Disaster Recovery System Administration Guide for Cisco Unified Communications Manager and IM & Presence Service, Release 10.0(1)

First Published: December 03, 2013

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Purpose

The *Disaster Recovery System Administration Guide for Cisco Unified Communications Manager* 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 Unified Communications Manager, Cisco Unified Communications Manager IM and Presence Service, and other Cisco IP telephony applications.

Audience

The *Disaster Recovery System Administration Guide for Cisco Unified Communications Manager* provides information to perform a system data restoration for network administrators who are responsible for managing and supporting Cisco Unified Communications Manager and Cisco Unified Communications Manager IM and Presence Service.

Related Documents

See the *Cisco Unified Communications Manager Documentation Guide* to learn about the documentation for Cisco Unified Communications Manager and IM and Presence Service.

For the latest IM and Presence Service and Cisco Unified Communications Manager requirements, see the *Release Notes for Cisco Unified Communications Manager*.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html.

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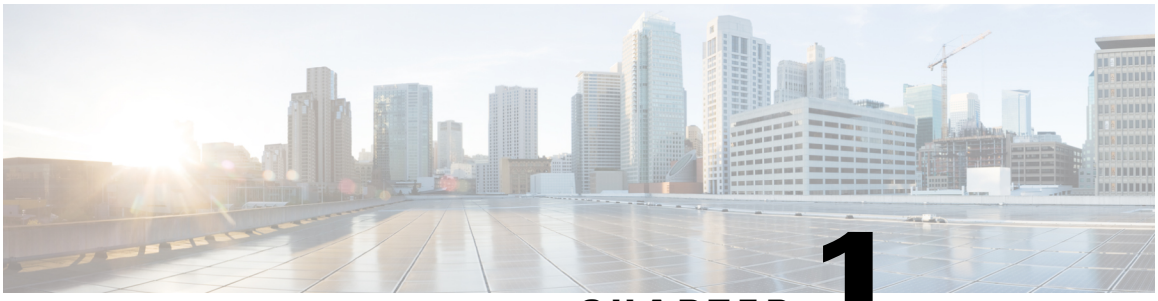
Cisco Product Security Overview

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.

Further information regarding U.S. export regulations may be found at `http://www.access.gpo.gov/bis/ear/ear_data.html`.



CHAPTER 1

Disaster Recovery System Overview

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- System Requirements, page 2
- Master Agent, page 4
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Disaster Recovery System

The Disaster Recovery System (DRS), which can be invoked from Cisco Unified Communications Manager Administration, or from any IM and Presence Service node, provides full data backup and restore capabilities for all servers in a Cisco Unified Communications Manager cluster. The Disaster Recovery System allows you to perform regularly scheduled automatic or user-invoked data backups.

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

DRS restores its own settings (backup device settings and schedule settings) as part of the platform backup/restore. DRS backs up and restores the drfDevice.xml and drfSchedule.xml files. When the server is restored with these files, you do not need to reconfigure DRS backup device and schedule.

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

The 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.
- Scheduled backups.
- Archived backups to a remote SFTP server.

The Disaster Recovery System contains two key functions: Master Agent (MA) and Local Agent (LA). The Master Agent coordinates backup and restore activity with Local Agents.

The system automatically starts the Master Agent on the publisher node, and starts the Local Agent on all cluster nodes.

Supported Features and Components

Disaster Recovery System can back up and restore the following components. The system backs up all of its components automatically.

- Cisco Unified Communications Manager database (CCMDB), includes Cisco Unified Communications Manager, Call Detail Records Analysis and Reporting, and Call Detail Records
- Platform
- Music On Hold (MOH) Audio Files
- BAT Bulk Provisioning Service (BPS)
- CCM Preference Files (CCMPREFS)
- TFTP Phone device files (TFTP)
- SNMP Syslog Component (SYSLOGAGT SNMP)
- SNMP CDP Subagent (CDPAGT SNMP)
- Trace Collection Tool (TCT)
- Cluster Manager (CLM)
- Cisco Extended Functions (CEF)
- Reporter

In addition, the Disaster Recovery System backs up and restores the following components of the IM and Presence Service if you have IM and Presence nodes installed in the cluster:

- Trace Collection Tool (TCT)
- IM and Presence Preference Files (PREFS)
- IM and Presence Database (DB)
- XMPP Configuration Files (XCP)
- Syslog Component (SYSLOGAGT)
- Platform
- Cluster Manager (CLM)
- IM and Presence Configuration Files (CUP)

System Requirements

To back up data to a remote device on the network, you must have an SFTP server that is configured. Cisco allows you to use any SFTP server product, but recommends SFTP products that have been certified with Cisco Technology Partners. Technology partners, such as GlobalSCAPE, certify their products with specified

versions of Cisco Unified Communications Manager. For information on which vendors have certified their products with your version of Cisco Unified Communications Manager, see the *Solutions Catalog* on the Cisco Developer Network at https://marketplace.cisco.com.

For information on using GlobalSCAPE with supported Cisco Unified Communications versions, contact GlobalSCAPE.

Note We recommend that you retest the DRS with your SFTP server after you upgrade your Unified Communications Manager, upgrade your SFTP server, or you switch to a different SFTP server. Perform this step to ensure that these components operate correctly together. As a best practice, perform a backup and restore on a standby or backup server.

Use the information in the following table to determine which SFTP server solution to use in your system.

Table 1: SFTP Server Information

SFTP Server	Information
SFTP Server on Cisco Prime Collaboration Deployment	This server is provided and tested by Cisco, and supported by Cisco TAC. Version compatibility depends on your version of Unified Communications Manager and Cisco Prime Collaboration Deployment. See the *Cisco Prime Collaboration Deployment Admin Guide* before you upgrade its version (SFTP) or Unified Communications Manager to ensure that the versions are compatible.
SFTP Server from a Technology Partner	These servers are third party provided, third party tested, and jointly supported by TAC and the Cisco vendor. Version compatibility depends on the third party test. See the Technology Partner page if you upgrade their SFTP product and/or upgrade UCM for which versions compatible: https://marketplace.cisco.com
SFTP Server from another Third Party	These servers are third party provided, have limited Cisco testing, and are not officially supported by Cisco TAC. Version compatibility is on a best effort basis to establish compatible SFTP versions and Unified Communications Manager versions. For a fully tested and supported SFTP solution, use Cisco Prime Collaboration Deployment or a Technology Partner.

Cisco uses the following servers for internal testing. You may use one of the servers, but you must contact the vendor for support:

- Open SSH
- Cygwin

- Titan

Cisco does not support using the SFTP product freeFTPd. This is because of the 1 GB file size limit on this SFTP product.

For Cygwin to function properly as your backup SFTP server, you must add the following lines to the `sshd_config` file:

The cipher key: ciphers aes128-cbc

The Unified Communications Algorithm: KexAlgorithms diffie-hellman-group-exchange-sha1,diffie-hellman-group1-sha1

Note For details on how to set up third-party SFTP products, contact the third-party vendor for support.

