

Upgrading Contact Center Software Components

This topic discusses in more detail the upgrade sequence for all the contact center components configured in specific deployment models for Cisco Unified Communications Release 5.0(2).

Upgrade procedures for individual components are not described in this document, since they are available in individual component upgrade documents. See the [Related Documentation](#) section at the end of this topic for the appropriate upgrade documents and their URLs.

This topic contains the following sections:

- [Contact Center Deployment Models](#)
- [Upgrading Contact Center Components](#)
- [Related Documentation](#)

Contact Center Deployment Models

Upgrade procedures in this document are specifically tailored for each of the deployment models in the contact center test environment, since each of the sites includes different components.

Detailed information about these contact center deployment models at the different sites is available at: <http://www.cisco.com/univercd/cc/td/doc/systems/unified/uc502/starmipc/ch2model.htm>

Listed below are the various deployment models in the Cisco Unified Communications contact center test environment:

- [Single-site](#)
- [Multisite Centralized](#)
- [Multisite Distributed](#)

Compare the above deployments to your specific deployment to best understand the upgrade process that is applicable in your environment.

This section provides the general upgrade sequence for the various components in the different deployment models. More detailed upgrade procedures are discussed later in this topic.

Single-site

In the contact center single-site model, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6000 switches, routers, and domain controllers

2. Contact center components:
 - a. Real-time Administration Workstation (at least one)
 - b. Cisco Unified ICM PROGGER (combination Peripheral Gateway, CallRouter, Logger, CTI OS and Cisco Agent Desktop (CAD) servers)
 - c. Cisco Unified Customer Voice Portal Voice Browser/ Application Server/ HTTP Media Server
 - d. Cisco Unified Outbound Dialer
 - e. Unity Connection
 - f. CTI OS Agent and Supervisor Desktop
 - g. Cisco Agent Desktop (CAD) and Cisco Supervisor Desktop (CSD)
 - h. VoIP Monitor
3. Windows Operating System
4. CRS (Cisco Unified IP IVR)
5. Cisco Unified CallManager servers (Cisco Unified IP Phones are upgraded at the same time)
6. PSTN Gateways
7. Cisco applications co-resident on MCS servers (such as Cisco Security Agent, JTAPI software, etc.)
8. Third-party applications co-resident on MCS servers (Antivirus, Backup agent, Management agent (SNMP), etc.)

**Note**

For Unified CallManager Release 5.0(4), co-residency of third-party applications is not supported.

9. Cisco and third-party adjunct applications or endpoints on other servers

Multisite Centralized

In the contact center multisite centralized model, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6000 switches, routers, and domain controllers
2. Contact center components:
 - a. Real-time Administration Workstation (at least one)
 - b. Cisco Unified ICM ROGGER (combination CallRouter and Logger)
 - c. Peripheral Gateway, Cisco Unified System Contact Center Gateway (Unified SCCG), and Cisco Unified Contact Center Gateway Enterprise (Unified CCGE)
 - d. CTI OS Server
 - e. CAD Server
 - f. Cisco Unified Customer Voice Portal Voice Browser/ Application Server/ HTTP Media Server
 - g. Cisco Unified Outbound Dialer
 - h. Unity Connection
 - i. CTI OS Agent and Supervisor Desktop
 - j. Cisco Agent Desktop (CAD) and Cisco Supervisor Desktop (CSD)
 - k. VoIP Monitor

3. Windows Operating System
4. CRS (Cisco Unified IP IVR)
5. Cisco Unified CallManager servers (Cisco Unified IP Phones are upgraded at the same time)
6. PSTN Gateways
7. Cisco applications co-resident on MCS servers (such as Cisco Security Agents, JTAPI software, etc.)
8. Third-party applications co-resident on MCS servers (Antivirus, Backup agent, Management agent (SNMP), etc.)

**Note**

For Unified CallManager Release 5.0(4), co-residency of third-party applications is not supported.

