



Using the Broadband Access Center for Cable Administrator User Interface

This chapter describes the administration activities performed using the Broadband Access Center for Cable (BACC) administrator user interface. These activities mainly involve monitoring the actions of various BACC components including:

- [User Management, page 9-1](#)
- [Device Management, page 9-3](#)
- [Node Management, page 9-16](#)
- [Viewing Servers, page 9-18](#)



Note

The procedures described in this chapter are presented in a tutorial manner. Wherever possible, examples are included to illustrate the possible results of each procedure.

User Management

Managing users involves adding, modifying, and deleting users who administer BACC. This section contains instructions for managing BACC users including:

- [Adding a New User](#)
- [Modifying Users](#)
- [Deleting Users](#)



Note

You can add and delete users only if you are logged in as the Administrator. See the [“Users” section on page 8-6](#) for additional information on user types.

Adding a New User

Adding a new user is a simple process of entering the user's name and creating a password. However, while creating a new user you do have to determine which type of user it will be; a Read/Write user or a Read Only user. BACC comes with one Administrator user already created; you cannot create an Administrator as a new user.

To add a new user:

- Step 1** Click **Users**, from either the Main Menu or the Primary Navigation bar. The Manage Users page appears. (See [Figure 9-1](#).)

Figure 9-1 Example Manage Users Page

User	Description	Role	Delete
Ace Duffy	Assistant Administrator	Read Write	
admin	Administrator	Administrator	

- Step 2** Click **Add** to display the Add User page.
- Step 3** Enter the new user's username and a password.
- Step 4** Confirm the new user's password, and select whether the new user's role is to be read only or read/write. See the "Users" section on page 8-6 for complete descriptions of each user type.
- Step 5** Enter a short description of the new user.



Tip Use the description field to identify the user's job or position; something that identifies the unique aspects of the new user.

- Step 6** Click **Submit** when complete. The Manage Users page appears with the new user added.



Note The new user's password must be recorded and stored in a safe place. This helps to prevent the loss or theft of the password and possible unauthorized entry.

Modifying Users

Although any user type can modify their own password and user description, only the administrator can modify any other user's information. You can change the password, user type, and description.



Note Any nonadministrative user that is created cannot be used to modify or delete the admin user.

To modify user properties:

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- Step 1** From either the Main Menu or the Primary Navigation bar, click **Users**. The Manage User page appears.
 - Step 2** Click the desired user name to display the Modify User page for that user.
 - Step 3** Make the necessary changes to the password, user type (provided that you are logged in as the Administrator), and the user's description.
 - Step 4** Click **Submit**. The Manage Users page appears with the appropriately modified user information.
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Deleting Users

Only the administrator has the ability to delete any other user that appears in the Manager Users page. To delete a user:

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- Step 1** From either the Main menu or the Primary Navigation bar, click **Users**. The Manage User page appears.



Note The default user called **admin** cannot be deleted.

- Step 2** Click the **Delete** icon corresponding to the user you want to delete. the Delete User dialog box appears.
 - Step 3** Click **OK** to delete the selected user. The Manage Users page appears without the deleted user.
-

Device Management

Use the Devices menu to provision and manage various devices. You can:

- Search for a specific device or for a group of devices that share criteria that you specify. See the [“Searching for Devices” section on page 9-6](#).
- Add, modify, or delete devices in the RDU database. See the:
 - [“Adding Devices” section on page 9-13](#)
 - [“Modifying Devices” section on page 9-13](#)
 - [“Deleting Devices” section on page 9-14](#)
- Regenerate device configurations. See the [“Regenerating Device Configurations” section on page 9-14](#).

- Relate and unrelate any device to a specific node. See the “[Relating and Unrelating Devices](#)” section on page 9-15.
- Reset, or reboot, any selected device. See the “[Resetting Devices](#)” section on page 9-15.
- Return a device configuration to its default condition without rebooting the device. See the “[Unregistering a Device](#)” section on page 9-15.

Manage Devices Page

The Manage Devices page appears whenever you click **Devices** in either the Main menu or the primary menu bar. This page, shown in [Figure 9-2](#), contains the fields and controls necessary to perform all device management functions.

Figure 9-2 Manage Devices Page

Broadband Access Center for Cable Logout

Configuration **Devices** Nodes | Servers | Users

User:admin Role:Administrator

Manage Devices
Use this page to manage (add, delete or search) devices, then to view the details of the device listed.

Search Type: MAC Address Search | MAC Address or MAC Address wildcard: * | Page Size: 25 | Search

Add | Delete | Regenerate | Relate | Reset | Unrelate | Unregister

Identifiers	Device Type	Status	Details
1.6.00.00.00.00.00.00	DOCSISModem	Unprovisioned	Details
1.6.00.00.00.00.00.00.01	DOCSISModem	Unprovisioned	Details
1.6.00.00.00.00.00.00.aa	DOCSISModem	Unprovisioned	Details

Result Pages: 1

The Manage Device page utilizes two separate but related areas to generate search results that let you perform many device management functions. These areas are the Search Type drop-down list, defining which search to perform, and search value field, which qualifies the search type. You can perform these searches:

- Class of Service search
- DHCP Criteria search
- FQDN search
- IP Address search
- MAC Address search
- Node search
- Owner ID search

Some searches that you can perform allow the use of a wildcard character (*) to enhance the search function. Using the FQDN as an example, you use these formats when using wildcard characters to search:

- modem10.cisco.com
- *.cisco.com
- *.com
- *

**Note**

Cisco does not recommend using the last wildcard search (*) in systems that support hundreds of thousands, or more, devices. This can return many thousands of search results, and use extensive system resources sufficient to impact performance.

