



Cisco IP Telephony Disaster Recovery System Administration Guide

The *Cisco IP Telephony Disaster Recovery System Administration Guide* provides an overview of the Disaster Recovery System, describes how to use the Disaster Recovery System, and provides procedures for completing various backup-related tasks and restore-related tasks. This guide serves as a reference and procedural guide that is intended for users of Cisco CallManager and other Cisco IP telephony applications.

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What is the Disaster Recovery System?

The Cisco Disaster Recovery System (DRS), which can be invoked from Cisco CallManager 5.0 Administration, provides full data backup and restore capabilities for all servers in a Cisco CallManager cluster. The Cisco Disaster Recovery System allows you to perform regularly scheduled automatic or user-invoked data backups. DRS supports only one backup schedule at a time.

The Cisco Disaster Recovery System performs a cluster-level backup, which means that it collects backups for all servers in a Cisco CallManager cluster to a central location and archives the backup data to physical storage device.

When performing a system data restoration, you can choose which nodes in the cluster you want to restore.

The Cisco Disaster Recovery System includes the following capabilities:

- A user interface for performing backup and restore tasks.
- A distributed system architecture for performing backup and restore functions.
- A scheduling engine to initiate tasks at user-specified times.
- Archive backups to a physical tape drive or remote sftp server.

The Cisco Disaster Recovery System contains two key functions, *Master Agent (MA)* and *Local Agent (LA)*. The Master Agent coordinates backup and restore activity with all the Local Agents.

The system automatically activates both the Master Agent and the Local Agent on all nodes in the cluster. However, you can only access the Master Agent functions on the first node of the cluster.

**Note**

The Cisco Disaster Recovery System does not provide migration of data from other platforms to Cisco CallManager 5.0. For information on data migration from a Windows-based platform to a Linux-based platform, refer to the *Cisco IP Telephony Data Migration Assistant 2.0 User Guide*.

Quick-Reference Tables for Backup and Restore Procedures

The following tables provide a quick reference for the backup and restore procedures.

Backup Quick Reference

[Table 1](#) provides a quick, high-level reference to the major steps, in chronological order, that you must perform to do a backup procedure by using the Cisco Disaster Recovery System.



Note

DRS does not provide migration of data from other platforms to Cisco CallManager 5.0. For information on data migration from a Windows-based platform to a Linux-based platform, refer to the *Data Migration Assistant User Guide* before following the steps in [Table 1](#).

Table 1 Major Steps for Performing a Backup Procedure

Action	Reference
Configure Features to Back Up—Before you can run a backup job, you must choose the features that you want to back up.	“Configuring Features to Back Up” section on page 6
Configure a Storage Location—You must choose the physical location where you want to store the backup file.	“Configuring a Storage Location” section on page 6
Configure a Scheduled Backup or start a Manual Backup—You can perform an immediate manual backup or configure a regularly scheduled backup for the cluster.	To configure a scheduled backup, see “Configuring a Backup Schedule” section on page 7 .
Note Either a manual or a scheduled backup backs up the whole cluster.	To start a manual backup, see “Starting a Manual Backup” section on page 8 .
Check the Status of the Backup—While a backup is running, you can check the status of the current backup job.	“Checking Backup Status” section on page 8

Restore Quick Reference

Table 2 provides a quick, high-level reference to the major steps, in chronological order, that you must perform to do a restore procedure by using the Cisco Disaster Recovery System.

Table 2 Major Steps for Performing a Restore Procedure

Action	Reference
Choose Storage Location—You must first choose the storage location from which you want to restore a backup file.	“Restoring a Backup File” section on page 9
Choose the Backup File—From a list of available files, choose the backup file that you want to restore.	“Restoring a Backup File” section on page 9
Choose Features—From the list of available features, choose the features that you want to restore.	“Restoring a Backup File” section on page 9
Choose Nodes—If the feature was backed up from multiple nodes, you must choose the nodes that you want to restore.	“Restoring a Backup File” section on page 9
Check the Status of the Restore—While the restore process is running, you can check the status of the current restore job.	“Viewing the Restore Status” section on page 14

Supported Features and Components

For the Cisco CallManager 5.0 release, you can back up and restore the Features and Subcomponents that are shown in the following table. For each feature that you choose, the system backs up all of its subcomponents automatically.

Feature	Components
CCM—Cisco CallManager	Cisco CallManager (version 5.0) database (CCMDB)
	Platform
	Serviceability
	Music On Hold (MOH)
	Cisco Emergency Responder (CER)
	Bulk \Tool (Bat)
	Preference
CDR_CAR	Phone device files
	Call Detail Records (CDR)
	CDR Analysis and Reporting (CAR)

System Requirements

Make sure that Cisco CallManager 5.0 is running on all servers in the cluster.

