



Upgrading Cisco Access Registrar Software

Cisco Access Registrar 3.5 supports software upgrades from your previously installed Cisco AR software while preserving your existing configuration database.



Note

Configuration for Prepaid billing servers in Cisco AR 3.0 will no longer work in Cisco AR 3.5. If you have been using a Prepaid billing server in Cisco AR 3.0 and are upgrading your software to Cisco AR 3.5, you must remove the Prepaid billing server configuration before installing the Cisco AR 3.5 software. [“Configuring Prepaid Billing” section on page 4-17](#) provides detailed instructions for configuring Prepaid billing services for Cisco AR 3.5.

This chapter contains the following sections:

- [“Upgrade Overview”](#)
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- [“Using pkgrm to Remove Cisco AR Software” section on page 3-2](#)
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- [“Installing Cisco AR Software” section on page 3-5](#)
- [“Restarting Replication” section on page 3-12](#)

Upgrade Overview

The following steps describe what you must do to perform the software upgrade process:

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- | | |
|---------------|---|
| Step 1 | Ensure that replication is disabled.
Refer to Disabling Replication . |
| Step 2 | Remove the old software using the pkgrm command.
Refer to Using pkgrm to Remove Cisco AR Software . |
| Step 3 | If you plan to use the Cisco AR SNMP features, disable the current Sun SNMP daemon and prevent the Sun SNMP daemon from restarting after a reboot. |
| Step 4 | Decide where to install the Cisco Access Registrar 3.5 software.
The default installation directory for Cisco AR 3.5 software is /opt/CSCOar . If you are upgrading from Cisco AR version 1.7 or earlier, the default installation directory was /opt/AICar1 . |
| Step 5 | Decide if you want to preserve your existing configuration database. |

Preserving your existing configuration database is a compelling reason to upgrade rather than to start anew. The upgrade procedures in this chapter assume you want to preserve your existing configuration.

If you are upgrading from Cisco AR 1.7 or an earlier version, the default installation directory is **/opt/AICar1**. The default installation directory for Cisco AR 3.0 and above is **/opt/CSCOar**.

If your previous install directory was **/opt/AICar1**, you should use that directory to install Cisco AR 3.5. You might also rename the old directory, as in the following:

```
cd /opt
```

```
mv AICar1 CSCOar
```

- Step 6** Copy the Cisco Access Registrar 3.5 license file to a location on the Cisco AR workstation directory such as **/tmp**.
- Step 7** Use the **pkgadd** command to install the Cisco Access Registrar 3.5 software.
-

Disabling Replication

If you are using the Cisco AR replication feature, you must disable it before you begin the upgrade process of the upgrade will fail. When completed, refer to [“Restarting Replication” section on page 3-12](#) for the correct way to restart replication.

To ensure that replication is disabled, complete the following steps:

- Step 1** Login as admin and launch **aregcmd**.
- Step 2** Change directory to **/radius/replication** and examine the **RepType** property.

```
cd /radius/replication
```

```
[ //localhost/Radius/Replication ]
RepType = None
RepTransactionSyncInterval = 60000
RepTransactionArchiveLimit = 100
RepIPAddress = 0.0.0.0
RepPort = 1645
RepSecret = NotSet
RepIsMaster = FALSE
RepMasterIPAddress = 0.0.0.0
RepMasterPort = 1645
Rep Members/
```

Make sure that **RepType** is set to **None**.

- Step 3** If you made changes, issue the **save** command, then exit the **aregcmd** command interface.
-

Using pkgrm to Remove Cisco AR Software

There are two different Cisco AR software packages, **AICar1** and **CSCOar**. The **AICar1** package was used for Cisco AR 1.7 and earlier versions. The **CSCOar** package has been used for Cisco AR 3.0 and later versions.

Removing the AICar1 Package

The following steps describe how to remove the **AICar1** software package.

Step 1 Log in to the Cisco AR workstation as a root user, and enter the following command line:

```
pkgrm AICar1
```

The following package is currently installed:

```
AICar1          Access Registrar 1.7R7 [SunOS-5.8, ns40, gcc-O, official]
                (sparc) 1.7R7
```

Do you want to remove this package?

