Phase 4 - Aggregation and Unified Communications Applications Upgrade

Introduction to Aggregation, UC Components, and Applications Upgrade

We recommend that you upgrade the components and groupings in Phase 4 in the following order:

1. Telephony aggregation components (vPGW and supporting components)
2. TelePresence

Note   Upgrade the above groupings in separate maintenance windows, with each grouping fully upgraded in a single maintenance window.

> **3**   Customer's Unified Communications (UC) applications

Important   In large Cisco HCS systems with many UC application instances, the upgrade can overload resources. At a minimum, the upgrade of UC applications can be a tedious and potentially error-prone task. It is critical that you follow the recommendations set out in UC Applications Backup and Upgrade Scheduling, on page 6 to schedule backups and upgrades of UC applications. Note that there is no difference in using the Platform Manager automation tool to perform backups or upgrades of UC applications, except that the prioritizing of UC applications to be upgraded is completed on a customer basis, rather than at a system level.

Note   Use the Platform Manager automation tool to streamline the upgrade activities without replacing your existing processes. Prepare to perform your usual installation and upgrade procedures and use Platform Manager to organize those tasks from one central location.

Platform Manager organizes servers into server groups. All of the servers in a server group can be upgraded, switched, and restarted at the same time. For procedures to organize your servers into server groups, refer to *Cisco Hosted Collaboration Solution, Release 10.1(2) Maintain and Operate Guide*.

Use VM-to-blade mapping information to minimize IOPS spikes. See the "Infrastructure Manager Configuration" section of *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 10.1(2)* for more information on how to perform VM mapping.

Note   VM mapping, plus the use of Platform Manager, can significantly reduce upgrade times and is less error prone.

Use Prime Collaboration Deployment with UC Applications 10.5(2)

Cisco Prime Collaboration Deployment is an application that is designed to assist in the management of Unified Communications (UC) applications. It allows you to perform tasks such as migration of older software versions of clusters to new virtual machines, fresh installs, and upgrades on existing clusters. Its primary high-level functions are to:

- Migrate an existing cluster of UC servers to a new cluster (such as MCS to virtual or virtual to virtual)

- Perform operations on existing clusters (8.6(1) or later). Examples of these operations include:

  - Fresh Installs

  - Upgrade

  - Switch version

  - Restart

• Change IP addresses or hostnames in the cluster on existing Release 10.x clusters.

Note Cisco Unity Connection migration is not supported. Use the manual upgrade option.

The following three tables identify the functions supported by Cisco Prime Collaboration Deployment, Platform Manager and Infrastructure Platform Automation. Each table lists the UC application and their versions that supported by the platform function, irrespective of Cisco HCS releases.

Table 1: Cisco. Prime Collaboration Deployment Functions (for 10.x and later UC Applications)

Product and Functions	Cluster Discovery	Migration to 10.x Cluster	Upgrade Task (Upgrade Application Server or Install COP Files)	Restart Task	Switch Version Task	Fresh Install a New 10.x Cluster	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified Communications Manager	6.1(5), 7.1(3), 7.1(5), 8.0(1), 8.0(2), 8.0(3), 8.5(1), 8.6(1), 8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1), 10.5(1), 10.5(2)	6.1(5), 7.1(3), 7.1(5), 8.0(1), 8.0(2), 8.0(3), 8.5(1), 8.6(1), 8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1)	8.6(1), 8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1), 10.5(1), 10.5(2)	8.6(1), 8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1)	8.6(1), 8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.x	10.x, 10.5(1), 10.5(2)	10.x
Cisco Unified Presence	8.5, 8.6	8.5(4), 8.6(3), 8.6(4), 8.6(5)	8.6(3), 8.6(4), 8.6(5)	8.6(3), 8.6(4), 8.6(5)	8.6(3), 8.6(4), 8.6(5)	—	—
IM and Presence Service	—	—	—	—	—	10.x, 10.5(1), 10.5(2)	Not Supported

Product and Functions	Cluster Discovery	Migration to 10.x Cluster	Upgrade Task (Upgrade Application Server or Install COP Files)	Restart Task	Switch Version Task	Fresh Install a New 10.x Cluster	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified Contact Center Express	8.5.1, 9.0, 9.0.2, and 10.x	Not Supported	9.0(2), 10.x	9.0(2), 10.x	9.0(2), 10.x	10.5(x)	10.5(x)
Cisco Unity Connection	8.6.1, 8.6.2, 9.x and 10.x	Not Supported	From 8.6(x) to 8.6(x) From 8.6(x) to 9.x From 9.x to 9.x From 10.0(1) to 10.x	8.6(1), 8.6(2), 9.x, 10.x	8.6(1), 8.6(2), 9.x, 10.x	10.5(x)	10.5(x)

Table 2: Platform Manager Functions (for pre10.x UC Applications)

Product and Functions	Cluster Discovery	Migration to 10.x Cluster	Upgrade Task (Upgrade Application Server or Install COP Files)	Restart Task	Switch Version Task	Fresh Install a New 10.x Cluster	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified Communications Manager	8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1)	Not Supported	8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1)	8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1)	8.6(2), 9.0.(1), 9.1(1), 9.1(2), 10.0(1)	Not Supported	Not Supported
Cisco Unified Presence	8.6	Not Supported	8.6(3), 8.6(4), 8.6(5)	8.6	8.6	Not Supported	Not Supported