9. Cisco and third-party adjunct applications or endpoints on other servers

Multisite Distributed

In the contact center multisite distributed model, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6000 switches, routers, and domain controllers
2. Contact center components:
 - a. Real-time Administration Workstation (at least one)
 - b. Cisco Unified ICM ROgger
 - c. Peripheral Gateway, Cisco Unified System Contact Center Gateway (Unified SCCG), and Cisco Unified Contact Center Gateway Enterprise (Unified CCGE)
 - d. CTI OS Server
 - e. CAD Server
 - f. Cisco Unified Customer Voice Portal Voice Browser/ Application Server/ HTTP Media Server
 - g. Cisco Unified Outbound Dialer
 - h. Unity Connection
 - i. CTI OS Agent and Supervisor Desktop
 - j. Cisco Agent Desktop (CAD) and Cisco Supervisor Desktop (CSD)
 - k. VoIP Monitor
3. Windows Operating System
4. CRS (Cisco Unified IP IVR)
5. Cisco Unified CallManager servers (Cisco Unified IP Phones are upgraded at the same time)
6. PSTN Gateways
7. Cisco applications co-resident on MCS servers (such as Cisco Security Agent, JTAPI software, etc.)
8. Third-party applications co-resident on MCS servers (Antivirus, Backup agent, Management agent (SNMP), etc.)

**Note**

For Unified CallManager Release 5.0(4), co-residency of third-party applications is not supported.

9. Cisco and third-party adjunct applications or endpoints on other servers

Upgrading Contact Center Components

This section describes the following upgrade strategies for contact center components:

- [Single-stage Upgrade](#)—Recommended for small single-site/multisite installations.
- [Multistage System Upgrade](#)—Recommended for medium/large single-site and medium multisite installations.
- [Multisite Migration](#)—To upgrade large, multisite contact center installations to the Cisco Unified Communications release set using the Multisite Migration upgrade strategy, you can use either the Single-stage or Multistage System upgrade procedures listed in this section.

See [“Planning Your System Upgrade”](#) for detailed information on the above upgrade strategies and [Chapter 2, “Preparing for System Upgrade”](#) for the software release versions of the components involved in the upgrade. For more information about the number of seats in these various types of sites, see the [Summary of Upgrade Strategies table](#) in [“Planning Your System Upgrade.”](#)

Single-stage Upgrade

The single-stage upgrade process is recommended for small single-site/multisite installations and can be performed in a single maintenance window. This enables you to upgrade all the components in a brief period of time with no loss of functionality.

You should upgrade the components in the order listed in [Table 4-1](#):

Table 4-1 *Single-stage Upgrade Order for Contact Center Components*

Order of Upgrade	Components being Upgraded
1	Cisco Catalyst 6500 + MSFC/SUP2 (core switch)
2	Cisco Catalyst 6500 + SUP2 (access switch)
3	Domain Controllers
4	Real Time AW/HDS/Webview
5	Cisco Unified ICM Rogger
6	Peripheral Gateway, Unified SCCG, Unified CCGE
7	CTI OS Server
8	CAD Server
9	Cisco Unified Customer Voice Portal Voice Browser/Application Server/HTTP Media Server
10	Cisco Unified Outbound Dialer
11	CTI OS Agent & Supervisor Desktop
12	CAD Agent & Supervisor Desktop
13	Windows Operating System
14	CRS (Cisco Unified IP IVR)

Table 4-1 Single-stage Upgrade Order for Contact Center Components (continued)

Order of Upgrade	Components being Upgraded
15	Cisco Unified CallManager cluster (Cisco Unified IP Phones are upgraded along with the cluster)
16	Voice and Data Gateways

Multistage System Upgrade

A Multistage System upgrade is the recommended approach for medium/large single-site and medium multisite installations. In this upgrade process, components are grouped together for upgrading in several stages or maintenance windows. Within each maintenance window, there is a recommended order for upgrading each component.

The grouping of the components into the stages may vary depending on the size of the networks being upgraded. For smaller networks, one or more separate maintenance windows may be collapsed into a single maintenance window. Additional stages may be necessary for larger sites.

After each maintenance window, we recommend that you verify that the operation of all basic and critical call types remains unaffected, before you initiate the next upgrade stage listed in the table.

See [Chapter 2, “Preparing for System Upgrade”](#) for the software release versions of the components involved in the upgrade.

The stages and the contact center components you should upgrade during each stage are listed in [Table 4-2](#).

