



CHAPTER 2

Preparing to Install Components

This chapter provides the information you need to prepare for a successful Broadband Access Center for Cable (BACC) component installation, including these topics:

- [Broadband Access Center for Cable Components, page 2-1](#)
- [Installation and Startup Process, page 2-2](#)
- [Broadband Access Center Database Requirements, page 2-5](#)
- [Installation Checklist, page 2-6](#)
- [Installation, page 2-7](#)

Broadband Access Center for Cable Components

The BACC component installation program prompts you to install one or more of these components:

- **Regional distribution unit (RDU).** The RDU is the primary server in the BACC provisioning system. You should install the RDU on a Solaris 8 or Solaris 9 server that meets the requirements described in the [“Hardware Requirements” section on page 1-2](#). The RDU performs these functions:
 - Manages the generation of device configurations.
 - Acts as a clearinghouse through which all application programming interface (API) requests must pass.
 - Manages the BACC system.
- **Network Registrar extensions.** These extensions are the link between BACC and Network Registrar. Install this component on all Network Registrar servers in your BACC environment. If you are deploying BACC in a failover environment, you must also install the extensions on the failover servers.



Note We recommend that you install the BACC Network Registrar extensions on a server running Network Registrar 6.1.2.3 or higher.

- **Device Provisioning Engine (DPE).** BACC supports the deployment of a DPE on Solaris Sparc computers running Solaris 8 or Solaris 9.



Note The DPE component now requires licenses to be installed at the RDU. If you have not yet received your licenses, contact your Cisco Systems representative before proceeding.

If, during DPE installation, the installation program detects the presence of a TFTP server running on the same computer that the DPE being installed on, the installation is immediately terminated and an error message appears on screen.

- Key Distribution Center (KDC). For maximum performance and segmentation of the network, you may install one KDC instance per provisioning group. The KDC, along with the DPE registration service, handles the authentication of all PacketCable voice technology MTAs. When a laboratory installation is performed, the KDC is installed on the lab computer. For performance reasons however, in a component installation, the KDC should be installed on a separate server. The KDC component requires a license.



Note The KDC and DPE have service keys that are required to allow them to communicate.

Although the component installation program supports installing the components on the same computer, in practice, you are likely to run the program on several different computers as described in these sections:

1. Installing the RDU on a Solaris 8 or 9 server.
2. Installing the Network Registrar extensions on a Network Registrar server or servers.
3. Installing the DPE on Solaris Sparc computers running Solaris 8 or Solaris 9.
4. Installing the KDC server.

Installation and Startup Process

To ensure a smooth installation and startup process, complete the order of operations as listed in [Table 2-1](#).

Table 2-1 *Installation and Startup Process*

Item	Description
1.	Determine which components you are installing and on what computers.
2.	Verify the file system block size of the directory in which you intend to install the BACC database and database transaction log files. See the “Broadband Access Center Database Requirements” section on page 2-5.
3.	Review the installation checklist. See the “Installation Checklist” section on page 2-6.
4.	Install a DPE. When you install the DPE, ensure that you have this information available: <ul style="list-style-type: none"> • Home Directory location • Data Directory location <p>After Solaris DPE installation is complete, you must configure the DPE using the command line interface (CLI). Refer to the <i>Cisco Broadband Access Center for Cable CLI Reference Guide</i> for these configuration instructions.</p>

Table 2-1 *Installation and Startup Process (continued)*

Item	Description
5.	<p data-bbox="467 310 1523 342">Install the RDU. When you install the RDU, ensure that you:</p> <ul data-bbox="479 359 1523 621" style="list-style-type: none"><li data-bbox="479 359 1523 390">• Obtain a valid BACC license key for each technology that you provision.<li data-bbox="479 407 1523 470">• Configure the syslog file for alerts. See the “Configuring the Syslog Utility to Receive Alerts from BACC” section on page 5-1.<li data-bbox="479 487 1523 550">• Verify that the RDU is running by starting the administrators user interface. For more information, see the <i>Broadband Access Center for Cable Administrator’s Guide</i>.<li data-bbox="479 567 1523 621">• Change the BACC administrator’s password. For more information, see the <i>Broadband Access Center for Cable Administrator’s Guide</i>. <p data-bbox="467 638 1523 695">Note The existence of a text file called log.txt indicates that errors occurred during the installation process. This text file is located under the <BACC_HOME> directory.</p>