How to Access the Cisco Disaster Recovery System

To access the Cisco Disaster Recovery System, choose **Disaster Recover System** from the **Navigation** menu in the upper, right corner of Cisco CallManager Administration window. Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.



Note

You set the Administrator username and password during Cisco CallManager installation, and you can change the Administrator password or set up a new Administrator account by using the Command Line Interface (CLI). Refer to the *Cisco IP Telephony Platform Administration Guide* for more information.

Master Agent Duties and Activation

The system automatically activates the Master Agent on all nodes in the cluster, but you can only access the Master Agent functions from the first node or publisher.

Duties That the Master Agent Performs

The Master Agent performs the following duties:

- The MA stores systemwide component registration information.
- The MA maintains a complete set of scheduled tasks in the Cisco CallManager database. When it receives updates from the user interface, the MA sends executable tasks to the applicable Local Agents, as scheduled. (Local Agents execute immediate-backup tasks without delay.)
- You access the MA through the Disaster Recovery System user interface to perform activities such as scheduling backups, adding a new backup task for a specific server or a defined cluster, updating or reviewing an existing entry, displaying status of executed tasks, and performing system restoration.
- The MA stores backup sets on a locally attached tape drive or a remote network location.

Local Agents

Each server in a Cisco CallManager cluster, including the server that contains the Master Agent, must have its own Local Agent to perform backup and restore functions for its server.



Note

By default, a local agent automatically gets activated on each node of the cluster.

Duties That Local Agents Perform

The Local Agent runs backup and restore scripts on each node in the cluster.

Configuring Features to Back Up

Before you can schedule or start a backup job, you must configure the features that you want to back up. Perform the following steps to choose the features that you want to back up.

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Backup>Configure Features**.



Note Changing a backup feature changes it for both manual and scheduled backups.

- Step 4** From the list of available features, choose the feature or features that you want to include in the backup and click **Save**. You must choose at least one feature.
- Step 5** Continue with the next procedure for configuring a storage location.
-

Configuring a Storage Location

Before using the Disaster Recover System, you must configure the location where you want the backup file to be stored. Perform the following steps to configure the storage location.

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Backup>Storage Location**. The Storage Location window displays.
- Step 4** Choose the number of backup files to store on a network directory.

- Step 5** Choose one of the following storage destination options and enter the appropriate field values:
- **Tape Device**—Stores the backup file on a locally attached tape drive. Choose the appropriate tape device from the list.
 - **Network Directory**—Stores the backup file on a networked drive accessed through an SFTP connection. Enter the following required information:
 - **Server name:** Name or IP address of the network server
 - **Path name:** Path name for the directory where you want to store the backup file
 - **User name:** Valid username for an account on the remote system
 - **Password:** Valid password for the account on the remote system



Note You must have access to an SFTP server to configure a network storage location.

- Step 6** To update these settings, click **Save**.
- Step 7** Continue with either a manual or a scheduled backup.

Configuring a Backup Schedule

You can schedule a backup to start at a specified date and time and configure it either run once or at a specified frequency. The system automatically backs up the features that you selected on the **Configure Features** menu. Perform the following steps to configure a backup schedule.

Procedure

- Step 1** Navigate to the Disaster Recovery System. If you are currently in Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Backup>Scheduler**. The Scheduler window displays.
- Step 4** If the Scheduler is not enabled, click **Enable Scheduler**.
- Step 5** Choose the date and time when you want the backup to begin.
- Step 6** Choose the frequency at which you want the backup to occur: Once, Daily, Weekly, or Monthly. If you choose Weekly, you can also choose the days of the week when the backup will occur.



Tip To set the backup frequency to Weekly, occurring Tuesday through Saturday, click **Set Default**.

- Step 7** To update these settings, click **Save**.

Step 8 The next backup occurs automatically at the time that you set.



Note Ensure all servers in the cluster are running the same version of Cisco CallManager and are reachable through the network.

Starting a Manual Backup

You can manually start a backup of the features that you selected on the **Configure Features** menu. Perform the following steps to start a manual backup.

Procedure

Step 1 Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.

The Disaster Recovery System Logon window displays.

Step 2 Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.

Step 3 Navigate to **Backup>Manual Backup**. The Manual Backup window displays.

Step 4 Make sure the features that you want to back up are selected. To choose other features, see the [Configuring Features to Back Up](#) section.



