Installation and Configuration Guide for Visual Voicemail Release 7.0

March 2, 2010

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Installation and Configuration Guide for Visual Voicemail Release 7.0
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CONTENTS

Planning to Install Cisco Visual Voicemail

Revised: March 2, 2010

Visual Voicemail

The Visual Voicemail application is an alternative to audio, or telephone user interface (TUI), voicemail service. You use the screen on your phone to work with your voice messages.

You can view a list of your messages and play your messages from the list. You can also compose, reply to, forward, and delete messages.

Visual Voicemail uses the following:

- A MIDlet. The MIDlet is installed when you update your Cisco Unity or Cisco Unity Connection server to the release required by Visual Voicemail.
- A phone service that points to the MIDlet. You install this phone service on the phones in your Unified Communications system.

To enable your users to use Visual Voicemail, you must perform the following tasks:

1. Ensure that you have read and understood all of the information in Before You Install Visual Voicemail, page 1-2.
2. Ensure that your Unified Communications system meets all of the prerequisites referred to in Prerequisites for Installing Visual Voicemail, page 1-3.
3. Configuring Cisco Visual Voicemail on Your Cisco Unified Communications System
4. (Optional) Configuring Security for Cisco Visual Voicemail
5. Installing Cisco Visual Voicemail on Phones
6. (Optional) Configuring Key Mappings in Visual Voicemail
7. (Optional) Provide information about Visual Voicemail to your users, as listed in Appendix A, "Additional User Information".

Accessing Visual Voicemail

Typically, you press the Messages button to start Visual Voicemail. You do not need to open a line before you start Visual Voicemail. Do not pick up the handset, or open a line in any other way, before you start Visual Voicemail.

To avoid disturbing others when you listen to your messages, pick up the handset. Pick up the handset only after Visual Voicemail has opened the line, that is, when the line button is lit.

Potential Error Message on Phones During Installation

If users press the Messages button on their phones before the installation of the Visual Voicemail service has completed, the following error message is displayed:

Error, contact administrator

Advise your users that they might encounter this error during the outage window when you install the Visual Voicemail service.

Before You Install Visual Voicemail

Before you install Visual Voicemail, consider the following:

- The installation of Visual Voicemail requires coordinated actions from the Cisco Unified Communications Manager administrator *and* from the Cisco Unity or Cisco Unity Connection administrator. The administrators need to plan to install Visual Voicemail in a coordinated way, and communicate regularly with one another.

- Decide whether you want to replace the TUI voicemail service with Visual Voicemail, or whether to enable users to choose which service to use. For more information about this topic, see How Visual Voicemail Interoperates with TUI Voicemail, page 5-11.

- Decide whether you want to implement security for Visual Voicemail. If you configure security for Visual Voicemail, the traffic between phones and the voicemail servers is secure.

  When you implement security, you must sign a Certificate Trust List (CTL) file. To sign a CTL file, you need at least one security eToken. If it is the first time that the CTL file is being signed, you need two security eTokens. You might need to order these items some time before you install Visual Voicemail.

- Ensure that traffic is allowed on the required ports before you install Visual Voicemail. For more information about this topic, see About Visual Voicemail Ports, page 1-3.

- Install Visual Voicemail during a period of light usage of your voice message service.

- Consider whether to advise your users that they might encounter the *Error, contact administrator* error during the outage window when you install the Visual Voicemail service. For more information about this topic, see Potential Error Message on Phones During Installation, page 1-2.

- Due to memory limitations on phones, you cannot run any other MIDlets on phones on which Visual Voicemail is installed. Before you install Visual Voicemail on your phones, uninstall any other MIDlets from the phones.

About Visual Voicemail Ports

Consumption of Port Licenses by Visual Voicemail

The usage of ports by Visual Voicemail is similar to the usage of ports by the TUI voicemail service.

When you start Visual Voicemail, Visual Voicemail automatically uses a port to open a line and call the voicemail server. On Cisco Unity the call times out after two minutes. On Cisco Unity Connection the call times out after one minute.

You might not need to buy new port licenses for your Visual Voicemail service. Use Visual Voicemail with your existing ports before you make a decision to buy new port licenses.

Ports and Protocols Used by Visual Voicemail

For Visual Voicemail to work successfully, traffic must be allowed on certain ports between the phone VLAN and the voicemail server. The following table lists the ports and the protocols required:

Port	Protocol	Required For...
80	HTTP	All deployments.
443	HTTPS	Secure deployments.

Prerequisites for Installing Visual Voicemail

Before you install Visual Voicemail, check that your system meets all the necessary prerequisites. Ensure that you have the correct versions of all the required software, as listed in the release notes at the following URL:

http://www.cisco.com/en/US/products/ps9829/prod_release_notes_list.html

Note   Your Cisco Unity or Cisco Unity Connection server, your Cisco Unified Communications Manager server, and the phone firmware must be at the versions that are specified in the release notes. If the servers and firmware are not at the correct versions, Visual Voicemail might fail to install, or fail to function correctly.

Note   The release number of Visual Voicemail does not indicate the releases of Cisco Unified Communications Manager, Cisco Unity or Cisco Unity Connection that are supported. For this information, see the release notes.

Installing Phone Firmware

For information about how to install phone firmware, see the documentation for the phone to which you want to install the firmware.

Installing Servers

For information about how to install server upgrades for Cisco Unity Connection or Cisco Unified Communications Manager from an .iso file, see *Cisco Unified Communications Operating System Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

For information about how to install server upgrades for Cisco Unity, see the release notes for the relevant Engineering Special (ES), or see Cisco Unity documentation at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps2237/tsd_products_support_series_home.html

Configuring Cisco Visual Voicemail on Your Cisco Unified Communications System

Revised: March 2, 2010

Configuration of Visual Voicemail on Your Cisco Unified Communications System

Before you install Visual Voicemail, ensure that you plan appropriately for the installation. For more information, see Planning to Install Cisco Visual Voicemail.

When you install Visual Voicemail, you can re-use some elements of the existing configuration of your TUI voicemail system. For some configurations, you do not need to create new versions of the following configuration elements, you can re-use these items:

- Voicemail ports
- Line groups
- Hunt lists

For other configurations, for example Cisco Unity Connection servers in an active-active configuration, you must create a line group and a hunt list for each server.

Related Topics
- Visual Voicemail and Complex Configurations, page 2-2

Visual Voicemail and Complex Configurations

Your Cisco Unified Communications system might contain the following elements for failover, clustering, or to ensure that the system can be scaled:

- Multiple voicemail servers
- Multiple Cisco Unified Communications Manager servers

If your system contains these elements, you must repeat some of the installation steps described in this chapter. You must repeat steps on different servers.

For more information about how to configure Visual Voicemail on complex configurations, see Configuring Cisco Visual Voicemail on Complex Systems with Failover, Clusters, and Multiple Servers.

Related Topics

- Configuration of Visual Voicemail on Your Cisco Unified Communications System, page 2-1

Enabling Web Access on Phones

For Visual Voicemail to function correctly on Cisco Unified IP Phones, the phones must have web access enabled. To enable web access on the phones in your system, you can use the following Cisco Unified Communications Manager windows:

- Device Configuration window
- Common Phone Profile window
- Enterprise Phone Configuration window

For more information about these windows, see the *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

For more information about web access, see the *Cisco Unified Communications Manager Security Guide* at the same URL.

What to Do Next

- Creating a Voicemail Pilot Number for Visual Voicemail, page 2-3

How to Create Voicemail Pilot Numbers, Hunt Pilots, Line Groups, and Hunt Lists

- Creating a Voicemail Pilot Number for Visual Voicemail, page 2-3
- Creating a Hunt Pilot for the Voicemail Pilot Number, page 2-3
- Testing Your Visual Voicemail Pilot Number, page 2-4
- (Active-Active Cisco Unity Connection Only) Creating a Line Group, page 2-4
- (Active-Active Cisco Unity Connection Only) Creating a Hunt List, page 2-4

Creating a Voicemail Pilot Number for Visual Voicemail

Procedure

Step 1   Select **Voice Mail > Voice Mail Pilot** in Cisco Unified Communications Manager Administration.

Step 2   Select **Add New**.

Step 3   Enter a directory number for the voicemail pilot for Visual Voicemail in the **Voice Mail Pilot Number** field.

Step 4   Select the same calling search space that you use for the TUI voicemail system from the **Calling Search Space** list box.

Step 5   (Optional) Enter a description in the Description field, for example, enter **Visual Voicemail Reverse Trap Pilot**.

Step 6   Select **Save**.

Related Topics

- How to Configure Reverse TRaP Rules, page 2-7

What to Do Next

- Creating a Hunt Pilot for the Voicemail Pilot Number, page 2-3

Creating a Hunt Pilot for the Voicemail Pilot Number

A hunt pilot is a string of digits and a set of associated digit manipulations that route calls to a hunt list. For more information about hunt pilots, see the *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Procedure

Step 1   Select **Call Routing > Route/Hunt > Hunt Pilot** in Cisco Unified Communications Manager Administration.

Step 2   Select **Add New**.

Step 3   Enter the number of the Visual Voicemail pilot number in the **Hunt Pilot** field.

Step 4   (Optional) Enter a description in the Description field, for example, enter **Visual Voicemail Reverse Hunt Pilot**.

Step 5   Select the same hunt list that is associated with your telephone user interface (TUI) voicemail system from the **Hunt List** list box.

Step 6   Select **Save**.

Related Topics

- Creating a Voicemail Pilot Number for Visual Voicemail, page 2-3

What to Do Next

- Testing Your Visual Voicemail Pilot Number, page 2-4

Testing Your Visual Voicemail Pilot Number

Call the Visual Voicemail pilot number. If you hear prompts from the TUI, you have successfully created the Visual Voicemail pilot number.

Related Topics

- Creating a Voicemail Pilot Number for Visual Voicemail, page 2-3
- Creating a Hunt Pilot for the Voicemail Pilot Number, page 2-3

What to Do Next

- (Active-Active Cisco Unity Connection Only) Creating a Hunt List, page 2-4
- How to Install and Configure Voicemail Web Services, page 2-5

(Active-Active Cisco Unity Connection Only) Creating a Line Group

If you want to configure Visual Voicemail in a cluster of publisher and subscriber Cisco Unity Connection servers in an active-active configuration with one Cisco Unified Communications Manager server, you must create a line group for each Cisco Unity Connection server.

The directory numbers that are listed for the ports for the publisher server must be added to the line group for the publisher server. Similarly, the directory numbers that are listed for the ports for the subscriber server must be added to the line group for the subscriber server.

To view a list of ports and associated directory numbers , select **Voice Mail > Cisco Voice Mail Port** in Cisco Unified Communications Manager Administration.

For more information about how to create a line group, see the *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

For more information about ports in Cisco Unity Connection, see the *System Administration Guide for Cisco Unity Connection* at the following URL:

http://www.cisco.com/en/US/products/ps6509/prod_maintenance_guides_list.html

What to Do Next

- (Active-Active Cisco Unity Connection Only) Creating a Hunt List, page 2-4

(Active-Active Cisco Unity Connection Only) Creating a Hunt List

If you want to configure Visual Voicemail in a cluster of publisher and subscriber Cisco Unity Connection servers in an active-active configuration with one Cisco Unified Communications Manager server, you must create a hunt list for each Cisco Unity Connection server.