Table 2-1 Installation and Startup Process (continued)

Item	Description
6.	<p data-bbox="431 317 1490 407">Install and configure Network Registrar, if it is not already installed on your systems. We recommend that you use Network Registrar 6.1.2.3 or higher. For more information, see the <i>Network Registrar Installation Guide</i>.</p> <ul style="list-style-type: none"> <li data-bbox="444 426 1490 453">• When you install Network Registrar Local Cluster (LCCM), ensure that you: <ol style="list-style-type: none"> <li data-bbox="488 472 1214 499">a. Obtain a valid Network Registrar license key for local cluster. <li data-bbox="488 518 1490 609">b. On all Network Registrar local cluster servers, install the BACC extensions for the product. For more information see the “Installing Extensions on a Network Registrar Server” section on page 3-3. <li data-bbox="488 627 1490 747">c. Configure Network Registrar, including its extensions. Specifically, you need to configure scopes, policies, client-classes, and scope selection tags. For more information, see the “Configuring Extensions” section on page 3-5, and also see the <i>Network Registrar User’s Guide</i>. <li data-bbox="488 766 1490 856">d. Configure the syslog on the Network Registrar for alerts and debugging information. See the “Configuring the Syslog Utility to Receive Alerts from BACC” section on page 5-1. <li data-bbox="488 875 1490 966">e. Validate the installation by connecting to the administrative user interface and viewing the administrator’s user interface. For more information, see the <i>Cisco Broadband Access Center for Cable Administrator’s Guide</i>. <li data-bbox="444 984 1490 1012">• When you install Network Registrar Regional Cluster (RCCM), ensure that you: <ol style="list-style-type: none"> <li data-bbox="488 1031 1490 1150">a. Identify the master server for Network Registrar Regional Installation, which administers all the configured CNR local clusters. This server can be Solaris or Windows or Linux. However, we recommend that you have the Solaris Operating System on the CNR Regional Server. <li data-bbox="488 1169 1317 1197">b. Obtain a valid central-cluster license key for the CNR Regional Server. <li data-bbox="488 1215 1490 1306">c. After you install the BACC extensions for the product on all CNR local servers, replicate the local data into regional and pull the “Replica Address Space”. For more information see the <i>Network Registrar User’s Guide</i>. <li data-bbox="488 1325 1490 1415">d. Alternatively, you can also create subnets, client-classes, policies, and so on at RCCM and push them to the required LCCM DHCP server. For more information, see the <i>Network Registrar User’s Guide</i>. <li data-bbox="488 1434 1490 1524">e. Configure this CNR Regional CCM Server’s IP address, port number, and login details into the RDU defaults for IP Reservation support. For more information, see the <i>Cisco Broadband Access Center for Cable Administrator’s Guide</i>. <p data-bbox="431 1543 1490 1602">Note Network Registrar Release Version prior to 6.1 does not support Regional Cluster, Hence BACC’s IP Lease Reservation Support feature cannot be used.</p>

Table 2-1 Installation and Startup Process (continued)

Item	Description
7.	<p>Install and configure the KDC. When you install the KDC, ensure that you have this information available:</p> <ul style="list-style-type: none"> • A valid license for KDC. • KDC realm—Identified by a unique name, the KDC realm consists of a KDC, and the clients and servers registered to that KDC. <p>Note The realm must match the certificate chain at the KDC.</p> <ul style="list-style-type: none"> • KDC FQDN—This is the fully qualified domain name on which the KDC server is located. • KDC interface address—This is the interface (generally the IP address of the KDC server) on which the KDC listens for requests. <p>Note During installation it may be necessary to install several Solaris patches on your computer. The installation program will display a complete list of patches that are required. Should patch installation become necessary, refer to the Sun Microsystems website to download the required patches.</p>
Note	<p>If you decide to terminate the BACC installation after the operating system database has been installed, you must uninstall it before attempting to reinstall the product. If you do not do this, and rerun the installation program, you cannot change the location of either the <BACC_DATA> and <BACC_DBLOG> directories.</p>

Broadband Access Center Database Requirements

Before you install BACC, be aware of these database considerations:

- File system block size
- Support for large files

File System Block Size

For optimum performance and reliability of the BACC database, configure the file system or systems that contain the database files and database 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 log files. These directories are identified in BACC with system variables, <BACC_DATA> and <BACC_DBLOG> respectively.