Product and Functions	Cluster Discovery	Migration to 10.x Cluster	Upgrade Task (Upgrade Application Server or Install COP Files)	Restart Task	Switch Version Task	Fresh Install a New 10.x Cluster	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
IM and Presence Service	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	Not Supported	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	Not Supported	Not Supported
Cisco Unified Contact Center Express	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported
Cisco Unity Connection	8.6.2 , 9.x and 10.0.1	Not Supported	From 8.6(x) to 8.6(x) From 8.6(x) to 9.x From 9.x to 9.x From 9.xto 10.x From 10.0(1) to 10.x	8.6.2, 9.x and 10.0.1	8.6.2, 9.x and 10.0.1	Not Supported	Not Supported

Table 3: Infrastructure Platform Automation Functions

Product and Functions	VMware Cloning from Golden Template	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified Communications Manager	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1)
Cisco Unified Presence	Not Supported	Not Supported
IM and Presence Service	10.0.(1)	10.0.(1)
Cisco Unified Contact Center Express	Not Supported	Not Supported
Cisco Unity Connection	9.x and 10.0.1	9.x and 10.0.1

Cisco only supports virtualized deployments of Cisco Prime Collaboration Deployment. The application is deployed using an OVA that contains the pre-installed application. This OVA is obtained with a licensed copy of Cisco Unified Communications Manager software. For information about how to extract and deploy the PCD_VAPP.OVA file, see topics relating to the installation of Cisco Prime Collaboration Deployment at http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html.

A single instance of Cisco Prime Collaboration Deployment should be installed in the Cisco HCS Management Extranet so it can access all Cisco Unified Communications Manager clusters for all customers including those behind a NAT. The **Cluster Discovery** feature should be used to initially find application clusters to perform fresh installs, migration, and upgrade functions. This discovery needs to be performed on a blade-by-blade basis.

Details on available features, along with installation, configuration and administration, best practices, and troubleshooting information can be found in the Administration Guide at:http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html and in the Release Notes at: http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-release-notes-list.html.

IP Telephony Customer Upgrade

Upgrade all of the UC applications and components for one customer before you upgrade the UC applications and components for another customer.

The following upgrade strategies are for IP telephony components, based on the size of the deployment.

- Single-phase Upgrade: Recommended for small single-site or multi-site installations.

- Multi-phase System Upgrade: Recommended for medium or large single-site and medium multi-site installations.

Note   For Contact Center deployments, see HCS for Contact Center Components Upgrade, on page 21.

UC Applications Backup and Upgrade Scheduling

We recommend that you implement regular daily/nightly backups for Cisco Unified Communications (UC) and Management Applications to ensure that data is not lost due to an unexpected outage. For large Cisco HCS systems with many UC application instances, this can become a tedious and potentially error-prone task.

Following the engineering recommendations, you can create a backup schedule to provide a guide for backup order so that the Cisco HCS system is not overwhelmed during scheduled backups. Safeguards should be set in place so that you do not overrun the CPU on a per-blade basis and the IOPS engineering of the SAN while maintaining an acceptable backup time.

To facilitate the process, we recommend using the Platform Manager Automation Tool to schedule upgrades and backups for the UC applications. The Platform Manager Automation Tool lets the System Administrator schedule the backups at a regular, predetermined time. A schedule helps to reduce the number of personnel required, and the process is much less error-prone.

We recommend that you perform the following steps to create a backup schedule:

1 Map Virtual Machines (VMs) to physical LUNs in the storage system.

2 Determine the oversubscribed and non-oversubscribed pools.

3 Partition the process into oversubscribed and non-oversubscribed pools.

   a For the non-oversubscribed clusters with SSD for storage, the VM backups can be scheduled according to the available bandwidth to the backup server. (Cisco assumes that you have SSD storage, so IOPS is not a factor.)

   b For the oversubscribed clusters that use 20% HA, Cisco recommends that you back up or upgrade a maximum of two VMs for each blade at a time. This recommendation is based on possible contention for computing resources.

   c For the oversubscribed clusters that use less than 20% HA, Cisco recommends that you back up or upgrade a maximum of one VM for each blade at a time. This recommendation is based on possible contention for computing resources.

   d List the order of applications to be backed up (at a system level). In order to maximize the backup timing, ensure that you conform to the stated Engineering Rules when prioritizing the applications for backup.

Note For upgrades, Cisco recommends that you follow the stated Engineering Rules, but prioritize the applications to be upgraded on a per-customer basis. For example, if you have three tenants, create three separate lists of orders based on the application mix that is provisioned for each tenant.

Cisco recommends a scheduled backup list based on the following priorities:

- **Priority 1 - Based on Application importance.** For example, set Cisco Unified Communications Manager to the highest application priority, and Cisco Unified Communications Manager IM and Presence Service to the lowest priority. Other Cisco UC Applications that are provided in the compatibility matrix can be given a running order priority as well. There is no specific rule about how the application priority can be set.

- **Priority 2 - Based on OVA size.** This priority allows you to back up the application based on tenant size. Each scheduled list should give the desired results and conform to the engineering rules.

