APPENDIX **E**

FAQs on Provisioning Broadband Access Center

This appendix lists answers to FAQs about BAC provisioning.

- BAC Configuration, page E-1
- IPv6 Configuration, page E-2
- CMTS Configuration, page E-5

BAC Configuration

This section features FAQs related to general BAC configurations.

- How do I enable or disable Network Registrar extensions?
- How do I enable tracing for Network Registrar extensions?
- Why is my DPE server registration failing?

How do I enable or disable Network Registrar extensions?

The procedures described in this section assume that:

- The BAC component is installed in */opt/CSCObac*.
- Cisco Network Registrar is installed in */opt/nwreg2*.

To manually install Network Registrar extension points:

Step 1 Log in to the Network Registrar server, with *root* access.

Step 2 Copy the *libbprextensions.so* directory to the *NR_HOME/local/extensions/dhcp/dex/* directory.

Step 3 Copy the *cnr_ep.properties* file to the *BPR_HOME/cnr_ep/conf* directory.

Step 4 Configure extensions from the Network Registrar command-line tool (**nrcmd**) using:

*NR_HOME***/local/usrbin/nrcmd -s -b <** *BPR_HOME***/cnr_ep/bin/bpr_cnr_enable_extpts.nrcmd**

To manually disable Network Registrar extension points:

Step 1 Log in to the Network Registrar server, with *root* access.

Step 2 Enter:

NR_HOME/**local/usrbin/nrcmd -s -b <** *BPR_HOME*/**cnr_ep/bin/bpr_cnr_disable_extpts.nrcmd**

Step 3 Delete the *libbprextensions.so* file, which is located in the *NR_HOME/local/extensions/dhcp/dex/* directory.

How do I enable tracing for Network Registrar extensions?

To enable tracing for Network Registrar extension points:

Step 1 Log in to the Network Registrar web UI. The default login and password are **admin** and **changeme**.

Step 2 From the menu, click **DHCP > DHCP Server** page.

The Manage DHCP Server page appears.

Step 3 Click the DHCP Server link.

The Edit DHCP Server page appears.

Step 4 Expand the Extensions category, and set the **extension-trace-level** value as 3 or 4.

Step 5 To view incoming and outgoing packets, expand the Logging category, and select the **incoming-packet-detail** and **outgoing-packet-detail** check boxes.

Step 6 Click **Modify Server**.

Step 7 Reload the DHCP server.

Why is my DPE server registration failing?

The registration of your DPE servers may be failing because the DPEs are not up to the requirements of the provisioning group.

Check the DPE log files for error messages that indicate that you must:

- Enable additional configuration, for example, if you must enable the TFTP service on the DPE.
- Upgrade the servers to enable features that are available only in this release of BAC.

IPv6 Configuration

This section features FAQs related to IPv6 while configuring BAC.

- How do I enable provisioning in IPv6 for the DPE?
- How do I configure an IPv4 interface for provisioning?

- DPE is configured for IPv6 provisioning, but BAC does not provision IPv6 DOCSIS 3.0 devices. Why?
- When searching for all devices using their MAC address, some IPv6 devices do not show up. Why?
- How do I enable IPv6 on an interface?
- How do I configure IPv6 on a loopback interface?
- How do I disable a stateful DHCPv6 client on Solaris 10?
- How do I assign a static IP address to an interface?

How do I enable provisioning in IPv6 for the DPE?

To enable IPv6 provisioning for the DPE, complete this procedure from the DPE command line:

Step 1 For enabling IPv6 provisioning, you must configure two interfaces using the following commands:

a. To configure the DPE to use the specified interface, identified by its IP address, when communicating with Network Registrar extensions, enter:

interface ip *ip_address* **pg-communication**

ip_address—Identifies the IPv4 address of a specific DPE interface.

b. To configure the specified interface, identified by its IP address, to handle provisioning requests, enter:

interface ip *ip_address* **provisioning**

ip_address—Specifies the IP address of the interface in the IPv6 format.

Step 2 Enable these services using the respective commands:

- TFTP—**service tftp** *1..1* **ipv6 enabled true**
- ToD—**service tod** *1..1* **ipv6 enabled true**

Step 3 Reload the DPE using the **dpe reload** command.

How do I configure an IPv4 interface for provisioning?

