CISCO SYSTEMS

Installation Guide for
Cisco Broadband Access Center

Release 3.0

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
        800 553-NETS (6387)
Fax: 408 526-4100

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Preface

The *Installation Guide for Cisco Broadband Access Center* describes general requirements and installation procedures for Cisco Broadband Access Center, which is called BAC throughout this installation guide.

This chapter provides an outline of the other chapters in this guide, details information about related documents that support this BAC release, and demonstrates the styles and conventions used in the guide.

This chapter contains the following sections:

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Audience

System Integrators, network administrators, and network technicians use this installation guide to install BAC on a Solaris operating system.

How This Guide Is Organized

The major sections of this guide are:

Section	Title	Description
Chapter 1	Introduction	Describes general requirements for a successful installation of BAC.
Chapter 2	Before Installing Broadband Access Center	Describes factors to consider as you prepare to install BAC; for example, the individual components of BAC, the database requirements, and the order of operations for installing the software.
Chapter 3	Installing Broadband Access Center	Describes how to install the individual components of BAC from the GUI or the command line interface (CLI).
Chapter 4	Adding a DPE	Describes how to add a BAC component, the DPE, from the GUI or the CLI.
Chapter 5	Uninstalling Broadband Access Center	Describes how to uninstall BAC from the GUI or the CLI.
Chapter 6	Configuring the Syslog Utility to Receive BAC Alerts	Describes how to configure the syslog file to receive alerts after BAC is installed.
Appendix A	Reinstalling Broadband Access Center	Describes how to reinstall BAC from the GUI or the CLI in case of a corrupted installation.

Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	**boldface** font
Variables for which you supply values	*italic* font
Displayed session and system information	`screen` font
Information you enter	**`boldface screen`** font
Variables you enter	*`italic screen`* font
Menu items and button names	**boldface** font
Selecting a menu item in paragraphs	**Option > Network Preferences**
Selecting a menu item in tables	Option > Network Preferences

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Product Documentation

Note We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 1 describes the documentation that is available for this BAC release.

Table 1   Product Documentation

Document Title	Available Formats
Release Notes for Cisco Broadband Access Center, Release 3.0	• Printed document included with the product. • PDF on the product CD-ROM. • On Cisco.com: http://cisco.com/en/US/products/ sw/netmgtsw/ps529/ prod_release_notes_list.html
Installation Guide for Cisco Broadband Access Center, Release 3.0	• Printed document included with the product. • PDF on the product CD-ROM. • On Cisco.com: http://cisco.com/en/US/products/ sw/netmgtsw/ps529/ prod_installation_guides_list.html
Cisco Broadband Access Center Administrator's Guide, Release 3.0	• PDF on the product CD-ROM • On Cisco.com: http://cisco.com/en/US/products/ sw/netmgtsw/ps529/ prod_maintenance_guides_list.html
Cisco Broadband Access Center DPE CLI Reference, Release 3.0	• PDF on the product CD-ROM • On Cisco.com: http://cisco.com/en/US/products/ sw/netmgtsw/ps529/ prod_command_reference_list.html

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. This section explains the product documentation resources that Cisco offers.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/techsupport

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

The Product Documentation DVD is a library of technical product documentation on a portable medium. The DVD enables you to access installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the HTML documentation and some of the PDF files found on the Cisco website at this URL:

http://www.cisco.com/univercd/home/home.htm

The Product Documentation DVD is created monthly and is released in the middle of the month. DVDs are available singly or by subscription. Registered Cisco.com users can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at the Product Documentation Store at this URL:

http://www.cisco.com/go/marketplace/docstore

Ordering Documentation

You must be a registered Cisco.com user to access Cisco Marketplace. Registered users may order Cisco documentation at the Product Documentation Store at this URL:

http://www.cisco.com/go/marketplace/docstore

If you do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Documentation Feedback

You can provide feedback about Cisco technical documentation on the Cisco Technical Support & Documentation site area by entering your comments in the feedback form available in every online document.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/
products_security_vulnerability_policy.html

From this site, you will find information about how to do the following:

- Report security vulnerabilities in Cisco products
- Obtain assistance with security incidents that involve Cisco products
- Register to receive security information from Cisco

A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you have identified a vulnerability in a Cisco product, contact PSIRT:

- For emergencies only—security-alert@cisco.com

  An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

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Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.*x* through 9.*x*.

Never use a revoked encryption key or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/
products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT to find other means of encrypting the data before sending any sensitive material.

Product Alerts and Field Notices

Modifications to or updates about Cisco products are announced in Cisco Product Alerts and Cisco Field Notices. You can receive Cisco Product Alerts and Cisco Field Notices by using the Product Alert Tool on Cisco.com. This tool enables you to create a profile and choose those products for which you want to receive information.

To access the Product Alert Tool, you must be a registered Cisco.com user. (To register as a Cisco.com user, go to this URL:
http://tools.cisco.com/RPF/register/register.do) Registered users can access the tool at this URL:
http://tools.cisco.com/Support/PAT/do/ViewMyProfiles.do?local=en

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Note Use the **Cisco Product Identification Tool** to locate your product serial number before submitting a request for service online or by phone. You can access this tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link, clicking the **All Tools (A-Z)** tab, and then choosing **Cisco Product Identification Tool** from the alphabetical list. This tool offers three search options: by product ID or model name; by tree view; or, for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

> **Tip** Displaying and Searching on Cisco.com
>
> If you suspect that the browser is not refreshing a web page, force the browser to update the web page by holding down the Ctrl key while pressing F5.
>
> To find technical information, narrow your search to look in technical documentation, not the entire Cisco.com website. On the Cisco.com home page, click the **Advanced Search** link under the Search box and then click the **Technical Support & Documentation**.radio button.
>
> To provide feedback about the Cisco.com website or a particular technical document, click **Contacts & Feedback** at the top of any Cisco.com web page.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411
Australia: 1 800 805 227
EMEA: +32 2 704 55 55
USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing network is "down" or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of the network is impaired while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco channel product offerings. To order and find out more about the *Cisco Product Quick Reference Guide*, go to this URL:

  http://www.cisco.com/go/guide

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- Cisco Press publishes a wide range of general networking, training, and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the magazine for Cisco networking professionals. Each quarter, *Packet* delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can subscribe to *Packet* magazine at this URL:

  http://www.cisco.com/packet

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:

  http://www.cisco.com/ipj

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

  http://www.cisco.com/en/US/products/index.html

- Networking Professionals Connection is an interactive website where networking professionals share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

  http://www.cisco.com/discuss/networking

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Introduction

This chapter gives an overview of Broadband Access Center (BAC), and describes the factors that you must consider before installing BAC.

