



# CHAPTER 3

## DPE Configuration Commands

This chapter describes the command-line interface (CLI) commands that you can use to manage and monitor the Cisco Broadband Access Center (BAC) Device Provisioning Engine (DPE).

The commands described in this chapter are:

Command	Description	CLI Mode	
		Login	Privileged
<code>clear cache</code>	Erases the DPE cache and resets the server to a clean state.		✓
<code>dpe docsis shared-secret</code>	Set a DOCSIS shared secret on the DPE.		✓
<code>dpe port</code>	Sets the port number that the DPE uses to communicate with Cisco Network Registrar extensions.		✓
<code>dpe provisioning-group primary</code>	Sets the DPE in a specific primary provisioning group.		✓
<code>dpe provisioning-group secondary</code>	Sets secondary provisioning groups for the DPE.		✓
<code>dpe rdu-server port</code>	Specifies the RDU port to connect to.		✓
<code>dpe rdu-server source ip</code>	Configures the DPE source interface to connect to the RDU.		✓
<code>dpe rdu-server source port</code>	Configures the DPE source port to connect to the RDU.		✓
<code>dpe reload</code>	Restarts the DPE.		✓
<code>dpe shared-secret</code>	Sets the shared secret used in communications with the RDU.		✓
<code>dpe start   stop</code>	Starts or stops the DPE.		✓
<code>interface ip pg-communication</code>	Configures an interface to communicate with Cisco Network Registrar extensions.		✓
<code>interface ip provisioning</code>	Configures an interface to handle provisioning requests.		✓
<code>interface ip provisioning fqdn</code>	Sets the fully qualified domain name for a specific interface.		✓

Command	Description	CLI Mode	
		Login	Privileged
<code>service tftp allow-read-access</code>	Enables TFTP read requests from the file system.		✓
<code>service tftp ipv4   ipv6 blocksize</code>	Enables or disables the blocksize option for the TFTP service for IPv4 or IPv6.		✓
<code>service tftp ipv4   ipv6 enabled</code>	Enables or disables the TFTP service for IPv4 or IPv6.		✓
<code>service tftp ipv4   ipv6 verify-ip</code>	Enables the verification of requestor IP addresses on dynamic configuration TFTP requests.		✓
<code>service tod</code>	Enables or disables the ToD service for IPv4 or IPv6.		✓
<code>show device-config</code>	Displays a device configuration that is cached at the DPE.		✓
<code>show dpe</code>	Displays the state of the DPE process and, if running, its operational statistics.	✓	✓
<code>show dpe config</code>	Displays the current settings on the DPE.	✓	✓

## clear cache

Use the **clear cache** command to erase the DPE cache and reset the server to a clean state. When the DPE is restarted, it connects to the RDU and rebuilds the cache from the information stored in the RDU database.



### Note

Before erasing the DPE cache, ensure that you stop the DPE by running the **dpe stop** command. For more information, see [dpe start | stop, page 3-11](#).

You should clear the cache only when the DPE encounters a major problem. Running this command forces the DPE to rebuild or repopulate its device cache. This process may take an extended period of time to complete.

Once the command is entered, the DPE cache is cleared and a prompt appears to indicate the amount of disk space cleared as a result. If the cache could not be cleared, the reason for the failure appears.

### Syntax Description

No keywords or arguments.

### Defaults

No default behavior or values.

**Examples**

This result occurs when the cache is successfully cleared.

```
bac_dpe# clear cache
Clearing DPE cache...
+ 820224 bytes cleared.
```

This result occurs when the cache has already been cleared.

```
bac_dpe# clear cache
Clearing DPE cache...
+ Cache already cleared.
```

This result occurs when the DPE has not been stopped.

```
bac_dpe# clear cache
DPE must be stopped before clearing cache.
```

## dpe docsis shared-secret

Use the **dpe docsis shared-secret** command to set a DOCSIS shared secret (DSS) on the DPE. The DSS is used to calculate the message integrity check of cable modems and the cable modem termination system (CMTS).

**Note**


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While setting or changing the DSS, we recommend that you use a secure connection.

---

To disable the DSS, use the **no** form of this command.

**Syntax Description**

**dpe docsis shared-secret** *type secret*

- *type*—Identifies whether the shared secret string appears as clear text or as encrypted text. To specify the format, enter:
  - 0 for a clear text string. This string is the default setting.
  - 7 for a Cisco IOS-encrypted shared-secret text string.
- *secret*—Identifies the secret string. You must enter a value from 2 to 80 characters.

If, after running this command, you use the **show running-config** command, a new line appears identifying the shared secret and its type.

**Defaults**

The DSS is by default not configured on the DPE.

**Examples**

```
bac_dpe# dpe docsis shared-secret 0 changeme
% OK (Warning: Current input accepted. Note a secure connection is recommended to set or change the DOCSIS Shared Secret.)
```

## no dpe docsis shared-secret

Use the **no dpe docsis shared-secret** command to disable the DOCSIS shared secret (DSS) configured on the DPE.

To enable the DSS, see [dpe docsis shared-secret, page 3-3](#).

---

**Syntax Description** No keywords or arguments.

---

**Defaults** The DSS is by default not configured on the DPE.

---

**Examples**

```
bac_dpe# no dpe docsis shared-secret
% OK
```

## dpe port

Use the **dpe port** command to specify the port number that the DPE uses to communicate with the Network Registrar extension points. You can leave this port number intact unless there is a need to change it for firewall reasons.



**Note**

---

You must stop the DPE before changing the port number. If you attempt to run this command on an operational DPE, the following error message appears:

```
ERROR: DPE must be stopped before changing the port number.
```

---

The changes that you introduce through this command do not take effect until you restart the DPE. For information on stopping and starting the DPE, see [dpe start | stop, page 3-11](#).

