



Upgrading Your Cisco Unified CallManager Server (When You Are Not Replacing Hardware)

You cannot upgrade directly from Cisco CallManager Release 3.2 or earlier to Cisco Unified CallManager Release 4.3. If your server runs a version of Cisco CallManager Release 3.2 or earlier, you must first upgrade every server in the cluster to the latest version of Cisco CallManager Release 3.3, 4.0, 4.1, or 4.2 before you can upgrade to a version of Cisco Unified CallManager Release 4.3. For information on upgrading to Cisco CallManager Release 3.3, refer to the latest version of *Upgrading Cisco CallManager Release 3.3*.



Note

To verify which versions of Cisco Unified CallManager are compatible for upgrade, refer to the *Cisco Unified CallManager Compatibility Matrix*.


You must upgrade Cisco Unified CallManager on the publisher database server and all subscriber servers in the cluster. For the order of the upgrade, see the [“Which server in the cluster do I upgrade first?” section on page 1-4](#).

Before You Begin

Before you start the upgrade, make sure that you perform the following tasks:

	Pre-Upgrade Task	Important Notes
Step 1	Make sure that you run a recommended version of Cisco Unified CallManager on all servers in the cluster.	From which versions of Cisco Unified CallManager can I upgrade to Cisco Unified CallManager Release 4.3(1)?, page 1-2
Step 2	Make sure that you understand the order in which you must upgrade the cluster.	Which server in the cluster do I upgrade first?, page 1-4 How does a coresident upgrade work if I have CRS installed with Cisco Unified CallManager?, page 1-5

Pre-Upgrade Task	Important Notes
<p>Step 3 In Cisco Unified CallManager Administration, make sure that you add each server only once on the Server Configuration window (System > Server). If you add a server by using the host name and add the same server by using the IP address, Cisco Unified CallManager cannot accurately determine component versions for the server after a Cisco Unified CallManager upgrade. If you have two entries in Cisco Unified CallManager Administration for the same server, delete one of the entries before you upgrade.</p>	<p>Refer to the <i>Cisco Unified CallManager Administration Guide</i>.</p>
<p>Step 4 Make sure that your server configuration supports this upgrade.</p>	<p>Which servers and operating system versions does Cisco support for this upgrade?, page 1-3</p>
<p>Step 5 Make sure that you have enough free disk space on each of your servers for the Cisco Unified CallManager upgrade.</p> <p>You need at least 3.0 gigabytes of disk space.</p>	
<p>Step 6 If you are using Cisco Unity as your voice-messaging system, configure the voice mail ports in Cisco Unified CallManager to ensure proper migration.</p>	<p>For more information, refer to the <i>Release Notes for Cisco Unified CallManager</i>. To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm.</p>
<p>Step 7 You must assign a unique device name to each H.323 intercluster trunk. A registration problem occurs when multiple Cisco Unified CallManager clusters have the same device name assigned to H.323 intercluster trunks in Cisco Unified CallManager Administration.</p>	<p>Refer to the <i>Cisco Unified CallManager Administration Guide</i> for information on the trunk configuration procedure.</p>
<p>Step 8 Verify that all H.323 dial-peer(s) point to a Cisco Unified CallManager server in the device profile for which they are assigned. Cisco no longer provides the Run H.225D On Every Node option in Cisco Unified CallManager Administration for H.323 gateways. If the session target statements in the dial-peer(s) do not point to the appropriate Cisco Unified CallManager server, calls fail.</p>	<p>Refer to the <i>Cisco Unified CallManager Administration Guide</i> for information on the gateway configuration procedure.</p>
<p>Step 9 If your system uses Cisco-provided operating system version 2004.4 or later and uses DNS for name resolution, make sure that you have set the Primary DNS suffix of this computer field if you set the DNS suffix for this connection field on the computer.</p>	<p>Refer to the <i>Installing the Operating System on the Cisco Unified Communications Server, Version 2000.4.4</i> (or later) for information on this procedure.</p>

Pre-Upgrade Task	Important Notes
<p>Step 10 Perform the recommended backup procedures for all coresident software applications that are installed on the server.</p> <p> Caution Failing to complete a backup causes a loss of data and configuration settings. For information on performing the backup, refer to the documentation that supports the applications.</p> <hr/> <p>BARS does not back up any operating system files except Host/LMhost, if these files exist on the server.</p> <p>For a list of files that the utility backs up, refer to <i>Cisco IP Telephony Backup and Restore System (BARS) Administration Guide</i>. To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm.</p>	<p>How does a coresident upgrade work if I have CRS installed with Cisco Unified CallManager?, page 1-5</p>
<p>Step 11 Be aware that if you change any security or account policies from the default, the upgrade may fail.</p>	<p>For more information on security and account policies, refer to Microsoft documentation.</p>
<p>Step 12 Understand how Cisco Unified CallManager updates service parameters.</p> <p>For Service Parameters with Nonnumeric Values</p> <p>Cisco Unified CallManager always updates service parameters with non-numeric values to the suggested value.</p> <p>For Service Parameters with Numeric Values</p> <p>If your service parameters are set to the suggested value, Cisco Unified CallManager automatically updates the value during the upgrade to match the new suggested value.</p> <p>If your customized value exists between the range of minimum and maximum values, Cisco Unified CallManager does not change the customized value.</p> <p>If you configured customized values that are not between the minimum and maximum range of values, the customized value changes during the upgrade to the maximum or minimum value. For example, if the maximum value equals 10 and the value that you configured is 12, Cisco Unified CallManager automatically sets the value to 10.</p> <p>During the upgrade, some non-servicewide parameters may change to clusterwide parameters (formerly known as servicewide parameters).</p>	<p>For more information on service parameters, refer to the <i>Cisco Unified CallManager Administration Guide</i> and the <i>Cisco Unified CallManager System Guide</i>.</p>