4 Develop a matrix that describes the number of provisioned VMs for each size on a per-blade basis, and the mapping as it relates to the SAN storage that it points to. Create the matrix manually. The following table is an example of this type of matrix.

Table 4: Example Matrix

Chassis 1 Provisioning								Chassis 1 RAID Group ID Map							
Blade 1	Blade 2	Blade 3	Blade 4	Blade 5	Blade 6	Blade 7	Blade 8	Blade 1	Blade 2	Blade 3	Blade 4	Blade 5	Blade 6	Blade 7	Blade 8
4	3	3	3	3	3	3	3	RG1,2,5,	RG1,2,1	6,2,5	1,2,6	1,2,7	1,2,8	1,2,9	1,2,10
4	4	4	4	4	4	4	4	7,8,9,12	7,8,9,11	7,8,9,11	7,8,9,13	7,8,9,14	7,8,9,15	7,8,9,16	7,8,9,17

Chassis 1 Provisioning								Chassis 1 RAID Group ID Map							
1	1	1	1	1	1	1	1	22	13	13	13	13	13	13	13
1	1	1	1	1	1	1	1	20	11	11	11	11	11	11	11
4	3	3	3	3	3	3	3	4,5,8,3	2,3,7	2,3,7	6,7,9	4,8,10	2,5,11	4,10,12	1,5,13
1	1	1	1	1	1	1	1	21	12	12	12	12	12	12	12
1	1	1	1	1	1	1	1	23	14	14	14	14	14	14	14
1	1	1	1	1	1	1	1	24	15	15	15	15	15	15	15
1	1	1	1	1	1	1	1	25	16	16	16	16	16	16	16
1	1	1	1	1	1	1	1	26	17	17	17	17	17	17	17
1	1	1	1	1	1	1	1	27	18	18	18	18	18	18	18

5 Create a backup list. In the following example, the Timeline Sequence column identifies the order that backups are scheduled for Blade 1. For example, Time Sequence 1 is completed first, then Time Sequence 2 is executed, and so on. Applications with the same priority (for example, Priority 3) can be completed at the same time. The Application and Size columns show the application and its size based on priority.

Table 5: Example Backup List with Timeline Sequence

Backup Order (Blade 1)					
Line #	Timeline Sequence	Application	Size	Approx. Backup Time	RAID Group ID
	1	CUCM - PUB(1)	500		RG1,2,5,6
	1	CUCM - PUB(2)	500		RG1,2,5,6
	2	CUCM - PUB(1)	500		
	2	CUCM - PUB(2)	500		
	3	CUCM - PUB(1)	1000		7,8,9,12
	3	CUCM - PUB(2)	1000		7,8,9,12
	4	CUCM - PUB(1)	1000		
	4	CUCM - PUB(2)	1000		
	5	CUCM - PUB(1)	5000		22
	6	CUCM - PUB(2)	10000		20
	7	CUCxn - PUB(1)	500		4,5,8,3
	7	CUCxn - PUB(2)	500		4,5,8,3
	8	CUCxn - PUB(1)	500		

	8	CUCxn - PUB(2)	500		

Phase 4—Upgrade Cisco HCS Release 8.6(2)+ to Cisco HCS Release 10.1(2)

Procedure

Step 1   Upgrade the Telephony Aggregation components.
See PGW-2200 Upgrade, on page 12.

Step 2   Upgrade TelePresence.
See TelePresence Upgrade, on page 12

Step 3   Upgrade the UC Applications.
See Upgrade UC Applications, on page 15.

Step 4   Upgrade video components.
See Video Components Upgrade, on page 19.

Step 5   Upgrade endpoints.
See Endpoints Upgrade, on page 20.

Step 6   (Optional) Upgrade any other third-party applications.
See Cisco and Third-Party Applications on Other Servers or VMs Upgrade, on page 20.

Step 7   (Optional) Upgrade HCS for Contact Center.
See HCS for Contact Center Components Upgrade, on page 21.

Step 8   Apply the license for the UC Applications.
See Unified Communications Application License 8.6(2)+ or 9.2(1) to Cisco HCS Release 10.1(2) , on page 24.

Phase 4—Upgrade Cisco HCS Release 9.1(1)+ to Cisco HCS Release 10.1(2)

Procedure

Step 1   Upgrade the Telephony Aggregation components.
See PGW-2200 Upgrade, on page 12.

Step 2   Upgrade TelePresence.
See TelePresence Upgrade, on page 12

Step 3   Upgrade the UC Applications.
See Upgrade UC Applications, on page 15.

Step 4   Upgrade video components.
See Video Components Upgrade, on page 19.

Step 5   Upgrade endpoints.
See Endpoints Upgrade, on page 20.

Step 6   (Optional) Upgrade any other third-party applications.
See Cisco and Third-Party Applications on Other Servers or VMs Upgrade, on page 20.

Step 7   (Optional) Upgrade HCS for Contact Center.
See HCS for Contact Center Components Upgrade, on page 21.

Step 8   Apply the license for the UC Applications.
See Unified Communications Application License 8.6(2)+ or 9.2(1) to Cisco HCS Release 10.1(2) , on page 24.