---

**Syntax Description** **dpe port** *port*

*port*—Identifies the port number assigned for connecting to the DPE.

---

**Defaults** The default port that the DPE uses is 49186.

---

**Examples**

```
bac_dpe# dpe port 49186
% OK
```

## dpe provisioning-group primary

Use the **dpe provisioning-group primary** command to specify the DPE as a member of a specified primary provisioning group. Most DPEs are configured with one primary provisioning group; however, selecting multiple provisioning groups allows multiple DHCP servers to use this DPE.



### Note

If you enable PacketCable voice technology, ensure that a DPE belongs to only one provisioning group.

When assigning new provisioning groups that have a large number of devices, restarting the DPE can take an extended period of time depending on the number of devices in your network and the size of the device configurations. This delay occurs because the cache for each provisioning group has to be synchronized or, for new provisioning groups, completely rebuilt.



### Note

Typically, you must change the provisioning groups only when the DPE is first deployed on the network.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To remove any configured primary provisioning groups, use the **no** form of this command. See [no dpe provisioning-group primary, page 3-6](#).

### Syntax Description

**dpe provisioning-group primary** *name* [*name*\*

- *name*—Identifies the assigned primary provisioning group.
- *name*\*—Allows the entry of multiple provisioning groups. When specifying multiple provisioning groups, you must insert a space between their names.

### Defaults

The default primary provisioning group is the provisioning group that you configure as the default. You can use any name to identify the primary provisioning group. By default, however, the primary provisioning group is identified as 'default'.

### Examples

This result occurs when you specify a single primary provisioning group.

```
bac_dpe# dpe provisioning-group primary PrimaryProvGroup
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you specify multiple primary provisioning groups.

```
bac_dpe# dpe provisioning-group primary provisioning-grp-1 provisioning-grp-2
% OK (Requires DPE restart "> dpe reload")
```

## no dpe provisioning-group primary

Use the **no dpe provisioning-group primary** command to clear configured primary provisioning groups. If primary provisioning groups are not available, you can use the DPE as a backup for other provisioning groups or as a TFTP file cache.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To specify the DPE as a member of a specified primary provisioning group, see [dpe provisioning-group primary, page 3-5](#).

---

**Syntax Description** No keywords or arguments.

---

**Defaults** No default behavior or values.

---

**Examples**

```

bac_dpe# no dpe provisioning-group primary
% OK (Requires DPE restart "> dpe reload")

```

## dpe provisioning-group secondary

Use the **dpe provisioning-group secondary** command to set secondary provisioning groups for the DPE server to use. Most DPEs are configured with a primary provisioning group; however, selecting multiple provisioning groups allows multiple DHCP servers to use this DPE.




---

**Note**

Secondary provisioning groups are used for provisioning only when the primary provisioning groups are not available or are overloaded.

---

When assigning new provisioning groups that have a large number of devices, restarting the DPE can take an extended period of time depending on the number of devices in your network and the size of the device configurations. This delay occurs because the cache for each provisioning group has to be synchronized or, for new provisioning groups, completely rebuilt.




---

**Note**

Typically, you must change the provisioning groups only when the DPE is first deployed on the network.

---

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To remove any configured secondary provisioning groups, use the **no** form of this command. See [no dpe provisioning-group secondary, page 3-7](#).

**Syntax Description**

**dpe provisioning-group secondary** *name* [*name*\*]

- *name*—Identifies the assigned secondary provisioning group.
- *name*\*—Allows the entry of multiple provisioning groups. When specifying multiple provisioning groups, you must insert a space between their names.

**Defaults**

No default behavior or values.

**Examples**

This result occurs when you specify a single secondary provisioning group.

```
bac_dpe# dpe provisioning-group secondary SecondaryProvGroup
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you specify multiple secondary provisioning groups.

```
bac_dpe# dpe provisioning-group primary provisioning-second-1 provisioning-second-2
% OK (Requires DPE restart "> dpe reload")
```

## no dpe provisioning-group secondary

Use the **no dpe provisioning-group secondary** command to clear configured secondary provisioning groups. If secondary provisioning groups are not available, the DPE can be used as a primary in other provisioning groups.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload](#), page 3-10.

To set secondary provisioning groups for the DPE, see [dpe provisioning-group secondary](#), page 3-6.

**Syntax Description**

No keywords or arguments.

**Defaults**

No default behavior or values.

**Examples**

```
bac_dpe# no dpe provisioning-group secondary
% OK (Requires DPE restart "> dpe reload")
```

# dpe rdu-server

Use the **dpe rdu-server** command to configure the DPE to connect to the RDU server. [Table 3-1](#) lists the keywords that you can use with this command.