You must add the line group for the publisher server to the hunt list for the publisher server. Similarly, you must add the line group for the subscriber server to the hunt list for the subscriber server.

For more information about how to create a hunt list, see the *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

What to Do Next

- How to Install and Configure Voicemail Web Services, page 2-5

How to Install and Configure Voicemail Web Services

- Installing the Cisco Unity Web Service, page 2-5
- Configuring Cisco Unity Connection Settings for the Voicemail Web Service, page 2-5
- Testing That the Voicemail Web Service Is Accessible, page 2-6

Installing the Cisco Unity Web Service

Procedure

Step 1   Download the .msi installation file for the Cisco Unity web service to the Cisco Unity server. For information about where to get the .msi installation file, see the release notes at the following URL:

http://www.cisco.com/en/US/products/ps9829/prod_release_notes_list.html

Step 2   Run the .msi installation file.

Step 3   Follow the instructions in the installation wizard to install the Cisco Unity web service.

Related Topics

- How to Install and Configure Voicemail Web Services, page 2-5
- Configuring Cisco Unity Connection Settings for the Voicemail Web Service, page 2-5

What to Do Next

- Testing That the Voicemail Web Service Is Accessible, page 2-6

Configuring Cisco Unity Connection Settings for the Voicemail Web Service

When you install the Engineering Special (ES) for Cisco Unity Connection, the voicemail web service is also installed. You must configure the voicemail web service in Cisco Unity Connection.

Procedure

Step 1   Select **System Settings > Advanced > Connection Administration** in Cisco Unity Connection Administration.

Step 2   Enter values for the following Voice Mail Web Service settings:

Field	Setting
Applications Can Cache the Cisco Unity Connection Password	Select this option to enable Visual Voicemail to cache the extension and numeric password of users. This is required if you want to enable your users to use the sign-in option **Keep me signed in**.
Session Timeout (in Seconds)	Ensure that this value is set to **300**.
Pilot Number for Voice Mail	Enter the directory number of your TUI voicemail service.
Pilot Number for TRAP Connections	Enter the Visual Voicemail pilot number.

Step 3   Select **Save**.

Related Topics

- How to Install and Configure Voicemail Web Services, page 2-5

What to Do Next

- Testing That the Voicemail Web Service Is Accessible, page 2-6

Testing That the Voicemail Web Service Is Accessible

Procedure

Step 1   Start a browser.

Step 2   Use the HTTP protocol to access the URL of the voicemail web service on the Cisco Unity or Cisco Unity Connection server.

You can access the URL structured as follows:

- Cisco Unity:
  http://<*domain-name-of-Cisco Unity-server*>/vmws/vmws.dll?Handler=GenAuthenticationWSDL

- Cisco Unity Connection:
  http://<*domain-name-of-Cisco Unity Connection-server*>/vmws/services/Authentication?wsdl

For example, access a URL similar to the following:

- Cisco Unity: http://unityserver/vmws/vmws.dll?Handler=GenAuthenticationWSDL

- Cisco Unity Connection: http://unityconnectionserver/vmws/services/Authentication?wsdl

If the source of an XML file is displayed, the voicemail web service has been correctly installed.

Related Topics

- How to Install and Configure Voicemail Web Services, page 2-5

What to Do Next

- About the Visual Voicemail .Jad and .Jar Files, page 2-7

About the Visual Voicemail .Jad and .Jar Files

Before you install Visual Voicemail, you must update your Cisco Unity or Cisco Unity Connection server to the release required for Visual Voicemail, as listed in the release notes at the following URL:

http://www.cisco.com/en/US/products/ps9829/prod_release_notes_list.html

During the installation of the updates, the following files are copied to the server:

- VisualVoicemail.jad
- VisualVoicemail.jar

VisualVoicemail.jad is a Java Application Descriptor (JAD) file. When you update the servers, the MIME type for .jad files is automatically set to the following value:

text/vnd.sun.j2me.app-descriptor

Related Topics

- Testing the Visual Voicemail .Jad File on Your Voicemail Server, page 2-7

Testing the Visual Voicemail .Jad File on Your Voicemail Server

Procedure

Step 1   Start a browser.

Step 2   Access the URL of the .jad file on the voicemail server.

You can access the URL structured as follows:

http://<*IP-address-of-voicemail-server*>/midlets/VisualVoicemail/VisualVoicemail.jad

For example, access:

http://209.165.200.225/midlets/VisualVoicemail/VisualVoicemail.jad

Depending on the browser you use, a dialog that prompts you to open or to save the VisualVoicemail.jad file is displayed.

Related Topics

- About the Visual Voicemail .Jad and .Jar Files, page 2-7

What to Do Next

- How to Configure Reverse TRaP Rules, page 2-7

How to Configure Reverse TRaP Rules

- Configuring a Reverse TRaP Rule on Cisco Unity, page 2-8

Configuring a Reverse TRaP Rule on Cisco Unity

Procedure

Step 1   Start a browser on the Cisco Unity server.

Step 2   Access the system administration web page of the Cisco Unity server.

You can access the URL structured as follows:

http://*<localhost>*/Web/SA

For example, access:

http://unityserver/Web/SA

Step 3   Select **Call Routing** in the **Call Management** section.

Step 4   Select **Direct Calls** in the left pane.

Step 5   Change the rule order in the Routing Table so that the Route to Reverse TRaP rule is before the Attempt Sign-In rule.

Step 6   Set the status of the Route to Reverse TRaP rule to **Enabled**.

Step 7   Enter the number of the Visual Voicemail pilot number in the **Dialed number (DNIS)** field.

Step 8   Select Reverse TRaP from the **Send calls to** list box.

Step 9   Select **Save**.

Note   Do not add any other reverse TRaP rules for Visual Voicemail. Also, do not rename the existing reverse TRaP rule. If you change the name of the reverse TRaP rule from *Route to Reverse TRaP*, Visual Voicemail does not function correctly.

What to Do Next

Configuring a Reverse TRaP Rule on Cisco Unity Connection

Procedure

Step 1   Select **Call Management > Call Routing > Direct Routing Rules** in Cisco Unity Connection Administration.

Step 2   Select **Add New**.

Step 3   Enter a name for the rule in the Display Name field, for example, enter **Visual Voicemail Reverse Trap Rule**.

Step 4   Select **Save** to save the name.

Step 5   Follow these steps to create a condition:

    a.   Select **Add New** in the Routing Rule Conditions section.

    b.   Select the **Dialed Number** option.

    c.   Select **Equals** from the list box of condition operators.

    d.   Enter the number of the Visual Voicemail pilot number in the value field.

    e.   Select **Save** to save the condition.

    Check that the new rule is displayed in the Routing Rule Conditions section.

Step 6   Select the **Edit Direct Routing Rule** link at the top of the window.

Step 7   Select the **Conversation** option on the Edit Direct Routing Rule window, then select **Reverse Trap** from the list box.

Step 8   Select **Save** to save the rule.

Note   Do not add any other reverse TRaP rules for Visual Voicemail.

What to Do Next

- Testing Your Reverse TRaP Rule, page 2-9

Testing Your Reverse TRaP Rule

Call the Visual Voicemail pilot number. If you hear five or six seconds of silence followed by termination of the call, you have successfully created the reverse TRaP rule.

Related Topics

- Configuring a Reverse TRaP Rule on Cisco Unity, page 2-8
- Configuring a Reverse TRaP Rule on Cisco Unity Connection, page 2-8

What to Do Next

- How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9

How to Add the Visual Voicemail Service in Cisco Unified Communications Manager

- Viewing the .Jad File, page 2-10
- Service Parameters for Visual Voicemail, page 2-10
- Adding the Visual Voicemail Service, page 2-11

Viewing the .Jad File

To add the Visual Voicemail service, you must first obtain information about the service from the VisualVoicemail.jad file. To obtain this information, you must view the content of the file.

Procedure

Step 1 Follow the procedure in Testing the Visual Voicemail .Jad File on Your Voicemail Server, page 2-7.

Step 2 Save the .jad file.

Step 3 Open VisualVoicemail.jad in a text editor

Related Topics

Service Parameters for Visual Voicemail

To update a Visual Voicemail service parameter, you must delete the Visual Voicemail service then recreate the service. Therefore, you must decide which service parameters you want to use before you create the Visual Voicemail service.

You can use the following parameters with the Visual Voicemail service:

Parameter	Description
call_connect_delay	Specifies in milliseconds the delay that Visual Voicemail allows for a call to be automatically answered and connected to the voicemail server. This call is then used to play or record a message.
	The default value is 1000, but this value might need to be adjusted if there is significant network latency between the IP Phones running Visual Voicemail and the voicemail server.
	If this value is not large enough, then calls created by Visual Voicemail to play or record messages might be disconnected after five or six seconds.
	Only modify the value of this parameter if establishing calls to the voicemail server is unreliable.
	Suggested maximum value: 2500
	Suggested minimum value: 500
log_level	Specifies the degree of detail that you want to appear for the phones that subscribe to the Visual Voicemail service.
never_save_localization_data	(Optional) Specifies whether to save localized user interface text in the memory of the phones.
tui_key_mappings_file_url	(Optional) Specifies the HTTP location of the key mappings file. For more information about this parameter, see Configuring Key Mappings in Visual Voicemail.

Parameter	Description
tui_key_mappings_file_version	(Optional) Specifies the version number of the key mappings file. For more information about this parameter, see Configuring Key Mappings in Visual Voicemail.
use_secure_https_connection	(Optional) Specifies whether to implement security in the Visual Voicemail service, that is whether to use HTTPS instead of HTTP to transmit voice messages. Set the value of this parameter to Yes to implement security in the Visual Voicemail service.
voicemail_server	Specifies the hostname of the voicemail server.

Related Topics

- Updating Visual Voicemail Service Parameters, page 7-2

Adding the Visual Voicemail Service

Procedure

Step 1   Select **Device > Device Settings > Phone Services** in Cisco Unified Communications Manager Administration.

Step 2   Select **Add New**.

Step 3   Enter information in the IP Phone Services Configuration window, as follows:

Field	Setting
Service Name	Enter the name of the service exactly as it appears in the VisualVoicemail.jad file. This name is displayed in the list of available services when you subscribe a phone to a service. ✎ **Note** You must enter the name of the service exactly as it appears in the VisualVoicemail.jad file. For example, if there are no spaces in the name of the service in the VisualVoicemail.jad file, do not include spaces in the name in this field.
ASCII Service Name	Enter a name for the service in ASCII characters. This name is displayed on a phone if the phone cannot display Unicode characters.
Service URL	Enter a URL that points to the service target .jad file. For example, enter a URL similar to the following URL: **http://209.165.200.225/midlets/VisualVoicemail/VisualVoicemail.jad**
Service Category	Select **Java MIDlet**.
Service Type	Select **Messages** to associate the service with the Messages button on the phone.
Service Vendor	Enter the name of the service vendor as it appears in VisualVoicemail.jad.
Service Version	Leave this field blank.

Field	Setting
Enable	Select this to enable the service.
Enterprise Subscription	Do not select this. This method of installing the Visual Voicemail service on phones is suitable for only the most simple phone systems.

Step 4   Select **Save**.

Step 5   Select **New Parameter** to add a parameter to the service.