Phase 4—Upgrade Cisco HCS Release 9.2(1)+ to Cisco HCS Release 10.1(2)

Procedure

Step 1   Upgrade the Telephony Aggregation components.
See PGW-2200 Upgrade, on page 12.

Step 2   Upgrade TelePresence.
See TelePresence Upgrade, on page 12

Step 3   Upgrade the UC Applications.
See Upgrade UC Applications, on page 15.

Step 4   Upgrade video components.
See Video Components Upgrade, on page 19.

Step 5   Upgrade endpoints.
See Endpoints Upgrade, on page 20.

Step 6   (Optional) Upgrade any other third-party applications.
See Cisco and Third-Party Applications on Other Servers or VMs Upgrade, on page 20.

Step 7   (Optional) Upgrade HCS for Contact Center.
See HCS for Contact Center Components Upgrade, on page 21.

Step 8   Apply the license for the UC Applications.
See Unified Communications Application License 8.6(2)+ or 9.2(1) to Cisco HCS Release 10.1(2) , on page 24.

Phase 4—Upgrade Cisco HCS Release 10.0(1) to Cisco HCS Release 10.1(2)

Note Check the *Cisco Hosted Collaboration Solution Compatibility Matrix* for compatible release versions. Depending on your system, you may not need to upgrade these components.

Procedure

Step 1 Upgrade the Telephony Aggregation components.
See PGW-2200 Upgrade, on page 12.

Step 2 Upgrade TelePresence.
See TelePresence Upgrade, on page 12.

Step 3 Upgrade the UC Applications.
See Upgrade UC Applications, on page 15.

Step 4 Upgrade video components.
See Video Components Upgrade, on page 19.

Step 5 Upgrade endpoints.
See Endpoints Upgrade, on page 20.

Step 6 (Optional) Upgrade any other third-party applications.
See Cisco and Third-Party Applications on Other Servers or VMs Upgrade, on page 20.

Step 7 (Optional) Upgrade HCS for Contact Center.
See HCS for Contact Center Components Upgrade, on page 21.

Step 8 Apply the license for the UC Applications.
See Unified Communications Application License 8.6(2)+ or 9.2(1) to Cisco HCS Release 10.1(2) , on page 24.

Phase 4—Upgrade Cisco HCS Release 10.1(1) to Cisco HCS Release 10.1(2)

Note Check the *Cisco Hosted Collaboration Solution Compatibility Matrix* for compatible release versions. Depending on your system, you may not need to upgrade these components.

Procedure

Step 1 Upgrade the Telephony Aggregation components.
See PGW-2200 Upgrade, on page 12.

Step 2 Upgrade TelePresence.
See TelePresence Upgrade, on page 12.

Step 3 Upgrade the UC Applications.
See Upgrade UC Applications, on page 15.

Step 4 Upgrade video components.
See Video Components Upgrade, on page 19.

Step 5 Upgrade endpoints.
See Endpoints Upgrade, on page 20.

Step 6 (Optional) Upgrade any other third-party applications.
See Cisco and Third-Party Applications on Other Servers or VMs Upgrade, on page 20.

Step 7 (Optional) Upgrade HCS for Contact Center.
See HCS for Contact Center Components Upgrade, on page 21.

Step 8 Apply the license for the UC Applications.
See Unified Communications Application License 8.6(2)+ or 9.2(1) to Cisco HCS Release 10.1(2) , on page 24.

PGW-2200 Upgrade

For more details on upgrade information for PGW-2200, see the relevant *Cisco Virtual PGW 2200 Softswitch* zip file at http://www.cisco.com/c/en/us/support/unified-communications/hosted-collaboration-solution-hcs/products-maintenance-guides-list.html.

Migrating Classic PGW to Virtualized PGW (vPGW)

For more details on upgrading from classic PGW to vPGW, see the *Cisco_Virtual_PGW_2200_VPGW_9.9_Migration_Guide* in the relevant Cisco Virtual PGW 2200 Softswitch zip file located at http://docwiki.cisco.com/wiki/Hosted_Collaboration_Solution_Release_10.0(1)_Documentation#vPGW_Documentation.

TelePresence Upgrade

TelePresence components are multi-tenant UC components that can be accessed by multiple Customers in the Cisco HCS deployment. TelePresence should be upgraded, if applicable, after Telephony Aggregation Components (vPGW and Supporting Components) have been upgraded.

Cisco HCS 8.6(2)SU1+ to Cisco HCS Release 10.1(2) TelePresence Upgrade Considerations

Because TelePresence is not supported in HCS 8.6(2)+, there is no upgrade consideration. Cisco HCS Release 10.1(2) TelePresence components can be deployed after the upgrade to Cisco HCS Release 10.1(2), if desired.

Cisco HCS 9.1(1)+ to Cisco HCS Release 10.1(2) TelePresence Upgrade Considerations

For existing Cisco TelePresence Exchange System deployments on Media Convergence Servers in HCS 9.x, upgrade to Cisco HCS Release 10.1(2) Cisco TelePresence Exchange System is supported using the existing Media Convergence Servers hardware. Or, the partner can migrate from Cisco TelePresence Exchange System on MCS servers to virtualized Cisco TelePresence Exchange System.