**Table 3-1** List of dpe rdu-server Commands

Command	Description				
<b>dpe rdu-server port</b>	<p>Identifies the RDU to which the DPE connects. Normally, you configure the RDU on the default port, but for security reasons, you could configure it to run on a nondefault port.</p> <p>After you use this command, run the <b>dpe reload</b> command so that the changes take effect. See <a href="#">dpe reload, page 3-10</a>.</p>				
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td> <p><b>dpe rdu-server</b> {<i>host</i>   <i>x.x.x.x</i>} <i>port</i></p> <ul style="list-style-type: none"> <li><i>host</i>—Identifies the fully qualified domain name (FQDN) of the RDU host.</li> <li><i>x.x.x.x</i>—Identifies the IP address of the RDU host.</li> <li><i>port</i>—Identifies the port number on which the RDU is listening for DPE connections.</li> </ul> </td> <td> <p>The default port on which the RDU listens for the DPE is 49187.</p> </td> </tr> </tbody> </table>	Syntax Description	Defaults	<p><b>dpe rdu-server</b> {<i>host</i>   <i>x.x.x.x</i>} <i>port</i></p> <ul style="list-style-type: none"> <li><i>host</i>—Identifies the fully qualified domain name (FQDN) of the RDU host.</li> <li><i>x.x.x.x</i>—Identifies the IP address of the RDU host.</li> <li><i>port</i>—Identifies the port number on which the RDU is listening for DPE connections.</li> </ul>	<p>The default port on which the RDU listens for the DPE is 49187.</p>
Syntax Description	Defaults				
<p><b>dpe rdu-server</b> {<i>host</i>   <i>x.x.x.x</i>} <i>port</i></p> <ul style="list-style-type: none"> <li><i>host</i>—Identifies the fully qualified domain name (FQDN) of the RDU host.</li> <li><i>x.x.x.x</i>—Identifies the IP address of the RDU host.</li> <li><i>port</i>—Identifies the port number on which the RDU is listening for DPE connections.</li> </ul>	<p>The default port on which the RDU listens for the DPE is 49187.</p>				
	<p><b>Examples</b></p> <p>This result occurs when you specify the RDU host:</p> <ul style="list-style-type: none"> <li>Using its FQDN. <pre> bac_dpe# dpe rdu-server rdu.example.com 49187 % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> <li>Using its IP address. <pre> bac_dpe# dpe rdu-server 10.10.20.1 49187 % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> </ul>				



Table 3-1 List of dpe rdu-server Commands (continued)

Command	Description				
<b>dpe rdu-server source ip</b>	Configures the DPE to use the specified interface as its source when connecting to the RDU. If you do not specify an interface, the DPE allows the operating system to determine the interface to use while communicating with the RDU server.				
<b>no dpe rdu-server source ip</b>	<p><b>Note</b> While using this command, you can specify IP addresses only in the IPv4 format.</p> <p>After you use this command, run the <b>dpe reload</b> command so that the changes take effect. See <a href="#">dpe reload</a>, page 3-10.</p> <p>To clear the configured interface, use the <b>no</b> form of this command. When clearing the configured interface, you need not specify the IP address of the interface.</p>				
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td> <b>dpe rdu-server source ip ip_address [?]</b> <ul style="list-style-type: none"> <li><i>ip_address</i>—Identifies the IP address of a specific DPE interface, in the IPv4 addressing format.</li> <li><i>?</i>—Dynamically determines and displays the available IP addresses. This parameter is optional. When you use this option, you need not specify an IP address.</li> </ul> </td> <td>No default behavior or values.</td> </tr> </tbody> </table>	Syntax Description	Defaults	<b>dpe rdu-server source ip ip_address [?]</b> <ul style="list-style-type: none"> <li><i>ip_address</i>—Identifies the IP address of a specific DPE interface, in the IPv4 addressing format.</li> <li><i>?</i>—Dynamically determines and displays the available IP addresses. This parameter is optional. When you use this option, you need not specify an IP address.</li> </ul>	No default behavior or values.
Syntax Description	Defaults				
<b>dpe rdu-server source ip ip_address [?]</b> <ul style="list-style-type: none"> <li><i>ip_address</i>—Identifies the IP address of a specific DPE interface, in the IPv4 addressing format.</li> <li><i>?</i>—Dynamically determines and displays the available IP addresses. This parameter is optional. When you use this option, you need not specify an IP address.</li> </ul>	No default behavior or values.				
	<p><b>Examples</b></p> <p>This result occurs when you configure the DPE interface.</p> <ul style="list-style-type: none"> <li>Using its IP address <pre> bac_dpe# dpe rdu-server source ip 10.10.1.2 % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> <li>Without specifying its IP address <pre> bac_dpe# dpe rdu-server source ip % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> <li>Using the ? option <pre> bac_dpe# dpe rdu-server source ip ? &lt;ip address&gt; [10.10.1.2] &lt;cr&gt; </pre> </li> </ul> <p>This result occurs when you clear the configured DPE interface.</p> <pre> bac_dpe# no dpe rdu-server source ip % OK (Requires DPE restart "&gt; dpe reload") </pre>				

Table 3-1 List of dpe rdu-server Commands (continued)

Command	Description				
<b>dpe rdu-server source port</b>	<p>Configures the DPE to use the specified port as the source port when connecting to the RDU. If you do not specify the port, the DPE allows the operating system to determine the port to use while communicating with the RDU.</p> <p>After you use this command, run the <b>dpe reload</b> command so that the changes take effect. See <a href="#">dpe reload, page 3-10</a>.</p> <p>To clear the configured port, use the <b>no</b> form of this command. When clearing the configured port, you need not specify the port number.</p>				
<b>no dpe rdu-server source port</b>					
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td> <p><b>dpe rdu-server source port</b> <i>port</i></p> <p><i>port</i>—Identifies the number of the DPE source port.</p> <p><b>Note</b> If the port you specify is not available, an error message appears.</p> </td> <td>No default behavior or values.</td> </tr> </tbody> </table>	Syntax Description	Defaults	<p><b>dpe rdu-server source port</b> <i>port</i></p> <p><i>port</i>—Identifies the number of the DPE source port.</p> <p><b>Note</b> If the port you specify is not available, an error message appears.</p>	No default behavior or values.
Syntax Description	Defaults				
<p><b>dpe rdu-server source port</b> <i>port</i></p> <p><i>port</i>—Identifies the number of the DPE source port.</p> <p><b>Note</b> If the port you specify is not available, an error message appears.</p>	No default behavior or values.				
	<p><b>Examples</b></p> <p>This result occurs when you configure a port to communicate with the RDU.</p> <pre>bac_dpe# dpe rdu-server source port 49186 % OK (Requires DPE restart "&gt; dpe reload")</pre> <p>This result occurs when you clear the configured port through which the DPE communicates with the RDU.</p> <pre>bac_dpe# no dpe rdu-server source port % OK (Requires DPE restart "&gt; dpe reload")</pre>				

## dpe reload

Use the **reload** command to restart the DPE, which must be operational before you reload it. If the DPE does not stop within 60 seconds, the BAC process watchdog (bprAgent) forces the DPE to stop, and an alert message, indicating that the DPE has been stopped, appears. Once the message appears, the DPE restarts.

