



Backup and Restore Utility Overview

The Backup and Restore Utility (called BARS) provides a reliable and convenient way to perform regularly scheduled automatic or user-invoked backups of data for a variety of Cisco Unified Communications products. BARS performs the following tasks:

- Saves all settings that are configured with the Cisco Unified Communications Applications Backup and Restore Utility configuration. [Figure 1-1](#) shows the main window of the Backup and Restore System configuration.
- Verifies authentication information that you provide during the configuration of the backup.
- Backs up the data that you choose.
- Creates separate logs for the backup and the restore utilities.
- Creates a trace for each task.
- Restores the data that was backed up.



Note

Use the supported Cisco Backup and Restore System utility if you are running Cisco CallManager 3.3 or later.

If you are using an earlier version of Cisco CallManager, use the Cisco Unified Communications Applications Backup Utility (3.5).

BARS only restores files that were backed up with BARS.

Figure 1-1 Backup and Restore System Main Window



This section contains the following topics:

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System Requirements

Be sure the following BARS requirements are met:

- For a standalone installation, you must use Microsoft Windows 2000 or 2003 (server) and Internet Information Server (IIS) 5.0.
- Ensure that Cisco CallManager 3.3x or above (or one of its associated Cisco IP telephony applications) is installed.
- You must use SQL 2000 or above and MSDE 2000 for a standalone Customer Response Solutions (CRS) server to act as a backup target or for a standalone Cisco Emergency Responder (CER) server to act as a backup server for a Cisco CallManager 3.3, 4.0, or 4.1 cluster.

For high availability, CRS supports only MS SQL 2000.

Obtaining BARS

You can obtain BARS from the web or from the CD-ROM that may ship with the supported application. To obtain the latest version of BARS, always download it from the web. The version that is available on the CD-ROM may not provide the latest utility. For the location of the latest web version of BARS, see the [“Installation Procedure” section on page 2-2](#).

Cisco Unified Communications Applications That Use BARS

BARS supports the following applications:

- Cisco Unified CallManager
- Cisco Customer Response Solutions (CRS)
- Cisco CDR Analysis and Reporting (CAR)
- Cisco Emergency Responder (CER)

Versions of Applications That BARS Supports

BARS, version 4.0(12), supports the following Cisco Unified Communications applications, which serve as minimum requirements:

- Cisco CallManager 3.3 or later
- All Cisco CRS and Cisco CAR releases that are compatible with Cisco Unified CallManager

Be sure to check the Cisco Unified CallManager Compatibility matrix at the following URL for information about which components have been tested with various BARS releases:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_device_support_tables_list.html

**Note**

If you receive a warning while using BARS that indicates an incompatibility issue, double-check the matrix. If the matrix indicates that BARS has been tested with the component that the warning specifies, you can ignore the warning.

- Cisco Emergency Responder (CER) 1.2(1) or later

Obtaining Release Notes for BARS

The release notes document contains resolved/open caveats and workarounds that apply to this version of the utility. To obtain the document, click the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/bars/index.htm>

If you have an account with Cisco.com, you can use the Bug Toolkit to find caveats for this utility.

To use the Bug Toolkit, click http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

How the Backup Portion of the BARS Utility Works

This section describes important information about different components of the backup portion of BARS. This section includes the following topics:

- [About the Backup Server, page 1-5](#)
- [About Backup Targets and Data Source Servers, page 1-6](#)
- [About Backup Data and the Backup File, page 1-6](#)
- [About the Scheduler, page 1-6](#)
- [About the Backup Storage Destination, page 1-7](#)
- [About the Created Backup Log File, page 1-7](#)

About the Backup Server

Although any server in the Cisco Unified CallManager cluster can act as the backup server, Cisco recommends that you designate the publisher database server as the *backup server*, which is the server that performs the backup. You need one backup server within a Cisco Unified CallManager cluster. You designate a server as a backup server during BARS installation.

**Note**

The Cisco Unified CallManager publisher database contains all the information that you configure with Cisco Unified CallManager Administration, and the database updates each time that you make a change. Cisco strongly recommends that you make a backup of the Cisco Unified CallManager database, configuration, and directory information by using BARS every time that you make changes in Cisco Unified CallManager Administration. Each Cisco Unified CallManager cluster contains only one publisher database.

Other Related Definitions

In addition to *backup server*, two other related terms appear throughout this manual:

- **Backup target**—A server (not the backup server) that contains data that is to get backed up when a BARS backup is invoked. During BARS installation, you designate a server as either a backup server or backup target.
- **Data source server**—A server that you configure in the BARS user interface that contains data that is to get backed up. This includes all backup targets and can also include the backup server itself. [Chapter 3, “Backing Up the Data,”](#) uses this term in more detail.

