



# CHAPTER 1

## Overview

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This chapter provides an overview of the software installation process. You can install the CAR 4.2 software on a machine for the first time, or you can upgrade the existing Cisco AR software on a workstation to CAR 4.2.

You might receive the Cisco AR software in a packaged CD-ROM or you can download the software from the Cisco.com web site. [“Downloading Cisco Access Registrar Software” section on page 1-3](#) provides detailed information about downloading the CAR 4.2 software.

Before you install the CAR 4.2 software, you must copy a license file to the workstation where you will install the software. You will receive the license file as an e-mail attachment.

[“Cisco Access Registrar 4.2 Licensing” section on page 1-4](#) provides detailed information about the new licensing mechanism in Cisco AR.



**Note**

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Before you begin the software installation, ensure that your server has up to date OS software including all relevant or recommended patches.

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## Installation Dialog Overview

You use the **pkgadd** command to install CAR 4.2 software on Solaris 9 and Solaris 10 workstations. The Linux version of CAR 4.2 uses the RedHat Package Manager (RPM) and installs as a script. When you begin the software installation, the install process uses a dialog to determine how to install the software.



**Note**

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CAR 4.2 can be used with Solaris 9, Solaris 10, or Red Hat Enterprise Linux 4.0 32-bit operating system using kernel 2.6.9-22.0.2.EL or later, and Glibc version: glibc-2.3.4-2.13 or later.

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## Installation Type

The first question for you to consider is the type of installation to perform. Your choices are full or configuration only. The default and most common installation type is a full install.

The Full installation installs all parts of the CAR 4.2 software including the server components, the example configuration, and the configuration utility, **aregcmd**.

The Config only installation only installs the example configuration and the configuration utility, **aregcmd**. You can use one instance of **aregcmd** to maintain other servers running the server software.

## Installation Location

The next question in the installation dialog asks, “Where do you want to install?” The default location to install the software is **/opt/CSCOar**. You can choose to specify another location by entering it at this point. That directory would then be the base install directory, sometimes referred to as **\$INSTALL** or **\$BASEDIR**.

## License File Location

The installation dialog asks for the location of the license file.

```
Access Registrar requires FLEXlm license file to operate. A list
of space delimited license files or directories can be supplied as
input; license files must have the extension ".lic".
```

```
Where are the FLEXlm license files located? [] [?,q]
```

Cisco AR uses a licensing mechanism that requires a file to be copied from a directory on the Cisco AR workstation. Earlier versions of Cisco AR used a license key. You should copy the license file to the Cisco AR workstation before you begin the software installation. You can copy the license file to **/tmp** or another directory you might prefer. The installation process will copy the license file from the location you provide to **/opt/CSCOar/license**.

See “[Cisco Access Registrar 4.2 Licensing](#)” section on page 1-4 for more detailed information about the Cisco AR license file requirements.

## Java 2 Runtime Environment

The installation dialog asks for the location of the Java 2 Runtime Environment (J2RE). Cisco AR provides a web-based GUI that requires J2RE version 1.4.X to be installed on the Cisco AR server.

```
Where is the J2RE installed?
```

If you already have a Java 2 platform installed, enter the directory where it is installed. If you need the J2RE, you can download it from:

<http://java.sun.com>

## Open Database Connectivity

The installation dialog asks for the location of the Oracle installation directory, required for Open Database Connectivity (ODBC) configuration. The installation process uses this information to set the **ORACLE\_HOME** variable in the **/opt/CSCOar/bin/arsserver** script.

If you are not using ODBC, press **Enter** to skip this step.

**Note**

Oracle 8i client and 8g server are no longer supported in CAR 4.2. However, Oracle 9i and 10g client and Oracle 9i, 10g, and 11g servers are supported in AR4.2.

## Example Configuration

The installation dialog asks if you want to install the example configuration. You can use the example configuration to learn about Cisco AR and to refer to the examples that appear later in this document.

You can delete the example configuration at any time by running the command:

```
/opt/CSCOAr/bin/aregcmd -f /opt/CSCOAr/examples/cli/delete-example-configuration.rc
```

## Base Directory

The installation process asks “where do you want to install [/opt/CSCOAr]?”

If the base directory does not exist, the installation process asks if you want to create the selected base directory.

```
The selected base directory </opt/CSCOAr> must exist before
installation is attempted.
```

```
Do you want this directory created now [y,n,?,q]
```

The base directory must be created before you can install the software. If you do not agree to create the base directory at this point, the installation process terminates and no changes are made to the system. The default base directory is **/opt/CSCOAr**.

