



Upgrading Cisco Unity Connection

You need to upgrade from the current version of Cisco Unity Connection to a higher version to use the new features supported with the new version. When you upgrade a server, the new version of Unity Connection is installed in a separate disk partition known as inactive partition. To activate the new version, you need to perform switch version. The following are the two ways to switch to the new version:

- **Automatic Switching:** Allows you to automatically switch to the new version of Unity Connection as part of the upgrade process.
- **Manual Switching:** Allows you to manually switch to the new version of Unity Connection after the successful completion of upgrade.

If you need to revert the server to the previous version, you can rollback to the previous version.



Note

You can install or upgrade Unity Connection 10.0(1) and later releases only on virtual machines.

Upgrade Types

The Unity Connection upgrade files are available as ISO images or COP (Cisco Option Package) files. You can use either of the following interfaces to upgrade Unity Connection:

- Command Line Interface (CLI)
- Cisco Unified OS Administration web interface.

You must save the COP files on a Network Location FTP/SFTP server accessible during upgrade. ISO image can be saved on a local DVD or on a network location. The performance of the upgrades can be monitored through CLI or Cisco Unified Operating System Administration interfaces.

The [Table 3-1](#) explains the upgrade types and supported upgrade paths from one version to another.

Table 3-1 Upgrade Matrix for Unity Connection

Upgrade Type	Upgrade Path	Description
Service Update (SU)	Examples of supported paths: <ul style="list-style-type: none"> 10.5.x/10.5.xSUx1 to 10.5.xSUx2 8.6.x/8.6.xSUx1 to 8.6.xSUx2 	<ul style="list-style-type: none"> SU is installed on the inactive partition to which you can switch later on. ISO images are non-bootable images not meant for installation.
Refresh Upgrade (RU)	8.5 or earlier to 10.x or later	<ul style="list-style-type: none"> If the RHEL version of the Unity Connection operating system changes during an upgrade, it is referred to as a Refresh Upgrade (RU). You need the following COP files before performing this upgrade: <ul style="list-style-type: none"> ciscocm.refresh_upgrade.cop ciscocm.version3-keys.cop The new version is installed on the inactive partition. You should perform automatic switch version during RU for successful upgrade.
	9.x or earlier to 10.x or later	<ul style="list-style-type: none"> You need the following COP file before performing this upgrade: <ul style="list-style-type: none"> ciscocm.version3-keys.cop The new version is installed on the inactive partition. You should perform automatic switch version during RU for successful upgrade.
Level 2 (L2)	Examples of supported paths: <ul style="list-style-type: none"> 10.0.x to 10.5.y 10.5.x to 10.5.y 9.x to 9.y 	<ul style="list-style-type: none"> If the RHEL version of the Unity Connection operating system do not change during an upgrade, it is referred to as an Level 2 (L2) upgrade. The new version is installed on the inactive partition to which you can switch later on.
COP file, for more information, see the Applying COP file from a Network Location, page 3-9 section.	Fix for the same version	<ul style="list-style-type: none"> COP files are installed on the active partition and you cannot uninstall them. Contact Cisco TAC to uninstall COP files.

**Note**

After the upgrade, you may need to reinstall the locale depending on the source and the target version. If the target version is compatible with the existing locales, then you need not install any new locales. However, if the target version requires to install new locales, then first verify the existing locales using the CLI **show cuc locale**, remove the existing set of locales after the completion of upgrade process, and install the new set available locales. If there is no set of available locales with the target version, then simply install the new set of locales.

Status of Unity Connection Cluster During an Upgrade

When a Unity Connection cluster is upgraded, the publisher server is completely disabled for the entire duration of upgrade but the subscriber server continues to provide services to users and callers. However, the performance of the cluster is affected in the following ways:

- If the phone system is routing calls to the subscriber server, outside callers and Unity Connection users can leave voice messages but the messages are not immediately delivered to user mailboxes. During switch version on the subscriber server in a cluster, messages that were left on the subscriber server are copied to the publisher server and delivered to user mailboxes.
- Unity Connection users can use the telephone user interface (TUI) to play messages recorded before the upgrade starts but cannot play the messages recorded during the upgrade.
- Unity Connection may not retain the status of messages. For example, if a user plays a message during the upgrade, the message may be marked as new again after the upgrade. Likewise, if a user deletes a message during the upgrade, the message may reappear after the upgrade.
- During an upgrade, users can access Unity Connection using clients, such as ViewMail for Outlook and Web Inbox other than the telephone user interface (TUI). During the switch version, publisher displays “message could not be loaded” for web inbox. The subscriber is completely disabled during the switch version.
- Administrator users can make configuration changes using any of the administration applications, such as Cisco Unity Connection Administration and Cisco Unified Operating System Administration since the administration applications are disabled for both publisher and subscriber during an upgrade. The configuration changes cannot be made during the switch version.
- Intrasite, intersite or HTTPS networking with other servers is disabled for the duration of the switch version. Directory changes made on the other servers in the network are not replicated to the server or cluster until the switch version is complete.