In addition, a Page Size drop-down lets you limit the number of search results displayed per page. You can select 25, 50, or 75 results for display. If the number of results returned for a search exceeds the number selected, a screen prompt appears at the bottom left corner of the administrators user interface to let you move from page to page of results.

Device Management Controls

These buttons are located directly below the search function fields and are generally used in conjunction with the search function. For example, you might search for devices belonging to a specific group of devices in order to perform some sort of management function. The following buttons are available, although each management function may not be available depending on the search type used.

Add

The Add function lets you add a new device to the RDU database. See the [“Adding Devices” section on page 9-13](#) for the appropriate instructions.

Delete

The Delete button lets you delete any selected device from the RDU database. See the [“Deleting Devices” section on page 9-14](#) for the appropriate instructions.

Regenerate

Use the Regenerate function to update stale configurations. Device configurations can become stale when changes are made to either the class of service or DHCP criteria parameters. Device configurations are automatically regenerated whenever class of service or DHCP properties are changed or new criteria are designated. They can also occur when an external file is replaced. However, some configurations cannot be automatically regenerated, but must rely on manual regeneration using either the generationConfiguration() method or the administrator’s user interface.

Relate

The Relate function lets you associate a device (using its MAC address) with a specific node.

Reset

The Reset button automatically reboots the selected device.

Unrelate

This function cancels the relationship between and selected device and the node that the device is currently related to.

Unregister

The Unregister function lets you reset a device back to its defaults as if it had just booted on the network.

Identifier

Identifies all devices matching the search criteria. Each of the identifiers displayed has a link to another page from which you can modify the device.

Device Type

Displays a drop-down list that identifies the available device types. Available selections, as they appear on screen, include:

- ATA186
- ATA188
- CableHomeManData
- CableHomeManWan
- DOCSISmodem
- Computer
- PacketCableMTA

Status

Identifies whether or not the device is provisioned. A provisioned device has been registered using the application programming interface (API), or the administrative user interface, and has booted on the network.

Details

Displays all available details for the selected device. See the [“Viewing Device Details” section on page 9-8](#) for additional information.

Searching for Devices

You can search for device information in a number of different ways using BACC. Each search result that you generate also carries with it a View Details function. The details that are displayed are identical whichever search method you use.

To search for a device type, from the Manage Devices page, click the **Search Type** button and a drop-down list appears. Subsequent search pages contain screen components that may be unique to the search type selected.

When the number of search results is greater than the selected page size, paging controls appear in the lower left corner of the page. These let you scroll forward or backward one page at a time, or to select a specific page. Refer to the [“Scrolling Backward and Forward” section on page 8-7](#) for additional information.

**Note**

A maximum of 1000 results are returned for any query with a maximum of 75 results displayed per page. You can change the default maximum by modifying the `/adminui/maxReturned` property, in `<BACC_HOME>/rdu/conf/adminui.properties` file, and then running the **bprAgent restart jrun** command (located in the `/etc/init.d/` directory) to restart the BACC JRun component.

Search Types

You can search for specific devices using these functions:

- Registered Class of Service search—Searches using the class of service that a device has been provisioned with.
- Selected Class of Service search—Searches using the class of service selected by the RDU for a device that, for one reason or another, cannot retain its registered Class of Service.
- Related Class of Service search—Searches using both the registered and selected class of service.
- Registered DHCP Criteria search—Searches for devices that belong to certain DHCP criteria.
- Selected DHCP Criteria search—Searches using the DHCP criteria selected by the RDU for a device that, for one reason or another, cannot retain its registered DHCP Criteria.
- Related DHCP Criteria search—Searches using both the registered and selected DHCP criteria.

**Note**

Under normal circumstances the Related/ Selected Class of Service and Related/Selected DHCP Criteria should be identical. If they are not you should investigate the reason and modify the Selected Class of Service/DHCP Criteria to match the Related Class of Service/DHCP Criteria.

- Fully qualified domain name (FQDN) search—The fully qualified domain name (FQDN) search is useful when searching for devices that are identified through the FQDN assigned by the DNS Server, especially when the device MAC address is unknown.
For example, **www.cisco.com** is a fully qualified domain name. Where **www** identifies the host, **cisco** identifies the second level domain, and **.com** identifies the third level domain.
- IP address search—The IP Address Search returns all devices on the network that currently have the specified DHCP leased IP address.
- MAC address search— The MAC address search function is best used when you know the precise MAC address for a specific modem or when all devices with a specific vendor-prefix unambiguously identify the equipment vendor. Therefore, if you perform a MAC address search, you can identify, by the MAC address, the manufacturer and type of device. See the [“Troubleshooting Devices by MAC Address” section on page 12-52](#) for information on the effective use of this search criteria.

**Note**

The vendor-prefix is the first 3 octets of the MAC address. For example, for MAC address `1,6,aa:bb:cc:dd:ee:ff`, the vendor-prefix is `“aa:bb:cc”`.

- Node search—The Node search function is used to search for nodes and node types that you have already created.
- Owner ID search— The owner ID can identify a device, it could identify the service subscriber’s account number, or anything else that uniquely identifies that device. Wildcard searching is not supported by this search function.

Viewing Device Details

You can view the details of any device identified in the search results. To view any device details, click the Details icon corresponding to the device you want to view and a View Device Details page appears. [Figure 9-3](#) provides an example View Device Details page.

The information that appears in the View Device Details page is largely dependent on the type of device you choose. However, [Figure 9-3](#) does identify the typical detail displayed for most devices.

Figure 9-3 Device Details Page

Broadband Access Center for Cable Logout

Configuration **Devices** Nodes Servers Users

User:admin Role:Administrator

CISCO SYSTEMS **View Device Details**
Use this page to view the details of the device listed.