Note For issues with third-party products that have not been certified through the Cisco Technology Developer Program process, contact the third-party vendor for support

Note While a backup or restore is running, you cannot perform any OS Administration tasks, because Disaster Recovery System blocks all OS Administration requests by locking the platform API. However, Disaster Recovery System does not block most CLI commands, because only the CLI-based upgrade commands use the Platform API locking package.

Tip Schedule backups during periods when you expect less network traffic.

Master Agent

The system automatically starts the Master Agent service on each node of the cluster, but the Master Agent is functional only on the publisher node. The Master Agents on the subscriber nodes do not perform any functions.

Local Agents

The server has a Local Agent to perform backup and restore functions.

Each node in a Cisco Unified Communications Manager cluster, including the node that contains the Master Agent, must have its own Local Agent to perform backup and restore functions.

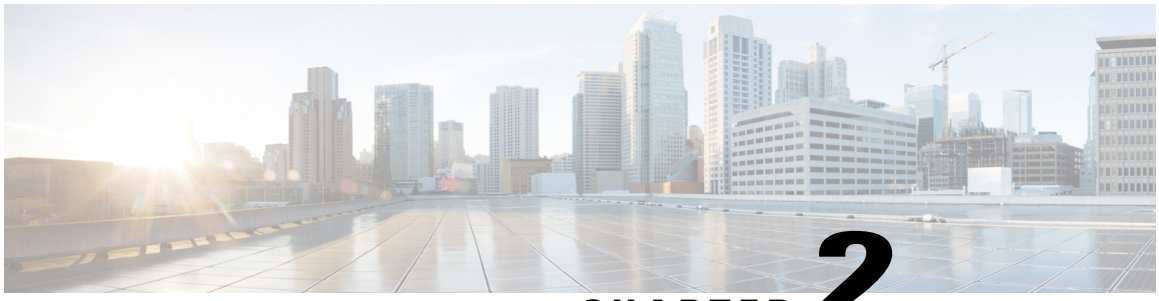
Note By default, a Local Agent automatically gets started on each node of the cluster, including IM and Presence nodes.

Log In to Disaster Recovery System

Use the following procedure to access the Disaster Recovery System on Cisco Unified Communications Manager (Unified Communications Manager) nodes, or on IM and Presence nodes. If you are already signed in to the administration software for the node, you must sign out before you begin this procedure.

Procedure

	Command or Action	Purpose
Step 1	Log in to the Disaster Recovery System for the type of node that you are using: • If you are configuring backup and restore operations for Unified Communications Manager nodes, select **Navigation** > **Disaster Recovery System** from the Cisco Unified Communications Manager Administration window and click **Go**. • If you are configuring backup and restore operations for IM and Presence nodes, select **Navigation** > **IM and Presence Disaster Recovery System** from the menu in the upper, right corner of Cisco Unified CM IM and Presence Administration window and click **Go**.	If you are already signed into the administration interface for the node, you must sign out of the application before you use the Disaster Recovery System.
Step 2	Enter the same Administrator username and password that you use to access the Operating System Administration interface for the node.	You set the Administrator username and password during the installation, and you can change the Administrator password or set up a new Administrator account using the Command Line Interface (CLI). Refer to the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions* for more information.



CHAPTER 2

Backup Procedures

This chapter describes the process for running backups.

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- Set Up Backup Devices, page 9
- Create and Edit Backup Schedules, page 10
- Enable, Disable, and Delete Schedules, page 11
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- Check Current Backup Job Status, page 13

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 Disaster Recovery System.

Procedure

Step 1 Create backup devices on which to back up data.
Set Up Backup Devices, on page 9

Step 2 Create and edit backup schedules to back up data on a schedule. Either a manual or a scheduled backup backs up the whole cluster.
Create and Edit Backup Schedules, on page 10

Step 3 Enable and disable backup schedules to back up data.
Enable, Disable, and Delete Schedules, on page 11

Step 4 Estimate size of backup tar taken to SFTP device
Estimate Size of Backup tar, on page 12

Step 5 Optionally, run a manual backup.
Manual Backup, on page 12

Step 6 Check the Status of the Backup—While a backup is running, you can check the status of the current backup job.
Check Current Backup Job Status, on page 13

Backup Notes and Tips

Before you run a backup, review the following notes and tips for information about backups.

Note While a backup is running, you cannot perform any tasks in Cisco Unified OS Administration or Cisco Unified IM and Presence OS Administration because Disaster Recovery System locks the platform API to block all requests. However, Disaster Recovery System does not block most CLI commands because only the CLI-based upgrade commands use the Platform API locking package.

Note Make sure that all cluster nodes are running the same version of Cisco Unified Communications Manager or Cisco IM and Presence Service. If different nodes are running different versions, the certificates will not match and your backup or restore could fail.

Note DRS encryption depends on the cluster security password. If you change this security password through the CLI or a fresh install, Cisco recommends that you take a fresh backup immediately or remember the old security password.

Note The Disaster Recovery System uses an SSL-based communication between the Master Agent and the Local Agent for authentication and encryption of data between the Cisco Unified Communications Manager cluster nodes. DRS makes use of the IPsec certificates for its Public/Private Key encryption. Be aware that if you delete the IPSEC truststore(hostname.pem) file from the Certificate Management pages, then DRS will not work as expected. If you delete the IPSEC-trust file manually, you must ensure that you upload the IPSEC certificate to the IPSEC-trust. For more details, see the certificate management help pages in the Cisco Unified Communications Manager security guides.

Tip Schedule backups during off-peak hours to avoid call-processing interruptions and impact to service.

Note For Release 10.0(1) and later, archived backups to tape drives are not supported. If you upgrade from pre-10.0(1) release to 10.0(1), the devices and schedules that are configured with tape drives will be removed after the upgrade. You must add the network device if it is not already added and reconfigure the schedule to facilitate the backup post upgrade.

Set Up Backup Devices

Before you use the Disaster Recovery System, you must configure the locations where you want the backup files to be stored. You can configure up to ten backup devices. You can add, delete, and list devices through the CLI. Perform the following steps to configure backup devices.

Procedure

Step 1 Log in to the **Disaster Recovery System** with the same administrator username and password that you use for Cisco Unified OS Administration or IM and Presence OS Administration .

Step 2 Select **Backup** > **Backup Device**. The Backup Device List window displays.

Step 3 Do either of the following:

- To create a new backup device, click **Add New**.
- To edit an existing backup device, select the device in the Backup Device list and click **Edit Selected**.
- To delete a backup device, select it in the Backup Device list and click **Delete Selected**.

You cannot delete a backup device that is configured as the backup device in a backup schedule.

Step 4 Enter the backup device name in the Backup device name field.

Note The backup device name may contain only alphanumeric characters, spaces ( ), dashes (-) and underscores (_). Do not use any other characters.