Table 4-2 Multistage System Upgrade Order for Contact Center Components

Stage	Component Groupings	Upgrade Order of Components in Each Stage
1	Switches and Domain Controllers	<ol style="list-style-type: none"> 1. Core Switch 2. Access Switch 3. Domain Controllers
2	Cisco Unified ICM Roggers and Real Time AW/HDS/Webview	<ol style="list-style-type: none"> 1. Real Time AW/HDS/Webview 2. Cisco Unified ICM ROgger
3	Peripheral Gateway, Unified SCCG, Unified CCGE, CTI OS and CAD servers, Cisco Unified Outbound Dialer, and Cisco Unified Customer Voice Portal components	<ol style="list-style-type: none"> 1. Peripheral Gateway, Unified SCCG, Unified CCGE 2. CTI OS Server 3. CAD Server 4. Cisco Unified Customer Voice Portal Voice Browser/ Application Server/ HTTP Media Server 5. Cisco Unified Outbound Dialer
4	CTI OS/CAD Agent and Supervisor Desktop clients	<ol style="list-style-type: none"> 1. CTI OS Agent/Supervisor Desktop 2. CAD Agent/Supervisor Desktop
5	Windows Operating System	<ol style="list-style-type: none"> 1. Windows 2000 to Windows 2003

Table 4-2 Multistage System Upgrade Order for Contact Center Components (continued)

Stage	Component Groupings	Upgrade Order of Components in Each Stage
6	CRS (Cisco Unified IP IVR) and Cisco Unified CallManager cluster (Cisco Unified IP Phones are upgraded along with the cluster)	<ol style="list-style-type: none"> 1. CRS (Cisco Unified IP IVR) 2. Cisco Unified CallManager cluster (Cisco Unified IP Phones are upgraded along with the cluster)
7	Voice and Data Gateways	<ol style="list-style-type: none"> 1. IOS Gateways (MGCP) 2. IOS Gateways (H.323) 3. Cisco Unified Customer Voice Portal VXML Gateways 4. Cisco Gatekeepers

Upgrading a Specific Contact Center Test Bed

The contact center test sites are set up as two separate test beds:

- Test Bed 1—IP IVR test bed with Unified CallManager Post-Routed call flows. In Test Bed 1, the parent and child model has been implemented as part of Cisco Unified Communications system testing.
- Test Bed 2—Cisco Unified Customer Voice Portal (Unified CVP) test bed with Unified CVP Post-Routed call flows

Test Bed 2: Cisco Unified Customer Voice Portal Post-Routed Call Flows

This section describes the detailed upgrade procedures for the components in Test Bed 2 using the Multistage System upgrade approach. Individual contact center components are upgraded from the Cisco Unified Communications Release 5.0 release set to Release 5.0(2) release software during separate maintenance windows.



Note

To verify the interoperability between clusters running the previous and target release versions, some of the Cisco Unified CallManager clusters in Test Bed 2 are not upgraded.

The different stages and the order of components within each stage are listed in [Table 4-2](#). The following is a sequential list of the tasks required to upgrade the contact center components in Test Bed 2:

1. Verify software versions of components being upgraded.
2. Upgrade the core and access switches.
3. Upgrade the Distributor AW/HDS after performing a full system backup.
4. Upgrade the Side A Unified ICM Central Controller components.
5. Upgrade the Side B Unified ICM Central Controller components.
6. Upgrade the client Administration Workstation (AW).
7. Upgrade the Peripheral Gateways (Side A and Side B) and associated CTI servers, CTI OS servers, and Cisco Unified Outbound Dialers (Unified OUTD).
8. Upgrade CTI OS Agent and Supervisor Desktop.
9. Upgrade Cisco Unified CallManager clusters.

10. Upgrade Gateways and Gatekeepers.

Verify Software Versions

Ensure that the contact center components targeted for the upgrade are at the current release versions. See the Upgrade Release Versions table for contact center components in [Chapter 2, “Preparing for System Upgrade”](#) for the correct software versions.

Upgrade Core and Access Switches

1. Copy the correct image on each switch via TFTP.
2. Modify the boot system configuration to enable loading of the new image.
3. Reboot the switch. The switch reads the modified configuration and reloads with the new image.