Device Details	
Device Type:	DOCSISModem
MAC Address:	1,6,aa:bb:cc:dd:ee:ff
FQDN:	
Host Name:	
Domain Name:	
Behind Device:	
Provisioning Group:	default
Registered DHCP Criteria:	default
CPE DHCP Criteria:	
Device Properties:	
Device Provisioned State:	Provisioned
Device Registered State:	Registered
Relay Agent Circuit Identifier:	80:01:00:22
Relay Agent Remote Identifier:	aa:bb:cc:dd:ee:ff
Client Identifier:	aa:bb:00:cc:dd:ee:ff
Client Request Host Name:	
Registered Class Of Service:	arris-cm
Owner Identifier:	
Detected Properties:	
Selected Properties:	/docsis/version=1.0
Is Behind Required Device:	Yes
Is In Required Provisioning Group:	Yes
Selected Access:	REGISTERED
Selected Class of Service:	arris-cm
Selected DHCP Criteria:	unprovisioned-docsis
Selected Explanation:	Because the device is registered.
Selected Reason:	REGISTERED
Related Node Name (Node Type):	
DHCP Information	
DHCP Inform Dictionary:	provisioning-group=default
DHCP Request Dictionary:	giaddr=10.7.1.1, dhcp-message-type=01, htype=01, relay-agent-circuit-id=01:04:80:01:00:22, dhcp-parameter-request-list=66,67,1,3,2,4,7,128,6,12,15,122,177, client-id-created-from-mac-address=0, relay-agent-remote-id=02:06:00:00:ca:b4:fb:9c, hlen=06, client-id=01:00:00:ca:b4:fb:9c, dhcp-class-identifier=docsis1.1.052401010102010103010104010105010106010107010f0801100901000a01010b01080c0101, chaddr=00:00:ca:b4:fb:9c, vendor-encapsulated-options=01:00:02:03:45:43:4d:03:08:45:43:4d:3a:45:4d:54:41:04:0f:34:35:4e:47:37:44:31:38:37:37:30:30:36:34:34:05:03:34:2e:30:06:12:54:53:2e:30:34:2e:30:31:2e:30:34:2e:30:33:31:35:30:34:07:00:08:06:30:30:30:30:43:41:09:06:54:4d:34:30:32:50:0a:19:41:72:72:69:73:20:49:6e:74:65:72:61:63:74:69:76:65:2c:20:4c:2e:4c:2e:43:2e
DHCP Response Dictionary:	
DHCP Environment Dictionary:	
Lease Information	
IP Address:	10.7.1.6
DHCP Lease Properties:	/network/lastTransTime=83, /network/isLeased=Leased, /network/leaseTime=221
Technology Specific Information	
XGCP Ports:	
DOCSIS Version:	1.1

Table 9-1 identifies the fields shown Figure 9-3.

Table 9-1 Device Details Page

Field or Button	Description
Device Details	
Device Type	Displays a drop-down list that identifies the available device types.
MAC Address	Identifies the devices MAC address.
FQDN	Identifies the fully qualified domain name for the selected device. For example, ACME.COM is a fully qualified domain name.
Host Name	Identifies the host. For example, from the FQDN description above, ACME is the host name.
Domain Name	Identifies the domain within which the host resides. For example, from the FQDN description above, .COM is the domain name.
Behind Device	Identifies the device that is behind this device.
Provisioning Group	Identifies the provisioning group to which the device is assigned.
DHCP Criteria	Identifies the DHCP criteria used. This is an active link that, if clicked, displays the appropriate Modify DHCP Criteria page.
CPE DHCP Criteria	Identifies the DHCP criteria used for customer premises equipment, when in the Promiscuous mode.
Device Properties	Identifies any properties, other than those displayed on this page, that can be set for this device. These are custom properties.
Device Provisioned State	Identifies whether the device is provisioned or not. A device is provisioned only when it is registered and has booted on the network.
Device Registered State	Identifies whether the device is registered or not.
Relay Agent Circuit Identifier	Identifies the relay agent circuit identifier of the device. This is equivalent to DHCP option 82, sub option 1.
Relay Agent Remote Identifier	Identifies the relay agent remote identifier of the device. This is the equivalent to the DHCP option 82, sub option 2.
Client Identifier	Identifies the client identification used by the device in its DHCP messages.
Client Request Host Name	Identifies the host name that the client requested in its DHCP messages.
Class of Service	Identifies the class of service assigned to this device.
Owner Identifier	Identifies the device. This may be a user ID, and account number, or may be blank.
Detected Properties	Identifies properties returned by the RDU device detection extension(s) when the device's configuration was generated.
Selected Properties	Identifies properties returned by the RDU service level selection extension(s) for the detected device type when the device's configuration was generated.
Is Behind Required Device	This returns "false" if the IPDeviceKeys.MUST_BE_BEHIND_DEVICE property has been used to establish a required relay agent device and the service level selection extension(s) determined this device did not boot behind the required relay agent.