This chapter details:

Product Overview

BAC is a distributed and scalable application that automates the tasks of provisioning and managing customer premises equipment (CPE) in a broadband service provider network. It enables secure provisioning and management of CPE by using the DSL Forum's CPE WAN Management Protocol (CWMP), a standard defined in the TR-069 specification.

Based on open standards, BAC provides a simple and easy way to deploy high-speed data and voice technology.

BAC can be scaled to suit networks of virtually any size. It also offers high availability, made possible by the product's distributed architecture with centralized management.

Operating System Requirements

You must install BAC on Sun SPARC computers that run the Solaris 9 operating system.

Make sure you have the correct type and number of patches installed on your system before installing BAC. Table 1-1 lists the patches that are recommended when using Java Development Kit 1.4.2_11 for the Solaris 9 operating system.

Table 1-1   Patches Recommended for BAC Installation

Patch	Description
113886-26	OpenGL 1.3 patch for Solaris (32-bit)
113887-26	OpenGL 1.3 patch for Solaris (64-bit)
113096-03	X11 6.6.1 OWconfig patch
112785-44	X11 6.6.1 Xsun patch

Note   Before installing BAC, you should download and install the recommended patches from the Sun Microsystems support site.

Hardware Requirements

A BAC installation requires:

- A Regional Distribution Unit (RDU).

  The RDU is the primary server in a BAC deployment. It contains the central BAC database and is the sole entry point for processing requests from the application programming interface (API).

- One or more Device Provisioning Engines (DPEs).

  A DPE caches provisioning information and configuration requests, including the transfer of configuration files to devices. It is the major component of the provisioning group, handling all device interactions with the RDU.

Types of Installation

This guide describes the individual component installation. The installation program enables you to install one or both components of BAC: the RDU and the DPE.

Note This release does not feature a lab installation, but you can perform its equivalent by installing both components in a single machine. Cisco recommends that you have at least 350 MB of disk space available for the lab installation.

You can install the RDU and the DPE through the GUI or CLI. For specifics about component installation, see the "Installing BAC" section on page 3-3.

Before installing BAC, familiarize yourself with the installation startup processes and checklists described in .

Before Installing Broadband Access Center

This chapter provides the information that you need to prepare for a successful installation of Broadband Access Center (BAC).

This chapter describes:

BAC Components

The BAC component installation program prompts you to install either or both of these components:

- Regional Distribution Unit (RDU).

  The RDU is the primary server in the BAC provisioning system. You should install the RDU on a Solaris 9 server that meets the requirements described in the "Hardware Requirements" section on page 1-2.

  The RDU:

  - Generates instructions that direct responses from the provisioning group to various customer premises equipment (CPE).

  - Processes application programming interface (API) requests for all BAC functions.

  - Manages the BAC system.

  ✎
  Note   The installation program preloads required data into the RDU database, and starts the RDU daemon through the BAC watchdog process. The SNMP agent and the administrator GUI are installed for the RDU.
  For details on configuring the SNMP agent, refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0.* For information on the BAC watchdog process and the administrator GUI, refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0.*

- Device Provisioning Engine (DPE).

  BAC supports the deployment of a DPE on Sun SPARC computers running Solaris 9.

  The DPE:

  - Caches instructions generated at the RDU.

  - Manages various CPE protocol services. These services obtain their operating instructions from the instruction cache.

> **Note** The installation program installs a CLI on your system to help configure the DPE. The BAC watchdog process and the SNMP agent are installed for the DPE also. For information on configuring the DPE and configuring the SNMP agent, refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0*.

Installation and Startup Process

To ensure a smooth installation and startup process, complete the following order of operations:

Step 1 Determine the computers and the servers on which you are installing the individual components of BAC.

Step 2 Verify the file system block size of the directory in which you intend to install the BAC database and the database transaction log files (see the "Database Requirements" section on page 2-6).

Step 3 Review the installation checklist (see the "Installation Checklist" section on page 2-9).

Step 4 Install the RDU. Ensure that you:

- Know the target location for the following directories:
  - Home Directory
  - Data Directory
  - Database Transaction Logs Directory
- Verify the existence of a text file called *log.txt*, which indicates that errors occurred during the installation process. This file is located under the *BPR_HOME* directory.

Step 5 Install a DPE. Ensure that you know the target location for the following directories:

- Home Directory
- Data Directory

> ✎
> **Note** If you exit the BAC installation after the operating system database has
> been installed, you must uninstall the *BPR_HOME* and the *BPR_DATA*
> directories before installing the product again. (For information on
> uninstallation, see Uninstalling Broadband Access Center, page 5-1.)
> Also, stopping the installation mid-way does not generate the log file.
>
> If you rerun the installation without uninstalling the specified directories,
> you cannot change the location of the *BPR_DATA* or the *BPR_DBLOG*
> directories.

Step 6 After installing the RDU, ensure that you:

- Obtain a valid BAC license key for each technology that you provision,
  specifically for the CPE WAN Management Protocol and for the DPE
  component.

  > ✎
  > **Note** If you have not yet received your licenses, contact your Cisco
  > representative before proceeding.

- Verify that the RDU is running by launching the BAC administrator user
  interface.

  - To launch the administrator user interface, enter the administrator's
    location by using this syntax:

    ```
    http://machine_name/
    ```

    where *machine_name* identifies the computer on which the RDU is
    running.