Field	Setting
Parameter Name	Enter the following text in this field: **voicemail_server**
Parameter Display Name	Enter a name for the parameter. This name is used in the Cisco Unified Communications Manager user interface. For example, enter **Voicemail server**.
Default Value	Cisco Unity: Enter the hostname of the primary server. Cisco Unity Connection: If you have a Cisco Unity Connection cluster, enter the cluster DNS alias. Otherwise, enter the hostname of your Cisco Unity Connection server. This value is displayed to administrators when they subscribe phones to this service. When a user signs in to Visual Voicemail, the hostname of any partner server that is available is cached by the Visual Voicemail MIDlet for use during failover. For this reason, only one hostname is needed for this parameter.
Parameter Description	Enter a description. For example, enter **Hostname of voicemail server**.
Parameter is Required	Select this option.
Parameter is a Password	Do not select this option.

For more information about service administration, see *Cisco Unified Communications Manager System Guide* and *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Step 6   Select **Save**.

Step 7   Select **Add New** to add another parameter to the service.

Field	Setting
Parameter Name	Enter the following text in this field: **call_connect_delay**
Parameter Display Name	Enter a name for the parameter. For example, enter **Call Connect Delay**.
Default Value	Enter **1000**.
Parameter Description	Enter a description. For example, enter **Default call connect delay**.

Field	Setting
Parameter is Required	Select this option.
Parameter is a Password	Do not select this option.

Step 8 Select **Add New** to add another parameter to the service.

Field	Setting
Parameter Name	Enter the following text in this field: **log_level**
Parameter Display Name	Enter a name for the parameter. For example, enter **Log Level**.
Default Value	Enter the following text in this field: **info**
Parameter Description	Enter a description. For example, enter **Level of logging**.
Parameter is Required	Select this option.
Parameter is a Password	Do not select this option.

Step 9 Select **Save And Close**.

Related Topics

- Viewing the .Jad File, page 2-10
- Service Parameters for Visual Voicemail, page 2-10
- About the Visual Voicemail .Jad and .Jar Files, page 2-7
- Installing by Enterprise Subscription, page 5-3
- How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9

What to Do Next

- (Optional) Configuring Security for Cisco Visual Voicemail
- (Optional) Configuring Cisco Visual Voicemail on Complex Systems with Failover, Clusters, and Multiple Servers
- Installing Cisco Visual Voicemail on Phones

Configuring Security for Cisco Visual Voicemail

Revised: March 2, 2010

Configuration of Security for Visual Voicemail

If you configure security for Visual Voicemail, the traffic between phones and the voicemail servers is secure. Visual Voicemail uses the HTTPS protocol instead of HTTP for traffic between phones and the voicemail servers.

Note When you configure security for Visual Voicemail, you use the Cisco CTL Client plug-in. The purpose of running the Cisco CTL Client plug-in is to sign the CTL file. This process does not configure secure messaging for your Cisco Unified Communications Manager, or change your Cisco Unified Communications Manager to secure mode or mixed mode.

Related Topics
- Visual Voicemail Security and Complex Configurations, page 3-1

Visual Voicemail Security and Complex Configurations

Your Cisco Unified Communications system might contain the following elements for failover, clustering, or to ensure that the system can be scaled:

- Multiple voicemail servers
- Multiple Cisco Unified Communications Manager servers

If your system contains these elements, you must repeat some of the installation steps described in this chapter. You must repeat steps on different servers. For example, you might need to configure a service parameter on multiple Cisco Unified Communications Manager servers.

Related Topics

- Configuration of Security for Visual Voicemail, page 3-1
- Configuring Cisco Visual Voicemail on Complex Systems with Failover, Clusters, and Multiple Servers

Adding the Security Service Parameter to the Visual Voicemail Service

Ensure that you added the use_secure_https_connection parameter to the Visual Voicemail service when you created the Visual Voicemail service.

If you did not add this parameter, you must delete the Visual Voicemail service, recreate the service, then add the use_secure_https_connection parameter to the Visual Voicemail service.

Related Topics

- Service Parameters for Visual Voicemail, page 2-10
- Adding the Visual Voicemail Service, page 2-11
- Updating Visual Voicemail Service Parameters, page 7-2

What to Do Next

- How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2
- How to Obtain a Certificate for Visual Voicemail on Cisco Unity Connection, page 3-5

How to Obtain a Certificate for Visual Voicemail on Cisco Unity

- Creating a Certificate Request for the Cisco Unity Server, page 3-2
- Submitting the Certificate Request to a Certificate Authority, page 3-3
- Installing the Certificate on the Cisco Unity Server, page 3-4
- Downloading the IIS Certificate from Cisco Unity, page 3-4

Creating a Certificate Request for the Cisco Unity Server

Procedure

Step 1 Start Internet Information Services Manager.

Step 2 Select the Cisco Unity server in the left pane.

Step 3 Select **Web Sites**.

Step 4 Right-click **Default Web Site**, then select **Properties**.

Step 5 Select the **Directory Security** tab.

Step 6 Select **Security Certificate**.

This starts a wizard that you can use to create the certificate request.

Step 7   Select **Create a new certificate**, then select **Next**.

Step 8   Select **Prepare the request now, but send it later**, then select **Next**.

Step 9   Type a name for the certificate, then select **Next**.

For example, type the hostname as the name of the certificate.

Step 10   Enter information about your organization, then select **Next**.

Step 11   Enter the fully-qualified domain name of the Cisco Unity server in the Common name field, then select **Next**.

Step 12   Enter your geographical information, then select **Next**.

Step 13   Enter a filename for the certificate request, then select **Next**.

Step 14   Check the details of your certificate request on the Request File Summary screen, then select **Next**.

Step 15   Select **Finish**.

Related Topics

- How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2

What to Do Next

- Submitting the Certificate Request to a Certificate Authority, page 3-3

Submitting the Certificate Request to a Certificate Authority

Procedure

Step 1   Begin the process to submit a certificate on your certificate authority web site.

Step 2   Copy the contents of the certificate request text file.

Step 3   Paste the contents into the appropriate field on your certificate authority web site.

Step 4   Submit your request.

Step 5   Locate the certificate request on your certificate authority web site.

Step 6   If the certificate has been issued, download the certificate to a folder on your Cisco Unity server.

Related Topics

- How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2

What to Do Next

- Installing the Certificate on the Cisco Unity Server, page 3-4

Installing the Certificate on the Cisco Unity Server

Procedure

Step 1   Start Internet Information Services Manager.

Step 2   Select the Cisco Unity server in the left pane.

Step 3   Select **Web Sites**.

Step 4   Right-click **Default Web Site**, then select **Properties**.

Step 5   Select the **Directory Security** tab.

Step 6   Select **Security Certificate**.

This starts a wizard that you can use to install the certificate.

Step 7   Select **Process the pending request and install the certificate**, then select **Next**.

Step 8   Enter the location of the certificate file, then select **Next**.

Step 9   Enter **443** as SSL port, then select **Next**.

Step 10   Check the details of your certificate on the Certificate Summary screen, then select **Next**.

Step 11   Select **Finish**.

Related Topics

- How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2

What to Do Next

- Downloading the IIS Certificate from Cisco Unity, page 3-4

Downloading the IIS Certificate from Cisco Unity

Procedure

Step 1   Start a browser on the Cisco Unity server.

Step 2   Use the HTTPS protocol to access the URL of the Cisco Unity server.

You can access the URL structured as follows:

https://<*localhost*>

For example, access:

https://unityserver/

Step 3   Select **View Certificate** on the security dialog box.

Step 4   Select the **Details** tab.

Step 5   Select **Copy to File**.

Step 6   Select **DER encoded binary X.509 (.CER)**, then select **Next**.

Step 7   Enter a filename for the certificate, then select **Next**.

Step 8   Verify the details of your certificate on the Completing the Certificate Export Wizard screen, then select **Finish**.

Related Topics

-

What to Do Next

-

How to Obtain a Certificate for Visual Voicemail on Cisco Unity Connection

-

Downloading the Tomcat Certificate from Cisco Unity Connection

Procedure

Step 1   Select **Security > Certificate Management** in Cisco Unified Operating System Administration.

Step 2   Find the Tomcat certificate.

Step 3   Select the **tomcat.der** link.

Step 4   Select **Download**, then save the tomcat.der file to your computer.

What to Do Next

-

How to Add Certificates to Cisco Unified Communications Manager and Your Phones

To ensure that the traffic between the Visual Voicemail application and the voicemail server is encrypted, you must do the following:

1. Upload the certificate to your Cisco Unified Communications Manager.
2. Sign the Certificate Trust List (CTL) file on the Cisco Unified Communications Manager.
3. Restart the Cisco Unified Communications Manager and TFTP servers to update the trust list on the phones in your system.

The phones trust the certificates in the CTL file, so the phones can make secure connections to the server specified in the certificate.

Related Topics

Uploading Certificates to Cisco Unified Communications Manager

Procedure

Step 1 Select **Security > Certificate Management** in Cisco Unified Operating System Administration.

Step 2 Select **Upload Certificate**.

Step 3 Select **Phone-trust** from the Certificate Name list box.

Step 4 Enter a description for the certificate in the **Description** field.

For example, enter **Unity Connection Tomcat Certificate** or **Unity IIS Certificate**.

Step 5 Enter the path to the certificate you downloaded in the Upload File field.

Step 6 Select **Upload File**.

Step 7 Select **Close**.

Related Topics

What to Do Next

Checking the Certificate on Cisco Unified Communications Manager

Procedure

Step 1 Select **Security > Certificate Management** in Cisco Unified Operating System Administration.

Step 2 Select **Find** to display a list of all security certificates.

Step 3   Locate the certificate that you uploaded. The certificate has the following values:

Field	Value
Certificate Name	Phone-trust
Certificate Type	trust-certs
.PEM File	*<hostname-of-Cisco Unity-or-Cisco Unity Connection-system>*.pem
.DER File	*<hostname-of-Cisco Unity-or-Cisco Unity Connection-system>*.der
Description	Trust certificate

Related Topics

What to Do Next

Signing the CTL File on Cisco Unified Communications Manager

Before You Begin

You must sign the CTL file. To do this, you need at least one security eToken. If this is the first time that the CTL file is being signed, you need two security eTokens.

The purpose of running the Cisco CTL Client plug-in is to sign the CTL file. This process does not configure secure messaging for your Cisco Unified Communications Manager, or change your Cisco Unified Communications Manager to secure mode or mixed mode.

The CTL file is signed so that the IP phone trusts the voicemail server certificate in the CTL file, and allows the phone to establish secure HTTPS connections to the voicemail server

Note   Even if the phones in your system already had a CTL installed, you must sign the modified CTL file after you upload the certificate to the Cisco Unified Communications Manager.

For more information about the Cisco CTL Client plug-in, see the *Cisco Unified Communications Manager Security Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Procedure

Step 1   Select **Application > Plugins** in Cisco Unified Communications Manager Administration.

Step 2   Select **Find**.

Step 3   Download the **Cisco CTL Client** plug-in to your computer.

Step 4   Run the Cisco CTL Client installer application.

Step 5   Start the Cisco CTL Client application.

Step 6 Enter the details of the publisher server on the **Cisco Unified Communications Manager Server** tab, then select **Next**.