Table 9-1 Device Details Page (continued)

Field or Button	Description
Is In Required Provisioning Group	This returns “false” if the IPDeviceKeys.MUST_BE_IN_PROV_GROUP property has been used to establish a required provisioning group and the service level selection extension(s) determined this device did not boot in the required provisioning group.
Selected Access	Identifies the access granted to the device by the service level selection extension(s): <ul style="list-style-type: none"> REGISTERED—Indicates the device was registered and met any requirements for access. PROMISCUOUS—Indicates the device’s provisioning will be based on policies assigned to it’ relay agent. DEFAULT—Indicates the device will be provisioned with the default access for its device type,. OTHER—Not used by the default extensions built into BACC and is provided for use by custom extensions.
Selected Class of Service	Identifies the name of the class of service used to generate the device’s configuration.
Selected DHCP Criteria	Identifies the name of the DHCP criteria used to generate the device’s configuration.
Selected Explanation	Provides a textual description of why the service level selection extension(s) selected the access they granted the device. For example, the device may have been granted default access because it did not boot in its required provisioning group.
Selected Reason	Identifies why the service level selection extension(s) selected the access they granted the device as an enumeration code. The possible values are: <ul style="list-style-type: none"> NOT_BEHIND_REQUIRED_DEVICE NOT_IN_REQUIRED_PROV_GROUP NOT_REGISTERED OTHER PROMISCUOUS_ACCESS_ENABLED REGISTERED RELAY_NOT_IN_REQUIRED_PROV_GROUP RELAY_NOT_REGISTERED Most of these indicate violations of requirements for granting registered or promiscuous access resulting in default access being granted.
Related Node Type	Identifies the node type to which this device is related. See the “ Node Management ” section on page 9-16 for additional information.

Table 9-1 Device Details Page (continued)

Field or Button	Description
DHCP Information	
DHCP Inform Dictionary	Identifies additional information that the Network Registrar extensions send to the RDU when requesting the generation of a configuration. This is for internal BACC use only.
DHCP Request Dictionary	Identifies the DHCPDISCOVER or DHCPREQUEST packet details that were sent from the Network Registrar extensions to the RDU when requesting the generation of a configuration.
DHCP Response Dictionary	This field is for internal BACC use only; it should always be empty.
DHCP Environment Dictionary	This field is for internal BACC use only; it should always be empty.
Lease Information	
IP Address	Identifies a device's IP address.
DHCP Lease Properties	Identifies the lease properties, this should always be empty.
Technology Specific Information	
Note	The technology-specific information identifies only data that is relevant for the technologies you are licensed to use.
XGCP Ports	Identifies the ports on which the gateway control protocol is active.
DOCSIS Version	Identifies the DOCSIS version currently in use.

Managing Devices

As mentioned earlier in this chapter, the Devices menu lets you create and manage how devices are maintained within the RDU database. Device management includes adding, deleting, and modifying devices as well as regenerating configurations, relating, and unregistering selected devices.

This section describes how to perform the various device management functions on new or existing devices. Several information fields appear consistently over all device management pages. These include:

- Device Type—When adding a device, this is a drop-down list that identifies the available device types you can create within BACC. Available selections, as they appear on screen, include:
 - ATA186
 - ATA188
 - CableHomeManData
 - CableHomeManWan
 - DOCSISmodem
 - Computer
 - PacketCableMTA

When modifying a device the device type can not be edited or changed.

- **MAC Address**—This is the MAC address of the device being added.
Enter the MAC address of the device being added in this field. When doing this, you must ensure that you enter the commas and colons in the appropriate positions. For example:
`1,6,00:00:00:00:00:AE`
- **Host Name**—Identifies the device's host. For example, from an FQDN of node.cisco.com, node is the host name.
- **Domain Name**—Identifies the domain within which the host resides. For example, from an FQDN of node.cisco.com, cisco.com is the domain name.
- **Owner Identifier**—Identifies the device using something other than the host name. This may be a user ID, an account number, or may be left blank.
- **Class of Service**—Specifies the class of service that the device is to be provisioned with.
- **DHCP Criteria**—Specifies the DHCP criteria that the device is to be provisioned with.

Depending on the page displayed, additional information may appear. Where appropriate, this additional information is identified in the following procedures.

Adding Devices

To add a device:

-
- Step 1** From the Manage Devices page, click **Add**. The Add Device page appears.
- Step 2** Choose the device type and class of service, and complete the other fields on the page. In addition to the fields described earlier in this section, you can also add new values for existing property name/value pairs.
- **Property Name**—Identifies the name of the custom or built-in device property.
 - **Property Value**—Identifies the value of the property.
- Step 3** Click **Submit** to add the device, or **Reset** to clear all fields.
-



Note

To specify a CPE DHCP criteria for a DOCSIS modem, for use with promiscuous computers, you must specify the property /provisioning/cpeDhcpCriteria. The value must be a valid DHCP criteria.

Modifying Devices

To modify a device:

-
- Step 1** From the Manage Devices page, click the **Identifier** link corresponding to the desired device. The Modify Device page appears.
- Step 2** Choose the desired parameter(s) from the applicable drop-down list(s) or enter the data in the correct field. You can modify any existing property name/value pairs by clicking **Add**, or delete any of them by clicking **Delete**.
- Step 3** Click **Submit** to save the changes made to this device, or **Reset** to clear all fields.
-

Deleting Devices

Deleting devices is a simple process, but one that you should use carefully. To undo the delete, you must restore a previously backed up database or re-add the device.



Note

Refer to the [“Database Restore” section on page 7-5](#) for additional information if restoration of a backed up database becomes necessary.

To delete a device:

-
- Step 1** From the Devices page, locate the device that you want to delete. You can use one of the search types for this purpose.
 - Step 2** Click the check box to the left of the desired device.
 - Step 3** Click **Delete**. The device record stored in the RDU database is removed.
-

Regenerating Device Configurations

It is sometimes necessary to change many different class of service or DHCP criteria parameters. When this happens, existing device configurations become stale and require regeneration of the configuration. To eliminate the need to manually regenerate each configuration, and reduce the potential for introducing errors, BACC provides a configuration regeneration service (CRS) that you can use to automatically regenerate all device configurations.