Step 2 Enter **y** or **yes** to continue removing the AICar1 package.

```
## Removing installed package instance <AICar1>
```

This package contains scripts which will be executed with super-user permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q]

Step 3 Enter **y** to continue removing the AICar1 package.

After you enter **y**, the AICar1 package should be removed without further interaction.

```
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
Waiting for these processes to die (this may take some time):
  AR MCD lock manager  (pid: 2971)
  AR MCD server        (pid: 2967)
  AR RADIUS server     (pid: 2973)
  AR Server Agent      (pid: 2965)
2967: terminated
2973: terminated
2971: terminated, wait status 0x000f
2965: terminated

Access Registrar Server Agent shutdown complete.
# removing /etc/rc.d files
# done with preremove.
## Removing pathnames in class <snmp>
/opt/AICar1/ucd-snmpp/share/snmp/snmpd.conf
.
. <several hundred lines deleted>
.
/opt/AICar1/bin/screen
/opt/AICar1/bin
/opt/AICar1/README
## Removing pathnames in class <none>
## Updating system information.

Removal of <AICar1> was successful.
hostname root /scratch##
```

Removing the CSCOar Package

The following steps describe how to remove the **CSCOar** software package.

Step 1 Log in to the Cisco AR workstation as a root user, and enter the following command line:

```
pkgrm CSCOar
```

The following package is currently installed:

```
CSCOar          Cisco Access Registrar 3.0R7 [SunOS-5.8, official]
                  (sparc) 3.0R7
```

Do you want to remove this package?

Step 2 Enter **y** or **yes** to continue removing the CSCOar package.

```
## Removing installed package instance <CSCOar>
```

This package contains scripts which will be executed with super-user permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q]

Step 3 Enter **y** to continue removing the CSCOar package.

After you enter **y**, the CSCOar package should be removed without further interaction.

```
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
Waiting for these processes to die (this may take some time):
  AR Server Agent      (pid: 28352)
  AR MCD server        (pid: 28354)
  AR RADIUS server     (pid: 28372)
  AR MCD lock manager  (pid: 28355)
28354: terminated, wait status 0x0000
28372: terminated, wait status 0x0000
28355: terminated, wait status 0x000f
28352: terminated, wait status 0x0000

Access Registrar Server Agent shutdown complete.
# removing /etc/rc.d files
# done with preremove.
## Removing pathnames in class <snmp>
/opt/CSCOar/ucd-snmp/share/snmp/snmpd.conf
/opt/CSCOar/ucd-snmp/share/snmp/snmpconf-data/snmptrapd-data/traphandle
.
.
. <several hundred lines deleted>
.
.
/opt/CSCOar/README
/opt/CSCOar/.system/screen
/opt/CSCOar/.system
## Removing pathnames in class <none>
## Updating system information.

Removal of <CSCOar> was successful.
hostname root ~##
```

Installing the Cisco AR License File

Cisco Access Registrar 3.5 uses a new licensing mechanism that enables you to activate different features in Cisco AR using a combination of different license keys. During system initialization, the Cisco AR server sets up the licensing data model and activates any features that are properly licensed.

You must have a license in a directory on the Cisco AR machine before you attempt to install Cisco Access Registrar 3.5 software. If you have not installed the Cisco AR license file before beginning the software installation, the installation process will fail.

You can store the Cisco AR license file in any directory on the Cisco AR machine. During the installation process, you will be asked the location of the license file, and the installation process will copy the license file to the **/opt/CSCOar/license** directory or to the base installation directory you specify when you install the software (if you are not using the default installation location).

The license file might have the name **ciscoar.lic**, but it can be any filename with the suffix **.lic**. To install the Cisco AR license file, you can copy and paste the text into a file, or you can simply save the file you receive in EMail to an accessible directory.