Upgrade Distributor Administrator Workstation/Historical Database Server

1. Using Unified ICM Service Control, stop all Unified ICM services on the AW/HDS.
2. Using Unified ICM Service Control, change all Unified ICM services on the AW/HDS to Manual Restart.
3. Perform a full system backup of the AW/HDS so that it can be restored in case a critical failure occurs.
4. Uninstall the Cisco Security Agent and the Unified ICM Policy.
5. Upgrade third-party software such as virus protection software and VNC or PC Anywhere.
6. Reboot the AW/HDS.
7. Use the Unified ICM Third-Party Tools CD and upgrade the JDK, ServletExec, and EA Server.
8. Run Unified ICM *setup.exe* from the Unified ICM Software CD on the AW/HDS. When the main setup screen appears, click Upgrade All.
9. Reboot the AW/HDS.
10. Install the latest Service Release and any required Engineering Specials on the AW/HDS.
11. Install Cisco Security Agent with Unified ICM Policy on the AW/HDS.

Upgrade Side A Central Controller Components

1. Disable configuration changes by setting the *HKEY_LOCAL_MACHINE\Software\Cisco Systems, Inc.\ICM\<instance name>\RouterA\Router\CurrentVersion\Configuration\GlobalDBMaintenance* key to “1” on both Side A and Side B routers of the system being upgraded.



Note

When disabling configuration settings on the Side B router, substitute ‘RouterA’ with ‘RouterB’ in the preceding registry key information.

2. Verify that you can no longer make configuration changes. The following message should display when attempting to save a configuration change: *Failed to update the database. Exclusive access to the router denied because configuration changes are currently disabled in the router registry.*

3. Using Unified ICM Service Control, stop all Unified ICM services on the Side A Rogger (Central Controller).
4. Using Unified ICM Service Control, change all Unified ICM services on the Side A Rogger to Manual Restart.
5. Perform a full system backup of the Side A Rogger so that it can be restored in case a critical failure occurs.
6. Uninstall the Cisco Security Agent and the Unified ICM Policy.
7. Upgrade third-party software such as virus protection software and VNC or PC Anywhere.
8. Reboot the Side A Unified ICM Rogger.
9. Back up the Unified OUTD private database using the SQL Server Enterprise Manager.



Note You must also upgrade Unified OUTD and their associated PGs for proper Unified Outbound Dialer operation. See related upgrade information in [Upgrade Cisco Unified Outbound Dialer](#).

10. Run Unified ICM *setup.exe* from the Unified ICM Software CD on the Rogger. When the main setup screen appears, click Upgrade All.
11. Reboot the Rogger.
12. Install the latest Service Release and any required Engineering Specials on the Rogger.
13. Re-import the customer contact lists and do-not-call lists to the Unified OUTD private database.
14. Install Cisco Security Agent with Unified ICM Policy on the Rogger.

Upgrade Side B Central Controller Components

After completing the upgrade of Side A Central Controller, you have to perform the following procedures to bring the Side A Central Controller into service, before you can upgrade Side B:

1. Ensure network connectivity exists between the upgraded Cisco Unified ICM central controller components (Side A) (but not to other Unified ICM nodes in the production network) by disabling Site1 (Side A) WAN and private router connections.
2. Using Unified ICM Service Control, manually start the Unified ICM services on the Side A router and Logger and the upgraded AW/HDS.
3. Ensure that operations are normal on the following components of the Side A Rogger by verifying:

Basic operations:

- Setup logs do not indicate errors or failure conditions.
- All applicable components can “ping” public and private IP addresses.
- Active Directory domain is populated with all the required users.
- The schema upgrade is successful for all databases with no loss of data or data integrity.
- Registry changes are correct and match contents of the setup logs.
- All component services start without errors.
- All general activities such as accessing SQL Server, running third-party software like VNC or PCAnywhere are not stopped by Cisco Security Agent.

Router Operations:

- The *ccagent* process is in service and connected to any PG that is located in Site1 of the test bed.

- The *rtsvr* process is connected to the primary Administration Workstation.

Logger Operations:

- The *recovery* process can start up normally, even though is not required (since Side B is not accessible by Side A at this point during the upgrade process).
- Users are in the correct domain.
- Configuration information is passed to the Router.
- Replication process begins when the HDS comes online.

HDS Operations:

- The *updateaw* process indicates that it is waiting for work (ready to begin operations).
- Replication process begins with no errors.

Security Operations:

- Specified users are able to use the Unified ICM Configuration Manager.
- Specified users are able to log into WebView and can access all previously existing public and private reports

Script Editor Operations:

- Previous settings for users remain unchanged when the Script Editor application is opened.
- Validate that all the scripts yield the same results as prior to the upgrade.
- You can create new scripts and open, edit, and delete scripts as well.