Device configurations are automatically regenerated whenever:

- A class of service property is changed.
- A DHCP criteria property changes.
- An external file is replaced. This applies to files that are dynamic DOCSIS templates and are directly associated with a class of service.
- New default classes of service or DHCP criteria are designated.

In addition, some configurations cannot be automatically regenerated, but must rely on manual regeneration using either the `generationConfiguration()` method or the administrator’s user interface. Configurations that must be manually regenerated are those that become necessary whenever:

- A technology default is changed.
- The system defaults are changed.
- A file that is included within another DOCSIS template is changed.



Note

Regardless of how configurations are regenerated, they are not propagated to the devices until the device is rebooted.

Relating and Unrelating Devices

The concept of relating devices is somewhat similar to that of Class of Service or DHCP Criteria inasmuch as a device is related to a specific class of service or to a specific DHCP criteria. The significant difference is that the Class of Service and DHCP Criteria are considered to be predefined nodes and that you use nodes to group devices into arbitrary groups that you define.

In this context, the Relate function lets you associate a device, using its MAC address, to a specific node, which is in turn associated with a specific node type.

By relating a device to a specific node, an extraordinarily large volume of information is recorded for the device. This information can then be used to troubleshoot potential problems. [Table 9-2](#) identifies a possible work flow using the Relate and Unrelate functions.

Table 9-2 Example Relate/Unrelate Process

Step	Action
1.	Determine whether or not a problem exists and identify which device(s) are affected.
2.	Relate the device(s) to a node.
3.	Wait a few minutes to ensure that device traffic is passing, or perform a hard boot of the device.
4.	Open the rdu.log file in a word processing application and locate the entries for the appropriate devices MAC address.
5.	Identify, correct, test, and verify the problem.
6.	Unrelate the device from the node.

Resetting Devices

The Reset button lets you reboot any selected device.

Unregistering a Device

The unregister function lets you reset a device back to its defaults as if it had just booted on the network.



Note

If the device has never booted on the network, it will be deleted.

Node Management

Node management allows the creation, modification and deletion of nodes and node types. Within the context of BACC, node types can be considered as groups of nodes, while nodes themselves make up the node type.

Managing Node Types

Access the Manage Nodes page (shown in [Figure 9-4](#)) by selecting Nodes from either the main menu or the primary menu bar. Node Type is the default setting when this page appears.

Figure 9-4 Manage Nodes Page

The screenshot displays the 'Manage Nodes' page. At the top, there is a navigation bar with 'Configuration', 'Devices', 'Nodes', 'Servers', and 'Users'. The 'Nodes' menu item is selected. Below the navigation bar, the page title is 'Broadband Access Center for Cable' with a 'Logout' link. The user information is 'User:admin Role:Administrator'. The main content area is titled 'Manage Nodes' and includes a sub-header: 'Use this page to manage nodes and node types (add, delete, modify or search)'. There is a 'Search Type' dropdown menu currently set to 'Node Type'. Below this is an 'Add' button. A table lists the existing node types:

Node Types	Delete
EST_Nodes	
Node_ABC	
system	

At the bottom left, it says 'Result Pages: 1'. On the right side, there is a vertical text '129906'.

Adding a Node Type

To add a new node type:

- Step 1 Click **Add** and the Add Node Type page appears.
- Step 2 Enter a name for the new node type.
- Step 3 Select the appropriate Property Name from the drop-down list and enter the required Property Value.
- Step 4 Click **Add** and the new node type appears. You can continue adding as many properties as required.
- Step 5 Click **Submit** when complete. The new node type is recorded in the RDU and the Manage Node Types page appears with the new node type added.

Modifying Node Types

To modify node type properties:

-
- Step 1** Click the desired node type and the Modify Node Type page appears.
 - Step 2** Make the necessary changes to the Property Name/Property Value pairs. If you need to delete a specific pair, click **Delete** next to the desired pair.
 - Step 3** Click **Submit** and the Manage Node page appears with the appropriately modified description.
-

Deleting Node Types

To delete node types:

-
- Step 1** In the Manager Node page click the **Delete** icon corresponding to the desired node type.
 - Step 2** In the Delete Node Type dialog box, click **OK** to delete the selected node type, or **Cancel** to return to the previous page.
- The Manage Nodes page appears without the deleted Node Type.
-

Managing Nodes

You can create and modify nodes, and delete unwanted nodes.

Adding a New Node

To add a new node:

-
- Step 1** Select **Nodes** from the drop-down list on the Manage Nodes page.
 - Step 2** Click **Add** and the Add Node page appears.
 - Step 3** Enter the new node name and select the appropriate Node Type for this node.
Click **Submit** when complete and the Manage Node page appears with the new node added.
 - Step 4** Select the appropriate Property Name from the drop-down list and enter the required Property Value.
 - Step 5** Click **Add** to increase the number of applicable Property Name/Property Value pairs.
 - Step 6** Click **Submit** when complete. The new node is recorded in the RDU and the Manage Nodes page appears with the new node added.
-

Modifying a Node

To modify node properties:

-
- Step 1 Click the desired node and the Modify Nodes page appears.
 - Step 2 Make the necessary changes to the Property Name/Property Value pairs. If you need to delete a specific pair, click **Delete** next to the desired pair.
 - Step 3 Click **Submit** and the Manage Node page appears with the appropriately modified description.
-

Deleting Nodes

You can delete any node that appears in the Manager Node page by checking the box corresponding to the node being deleted and then click **Delete**. The node is immediately deleted.