Pre-Upgrade Task	Important Notes
Step 13 If you are upgrading a Cisco Unified CallManager 4.0 server and you installed certificates on the phones that are using the Certificate Authority Proxy Function (CAPF) server, you must migrate existing the CAPF data.	Migrating Existing CAPF Data, page 2-4
Step 14 If your cluster uses security, make sure that you have at least one of the two Etokens that you used to secure the cluster and that the Etoken remains valid.	
Step 15 Close all web browser windows.	If you have an open browser window, Cisco Unified CallManager will reboot the server after the Sun Microsystems JRE package has been installed.
Step 16 Verify that all Cisco Unified CallManager Extension Mobility users have logged out of the system prior to the upgrade.	If there are still extension mobility users who are still logged in during the upgrade, they may not be able to use all the features on their phone until they log off and log back in.
Step 17 Before the upgrade, obtain the local Administrator account password, the SQL server SA password, the Private Password Phrase, and the computer name of the publisher database server.	Information That You May Need During the Upgrade, page 2-6
Step 18 Before the upgrade, perform basic connectivity and functional testing of any current Cisco Partner/Affiliate applications and products in your current (pre-upgrade) environment. Document the tests you perform and the results for use in the post-upgrade procedures.	
Step 19 Obtain and review any required Cisco Partner/Affiliate versions of software and documentation necessary to support this version of Cisco Unified CallManager.	Which third-party applications does Cisco support for this upgrade?, page 1-3

Migrating Existing CAPF Data



Caution

Failing to perform the tasks that are described in this section may cause a loss of CAPF data.

Review the following details before you upgrade Cisco Unified CallManager:

- Upgrades from Cisco Unified CallManager 4.0 where CAPF was installed on the Cisco Unified CallManager 4.0 publisher database server—If you performed certificate operations before the upgrade to Cisco Unified CallManager 4.3 and CAPF ran on the publisher database server, the latest operation status migrates to the Cisco Unified CallManager 4.3 database.
- Upgrades from Cisco Unified CallManager where CAPF was installed on a Cisco Unified CallManager 4.0 subscriber server—If you performed certificate operations before the upgrade to Cisco Unified CallManager 4.3 and CAPF ran on a subscriber server, you must copy the CAPF data to the 4.0 publisher database server before you upgrade the cluster to Cisco Unified CallManager 4.3.

Copying CAPF 1.0(1) Data from a 4.0 Subscriber Server to the 4.0 Publisher Database Server



Caution

If you installed CAPF utility 1.0(1) on a Cisco Unified CallManager 4.0 subscriber server, you must copy the CAPF data to the 4.0 publisher database server before you upgrade to Cisco Unified CallManager 4.3. Failing to perform this task causes a loss of CAPF data; for example, you may lose the phone record files in C:\Program Files\Cisco\CAPF\CAPF.phone. If a loss of data occurs, the locally significant certificates that you issued with CAPF utility 1.0(1) remain in the phones; CAPF 4.3(1) must reissue the certificates, which are not valid.

To copy the files, perform the following procedure:

Procedure

- Step 1** Copy the files in [Table 2-1](#) from the machine where CAPF 1.0 is installed to the publisher database server where Cisco Unified CallManager 4.0 is installed:

Table 2-1 Copy From Server to Server

Files to Copy	From Machine Where CAPF 1.0 Is Installed	To Publisher Database Server Where Cisco Unified CallManager 4.0 Is Installed
*.0	in C:\Program Files\Cisco\CAPF	to C:\Program Files\Cisco\Certificates
CAPF.phone	in C:\Program Files\Cisco\CAPF	to C:\Program Files\Cisco\CAPF
CAPF.cfg files	in C:\Program Files\Cisco\CAPF	to C:\Program Files\Cisco\CAPF

- Step 2** Upgrade every server in the cluster to Cisco Unified CallManager 4.3.
- Step 3** After you upgrade the cluster to Cisco Unified CallManager 4.3, upgrade the Cisco CTL client and run it before you use the phones. The Cisco CTL client will copy the CAPF certificate to all the servers in the cluster.
- Step 4** Delete the CAPF utility that you used with Cisco Unified CallManager 4.0. See [Table 2-1](#).

Information That You May Need During the Upgrade

Use the information in the following table when you perform the upgrade procedures.


Caution

When entering passwords for the local Administrator and SA (SQL Server system administrator) accounts, enter alphanumeric characters only. The account password must match on every server in the cluster. For each of the accounts, you must enter the same password on every server in the cluster.

The upgrade prompts you for a Private Password Phrase. The upgrade uses the string that you enter to create a unique, encrypted password. You must enter the same phrase on all servers in the cluster.

Table 2-2 Information That You May Need During the Upgrade


Data	Your Entry
Destination where the backup file is stored during the backup	
WorkGroup Name	
Name of your organization	
Computer name of the publisher database server	
Local Administrator account password (same password for all servers in cluster)	
LDAP (DC) Directory Manager password (same password for all servers in cluster)	
SQL Server SA password (same password for all servers in cluster)	
Private Password Phrase for the cluster (same phrase for all servers in cluster)	

Upgrading the Cisco Unified CallManager Publisher Database Server

Review the following upgrade tasks, designated time to perform the task, and the location where you obtain the procedure:

	Task	Procedure	Designated Time
Step 1	Verify that you have performed all pre-upgrade tasks.	See the “ Before You Begin ” section on page 2-1 and the “ Information That You May Need During the Upgrade ” section on page 2-6.	Depends on the size of the cluster
Step 2	Remove all servers in the cluster from the NT Domain or the Microsoft Active Directory Domain.	See the “ Remove the System from the NT Domain or Microsoft Active Directory Domain and Reboot the Server (Required, If Configured) ” section on page 2-10. Tip You can perform this task on all servers in the cluster at the same time.	Depends on the size of the cluster
Step 3	Manually disable and stop all platform agents, Cisco-verified applications (Cisco Partner Applications), and Cisco-provided coresident applications that run on the servers in the cluster. Reboot the server.	Disabling platform agents and services, such as performance monitoring (for example, NetIQ), antivirus (Cisco-approved McAfee services), intrusion detection (for example, Cisco Security Agent), and remote management services, ensures that the upgrade does not encounter issues that are associated with these services. See the “ Disable and Stop Third-Party, Cisco-Verified, and Cisco-Provided Coresident Applications and Reboot the Server (Required) ” section on page 2-10. Tip You can perform this task on all servers in the cluster at the same time.	20 minutes
Step 4	Manually install and configure Cisco IP Telephony Backup and Restore System (BARS) version 4.0(12) (or later). (Required)	If you have not already done so, Cisco requires that you install and configure the backup utility on the publisher database server. BARS does not back up any operating system files except Host/LMhost, if these files exist on the server. For a list of files that the utility backs up, refer to <i>Cisco IP Telephony Backup and Restore System (BARS) Administration Guide</i> . To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm .	15 minutes
Step 5	Using BARS, version 4.0(12) (or later), manually back up the Cisco Unified CallManager data to either a network directory. (Required)	For information on backing up your system, refer to <i>Cisco IP Telephony Backup and Restore System (BARS) Administration Guide</i> . To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm . Tip To significantly improve the speed of the Cisco Unified CallManager upgrade, archive or remove CDRs before backing up your system. Note If your system uses Cisco-provided operating system version 2004.4 or later and uses DNS for name resolution, make sure that you have set the Primary DNS suffix of this computer field if you set the DNS suffix for this connection field on the computer before you perform the backup. Refer to the <i>Installing the Operating System on the Cisco Unified Communications Server, Version 2000.4.4</i> (or later) for information on this procedure.	30 to 60 minutes, depending on the size of the Cisco Unified CallManager and Call Detail Record (CDR) database

	Task	Procedure	Designated Time
Step 6	<p>Run the Cisco Unified CallManager Upgrade Assistant Utility on all servers in the cluster.</p> <p>You must perform this task on one server in the cluster at a time, beginning with the publisher database server.</p>	<p>The Cisco Unified CallManager Upgrade Assistant Utility verifies that your server is in a healthy state before the upgrade. Perform this task on one server in the cluster at a time, beginning with the publisher database server.</p> <p>See the “Run the Cisco Unified CallManager Upgrade Assistant Utility on All Servers in the Cluster (Strongly Recommended)” section on page 2-12.</p>	1 to 20 minutes for the publisher database server; 1 to 5 minutes for the subscriber server
Step 7	Use the operating system install DVD to install the Cisco-provided operating system version 2003.1.1 (or later).	<p>Before you perform the installation, be sure to read <i>Installing the Operating System on the Cisco Unified Communications Applications Server</i>. To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/iptel_os/index.htm</p> <p>Perform on the publisher database server first; complete the Cisco Unified CallManager upgrade on the publisher database server before you upgrade the operating system on the subscriber servers.</p> <p>Note If your system uses DNS for name resolution and you set the DNS suffix for this connection field on the computer, make sure that you have also set the <i>Primary DNS suffix of this computer</i> field. Refer to the <i>Installing the Operating System on the Cisco Unified Communications Server, Version 2003.1.1</i> for information on this procedure.</p>	45 to 75 minutes per server, depending on the server type
Step 8	Download and install the latest Cisco Unified Communications Server Operating System service release. (Recommended)	<p>The operating system service releases post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page.</p> <p>For installation instructions, refer to the file-specific readme document, <i>Cisco Unified Communications Operating System, SQL Server, Security Updates</i>, and <i>Installing the Operating System on the Cisco Unified Communications Applications Server</i>. To obtain the most recent version of these documents, go to http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml.</p>	15 minutes
Step 9	Download and install the latest OS-related security hotfixes, if any. (Recommended)	<p>The operating system related security hotfixes post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page.</p> <p>For installation instructions, refer to the file-specific readme document, <i>Cisco Unified Communications Operating System, SQL Server, Security Updates</i>, and <i>Installing the Operating System on the Cisco Unified Communications Applications Server</i>. To obtain the most recent version of these documents, go to http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml.</p>	5 minutes

Task	Procedure	Designated Time
Step 10 Manually install and configure Cisco IP Telephony Backup and Restore System (BARS) version 4.0(12) (or later). (Required)	<p>If you have not already done so, Cisco requires that you install and configure the backup utility on the publisher database server.</p> <p>Note The operating system installation removes the version of BARS that you previously installed.</p> <p>For more detailed instructions, refer to <i>Cisco IP Telephony Backup and Restore System (BARS) Administration Guide</i>. To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm.</p>	15 minutes
Step 11 Copy the backup tar file from the remote location where you stored the file to the local hard disk of the Cisco Unified CallManager server so that you can easily access the backup file during the restore process. (Recommended)	Copy the tar file to a location that you can remember.	2 minutes
Step 12 If the server supports drive removal, remove a drive from the server to save your data and configuration.	See the “ Removing a Drive, Inserting a Replacement Drive, and Drive Mirroring (Strongly Recommended) ” section on page 2-14.	15 to 60 minutes, depending on the server type
Step 13 Upgrade Cisco Unified CallManager.	<p> Caution You must perform the Cisco Unified CallManager installation serially; that is, on one server at a time. After you reboot the server and after you verify that the server pulled the subscription from the publisher database server, you can begin the upgrade on the next server.</p> <p>See the “Upgrading Related Cisco CallManager Services and Detecting the Server (Required)” section on page 2-15</p>	45 to 120 minutes per server, depending on the server type
Step 14 Upgrade all of the subscriber servers in the cluster.	<p>See the “Upgrading the Cisco Unified CallManager Subscriber Server(s)” procedure on page 2-17.</p> <p>Note You cannot add a subscriber server to a cluster by installing a previous version of Cisco Unified CallManager and then upgrading the subscriber server to the same version that is running on the publisher server. If you are adding a new subscriber server or replacing a subscriber server on the cluster, you must use the installation DVD with the same Cisco Unified CallManager version that is running on the publisher server.</p>	Depends on the size of the cluster.