    > ✎
    > **Note** To access the administrator user interface using HTTP over
    > SSL/TLS, enter `https://machine_name`.

    The server-side of the administrator application runs on a computer port.
    By default, this port number is set at 80 for HTTP and 443 for HTTP over
    SSL/TLS.

    The main login page appears.

- Change the BAC administrator password.

  - To change the password, enter the default username (**admin**) and password (**changeme**). Click **Login**.

    The Change Password screen appears and prompts you to change the default password. Enter a new password, and click **Login**.

Step 7   Optionally, configure the syslog file for alerts (see Configuring the Syslog Utility to Receive BAC Alerts, page 6-1).

✎
Note   You can set up the syslog file on any BAC component server.

Step 8   After installing the DPE, ensure that you:

- Change the DPE login password and the enable password from the CLI.

  - To change the login password, access the CLI in the enabled mode, and enter:

    ```
    dpe# password password
    ```

    where *password* identifies the new DPE password.

  - To change the DPE enable password, enter the following command:

    ```
    dpe# enable password password
    ```

    where *password* identifies the local configured password currently in effect or, optionally, provides a new password. If this parameter is omitted, you are prompted for the password.

    For more information, refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0*.

- Configure the DPE from the CLI. Refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0,* for these configuration instructions.

Step 9   Optionally, configure the syslog file for alerts (see Configuring the Syslog Utility to Receive BAC Alerts, page 6-1).

✎
Note   You can set up the syslog file on any BAC component server.

Database Requirements

Before you install BAC, remember:

- File system block size
- Large file support

File System Block Size

For optimum performance and reliability of the BAC database, configure the file system or systems that contain the database files and database transaction log files with an 8-KB block size or greater. If your system configuration does not support an 8-KB block size, then configure the block size in multiples of 8 KB; for example, 16 KB or 32 KB.

The installation program prompts you to specify a directory in which to install database files and database transaction log files; these directories are identified in BAC with system variables *BPR_DATA* and *BPR_DBLOG*, respectively.

To verify that a directory resides on a file system with a minimum 8-KB block size:

Step 1 Run the UNIX **mount** command without any parameters to determine on which file system device the directory resides. The default directory is */var/CSCObac*.

For example:

```
# mount
/var on /dev/dsk/c0t0d0s4
read/write/setuid/intr/largefiles/onerror=panic/dev=2200004 on Mon Nov
26 08:07:53
```

In this example, the file system device is */dev/dsk/c0t0d0s4*.

Step 2 To determine the file system block size, use the **df** command.

For example:

```
# df -g /dev/dsk/c0t0d0s4
/var              (/dev/dsk/c0t0d0s4 ):     8192 block size
1024 frag size
961240 total blocks   851210 free blocks      755086 available
243712 total files
239730 free files      35651588 filesys id
```

```
ufs fstype          0x00000004 flag          255 filename length
```

In this example, the block size is 8192 bytes, which is 8 KB. The block size of the selected directory, therefore, is correct.

Large File Support

Ensure that the file system in which you place database files is configured to support files larger than 2 GB.

To verify large file support:

Step 1   Run the UNIX **mount** command without parameters.

Step 2   Note whether the intended file system contains the keyword **largefiles**.

For example:

```
# mount
/var on /dev/dsk/c0t0d0s4
read/write/setuid/intr/largefiles/onerror=panic/dev=2200004 on Mon Nov
26 08:07:53
```

In this example, the output contains the keyword **largefiles**. This file system, therefore, can support files greater than 2 GB.

Required Ports Information

Before installation, you must determine the ports on which the BAC components, the RDU and the DPE, listen during communication with each other or with CPE.

The installation program checks for the availability of all ports: both configurable and nonconfigurable.

If the port that you have specified is unavailable, the installation program displays a message; otherwise, the message similar to the following one appears:

```
Not a valid port number
```

In the case of a nonconfigurable port, the installation program notifies you and exits the program without making any changes to the system.

Table 2-1 lists the required ports and their default values:

Table 2-1   Default Ports Used by BAC Components

Component	Default Port Number	Protocol	Configurable?	Used by ...
RDU	49187	TCP	Yes	RDU process
RDU/DPE	49888	TCP	No	Process Watchdog
RDU/DPE	49887	TCP	No	SNMP Agent
RDU	80	TCP	Yes	Administrator user interface (HTTP)
RDU	443	TCP	Yes	Administrator user interface (HTTP over SSL/TLS)
DPE	49186	UDP	Yes	DPE process
DPE	2323	TCP	Yes	DPE CLI
DPE	7547	TCP	Yes	CWMP Service 1
DPE	7548	TCP	Yes	CWMP Service 2
DPE	7549	TCP	Yes	HTTP File Service 1
DPE	7550	TCP	Yes	HTTP File Service 2

Note   BAC supports two instances each for the CWMP service and the HTTP file service; so you can configure different options for each service.
For instance, CWMP service 1 is, by default, configured to require HTTP digest authentication; but without HTTP over the SSL/TLS protocol. This service is configured to run on port 7547 and is enabled by default. CWMP service 2 is configured on port 7547 with HTTP over SSL/TLS; but is disabled by default. You can reconfigure any of these defaults for each service to suit your requirements.

Installation Checklist

Before you run the installation software, ensure that you are ready by verifying with the following checklist. Also, check with the information detailed in the "Installation Notes" section on page 3-2.

1. Verify the prerequisite system hardware and software requirements described in the "Introduction" section on page 1-1.

2. Ensure that you have *root* access to the computers on which you intend to install BAC components.

3. Have your BAC license key or keys at hand. You need a valid license key for each technology that you want to provision with BAC, namely CWMP and the DPE.

4. Determine the home directory (*BPR_HOME*) on which you want to install the BAC component or components. The default directory is */opt/CSCObac*.

   ✎ **Note** Cisco recommends that you have at least 350 MB of disk space available for the home directory. For detailed information, see the "Installation Notes" section on page 3-2.