Field	Value
Hostname or IP Address	Enter the IP address of the Cisco Unified Communications Manager publisher server to which you uploaded the certificate in Uploading Certificates to Cisco Unified Communications Manager, page 3-6.
Port	Enter the port of the Cisco Unified Communications Manager publisher server to which you uploaded the certificate. The default value is 2444. You do not need to change this value.
Username	Enter the administrator username for the Cisco Unified Communications Manager Administration application.
Password	Enter the administrator password for the Cisco Unified Communications Manager Administration application.

Step 7 Select **Update CTL File** on the Cluster Security Mode tab, then select **Next**.

A message box prompts you to insert a security token.

Step 8 Insert a security eToken into your computer, then select **OK** on the message box.

Select **Add** or **Next** on the Security Token Information tab.

Step 9 Check that the CTL file is listed on the CTL Entries tab.

Verify that the hostname or address that you entered in Step 6 is present in the Subject column of one of the entries.

Step 10 Select **Finish**.

If this is the first time that the CTL file is being signed, you are prompted to sign with two eTokens, as follows:

1. Select **OK** on the prompt message box.
2. Select **Add Tokens** on the CTL Entries tab.
3. Select **OK** on the prompt message box.
4. Remove the first eToken from your computer.
5. Insert the second security eToken into your computer.
6. Select **Add** on the Security Token Information tab.
7. Select **Finish**.

Step 11 Enter the password for the eToken in the Log On: eToken dialog box.

The default password for the eToken is provided with the eToken.

Step 12 Select **OK**.

Step 13 Select **Done** on the dialog box that shows the location of the CTL file.

Related Topics

- How to Add Certificates to Cisco Unified Communications Manager and Your Phones, page 3-5

What to Do Next

- Restarting the Cisco Unified Communications Manager and TFTP Servers, page 3-9

Restarting the Cisco Unified Communications Manager and TFTP Servers

After you sign the CTL file, restart the Cisco Unified Communications Manager services and Cisco TFTP services in Cisco Unified Serviceability. Restart the TFTP and Cisco Unified Communications Manager services on all nodes in the cluster that run these services.

Related Topics

- How to Add Certificates to Cisco Unified Communications Manager and Your Phones, page 3-5

What to Do Next

- Checking That the CTL File Is On Phones in Your System, page 3-9

Checking That the CTL File Is On Phones in Your System

Procedure

Step 1   Press the Settings button on any phone in your network.

Step 2   Select **Security Configuration**.

Step 3   Select **Trust List**.

Step 4   Check that the value of one of the Application Server entries is the hostname of your Cisco Unity or Cisco Unity Connection server.

Related Topics

- How to Add Certificates to Cisco Unified Communications Manager and Your Phones, page 3-5

What to Do Next

- Installing Cisco Visual Voicemail on Phones

Configuring Cisco Visual Voicemail on Complex Systems with Failover, Clusters, and Multiple Servers

Revised: March 2, 2010

Visual Voicemail Configuration on Complex Systems

Your Cisco Unified Communications system might contain the following elements for failover, clustering, or to ensure that the system can be scaled:

• Multiple voicemail servers

• Multiple Cisco Unified Communications Manager servers

If your system contains these elements, you must repeat some of the installation steps described in Configuring Cisco Visual Voicemail on Your Cisco Unified Communications System and Configuring Security for Cisco Visual Voicemail. You must repeat steps on different servers.

This chapter describes the configuration that is required in these complex configurations to ensure that Visual Voicemail functions correctly.

Use Table 4-1 to identify what part of this chapter corresponds to your complex configuration.

Table 4-1   Visual Voicemail Configurations on Complex Systems

Voicemail Software	Voicemail Servers	Voicemail Server Configuration	Number of Cisco Unified Communications Manager Servers	Cross-Reference
Cisco Unity	Primary and secondary	Failover	One	Failover Configuration, page 4-3
Cisco Unity	Multiple	Independent	One	Configuration of Multiple Independent Cisco Unity Servers Integrated with One Cisco Unified Communications Manager Server, page 4-4
Cisco Unity	One	—	Multiple	Configuration of One Cisco Unity Server Integrated with Multiple Cisco Unified Communications Manager Servers, page 4-5
Cisco Unity Connection	Cluster of publisher and subscriber	Active-Active	One	Cluster of Publisher and Subscriber Cisco Unity Connection Servers in an Active-Active Configuration with One Cisco Unified Communications Manager Server, page 4-6
Cisco Unity Connection	Multiple	—	One	Configuration of Multiple Cisco Unity Connection Clusters Integrated with One Cisco Unified Communications Manager Server, page 4-8
Cisco Unity Connection	One	—	Multiple	Configuration of One Cisco Unity Connection Server Integrated with Multiple Cisco Unified Communications Manager Servers, page 4-9

About Visual Voicemail Installation on Complex Cisco Unity Configurations

- Failover Configuration, page 4-3
- Configuration of Multiple Independent Cisco Unity Servers Integrated with One Cisco Unified Communications Manager Server, page 4-4
- Configuration of One Cisco Unity Server Integrated with Multiple Cisco Unified Communications Manager Servers, page 4-5

Failover Configuration

To configure Visual Voicemail on a system with failover where the primary and secondary Cisco Unity servers are integrated with one Cisco Unified Communications Manager server, you must do the following:

- Create only one Visual Voicemail pilot number.
- Install the web services on both the primary and secondary servers. The web services only install on an active server. To install the web services on the secondary server, do the following:
  - a. Run the Unity Failover Monitor on the primary server.
  - b. Failover to the secondary server.
  - c. Install the web services on the secondary server.
  - d. Run the Unity Failover Monitor on the secondary server.
  - e. Failback to the primary server.
- Configure the reverse TRaP rule on *both* the primary server and the secondary server. Use the same Visual Voicemail pilot number in the Dialled Number field for both servers.
- Create only one Visual Voicemail service on the Cisco Unified Communications Manager server. Enter the hostname of the primary server in the following fields:
  - Service URL of the service
  - Default Value of the voicemail_server parameter

Note   When a user signs in to Visual Voicemail, the primary server automatically provides the hostname of the secondary server to the application. The hostname of the secondary server is cached locally by the application and is used in failover scenarios when the primary server is not available.

If you want to configure security for Visual Voicemail, you must do the following:

- Add the use_secure_https_connection parameter to the Visual Voicemail service on the Cisco Unified Communications Manager server.
- Obtain a certificate for Visual Voicemail on *both* the primary server and secondary server.
- Add the certificates for *both* the primary server and secondary server to Cisco Unified Communications Manager and to the phones.

Related Topics

- How to Create Voicemail Pilot Numbers, Hunt Pilots, Line Groups, and Hunt Lists, page 2-2

- [How to Install and Configure Voicemail Web Services, page 2-5](#)
- [How to Configure Reverse TRaP Rules, page 2-7](#)
- [How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9](#)
- [Adding the Security Service Parameter to the Visual Voicemail Service, page 3-2](#)
- [How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2](#)
- [Uploading Certificates to Cisco Unified Communications Manager, page 3-6](#)

Configuration of Multiple Independent Cisco Unity Servers Integrated with One Cisco Unified Communications Manager Server

To configure Visual Voicemail on a system where multiple independent Cisco Unity servers are integrated with one Cisco Unified Communications Manager server, you must do the following:

- Create a unique Visual Voicemail pilot number for *each* Cisco Unity server. Each pilot number must use the correct set of voicemail ports for the particular Cisco Unity server.

- Install the web services on *each* Cisco Unity server.

- Configure the reverse TRaP rule on *each* Cisco Unity server. Use the appropriate Visual Voicemail pilot number for each server in the Dialled Number field.

- Create a Visual Voicemail service for *each* Cisco Unity server on the Cisco Unified Communications Manager server. For each Cisco Unity server, use the hostname of that server in the following fields:

  - Service URL of the service
  - Default Value of the voicemail_server parameter

  Each service must have the same value in the Service Name field, because this value must match the value in the .jad file. Cisco Unified Communications Manager allows you to create multiple services with the same name. You can use the Service Description field to distinguish between the services.

If you want to configure security for Visual Voicemail, you must do the following:

- Add the use_secure_https_connection parameter to *each* Visual Voicemail service on the Cisco Unified Communications Manager server.

- Obtain a certificate for Visual Voicemail on *each* Cisco Unity server.

- Add the certificates for *each* Cisco Unity server to Cisco Unified Communications Manager and to the phones.

Related Topics

- [How to Create Voicemail Pilot Numbers, Hunt Pilots, Line Groups, and Hunt Lists, page 2-2](#)
- [How to Install and Configure Voicemail Web Services, page 2-5](#)
- [How to Configure Reverse TRaP Rules, page 2-7](#)
- [How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9](#)
- [Adding the Security Service Parameter to the Visual Voicemail Service, page 3-2](#)
- [How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2](#)
- [Uploading Certificates to Cisco Unified Communications Manager, page 3-6](#)

Configuration of One Cisco Unity Server Integrated with Multiple Cisco Unified Communications Manager Servers

To configure Visual Voicemail on a system where one Cisco Unity server is integrated with multiple Cisco Unified Communications Manager servers, you must do the following:

- Create a Visual Voicemail pilot number on *each* Cisco Unified Communications Manager server. You must use the same directory number for the pilot number on each Cisco Unified Communications Manager server.

- Install the web services on the Cisco Unity server.

- Configure the reverse TRaP rule on the Cisco Unity server. Use the Visual Voicemail pilot number in the Dialled Number field on the server.

    Because there is only one Cisco Unity server, there is only one reverse TRaP rule. The reverse TRaP rule can only match one directory number as the Dialled Number. This is the reason why you must use the same directory number for the pilot number on each Cisco Unified Communications Manager server.

- Create a Visual Voicemail service on *each* Cisco Unified Communications Manager server. On each server, use the hostname of the Cisco Unity server in the following fields:

    - Service URL of the service

    - Default Value of the voicemail_server parameter

If you want to configure security for Visual Voicemail, you must do the following:

- Add the use_secure_https_connection parameter to the Visual Voicemail service on *each* Cisco Unified Communications Manager server.

- Obtain a certificate for Visual Voicemail on the Cisco Unity server.

- Add the certificates for the Cisco Unity server to *each* Cisco Unified Communications Manager and to the phones.

Related Topics

About Visual Voicemail Installation on Complex Cisco Unity Connection Configurations

- Configuration of One Cisco Unity Connection Server Integrated with Multiple Cisco Unified Communications Manager Servers, page 4-9

Cluster of Publisher and Subscriber Cisco Unity Connection Servers in an Active-Active Configuration with One Cisco Unified Communications Manager Server

To configure Visual Voicemail on a system where publisher and subscriber Cisco Unity Connection servers are integrated in an active-active configuration with one Cisco Unified Communications Manager server, you must do the following:

- Create a unique Visual Voicemail pilot number for *each* Cisco Unity Connection server in the cluster. Each pilot number must use the correct set of voicemail ports that corresponds to the particular Cisco Unity Connection server.

  The set of voicemail ports for a server is contained in a line group. A hunt list refers to the line group, and a hunt pilot refers to the hunt list. Therefore the hunt pilot for a particular server must use a line group which has the correct ports for that server.