Unified ICMDBA Operations:

- Import/Export functionality is present.
- Database space allocation and percentage (%) used are correct.

Support Tools Operations:

- You can acquire logs, capture registry information, and schedule collection of logs.

4. Using Unified ICM Service Control, set the Unified ICM services to AUTOSTART on each of the upgraded Unified ICM components.



Note

Call processing is impacted until the next three steps are completed, and therefore, must be executed at an appropriate pre-planned time.

5. Using Unified ICM Service Control, stop the Unified ICM Services on the Side B Logger and Router and on all the AW/HDS.
6. Reestablish the network connectivity between Site1 and the rest of the system.
7. Verify production system operation is running normally with the upgraded Side A Router and Logger.
8. Upgrade the Side B Router using the same procedures as listed in [Upgrade Side A Central Controller Components](#) (omit steps 9 and 13).
9. Using Unified ICM Service Control, set the Unified ICM services to AUTOSTART on the upgraded Side B Call Router and Logger.
10. Using Unified ICM Service Control, start the Unified ICM services on the new Side B Router and Logger.
11. Verify overall system operation.

12. Once data synchronization is complete between the Loggers, if possible, cycle the Unified ICM services on the Side A Router and Logger.
13. Verify that the Side B takes over operations and that the system continues to operate normally.
14. Enable configuration changes by setting the *HKEY_LOCAL_MACHINE\Software\Cisco Systems, Inc.\ICM<instance name>\RouterA\Router\CurrentVersion\Configuration\Global\DBMaintenance* key to “0” on both Side A and Side B routers of the system being upgraded.



Note When enabling configuration settings on the Side B router, substitute ‘RouterA’ with ‘RouterB’ in the preceding registry key information.

15. Verify that you can now once again make configuration changes.
16. Upgrade all other Distributor AWs and/or HDS using the steps listed in [Upgrade Distributor Administrator Workstation/Historical Database Server](#).

Upgrade Client Administrator Workstation

1. Using Unified ICM Service Control, stop all Unified ICM services on the AW.
2. Using Unified ICM Service Control, change all Unified ICM services on the AW to Manual Restart.
3. Perform a full system backup of the AW server so that it can be restored should a critical failure occur during the common ground upgrade process.
4. Uninstall the Cisco Security Agent and the Unified ICM Policy.
5. Upgrade third-party software such as virus protection software and VNC or PC Anywhere.
6. Reboot the AW.
7. Run Unified ICM *setup.exe* from the Unified ICM Software CD. When the main setup screen appears, click Upgrade All to upgrade all Unified ICM components on the AW.
8. Reboot the AW.
9. Install the latest Services Release and any required Engineering Specials on the AW.
10. Install Cisco Security Agent with Unified ICM Policy on the AW.

Upgrade Peripheral Gateways (Side A and Side B)

While different Peripheral Gateways (including the Unified System Contact Center Gateways and Unified Contact Center Enterprise Gateways) can be upgraded at different times, you must upgrade Side A and Side B of the redundant PG pairs within the same maintenance window, along with the associated CTI Servers, CTI OS servers, and Cisco Unified OUTD.

For proper Unified OUTD operation, you must upgrade all Cisco Unified OUTD during the same maintenance window as the Campaign Manager.

1. Using Unified ICM Service Control, stop all Unified ICM and CTI OS services on the Side A PG.
2. Using Unified ICM Service Control, change all Unified ICM and CTI OS services on the Side A PG to Manual Restart.
3. Perform a full system backup of the Side A PG server so that it can be restored in case a critical failure occurs.
4. Uninstall the Cisco Security Agent and the Unified ICM Policy.

5. Upgrade third-party software such as virus protection software and VNC or PC Anywhere.
6. Reboot the Side A PG.
7. Run Unified ICM *setup.exe* from the Unified ICM Software CD. When the main setup screen appears, click Upgrade All to upgrade all Unified ICM components on the Side A PG.
8. Run *setup.exe* from the CTI OS installation CD to install the latest version of CTI OS on Side A. It is not necessary to uninstall previous versions of CTI OS.
9. If this is a Cisco Unified CallManager PG, upload the JTAPI Client from the Cisco Unified CallManager using the information documented in Chapter 6 of the *IPCC Installation and Configuration Guide for Cisco IPCC Enterprise Edition*. See [Related Documentation](#) for the URL.
10. Reboot the PG.
11. Install the latest Services Release and any required Engineering Specials on the Side A PG.
12. Install Cisco Security Agent with Unified ICM Policy on the Side A PG.
13. If there are Unified OUTD associated with the PG pair being upgraded which are on separate servers, upgrade all the Unified OUTD now. For more information on upgrading Unified OUTD, see [Upgrade Cisco Unified Outbound Dialer](#).