Installing Cisco AR Software

This section describes the software installation process and includes the following sections:

- [Deciding Where to Install](#)
- [Installing Cisco AR Software from CD-ROM](#)
- [Installing Downloaded Software](#)
- [Common Installation Steps](#)
- [Configuring SNMP](#)

Deciding Where to Install

Before you begin the software installation, you should decide where you want to install the new software. The default installation directory for Cisco AR 3.5 software is **/opt/CSCOar**. If you are upgrading from Cisco AR version 1.7 or earlier, the default installation directory was **/opt/AICar1**. You can preserve your existing configuration database by installing the new software in the old location, or you can rename the previous installation directory to the new package name before you begin the installation using commands like the following:

```
cd /opt
```

```
mv AICar1 CSCOar
```

Make this decision and take appropriate action before you proceed.

Installing Cisco AR Software from CD-ROM

The following steps describe how to begin the software installation process when installing software from the Cisco Access Registrar 3.5 CD-ROM.

-
- Step 1** Place the Cisco Access Registrar 3.5 software CD-ROM in the Cisco AR workstation CD-ROM drive.
- Step 2** Log in to the Cisco AR workstation as a root user, and enter the following command line:
- ```
pkgadd -d /cdrom/cdrom0/kit/solaris-2.8 CSCOar
```
- Step 3** Proceed to [Common Installation Steps](#).
- 

## Installing Downloaded Software

This section describes how to uncompress and extract downloaded Cisco Access Registrar 3.5 software and begin the software installation.

- 
- Step 1** Log in to the Cisco AR workstation as a root user.
- Step 2** Change directory to the location where you have stored the uncompressed tarfile.
- ```
cd /tmp
```
- Step 3** Use the following command line to uncompress the tarfile and extract the installation package files.
- ```
zcat CSCOar-3.5.1-sunos58.tar.gz | tar xvf -
```
- Step 4** Enter the following command to begin the installation:
- ```
pkgadd -d /tmp CSCOar
```
- where */tmp* is the temporary directory where you stored and uncompressed the installation files.
- Step 5** Proceed to [Common Installation Steps](#).
-

Common Installation Steps

This section describes the installation process immediately after you have issued the **pkgadd** command installing from CD-ROM or from downloaded software.

```
Processing package instance <CSCOar> from </tmp>
```

```
Cisco Access Registrar 3.5.1 [SunOS-5.8, official]
(sparc) 3.5.1
```

```
Copyright (C) 1998-2004 by Cisco Systems, Inc.
```

```
This program contains proprietary and confidential information.
```

```
All rights reserved except as may be permitted by prior written consent.
```

```
This package contains the Cisco Access Registrar Server and the
Cisco Access Registrar Configuration Utility. You can choose to
perform a Full installation, just install the Server, or just
```

install the Configuration Utility.

What type of installation: Full, Server only, Config only [Full] [?,q]

Step 6 For a full install, press **Enter**.

Where do you want to install <CSCOar>? [/opt/CSCOar] [?,q]

Step 7 Enter the location where the previous package was installed, or accept the default location of **/opt/CSCOar** if you moved the previous configuration database to the default directory.

The installation procedure requires the FLEXlm license file(s) location. An individual file or a directory can be supplied as input. License file(s) must have extension .lic

The file(s) will be copied to the installation license directory
/opt/CSCOar/license

To enable other features within this package, additional FLEXlm license files can be added to the license directory.

Enter FLEXlm license file(s) location? [/opt/CSCOar/license] [?,q]

Step 8 Enter the directory where you have stored the Cisco Access Registrar 3.5 license file.

Cisco AR provides extensions that can be written in Java. If you intend to write Java extensions, the Java Runtime Environment (JRE) is required.

If you are not using Java, press Enter/Return to skip this step.

If you already have JRE installed, please enter the directory where it is installed. If you do not, the JRE can be downloaded from:

<http://java.sun.com/products/archive>

Where is the current JRE installed? [?,q]

Step 9 If you are using Java, enter the directory location where the JRE is installed, otherwise press **Enter**.