Relating/Unrelating Node Types to Nodes

The relate and unrelate functions are used to establish a relationship between specific node types and nodes. To either relate or unrelate this relationship:

-
- Step 1 Click **Relate** or **Unrelate**, as desired, for the selected node. Either the Relate Nodes or Unrelate Node page appears.
 - Step 2 Select the appropriate **Node Type** from the drop-down list and select the group to which the node will be related/unrelated.
 - Step 3 Click **Submit** and the Manage Nodes page appears.
-

Viewing Node Details

Use the **Devices** icon to search for a specific node. Doing this displays the Node Search function on the Manage Devices page. From this page select the appropriate Node Type and enter the node name. You can use wildcard characters to locate a group of similarly named nodes. See the [“Searching for Devices” section on page 9-6](#) for additional information on search functions.

Viewing Servers

This section describes the BACC administrator view server pages:

- [Listing Device Provisioning Engines, page 9-19](#)
- [Listing Network Registrar Extension Points, page 9-21](#)
- [Listing Provisioning Groups, page 9-23](#)
- [Viewing Regional Distribution Unit Details, page 9-24](#)

Listing Device Provisioning Engines

The List Device Provisioning Engines page lets you monitor the list of all DPEs currently registered with the BACC database. Each DPE name displayed on this page is a link to another page that shows the details for that DPE. Click this link to display the details page, which is similar to [Figure 9-5](#).



Note The RDU determines the names of the CNR extensions and DPEs by the interface they connect to the RDU on. That is, the name of the DPE or CNR extensions is what the RDU machine thinks it is.

Figure 9-5 View Device Provisioning Engine Details Page

The screenshot shows the 'View Device Provisioning Engine Details' page. The page header includes the Cisco Systems logo and the title 'View Device Provisioning Engine Details'. Below the title is a sub-header: 'Use this page to view the current values for the device provisioning engine that you selected.' The main content area is a table with various statistics and configuration details for the device 'test.cisco.com'.

Device Provisioning Engine Details	
Host Name:	test.cisco.com
Port:	49186
IP Address:	10.10.10.1
Primary Provisioning Group(s):	default
Secondary Provisioning Group(s):	
PacketCable Enabled:	No
CableHome Enabled:	Yes
Properties:	
Version:	BPR 2.7
UpTime:	12 day(s) 21 hour(s) 54 min(s) 49 sec(s)
State:	Ready
Cache Statistics	
Hits:	0
Misses:	0
Files:	0
Configurations:	2
TFTP Statistics	
Packets Received:	0
Packets Dropped:	0
Packets Successful:	0
Packets Failed:	0
Time Of Day Statistics	
Packets Received:	0
Packets Dropped:	0
Packets Successful:	0
Packets Failed:	0
PacketCable SNMP Statistics	
SNMP Informs Successful:	0
SNMP Sets Successful:	0
SNMP Configuration Informs Successful:	0
SNMP Configuration Informs Failed:	0
PacketCable MTA Statistics	
MTA AP Requests Received:	0
MTA AP Responses Sent:	0
PacketCable KDC Statistics	
KDC FQDN Requests Received:	0
KDC FQDN Responses Sent:	0

[Table 9-3](#) identifies the fields and buttons shown in [Figure 9-5](#).



Note The type of DPE details displayed for a hardware or Solaris DPE are the same.

Table 9-3 View Device Provisioning Engine Details Page

Field or Button	Description
Device Provisioning Engine Details	
Host Name	Identifies the DPE host name.
Port	Identifies the DPE port number.
IP Address	Identifies the IP address of the DPE.
Primary Provisioning Group(s)	Identifies the primary provisioning groups that the selected DPE belongs to. This is an active link that, if clicked, displays the Provisioning Group Details page for that provisioning group.
Secondary Provisioning Group(s)	Identifies the secondary provisioning group (provided that this DPE belongs to a secondary provisioning group) that the selected DPE belongs to.
PacketCable Enabled	Identifies whether the PacketCable voice technology is enabled on this DPE.
CableHome Enabled	Identifies whether the home networking technology is enabled on this DPE.
Properties	Identifies which properties have been assigned to this DPE.
Version	Identifies the version of DPE software currently in use.
Up Time (in seconds)	Specifies the total amount of time that the DPE has been operational since its last period of down time.
State	Identifies whether the DPE is ready for operations. Note If this field reads Offline, up time, and all fields below it, are not displayed.
Cache Statistics	
Hits	Identifies the number of cache hits that occurred since the last time the DPE was started.
Misses	Identifies the number of cache misses that occurred since the last time the DPE was started.
Files	Identifies the number of cache files that are currently stored in the DPE.
Configurations	Identifies how many device configuration files are saved in cache.
TFTP Statistics	
Packets Received	Identifies the number of TFTP packets that were received by the selected DPE.
Packets Dropped	Identifies the number of TFTP packets that were dropped due to the DPE being overloaded.
Packets Successful	Identifies the number of TFTP packets that were transmitted successfully.
Packets Failed	Identifies the number of TFTP packets that failed during transmission.
Time of Day Statistics	

Table 9-3 View Device Provisioning Engine Details Page (continued)