5. For the RDU, determine where you want to install the data directory (*BPR_DATA*) and the database transaction logs (*BPR_DBLOG*). The default directory is */var/CSCObac*.

   ✎ **Note** Cisco recommends that you install the database transaction logs on a different physical disk than the home directory or the data directory. For detailed information, see the "Installation Notes" section on page 3-2.

6. For the RDU, select the shared secret password that the BAC servers on your network use as a token to authenticate communication with one another. The shared secret password is the same for all BAC servers on your network.

Installing Broadband Access Center

This chapter describes how to work with the Broadband Access Center (BAC) program to install the BAC components: the RDU and the DPE.

You can install the BAC components from the GUI or CLI. Both interfaces are supplied with the product.

Caution   If you interrupt the installation program after it begins copying files, you must manually clean up the locations of copied files, specifically *BPR_HOME*. For detailed information, see Uninstalling Broadband Access Center, page 5-1.

This chapter includes:

- Installation Notes, page 3-2
- Installing BAC, page 3-3

Installation Notes

This section describes some notes and recommendations to consider before and during the installation process. Use this information along with the installation startup processes and checklists described in Before Installing Broadband Access Center, page 2-1.

- Be sure to install the RDU before installing the DPE. If you choose to install the DPE without installing the RDU, or without an RDU already installed on your system, the DPE fails to function normally.

- When the program prompts you to enter a value during installation, note that the values in square brackets are default values. If you press **Enter** without entering fresh values, the program takes the default value.

- The installation program, by default, installs the data directory (*BPR_DATA*) in a location other than that of the home directory (*BPR_HOME*). The default location for the data directory is */var/CSCObac*.

  Cisco recommends that the data directory be on a different physical disk than the home directory; for example, */var/disk0/CSCObac*. However, it is not required. The disk should have at least 1 GB and up to 30 GB of free space.

  The directory specified becomes the top-level directory under which the installation program creates a number of subdirectories; for example, */var/disk0/CSCObac/rdu/db*.

- The installation program, by default, installs the database transaction logs directory (*BPR_DBLOG*) in the same directory as the data directory (*BPR_DATA*). The default location for the database transaction logs is */var/CSCObac*.

  Cisco recommends that you locate the database transaction logs directory on the fastest disk on the system. Also, ensure that 1 GB disk space is available.

- You must enter a listening port number for the RDU. This port is the interface that the RDU uses to communicate with the DPE. The default port is 49187.

- During installation, the program generates a definitions file (*bpr_definitions.sh*), which is copied to the target home directory (*BPR_HOME*). The definition file stores the values for the:

  - installation location (*BPR_HOME*)

  - data location (*BPR_DATA*)

  - database transactions log location (*BPR_DBLOG*)

- BAC class path (BPR_CP)
- all installed components (COMPONENTS)

The *bpr_definitions.sh* file is updated whenever new components are installed or added.

Installing BAC

This section describes the procedures that you follow to install the individual components of BAC: the RDU and the DPE.

Note   Before installing the DPE, you must install the RDU, or have the RDU already installed on your system. In the absence of the central server, the DPE fails to function normally.

You can install the BAC components from the GUI or CLI, as described in:

- Installing the RDU, page 3-3
- Installing the DPE, page 3-9

Installing the RDU

This section explains how to install the RDU. Install the RDU server on a Solaris 9 server that meets the requirements described in the "Hardware Requirements" section on page 1-2.

See the following sections for instructions on installing the RDU from the GUI or CLI:

- Installing the RDU from the CLI, page 3-4.
- Installing the RDU from the GUI, page 3-7.

Installing the RDU from the CLI

Complete the following procedure to install the RDU from the CLI:

Step 1 Log in to the intended BAC host as *root*.

Step 2 At the Solaris system prompt, change directory to your CD-ROM drive or other installation media. The installation program, *setup.bin*, is at the root of this drive.

Step 3 Enter this command to start the installation program:

> **./setup.bin -console**

The installation program verifies that you have installed the correct patches to the Solaris operating system. When the verification is complete, the program displays welcome information.

Step 4 Press **Enter** to continue.

Step 5 When the installation program prompts you to select one or more components, at the RDU prompt, enter **y** and press **Enter**.

For example:

```
Installation Components

Select one or more components to install BPR.
    Regional distribution unit (RDU) (y/n/?) [no] y
    Device Provisioning Engine (DPE) (y/n/?) [no] n
```

Step 6 The program prompts you to confirm the components that you want to install. Enter **y** and press **Enter** to continue.

Step 7 The program displays a message that it is starting validation of the individual component installation parameters. Press **Enter** to continue.

For example:

```
Starting the individual component installation parameters validation.
    Press Enter to Continue or 'q' to Quit:

Validating the individual component installation parameters - Please
wait.
```

Step 8 The Home Directory Destination prompt appears. To accept the default directory, */opt/CSCObac*, press **Enter**; or enter a different directory.

For example:

```
Home Directory Destination

    Home Directory Destination [/opt/CSCObac]
```

When the program asks if you want to create the default installation directory, press **y** and **Enter**.

For example:

```
Choosing yes will create the directory during the installation.
Choosing no will allow a different directory to be chosen.

    The directory /opt/CSCObac does not exist. Create it? (y/n/?)
    [yes]
```

Step 9   Confirm the directory; press **y** and **Enter**.

Step 10   The data directory destination prompt appears. To accept the default directory, */var/CSCObac*, press **Enter**; or enter another directory.

For example:

```
Data Directory Destination

    Data Directory Destination [/var/CSCObac] /var/disk0/CSCObac
```

Step 11   To confirm the directory, press **y** and **Enter**.

Step 12   You are then prompted to enter the database transaction logs destination. To accept the default directory, */var/CSCObac*, press **Enter**; or enter another directory.

For example:

```
Logs Directory Destination

Logs Directory Destination [/var/CSCObac] var/disk1/CSCObac
```

To confirm the directory, enter **y** and press **Enter**.