Step 5 In the Select Destination area, choose a Network Directory location. The Network Directory location must be accessible through an SFTP connection.
Enter the following required information:

- Host name/IP address: Hostname 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
- Number of backups to store on Network Directory: The number of backups to store on this network directory.

Note You must have access to an SFTP server to configure a network storage location. The SFTP path must exist before you create the backup. The account that is used to access the SFTP server must have write permission for the selected path.

Step 6 Click **Save**.

The DRS Master Agent validates the selected backup device to ensure that the username, password, server name, and directory path are valid. If any of these values are invalid, the save operation fails.

Create and Edit Backup Schedules

You can create up to fourteen backup schedules. Each backup schedule has its own set of properties, including a schedule for automatic backups, the set of features to back up, and a storage location.

Caution Schedule backups during off-peak hours to avoid call-processing interruptions and impact to service.

Note You can list and add backup schedules through the Command Line Interface.

Note Be aware that your backup .tar files are encrypted by a randomly generated password. This password is then encrypted by using the cluster security password and gets saved along with the backup .tar files. You must remember this security password or take a backup immediately after the security password change/reset.

Perform the following steps to manage backup schedules:

Procedure

Step 1 Navigate to the Disaster Recovery System. Log in to Cisco Unified Communications Manager Administration, choose Disaster Recovery System from the Navigation menu in the upper, right corner of the Cisco Unified Communications Manager Administration window, and click **Go**. If you are creating and editing backup schedules for IM and Presence nodes, select **Navigation** > **IM and Presence Disaster Recovery System** from the menu in the upper, right corner of Cisco Unified CM IM and Presence 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 Cisco Unified OS Administration. For Cisco Unified CM IM and Presence, log in to the Disaster Recovery System by using the same Administrator username and password that you use for Cisco Unified CM IM and Presence OS Administration.

Step 3 Navigate to **Backup** > **Scheduler**.
The Schedule List window displays.

Step 4 Do one of the following steps to add a new schedule or edit an existing schedule

a) To create a new schedule, click **Add New**.

b) To configure an existing schedule, click its name in the Schedule List column.
The scheduler window displays.

Step 5 Enter a schedule name in the **Schedule Name** field.

Note You cannot change the name of the default schedule.

Step 6 Select the backup device in the Select Backup Device area.

Step 7 Select the features to back up in the Select Features area. You must choose at least one feature.

Step 8 Choose the date and time when you want the backup to begin in the Start Backup at area.

Step 9 Choose the frequency at which you want the backup to occur in the Frequency area: 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 10 To update these settings, click **Save**.

Step 11 To enable the schedule, click **Enable Schedule**.
The next backup occurs automatically at the time that you set.

Note Ensure that all servers in the cluster are running the same version of Cisco Unified Communications Manager or Cisco IM and Presence Service and are reachable through the network. Servers that are not reachable at the time of the scheduled backup will not get backed up.

Step 12 To disable the schedule, click **Disable Schedule**.

Enable, Disable, and Delete Schedules

Complete this procedure to enable, disable or delete schedules.

You can enable, disable, and delete backup schedules through the CLI. For details, see the Command Line Interface section.

Note You cannot delete a backup device if you configured it as the backup device in a backup schedule.

Procedure

Step 1 Log in to the Disaster Recovery System with the same Administrator username and password that you use for Cisco Unified OS Administration or IM and Presence OS Administration.

Step 2 Navigate to **Backup** > **Scheduler**.
The Schedule List window displays.

Step 3 Check the check boxes next to the schedules that you want to modify.

- To select all schedules, click **Select All**.
- To clear all check boxes, click **Clear All**.

Step 4 To enable the selected schedules, click **Enable Selected Schedules**.

Step 5 To disable the selected schedules, click **Disable Selected Schedules**.

Step 6 To delete the selected schedules, click **Delete Selected**.

Estimate Size of Backup tar

Follow this procedure to estimate the size of the backup tar that is performed on an SFTP device.

Note Be aware that the calculated size is not an exact value but an estimated size of the backup tar. Size is calculated based on the actual backup size of a previous successful backup and may vary if the configuration changed since the last backup.

Note Be aware that if no backup history exists for one or more of the selected features, Cisco Unified Communications Manager cannot estimate the size of the backup tar.

Procedure

Step 1 Log in to the Disaster Recovery System by using the same administrator username and password that you use for Cisco Unified OS Administration or IM and Presence OS Administration.

Step 2 Select the **Backup** > **Manual Backup** menu.
The Manual Backup window appears.

Step 3 In the Select Features area, select the features to back up.

Step 4 Click **Estimate Size** to get the estimated size of backup for the selected features.

Manual Backup

Follow this procedure to start a manual backup.

Note While a backup is running, you cannot perform any tasks in Cisco Unified OS Administration or Cisco Unified IM and Presence OS Administration because Disaster Recovery System locks the platform API to block all requests. However, Disaster Recovery System does not block most CLI commands because only the CLI-based upgrade commands use the Platform API locking package.

Note Be aware that your backup .tar files are encrypted by a randomly generated password. This password is then encrypted by using the cluster security password and gets saved along with the backup .tar files. You must remember this security password or take a backup immediately after the security password change/reset.

Note Before you run a backup, make sure that all cluster nodes are running the same version of Cisco Unified Communications Manager or Cisco Unified Communications Manager IM and Presence Service. If different nodes are running different versions, the certificates will not match and your backup could fail.

Procedure

Step 1 Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Cisco Unified OS Administration or IM and Presence OS Administration.

Step 2 Navigate to **Backup** > **Manual Backup**. The Manual Backup window displays.

Step 3 In the Select Backup Device area, select a backup device.

Step 4 In the Select Features area, select the features to back up.

Step 5 Click **Start Backup** to start the manual backup.

Note Be aware that because of "no space in remote server" or "interruptions in network connectivity" or any other reason, the backup process could fail. If this happens, address the reasons that caused the backup to fail and then start a fresh backup.

Check Current Backup Job Status

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

Caution Be aware that if the backup to the remote server is not completed within 20 hours, the backup session times out and you must begin a fresh backup.

Procedure

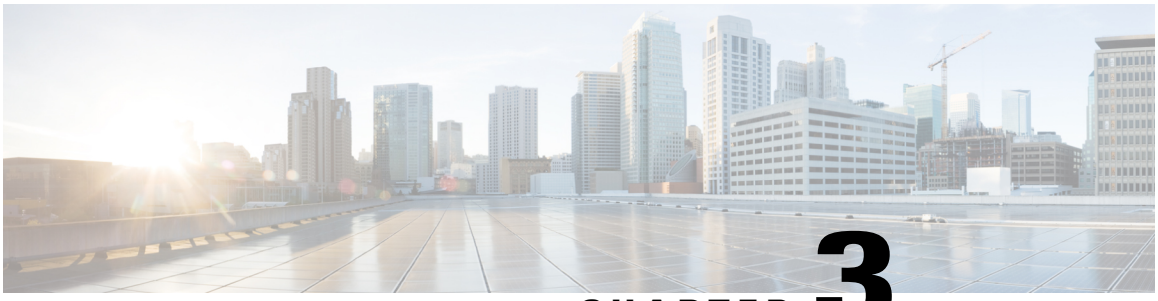
Step 1 Log in to the Disaster Recovery System by using the same Administrator username and password that you use for Cisco Unified OS Administration or IM and Presence Administration.