### Syntax Description

No keywords or arguments.

### Defaults

No default behavior or values.

### Examples

```
bac_dpe# dpe reload
Process [dpe] has been restarted.
```

## dpe shared-secret

Use the **dpe shared-secret** command to set the shared secret used for communications with the RDU. Communication fails if the shared secret, which is set on the two servers, is not the same.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload](#), page 3-10.

---

**Syntax Description**

**dpe shared-secret** *secret*

*secret*—Identifies the RDU shared secret.

---

**Defaults**

No default behavior or values.

---

**Examples**

```
bac_dpe# dpe shared-secret private
% OK (Requires DPE restart "> dpe reload")
```

## dpe start | stop

Use the **dpe start | stop** command to start or stop the DPE.

---

**Syntax Description**

**dpe start | stop**

- **start**—Starts the DPE. You can use this command only when the DPE is not running. Having the DPE start successfully does not guarantee that the DPE will run successfully. Check the DPE log to ensure that the DPE has started correctly. Also, check the log periodically to ensure that no additional errors have occurred.
- **stop**—Stops the DPE. You can use this command only when the DPE is running. If the DPE has not stopped within 60 seconds, the DPE process watchdog (bprAgent) forces the DPE to stop, and an alert message, indicating that the DPE has been stopped, appears.

---

**Defaults**

No default behavior or values.

---

**Examples**

This result occurs when the DPE is started.

```
bac_dpe# dpe start
Process [dpe] has been started
```

This result occurs if the DPE is started when it is already operational.

```
bac_dpe# dpe start
Process [dpe] is already running
```

This result occurs when the DPE is stopped.

```
bac_dpe# dpe stop
Process [dpe] has been stopped.
```

## interface ip pg-communication

Use the **interface ip pg-communication** command to configure the DPE to use the specified interface, identified by its IP address, when communicating with Network Registrar extensions.



### Note

You can configure only IPv4 interfaces for communication with Network Registrar extensions.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To clear the configured interface, use the **no** form of this command. See [no interface ip pg-communication, page 3-12](#).

### Syntax Description

**interface ip *ipv4\_address* pg-communication**

*ipv4\_address*—Identifies the IPv4 address of a specific DPE interface.

### Defaults

No default behavior or values.

### Examples

```
bac_dpe# interface ip 10.10.1.20 pg-communication
% OK (Requires DPE restart "> dpe reload")
```

## no interface ip pg-communication

Use the **no interface ip pg-communication** command to disable the interface configured on the DPE when communicating with Network Registrar extensions.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To configure a DPE interface, see [interface ip pg-communication, page 3-12](#).

### Syntax Description

**no interface ip *ipv4\_address* pg-communication**

*ipv4\_address*—Identifies the IPv4 address of a specific DPE interface.

### Defaults

No default behavior or values.

### Examples

```
bac_dpe# no interface ip 10.10.1.20 pg-communication
```

% OK (Requires DPE restart "> dpe reload")

## interface ip provisioning

Use the **interface ip provisioning** command to configure the specified interface, identified by its IP address, to handle provisioning requests. Only interfaces that have provisioning enabled are used for communication with devices and the DHCP server.

If you do not specify an interface for communication with Network Registrar extensions, the extensions communicate with the DPE via the interface on which provisioning is enabled. If you configure an interface to communicate with the extensions (using the **interface ip pg-communication** command), the extensions communicate with the DPE via the interface you specify. Using this configuration, you can enable the use of split-networking techniques to isolate devices facing communication from management communications.



### Note

If you are using IPv6, you must configure an interface to communicate with Network Registrar extensions. Otherwise, the DPE fails to communicate with the extensions.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload](#), page 3-10.

To disable the configured interface, use the **no** form of this command. See [no interface ip provisioning](#), page 3-14.

### Syntax Description

**interface ip *ip\_address* provisioning [?]**

- *ip\_address*—Specifies the IP address of the interface in the IPv4 or the IPv6 format.
- ?—Dynamically determines and displays the available interfaces by their IP addresses. This parameter is optional. When you use this option, you need not specify an IP address.

The IP addresses that appear when you use the ? option do not change after you install the CLI. If you want to change the provisioning IP address, manually remove the existing IP address and configure a new IP address in the following manner:

1. Delete the existing IP address, using the **no interface ip *ip\_address* provisioning** command.
2. Shut down the CLI process, using the **/etc/init.d/bprAgent stop cli** command.
3. Change the IP address on the network card.
4. Start the CLI process again, using the **/etc/init.d/bprAgent start cli** command.
5. Add the new IP address from the DPE command line, using the **interface ip provisioning** command.
6. Reload the DPE, using the **dpe reload** command.

### Defaults

No default behavior or values.

**Examples**

This result occurs when you configure an interface by specifying its IPv4 address.

```
bac_dpe# interface ip 10.10.10.133 provisioning
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you configure an interface by specifying its IPv6 address.

```
bac_dpe# interface ip 2001:0DB8:0:0:203:baff:fe12:d5ea provisioning
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you use the ? option.

```
bac_dpe# interface ip ?
10.10.10.133          eri0 [3]
2001:0DB8:0:0:203:baff:fe12:d5ea  eri0 [1]
2001:0DB8:0:1:203:baff:fe12:d5ea  eri0
fe80:0:0:0:203:baff:fe12:d5ea     eri0 [2]
```

## no interface ip provisioning

Use the **no interface ip provisioning** command to disable provisioning via the specified interface.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To enable an interface, see [interface ip provisioning, page 3-13](#).