Step 13   The program then prompts for the Regional Distribution Unit Host/Port. Enter the listening port for the RDU. To accept the default value, 49187, press **Enter**; or enter another port number.

⚠️

Caution   If you change the default listening port value, ensure that the new value does not conflict with any existing port assignments. Also, ensure that you configure all DPEs with the correct RDU port number. Refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0,* for details on configuring the DPE.

The installation program obtains the IP address of the RDU automatically. You do not need to enter this value.

For example:

```
Regional Distribution Unit Host/Port

Enter the IP address and the listening port of the regional
distribution unit (RDU) associated with this installation.

Enter the Host/IP address and address of the listening port
for the RDU.
    RDU Listening Port [49187]
```

Step 14   Confirm the listening port number. Enter **y** and press **Enter**.

Step 15   Enter the shared secret password that you want to use for authentication between the BAC servers; the default password is **secret**. Press **Enter** to continue.

✎

Note   You must use the same shared secret password for all RDUs and DPEs in your network.

For example:

```
Shared Secret Password

Enter the password to be used for authentication
between the BAC servers.

If you are performing a lab installation, then the password will be
used for all the servers. If this is a component installation, then
the password you enter must be the same as the components previously
installed.

    Enter the Shared Secret Password [secret]
```

Press **Enter** to continue the installation.

Step 16 The program displays the installation parameters that you selected. Enter **y** and press **Enter** to confirm the parameters, and install the RDU component.

For example:

```
The Component Installation will use the following parameters
to install the RDU component:

Home directory:/opt/CSCObac
Data directory:/var/disk0/CSCObac
Logs directory:/var/disk1/CSCObac
RDU Port:49187
```

Step 17 The program displays the Installation Summary when installation is complete.

For example:

```
Installation Summary

The installation program has successfully installed Cisco Broadband
Access Center (BAC) on your system.
```

Press **Enter** to exit the installation program.

Installing the RDU from the GUI

Complete the following procedure to install the RDU from the GUI:

Step 1 By using an X-Windows client, log in to the computer on which you intend to install the BAC components, with *root* access.

Step 2 At the Solaris system prompt, navigate to the directory containing the *setup.bin* file. If you are using the BAC CD-ROM, you will find *setup.bin* at the root of your CD-ROM drive.

Step 3 Enter this command to start the installation program:

> **./setup.bin**

The installation program verifies that you have installed the correct patches on the Solaris operating system. When the verification is complete, the program displays welcome information.

Step 4 Click **Next**. The Installation Components screen appears.

Step 5   On the Installation Components screen, check the **Regional Distribution Unit** check box. Click **Next.**

Step 6   The Home Directory Destination screen appears. To choose the location of the home directory (*BPR_HOME*), accept the default directory (*/opt/CSCObac*). Or, enter a new target directory. You can use the **Browse** button to select a new directory. Click **Next**.

Step 7   The installation program displays the Create Directory dialog box. Click **Yes** to continue.

Step 8   The Data Directory Destination screen appears. To install the data directory (*BPR_DATA*), accept the default directory (*/var/CSCObac*). Or, enter a new directory. You can use the **Browse** button to select a new directory. Click **Next**.

Step 9   The Database Transaction Logs Destination screen appears. Enter the target directory to install the transaction logs (*BPR_DBLOG*). The default directory is */var/CSCObac*. Or, use the **Browse** button to select a new directory. Click **Next**.

Step 10   The Regional Distribution Unit Host/Port screen appears. Accept the default listening port number (49187). Or, enter a new port number. Click **Next**.

⚠

Caution   If you change the default listening port value, ensure that the new value does not conflict with any existing port assignments. Also, ensure that you configure all DPEs with the correct RDU port number. Refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0,* for details on configuring the DPE.

The installation program obtains the IP address of the RDU automatically. You do not need to enter this value.

Step 11   The Shared Secret Password screen appears. Enter and confirm the shared secret password. Remember to use the same shared secret for all the RDUs and the DPEs in your network. Click **Next**.

Step 12 The Installation Parameters screen appears. This screen identifies the values that you have entered in the previous screens. To change any of the values entered previously:

a. Click **Back** until the correct screen appears.

b. Make the necessary changes.

c. Click **Next** repeatedly until you return to this screen.

Or, just click **Next**.

Step 13 When the installation is complete, the Installation Summary screen appears. Click **Finish** to exit the installation program.

Installing the DPE

This section explains the procedures that you follow to install the DPE from the GUI or CLI.

- Installing the DPE from the CLI, page 3-9
- Installing the DPE from the GUI, page 3-13

Installing the DPE from the CLI

Note Before proceeding to install the DPE, ensure that the RDU resides on your system. For details on installing the RDU, see the "Installing the RDU from the CLI" section on page 3-4.

To install the DPE from the CLI:

Step 1 Log in to the intended BAC host as *root*.

Step 2 At the Solaris system prompt, change directory to your CD-ROM drive or other installation media. The installation program, *setup.bin*, is at the root of this drive.

Step 3 Enter this command to start the installation program:

```
> ./setup.bin -console
```

The installation program verifies that you have installed the correct patches to the Solaris operating system. When the verification is complete, the program displays welcome information.

Step 4   Press **Enter** to continue.

Step 5   When the installation program prompts you to select one or more components, press **y** and **Enter** at the DPE prompt.

For example:

```
Installation Components

Select one or more components to install BPR.

    Regional Distribution Unit (RDU) (y/n/?) [no] n
    Device Provisioning Engine (DPE) (y/n/?) [no] y
```

Step 6   The program prompts you to confirm the components that you want to install. Enter **y** and press **Enter** to continue.

Step 7   The program displays a message that it is starting individual component validation. Press **Enter** to continue.

Validation involves checking to verify that the correct patches have been installed. If they are not, error messages appear.

Step 8   When validation is complete, the program prompts you to enter the home directory destination. To accept the default home directory destination (*/opt/CSCObac*), press **Enter**, or enter another directory.

When the program asks if you want to create the default installation directory, press **y** and **Enter**.