Remove the System from the NT Domain or Microsoft Active Directory Domain and Reboot the Server (Required, If Configured)

**Tip**

You can perform this task on all servers in the cluster at the same time.

The reboot causes call-processing interruptions if done at the same time.

**Caution**

When a server exists in a domain during an upgrade, authentication between servers may fail, or the non-default domain security policies may restrict Cisco Unified CallManager from building critical NT accounts. Failing to remove the system from the domain and add it to a work group may cause upgrade errors, upgrade failures, or a total system failure, which includes a loss of data and a complete reinstallation of Cisco Unified CallManager. Do not place the servers back into the domain until you have completed the upgrade procedures for every server in the cluster.

Convert any servers that exist in the NT Domain or Microsoft Active Directory Domain by performing the following procedure:

Procedure

- Step 1** Choose **Start > Settings > Control Panel > System**.
- Step 2** Click the **Network Identification** tab.
- Step 3** Click the **Properties** button.
- Step 4** Click the **Workgroup** radio button and enter a name, for example, WRKGRP, in the corresponding field.
- Step 5** Click **OK**.
- Step 6** When prompted to do so, reboot the server.
- Step 7** Log in to the server by using the Administrator password.
- Step 8** Perform this procedure on every server in the cluster that exists in the NT Domain.
- Step 9** Go to the Domain Controller and remove the computer accounts for the Cisco Unified CallManager servers in the cluster.

Disable and Stop Third-Party, Cisco-Verified, and Cisco-Provided Coresident Applications and Reboot the Server (Required)

**Tip**

You must perform this task on all servers in the cluster at the same time.

The reboot may cause call-processing interruptions.

To review a list of Cisco-verified applications that Cisco supports and that you should disable before the installation, click <http://www.cisco.com/cgi-bin/ecoa/Search>. In the Solution pane, click **IP Telephony**. From the Solution Category drop-down list box, choose **Operations, Administration, and Maintenance (OAM)**. Click **Search**.

The following platform agents may interfere with the Cisco Unified CallManager installation: antivirus services, intrusion detection services (for example, Cisco Security Agent), OEM server agents, server management agents, VOIP monitoring/performance monitoring, or remote access/remote management agents. Disabling platform agents and services, such as performance monitoring (for example, NetIQ), antivirus (Cisco-verified McAfee services), intrusion detection, and remote management services, ensures that you do not encounter issues that are associated with these services.

This document provides procedures for disabling Cisco-verified McAfee antivirus services only. If you need assistance with disabling other services or applications, refer to the corresponding documentation that accompanies the product.

To disable the McAfee antivirus services, perform the following tasks:

Procedure

Step 1 Choose **Start > Settings > Control Panel > Administrative Tools > Services**.

Step 2 From the Services window, right-click one of the antivirus services; that is, Network Associates Alert Manager, Network Associates McShield, Network Associates Task Manager, or McAfee Framework Service and choose **Properties**.



Note The name of the antivirus service depends on the version of your antivirus software.

Step 3 In the Properties window, verify that the General tab displays.

Step 4 In the Service Status area, click **Stop**.

Step 5 From the Startup type drop-down list box, choose **Disabled**.

Step 6 Click **OK**.

Step 7 Perform [Step 1](#) through [Step 6](#) for all Cisco-approved McAfee antivirus services; for example, Network Associates Alert Manager, Network Associates McShield, and Network Associates Task Manager.

Step 8 Reboot the server and verify that the services are not running.



Caution Make sure that the services do not start after the reboot.



Caution If Cisco-verified antivirus or intrusion detection software is not currently installed on the server, Cisco strongly recommends that you do not install the software until you complete the entire upgrade/installation of all servers in the cluster.

Install and Configure Cisco IP Telephony Backup and Restore System (BARS) Version 4.0(12) (or Later) (Required)

If you have not already done so, Cisco requires that you install and configure the backup utility on the publisher database server. The Cisco IP Telephony Backup and Restore System (BARS) does not back up any operating system files except for Host/LMhost, if these files exist on the server.

For a list of files that the utility backs up, refer to *Cisco IP Telephony Backup and Restore System (BARS) Administration Guide*. To obtain the most recent version of this document, go to <http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm>.

Back Up Existing Data (Required)

For information on backing up your system, refer to *Cisco IP Telephony Backup and Restore System (BARS) Administration Guide*. To obtain the most recent version of this document, go to <http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm>.



Note

If your system uses Cisco-provided operating system version 2004.4 or later and uses DNS for name resolution, make sure that you have set the **Primary DNS suffix of this computer** field if you set the **DNS suffix for this connection** field on the computer before performing the backup. Refer to the *Installing the Operating System on the Cisco Unified Communications Server, Version 2000.4.4* (or later) or information on this procedure.

Run the Cisco Unified CallManager Upgrade Assistant Utility on All Servers in the Cluster (Strongly Recommended)



Tip

You must perform this task on one server in the cluster at a time, beginning with the publisher database server.

The reboot may cause call-processing interruptions.

Item Needed: Web Download of Utility

Run the latest Cisco Unified CallManager Upgrade Assistant Utility to verify that your server is in a healthy state before the upgrade. The document that posts next to the utility on the web provides detailed information about the utility. To obtain the latest version of the utility and the document, perform the following procedure:

Procedure

- Step 1** Click <http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>.
- Step 2** Click **Cisco Unified CallManager Version 4.3**.
The Cisco Unified CallManager 4.3 software page displays.
- Step 3** Locate and download the document.

