQuery(query);
}

/**
* Select global or project permission of given groups and organization. Anyone virtual group is supported
* through the value "zero" (0L) in {@code groupIds}.
*/
public List<GroupPermissionDto> selectByGroupIds(DbSession dbSession, String organizationUuid, List<Integer>
groupIds, @Nullable Long projectId) {
    return executeLargeInputs(groupIds, groups -> mapper(dbSession).selectByGroupIds(organizationUuid, groups,
projectId));
}

/**
* Select global and project permissions of a given group (Anyone group is NOT supported)
* Each row returns a {@link GroupPermissionDto}
*/
public void selectAllPermissionsByGroupId(DbSession dbSession, String organizationUuid, Integer groupId,
ResultHandler resultHandler) {
    mapper(dbSession).selectAllPermissionsByGroupId(organizationUuid, groupId, resultHandler);
}

/**
* Each row returns a {@link CountPerProjectPermission}
*/
public void groupsCountByComponentIdAndPermission(DbSession dbSession, List<Long> componentIds,
ResultHandler resultHandler) {
    Map<String, Object> parameters = new HashMap<>(2);
    parameters.put(ANYONE_GROUP_PARAMETER, DefaultGroups.ANYONE);

    executeLargeInputsWithoutOutput(
        componentIds,
        partitionedComponentIds -> {
            parameters.put("componentIds", partitionedComponentIds);
            mapper(dbSession).groupsCountByProjectIdAndPermission(parameters, resultHandler);
        }
    );
}

```

```

    });
}

/**
 * Selects the global permissions granted to group. An empty list is returned if the
 * group does not exist.
 */
public List<String> selectGlobalPermissionsOfGroup(DbSession session, String organizationUuid, @Nullable
Integer groupId) {
    return mapper(session).selectGlobalPermissionsOfGroup(organizationUuid, groupId);
}

/**
 * Selects the permissions granted to group and project. An empty list is returned if the
 * group or project do not exist.
 */
public List<String> selectProjectPermissionsOfGroup(DbSession session, String organizationUuid, @Nullable
Integer groupId, long projectId) {
    return mapper(session).selectProjectPermissionsOfGroup(organizationUuid, groupId, projectId);
}

/**
 * Lists id of groups with at least one permission on the specified root component but which do not have the
 * specified
 * permission, <strong>excluding group "AnyOne"</strong> (which implies the returned { @code Set} can't
 * contain
 * { @code null}).
 */
public Set<Integer> selectGroupIdsWithPermissionOnProjectBut(DbSession session, long projectId, String
permission) {
    return mapper(session).selectGroupIdsWithPermissionOnProjectBut(projectId, permission);
}

public void insert(DbSession dbSession, GroupPermissionDto dto) {
    ensureComponentPermissionConsistency(dbSession, dto);
    ensureGroupPermissionConsistency(dbSession, dto);
    mapper(dbSession).insert(dto);
}

private static void ensureComponentPermissionConsistency(DbSession dbSession, GroupPermissionDto dto) {
    if (dto.getResourceId() == null) {
        return;
    }
    ComponentMapper componentMapper = dbSession.getMapper(ComponentMapper.class);
    checkArgument(
        componentMapper.countComponentByOrganizationAndId(dto.getOrganizationUuid(), dto.getResourceId()) ==
1,
        "Can't insert permission '%s' for component with id '%s' in organization with uuid '%s' because this component

```



```

does not belong to organization with uuid '%s'",
    dto.getRole(), dto.getResourceId(), dto.getOrganizationUuid(), dto.getOrganizationUuid());
}

private static void ensureGroupPermissionConsistency(DbSession dbSession, GroupPermissionDto dto) {
    if (dto.getGroupId() == null) {
        return;
    }
    GroupMapper groupMapper = dbSession.getMapper(GroupMapper.class);
    checkArgument(
        groupMapper.countGroupByOrganizationAndId(dto.getOrganizationUuid(), dto.getGroupId()) == 1,
        "Can't insert permission '%s' for group with id '%s' in organization with uuid '%s' because this group does not
belong to organization with uuid '%s'",
        dto.getRole(), dto.getGroupId(), dto.getOrganizationUuid(), dto.getOrganizationUuid());
}

/**
 * Delete all the permissions associated to a root component (project)
 */
public void deleteByRootComponentId(DbSession dbSession, long rootComponentId) {
    mapper(dbSession).deleteByRootComponentId(rootComponentId);
}

/**
 * Delete all permissions of the specified group (group "AnyOne" if {@code groupId} is {@code null}) for the
specified
 * component.
 */
public int deleteByRootComponentIdAndGroupId(DbSession dbSession, long rootComponentId, @Nullable
Integer groupId) {
    return mapper(dbSession).deleteByRootComponentIdAndGroupId(rootComponentId, groupId);
}

/**
 * Delete the specified permission for the specified component for any group (including group AnyOne).
 */
public int deleteByRootComponentIdAndPermission(DbSession dbSession, long rootComponentId, String
permission) {
    return mapper(dbSession).deleteByRootComponentIdAndPermission(rootComponentId, permission);
}

/**
 * Delete a single permission. It can be:
 * <ul>
 * <li>a global permission granted to a group</li>
 * <li>a global permission granted to anyone</li>
 * <li>a permission granted to a group for a project</li>
 * <li>a permission granted to anyone for a project</li>

```

```

* </ul>
* @param dbSession
* @param permission the kind of permission
* @param organizationUuid UUID of organization, even if parameter { @code groupId} is not null
* @param groupId if null, then anyone, else id of group
* @param rootComponentId if null, then global permission, else id of root component (project)
*/
public void delete(DbSession dbSession, String permission, String organizationUuid, @Nullable Integer groupId,
@Nullable Long rootComponentId) {
    mapper(dbSession).delete(permission, organizationUuid, groupId, rootComponentId);
}

public void deleteByOrganization(DbSession dbSession, String organizationUuid) {
    mapper(dbSession).deleteByOrganization(organizationUuid);
}

private static GroupPermissionMapper mapper(DbSession session) {
    return session.getMapper(GroupPermissionMapper.class);
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.db.permission;

import javax.annotation.CheckForNull;
import javax.annotation.Nullable;

public class UserPermissionDto {

    private String organizationUuid;
    private String permission;

```

```

private int userId;
private Long componentId;

public UserPermissionDto() {
    // used by MyBatis
}

public UserPermissionDto(String organizationUuid, String permission, int userId, @Nullable Long componentId) {
    this.organizationUuid = organizationUuid;
    this.permission = permission;
    this.userId = userId;
    this.componentId = componentId;
}

public String getPermission() {
    return permission;
}

public int getUserId() {
    return userId;
}

public String getOrganizationUuid() {
    return organizationUuid;
}

/**
 * @return { @code null} if it's a global permission, else return the project id.
 */
@CheckForNull
public Long getComponentId() {
    return componentId;
}

@Override
public String toString() {
    StringBuilder sb = new StringBuilder("UserPermissionDto{");
    sb.append("permission=").append(permission).append("\");
    sb.append(", userId=").append(userId);
    sb.append(", organizationUuid=").append(organizationUuid);
    sb.append(", componentId=").append(componentId);
    sb.append('}');
    return sb.toString();
}
}
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```

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*/
package org.sonar.db.permission;

import java.util.Collection;
import java.util.List;
import java.util.Set;
import org.apache.ibatis.annotations.Param;

/**
 * @see AuthorizationDao
 */
public interface AuthorizationMapper {

    Set<String> selectOrganizationPermissions(@Param("organizationUuid") String organizationUuid,
@Param("userId") int userId);

    Set<String> selectOrganizationPermissionsOfAnonymous(@Param("organizationUuid") String organizationUuid);

    int countUsersWithGlobalPermissionExcludingGroup(@Param("organizationUuid") String organizationUuid,
@Param("permission") String permission, @Param("excludedGroupId") int excludedGroupId);

    int countUsersWithGlobalPermissionExcludingUser(@Param("organizationUuid") String organizationUuid,
@Param("permission") String permission,
@Param("excludedUserId") int excludedUserId);

    int countUsersWithGlobalPermissionExcludingGroupMember(@Param("organizationUuid") String
organizationUuid,
@Param("permission") String permission, @Param("groupId") int groupId, @Param("userId") int userId);

    int countUsersWithGlobalPermissionExcludingUserPermission(@Param("organizationUuid") String
organizationUuid,
@Param("permission") String permission, @Param("userId") int userId);

```

```

Set<String> selectOrganizationUuidsOfUserWithGlobalPermission(@Param("userId") int userId,
@Param("permission") String permission);

Set<Long> keepAuthorizedProjectIdsForAnonymous(@Param("role") String role, @Param("componentIds")
Collection<Long> componentIds);

Set<Long> keepAuthorizedProjectIdsForUser(@Param("userId") int userId, @Param("role") String role,
@Param("componentIds") Collection<Long> componentIds);

List<Integer> keepAuthorizedUsersForRoleAndProject(@Param("role") String role, @Param("componentId") long
componentId, @Param("userIds") List<Integer> userIds);

Set<String> keepAuthorizedProjectUuidsForUser(@Param("userId") int userId, @Param("permission") String
permission, @Param("projectUuids") Collection<String> projectUuids);

Set<String> keepAuthorizedProjectUuidsForAnonymous(@Param("permission") String permission,
@Param("projectUuids") Collection<String> projectUuids);

Set<String> selectProjectPermissions(@Param("projectUuid") String projectUuid, @Param("userId") long userId);

Set<String> selectProjectPermissionsOfAnonymous(@Param("projectUuid") String projectUuid);

List<String> selectQualityProfileAdministratorLogins(@Param("permission") String permission);

Set<String> keepAuthorizedLoginsOnProject(@Param("logins") List<String> logins, @Param("projectKey")
String projectKey, @Param("permission") String permission);

List<String> selectLoginsWithGlobalPermission(@Param("permission") String permission);
}
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 */

```

```

package org.sonar.db.permission;

import java.util.Collection;
import java.util.List;
import java.util.Set;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.db.Dao;
import org.sonar.db.DatabaseUtils;
import org.sonar.db.DbSession;
import org.sonar.db.component.ComponentMapper;

import static com.google.common.base.Preconditions.checkNotNull;
import static java.util.Collections.emptyList;
import static org.sonar.db.DatabaseUtils.executeLargeInputs;

public class UserPermissionDao implements Dao {

    /**
     * List of user permissions ordered by alphabetical order of user names.
     * Pagination is NOT applied.
     * No sort is done.
     *
     * @param query non-null query including optional filters.
     * @param userIds Filter on user ids, including disabled users. Must not be empty and maximum size is {@link
     DatabaseUtils#PARTITION_SIZE_FOR_ORACLE}.
     */
    public List<UserPermissionDto> selectUserPermissionsByQuery(DbSession dbSession, PermissionQuery query,
    Collection<Integer> userIds) {
        if (userIds.isEmpty()) {
            return emptyList();
        }
        checkArgument(userIds.size() <= DatabaseUtils.PARTITION_SIZE_FOR_ORACLE, "Maximum 1'000 users are
    accepted");
        return mapper(dbSession).selectUserPermissionsByQueryAndUserIds(query, userIds);
    }

    public List<Integer> selectUserIdsByQuery(DbSession dbSession, PermissionQuery query) {
        return mapper(dbSession).selectUserIdsByQuery(query)
            .stream()
            // Pagination is done in Java because it's too complex to use SQL pagination in Oracle and MsSQL with the
    distinct
            .skip(query.getPageOffset())
            .limit(query.getPageSize())
            .collect(MoreCollectors.toList());
    }

    public int countUsersByQuery(DbSession dbSession, PermissionQuery query) {
        return mapper(dbSession).countUsersByQuery(query);
    }
}

```

```

}

/**
 * Count the number of users per permission for a given list of projects
 *
 * @param projectIds a non-null list of project ids to filter on. If empty then an empty list is returned.
 */
public List<CountPerProjectPermission> countUsersByProjectPermission(DbSession dbSession, Collection<Long>
projectIds) {
    return executeLargeInputs(projectIds, mapper(dbSession)::countUsersByProjectPermission);
}

/**
 * Gets all the global permissions granted to user for the specified organization.
 *
 * @return the global permissions. An empty list is returned if user or organization do not exist.
 */
public List<String> selectGlobalPermissionsOfUser(DbSession dbSession, int userId, String organizationUuid) {
    return mapper(dbSession).selectGlobalPermissionsOfUser(userId, organizationUuid);
}

/**
 * Gets all the project permissions granted to user for the specified project.
 *
 * @return the project permissions. An empty list is returned if project or user do not exist.
 */
public List<String> selectProjectPermissionsOfUser(DbSession dbSession, int userId, long projectId) {
    return mapper(dbSession).selectProjectPermissionsOfUser(userId, projectId);
}

public Set<Integer> selectUserIdsWithPermissionOnProjectBut(DbSession session, long projectId, String
permission) {
    return mapper(session).selectUserIdsWithPermissionOnProjectBut(projectId, permission);
}

public void insert(DbSession dbSession, UserPermissionDto dto) {
    ensureComponentPermissionConsistency(dbSession, dto);
    mapper(dbSession).insert(dto);
}

private static void ensureComponentPermissionConsistency(DbSession dbSession, UserPermissionDto dto) {
    if (dto.getComponentId() == null) {
        return;
    }
    ComponentMapper componentMapper = dbSession.getMapper(ComponentMapper.class);
    checkArgument(
        componentMapper.countComponentByOrganizationAndId(dto.getOrganizationUuid(), dto.getComponentId())
        == 1,

```

```

    "Can't insert permission '%s' for component with id '%s' in organization with uuid '%s' because this component
    does not belong to organization with uuid '%s'",
    dto.getPermission(), dto.getComponentId(), dto.getOrganizationUuid(), dto.getOrganizationUuid());
}

/**
 * Removes a single global permission from user
 */
public void deleteGlobalPermission(DbSession dbSession, int userId, String permission, String organizationUuid) {
    mapper(dbSession).deleteGlobalPermission(userId, permission, organizationUuid);
}

/**
 * Removes a single project permission from user
 */
public void deleteProjectPermission(DbSession dbSession, int userId, String permission, long projectId) {
    mapper(dbSession).deleteProjectPermission(userId, permission, projectId);
}

/**
 * Deletes all the permissions defined on a project
 */
public void deleteProjectPermissions(DbSession dbSession, long projectId) {
    mapper(dbSession).deleteProjectPermissions(projectId);
}

/**
 * Deletes the specified permission on the specified project for any user.
 */
public int deleteProjectPermissionOfAnyUser(DbSession dbSession, long projectId, String permission) {
    return mapper(dbSession).deleteProjectPermissionOfAnyUser(projectId, permission);
}

public void deleteByOrganization(DbSession dbSession, String organizationUuid) {
    mapper(dbSession).deleteByOrganization(organizationUuid);
}

public void deleteOrganizationMemberPermissions(DbSession dbSession, String organizationUuid, int userId) {
    mapper(dbSession).deleteOrganizationMemberPermissions(organizationUuid, userId);
}

public void deleteByUserId(DbSession dbSession, int userId) {
    mapper(dbSession).deleteByUserId(userId);
}

private static UserPermissionMapper mapper(DbSession dbSession) {
    return dbSession.getMapper(UserPermissionMapper.class);
}

```



```

}
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 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.Collection;
import java.util.List;
import java.util.Set;
import javax.annotation.Nullable;
import org.sonar.db.Dao;
import org.sonar.db.DbSession;

import static org.sonar.db.DatabaseUtils.executeLargeInputs;
import static org.sonar.db.DatabaseUtils.executeLargeInputsIntoSet;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_PROFILES;

/**
 * The SQL requests used to verify authorization (the permissions
 * granted to users)
 *
 * @see GroupPermissionDao for CRUD of table group_roles
 * @see UserPermissionDao for CRUD of table user_roles
 */
public class AuthorizationDao implements Dao {

    /**
     * Loads all the permissions granted to logged-in user for the specified organization
     */
    public Set<String> selectOrganizationPermissions(DbSession dbSession, String organizationUuid, int userId) {
        return mapper(dbSession).selectOrganizationPermissions(organizationUuid, userId);
    }

```

```

}

/**
 * Loads all the permissions granted to anonymous user for the specified organization
 */
public Set<String> selectOrganizationPermissionsOfAnonymous(DbSession dbSession, String organizationUuid) {
    return mapper(dbSession).selectOrganizationPermissionsOfAnonymous(organizationUuid);
}

/**
 * Loads all the permissions granted to logged-in user for the specified project <strong>stored in *_ROLES
 * tables</strong>.
 * An empty Set is returned if user has no permissions on the project.
 *
 * <strong>This method does not support public components</strong>
 */
public Set<String> selectProjectPermissions(DbSession dbSession, String projectUuid, long userId) {
    return mapper(dbSession).selectProjectPermissions(projectUuid, userId);
}

/**
 * Loads all the permissions granted to anonymous for the specified project <strong>stored in *_ROLES
 * tables</strong>.
 * An empty Set is returned if anonymous user has no permissions on the project.
 *
 * <strong>This method does not support public components</strong>
 */
public Set<String> selectProjectPermissionsOfAnonymous(DbSession dbSession, String projectUuid) {
    return mapper(dbSession).selectProjectPermissionsOfAnonymous(projectUuid);
}

/**
 * The number of users who will still have the permission if the group { @code excludedGroupId}
 * is deleted. The anyone virtual group is not taken into account.
 */
public int countUsersWithGlobalPermissionExcludingGroup(DbSession dbSession, String organizationUuid,
    String permission, int excludedGroupId) {
    return mapper(dbSession).countUsersWithGlobalPermissionExcludingGroup(organizationUuid, permission,
    excludedGroupId);
}

/**
 * The number of users who will still have the permission if the user { @code excludedUserId}
 * is deleted. The anyone virtual group is not taken into account.
 */
public int countUsersWithGlobalPermissionExcludingUser(DbSession dbSession, String organizationUuid,
    String permission, int excludedUserId) {
    return mapper(dbSession).countUsersWithGlobalPermissionExcludingUser(organizationUuid, permission,

```

```

excludedUserId);
}

/**
 * The number of users who will still have the permission if the user { @code userId }
 * is removed from group { @code groupId }. The anyone virtual group is not taken into account.
 * Contrary to { @link #countUsersWithGlobalPermissionExcludingUser(DbSession, String, String, int)}, user
 * still exists and may have the permission directly or through other groups.
 */
public int countUsersWithGlobalPermissionExcludingGroupMember(DbSession dbSession, String
organizationUuid,
String permission, int groupId, int userId) {
return mapper(dbSession).countUsersWithGlobalPermissionExcludingGroupMember(organizationUuid,
permission, groupId, userId);
}

/**
 * The number of users who will still have the permission if the permission { @code permission }
 * is removed from user { @code userId }. The anyone virtual group is not taken into account.
 * Contrary to { @link #countUsersWithGlobalPermissionExcludingUser(DbSession, String, String, int)}, user
 * still exists and may have the permission through groups.
 */
public int countUsersWithGlobalPermissionExcludingUserPermission(DbSession dbSession, String
organizationUuid,
String permission, int userId) {
return mapper(dbSession).countUsersWithGlobalPermissionExcludingUserPermission(organizationUuid,
permission, userId);
}

/**
 * The UUIDs of all the organizations in which the specified user has the specified global permission. An empty
 * set is returned if user or permission do not exist. An empty set is also returned if the user is not involved
 * in any organization.
 * <br/>
 * Group membership is taken into account. Anonymous privileges are ignored.
 */
public Set<String> selectOrganizationUuidsOfUserWithGlobalPermission(DbSession dbSession, int userId, String
permission) {
return mapper(dbSession).selectOrganizationUuidsOfUserWithGlobalPermission(userId, permission);
}

/**
 * @deprecated replaced by { @link #keepAuthorizedProjectUuids(DbSession, Collection, Integer, String)}
 */
@Deprecated
public Set<Long> keepAuthorizedProjectIds(DbSession dbSession, Collection<Long> componentIds, @Nullable
Integer userId, String permission) {
return executeLargeInputsIntoSet(

```

```

componentIds,
partition -> {
    if (userId == null) {
        return mapper(dbSession).keepAuthorizedProjectIdsForAnonymous(permission, partition);
    }
    return mapper(dbSession).keepAuthorizedProjectIdsForUser(userId, permission, partition);
},
partitionSize -> partitionSize / 2);
}

public Set<String> keepAuthorizedProjectUuids(DbSession dbSession, Collection<String> projectUuids,
@Nullable Integer userId, String permission) {
    return executeLargeInputsIntoSet(
        projectUuids,
        partition -> {
            if (userId == null) {
                return mapper(dbSession).keepAuthorizedProjectUuidsForAnonymous(permission, partition);
            }
            return mapper(dbSession).keepAuthorizedProjectUuidsForUser(userId, permission, partition);
        },
        partitionSize -> partitionSize / 2);
}

/**
 * Keep only authorized user that have the given permission on a given project.
 * Please Note that if the permission is 'Anyone' is NOT taking into account by this method.
 */
public Collection<Integer> keepAuthorizedUsersForRoleAndProject(DbSession dbSession, Collection<Integer>
userIds, String role, long projectId) {
    return executeLargeInputs(
        userIds,
        partitionOfIds -> mapper(dbSession).keepAuthorizedUsersForRoleAndProject(role, projectId, partitionOfIds),
        partitionSize -> partitionSize / 3);
}

public List<String> selectQualityProfileAdministratorLogins(DbSession dbSession) {
    return mapper(dbSession).selectLoginsWithGlobalPermission(ADMINISTER_QUALITY_PROFILES.getKey());
}

/**
 * Used by license notifications
 */
public List<String> selectGlobalAdministratorLogins(DbSession dbSession) {
    return mapper(dbSession).selectLoginsWithGlobalPermission(ADMINISTER.getKey());
}

public Set<String> keepAuthorizedLoginsOnProject(DbSession dbSession, Set<String> logins, String projectKey,
String permission) {

```

```

    return executeLargeInputsIntoSet(
        logins,
        partitionOfLogins -> mapper(dbSession).keepAuthorizedLoginsOnProject(partitionOfLogins, projectKey,
permission),
        partitionSize -> partitionSize / 3);
    }

private static AuthorizationMapper mapper(DbSession dbSession) {
    return dbSession.getMapper(AuthorizationMapper.class);
}
}
/*
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import com.google.common.annotations.VisibleForTesting;

/**
 * Count the number of users or groups for a given project and permission
 */
public class CountPerProjectPermission {
    private long componentId;
    private String permission;
    private int count;

    public CountPerProjectPermission() {
        // used by MyBatis
    }

    @VisibleForTesting
    CountPerProjectPermission(long componentId, String permission, int count) {

```

```

    this.componentId = componentId;
    this.permission = permission;
    this.count = count;
}

public long getComponentId() {
    return componentId;
}

public String getPermission() {
    return permission;
}

public int getCount() {
    return count;
}
}
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.Arrays;
import java.util.stream.Stream;

public enum OrganizationPermission {

    ADMINISTER("admin"),
    ADMINISTER_QUALITY_GATES("gateadmin"),
    ADMINISTER_QUALITY_PROFILES("profileadmin"),
    PROVISION_PROJECTS("provisioning"),
    SCAN("scan");

```

```

private final String key;

OrganizationPermission(String key) {
    this.key = key;
}

public String getKey() {
    return key;
}

@Override
public String toString() {
    return key;
}

public static OrganizationPermission fromKey(String key) {
    for (OrganizationPermission p : values()) {
        if (p.getKey().equals(key)) {
            return p;
        }
    }
    throw new IllegalArgumentException("Unsupported permission: " + key);
}

public static Stream<OrganizationPermission> all() {
    return Arrays.stream(values());
}
}
<dataset>

<!-- user 100 has the role "user" on the project 300 and in group 200 -->
<user_roles id="1"
    user_id="100"
    resource_id="300"
    role="user"
    organization_uuid="org1"/>
<groups_users user_id="100"
    group_id="200"/>
<group_roles id="1"
    group_id="200"
    resource_id="999"
    role="user"
    organization_uuid="org1"/>

<projects organization_uuid="org1"
    id="300"
    uuid="ABCD"

```

```
    uuid_path="NOT_USED"
    root_uuid="ABCD"
    project_uuid="ABCD"
    module_uuid="[null]"
    kee="pj-w-snapshot"
    scope="PRJ"
    qualifier="TRK"
    enabled="[true]"
    private="[false]"/>
<projects organization_uuid="org1"
  id="301"
  uuid="BCDE"
  uuid_path="NOT_USED"
  root_uuid="BCDE"
  project_uuid="BCDE"
  module_uuid="[null]"
  kee="pj-w-snapshot1"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>
<projects organization_uuid="org1"
  id="302"
  uuid="CDEF"
  uuid_path="NOT_USED"
  root_uuid="CDEF"
  project_uuid="CDEF"
  module_uuid="[null]"
  kee="pj-w-snapshot2"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>

<projects organization_uuid="org1"
  id="303"
  uuid="DEFG"
  uuid_path="NOT_USED"
  root_uuid="DEFG"
  project_uuid="DEFG"
  module_uuid="[null]"
  kee="pj-w-snapshot3"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>

</dataset>
```



```

<dataset>

<user_roles id="1"
  user_id="100"
  resource_id="999"
  role="user"
  organization_uuid="org1"/>
<groups_users user_id="100"
  group_id="200"/>
<group_roles id="1"
  group_id="[null]"
  resource_id="300"
  role="user"
  organization_uuid="org1"/>

<projects organization_uuid="org1"
  id="300"
  uuid="ABCD"
  uuid_path="NOT_USED"
  root_uuid="ABCD"
  project_uuid="ABCD"
  module_uuid="[null]"
  kee="pj-w-snapshot"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>
<projects organization_uuid="org1"
  id="301"
  uuid="BCDE"
  uuid_path="NOT_USED"
  root_uuid="BCDE"
  project_uuid="BCDE"
  module_uuid="[null]"
  kee="pj-w-snapshot1"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>
<projects organization_uuid="org1"
  id="302"
  uuid="CDEF"
  uuid_path="NOT_USED"
  root_uuid="CDEF"
  project_uuid="CDEF"
  module_uuid="[null]"
  kee="pj-w-snapshot2"
  scope="PRJ"

```

```

    qualifier="TRK"
    enabled="[true]"
    private="[false]"/>

<projects organization_uuid="org1"
  id="303"
  uuid="DEFG"
  uuid_path="NOT_USED"
  root_uuid="DEFG"
  project_uuid="DEFG"
  module_uuid="[null]"
  kee="pj-w-snapshot3"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>

</dataset>
<dataset>

<!-- user 100 has no direct grant access, but is in the group 200 that has the role "user"
on the project 300 -->
<user_roles id="1"
  user_id="100"
  resource_id="999"
  role="user"
  organization_uuid="org1"/>
<groups_users user_id="100"
  group_id="200"/>
<group_roles id="1"
  group_id="200"
  resource_id="300"
  role="user"
  organization_uuid="org1"/>