Step 2 Select **Backup** > **Current Status**. The Backup Status window displays.

Step 3 To view the backup log file, click the log filename link.

Step 4 To cancel the current backup, click **Cancel Backup**.

Note The backup cancels after the current component completes its backup operation.



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Restore Procedures

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Restore Quick Reference

The following procedure 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 Disaster Recovery System.

Procedure

Step 1 Choose Storage Location—You must first choose the storage location from which you want to restore a backup file.

Step 2 Choose the Backup File—From a list of available files, choose the backup file that you want to restore.

Step 3 Choose Features—From the list of available features, choose the features that you want to restore.

Step 4 Choose Nodes—If the feature was backed up from multiple nodes, you must choose the nodes that you want to restore.

Step 5 Start the Restore.

Step 6 Check the Status of the Restore—While the restore process is running, you can check the status of the current restore job.

Restore Scenarios

To restore Cisco Unified Communications Manager or IM and Presence Service, choose one of the following restore scenarios:

- Restore node or cluster to last known good configuration—Use this procedure only if you are restoring this node to a last known good configuration. Do not use this after a hard drive failure or other hardware failure.
- Restore entire cluster—Use this procedure to restore an entire cluster. If a major hard drive failure or upgrade occurs, or in the event of a hard drive migration, you may need to rebuild all nodes in the cluster.
- Restore the first node only—Use this procedure only to restore the first publisher node in the cluster.
- Restore subsequent cluster nodes—Use this procedure to restore the subscriber nodes in a cluster.
- Restore cluster in one step after publisher rebuilds—Follow this procedure to restore the entire cluster in one step if the publisher has already been rebuilt.

Note For publisher rebuild, you can restore only the publisher node or the entire cluster. Select 'Restore the first node only' to restore the publisher node. Select 'Restore the cluster in one-step' to restore the entire cluster.

Restore Notes and Tips

Review the following cautions, notes, and tips for general information on restoring backups:

Caution Be aware that DRS encryption depends on the cluster security password. If you have changed the security password between the backup and this restore, DRS will ask for the old security password. Therefore, to use such old backups, you must remember the old security password or take a backup immediately after the security password change/reset.

Caution Do not make any configuration changes to Cisco Unified Communications Manager during a restore until after you have verified that database replication is functioning. Configuration changes include any changes that you make in Cisco Unified Communications Manager Administration, Cisco Unified Serviceability, and the User Option windows.

Important You can restore the DRS backup from a restricted version only to a restricted version and the backup from an unrestricted version can be restored only to an unrestricted version. Note that if you upgrade to the U.S. export unrestricted version of Cisco Unified Communications Manager, you will not be able to later upgrade to or be able to perform a fresh install of the U.S. export restricted version of this software.

Note If you are running a DRS restore on a SAML SSO enabled cluster with an OpenAM SSO backed up configuration, or on an OpenAM SSO enabled cluster with a SAML SSO backed up configuration, you will be logged out from the DRS GUI during restore. You can check the DRS restore status from the DRS GUI or from the CLI. To check the status from the DRS GUI, log into the DRS GUI and navigate to **Restore** > **Status**. To check the status from CLI, execute the **utils disaster_recovery status** command.

Note If you are restoring Cisco Unified Communications Manager, ensure that the Cisco Unified Communications Manager version that is installed on the server matches the version of the backup file that you want to restore. If you are restoring Cisco IM and Presence Service, ensure that the version that is installed on the server matches the version from the backup file that you want to restore.

Note For Cisco Unified Communications Manager restores, make sure that all cluster nodes are running the same version of Cisco Unified Communications Manager. For Cisco IM and Presence restores, make sure that all cluster nodes are running the same version of Cisco IM and Presence Service. If different nodes are running different versions, your backup or restore could fail.

Note The Disaster Recovery System does not migrate data from Windows to Linux or from Linux to Linux. A restore must run on the same product version as the backup. For information on data migration from a Windows-based platform to a Linux-based platform, see the Data Migration Assistant User Guide before following the steps in this procedure.

Note When you perform a DRS restore to migrate data to a new server, you must assign the new server the identical IP address and hostname that the old server used. Additionally, if DNS was configured when the backup was taken, then the same DNS configuration must be present prior to performing a restore. For more information about replacing a server, refer to the Replacing a Single Server or Cluster for Cisco Unified Communications Manager guide.

Tip Beginning with Cisco Unified Communications Manager Release 8.0(1), there is only one upgrade scenario in which you must run the Certificate Trust List (CTL) client after a hardware replacement. You must run the CTL client if you do not restore the subsequent node (subscriber) servers. In other cases, DRS backs up the certificates that you need. For more information, see the "Installing the CTL Client" and "Configuring the CTL Client" procedures in the Cisco Unified Communications Manager Security Guide.

Restore Node Or Cluster to Last Known Good Configuration

Use this procedure only if you are restoring a node to a last known good configuration. Do not use this after a hard drive failure or other hardware failure. If you intend to rebuild the publisher server, read the Restore the First Node Only, on page 21. If you intend to rebuild the entire cluster, read the Restore Entire Cluster, on page 20.

Caution Before you restore Cisco Unified Communications Manager, ensure that the hostname, IP address, DNS configuration, domain name, version, and deployment type of the restore matches the hostname, IP address, DNS configuration, domain name, version, and deployment type of the backup file that you want to restore. DRS does not restore across different hostnames, IP addresses, DNS configurations and deployment types.

Note Extension Mobility Cross Cluster users who logged in to a remote cluster at backup shall remain logged in after restore.

Procedure

Step 1 Choose **Restore** > **Restore Wizard**. The Restore Wizard Step 1 window displays.

Step 2 Choose the backup device from which to restore in the Select Backup Device area. Then, click **Next**. The Restore Wizard Step 2 window displays.

Step 3 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 4 Click Next. The Restore Wizard Step 3 window displays.

Step 5 Choose the features that you want to restore.

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

Step 6 Click **Next**. The Restore Wizard Step 4 window displays.

Step 7 Select the Perform file integrity check using SHA1 Message Digest checkbox if you want to run a file integrity check.

Note The file integrity check is optional and is only required in the case of SFTP backups.

Note Be aware that the file integrity check process consumes a significant amount of CPU and network bandwidth, which considerably slows down the restore process.