- Step 4** Using the document as a reference, download and run the utility on every server in the cluster where Cisco Unified CallManager is installed.
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Install the Operating System to Cisco-Provided Version 2003.1.1 (or Later) (Required)

Cisco requires that you install the Cisco Unified Communications operating system version 2003.1.1 (or later) with the latest service release before you upgrade to Cisco Unified CallManager Release 4.3(1).

Before you perform the installation, be sure to read *Installing the Operating System on the Cisco Unified Communications Applications Server*. To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/iptel_os/index.htm.

Perform the operating system installation on the publisher database server first; complete the Cisco Unified CallManager upgrade on the publisher database server before you install the operating system on the subscriber servers.

Download and Install the Latest OS-Related Security Hotfixes (If Any) (Recommended)

The operating system related security hotfixes post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page.

For installation instructions, refer to the file-specific readme document, *Cisco Unified Communications Operating System, SQL Server, Security Updates*, and *Installing the Operating System on the Cisco Unified Communications Applications Server*. To obtain the most recent version of these documents, go to <http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>.

Install and Configure Cisco IP Telephony Backup and Restore System (BARS) Version 4.0(12) (or Later) (Required)

If you have not already done so, Cisco requires that you install and configure the backup utility on the publisher database server.

Note The operating system installation removes the version of BARS that you previously installed.

For more detailed instructions, refer to *Cisco IP Telephony Backup and Restore System (BARS) Administration Guide*. To obtain the most recent version of this document, go to <http://www.cisco.com/univercd/cc/td/doc/product/voice/backup/index.htm>.

Copy the Backup File to the Cisco Unified CallManager Server (Recommended)

Copy the backup tar file from the remote location where you stored the file to the local hard disk of the Cisco Unified CallManager server so that you can easily access the backup file during the restore process. (Recommended)

Removing a Drive, Inserting a Replacement Drive, and Drive Mirroring (Strongly Recommended)

Item Needed: Newly Purchased Hard Drive

You cannot remove a drive if you have the Cisco MCS-7815, MCS-7820, MCS-7822, or MCS-7825 Cisco Unified CallManager appliances, or the customer-provided IBM xSeries 330 server.

After you verify that you have a good backup of the data, you can remove a drive to save configured data; however, you must insert a replacement drive into the server before you begin the operating system procedures. This task may require that you purchase a new drive.

This process may take between 30 minutes to 60 minutes, depending on the size of the drive.

Perform the following steps to remove a drive, to insert a replacement drive, and to mirror the drives:

Procedure

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- Step 1** Run the "CHKDSK /F" command on all logical drives:
- The "Trace" drive - either E: or F: (for MCS-7845)
 - The D: drive
 - The C: drive - requires a reboot
- a. If you are prompted to dismount the volume, enter **N** for no.
 - b. If you are prompted to schedule the volume to be checked the next time that the system restarts, enter **Y** for yes.

This step ensures data integrity and secures a higher chance of success when you are mirroring drives afterwards.

- Step 2** Power off the publisher database server.
- Step 3** For all servers except the MCS-7845, remove the hard drive from Slot 0 and label the drive with the machine name, slot number, and current version of Cisco Unified CallManager.
- For the MCS-7845, remove the drives from Slot 0 and Slot 2.
- Step 4** Power on the system.

Cisco MCS Unified CallManager Appliance

- Step 5** Perform the following procedure for the Unified CallManager Appliance 78xxH MCS or HP ProLiant Series Server (The MCS-7845 requires two spare hard drives.):
- a. To enable interim recovery mode on the MCS-7830, MCS-7835, or MCS-7845, press **F2**.



Note

The MCS-7835H-2.4 (or later) and MCS-7845H-2.4 (or later) default to F2, and the process automatically continues after a 10-second delay.

- b. This step applies only for the MCS-7830, MCS-7835, or MCS-7845.
When prompted, press **F1** to continue.
- c. After Windows 2003 finishes booting, insert the replacement hard drive in Slot 0.

**Note**

On the MCS-7845, do not insert the replacement drive into Slot 2 until the mirror process completes for the drive in Slot 0.

- d. On the MCS-7830, MCS-7835, or MCS-7845, choose **Start > Compaq Systems Tools > Compaq Array Configuration Utility or Start > HP Systems Tools > HP Array Configuration Utility**. When the Array Configuration Utility Warning window opens, click **OK**.
- e. Watch the status bar in the lower, right corner to determine when the mirroring process completes.
- f. This step applies for the MCS-7845 only.

After the mirroring process completes in Slot 0, insert the next drive into Slot 2. The mirroring process launches automatically after you insert the drive into Slot 2.

Cisco Unified CallManager for the IBM xSeries Server**Step 6**

Perform the following procedure for the Unified CallManager Appliance 78xx MCS or Cisco Unified CallManager for the IBM xSeries Server:

- a. Insert a replacement drive into Slot 0.
- b. Press **F5**.
- c. Choose **Start > Programs > ServeRaid Manager > ServeRaid Manager**. You can view the progression of the drive mirroring process.

Upgrading Related Cisco CallManager Services and Detecting the Server (Required)

Continue the upgrade by performing the following procedure.

**Note**

Critical third-party components that are required and installed by Cisco Unified CallManager might require multiple reboots during installation, and you may need to manually restart the installation program and reenter the configuration data.

Procedure

Step 1 If you did not log in to the server after the operating system upgrade, log in to the server by using the Administrator password.

Step 2 Locate the Cisco Unified CallManager 4.3 Installation, Upgrade, and Recovery Disk and insert it into the drive.

The installation process automatically starts.

**Tip**

Do not remove the disk until you are directed to do so by procedure.

