Cisco Broadband Access Center DPE CLI Reference

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CONTENTS

Preface

The *Cisco Broadband Access Center DPE CLI Reference* describes the command-line interface (CLI) commands that Cisco Broadband Access Center, which is called BAC throughout the guide, supports on the Device Provisioning Engine (DPE).

This preface provides an outline of the other chapters in this guide, details information about related documents that support this BAC release, and demonstrates the styles and conventions used in the guide.

This preface contains the following sections:

Audience

This guide is written for those using the CLI of the BAC DPE.

How This Guide Is Organized

The major sections of this guide are:

Introduction to the Broadband Access Center CLI	Describes the DPE CLI, explains how you access the DPE, and provides a list of the commands that you can use on hardware DPEs, on Solaris DPEs, or on both.
System Commands	Describes commands used to manage various system aspects of the DPE.
DPE Configuration Commands	Describes commands used to configure both hardware and Solaris DPEs.

PacketCable Voice Technology Commands	Describes commands related to the PacketCable voice technology.
SNMP Agent Commands	Describes commands related to the SNMP agent on the DPE.
Log System Management Commands	Describes commands related to log management of the DPE.
Support and Troubleshooting Commands	Describes commands used to support and troubleshoot the DPE.
Glossary	Defines terminology used in this guide and generally applicable to the technologies being discussed.

Conventions

This guide uses the following conventions:

Item	Convention
Commands and keywords	**boldface** font
Variables for which you supply values	*italic* font
Displayed session and system information	`screen` font
Information you enter	**`boldface screen`** font
Variables you enter	*`italic screen`* font
Menu items and button names	**boldface** font
Selecting a menu item in paragraphs	**Option > Network Preferences**
Selecting a menu item in tables	Option > Network Preferences

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Product Documentation

Note We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 1 describes the documentation that is available for this BAC release.

Table 1 Product Documentation

Document Title	Available Format
Release Notes for Cisco Broadband Access Center, Release 2.7.1	• PDF on the product CD-ROM • On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps529/prod_release_notes_list.html
Installation and Setup Guide for Cisco Broadband Access Center, Release 2.7.1	• PDF on the product CD-ROM • On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps529/prod_installation_guides_list.html
Cisco Broadband Access Center Administrator Guide, Release 2.7.1	• PDF on the product CD-ROM • On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps529/prod_maintenance_guides_list.html
Cisco Broadband Access Center DPE CLI Reference, Release 2.7.1	• PDF on the product CD-ROM • On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps529/prod_command_reference_list.html
To support the DPE-2115: • *DPE-2115 Recovery CD-ROM Release Notes* • *Installation and Setup Guide for the Cisco 1102 VLAN Policy Server*	On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps529/prod_release_notes_list.html

Caution Refer to the Cisco 1102 VLAN Policy Server guide only for port and connector identification and to perform hardware installation. Do not attempt to perform any of the configuration instructions described in that guide.

Related Documentation

Note We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 2 describes additional documentation that is available for this BAC release.

Table 2 Related Product Documentation

Document Title	Available Format
Release Notes for Cisco Network Registrar 6.2.3	On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps1982/prod_release_notes_list.html
Cisco Network Registrar User's Guide, Release 6.2.1	On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps1982/products_user_guide_list.html
Cisco Network Registrar CLI Reference, Release 6.2.1	On Cisco.com: http://cisco.com/en/US/products/sw/netmgtsw/ps1982/prod_command_reference_list.html

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New* in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

CHAPTER 1

Introduction to the Broadband Access Center CLI

This chapter describes how you can access the command-line interface (CLI) of the Broadband Access Center (BAC) Device Provisioning Engine (DPE).

The chapter also provides a list of the commands specific to a hardware DPE and the Solaris DPE. Command Usage, page 1-3, identifies the commands used on either type of DPE.

Note The commands related to a hardware DPE that are described in this guide are used on DPE-2115 devices. This release does not support the DPE-590 appliance. You can, however, upgrade the DPE-590 to Broadband Access Center for Cable version 2.7, which is compatible with the BAC 2.7.1 RDU.

Accessing the DPE CLI

You access the CLI for hardware and Solaris DPEs in different ways:

- Access the hardware DPE via Telnet or the console port of the DPE.
- Access the Solaris DPE by telneting to port 2323.

Accessing the Hardware DPE CLI

When using the DPE-2115, connect your computer to the serial console port on the hardware DPE. Once connected, complete these steps:

Step 1 Initiate a Hyper Terminal connection between your computer and the DPE.

Step 2 Once the connection is made, enter the DPE password at the password prompt. Then continue with the CLI operations you need to perform.

Note Although the default DPE password is **changeme**, remember that it is not the same password that is used to access the BAC administrator user interface.