**Note**

You can also upgrade Unity Connection 11.x and later using Cisco Prime Collaboration Deployment. For detailed information on Cisco Prime Collaboration Deployment, see the applicable *Cisco Prime Collaboration Deployment Administration Guide* at <http://www.cisco.com/c/en/us/support/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Duration of Upgrade

Under ideal network conditions, an upgrade process takes approximately two hours to complete on each server. Therefore, a Unity Connection cluster takes four hours to upgrade to a higher version. Depending on the data size of the server, the switch version process might take some more time.

If you are upgrading in a slow network condition, the upgrade process may take longer time than expected. It is always recommended to upgrade Unity Connection during off-peak hours or during a maintenance window to avoid service interruptions.

**Tip**

You can reduce the duration of upgrade process by asking users to permanently delete items in the deleted items folder before starting the upgrade. This saves time as deleted items are not copied.

Prerequisites for Upgrade

Before beginning the upgrade process, you must consider the following points for a successful upgrade:

- Ensure that you have a good network connection to avoid service interruptions during upgrade.
- You must have a Secure File Transfer Protocol (SFTP) or File Transfer Protocol (FTP) server in place when upgrading from a network location.
- Check the current version and determine the version to which you want to upgrade. See the release notes of the new version for more information. Release notes are available at <http://www.cisco.com/c/en/us/support/unified-communications/unity-connection/products-release-notes-list.html>.
- Determine if you need COP files depending on the upgrade process. Download the COP and ISO image files from: <http://software.cisco.com/download/navigator.html?mdfid=280082558&i=rm>.
- Backup all the existing data. For more information on backup and restore, see the [Backing Up and Restoring Cisco Unity Connection Components](#) chapter.
- Confirm that the status of both publisher and subscriber servers is active and they can answer calls. Follow the given steps to confirm the server status in a cluster:
 - a. Sign in to Cisco Unity Connection Serviceability.
 - b. Expand **Tools** and select **Cluster Management**.
 - c. Check the server status in a cluster.
 - d. In addition to this, confirm the running state of database replication using the CLI command **show cuc cluster status**.
- Before upgrading to Release 11.x, rename the below mentioned notification templates.
 - a. Default_Missed_Call
 - b. Default_Missed_Call_With_Summary
 - c. Default_Scheduled_Summary
 - d. Default_Voice_Message_With_Summary

If not renamed, the mentioned notification templates get replaced with default notification templates of Release 11.x.

**Note**

After confirming the status of publisher server as **Primary** and subscriber server as **Secondary**, start the upgrade process first on publisher server and then on subscriber server.

- Initiate a pre upgrade test before starting the upgrade process using the CLI command

```
run cuc preupgrade test
```

**Warning**

If you are upgrading from Unity Connection 8.6 or earlier, you must install all the applicable licenses before you upgrade to Unity Connection release 9.x and later. This is because the installed license information considered as legacy license data is required to migrate licenses. After you upgrade to Unity Connection 9.x and later releases, you can not apply legacy licenses using the Prime License Manager. For more information see the [Migrating Licenses from Unity Connection 8.6 and Earlier Releases, page 6-3](#) section.

Task list to Upgrade to Unity Connection Shipping Version 11.x

Do the following tasks to upgrade an Unity Connection server:

1. If you are running the current version of Unity Connection on a physical server then you must replace it with a virtual server. See the [Migrating a Physical Server to a Virtual Machine, page 5-1](#) section.

If you are already running the current version on a virtual server, make sure it is compatible with the upgraded version. See the *Cisco Unity Connection 11.x Supported Platform List* at http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/11x/supported_platforms/11xcspl.html.

**Note**

If you are performing an L2 upgrade, make sure that the Platform SOAP services are running on both the Unity Connection servers to successfully upgrade using Prime Collaboration Deployment. SOAP services can be enabled on both the servers using Cisco Unified Serviceability page. For more information on PCD, see the *Cisco Prime Collaboration Deployment Administration Guide* at <http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-call-manager/products-maintenance-guides-list.html>.