TelePresence in HCS 9.2(1) (Cisco TelePresence Exchange System 1.2) introduced improved port-based licensing. Therefore, upgrades from Cisco HCS 9.1(1)+ to Cisco HCS Release 10.1(2) requires licensing upgrades. For complete details, refer to the Cisco TelePresence Exchange System 1.2 documentation:

http://www.cisco.com/c/en/us/support/conferencing/telepresence-exchange-system/tsd-products-support-general-information.html

Note the following considerations:

- Licensing in Cisco TelePresence Exchange System 1.2 **requires new licenses** for upgrades.
- An Upgrade license is available for the Cisco TelePresence Exchange System Starter Package to add multi-region and unlimited ports.
- Active Meeting Management (AMM) feature license available.
- Removed feature licenses: meetme, direct dial, multi-region, concurrent active endpoints, and inter-op.

Cisco HCS 9.2(1)+ to Cisco HCS Release 10.1(2) TelePresence Upgrade Considerations

For 9.x Cisco TelePresence Exchange System deployments on Media Convergence Servers, upgrade to Cisco HCS Release 10.1(2) Cisco TelePresence Exchange System is supported using the existing MCS hardware. Or, the partner can migrate from Cisco TelePresence Exchange System on Media Convergence Servers to virtualized Cisco TelePresence Exchange System.

Upgrade Validation Considerations

After completing the upgrades, testing should be performed to ensure that there is no impact to the behavior of any **BASE** release set features for customers still running previous versions of UC applications and components.

Software Upgrades

You should regularly check for updates to the main software image on the Cisco website. This section describes how to upgrade the device using the web.

To check for and download updates, log in to the web interface and go to **Status** to check the currently installed version. Then go to the support section of www.Cisco.com and check whether a more recent release is available. If there is a more recent release, download it and save it locally.

TelePresence License Upgrades

There are two types of base license available for the Cisco TelePresence Exchange System:

- Base CTX HD Ports—Applicable to the full-feature configuration of Cisco TelePresence Exchange System. There is no limit to the amount of additional port licenses you can purchase and add beyond the 48 base ports provided by this license.

- Base CTX Starter HD Ports—Applicable to the starter package configuration of Cisco TelePresence Exchange System. With this base license, your system is limited to a maximum of 250 port licenses (including the 48 base ports provided by the license). If you reach the 250 port limit, you must purchase a CTX Starter Upgrade license and additional port licenses to continue adding ports.

The Cisco TelePresence Exchange System comes with a preinstalled 60-day evaluation license that includes 48 ports. After 60 days, you must install a permanent base license to continue to use the Meet-Me and direct-dial services, and a permanent Active Meeting Management feature license if you wish to continue to use the active meeting management feature. Permanent licenses are perpetual, meaning that they do not expire and do not need to be renewed.

For more information on licensing, including the options available for each type of base license and system changes that can affect the validity of your licenses, see the "Managing Licenses" chapter of the Administration Guide for the Cisco TelePresence Exchange System Release 1.3 at http://www.cisco.com/en/US/products/ps11276/products_installation_and_configuration_guides_list.html.

For Cisco TelePresence Exchange installation and upgrade information, see http://www.cisco.com/c/en/us/td/docs/telepresence/tx/exchange_system/1_3/rn_ctx13.html.

Maintenance Windows and Time Estimates

Customer upgrades can be quite long, depending on the number of customers that have to be migrated or the size of individual customers. Upgrading an entire customer (Cisco Unified Communications Manager, Cisco Unified Presence, Connection, Cisco Emergency Responder, Attendant Console, customer premises equipment, and so on) may require more than one maintenance window for larger customers. Therefore, you can break this phase into sub-phases of multiple maintenance windows while still following the overall upgrade order described in this guide.

At a minimum, you should perform customer upgrades in a separate maintenance window from any previous upgrade phases involving Cisco HCS Management Applications and Telephony Aggregation Components.

For virtual machine upgrades to support newer VMware hardware and tools, for the Unified Communications applications, the following link describes the supported upgrades process. Each must be running on a blade that has been upgraded to the latest version before the virtual machine can be upgraded.

http://docwiki.cisco.com/wiki/VMware_Tools

The following link provides information for upgrading a virtual machine to the latest hardware version:

http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1010675

Upgrade UC Applications

Upgrade for Cisco Unified Communications Manager and Unified Communications Manager IM and Presence Components

Upgrade information is as follows:

- Cisco Unified Communications Manager and Cisco Unified Communications Manager IM and Presence versions must be aligned and upgraded simultaneously.

- Cisco Unified Communications Manager IM and Presence versions must match at the major and minor release level (for example, 10.0 works with 10.0; 10.x works with 10.x).

- In 10.x, a Cisco Unified Communications Manager IM and Presence install fails if the Cisco Unified Communications Manager publisher does not have the same major and minor release level.

- Upgrade Cisco Unified Communications Manager to 10.x before you upgrade Cisco Unified Communications Manager IM and Presence to 10.x.

- Cisco Unified Communications Manager IM and Presence switch version to 10.x or later fails if the Cisco Unified Communications Manager version does not match at the major and minor release level.

- All upgrades to 10.x are refresh upgrades and are service impacting.