**Syntax Description**

**no interface ip *ip\_address* provisioning [?]**

- *ip\_address*—Specifies the IPv4 or IPv6 address of the interface.
- ?—Dynamically determines and displays the available interfaces by their IP addresses. This parameter is optional. When you use this option, you need not specify an IP address.

**Defaults**

No default behavior or values.

**Examples**

This result occurs when you disable an interface by specifying its IPv4 address.

```
bac_dpe# no interface ip 10.10.10.133 provisioning
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you disable an interface by specifying its IPv6 address.

```
bac_dpe# no interface ip 2001:0DB8:0:0:203:baff:fe12:d5ea provisioning
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you use the ? option.

```
bac_dpe# no interface ip ?
10.10.10.133          eri0 [3]
2001:0DB8:0:0:203:baff:fe12:d5ea  eri0 [1]
2001:0DB8:0:1:203:baff:fe12:d5ea  eri0
fe80:0:0:0:203:baff:fe12:d5ea     eri0 [2]
```

## interface ip provisioning fqdn

Use the **interface ip provisioning fqdn** command to set the fully qualified domain name (FQDN) for a specific interface. The provisioning FQDN is the domain name that is given to devices to contact the specific DPE interface.

**Note**

Before setting the FQDN for an interface, ensure that provisioning is enabled on that interface. To enable provisioning on an interface, see [interface ip provisioning, page 3-13](#).

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To clear the configured FQDN, use the **no** form of this command. See [no interface ip provisioning fqdn, page 3-15](#).

**Syntax Description**

**interface ip *ip\_address* provisioning fqdn *fqdn***

- *ip\_address*—Identifies the interface on the DPE.
- *fqdn*—Identifies the FQDN that is set on the specified interface. This FQDN is sent as the SNMPEntity in DHCP option 177, suboption 3.

**Defaults**

No default behavior or values.

**Examples**

This result occurs when you set the FQDN of an IPv4 interface.

```
bac_dpe# interface ip 10.10.1.2 provisioning fqdn dpe.example.com
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you set the FQDN of an IPv6 interface.

```
bac_dpe# interface ip 2001:0DB8:0:0:203:baff:fe12:d5ea provisioning fqdn dpe.example.com
% OK (Requires DPE restart "> dpe reload")
```

## no interface ip provisioning fqdn

Use the **no interface ip provisioning fqdn** command to clear the fully qualified domain name (FQDN) for a specific interface. The provisioning FQDN is the domain name that is given to devices to contact the specific DPE interface.

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).

To set the FQDN for an interface, see [interface ip provisioning fqdn, page 3-15](#).

**Syntax Description** **no interface ip** *ip\_address* **provisioning fqdn** *fqdn*

- ip\_address*—Identifies the interface on the DPE.
- fqdn*—Identifies the FQDN that is set on the specified interface. This FQDN is sent as the SNMP Entity in DHCP option 177, suboption 3.

**Defaults** No default behavior or values.

**Examples** This result occurs when you clear the FQDN of an interface by specifying its IPv4 address.

```
bac_dpe# no interface ip 10.10.1.2 provisioning fqdn dpe.example.com
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you clear the FQDN of an interface by specifying its IPv6 address.

```
bac_dpe# no interface ip 2001:0DB8:0:0:203:baff:fe12:d5ea provisioning fqdn
dpe.example.com
% OK (Requires DPE restart "> dpe reload")
```

## service tftp

Use the **service tftp** command to configure settings related to TFTP. [Table 3-2](#) lists the keywords that you can use with this command.

The TFTP service on the DPE features one instance of the service, which you can configure to suit your requirements.

**Table 3-2 List of service tftp Commands**

Command	Description				
<b>service tftp allow-read-access</b>	Enables TFTP read requests from the file system. When you enable this command, the DPE looks for the required file in the local directory; it does not search the DPE cache.				
<b>no service tftp allow-read-access</b>	To disable TFTP read requests from the file system, use the <b>no</b> form of this command.				
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td><b>service tftp</b> <i>l..l</i> <b>allow-read-access</b> <i>l..l</i>—Identifies the instance of the TFTP service.</td> <td>TFTP read requests are by default disabled.</td> </tr> </tbody> </table>	Syntax Description	Defaults	<b>service tftp</b> <i>l..l</i> <b>allow-read-access</b> <i>l..l</i> —Identifies the instance of the TFTP service.	TFTP read requests are by default disabled.
Syntax Description	Defaults				
<b>service tftp</b> <i>l..l</i> <b>allow-read-access</b> <i>l..l</i> —Identifies the instance of the TFTP service.	TFTP read requests are by default disabled.				
	<p><b>Examples</b></p> <p>This result occurs when you enable read requests from the file system.</p> <pre>bac_dpe# service tftp 1 allow-read-access % OK</pre> <p>This result occurs when you disable read requests from the file system.</p> <pre>bac_dpe# no service tftp 1 allow-read-access % OK</pre>				



Table 3-2 List of service tftp Commands (continued)