Step 3 To confirm the version of Cisco Unified CallManager from which you are upgrading and the version to which you are upgrading, click **Yes**.

Step 4 To confirm that you have disabled antivirus and intrusion detection software, click **Yes**.

- Step 5** To confirm that you might be prompted to reboot the server and reenter configuration data multiple times for Cisco Unified CallManager to install critical third-party components, click **OK**.
- Step 6** In the Welcome window, click **Next**.
- Step 7** Accept the Cisco Unified CallManager license agreement by clicking the **I accept the terms in the license agreement** radio button; then, click **Next**.
- Step 8** If you want to receive alerts when the pool non-paged memory usage reaches 75%, 90%, and 95% of the allocated memory size, enter the email server and email addresses to which you want the system to send alerts in the Non-Paged Pool Monitor Epage Service window.

The allocated space varies, depending on whether or not the \3GB switch exists for the NonpagePool-Bytes parameter in the boot.ini file. If \3GB switch exists, the maximum value of non-paged pool memory equals 128 MB. If the \3GB switch does not exist, the maximum value of non-paged pool memory equals 256 MB.



Note Note: You can change the values that you enter after installation by editing the C:\Utils\epageDetails.txt file.

- Step 9** In the Customer Information window, the User Name and Organization that you entered during the operating system installation automatically display.
- Cisco automatically populates the product key fields with the product key that you entered during the operating system installation. Click **Next**.
- Step 10** In the Server type window, choose the **Publisher** radio button and click **Next**.
- Step 11** In the Install type window, choose the **Upgrade from 3.3, 4.0, 4.1, and 4.2 release** radio button, enter the path to the Cisco Unified CallManager backup file in the **Backup Archive File** field, and click **Next**.
- The system validates the archive file.
- Step 12** In the Administrator Password / Private Password window, do the following tasks:
- Enter the administrator password.
 - Enter the private password phrase for the cluster; then, reenter the password for confirmation.
 - Click **Next**.
- Step 13** In the Database passwords window, do the following tasks:
- Enter the SQL System Administrator (SA) password; then, reenter it for confirmation.
 - Enter a Directory Manager password; then, reenter it for confirmation.
 - Click **Next**.
- Step 14** To begin the installation, click **Install**.
- Step 15** To reboot the server and continue with the installation, click **OK**.
- Step 16** After the server reboots, log in to the Windows Administrator account.
- The installation begins. The status window opens and displays the progress of the installation. Do not click Cancel.



Note The progress of the status bar may reset as each software package is being installed and as the installation program configures your machine. You may see the installation program reset the status bar multiple times. Do not reboot the server unless the installation prompts you to do so.

Step 17 After the DC Directory installation completes, a message indicates that you must reboot to continue the installation. Click **OK**.

The system reboots and the InstallShield Wizard window displays.

Step 18 Click **Finish**.

A message indicates that you must reboot to continue the installation.

Step 19 To reboot the server, click **OK**.

Step 20 After the server reboots, log in to the Windows Administrator account.

The Cisco IP Telephony Backup and Restore System (BARS) restores the database from the backup file archive. After the restore completes, the Cisco Unified CallManager installation begins again.

Step 21 When the installation completes, click **Finish**.

Step 22 To reboot the server, click **Yes**.



Note

If you have secure phones in your cluster, you must perform [Step 4](#) and [Step 5](#) in the “[Upgrading Your Cisco Unified CallManager Server \(When You Are Not Replacing Hardware\)](#)” section on page 2-1 in order for your phones to register.

Upgrading the Cisco Unified CallManager Subscriber Server(s)





Note

You cannot add a subscriber server to a cluster by installing a previous version of Cisco Unified CallManager and then upgrading the subscriber server to the same version that is running on the publisher server. If you are adding a new subscriber server or replacing a subscriber server on the cluster, you must use the installation DVD with the same Cisco Unified CallManager version that is running on the publisher server.

Perform the following tasks to upgrade the subscriber servers.

	Task	Important Information and Resources
Step 1	Perform pre-upgrade tasks.	See the “ Before You Begin ” section on page 2-1 and the “ Information That You May Need During the Upgrade ” section on page 2-6.
Step 2	Verify that you removed all servers from the NT or Microsoft Active Directory Domain.	See the “ Remove the System from the NT Domain or Microsoft Active Directory Domain and Reboot the Server (Required, If Configured) ” section on page 2-19.
Step 3	Verify that you have disabled and stopped all third-party, Cisco-verified, and Cisco-provided coresident applications that run on the server. Make sure that you have rebooted the server.	See the “ Disable and Stop Third-Party, Cisco-Verified, and Cisco-Provided Coresident Applications and Reboot the Server (Required) ” section on page 2-20.

Task	Important Information and Resources
Step 4 Optional Task Run the ServPrep utility.	You can only run the utility via the Cisco Unified CallManager Subscriber Preparation Disk. Cisco does not provide this utility on the web. See the “ Run the ServPrep Utility (Optional) ” section on page 2-21.
Step 5 Use the operating system DVD to install the Cisco-provided operating version 2003.1.1 (or later). (Required)	Before you perform the installation, be sure to read <i>Installing the Operating System on the Cisco Unified Communications Applications Server</i> . To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/iptel_os/index.htm . Note If your system uses DNS for name resolution and you set the DNS suffix for this connection field on the computer, make sure that you have also set the <i>Primary DNS suffix of this computer</i> field. Refer to the <i>Installing the Operating System on the Cisco Unified Communications Server, Version 2003.1.1</i> for information on this procedure.
Step 6 Download and install the latest Cisco Unified Communications Server Operating System service release. (Recommended)	The operating system service releases post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page. For installation instructions, refer to the file-specific readme document, <i>Cisco Unified Communications Operating System, SQL Server, Security Updates</i> , and <i>Installing the Operating System on the Cisco Unified Communications Applications Server</i> . To obtain the most recent version of these documents, go to http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml .
Step 7 Download and install the latest OS-related security hotfixes, if any. (Recommended)	The operating system related security hotfixes post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page. For installation instructions, refer to the file-specific readme document, <i>Cisco Unified Communications Operating System, SQL Server, Security Updates</i> , and <i>Installing the Operating System on the Cisco Unified Communications Applications Server</i> . To obtain the most recent version of these documents, go to http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml .

Task	Important Information and Resources
<p>Step 8 Task That You Should Perform Serially</p> <p>Perform the Cisco Unified CallManager upgrade on one server at a time.</p>	<p> Caution While you are upgrading a subscriber server, do not reboot the publisher server.</p> <hr/> <p> Caution You must perform the Cisco Unified CallManager installation serially; that is, on one server at a time. After you reboot the server and after you verify that the server pulled the subscription from the publisher database server, you can begin the upgrade on the next server.</p> <hr/> <p>You use the same Cisco Unified CallManager Installation, Upgrade, and Recovery Disks for the publisher database server and subscriber servers.</p> <p>See the “Upgrading Related Cisco CallManager Services and Detecting the Server (Required)” section on page 2-23</p>
<p>Step 9 After you complete the installation on all servers in the cluster, perform post-upgrade tasks.</p>	<p>See the “Performing Post-Upgrade Tasks” section on page 3-1.</p>

Remove the System from the NT Domain or Microsoft Active Directory Domain and Reboot the Server (Required, If Configured)



Tip

You can perform this task on all servers in the cluster at the same time.

The reboot causes call-processing interruptions if done at the same time.



Caution

When a server exists in a domain during an upgrade, authentication between servers may fail, or the non-default domain security policies may restrict Cisco Unified CallManager from building critical NT accounts. Failing to remove the system from the domain and add it to a work group may cause upgrade errors, upgrade failures, or a total system failure, which includes a loss of data and a complete reinstallation of Cisco Unified CallManager. Do not place the servers back into the domain until you have completed the upgrade procedures for every server in the cluster.

Convert any servers that exist in the NT Domain or Microsoft Active Directory Domain by performing the following procedure:

Procedure

- Step 1** Choose **Start > Settings > Control Panel > System**.
- Step 2** Click the **Network Identification** tab.
- Step 3** Click the **Properties** button.

- Step 4** Click the **Workgroup** radio button and enter a name, for example, WRKGRP, in the corresponding field.
- Step 5** Click **OK**.
- Step 6** When prompted to do so, reboot the server.
- Step 7** Log in to the server by using the Administrator password.
- Step 8** Perform this procedure on every server in the cluster that exists in the NT Domain.
- Step 9** Go to the Domain Controller and remove the computer accounts for the Cisco Unified CallManager servers in the cluster.

Disable and Stop Third-Party, Cisco-Verified, and Cisco-Provided Coresident Applications and Reboot the Server (Required)



Tip

The reboot may cause call-processing interruptions.

To review a list of Cisco-verified applications that Cisco supports and that you should disable before the installation, click <http://www.cisco.com/cgi-bin/ecoa/Search>. In the Solution pane, click **IP Telephony**. From the Solution Category drop-down list box, choose **Operations, Administration, and Maintenance (OAM)**. Click **Search**.

The following platform agents may interfere with the Cisco Unified CallManager installation: antivirus services, intrusion detection services (for example, Cisco Security Agent for Unified CallManager), OEM server agents, server management agents, VOIP monitoring/performance monitoring, or remote access/remote management agents. Disabling platform agents and services, such as performance monitoring (for example, NetIQ), antivirus (Cisco-verified McAfee services), intrusion detection, and remote management services, ensures that you do not encounter issues that are associated with these services.

This document provides procedures for disabling Cisco-verified McAfee antivirus services only. If you need assistance with disabling other services or applications, refer to the corresponding documentation that accompanies the product.

To disable the McAfee antivirus services, perform the following tasks:

Procedure

- Step 1** Choose **Start > Settings > Control Panel > Administrative Tools > Services**.
- Step 2** From the Services window, right-click one of the antivirus services; that is, Network Associates Alert Manager, Network Associates McShield, Network Associates Task Manager, or McAfee Framework Service and choose **Properties**.



Note The name of the antivirus service depends on the version of your antivirus software.

- Step 3** In the Properties window, verify that the General tab displays.
- Step 4** In the Service Status area, click **Stop**.
- Step 5** From the Startup type drop-down list box, choose **Disabled**.

- Step 6** Click **OK**.
- Step 7** Perform [Step 1](#) through [Step 6](#) for all Cisco-approved McAfee antivirus services; for example, Network Associates Alert Manager, Network Associates McShield, and Network Associates Task Manager.
- Step 8** Reboot the server and verify that the services are not running.

**Caution**

Make sure that the services do not start after the reboot.

**Caution**

If Cisco-verified antivirus or intrusion detection software is not currently installed on the server, Cisco strongly recommends that you do not install the software until you complete the entire upgrade/installation of all servers in the cluster.

Run the ServPrep Utility (Optional)

Item Needed: Cisco Unified CallManager Subscriber Upgrade Disk

Before you install Cisco Unified CallManager, you must run the ServPrep utility and install Cisco Unified Communications Operating System by using the Cisco-provided operating system disks and upgrade to the latest operating system 2003.1.1 (or later).

The ServPrep utility, which you run on subscriber servers, updates the network configuration by creating the file, STISys.inf, which contains network information. The utility saves TCP/IP settings, but you lose manually configured NIC settings; for example, hard-coded Speed/Duplex settings. After you complete the installation on all servers in the cluster, you must manually configure previous NIC settings.