<projects organization_uuid="org1"
  id="300"
  uuid="ABCD"
  uuid_path="NOT_USED"
  root_uuid="ABCD"
  project_uuid="ABCD"
  module_uuid="[null]"
  kee="pj-w-snapshot"
  scope="PRJ"
  qualifier="TRK"
  enabled="[true]"
  private="[false]"/>
<projects organization_uuid="org1"

```

```

    id="301"
    uuid="BCDE"
    uuid_path="NOT_USED"
    root_uuid="BCDE"
    project_uuid="BCDE"
    module_uuid="[null]"
    kee="pj-w-snapshot1"
    scope="PRJ"
    qualifier="TRK"
    enabled="[true]"
    private="[false]"/>
<projects organization_uuid="org1"
    id="302"
    uuid="CDEF"
    uuid_path="NOT_USED"
    root_uuid="CDEF"
    project_uuid="CDEF"
    module_uuid="[null]"
    kee="pj-w-snapshot2"
    scope="PRJ"
    qualifier="TRK"
    enabled="[true]"
    private="[false]"/>

<projects organization_uuid="org1"
    id="303"
    uuid="DEFG"
    uuid_path="NOT_USED"
    root_uuid="DEFG"
    project_uuid="DEFG"
    module_uuid="[null]"
    kee="pj-w-snapshot3"
    scope="PRJ"
    qualifier="TRK"
    enabled="[true]"
    private="[false]"/>

</dataset>
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```

```

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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.core.permission;

import org.junit.Test;
import org.sonar.api.web.UserRole;

import static org.assertj.core.api.Assertions.assertThat;

public class ProjectPermissionsTest {

    @Test
    public void all_permissions() {
        assertThat(ProjectPermissions.ALL).containsExactly(UserRole.ADMIN, UserRole.CODEVIEWER,
        UserRole.ISSUE_ADMIN, GlobalPermissions.SCAN_EXECUTION, UserRole.USER);
    }

    @Test
    public void all_permissions_as_string() {
        assertThat(ProjectPermissions.ALL_ON_ONE_LINE).isEqualTo("admin, codeviewer, issueadmin, scan, user");
    }
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/

```

```

package org.sonar.db.permission;

import org.junit.Test;

import static org.assertj.core.api.Assertions.assertThat;

public class OrganizationPermissionTest {

    @Test
    public void fromKey_returns_enum_with_specified_key() {
        for (OrganizationPermission p : OrganizationPermission.values()) {
            assertThat(OrganizationPermission.fromKey(p.getKey()).isEqualTo(p);
        }
    }

    @Test
    public void all_returns_stream_of_values() {
        assertThat(OrganizationPermission.all()).hasSize(OrganizationPermission.values().length);
        for (OrganizationPermission permission : OrganizationPermission.values()) {
            assertThat(OrganizationPermission.all()).contains(permission);
        }
    }
}
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 *
 * You should have received a copy of the GNU Lesser General Public License
 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.ArrayList;
import java.util.Arrays;
import java.util.Collection;
import java.util.List;

```

```

import java.util.Random;
import java.util.function.Consumer;
import java.util.stream.Collectors;
import org.assertj.core.groups.Tuple;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.UserDto;

import static java.util.Arrays.asList;
import static java.util.Arrays.stream;
import static java.util.Collections.emptyList;
import static java.util.Collections.singletonList;
import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.tuple;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;
import static org.sonar.db.permission.OrganizationPermission.SCAN;

public class UserPermissionDaoTest {

    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);

    private DbSession dbSession = db.getSession();
    private UserPermissionDao underTest = new UserPermissionDao();

    @Test
    public void select_global_permissions() {
        OrganizationDto organization = db.organizations().insert();
        OrganizationDto org2 = db.organizations().insert();
        UserDto user1 = insertUser(u -> u.setLogin("login1").setName("Marius").setEmail("email1@email.com"),
organization, org2);
        UserDto user2 = insertUser(u -> u.setLogin("login2").setName("Marie").setEmail("email2@email.com"),
organization, org2);
        UserDto user3 = insertUser(u -> u.setLogin("zanother").setName("Zoe").setEmail("zanother3@another.com"),
organization);
    }
}

```

```

ComponentDto project = db.components().insertPrivateProject(organization);
UserPermissionDto global1 = addGlobalPermission(organization, SYSTEM_ADMIN, user1);
UserPermissionDto global2 = addGlobalPermission(organization, SYSTEM_ADMIN, user2);
UserPermissionDto global3 = addGlobalPermission(organization, PROVISIONING, user2);
UserPermissionDto project1Perm = addProjectPermission(organization, USER, user3, project);
// permissions on another organization, to be excluded
UserPermissionDto org2Global1 = addGlobalPermission(org2, SYSTEM_ADMIN, user1);
UserPermissionDto org2Global2 = addGlobalPermission(org2, PROVISIONING, user2);

// global permissions of users who has at least one global permission, ordered by user name then permission
PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().build();
expectPermissions(query, asList(user2.getId(), user1.getId()), global2, global3, global1);

// default query returns all users, whatever their permissions nor organizations
// (that's a non-sense, but still this is required for api/permissions/groups
// when filtering users by name)
query = PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).build();
expectPermissions(query, asList(user2.getId(), user1.getId(), user3.getId()), global2, global3, org2Global2,
global1, org2Global1, project1Perm);

// global permissions "admin"
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setPermission(SYSTEM_ADMIN).build();
expectPermissions(query, asList(user2.getId(), user1.getId()), global2, global1);

// empty if nobody has the specified global permission
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setPermission("missing").build();
expectPermissions(query, emptyList());

// search by user name (matches 2 users)
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setSearchQue
ry("mari").build();
expectPermissions(query, asList(user2.getId(), user1.getId()), global2, global3, global1);

// search by user login
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setSearchQue
ry("ogin2").build();
expectPermissions(query, singletonList(user2.getId()), global2, global3);

// search by user email
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setSearchQue
ry("mail2").build();
expectPermissions(query, singletonList(user2.getId()), global2, global3);

```

```

// search by user name (matches 2 users) and global permission
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setSearchQuery("Mari").setPermission(PROVISIONING).build();
expectPermissions(query, singletonList(user2.getId()), global3);

// search by user name (no match)
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setSearchQuery("Unknown").build();
expectPermissions(query, emptyList());
}

@Test
public void select_project_permissions() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(u -> u.setLogin("login1").setName("Marius").setEmail("email1@email.com"),
organization);
    UserDto user2 = insertUser(u -> u.setLogin("login2").setName("Marie").setEmail("email2@email.com"),
organization);
    UserDto user3 = insertUser(u -> u.setLogin("zanother").setName("Zoe").setEmail("zanother3@another.com"),
organization);
    addGlobalPermission(organization, SYSTEM_ADMIN, user1);
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    UserPermissionDto perm1 = addProjectPermission(organization, USER, user1, project1);
    UserPermissionDto perm2 = addProjectPermission(organization, ISSUE_ADMIN, user1, project1);
    UserPermissionDto perm3 = addProjectPermission(organization, ISSUE_ADMIN, user2, project1);
    addProjectPermission(organization, ISSUE_ADMIN, user3, project2);

// project permissions of users who has at least one permission on this project
PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setComponentUuid(project1.uuid()).build();
expectPermissions(query, asList(user2.getId(), user1.getId(), perm3, perm2, perm1);

// empty if nobody has the specified global permission
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setPermission("missing").setComponentUuid(project1.uuid()).build();
expectPermissions(query, emptyList());

// search by user name (matches 2 users), users with at least one permission
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setSearchQuery("Mari").withAtLeastOnePermission().setComponentUuid(project1.uuid()).build();
expectPermissions(query, asList(user2.getId(), user1.getId(), perm3, perm2, perm1);

```



```

// search by user name (matches 2 users) and project permission
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setSearchQuery("Mari").setPermission(ISS
UE_ADMIN).setComponentUuid(project1.uuid()).build();
expectPermissions(query, asList(user2.getId(), user1.getId()), perm3, perm2);

// search by user name (no match)
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setSearchQuery("Unknown").setCompone
ntUuid(project1.uuid()).build();
expectPermissions(query, emptyList());

// permissions of unknown project
query =
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).setComponentUuid("missing").withAtLeas
tOnePermission().build();
expectPermissions(query, emptyList());
}

@Test
public void countUsersByProjectPermission() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    addGlobalPermission(organization, SYSTEM_ADMIN, user1);
    addProjectPermission(organization, USER, user1, project1);
    addProjectPermission(organization, ISSUE_ADMIN, user1, project1);
    addProjectPermission(organization, ISSUE_ADMIN, user2, project1);
    addProjectPermission(organization, ISSUE_ADMIN, user2, project2);

// no projects -> return empty list
assertThat(underTest.countUsersByProjectPermission(dbSession, emptyList())).isEmpty();

// one project
expectCount(singletonList(project1.getId()),
    new CountPerProjectPermission(project1.getId(), USER, 1),
    new CountPerProjectPermission(project1.getId(), ISSUE_ADMIN, 2));

// multiple projects
expectCount(asList(project1.getId(), project2.getId(), -1L),
    new CountPerProjectPermission(project1.getId(), USER, 1),
    new CountPerProjectPermission(project1.getId(), ISSUE_ADMIN, 2),
    new CountPerProjectPermission(project2.getId(), ISSUE_ADMIN, 1));
}

@Test

```

```

public void selectUserIdsByQuery() {
    OrganizationDto org1 = db.organizations().insert();
    OrganizationDto org2 = db.organizations().insert();
    UserDto user1 = insertUser(u -> u.setLogin("login1").setName("Marius").setEmail("email1@email.com"), org1,
org2);
    UserDto user2 = insertUser(u -> u.setLogin("login2").setName("Marie").setEmail("email2@email.com"), org1,
org2);
    ComponentDto project1 = db.components().insertPrivateProject(org1);
    ComponentDto project2 = db.components().insertPrivateProject(org2);
    addProjectPermission(org1, USER, user1, project1);
    addProjectPermission(org1, USER, user2, project1);
    addProjectPermission(org2, USER, user1, project2);
    addProjectPermission(org1, ISSUE_ADMIN, user2, project1);
    addProjectPermission(org2, ISSUE_ADMIN, user2, project2);

    // logins are ordered by user name: user2 ("Marie") then user1 ("Marius")
    PermissionQuery query =
PermissionQuery.builder().setOrganizationUuid(project1.getOrganizationUuid()).setComponentUuid(project1.uuid(
)).withAtLeastOnePermission().build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).containsExactly(user2.getId(), user1.getId());
    query =
PermissionQuery.builder().setOrganizationUuid("anotherOrg").setComponentUuid(project1.uuid()).withAtLeastOn
ePermission().build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).isEmpty();

    // on a project without permissions
    query =
PermissionQuery.builder().setOrganizationUuid(org1.getUuid()).setComponentUuid("missing").withAtLeastOnePer
mission().build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).isEmpty();

    // search all users whose name matches "mar", whatever the permissions
    query = PermissionQuery.builder().setOrganizationUuid(org1.getUuid()).setSearchQuery("mar").build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).containsExactly(user2.getId(), user1.getId());

    // search all users whose name matches "mariu", whatever the permissions
    query = PermissionQuery.builder().setOrganizationUuid(org1.getUuid()).setSearchQuery("mariu").build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).containsExactly(user1.getId());

    // search all users whose name matches "mariu", whatever the permissions
    query =
PermissionQuery.builder().setOrganizationUuid(org1.getUuid()).setSearchQuery("mariu").setComponentUuid(proje
ct1.uuid()).build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).containsExactly(user1.getId());

    // search all users whose name matches "mariu", whatever the organization
    query = PermissionQuery.builder().setOrganizationUuid("missingOrg").setSearchQuery("mariu").build();
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).isEmpty();

```

```

}

@Test
public void selectUserIdsByQuery_is_paginated() {
    OrganizationDto organization = db.organizations().insert();
    List<Integer> userIds = new ArrayList<>();
    for (int i = 0; i < 10; i++) {
        String name = "user-" + i;
        UserDto user = insertUser(u -> u.setName(name), organization);
        addGlobalPermission(organization, PROVISIONING, user);
        addGlobalPermission(organization, SYSTEM_ADMIN, user);
        userIds.add(user.getId());
    }

    assertThat(underTest.selectUserIdsByQuery(dbSession,
PermissionQuery.builder().setOrganizationUuid(organization.getUuid())
        .setPageSize(3).setPageIndex(1).build()))
        .containsExactly(userIds.get(0), userIds.get(1), userIds.get(2));
    assertThat(underTest.selectUserIdsByQuery(dbSession,
PermissionQuery.builder().setOrganizationUuid(organization.getUuid())
        .setPageSize(2).setPageIndex(3).build()))
        .containsExactly(userIds.get(4), userIds.get(5));
    assertThat(underTest.selectUserIdsByQuery(dbSession,
PermissionQuery.builder().setOrganizationUuid(organization.getUuid())
        .setPageSize(50).setPageIndex(1).build()))
        .hasSize(10);
}

@Test
public void selectUserIdsByQuery_is_sorted_by_insensitive_name() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(u -> u.setName("user1"), organization);
    addGlobalPermission(organization, PROVISIONING, user1);
    UserDto user3 = insertUser(u -> u.setName("user3"), organization);
    addGlobalPermission(organization, SYSTEM_ADMIN, user3);
    UserDto user2 = insertUser(u -> u.setName("User2"), organization);
    addGlobalPermission(organization, PROVISIONING, user2);

    assertThat(underTest.selectUserIdsByQuery(dbSession,
PermissionQuery.builder().setOrganizationUuid(organization.getUuid()).build()))
        .containsExactly(user1.getId(), user2.getId(), user3.getId());
}

@Test
public void deleteGlobalPermission() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);

```

```

ComponentDto project1 = db.components().insertPrivateProject(organization);
ComponentDto project2 = db.components().insertPrivateProject(organization);
addGlobalPermission(organization, "perm1", user1);
addGlobalPermission(organization, "perm2", user1);
addProjectPermission(organization, "perm1", user1, project1);
addProjectPermission(organization, "perm3", user2, project1);
addProjectPermission(organization, "perm4", user2, project2);

// user2 does not have global permissions -> do nothing
underTest.deleteGlobalPermission(dbSession, user2.getId(), "perm1", db.getDefaultOrganization().getUuid());
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(5);

// global permission is not granted -> do nothing
underTest.deleteGlobalPermission(dbSession, user1.getId(), "notGranted",
db.getDefaultOrganization().getUuid());
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(5);

// permission is on project -> do nothing
underTest.deleteGlobalPermission(dbSession, user1.getId(), "perm3", db.getDefaultOrganization().getUuid());
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(5);

// global permission on another organization-> do nothing
underTest.deleteGlobalPermission(dbSession, user1.getId(), "notGranted", "anotherOrg");
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(5);

// global permission exists -> delete it, but not the project permission with the same name !
underTest.deleteGlobalPermission(dbSession, user1.getId(), "perm1", organization.getUuid());
assertThat(db.countSql(dbSession, "select count(id) from user_roles where role='perm1' and resource_id is
null").isEqualTo(0);
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(4);
}

@Test
public void deleteProjectPermission() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    addGlobalPermission(organization, "perm", user1);
    addProjectPermission(organization, "perm", user1, project1);
    addProjectPermission(organization, "perm", user1, project2);
    addProjectPermission(organization, "perm", user2, project1);

// no such provision -> ignore
underTest.deleteProjectPermission(dbSession, user1.getId(), "anotherPerm", project1.getId());
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(4);

```

```

underTest.deleteProjectPermission(dbSession, user1.getId(), "perm", project1.getId());
assertThatProjectPermissionDoesNotExist(user1, "perm", project1);
assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(3);
}

```

@Test

```

public void deleteProjectPermissions() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    addGlobalPermission(organization, "perm", user1);
    addProjectPermission(organization, "perm", user1, project1);
    addProjectPermission(organization, "perm", user2, project1);
    addProjectPermission(organization, "perm", user1, project2);

    underTest.deleteProjectPermissions(dbSession, project1.getId());
    assertThat(db.countRowsOfTable(dbSession, "user_roles").isEqualTo(2);
    assertThatProjectHasNoPermissions(project1);
}

```

@Test

```

public void selectGlobalPermissionsOfUser() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    UserDto user3 = insertUser(organization);
    OrganizationDto org = db.organizations().insert();
    ComponentDto project = db.components().insertPrivateProject(organization);
    addGlobalPermission(db.getDefaultOrganization(), "perm1", user1);
    addGlobalPermission(org, "perm2", user2);
    addGlobalPermission(org, "perm3", user1);
    addProjectPermission(organization, "perm4", user1, project);
    addProjectPermission(organization, "perm5", user1, project);

    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user1.getId(),
org.getUuid()).containsOnly("perm3"));
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user1.getId(),
db.getDefaultOrganization().getUuid()).containsOnly("perm1"));
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user1.getId(), "otherOrg")).isEmpty();
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user3.getId(), org.getUuid()).isEmpty());
}

```

@Test

```

public void selectProjectPermissionsOfUser() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);

```

```

    UserDto user2 = insertUser(organization);
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    ComponentDto project3 = db.components().insertPrivateProject(organization);
    addGlobalPermission(organization, "perm1", user1);
    addProjectPermission(organization, "perm2", user1, project1);
    addProjectPermission(organization, "perm3", user1, project1);
    addProjectPermission(organization, "perm4", user1, project2);
    addProjectPermission(organization, "perm5", user2, project1);

    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(),
project1.getId())).containsOnly("perm2", "perm3");
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(),
project2.getId())).containsOnly("perm4");
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(), project3.getId())).isEmpty();
}

@Test
public void selectGroupIdsWithPermissionOnProjectBut_returns_empty_if_project_does_not_exist() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    UserDto user = insertUser(organization);
    db.users().insertProjectPermissionOnUser(user, "foo", project);

    assertThat(underTest.selectUserIdsWithPermissionOnProjectBut(dbSession, 1234, UserRole.USER))
        .isEmpty();
}

@Test
public void
selectGroupIdsWithPermissionOnProjectBut_returns_only_users_of_projects_which_do_not_have_permission() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    db.users().insertProjectPermissionOnUser(user1, "p1", project);
    db.users().insertProjectPermissionOnUser(user2, "p2", project);

    assertThat(underTest.selectUserIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p2"))
        .containsOnly(user1.getId());
    assertThat(underTest.selectUserIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p1"))
        .containsOnly(user2.getId());
    assertThat(underTest.selectUserIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p3"))
        .containsOnly(user1.getId(), user2.getId());
}

@Test
public void

```

```

selectGroupIdsWithPermissionOnProjectBut_does_not_return_groups_which_have_no_permission_at_all_on_speci
fied_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    db.users().insertProjectPermissionOnUser(user1, "p1", project);
    db.users().insertProjectPermissionOnUser(user2, "p2", project);

    assertThat(underTest.selectUserIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p2"))
        .containsOnly(user1.getId());
    assertThat(underTest.selectUserIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p1"))
        .containsOnly(user2.getId());
}

@Test
public void deleteByOrganization_does_not_fail_if_table_is_empty() {
    underTest.deleteByOrganization(dbSession, "some uuid");
    dbSession.commit();
}

@Test
public void deleteByOrganization_does_not_fail_if_organization_has_no_user_permission() {
    OrganizationDto organization = db.organizations().insert();

    underTest.deleteByOrganization(dbSession, organization.getUuid());
    dbSession.commit();
}

@Test
public void deleteByOrganization_deletes_all_user_permission_of_specified_organization() {
    OrganizationDto organization1 = db.organizations().insert();
    OrganizationDto organization2 = db.organizations().insert();
    OrganizationDto organization3 = db.organizations().insert();
    UserDto user1 = insertUser(organization1, organization2, organization3);
    UserDto user2 = insertUser(organization1, organization2, organization3);
    UserDto user3 = insertUser(organization1, organization2, organization3);
    db.users().insertPermissionOnUser(organization1, user1, "foo");
    db.users().insertPermissionOnUser(organization1, user2, "foo");
    db.users().insertPermissionOnUser(organization1, user2, "bar");
    db.users().insertPermissionOnUser(organization2, user2, "foo");
    db.users().insertPermissionOnUser(organization2, user3, "foo");
    db.users().insertPermissionOnUser(organization2, user3, "bar");
    db.users().insertPermissionOnUser(organization3, user3, "foo");
    db.users().insertPermissionOnUser(organization3, user1, "foo");
    db.users().insertPermissionOnUser(organization3, user1, "bar");

    underTest.deleteByOrganization(dbSession, organization3.getUuid());
}

```

```

dbSession.commit();
verifyOrganizationUidsInTable(organization1.getUuid(), organization2.getUuid());

underTest.deleteByOrganization(dbSession, organization2.getUuid());
dbSession.commit();
verifyOrganizationUidsInTable(organization1.getUuid());

underTest.deleteByOrganization(dbSession, organization1.getUuid());
dbSession.commit();
verifyOrganizationUidsInTable();
}

@Test
public void delete_permissions_of_an_organization_member() {
    OrganizationDto organization1 = db.organizations().insert();
    OrganizationDto organization2 = db.organizations().insert();
    ComponentDto project = db.components().insertPrivateProject(organization1);
    UserDto user1 = insertUser(organization1, organization2);
    UserDto user2 = insertUser(organization1, organization2);
    // user 1 permissions
    db.users().insertPermissionOnUser(organization1, user1, SCAN);
    db.users().insertPermissionOnUser(organization1, user1, ADMINISTER);
    db.users().insertProjectPermissionOnUser(user1, UserRole.CODEVIEWER, project);
    db.users().insertPermissionOnUser(organization2, user1, SCAN);
    // user 2 permission
    db.users().insertPermissionOnUser(organization1, user2, SCAN);
    db.users().insertProjectPermissionOnUser(user2, UserRole.CODEVIEWER, project);

    underTest.deleteOrganizationMemberPermissions(dbSession, organization1.getUuid(), user1.getId());
    dbSession.commit();

    // user 1 permissions
    assertOrgPermissionsOfUser(user1, organization1);
    assertOrgPermissionsOfUser(user1, organization2, SCAN);
    assertProjectPermissionsOfUser(user1, project);
    // user 2 permissions
    assertOrgPermissionsOfUser(user2, organization1, SCAN);
    assertProjectPermissionsOfUser(user2, project, CODEVIEWER);
}

@Test
public void deleteByUserId() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    ComponentDto project = db.components().insertPrivateProject(organization);
    db.users().insertPermissionOnUser(user1, SCAN);
    db.users().insertPermissionOnUser(user1, ADMINISTER);

```



```

db.users().insertProjectPermissionOnUser(user1, ADMINISTER_QUALITY_GATES.getKey(), project);
db.users().insertPermissionOnUser(user2, SCAN);
db.users().insertProjectPermissionOnUser(user2, ADMINISTER_QUALITY_GATES.getKey(), project);

underTest.deleteByUserId(dbSession, user1.getId());
dbSession.commit();

assertThat(db.select("select user_id as \"userId\", resource_id as \"projectId\", role as \"permission\" from
user_roles"))
    .extracting((row) -> row.get("userId"), (row) -> row.get("projectId"), (row) -> row.get("permission"))
    .containsOnly(tuple(user2.getId().longValue(), null, SCAN.getKey()), tuple(user2.getId().longValue(),
project.getId(), ADMINISTER_QUALITY_GATES.getKey()));
}

@Test
public void deleteProjectPermissionOfAnyUser_has_no_effect_if_specified_component_does_not_exist() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user = insertUser(organization);
    db.users().insertPermissionOnUser(organization, user, SCAN);

    int deletedCount = underTest.deleteProjectPermissionOfAnyUser(dbSession, 124L, SCAN.getKey());

    assertThat(deletedCount).isEqualTo(0);
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user.getId(),
organization.getUuid())).containsOnly(SCAN.getKey());
}

@Test
public void
deleteProjectPermissionOfAnyUser_has_no_effect_if_specified_component_has_no_permission_at_all() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user = insertUser(organization);
    db.users().insertPermissionOnUser(organization, user, SCAN);
    ComponentDto project = randomPublicOrPrivateProject(organization);

    int deletedCount = underTest.deleteProjectPermissionOfAnyUser(dbSession, project.getId(), SCAN.getKey());

    assertThat(deletedCount).isEqualTo(0);
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user.getId(),
organization.getUuid())).containsOnly(SCAN.getKey());
}

@Test
public void
deleteProjectPermissionOfAnyUser_has_no_effect_if_specified_component_does_not_have_specified_permission()
{
    OrganizationDto organization = db.organizations().insert();
    UserDto user = insertUser(organization);

```

```

db.users().insertPermissionOnUser(organization, user, SCAN);
ComponentDto project = randomPublicOrPrivateProject(organization);
db.users().insertProjectPermissionOnUser(user, SCAN.getKey(), project);

int deletedCount = underTest.deleteProjectPermissionOfAnyUser(dbSession, project.getId(), "p1");

assertThat(deletedCount).isEqualTo(0);
assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user.getId(),
organization.getUuid())).containsOnly(SCAN.getKey());
assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user.getId(),
project.getId())).containsOnly(SCAN.getKey());
}

@Test
public void
deleteProjectPermissionOfAnyUser_deletes_specified_permission_for_any_user_on_the_specified_component() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = insertUser(organization);
    UserDto user2 = insertUser(organization);
    db.users().insertPermissionOnUser(organization, user1, SCAN);
    db.users().insertPermissionOnUser(organization, user2, SCAN);
    ComponentDto project1 = randomPublicOrPrivateProject(organization);
    ComponentDto project2 = randomPublicOrPrivateProject(organization);
    db.users().insertProjectPermissionOnUser(user1, SCAN.getKey(), project1);
    db.users().insertProjectPermissionOnUser(user2, SCAN.getKey(), project1);
    db.users().insertProjectPermissionOnUser(user1, SCAN.getKey(), project2);
    db.users().insertProjectPermissionOnUser(user2, SCAN.getKey(), project2);
    db.users().insertProjectPermissionOnUser(user2, PROVISION_PROJECTS.getKey(), project2);

    int deletedCount = underTest.deleteProjectPermissionOfAnyUser(dbSession, project1.getId(), SCAN.getKey());

    assertThat(deletedCount).isEqualTo(2);
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user1.getId(),
organization.getUuid())).containsOnly(SCAN.getKey());
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user2.getId(),
organization.getUuid())).containsOnly(SCAN.getKey());
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(), project1.getId())).isEmpty();
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user2.getId(), project1.getId())).isEmpty();
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(),
project2.getId())).containsOnly(SCAN.getKey());
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user2.getId(),
project2.getId())).containsOnly(SCAN.getKey(), PROVISION_PROJECTS.getKey());

    deletedCount = underTest.deleteProjectPermissionOfAnyUser(dbSession, project2.getId(), SCAN.getKey());

    assertThat(deletedCount).isEqualTo(2);
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user1.getId(),
organization.getUuid())).containsOnly(SCAN.getKey());