- Create a line group for *each* Cisco Unity Connection server in the cluster. The directory numbers that are listed for the ports for the publisher server must be added to the line group for the publisher server. Similarly, the directory numbers that are listed for the ports for the subscriber server must be added to the line group for the subscriber server.

  For more information about how to create a line group, see (Active-Active Cisco Unity Connection Only) Creating a Line Group, page 2-4.

- Create a hunt list for *each* Cisco Unity Connection server in the cluster. You must add the line group for the publisher server to the hunt list for the publisher server. Similarly, you must add the line group for the subscriber server to the hunt list for the subscriber server.

  For more information about how to create a hunt list, see (Active-Active Cisco Unity Connection Only) Creating a Hunt List, page 2-4.

- Configure the Cisco Unity Connection settings for the web service on *both* the publisher and subscriber Cisco Unity Connection servers.

  When you configure the voicemail web service, enter the appropriate pilot number for each Cisco Unity Connection server in the Pilot Number for TRAP Connections field. This setting has different values on the publisher server and subscriber server, because you created a different pilot number for each server.

- Configure two reverse TRaP rules on your Cisco Unity Connection publisher server, as follows:

  – In the first rule, set the Dialled Number field of the routing condition to the Visual Voicemail pilot number for the publisher server.

  – In the second rule, set the Dialled Number field of the routing condition to the Visual Voicemail pilot number for the subscriber server.

  You do not need to do this configuration on the subscriber server because the rules are replicated to the subscriber server.

- Create one Visual Voicemail service on the Cisco Unified Communications Manager server. Use the cluster DNS alias as the hostname in the following fields:

  – Service URL of the service

  – Default Value of the voicemail_server parameter

The term *cluster DNS alias* refers to two Cisco Unity Connection servers that work together as a cluster, that is, both servers actively accept calls and web service requests from Visual Voicemail.

When you use the cluster DNS alias for the voicemail_server parameter, the Visual Voicemail application uses the Cisco Unity Connection servers in a round robin order. When a user signs in to the Visual Voicemail application, the Cisco Unity Connection server that is used automatically provides the hostname of the partner server to the Visual Voicemail application. The partner hostname is cached locally by the Visual Voicemail application and is used in failover scenarios when the original server is not available.

If you want to configure security for Visual Voicemail, you must do the following:

- Add the use_secure_https_connection parameter to the Visual Voicemail service on the Cisco Unified Communications Manager server.

- Obtain a certificate for Visual Voicemail on *each* Cisco Unity Connection server.

- Add the certificates for *each* Cisco Unity Connection server to Cisco Unified Communications Manager and to the phones.

For more information about clusters of publisher and subscriber Cisco Unity Connection servers in an active-active configuration, navigate to the *Design Guide for Cisco Unity Connection* from the following URL:

http://www.cisco.com/en/US/products/ps6509/tsd_products_support_design.html

For more information about using a Cisco Unity Connection cluster, as well as information on how a Connection cluster works, navigate to the *Cluster Configuration and Administration Guide for Cisco Unity Connection* from the following URL:

http://www.cisco.com/en/US/products/ps6509/prod_maintenance_guides_list.html

Balancing Web Service Requests Between Servers in an Active-Active Configuration

To balance web service requests equally between two Cisco Unity Connection servers, use DNS aliasing. To do this, you must add two DNS Host(A) records as follows:

- Host Name = unityCxnCluster   IP Address : IP address of primary server

- Host Name = unityCxnCluster   IP Address : IP address of secondary server

If you add these two records, DNS queries for the cluster DNS alias *unityCxnCluster* resolve alternately between the two IP addresses.

For more information about balancing web service requests between servers in an active-active configuration, navigate to the *Design Guide for Cisco Unity Connection* from the following URL:

http://www.cisco.com/en/US/products/ps6509/tsd_products_support_design.html

Use of Ports by Visual Voicemail

Visual Voicemail always works with the server that is assigned by the IP resolution of the cluster DNS alias. If all ports are busy on the server, Visual Voicemail does not attempt to use the ports on the partner server. Users might observe that their Cisco Unified IP Phone dials the voicemail pilot number, but then they hear the busy tone.

This behavior is different from the telephone user interface (TUI), where the ports from the partner server are used.

Related Topics

Configuration of Multiple Cisco Unity Connection Clusters Integrated with One Cisco Unified Communications Manager Server

To configure Visual Voicemail on a system where multiple Cisco Unity Connection clusters are integrated with one Cisco Unified Communications Manager server, you must do the following:

- Create a unique Visual Voicemail pilot number for *each* Cisco Unity Connection server. Each pilot number must use the correct set of voicemail ports for the particular Cisco Unity Connection server.

- Configure the Cisco Unity Connection settings for the web service on *both* the publisher and subscriber Cisco Unity Connection servers in each cluster.

  When you configure the voicemail web service, enter the appropriate pilot number for each Cisco Unity Connection server in the Pilot Number for TRAP Connections field. This setting has different values on each Cisco Unity Connection server, because you created a different pilot number for each server.

- Configure the reverse TRaP rule on *each* Cisco Unity Connection server. Use the same Visual Voicemail pilot number in the Dialled Number field on each server.

- Create one Visual Voicemail service on the Cisco Unified Communications Manager server for each cluster. For each Cisco Unified Communications Manager server, use the cluster DNS alias as the hostname of that server in the following fields:

  - Service URL of the service
  - Default Value of the voicemail_server parameter

  Each service must have the same value in the Service Name field, because this value must match the value in the .jad file. Cisco Unified Communications Manager allows you to create multiple services with the same name. You can use the Service Description field to distinguish between the services.

  When you use the cluster DNS alias for the voicemail_server parameter, the Visual Voicemail application uses the Cisco Unity Connection servers in that cluster in a round robin order. When a user signs in to the Visual Voicemail application, the Cisco Unity Connection server that is used automatically provides the hostname of the partner server to the Visual Voicemail application. The partner hostname is cached locally by the Visual Voicemail application and is used in failover scenarios when the original server is not available.

If you want to configure security for Visual Voicemail, you must do the following:

- Add the use_secure_https_connection parameter to *each* Visual Voicemail service on the Cisco Unified Communications Manager server.

- Obtain a certificate for Visual Voicemail on *each* Cisco Unity Connection server.

- Add the certificates for *each* Cisco Unity Connection server to Cisco Unified Communications Manager and to the phones.

Related Topics

- How to Create Voicemail Pilot Numbers, Hunt Pilots, Line Groups, and Hunt Lists, page 2-2
- How to Install and Configure Voicemail Web Services, page 2-5
- How to Configure Reverse TRaP Rules, page 2-7
- How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9
- Adding the Security Service Parameter to the Visual Voicemail Service, page 3-2
- How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2
- Uploading Certificates to Cisco Unified Communications Manager, page 3-6

Configuration of One Cisco Unity Connection Server Integrated with Multiple Cisco Unified Communications Manager Servers

To configure Visual Voicemail on a system where one Cisco Unity Connection server is integrated with multiple Cisco Unified Communications Manager servers, you must do the following:

- Create a Visual Voicemail pilot number on *each* Cisco Unified Communications Manager server. You must use the same directory number for the pilot number on each Cisco Unified Communications Manager server.
- Configure the Cisco Unity Connection settings for the web service on the Cisco Unity Connection server.
- Configure the reverse TRaP rule on the Cisco Unity Connection server. Use the Visual Voicemail pilot number in the Dialled Number field on the server.

  Because there is only one Cisco Unity Connection server, there is only one reverse TRaP rule. The reverse TRaP rule can only match one directory number as the Dialled Number. This is the reason why you must use the same directory number for the pilot number on each Cisco Unified Communications Manager server.

- Create a Visual Voicemail service on *each* Cisco Unified Communications Manager server. On each server, use the hostname of the Cisco Unity Connection server in the following fields:

  – Service URL of the service
  – Default Value of the voicemail_server parameter

If you want to configure security for Visual Voicemail, you must do the following:

- Add the use_secure_https_connection parameter to the Visual Voicemail service on *each* Cisco Unified Communications Manager server.
- Obtain a certificate for Visual Voicemail on the Cisco Unity Connection server.
- Add the certificate for the Cisco Unity Connection server to *each* Cisco Unified Communications Manager and to the phones.

Related Topics

- How to Create Voicemail Pilot Numbers, Hunt Pilots, Line Groups, and Hunt Lists, page 2-2
- How to Install and Configure Voicemail Web Services, page 2-5
- How to Configure Reverse TRaP Rules, page 2-7

- How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9
- Adding the Security Service Parameter to the Visual Voicemail Service, page 3-2
- How to Obtain a Certificate for Visual Voicemail on Cisco Unity, page 3-2
- Uploading Certificates to Cisco Unified Communications Manager, page 3-6

Installing Cisco Visual Voicemail on Phones

Revised: March 2, 2010

How to Install the Visual Voicemail Service on Phones

The following table lists the installation methods available for Visual Voicemail:

Installation Method	Advantages	Disadvantages
Enterprise subscription	This method replaces TUI with Visual Voicemail on *all* phones in your system that support Visual Voicemail. This is a simple method of installation.	You cannot customize the installation for users with exceptional requirements.
Individual subscription	You can customize the installation for users with exceptional requirements.	If you use this method for every user in your system, it might be very time-consuming.
Bulk administration	You can customize the installation for users with exceptional requirements, for example, a user who can only use the TUI voicemail service.	The installation process is more complex.

If you change any of the service parameters for the Visual Voicemail service, you must delete the service then recreate the service. For more information on this topic, see Updating Visual Voicemail Service Parameters, page 7-2.

Related Topics

- Enabling Service Provisioning on Your Cisco Unified Communications System, page 5-2
- Installing by Enterprise Subscription, page 5-3
- Subscribing Individual Phones to Visual Voicemail, page 5-4
- How to Install by Bulk Administration, page 5-4

Enabling Service Provisioning on Your Cisco Unified Communications System

Before you install Visual Voicemail on your Cisco Unified Communications system, you must enable the phones in your system to receive services from Cisco Unified Communications Manager. You must allow for internal service provisioning.

Procedure

Step 1 Select **System > Enterprise Parameters** in Cisco Unified Communications Manager Administration.

Step 2 Set the value in the **Services Provisioning** list box, as shown in the following table.

If the Current Value Is...	Change To...
Both	Do not change the setting.
Internal	Do not change the setting.
External URL	Both

Step 3 Select **Save**.

Step 4 Select **Device > Device Settings > Common Phone Profile** in Cisco Unified Communications Manager Administration.

Step 5 Search for the profile in the Find and List Common Phone Profiles window.

Step 6 Select your common phone profile.

Step 7 Set the value in the **Services Provisioning** list box, as shown in the following table.

If the Current Value Is...	Change To...
Both	Do not change the setting.
Default	Do not change the setting.
External	Both
Internal	Do not change the setting.

Step 8 Select **Save**.

This allows the changes you made to propagate to all phones that have the Service Provisioning value set to Default.

Step 9 Set the Services Provisioning parameter to Default on each phone on which you want to install Visual Voicemail.

For example, you can use BAT to set the Services Provisioning parameter on each phone. For more information about BAT, see the *Cisco Unified Communications Manager Bulk Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

What to Do Next

Installing by Enterprise Subscription

It is only appropriate to install Visual Voicemail by enterprise subscription for systems that have the following characteristics:

- All users of phones in the system that support Visual Voicemail, will use Visual Voicemail. You cannot exclude any phones that support Visual Voicemail from the installation of Visual Voicemail if you use enterprise subscription.