Note Call processing for the Peripheral being upgraded is affected until the next four steps are completed.

14. Using Unified ICM Service Control, stop the Unified ICM and CTI OS services on the Side B PG.
15. Using Unified ICM Service Control, start all Unified ICM and CTI OS services on the Side A PG.
16. Using Unified ICM Service Control, set all of the Unified ICM and CTI OS processes on the Side A PG to AUTOSTART.
17. Verify the proper operation of the peripheral running on the upgraded Side A PG (call flows, CTI desktops and other applications, and Unified OUTD).
18. Repeat the above procedures to upgrade the Side B PG.
19. Using Unified ICM Service Control, start all Unified ICM and CTI OS services on the Side B PG.
20. Using Unified ICM Service Control, set all of the Unified ICM and CTI OS processes on the upgraded Side B PG to AUTOSTART.
21. Verify that the Unified ICM components on the Side B PG start up and come into service by reviewing the process windows and/or log files.
22. Using Unified ICM Service Control, stop all Unified ICM and CTI OS services on the Side A PG.
23. Verify that the upgraded Side B PG becomes active and the peripheral running on the upgraded Side B PG (call flows, CTI desktops and other applications, and Unified OUTD) is properly operating.
24. Using Unified ICM Service Control, restart the Unified ICM and CTI OS services on the Side A PG.

Upgrade Cisco Unified Outbound Dialer

1. Using Unified ICM Service Control, stop all Unified ICM services on the Cisco Unified Outbound Dialer (Unified OUTD).
2. Using Unified ICM Service Control, change all Unified ICM services on the Unified OUTD to Manual Restart.

3. Perform a full system backup of the Unified OUTD server so that it can be restored in case a critical failure occurs.
4. Uninstall the Cisco Security Agent and the Unified CM Policy.
5. Upgrade third- party software such as virus protection software and VNC or PC Anywhere.
6. Reboot the Unified OUTD.
7. Run Unified ICM *setup.exe* from the Unified ICM Software CD. When the main setup screen appears, click Upgrade All to upgrade all Unified ICM components on the Unified OUTD.
8. Reboot the Unified OUTD.
9. Install the latest Services Release and any required Engineering Specials on the Unified OUTD.
10. Install Cisco Security Agent with Unified ICM Policy on the Unified OUTD.

Upgrade CTI OS Agent and Supervisor Desktop

1. Stop the CTI OS Agent or Supervisor Desktop application that is running on the machine.
2. Run the CTI OS Client install from the Unified ICM Software CD, updating configuration data as prompted.
3. Reboot the machine if you are directed to do so.

Upgrade Cisco Unified CallManager Clusters

Follow the best practices specified in the *Developing Migration Strategies for Cisco CallManager 5.0* for migrating and upgrading the Unified CallManager cluster. Also review the *Release Notes for Cisco Unified CallManager Release 5.0(4)* and *Installing Cisco Unified CallManager Release 5.0(4)* as listed in [Related Documentation](#).

For further details on recommended upgrade procedures, see the “Call Processing” chapter of the *Cisco Unified Communications SRND based on Cisco Unified CallManager 5.0*:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/5x/50clproc.html

Be aware of the following before you start the Unified CallManager upgrade process:

- If performing the upgrade from a remote file system, ensure that a working SFTP server is available to provide a network location for backup after the upgrade.
- Subsequent nodes can be upgraded simultaneously without impacting their active services.
- Once the upgrade process starts on the inactive partition, any changes made in the active partition of the first node’s database will not be migrated to the new version of the database.
- The first node in the cluster must always be upgraded first; otherwise, the subsequent nodes upgrade process will not initiate.
- The first node in the cluster must be available at the time subsequent nodes are being upgraded.
- After all the nodes in the cluster are completely upgraded, a new database replication is automatically setup within the cluster. Depending on the database size and the number of nodes in the cluster, the replication process may take a long time. During this time, ensure that the first node is operational and available to the subsequent nodes to avoid service outages and enable timely completion of the replication setup process.