To configure an IPv4 interface for provisioning, you must set the fully qualified domain name (FQDN) for that interface using this command:

interface ip *ip_address* **provisioning fqdn** *fqdn*

- *ip_address*—Specifies the IP address of the interface in the IPv4 format.
- *fqdn*—Identifies the FQDN that is set on the specified interface.

DPE is configured for IPv6 provisioning, but BAC does not provision IPv6 DOCSIS 3.0 devices. Why?

You must enable DOCSIS 3.0 for the provisioning group to which the DPE belongs.

On the BAC administrator user interface:

Step 1 Click **Servers > Provisioning Group**.

The Provisioning Group Details page appears.

Step 2 Click the Provisioning Groups link corresponding to the specific DPE.

Step 3 In the Capabilities Management area, click the **Enabled** radio button corresponding to IPv6 - DOCSIS 3.0.

Step 4 Click **Submit**.

When searching for all devices using their MAC address, some IPv6 devices do not show up. Why?

Some IPv6 devices do not appear following a search for all devices using the MAC address option because devices such as the Vista IPv6 computer do not report their MAC address in the Solicit message. As a result, they are known only by their DUID.

If a device reports its MAC address in the CableLabs Device ID option, then you can locate that device using its DUID or its MAC address.

How do I enable IPv6 on an interface?

To enable IPv6 on an interface, run the following commands:

```
# ifconfig intf inet6 plumb up
# ifconfig intf inet6 plumb up
# /usr/lib/inet/in.ndpd
# touch /etc/hostname6.intf
```

where *intf* identifies the interface on which you want to enable IPv6.

How do I configure IPv6 on a loopback interface?

Before you configure IPv6 on a loopback interface, confirm if the loopback interface is up using this command:

```
# ifconfig -a
```

If the loopback interface is not up, log in as *root* and run the following commands:

```
# ifconfig lo0 inet6 plumb
# route add -inet6 ::1/128 localhost
# ifconfig lo0 inet6 up
```

How do I disable a stateful DHCPv6 client on Solaris 10?

To disable a stateful DHCPv6 client on Solaris 10, you must change the *ndpd.conf* file using these commands:

```
# cat > /etc/inet/ndpd.conf <<EOF
ifdefault StatefulAddrConf off
EOF
```

How do I assign a static IP address to an interface?

While assigning a static IP address is not essential, to do so, run this command:

```
# ifconfig bge0 inet6 addif 2001:420:3800:601::1/64 up
```

CMTS Configuration

This section describes some FAQs related to configuring a cable modem termination system (CMTS):

- How do I know that both cable line cards are using the cable bundle 1?
- Is there an IPv6 cable-helper address that I can use?
- How do I configure multiple IPv6 subnets similar to IPv4 primary and secondary IPv4 subnets?
- How do I view the list of IPv6 modems on the CMTS?
- How do I configure a CMTS interface to accept only IPv6 single stack?
- What does the modem state init(x) mean?

How do I know that both cable line cards are using the cable bundle 1?

You must add this setting for each cable interface:

```
interface Cable3/0
 cable bundle 1
```

Is there an IPv6 cable-helper address that I can use?

Yes, this setting on the bundle is equivalent to the helper-address in IPv4:

```
ipv6 dhcp relay destination FC00:420:3800:710::2 GigabitEthernet0/1
```

How do I configure multiple IPv6 subnets similar to IPv4 primary and secondary IPv4 subnets?

While you can assign multiple prefixes to a bundle for IPv6, there are no primary or secondary types for these subnets in IPv6.

How do I view the list of IPv6 modems on the CMTS?

Use the following command to see the list of IPv6 modems:

```
show cable modem ipv6
```

How do I configure a CMTS interface to accept only IPv6 single stack?

You must add this option to the interface of the cable modem termination system (CMTS):

```
(config-if)# cable ip-init ipv6
```

What does the modem state init(x) mean?

The **show cable modems** (scm) command displays the connected cable modems and their respective states.

Table E-1 lists the various modem states in both IPv4 and IPv6.

Table E-1 Cable Modem States

State	Description
IPv4	
init(d)	DHCP Discover
init(io)	DHCP Offer
init(dr)	DHCP Request
init(i)	DHCP Ack
init(o)	TFTP Request
Init(t)	ToD Request
online	Online
IPv6	
init6(s)	Solicit
init6(a)	Advertise
init6(r)	Request
init6(i)	Reply
init6(o)	IPv6 TFTP Request
init6(t)	IPv6 ToD request
online	Online