```

```

    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user2.getId(),
organization.getId())).containsOnly(SCAN.getKey());
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(), project1.getId())).isEmpty();
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user2.getId(), project1.getId())).isEmpty();
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user1.getId(), project2.getId())).containsOnly();
    assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user2.getId(),
project2.getId())).containsOnly(PROVISION_PROJECTS.getKey());
}

private ComponentDto randomPublicOrPrivateProject(OrganizationDto organization) {
    return new Random().nextBoolean() ? db.components().insertPrivateProject(organization) :
db.components().insertPublicProject(organization);
}

private UserDto insertUser(Consumer<UserDto> populateUserDto, OrganizationDto... organizations) {
    UserDto user = db.users().insertUser(populateUserDto);
    stream(organizations).forEach(organization -> db.organizations().addMember(organization, user));
    return user;
}

private UserDto insertUser(OrganizationDto... organizations) {
    UserDto user = db.users().insertUser();
    stream(organizations).forEach(organization -> db.organizations().addMember(organization, user));
    return user;
}

private void verifyOrganizationUuidsInTable(String... organizationUuids) {
    assertThat(db.select("select organization_uuid as \"organizationUuid\" from user_roles"))
        .extracting((row) -> (String) row.get("organizationUuid"))
        .containsOnly(organizationUuids);
}

private void expectCount(List<Long> projectIds, CountPerProjectPermission... expected) {
    List<CountPerProjectPermission> got = underTest.countUsersByProjectPermission(dbSession, projectIds);
    assertThat(got).hasSize(expected.length);

    for (CountPerProjectPermission expect : expected) {
        boolean found = got.stream().anyMatch(b -> b.getPermission().equals(expect.getPermission()) &&
            b.getCount() == expect.getCount() &&
            b.getComponentId() == expect.getComponentId());
        assertThat(found).isTrue();
    }
}

private void expectPermissions(PermissionQuery query, Collection<Integer> expectedUserIds,
UserPermissionDto... expectedPermissions) {
    assertThat(underTest.selectUserIdsByQuery(dbSession, query)).containsExactly(expectedUserIds.toArray(new
Integer[0]));
}

```

```

    List<UserPermissionDto> currentPermissions = underTest.selectUserPermissionsByQuery(dbSession, query,
expectedUserIds);
    assertThat(currentPermissions).hasSize(expectedPermissions.length);
    List<Tuple> expectedPermissionsAsTuple = Arrays.stream(expectedPermissions)
        .map(expectedPermission -> tuple(expectedPermission.getUserId(), expectedPermission.getPermission(),
expectedPermission.getComponentId(),
        expectedPermission.getOrganizationUuid()))
        .collect(Collectors.toList());
    assertThat(currentPermissions)
        .extracting(UserPermissionDto::getUserId, UserPermissionDto::getPermission,
UserPermissionDto::getComponentId, UserPermissionDto::getOrganizationUuid)
        .containsOnly(expectedPermissionsAsTuple.toArray(new Tuple[0]));

    // test method "countUsers()"
    long distinctUsers = stream(expectedPermissions).mapToLong(UserPermissionDto::getUserId).distinct().count();
    assertThat((long) underTest.countUsersByQuery(dbSession, query)).isEqualTo(distinctUsers);
}

private UserPermissionDto addGlobalPermission(OrganizationDto org, String permission, UserDto user) {
    UserPermissionDto dto = new UserPermissionDto(org.getUuid(), permission, user.getId(), null);
    underTest.insert(dbSession, dto);
    db.commit();
    return dto;
}

private UserPermissionDto addProjectPermission(OrganizationDto org, String permission, UserDto user,
ComponentDto project) {
    UserPermissionDto dto = new UserPermissionDto(org.getUuid(), permission, user.getId(), project.getId());
    underTest.insert(dbSession, dto);
    db.commit();
    return dto;
}

private void assertThatProjectPermissionDoesNotExist(UserDto user, String permission, ComponentDto project) {
    assertThat(db.countSql(dbSession, "select count(id) from user_roles where role='" + permission + "' and user_id="
+ user.getId() + " and resource_id=" + project.getId()))
        .isEqualTo(0);
}

private void assertThatProjectHasNoPermissions(ComponentDto project) {
    assertThat(db.countSql(dbSession, "select count(id) from user_roles where resource_id=" +
project.getId())) .isEqualTo(0);
}

private void assertOrgPermissionsOfUser(UserDto user, OrganizationDto organization, OrganizationPermission...
permissions) {
    assertThat(underTest.selectGlobalPermissionsOfUser(dbSession, user.getId(), organization.getUuid()).stream()
        .map(OrganizationPermission::fromKey))

```

```

        .containsOnly(permissions);
    }

    private void assertProjectPermissionsOfUser(UserDto user, ComponentDto project, String... permissions) {
        assertThat(underTest.selectProjectPermissionsOfUser(dbSession, user.getId(),
project.getId())).containsOnly(permissions);
    }
}
/*
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission;

import java.util.ArrayList;
import java.util.Collection;
import java.util.Collections;
import java.util.List;
import java.util.Random;
import java.util.stream.IntStream;
import java.util.stream.Stream;
import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.component.ComponentTesting;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;

```

```

import static java.util.Arrays.asList;
import static java.util.Collections.singletonList;
import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.tuple;
import static org.sonar.api.security.DefaultGroups.ANYONE;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;
import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.PROVISION_PROJECTS;
import static org.sonar.db.permission.OrganizationPermission.SCAN;

```

```

public class GroupPermissionDaoTest {

    private static final int ANYONE_ID = 0;
    private static final int MISSING_ID = -1;

    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);

    private DbSession dbSession = db.getSession();
    private GroupPermissionDao underTest = new GroupPermissionDao();
    private String defaultOrganizationUuid;

    @Before
    public void setUp() throws Exception {
        defaultOrganizationUuid = db.getDefaultOrganization().getUuid();
    }

    @Test
    public void group_count_by_permission_and_component_id_on_private_projects() {
        GroupDto group1 = db.users().insertGroup();
        GroupDto group2 = db.users().insertGroup();
        GroupDto group3 = db.users().insertGroup();
        ComponentDto project1 = db.components().insertPrivateProject();
        ComponentDto project2 = db.components().insertPrivateProject();
        ComponentDto project3 = db.components().insertPrivateProject();

        db.users().insertProjectPermissionOnGroup(group1, ISSUE_ADMIN, project1);
        db.users().insertProjectPermissionOnGroup(group1, ADMIN, project2);
        db.users().insertProjectPermissionOnGroup(group2, ADMIN, project2);
        db.users().insertProjectPermissionOnGroup(group3, ADMIN, project2);
        db.users().insertProjectPermissionOnGroup(group1, USER, project2);
        db.users().insertProjectPermissionOnGroup(group1, USER, project3);
    }
}

```

```

    final List<CountPerProjectPermission> result = new ArrayList<>();
    underTest.groupsCountByComponentIdAndPermission(dbSession, asList(project2.getId(), project3.getId(),
789L),
        context -> result.add((CountPerProjectPermission) context.getResultObject());

    assertThat(result).hasSize(3);
    assertThat(result).extracting("permission").containsOnly(ADMIN, USER);
    assertThat(result).extracting("componentId").containsOnly(project2.getId(), project3.getId());
    assertThat(result).extracting("count").containsOnly(3, 1);
}

```

@Test

```

public void group_count_by_permission_and_component_id_on_public_projects() {
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    GroupDto group3 = db.users().insertGroup();
    ComponentDto project1 = db.components().insertPublicProject();
    ComponentDto project2 = db.components().insertPublicProject();
    ComponentDto project3 = db.components().insertPublicProject();

```

```

    db.users().insertProjectPermissionOnGroup(group1, "p1", project1);
    db.users().insertProjectPermissionOnGroup(group1, "p2", project2);
    db.users().insertProjectPermissionOnGroup(group2, "p2", project2);
    db.users().insertProjectPermissionOnGroup(group3, "p2", project2);
    // anyone group
    db.users().insertProjectPermissionOnAnyone("p2", project2);
    db.users().insertProjectPermissionOnGroup(group1, "p3", project2);
    db.users().insertProjectPermissionOnGroup(group1, "p3", project3);

```

```

    final List<CountPerProjectPermission> result = new ArrayList<>();
    underTest.groupsCountByComponentIdAndPermission(dbSession, asList(project2.getId(), project3.getId(),
789L),
        context -> result.add((CountPerProjectPermission) context.getResultObject());

    assertThat(result).hasSize(3);
    assertThat(result).extracting("permission").containsOnly("p2", "p3");
    assertThat(result).extracting("componentId").containsOnly(project2.getId(), project3.getId());
    assertThat(result).extracting("count").containsOnly(4, 1);
}

```

@Test

```

public void selectGroupNamesByQuery_is_ordered_by_group_names() {
    OrganizationDto organizationDto = db.organizations().insert();
    GroupDto group2 = db.users().insertGroup(organizationDto, "Group-2");
    GroupDto group3 = db.users().insertGroup(organizationDto, "Group-3");
    GroupDto group1 = db.users().insertGroup(organizationDto, "Group-1");
    db.users().insertPermissionOnAnyone(organizationDto, SCAN);

```

```

    assertThat(underTest.selectGroupNamesByQuery(dbSession,
newQuery().setOrganizationUuid(organizationDto.getUuid()).build()))
        .containsExactly(ANYONE, group1.getName(), group2.getName(), group3.getName());
}

```

@Test

```

public void countGroupsByQuery() {
    OrganizationDto organizationDto = db.getDefaultOrganization();
    GroupDto group1 = db.users().insertGroup(organizationDto, "Group-1");
    db.users().insertGroup(organizationDto, "Group-2");
    db.users().insertGroup(organizationDto, "Group-3");
    db.users().insertPermissionOnAnyone(organizationDto, SCAN);
    db.users().insertPermissionOnGroup(group1, PROVISION_PROJECTS);

    assertThat(underTest.countGroupsByQuery(dbSession,
        newQuery().build()).isEqualTo(4);
    assertThat(underTest.countGroupsByQuery(dbSession,
        newQuery().setPermission(PROVISION_PROJECTS.getKey()).build()).isEqualTo(1);
    assertThat(underTest.countGroupsByQuery(dbSession,
        newQuery().withAtLeastOnePermission().build()).isEqualTo(2);
    assertThat(underTest.countGroupsByQuery(dbSession,
        newQuery().setSearchQuery("Group-").build()).isEqualTo(3);
    assertThat(underTest.countGroupsByQuery(dbSession,
        newQuery().setSearchQuery("Any").build()).isEqualTo(1);
}

```

@Test

```

public void selectGroupNamesByQuery_with_global_permission() {
    OrganizationDto organizationDto = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(organizationDto, "Group-1");
    GroupDto group2 = db.users().insertGroup(organizationDto, "Group-2");
    GroupDto group3 = db.users().insertGroup(organizationDto, "Group-3");

    ComponentDto project =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(organizationDto));

    db.users().insertPermissionOnAnyone(organizationDto, SCAN);
    db.users().insertPermissionOnAnyone(organizationDto, PROVISION_PROJECTS);
    db.users().insertPermissionOnGroup(group1, SCAN);
    db.users().insertPermissionOnGroup(group3, ADMINISTER);
    db.users().insertProjectPermissionOnGroup(group2, UserRole.ADMIN, project);

    assertThat(underTest.selectGroupNamesByQuery(dbSession,
newQuery().setOrganizationUuid(organizationDto.getUuid()).setPermission(SCAN.getKey()).build()).containsExa
ctly(ANYONE, group1.getName());

    assertThat(underTest.selectGroupNamesByQuery(dbSession,

```



```
newQuery().setOrganizationUuid(organizationDto.getUuid()).setPermission(ADMINISTER.getKey()).build()).containsExactly(group3.getName());
```

```
    assertThat(underTest.selectGroupNamesByQuery(dbSession,
newQuery().setOrganizationUuid(organizationDto.getUuid()).setPermission(PROVISION_PROJECTS.getKey()).build()).containsExactly(ANYONE);
    }
```

@Test

```
public void select_groups_by_query_with_project_permissions_on_public_projects() {
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    GroupDto group3 = db.users().insertGroup();
```

```
    ComponentDto project = db.components().insertPublicProject();
    ComponentDto anotherProject = db.components().insertPublicProject();
```

```
    db.users().insertProjectPermissionOnGroup(group1, "p1", project);
    db.users().insertProjectPermissionOnGroup(group1, "p2", project);
    db.users().insertProjectPermissionOnAnyone("p3", project);
```

```
    db.users().insertProjectPermissionOnGroup(group1, "p4", anotherProject);
    db.users().insertProjectPermissionOnAnyone("p4", anotherProject);
    db.users().insertProjectPermissionOnGroup(group3, "p1", anotherProject);
    db.users().insertPermissionOnGroup(group2, "p5");
```

```
    PermissionQuery.Builder builderOnComponent = newQuery().setComponentUuid(project.uuid());
    assertThat(underTest.selectGroupNamesByQuery(dbSession,
        builderOnComponent.withAtLeastOnePermission().build()).containsOnlyOnce(group1.getName());
    assertThat(underTest.selectGroupNamesByQuery(dbSession,
        builderOnComponent.setPermission("p1").build()).containsOnlyOnce(group1.getName());
    assertThat(underTest.selectGroupNamesByQuery(dbSession,
        builderOnComponent.setPermission("p3").build()).containsOnlyOnce(ANYONE);
    }
```

@Test

```
public void select_groups_by_query_with_project_permissions_on_private_projects() {
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    GroupDto group3 = db.users().insertGroup();
```

```
    ComponentDto project = db.components().insertPrivateProject();
    ComponentDto anotherProject = db.components().insertPrivateProject();
```

```
    db.users().insertProjectPermissionOnGroup(group1, SCAN_EXECUTION, project);
    db.users().insertProjectPermissionOnGroup(group1, PROVISIONING, project);
```

```
    db.users().insertProjectPermissionOnGroup(group1, SYSTEM_ADMIN, anotherProject);
```

```

db.users().insertProjectPermissionOnGroup(group3, SCAN_EXECUTION, anotherProject);
db.users().insertPermissionOnGroup(group2, SCAN);

PermissionQuery.Builder builderOnComponent = newQuery().setComponentUuid(project.uuid());
assertThat(underTest.selectGroupNamesByQuery(dbSession,
    builderOnComponent.withAtLeastOnePermission().build()).containsOnlyOnce(group1.getName()));
assertThat(underTest.selectGroupNamesByQuery(dbSession,
    builderOnComponent.setPermission(SCAN_EXECUTION).build()).containsOnlyOnce(group1.getName()));
assertThat(underTest.selectGroupNamesByQuery(dbSession,
    builderOnComponent.setPermission(USER).build()).isEmpty());
}

@Test
public void selectGroupNamesByQuery_is_paginated() {
    IntStream.rangeClosed(0, 9).forEach(i -> db.users().insertGroup(db.getDefaultOrganization(), i + "-name"));

    List<String> groupNames = underTest.selectGroupNamesByQuery(dbSession,
        newQuery().setPageIndex(2).setPageSize(3).build());
    assertThat(groupNames).containsExactly("3-name", "4-name", "5-name");
}

@Test
public void selectGroupNamesByQuery_with_search_query() {
    GroupDto group = db.users().insertGroup(db.getDefaultOrganization(), "group-anyone");
    db.users().insertGroup(db.getDefaultOrganization(), "unknown");
    db.users().insertPermissionOnGroup(group, SCAN);

    assertThat(underTest.selectGroupNamesByQuery(dbSession,
        newQuery().setSearchQuery("any").build()).containsOnlyOnce(ANYONE, group.getName()));
}

@Test
public void selectGroupNamesByQuery_does_not_return_anyone_when_group_roles_is_empty() {
    GroupDto group = db.users().insertGroup();

    assertThat(underTest.selectGroupNamesByQuery(dbSession,
        newQuery().build())
        .doesNotContain(ANYONE)
        .containsExactly(group.getName()));
}

@Test
public void selectByGroupIds_on_global_permissions() {
    OrganizationDto organizationDto = db.organizations().insert();

    GroupDto group1 = db.users().insertGroup(organizationDto, "Group-1");
    db.users().insertPermissionOnGroup(group1, SCAN);
}

```

```

    GroupDto group2 = db.users().insertGroup(organizationDto, "Group-2");
    ComponentDto project =
db.components().insertComponent(ComponentTesting.newPrivateProjectDto(organizationDto));
    db.users().insertProjectPermissionOnGroup(group2, UserRole.ADMIN, project);

    GroupDto group3 = db.users().insertGroup(organizationDto, "Group-3");
    db.users().insertPermissionOnGroup(group3, ADMINISTER);

    // Anyone
    db.users().insertPermissionOnAnyone(organizationDto, SCAN);
    db.users().insertPermissionOnAnyone(organizationDto, PROVISION_PROJECTS);

    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), asList(group1.getId(), null))
        .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
        .containsOnly(tuple(group1.getId(), SCAN_EXECUTION, null)));

    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), asList(group2.getId(),
null)).isEmpty());

    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), asList(group3.getId(), null))
        .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
        .containsOnly(tuple(group3.getId(), SYSTEM_ADMIN, null)));

    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), asList(ANYONE_ID, null))
        .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
        .containsOnly(
            tuple(0, SCAN_EXECUTION, null),
            tuple(0, PROVISIONING, null)));

    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), asList(group1.getId(),
group2.getId(), ANYONE_ID, null)).hasSize(3);
    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), asList(MISSING_ID,
null)).isEmpty());
    assertThat(underTest.selectByGroupIds(dbSession, organizationDto.getUuid(), Collections.emptyList(),
null)).isEmpty();
}

@Test
public void selectByGroupIds_on_public_projects() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org, "Group-1");
    db.users().insertPermissionOnGroup(group1, "p1");

    GroupDto group2 = db.users().insertGroup(org, "Group-2");
    ComponentDto project = db.components().insertPublicProject(org);

```

```

db.users().insertProjectPermissionOnGroup(group2, "p2", project);

GroupDto group3 = db.users().insertGroup(org, "Group-3");
db.users().insertProjectPermissionOnGroup(group3, "p2", project);

// Anyone group
db.users().insertPermissionOnAnyone(org, "p3");
db.users().insertProjectPermissionOnAnyone("p4", project);

assertThat(underTest.selectByGroupIds(dbSession, defaultOrganizationUuid, singletonList(group1.getId()),
project.getId())).isEmpty();

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(group2.getId()), project.getId()))
    .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
    .containsOnly(tuple(group2.getId(), "p2", project.getId()));

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(group3.getId()), project.getId()))
    .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
    .containsOnly(tuple(group3.getId(), "p2", project.getId()));

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(ANYONE_ID), project.getId()))
    .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
    .containsOnly(tuple(0, "p4", project.getId()));

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), asList(group1.getId(), group2.getId(),
ANYONE_ID), project.getId())).hasSize(2);
assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(MISSING_ID),
project.getId())).isEmpty();
assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(group1.getId()),
123L)).isEmpty();
assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), Collections.emptyList(),
project.getId())).isEmpty();
}

@Test
public void selectByGroupIds_on_private_projects() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org, "Group-1");
    db.users().insertPermissionOnGroup(group1, PROVISION_PROJECTS);

    GroupDto group2 = db.users().insertGroup(org, "Group-2");
    ComponentDto project = db.components().insertPrivateProject(org);
    db.users().insertProjectPermissionOnGroup(group2, USER, project);

    GroupDto group3 = db.users().insertGroup(org, "Group-3");

```

```

db.users().insertProjectPermissionOnGroup(group3, USER, project);

// Anyone group
db.users().insertPermissionOnAnyone(org, SCAN);

assertThat(underTest.selectByGroupIds(dbSession, defaultOrganizationUuid, singletonList(group1.getId()),
project.getId())).isEmpty();

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(group2.getId()), project.getId()))
    .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
    .containsOnly(tuple(group2.getId(), USER, project.getId()));

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(group3.getId()), project.getId()))
    .extracting(GroupPermissionDto::getGroupId, GroupPermissionDto::getRole,
GroupPermissionDto::getResourceId)
    .containsOnly(tuple(group3.getId(), USER, project.getId()));

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(ANYONE_ID), project.getId()))
    .isEmpty();

assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), asList(group1.getId(), group2.getId(),
ANYONE_ID), project.getId())).hasSize(1);
assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(MISSING_ID),
project.getId())).isEmpty();
assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), singletonList(group1.getId()),
123L)).isEmpty();
assertThat(underTest.selectByGroupIds(dbSession, org.getUuid(), Collections.emptyList(),
project.getId())).isEmpty();
}

@Test
public void selectGlobalPermissionsOfGroup() {
    OrganizationDto org1 = db.organizations().insert();
    OrganizationDto org2 = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org1, "group1");
    GroupDto group2 = db.users().insertGroup(org2, "group2");
    ComponentDto project = db.components().insertPublicProject(org1);

    db.users().insertPermissionOnAnyone(org1, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertPermissionOnGroup(group1, "perm3");
    db.users().insertPermissionOnGroup(group2, "perm4");
    db.users().insertProjectPermissionOnGroup(group1, "perm5", project);
    db.users().insertProjectPermissionOnAnyone("perm6", project);

    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, org1.getUuid(),
group1.getId())).containsOnly("perm2", "perm3");

```

```

    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, org2.getUuid(),
group2.getId()).containsOnly("perm4"));
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, org1.getUuid(), null).containsOnly("perm1"));

    // group1 is not in org2
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, org2.getUuid(), group1.getId()).isEmpty());
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, org2.getUuid(), null).isEmpty());
}

@Test
public void selectProjectPermissionsOfGroup_on_public_project() {
    OrganizationDto org1 = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org1, "group1");
    ComponentDto project1 = db.components().insertPublicProject(org1);
    ComponentDto project2 = db.components().insertPublicProject(org1);

    db.users().insertPermissionOnAnyone(org1, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm4", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm5", project2);
    db.users().insertProjectPermissionOnAnyone("perm6", project1);

    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), group1.getId(),
project1.getId()))
        .containsOnly("perm3", "perm4");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), group1.getId(),
project2.getId()))
        .containsOnly("perm5");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), null, project1.getId()))
        .containsOnly("perm6");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), null, project2.getId()))
        .isEmpty();
}

@Test
public void selectProjectPermissionsOfGroup_on_private_project() {
    OrganizationDto org1 = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org1, "group1");
    ComponentDto project1 = db.components().insertPrivateProject(org1);
    ComponentDto project2 = db.components().insertPrivateProject(org1);

    db.users().insertPermissionOnAnyone(org1, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm4", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm5", project2);

```

```

    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), group1.getId(),
project1.getId()))
        .containsOnly("perm3", "perm4");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), group1.getId(),
project2.getId()))
        .containsOnly("perm5");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), null, project1.getId()))
        .isEmpty();
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, org1.getUuid(), null, project2.getId()))
        .isEmpty();
}

```

@Test

```

public void selectAllPermissionsByGroupId_on_public_project() {
    OrganizationDto org1 = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org1, "group1");
    ComponentDto project1 = db.components().insertPublicProject(org1);
    ComponentDto project2 = db.components().insertPublicProject(org1);
    db.users().insertPermissionOnAnyone(org1, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm4", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm5", project2);
    db.users().insertProjectPermissionOnAnyone("perm6", project1);

    List<GroupPermissionDto> result = new ArrayList<>();
    underTest.selectAllPermissionsByGroupId(dbSession, org1.getUuid(), group1.getId(), context ->
result.add((GroupPermissionDto) context.getResultObject()));
    assertThat(result).extracting(GroupPermissionDto::getResourceId, GroupPermissionDto::getRole).containsOnly(
        tuple(null, "perm2"),
        tuple(project1.getId(), "perm3"), tuple(project1.getId(), "perm4"), tuple(project2.getId(), "perm5"));
}

```

@Test

```

public void selectAllPermissionsByGroupId_on_private_project() {
    OrganizationDto org1 = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org1, "group1");
    ComponentDto project1 = db.components().insertPrivateProject(org1);
    ComponentDto project2 = db.components().insertPrivateProject(org1);
    db.users().insertPermissionOnAnyone(org1, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm4", project1);
    db.users().insertProjectPermissionOnGroup(group1, "perm5", project2);

    List<GroupPermissionDto> result = new ArrayList<>();
    underTest.selectAllPermissionsByGroupId(dbSession, org1.getUuid(), group1.getId(), context ->
result.add((GroupPermissionDto) context.getResultObject()));
}

```

```

assertThat(result).extracting(GroupPermissionDto::getResourceId, GroupPermissionDto::getRole).containsOnly(
    tuple(null, "perm2"),
    tuple(project1.getId(), "perm3"), tuple(project1.getId(), "perm4"), tuple(project2.getId(), "perm5"));
}

```

```
@Test
```

```

public void selectGroupIdsWithPermissionOnProjectBut_returns_empty_if_project_does_not_exist() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnGroup(group, "foo", project);

```

```

assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, 1234, UserRole.USER))
    .isEmpty();
}

```

```
@Test
```

```

public void
selectGroupIdsWithPermissionOnProjectBut_returns_only_groups_of_project_which_do_not_have_permission() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    GroupDto group1 = db.users().insertGroup(organization);
    GroupDto group2 = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnGroup(group1, "p1", project);
    db.users().insertProjectPermissionOnGroup(group2, "p2", project);

```

```

assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p2"))
    .containsOnly(group1.getId());
assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p1"))
    .containsOnly(group2.getId());
assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p3"))
    .containsOnly(group1.getId(), group2.getId());
}

```

```
@Test
```

```

public void
selectGroupIdsWithPermissionOnProjectBut_does_not_returns_group_AnyOne_of_project_when_it_does_not_hav
e_permission() {

```

```

    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    GroupDto group1 = db.users().insertGroup(organization);
    GroupDto group2 = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnGroup(group1, "p1", project);
    db.users().insertProjectPermissionOnGroup(group2, "p2", project);
    db.users().insertProjectPermissionOnAnyone("p2", project);

```

```

assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p2"))
    .containsOnly(group1.getId());