If you are not using ODBC, press Enter/Return to skip this step. ORACLE installation directory is required for ODBC configuration. ORACLE_HOME variable will be set in /etc/init.d/arserver script

Where is ORACLE installed? [] [?,q]

Step 10 If you are using Open Database Connectivity, enter the location where you have installed Oracle, otherwise press **Enter**.

A local database from previous installation of the Access Registrar Server has been detected. It contains:

- * session information
- * all server object definitions
- * local UserLists

Do you want to preserve the local database in /opt/CSCOar [y,n,?,q]

Step 11 Because you are upgrading, you will want to preserve your local database. Enter **y** or **yes.**, then provide an administrator userID and password.

The upgrade procedure needs administrator access to your configuration so that it can upgrade it.

Enter an AR administrator username and password:

```

User: admin
Password:
Retype password:

Remove old sessions in /opt/CSCOar/data/radius [y,n,?,q] n

```

Step 12 Enter **Y** to remove old sessions or **N** to save old sessions.

```

## Executing checkinstall script.
Using </opt/CSCOar> as the package base directory.
## Processing package information.
## Processing system information.
    14 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

The following files are being installed with setuid and/or setgid
permissions:
    /opt/CSCOar/.system/screen <setuid root>
    /opt/CSCOar/bin/aregcmd <setgid staff>
    /opt/CSCOar/bin/radclient <setgid staff>

Do you want to install these as setuid/setgid files [y,n,?,q]

```

Step 13 Enter **Y** to install these files.

```

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <CSCOar> [y,n,?]

```

Step 14 Enter **Y** to continue with the software installation.

No further interaction is required; the installation process should complete successfully and the arservagt is automatically started. Sections that follow describe actions taken during the upgrade.

Installing Cisco Access Registrar 3.5.1 [SunOS-5.8, official] as <CSCOar>

```

## Installing part 1 of 1.
/opt/CSCOar/.system/screen
/opt/CSCOar/README
/opt/CSCOar/bin/arbug
.
. <several hundred lines deleted>
.
/opt/CSCOar/ucd-snmp/share/snmp/snmpd.conf
[ verifying class <snmp> ]
## Executing postinstall script.
# setting up product configuration file /opt/CSCOar/conf/car.conf
# linking /etc/init.d/arserver to /etc/rc.d files
# setting ORACLE_HOME variable in arserver

# Upgrade of the configuration db is in progress

# Password check in progress
# Wait.
# Password check complete

# flushing old replication archive

# Backup of configuration in progress
# Wait.....

```



```

# Backup complete

#####
#
# A backup copy of your original configuration has been
# saved to the file:
#
# /opt/CSCOar/temp/12661.origconfig-backup
#
# If you need to restore the original configuration,
# enter the following command:
#
# mcdadmin -coi /opt/CSCOar/temp/12661.origconfig-backup
#
#####

#####
#
# The upgrade process involves the use of mcdadmin and
# aregcmd. First a small set of updates are performed
# using mcdadmin. Then the vast majority of updates are
# performed using aregcmd.
#
#####

# Mcdadmin-level upgrade in progress
# Mcdadmin-level upgrade completed

# Aregcmd-level upgrade in progress
# Configuration DB analysis is in progress
# Wait....
# Analysis completed

# Deleting of obsolete tunnel attributes is in progress
# Wait.....
# Deletion completed

# Updating Port object definitions is in progress
# Wait.
# Update completed

# Add of new database elements is in progress
# Wait.....
# Add completed

# Search for obsolete VSA names is in progress
# Search completed

#####
#
# Sometimes VSAs get renamed from version to version of AR.
# The upgrade process does not automatically remove the
# old names. The upgrade process has generated a script
# to remove the old names. The script is located in:
#
# /opt/CSCOar/temp/12661.manual-deletes
#
# Review the script to make sure you are not using any of
# these old VSAs. Modify your configuration and your
# scripts to use the new names before you attempt to run
# the script.
#