Command	Description				
<b>service tftp ipv4   ipv6 blocksize</b>  <b>no service tftp ipv4   ipv6 blocksize</b>	<p>Enables or disables the blocksize option for TFTP transfers using IPv4 or IPv6. The blocksize option specifies the number of data octets and allows the client and server to negotiate a block size more applicable to the network medium.</p> <p>When you enable blocksize, the TFTP service uses the requested block size for the transfer if it is within the specified lower and upper limits. If you disable blocksize, the TFTP service ignores the client request and an appropriate message is logged in the DPE log file.</p> <p>To disable the blocksize option for the TFTP service, use the <b>no</b> form of this command.</p>				
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td> <b>service tftp 1..1 ipv4   ipv6 blocksize lower upper</b> <ul style="list-style-type: none"> <li><i>1..1</i>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables blocksize for IPv4.</li> <li><b>ipv6</b>—Enables blocksize for IPv6.</li> <li><i>lower</i>—Specifies, in octets, the lower limit for the file transfer. If the transfer is lower than the limit specified, the option is ignored.</li> <li><i>upper</i>—Specifies, in octets, the upper limit for the file transfer. If the transfer is higher than the limit specified, the option is ignored.</li> </ul> </td> <td> <p>The blocksize option is by default:</p> <ul style="list-style-type: none"> <li>Disabled for IPv4. If enabled, the default lower and upper limits are 512 and 1428, respectively.</li> <li>Enabled for IPv6. The default lower and upper limits are 1448.</li> </ul> </td> </tr> </tbody> </table>	Syntax Description	Defaults	<b>service tftp 1..1 ipv4   ipv6 blocksize lower upper</b> <ul style="list-style-type: none"> <li><i>1..1</i>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables blocksize for IPv4.</li> <li><b>ipv6</b>—Enables blocksize for IPv6.</li> <li><i>lower</i>—Specifies, in octets, the lower limit for the file transfer. If the transfer is lower than the limit specified, the option is ignored.</li> <li><i>upper</i>—Specifies, in octets, the upper limit for the file transfer. If the transfer is higher than the limit specified, the option is ignored.</li> </ul>	<p>The blocksize option is by default:</p> <ul style="list-style-type: none"> <li>Disabled for IPv4. If enabled, the default lower and upper limits are 512 and 1428, respectively.</li> <li>Enabled for IPv6. The default lower and upper limits are 1448.</li> </ul>
Syntax Description	Defaults				
<b>service tftp 1..1 ipv4   ipv6 blocksize lower upper</b> <ul style="list-style-type: none"> <li><i>1..1</i>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables blocksize for IPv4.</li> <li><b>ipv6</b>—Enables blocksize for IPv6.</li> <li><i>lower</i>—Specifies, in octets, the lower limit for the file transfer. If the transfer is lower than the limit specified, the option is ignored.</li> <li><i>upper</i>—Specifies, in octets, the upper limit for the file transfer. If the transfer is higher than the limit specified, the option is ignored.</li> </ul>	<p>The blocksize option is by default:</p> <ul style="list-style-type: none"> <li>Disabled for IPv4. If enabled, the default lower and upper limits are 512 and 1428, respectively.</li> <li>Enabled for IPv6. The default lower and upper limits are 1448.</li> </ul>				
	<p><b>Examples</b></p> <p>This result occurs when you enable blocksize for TFTP transfers.</p> <ul style="list-style-type: none"> <li>Using IPv4 <pre> bac_dpe# service tftp 1 ipv4 blocksize 512 1428 % OK </pre> </li> <li>Using IPv6 <pre> bac_dpe# service tftp 1 ipv6 blocksize 1428 1448 % OK </pre> </li> </ul> <p>This result occurs when you disable blocksize for TFTP transfers.</p> <ul style="list-style-type: none"> <li>Using IPv4 <pre> bac_dpe# no service tftp 1 ipv4 blocksize % OK </pre> </li> <li>Using IPv6 <pre> bac_dpe# no service tftp 1 ipv6 blocksize % OK </pre> </li> </ul>				

Table 3-2 List of service tftp Commands (continued)

Command	Description				
<b>service tftp ipv4   ipv6 enabled</b>	<p>Enables or disables the TFTP service for IPv4 or IPv6.</p> <p>After you use this command, run the <b>dpe reload</b> command so that the changes take effect. See <a href="#">dpe reload, page 3-10</a>.</p> <p><b>Note</b> If the well-known TFTP port (port number 69) is not available, an error message appears.</p>				
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td> <p><b>service tftp 1..1 ipv4   ipv6 enabled true   false</b></p> <ul style="list-style-type: none"> <li><b>1..1</b>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables the TFTP service for IPv4.</li> <li><b>ipv6</b>—Enables the TFTP service for IPv6.</li> <li><b>true</b>—Enables the TFTP service for IPv4 or IPv6.</li> <li><b>false</b>—Disables the TFTP service for IPv4 or IPv6.</li> </ul> </td> <td> <p>The TFTP service is by default disabled.</p> </td> </tr> </tbody> </table>	Syntax Description	Defaults	<p><b>service tftp 1..1 ipv4   ipv6 enabled true   false</b></p> <ul style="list-style-type: none"> <li><b>1..1</b>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables the TFTP service for IPv4.</li> <li><b>ipv6</b>—Enables the TFTP service for IPv6.</li> <li><b>true</b>—Enables the TFTP service for IPv4 or IPv6.</li> <li><b>false</b>—Disables the TFTP service for IPv4 or IPv6.</li> </ul>	<p>The TFTP service is by default disabled.</p>
Syntax Description	Defaults				
<p><b>service tftp 1..1 ipv4   ipv6 enabled true   false</b></p> <ul style="list-style-type: none"> <li><b>1..1</b>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables the TFTP service for IPv4.</li> <li><b>ipv6</b>—Enables the TFTP service for IPv6.</li> <li><b>true</b>—Enables the TFTP service for IPv4 or IPv6.</li> <li><b>false</b>—Disables the TFTP service for IPv4 or IPv6.</li> </ul>	<p>The TFTP service is by default disabled.</p>				
	<p><b>Examples</b></p> <p>This result occurs when you enable the TFTP service.</p> <ul style="list-style-type: none"> <li>For IPv4 <pre> bac_dpe# service tftp 1 ipv4 enabled true % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> <li>For IPv6 <pre> bac_dpe# service tftp 1 ipv6 enabled true % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> </ul> <p>This result occurs when you disable the TFTP service.</p> <ul style="list-style-type: none"> <li>For IPv4 <pre> bac_dpe# service tftp 1 ipv4 enabled false % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> <li>For IPv6 <pre> bac_dpe# service tftp 1 ipv6 enabled false % OK (Requires DPE restart "&gt; dpe reload") </pre> </li> </ul>				