Step 8 When you get prompted to choose the node to restore, choose the appropriate node.

Step 9 (Optional) If the node that you chose to restore is a publisher node, from the Select Server Name drop-down list box, choose the Cisco Unified Communications Manager subscriber node from which you want to restore the publisher database. The Disaster Recovery System restores all nondatabase information from the backup file and pulls the latest database from the chosen subscriber node.

Note This option appears only if the backup file that you selected includes the CCMDB database component and if the node that you chose is a publisher node.

Note In order to resolve the hostname, you must first configure a DNS server on the publisher, or to navigate to **System** > **Server** on the publisher to add the subscriber for which the database is going to be restored from.

Step 10 To start restoring the data, click Restore.

Note If you selected the Perform file integrity check using SHA1 Message Digest checkbox in Step 9, DRS runs a file integrity check on each file when you click Restore. If the system finds discrepancies in any .tar file during the check, the restore process will ERROR out the component that failed the integrity check and move to restore the next .tar file (that is, the next component).

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

Note If you choose the first node to restore the data, DRS automatically restores the Cisco Unified Communications Manager database on the subsequent nodes. Read Restore the First Node Only, on page 21 for more details.

Step 11 Your data gets restored on the node that you chose. To view the status of the restore, see the Check Current Restore Job Status, on page 25.

Note During the restore process, do not perform any tasks with Cisco Unified Communications Manager Administration or User Options.

Note Depending on the size of your database and the components that you choose to restore, the system can require a few hours to restore.

Step 12 After the restoration completes and the Percentage Complete field on the Restore Status window in the Disaster Recovery System shows 100 percent, restart the server. For more information on restarting, see the *Cisco Unified Communications Operating System Administration Guide*.

Note If you are restoring only to the first node, you must restart all nodes in the cluster. Make sure that you restart the first node before you restart the subsequent nodes.

Note After the first node has restarted and runs the restored version of Cisco Unified Communications Manager, restart the subsequent nodes.

Step 13 Replication will setup automatically after a cluster reboot. Check the Replication Status value on all nodes by using the "utils dbreplication runtimestate" CLI command as described in the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*. The value on each node should equal 2.

Note Database replication on the subsequent nodes may take enough time to complete after the subsequent nodes restart, depending on the size of the cluster.

Tip If replication does not set up properly, use the "utils dbreplication rebuild" CLI command as described in the *Command Line Interface Reference Guide for Cisco Unifed Communications Solutions*.

Restore Entire Cluster

If a major hard drive failure or upgrade occurs, or in the event of a hard drive migration, you may need to rebuild all nodes in the cluster. Follow these steps to restore an entire cluster.

If you are doing most other types of hardware upgrades, such as replacing a network card or adding memory, you do not need to perform this procedure.

Note You can restore the whole cluster as a single operation after you rebuild the publisher server and the subscriber servers, or to revert to a known good configuration. You do not need to restore the first node and the subsequent nodes in two separate operations.

Note Extension Mobility Cross Cluster users who logged in to a remote cluster at backup shall remain logged in after restore.

Note Before you restore a cluster, make sure that all nodes in the cluster are up and communicating with the first node. You must perform a fresh install for the nodes that are down or not communicating with first node at the time of the restore.

Procedure

Step 1 Choose **Restore** > **Restore Wizard**.
The **Restore Wizard Step 1** window displays.

Step 2 In the Select Backup Device area, choose the appropriate backup device to restore.

Step 3 Click **Next**.
The **Restore Wizard Step 2** window displays.

Step 4 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 5 Click **Next**.
The **Restore Wizard Step 3** window displays

Step 6 Click **Next**. The Restore Wizard Step 4 window displays.

Step 7 Choose all the nodes when prompted to choose restore nodes.

Step 8 Click **Restore**to restore the data.

Note During the restore process, do not perform any tasks with Cisco Unified Communications Manager Administration or User Options.

Note Depending on the size of your database and the components that you choose to restore, the system can require a few hours to restore.

Step 9 After the restoration completes and the Percentage Complete field on the Restore Status window in the Disaster Recovery System shows 100 percent, restart the server(s). For more information on restarting, see the *Cisco Unified Communications Operating System Administration Guide*.

Note Make sure that you restart the first node before you restart the subsequent nodes.

Note After the first node has restarted and is running the restored version of Cisco Unified Communications Manager, restart the subsequent nodes.

Step 10 Replication will be setup automatically after cluster reboot. Check the Replication Status value on all nodes by using the "utils dbreplication runtimestate" CLI command as described in the Command Line Interface Reference Guide for Cisco Unified Communications Solutions. The value on each node should equal 2.

Note Database replication on the subsequent nodes may take enough time to complete after the subsequent node restarts, depending on the size of the cluster.

Tip If replication does not set up properly, use the "utils dbreplication rebuild" CLI command as described in the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*.

Restore the First Node Only

Follow this procedure to restore the first node (publisher) server in the cluster.

Caution Before you restore Cisco Unified Communications Manager, ensure that the hostname, IP address, DNS configuration, and deployment type of the restore matches the hostname, IP address, DNS configuration, and deployment type of the backup file that you want to restore. DRS does not restore across different hostnames, IP addresses, DNS configurations, and deployment types.

Note Cisco recommends that you perform a fresh installation of Cisco Unified Communications Manager on the first node. For more information on installing Cisco Unified Communications Manager, see Installing Cisco Unified Communications Manager.

Note Extension Mobility Cross Cluster users who logged in to a remote cluster at backup shall remain logged in after restore.

Note Before you restore Cisco Unified Communications Manager, ensure that the Cisco Unified Communications Manager version that is installed on the server matches the version of the backup file that you want to restore. The Disaster Recovery System supports only matching versions of Cisco Unified Communications Manager for restore. For example, the Disaster Recovery System does not allow a restore from version 8.6.1.20000-1 to version 8.6.2.20000-2, or from version 8.6.2.20000-2 to 8.6.2.21900-5.

Procedure

Step 1 Choose **Restore** > **Restore Wizard**.

The **Restore Wizard Step 1** window displays.

Step 2 In the **Select Backup Device** area, choose the appropriate backup device to restore.

Step 3 Click **Next**. The Restore Wizard Step 2 window displays.

Step 4 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 5 Click **Next**. The Restore Wizard Step 3 window displays.

Step 6 Choose the features that you want to restore.

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

Step 7 Click **Next**. The Restore Wizard Step 4 window displays.

Step 8 When you get prompted to choose the nodes to restore, choose only the first node (the publisher).

Caution Do not select the subsequent (subscriber) nodes in this condition as this will result in failure of the restore attempt.

Step 9 (Optional) From the Select Server Name drop-down list box, choose the subscriber node from which you want to restore the publisher database. The Disaster Recovery System restores all nondatabase information from the backup file and pulls the latest database from the chosen subscriber node.