```

```

# To run the removal script, type:
#
#       aregcmd -f /opt/CSCOar/temp/12661.manual-deletes
#
#####

#####
#
# VSAs for the old AR version are not updated
# automatically. The upgrade process generated a script
# to perform the update. The script is located in:
#
#       /opt/CSCOar/temp/12661.manual-changes
#
# Review the script to make sure it does not conflict with
# any of your VSA changes. Make sure you modify the script,
# if necessary, before you attempt to run it.
#
# To run the update script, type:
#
#       aregcmd -f /opt/CSCOar/temp/12661.manual-changes
#
#####

#####
#
# These upgrade messages are saved in:
#
#       /opt/CSCOar/temp/12661.upgrade-log
#
#####

Starting Access Registrar Server Agent..completed.
The Radius server is now running.

If SNMP needs to be reconfigured please follow the following
procedure:

(1) stop AR: /opt/CSCOar/bin/arserver stop
(2) edit: /cisco-ar/ucd-snmp/share/snmp/snmpd.conf
(3) restart AR: /opt/CSCOar/bin/arserver start

# done with postinstall.

Installation of <CSCOar> was successful.

```

Back-up Copy of Original Configuration

The upgrade process displays a message like the following to indicate where a copy of your original configuration has been stored.

```
#####
#
#  A backup copy of your original configuration has been
#  saved to the file:
#
#    /opt/CSCOar/temp/10062.origconfig-backup
#
#  If you need to restore the original configuration,
#  enter the following command:
#
#    mcdadmin -coi /opt/CSCOar/temp/10062.origconfig-backup
#
#####
```

Removing Old VSA Names

The upgrade process provides an analysis of the configuration database, addition of new database elements, and a search for obsolete VSA names. When this is complete, a message like the following is displayed:

```
#####
#
#  Sometimes VSAs get renamed from version to version of AR.
#  The upgrade process does not automatically remove the
#  old names. The upgrade process has generated a script
#  to remove the old names. The script is located in:
#
#    /opt/CSCOar/temp/10062.manual-deletes
#
#  Review the script to make sure you are not using any of
#  these old VSAs. Modify your configuration and your
#  scripts to use the new names before you attempt to run
#  the script.
#
#  To run the removal script, type:
#
#    aregcmd -sf /opt/CSCOar/temp/10062.manual-deletes
#
#####
```

At this point, you should examine the script produced by the upgrade process to make sure that your site is not using any of the old VSAs. In the example above, the script can be found at **/opt/CSCOar/temp/10062.manual-deletes**.



Note

The number preceding **manual.deletes** is produced from the PID of the upgrade process.

Modify your configuration and your scripts to use the new names before you attempt to run the script generated by the upgrade process.

VSA Update Script

The upgrade process builds a script you can use to update VSAs in your system.

```
#####
#
# VSAs for the old AR version are not updated
# automatically. The upgrade process generated a script
# to perform the update. The script is located in:
#
# /opt/CSCOar/temp/10062.manual-changes
#
# Review the script to make sure it does not conflict with
# any of your VSA changes. Make sure you modify the script,
# if necessary, before you attempt to run it.
#
# To run the update script, type:
#
# aregcmd -sf /opt/CSCOar/temp/10062.manual-changes
#
#####
```

Step 15 Review the script and make sure that the changes it will make do not conflict with any changes you might have made to the VSAs. Modify the script if necessary.

Step 16 Record the location of the upgrade messages for future reference.

```
#####
#
# These upgrade messages are saved in:
#
# /opt/CSCOar/temp/10062.upgrade-log
#
#####
```

Configuring SNMP

If you choose not to use the SNMP features of Cisco Access Registrar, the installation process is completed. To use SNMP features, complete the configuration procedure described in [Configuring SNMP](#), page 4-14.

Restarting Replication

Before you enable replication, you must first upgrade all replication slave servers to the same version of Access Registrar software as the master server. Do not enable replication on the master server until all slave servers have been upgraded.

Use the same process you used to upgrade the master server to upgrade any slave servers. If you retained your configuration on the master, retain the configuration on the slaves, too.

After the same version of Cisco AR software has been installed on all slave servers, you can enable replication on the master server again. After enabling replication on the master server, you can enable replication on each of the slave servers.