Additional Information

For subscriber databases that are configured for backup, BARS backs up only TFTP files and CDR/CMR files.

However, you can configure BARS to back up more than one Cisco Unified Communications Applications Server, such as publishing database servers of other Cisco Unified CallManager clusters, Cisco CER servers, or Cisco Customer Response Solutions (CRS) servers.

To successfully back up the Cisco Unified CallManager database, the backup server and backup targets must exist in the same cluster and have the same version of BARS installed.

For backups to succeed for supported applications, the same version of Cisco Unified CallManager must exist on the backup server and all backup targets.

For more information about the backup server, see [Chapter 3, “Backing Up the Data.”](#)

**Note**

BARS will back up all nodes in a CRS 4.0 cluster, though you need to specify only one node in the cluster as data source server. That node will back up all the data in the CRS cluster and put the data on the BARS backup server.

About Backup Targets and Data Source Servers

A backup target contains the data to be backed up for Cisco Unified CallManager, CAR, CRS, or CER. You designate a server as a *backup target* during BARS installation if this server contains data to be backed up and is not the *backup server*. Ensure that backup targets are configured as data source servers during BARS configuration.

A Cisco Unified CallManager cluster can contain one or more data source servers.

When you add a data source server by using the BARS configuration window, you can enter the computer name, the IP address, or the fully qualified DNS name.

If a data source server is a remote server, you must provide a user name and password that has administrative privileges to the remote server.

**Caution**

Verify that the backup targets and backup server have the same version of BARS installed. Verify that the backup targets and backup server exist in the same cluster.

**Caution**

If the backup server and backup targets are not running and functional, the backup fails. Verify that all corresponding services, such as DC Directory, are running before you perform the backup. If the services are not running, the backup fails.

About Backup Data and the Backup File

During the backup, BARS sends the data to a staging directory, and, by default, one file that is called Backup $mm-dd-yy\#hh-mm$.tar (where mm specifies the month, dd specifies the day, yy specifies the year, hh specifies the hour, and mm specifies the minute) archives all data that is backed up from the data source servers that are listed in the BARS configuration windows.

For more information about the backup file, see [Chapter 3, “Backing Up the Data.”](#)

About the Scheduler

Using the Scheduler tab (click **Backup > Scheduler** on the BARS main window), you configure the day and time that you want the backup to run.

Cisco sets a default schedule for when the backup is to run. You can change the schedule at any time, restore the default schedule, and enable/disable the configured schedule.

The utility backs up all data at the same time. You cannot configure a separate schedule for each application.

You must enable the schedule, even if you choose to use the default schedule that Cisco automatically configures. See the [“Enabling the Scheduler”](#) section on page 3-5.

After you configure the backup settings, you can initiate a backup at any time. See the [“Performing a Backup Now”](#) section on page 3-8.

About the Backup Storage Destination

Each instance of BARS stores all data from all applications in the same backup location.

For the backup destination, Cisco strongly recommends that you specify a tape drive or a network directory, not a local directory. In addition, configure each instance of BARS that is running on the network (whether it is in the same cluster or not) with a unique storage location.

For more information about backup storage location, see the [“Configuring the Backup Storage Location” section on page 3-7](#).

About the Created Backup Log File

The backup process creates a backup log file with the following format:

Backup $mm-dd-yy$.txt

where mm specifies the month, dd specifies the day, and yy specifies the year

BARS puts this file in the following location on the backup server:

C:\Program Files\Common Files\Cisco\Logs\BARS\Backup

On the Configure Scheduler window, you can specify the number of days for which you want to retain log files. Log files exist for each day that you perform a backup.

For more information, see [“Accessing the Backup Log File After the Backup Completes” section on page 3-10](#).

What Data Does the BARS Utility Back Up?

If you configure the backup settings as instructed in this document, Cisco BARS automatically backs up the information that the following sections list for each supported application:

- [Cisco Unified CallManager Version 3.3\(x\) and 4.0\(x\)](#), page 1-7
- [CDR Analysis and Reporting \(CAR\)](#), page 1-8
- [Cisco Customer Response Solutions](#), page 1-9
- [Cisco Emergency Responder](#), page 1-11



Caution

The Cisco Unified Communications BARS utility does not back up any operating system files except Hosts and LMhosts files, if these files exist on the server.