Note This option appears only if the backup file that you selected includes the CCMDB database component. Initially, only the publisher node is fully restored, but when you perform Step 15 and restore the subsequent cluster nodes, the Disaster Recovery System performs database replication and fully synchronizes all cluster node databases. This ensures that all cluster nodes are using current data.

Note Make sure the subscriber node that you chose is up and connected to the cluster. A subscriber node can be added manually to the cluster in Cisco Unified Communications Manager Administration (**System** > **Server**).

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

Step 11 Your data gets restored on the publisher node.

Note During the restore process, do not perform any tasks with Cisco Unified Communications Manager Administration or User Options.

Note Restoring the first node restores the whole Cisco Unified Communications Manager database to the cluster. This may take up to several hours based on number of nodes and size of database that is being restored.

Note Depending on the size of your database and the components that you choose to restore, the system can require a few hours to restore.

Step 12 When the restoration completes and the Percentage Complete field on the Restore Status window in the Disaster Recovery System shows 100 percent, restart the server. For more information on restarting, see the Cisco Unified Communications Operating System Administration Guide.

Note Restart of all the nodes in the cluster is required in case of restoring only to the first node.

Note Ensure that you restart the first node before you restart the subsequent nodes.

Step 13 When the first node has restarted and is running the restored version of Cisco Unified Communications Manager, restart the subsequent nodes.

Step 14 Replication will be setup automatically after cluster reboot. Check the Replication Status value on all nodes by using the "utils dbreplication runtimestate" CLI command as described in the Command Line Interface Reference Guide for Cisco Unified Communications Solutions. The value on each node should equal 2.

Note Database replication on the subsequent nodes may take enough time to complete after the subsequent nodes restart, depending on the size of the cluster.

Tip If replication does not set up properly, use the "utils dbreplication rebuild" CLI command as described in the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*.

Restore Subsequent Cluster Nodes

Follow this procedure to restore one or more subsequent nodes in the cluster.

Before You Begin

Before you perform a restore operation, ensure that the hostname, IP address, DNS configuration, and deployment type of the restore matches the hostname, IP address, DNS configuration, and deployment type of the backup file that you want to restore. DRS does not restore across different hostnames, IP addresses, DNS configurations and deployment types.

Ensure that the software version that is installed on the server matches the version of the backup file that you want to restore. The Disaster Recovery System supports only matching software versions for restore operations.

If you are restoring the subsequent nodes after a rebuild, you must configure the backup device.

Procedure

Step 1 Click **Restore** > **Restore Wizard**. The Restore Wizard Step 1window displays.

Step 2 In the**Select Backup Device area** choose the backup device from which to restore.

Step 3 Click **Next**. The Restore Wizard Step 2 window displays.

Step 4 Choose the backup file that you want to restore.

Step 5 Click **Next**. The Restore Wizard Step 3 window displays.

Step 6 Choose the features that you want to restore.

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

Step 7 Click **Next**. The Restore Wizard Step 4 window displays.

Step 8 When you get prompted to choose the nodes to restore, choose only the subsequent nodes.

Step 9 Click **Restore**.

Step 10 Your data is restored on the subsequent nodes.

Note During the restore process, do not perform any tasks with Cisco Unified Communications Manager Administration or User Options.

Step 11 After the restoration completes and the Percentage Complete field on the Restore Status window in the Disaster Recovery System shows 100 percent, restart the server. For more information on restarting, see the *Cisco Unified Communications Operating System Administration Guide*.

Restore Cluster in One Step After Publisher Rebuilds

Follow this procedure to restore the entire cluster in one step if the Publisher has already been rebuilt or fresh installed.

Cisco recommends that you perform a fresh installation of Cisco Unified Communications Manager on the first node. For more information on installing Cisco Unified Communications Manager, see *Installing Cisco Unified Communications Manager*

Caution Before you restore Cisco Unified Communications Manager, ensure that the hostname, IP address, and deployment type of the restore matches the hostname, IP address and deployment type of the backup file that you want to restore. DRS does not restore across different hostnames, IP addresses and deployment types.

Note Extension Mobility Cross Cluster users who logged in to a remote cluster at backup shall remain logged in after restore.

Note Before you restore Cisco Unified Communications Manager, ensure that the Cisco Unified Communications Manager or Cisco IM and Presence version that is installed on the server matches the version of the backup file that you want to restore. The Disaster Recovery System supports only matching versions for restore.

Procedure

Step 1 Navigate to the Disaster Recovery System. Log in to Cisco Unified Communications Manager Administration, choose **Disaster Recovery System** from the Navigation drop-down list box in the upper, right corner of the Cisco Unified Communications Manager 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 Cisco Unified Communications Operating System Administration.

Step 3 Configure the backup device. For more information, see *Managing Backup Devices, page 7*.

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

Step 5 In the Select Backup Device area, choose the backup device from which to restore.

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.

Note Choose only the backup file of the cluster from which you want to restore the entire cluster.

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 Click **One-Step Restore**.

Note This option appears on Restore Wizard Step 4 window only if the backup file selected for restore is the backup file of the cluster and the features chosen for restore includes the feature(s) that is registered with both publisher and subscriber nodes.

Note This option allows the publisher to become cluster aware and will take five minutes to do so. Once you click on this option, a status message displays as “Please wait for 5 minutes until Publisher becomes cluster aware and do not start any backup or restore activity in this time period.”

Note After the delay, if the publisher becomes cluster aware, a status message displays as "Publisher has become cluster aware. Please select the servers and click on Restore to start the restore of entire cluster."

Note After the delay, if the publisher has not become cluster aware, a status message displays as "Publisher has failed to become cluster aware. Cannot start one-step restore. Please go ahead and do a normal two-step restore." To restore the whole cluster in two-step (publisher and then subscriber), perform the steps mentioned in Restore the First Node Only, on page 21 and Restore Subsequent Cluster Nodes, on page 23.

Step 12 When you get prompted to choose the nodes to restore, choose all the nodes in the cluster.

Note The Disaster Recovery System restores the Cisco Unified Communications Manager database (CCMDB) on subsequent nodes automatically when you restore a first node. This may take up to several hours based on number of nodes and size of that database that is being restored.

Step 13 To start restoring the data, click **Restore**.

Step 14 Your data gets restored on all the nodes of the cluster. To view the status of the restore, see Viewing the Restore Status, page 24.

Note Depending on the size of your database and the components that you choose to restore, the system can require a few hours to restore.

Step 15 When the restoration completes and the Percentage Complete field on the Restore Status window in the Disaster Recovery System shows 100 percent, restart the servers. For more information on restarting, see the *Cisco Unified Communications Operating System Administration Guide*.

Note Make sure that you restart the first node before you restart the subsequent nodes.

Note When the first node has restarted, and is running the restored version of Cisco Unified Communications Manager, restart the subsequent nodes.