For example:

```
Home Directory Destination

    Home Directory Destination [/opt/CSCObac]

Choosing yes will create the directory during the installation.
Choosing no will allow a different directory to be chosen.

    The directory /opt/CSCObac does not exist. Create it? (y/n/?)
    [yes]
```

Step 9   Confirm the directory; enter **y** and press **Enter**.

Step 10   The program prompts you to enter the data directory destination. To accept the default data directory destination (*/var/CSCObac*), press **Enter**, or enter another directory.

For example:

```
Data Directory Destination

    Data Directory Destination [/var/CSCObac]
```

Step 11   To confirm the target directory, enter **y** and press **Enter**.

Step 12   You must then enter the listening port and the IP address for the RDU. To enter the IP address of the RDU, enter the hostname of the system on which the RDU is installed. Press **Enter**.

Step 13   To accept the default listening port number for the RDU, 49187, press **Enter**; or enter another port number.

⚠
Caution   If you change the default listening port value, ensure that the new value does not conflict with any existing port assignments. Also, ensure that you configure all DPEs with the correct RDU port number. See the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0,* for more information about configuring the DPE.

For example:

```
Regional Distribution Unit Host/Port

Enter the IP address and the listening port of the regional
distribution unit(RDU)associated with this installation.

Enter the Host/IP address and address of the listening port
for the RDU.
    RDU IP Address [abc.xyz.com]
    RDU Listening Port [49187]
```

Step 14   The program then prompts you to confirm the IP address and the listening port number. Press **y** and **Enter**.

Step 15   Enter the shared secret password that you want to use for authentication between the BAC servers; the default password is **secret**. Press **Enter** to continue.

✎

Note You must use the same shared secret password for all RDUs and DPEs in your network.

For example:

```
Shared Secret Password

Enter the password to be used for authentication
between the BAC servers.

If you are performing a lab installation, then the password will be
used for all the servers. If this is a component installation, then
the password you enter must be the same as the components previously
installed.

    Enter the Shared Secret Password [secret]
```

Step 16 The program displays the installation parameters that you selected. Enter **y** and press **Enter** to confirm the parameters, and install the DPE.

For example:

```
Installation Parameters

This screen shows the installation parameters that you have chosen:

========== Confirmation ==========
The Component Installation will use the following parameters
to install the DPE component:

    Home directory: /opt/CSCObac
    Data directory: /var/CSCObac
```

Step 17 The program displays the Installation Summary when installation is complete.

For example:

```
Installation Summary

The installation program has successfully installed
Cisco Broadband Access Center (BAC) on your system.
```

Press **Enter** to exit the installation program.

Installing the DPE from the GUI

> **Note** You must install the RDU before installing the DPE. For details on installing the RDU, see the "Installing the RDU from the GUI" section on page 3-7.

Complete the following procedure to install the DPE from the GUI:

Step 1   By using an X-Windows client, log in to the computer on which you intend to install the BAC components, with *root* access.

Step 2   At the Solaris system prompt, navigate to the directory containing the *setup.bin* file. If you are using the BAC CD-ROM, you will find *setup.bin* at the root of your CD-ROM drive.

Step 3   Enter this command to start the installation program:

> `./setup.bin`

The installation program verifies that you have installed the correct patches on the Solaris operating system. When the verification is complete, the program displays welcome information.

Step 4   Click **Next**. The Installation Components screen appears.

Step 5   On the Installation Components screen, check the **Device Provisioning Engine** check box, then click **Next** to continue.

Step 6   The Home Directory Destination screen appears. Enter the path for the home directory (*BPR_HOME*). The default directory location is */opt/CSCObac*. Or, click the **Browse** button to locate the correct directory. Click **Next**.

Step 7   The installation program performs some validation and, if necessary, prompts you to create the directory. Click **Yes**.

Step 8   The Data Directory Destination screen appears. To install the data directory (*BPR_DATA*), accept the default directory (*/var/CSCObac*), or enter a new directory. You can use the **Browse** button to select a new directory. Click **Next**.

Step 9   The Regional Distribution Unit Host/Port screen appears. Enter the hostname of the machine on which the RDU is installed. For the listening port number, you can use the default port, 49187, or enter a new port number. Click **Next**.

⚠️

Caution   If you change the default listening port value, ensure that the new value does not conflict with any existing port assignments. Also, ensure that you configure all DPEs with the correct RDU port number. Refer to the *Cisco Broadband Access Center DPE CLI Reference, Release 3.0,* for details on configuring the DPE.

Step 10   The Shared Secret Password screen appears. Enter the shared secret password and confirm it. Click **Next**.

Step 11   The Installation Parameters screen appears. After verifying that the parameters are correct, click **Next** to install the DPE, or **Back** to change the parameters.

Step 12   When installation is complete, the Installation Summary screen appears. Click **Finish** to end the installation process and exit the installation program.

Adding a DPE

This chapter describes how to install the Broadband Access Center (BAC) Device Provisioning Engine (DPE) on a system in which the other component, the RDU, has already been installed.

This situation arises largely in a lab deployment, where, for the purposes of testing, both BAC components are installed on a single machine.

Note Before proceeding to add the DPE, ensure that the RDU and the DPE belong to the BAC 3.0 version.

When the installation program detects the presence of an RDU on your system, it does not allow you the option of adding the RDU. It prompts you to add or install only the DPE.

Note A successful DPE installation requires an RDU. You must, therefore, have the RDU already installed on your system (see the "Installing BAC" section on page 3-3).

If you choose to add the RDU to a DPE that has already been installed on your system, the DPE fails to connect to the RDU. Subsequently, it does not provision the devices in your network.

Unlike the procedure in a fresh installation, while adding a DPE, you cannot install the home (*BPR_HOME*) and data (*BPR_DATA*) directories in a location of your choice. The directories are installed only in the location where you chose to install the RDU directories.

You can add the DPE using the GUI or the CLI.

This section provides the information about how to successfully add a DPE:

Adding a DPE from the CLI

To install the DPE from the CLI:

Step 1   Log in to the intended BAC host as *root*.