Cisco Unified CallManager Version 3.3(x) and 4.0(x)

Cisco Unified CallManager Publisher Database

The following list shows the data that is backed up and restored for the Cisco Unified CallManager publisher database:

- Hosts and LMhosts files
- Latest Cisco Unified CallManager publisher database
- DC Directory LDAP directory

- For Cisco CallManager 3.3.x—DirectoryConfiguration.ini from C:\dcdsrvr.
For Cisco Unified CallManager 4.0(x) or later—UMDirectoryConfiguration.ini.
- Directory schema files—avvid_schemaV*.txt
- Publisher and subscriber configuration information to replication.ini file
- Cisco Unified CallManager version to version.ini file
- If the option to back up CDR is chosen, CDR database and CDR/CMR flat files from Local CDR Path
- TFTP files from C:\Program Files\Cisco\TFTPPath (the default path)
- TFTP files from alternate file locations
- Cisco Bulk Administration Tool (BAT) files and templates from C:\CiscoWebs\BAT, CSV files from C:\BAT and the BATversion.asp file
- HKLM\Software\Cisco Systems, Inc. (registry keys)
- Cisco Unified CallManager DSN
- Security files (certificates) from under C:\Program Files\Cisco\Certificates. This applies only to Cisco Unified CallManager 4.x or later.
- LDAPConfig.ini for Cisco Unified CallManager Assistant configuration
- Backup/Restore of Cisco Unified CallManger Related Locale files (*.csv files) from C:\ProgramFiles\CiscoCallManager\DBInstallCSV\Products

Cisco Unified CallManager Subscriber Database

The following list shows the data that is backed up and restored for the Cisco Unified CallManager subscriber database:

- LmHosts/Hosts files
- Publisher and subscriber configuration information to replication.ini file
- Cisco Unified CallManager version to version.ini file
- If the option to back up CDR is chosen, CDR database and CDR/CMR flat files from Local CDR Path
- TFTP files
- Cisco Unified CallManager DSN



Note

The BARS utility does not back up the Microsoft Active Directory or Netscape Directory Server database. This utility does not back up Cisco Multilevel Administration (MLA). Refer to the Cisco MLA documentation for information on how to back up that data.

CDR Analysis and Reporting (CAR)

The following list shows the data that is backed up and restored for CDR Analysis and Reporting (CAR):

- CAR (ART) database
- C:\Ciscowebs\ART\reports\Pregenerated
- HKLM\Software\Cisco Systems Inc.\ART (registry key)

Cisco Customer Response Solutions

The following list shows the data that is backed up and restored for Cisco Customer Response Solutions (CRS):

All Versions of Cisco CRS (with CRS server)

- LMHosts file and Hosts file
- \$winsysdir\$\Ccn\Ccndir.ini (backed up for CRS 3.5 and earlier)
- If present, C:\Program Files\Cisco\bin\SaEnvProperties.ini (backed up for CRS 3.5 and earlier)
- Files from C:\Program Files\Wfavvid, including Workflows (.aef), Java files(.java), Jar (.jar), Properties (.properties), and Audio (.wav) (backed up for CRS 3.5 and earlier)

Cisco CRS Release 3.0 and Later (with CRS server)

- LMHosts file and Hosts file
- \$winsysdir\$\Ccn\Ccndir.ini
- If present, C:\Program Files\Cisco\bin\SaEnvProperties.ini
- Files from C:\Program Files\Wfavvid, including Workflows (.aef), Java files(.java), Jar (.jar), Properties (.properties), and Audio (.wav)
- Files from C:\Program Files\Wfavvid, including XML (.xml), Class (.class), GSL (.gsl), and Digit (.digit), JobRunner.ini, Sch.ini
- War (.war) files from C:\Program Files\Wfavvid\tomcat_appadmin and below
- Cfg files (.CFG) from C:\Program Files\Cisco\Common
- Cfg files (.CFG) from C:\Program Files\Cisco\Desktop
- AlarmService.ini from C:\program Files\Cisco\AlarmService
- GSL and .Digit from user and system grammar paths
- Databases DB_CRA, DB_CRA_CCDR, SCHEDULERDB
- If Spanlink and ICD are installed:
 - Database FCRASSVR (if ICD is installed)
 - All files/folders under C:\Program Files\Cisco\Desktop_config\Config
 - All files/folders under C:\Program Files\Cisco\Desktop_config\Icons
 - All files/folders under C:\Program Files\Cisco\Desktop_config\Audio Files
- Audio files(.wav) from user and system prompt paths

Cisco CRS Release 3.1 and Later (with CRS server)

- LMHosts file and Hosts file
- \$winsysdir\$\Ccn\Ccndir.ini
- If present, C:\Program Files\Cisco\bin\SaEnvProperties.ini
- Files from C:\Program Files\Wfavvid, including Workflows (.aef), Java files(.java), Jar (.jar), Properties (.properties), and Audio (.wav)
- Files from C:\Program Files\Wfavvid, including XML (.xml), Class (.class), GSL (.gsl), and Digit (.digit), JobRunner.ini, Sch.ini
- War (.war) files from C:\Program Files\Wfavvid\tomcat_appadmin and below