  If a Visual Voicemail user wants to use the TUI voice message service, you can add that service to their phone. For more information about this topic, see How Visual Voicemail Interoperates with TUI Voicemail, page 5-11.

  For information about which phones support Visual Voicemail, see the release notes at the following URL:

  http://www.cisco.com/en/US/products/ps9829/prod_release_notes_list.html

- For phones that are behind Cisco Virtual Office routers, or behind any other type of hardware VPN device, the address of the Cisco Unity or Cisco Unity Connection server must not be blocked. In some cases, particular traffic might be prevented from leaving or entering the voice Virtual Local Area Network (VLAN). Check with your administrator to ensure there are no access control lists or firewall devices that block the address of the Cisco Unity or Cisco Unity Connection server.

When you use enterprise subscription, enter any service parameter into the URL of the service structured as follows:

http://*<IP-address-of-server>*/midlets/VisualVoicemail/VisualVoicemail.jad?*<name-of-parameter-1>*=*<value-of-parameter-1>*&*<name-of-parameter-2>*=*<value-of-parameter-2>*

For example, you want to enter the following service parameter values:

Parameter	Value
use_secure_https_connection	1
voicemail_server	example_hostname
vmserver_is_unity_connection	1

To enter these values, use the following URL:

http://209.165.200.225/midlets/VisualVoicemail/VisualVoicemail.jad?use_secure_https_connection=1&voicemail_server=example_hostname&vmserver_is_unity_connection=1

Related Topics

- How to Install the Visual Voicemail Service on Phones, page 5-1

What to Do Next

- Restarting the TFTP Services and Devices, page 5-12

Subscribing Individual Phones to Visual Voicemail

Procedure

Step 1   Select **Device > Phone**.

Step 2   Search for the phone in the Find and List Phones window.

Step 3   Select the phone.

Step 4   Select **Subscribe/Unsubscribe Services** from Related Links, then select **Go**.

Step 5   Select the Visual Voicemail service from the Select a Service dialog box.

Step 6   Select **Next**.

Step 7   Select **Subscribe**.

To unsubscribe from the service, select **Unsubscribe**.

Related Topics

- How to Install the Visual Voicemail Service on Phones, page 5-1

What to Do Next

- Restarting the TFTP Services and Devices, page 5-12

How to Install by Bulk Administration

To install the Visual Voicemail MIDlet by bulk administration, you must do the following:

1. Create a BAT phone template.

2. Subscribe the Visual Voicemail service to a phone template.

The Bulk Administration Tool (BAT) performs bulk updates to the Cisco Unified Communications Manager database. For more information about BAT, see the *Cisco Unified Communications Manager Bulk Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

What to Do Next

- Creating a BAT Phone Template, page 5-4
- Using Bulk Administration to Update Your Phones, page 5-5
- Scheduling the Update of Phones, page 5-6

Creating a BAT Phone Template

For more information about BAT phone templates, see *Cisco Unified Communications Manager Bulk Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Procedure

Step 1   Select **Bulk Administration > Phones > Phone Template** in Cisco Unified Communications Manager Administration.

Step 2   Select **Add New**.

Step 3   Select any phone type, then select **Next**.

Step 4   Select the device protocol for the phone type you selected, then select **Next**.

Step 5   Enter the required information for the phone template in the Phone Template Configuration window, then select **Save**.

Step 6   Select **Subscribe/Unsubscribe Services** from Related Links, then select **Go**.

Step 7   Select the Visual Voicemail service from the Select a Service dialog box.

Step 8   Select **Next**.

Step 9   Select **Subscribe**.

Related Topics

What to Do Next

Using Bulk Administration to Update Your Phones

Use the BAT query function to update the phones in your site that support Visual Voicemail with the Visual Voicemail service.

Before You Begin

Identify the phones in your site that support Visual Voicemail. For information about the phones that support Visual Voicemail see the release notes at the following URL:

http://www.cisco.com/en/US/products/ps9829/prod_release_notes_list.html

Procedure

Step 1   Select **Bulk Administration > Phones > Update Phones > Query** in Cisco Unified Communications Manager Administration.

Step 2   Compose your query to specify the phones to which you want to add the Visual Voicemail service.

For example, you can specify phones that have a device type that contains 7975, 7971, 7970, and so on.

Step 3   Select **Next**.

Step 4   Select **Restart phones**.

Step 5   Select **Add all services from this template** in the Assign IP Phone Services section, then select the BAT phone template you created from the list box.

Step 6   Select **Run later** in the Job Information section.

Step 7   Select **Submit**.

For more information about how to use queries to perform bulk administration, see *Cisco Unified Communications Manager Bulk Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Related Topics

- How to Install by Bulk Administration, page 5-4

What to Do Next

- Scheduling the Update of Phones, page 5-6

Scheduling the Update of Phones

Procedure

Step 1   Select **Bulk Administration > Job Scheduler** in Cisco Unified Communications Manager Administration.

Step 2   Search for the job in the Find and List Jobs window.

Step 3   To start the job, select the job, then select **Activate Selected**.

To schedule the job, select the job ID. Enter the job details in the Job Scheduler window, then select **Activate Job**.

For more information about scheduling bulk administration jobs, see *Cisco Unified Communications Manager Bulk Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Related Topics

- How to Install by Bulk Administration, page 5-4

What to Do Next

- (Optional) How to Install Visual Voicemail to Device Profiles for Extension Mobility, page 5-6
- (Optional) Installing by Enterprise Subscription, page 5-3
- (Optional) Subscribing Individual Phones to Visual Voicemail, page 5-4
- Restarting the TFTP Services and Devices, page 5-12

How to Install Visual Voicemail to Device Profiles for Extension Mobility

When you install the Visual Voicemail service on phones in a system that requires extension mobility, ensure that Visual Voicemail is installed on the following:

- All phones to which the extension mobility service is subscribed. If the Visual Voicemail MIDlet is installed on the phones, users are less likely to experience errors.
- All device profiles associated with extension mobility profiles.

If you want to install Visual Voicemail on both SIP and SCCP phones in your phone system, you must perform each of the following procedures separately for each protocol:

What to Do Next

Creating a UDP File Format

Procedure

Step 1   Select **Bulk Administration > User Device Profiles > UDP File Format > Create UDP File Format** in Cisco Unified Communications Manager Administration.

Step 2   Select **Add New**.

Step 3   Enter a unique name for the file format in the **Format Name** field.

Step 4   Add all of the fields in the **Device Fields** list box to the **Selected Device Fields** list box.

Step 5   Ensure that the following list boxes are empty:

- **Selected Line Fields**

- **Selected Intercom DN Fields**

Step 6   Ensure that the value of all fields in the **IP Phone Service Maximums** section is set to zero (0).

Step 7   Select **Save**.

Related Topics

What to Do Next

Creating a UDP Template

Procedure

Step 1   Select **Bulk Administration > User Device Profiles > UDP Template** in Cisco Unified Communications Manager Administration.

Step 2   Select **Add New**.

Step 3   Select **7962** from the Device Profile Type list box, then select **Next**.

Step 4   Select **SCCP** or **SIP** from the Device Protocol list box, depending on the protocol of the profiles on which you want to install Visual Voicemail.

Step 5   Select **Next**.

Step 6   Enter a unique name for the template in the **User Device Profile Template Name** field.

Step 7   Select the standard phone button template from the **Phone Button Template** list box.

Step 8   Select **Save**.

Step 9   Select **Subscribe/Unsubscribe Services** from Related Links, then select **Go**.

Step 10   Select the Visual Voicemail service from the Select a Service dialog box, then select **Next**.

Step 11   Select **Subscribe**.

> **Note**   Do not make any changes to the default values of the UDP template, other than those specified in this procedure.

Related Topics

- How to Install Visual Voicemail to Device Profiles for Extension Mobility, page 5-6

What to Do Next

- Exporting Profile Information, page 5-8

Exporting Profile Information

Procedure

Step 1   Select **Bulk Administration > User Device Profiles > Export UDP > Specific Details** in Cisco Unified Communications Manager Administration.

Step 2   Compose your query to specify the profiles to which you want to add the Visual Voicemail service.

Ensure that your query finds only the profiles to which you want to add the Visual Voicemail service. VPN routers are not supported by Visual Voicemail, so ensure that you exclude profiles that connect to the system by VPN from the query.

To unsubscribe services from profiles is difficult, so ensure that your query finds only the profiles to which you want to add the Visual Voicemail service.

For example, you can specify profiles that have a device type that contains 7975, 7971, 7970, and so on.

Step 3   Add a criterion to the query so that the query specifies only SIP or only SCCP profiles. To do this, compose the criterion as follows:

Field	Setting
Find User Device Profile where list box	Select **Device Protocol**.
Condition list box	Select **is exactly**.
Value text box	Type either **SIP** or **SCCP**.

For more information about how to use queries to perform bulk administration, see *Cisco Unified Communications Manager Bulk Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Step 4   Select **Find**.

Review the list of profiles that the query finds, and ensure that the query finds only the profiles to which you want to add the Visual Voicemail service.

Step 5   Select **Next**.

Step 6   Enter information in the Export User Device Profiles window, as follows:

Field	Setting
File Name	Enter a name for the file to export.
File Format	Select the file format that you created in Creating a UDP File Format, page 5-7.

Step 7   Select **Run Immediately** in the Job Information section. You might need to select **Run Immediately** more than once.

Step 8   Select **Submit**.

Step 9   Select **Bulk Administration > Job Scheduler**.

Verify that the export operation performed successfully. You can select the Job Id to view the details of the operation, including the filename that you specified.

Related Topics

- How to Install Visual Voicemail to Device Profiles for Extension Mobility, page 5-6

What to Do Next

- Importing Profile Information, page 5-9

Importing Profile Information

Procedure

Step 1   Select **Bulk Administration > Upload/Download Files** in Cisco Unified Communications Manager Administration.

Step 2   Search for the file created in Exporting Profile Information, page 5-8 in the Find and List Files window.

Step 3   Select the file, then select **Download Selected**.

Step 4   Rename the downloaded file.

Step 5   Select **Add New**.

Step 6   Enter information in the File Upload Configuration window, as follows:

Field	Setting
File	Select the file that you downloaded and renamed.
Select The Target	Select **UDP**.
Select Transaction Type	Select **Insert UDP - Specific Details**.

Step 7   Select **Save**.

Step 8   Select **Bulk Administration > User Device Profiles > Insert UDP**.

Step 9   Enter information in the Insert User Device Profiles Configuration window, as follows:

Field	Setting
Insert User Device Profiles Specific Details	Select this option.
File Name	Select the file that you specified in Step 6.
User Device Profiles Template Name	Select the file format that you created in Creating a UDP File Format, page 5-7.
Override the existing configuration	Select this option.

Step 10   Select **Run Immediately** in the Job Information section. You might need to select **Run Immediately** more than once.

Step 11   Select **Submit**.

Related Topics

- How to Install Visual Voicemail to Device Profiles for Extension Mobility, page 5-6

What to Do Next

- Verifying That the Profiles Are Subscribed to the Visual Voicemail Service, page 5-10

Verifying That the Profiles Are Subscribed to the Visual Voicemail Service

Procedure

Step 1   Select **Device > Device Settings > Profile** in Cisco Unified Communications Manager Administration.