Accessing the Solaris DPE CLI

You can access the CLI of a Solaris DPE in one of two ways: from a local or remote host.

Accessing from a Local Host

To access the CLI from a local host, use:

```
# telnet localhost 2323
```

or

```
# telnet 0 2323
```

Accessing from a Remote Host

To access the CLI from a remote host, enter:

```
# telnet remote-hostname 2323
```

Note If you cannot establish a Telnet connection to the CLI, the CLI server is probably not running. You may need to start the server. To start the server, enter:

```
# /etc/init.d/bprAgent start cli
```

After you access the CLI, you must enter the DPE password to continue. The default login and enable passwords are **changeme**. For information on how to change the login password and the enable password, see enable, page 2-4, and enable password, page 2-5, respectively.

Examples

```
bac_host# telnet 0 2323

Trying 0.0.0.0...
Connected to 0.
Escape character is '^]'.

bac_host BAC Device Provisioning Engine


User Access Verification

Password:

bac_host> enable
Password:
bac_host#
```

Command Usage

Some CLI commands can be used on the hardware and the Solaris DPEs. Others, however, can be used on one or the other, but not both. Table 1-1 describes this support.

Table 1-1 DPE Command Support

Command	DPE Support		
	Only Hardware	Only Solaris	Both
aaa authentication			✓
clear bundles			✓
clear cache			✓
clear logs			✓
clock set	✓		
debug dpe cache			✓
debug dpe connection			✓
debug dpe dpe-server			✓
debug dpe event-manager			✓
debug dpe events			✓
debug dpe exceptions			✓
debug dpe framework			✓
debug dpe messaging			✓
debug dpe netsnmp			✓
debug dpe registration			✓
debug dpe registration-detail			✓
debug dpe snmp			✓
debug dpe tftp			✓
debug on			✓
disable			✓
docsis shared-secret			✓
dpe port			✓
dpe provisioning-group primary			✓
dpe provisioning-group secondary			✓
dpe rdu-server			✓
dpe reload			✓
dpe shared-secret			✓
dpe start			✓
dpe stop			✓
enable			✓

Table 1-1 DPE Command Support (continued)

Command	DPE Support		
	Only Hardware	Only Solaris	Both
enable password			✓
exit			✓
help			✓
host	✓		
hostname	✓		
interface ethernet provisioning enabled			✓
interface ethernet provisioning fqdn			✓
interface ethernet ip address	✓		
interface ethernet ip enabled	✓		
ip default-gateway	✓		
ip domain-name	✓		
ip name-server	✓		
ip route	✓		
log level			✓
no debug			✓
ntp server	✓		
packetcable enable			✓
packetcable registration encryption			✓
packetcable registration kdc-service-key			✓
packetcable registration policy-privacy			✓
packetcable snmp key-material			✓
packetcable snmp timeout			✓
password			✓
ping	✓		
poweroff	✓		
reload	✓		
show bundles			✓
show clock			✓
show commands			✓
show cpu			✓
show device-config			✓
show disk			✓
show dpe			✓
show dpe config			✓

Table 1-1 DPE Command Support (continued)

Command	DPE Support		
	Only Hardware	Only Solaris	Both
show hostname			✓
show interface ethernet config			✓
show interface ethernet stats			✓
show ip			✓
show ip route			✓
show log			✓
show memory			✓
show packetcable snmp log			✓
show running-config			✓
show syslog	✓		
show tftp files			✓
show version			✓
snmp-server community			✓
snmp-server contact			✓
snmp-server host			✓
snmp-server inform			✓
snmp-server location			✓
snmp-server reload			✓
snmp-server start			✓
snmp-server stop			✓
snmp-server udp-port		✓	
support bundle cache			✓
support bundle state			✓
support daemon ftp enabled	✓		
support daemon telnet enabled	✓		
syslog log-server	✓		
syslog mode	✓		
tacacs-server host			✓
tacacs-server retries			✓
tacacs-server timeout			✓
tftp allow-create-dirs			✓
tftp allow-override			✓
tftp allow-read-access			✓
tftp allow-write-access			✓

Table 1-1 DPE Command Support (continued)

Command	DPE Support		
	Only Hardware	Only Solaris	Both
tftp verify-ip			✓
traceroute	✓		
upgrade	✓		
uptime			✓