- The Cisco Unified Communications Manager cluster must be upgraded and running 10.x before IM and Presence nodes are upgraded to 10.x.

Sync Data After Upgrading UC Applications

After you upgrade a UC Application that is referenced from Cisco Unified Communications Domain Manager, you should manually initiate a full data sync from Cisco Unified Communications Domain Manager to ensure the existing device model instance's universally unique identifiers (UUIDs) are in sync with the upgraded UC Application.

Use the following procedure after upgrading the UC Application:

Procedure

Step 1 Log in to Cisco Unified Communications Domain Manager as a Provider Admin.
Step 2 Select **Device Management** > **Advanced** > **{CUCM or CUC} Network Device**.
Step 3 Select the UC Application that was upgraded.
Step 4 Select **Action** > **Import**.

Upgrade Cisco Unified Communications Manager

Before You Begin

- Review the following tasks: solution backups, static configuration, maintenance windows, upgrade failure and fallback, upgrade validation, and service impact considerations.

- Create working backups. For details, see the *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 10.1(2)* at http://www.cisco.com/c/en/us/support/unified-communications/hosted-collaboration-solution-version-10-1-2/model.html.

Procedure

Step 1 Obtain the new software. You can download the OVA file from the following site: http://docwiki.cisco.com/wiki/Virtualization_for_Cisco_Unified_Communications_Manager_%28CUCM%29.

Step 2 Install the software. For details, see the *Upgrade Guide for Cisco Unified Communications Manager, Release 10.0(1)* at http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-guides-list.html.

Note Some issues have been seen concerning Cisco Unified Communications Manager 2500 User deployments. It is imperative that you run through the preupgrade tasks outlined in the *Upgrade Guide for Cisco Unified Communications Manager, Release 10.0(1)* to ensure that sufficient disk space is available for the upgrade to succeed.

Step 3 Validate that the upgrade was successful. For details, see Validate Unified Communications Manager Upgrade, on page 16.

Step 4 Verify that Cisco Unified Communications Manager services are running by running bulk-load voice traffic with different call flows.

Step 5 If you are using JTAPI, upgrade your JTAPI application:

a) From Cisco Unified CM Administration, choose **Application** > **Plugins**.

b) Download the JTAPI installer.

c) Follow the instructions in the *Cisco Unified JTAPI Developers Guide* at the following location to upgrade the JTAPI application: http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_programming_reference_guides_list.html.

Validate Unified Communications Manager Upgrade

Procedure

Step 1 Verify that no error messages occurred during the upgrade process.

Step 2 Check the upgrade log file for errors.

Step 3 Check the system version using either of the following methods:

- Log in to Cisco Unified CM Administration and click **About**.

> • Run the `show version active` CLI command.

Step 4 Verify through Cisco Unified Real-Time Monitoring Tool that there is no DB replication issue between the publisher and subscribers.

Step 5 Verify that Cisco Unified Communications Manager does not return any error related to licensing.

Step 6 Verify that SIP and SCCP IP Phones are registered with Cisco Unified Communications Manager.

Step 7 Ensure the following devices are configured correctly:

> • Gatekeepers
>
> • MGCP and H.323 Gateways
>
> • Trunks
>
> • CTI Route Points

Step 8 Check that media resources such as conference bridges, media termination points (MTPs), or transcoders have registered properly.

Step 9 Verify that required services are running for all cluster nodes.

Step 10 Verify that the Active Directory integration for user information and authentication was carried out, and all users are in place (IP telephony only).

Upgrade Cisco Unified Communications Manager IM and Presence Service

Before You Begin

- Review solution backups, static configuration, maintenance window, upgrade failure and fallback, upgrade validation, and service impact considerations.

- Create working backups. For details, see the *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 10.1(2)* at http://www.cisco.com/c/en/us/support/unified-communications/hosted-collaboration-solution-version-10-1-2/model.html.

Procedure

Step 1 Obtain the new software. You can download the OVA file from the following site: http://docwiki.cisco.com/wiki/Virtualization_for_Unified_CM_IM_and_Presence.

Step 2 Install the software. For details, see the *Upgrade Guide for Cisco Unified Communications Manager* at http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_installation_guides_list.html.

Step 3 Validate the installation. For details, see Validate IM and Presence Upgrade, on page 18.

Step 4 Run IM and Presence bulk-load traffic to verify that IM and Presence services are running.

What to Do Next

After you verify the upgrade of multiple customers in your deployment, you can manage backups for Cisco Unified Communications Manager IM and Presence through Platform Manager in Cisco HCM-F.

Validate IM and Presence Upgrade

Procedure

Step 1 Verify that there were no error messages during the upgrade process.

Step 2 Check the upgrade log file for errors.

Step 3 Check the system version using either of the following methods:

- Log into Cisco Unified CM IM and Presence Administration and click **About**.

- Run the `show version active` CLI command.

Step 4 Verify that there are no licensing errors.

Step 5 Use Cisco Unified Real-Time Monitoring Tool to verify that CPU usage is consistent for over 5 minutes with no CPU spikes.

Step 6 Add a user in the contact list.

Step 7 Remove the user from the contact list.

Step 8 Change the availability status of a client and verify that the availability status is updated in another client.