- Cfg files (.CFG) from C:\Program Files\Cisco\Common
- Cfg files (.CFG) from C:\Program Files\Cisco\Desktop
- AlarmService.ini from C:\program Files\Cisco\AlarmService
- GSL and .Digit from user and system grammar paths
- Databases DB_CRA, DB_CRA_CCDR, SCHEDULERDB
- If Spanlink and ICD are installed:
 - Database FCRASSVR (if ICD is installed)
 - All files/folders under C:\Program Files\Cisco\Desktop_config\Config
 - All files/folders under C:\Program Files\Cisco\Desktop_config\Icons
 - All files/folders under C:\Program Files\Cisco\Desktop_config\Audio Files
- Audio files(.wav) from user and system prompt paths
- System DSN dsn_cra_hrdb
- If ICD is installed, back up the following directory (including all files/folders), if it exists: C:\Program Files\Cisco\Desktop_AudioFiles

Cisco CRS Release 3.1 and Later (RDB server)

- LMHosts file and Hosts file
- Databases – db_cra, db_cra_ccdr
- SQL jobs belonging to category ‘CRS-RemoteDB Synchronization’
- If ICD is installed, back up the following directory (including all files/folders), if it exists: C:\Program Files\Cisco\Desktop_AudioFiles

Cisco CRS Release 3.1 and Later (VOIP and Record server)

- C:\Program Files\Cisco\Desktop_Audio Files
- CFG files (*.CFG) from C:\program Files\Cisco\Desktop

Cisco CRS Release 4.0 and Later (with CRS server)

- Clusters, configurations, and applications profile in LDAP
- Workflow scripts that are already uploaded in LDAP
- Db_cra, db_cra_repository, FCRasSvr database in the cluster
- ICD configuration data (such as open LDAP and flat files)
- ICD recording files
- Windows hosts and lmhosts
- Cisco Unified CallManager JTAPI configuration (jtapi.ini)
- User prompts, grammars, and documents under c:\Program Files\wfavvid\Prompts\user and c:\Program Files\wfavvid\Grammars\user and c:\Program Files\wfavvid\Documents\user.

Cisco Emergency Responder

Cisco Emergency Responder Versions 1.2.1 and Above

The following list shows the data that is backed up and restored for Cisco Emergency Responder (CER):

- LmHosts and Hosts files from C:\Winnt\System32\Drivers\Etc
- Latest database CER12XX
- Registry key HKEY_LOCAL_MACHINE, “Software\Cisco Systems, Inc.\AVVID E911
- Replication information to Replication.ini
- Build Number and Minor Version to version.ini
- Folders—CallHistory, CERSysFiles, and so on, export, import, nena_msag_records
- Files—JTapi.jar from %CERRoot%\lib and SAenvProperties.ini from %Program Files%\Cisco\bin
- CER NT Users

Understanding How the Restore Utility Works

The BARS restore process allows you to recover all data that was compressed into the Backup*mm-dd-yy*.tar file.

BARS puts log files that were created during the restore process into the following folder:

C:\Program Files\Common Files\Cisco\Logs\BARS\Restore

For information on how the restore process works, what log files are created during the restore process, when to run a restore, and the procedures for running a restore, see [Chapter 4, “Restoring the Data.”](#)

**Note**

For a CRS 4.0 restore, [Chapter 4, “Restoring the Data,”](#) describes a separate restore process. For CRS versions prior to 4.0, the restore process remains the same as for other applications.

Location of Trace Files

BARS puts trace files that were created during the backup and restore processes into the following folder:

C:\Program Files\Cisco\Trace\BARS

These files will contain detailed information for each BARS operation. Refer to these files in case of a failed backup or restore process.

Setting the Trace Directory Path to Default C: Drive

If you are replacing a server with four drives, set the trace directory path on the server to the default C: drive before you back up your server. After you install Cisco Unified CallManager on the new server, you can configure the trace drive to collect trace files.

Use the following procedure to set the trace directory path to the default:

Procedure

- Step 1** In Cisco Unified CallManager Administration, choose **Application > Cisco Unified CallManager Serviceability**.
- The Cisco Unified CallManager Serviceability window displays.
- Step 2** Choose **Trace > Configuration**.
- Step 3** From the Server pane on the left side of the Trace Configuration window, click the server name or IP address of the four-disk drive server.
- Step 4** Click the Cisco CallManager service.
- The Trace Configuration window for the service and server displays.
- Step 5** In the upper, right corner of the window, click the **SDL Configuration** link.
- Step 6** In the Trace Directory Path field under Trace Output Settings, change the drive letter to **C:**.
- Step 7** Click Update.
-