Step 16 Replication will be setup automatically after cluster reboot. Use the "utils dbreplication runtimestate" CLI command as described in the *Command Line Reference Guide for Cisco Unified Communications Solutions* to check the replication status value on all nodes. The value on each node should equal 2.

Note Database replication on the subsequent nodes may take enough time to complete after the subsequent node restarts, depending on the size of the cluster.

Tip If replication does not set up properly, use the "utils dbreplication reset "CLI command as described in the *Command Line Reference Guide for Cisco Unified Communications Solutions*.

Check Current Restore Job 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 Unified Communications Manager Administration, choose Disaster Recovery System from the Navigation menu in the upper, right corner of the Cisco Unified Communications Manager Administration window, and click Go. If you are checking the current restore job status for IM and Presence nodes, select **Navigation** > **IM and Presence Disaster Recovery System** from the menu in the upper, right corner of Cisco Unified CM IM and Presence 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 Cisco Unified Communications Operating System Administration. For Cisco Unified CM IM and Presence, log in to the Disaster Recovery System by using the same Administrator username and password that you use for Cisco Unified CM IM and Presence OS Administration.

Step 3 Navigate to **Restore** > **Status**. The Restore Status window displays.
The Status column in the Restore Status window shows the status of the restoration in progress, including the percentage of completion of the restore procedure.

Step 4 To view the restore log file, click the log filename link.

Troubleshooting

DRS Restore to Smaller Virtual Machine Fails

Problem

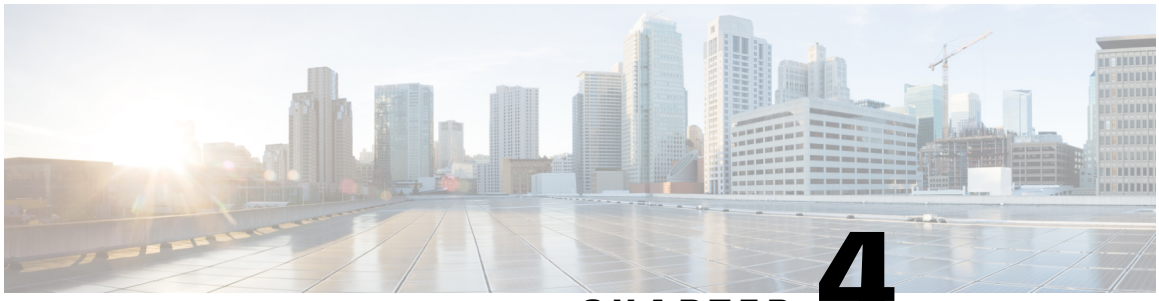
A database restore may fail if you restore an IM and Presence Service node to a VM with smaller disks.

Cause

This failure occurs when you migrate from a larger disk size to a smaller disk size.

Solution

Deploy a VM for the restore from an OVA template that has 2 virtual disks.



CHAPTER 4

Backup and Restore History

This chapter describes how to view the history for backups and restores.

- View Backup History, page 27
- View Restore History, page 28

View Backup History

Perform the following steps to view the backup history.

Note Backup files are encrypted and can be opened only by the system software.

Procedure

Step 1 Navigate to the Disaster Recovery System. Log in to Cisco Unified Communications Manager Administration, choose Disaster Recovery System from the Navigation menu in the upper, right corner of the Cisco Unified Communications Manager Administration window, and click Go. If you are viewing backup history for IM and Presence nodes, select **Navigation** > **IM and Presence Disaster Recovery System** from the menu in the upper, right corner of Cisco Unified CM IM and Presence 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 Cisco Unified Communications Operating System Administration. For Cisco Unified CM IM and Presence, log in to the Disaster Recovery System by using the same Administrator username and password that you use for Cisco Unified CM IM and Presence OS 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, backup device, completion date, result, version, features that are backed up, and failed features.

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

View Restore History

Perform the following steps to view the restore history.

Procedure

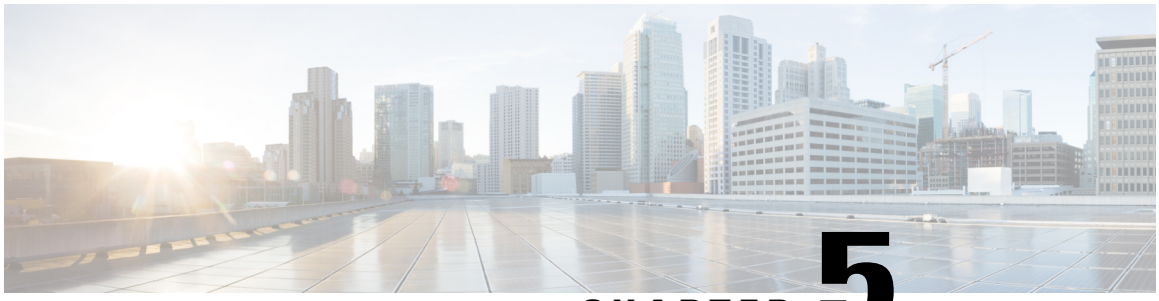
Step 1 Navigate to the Disaster Recovery System. Log in to Cisco Unified Communications Manager Administration, choose Disaster Recovery System from the Navigation menu in the upper, right corner of the Cisco Unified Communications Manager Administration window, and click Go. If you are viewing restore history for IM and Presence nodes, select **Navigation** > **IM and Presence Disaster Recovery System** from the menu in the upper, right corner of Cisco Unified CM IM and Presence 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 Cisco Unified Communications Operating System Administration. For Cisco Unified CM IM and Presence, log in to the Disaster Recovery System by using the same Administrator username and password that you use for Cisco Unified CM IM and Presence OS 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, backup device, completion date, result, version, features that were restored, and failed features.

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



CHAPTER 5

Data Authentication

This chapter describes the data authentication processes with the Disaster Recovery System.

- Trace Files, page 29
- Command Line Interface, page 29

Trace Files

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

- For the Master Agent, find the trace file at platform/drf/trace/drfMA0*
- For each Local Agent, find the trace file at platform/drf/trace/drfLA0*
- For the GUI, find the trace file at platform/drf/trace/drfConfLib0*
- For the JSch, find the trace file at platform/drf/trace/drfJSch*

You can view trace files by using the Command Line Interface. See the *Command Line Interface Reference Guide for Cisco Unifed Communications Solutions* for more information.