Cisco Unity Connection Upgrade

Upgrade Cisco Unity Connection

Before You Begin

- Activate the Platform Administrative Web Service on the Cisco Unity Connection publisher node.

- Create working backups. For details, see the *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 10.1(2)* at http://www.cisco.com/c/en/us/support/unified-communications/ hosted-collaboration-solution-version-10-1-2/model.html.

Procedure

Step 1 Activate the Platform Administrative Web Service on the Cisco Unity Connection publisher node.

Step 2 Obtain the software. You can download the OVA file from this site: http://docwiki.cisco.com/wiki/ Virtualization_for_Cisco_Unity_Connection.

Step 3 Install the software.

Step 4 Verify that the installation succeeded.

Step 5 Verify that the Cisco Unity Connection services are active by running bulk-load voicemail traffic with different call flows to verify Cisco Unity Connection servers.

What to Do Next

After you have verified the upgrade of multiple customers in your deployment, you can manage backups for Cisco Unity Connection through Platform Manager in Cisco HCM-F.

Validate Cisco Unity Connection Upgrade

Procedure

Step 1 Check both the primary and secondary Cisco Unity Connection Active version using the `show cuc version` CLI command.

Step 2 Log in to Cisco Unified OS Administration and check the System version.

Step 3 Check the server status and port status under Cluster Management from the Unity Connection Serviceability page. The server status should display as Primary and Secondary.

Step 4 Verify that you can log in to Cisco Unity Connection Administration without errors.

Step 5 Verify the Port Group status under Telephony Integrations.

Step 6 Open **Telephony Integrations** > **Port Group** and verify that there are no errors under Check Telephony Configuration.

Video Components Upgrade

Upgrading Video Conference Bridges

For information on upgrading the Cisco TelePresence MCU MSE 8510 Series, see Cisco TelePresence MCU MSE Series Install and Upgrade Guides.

Upgrading TelePresence MCUs

For information on upgrading the Cisco TelePresence MCU 4500 Series, see Cisco TelePresence MCU 4500 Series Install and Upgrade.

Endpoints Upgrade

This topic describes how endpoints are upgraded.

- IP Phones
  Typically automatically upgraded in Cisco Unified Communications Manager upgrade (device defaults - firmware).

- Jabber Clients
  Jabber clients versions are not required to upgrade. UC applications are backward compatible to BASE versions. If upgrade is desired, the user should upgrade to the latest FCS version of Jabber Client.

- Video endpoints
  Typically automatically upgraded in Cisco Unified Communications Manager upgrade (device defaults - firmware).

Cisco and Third-Party Applications on Other Servers or VMs Upgrade

This topic describes how Cisco and Third-Party Applications on other servers or VMs are upgraded.

Cisco Emergency Responder

To upgrade Cisco Emergency Responder to the most recent version of Emergency Responder, use the Cisco Unified OS Administration web interface. See the Cisco Emergency Responder Administration Guide for information about performing upgrades.

Meeting and Collaboration Components

There is no new version of WebEx Meeting Center for Cisco HCS Release 10.1(2).

Cisco Unified Attendant Console

The Cisco Unified Attendant Console (CUAC) portfolio combines the Premium, Enterprise, and Business editions.

Note   The CUAC Premium Edition is specified for HCS pre-Cisco HCS Release 10.1(1). Follow CUAC product documentation to upgrade to Cisco HCS Release 10.1(2).

Cisco Unified Communications Manager includes a server-less Attendant Console (AC), "Cisco Unified Attendant Console - Standard". This 'Standard' AC functionality is a feature built into Cisco Unified Communications Manager application itself. If the standard functionality is sufficient for you, then no separate CUAC product is necessary.

HCS for Contact Center Components Upgrade

The following section outlines upgrades for Contact Center components.

Note   You should upgrade all of the HCS for Contact Center applications and components for a single customer before you upgrade the HCS for Contact Center for another customer.

Upgrade HCS for Contact Center Components

Follow this procedure to upgrade HCS for Contact Center. Cisco recommends that you upgrade all of the Contact Center components for an individual customer before you upgrade Contact Center components for another customer.

Before You Begin

- Review the following tasks: solution backups, static configuration, maintenance windows, upgrade failure and fallback, upgrade validation, and service impact considerations.

- Create system backups.

- Make sure you have completed the domain manager upgrade procedures for Cisco Unified Communications Domain Manager and Contact Center Domain Manager in the Phase 2 - Management Updates section here Upgrade Contact Center Domain Manager before proceeding.

Procedure

Step 1   Download the OVA software from http://software.cisco.com/download/type.html?mdfid=284762318&flowid=40602.

Step 2   Upgrade Customer Voice Portal.

a) Back up the Unified CVP Operations Console configuration.

b) Install the upgrade software. For details, see *Installation and Upgrade Guide for Cisco Unified Customer Voice Portal* at http://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_installation_guides_list.html.

Step 3   Upgrade the Cisco HCS Contact Center gateway components. Do the following for the Cisco Unified Border Element (SP Edition) or Perimeta SBC, Cisco Unified Border Element Enterprise Edition, and the vPGW.

a) Complete the backup procedures for LBO through Cisco Unified Communications Manager.

b) Complete the backup for component configurations through the respective consoles.

c) Upgrade the gateways.