Step 2   At the Solaris system prompt, change directory to your CD-ROM drive or other installation media. The installation program, *setup.bin*, is at the root of this drive.

Step 3   Enter this command to start the installation program:

```
> ./setup.bin -console
```

Step 4   The installation program verifies that you have installed the correct patches to the Solaris operating system. When the verification is complete, the program displays welcome information. Press **Enter** to continue.

Step 5   When the installation program prompts you to select one or more components, enter **y** and press **Enter** at the DPE prompt. The installation program prompts you to add only the DPE.

For example:

```
Installation Components

Select one or more components to install BAC.

     Device Provisioning Engine (DPE) (y/n/?) [no] y
```

Step 6   Confirm the components that you want to install; enter **y** and press **Enter** to continue.

Step 7   The program displays a message that it is starting individual component validation. Press **Enter** to continue.

Step 8   When validation is complete, the program prompts you to enter the IP address and the listening port of the RDU. Press **Enter** to accept the hostname of the RDU.

> **Note** The installation program obtains the IP address of the RDU automatically. You do not need to enter this value.

Step 9 To accept the default port number, 49187, press **Enter**; or enter another port number.

> ⚠
>
> **Caution** If you change the default listening port value, ensure that the new value does not conflict with any existing port assignments. Also, ensure that you configure all DPEs with the correct RDU port number. Refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0,* for information on configuring the DPE.

For example:

```
Regional Distribution Unit Host/Port

Enter the IP address and the listening port of the regional
distribution unit (RDU) associated with this installation.

Enter the Host/IP address and address of the listening port
for the RDU.
    RDU IP Address [abc.xyz.com]
    RDU Listening Port [49187]
```

Step 10 Then, confirm the IP address and the listening port number; enter **y** and press **Enter**.

Step 11 The program prompts you to enter the shared secret password. Enter the password that you want to use for authentication between the BAC servers, and press **Enter**.

> **Note** You must use the same shared secret password for all RDUs and DPEs in your network. The default password is **secret**.

For example:

```
Shared Secret Password

Enter the password to be used for authentication
between the BAC servers.

If you are performing a lab installation, then the password will be
used for all the servers. If this is a component installation, then
the password you enter must be the same as the components previously
installed.

    Enter the Shared Secret Password [secret]
```

Step 12   Press **Enter** to continue. The installation parameters that you selected appear.
Enter **y** and press **Enter** to confirm the parameters, and add the DPE.

For example:

```
Installation Parameters

This screen shows the installation parameters that you have chosen:

========== Confirmation ==========
The Component Installation will use the following parameters
to install the DPE component:

    Home directory: /opt/CSCObac
    Data directory: /var/CSCObac
```

Step 13   The Installation Summary appears when the installation is complete. Press **Enter**
to exit the installation program.

Adding a DPE from the GUI

To add the DPE from the GUI:

Step 1   By using an X-Windows client, log in to the computer on which you intend to
install the BAC components, with *root* access.

Step 2   At the Solaris system prompt, navigate to the directory containing the *setup.bin*
file. If you are using the BAC CD-ROM, you will find *setup.bin* at the root of your
CD-ROM drive.

Step 3   Enter this command to start the installation program:

> **./setup.bin**

The installation program verifies that you have installed the correct patches on the Solaris operating system. When the verification is complete, the program displays welcome information.

Step 4   Click **Next**. The Installation Components screen appears.

Step 5   On the Installation Components screen, select the Device Provisioning Engine option. Click **Next**. The installation program detects the installed components and allows you to add only the DPE.

Step 6   The installation program performs some validation before displaying the Regional Distribution Unit Host/Port screen. Accept the hostname of the RDU. You do not need to enter the IP address of the RDU; the installation program obtains that value automatically.

Step 7   Accept the default port number, 49187, or enter a new port number. Click **Next**.

> ⚠️
>
> **Caution**   If you change the default listening port value, ensure that the new value does not conflict with any existing port assignments. Also, ensure that you configure all DPEs with the correct RDU port number. Refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0,* for information on configuring the DPE.

Step 8   The Shared Secret Password screen appears. Enter the shared secret password, and confirm it. Click **Next**.

Step 9   The Installation Parameters screen appears. After verifying that the parameters are correct, click **Next** to install the DPE. To change the parameters, click **Back**.

Step 10   When installation is complete, the Installation Summary screen appears. Click **Finish** to end the installation process and to exit the installation program.

C H A P T E R **5**

Uninstalling Broadband Access Center

This chapter describes how you can uninstall Broadband Access Center (BAC).

Note You cannot uninstall the RDU and the DPE separately. Both components are uninstalled together.

The uninstallation program removes all files under the installation directory (the default installation directory is */opt/CSCObac*). It also shuts down and removes these processes if they are detected: RDU, SNMP Agent, Tomcat, Watchdog, and DPE.

The uninstallation program does not remove files that were placed outside the installation directory. For example, a component installation places the database and database transaction logs directories under */var/CSCObac*. These files must be manually removed. (Subsequent sections describe how to delete these files.) But, if you choose to install the home, data, and database transaction log directories in the same location, the uninstallation program warns you that continuing the uninstallation will remove the data and log files.

Should the program fail to uninstall BAC, error messages appear.

This chapter describes:

- Uninstalling BAC, page 5-2
- Post-Uninstallation Task, page 5-3

Uninstalling BAC

This section describes the procedures to uninstall BAC.

After uninstalling BAC, manually remove the Data and Database Transaction Logs directories (see the "Post-Uninstallation Task" section on page 5-3).

You can uninstall BAC from the GUI or CLI:

Uninstalling from the CLI

To uninstall BAC from the CLI:

Step 1   Log in as *root*.

Step 2   Change directory to where the BAC program is installed (the default installation directory is */opt/CSCObac*).

Step 3   At the CLI prompt, navigate to the *_uninst* directory, and run the *uninstall.bin -console* script.

