Preparing To Install Components

This chapter provides the information you need to prepare for a successful BPR component installation.

This chapter contains the following topics:

- BPR components
- Order of operations
- BPR database requirements
- Installation checklist
- Initial installation steps

Broadband Provisioning Registrar Components

The BPR installation program prompts you to install one or more of the following components:

- Regional Distribution Unit (RDU). The RDU is the primary server in the BPR provisioning system. You should install the RDU on a Solaris 8 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 though which all application programming interface (API) requests must pass
    - Manages the BPR system
- Cisco Network Registrar extensions. These extensions are the link between BPR and Network Registrar. Install this component on all Network Registrar servers in your BPR environment. If you are deploying BPR in a failover environment, you must also install the extensions on the failover servers.

    Note Install the BPR Network Registrar extensions on a server running Network Registrar 5.0.9 or greater.

- Application programming interface (API) client. If you develop your own software that you want to interoperate with the RDU, install the API component on the same client workstation on which your software is installed.

Although the installation program supports installing the three components on the same computer, in practice, you are likely to run the program on at least three computers:

1. Installing the RDU on a Solaris 8 server as described in the "Hardware Requirements" section on page 1-2.

2. Installing the Network Registrar extensions on a Network Registrar server or servers.

3. Installing the client API on one or more client workstations.

Order of Operations

To ensure a smooth installation and startup process, follow the order of operations listed in Table 2-1.

Table 2-1   Order of Operations

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 BPR database and database transaction log files. See the "Broadband Provisioning Registrar Database Requirements" section on page 2-3.
3.	Review the installation checklist. See the "Installation Checklist" section on page 2-4.
4.	Install the RDU. When you install the RDU, ensure that you do the following: • Obtain a valid BPR license key for each technology that you provision. • Configure syslog for alerts. See the "Configuring the Syslog to Receive Alerts from BPR" section on page 3-23. • Validate the installation by running the administrators user interface. For more information, see the *Broadband Provisioning Registrar Administrator's Guide*. • Change the BPR administrator's password. For more information, see the *Broadband Provisioning Registrar Administrator's Guide*.

Table 2-1   Order of Operations (continued)

Item	Description
5.	Install and configure Network Registrar 5.0.9 or greater, if it is not already installed on your systems. For more information, see the *Network Registrar Installation Guide*. When you install Network Registrar, ensure that you do the following: • Obtain a valid Network Registrar license key. • On all Network Registrar servers, install the BPR extensions for the product. For more information see the "Installing Extensions on a Network Registrar Server" section on page 3-8. • 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 3-12, and also see the *Network Registrar User's Guide*. • Configure the syslog on the Network Registrar for alerts and debugging information. See the "Configuring the Syslog to Receive Alerts from BPR" section on page 3-23. • Validate the installation by connecting to a BPR regional distribution unit (RDU) and viewing the administrator's user interface. For more information, see the *Broadband Provisioning Registrar Administrator's Guide*.
6.	If you intend to develop software that interoperates with BPR, install the BPR application programming interface on client workstations.

Broadband Provisioning Registrar Database Requirements

Before you install BPR, be aware of the following database considerations:

• File system block size

• Support for large files

File System Block Size

For optimum performance and reliability of the BPR 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 BPR with system variables, BPR_DATA and BPR_DBLOG respectively.

To verify that a directory resides on a file system with an 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.

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

```
/var on /dev/dsk/c0t0d0s4 read/write/setuid/intr/largefiles/onerror=panic/dev=2200004 on
Mon Nov 26 08:07:53 2001
```

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, follow these steps:

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

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

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

```
/var on /dev/dsk/c0t0d0s4 read/write/setuid/intr/largefiles/onerror=panic/dev=2200004 on
Mon Nov 26 08:07:53 2001
```

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

Installation Checklist

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

- Verify the prerequisite system hardware and software requirements described in Chapter 1, "Overview."
- Have your BPR license key or keys at hand. You need a valid license key for each technology that you want to provision with BPR.
- Ensure that you have *root* access to the computers where you intend to install BPR components.
- Verify that Network Registrar 5.0.9 or greater is installed on any servers where you are installing BPR extensions.
- Determine the home directory (BPR_HOME) in which you want to install the BPR component or components. (The default directory is /opt/CSCObpr.)

    Note   Cisco Systems recommends that you have at least 50 MB of disk space available.

- 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/CSCObpr.)

- For Network Registrar extensions, determine where you want to install the data directory (BPR_DATA).

> **Note**   Cisco Systems 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 BPR servers on your network use as a token to authenticate communication with one another. The shared secret password is the same for all BPR servers on your network.

- For extensions, determine the name of provisioning group to which the Network Registrar server belongs.

- 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.)

Initial Installation Steps

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

You install BPR from either a graphical user interface (GUI) or a command line interface (CLI).

Installing from the Graphical User Interface

To install BPR from the GUI follow these initial steps:

Step 1   Using an X-Windows client, log in as *root* on the computer on which you intend to install the BPR component.

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 the following command to start the installation program:

```
> setup.bin
```

The installation program verifies that you have installed the required patches to the Solaris 8 operating system and are running a supported version of Network Registrar. When the verification is complete, the Welcome screen appears (Figure 2-1).

> **Note**   If you have not installed the correct patches for the operating system, note the information that the installation program displays. Then, go to the Sun Microsystems web site to obtain the specified patches or their replacements.