CHAPTER 2

System Commands

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

Note If you run these commands 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 a DPE license.
```

The system commands that affect the entire DPE are:

aaa authentication

Use this command to configure the CLI to perform local user (login) authentication or remote TACACS+ user authentication. This setting applies to all Telnet and console CLI interfaces.

TACACS+ is a TCP-based protocol that supports centralized access control for large numbers of network devices and user authentication for the DPE CLI. Through the use of TACACS+, a DPE supports multiple users (and their individual usernames) and the login and enable passwords configured at the TACACS+ server.

Usage Guidelines

Although this command is used on both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

aaa authentication *mode*

mode specifies either:

- **local**—In this mode, user authentication is enabled via a local login.
- **tacacs**— In this mode, the CLI sequentially attempts a TACACS+ exchange with each server in the TACACS+ server list. The attempts continue for a specified number of retries. If the end of the server list is reached before a successful protocol exchange occurs, the local authentication mode is entered automatically. In this manner, you can gain access to the CLI even if the TACACS+ service is completely unavailable.

Note TACACS+ authentication prompts you to enter your TACACS+ configured username and password; local authentication, however, prompts only for the local configured password.

Defaults

The default CLI user's login authentication is enabled in the local mode.

Examples

```
dpe# aaa authentication tacacs
% OK
```

clock set

Use this command to set the current time, in the 24-hour format, and the date used by the DPE. The DPE uses GMT to keep time, and any time changes made take effect immediately.

Note You do not have to use this command if Network Time Protocol (NTP) is being used. For additional information, see ntp server, page 2-13.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

clock set *hh:mm:ss day month yyyy*

- *hh:mm:ss*—Identifies the current time in the 24-hour format. For example, 5:00 a.m. is identified as 05:00:00, and 11:37 p.m. and 30 seconds is identified as 23:37:30.
- *day*—Identifies the date of the month as a number between 1 and 31.
- *month*—Identifies the current month as a number between 1 and 12.
- *yyyy*—Identifies the current year in four digits.

Examples

```
dpe# clock set 11:26:00 14 12 2006
Fri Dec 14 11:26:00 GMT 2006
% OK
```

disable

Use this command to exit the enabled mode on the DPE. Once the disabled mode is activated, only those commands that allow viewing the system configuration are available on the CLI.

Usage Guidelines

Use this command on both hardware and Solaris DPEs, but only in the enabled mode.

Syntax Description

No keywords or arguments.

Examples

```
dpe# disable
dpe>
```

enable

Use this command to access the DPE in the enabled mode. Viewing the system configuration does not require the enabled mode; however, only in this mode can you change the system configuration, state, and data.

After entering the command, you are prompted to enter the local, configured, enable password. For information on setting the password for the enabled mode, see enable password, page 2-5.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe> enable
Password:
dpe#
```

enable password

Use this command to change the local password for accessing the DPE in the enabled mode.

Once the password is changed, all users who, from that point forward, attempt to enter into the enabled mode are required to use the new password.

Note This command does not change the login password; it only changes the local enable password. You do not use this command when TACACS+ authentication is enabled. See aaa authentication, page 2-2, for more information.

Usage Guidelines

Use this command on both hardware and Solaris DPEs, but only in the enabled mode.

Syntax Description

When entering the **enable password** command, you can provide the password on a command line or when prompted.

enable password *password*

password—Specifies the local configured password currently in effect or, optionally, provides a new password. If this parameter is omitted, you are prompted for the password.

Examples

Example 1

```
dpe# enable password
New enable password:
Retype new enable password:
Password changed successfully.
```

This result occurs when you are prompted to enter the password, and the password is changed successfully.

Example 2

```
dpe# enable password
New enable password:
Retype new enable password:
Sorry, passwords do not match.
```

This result occurs when the password is entered incorrectly.

Example 3

```
dpe# enable password cisco
Password changed successfully
```

This result occurs when you enter the password without being prompted, and the password is changed successfully.

exit

Use this command to close a Telnet connection to the DPE and return to the login prompt. After running this command, a message indicates that the Telnet connection has been closed.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# exit
% Connection closed.
```

help

Use this command to display a help screen to assist you in using the DPE CLI. If you need help on a particular command, or to list all available commands, enter *command* **?** or **?**, respectively.

After entering the command, a screen prompt appears to explain how you can use the help function.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Command Types

Two types of help are provided:

1. Full help is available when you are ready to enter a command argument, such as **show ?**, and describes each possible argument.
2. Partial help is provided when you enter an abbreviated argument and want to know what arguments match the input; for example, **show c?**.

Syntax Description

No keywords or arguments.

Examples

Example 1

```
dpe# help
Help may be requested at any point in a command by entering a question mark '?'. If
nothing matches, the help list will be empty and you must backup until entering a '?'
shows the available options.

1) Full help is available when you are ready to enter a command argument (e.g. 'show ?')
and describes each possible argument.