Step 2   Search for a device profile in the Find and List Device Profiles window.

Step 3   Select any device profile.

Step 4   Select **Subscribe/Unsubscribe Services** from Related Links, then select **Go**.

Verify that the Visual Voicemail service is subscribed to the device profile.

Step 5   Sign in to a phone that is used for extension mobility, then press the Messages button.

Verify that the Visual Voicemail application starts.

Related Topics

- How to Install Visual Voicemail to Device Profiles for Extension Mobility, page 5-6

What to Do Next

- Restarting the TFTP Services and Devices, page 5-12

How Visual Voicemail Interoperates with TUI Voicemail

The standard Cisco Unity and Cisco Unity Connection telephone user interface (TUI) voicemail service is configured in Cisco Unified Communications Manager as a phone service called *Voicemail*. The service is enabled as an enterprise subscription, so all phones are subscribed to this service.

Visual Voicemail can coexist with the TUI voicemail service. You can choose the following options when you deploy Visual Voicemail:

- Do not change the existing TUI voicemail service. Subscribe all phones to the Visual Voicemail service. When the user presses the Messages button a list of services is displayed, as follows:
    - Voicemail
    - VisualVoicemail

    Users can select which service to use.

- Change the existing TUI voicemail service so that it is not an enterprise subscription. Then subscribe some phones to the TUI voicemail service only, and subscribe some phones to the Visual Voicemail service only. When a user presses the Messages button, the service to which the phone is subscribed starts.

- Disable the TUI voicemail service, and subscribe all phones to the Visual Voicemail service. When a user presses the Messages button, Visual Voicemail starts.

Related Topics

- Changing the TUI Voicemail Service to Non-Enterprise Subscription, page 5-11
- Disabling the TUI Voicemail Service, page 5-12

Changing the TUI Voicemail Service to Non-Enterprise Subscription

Before You Begin

To change the existing TUI voicemail service so that it is not an enterprise subscription, you must delete the service, then add it again.

Procedure

Step 1   Select **Device > Device Settings > Phone Services** in Cisco Unified Communications Manager Administration.

Step 2   Search for the service called *Voicemail* in the Find and List IP Phone Services window.

Step 3   Select the check box for the *Voicemail* service.

Step 4   Select **Delete Selected**, then select **OK** to confirm.

Step 5   Select **Add New**.

Step 6   Enter values for the fields in the IP Phone Services Configuration window, as shown in the following table:

Field	Value
Service Name	Enter **Voicemail**.
ASCII Service Name	Enter **Voicemail**.

Field	Value
Service URL	Enter **Application:Cisco/Voicemail**.
Service Category	Select **XML Service**.
Service Type	Select **Messages**.

Leave the other fields blank.

Step 7   Select **Save**.

Related Topics

- How Visual Voicemail Interoperates with TUI Voicemail, page 5-11

Disabling the TUI Voicemail Service

Before You Begin

You might choose to disable the TUI voicemail service in your system after you install Visual Voicemail. If you enable the TUI voicemail service again after you disable it, when the users press the Messages button, a list of services is displayed including the TUI voicemail service and Visual Voicemail.

Procedure

Step 1   Select **Device > Device Settings > Phone Services**.

Step 2   Find the TUI voicemail service.

Step 3   Select the service.

Step 4   Deselect **Enable**.

Step 5   Select **Save**.

Related Topics

- How Visual Voicemail Interoperates with TUI Voicemail, page 5-11

Restarting the TFTP Services and Devices

After you update subscriptions, restart all of the TFTP services in your cluster, then restart all of the devices in Cisco Unified Communications Manager.

For information about how to restart TFTP services, see *Cisco Unified Serviceability Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

To restart the devices, reset the devices for each device pool in the cluster. For information about how to restart devices in Cisco Unified Communications Manager, see *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Related Topics

- Configuring Key Mappings in Visual Voicemail

- Maintaining Cisco Visual Voicemail

- Troubleshooting Cisco Visual Voicemail

Configuring Key Mappings in Visual Voicemail

Revised: March 2, 2010

Visual Voicemail Key Mappings

Users can press numbers on the phone keypad to perform some actions in Visual Voicemail. A key mappings file defines which keys perform which actions.

Visual Voicemail does not use the same key mappings file as Cisco Unity and Cisco Unity Connection. However, Visual Voicemail does use *some* of the same key combinations as the Cisco Unity and Cisco Unity Connection telephone user interface (TUI) services.

The Visual Voicemail key mappings file has a different format than the Cisco Unity and Cisco Unity Connection key mappings files.

Related Topics

- Enabling Visual Voicemail Key Mappings, page 6-4
- Limitations of Visual Voicemail Key Mappings, page 6-5

Visual Voicemail Key Mapping File Format

Each line in the key mapping file represents one key mapping. The format of each line is as follows:

CONTEXT:INPUT:ACTION

The following table describes each of these parameters:

Parameter	Description
CONTEXT	Represents the state of the application when the user presses a key. For example, the application might respond differently to a key press depending on whether a message is playing or not.
INPUT	Represents the key, or sequence of keys, that the user presses.
ACTION	Represents the action to perform when the user presses the key.

Each parameter is represented by an integer in the key mapping. For example, the following key mapping specifies that if a message is not playing, and the user presses 3, the currently-selected message is deleted:

3:3:4

Related Topics

- Enabling Visual Voicemail Key Mappings, page 6-4

- Contexts in Visual Voicemail Key Mapping Files, page 6-2

- Actions in Visual Voicemail Key Mapping Files, page 6-3

- Default Visual Voicemail Key Functions, page 6-5

Contexts in Visual Voicemail Key Mapping Files

Table 6-1 lists the contexts in Visual Voicemail key mapping files, and the integers that represent the contexts. These contexts are only relevant to the messages list screen that is displayed after you sign in.

Table 6-1   Visual Voicemail Contexts in Key Mapping Files

Integer	Context
1	Message playing
2	Message paused
3	No message playing

Related Topics

- Visual Voicemail Key Mapping File Format, page 6-1

- Actions in Visual Voicemail Key Mapping Files, page 6-3

Actions in Visual Voicemail Key Mapping Files

Table 6-2 lists the actions in Visual Voicemail key mapping files, and the integers that represent the actions.

Table 6-2   Representation of Visual Voicemail Actions in Key Mapping Files

Integer	Action
1	Play next message
2	Play previous message
3	Play the current message again
4	Delete message
5	Decrease speed of message
6	Reply to message
7	Increase speed of message
8	Mark message
9	Rewind message
10	Pause message
11	Play message
12	Fast forward message
13	Sign out
14	Play previous message
15	Play next message
16	Forward message

Related Topics

- Visual Voicemail Key Mapping File Format, page 6-1
- Contexts in Visual Voicemail Key Mapping Files, page 6-2

Service Parameters for the Visual Voicemail Key Mapping File

To enable Visual Voicemail key mappings, you must add the following service parameters to the Visual Voicemail service:

Service Parameter	Description
tui_key_mappings_file_url	Specifies the HTTP location of the key mappings file.
tui_key_mappings_file_version	Specifies the version number of the key mappings file.
	Visual Voicemail uses this parameter to check whether there is a new version of the key mappings file on the server. If there is a new version, Visual Voicemail downloads the new version. If the version is not new, Visual Voicemail uses a cached version of the previously-downloaded mappings file.
	You must update the value of this parameter every time you put a new version of the key mappings file on the server. To update the parameter, you must delete the Visual Voicemail service, then add the service again with the new value for the parameter. For more information on this topic, see Updating Visual Voicemail Service Parameters, page 7-2.

Related Topics

- Enabling Visual Voicemail Key Mappings, page 6-4
- Updating Visual Voicemail Service Parameters, page 7-2

Enabling Visual Voicemail Key Mappings

Before You Begin

Put your Visual Voicemail key mappings file on a server that can be accessed using HTTP.

Procedure

Step 1 Select **Device > Device Settings > Phone Services** in Cisco Unified Communications Manager Administration.

Step 2 Find your Visual Voicemail service.

Step 3 Select your Visual Voicemail service.

Step 4 Select **New Parameter** to add a parameter to the service.

Field	Setting
Parameter Name	Enter the following text in this field: **tui_key_mappings_file_url**
Parameter Display Name	Enter a name for the parameter. This name is used in the Cisco Unified Communications Manager user interface. For example, enter **URL for Visual Voicemail Key Mappings File**.
Default Value	Enter the URL where the Visual Voicemail key mappings file is located.

For more information about service administration, see *Cisco Unified Communications Manager System Guide* and *Cisco Unified Communications Manager Administration Guide* at the following URL:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

Step 5   Select **Save And Close**.

Step 6   Select **New Parameter** to add another parameter to the service.

Field	Setting
Parameter Name	Enter the following text in this field: **tui_key_mappings_file_version**
Parameter Display Name	Enter a name for the parameter. This name is used in the Cisco Unified Communications Manager user interface. For example, enter **Version Number of Visual Voicemail Key Mappings File**.
Default Value	Enter the version number for the key mappings file.

Step 7   Select **Save And Close**.

Related Topics

- Service Parameters for the Visual Voicemail Key Mapping File, page 6-4
- Limitations of Visual Voicemail Key Mappings, page 6-5
- How to Add the Visual Voicemail Service in Cisco Unified Communications Manager, page 2-9

Limitations of Visual Voicemail Key Mappings

Visual Voicemail can only accept keypad input of one or two key presses. Cisco Unity can accept up to three key presses.

Related Topics

- Enabling Visual Voicemail Key Mappings, page 6-4

Default Visual Voicemail Key Functions

The default Visual Voicemail key mapping file defines which keys perform which actions on the message list screen. Table 6-3, Table 6-4, and Table 6-5 list the default functions of the keys in Visual Voicemail.

Table 6-3   Default Key Functions When No Message Is Playing

Key	Function
1	Repeat Play, if a message has not been played already
3	Delete
4	Reply
5	Forward

Table 6-3   ***Default Key Functions When No Message Is Playing***

Key	Function
6	Mark
*	Sign Out

Table 6-4   ***Default Key Functions When A Message Is Playing or Paused***

Key	Function
1	Repeat
3	Delete
4	Decrease Speed
6	Increase Speed
7	Rewind
8	Pause/Play
9	Fast Forward
*	Sign Out

Table 6-5   ***Default Key Functions When A Message Is Stopped, Playing, or Paused***

Key	Function
1, 4	Play Previous Message
1, 6	Play Next Message
#, #	Skip to Next Message

Related Topics

- Visual Voicemail Key Mapping File Format, page 6-1
- Maintaining Cisco Visual Voicemail
- Troubleshooting Cisco Visual Voicemail

Maintaining Cisco Visual Voicemail

Revised: March 2, 2010

About Searching for Directory Numbers in Visual Voicemail

In Visual Voicemail, you can search by number for recipients for your voice messages. However, you can only search for the full directory number of the recipient. You cannot search for the local extension.

You can modify your Cisco Unity or Cisco Unity Connection configuration to enable Visual Voicemail users to search by local extension. You can create an alternative extension for each user. When you create an alternative extension, you select an action to perform on the full directory number. For example, you can select to remove all of a full directory number except the last five digits.