Upgrade only those Unified CallManager clusters in the test bed that are targeted for upgrade as follows:

1. Back up the existing Unified CallManager 5.0(2) system using the Cisco Unified CallManager Disaster Recovery System.

2. Using the Cisco Unified CallManager 5.0(4) Install DVD or remote file system, upgrade the first node first, without rebooting it.
3. Then upgrade all the subsequent nodes simultaneously, again without rebooting them.
4. After all nodes in the cluster are upgraded, make sure you do the following:
 - a. Reboot and switch versions to Unified CallManager 5.0(4) on the first node and wait until the first node is initialized and fully operational.
To ensure this, either access the Cisco Unified CallManager Administration pages and login or monitor the server via the RTMT summary window.
 - b. Reboot and switch versions to Unified CallManager 5.0(4) on the TFTP and Music-On-Hold (MOH) servers.
 - c. Wait until the TFTP servers fully build their configuration files.
To ensure this, monitor the *Cisco TFTP\BuildDuration* performance counter via the IPT Platform CLI or RTMT summary window and make sure that it is no longer incrementing.
 - d. Then reboot and switch versions to Unified CallManager 5.0(4) on the backup call processing subsequent nodes and wait until these servers are fully initialized.
To ensure this, monitor the *Cisco CallManager\CallManagerHeartBeat* performance counter on each node and make sure it is incrementing by 1 every 2 seconds
 - e. Complete the upgrade process by rebooting and switching versions to Unified CallManager 5.0(4) on the remaining active call processing subsequent nodes in the cluster.
5. After the upgrade process is complete and all subsequent nodes are restarted and have switched versions to Unified CallManager 5.0(4), monitor the replication setup process on each node using the following performance counters:
 - *Number of Replicates Created* and *State of Replication(ReplicateCount)\Number of Replicates Created*
 - *Number of Replicates Created* and *State of Replication(ReplicateCount)\Replicate_State*



Note Be aware that the *Replicate_State* counters on the subsequent nodes reach 3 when the database replication setup is completed on all the nodes. Use the IPT Platform CLI command **utils dbreplication status** to ensure all data from the first node database is successfully replicated to the subsequent nodes.

Reinstalling Latest JTAPI Client

1. On the Unified CallManager PGs, upload the JTAPI Client from the Unified CallManager using the information documented in Chapter 6 of the *IPCC Installation and Configuration Guide for Cisco IPCC Enterprise Edition*. See [Related Documentation](#) for the URL.
2. Reboot the PG.

Recovering from a Failed Upgrade

If the upgrade fails, you can revert back to the previous version of Unified CallManager that is installed on the server, since up to two versions of the Unified CallManager can exist on the same server. One version is stored in the active partition and the other version in the inactive partition. Any time after the upgrade of the cluster, you can switch to the old version from the IPT Platform CLI or IPT Platform GUI.

The recovery procedure is similar to the upgrade procedure:

- Restart and switch versions back to the previous version of Unified CallManager on the first node. Wait until the first node is initialized and fully operational.
- Next restart and switch versions back to the previous versions of Unified CallManager on the TFTP and MOH servers. Wait until the TFTP servers fully build their configuration files.
- Then restart and switch versions back to the previous versions of Unified CallManager on the backup, call processing subsequent nodes. Wait until these servers are initialized and fully operational.
- Complete the recovery process by restarting and switching versions back to the previous versions of Unified CallManager on the remaining active call processing subsequent nodes.

Upgrade Gateways and Gatekeepers

1. Copy the correct image on each switch via TFTP.
2. Modify the boot system configuration to enable loading of the new image.
3. Reboot the switch. The switch reads the modified configuration and reloads with the new image.