2) Partial help is provided when an abbreviated argument is entered and you want to know
what arguments match the input (e.g. "show c?").
```

This result occurs when you use the **help** command.

Example 2

```
dpe# show ?
  bundles         Shows the archived bundles.
  clock           Shows the current system time.
  commands        Shows the full command hierarchy.
  cpu             Shows the current CPU usage.
  device-config   Show device configuration.
  disk            Shows the current disk usage.
  dpe             Shows the status of the DPE process if started.
  hostname        Shows the system hostname.
  interface       Shows all of the interfaces.
  ip              Shows IP configuration details.
  log             Shows recent log entries.
  memory          Shows the current memory usage.
  packetcable     Shows PacketCable.
  running-config  Shows the appliance configuration.
  tftp            Shows TFTP details.
  version         Shows DPE version.
```

This result occurs on a Solaris DPE when you invoke the full help function for a command; in this instance, **show ?**.

Example 3

```
dpe# show ?
  bundles         Shows the archived bundles.
  clock           Shows the current system time.
  commands        Shows the full command hierarchy.
  cpu             Shows the current CPU usage.
  disk            Shows the current disk usage.
  dpe             Shows the status of the DPE process if started.
  hostname        Shows the system hostname.
  interface       Shows all of the interfaces.
  ip              Shows IP configuration details.
  log             Shows recent log entries.
  memory          Shows the current memory usage.
  running-config  Shows the appliance configuration.
  syslog          Shows the recent syslog entries.
  version         Shows DPE version.
```

This result occurs on a hardware DPE when you invoke the full help function for a command; in this instance, **show ?**.

Example 4

```
dpe# show c?
clock     commands  cpu
dpe# show clock
Sat Nov 14 12:06:52 EDT 2006
```

This result occurs when you invoke the partial help function for arguments of a command; in this instance, **show clock**.

hostname

Use this command to set the DPE hostname. The hostname is used primarily for display in the DPE and should correspond to the DNS name for the IP address of the DPE.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16, for additional information.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

hostname *hostname*

hostname—Identifies the hostname of the DPE.

Examples

```
dpe# hostname BPR_DPE_name
% OK (Requires appliance restart "> reload")
```

interface ethernet ip address

Use this command to set the IP address of the Ethernet interface being used by the DPE. This IP address must be kept current with a valid gateway. If the gateway is invalid, rebooting could occur, and this might cause the DPE to become unavailable on the network. If the IP address is configured incorrectly, use the DPE console port to reconfigure the device with a valid IP.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16, for additional information.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

interface ethernet *0...1* **ip address** *x.x.x.x y.y.y.y*

- *0...1*—Identifies the Ethernet interface.
- *x.x.x.x*—Identifies the IP address of the DPE.
- *y.y.y.y*—Identifies the subnet mask.

Examples

```
dpe# interface ethernet 0 ip address 10.10.10.5 255.255.255.0
% OK (Requires appliance restart "> reload")
```

interface ethernet ip enabled

Use this command to control whether the Ethernet interfaces are configured to support IP communications. If both interfaces are disabled, the device will have no network connectivity. Typically, both interfaces are enabled and connected to the network either to provide redundancy or to use split networking.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16, for additional information.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

interface ethernet *0...1* **ip enabled** {**true** | **false**}

- *0...1*—Identifies the Ethernet interface
- **true**—Indicates if the Ethernet interface on the DPE is enabled for IP.
- **false**—Indicates if the Ethernet interface on the DPE is disabled for IP.

Examples

```
dpe# interface ethernet 0 ip enabled true
% OK (Requires appliance restart "> reload")
```

ip default-gateway

Use this command to configure a default gateway for the DPE. This default gateway must be directly accessible by one of the DPE interfaces, otherwise the DPE becomes unavailable.

Note You must verify this setting before attempting to reboot the DPE. If an incorrect value is configured, it may become necessary to physically connect to the DPE through the console port; long distances make this impractical.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16, for additional information.

To clear the default gateway configured for the DPE, use the **no** form of this command. See no ip default-gateway, page 2-10.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

ip default-gateway *x.x.x.x*

x.x.x.x—Identifies the IP address of the default gateway.

Examples

```
dpe# ip default-gateway 10.10.20.10
% OK (Requires appliance restart "> reload")
```

no ip default-gateway

Use this command to clear the default gateway for a DPE. If a default gateway is not specified, the DPE is available only with direct network connectivity or through the console port on the DPE.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16, for additional information.

To configure a default gateway for a DPE, see ip default-gateway, page 2-9.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no ip default-gateway
% OK (Requires appliance restart "> reload")
```

ip domain-name

Use this command to configure the DPE domain name used when resolving names for communication operations, such as connecting to the RDU, or when using the **ping** and **traceroute** commands. The domain name is also associated with the DPE.

To clear the domain name configured for the DPE, use the **no** form of this command. See no ip domain-name, page 2-11.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

ip domain-name *sub.domain.com*

sub.domain.com—Identifies the fully qualified domain name (FQDN) of the DPE.