```



```

    assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p1"))
        .containsOnly(group2.getId());
}

@Test
public void
selectGroupIdsWithPermissionOnProjectBut_does_not_return_groups_which_have_no_permission_at_all_on_speci
fied_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    GroupDto group1 = db.users().insertGroup(organization);
    GroupDto group2 = db.users().insertGroup(organization);
    GroupDto group3 = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnGroup(group1, "p1", project);
    db.users().insertProjectPermissionOnGroup(group2, "p2", project);

    assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p2"))
        .containsOnly(group1.getId());
    assertThat(underTest.selectGroupIdsWithPermissionOnProjectBut(dbSession, project.getId(), "p1"))
        .containsOnly(group2.getId());
}

@Test
public void deleteByRootComponentId_on_private_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    GroupDto group2 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPrivateProject(org);
    ComponentDto project2 = db.components().insertPrivateProject(org);
    db.users().insertPermissionOnGroup(group1, "perm1");
    db.users().insertProjectPermissionOnGroup(group1, "perm2", project1);
    db.users().insertProjectPermissionOnGroup(group2, "perm3", project2);

    underTest.deleteByRootComponentId(dbSession, project1.getId());
    dbSession.commit();

    assertThat(db.countSql("select count(id) from group_roles where resource_id=" + project1.getId()).isEqualTo(0);
    assertThat(db.countRowsOfTable("group_roles").isEqualTo(2);
}

@Test
public void deleteByRootComponentId_on_public_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    GroupDto group2 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPublicProject(org);
    ComponentDto project2 = db.components().insertPublicProject(org);
    db.users().insertPermissionOnGroup(group1, "perm1");

```

```

db.users().insertProjectPermissionOnGroup(group1, "perm2", project1);
db.users().insertProjectPermissionOnGroup(group2, "perm3", project2);
db.users().insertProjectPermissionOnAnyone("perm4", project1);
db.users().insertProjectPermissionOnAnyone("perm5", project2);

underTest.deleteByRootComponentId(dbSession, project1.getId());
dbSession.commit();

assertThat(db.countSql("select count(id) from group_roles where resource_id=" + project1.getId())).isEqualTo(0);
assertThat(db.countRowsOfTable("group_roles")).isEqualTo(3);
}

@Test
public void delete_global_permission_from_group_on_public_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPublicProject(org);
    db.users().insertPermissionOnAnyone(org, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnAnyone("perm4", project1);

    underTest.delete(dbSession, "perm2", group1.getOrganizationUuid(), group1.getId(), null);
    dbSession.commit();

    assertThatNoPermission("perm2");
    assertThat(db.countRowsOfTable("group_roles")).isEqualTo(3);
}

@Test
public void delete_global_permission_from_group_on_private_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPrivateProject(org);
    db.users().insertPermissionOnAnyone(org, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);

    underTest.delete(dbSession, "perm2", group1.getOrganizationUuid(), group1.getId(), null);
    dbSession.commit();

    assertThatNoPermission("perm2");
    assertThat(db.countRowsOfTable("group_roles")).isEqualTo(2);
}

@Test
public void delete_global_permission_from_anyone_on_public_project() {
    OrganizationDto org = db.organizations().insert();

```

```

GroupDto group1 = db.users().insertGroup(org);
ComponentDto project1 = db.components().insertPublicProject(org);
db.users().insertPermissionOnAnyone(org, "perm1");
db.users().insertPermissionOnGroup(group1, "perm2");
db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
db.users().insertProjectPermissionOnAnyone("perm4", project1);

underTest.delete(dbSession, "perm1", group1.getOrganizationUuid(), null, null);
dbSession.commit();

assertThatNoPermission("perm1");
assertThat(db.countRowsOfTable("group_roles")).isEqualTo(3);
}

@Test
public void delete_project_permission_from_group_on_private_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPrivateProject(org);
    db.users().insertPermissionOnAnyone(org, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);

    underTest.delete(dbSession, "perm3", group1.getOrganizationUuid(), group1.getId(), project1.getId());
    dbSession.commit();

    assertThatNoPermission("perm3");
    assertThat(db.countRowsOfTable("group_roles")).isEqualTo(2);
}

@Test
public void delete_project_permission_from_group_on_public_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPublicProject(org);
    db.users().insertPermissionOnAnyone(org, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnAnyone("perm4", project1);

    underTest.delete(dbSession, "perm3", group1.getOrganizationUuid(), group1.getId(), project1.getId());
    dbSession.commit();

    assertThatNoPermission("perm3");
    assertThat(db.countRowsOfTable("group_roles")).isEqualTo(3);
}

@Test

```

```

public void delete_project_permission_from_anybody_on_private_project() {
    OrganizationDto org = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(org);
    ComponentDto project1 = db.components().insertPublicProject(org);
    db.users().insertPermissionOnAnyone(org, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertProjectPermissionOnGroup(group1, "perm3", project1);
    db.users().insertProjectPermissionOnAnyone("perm4", project1);

    underTest.delete(dbSession, "perm4", group1.getOrganizationUuid(), null, project1.getId());
    dbSession.commit();

    assertThatNoPermission("perm4");
    assertThat(db.countRowsOfTable("group_roles")).isEqualTo(3);
}

@Test
public void deleteByOrganization_does_not_fail_on_empty_db() {
    underTest.deleteByOrganization(dbSession, "some uuid");
    dbSession.commit();
}

@Test
public void deleteByOrganization_does_not_fail_if_organization_has_no_group() {
    OrganizationDto organization = db.organizations().insert();

    underTest.deleteByOrganization(dbSession, organization.getUuid());
    dbSession.commit();
}

@Test
public void deleteByOrganization_deletes_all_groups_of_organization() {
    OrganizationDto organization1 = db.organizations().insert();
    OrganizationDto organization2 = db.organizations().insert();
    OrganizationDto organization3 = db.organizations().insert();
    insertGroupWithPermissions(organization1);
    insertGroupWithPermissions(organization2);
    insertGroupWithPermissions(organization3);
    insertGroupWithPermissions(organization3);
    insertGroupWithPermissions(organization2);
    db.users().insertPermissionOnAnyone(organization1, "pop");
    db.users().insertPermissionOnAnyone(organization2, "pop");
    db.users().insertPermissionOnAnyone(organization3, "pop");

    underTest.deleteByOrganization(dbSession, organization2.getUuid());
    dbSession.commit();
    verifyOrganizationUuidsInTable(organization1.getUuid(), organization3.getUuid());
}

```

```

underTest.deleteByOrganization(dbSession, organization1.getUuid());
dbSession.commit();
verifyOrganizationUuidsInTable(organization3.getUuid());

underTest.deleteByOrganization(dbSession, organization3.getUuid());
dbSession.commit();
verifyOrganizationUuidsInTable();
}

@Test
public void
deleteByRootComponentIdAndGroupId_deletes_all_permissions_of_group_AnyOne_of_specified_component_if_groupId_is_null() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnAnyone("p1", project);
    db.users().insertProjectPermissionOnGroup(group, "p2", project);
    db.users().insertPermissionOnAnyone(organization, "p3");
    db.users().insertPermissionOnGroup(group, "p4");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId()))
        .containsOnly("p1");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group.getId(),
project.getId()))
        .containsOnly("p2");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), null))
        .containsOnly("p3");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group.getId()))
        .containsOnly("p4");

    int deletedCount = underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), null);

    assertThat(deletedCount).isEqualTo(1);
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId()))
        .isEmpty();
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group.getId(),
project.getId()))
        .containsOnly("p2");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), null))
        .containsOnly("p3");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group.getId()))
        .containsOnly("p4");
}

@Test
public void
deleteByRootComponentIdAndGroupId_deletes_all_permissions_of_specified_group_of_specified_component_if_groupId_is_non_null() {

```

```

OrganizationDto organization = db.organizations().insert();
ComponentDto project = db.components().insertPublicProject(organization);
GroupDto group1 = db.users().insertGroup(organization);
GroupDto group2 = db.users().insertGroup(organization);
db.users().insertProjectPermissionOnAnyone("p1", project);
db.users().insertProjectPermissionOnGroup(group1, "p2", project);
db.users().insertProjectPermissionOnGroup(group2, "p3", project);
db.users().insertProjectPermissionOnGroup(group2, "p4", project);
db.users().insertPermissionOnAnyone(organization, "p5");
db.users().insertPermissionOnGroup(group1, "p6");
db.users().insertPermissionOnGroup(group2, "p7");
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId())
    .containsOnly("p1");
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId(),
project.getId())
    .containsOnly("p2");
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId(),
project.getId())
    .containsOnly("p3", "p4");
assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), null))
    .containsOnly("p5");
assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId())
    .containsOnly("p6");
assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId())
    .containsOnly("p7");

int deletedCount = underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), group1.getId());

assertThat(deletedCount).isEqualTo(1);
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId())
    .containsOnly("p1");
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId(),
project.getId())
    .isEmpty();
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId(),
project.getId())
    .containsOnly("p3", "p4");
assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId())
    .containsOnly("p6");
assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId())
    .containsOnly("p7");

deletedCount = underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), group2.getId());

assertThat(deletedCount).isEqualTo(2);
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId())
    .containsOnly("p1");
assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId(),

```

```

project.getId()))
    .isEmpty();
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId(),
project.getId()))
    .isEmpty();
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId()))
    .containsOnly("p6");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId()))
    .containsOnly("p7");
}

@Test
public void deleteByRootComponentIdAndGroupId_has_no_effect_if_component_does_not_exist() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);

    assertThat(underTest.deleteByRootComponentIdAndGroupId(dbSession, 1234L, null)).isEqualTo(0);
    assertThat(underTest.deleteByRootComponentIdAndGroupId(dbSession, 1234L, group.getId())).isEqualTo(0);
}

@Test
public void
deleteByRootComponentIdAndGroupId_has_no_effect_if_component_has_no_group_permission_at_all() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);
    GroupDto group = db.users().insertGroup(organization);

    assertThat(underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), null)).isEqualTo(0);
    assertThat(underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(),
group.getId())).isEqualTo(0);
}

@Test
public void deleteByRootComponentIdAndGroupId_has_no_effect_if_group_does_not_exist() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = randomPublicOrPrivateProject(organization);

    assertThat(underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), 5678)).isEqualTo(0);
}

@Test
public void
deleteByRootComponentIdAndGroupId_has_no_effect_if_component_has_no_group_permission_for_group_AnyOne() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPrivateProject(organization);
    GroupDto group1 = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnGroup(group1, "p1", project);
}

```

```

    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId()))
        .isEmpty();
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId(),
project.getId()))
        .containsOnly("p1");
    db.users().insertPermissionOnAnyone(organization, "p2");
    db.users().insertPermissionOnGroup(group1, "p3");

    int deletedCount = underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), null);

    assertThat(deletedCount).isEqualTo(0);
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), null, project.getId()))
        .isEmpty();
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId(),
project.getId()))
        .containsOnly("p1");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), null))
        .containsOnly("p2");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId()))
        .containsOnly("p3");
}

@Test
public void
deleteByRootComponentIdAndGroupId_has_no_effect_if_component_has_no_group_permission_for_specified_group() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPrivateProject(organization);
    GroupDto group1 = db.users().insertGroup(organization);
    GroupDto group2 = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnGroup(group1, "p1", project);
    db.users().insertPermissionOnAnyone(organization, "p2");
    db.users().insertPermissionOnGroup(group1, "p3");

    int deletedCount = underTest.deleteByRootComponentIdAndGroupId(dbSession, project.getId(), group2.getId());

    assertThat(deletedCount).isEqualTo(0);
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId(),
project.getId()))
        .containsOnly("p1");
    assertThat(underTest.selectProjectPermissionsOfGroup(dbSession, organization.getUuid(), group2.getId(),
project.getId()))
        .isEmpty();
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), null))
        .containsOnly("p2");
    assertThat(underTest.selectGlobalPermissionsOfGroup(dbSession, organization.getUuid(), group1.getId()))
        .containsOnly("p3");
}

```



```

@Test
public void
deleteByRootComponentIdAndPermission_deletes_all_rows_for_specified_role_of_specified_component() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    GroupDto group = db.users().insertGroup(organization);
    Stream.of("p1", "p2").forEach(permission -> {
        db.users().insertPermissionOnAnyone(organization, permission);
        db.users().insertPermissionOnGroup(group, permission);
        db.users().insertProjectPermissionOnGroup(group, permission, project);
        db.users().insertProjectPermissionOnAnyone(permission, project);
    });
    assertThat(getGlobalPermissionsForAnyone(organization)).containsOnly("p1", "p2");
    assertThat(getGlobalPermissionsForGroup(group)).containsOnly("p1", "p2");
    assertThat(getProjectPermissionsForAnyOne(project)).containsOnly("p1", "p2");
    assertThat(getProjectPermissionsForGroup(project, group)).containsOnly("p1", "p2");

    int deletedRows = underTest.deleteByRootComponentIdAndPermission(dbSession, project.getId(), "p1");

    assertThat(deletedRows).isEqualTo(2);
    assertThat(getGlobalPermissionsForAnyone(organization)).containsOnly("p1", "p2");
    assertThat(getGlobalPermissionsForGroup(group)).containsOnly("p1", "p2");
    assertThat(getProjectPermissionsForAnyOne(project)).containsOnly("p2");
    assertThat(getProjectPermissionsForGroup(project, group)).containsOnly("p2");

    deletedRows = underTest.deleteByRootComponentIdAndPermission(dbSession, project.getId(), "p2");

    assertThat(deletedRows).isEqualTo(2);
    assertThat(getGlobalPermissionsForAnyone(organization)).containsOnly("p1", "p2");
    assertThat(getGlobalPermissionsForGroup(group)).containsOnly("p1", "p2");
    assertThat(getProjectPermissionsForAnyOne(project)).isEmpty();
    assertThat(getProjectPermissionsForGroup(project, group)).isEmpty();
}

@Test
public void
deleteByRootComponentIdAndPermission_has_no_effect_if_component_has_no_group_permission_at_all() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = randomPublicOrPrivateProject(organization);
    db.users().insertPermissionOnAnyone(organization, "p1");
    db.users().insertPermissionOnGroup(group, "p1");

    assertThat(underTest.deleteByRootComponentIdAndPermission(dbSession, project.getId(), "p1")).isEqualTo(0);

    assertThat(getGlobalPermissionsForAnyone(organization)).containsOnly("p1");
    assertThat(getGlobalPermissionsForGroup(group)).containsOnly("p1");
}

```

```

assertThat(getProjectPermissionsForAnyOne(project)).isEmpty();
assertThat(getProjectPermissionsForGroup(project, group)).isEmpty();
}

```

```
@Test
```

```

public void deleteByRootComponentIdAndPermission_has_no_effect_if_component_does_not_exist() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertPermissionOnAnyone(organization, "p1");
    db.users().insertPermissionOnGroup(group, "p1");
    db.users().insertProjectPermissionOnGroup(group, "p1", project);
    db.users().insertProjectPermissionOnAnyone("p1", project);

```

```

assertThat(underTest.deleteByRootComponentIdAndPermission(dbSession, 1324, "p1")).isEqualTo(0);

```

```

assertThat(getGlobalPermissionsForAnyone(organization)).containsOnly("p1");
assertThat(getGlobalPermissionsForGroup(group)).containsOnly("p1");
assertThat(getProjectPermissionsForAnyOne(project)).containsOnly("p1");
assertThat(getProjectPermissionsForGroup(project, group)).containsOnly("p1");
}

```

```
@Test
```

```
public void
```

```

deleteByRootComponentIdAndPermission_has_no_effect_if_component_does_not_have_specified_permission() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group = db.users().insertGroup(organization);
    ComponentDto project = randomPublicOrPrivateProject(organization);
    db.users().insertPermissionOnAnyone(organization, "p1");
    db.users().insertPermissionOnGroup(group, "p1");

```

```

assertThat(underTest.deleteByRootComponentIdAndPermission(dbSession, project.getId(), "p1")).isEqualTo(0);
}

```

```

private Collection<String> getGlobalPermissionsForAnyone(OrganizationDto organization) {
    return getPermissions("organization_uuid = " + organization.getUuid() + " and group_id is null and resource_id is null");
}

```

```

private Collection<String> getGlobalPermissionsForGroup(GroupDto groupDto) {
    return getPermissions("organization_uuid = " + groupDto.getOrganizationUuid() + " and group_id = " + groupDto.getId() + " and resource_id is null");
}

```

```

private Collection<String> getProjectPermissionsForAnyOne(ComponentDto project) {
    return getPermissions("organization_uuid = " + project.getOrganizationUuid() + " and group_id is null and resource_id = " + project.getId());
}

```

```

private Collection<String> getProjectPermissionsForGroup(ComponentDto project, GroupDto group) {
    return getPermissions("organization_uuid = " + project.getOrganizationUuid() + " and group_id = " +
group.getId() + " and resource_id = " + project.getId());
}

private Collection<String> getPermissions(String whereClauses) {
    return db
        .select(dbSession, "select role from group_roles where " + whereClauses)
        .stream()
        .flatMap(map -> map.entrySet().stream())
        .map(entry -> (String) entry.getValue())
        .collect(MoreCollectors.toList());
}

private ComponentDto randomPublicOrPrivateProject(OrganizationDto organization) {
    return new Random().nextBoolean() ? db.components().insertPublicProject(organization) :
db.components().insertPrivateProject(organization);
}

private PermissionQuery.Builder newQuery() {
    return PermissionQuery.builder().setOrganizationUuid(db.getDefaultOrganization().getUuid());
}

private void verifyOrganizationUuidsInTable(String... organizationUuids) {
    assertThat(db.select("select distinct organization_uuid as \"organizationUuid\" from group_roles"))
        .extracting((row) -> (String) row.get("organizationUuid"))
        .containsOnly(organizationUuids);
}

private int insertGroupWithPermissions(OrganizationDto organization1) {
    GroupDto group = db.users().insertGroup(organization1);
    db.users().insertPermissionOnGroup(group, "foo");
    db.users().insertPermissionOnGroup(group, "bar");
    db.users().insertPermissionOnGroup(group, "doh");
    return group.getId();
}

private void assertThatNoPermission(String permission) {
    assertThat(db.countSql("select count(id) from group_roles where role=\"" + permission + "\"")).isEqualTo(0);
}

}
/*
* SonarQube
* Copyright (C) 2009-2018 SonarSource SA
* mailto:info AT sonarsource DOT com
*

```

```

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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/

```

```
package org.sonar.db.permission.template;
```

```

import java.util.Collections;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.UserDto;

import static java.util.Arrays.asList;
import static java.util.Collections.singletonList;
import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.tuple;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.db.permission.PermissionQuery.builder;

```

```

public class UserWithPermissionTemplateDaoTest {

    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);

    private DbSession dbSession = db.getSession();

    private PermissionTemplateDao underTest = db.getDbClient().permissionTemplateDao();

    @Test
    public void select_logins() {
        OrganizationDto organization = db.organizations().insert();
        UserDto user1 = db.users().insertUser();
        UserDto user2 = db.users().insertUser();
    }
}

```

```

UserDto user3 = db.users().insertUser();
db.organizations().addMember(organization, user1, user2, user3);
PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, ADMIN);
db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, CODEVIEWER);
db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);
PermissionTemplateDto anotherPermissionTemplate = db.permissionTemplates().insertTemplate();
db.permissionTemplates().addUserToTemplate(anotherPermissionTemplate, user1, USER);

assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
    builder().setOrganizationUuid(organization.getUuid()).build(),
    permissionTemplate.getId()))
    .containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin(), user3.getLogin());
assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setPermission(USER).build(),
    permissionTemplate.getId()))
    .containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin());
}

@Test
public void return_no_logins_on_unknown_template_key() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user = db.users().insertUser();
    db.organizations().addMember(organization, user);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user, USER);

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
builder().setOrganizationUuid(organization.getUuid()).setPermission(USER).withAtLeastOnePermission().build(),
999L))
        .isEmpty();
}

@Test
public void select_only_logins_with_permission() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();
    db.organizations().addMember(organization, user1, user2, user3);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, ADMIN);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, CODEVIEWER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);
    PermissionTemplateDto anotherPermissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(anotherPermissionTemplate, user1, USER);

```

```

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
builder().setOrganizationUuid(organization.getUuid()).setPermission(USER).withAtLeastOnePermission().build(),
permissionTemplate.getId()))
        .containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin());
}

```

@Test

```

public void select_only_enable_users() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user = db.users().insertUser();
    UserDto disabledUser = db.users().insertUser(u -> u.setActive(false));
    db.organizations().addMember(organization, user, disabledUser);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user, USER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, disabledUser, USER);

```

```

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
builder().setOrganizationUuid(organization.getUuid()).setPermission(USER).build(),
permissionTemplate.getId()))
        .containsExactlyInAnyOrder(user.getLogin());
}

```

@Test

```

public void search_by_user_name() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = db.users().insertUser(u -> u.setName("User1"));
    UserDto user2 = db.users().insertUser(u -> u.setName("User2"));
    UserDto user3 = db.users().insertUser(u -> u.setName("User3"));
    db.organizations().addMember(organization, user1, user2, user3);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);

```

```

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(
dbSession,
builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setPermission(USER).setSearchQuery("SEr1").build(),
permissionTemplate.getId()))
        .containsExactlyInAnyOrder(user1.getLogin());

```

```

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(
dbSession,
builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setPermission(USER).setSearchQuery("user").build(),
permissionTemplate.getId()))
        .containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin());
}

```

```

@Test
public void should_be_sorted_by_user_name() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = db.users().insertUser(u -> u.setName("User3"));
    UserDto user2 = db.users().insertUser(u -> u.setName("User1"));
    UserDto user3 = db.users().insertUser(u -> u.setName("User2"));
    db.organizations().addMember(organization, user1, user2, user3);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
        builder().setOrganizationUuid(organization.getUuid()).build(), permissionTemplate.getId())
        .containsExactly(user2.getLogin(), user3.getLogin(), user1.getLogin()));
}

```

```

@Test
public void should_be_paginated() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = db.users().insertUser(u -> u.setName("User1"));
    UserDto user2 = db.users().insertUser(u -> u.setName("User2"));
    UserDto user3 = db.users().insertUser(u -> u.setName("User3"));
    db.organizations().addMember(organization, user1, user2, user3);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);

    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
        builder().setOrganizationUuid(organization.getUuid()).setPageIndex(1).setPageSize(2).build(),
        permissionTemplate.getId())
        .containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin()));
    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
        builder().setOrganizationUuid(organization.getUuid()).setPageIndex(2).setPageSize(2).build(),
        permissionTemplate.getId())
        .containsExactlyInAnyOrder(user3.getLogin()));
    assertThat(underTest.selectUserLoginsByQueryAndTemplate(dbSession,
        builder().setOrganizationUuid(organization.getUuid()).setPageIndex(3).setPageSize(1).build(),
        permissionTemplate.getId())
        .containsExactlyInAnyOrder(user3.getLogin()));
}

```

```

@Test
public void count_users() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();
}

```

```

db.organizations().addMember(organization, user1, user2, user3);
PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);

assertThat(underTest.countUserLoginsByQueryAndTemplate(dbSession,
    builder().setOrganizationUuid(organization.getUuid()).build(), permissionTemplate.getId()))
    .isEqualTo(3);
assertThat(underTest.countUserLoginsByQueryAndTemplate(dbSession,
builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().setPermission("user").build(), p
ermissionTemplate.getId()))
    .isEqualTo(2);
}

@Test
public void select_user_permission_templates_by_template_and_logins() {
    OrganizationDto organization = db.organizations().insert();
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();
    db.organizations().addMember(organization, user1, user2, user3);
    PermissionTemplateDto permissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, USER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, ADMIN);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user1, CODEVIEWER);
    db.permissionTemplates().addUserToTemplate(permissionTemplate, user2, USER);
    PermissionTemplateDto anotherPermissionTemplate = db.permissionTemplates().insertTemplate();
    db.permissionTemplates().addUserToTemplate(anotherPermissionTemplate, user1, USER);

    assertThat(underTest.selectUserPermissionsByTemplateIdAndUserLogins(dbSession,
permissionTemplate.getId(), singletonList(user1.getLogin())))
        .extracting(PermissionTemplateUserDto::getUserLogin, PermissionTemplateUserDto::getPermission)
        .containsExactlyInAnyOrder(
            tuple(user1.getLogin(), USER),
            tuple(user1.getLogin(), ADMIN),
            tuple(user1.getLogin(), CODEVIEWER));

    assertThat(underTest.selectUserPermissionsByTemplateIdAndUserLogins(dbSession,
permissionTemplate.getId(), asList(user1.getLogin(), user2.getLogin(), user2.getLogin())))
        .extracting(PermissionTemplateUserDto::getUserLogin, PermissionTemplateUserDto::getPermission)
        .containsExactlyInAnyOrder(
            tuple(user1.getLogin(), USER),
            tuple(user1.getLogin(), ADMIN),
            tuple(user1.getLogin(), CODEVIEWER),
            tuple(user2.getLogin(), USER));

    assertThat(underTest.selectUserPermissionsByTemplateIdAndUserLogins(dbSession,
permissionTemplate.getId(), singletonList("unknown")))
        .isEmpty();
}

```



```

    assertThat(underTest.selectUserPermissionsByTemplateIdAndUserLogins(dbSession,
permissionTemplate.getId(), Collections.emptyList()).isEmpty());
    assertThat(underTest.selectUserPermissionsByTemplateIdAndUserLogins(dbSession, 123L,
singletonList(user1.getLogin()))).isEmpty();
}
}
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* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.db.permission.template;

import javax.annotation.Nullable;
import org.sonar.db.DbClient;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;

import static
org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateCharacteristicDto;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateDto;

public class PermissionTemplateDbTester {
    private final DbTester db;
    private final DbClient dbClient;
    private final DbSession dbSession;

    public PermissionTemplateDbTester(DbTester db) {
        this.db = db;
        this.dbClient = db.getDbClient();
        this.dbSession = db.getSession();

```

```

}

public PermissionTemplateDto insertTemplate() {
    return insertTemplate(newPermissionTemplateDto());
}

public PermissionTemplateDto insertTemplate(OrganizationDto organizationDto) {
    return insertTemplate(newPermissionTemplateDto().setOrganizationUuid(organizationDto.getUuid()));
}

public PermissionTemplateDto insertTemplate(PermissionTemplateDto template) {
    PermissionTemplateDto templateInDb = dbClient.permissionTemplateDao().insert(dbSession, template);
    db.commit();

    return templateInDb;
}

public void addGroupToTemplate(PermissionTemplateDto permissionTemplate, GroupDto group, String
permission) {
    addGroupToTemplate(permissionTemplate.getId(), group.getId(), permission);
}

public void addGroupToTemplate(long templateId, @Nullable Integer groupId, String permission) {
    dbClient.permissionTemplateDao().insertGroupPermission(dbSession, templateId, groupId, permission);
    db.commit();
}

public void addAnyoneToTemplate(PermissionTemplateDto permissionTemplate, String permission) {
    addGroupToTemplate(permissionTemplate.getId(), null, permission);
}

public void addUserToTemplate(PermissionTemplateDto permissionTemplate, UserDto user, String permission) {
    addUserToTemplate(permissionTemplate.getId(), user.getId(), permission);
}

public void addUserToTemplate(long templateId, int userId, String permission) {
    dbClient.permissionTemplateDao().insertUserPermission(dbSession, templateId, userId, permission);
    db.commit();
}

public void addProjectCreatorToTemplate(PermissionTemplateDto permissionTemplate, String permission) {
    addProjectCreatorToTemplate(permissionTemplate.getId(), permission);
}

public void addProjectCreatorToTemplate(long templateId, String permission) {
    dbClient.permissionTemplateCharacteristicDao().insert(dbSession, newPermissionTemplateCharacteristicDto()
        .setWithProjectCreator(true)
        .setTemplateId(templateId)