Note Ensure all servers in the cluster are running the same version of Cisco CallManager and are reachable through the network.

Step 5 To begin the manual backup, click **Start Backup**.

Checking Backup Status

You can check the status of the current backup job and cancel the current backup job. To view the backup history, see [Viewing the Backup and Restore History](#).

Checking the Status of the Current Backup Job

Perform the following steps to check the status of the current backup job.

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Backup>Current Status**. The Backup Status window displays.
- Step 4** To view the backup log file, click the log filename link.
- Step 5** To cancel the current backup, click **Cancel Backup**.
-

Restoring a Backup File

The Restore Wizard walks you through the steps that are required to restore a backup file. To perform a restore, use the procedure that follows.



Tip

To restore all servers in a cluster, see [Restoring a Cluster](#).



Caution

Before you restore Cisco CallManager, ensure that the Cisco CallManager version that is installed on the server matches the version of the backup file you want to restore.

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Restore>Restore Wizard**. The Restore Wizard Step 1 window displays.

- Step 4** Choose the storage location from which you want to restore the file and enter the following required information for the chosen storage location:
- **Tape Device**—Restores the backup file from a locally attached tape drive. Choose the appropriate tape device from the list.
 - **Network Directory**—Restores the backup file from a networked drive that is accessed through an sftp connection. Enter the following required information:
 - **Server name:** Name or IP address of the network server
 - **Path name:** Path name for the directory from which you want to restore the backup file
 - **User name:** Valid username for an account on the remote system
 - **Password:** Valid password for the account on the remote system

Step 5 Click **Next**. The Restore Wizard Step 2 window displays.

Step 6 Choose the backup file that you want to restore.



Note The backup filename indicates the date and time that the system created the backup file.

Step 7 Click **Next**. The Restore Wizard Step 3 window displays.

Step 8 Choose the features that you want to restore.



Note Only the features that were backed up to the file that you chose display.

Step 9 Click **Next**. The Restore Wizard Step 4 window displays.

Step 10 To start restoring the data, click **Restore**.

You get prompted to choose the feature and node you want to restore.

Step 11 Choose the appropriate the node and features.



Caution After you choose the node to which you want the data restored, any existing data on that server gets overwritten.

Step 12 Your data gets restored on the nodes that you chose. To view the status of the restore, see [Viewing the Restore Status](#).

Step 13 Restart the server. For more information on restarting, see the *Cisco IP Telephony Platform Administration Guide*.



Note Depending on the size of your database and the components that you choose to restore, the system can require one hour or more to restore.

Restoring a Cluster

In case of a major failure or a hardware upgrade, you may need to restore all nodes in the cluster. To restore a whole cluster, you must first restore the first node or publisher and then restore the subsequent nodes.

The following procedures provide the steps for the full-cluster restore process.

Restoring the First Node

Follow this procedure to restore first node or publisher in the cluster.

Procedure

-
- Step 1** Perform a fresh installation of Cisco CallManager 5.0 on the first node or publisher. For more information on installing Cisco CallManager, see *Installing Cisco CallManager, Release 5.0(1)*.



Caution Before you restore Cisco CallManager, ensure that the Cisco CallManager version that is installed on the server matches the version of the backup file you want to restore.

- Step 2** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.

The Disaster Recovery System Logon window displays.

- Step 3** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.

- Step 4** Navigate to **Restore>Restore Wizard**. The Restore Wizard Step 1 window displays.

- Step 5** Choose the storage location from which you want to restore the file and enter the following required information for the chosen storage location:
- **Tape Device**—Restores the backup file from a locally attached tape drive. Choose the appropriate tape device from the list.
 - **Network Directory**—Restores the backup file from a networked drive that is accessed through an sftp connection. Enter the following required information:
 - **Server name:** Name or IP address of the network server
 - **Path name:** Path name for the directory from which you want to restore the backup file
 - **User name:** Valid username for an account on the remote system
 - **Password:** Valid password for the account on the remote system

- Step 6** Click **Next**. The Restore Wizard Step 2 window displays.

- Step 7** Choose the backup file that you want to restore.



Note The backup filename indicates the date and time that the system created the backup file.

- Step 8** Click **Next**. The Restore Wizard Step 3 window displays.

Step 9 Choose the features that you want to restore.



Note Only the features that were backed up to the file that you chose display.

Step 10 Click **Next**. The Restore Wizard Step 4 window displays.

Step 11 To start restoring the data, click **Restore**.

Step 12 When you get prompted to choose the nodes and features that you want to restore, choose only the first node (the publisher) and its features.