2. If you are upgrading during non business hours, run the following command on the standalone server or the publisher server to speed up the upgrade process:

```
utils iothrottle disable
```

If you are upgrading during a maintenance window, you can speed up the upgrade by disabling the throttling. This decreases the time required to complete the upgrade but affects Unity Connection performance.

**Caution**

You cannot disable throttling during the upgrade process. If you want to disable the throttling process, you must first stop upgrade, disable throttle, and restart the Unity Connection server. Once the server is active again, begin the upgrade process.

3. (*Unity Connection 8.6 only*) Install the licenses on the existing Unity Connection 8.6 servers before you upgrade to Unity Connection 11.x server. While upgrade, the legacy license information is uploaded in Unity Connection database. For more information, see the [Migrating Licenses from Unity Connection 8.6 and Earlier Releases, page 6-3](#) section.
4. (*Unity Connection 7.x only*) Unity Connection version 7.0(1) and 7.1(2) cannot be directly upgraded to Unity Connection 11.x and higher versions. If you are currently running versions earlier than Unity Connection 7.1(3), you first need to upgrade to an intermediate version of Unity Connection

7.1(3). For information on supported upgrades, see the “Supported Cisco Unified Communications Manager Upgrades” section of *Cisco Unified Communications Manager Software Compatibility Matrix* at http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/compat/ccmcompmatr.html.

5. Confirm if you require COP file for the upgrade process from [Table 3-1](#) and download file from <http://software.cisco.com/download/navigator.html?mdfid=280082558&i=rm>.
6. Apply the COP file using the steps listed in the [Applying COP file from a Network Location](#) section
7. Follow the upgrade process on the standalone server:
 - (*RU upgrades only*) Upgrade the server following the steps mentioned in the [Upgrading the Unity Connection Server, page 3-7](#) section. The server automatically switches to the new version after completing the upgrade.
 - (*L2 upgrades only*) Upgrade the server using the steps mentioned in the [Upgrading the Unity Connection Server, page 3-7](#) section. Switch to the upgraded software to complete the upgrade process following the steps mentioned in the [Switching to the Upgraded Version of Unity Connection Software, page 3-8](#) section.
8. Follow the upgrade process on the Unity Connection cluster:
 - (*RU upgrades only*) Upgrade the publisher server following the steps mentioned in the [Upgrading the Unity Connection Server, page 3-7](#) section. The server automatically switches to the new version after completing the upgrade.

Upgrade the subscriber server following the steps mentioned in the [Upgrading the Unity Connection Server, page 3-7](#) section. The server automatically switches to the new version after completing the upgrade.
 - (*L2 upgrades only*) Upgrade the publisher server using the steps mentioned in the [Upgrading the Unity Connection Server, page 3-7](#) section.


Caution

In case of L2 upgrade of a cluster, do not restart or perform switch version on the publisher server before completing the upgrade on subscriber server otherwise cluster does not function properly.

Upgrade the subscriber server following the steps mentioned in the [Upgrading the Unity Connection Server, page 3-7](#) section.

Switch to the upgraded software first on the publisher server and then on the subscriber server following the steps mentioned in the [Switching to the Upgraded Version of Unity Connection Software, page 3-8](#) section.

9. Confirm that publisher server has **Primary** status and subscriber server has **Secondary** status.
10. (*Unity Connection 9.1(2) or earlier versions only*): If you are upgrading from Unity Connection 9.1(2) or earlier versions to Unity Connection 11.x, update the following virtual machine settings on both publisher and subscriber server through VMware vSphere client:
 - a. Change the Guest Operating System version to match the requirements of the Unity Connection 11.x.
 - b. Modify the network adapter to use the VMXNET 3 Adapter type.

**Note**

For more information on changing the Guest Operating System and network adapter, see the corresponding Readme of the OVA template at <https://software.cisco.com/download/release.html?mdfid=283062758&flowid=45673&softwareid=282074348&release=OVA-11.0&reind=AVAILABLE&rellifecycle=&reltype=latest>.