```

```

        .setPermission(permission));
    db.commit();
}
}
/*
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 * mailto:info AT sonarsource DOT com
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission.template;

import java.util.ArrayList;
import java.util.Date;
import java.util.List;
import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;

import static com.google.common.primitives.Longs.asList;
import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.tuple;
import static org.mockito.Mockito.mock;
import static org.mockito.Mockito.when;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.CODEVIEWER;
import static org.sonar.api.web.UserRole.ISSUE_ADMIN;

```

```

import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.db.permission.template.PermissionTemplateTesting.newPermissionTemplateDto;
import static org.sonar.db.user.GroupTesting.newGroupDto;

public class PermissionTemplateDaoTest {

    private static final Date PAST = new Date(100_000_000_000L);
    private static final Date NOW = new Date(500_000_000_000L);

    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    @Rule
    public DbTester db = DbTester.create();

    private System2 system2 = mock(System2.class);
    private DbSession dbSession = db.getSession();
    private PermissionTemplateDbTester templateDb = db.permissionTemplates();

    private PermissionTemplateDao underTest = new PermissionTemplateDao(system2);

    @Before
    public void setUp() throws Exception {
        when(system2.now()).thenReturn(NOW.getTime());
    }

    @Test
    public void should_create_permission_template() {
        PermissionTemplateDto permissionTemplate = underTest.insert(db.getSession(), newPermissionTemplateDto()
            .setUuid("ABCD")
            .setName("my template")
            .setDescription("my description")
            .setKeyPattern("myregexp")
            .setOrganizationUuid("org")
            .setCreatedAt(PAST)
            .setUpdatedAt(NOW));
        db.commit();

        assertThat(underTest.selectByUuid(db.getSession(), permissionTemplate.getUuid()))
            .extracting(PermissionTemplateDto::getUuid, PermissionTemplateDto::getName,
                PermissionTemplateDto::getDescription, PermissionTemplateDto::getKeyPattern,
                PermissionTemplateDto::getOrganizationUuid, PermissionTemplateDto::getCreatedAt,
                PermissionTemplateDto::getUpdatedAt)
            .containsOnly("ABCD", "my template", "my description", "myregexp", "org", PAST, NOW);
    }

    @Test

```

```

public void should_select_permission_template_by_uuid() {
    templateDb.insertTemplate(newPermissionTemplateDto()
        .setUuid("ABCD")
        .setName("my template")
        .setDescription("my description")
        .setKeyPattern("myregexp")
        .setOrganizationUuid("org"));

    assertThat(underTest.selectByUuid(db.getSession(), "ABCD"))
        .extracting(PermissionTemplateDto::getUuid, PermissionTemplateDto::getName,
PermissionTemplateDto::getDescription, PermissionTemplateDto::getKeyPattern,
        PermissionTemplateDto::getOrganizationUuid)
        .containsOnly("ABCD", "my template", "my description", "myregexp", "org");
}

@Test
public void selectAll_without_name_filtering() {
    templateDb.insertTemplate(newPermissionTemplateDto()
        .setUuid("tpl1")
        .setName("template1")
        .setDescription("description1")
        .setOrganizationUuid("org"));
    templateDb.insertTemplate(newPermissionTemplateDto()
        .setUuid("tpl2")
        .setName("template2")
        .setDescription("description2")
        .setOrganizationUuid("org"));
    templateDb.insertTemplate(newPermissionTemplateDto()
        .setUuid("tpl3")
        .setName("template3")
        .setDescription("description3")
        .setOrganizationUuid("org"));

    assertThat(underTest.selectAll(dbSession, "org", null))
        .extracting(PermissionTemplateDto::getUuid, PermissionTemplateDto::getName,
PermissionTemplateDto::getDescription)
        .containsOnly(
            tuple("tpl1", "template1", "description1"),
            tuple("tpl2", "template2", "description2"),
            tuple("tpl3", "template3", "description3"));
    assertThat(underTest.selectAll(dbSession, "missingOrg", null)).isEmpty();
}

@Test
public void selectAll_with_name_filtering() {
    PermissionTemplateDto t1InOrg1 =
templateDb.insertTemplate(newPermissionTemplateDto().setName("aBcDeF").setOrganizationUuid("org1"));
    PermissionTemplateDto t2InOrg1 =

```

```

templateDb.insertTemplate(newPermissionTemplateDto().setName("cdefgh").setOrganizationUuid("org1"));
    PermissionTemplateDto t3InOrg1 =
templateDb.insertTemplate(newPermissionTemplateDto().setName("hijkl").setOrganizationUuid("org2"));
    PermissionTemplateDto t4InOrg2 =
templateDb.insertTemplate(newPermissionTemplateDto().setName("cdefgh").setOrganizationUuid("org2"));

    assertThat(underTest.selectAll(dbSession, "org1",
"def")).extracting(PermissionTemplateDto::getId).containsExactly(t1InOrg1.getId(), t2InOrg1.getId());
    assertThat(underTest.selectAll(dbSession, "org1", "missing")).isEmpty();
}

@Test
public void should_update_permission_template() {
    PermissionTemplateDto permissionTemplateDto = templateDb.insertTemplate(newPermissionTemplateDto()
        .setUuid("ABCD")
        .setName("name")
        .setDescription("description")
        .setKeyPattern("regexp")
        .setOrganizationUuid("org")
        .setCreatedAt(PAST)
        .setUpdatedAt(PAST));

    underTest.update(dbSession, permissionTemplateDto
        .setName("new_name")
        .setDescription("new_description")
        .setKeyPattern("new_regexp")
        .setUpdatedAt(NOW)
        // Invariant fields, should not be updated
        .setUuid("new UUID")
        .setOrganizationUuid("new org")
        .setCreatedAt(NOW));
    db.commit();

    assertThat(underTest.selectByUuid(db.getSession(), "ABCD"))
        .extracting(PermissionTemplateDto::getUuid, PermissionTemplateDto::getName,
PermissionTemplateDto::getDescription, PermissionTemplateDto::getKeyPattern,
        PermissionTemplateDto::getOrganizationUuid, PermissionTemplateDto::getCreatedAt,
PermissionTemplateDto::getUpdatedAt)
        .containsOnly("ABCD", "new_name", "new_description", "new_regexp", "org", PAST, NOW);
}

@Test
public void should_delete_permission_template() {
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    PermissionTemplateDto permissionTemplate1 = templateDb.insertTemplate(db.getDefaultOrganization());

```

```

PermissionTemplateDto permissionTemplate2 = templateDb.insertTemplate(db.getDefaultOrganization());
templateDb.addUserToTemplate(permissionTemplate1, user1, "user");
templateDb.addUserToTemplate(permissionTemplate1, user2, "user");
templateDb.addUserToTemplate(permissionTemplate1, user2, "admin");
templateDb.addUserToTemplate(permissionTemplate2, user2, "admin");
templateDb.addGroupToTemplate(permissionTemplate1, group1, "user");
templateDb.addGroupToTemplate(permissionTemplate1, group2, "user");
templateDb.addAnyoneToTemplate(permissionTemplate1, "admin");
templateDb.addAnyoneToTemplate(permissionTemplate2, "admin");
templateDb.addProjectCreatorToTemplate(permissionTemplate1.getId(), "user");
templateDb.addProjectCreatorToTemplate(permissionTemplate2.getId(), "user");

underTest.deleteById(dbSession, permissionTemplate1.getId());
dbSession.commit();

assertThat(underTest.selectAll(db.getSession(), db.getDefaultOrganization().getUuid(), null)
    .extracting(PermissionTemplateDto::getUuid)
    .containsOnly(permissionTemplate2.getUuid());
assertThat(db.getClient().permissionTemplateDao().selectUserPermissionsByTemplateId(db.getSession(),
permissionTemplate1.getId())).isEmpty();
assertThat(db.getClient().permissionTemplateDao().selectUserPermissionsByTemplateId(db.getSession(),
permissionTemplate2.getId())).hasSize(1);
assertThat(db.getClient().permissionTemplateDao().selectGroupPermissionsByTemplateId(db.getSession(),
permissionTemplate1.getId())).isEmpty();
assertThat(db.getClient().permissionTemplateDao().selectGroupPermissionsByTemplateId(db.getSession(),
permissionTemplate2.getId())).hasSize(1);
assertThat(db.getClient().permissionTemplateCharacteristicDao().selectByTemplateIds(db.getSession(),
asList(permissionTemplate1.getId(), permissionTemplate2.getId())))
    .extracting(PermissionTemplateCharacteristicDto::getTemplateId)
    .containsOnly(permissionTemplate2.getId());
}

@Test
public void should_add_user_permission_to_template() {
    PermissionTemplateDto permissionTemplate = templateDb.insertTemplate(db.getDefaultOrganization());
    UserDto user = db.users().insertUser();

    underTest.insertUserPermission(dbSession, permissionTemplate.getId(), user.getId(), "user");

    assertThat(db.getClient().permissionTemplateDao().selectUserPermissionsByTemplateId(db.getSession(),
permissionTemplate.getId()))
        .extracting(PermissionTemplateUserDto::getTemplateId, PermissionTemplateUserDto::getUserId,
PermissionTemplateUserDto::getPermission, PermissionTemplateUserDto::getCreatedAt,
PermissionTemplateUserDto::getUpdatedAt)
        .containsOnly(tuple(permissionTemplate.getId(), user.getId(), "user", NOW, NOW));
}

@Test

```

```

public void should_remove_user_permission_from_template() {
    PermissionTemplateDto permissionTemplate = templateDb.insertTemplate(db.getDefaultOrganization());
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    templateDb.addUserToTemplate(permissionTemplate, user1, "user");
    templateDb.addUserToTemplate(permissionTemplate, user1, "admin");
    templateDb.addUserToTemplate(permissionTemplate, user2, "user");

    underTest.deleteUserPermission(dbSession, permissionTemplate.getId(), user1.getId(), "user");

    assertThat(db.getDbClient().permissionTemplateDao().selectUserPermissionsByTemplateId(db.getSession(),
permissionTemplate.getId()))
        .extracting(PermissionTemplateUserDto::getUserId, PermissionTemplateUserDto::getPermission)
        .containsOnly(tuple(user1.getId(), "admin"), tuple(user2.getId(), "user"));
}

@Test
public void should_add_group_permission_to_template() {
    PermissionTemplateDto permissionTemplate = templateDb.insertTemplate(db.getDefaultOrganization());
    GroupDto group = db.users().insertGroup();

    underTest.insertGroupPermission(dbSession, permissionTemplate.getId(), group.getId(), "user");
    dbSession.commit();

    assertThat(db.getDbClient().permissionTemplateDao().selectGroupPermissionsByTemplateId(db.getSession(),
permissionTemplate.getId()))
        .extracting(PermissionTemplateGroupDto::getTemplateId, PermissionTemplateGroupDto::getGroupId,
PermissionTemplateGroupDto::getPermission,
PermissionTemplateGroupDto::getCreatedAt,
PermissionTemplateGroupDto::getUpdatedAt)
        .containsOnly(tuple(permissionTemplate.getId(), group.getId(), "user", NOW, NOW));
}

@Test
public void remove_by_group() {
    PermissionTemplateDto permissionTemplate = templateDb.insertTemplate(db.getDefaultOrganization());
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    templateDb.addGroupToTemplate(permissionTemplate, group1, "user");
    templateDb.addGroupToTemplate(permissionTemplate, group1, "admin");
    templateDb.addGroupToTemplate(permissionTemplate, group2, "user");

    underTest.deleteByGroup(db.getSession(), group1.getId());
    db.getSession().commit();

    assertThat(db.getDbClient().permissionTemplateDao().selectGroupPermissionsByTemplateId(db.getSession(),
permissionTemplate.getId()))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getPermission)

```



```

        .containsOnly(tuple(group2.getId(), "user"));
    }

    @Test
    public void should_add_group_permission_to_anyone() {
        PermissionTemplateDto permissionTemplate = templateDb.insertTemplate(db.getDefaultOrganization());

        underTest.insertGroupPermission(dbSession, permissionTemplate.getId(), null, "user");
        dbSession.commit();

        assertThat(db.getClient().permissionTemplateDao().selectGroupPermissionsByTemplateId(db.getSession(),
            permissionTemplate.getId()))
            .extracting(PermissionTemplateGroupDto::getTemplateId, PermissionTemplateGroupDto::getGroupId,
                PermissionTemplateGroupDto::getGroupName,
                PermissionTemplateGroupDto::getPermission)
            .containsOnly(tuple(permissionTemplate.getId(), 0, "Anyone", "user"));
    }

    @Test
    public void group_count_by_template_and_permission() {
        PermissionTemplateDto template1 = templateDb.insertTemplate();
        PermissionTemplateDto template2 = templateDb.insertTemplate();
        PermissionTemplateDto template3 = templateDb.insertTemplate();
        PermissionTemplateDto template4 = templateDb.insertTemplate();
        GroupDto group1 = db.users().insertGroup(new GroupDto());
        GroupDto group2 = db.users().insertGroup(new GroupDto());
        GroupDto group3 = db.users().insertGroup(new GroupDto());
        templateDb.addGroupToTemplate(template1.getId(), group1.getId(), CODEVIEWER);
        templateDb.addGroupToTemplate(template1.getId(), group2.getId(), CODEVIEWER);
        templateDb.addGroupToTemplate(template1.getId(), group3.getId(), CODEVIEWER);
        templateDb.addGroupToTemplate(template1.getId(), null, CODEVIEWER);
        templateDb.addGroupToTemplate(template1.getId(), group1.getId(), ADMIN);
        templateDb.addGroupToTemplate(template2.getId(), group1.getId(), ADMIN);
        templateDb.addGroupToTemplate(template4.getId(), group1.getId(), ISSUE_ADMIN);

        final List<CountByTemplateAndPermissionDto> result = new ArrayList<>();
        underTest.groupsCountByTemplateIdAndPermission(dbSession, asList(template1.getId(), template2.getId(),
            template3.getId()),
            context -> result.add(context.getResultObject()));

        assertThat(result).extracting(CountByTemplateAndPermissionDto::getPermission,
            CountByTemplateAndPermissionDto::getTemplateId, CountByTemplateAndPermissionDto::getCount)
            .containsOnly(tuple(ADMIN, template1.getId(), 1), tuple(CODEVIEWER, template1.getId(), 4), tuple(ADMIN,
                template2.getId(), 1));
    }

    @Test
    public void user_count_by_template_and_permission() {

```

```

PermissionTemplateDto template1 = templateDb.insertTemplate();
PermissionTemplateDto template2 = templateDb.insertTemplate();
PermissionTemplateDto template3 = templateDb.insertTemplate();
PermissionTemplateDto anotherTemplate = templateDb.insertTemplate();

UserDto user1 = db.users().insertUser();
UserDto user2 = db.users().insertUser();
UserDto user3 = db.users().insertUser();

templateDb.addUserToTemplate(template1.getId(), user1.getId(), ADMIN);
templateDb.addUserToTemplate(template1.getId(), user2.getId(), ADMIN);
templateDb.addUserToTemplate(template1.getId(), user3.getId(), ADMIN);
templateDb.addUserToTemplate(template1.getId(), user1.getId(), USER);
templateDb.addUserToTemplate(template2.getId(), user1.getId(), USER);
templateDb.addUserToTemplate(anotherTemplate.getId(), user1.getId(), ISSUE_ADMIN);

final List<CountByTemplateAndPermissionDto> result = new ArrayList<>();
underTest.usersCountByTemplateIdAndPermission(dbSession, asList(template1.getId(), template2.getId(),
template3.getId()),
    context -> result.add(context.getResultObject()));
assertThat(result)
    .extracting(CountByTemplateAndPermissionDto::getPermission,
CountByTemplateAndPermissionDto::getTemplateId, CountByTemplateAndPermissionDto::getCount)
    .containsExactlyInAnyOrder(
        tuple(ADMIN, template1.getId(), 3),
        tuple(USER, template1.getId(), 1),
        tuple(USER, template2.getId(), 1));
}

@Test
public void selectPotentialPermissions_with_unknown_template_and_no_user() {
    List<String> result = underTest.selectPotentialPermissionsByUserIdAndTemplateId(dbSession, null, 42L);

    assertThat(result).isEmpty();
}

@Test
public void selectPotentialPermissions_with_empty_template_and_new_user() {
    UserDto user = db.users().insertUser();
    PermissionTemplateDto template = templateDb.insertTemplate();

    List<String> result = underTest.selectPotentialPermissionsByUserIdAndTemplateId(dbSession, user.getId(),
template.getId());

    assertThat(result).isEmpty();
}

@Test

```

```

public void selectPotentialPermission_with_template_users_groups_and_project_creator() {
    UserDto user = db.users().insertUser();
    GroupDto group = db.users().insertGroup(new GroupDto());
    db.users().insertMember(group, user);
    PermissionTemplateDto template = templateDb.insertTemplate();
    templateDb.addProjectCreatorToTemplate(template.getId(), SCAN_EXECUTION);
    templateDb.addProjectCreatorToTemplate(template.getId(), UserRole.ADMIN);
    templateDb.addUserToTemplate(template.getId(), user.getId(), UserRole.USER);
    templateDb.addUserToTemplate(template.getId(), user.getId(), UserRole.ADMIN);
    templateDb.addGroupToTemplate(template.getId(), group.getId(), UserRole.CODEVIEWER);
    templateDb.addGroupToTemplate(template.getId(), group.getId(), UserRole.ADMIN);
    templateDb.addGroupToTemplate(template.getId(), null, UserRole.ISSUE_ADMIN);

    List<String> resultWithUser = underTest.selectPotentialPermissionsByUserIdAndTemplateId(dbSession,
user.getId(), template.getId());
    List<String> resultWithoutUser = underTest.selectPotentialPermissionsByUserIdAndTemplateId(dbSession, null,
template.getId());

    assertThat(resultWithUser).containsOnlyOnce(SCAN_EXECUTION, UserRole.ADMIN, UserRole.USER,
UserRole.CODEVIEWER, UserRole.ISSUE_ADMIN);
    // only permission from anyone group
    assertThat(resultWithoutUser).containsOnly(UserRole.ISSUE_ADMIN);
}

@Test
public void selectAllGroupPermissionTemplatesByGroupId() {
    PermissionTemplateDto permissionTemplate = templateDb.insertTemplate(db.getDefaultOrganization());
    GroupDto group1 = db.users().insertGroup();
    GroupDto group2 = db.users().insertGroup();
    templateDb.addGroupToTemplate(permissionTemplate, group1, "user");
    templateDb.addGroupToTemplate(permissionTemplate, group1, "admin");
    templateDb.addGroupToTemplate(permissionTemplate, group2, "user");

    assertThat(db.getDbClient().permissionTemplateDao().selectAllGroupPermissionTemplatesByGroupId(db.getSessi
on(), group1.getId()))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getPermission)
        .containsOnly(tuple(group1.getId(), "user"), tuple(group1.getId(), "admin"));
}

@Test
public void deleteByOrganization_does_not_fail_on_empty_db() {
    underTest.deleteByOrganization(dbSession, "some uuid");
    dbSession.commit();
}

@Test
public void deleteByOrganization_does_not_fail_when_organization_has_no_template() {
    OrganizationDto organization = db.organizations().insert();

```

```

underTest.deleteByOrganization(dbSession, organization.getUuid());
dbSession.commit();
}

@Test
public void deleteByOrganization_delete_all_templates_of_organization_and_content_of_child_tables() {
    OrganizationDto organization1 = db.organizations().insert();
    OrganizationDto organization2 = db.organizations().insert();
    OrganizationDto organization3 = db.organizations().insert();

    PermissionTemplateDto[] templates = {
        createTemplate(organization1),
        createTemplate(organization2),
        createTemplate(organization3),
        createTemplate(organization1),
        createTemplate(organization2)
    };

    verifyTemplateIdsInDb(templates[0].getId(), templates[1].getId(), templates[2].getId(), templates[3].getId(),
templates[4].getId());

    underTest.deleteByOrganization(dbSession, organization2.getUuid());
    dbSession.commit();
    verifyTemplateIdsInDb(templates[0].getId(), templates[2].getId(), templates[3].getId());

    underTest.deleteByOrganization(dbSession, organization3.getUuid());
    dbSession.commit();
    verifyTemplateIdsInDb(templates[0].getId(), templates[3].getId());

    underTest.deleteByOrganization(dbSession, organization1.getUuid());
    dbSession.commit();
    verifyTemplateIdsInDb();
}

@Test
public void delete_user_permissions_by_organization() {
    OrganizationDto organization = db.organizations().insert();
    OrganizationDto anotherOrganization = db.organizations().insert();
    UserDto user = db.users().insertUser();
    UserDto anotherUser = db.users().insertUser();
    PermissionTemplateDto template = db.permissionTemplates().insertTemplate(organization);
    PermissionTemplateDto anotherTemplate = db.permissionTemplates().insertTemplate(anotherOrganization);
    String permission = "PERMISSION";
    db.permissionTemplates().addUserToTemplate(template.getId(), user.getId(), permission);
    db.permissionTemplates().addUserToTemplate(template.getId(), anotherUser.getId(), permission);
    db.permissionTemplates().addUserToTemplate(anotherTemplate.getId(), user.getId(), permission);
}

```

```

underTest.deleteUserPermissionsByOrganization(dbSession, organization.getUuid(), user.getId());

assertThat(underTest.selectUserPermissionsByTemplateId(dbSession,
template.getId())).extracting(PermissionTemplateUserDto::getUserId).containsOnly(anotherUser.getId());
assertThat(underTest.selectUserPermissionsByTemplateId(dbSession,
anotherTemplate.getId())).extracting(PermissionTemplateUserDto::getUserId).containsOnly(user.getId());
}

@Test
public void delete_user_permissions_by_user_id() {
    OrganizationDto organization = db.organizations().insert();
    OrganizationDto anotherOrganization = db.organizations().insert();
    UserDto user = db.users().insertUser();
    UserDto anotherUser = db.users().insertUser();
    PermissionTemplateDto template = db.permissionTemplates().insertTemplate(organization);
    PermissionTemplateDto anotherTemplate = db.permissionTemplates().insertTemplate(anotherOrganization);
    String permission = "PERMISSION";
    db.permissionTemplates().addUserToTemplate(template.getId(), user.getId(), permission);
    db.permissionTemplates().addUserToTemplate(template.getId(), anotherUser.getId(), permission);
    db.permissionTemplates().addUserToTemplate(anotherTemplate.getId(), user.getId(), permission);

    underTest.deleteUserPermissionsByUserId(dbSession, user.getId());
    db.commit();

    assertThat(db.select("select template_id as \"templateId\", user_id as \"userId\", permission_reference as
\"permission\" from perm_templates_users"))
        .extracting((row) -> row.get("templateId"), (row) -> row.get("userId"), (row) -> row.get("permission"))
        .containsOnly(tuple(template.getId(), anotherUser.getId().longValue(), permission));
}

private PermissionTemplateDto createTemplate(OrganizationDto organization) {
    UserDto user = db.users().insertUser();
    GroupDto group = db.users().insertGroup();
    db.users().insertMember(group, user);
    PermissionTemplateDto template = templateDb.insertTemplate(organization);
    templateDb.addProjectCreatorToTemplate(template.getId(), SCAN_EXECUTION);
    templateDb.addProjectCreatorToTemplate(template.getId(), UserRole.ADMIN);
    templateDb.addUserToTemplate(template.getId(), user.getId(), UserRole.USER);
    templateDb.addUserToTemplate(template.getId(), user.getId(), UserRole.ADMIN);
    templateDb.addGroupToTemplate(template.getId(), group.getId(), UserRole.CODEVIEWER);
    templateDb.addGroupToTemplate(template.getId(), group.getId(), UserRole.ADMIN);
    templateDb.addGroupToTemplate(template.getId(), null, UserRole.ISSUE_ADMIN);
    return template;
}

private void verifyTemplateIdsInDb(Long... expectedTemplateIds) {
    assertThat(db.select("select distinct template_id as \"templateId\" from perm_templates_groups"))
        .extracting((row) -> (Long) row.get("templateId"))

```

```

        .containsOnly(expectedTemplateIds);
        assertThat(db.select("select distinct template_id as \"templateId\" from perm_templates_users"))
            .extracting((row) -> (Long) row.get("templateId"))
            .containsOnly(expectedTemplateIds);
        assertThat(db.select("select distinct template_id as \"templateId\" from perm_tpl_characteristics"))
            .extracting((row) -> (Long) row.get("templateId"))
            .containsOnly(expectedTemplateIds);
        assertThat(db.select("select distinct id as \"templateId\" from permission_templates"))
            .extracting((row) -> (Long) row.get("templateId"))
            .containsOnly(expectedTemplateIds);
    }

}

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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission.template;

import com.google.common.base.Strings;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;

public class PermissionTemplateCharacteristicDtoTest {
    @Rule
    public ExpectedException expectedException = ExpectedException.none();

    PermissionTemplateCharacteristicDto underTest = new PermissionTemplateCharacteristicDto();

    @Test
    public void check_permission_field_length() {
        expectedException.expect(IllegalArgumentException.class);
    }
}

```

```

    expectedException
        .expectMessage("Permission key length (65) is longer than the maximum authorized (64).
'aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa' was provided.");

    underTest.setPermission(Strings.repeat("a", 65));
}
}
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 */
package org.sonar.db.permission.template;

import java.util.Date;
import org.apache.commons.lang.math.RandomUtils;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.core.util.Uuids;

import static org.apache.commons.lang.RandomStringUtils.randomAlphanumeric;
import static org.apache.commons.lang.RandomStringUtils.randomAscii;

public class PermissionTemplateTesting {
    public static PermissionTemplateDto newPermissionTemplateDto() {
        return new PermissionTemplateDto()
            .setName(randomAlphanumeric(60))
            .setDescription(randomAscii(500))
            .setOrganizationUuid(randomAlphanumeric(40))
            .setUuid(Uuids.create())
            .setCreatedAt(new Date())
            .setUpdatedAt(new Date());
    }

    public static PermissionTemplateUserDto newPermissionTemplateUserDto() {