Step 13 Your data gets restored on the nodes that you chose. To view the status of the restore, see [Viewing the Restore Status](#).

Step 14 Restart the server. For more information on restarting, see the *Cisco IP Telephony Platform Administration Guide*.



Note Depending on the size of your database and the components that you choose to restore, the system can require one hour or more to restore.

Step 15 After the first node restarts, continue with [Restoring Subsequent Cluster Nodes](#).

Restoring Subsequent Cluster Nodes

Follow this procedure to restore subsequent nodes in the cluster.

Procedure

Step 1 Perform a fresh installation of Cisco CallManager 5.0 on the subsequent nodes. For more information on installing Cisco CallManager, see *Installing Cisco CallManager, Release 5.0(1)*.



Caution Before you restore Cisco CallManager, ensure that the Cisco CallManager version that is installed on the server matches the version of the backup file you want to restore.

Step 2 Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.

The Disaster Recovery System Logon window displays.

Step 3 Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.

Step 4 Navigate to **Restore>Restore Wizard**. The Restore Wizard Step 1 window displays.

- Step 5** Choose the storage location from which you want to restore the file and enter the following required information for the chosen storage location:
- **Tape Device**—Restores the backup file from a locally attached tape drive. Choose the appropriate tape device from the list.
 - **Network Directory**—Restores the backup file from a networked drive that is accessed through an sftp connection. Enter the following required information:
 - **Server name:** Name or IP address of the network server
 - **Path name:** Path name for the directory from which you want to restore the backup file
 - **User name:** Valid username for an account on the remote system
 - **Password:** Valid password for the account on the remote system

Step 6 Click **Next**. The Restore Wizard Step 2 window displays.

Step 7 Choose the backup file that you want to restore.



Caution To restore subsequent nodes in the cluster, you must choose the same backup file that you used to restore the first node.

Step 8 Click **Next**. The Restore Wizard Step 3 window displays.

Step 9 Choose the features that you want to restore.



Note Only the features that were backed up to the file that you chose display.

Step 10 Click **Next**. The Restore Wizard Step 4 window displays.

Step 11 To start restoring the data, click **Restore**.

Step 12 When you get prompted to choose the nodes and features that you want to restore, choose only the subsequent nodes and their features.

Step 13 Your data gets restored on the nodes that you chose. To view the status of the restore, see [Viewing the Restore Status](#).

Step 14 Restart the server. For more information on restarting, see the *Cisco IP Telephony Platform Administration Guide*.



Note Depending on the size of your database and the components that you choose to restore, the system can require one hour or more to restore.

Viewing the Restore Status

To check the status of the current restore job, perform the following steps:

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Restore>Status**. The Restore Status window displays.
- Step 4** To view the restore log file, click the log filename link.
-

Viewing the Backup and Restore History

Using the following procedures, you can see the last 20 backup and restore jobs.

Backup History

Perform the following steps to view the backup history.

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Backup>History**. The Backup History window displays.
- Step 4** From the Backup History window, you can view the backups that you have performed, including filename, storage location, completion date, result, and features that are backed up.



Note The Backup History window displays only the last 20 backup jobs.

Restore History

Perform the following steps to view the restore history.

Procedure

-
- Step 1** Navigate to the Disaster Recovery System. Log in to Cisco CallManager Administration, choose **Disaster Recovery System** from the **Navigation** menu in the upper, right corner of the Cisco CallManager Administration window, and click **Go**.
- The Disaster Recovery System Logon window displays.
- Step 2** Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Platform Administration.
- Step 3** Navigate to **Restore>History**. The Restore History window displays.
- Step 4** From the Restore History window, you can view the restores that you have performed, including filename, storage location, completion date, result, and the features that were restored.



Note The Restore History window displays only the last 20 restore jobs.

Trace Files

In this release of the Cisco Disaster Recovery System, trace files for the Master Agent, the GUI, and each Local Agent get written to the following locations:

- For the Master Agent, the trace file is `/var/log/active/platform/drf/trace/drfMA0*`
- For each Local Agent, the trace file is `/var/log/active/platform/drf/trace/drfLA0*`
- For the GUI, the trace file is `/var/log/active/platform/drf/trace/drfConfLib0*`

You can view trace files by using the command line interface. See the *Cisco IP Telephony Platform Administration Guide* for more information.

Command Line Interface

The Cisco Disaster Recovery System also provides command-line access to a subset of backup and restore functions, as shown in [Table 3](#). For more information on these commands and on using the command line interface, see the *Cisco IP Telephony Platform Administration Guide*.