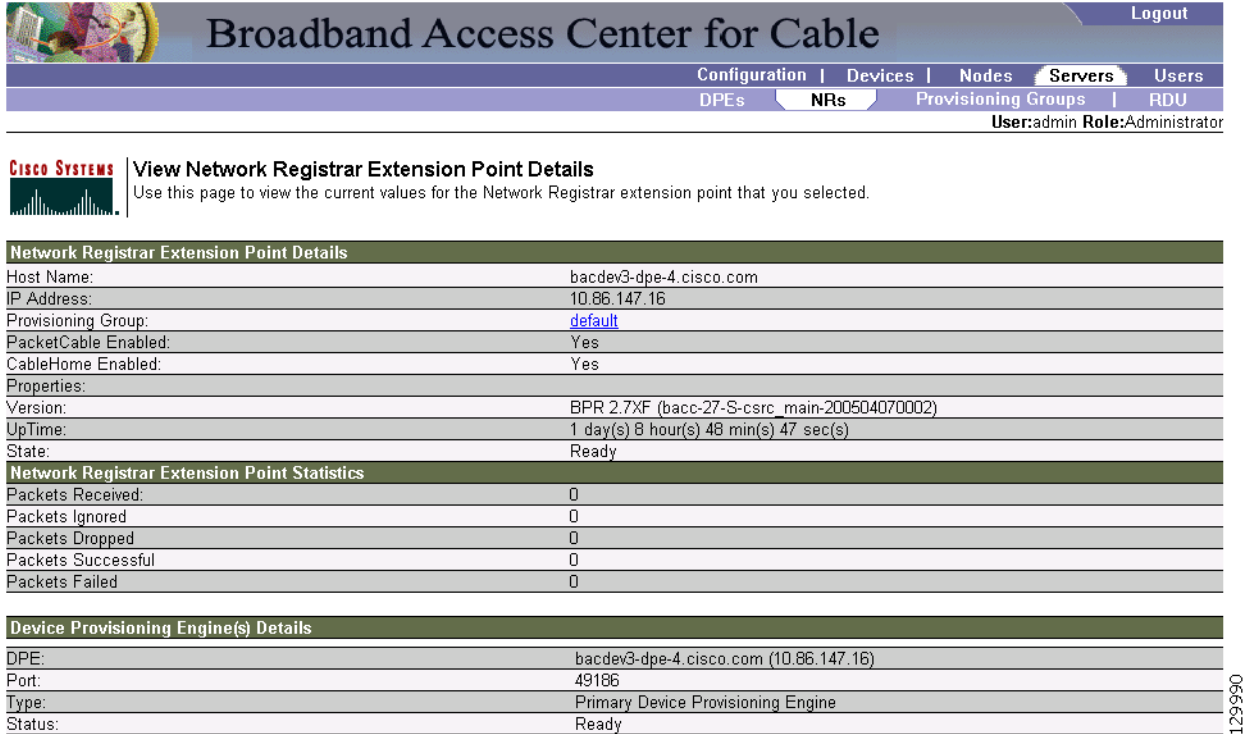
Field or Button	Description
Packets Received	Identifies the number of Time of Day packets that were received by the selected DPE.
Packets Successful	Identifies the number of Time of Day packets that were transmitted successfully.
Packets Failed	Identifies the number of Time of Day packets that failed during transmission.
PacketCable SNMP Statistics	
SNMP Informs Successful	Identifies the number of inform requests that were successfully sent.
SNMP Sets Successful	Identifies the number of successful SNMP sets.
Configuration Informs Successful	Identifies the number of SNMP informs received from PacketCable MTAs indicating that they were successfully provisioned.
Configuration Informs Failed	Identifies the number of SNMP informs received from PacketCable MTAs indicating that they failed to be provisioned.

Listing Network Registrar Extension Points

The List Network Registrar Extension Points page lists the extension points for all Network Registrar servers that have been registered with the RDU, and are configured for use with BACC. Network Registrar servers automatically register with the RDU when those servers are started.

Each Network Registrar extension point displayed on this page is a link to a secondary page that displays details of that extension point. Click this link to display the details page, which is similar to [Figure 9-6](#).

Figure 9-6 View Cisco Network Registrar Details Page



Broadband Access Center for Cable Logout

Configuration | Devices | Nodes | **Servers** | Users
DPEs | **NRs** | Provisioning Groups | RDU
User:admin Role:Administrator

CISCO SYSTEMS | **View Network Registrar Extension Point Details**
Use this page to view the current values for the Network Registrar extension point that you selected.

Network Registrar Extension Point Details	
Host Name:	bacdev3-dpe-4.cisco.com
IP Address:	10.86.147.16
Provisioning Group:	default
PacketCable Enabled:	Yes
CableHome Enabled:	Yes
Properties:	
Version:	BPR 2.7XF (bacc-27-S-csrc_main-200504070002)
UpTime:	1 day(s) 8 hour(s) 48 min(s) 47 sec(s)
State:	Ready
Network Registrar Extension Point Statistics	
Packets Received:	0
Packets Ignored:	0
Packets Dropped:	0
Packets Successful:	0
Packets Failed:	0
Device Provisioning Engine(s) Details	
DPE:	bacdev3-dpe-4.cisco.com (10.86.147.16)
Port:	49186
Type:	Primary Device Provisioning Engine
Status:	Ready

Table 9-4 identifies the fields and buttons shown in Figure 9-6.

Table 9-4 View Network Registrar Extension Point Details Page

Field or Button	Description
Network Registrar Extension Point Details	
Host Name	Displays the host name of the system running Network Registrar.
IP Address	Identifies the IP address of the Network Registrar.
Provisioning Group	Identifies the provisioning group for this Network Registrar servers. This is an active link that, if clicked, displays the Provisioning Group Details page for that provisioning group.
PacketCable Enabled	Identifies whether the PacketCable voice technology is enabled.
Properties	Identifies the properties that are applied to the selected Network Registrar.
Version	Identifies the extension point version currently in use.
Up Time	Identifies how long the Network Registrar extension point has been operational. This is indicated in hours, minutes, and seconds.
State	Identifies whether the DPE is ready for operations. Note If this field reads Offline, up time, and all fields below it, are not displayed.
Network Registrar Extension Point Statistics	

Table 9-4 View Network Registrar Extension Point Details Page (continued)

Field or Button	Description
Packets Received	Identifies the number of packets that were received.
Packets Ignored	Identifies the number of packets that were ignored.
Packets Dropped	Identifies the number of packets that were dropped.
Packets Successful	Identifies the number of packets that transferred successfully.
Packets Failed	Identifies the number of packets that failed to be transferred.
Device Provisioning Engine(s) Details	
DPE	Identifies the IP address of the device provisioning engine.
Port	Identifies the DPE port number.
Type	Identifies whether this DPE is a primary or secondary DPE.
Status	Identifies whether the DPE is operational.