```

```

return new PermissionTemplateUserDto()
    .setPermission(ProjectPermissions.ALL.get(RandomUtils.nextInt(ProjectPermissions.ALL.size())))
    .setCreatedAt(new Date())
    .setUpdatedAt(new Date());
}

public static PermissionTemplateGroupDto newPermissionTemplateGroupDto() {
return new PermissionTemplateGroupDto()
    .setPermission(ProjectPermissions.ALL.get(RandomUtils.nextInt(ProjectPermissions.ALL.size())))
    .setCreatedAt(new Date())
    .setUpdatedAt(new Date());
}

public static PermissionTemplateCharacteristicDto newPermissionTemplateCharacteristicDto() {
return new PermissionTemplateCharacteristicDto()
    .setPermission(ProjectPermissions.ALL.get(RandomUtils.nextInt(ProjectPermissions.ALL.size())))
    .setWithProjectCreator(RandomUtils.nextBoolean())
    .setCreatedAt(System.currentTimeMillis())
    .setUpdatedAt(System.currentTimeMillis());
}
}
}
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* along with this program; if not, write to the Free Software Foundation,
* Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
*/
package org.sonar.db.permission.template;

import java.util.Collections;
import java.util.List;
import java.util.stream.IntStream;
import org.junit.Rule;
import org.junit.Test;

```



```

import org.sonar.api.utils.System2;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.permission.PermissionQuery;
import org.sonar.db.user.GroupDto;

import static java.util.Arrays.asList;
import static org.assertj.core.api.Assertions.assertThat;
import static org.assertj.core.api.Assertions.tuple;
import static org.sonar.api.web.UserRole.ADMIN;
import static org.sonar.api.web.UserRole.USER;
import static org.sonar.core.permission.GlobalPermissions.PROVISIONING;
import static org.sonar.db.permission.PermissionQuery.builder;
import static org.sonar.db.user.GroupTesting.newGroupDto;

public class GroupWithPermissionTemplateDaoTest {

    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);

    private DbSession session = db.getSession();
    private PermissionTemplateDbTester permissionTemplateDbTester = db.permissionTemplates();
    private PermissionTemplateDao underTest = db.getDbClient().permissionTemplateDao();

    @Test
    public void select_group_names_by_query_and_template() {
        OrganizationDto organization = db.organizations().insert();
        GroupDto group1 = db.users().insertGroup(organization, "Group-1");
        GroupDto group2 = db.users().insertGroup(organization, "Group-2");
        GroupDto group3 = db.users().insertGroup(organization, "Group-3");

        PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate(organization);
        permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), USER);
        permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), ADMIN);
        permissionTemplateDbTester.addGroupToTemplate(template.getId(), group2.getId(), PROVISIONING);

        PermissionTemplateDto anotherTemplate = permissionTemplateDbTester.insertTemplate(organization);
        permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), null, USER);
        permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), group1.getId(), PROVISIONING);

        assertThat(selectGroupNamesByQueryAndTemplate(builder(), organization, template))
            .containsOnly("Group-1", "Group-2", "Group-3", "Anyone");
        assertThat(selectGroupNamesByQueryAndTemplate(builder().withAtLeastOnePermission(), organization,
            template))
            .containsOnly("Group-1", "Group-2");
        assertThat(selectGroupNamesByQueryAndTemplate(builder().setPermission(USER), organization, template))
            .containsOnly("Group-1");
    }
}

```

```

    assertThat(selectGroupNamesByQueryAndTemplate(builder().setPermission(USER), organization,
anotherTemplate))
        .containsOnly("Anyone");
    assertThat(selectGroupNamesByQueryAndTemplate(builder().setSearchQuery("groU"), organization, template))
        .containsOnly("Group-1", "Group-2", "Group-3");
    assertThat(selectGroupNamesByQueryAndTemplate(builder().setSearchQuery("nYo"), organization, template))
        .containsOnly("Anyone");
    assertThat(selectGroupNamesByQueryAndTemplate(builder().setSearchQuery("p-2"), organization, template))
        .containsOnly("Group-2");

    assertThat(selectGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).withAt
LeastOnePermission().build(), organization, 123L))
        .isEmpty();
    assertThat(selectGroupNamesByQueryAndTemplate(builder().setSearchQuery("unknown"), organization,
template))
        .isEmpty();
}

```

@Test

```

public void select_group_names_by_query_and_template_is_ordered_by_group_names() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group2 = db.users().insertGroup(organization, "Group-2");
    db.users().insertGroup(organization, "Group-3");
    db.users().insertGroup(organization, "Group-1");

    PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate(organization);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group2.getId(), USER);

    assertThat(selectGroupNamesByQueryAndTemplate(builder(), organization, template))
        .containsExactly("Anyone", "Group-1", "Group-2", "Group-3");
}

```

@Test

```

public void select_group_names_by_query_and_template_is_paginated() {
    OrganizationDto organization = db.organizations().insert();
    IntStream.rangeClosed(0, 9).forEach(i -> db.users().insertGroup(organization, i + "-name"));

    PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate(organization);

    assertThat(selectGroupNamesByQueryAndTemplate(builder().setPageIndex(1).setPageSize(1), organization,
template))
        .containsExactly("0-name");
    assertThat(selectGroupNamesByQueryAndTemplate(builder().setPageIndex(2).setPageSize(3), organization,
template))
        .containsExactly("3-name", "4-name", "5-name");
}

```

@Test

```

public void select_group_names_by_query_and_template_returns_anyone() {
    OrganizationDto organization = db.organizations().insert();
    PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate(organization);

    GroupDto group = db.users().insertGroup(newGroupDto().setName("Group"));
    PermissionTemplateDto otherTemplate = permissionTemplateDbTester.insertTemplate(organization);
    permissionTemplateDbTester.addGroupToTemplate(otherTemplate.getId(), group.getId(), USER);

    assertThat(selectGroupNamesByQueryAndTemplate(builder().setSearchQuery("nyo"), organization, template))
        .containsExactly("Anyone");
}

@Test
public void count_group_names_by_query_and_template() {
    OrganizationDto organization = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(organization, "Group-1");
    GroupDto group2 = db.users().insertGroup(organization, "Group-2");
    GroupDto group3 = db.users().insertGroup(organization, "Group-3");

    PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate(organization);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), USER);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), ADMIN);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group2.getId(), PROVISIONING);

    PermissionTemplateDto anotherTemplate = permissionTemplateDbTester.insertTemplate(organization);
    permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), null, USER);
    permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), group1.getId(), PROVISIONING);

    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()),
organization, template))
        .isEqualTo(4);
    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).withAt
LeastOnePermission(), organization, template))
        .isEqualTo(2);
    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).setPer
mission(USER), organization, template)).isEqualTo(1);
    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).setPer
mission(USER), organization, anotherTemplate))
        .isEqualTo(1);
    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).setSear
chQuery("groU"), organization, template))
        .isEqualTo(3);
    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).setSear
chQuery("nYo"), organization, template))
        .isEqualTo(1);
    assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).setSear
chQuery("p-2"), organization, template))
        .isEqualTo(1);
}

```

```

assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).withAtLeastOnePermission().build(), organization, 123L))
    .isZero();
assertThat(countGroupNamesByQueryAndTemplate(builder().setOrganizationUuid(organization.getUuid()).setSearchQuery("unknown"), organization, template))
    .isZero();
}

@Test
public void select_group_permissions_by_template_id_and_group_names() {
    GroupDto group1 = db.users().insertGroup(newGroupDto().setName("Group-1"));
    GroupDto group2 = db.users().insertGroup(newGroupDto().setName("Group-2"));
    GroupDto group3 = db.users().insertGroup(newGroupDto().setName("Group-3"));

    PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate();
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), USER);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), ADMIN);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group2.getId(), PROVISIONING);

    PermissionTemplateDto anotherTemplate = permissionTemplateDbTester.insertTemplate();
    permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), null, USER);
    permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), group1.getId(), PROVISIONING);

    assertThat(underTest.selectGroupPermissionsByTemplateIdAndGroupNames(session, template.getId(),
asList("Group-1")))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getGroupName,
PermissionTemplateGroupDto::getPermission)
        .containsOnly(
            tuple(group1.getId(), "Group-1", USER),
            tuple(group1.getId(), "Group-1", ADMIN));

    assertThat(underTest.selectGroupPermissionsByTemplateIdAndGroupNames(session, anotherTemplate.getId(),
asList("Group-1")))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getGroupName,
PermissionTemplateGroupDto::getPermission)
        .containsOnly(
            tuple(group1.getId(), "Group-1", PROVISIONING));

    assertThat(underTest.selectGroupPermissionsByTemplateIdAndGroupNames(session, anotherTemplate.getId(),
asList("Anyone")))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getGroupName,
PermissionTemplateGroupDto::getPermission)
        .containsOnly(
            tuple(0, "Anyone", USER));

    assertThat(underTest.selectGroupPermissionsByTemplateIdAndGroupNames(session, template.getId(),
asList("Group-1", "Group-2", "Anyone")))
        .hasSize(3);
}

```

```

    assertThat(underTest.selectGroupPermissionsByTemplateIdAndGroupNames(session, template.getId(),
asList("Unknown")))
        .isEmpty();
    assertThat(underTest.selectGroupPermissionsByTemplateIdAndGroupNames(session, template.getId(),
Collections.emptyList()))
        .isEmpty();
}

@Test
public void select_group_permissions_by_template_id() {
    GroupDto group1 = db.users().insertGroup(new GroupDto().setName("Group-1"));
    GroupDto group2 = db.users().insertGroup(new GroupDto().setName("Group-2"));
    GroupDto group3 = db.users().insertGroup(new GroupDto().setName("Group-3"));

    PermissionTemplateDto template = permissionTemplateDbTester.insertTemplate();
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), USER);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group1.getId(), ADMIN);
    permissionTemplateDbTester.addGroupToTemplate(template.getId(), group2.getId(), PROVISIONING);

    PermissionTemplateDto anotherTemplate = permissionTemplateDbTester.insertTemplate();
    permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), null, USER);
    permissionTemplateDbTester.addGroupToTemplate(anotherTemplate.getId(), group1.getId(), PROVISIONING);

    assertThat(underTest.selectGroupPermissionsByTemplateId(session, template.getId()))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getGroupName,
PermissionTemplateGroupDto::getPermission)
        .containsOnly(
            tuple(group1.getId(), "Group-1", USER),
            tuple(group1.getId(), "Group-1", ADMIN),
            tuple(group2.getId(), "Group-2", PROVISIONING));
    assertThat(underTest.selectGroupPermissionsByTemplateId(session, anotherTemplate.getId()))
        .extracting(PermissionTemplateGroupDto::getGroupId, PermissionTemplateGroupDto::getGroupName,
PermissionTemplateGroupDto::getPermission)
        .containsOnly(
            tuple(group1.getId(), "Group-1", PROVISIONING),
            tuple(0, "Anyone", USER));

    assertThat(underTest.selectGroupPermissionsByTemplateId(session, 321L))
        .isEmpty();
}

private List<String> selectGroupNamesByQueryAndTemplate(PermissionQuery.Builder queryBuilder,
OrganizationDto organization, PermissionTemplateDto permissionTemplateDto) {
    return
selectGroupNamesByQueryAndTemplate(queryBuilder.setOrganizationUuid(organization.getUuid()).build(),
organization, permissionTemplateDto.getId());
}

private List<String> selectGroupNamesByQueryAndTemplate(PermissionQuery query, OrganizationDto
organization, long templateId) {
    return underTest.selectGroupNamesByQueryAndTemplate(session, query, templateId);
}

```

```

}

private int countGroupNamesByQueryAndTemplate(PermissionQuery.Builder queryBuilder, OrganizationDto
organization, PermissionTemplateDto permissionTemplateDto) {
    return countGroupNamesByQueryAndTemplate(queryBuilder.build(), organization,
permissionTemplateDto.getId());
}

private int countGroupNamesByQueryAndTemplate(PermissionQuery query, OrganizationDto organization, long
templateId) {
    return underTest.countGroupNamesByQueryAndTemplate(session, query, organization.getUuid(), templateId);
}

}
/*
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 * along with this program; if not, write to the Free Software Foundation,
 * Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 */
package org.sonar.db.permission.template;

import java.util.List;
import java.util.Optional;
import org.junit.Rule;
import org.junit.Test;
import org.junit.rules.ExpectedException;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;

import static com.google.common.collect.Lists.newArrayList;
import static com.google.common.primitives.Longs.asList;
import static java.util.Collections.emptyList;

```

```

import static org.assertj.core.api.Assertions.assertThat;

public class PermissionTemplateCharacteristicDaoTest {
    @Rule
    public ExpectedException expectedException = ExpectedException.none();
    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);
    private DbSession dbSession = db.getSession();
    private PermissionTemplateCharacteristicDao underTest = new PermissionTemplateCharacteristicDao();

    @Test
    public void selectByTemplateId_filter_by_template_id() {
        PermissionTemplateCharacteristicDto templatePermission1 = underTest.insert(dbSession, new
PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.ADMIN)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(2_000_000_000L));
        PermissionTemplateCharacteristicDto templatePermission2 = underTest.insert(dbSession, new
PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(2L)
        .setWithProjectCreator(false)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(2_000_000_000L));
        PermissionTemplateCharacteristicDto templatePermissionForAnotherTemplate = underTest.insert(dbSession, new
PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.ADMIN)
        .setTemplateId(42L)
        .setWithProjectCreator(true)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(2_000_000_000L));

        List<PermissionTemplateCharacteristicDto> result = underTest.selectByTemplateIds(dbSession,
newArrayList(1L, 2L));
        assertThat(result)
            .hasSize(2)
            .extracting("id")
            .doesNotContain(templatePermissionForAnotherTemplate.getId())
            .containsOnly(templatePermission1.getId(), templatePermission2.getId());
        assertThat(result.get(0))
            .isEqualToComparingFieldByField(templatePermission1);
    }

    @Test
    public void selectByTemplateId_for_empty_list_of_template_id() {
        List<PermissionTemplateCharacteristicDto> result = underTest.selectByTemplateIds(dbSession, emptyList());
    }
}

```

```

    assertThat(result).isEmpty();
}

@Test
public void selectByPermissionAndTemplateId() {
    PermissionTemplateCharacteristicDto templatePermission1 = underTest.insert(dbSession, new
PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.ADMIN)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(2_000_000_000L));
    underTest.insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(false)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(2_000_000_000L));
    underTest.insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.ADMIN)
        .setTemplateId(42L)
        .setWithProjectCreator(true)
        .setCreatedAt(1_000_000_000L)
        .setUpdatedAt(2_000_000_000L));

    Optional<PermissionTemplateCharacteristicDto> result =
underTest.selectByPermissionAndTemplateId(dbSession, UserRole.ADMIN, 1L);

    assertThat(result).isPresent();
    assertThat(result.get()).isEqualToComparingFieldByField(templatePermission1);
}

@Test
public void insert() {
    PermissionTemplateCharacteristicDto expectedResult = underTest.insert(dbSession, new
PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(123_456_789L)
        .setUpdatedAt(2_000_000_000L));

    PermissionTemplateCharacteristicDto result =
dbSession.getMapper(PermissionTemplateCharacteristicMapper.class).selectById(expectedResult.getId());
    assertThat(result.getId()).isNotNull();
    assertThat(result).isEqualToComparingFieldByField(expectedResult);
}

```



```

@Test
public void update_only_change_with_project_creator_and_updated_at() {
    PermissionTemplateCharacteristicDto insertedDto = underTest.insert(dbSession, new
PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(123_456_789L)
        .setUpdatedAt(2_000_000_000L));

    underTest.update(dbSession, new PermissionTemplateCharacteristicDto()
        .setId(insertedDto.getId())
        .setPermission("PERMISSION_ARE_NOT_UPDATABLE")
        .setTemplateId(42L)
        .setCreatedAt(42L)
        .setWithProjectCreator(false)
        .setUpdatedAt(3_000_000_000L));

    PermissionTemplateCharacteristicDto result = underTest.selectByPermissionAndTemplateId(dbSession,
insertedDto.getPermission(), insertedDto.getTemplateId()).get();
    assertThat(result).extracting("id", "permission", "templateId", "createdAt")
        .containsExactly(insertedDto.getId(), insertedDto.getPermission(), insertedDto.getTemplateId(),
insertedDto.getCreatedAt());
    assertThat(result).extracting("withProjectCreator", "updatedAt")
        .containsExactly(false, 3_000_000_000L);
}

```

```

@Test
public void fail_insert_if_created_at_is_equal_to_0() {
    expectedException.expect(IllegalArgumentException.class);

    underTest.insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setUpdatedAt(2_000_000_000L));
}

```

```

@Test
public void fail_insert_if_updated_at_is_equal_to_0() {
    expectedException.expect(IllegalArgumentException.class);

    underTest.insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(2_000_000_000L));
}

```

```

}

@Test
public void fail_update_if_id_is_null() {
    expectedException.expect(NullPointerException.class);

    underTest.update(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(123_456_789L)
        .setUpdatedAt(2_000_000_000L));
}

@Test
public void delete_by_permission_template_id() {
    underTest.insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(1L)
        .setWithProjectCreator(true)
        .setCreatedAt(123_456_789L)
        .setUpdatedAt(2_000_000_000L));
    underTest.insert(dbSession, new PermissionTemplateCharacteristicDto()
        .setPermission(UserRole.USER)
        .setTemplateId(2L)
        .setWithProjectCreator(true)
        .setCreatedAt(123_456_789L)
        .setUpdatedAt(2_000_000_000L));

    assertThat(underTest.selectByTemplateIds(dbSession, asList(1L))).hasSize(1);
    assertThat(underTest.selectByTemplateIds(dbSession, asList(1L, 2L))).hasSize(2);

    dbSession.getMapper(PermissionTemplateCharacteristicMapper.class).deleteByTemplateId(1L);

    assertThat(underTest.selectByTemplateIds(dbSession, asList(1L))).hasSize(0);
    assertThat(underTest.selectByTemplateIds(dbSession, asList(1L, 2L))).hasSize(1);
}
}
/*
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 *

```

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\*/

```
package org.sonar.db.permission;
```

```
import org.junit.Rule;
```

```
import org.junit.Test;
```

```
import org.junit.rules.ExpectedException;
```

```
import static org.assertj.core.api.Assertions.assertThat;
```

```
public class PermissionQueryTest {
```

```
    @Rule
```

```
    public ExpectedException expectedException = ExpectedException.none();
```

```
    @Test
```

```
    public void create_query() {
```

```
        PermissionQuery query = PermissionQuery.builder()
```

```
            .setComponentUuid("COMPONENT_UUID")
```

```
            .setOrganizationUuid("ORGANIZATION_UUID")
```

```
            .setPermission("user")
```

```
            .setSearchQuery("sonar")
```

```
            .build();
```

```
        assertThat(query.getComponentUuid()).isEqualTo("COMPONENT_UUID");
```

```
        assertThat(query.getOrganizationUuid()).isEqualTo("ORGANIZATION_UUID");
```

```
        assertThat(query.getPermission()).isEqualTo("user");
```

```
        assertThat(query.getSearchQuery()).isEqualTo("sonar");
```

```
    }
```

```
    @Test
```

```
    public void create_query_with_pagination() {
```

```
        PermissionQuery query = PermissionQuery.builder()
```

```
            .setOrganizationUuid("ORGANIZATION_UUID")
```

```
            .setPageSize(10)
```

```
            .setPageIndex(5)
```

```
            .build();
```

```
        assertThat(query.getPageOffset()).isEqualTo(40);
```

```
        assertThat(query.getPageSize()).isEqualTo(10);
```

```
    }
```

```

@Test
public void create_query_with_default_pagination() {
    PermissionQuery quey = PermissionQuery.builder()
        .setOrganizationUuid("ORGANIZATION_UUID")
        .build();

    assertThat(quey.getPageOffset()).isEqualTo(0);
    assertThat(quey.getPageSize()).isEqualTo(20);
}

@Test
public void fail_when_no_organization() {
    expectedException.expect(NullPointerException.class);
    expectedException.expectMessage("Organization UUID cannot be null");

    PermissionQuery.builder().setOrganizationUuid(null).build();
}

@Test
public void fail_when_search_query_length_is_less_than_3_characters() {
    expectedException.expect(IllegalArgumentException.class);
    expectedException.expectMessage("Search query should contains at least 3 characters");

    PermissionQuery.builder()
        .setOrganizationUuid("ORGANIZATION_UUID")
        .setSearchQuery("so")
        .build();
}
}
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 */

```

```

*/
package org.sonar.db.permission;

import java.util.Collection;
import java.util.Collections;
import java.util.List;
import java.util.Random;
import java.util.Set;
import java.util.stream.Collectors;
import java.util.stream.IntStream;
import org.junit.Before;
import org.junit.Rule;
import org.junit.Test;
import org.sonar.api.utils.System2;
import org.sonar.api.web.UserRole;
import org.sonar.core.permission.ProjectPermissions;
import org.sonar.core.util.stream.MoreCollectors;
import org.sonar.db.DbSession;
import org.sonar.db.DbTester;
import org.sonar.db.component.BranchType;
import org.sonar.db.component.ComponentDto;
import org.sonar.db.organization.OrganizationDto;
import org.sonar.db.user.GroupDto;
import org.sonar.db.user.UserDto;

import static com.google.common.collect.Sets.newHashSet;
import static java.util.Collections.singleton;
import static org.assertj.core.api.Assertions.assertThat;
import static org.sonar.core.permission.GlobalPermissions.QUALITY_GATE_ADMIN;
import static org.sonar.core.permission.GlobalPermissions.SCAN_EXECUTION;
import static org.sonar.core.permission.GlobalPermissions.SYSTEM_ADMIN;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_GATES;
import static org.sonar.db.permission.OrganizationPermission.ADMINISTER_QUALITY_PROFILES;
import static org.sonar.db.permission.OrganizationPermission.SCAN;

public class AuthorizationDaoTest {

    private static final Long PROJECT_ID = 300L;
    private static final int MISSING_ID = -1;
    private static final String A_PERMISSION = "a-permission";
    private static final String DOES_NOT_EXIST = "does-not-exist";

    @Rule
    public DbTester db = DbTester.create(System2.INSTANCE);

    private final Random random = new Random();
    private DbSession dbSession = db.getSession();

```

```

private AuthorizationDao underTest = new AuthorizationDao();
private OrganizationDto organization;
private UserDto user;
private GroupDto group1;
private GroupDto group2;
private Set<Long> randomPublicProjectIds;
private Set<Long> randomPrivateProjectIds;
private Set<Integer> randomExistingUserIds;
private String randomPermission = "p" + random.nextInt();

@Before
public void setUp() throws Exception {
    organization = db.organizations().insert();
    user = db.users().insertUser();
    group1 = db.users().insertGroup(organization, "group1");
    group2 = db.users().insertGroup(organization, "group2");
    randomExistingUserIds = IntStream.range(0, 1 + Math.abs(random.nextInt(5)))
        .map(i -> db.users().insertUser().getId())
        .boxed()
        .collect(MoreCollectors.toSet());
    randomPublicProjectIds = IntStream.range(0, 1 + Math.abs(random.nextInt(5)))
        .mapToLong(i -> db.components().insertPublicProject(organization).getId())
        .boxed()
        .collect(MoreCollectors.toSet());
    randomPrivateProjectIds = IntStream.range(0, 1 + Math.abs(random.nextInt(5)))
        .mapToLong(i -> db.components().insertPrivateProject(organization).getId())
        .boxed()
        .collect(MoreCollectors.toSet());
}

/**
 * Union of the permissions granted to:
 * - the user
 * - the groups which user is member
 * - anyone
 */
@Test
public void selectOrganizationPermissions_for_logged_in_user() {
    ComponentDto project = db.components().insertPrivateProject(organization);
    db.users().insertMember(group1, user);
    db.users().insertPermissionOnUser(organization, user, "perm1");
    db.users().insertProjectPermissionOnUser(user, "perm42", project);
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertPermissionOnAnyone(organization, "perm3");

    // ignored permissions, user is not member of this group
    db.users().insertPermissionOnGroup(group2, "ignored");
}

```

```

    Set<String> permissions = underTest.selectOrganizationPermissions(dbSession, organization.getUuid(),
user.getId());

    assertThat(permissions).containsOnly("perm1", "perm2", "perm3");
}

/**
 * Anonymous user only benefits from the permissions granted to
 * "Anyone"
 */
@Test
public void selectOrganizationPermissions_for_anonymous_user() {
    db.users().insertPermissionOnAnyone(organization, "perm1");

    // ignored permissions
    db.users().insertPermissionOnUser(organization, user, "ignored");
    db.users().insertPermissionOnGroup(group1, "ignored");

    Set<String> permissions = underTest.selectOrganizationPermissionsOfAnonymous(dbSession,
organization.getUuid());

    assertThat(permissions).containsOnly("perm1");
}

@Test
public void countUsersWithGlobalPermissionExcludingGroup() {
    // users with global permission "perm1" :
    // - "u1" and "u2" through group "g1"
    // - "u1" and "u3" through group "g2"
    // - "u4"

    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();
    UserDto user4 = db.users().insertUser();
    UserDto user5 = db.users().insertUser();

    OrganizationDto organization = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(organization, "g1");
    db.users().insertPermissionOnGroup(group1, "perm1");
    db.users().insertPermissionOnGroup(group1, "perm2");
    db.users().insertMember(group1, user1);
    db.users().insertMember(group1, user2);

    GroupDto group2 = db.users().insertGroup(organization, "g2");
    db.users().insertPermissionOnGroup(group2, "perm1");
    db.users().insertPermissionOnGroup(group2, "perm2");
    db.users().insertMember(group2, user1);

```

```

db.users().insertMember(group2, user3);

// group3 has the permission "perm1" but has no users
GroupDto group3 = db.users().insertGroup(organization, "g2");
db.users().insertPermissionOnGroup(group3, "perm1");

db.users().insertPermissionOnUser(organization, user4, "perm1");
db.users().insertPermissionOnUser(organization, user4, "perm2");
db.users().insertPermissionOnAnyone(organization, "perm1");

// other organizations are ignored
OrganizationDto org2 = db.organizations().insert();
db.users().insertPermissionOnUser(org2, user1, "perm1");

// excluding group "g1" -> remain u1, u3 and u4
assertThat(underTest.countUsersWithGlobalPermissionExcludingGroup(db.getSession(),
    organization.getUuid(), "perm1", group1.getId()).isEqualTo(3);

// excluding group "g2" -> remain u1, u2 and u4
assertThat(underTest.countUsersWithGlobalPermissionExcludingGroup(db.getSession(),
    organization.getUuid(), "perm1", group2.getId()).isEqualTo(3);

// excluding group "g3" -> remain u1, u2, u3 and u4
assertThat(underTest.countUsersWithGlobalPermissionExcludingGroup(db.getSession(),
    organization.getUuid(), "perm1", group3.getId()).isEqualTo(4);

// nobody has the permission
assertThat(underTest.countUsersWithGlobalPermissionExcludingGroup(db.getSession(),
    organization.getUuid(), "missingPermission", group1.getId()).isEqualTo(0);
}

@Test
public void countUsersWithGlobalPermissionExcludingUser() {
    // group g1 has the permission p1 and has members user1 and user2
    // user3 has the permission
    UserDto user1 = db.users().insertUser();
    UserDto user2 = db.users().insertUser();
    UserDto user3 = db.users().insertUser();

    OrganizationDto organization = db.organizations().insert();
    GroupDto group1 = db.users().insertGroup(organization, "g1");
    db.users().insertPermissionOnGroup(group1, "p1");
    db.users().insertPermissionOnGroup(group1, "p2");
    db.users().insertMember(group1, user1);
    db.users().insertMember(group1, user2);
    db.users().insertPermissionOnUser(organization, user3, "p1");
    db.users().insertPermissionOnAnyone(organization, "p1");