Examples

```
dpe# ip domain-name cisco.com
% OK
```

Note The changes you introduce through this command take effect immediately. You do not need to reload the DPE.

no ip domain-name

Use this command to clear the configured domain name of a DPE. If a domain name is not specified, all remote hostnames must be specified using FQDNs.

To set a domain name for a DPE, see ip domain-name, page 2-10.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no ip domain-name
% OK
```

Note The changes you introduce through this command take effect immediately. You do not need to reload the DPE.

ip name-server

Use this command to configure the IP address of the name servers for use on the DPE. These servers are used to resolve hostnames into IP addresses for communication. If an FQDN is used to specify the RDU, you must specify a valid name server for successful communication with the RDU.

To clear the DPE name servers, use the **no** form of this command. See no ip name-server, page 2-12.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

ip name-server *x.x.x.x* [*x.x.x.x**]

- *x.x.x.x*—Identifies the IP address of the name server.
- *x.x.x.x**—Allows the entry of multiple IP addresses if multiple name servers are used.

Examples

Example 1

```
dpe# ip name-server 10.10.10.5
% OK
```

Example 2

```
dpe# ip name-server 10.10.10.5 10.10.10.8
% OK
```

Note The changes you introduce through this command take effect immediately. You do not need to reload the DPE.

no ip name-server

Use this command to clear the DPE name servers. When no name servers are configured, all communication must be performed by using explicit IP addresses.

To configure the IP address of a name server for a DPE, see ip name-server, page 2-11.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no ip name-server
% OK
```

ip route

Use this command to configure a custom route on the DPE.

To clear a custom route, use the **no** form of this command. See no ip route, page 2-13.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

ip route *x.x.x.x y.y.y.y z.z.z.z*

- *x.x.x.x*—Identifies the IP address of the destination network.
- *y.y.y.y*—Identifies the subnet mask for the destination network.
- *z.z.z.z*—Identifies the IP address of the gateway that is to be used when communicating to this network.

Examples

```
dpe# ip route 10.10.10.5 255.255.255.0 10.10.20.10
% OK
```

no ip route

Use this command to clear the specified custom route. You cannot use this command to remove the default route; instead, use the **ip default-gateway** command. See no ip default-gateway, page 2-10.

To add a custom route, see ip route, page 2-12.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

no ip route *x.x.x.x*

x.x.x.x—Identifies the route to be removed from the system.

Examples

```
dpe# no ip route 10.10.10.5
% OK
```

Note The changes you introduce through this command take effect immediately. You do not need to reload the DPE.

ntp server

Use this command to specify one or more Network Time Protocol (NTP) servers to be used for time synchronization. You can specify as many hosts as required to identify all of the servers.

To disable the NTP, use the **no** form of this command. See no ntp server, page 2-14.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

ntp server {*host* | *x.x.x.x*} [*host** | *x.x.x.x**]

- *host*—Identifies the first server by its FQDN.
- *x.x.x.x*—Identifies the first server by its IP address.
- *host**—Identifies the next server by its FQDN. You can omit this value if you are entering only a single hostname.
- *x.x.x.x**—Identifies the next server by its IP address. You can omit this value if you are entering only a single hostname.

Examples

These examples illustrate the use of the **ntp server** command for single and multiple servers.

Example 1

For a single server:

- Using FQDN:

```
dpe# ntp server clock.cisco.com
Shutting down ntpd: [  OK  ]
Starting ntpd: [  OK  ]
% OK
```

- Using IP address:

```
dpe# ntp server 10.10.10.5
Shutting down ntpd: [  OK  ]
Starting ntpd: [  OK  ]
% OK
```

Example 2

For multiple servers:

- Using FQDNs:

```
dpe# ntp server clock_1.cisco.com clock_2.cisco.com clock_3.cisco.com
Shutting down ntpd: [  OK  ]
Starting ntpd: [  OK  ]
% OK
```

- Using IP addresses:

```
dpe# ntp server 10.10.10.5 10.10.10.6 10.10.10.7
Shutting down ntpd: [  OK  ]
Starting ntpd: [  OK  ]
% OK
```

no ntp server

Use this command to disable the Network Time Protocol (NTP).