Table 3-2 List of service tftp Commands (continued)

Command	Description				
<b>service tftp ipv4   ipv6 verify-ip</b>	Enables the verification of requestor IP addresses on dynamic configuration TFTP requests.				
<b>no service tftp ipv4   ipv6 verify-ip</b>	To disable the verification of requestor IP addresses on dynamic configuration TFTP requests, use the <b>no</b> form of this command.				
	<table border="1"> <thead> <tr> <th>Syntax Description</th> <th>Defaults</th> </tr> </thead> <tbody> <tr> <td> <b>service tftp 1..1 ipv4   ipv6 verify-ip</b> <ul style="list-style-type: none"> <li><b>1..1</b>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables verification of requestor IP addresses in IPv4.</li> <li><b>ipv6</b>—Enables verification of requestor IP addresses in IPv6.</li> </ul> </td> <td>The verification of requestor IP addresses on dynamic configuration TFTP requests is by default enabled.</td> </tr> </tbody> </table>	Syntax Description	Defaults	<b>service tftp 1..1 ipv4   ipv6 verify-ip</b> <ul style="list-style-type: none"> <li><b>1..1</b>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables verification of requestor IP addresses in IPv4.</li> <li><b>ipv6</b>—Enables verification of requestor IP addresses in IPv6.</li> </ul>	The verification of requestor IP addresses on dynamic configuration TFTP requests is by default enabled.
Syntax Description	Defaults				
<b>service tftp 1..1 ipv4   ipv6 verify-ip</b> <ul style="list-style-type: none"> <li><b>1..1</b>—Identifies the instance of the TFTP service.</li> <li><b>ipv4</b>—Enables verification of requestor IP addresses in IPv4.</li> <li><b>ipv6</b>—Enables verification of requestor IP addresses in IPv6.</li> </ul>	The verification of requestor IP addresses on dynamic configuration TFTP requests is by default enabled.				
	<p><b>Examples</b></p> <p>This result occurs when you enable verification of requestor IP addresses on TFTP requests.</p> <ul style="list-style-type: none"> <li>For IPv4 <pre> bac_dpe# service tftp 1 ipv4 verify-ip % OK </pre> </li> <li>For IPv6 <pre> bac_dpe# service tftp 1 ipv6 verify-ip % OK </pre> </li> </ul> <p>This result occurs when you disable verification of requestor IP addresses on TFTP requests.</p> <ul style="list-style-type: none"> <li>For IPv4 <pre> bac_dpe# no service tftp 1 ipv4 verify-ip % OK </pre> </li> <li>For IPv6 <pre> bac_dpe# no service tftp 1 ipv6 verify-ip % OK </pre> </li> </ul>				

# service tod

Use the **service tod** command to enable or disable the Time of Day (ToD) service running on the DPE for IPv4 or IPv6. The ToD service binds to only those interfaces that are configured for provisioning. For information on how to enable an interface for provisioning, see [interface ip provisioning, page 3-13](#).

After you use this command, run the **dpe reload** command so that the changes take effect. See [dpe reload, page 3-10](#).



## Note

If the ToD port is not available, an error message appears.

## Syntax Description

**service tod *l..l* ipv4 | ipv6 enabled true | false**

- *l..l*—Identifies the instance of the ToD service.
- **ipv4**—Enables the ToD service for IPv4.
- **ipv6**—Enables the ToD service for IPv6.
- **true**—Enables the ToD service.
- **false**—Disables the ToD service.

## Defaults

The ToD service is by default disabled on the DPE.

## Examples

This result occurs when you enable the ToD service on the DPE.

- For IPv4
 

```
bac_dpe# service tod 1 ipv4 enabled true
% OK (Requires DPE restart "> dpe reload")
```
- For IPv6
 

```
bac_dpe# service tod 1 ipv6 enabled true
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you disable the ToD service on the DPE.

- For IPv4
 

```
bac_dpe# service tod 1 ipv4 enabled false
% OK (Requires DPE restart "> dpe reload")
```
- For IPv6
 

```
bac_dpe# service tod 1 ipv6 enabled false
% OK (Requires DPE restart "> dpe reload")
```

# show device-config

Use the **show device-config** command to display a device configuration that is cached at the DPE.

If you run this command on an unlicensed DPE, a message similar to this one appears:

```
This DPE is not licensed. Your request cannot be serviced. Please check with your
system administrator for DPE licenses.
```

## Syntax Description

**show device-config** *mac* | *duid*

- *mac*—Specifies the MAC address of a device. The accepted formats for *mac*, assuming that the MAC address header is 1,6, are:
  - “Type,len,addr”; for example, 1,6,00:01:02:03:04:05 or 9,10,43:43:31:32:33:34:35:36:2d:41.
  - Exact-size octets; for example, 000102030405 or 00:01:02:03:04:05.
- *duid*—Specifies the DHCP Unique Identifier (DUID) of a device in an IPv6 environment; for example, 00:03:00:01:00:18:68:52:75:c0. A DUID cannot be more than 128 octets long.

## Defaults

No default behavior or values.

## Examples

This result occurs when you look up a configuration based on the MAC address of the device. This example assumes that the MAC address is 1,6,aa:bb:cc:dd:ee:ff.