Table 3 Cisco Disaster Recovery System Command Line Interface

Command	Description
<code>utils disaster_recovery backup</code>	Starts a manual backup by using the features that are configured in the Cisco Disaster Recovery System interface
<code>utils disaster_recovery restore</code>	Starts a restore and requires parameters for backup location, filename, features, and nodes to restore

Table 3 Cisco Disaster Recovery System Command Line Interface (continued)

Command	Description
utils disaster_recovery status	Displays the status of ongoing backup or restore job
utils disaster_recovery show_backupfiles	Displays existing backup files
utils disaster_recovery cancel_backup	Cancels an ongoing backup job
utils disaster_recovery show_registration	Displays the currently configured registration
utils disaster_recovery show_tapeid	Displays the tape identification information

Error Messages

The Cisco Disaster Recovery System issues alarms for various errors that could occur during a backup or restore procedure. [Table 4](#) provides a list of Cisco DRS alarms.

Table 4 Disaster Recovery System Alarms

Alarm Name	Description	Explanation
CiscoDRFBackupDeviceError	DRF backup process has problems accessing device	DRF backup process encountered errors while accessing device.
CiscoDRFBackupFailure	Cisco DRF Backup process failed	DRF Backup process encountered errors.
CiscoDRFBackupInProgress	Unable to start new backup while another backup is still running	DRF cannot start new backup while another backup is still running.
CiscoDRFInternalProcessFailure	DRF internal process has encountered an error.	DRF internal process encountered an error.
CiscoDRFLA2MAFailure	DRF Local Agent is not able to connect to Master Agent	DRF Local Agent cannot connect to master Agent
CiscoDRFLocalAgentStartFailure	DRF Local Agent was not able to start	DRF Local Agent might be down.
CiscoDRFMA2LAFailure	DRF Master Agent is not able to connect to Local Agent	DRF Master Agent cannot connect to Local Agent.
CiscoDRFMABackupComponent Failure	DRF was unable to backup at least one component.	DRF requested a component to back up its data. However, an error occurred during the backup process, and the component was not backed up.
CiscoDRFMABackupNodeDisconnect	The node being backed up disconnected from the Master Agent prior to being fully backed up.	The DRF Master Agent was running a backup operation on a CM node, and the node disconnected before the backup operation completed.
CiscoDRFMARestoreComponent Failure	DRF was unable to restore at least one component.	DRF requested a component to restore its data. However, an error occurred during the restore process, and the component was not restored.

Table 4 *Disaster Recovery System Alarms (continued)*

Alarm Name	Description	Explanation
CiscoDRFMARestoreNodeDisconnect	The node being restored disconnected from the Master Agent prior to being fully restored.	The DRF Master Agent was running a restore operation on a CM node, and the node disconnected before the restore operation completed.
CiscoDRFMasterAgentStartFailure	DRF Master Agent was not able to start	DRF Master Agent might be down.
CiscoDRFNoRegisteredComponent	No registered components available, backup failed	DRF backup failed because no registered components are available.
CiscoDRFNoRegisteredComponent	No feature selected for backup	No feature got selected for backup.
CiscoDRFRestoreDeviceError	DRF restore process has problems accessing device	DRF restore process cannot read from device.
CiscoDRFRestoreFailure	DRF restore process failed	DRF restore process encountered errors.
CiscoDRFSftpFailure	DRF sftp operation has errors	DRF sftp operation has errors.

Related Documentation

Refer to the following documentation about related Cisco IP Telephony applications and products:

- *Cisco CallManager Installation Guide*
- *Cisco CallManager Administration Guide*
- *Cisco CallManager Serviceability Administration Guide*
- *Cisco IP Telephony Data Migration Assistant User Guide*
- *Cisco IP Telephony Platform Administration Guide*
- Any release notes, installation/upgrade, and configuration guides for the applications that you want to integrate with Cisco CallManager.

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Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

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http://www.cisco.com/public/countries_languages.shtml

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Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at tech-doc-store-mkpl@external.cisco.com or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:

<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to export@cisco.com.

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>



Note

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:
<http://www.cisco.com/go/marketplace/>
- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:
<http://www.cisco.com/packet>
- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:
<http://www.cisco.com/go/iqmagazine>
or view the digital edition at this URL:
<http://cisoiq.texterity.com/cisoiq/sample/>
- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:
<http://www.cisco.com/ipj>
- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:
<http://www.cisco.com/en/US/products/index.html>

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

<http://www.cisco.com/discuss/networking>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/en/US/learning/index.html>

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