To specify one or more NTP servers, see ntp server, page 2-13.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no ntp server
Shutting down ntpd: [  OK  ]
Starting ntpd: [  OK  ]
% OK
```

password

Use this command to change the local system password, which you use to access the DPE and which is different from the one used to access the enabled mode on the DPE. The system password is changed automatically for future logins and for FTP access.

Note

The changes that you introduce through this command take effect for new users, but users who are currently logged on are not disconnected.

If TACACS+ user authentication is used, the local system password is used only if the DPE is unable to communicate with a TACACS+ server.

Usage Guidelines

While you can use this command for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

password *password*

password—Identifies the new DPE password.

Examples

Example 1

```
dpe# password
New password:
Retype new password:
Password changed successfully.
```

This result occurs when you are prompted for the password, and the password is changed successfully.

Example 2

```
dpe# password
New password:
Retype new password:
Sorry, passwords do not match.
```

This result occurs when the password is entered incorrectly.

Example 3

```
dpe# password cisco
Password changed successfully.
```

This result occurs when the password is changed without being prompted (using an approach easier for scripting).

poweroff

Use this command to turn off the DPE power. It removes all current users from the system and shuts the DPE down cleanly. Before executing this command, verify that the hard drive has had no activity for approximately 30 seconds.

Caution Using the power switch on the device can potentially cause partial corruption of the DPE cache. This corruption could result in the DPE needing more time to rebuild its cache the next time it is powered up.

Usage Guidelines Use this command only on a hardware DPE.

Syntax Description No keywords or arguments.

Examples

```
dpe# poweroff
dpe#
```

reload

Use this command to reboot the DPE. This command disconnects all current users from the system.

Caution Using the power switch on the device can potentially cause partial corruption of the DPE cache. This corruption could result in the DPE needing more time to rebuild its cache the next time it is powered up.

Usage Guidelines Use this command only on a hardware DPE.

Syntax Description No keywords or arguments.

Examples

```
dpe# reload
GRUB loading, please wait...

...
```

```
Entry 0 will be booted automatically in 1 seconds.
  Booting 'DPE Appliance'