Step 4   The following message appears:

```
Welcome to the Uninstallation Program

Press Enter to uninstall Cisco Broadband Access Center from your
system.
Press Enter to Continue or 'q' to Quit:
```

Press **Enter** to start uninstalling.

Step 5   When the process is complete, these messages appear:

```
Cisco Broadband Access Center was uninstalled

Cisco Broadband Access Center files were uninstalled successfully.
Press Enter to finish.
```

Press **Enter** to exit the program.

Uninstalling from the GUI

To uninstall BAC from the GUI:

Step 1   Log in as *root*.

Step 2   Navigate to the home directory where the BAC program is installed. The default directory is */opt/CSCObac*.

Step 3   At the CLI prompt, change to the *_uninst* directory, and run the *uninstall.bin* script.

Step 4   The welcome screen of the uninstallation program appears. Click **Next**.

Step 5   The uninstallation program begins removing BAC files. When the uninstallation is complete, the Cisco Broadband Access Center was Uninstalled message appears. Click **Finish** to exit the uninstallation program.

Post-Uninstallation Task

After uninstalling BAC, manually remove the Data and Database Transaction Logs directories. To remove these directories:

Step 1   Log in as *root*.

Step 2   Remove the Data and the Database Transaction Logs. (The default directory for both is */var/CSCObac*.)

For example, enter:

```
# rm -rf /var/CSCobac
```

The data and the database transaction logs directories are deleted.

Post-Uninstallation Task

Configuring the Syslog Utility to Receive BAC Alerts

This chapter describes how to configure the syslog utility after you installed Broadband Access Center (BAC). You can configure the syslog file on any BAC component server to receive alerts and debugging information from the system.

> ✎
> **Note** Configuring the syslog file is an optional task.

BAC generates alerts through the Solaris syslog service. Syslog is a client-server protocol that manages the logging of information on UNIX. BAC syslog alerts are not a logging service; they notify that a problem exists, but do not necessarily define the specific cause of the problem. This information might reside in the appropriate BAC log files (*rdu.log* and *dpe.log*). If you choose to configure the syslog file, these alerts are directed to a separate log file.

For more information on error messages and alerts, refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0.*

To configure the syslog utility on the RDU:

Step 1 Log in as *root* on the RDU server.

Step 2 At the command line, create the log file.

For example:

```
# touch /var/log/bac.log
```

Step 3 Open the */etc/syslog.conf* file with a text editor, such as *vi*.

Step 4   Add this line to the */etc/syslog.conf* file:

```
local6.info          /var/log/bac.log
```

✎

Note   You must insert one or more tabs between the local6:info and
/var/log/bac.log information.

Step 5   Save and close the */etc/syslog.conf* file.

Step 6   To force the syslog utility to take the new configuration, at the command line,
enter:

```
# ps -ef  | grep syslogd
    root        217        1  0  Nov 26     ?            0:00
    /usr/sbin/syslogd

    kill -HUP 217
```

✎

Note   The process ID (PID) in this example is 217, but may change when you
run **ps -ef | grep syslogd**. Use the correct output from that command as
the input to **kill -HUP**.

Syslog is now ready to receive alerts from BAC.

A P P E N D I X   A

Reinstalling Broadband Access Center

This chapter describes the procedures to reinstall Broadband Access Center (BAC). Reinstallation in BAC is enabled only for the purpose of restoring an installation that might have been corrupted.

This release does not support reinstalling the Regional Distribution Unit (RDU) and the Device Provisioning Engine (DPE) that are already installed on your system. If you must carry out a reinstallation, first uninstall both components, and reinstall them.

⚠
Caution   You cannot retrieve a corrupted database after a reinstallation. You must have a backup of the database before it was corrupted. Subsequent sections describe how you can back up your database.

This chapter describes:

- Reinstalling from the CLI, page A-2
- Reinstalling from the GUI, page A-3

Reinstalling from the CLI

To reinstall BAC from the CLI:

Step 1   Back up your database by running the *BPR_HOME***/rdu/bin/backupDb.sh** command, where *BPR_HOME* is the home directory. The default directory is */opt/CSCObac*.

To use this command, you must provide the target directory in which to place the backup files. This directory should be on a disk or partition that has available disk space equivalent to 120% of the current database file size. For detailed information, refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0*.

> ⚠
>
> **Caution**   You must back up your database before proceeding with the reinstallation procedure. If you do not save your database before uninstalling BAC (the next step in the procedure), you will lose the information in the database because the *BPR_HOME* directory is deleted during an uninstallation.

Step 2   Uninstall BAC from your system (see the "Uninstalling from the CLI" section on page 5-2).

Step 3   Then, carry out the installation procedure as described in the "Installing BAC" section on page 3-3.

Step 4   After you have installed BAC 3.0 on your system, restore the database from the backup, and copy the recovered database to the database location that the RDU uses. For detailed information, refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0*.

Reinstalling from the GUI

To reinstall BAC from the GUI:

Step 1   Back up your database from the command line, by running the *BPR_HOME*/**rdu/bin/backupDb.sh** command.

To use this command, you must provide the target directory in which to store the backup files. This directory should be on a disk or partition that has available disk space equivalent to 120% of the current database file size. For detailed information, refer to the *Cisco Broadband Access Center Administrator's Guide*, *Release 3.0*.

> ⚠ **Caution**   You must back up your database before proceeding with the reinstallation procedure. If you do not save your database before uninstalling BAC (the next step in the procedure), you will lose the information in the database because the *BPR_HOME* directory is deleted during an uninstallation.

Step 2   Uninstall BAC from your system by following the uninstallation procedure described in the "Uninstalling from the GUI" section on page 5-3.

Step 3   Install the RDU and the DPE by following the procedure described in the "Installing BAC" section on page 3-3.

Step 4   After you installed BAC 3.0 on your system, restore the database from the backup, and copy the recovered database to the database location that the RDU uses. For detailed information, refer to the *Cisco Broadband Access Center Administrator's Guide, Release 3.0*.

Reinstalling from the GUI

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uninstalling BAC