Listing Provisioning Groups

The List Provisioning Groups page lets you monitor all current provisioning groups. Each provisioning group appearing in this list is a link to its own details page. Click this link to display the details page, which is similar to [Figure 9-7](#).

Figure 9-7 View Provisioning Group Details Page

Broadband Access Center for Cable Logout

Configuration | Devices | **Servers** | Users

DPEs | NRs | **Provisioning Groups** | RDU

CISCO SYSTEMS **View Provisioning Group Details**
Use this page to view the current values for the provisioning group that you selected.

Provisioning Group Details	
Name:	default
Primary Device Provisioning Engine(s):	bac-u5-26.cisco.com
Secondary Device Provisioning Engine(s):	
Network Registrar Extension Point(s):	bac-u5-26.cisco.com

101573

[Table 9-5](#) identifies the fields and buttons shown in [Figure 9-7](#). The fields described in [Table 9-5](#) may include active links that, if clicked, display the appropriate details page.

Table 9-5 View Provisioning Groups Details Page

Field or Button	Description
Name	Identifies the provisioning group name selected from the List Provisioning Groups page.
Primary Device Provisioning Engine(s)	Identifies the host names of the DPEs that are primary for this provisioning group.
Secondary Device Provisioning Engine(s)	Identifies the host names of the DPEs that are secondary for this provisioning group.
Network Registrar Extension Points	Identifies the host name of the Network Registrar server assigned to this provisioning group.

Viewing Regional Distribution Unit Details

The RDU option, from the Servers menu, displays details of the RDU currently in use. [Figure 9-8](#) illustrates a sample RDU details page.

Figure 9-8 View Regional Distribution Unit Details Page

The screenshot shows the Cisco Broadband Access Center for Cable interface. The navigation menu includes Configuration, Devices, Nodes, Servers, and Users. The Servers menu is expanded, showing DPEs, NRs, Provisioning Groups, and RDU. The user is identified as admin with the role of Administrator.

View Regional Distribution Unit Details
Use this page to view the current values for the regional distribution unit that you selected.

Regional Distribution Unit Details	
Host Name:	bacdev3-dpe-4.cisco.com
Port:	49187
IP Address:	10.86.147.16
Properties:	
Version:	BPR 2.7XG(Build Number)
UpTime:	5 min(s) 49 sec(s)
State:	Ready
PACE Statistics	
Batches Processed:	88
Batches Succeeded:	88
Batches Dropped:	0
Batches Failed:	0
Average Processing Time:	25 ms
Average Batch Processing Time:	25 ms
Configuration Regeneration Statistics	
State:	IDLE
Requests Processed:	0
Log Files	
RDU Log File	63
Audit Log File	63
Device Statistics	
DOCSIS Modems:	5
Packet Cable MTA:	5

[Table 9-6](#) identifies the fields and buttons shown in [Figure 9-8](#).

Table 9-6 View RDU Details Page

Field or Button	Description
Regional Distribution Unit Details	
Host Name	Identifies the host name of the system that is running the regional distribution unit.
Port	Identifies the RDU listening port number. Although the default port number is 49187, the port number displayed in this field is the same as that entered as the Regional Distribution Unit Host/Port screen during installation.
IP Address	Identifies the IP address assigned to the RDU.
Properties	Identifies the RDU properties that are used for server configuration and control.
Version	Specifies the version of RDU software currently in use.
Up Time	Specifies the total amount of time that the RDU has been operational since its last period of down time.
State	Identifies whether the RDU is ready to respond to requests.
PACE Statistics	
Batches Processed	Identifies how many individual batches have been processed while the PACE engine has been operating.
Batches Succeeded	Identifies how many individual batches have been successfully processed while the PACE engine has been operating.
Batches Dropped	Identifies how many batches have been dropped while the PACE engine has been operating.
Batches Failed	Identifies how many batches have failed processing while the PACE engine has been operating.
Average Processing Time	Identifies the average time, in milliseconds, that it takes to process the batch excluding the time it spends in the queue if RDU is too busy.
Average Batch Processing Time	Identifies the average time, in milliseconds, that it takes to process the batch including the time it spends in the queue if RDU is too busy.
Configuration Regeneration Statistics	
State	Identifies whether the configuration regeneration service is ready to respond to requests.
Requests Processed	Identifies how many configuration regeneration requests have been processed.

Table 9-6 View RDU Details Page (continued)

Field or Button	Description
Device Statistics	
<p>The information presented in this area depends on the technologies licensed and configured. The values presented for each technology represent the number of devices identified in the RDU database. These devices may include:</p> <ul style="list-style-type: none"> • DOCSIS Modems • Computers • ATA 186 and 188 devices • PacketCable MTAs • CableHome WAN DATA/WAN MAN devices <p>Note The Device Statistics section appears only when the appropriate devices are present. If external Jar files are installed, detailed information appears immediately after the Device Statistics section.</p>	

**Note**

For performance reasons, the RDU does not write updated database statistics to disk every time a device record is updated. Database statistics, such as device object counters shown in [Table 9-6](#), are maintained in memory and periodically written to the database. Consequently, the device statistics displayed in this page are approximate counts that may not exactly match the actual number of devices in the database.