(Hit Enter to Login)
```

Note The output of this command has been trimmed for demonstration purposes.

show

Use the **show** command to view information related to specific DPE functions. Table 2-1 lists the various keywords that you can use with this command.

Table 2-1 List of show Commands

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show clock				
Shows the current system time and date.	No keywords or arguments.	✓	✓	`dpe# show clock` `Fri Dec 21 11:39:31 GMT 2006`
show commands				

Depending on the connection mode in use (enabled or disabled), displays all available DPE commands. For security reasons, this command shows different output on a hardware DPE, based on whether a Telnet session or the console mode is in operation.	No keywords or arguments.	✓	✓	**Example 1**
				`dpe> show commands`
				`> enable`
				`> exit`
				`> help`
				`> host <host.domain>`
				`> show bundles`
				`> show disk`
				`> show log`
				`> show memory`
				`> show running-config`
				`[more]`
				This result occurs in the disabled mode.
				Note The output presented in these examples has been trimmed.
				Example 2
				`dpe# show commands`
				`> aaa authentication local`
				`> aaa authentication tacacs`
				`> clear bundles`
				`> clear cache`
				`> debug dpe snmp`
				`> debug on`
				`> disable`
				`> dpe port <port>`
				`[more]`
				This result occurs in the enabled mode.

Table 2-1 List of show Commands (continued)

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show cpu				

Identifies CPU usage for the device on which the DPE is running. After the command is entered, CPU activities and statistics appear.	No keywords or arguments.	✓	✓	**Example 1**
				`dpe# show cpu`
				`avg-cpu: %user %nice %sys %idle`
				`0.00 0.00 0.00 100.00`
				This result occurs on a hardware DPE.
				
				Example 2
				When you enter **show cpu** on a Solaris DPE, the DPE returns per-processor statistics, for the following headers, in tabular form:
				Note Unless otherwise noted, all values are events per second.
				• CPU—Processor ID.
				• minf—Minor faults.
				• mjf—Major faults.
				• xcal—Interprocessor cross-calls.
				• intr—Interrupts.
				• ithr—Interrupts as threads (not counting clock interrupt).
				• csw—Context switches.
				• icsw—Involuntary context switches.
				• migr—Thread migrations (to another processor).
				• smtx—Spins on mutexes.
				• srw—Spins on readers' or writers' lock.
				• syscl—System calls.
				• usr—User time (percent).
				• sys—System time (percent).
				• wt—Wait time (percent).
				• idl—Idle time (percent).
				These values are returned on a Solaris DPE.

Table 2-1 List of show Commands (continued)

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show disk				
Identifies the disk that the DPE is currently using. Once the command is entered, the disk drive statistics appear.	No keywords or arguments.	✓	✓	When you enter **show disk**, the DPE returns values for the following headers: • Filesystem—Indicates path of the file system. • Size—Indicates size of the file system (Kb). • Used—Indicates used disk space (Kb). • Avail—Indicates available disk space (Kb). • Capacity—Indicates capacity of the disk (percent). • Mounted on—Indicates the resources on which the file system is mounted. Resources are usually directories.
show hostname				
Displays the DPE hostname.	No keywords or arguments.	✓	✓	`dpe# show hostname` `hostname = BAC_host`
show interface ethernet config				

Displays the configuration for the Ethernet interface. The DPE uses these settings when it reboots. Use the **show interface ethernet config** command to identify the currently configured IP address.	**show interface ethernet** *{0...1 | intf0}* **config**
	• *0...1*—Identifies the Ethernet interface number on a hardware DPE.
	• *intf0*—Identifies the Ethernet interface number on a Solaris DPE.
		✓	✓	**Example 1**
				`dpe# show interface ethernet 0 config`
				`ip address = 10.10.10.5`
				`netmask = 255.255.255.0`
				`enabled = true`
				`for prov = true`
				This result occurs on a hardware DPE.
				Example 2
				`dpe# show interface ethernet hme0 config`
				`ip address = 10.10.10.4`
				`netmask = 255.255.255.0`
				`enabled = true`
				`for prov = true`
				This result occurs on a Solaris DPE.

Table 2-1 List of show Commands (continued)

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show interface ethernet stats				
Displays statistics for the Ethernet interface of the DPE.	**show interface ethernet** *{0..1 | intf0}* **stats** • *0...1*—Identifies the Ethernet interface number on a hardware DPE. • *intf0*—Identifies the Ethernet interface number on a Solaris DPE.	✓	✓	**Example 1** dpe# **show interface ethernet 0 stats** eth0 Link encap:Ethernet HWaddr 00:B0:D0:F7:07:C2 inet addr:10.10.10.5 Bcast:10.10.10.2 Mask:255.255.255.0 UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:3539 errors:0 dropped:0 overruns:0 frame:0 TX packets:3233 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:100 This result occurs on a hardware DPE. **Example 2** dpe# **show interface ethernet hme0 stats** hme0 Link encap:Ethernet HWaddr 00:B0:D0:F7:07:C2 inet addr:10.10.10.4 Bcast:10.10.10.2 Mask:255.255.255.0 UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:3539 errors:0 dropped:0 overruns:0 frame:0 TX packets:3233 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:100 This result occurs on a Solaris DPE.
show ip				
Shows the current general IP settings of the DPE. The DPE uses these settings when it reboots. For specific interface settings, use the **show interface** commands.	No keywords or arguments.	✓	✓	dpe# **show ip** hostname = BAC_host domainname = abc.com gateway = 10.10.20.10

Table 2-1 List of show Commands (continued)

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show ip route				
Shows the IP routing table of the DPE, including any custom routes. The default gateway is indicated by the G flag in the flags column.	No keywords or arguments.	✓	✓	When you enter **show ip route**, the DPE returns the routing table with values for the following headers: • Destination—Indicates the destination network or destination host. • Mask—Indicates the subnet mask associated with the route. • Gateway—Indicates the address of the outgoing interface. • Device—Indicates the network interfaces used for the route. • Mxfrg—Indicates the Path Maximum Transfer Unit. • Rtt—Indicates the time (in minutes) remaining before the route expires. • Ref—Indicates the current number of active uses for the route. • Flg—Indicates the state of the route, which could be: – U—Up – H—To a host rather than to a network – G—To a gateway • Out—Identifies the number of packets sent out from this interface or route. • In/Fwd—Identifies the number of packets received through this interface or route.

Table 2-1 List of show Commands (continued)

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show memory				
Identifies how much current memory and swap space are available on the device running the DPE.	No keywords or arguments.	✓	✓	When you enter **show memory**, the DPE returns values for: • kthr—Indicates the number of kernel threads in r (run queue), b (processes blocked while waiting for I/O), and w (idle processes that have been swapped). • memory—Indicates virtual and real memory usage. The value could be: – swap—Free, unreserved swap space (Kb). – free—Free memory (Kb). • page—Indicates page faults and paging activity (units per second). – re—Displays pages reclaimed from the free list. – mf—Displays minor faults. – pi—Displays pages in memory (Kb/s). – po—Displays pages out of memory (Kb/s). – fr—Displays activity of the page scanner that has been freed (Kb/s). – de—Displays pages freed after writes (Kb/s). – sr—Displays the number of pages that have been scanned. • disk—Indicates the number of disk operations per second. Each S column represents a different disk. • faults—Indicates the trap or interrupt rates (per second) as in (interrupts), sy (system calls), and cs (context switches). • cpu—Indicates CPU usage time, in percent, as us (user time), sy (system time), and id (idle time).

Table 2-1 List of show Commands (continued)

Command Usage	Syntax Description	DPE Support		Returned Values and Examples
		Hardware	Solaris	
show running-config				

Displays the current configuration of the DPE. All the configuration options appear by using the actual commands that set the options.	No keywords or arguments.	✓	✓	`dpe# show running-config`
				`aaa authentication local`
				`dpe port 49186`
				`dpe provisioning-group primary default`
				`dpe rdu-server localhost 49187`
				`dpe shared-secret fgIn3AXtR6mpg`
				`log level 5-notification`
				`no debug`
				`no debug dpe cache`
				`packetcable enable`
				`packetcable registration kdc-service-key <value is set>`
				`packetcable snmp key-material <value is set>`
				`snmp-server community baccread ro`
				`snmp-server community baccwrite rw`
				`snmp-server contact Terry-ext1234`
				`snmp-server host 10.10.10.5`
				`snmp-server inform timeout 1000 retries 3`
				`snmp-server location equipmentrack5D`
				`snmp-server udp-port 8001`
				`tacacs-server retries 2`
				`tacacs-server timeout 5`
				Note The output presented in this example has been trimmed.

show tftp files				

Identifies the files that are stored only in the DPE cache and not those in the local directory. The file size is also shown.	No keywords or arguments.	✓	✓	`dpe# show tftp files`
				`The list of TFTP files currently in DPE cache`
				`filename size`
				`unprov.cm 310`
				`DPE caching 1 external files. Listing the first 1 files, 0 files omitted`
				Note By using this command, you can display a maximum of 500 TFTP files.

show version				
Identifies the current version of DPE software.	No keywords or arguments.	✓	✓	`dpe# show version` `Version: BAC 2.7.1 (bac_271_S_000000000000)`

tacacs-server host

Use this command to add a TACACS+ server to the end of the TACACS+ client's list of TACACS+ servers. When TACACS+ authentication is enabled, the client attempts user login authentication to each server sequentially in the list until a successful authentication exchange is executed, or the list is exhausted. If the list is exhausted, the client automatically falls back into the local authentication mode (using the local system password).

Optionally, an encryption key can be specified for each TACACS+ server. If this encryption key is used, it must match the key configured at the specified TACACS+ server. Omitting the encryption key disables TACACS+ encryption.

To remove a TACACS+ server from the list of TACACS+ servers in the CLI, use the **no** form of this command. For more information, see no tacacs-server host, page 2-25.

Usage Guidelines

Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

tacacs-server host *host* [**key** *encryption-key*]

- *host*—Specifies either the IP address or the hostname of the TACACS+ server.
- *encryption-key*—Identifies the encryption key. This parameter is optional.

Examples

Example 1

This example adds a TACACS+ server by using its IP address (10.0.1.1) without encryption.