**Caution**

This utility supports all Cisco Media Convergence Servers, Unified CallManager appliances, customer-provided Cisco Unified CallManager for the HP DL320 and DL380 servers, and customer-provided Cisco Unified CallManager for the IBM xSeries 330, 340, 342, and 345 servers that meet Cisco-approved configuration standards. Do not run this utility on any other servers, including customer-provided servers.

Procedure

- Step 1** Insert the Cisco Unified CallManager Subscriber Upgrade Disk into the drive as soon as you can do so.
- Step 2** When the Upgrade Warning window displays, carefully read the information and click the **ServPrep Utility** link at the bottom of the window.
- Step 3** Run the program from the current location; follow the prompts that display.

Upgrade the Operating System to Cisco-Provided Version 2003.1.1 (or Later) (Required)

Cisco requires that you install the Cisco Unified Communications operating system version 2003.1.1 (or later) with the latest service release before you upgrade to Cisco Unified CallManager Release 4.3(1).

Before you perform the installation, be sure to read *Installing the Operating System on the Cisco Unified Communications Applications Server*. To obtain the most recent version of this document, go to http://www.cisco.com/univercd/cc/td/doc/product/voice/iptel_os/index.htm.

Perform the operating system installation on the publisher database server first; complete the Cisco Unified CallManager upgrade on the publisher database server before you install the operating system on the subscriber servers.

Note If your system uses DNS for name resolution and you set the **DNS suffix for this connection** field, make sure that you have set the **Primary DNS suffix of this computer** field. Refer to the *Installing the Operating System on the Cisco Unified Communications Server, Version 2003.1.1* for information on this procedure.

Download and Install the Latest Cisco Unified Communications Server Operating System Service Release (Recommended)

Download and install the latest Cisco Unified Communications Server Operating System service release. The operating system service releases post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page.

For installation instructions, refer to the file-specific readme document, *Cisco Unified Communications Operating System, SQL Server, Security Updates*, and *Installing the Operating System on the Cisco Unified Communications Applications Server*. To obtain the most recent version of these documents, go to <http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>.

Download and Install the Latest OS-Related Security Hotfixes (If Any) (Recommended)

The operating system related security hotfixes post on the voice products operating system cryptographic software page. You can navigate to the site from the Cisco Unified CallManager software page.

For installation instructions, refer to the file-specific readme document, *Cisco Unified Communications Operating System, SQL Server, Security Updates*, and *Installing the Operating System on the Cisco Unified Communications Applications Server*. To obtain the most recent version of these documents, go to <http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>.

Upgrading Related Cisco CallManager Services and Detecting the Server (Required)



Note

Critical third-party components that Cisco Unified CallManager requires and installs might require multiple reboots during installation, and you may need to manually restart the installation program and reenter the configuration data.

Items Needed: Cisco Unified CallManager 4.3(1) Installation and Recovery Disk

Perform the following procedure:

Procedure

- Step 1** If you did not log in to the server after the operating system installation, log in to the server by using the Administrator password.
- Step 2** Locate the Cisco Unified CallManager 4.3 Installation, Upgrade, and Recovery Disk and insert it into the drive.
- The installation process automatically starts.



Tip

Do not remove the disk until the procedure directs you to do so.

- Step 3** To confirm that you have disabled antivirus and intrusion detection software, click **Yes**.
- Step 4** To confirm that you might be prompted to reboot the server and reenter configuration data multiple times for Cisco Unified CallManager to install critical third-party components, click **OK**.
- Step 5** In the Welcome window, click **Next**.
- Step 6** Accept the Cisco Unified CallManager license agreement by clicking the **I accept the terms in the license agreement** radio button; then, click **Next**.
- Step 7** If you want to receive alerts when the pool non-paged memory usage reaches 75%, 90%, and 95% of the allocated memory size, enter the email server and email addresses to which you want the system to send alerts in the Non-Paged Pool Monitor Epage Service window.

The allocated space varies, depending on whether or not the \3GB switch exists for the NonpagePool-Bytes parameter in the boot.ini file. If \3GB switch exists, the maximum value of non-paged pool memory equals 128 MB. If the \3GB switch does not exist, the maximum value of non-paged pool memory equals 256 MB.



Note

Note: You can change the values that you enter after installation by editing the C:\Utils\ePageDetails.txt file.

- Step 8** In the Customer Information window, click **Next**.
- Step 9** In the Server Type window, choose **Subscriber** radio button, enter the publisher hostname in the **Publisher Server Name** field, and click **Next**.
- Step 10** In the Administrator Password / Private password window, do the following tasks:
- a. Enter the administrator password; then, reenter it for confirmation.

- b. Enter the private password phrase for the cluster; then, reenter it for confirmation.
- c. Click **Next**.

Step 11 In the Database passwords window, do the following tasks:

- a. Enter the SQL System Administrator (SA) password; then, reenter it for confirmation.
- b. Click **Next**.

Step 12 To begin the installation, click **Install**.

Step 13 To reboot the server and continue with the installation, click **OK**.

Step 14 After the server reboots, log in to the Windows Administrator account.

The installation begins. The status window opens and displays the progress of the installation. Do not click Cancel.



Note The progress of the status bar may reset as each software package is being installed and as the installation program configures your machine. You may see the installation program reset the status bar multiple times. Do not reboot the server unless the installation prompts you to do so.

Step 15 Click **Finish**.

Step 16 To reboot the server, click **Yes**.



Tip

Repeat the procedures in the “[Upgrading the Cisco Unified CallManager Subscriber Server\(s\)](#)” section on page 2-17 on each subscriber server until you have upgraded all the servers in your cluster. After you update all of the servers, perform the appropriate procedures in the “[Performing Post-Upgrade Tasks](#)” section on page 3-1.



Note

If you have secure phones in your cluster, you must perform [Step 4](#) and [Step 5](#) in the “[Upgrading Your Cisco Unified CallManager Server \(When You Are Not Replacing Hardware\)](#)” section on page 2-1 in order for your phones to register.