Step 4 Upgrade Cisco Unified Intelligent Contact Management.

a) Uninstall the ICM Maintenance Release Patch .exe file from the Call Server.

b) After the uninstallation is complete, install the new .exe file.

Step 5 Upgrade the Unified CCE Administration and Data Server-HDS. For details, see "Administration & Data Server-HDS Common Ground upgrade" in the *Upgrade Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted* at http://www.cisco.com/en/US/partner/products/sw/custcosw/ps1844/prod_installation_guides_list.html.

Step 6 Upgrade the Logger. For details, see "Logger Common Ground upgrade: side A/B" in the *Upgrade Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted* at http://www.cisco.com/en/US/partner/products/sw/custcosw/ps1844/prod_installation_guides_list.html.

Step 7 Upgrade the peripheral and network gateways. For details, see the following procedures in the *Upgrade Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted* at http://www.cisco.com/en/US/partner/products/sw/custcosw/ps1844/prod_installation_guides_list.html.

a) PG Common Ground Upgrade

b) Install Cisco JTAPI Client on the generic IPCC PG

c) Gateway Common Ground Upgrade

Step 8 Upgrade the Cisco Unified Intelligence Center. For details, see "Upgrades and Migrations" in *Installation and Upgrade Guide for Cisco Unified Intelligence Center* at www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/products-installation-guides-list.html.

Step 9 Upgrade Cisco Finesse. For details, see the *Cisco Finesse Installation Guide* at http://www.cisco.com/en/US/partner/products/ps11324/prod_installation_guides_list.html.

a) Log in to the Cisco Finesse CLI using the platform administrator account.

b) Run the `utils system upgrade initiate` CLI command and follow the prompts.

c) At the "Automatically switch versions if upgrade is successful" prompt, type `yes`.

Step 10 Validate the upgrade for the following HCS for Contact Center components.

- Validate Customer Voice Portal Upgrade, on page 23

- Validate Cisco Unified Intelligent Contact Management Upgrade, on page 23

- Validate Cisco Finesse Upgrade, on page 24

Step 11 Upgrade Cisco MediaSense. For details, see *Installation and Administration Guide for Cisco MediaSense* at http://www.cisco.com/c/en/us/support/customer-collaboration/mediasense/products-installation-guides-list.html.

Validate Customer Voice Portal Upgrade

Procedure

Step 1 Log in to Operations Console.

Step 2 Validate the version of each component.

Step 3 Verify that all services are running.

Step 4 Make a test Central Breakout (CBO) call. Place the call in Queue and connect to agent.

Step 5 Make a test Local Breakout (LBO) call. Place the call in Queue and connect to agent.

Validate Cisco Unified Intelligent Contact Management Upgrade

Procedure

Step 1 Validate Unified CCE processes.

  a) Make sure that each software process is running according to specification.

  b) Check each NIC for the proper connection to the carrier network.

  c) Stop and restart each process.

Step 2 Validate system redundancy.

  a) Stop each active PG to ensure that the backup PG assumes an active state.

  b) Stop the active CallRouter side to ensure that the system switches to the alternate CallRouter side without loss of functionality.

  c) Repeat these tests on the Logger and NIC.

Step 3 Validate historical reporting by launching queries against the upgraded Loggers to ensure the presence and integrity of historical call detail.

Step 4 Examine the Cisco Unified Intelligent Contact Management reporting data.

Step 5 Use Internet Script Editor to open and examine the most commonly monitored ICM scripts.

Step 6 Set all ICM services to Automatic Start by doing the following:

  a) Double-click the local Unified CCE Service Control icon on each ICM component.

  b) Set each ICM service to Automatic start.

Step 7 Open the Script Editor and select **Script** > **Validate All**. Ensure that scripts are running properly.

Validate Cisco Finesse Upgrade

Procedure

Step 1 Validate the Cisco Finesse version.

Step 2 On the console, verify that all services are up.

Step 3 Log in to an agent and run desktop-initiated tests such as Call Hold, Transfer, and Conference.

Unified Communications Application License 8.6(2)+ or 9.2(1) to Cisco HCS Release 10.1(2)

For information on Cisco HCS version upgrades, see the *Cisco Hosted Collaboration Solution, Release 10.1(2) License Management* guide.

Upgrade Cisco Network Registrar

The Cisco Network Registrar (CNR) (version 7.x) must be upgraded to Cisco Prime Network Registrar (CPNR) (version 8.x) in Cisco HCS Release 10.1(2).

Cisco Prime Network Registrar requires an additional virtual machine to host the 8.x licence because the version 7.x CNR license cannot be reused. Therefore, two virtual machines are required for the upgrade of CNR to CPNR; one virtual machine is required to host the license (named Regional), and the other virtual machine (named Local) acts as a client for the Regional server to obtain the license.

For upgrade steps, follow the procedure described in http://www.cisco.com/c/en/us/td/docs/net_mgmt/prime/network_registrar/8-2/installation/guide/CPNR82InstallGuide/bk_CPNR_Install_Guide_chapter_0110.html#t_CPNR_Install_Upgrd_Upgrd_Win.xml.