Related Documentation

Compatibility Documentation

- *IPCC Enterprise Software Compatibility Guide:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1844/c1609/ccmigration_09186a008031a0a7.pdf
- *Cisco Response Solutions (CRS) Software and Hardware Compatibility Guide:*
http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/crscomtx.pdf

Cisco Unified CallManager Installation and Upgrade Documentation

- *Release Notes for Cisco Unified CallManager Release 5.0(4):*
http://www.cisco.com/application/pdf/en/us/guest/products/ps6164/c1178/ccmigration_09186a00806d06f4.pdf
- *Installing Cisco Unified CallManager Release 5.0(4):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/install/5_0/cmins504.html
- *Upgrading Cisco Unified CallManager Release 5.0(4):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/upgrade/5_0/upgrd504.html
- *Cisco Unified CallManager Standalone Upgrade Time Estimates for Planning Purposes:*
http://www.cisco.com/application/vnd.ms-excel/en/us/guest/products/ps556/c1609/ccmigration_09186a00806b0ef6.xls
- *Disaster Recovery System Administration Guide Release 5.0(4):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/drs/5_0_4/drsag504.html
- *Installing Cisco Unified CallManager Release 5.0(2):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/install/5_0/cmins502.html

- *Upgrading Cisco Unified CallManager Release 5.0(2):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/upgrade/5_0/upgrd502.html
- *Disaster Recovery System Administration Guide Release 5.0(2):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/drs/5_0_2/drsag502.html
- *Data Migration Assistant User Guide Release 5.0(2):*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/dma/5_0_x/dmaug502.html

Contact Center Installation and Upgrade Documentation

- *Release Notes for Cisco IPCC/ICM Enterprise & Hosted Editions Release 7.0(0)B:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1001/c1178/ccmigration_09186a00805670e0.pdf
- *IPCC Installation and Configuration Guide for Cisco IPCC Enterprise Edition:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1844/c1097/ccmigration_09186a00804d73b7.pdf
- *System IPCC Enterprise Installation and Configuration Guide:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1844/c1676/ccmigration_09186a00804d8b1c.pdf
- *Cisco IPCC Gateway Deployment Guide ICM/IPCC Enterprise Edition:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1001/c1097/ccmigration_09186a0080626383.pdf
- *Pre-installation Planning Guide for Cisco ICM Enterprise Edition:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1001/c1097/ccmigration_09186a00804d7115.pdf
- *ICM Installation Guide for Cisco ICM Enterprise Edition:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1001/c1097/ccmigration_09186a00804d7106.pdf
- *Upgrade Guide for Cisco ICM/IPCC Enterprise & Hosted Editions:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1001/c1952/ccmigration_09186a00805e1ea2.pdf
- *Cisco ICM/IPCC 7.0 Upgrade Mitigation Strategies White Paper:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1001/c1952/ccmigration_09186a0080520003.pdf
- *Release Notes for Cisco Customer Voice Portal (CVP) Release 3.1(0)SR1:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1006/c1178/ccmigration_09186a008062fbc3.pdf
- *Cisco Customer Voice Portal (CVP) Installation Guide:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1006/c1097/ccmigration_09186a0080552e0b.pdf
- *Cisco CVP VoiceXML 3.1 Installation Guide:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps1006/c1097/ccmigration_09186a0080552e11.pdf
- *Cisco CAD Installation Guide:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps427/c1097/ccmigration_09186a00805e2465.pdf

- *CTI OS System Manager's Guide for Cisco ICM/IPCC Enterprise & Hosted Editions:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps14/c1676/ccmigration_09186a00804d2a89.pdf

Cisco Unity Connection Installation and Upgrade Documentation

- *Cisco Unity Connection Installation Guide:*
http://www.cisco.com/en/US/docs/voice_ip_comm/connection/1x/installation/guide/inst.html
- *Cisco Unity Connection Reconfiguration and Upgrade Guide:*
http://www.cisco.com/en/US/docs/voice_ip_comm/connection/1x/upgrade/guide/rug.html

CRS and Cisco Unified IP IVR Installation and Upgrade Documentation

- *Release Notes for Customer Response Solutions 4.5(2):*
http://www.cisco.com/application/pdf/en/us/guest/products/ps6879/c1178/ccmigration_09186a008063b195.pdf
- *Cisco CRS Installation Guide:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps6879/c1097/ccmigration_09186a0080610e12.pdf
- *Getting Started with Cisco IP IVR CRS:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps6879/c1689/ccmigration_09186a0080611818.pdf
- *Backup and Restore System for Cisco Customer Response Solutions 4.5:*
http://www.cisco.com/application/pdf/en/us/guest/products/ps6879/c1097/ccmigration_09186a0080612a78.pdf