Command Line Interface

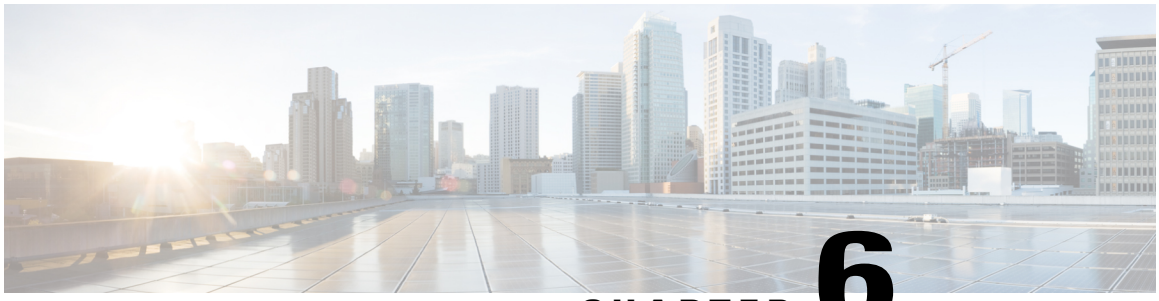
The Disaster Recovery System also provides command line access to a subset of backup and restore functions, as shown in the following table. For more information on these commands and on using the command line interface, see the *Command Line Interface Reference Guide* for Cisco Unified Communications Solutions.

Table 2: Disaster Recovery System Command Line Interface

Command	Description
utils disaster_recovery estimate_tar_size	Displays estimated size of backup tar from SFTP/Local device and requires one parameter for feature list

Command	Description
utils disaster_recovery backup	Starts a manual backup by using the features that are configured in the Disaster Recovery System interface
utils disaster_recovery jschLogs	Enables or disables JSch library logging
utils disaster_recovery restore	Starts a restore and requires parameters for backup location, filename, features, and nodes to restore
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 device add	Adds the network device
utils disaster_recovery device delete	Deletes the device
utils disaster_recovery device list	Lists all the devices
utils disaster_recovery schedule add	Adds a schedule
utils disaster_recovery schedule delete	Deletes a schedule
utils disaster_recovery schedule disable	Disables a schedule
utils disaster_recovery schedule enable	Enables a schedule
utils disaster_recovery schedule list	Lists all the schedules
utils disaster_recovery backup	Starts a manual backup by using the features that are configured in the Disaster Recovery System interface.
utils disaster_recovery restore	Starts a restore and requires parameters for backup location, filename, features, and nodes to restore.
utils disaster_recovery status	Displays the status of ongoing backup or restore job.

Command	Description
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.



CHAPTER 6

Alarms and Messages

This chapter describes alarms and messages with the Disaster Recovery System.

- Alarms and Messages, page 33

Alarms and Messages

The Disaster Recovery System issues alarms for various errors that could occur during a backup or restore procedure. The following table provides a list of Cisco Disaster Recovery System alarms.

Table 3: Disaster Recovery System Alarms and Messages

Alarm Name	Description	Explanation
DRFBackupDeviceError	DRF backup process has problems accessing device.	DRS backup process encountered errors while it was accessing device.
DRFBackupFailure	Cisco DRF Backup process failed.	DRS backup process encountered errors.
DRFBackupInProgress	New backup cannot start while another backup is still running	DRS cannot start new backup while another backup is still running.
DRFInternalProcessFailure	DRF internal process encountered an error.	DRS internal process encountered an error.
DRFLA2MAFailure	DRF Local Agent cannot connect to Master Agent.	DRS Local Agent cannot connect to Master Agent.
DRFLocalAgentStartFailure	DRF Local Agent does not start.	DRS Local Agent might be down.
DRFMA2LAFailure	DRF Master Agent does not connect to Local Agent.	DRS Master Agent cannot connect to Local Agent.

Alarm Name	Description	Explanation
DRFMABackupComponentFailure	DRF cannot back up at least one component.	DRS requested a component to back up its data; however, an error occurred during the backup process, and the component did not get backed up.
DRFMABackupNodeDisconnect	The node that is being backed up disconnected from the Master Agent prior to being fully backed up.	While the DRS Master Agent was running a backup operation on a Cisco Unified Communications Manager node, the node disconnected before the backup operation completed.
DRFMARestoreComponentFailure	DRF cannot restore at least one component.	DRS requested a component to restore its data; however, an error occurred during the restore process, and the component did not get restored.
DRFMARestoreNodeDisconnect	The node that is being restored disconnected from the Master Agent prior to being fully restored.	While the DRS Master Agent was running a restore operation on a Cisco Unified Communications Manager node, the node disconnected before the restore operation completed.
DRFMasterAgentStartFailure	DRF Master Agent did not start.	DRS Master Agent might be down.
DRFNoRegisteredComponent	No registered components are available, so backup failed.	DRS backup failed because no registered components are available.
DRFNoRegisteredFeature	No feature got selected for backup.	No feature got selected for backup.
DRFRestoreDeviceError	DRF restore process has problems accessing device.	DRS restore process cannot read from device.
DRFRestoreFailure	DRF restore process failed.	DRS restore process encountered errors.
DRFSftpFailure	DRF SFTP operation has errors.	Errors exist in DRS SFTP operation.
DRFSecurityViolation	DRF system detected a malicious pattern that could result in a security violation.	The DRF Network Message contains a malicious pattern that could result in a security violation like code injection or directory traversal. DRF Network Message has been blocked.

Alarm Name	Description	Explanation
DRFTruststoreMissing	The IPsec truststore is missing on the node.	The IPsec truststore is missing on the node. DRF Local Agent cannot connect to Master Agent.
DRFUnknownClient	DRF Master Agent on the Pub received a Client connection request from an unknown server outside the cluster. The request has been rejected.	The DRF Master Agent on the Pub received a Client connection request from an unknown server outside the cluster. The request has been rejected.
DRFBackupCompleted	DRF backup completed successfully.	DRF backup completed successfully.
DRFRestoreCompleted	DRF restore completed successfully.	DRF restore completed successfully.
DRFNoBackupTaken	DRF did not find a valid backup of the current system.	DRF did not find a valid backup of the current system after an Upgrade/Migration or Fresh Install.
DRFComponentRegistered	DRF successfully registered the requested component.	DRF successfully registered the requested component.
DRFRegistrationFailure	DRF Registration operation failed.	DRF Registration operation failed for a component due to some internal error.
DRFComponentDeRegistered	DRF successfully deregistered the requested component.	DRF successfully deregistered the requested component.
DRFDeRegistrationFailure	DRF deregistration request for a component failed.	DRF deregistration request for a component failed.
DRFFailure	DRF Backup or Restore process has failed.	DRF Backup or Restore process encountered errors.
DRFRestoreInternalError	DRF Restore operation has encountered an error. Restore cancelled internally.	DRF Restore operation has encountered an error. Restore cancelled internally.
DRFLogDirAccessFailure	DRF could not access the log directory.	DRF could not access the log directory.
DRFDeRegisteredServer	DRF automatically de-registered all the components for the server.	The server may have been disconnected from the Unified Communications Manager cluster.

Alarm Name	Description	Explanation
DRFSchedulerDisabled	DRF Scheduler is disabled because no configured features are available for backup.	DRF Scheduler is disabled because no configured features are available for backup
DRFSchedulerUpdated	DRF Scheduled backup configuration is updated automatically due to feature de-registration.	DRF Scheduled backup configuration is updated automatically due to feature de-registration

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