## setuid and setgid Permissions

The installation process asks before installing the following files with setuid and setgid permissions:

- /opt/CSCOAr/.system/screen <setuid root>
- /opt/CSCOAr/bin/aregcmd <setgid staff>
- /opt/CSCOAr/bin/radclient <setgid staff>

If you do not agree to install these files, the installation will continue, but you will only be able to run **aregcmd** as user **root**. Cisco recommends that you answer **Yes** to this question.

## Continue with Installation

The final question asked by the installation process dialog is, “Do you want to continue with the installation of <CSCOAr>?” Enter **Y** or **yes** to continue with the installation. No further user input is required.

## Downloading Cisco Access Registrar Software

Cisco AR software is available for download from <http://www.cisco.com> at the following URL:

<http://www.cisco.com/cgi-bin/tablebuild.pl/access-registrar-encrypted?sort=release>

The page at this URL lists all available versions of Cisco AR software available for download. The current versions are:

- **CSCOAr-4.2.1-sol9-k9.tar.gz** for Solaris 9

- **CSCOAr-4.2.1-sol10-k9.tar.gz** for Solaris 10
- **CSCOAr-4.2.1-lnx26-install-K9.sh** for RedHat Enterprise Linux (RHEL) 4.0

Complete the following steps to download the software.

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**Step 1** Create a temporary directory, such as **/tmp**, to hold the downloaded software package.

**Step 2** Enter the URL to the Cisco.com web site for Cisco AR software:

<http://www.cisco.com/cgi-bin/tablebuild.pl/access-registrar-encrypted?sort=release>

**Step 3** Click on the link for Cisco AR software:

**CSCOAr-4.2.1-sol9-k9.tar.gz** for the Solaris 9 version, or  
**CSCOAr-4.2.1-sol10-k9.tar.gz** for the Solaris 10 version, or  
**CSCOAr-4.2.1-lnx26-install-K9.sh** for the RedHat Enterprise Linux version.

The Software Center Download Rules page displays. You should read these rules carefully.



**Warning**

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**Before downloading this software please ensure that each of the following licenses and agreements are in place with Cisco Systems or a Cisco Systems authorized reseller.**

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These rules require you to acknowledge the following:

- A software license
- A valid service agreement

By clicking **Agree**, you confirm that the download of this file by you is in accordance with the requirements listed and that you understand and agree that Cisco Systems reserves the right to charge you for, and you agree to pay for, any software downloads to which you are not entitled. All Cisco Systems Operating System and application software licenses and downloads are governed by Cisco Systems' applicable End User License Agreement/Software License Agreement. By clicking **Agree** you further agree to abide by the terms and conditions set forth in Cisco Systems' End User License agreement/Software License Agreement and your service agreement.

If you click **Agree**, the End User License Agreement / Software License Agreement displays.

**Step 4** Read the End User License Agreement / Software License Agreement carefully, and if you accept the terms, click **Accept**.

The software Download page appears. In few seconds, a File Download dialog box appears. If it does not appear, click the link provided in the page.

**Step 5** Click **Save** and indicate where to save the file on your computer, such as **/tmp**, then click **Save** again.

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## Cisco Access Registrar 4.2 Licensing

CAR 4.2 uses a new licensing mechanism that enables you to activate all features in Cisco AR. During system initialization, the Cisco AR server sets up the licensing data model and activates all features.

In CAR 4.2, licensing is based on transactions per second (TPS). Every license will cover all features, but with restrictions enforced on the TPS. TPS is calculated based on the number of packets flowing into CAR irrespective of the feature.

CAR can be deployed in a two-tier architecture—front-end and back-end server. The front-end server performs AAA functions and it needs the base license and the TPS license. The back-end server performs session management functions and it needs the secondary license.

CAR can be deployed in an active/stand-by server combination (with Sun clustering solution). Active server performs all the functionality and it needs the base license and the TPS license. Only if the active server goes down, sun cluster will trigger the stand-by server. The stand-by server needs secondary license.

## License Slabs

The license slabs available in CAR 4.2 are listed in [Table 1](#).