To verify that a directory resides on a file system with a minimum 8 KB block size, follow these steps:

- 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/CSCObpr. For example:

```
/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
```

Example output from the **df** command is as follows:

```
/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 above 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**.

An example output of the **mount** command is:

```
/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.

Installation Checklist

Before you run the installation software, use this checklist to ensure that you are ready:

- Verify the prerequisite system hardware and software requirements described in [Chapter 1, “Overview”](#)
- Determine the home directory (<BACC_HOME>) in which you want to install the BACC component or components. The default directory is /opt/CSCObpr.



Note

Cisco Systems recommends that you have at least 350 MB of disk space available.

- Ensure that you have *root* access to the computers where you intend to install BACC components.
- Have your BACC license key or keys at hand. You need a valid license key for each technology that you want to provision with BACC.
- For the RDU, determine where you want to install the data directory (<BACC_DATA>) and the database transaction logs (<BACC_DBLOG>). (The default directory is /var/CSCObpr.)

**Note**

Cisco recommends that you install the database transaction logs on a different physical disk than either the home directory or the data directory.

- For the RDU, select the shared secret password that BACC servers on your network use as a token to authenticate communication with one another. The shared secret password is the same for all BACC servers on your network.
- We recommend that Network Registrar 6.1.2.3 or higher is installed and running on any servers where you are installing BACC extensions.
- For extensions, determine the name of provisioning group to which the Network Registrar server belongs.
- For Network Registrar extensions, determine where you want to install the data directory (<BACC_DATA>).
- Verify that you have the necessary Network Registrar configuration files, (See [Appendix A, “Network Registrar Configuration File Example”](#) for an example of these configuration files.)
- Verify that you have the necessary KDC servers available.

**Note**

If you interrupt the installation program after it begins copying files, you may have to manually clean up the locations of copied files.

Installation

The initial steps in the BACC installation program are identical regardless of the BACC component you are installing. This section describes how to work with the installation program and the initial installation steps.

You install BACC using either the graphical user interface (GUI) or the command line interface (CLI). Both of these interfaces are supplied with BACC.

Installation Using the Graphical User Interface

To install BACC using the graphical interface:

- Step 1** Using an X-Windows client, log in as *root* on the computer on which you intend to install the BACC component.
- Step 2** At the Solaris system prompt, navigate to the directory containing the `setup.bin` file. If you are using the BACC CD-ROM, you will find `setup.bin` located 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 required patches to the Solaris operating system. When the verification is complete, the Welcome screen appears.
- Step 4** Click **Next**. The Choose Installation Type screen appears.

- Step 5** Select one of the two installation types:
- Individual Components—This option enables you to install an RDU, Network Registrar extensions, the DPE, or the KDC. See these sections for the appropriate installation instructions:
 - [Installing the Regional Distribution Unit, page 3-2](#)
 - [Installing Extensions on a Network Registrar Server, page 3-3](#)
 - [Installing the Key Distribution Center, page 3-7](#)
 - [Installing the Device Provisioning Engine, page 3-8](#)
 - Lab—This option enables you to install the software in a laboratory environment. See [Chapter 4, “Installing in a Lab Environment”](#) in this guide.
- Step 6** Click **Next**. Depending on the option you selected in the preceding step, either the Installation Components screen appears, or you begin the lab installation.



Note You must select one of the displayed installation components before you can proceed with the installation.

Installing from the Command Line

To perform the initial installation procedure from the command line:

-
- Step 1** Log into the intended BACC 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 required patches to the Solaris operating system. When the verification is complete, the program displays welcome information.

- Step 4** Press **Enter** to continue. The program prompts you to choose the installation type. You can choose to install:
- Individual components
 - Lab installation

- Step 5** To choose individual components, enter **C**; or, to choose Lab installation, enter **L**. For example:

```
Choose Installation
```

```
Choose the type of BPR installation you want to install.
```

```
The Lab installation will store all components in the chosen destination.
Otherwise, you can select individual components and destinations.
```

```
Enter C for individual components or L for lab [C]:c
```


The program prompts you to confirm the installation type.

Step 6 Press **y** and then **Enter** to continue.

At this point you must decide which installation you want to perform. To install individual components go to the [“Installing Components Using the CLI”](#) section on page 3-8. To install in a lab environment go to the [“Installing in a Lab Environment Using the CLI”](#) section on page 4-3.