```
bac_dpe# show device-config mac 1,6,aa:bb:cc:dd:ee:ff
DHCP configuration for device 1,6,aa:bb:cc:dd:ee:ff in default provisioning-group:
  Extension PRE_CLIENT_LOOKUP
    Dictionary REQUEST
      VALIDATE relay-agent-remote-id = 00:00:00:00:aa:bb:cc:dd
      VALIDATE_CONTINUE dhcp-parameter-request-list-blob =
42:43:01:03:02:04:07:06:0c:0f:7a:b1
      VALIDATE_CONTINUE dhcp-class-identifier =
"docsisl.1:052401010102010103010104010105010106010107010f0801100901000a01010b01080c0101"
    Dictionary ENVIRONMENT
      PUT_REPLACE client-class-name = "unprovisioned-docsis"
  Extension PRE_PACKET_ENCODE
    Dictionary RESPONSE
      PUT_REPLACE ccc-primary-dhcp-server = BYTES_BPR_PROPERTY_OPTIONAL_IP_ADDRESS_BIN
"/ccc/dhcp/primary"
      PUT_REPLACE ccc-secondary-dhcp-server = BYTES_BPR_PROPERTY_OPTIONAL_IP_ADDRESS_BIN
"/ccc/dhcp/secondary"
      PUT_REPLACE boot-file = "unprov.cm"
      PUT_REPLACE file = "unprov.cm"
      PUT_REPLACE siaddr = BYTES_DPE_IP_ADDRESS_BIN
      PUT_REPLACE tftp-server = BYTES_DPE_IP_ADDRESS_DOTTED_DECIMAL
      PUT_REPLACE time-servers = BYTES_DPE_IP_ADDRESS_BIN
```

This result occurs when you look up a configuration based on the DUID of the device. This example assumes that the DUID is 00:00:00:00:00:00:00:52:75:c0.

```
bac_dpe# show device-config duid 00:00:00:00:00:00:00:52:75:c0
DHCP configuration for device 00:00:00:00:00:00:00:52:75:c0 in default provisioning-group:
DHCP Configuration for device 00:00:00:00:00:00:00:52:75:c0
  Commands:
    PRE_CLIENT_LOOKUP: ENVIRONMENT, PUT_REPLACE, client-class-name,
unprovisioned-docsis
```

```

PRE_CLIENT_LOOKUP: RELAY_REQUEST, VALIDATE_CONTINUE, link-address,
20:01:04:20:38:00:05:00:00:00:00:00:00:00:00:00:01
PRE_CLIENT_LOOKUP: REQUEST, VALIDATE_OPTION_CONTINUE, {OPTION_NUMBER=16,
ENTERPRISE_ID=4491, INDEX=0, END}, 64:6f:63:73:69:73:33:2e:30
PRE_PACKET_ENCODE: RESPONSE, PUT_OPTION, {OPTION_NUMBER=17, ENTERPRISE_ID=4491,
SUBOPTION_NUMBER=33, END}, unprov.cm
PRE_PACKET_ENCODE: RESPONSE, PUT_OPTION, {OPTION_NUMBER=17, ENTERPRISE_ID=4491,
SUBOPTION_NUMBER=37, END}, BYTES_DPE_IPV6_ADDRESS_BIN
PRE_PACKET_ENCODE: RESPONSE, PUT_OPTION, {OPTION_NUMBER=17, ENTERPRISE_ID=4491,
SUBOPTION_NUMBER=32, END}, BYTES_DPE_IPV6_ADDRESS_BIN

```

This result occurs when the configuration for the specified device is not available in the DPE cache.

```

bac_dpe# show device-config mac 1,6,aa:bb:cc:dd:ee:aa
No configuration found on DPE.

```

## show dpe

Use the **show dpe** command to check to see if the DPE is running and to display the state of the process and, if running, its operational statistics. This command does not indicate if the DPE is running successfully, only that the process itself is currently executing. However, when the DPE is running, you can use statistics that this command displays to determine if the DPE is successfully servicing requests.

If you run this command on an unlicensed DPE, a message similar to this one appears:

```

This DPE is not licensed. Your request cannot be serviced. Please check with your
system administrator for DPE licenses.

```

### Syntax Description

No keywords or arguments.

### Defaults

No default behavior or values.

### Examples

This result occurs when the DPE is running.

```

bac_dpe# show dpe
Process [dpe] is running

Version BAC 4.0 (SOL_BAC4_0_0_20000000_0000).
Caching 0 device configs and 6 external files.
Received 0 cache hits and 3 misses.
Received 0 lease updates.
Connection status is Ready.
Sent 0 SNMP informs and 0 SNMP sets.
Received 0 MTA provisioning successful SNMP informs.
Received 0 MTA provisioning failed SNMP informs.
Running for 10 hours 51 mins 23 secs.

```

This result occurs when the DPE is not running.

```

bac_dpe# show dpe
BAC Process Watchdog is running
Process [dpe] is not running

```

When this error occurs, start the DPE process. See [dpe start | stop, page 3-11](#).

This result occurs when the DPE is unable to service requests.

```
bac_dpe# show dpe
BAC Process Watchdog is running
Process [dpe] is not running; it is in back off mode
```

This error occurs when there is an issue with the DPE. Look at the DPE log (*dpe.log*) to troubleshoot the issue.

## show dpe config

Use the **show dpe config** command to display the current settings on the DPE.

---

**Syntax Description** No keywords or arguments.

---

**Defaults** No default behavior or values.

---

**Examples**

```
bac_dpe# show dpe config
dpe port          = 49186
rdu host          = source
rdu port          = ip
primary groups    = provisioning-second-1,provisioning-second-2
secondary groups = [no value]
```

■ show dpe config