Performing a Factory Reset

This chapter provides information on performing a factory reset for a CSR 1000v instance. The factory reset feature helps remove any sensitive information from the router, or to reset the router to a fully functional state.

Information About Factory Reset

The factory reset is a process of clearing the current running and start up configuration information on a router, and resetting the router to an earlier, fully functional state. The factory reset process uses the **factory-reset all** command.

> **Note** The time taken for factory reset on a CSR 1000v instance is dependent on factors such as the type of storage and the devices present on the router.

Information deleted:

When you perform a factory reset, the following information is deleted:

- Licenses – user installed, and manufacturer provided

- Non-volatile random-access memory data

- User credentials

- Start-up configuration

- All writable file systems and personal data

- ROMMON variable

- Persistent storage devices

- Any containers running on bootflash

Information retained:

However, the following information will be retained even after the factory reset:

- Critical information including files that provide access to the router after the reset is complete

- The software packages that are installed before you perform factory reset

- UDI and Smart Licensing files

Supported Scenarios:

You can use the factory reset feature in the following scenarios:

- When you want to delete a CSR 1000v instance in a secure manner.

- If the router data is compromised due to a malicious attack, you must reset the router to factory configuration and then reconfigure once again for further use.

Supported Platforms:

Factory reset is supported on a CSR 1000v instance running on all the platforms including Amazon Web Services, Microsoft Azure, GCP cloud, VMware ESXi, and Hyper-V.

Prerequisites for Performing Factory Reset

- Ensure that your CSR 1000v instance is running on 16.11.x release or later.

- Ensure that you take a backup of all the software images, configurations and personal data before performing the factory reset operation.

- Ensure that there is uninterrupted power supply when the feature reset process is in progress.

- Ensure that the instance has at least 8 GB memory in the bootflash.

Restrictions for Performing a Factory Reset

- Any software patches that are installed on the router are not restored after the factory reset operation.

- You must not restart the CSR 1000V instance during the factory reset process.

- If the factory reset command is issued through a Virtual Teletype (VTY) session, the session is not restored after the completion of the factory reset process.

- Any CSR 1000V instance running on 16.10.x release or earlier does not support this functionality.

- This feature is supported only when you launch the CSR 1000V instance created in the 16.9.x or the 16.10.x releases. If you launch the instance from any other earlier release and then upgrade to release 16.11 or above, factory reset is no longer supported.

- If you want to perform a factory reset for a CSR1000V instance that is running on Microsoft Azure, the instance should belong to a 16.11 release or later. If you upgrade from an earlier release, do not perform a factory reset. This feature is not supported in the earlier releases.

How to Perform a Factory Reset

Step 1   Log in to a CSR 1000v instance running a 16.11 IOS-XE image or later.

Step 2   At the command prompt, execute the **factory-reset all** command.

The system displays the following:

```
factoryreset#factory-reset all
The factory reset operation is irreversible for all operations. Are you sure? [confirm]
 The following will be deleted as a part of factory reset:
 1: All writable file systems and personal data
 2: Licenses
 3: Configuration
 4: User Credentials
 The system will reload to perform a factory reset.
 Note that any day0 configuration will be applied after reload
 DO NOT STOP OR INTERRUPT THE POWER DURING RESET
Are you sure you want to continue? [confirm]Connection to 35.231.25.29 closed by remote host.
Connection to 135.231.25.29 closed.
```

Step 3   Enter confirm to proceed with the factory reset.

Note   The time taken for the factory reset process depends on the type of storage and on which cloud service you deploy the CSR instances.

Note   If you want to quit the factory reset process, press the **Escape** key.

What to do next

After the factory reset process is completed, you receive a log file in the bootflash that indicates whether the process was successful or not.

Restoring Smart Licensing after a Factory Reset

After the reset, Smart Licensing configuation is also deleted. You must reconfigure Smart Licensing on the router by using the token ID. In the connected mode, when you register your instance for Smart Licensing, you must use the force option. That is, you must use the **license smart register idtoken *****token***** force** command. The registration process begins.

When you do not use the force option, and configure Smart Licensing directly, the license registration fails. The following is an example of a failed registration output:

```
router#show license status
csr1#show license status
Smart Licensing is ENABLED

Utility:
  Status: DISABLED

Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
```

```
     Smart Licensing hostname privacy: DISABLED
   Version privacy: DISABLED

Transport:
  Type: Callhome

Registration:
  Status: UNREGISTERED - REGISTRATION FAILED
  Export-Controlled Functionality: NOT ALLOWED
  Initial Registration: FAILED on Feb 15 22:03:29 2019 UTC
    Failure reason: The product
regid.2013-08.com.cisco.CSR1000V,1.0_1562da96-9176-4f99-a6cb-14b4dd0fa135 and sudi containing
 udiSerialNumber:9XIVK9PIVPK,udiPid:CSR1000V has already been registered.

License Authorization:
  Status: No Licenses in Use

Export Authorization Key:
  Features Authorized:
```

After you execute the license smart register idtoken *****token***** force command, the license goes to the Registered state. The following is an example of a configuration output in the Registered state:

```
csr1#show license status
Smart Licensing is ENABLED

Utility:
  Status: DISABLED

Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
    Smart Licensing hostname privacy: DISABLED
  Version privacy: DISABLED

Transport:
  Type: Callhome

Registration:
  Status: REGISTERED
  Smart Account: InternalTestDemoAccount8.cisco.com
  Virtual Account: RTP-CSR-DT-Prod
  Export-Controlled Functionality: ALLOWED
  Initial Registration: SUCCEEDED on Feb 15 22:04:07 2019 UTC
  Last Renewal Attempt: None
  Next Renewal Attempt: Aug 14 22:04:06 2019 UTC
  Registration Expires: Feb 15 21:59:05 2020 UTC

License Authorization:
  Status: AUTHORIZED on Feb 15 22:04:11 2019 UTC
  Last Communication Attempt: SUCCEEDED on Feb 15 22:04:11 2019 UTC
  Next Communication Attempt: Mar 17 22:04:11 2019 UTC
  Communication Deadline: May 16 21:58:10 2019 UTC

Export Authorization Key:
  Features Authorized:
    <none>
```

What Happens after a Factory Reset

After the factory reset is successfully completed, the router boots up. However, before the factory reset process started, if the configuration register was set to manually boot from ROMMON, the router stops at ROMMON.

Important   If the current boot image is a remote image or is stored in a USB or a NIM-SSD, ensure that you take a backup of the image before starting the factory reset process.

Factory reset does not change the UDI of the CSR 1000v instance. To verify whether the UDI is the same after the factory reset, execute the **factoryreset#show license udi** command before and after the factory reset process.

After you configure Smart Licensing, execute the **#show license status** command, to check whether Smart Licensing is enabled for your instance.

Note   If you had SLR enabled before you performed the factory reset, use the same license and enter the same license key that you received from the smart agent.