Figure 2-1   Broadband Provisioning Registrar Welcome Screen

Step 4   Click **Next**. The Choose Installation Type screen appears (Figure 2-2).

Figure 2-2   Choose Installation Type Screen
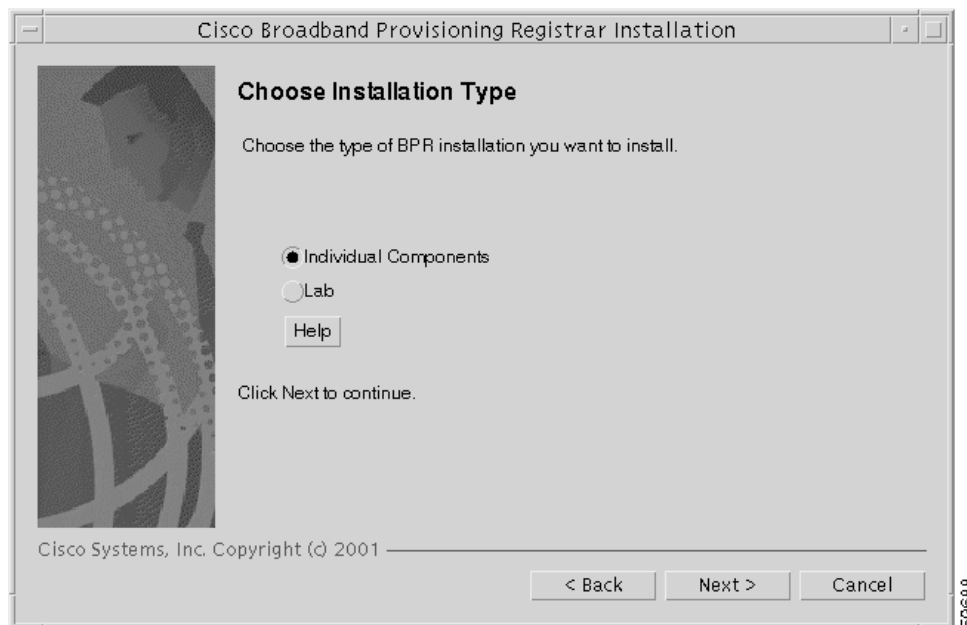
Step 5   Select one of the two installation types:

- Individual Components—This option enables you to install an RDU, Network Registrar extensions, or the application programming interface. See the "Installing the Regional Distribution Unit" section on page 3-1, the "Installing Extensions on a Network Registrar Server" section on page 3-8, or the "Installing the Application Programming Interface" section on page 3-14.

- Lab—This option enables you to install the software in a laboratory environment. See Chapter 4, "Installing In a Lab Environment."

Step 6   Click **Next**. Depending on the option you selected in the preceding step, either the Installation Components screen appears (Figure 2-3), or you begin the lab installation.

Figure 2-3   Installation Components Screen
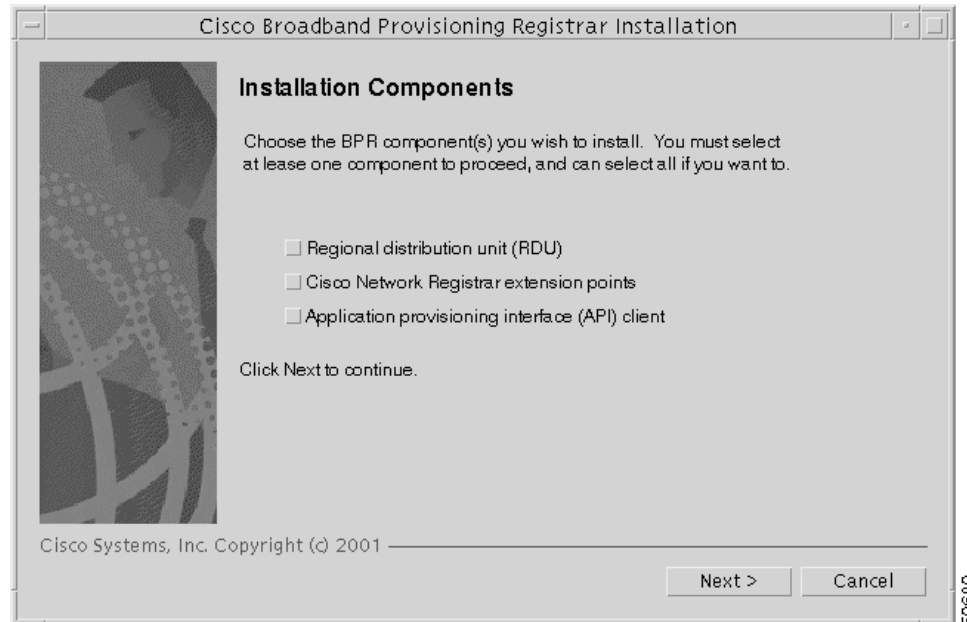
Installing from the Command Line

To perform the initial installation procedure from the command line, follow these steps:

Step 1   Log into the intended BPR 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 8 operating system and a supported version of Network Registrar. 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

■ **Initial Installation Steps**

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

```
Choose Installation Type


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.

To install individual components go to the "Installing Components Using the CLI" section on page 3-16. To install in a lab environment go to the"Installing in a Lab Environment Using the CLI" section on page 4-5.