```



```

// other organizations are ignored
OrganizationDto org2 = db.organizations().insert();
db.users().insertPermissionOnUser(org2, user1, "p1");

// excluding user1 -> remain user2 and user3
assertThat(underTest.countUsersWithGlobalPermissionExcludingUser(db.getSession(),
    organization.getUuid(), "p1", user1.getId()).isEqualTo(2);

// excluding user3 -> remain the members of group g1
assertThat(underTest.countUsersWithGlobalPermissionExcludingUser(db.getSession(),
    organization.getUuid(), "p1", user3.getId()).isEqualTo(2);

// excluding unknown user
assertThat(underTest.countUsersWithGlobalPermissionExcludingUser(db.getSession(),
    organization.getUuid(), "p1", -1)).isEqualTo(3);

// nobody has the permission
assertThat(underTest.countUsersWithGlobalPermissionExcludingUser(db.getSession(),
    organization.getUuid(), "missingPermission", group1.getId()).isEqualTo(0);
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_group_AnyOne_if_project_set_is_empty_on_public_project() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, Collections.emptySet(), null, UserRole.USER))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_empty_for_user_if_project_set_is_empty_on_public_project() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, Collections.emptySet(), user.getId(),
UserRole.USER))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_empty_for_group_AnyOne_for_non_existent_projects() {
    Set<Long> randomNonProjectsSet = IntStream.range(0, 1 + Math.abs(random.nextInt(5)))
        .mapToLong(i -> 3_562 + i)
        .boxed()
        .collect(MoreCollectors.toSet());

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomNonProjectsSet, null, UserRole.USER))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_empty_for_user_for_non_existent_projects() {

```

```

Set<Long> randomNonProjectsSet = IntStream.range(0, 1 + Math.abs(random.nextInt(5)))
    .mapToLong(i -> 9_666 + i)
    .boxed()
    .collect(MoreCollectors.toSet());

assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomNonProjectsSet, user.getId(),
UserRole.USER))
    .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_any_public_project_for_group_AnyOne_without_any_permission_in_DB_and_
permission_USER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPublicProjectIds, null, UserRole.USER))
        .containsAll(randomPublicProjectIds);
}

@Test
public void
keepAuthorizedProjectIds_returns_any_public_project_for_user_without_any_permission_in_DB_and_permission_
USER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPublicProjectIds, user.getId(),
UserRole.USER))
        .containsAll(randomPublicProjectIds);
}

@Test
public void
keepAuthorizedProjectIds_returns_any_public_project_for_group_AnyOne_without_any_permission_in_DB_and_
permission_CODEVIEWER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPublicProjectIds, null,
UserRole.CODEVIEWER))
        .containsAll(randomPublicProjectIds);
}

@Test
public void
keepAuthorizedProjectIds_returns_any_public_project_for_user_without_any_permission_in_DB_and_permission_
CODEVIEWER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPublicProjectIds, user.getId(),
UserRole.CODEVIEWER))
        .containsAll(randomPublicProjectIds);
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_other_permission_for_group_AnyOne_on_public_project_without_a

```

```

ny_permission_in_DB() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPublicProjectIds, null, randomPermission))
        .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_any_permission_for_user_on_public_project_without_any_permission_in_DB() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPublicProjectIds, user.getId(),
randomPermission))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_public_project_if_user_is_granted_project_permission_directly() {
    ComponentDto project = db.components().insertPublicProject(organization);
    ComponentDto otherProject = db.components().insertPublicProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, randomPermission, project);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), otherUser.getId(),
randomPermission))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(otherProject.getId()), user.getId(),
randomPermission))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(),
randomPermission))
        .containsOnly(project.getId());
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(), "another
perm"))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_public_project_if_user_is_granted_project_permission_by_group()
{
    ComponentDto project = db.components().insertPublicProject(organization);
    ComponentDto otherProject = db.components().insertPublicProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertMember(group1, user);
    db.users().insertProjectPermissionOnGroup(group1, randomPermission, project);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(),
randomPermission))
        .containsOnly(project.getId());
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(otherProject.getId()), user.getId(),

```

```

randomPermission))
    .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), otherUser.getId(),
randomPermission))
    .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(), "another
perm"))
    .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_public_project_if_group_AnyOne_is_granted_project_permission_directly() {
    ComponentDto project = db.components().insertPublicProject(organization);
    ComponentDto otherProject = db.components().insertPublicProject(organization);
    db.users().insertProjectPermissionOnAnyone(randomPermission, project);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), null, randomPermission))
        .containsOnly(project.getId());
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), null, "another perm"))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(otherProject.getId()), null,
randomPermission))
        .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_user_on_private_project_without_any_permission_in_DB_and_perm
ission_USER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, user.getId(),
UserRole.USER))
        .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_group_AnyOne_on_private_project_without_any_permission_in_DB
_and_permission_USER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, null, UserRole.USER))
        .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_user_on_private_project_without_any_permission_in_DB_and_perm
ission_CODEVIEWER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, user.getId(),

```

```

UserRole.CODEVIEWER))
    .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_group_AnyOne_on_private_project_without_any_permission_in_DB
_and_permission_CODEVIEWER() {
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, null,
UserRole.CODEVIEWER))
        .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_user_and_any_permission_on_private_project_without_any_permissi
on_in_DB() {
    ProjectPermissions.ALL
        .forEach(perm -> {
            assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, user.getId(), perm))
                .isEmpty();
        });
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, user.getId(),
randomPermission))
        .isEmpty();
}

@Test
public void
keepAuthorizedProjectIds_returns_empty_for_group_AnyOne_and_any_permission_on_private_project_without_a
ny_permission_in_DB() {
    ProjectPermissions.ALL
        .forEach(perm -> {
            assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, null, perm))
                .isEmpty();
        });
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, randomPrivateProjectIds, null, randomPermission))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_private_project_if_user_is_granted_project_permission_directly() {
    ComponentDto project = db.components().insertPrivateProject(organization);
    ComponentDto otherProject = db.components().insertPrivateProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, randomPermission, project);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(),

```

```

randomPermission))
    .containsOnly(project.getId());
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(), "another
perm"))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(otherProject.getId()), user.getId(),
randomPermission))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), otherUser.getId(),
randomPermission))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectIds_returns_private_project_if_user_is_granted_project_permission_by_group()
{
    ComponentDto project = db.components().insertPrivateProject(organization);
    ComponentDto otherProject = db.components().insertPrivateProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertMember(group1, user);
    db.users().insertProjectPermissionOnGroup(group1, randomPermission, project);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(),
randomPermission))
        .containsOnly(project.getId());
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), user.getId(), "another
perm"))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(otherProject.getId()), user.getId(),
randomPermission))
        .isEmpty();
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, singleton(project.getId()), otherUser.getId(),
randomPermission))
        .isEmpty();
}

@Test
public void user_should_be_authorized() {
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    ComponentDto project3 = db.components().insertPrivateProject(organization);
    UserDto user = db.users().insertUser("u1");
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertProjectPermissionOnUser(user, UserRole.USER, project2);
    db.users().insertProjectPermissionOnUser(user, UserRole.USER, project3);
    db.users().insertMember(group, user);
    db.users().insertProjectPermissionOnGroup(group, UserRole.USER, project1);
}

```

```

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, newHashSet(project2.getId(), project3.getId()),
user.getId(), UserRole.USER))
        .containsOnly(project2.getId(), project3.getId());

    // user does not have the role "admin"
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, newHashSet(project2.getId(), user.getId(),
UserRole.ADMIN))
        .isEmpty();

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, Collections.emptySet(), user.getId(),
UserRole.ADMIN))
        .isEmpty();
}

@Test
public void group_should_be_authorized() {
    ComponentDto project1 = db.components().insertPrivateProject(organization);
    ComponentDto project2 = db.components().insertPrivateProject(organization);
    ComponentDto project3 = db.components().insertPrivateProject(organization);
    UserDto user1 = db.users().insertUser("u1");
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertMembers(group, user1);
    db.users().insertProjectPermissionOnUser(user1, UserRole.USER, project1);
    db.users().insertProjectPermissionOnGroup(group, UserRole.USER, project2);
    db.users().insertProjectPermissionOnGroup(group, UserRole.USER, project3);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, newHashSet(project2.getId(), project3.getId()),
user1.getId(), UserRole.USER))
        .containsOnly(project2.getId(), project3.getId());

    // group does not have the role "admin"
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, newHashSet(project2.getId(), project3.getId()),
user1.getId(), UserRole.ADMIN))
        .isEmpty();
}

@Test
public void anonymous_should_be_authorized() {
    ComponentDto project1 = db.components().insertPublicProject(organization);
    ComponentDto project2 = db.components().insertPublicProject(organization);
    UserDto user1 = db.users().insertUser("u1");
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertMembers(group, user1);

    assertThat(underTest.keepAuthorizedProjectIds(dbSession, newHashSet(project1.getId(), project2.getId()), null,
UserRole.USER))
        .containsOnly(project1.getId(), project2.getId());
}

```

```

// group does not have the role "admin"
assertThat(underTest.keepAuthorizedProjectIds(dbSession, newHashSet(project1.getId(), null, "admin"))
    .isEmpty());
}

@Test
public void keepAuthorizedProjectIds_should_be_able_to_handle_lots_of_projects() {
    List<ComponentDto> projects = IntStream.range(0, 2000).mapToObj(i ->
db.components().insertPublicProject(organization)).collect(Collectors.toList());

    Collection<Long> ids = projects.stream().map(ComponentDto::getId).collect(Collectors.toSet());
    assertThat(underTest.keepAuthorizedProjectIds(dbSession, ids, null, UserRole.USER)
        .containsOnly(ids.toArray(new Long[0]));
}

@Test
public void keepAuthorizedProjectUuids_should_be_able_to_handle_lots_of_projects() {
    List<ComponentDto> projects = IntStream.range(0, 2000).mapToObj(i ->
db.components().insertPublicProject(organization)).collect(Collectors.toList());

    Collection<String> uuids = projects.stream().map(ComponentDto::uuid).collect(Collectors.toSet());
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, uuids, null, UserRole.USER)
        .containsOnly(uuids.toArray(new String[0]));
}

@Test
public void keepAuthorizedUsersForRoleAndProject_returns_empty_if_user_set_is_empty_on_public_project() {
    OrganizationDto organization = db.organizations().insert();
    ComponentDto project = db.components().insertPublicProject(organization);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, Collections.emptySet(),
UserRole.USER, project.getId()))
        .isEmpty();
}

@Test
public void keepAuthorizedUsersForRoleAndProject_returns_empty_for_non_existent_users() {
    ComponentDto project = random.nextBoolean() ? db.components().insertPublicProject(organization) :
db.components().insertPrivateProject(organization);
    Set<Integer> randomNonExistingUserIdsSet = IntStream.range(0, 1 + Math.abs(random.nextInt(5)))
        .map(i -> i + 1_990)
        .boxed()
        .collect(MoreCollectors.toSet());

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomNonExistingUserIdsSet,
UserRole.USER, project.getId()))
        .isEmpty();
}

```



```

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_any_users_for_public_project_without_any_permission_in_DB_and_permission_USER() {
    ComponentDto project = db.components().insertPublicProject(organization);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds,
        UserRole.USER, project.getId()))
        .containsAll(randomExistingUserIds);
}

```

```

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_any_users_for_public_project_without_any_permission_in_DB_and_permission_CODEVIEWER() {
    ComponentDto project = db.components().insertPublicProject(organization);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds,
        UserRole.CODEVIEWER, project.getId()))
        .containsAll(randomExistingUserIds);
}

```

```

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_empty_for_any_users_on_public_project_without_any_permission_in_DB() {
    ComponentDto project = db.components().insertPublicProject(organization);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds,
        randomPermission, project.getId()))
        .isEmpty();
}

```

```

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_user_if_granted_project_permission_directly_on_public_project()
{
    ComponentDto project = db.components().insertPublicProject(organization);
    ComponentDto otherProject = db.components().insertPublicProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, randomPermission, project);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
        randomPermission, project.getId()))
        .containsOnly(user.getId());
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()), "another perm",
        project.getId()))

```

```

        .isEmpty();
        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(otherUser.getId()),
randomPermission, project.getId()))
        .isEmpty();
        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, otherProject.getId()))
        .isEmpty();
    }

    @Test
    public void
keepAuthorizedUsersForRoleAndProject_returns_user_if_granted_project_permission_by_group_on_public_projec
t() {
        ComponentDto project = db.components().insertPublicProject(organization);
        ComponentDto otherProject = db.components().insertPublicProject(organization);
        UserDto otherUser = db.users().insertUser();
        db.users().insertMember(group1, user);
        db.users().insertProjectPermissionOnGroup(group1, randomPermission, project);

        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, project.getId()))
        .containsOnly(user.getId());
        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()), "another perm",
project.getId()))
        .isEmpty();
        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, otherProject.getId()))
        .isEmpty();
        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(otherUser.getId()),
randomPermission, project.getId()))
        .isEmpty();
    }

    @Test
    public void
keepAuthorizedUsersForRoleAndProject_does_not_return_user_if_granted_project_permission_by_AnyOne_on_p
ublic_project() {
        ComponentDto project = db.components().insertPublicProject(organization);
        ComponentDto otherProject = db.components().insertPublicProject(organization);
        UserDto otherUser = db.users().insertUser();
        db.users().insertProjectPermissionOnAnyone(randomPermission, project);

        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, project.getId()))
        .isEmpty();
        assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()), "another perm",
project.getId()))
        .isEmpty();
    }

```

```

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, otherProject.getId()))
        .isEmpty();
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(otherUser.getId()),
randomPermission, project.getId()))
        .isEmpty();
}

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_empty_for_any_user_on_private_project_without_any_permission_in_DB_and_permission_USER() {
    ComponentDto project = db.components().insertPrivateProject(organization);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds,
UserRole.USER, project.getId()))
        .isEmpty();
}

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_empty_for_any_user_on_private_project_without_any_permission_in_DB_and_permission_CODEVIEWER() {
    ComponentDto project = db.components().insertPrivateProject(organization);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds,
UserRole.CODEVIEWER, project.getId()))
        .isEmpty();
}

@Test
public void
keepAuthorizedUsersForRoleAndProject_returns_empty_for_any_users_and_any_permission_on_private_project_without_any_permission_in_DB() {
    ComponentDto project = db.components().insertPrivateProject(organization);

    ProjectPermissions.ALL
        .forEach(perm -> {
            assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds, perm,
project.getId()))
                .isEmpty();
        });
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, randomExistingUserIds,
randomPermission, project.getId()))
        .isEmpty();
}

@Test

```

```

public void
keepAuthorizedUsersForRoleAndProject_returns_user_if_granted_project_permission_directly_on_private_project(
) {
    ComponentDto project = db.components().insertPrivateProject(organization);
    ComponentDto otherProject = db.components().insertPublicProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, randomPermission, project);

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, project.getId()))
        .containsOnly(user.getId());
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()), "another perm",
project.getId()))
        .isEmpty();
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(otherUser.getId()),
randomPermission, project.getId()))
        .isEmpty();
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, otherProject.getId()))
        .isEmpty();
}

```

```
@Test
```

```
public void
```

```
keepAuthorizedUsersForRoleAndProject_returns_user_if_granted_project_permission_by_group_on_private_proje
ct() {
```

```

    ComponentDto project = db.components().insertPrivateProject(organization);
    ComponentDto otherProject = db.components().insertPublicProject(organization);
    UserDto otherUser = db.users().insertUser();
    db.users().insertMember(group1, user);
    db.users().insertProjectPermissionOnGroup(group1, randomPermission, project);

```

```

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, project.getId()))
        .containsOnly(user.getId());
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()), "another perm",
project.getId()))
        .isEmpty();
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(user.getId()),
randomPermission, otherProject.getId()))
        .isEmpty();
    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession, singleton(otherUser.getId()),
randomPermission, project.getId()))
        .isEmpty();
}

```

```
@Test
```

```
public void keep_authorized_users_returns_empty_list_for_role_and_project_for_anonymous() {
```

```

ComponentDto project1 = db.components().insertPrivateProject(organization);
ComponentDto project2 = db.components().insertPrivateProject(organization);
ComponentDto project3 = db.components().insertPrivateProject(organization);
UserDto user1 = db.users().insertUser("u1");
UserDto user2 = db.users().insertUser("u2");
UserDto user3 = db.users().insertUser("u3");
GroupDto group1 = db.users().insertGroup(organization);
GroupDto group2 = db.users().insertGroup(organization);
db.users().insertMembers(group1, user1, user2);
db.users().insertMembers(group2, user3);
db.users().insertProjectPermissionOnUser(user1, UserRole.USER, project1);
db.users().insertProjectPermissionOnUser(user2, UserRole.USER, project1);
db.users().insertProjectPermissionOnUser(user3, UserRole.USER, project1);
db.users().insertProjectPermissionOnGroup(group2, UserRole.USER, project3);

assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession,
    // Only 100 and 101 has 'user' role on project
    newHashSet(100, 101, 102), "user", PROJECT_ID)).isEmpty();
}

@Test
public void keepAuthorizedUsersForRoleAndProject_should_be_able_to_handle_lots_of_users() {
    List<UserDto> users = IntStream.range(0, 2000).mapToObj(i ->
db.users().insertUser()).collect(Collectors.toList());

    assertThat(underTest.keepAuthorizedUsersForRoleAndProject(dbSession,
        users.stream().map(UserDto::getId).collect(Collectors.toSet()), "user", PROJECT_ID)).isEmpty();
}

@Test
public void countUsersWithGlobalPermissionExcludingGroupMember() {
    // u1 has the direct permission, u2 and u3 have the permission through their group
    UserDto u1 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization, u1, A_PERMISSION);
    db.users().insertPermissionOnGroup(group1, A_PERMISSION);
    db.users().insertPermissionOnGroup(group1, "another-permission");
    UserDto u2 = db.users().insertUser();
    db.users().insertMember(group1, u2);
    UserDto u3 = db.users().insertUser();
    db.users().insertMember(group1, u3);

    // excluding u2 membership --> remain u1 and u3
    int count = underTest.countUsersWithGlobalPermissionExcludingGroupMember(dbSession,
organization.getUuid(), A_PERMISSION, group1.getId(), u2.getId());
    assertThat(count).isEqualTo(2);

    // excluding unknown memberships
    count = underTest.countUsersWithGlobalPermissionExcludingGroupMember(dbSession, organization.getUuid(),

```

```

A_PERMISSION, group1.getId(), MISSING_ID);
    assertThat(count).isEqualTo(3);
    count = underTest.countUsersWithGlobalPermissionExcludingGroupMember(dbSession, organization.getUuid(),
A_PERMISSION, MISSING_ID, u2.getId());
    assertThat(count).isEqualTo(3);

    // another organization
    count = underTest.countUsersWithGlobalPermissionExcludingGroupMember(dbSession, DOES_NOT_EXIST,
A_PERMISSION, group1.getId(), u2.getId());
    assertThat(count).isEqualTo(0);

    // another permission
    count = underTest.countUsersWithGlobalPermissionExcludingGroupMember(dbSession, organization.getUuid(),
DOES_NOT_EXIST, group1.getId(), u2.getId());
    assertThat(count).isEqualTo(0);
}

@Test
public void countUsersWithGlobalPermissionExcludingUserPermission() {
    // u1 and u2 have the direct permission, u3 has the permission through his group
    UserDto u1 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization, u1, A_PERMISSION);
    UserDto u2 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization, u2, A_PERMISSION);
    db.users().insertPermissionOnGroup(group1, A_PERMISSION);
    UserDto u3 = db.users().insertUser();
    db.users().insertMember(group1, u3);

    // excluding u2 permission --> remain u1 and u3
    int count = underTest.countUsersWithGlobalPermissionExcludingUserPermission(dbSession,
organization.getUuid(), A_PERMISSION, u2.getId());
    assertThat(count).isEqualTo(2);

    // excluding unknown user
    count = underTest.countUsersWithGlobalPermissionExcludingUserPermission(dbSession, organization.getUuid(),
A_PERMISSION, MISSING_ID);
    assertThat(count).isEqualTo(3);

    // another organization
    count = underTest.countUsersWithGlobalPermissionExcludingUserPermission(dbSession, DOES_NOT_EXIST,
A_PERMISSION, u2.getId());
    assertThat(count).isEqualTo(0);

    // another permission
    count = underTest.countUsersWithGlobalPermissionExcludingUserPermission(dbSession, organization.getUuid(),
DOES_NOT_EXIST, u2.getId());
    assertThat(count).isEqualTo(0);
}

```

```

@Test
public void selectOrganizationUuidsOfUserWithGlobalPermission_returns_empty_set_if_user_does_not_exist() {
    // another user
    db.users().insertPermissionOnUser(user, ADMINISTER_QUALITY_GATES);

    Set<String> orgUuids = underTest.selectOrganizationUuidsOfUserWithGlobalPermission(dbSession,
MISSING_ID, SYSTEM_ADMIN);

    assertThat(orgUuids).isEmpty();
}

@Test
public void
selectOrganizationUuidsOfUserWithGlobalPermission_returns_empty_set_if_user_does_not_have_permission_at_a
ll() {
    db.users().insertPermissionOnUser(user, ADMINISTER_QUALITY_GATES);
    // user is not part of this group
    db.users().insertPermissionOnGroup(group1, SCAN_EXECUTION);

    Set<String> orgUuids = underTest.selectOrganizationUuidsOfUserWithGlobalPermission(dbSession, user.getId(),
SCAN_EXECUTION);

    assertThat(orgUuids).isEmpty();
}

@Test
public void
selectOrganizationUuidsOfUserWithGlobalPermission_returns_organizations_on_which_user_has_permission() {
    db.users().insertPermissionOnGroup(group1, SCAN_EXECUTION);
    db.users().insertPermissionOnGroup(group2, QUALITY_GATE_ADMIN);
    db.users().insertMember(group1, user);
    db.users().insertMember(group2, user);

    Set<String> orgUuids = underTest.selectOrganizationUuidsOfUserWithGlobalPermission(dbSession, user.getId(),
SCAN_EXECUTION);

    assertThat(orgUuids).containsExactly(group1.getOrganizationUuid());
}

@Test
public void
selectOrganizationUuidsOfUserWithGlobalPermission_handles_user_permissions_and_group_permissions() {
    // organization: through group membership
    db.users().insertPermissionOnGroup(group1, SCAN_EXECUTION);
    db.users().insertMember(group1, user);

    // org2 : direct user permission

```

```

OrganizationDto org2 = db.organizations().insert();
db.users().insertPermissionOnUser(org2, user, SCAN_EXECUTION);

// org3 : another permission QUALITY_GATE_ADMIN
OrganizationDto org3 = db.organizations().insert();
db.users().insertPermissionOnUser(org3, user, QUALITY_GATE_ADMIN);

// exclude project permission
db.users().insertProjectPermissionOnUser(user, UserRole.ADMIN, db.components().insertPrivateProject());

Set<String> orgUuids = underTest.selectOrganizationUuidsOfUserWithGlobalPermission(dbSession, user.getId(),
SCAN_EXECUTION);

assertThat(orgUuids).containsOnly(organization.getUuid(), org2.getUuid());
}

@Test
public void selectOrganizationUuidsOfUserWithGlobalPermission_ignores_anonymous_permissions() {
    db.users().insertPermissionOnAnyone(organization, SCAN);
    db.users().insertPermissionOnUser(organization, user, ADMINISTER_QUALITY_GATES);

    Set<String> orgUuids = underTest.selectOrganizationUuidsOfUserWithGlobalPermission(dbSession, user.getId(),
SCAN.getKey());

    assertThat(orgUuids).isEmpty();
}

@Test
public void
selectProjectPermissionsOfAnonymous_returns_permissions_of_anonymous_user_on_specified_public_project() {
    ComponentDto project = db.components().insertPublicProject(organization);
    db.users().insertProjectPermissionOnAnyone("p1", project);
    db.users().insertProjectPermissionOnUser(db.users().insertUser(), "p2", project);
    ComponentDto otherProject = db.components().insertPublicProject();
    db.users().insertProjectPermissionOnAnyone("p3", otherProject);

    assertThat(underTest.selectProjectPermissionsOfAnonymous(dbSession, project.uuid()).containsOnly("p1");
}

@Test
public void selectProjectPermissionsOfAnonymous_returns_empty_set_when_project_does_not_exist() {
    assertThat(underTest.selectProjectPermissionsOfAnonymous(dbSession, "does_not_exist").isEmpty());
}

@Test
public void selectProjectPermissions_returns_empty_set_when_logged_in_user_and_project_does_not_exist() {
    assertThat(underTest.selectProjectPermissions(dbSession, "does_not_exist", user.getId()).isEmpty());
}

```



```

@Test
public void
selectProjectPermissions_returns_permissions_of_logged_in_user_on_specified_public_project_through_anonymou
s_permissions() {
    ComponentDto project = db.components().insertPublicProject(organization);
    db.users().insertProjectPermissionOnAnyone("p1", project);
    db.users().insertProjectPermissionOnAnyone("p2", project);

    assertThat(underTest.selectProjectPermissions(dbSession, project.uuid(), user.getId())).containsOnly("p1", "p2");
}

```

```

@Test
public void selectProjectPermissions_returns_permissions_of_logged_in_user_on_specified_project() {
    ComponentDto project = db.components().insertPrivateProject(organization);
    db.users().insertProjectPermissionOnUser(user, UserRole.CODEVIEWER, project);
    db.users().insertProjectPermissionOnUser(db.users().insertUser(), UserRole.ISSUE_ADMIN, project);

    assertThat(underTest.selectProjectPermissions(dbSession, project.uuid(),
user.getId())).containsOnly(UserRole.CODEVIEWER);
}

```

```

@Test
public void
selectProjectPermissions_returns_permissions_of_logged_in_user_on_specified_project_through_group_membershi
p() {
    ComponentDto project = db.components().insertPrivateProject(organization);
    db.users().insertProjectPermissionOnGroup(group1, UserRole.CODEVIEWER, project);
    db.users().insertProjectPermissionOnGroup(group2, UserRole.ISSUE_ADMIN, project);
    db.users().insertMember(group1, user);

    assertThat(underTest.selectProjectPermissions(dbSession, project.uuid(),
user.getId())).containsOnly(UserRole.CODEVIEWER);
}

