



Backup and Restore System (BARS) Overview

The BARS utility provides a reliable and convenient way to perform regularly scheduled automatic or user-invoked backups of data for a variety of Cisco IP telephony products. BARS performs the following tasks:

- Saves all settings that are configured with the Cisco IP Telephony Applications Backup and Restore System (BARS) 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

Cisco strongly recommends that you use the supported Cisco Backup and Restore System (BARS) utility if you are running Cisco CallManager 3.3 or later.

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

BARS only restores files that were backed up with BARS.

Figure 1-1 Backup and Restore System Main Window



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System Requirements

Be sure the following BARS requirements are met:

- For a standalone installation, you must use Microsoft Windows 2000 (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 either a standalone Customer Response Solutions (CRS) server or a standalone Cisco Emergency Responder (CER) server to act as a backup server for a Cisco CallManager 3.3 or 4.0 cluster.

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](#).

IP Telephony Applications That Use BARS

BARS supports the following applications:

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

Versions of Applications That BARS Supports

Cisco IP Telephony BARS, version 4.0 (2), supports the following Cisco IP Telephony applications, which serve as minimum requirements:

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

To obtain compatibility information on CRA/CRS and Cisco CAR, see the *Cisco CallManager Compatibility Matrix* (refer to [Table 2 on page -ix](#)).

- 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://preview.cisco.com/en/US/docs/voice_ip_comm/cucm/bars/rel_notes/rn40_1BA.html

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 1-4](#)
- [About Data Source Server\(s\), page 1-5](#)
- [About Backup Data and the Backup File, page 1-5](#)
- [About the Scheduler, page 1-5](#)
- [About the Backup Storage Destination, page 1-6](#)
- [About the Created Backup Log File, page 1-6](#)

About the Backup Server

Although any server in the Cisco CallManager cluster can act as the backup server, Cisco recommends that you designate the publisher database server as the backup server. One backup server is required within a Cisco CallManager cluster. You designate a server as a backup server during BARS installation.



Note

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

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 IP Telephony Applications Server, such as publishing database servers of other Cisco CallManager clusters, Cisco CER servers, or Cisco Customer Response Solutions (CRS/CRA) servers.

To successfully back up the Cisco CallManager database, the backup server and data source servers (called *backup targets* during BARS installation) 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 the database must exist on the backup server and all data source servers.

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

About Data Source Server(s)

A data source server (or *backup target*) contains the data to be backed up for Cisco CallManager, CAR, CRS, or CER.

A Cisco CallManager cluster can contain zero, one or more data source servers. You designate a server as a data source server (*backup target*) during BARS installation.

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 data source server(s) and backup server have the same version of BARS installed. Verify that the backup data source server(s) and backup server exist in the same cluster.

**Caution**

If the backup server and data source server(s) 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.

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

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 $mm-dd-yy$.tar (where mm specifies the month, dd specifies the day and yy specifies the year) archives all data that is backed up from the data source servers listed in the BARS configuration windows.

**Caution**

BARS creates a unique backup file for each date. Each time that a backup is performed on the same date, the new backup file overwrites the existing backup file. If you want to retain previous backup data, you must archive or rename the existing backup tar file before the next backup is performed.

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

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.

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 the [“Accessing the Backup Log File After the Backup Completes” section on page 3-9](#).

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 CallManager Version 3.3\(x\) and 4.0\(x\), page 1-7](#)
- [Call Detail Records Administrative Reporting, page 1-8](#)
- [Cisco Customer Response Applications/Solutions, page 1-8](#)
- [Cisco Emergency Responder, page 1-10](#)



Caution

The Cisco IP Telephony BARS utility does not back up any operating system files except Host/LMhost, if these files exist on the server.

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

Cisco CallManager Publisher Database

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

- LmHosts/Hosts files
- Latest Cisco CallManager publisher database
- DC Directory LDAP directory
- For Cisco CallManager 3.3.x—DirectoryConfiguration.ini from C:\dcdsrvr.
For Cisco CallManager 4.0(x) or later—UMDirectoryConfiguration.ini.
- Directory schema files—avvid_schemaV*.txt
- Publisher and subscriber configuration information to replication.ini file.
- Cisco CallManager version to version.ini file.
- If the option to backup 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 on subscriber servers that are configured as backup data source servers (targets)
- TFTP files from alternate file locations
- Cisco Bulk Administration Tool (BAT) files—templates from C:\CiscoWebs\BAT, CSV files from C:\BAT and the BATversion.asp file.
- HKLM\Software\Cisco Systems, Inc. (registry keys)
- Cisco CallManager DSN

Cisco CallManager Subscriber Database

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

- LmHosts/Hosts files
- Publisher and subscriber configuration information to replication.ini file.
- Cisco CallManager version to version.ini file.

- If the option to backup CDR is chosen, CDR database and CDR/CMR flat files from Local CDR Path
- TFTP files
- Cisco 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.

Call Detail Records Administrative Reporting

The following list shows the data that is backed up and restored for Call Detail Records (CDR) Administrative Reporting (CAR):

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

Cisco Customer Response Applications/Solutions

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

All Versions of Cisco CRA (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)

Cisco CRA 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 CRA 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_CCDD, 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 CRA 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, backup the following directory (including all files/folders), if it exists: C:\Program Files\Cisco\Desktop_AudioFiles

Cisco CRA 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 Emergency Responder

Cisco Emergency Responder Versions 1.21 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, etc, 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.”](#)

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.