Related Topics

Creating Alternative Extensions for Visual Voicemail Users

Procedure

Step 1 Perform one of the following actions:

Cisco Unity: Start Cisco Unity Depot Tools. Select **Administration Tools**, then double-click **BulkEdit**.

Cisco Unity Connection: Select **Tools > Bulk Edit Utility** in Cisco Unity Connection Administration.

Step 2 Select **Users with Voice Mail**.

Step 3 Select the category of users to whom you want to give alternative extensions from **Select Users**.

Step 4 Select **Find**.

Step 5 Select the users to whom you want to give alternative extensions from the list of users.

Step 6 Select **Next**.

Step 7 Select **Alternate Extensions**.

Step 8 Select an alternative extension to modify from **Select an Alternate Extension to Modify**.

For example, select **Work Phone 2**.

Step 9 (Optional) Select a partition in which you want to create alternative extensions.

Step 10 Select an appropriate action to create the alternative extension.

For example, you might select to remove all digits except the rightmost five digits from the directory number.

Step 11 Select **Next**.

Step 12 Select **Finish**.

Related Topics

-

Updating the Visual Voicemail MIDlet

To update the Visual Voicemail MIDlet, you must first update your release of Cisco Unity or Cisco Unity Connection to the release that contains the MIDlet that you want to update to. This updates the .jad file and .jar file on the Cisco Unity or Cisco Unity Connection server.

The reset all phones that are subscribed to the MIDlet. The next time that a user starts Visual Voicemail, latest version is downloaded to the phone.

Related Topics

-

Updating Visual Voicemail Service Parameters

If you need to update a parameter for the Visual Voicemail service, do not modify the existing service. Instead, delete the existing service, then create a new service. The new service parameters do not become active if you update the subscription.

Procedure

Step 1 Delete the current Visual Voicemail service, as follows:

  a. Select **Device > Device Settings > Phone Services** in Cisco Unified Communications Manager Administration.

  b. Search for the service in the Find and List IP Phone Services window.

  c. Select the service that you want to delete.

  d. Select **Delete**, then select **OK**.

Step 2 Create a new service in the Cisco Unified Communications Manager Administration.

For information about how to create a new service, see .

Step 3   Install the new service on the phones in your system.

For information about how to install a new service, see Chapter 5, "Installing Cisco Visual Voicemail on Phones".

Related Topics

- Service Parameters for Visual Voicemail, page 2-10
- Troubleshooting Cisco Visual Voicemail

Disabling the "Keep me signed in" Option

- Disabling the "Keep me signed in" Option on Cisco Unity, page 7-3
- Disabling the "Keep me signed in" Option on Cisco Unity Connection, page 7-3

Disabling the "Keep me signed in" Option on Cisco Unity

Procedure

Step 1   Start Cisco Unity Tools Depot.

Step 2   Select **Administration Tools**, then double-click **Advanced Settings Tool**.

Step 3   Select **VMWS - Allow Client Credential Caching** in the Unity Advanced Settings dialog box.

You might need to scroll in the Unity Settings pane before the setting is visible.

Step 4   Select **0** from the New Value drop-down list.

Step 5   Select **Set**.

Disabling the "Keep me signed in" Option on Cisco Unity Connection

Procedure

Step 1   Select **System Settings > Advanced > Connection Administration** in Cisco Unity Connection Administration.

Step 2   Uncheck **Voice Mail Web Service: Applications Can Cache the Cisco Unity Connection Password**.

Step 3   Select **Save**.

Disabling the "Keep me signed in" Option

Troubleshooting Cisco Visual Voicemail

Revised: March 2, 2010

- Capturing Phone Logs, page 8-1
- How to Resolve Visual Voicemail Problems, page 8-1

Capturing Phone Logs

To access the logs of a phone, you must first obtain the IP address of the phone.

Procedure

Step 1   Select **Device > Phone** in Cisco Unified Communications Manager Administration.

Step 2   Search for the phone in the Find and List Phones window.

The IP Address column displays the IP addresses of the phones that the search found.

Step 3   Copy the IP address and paste the address into the address or location bar of a web browser.

Step 4   Select **Console Logs** under Device Logs on the left side of the page in the browser.

Links to the phone log files are displayed in the page. To download the log files that you require, right-click on the link, then save the file as a text file.

Step 5   Select **Core Dumps** under Device Logs on the left side of the page in the browser.

Links to the core files are displayed in the page. To download the core files that you require, right-click on the link, then save the file as a text file.

How to Resolve Visual Voicemail Problems

- Users See "Contact Administrator" Error Message, page 8-2
- Users with Phones Behind Routers See "Contact Administrator" Error Message, page 8-2
- Users with Phones Behind ASAs See "Contact Administrator" Error Message, page 8-2
- Users Cannot Start Visual Voicemail, page 8-2
- Line Used by Visual Voicemail Becomes Disconnected After a Few Seconds, page 8-3

Users See "Contact Administrator" Error Message

Problem When users press the Messages button on their phones, the following error is displayed:

Error, contact administrator

Solution This error message is displayed if a user presses the Messages button during the installation of the Visual Voicemail service. To resolve this issue, ask the user to wait for approximately one minute, until the Visual Voicemail application has downloaded. Then ask the user to press the Messages button again. If Visual Voicemail starts, the problem is resolved.

Users with Phones Behind Routers See "Contact Administrator" Error Message

Problem When users who have a phone behind a Cisco Virtual Office router press the Messages button on the phone, the following error might be displayed:

Error, contact administrator

Solution For phones that are behind Cisco Virtual Office routers, or behind any other type of hardware VPN device, the address of the Cisco Unity or Cisco Unity Connection server must not be blocked. In some cases, particular traffic might be prevented from leaving or entering the voice Virtual Local Area Network (VLAN). Check with your administrator to ensure there are no access control lists or firewall devices that block the address of the Cisco Unity or Cisco Unity Connection server.

Users with Phones Behind ASAs See "Contact Administrator" Error Message

Problem When users who have a phone behind a Cisco Adaptive Security Appliance (ASA) press the Messages button on the phone, the following error might be displayed:

Error, contact administrator

Solution For phones that are behind ASAs, the address of the Cisco Unity or Cisco Unity Connection server must not be blocked. In some cases, particular traffic might be prevented from leaving or entering the voice Virtual Local Area Network (VLAN). Check with your administrator to ensure there are no access control lists that block the address of the Cisco Unity or Cisco Unity Connection server.

Users Cannot Start Visual Voicemail

Problem When users try to start Visual Voicemail, the following error message is displayed:

Error, contact administrator

The error message still appears after the user waits for two minutes, then try to start Visual Voicemail again.

Solution This can happen if a user is playing or recording a message when the voicemail server stops running. To resolve this issue, reset the affected phones.

Line Used by Visual Voicemail Becomes Disconnected After a Few Seconds

Problem When some users with SIP phones start Visual Voicemail, the line is opened, but they do not hear anything, and the line is disconnected after less than 10 seconds. Users with phones that are in a remote location might experience this problem more often than local users.

Problem The following message is frequently displayed when users try to play or record a message on a SIP phone:

Retrying connection...

Problem When users enroll in the voice message service for the first time from a SIP phone, the line that Visual Voicemail uses becomes disconnected after a few seconds.

Solution Change the value of the call_connect_delay parameter in the Visual Voicemail service *only* on the phones that experience this problem. The default value of this parameter is 1000 milliseconds. To resolve the problems above, change the value 1500. If the problem persists, change the value to 2000.

Cannot Hear Message Playing

Problem The user reports that they pick up the handset, open Visual Voicemail, then play a message, but cannot hear the voice message.

Solution Except for when you start Visual Voicemail, the application only opens a line when you play or record a message. Users can view a list of their messages, then choose to play a message. At this point, Visual Voicemail opens a line. Therefore, the user does not need to pick up the handset, or open a line in any other way, before they start Visual Voicemail. Refer the user to the *Quick Start Guide for Visual Voicemail*.

Opening Visual Voicemail Takes a Long Time

Problem When users of extension mobility functionality start Visual Voicemail, they experience a delay before the list of voice messages is displayed.

Solution In environments where the directory number associated with a phone changes frequently, you can add the never_save_localization_data service parameter to the Visual Voicemail service. Set the value of this service to 1. This might help to reduce the time for Visual Voicemail to start.

Voicemail Server Is Unavailable

Problem When you start Visual Voicemail, the Cisco Unity or Cisco Unity Connection voicemail server is unavailable.

Solution Verify that your configuration defines a valid DNS server on the phone. On the phone, select Settings > Network Configuration > IPv4 Configuration > DNS Server 1.

Solution Verify that your configuration defines a valid domain name on the phone. On the phone, select Settings > Network Configuration > Domain Name.

Alternatively, if the voicemail server is not within the phone domain, you must specify the fully-qualified domain name in the voicemail_server service parameter. For more information about this parameter, see Service Parameters for Visual Voicemail, page 2-10.

A P P E N D I X A

Additional User Information

Revised: March 2, 2010

This appendix provides additional information that might be useful to your users. For more user information, see the *Quick Start Guide for Visual Voicemail*.

Information to Provide to Users After Installation

When your installation of Visual Voicemail is complete, you can provide the information in the following table to your users:

Provide...	Explanation
Sign-in information.	Notify your users that the password that they require to sign in to Visual Voicemail is the same numeric password that they use with the TUI voice message service.
Instructions for using the application.	Provide users with the *Quick Start Guide for Visual Voicemail*.
Notify users that they do not need to pick up the handset before they start Visual Voicemail.	You do not need to open a line before you start Visual Voicemail. To avoid disturbing others when you listen to your messages, pick up the handset, but only do this after Visual Voicemail has opened the line, that is, when the line button is lit. For more information, see the *Quick Start Guide for Visual Voicemail*.
Internal company support for the application.	Provide your users with the names of people to contact for assistance if they encounter problems with the application.
Additional user information.	• If the **Keep me signed in** option is implemented on your site, it is not available the first time that you use Visual Voicemail. • The first time that you use Visual Voicemail, the date for messages that were created before the installation of Visual Voicemail is not displayed. These dates are displayed in subsequent Visual Voicemail sessions. • You cannot forward a message that is marked as private. • If the key mappings for Visual Voicemail are the same as the key mappings for your TUI voice message service, you can inform the users that they can use the same keys to perform the same tasks in some cases.

Unloading Visual Voicemail from the Memory of Phones

When you press the **Exit** softkey in Visual Voicemail, the application remains in the memory of the phone. This enables the phone to display Visual Voicemail quickly when users press the Messages button. A Visual Voicemail icon is displayed at the top left area of the screen.

To unload from the memory of a phone, do one of the following:

- If the application is open on the phone, press the Messages button.

- If a icon is displayed at the top left area of the screen, press the Messages button to display on the phone, then press the Messages button again.

If your voicemail system includes both Visual Voicemail and the TUI voicemail service, press the Messages button to display the list of voice message services that you can use.

About Fast Forwarding and Rewinding Messages

When you fast forward or rewind a Visual Voicemail message, the amount of time that is skipped forwards or backwards depends on the length of the message. The following table lists the amounts of time for each length of message.

Length of Message	Amount of Time
Greater than 30 seconds	10 seconds
Between 15 and 30 seconds	5 seconds
Less than 15 seconds	3 seconds