```

```

@Test
public void
selectProjectPermissions_returns_permissions_of_logged_in_user_on_specified_private_project_through_all_possi
ble_configurations() {
    ComponentDto project = db.components().insertPrivateProject(organization);
    db.users().insertProjectPermissionOnUser(user, UserRole.CODEVIEWER, project);
    db.users().insertProjectPermissionOnGroup(group1, UserRole.USER, project);
    db.users().insertMember(group1, user);

    assertThat(underTest.selectProjectPermissions(dbSession, project.uuid(),
user.getId())).containsOnly(UserRole.CODEVIEWER, UserRole.USER);
}

```

```

@Test
public void
selectProjectPermissions_returns_permissions_of_logged_in_user_on_specified_public_project_through_all_possible_configurations() {
    ComponentDto project = db.components().insertPublicProject(organization);
    db.users().insertProjectPermissionOnUser(user, "p1", project);
    db.users().insertProjectPermissionOnAnyone("p2", project);
    db.users().insertProjectPermissionOnGroup(group1, "p3", project);
    db.users().insertMember(group1, user);

    assertThat(underTest.selectProjectPermissions(dbSession, project.uuid(), user.getId())).containsOnly("p1", "p2", "p3");
}

```

```

@Test
public void keepAuthorizedProjectUuids_filters_projects_authorized_to_logged_in_user_by_direct_permission() {
    ComponentDto privateProject = db.components().insertPrivateProject(organization);
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    UserDto user = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user, UserRole.ADMIN, privateProject);

    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(privateProject.uuid(), publicProject.uuid()), user.getId(), UserRole.ADMIN))
        .containsOnly(privateProject.uuid());
    // user does not have the permission "issueadmin"
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(privateProject.uuid(), publicProject.uuid()), user.getId(), UserRole.ISSUE_ADMIN))
        .isEmpty();
}

```

```

@Test
public void keepAuthorizedProjectUuids_filters_projects_authorized_to_logged_in_user_by_group_permission() {
    ComponentDto privateProject = db.components().insertPrivateProject(organization);
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    UserDto user = db.users().insertUser();
    GroupDto group = db.users().insertGroup(organization);
    db.users().insertMember(group, user);
    db.users().insertProjectPermissionOnGroup(group, UserRole.ADMIN, privateProject);

    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(privateProject.uuid(), publicProject.uuid()), user.getId(), UserRole.ADMIN))
        .containsOnly(privateProject.uuid());
    // user does not have the permission "issueadmin"
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(privateProject.uuid(), publicProject.uuid()), user.getId(), UserRole.ISSUE_ADMIN))
        .isEmpty();
}

```

```

@Test
public void keepAuthorizedProjectUuids_returns_empty_list_if_input_is_empty() {
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    UserDto user = db.users().insertUser();

    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, Collections.emptySet(), user.getId(),
    UserRole.USER))
        .isEmpty();

    // projects do not exist
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet("does_not_exist"), user.getId(),
    UserRole.USER))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectUuids_returns_empty_list_if_input_does_not_reference_existing_projects() {
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    UserDto user = db.users().insertUser();

    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet("does_not_exist"), user.getId(),
    UserRole.USER))
        .isEmpty();
}

@Test
public void keepAuthorizedProjectUuids_returns_public_projects_if_permission_USER_or_CODEVIEWER() {
    ComponentDto publicProject = db.components().insertPublicProject(organization);
    UserDto user = db.users().insertUser();

    // logged-in user
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(publicProject.uuid()), user.getId(),
    UserRole.CODEVIEWER))
        .containsOnly(publicProject.uuid());
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(publicProject.uuid()), user.getId(),
    UserRole.USER))
        .containsOnly(publicProject.uuid());
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(publicProject.uuid()), user.getId(),
    UserRole.ADMIN))
        .isEmpty();

    // anonymous
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(publicProject.uuid()), null,
    UserRole.CODEVIEWER))
        .containsOnly(publicProject.uuid());
    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(publicProject.uuid()), null,
    UserRole.USER))
        .containsOnly(publicProject.uuid());
}

```

```

    assertThat(underTest.keepAuthorizedProjectUuids(dbSession, newHashSet(publicProject.uuid()), null,
    UserRole.ADMIN))
        .isEmpty();
}

```

```

@Test
public void
selectQualityProfileAdministratorLogins_return_users_with_quality_profile_administrator_permission() {
    OrganizationDto organization1 = db.organizations().insert();
    UserDto user1 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization1, user1, ADMINISTER_QUALITY_PROFILES);
    OrganizationDto organization2 = db.organizations().insert();
    UserDto user2 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization2, user2, ADMINISTER_QUALITY_PROFILES);

    List<String> logins = underTest.selectQualityProfileAdministratorLogins(dbSession);

    assertThat(logins).containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin());
}

```

```

@Test
public void selectQualityProfileAdministratorLogins_return_users_within_quality_profile_administrator_group() {
    OrganizationDto organization1 = db.organizations().insert();
    GroupDto qualityProfileAdministratorGroup1 = db.users().insertGroup(organization1);
    db.users().insertPermissionOnGroup(qualityProfileAdministratorGroup1,
ADMINISTER_QUALITY_PROFILES);
    UserDto user1 = db.users().insertUser();
    db.users().insertMember(qualityProfileAdministratorGroup1, user1);
    OrganizationDto organization2 = db.organizations().insert();
    GroupDto qualityProfileAdministratorGroup2 = db.users().insertGroup(organization2);
    db.users().insertPermissionOnGroup(qualityProfileAdministratorGroup2,
ADMINISTER_QUALITY_PROFILES);
    UserDto user2 = db.users().insertUser();
    db.users().insertMember(qualityProfileAdministratorGroup2, user2);

    List<String> logins = underTest.selectQualityProfileAdministratorLogins(dbSession);

    assertThat(logins).containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin());
}

```

```

@Test
public void selectQualityProfileAdministratorLogins_does_not_return_non_quality_profile_administrator_logins()
{
    OrganizationDto organization1 = db.organizations().insert();
    UserDto user1 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization1, user1, ADMINISTER);
    db.users().insertUser();
}

```

```

List<String> logins = underTest.selectQualityProfileAdministratorLogins(dbSession);

assertThat(logins).isEmpty();
}

@Test
public void selectGlobalAdministratorLogins() {
    OrganizationDto organization1 = db.organizations().insert();
    UserDto user1 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization1, user1, ADMINISTER);
    OrganizationDto organization2 = db.organizations().insert();
    UserDto user2 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization2, user2, ADMINISTER);

    GroupDto administratorGroup2 = db.users().insertGroup(organization2);
    db.users().insertPermissionOnGroup(administratorGroup2, ADMINISTER);
    UserDto user3 = db.users().insertUser();
    db.users().insertMember(administratorGroup2, user3);

    ComponentDto project = db.components().insertPrivateProject();

    UserDto user4 = db.users().insertUser();
    db.users().insertPermissionOnUser(organization1, user4, ADMINISTER_QUALITY_PROFILES);
    db.users().insertProjectPermissionOnUser(user4, "admin", project);
    db.users().insertUser();

    List<String> logins = underTest.selectGlobalAdministratorLogins(dbSession);

    assertThat(logins).containsExactlyInAnyOrder(user1.getLogin(), user2.getLogin(), user3.getLogin());
}

@Test
public void keepAuthorizedLoginsOnProject_return_correct_users_on_public_project() {
    ComponentDto project = db.components().insertPublicProject(organization);

    UserDto user1 = db.users().insertUser();

    // admin with "direct" ADMIN role
    UserDto admin1 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(admin1, UserRole.ADMIN, project);

    // admin2 with ADMIN role through group
    UserDto admin2 = db.users().insertUser();
    GroupDto adminGroup = db.users().insertGroup(organization, "ADMIN");
    db.users().insertMember(adminGroup, admin2);
    db.users().insertProjectPermissionOnGroup(adminGroup, UserRole.ADMIN, project);

    assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(user1.getLogin())),

```

```

project.getKey(), UserRole.USER))
    .containsOnly(user1.getLogin());
assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(user1.getLogin(),
admin1.getLogin(), admin2.getLogin()), project.getKey(), UserRole.USER))
    .containsOnly(user1.getLogin(), admin1.getLogin(), admin2.getLogin());
assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(user1.getLogin(),
admin1.getLogin(), admin2.getLogin()), project.getKey(), UserRole.ADMIN))
    .containsOnly(admin1.getLogin(), admin2.getLogin());
}

@Test
public void keepAuthorizedLoginsOnProject_return_correct_users_on_private_project() {
    ComponentDto project = db.components().insertPrivateProject(organization);

    GroupDto userGroup = db.users().insertGroup(organization, "USERS");
    GroupDto adminGroup = db.users().insertGroup(organization, "ADMIN");
    db.users().insertProjectPermissionOnGroup(userGroup, UserRole.USER, project);
    db.users().insertProjectPermissionOnGroup(adminGroup, UserRole.ADMIN, project);

    // admin with "direct" ADMIN role
    UserDto admin1 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(admin1, UserRole.ADMIN, project);

    // admin2 with ADMIN role through group
    UserDto admin2 = db.users().insertUser();
    db.users().insertMember(adminGroup, admin2);

    // user1 with "direct" USER role
    UserDto user1 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user1, UserRole.USER, project);

    // user2 with USER role through group
    UserDto user2 = db.users().insertUser();
    db.users().insertMember(userGroup, user2);

    // user without role
    UserDto userWithNoRole = db.users().insertUser();

    assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(userWithNoRole.getLogin()),
project.getKey(), UserRole.USER))
        .isEmpty();
    assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(user1.getLogin()),
project.getKey(), UserRole.USER))
        .containsOnly(user1.getLogin());

    Set<String> allLogins = newHashSet(admin1.getLogin(), admin2.getLogin(), user1.getLogin(), user2.getLogin(),
userWithNoRole.getLogin());

```

```

// Admin does not have the USER permission set
assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, allLogins, project.getKey(), UserRole.USER))
    .containsOnly(user1.getLogin(), user2.getLogin());
assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, allLogins, project.getKey(),
UserRole.ADMIN))
    .containsOnly(admin1.getLogin(), admin2.getLogin());
}

@Test
public void keepAuthorizedLoginsOnProject_return_correct_users_on_branch() {
    ComponentDto project = db.components().insertPrivateProject(organization);
    ComponentDto branch = db.components().insertProjectBranch(project, c ->
c.setBranchType(random.nextBoolean() ? BranchType.SHORT : BranchType.LONG));

    GroupDto userGroup = db.users().insertGroup(organization, "USERS");
    GroupDto adminGroup = db.users().insertGroup(organization, "ADMIN");
    db.users().insertProjectPermissionOnGroup(userGroup, UserRole.USER, project);
    db.users().insertProjectPermissionOnGroup(adminGroup, UserRole.ADMIN, project);

// admin with "direct" ADMIN role
    UserDto admin1 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(admin1, UserRole.ADMIN, project);

// admin2 with ADMIN role through group
    UserDto admin2 = db.users().insertUser();
    db.users().insertMember(adminGroup, admin2);

// user1 with "direct" USER role
    UserDto user1 = db.users().insertUser();
    db.users().insertProjectPermissionOnUser(user1, UserRole.USER, project);

// user2 with USER role through group
    UserDto user2 = db.users().insertUser();
    db.users().insertMember(userGroup, user2);

// user without role
    UserDto userWithNoRole = db.users().insertUser();

    assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(userWithNoRole.getLogin()),
branch.getKey(), UserRole.USER))
        .isEmpty();
    assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, newHashSet(user1.getLogin()),
branch.getKey(), UserRole.USER))
        .containsOnly(user1.getLogin());

    Set<String> allLogins = newHashSet(admin1.getLogin(), admin2.getLogin(), user1.getLogin(), user2.getLogin(),
userWithNoRole.getLogin());

```

```

// Admin does not have the USER permission set
assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, allLogins, branch.getKey(), UserRole.USER))
    .containsOnly(user1.getLogin(), user2.getLogin());
assertThat(underTest.keepAuthorizedLoginsOnProject(dbSession, allLogins, branch.getKey(),
UserRole.ADMIN))
    .containsOnly(admin1.getLogin(), admin2.getLogin());
}
}
/*
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*/
package org.sonar.server.platform.db.migration.version.v67;

import java.sql.SQLException;
import org.sonar.db.Database;
import org.sonar.server.platform.db.migration.step.DataChange;
import org.sonar.server.platform.db.migration.step.MassUpdate;

public class DropOldLicenses extends DataChange {

    private static final String LICENSE_HASH_SECURED_SUFFIX = ".licenseHash.secured";
    private static final String LICENSE_SECURED_SUFFIX = ".license.secured";

    public DropOldLicenses(Database db) {
        super(db);
    }

    @Override
    protected void execute(Context context) throws SQLException {
        MassUpdate massUpdate = context.prepareMassUpdate();
        massUpdate.select("select prop_key from properties where prop_key like ?")
            .setString(1, "%" + LICENSE_HASH_SECURED_SUFFIX);
    }
}

```



```

massUpdate.update("delete from properties where prop_key = ? or prop_key = ?");
massUpdate.rowPluralName("old license properties");
massUpdate.execute((row, update) -> {
    String licenseHashKey = row.getString(1);
    String licenseKey = licenseHashKey.replace(LICENSE_HASH_SECURED_SUFFIX, "") +
LICENSE_SECURED_SUFFIX;
    update.setString(1, licenseHashKey);
    update.setString(2, licenseKey);
    return true;
});
}
}

```

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Version 3, 29 June 2007

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### Kuromoji Japanese Morphological Analyzer - Apache Lucene Integration

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This software includes a binary and/or source version of data from

mecab-ipadic-2.7.0-20070801

which can be obtained from

<http://atilika.com/releases/mecab-ipadic/mecab-ipadic-2.7.0-20070801.tar.gz>

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analysis/common/src/resources/org/apache/lucene/analysis/fa/stopwords.txt,  
analysis/common/src/resources/org/apache/lucene/analysis/ro/stopwords.txt,  
analysis/common/src/resources/org/apache/lucene/analysis/bg/stopwords.txt,  
analysis/common/src/resources/org/apache/lucene/analysis/hi/stopwords.txt  
See <http://members.unine.ch/jacques.savoy/clef/index.html>.

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analysis/common/src/java/org/apache/lucene/analysis/de/GermanLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/de/GermanMinimalStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/es/SpanishLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/fi/FinnishLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/fr/FrenchLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/fr/FrenchMinimalStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/hu/HungarianLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/it/ItalianLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/pt/PortugueseLightStemmer.java  
analysis/common/src/java/org/apache/lucene/analysis/ru/RussianLightStemmer.java  
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\*\*\*The art of simplicity is a puzzle of complexity.\*\*\*

## Overview ##

[YAML](<http://yaml.org>) is a data serialization format designed for human readability and interaction with scripting languages.

SnakeYAML is a YAML processor for the Java Virtual Machine.

## SnakeYAML features ##

- \* a **complete** [YAML 1.1 processor](<http://yaml.org/spec/1.1/current.html>). In particular, SnakeYAML can parse all examples from the specification.
- \* Unicode support including UTF-8/UTF-16 input/output.
- \* high-level API for serializing and deserializing native Java objects.
- \* support for all types from the [YAML types repository](<http://yaml.org/type/index.html>).
- \* relatively sensible error messages.

## Info ##

- \* [Changes](<https://bitbucket.org/asomov/snakeyaml/wiki/Changes>)
- \* [Documentation](<https://bitbucket.org/asomov/snakeyaml/wiki/Documentation>)

## Contribute ##

- \* Mercurial DVCS is used to dance with the [source code](<https://bitbucket.org/asomov/snakeyaml/src>).
- \* If you find a bug in SnakeYAML, please [file a bug report](<https://bitbucket.org/asomov/snakeyaml/issues?status=new&status=open>).
- \* You may discuss SnakeYAML at [the mailing list](<http://groups.google.com/group/snakeyaml-core>).

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=====

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A number of small but very helpful changes have been contributed by Adrien Grand (<https://github.com/jpountz>)

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```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN" "mybatis-3-mapper.dtd">

<mapper namespace="org.sonar.db.permission.UserPermissionMapper">
```

```

<select id="selectUserPermissionsByQueryAndUserIds" parameterType="map"
resultType="org.sonar.db.permission.UserPermissionDto">
  select
    u.id as userId,
    ur.organization_uuid as organizationUuid,
    ur.resource_id as componentId,
    ur.role as permission
  <include refid="sqlQueryJoins" />
  <where>
    u.id in <foreach collection="userIds" open="(" close=")" item="userId"
separator=",">#{userId,jdbcType=INTEGER}</foreach>
    <include refid="sqlQueryFilters" />
  </where>
</select>

```

```

<select id="selectUserIdsByQuery" parameterType="map" resultType="int">
  select
    distinct u.id, lower(u.name) as lowerName
  <include refid="sqlQueryJoins" />
  <where>
    <include refid="sqlQueryFilters" />
  </where>
  order by lowerName asc
</select>

```

```

<select id="countUsersByQuery" parameterType="map" resultType="int">
  select count(distinct(u.id))
  <include refid="sqlQueryJoins" />
  <where>
    <include refid="sqlQueryFilters" />
  </where>
</select>

```

```

<sql id="sqlQueryJoins">
  from users u
  left join user_roles ur on ur.user_id = u.id
  left join projects p on ur.resource_id = p.id
  inner join organization_members om on u.id=om.user_id and
om.organization_uuid=#{query.organizationUuid,jdbcType=VARCHAR}
</sql>

```

```

<sql id="sqlQueryFilters">
  and u.active = ${_true}
  <if test="query.searchQueryToSql != null">
    and (
      lower(u.name) like #{query.searchQueryToSqlLowercase,jdbcType=VARCHAR} ESCAPE '/'
      or u.email like #{query.searchQueryToSql,jdbcType=VARCHAR} ESCAPE '/'
      or u.login like #{query.searchQueryToSql,jdbcType=VARCHAR} ESCAPE '/')
  </if>
</sql>

```

```

</if>
<!-- filter rows with user permissions -->
<if test="query.withAtLeastOnePermission()">
  and ur.organization_uuid = om.organization_uuid
  and ur.role is not null
  <if test="query.componentUuid==null">
    and ur.resource_id is null
  </if>
  <if test="query.componentUuid!=null">
    and p.uuid = #{query.componentUuid,jdbcType=VARCHAR}
  </if>
  <if test="query.permission!=null">
    and ur.role = #{query.permission,jdbcType=VARCHAR}
  </if>
</if>
</sql>

<select id="selectGlobalPermissionsOfUser" parameterType="map" resultType="string">
  select ur.role
  from user_roles ur
  where
  ur.organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
  ur.user_id = #{userId,jdbcType=INTEGER} and
  ur.resource_id is null
</select>

<select id="selectProjectPermissionsOfUser" parameterType="map" resultType="string">
  select ur.role
  from user_roles ur
  where
  ur.user_id = #{userId,jdbcType=INTEGER} and
  ur.resource_id = #{projectId,jdbcType=BIGINT}
</select>

<select id="countUsersByProjectPermission" resultType="org.sonar.db.permission.CountPerProjectPermission">
  select ur.resource_id as componentId, ur.role as permission, count(u.login) as count
  from users u
  inner join user_roles ur on ur.user_id = u.id
  inner join projects p on p.id = ur.resource_id
  where u.active = ${_true}
  and p.id in <foreach collection="projectIds" open="(" close=")" item="projectId"
separator=",">#{projectId}</foreach>
  group by ur.resource_id, ur.role
</select>

<select id="selectUserIdsWithPermissionOnProjectBut" resultType="Integer">
  select
  distinct ur1.user_id

```

```

from
  user_roles ur1
where
  ur1.resource_id = #{projectId,jdbcType=BIGINT}
  and role <> #{permission,jdbcType=VARCHAR}
  and not exists (
    select
      1
    from
      user_roles ur2
    where
      ur2.resource_id = ur1.resource_id
      and ur2.user_id = ur1.user_id
      and role = #{permission,jdbcType=VARCHAR}
  )
</select>

<insert id="insert" parameterType="org.sonar.db.permission.UserPermissionDto" useGeneratedKeys="false">
  insert into user_roles (
    organization_uuid,
    user_id,
    resource_id,
    role
  ) values (
    #{organizationUuid,jdbcType=VARCHAR},
    #{userId,jdbcType=INTEGER},
    #{componentId,jdbcType=BIGINT},
    #{permission,jdbcType=VARCHAR}
  )
</insert>

<delete id="deleteGlobalPermission" parameterType="map">
  delete from user_roles
  where
    role = #{permission,jdbcType=VARCHAR} and
    user_id = #{userId,jdbcType=INTEGER} and
    organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
    resource_id is null
</delete>

<delete id="deleteProjectPermission" parameterType="map">
  delete from user_roles
  where
    role = #{permission,jdbcType=VARCHAR} and
    user_id = #{userId,jdbcType=INTEGER} and
    resource_id = #{projectId,jdbcType=BIGINT}
</delete>

```

```

<delete id="deleteProjectPermissions" parameterType="map">
    delete from user_roles
    where
    resource_id = #{projectId,jdbcType=BIGINT}
</delete>

<delete id="deleteProjectPermissionOfAnyUser" parameterType="map">
    delete from
    user_roles
    where
    resource_id = #{projectId,jdbcType=BIGINT}
    and role = #{permission,jdbcType=VARCHAR}
</delete>

<delete id="deleteByOrganization" parameterType="String">
    delete from
    user_roles
    where
    organization_uuid = #{organizationUuid,jdbcType=VARCHAR}
</delete>

<delete id="deleteOrganizationMemberPermissions" parameterType="map">
    delete from
    user_roles
    where
    organization_uuid = #{organizationUuid,jdbcType=VARCHAR} and
    user_id = #{userId,jdbcType=INTEGER}
</delete>

<delete id="deleteByUserId" parameterType="int">
    DELETE FROM user_roles WHERE user_id=#{userId,jdbcType=INTEGER}
</delete>
</mapper>

```

## 1.119 summernote 0.8.10

### 1.119.1 Available under license :

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## 1.120 swagger-core 1.5.19

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```
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 */

package io.swagger.v3.oas.models.info;

import java.util.Objects;

/**
 * License
 *
 * @see "https://github.com/OAI/OpenAPI-Specification/blob/3.0.1/versions/3.0.1.md#licenseObject"
 */

public class License {
    private String name = null;
    private String url = null;
    private java.util.Map<String, Object> extensions = null;

    /**
```

```
* returns the name property from a License instance.  
*  
* @return String name  
**/
```

```
public String getName() {  
    return name;  
}
```

```
public void setName(String name) {  
    this.name = name;  
}
```

```
public License name(String name) {  
    this.name = name;  
    return this;  
}
```

```
/**  
* returns the url property from a License instance.  
*  
* @return String url  
**/
```

```
public String getUrl() {  
    return url;  
}
```

```
public void setUrl(String url) {  
    this.url = url;  
}
```

```
public License url(String url) {  
    this.url = url;  
    return this;  
}
```

```
@Override  
public boolean equals(java.lang.Object o) {  
    if (this == o) {  
        return true;  
    }  
    if (o == null || getClass() != o.getClass()) {  
        return false;  
    }  
    License license = (License) o;  
    return Objects.equals(this.name, license.name) &&  
        Objects.equals(this.url, license.url) &&
```



```

        Objects.equals(this.extensions, license.extensions);
    }

    @Override
    public int hashCode() {
        return Objects.hash(name, url, extensions);
    }

    public java.util.Map<String, Object> getExtensions() {
        return extensions;
    }

    public void addExtension(String name, Object value) {
        if (name == null || name.isEmpty() || !name.startsWith("x-")) {
            return;
        }
        if (this.extensions == null) {
            this.extensions = new java.util.HashMap<>();
        }
        this.extensions.put(name, value);
    }

    public void setExtensions(java.util.Map<String, Object> extensions) {
        this.extensions = extensions;
    }

    public License extensions(java.util.Map<String, Object> extensions) {
        this.extensions = extensions;
        return this;
    }

    @Override
    public String toString() {
        StringBuilder sb = new StringBuilder();
        sb.append("class License {\n");

        sb.append("  name: ").append(toIndentedString(name)).append("\n");
        sb.append("  url: ").append(toIndentedString(url)).append("\n");
        sb.append("}");
        return sb.toString();
    }

    /**
     * Convert the given object to string with each line indented by 4 spaces
     * (except the first line).
     */
    private String toIndentedString(java.lang.Object o) {
        if (o == null) {

```

```

        return "null";
    }
    return o.toString().replace("\n", "\n ");
}

}
/**
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 */

package io.swagger.v3.oas.annotations.info;

import io.swagger.v3.oas.annotations.extensions.Extension;

import java.lang.annotation.Retention;
import java.lang.annotation.RetentionPolicy;
import java.lang.annotation.Target;

/**
 * The annotation may be used in { @link Info#license()} to define a license for the OpenAPI spec.
 *
 * @see <a target="_new" href="https://github.com/OAI/OpenAPI-Specification/blob/3.0.1/versions/3.0.1.md#licenseObject">License (OpenAPI specification)</a>
 * @see io.swagger.v3.oas.annotations.OpenAPIDefinition
 * @see Info
 */
@Target({})
@Retention(RetentionPolicy.RUNTIME)
public @interface License {
    /**
     * The license name used for the API.
     *
     * @return the name of the license
     */
    String name() default "";
}

```

```

/**
 * A URL to the license used for the API. MUST be in the format of a URL.
 *
 * @return the URL of the license
 */
String url() default "";

/**
 * The list of optional extensions
 *
 * @return an optional array of extensions
 */
Extension[] extensions() default { };
}

```

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## 1.121 swagger-parser 1.0.35

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# 1.122 webpack-merge 4.1.2

## 1.122.1 Available under license :

# Contributors

- \* [Fernando Montoya](https://github.com/montogeek) - Use separate lodash functions instead of the core package. Faster to install this way.
  - \* [Jonathan Felchlin](https://github.com/GreenGremlin) - Smart merging for loaders.
  - \* [David Gmez](https://github.com/davegomez) - Performance and cosmetic improvements.
  - \* [siready](https://github.com/siready) - Extend `merge.smart` to support `include/exclude`.
  - \* [C.J. Winslow](https://github.com/Whoaa512) - Make `merge.smart` `include/exclude` to work correctly with `loader`.
  - \* [Artem Zakharchenko](https://github.com/blackrabbit99) - Fix `merge.smart` duplication so that if `include` exists, it will merge.
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  - \* [Lucretiel](https://github.com/Lucretiel) - Added a more generic test to describe merge behavior better.
  - \* [Christian Hoffmeister](https://github.com/choffmeister) - Fix `merge.smart` behavior so that it checks against full loader names instead of just the first letter.
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  - \* [Amy Lynn](https://github.com/Amy-Lynn) - Smart merge should maintain existing loader order. #79, #101
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# 1.123 yup 0.25.1

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