Upgrading the Unity Connection Server

To Upgrade the Unity Connection Server

- Step 1** Do any one of the following:
- Copy the ISO file to a folder on an FTP or SFTP server that the Unity Connection server can access.
 - Insert the DVD with the ISO file of the Unity Connection server that you want install into the disk drive of the server.
- Step 2** Sign in to Cisco Unified Operating System Administration.
- Step 3** From the **Software Upgrades** menu, select **Install/Upgrade**.
- Step 4** On the Software Installation/Upgrade page, in the **Source** field, select any one of the following:
- **Remote Filesystem:** Select this option to upgrade from remoter server and follow this procedure.
 - **DVD/CD:** Select this option to upgrade from disk drive and move to [Step 10](#).
- Step 5** In the **Directory** field, enter the path of the folder that contains the upgrade file.
- If the upgrade file is located on a Linux or Unix server, you must enter a forward slash (/) at the beginning of the folder path. (For example, if the upgrade file is in the upgrade folder, you must enter /upgrade).
- If the upgrade file is located on a Windows server, you must use the applicable syntax for an FTP or SFTP server such as:
- The path must begin with a forward slash (/) and contain forward slashes throughout instead of backward slashes (\).
 - The path must start from the FTP or SFTP root folder on the server and must not include a Windows absolute path that starts with a drive letter (for example, C:).
- Step 6** In the **Server** field, enter the server name or IP address.
- Step 7** In the **User Name** field, enter the alias that is used to sign in to the remote server.
- Step 8** In the **User Password** field, enter the password that is used to sign in to the remote server.
- Step 9** In the **Transfer Protocol** field, select the applicable transfer protocol and select **Next**.
- Step 10** Select the upgrade version that you want to install and select **Next**. The upgrade file is copied to the hard disk of the Unity Connection server. When the file is copied, a screen displaying the checksum value appears.
- Step 11** Verify the checksum.
- Step 12** On the next page, monitor the progress of the upgrade.

**Caution**

If you lose your connection with the remote server or close your browser during this step, you may see the following warning when you try to view the Software Installation/Upgrade page again:

Warning: Another session is installing software, click Assume Control to take over the installation.

To continue monitoring the upgrade, select **Assume Control**.

Step 13 Select **Next**.

During the initial phase of upgrade, the **Installation Log** text box in Cisco Unified Operating System Administration is updated with the information on the progress of the upgrade. To confirm the completion of upgrade, open the console of the Unity Connection server and make sure that a message indicating the completion of upgrade appears on the screen along with the login prompt.

Step 14 To verify if the upgrade is successful, run the following CLI commands:

- **show cuc version**: Displays the version of Unity Connection server in both active and inactive partitions. The upgraded Unity Connection version is in the inactive partition.
- **utils system upgrade status**: Displays the status of the upgrade that you performed. This command should display the message for successful upgrade along with the upgraded version.

Switching to the Upgraded Version of Unity Connection Software

After completing the upgrade process, you need to manually switch over to the upgraded version of Unity Connection. For a single Unity Connection server, you can select either **manual switch version** or **automatic switch version**.

You can perform the switch version running the CLI command **utils system switch-version**. The system automatically reboots after the switch version.

If you select not to automatically switch to the upgraded partition at the end of the upgrade, do the following procedure when you are ready to switch partitions.

To Switch to the Upgraded Version of Unity Connection Software

Step 1 Sign in to Cisco Unified Operating System Administration.

Step 2 From the **Settings** menu, select **Version**.

Step 3 On the Version Settings page, select **Switch Versions**, to start the following activities:

- Unity Connection services are stopped.
- Data from the active partition is copied to the inactive partition. Note that the messages are stored in a common partition, therefore they are not copied.
- The Unity Connection server restarts and switches to the newer version.

**Note**

You can check the status of the upgraded software run the CLI command **show cuc version**. The upgrade is complete when the inactive partition has the upgraded software and the active partition has the old software.