**Table 1** CAR 4.2 License Slabs

Product	Description
AR-4.2-BASE-K9=	CAR base license. Limited to 100 transactions per second.
AR-4.2-100TPS=	CAR additional license per server. Limited to 100 transactions per second.
AR-4.2-200TPS=	CAR additional license per server. Limited to 200 transactions per second.
AR-4.2-500TPS=	CAR additional license per server. Limited to 500 transactions per second.
AR-4.2-1000TPS=	CAR additional license per server. Limited to 1,000 transactions per second.
AR-4.2-2000TPS=	CAR additional license per server. Limited to 2,000 transactions per second.
AR-4.2-3000TPS=	CAR additional license per server. Limited to 3,000 transactions per second.
AR-4.2-5000TPS=	CAR additional license per server. Limited to 5,000 transactions per second.
AR-4.2-SECONDARY=	CAR secondary license. Required for each secondary server—back-end or stand-by.
AR-4.2-UP-3.X-K9=	CAR upgrade license for R3.x Customers, with or without SAS contract. Limited to 1000 transactions per second.
AR-4.2-UP-4.X-K9=	CAR upgrade license for R4.0 and R4.1 Customers, without SAS contract. Limited to 1000 transactions per second.

## Getting Cisco Access Registrar 4.2 License

When you order the CAR 4.2 product, a text license file will be sent to you in e-mail. If you are evaluating the software, Cisco will provide you with an evaluation license.

If you decide to upgrade your Cisco AR software, a new text license file will be sent to you in e-mail.



### Note

While upgrading, the licenses of previous versions cannot be used with CAR 4.2. Backward compatibility support in terms of license will not be available in this version.

If you receive a Software License Claim Certificate, you can get your Cisco AR license file at one of the two following URLs:

- [www.cisco.com/go/license](http://www.cisco.com/go/license)

Use this site if you are a registered user of Cisco Connection Online.

- [www.cisco.com/go/license/public](http://www.cisco.com/go/license/public)

Use this site if you are not a registered user of Cisco Connection Online.

Within one hour of registration at either of the above web sites, you will receive your license key file and installation instructions in e-mail.

## Installing Cisco Access Registrar 4.2 Licenses

You must have a license in a directory on the Cisco AR machine before you attempt to install Cisco AR 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 `$INSTALL/license` 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 e-mail to an accessible directory.

## Adding Additional Cisco Access Registrar 4.2 Licenses

If you add additional licenses, you can open the file in `/opt/CSCOAr/license` and add additional lines to the license file, or you can create an additional license file to hold the new lines. If you add a new file, remember to give it a `.lic` suffix. You must restart the Cisco AR server for the new license to take effect. To restart the Cisco AR server, enter the following on the server command line:

```
/opt/CSCOAr/bin/arserver restart
```

## Sample License File

The following is an example of a CAR 4.2 license file.

```
INCREMENT AR-BASE-100TPS cisco 4.2 30-nov-2008 uncounted
  HOSTID=ANY \
  NOTICE="<LicFileID>2008090307</LicFileID><LicLineID>0</LicLineID> \
  <PAK>dummyPak</PAK>" SIGN=ABCDEF123456
INCREMENT AR-ADD-TPS cisco 4.2 30-nov-2008 uncounted \
  VENDOR_STRING=<count>100</count> HOSTID=ANY \
  NOTICE="<LicFileID>2008090307</LicFileID><LicLineID>1</LicLineID> \
  <PAK>dummyPak</PAK>" SIGN=ABCDEF123456
```

## Displaying License Information

Cisco AR provides two ways of getting license information using **aregcmd**:

- **aregcmd** command-line option
- Launching **aregcmd**

### aregcmd Command-Line Option

Cisco AR provides a new **-l** command-line option to **aregcmd**. The syntax is:

```
aregcmd -l directory_name
```

where *directory\_name* is the directory where the Cisco AR license file is stored. The following is an example of the **aregcmd -l** command:

```
aregcmd -l /opt/CSC0ar/license
Licensed Application: Cisco Access Registrar (Standard Version)
```

Following are the licensed components:

	NAME	VERSION	EXPIRY_INFO	COUNT
	====	=====	=====	=====
	AR-Base-100TPS	4.2	30-Nov-2008	100
	AR-ADD-TPS	4.2	30-Nov-2008	100

### Launching aregcmd

The Cisco AR server displays license information when you launch **aregcmd**, as shown in the following:

```
aregcmd
```

```
Cisco Access Registrar 4.2.1 Configuration Utility
Copyright (C) 1995-2008 by Cisco Systems, Inc. All rights reserved.
Logging in to localhost
```

```
[ //localhost ]
LicenseInfo = AR-Base-100TPS 4.2 (expires on 30-Nov-2008)
              AR-ADD-TPS 4.2 (expires on 30-Nov-2008)

Radius/
Administrators/
```

```
Server 'Radius' is Running, its health is 10 out of 10
```