Applying COP file from a Network Location

To Apply a COP file from Network Location

- Step 1** Copy the Cisco Option Package (.cop) file on an FTP or SFTP server that the server can access.
- Step 2** Sign in to Cisco Unified Operating System Administration.
- If you are upgrading the subscriber server in a Unity Connection cluster, type the following address to access Cisco Unified Operating System Administration:
- http://<Unity Connection_servername>/cmplatform**
- Step 3** From the **Software Upgrades** menu, select **Install/Upgrade**.
- Step 4** On the Software Installation/Upgrade page, in the **Source** field, select **Remote Filesystem**.
- Step 5** In the **Directory** field, enter the path to the folder that contains the .cop file.
- If the .cop file is located on a Linux or Unix server, you must enter a forward slash (/) at the beginning of the folder path. (For example, if the .cop file is in the cop folder, you must enter /cop).
- If the .cop file is located on a Windows server, you must use the applicable syntax for an FTP or SFTP server such as:
- The path must begin with a forward slash (/) and contain forward slashes throughout instead of backward slashes (\).
 - The path must start from the FTP or SFTP root folder on the server and must not include a Windows absolute path that starts with a drive letter (for example, C:).
- Step 6** In the **Server** field, enter the server name or IP address.
- Step 7** In the **User Name** field, enter the alias that is used to sign in to the remote server.
- Step 8** In the **User Password** field, enter the password that is used to sign in to the remote server.
- Step 9** In the **Transfer Protocol** field, select the applicable transfer protocol and select **Next**.
- Step 10** Select the software that you want to install, and select **Next**.
- The .cop file is copied to the virtual hard disk on Unity Connection server. When the file is copied, a screen displays the checksum value.
- Step 11** Verify the checksum and select **Next** to begin the installation.
- During the upgrade, the value of the **Status** field is **Running**. When the upgrade process is complete, the value of the **Status** field changes to **Complete**.
- Note**
- All command-line interface sessions are terminated automatically.
 - The Cisco Tomcat Service can take several minutes to restart automatically.
- Step 12** Sign out from the Cisco Unified Operating System Administration application.

**Note**

Step 13 Run the CLI command **utils service list** to confirm that the Cisco Tomcat service is in the **Running** state.

Rollback of Unity Connection

After upgrading the Unity Connection version, you can rollback to the software version that was running before the upgrade by switching to the software version on inactive partition.

Important Considerations for Rollback

1. Do not make any configuration changes during the rollback because the changes are lost after the rollback.
2. In an cluster setup, do not switch versions on both the first and second servers at the same time. Perform switch version on the second server only after you have switched versions on the first server.
3. Users and mailbox stores that were added after the upgrade, no longer exist after you rollback to the version on inactive partition. The new users and mailbox stores are deleted.
4. All messages are preserved but for the users that were added after upgrade, their messages are orphaned as the users no longer exist after rollback. These messages are moved to the undeliverable messages folder.
5. If you moved mailboxes from one mailbox store to another after upgrading, those mailboxes are moved back to the mailbox stores they were in before the upgrade.
6. A future delivery folder is created for users to mark messages for future delivery. If you revert to a version that supports future delivery but the future delivery folder has not been created for the user as yet, the messages in the future delivery folder for the new version are moved to the undeliverable messages folder.
7. (*Unity Connection 8.5 and earlier only*) If a user rollbacks to Unity Connection version 8.5 or earlier from a current version that is 8.6 and higher, then following limitations are faced:
 - No voice messages are left after the rollback.
 - No administrator settings are preserved after the rollback.
8. (*Unity Connection 9.1(2) or earlier versions only*): If a user rollbacks to Unity Connection version 9.1(2) or earlier from the current version, update the following virtual machine settings on both publisher and subscriber server through VMware vSphere client:
 - a. Revert to the Guest Operating System version as earlier (before upgrade).
 - b. Modify the network adapter to the adapter type as earlier (if you changed after upgrade).

Rollback Scenarios

You can revert a single Unity Connection server or a cluster to the version on inactive partition.

To rollback a Unity Connection cluster, you should rollback both the servers, first the publisher and then the subscriber. After the successful rollback of both the publisher and subscriber servers, reset the replication between the two servers running the following CLI commands:

- a. Stop the replication on subscriber server with the CLI command **utils dbreplication stop**.

- b. Stop the replication on publisher server with the CLI command **utils dbreplication stop**.
- c. Reset the replication running the CLI command **utils dbreplication reset all** on the publisher server.

After the reset of replication between the two servers, check the cluster status running the CLI command **show cuc cluster status utils system restart** on both publisher and subscriber.

To Rollback a Unity Connection Server to the Version in the Inactive Partition

- Step 1** Sign in to Cisco Unified Operating System Administration.
 - Step 2** From the **Settings** menu, select **Version** and the Version Settings window displays.
 - Step 3** Select the **Switch Versions** option. After you confirm that you want to restart the system, the system restarts that might take up to 15 minutes.
 - Step 4** Follow the given steps to confirm that the switch version is successful:
 - a. Sign in to Cisco Unified Operating System Administration.
 - b. In the **Settings** menu, select **Version**. The Version Settings window displays the product version.
 - c. Confirm that the active partition runs the correct version of Unity Connection server and all critical services are in the **Running** state.
 - d. Sign in to Cisco Unity Connection Administration and confirm that the configuration data exists.
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