```
dpe# tacacs-server host 10.0.1.1
% OK
```

Example 2

This example adds a TACACS+ server by using its IP address (10.0.1.1) with an encryption key (hg667YHHj).

```
dpe# tacacs-server host 10.0.1.1 key hg667YHHj
% OK
```

Example 3

This example adds a TACACS+ server by using its hostname (tacacs1.cisco.com) without encryption.

```
dpe# tacacs-server host tacacs1.cisco.com
% OK
```

Example 4

This example adds a TACACS+ server by using its hostname (tacacs1.cisco.com) with an encryption key (hg667YHHj).

```
dpe# tacacs-server host tacacs1.cisco.com key hg667YHHj
% OK
```

no tacacs-server host

Use this command to remove a TACACS+ server from the list of TACACS+ servers in the CLI.

To add a TACACS+ server, see tacacs-server host, page 2-24.

Usage Guidelines

Although this command is used on both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

no tacacs-server host *host*

host—Specifies either the IP address or the hostname of the TACACS+ server.

Examples

Example 1

This example removes a TACACS+ server by using its IP address.

```
dpe# no tacacs-server host 10.0.1.1
% OK
```

Example 2

This example removes a TACACS+ server by using its hostname.

```
dpe# no tacacs-server host tacacs1.cisco.com
% OK
```

tacacs-server retries

Use this command to set the number of times the TACACS+ protocol exchange is retried before the TACACS+ client considers a specific TACACS+ server unreachable. When this limit is reached, the TACACS+ client moves to the next server in its TACACS+ server list, or falls back into local authentication mode if the TACACS+ list has been exhausted.

Usage Guidelines

Although this command is used on both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

tacacs-server retries *value*

value—Specifies a dimensionless number within the range of 1 and 100, inclusive. This value applies to all TACACS+ servers.

Defaults

The default number of times the TACACS+ protocol exchange is retried before the TACACS+ client considers a specific TACACS+ server unreachable is 2.

Examples

```
dpe# tacacs-server retries 10
% OK
```

tacacs-server timeout

Use this command to set the maximum length of time that the TACACS+ client waits for a TACACS+ server response before it considers the protocol exchange to have failed.

Usage Guidelines

Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

tacacs-server timeout *value*

value—Specifies the length of time that the CLI waits. This value must be within the range of 1 to 300 seconds. This value applies to all TACACS+ servers.

Defaults

The default maximum length of time that the CLI waits for a TACACS+ server response before it times out is 5 seconds.

Examples

```
dpe# tacacs-server timeout 10
% OK
```

upgrade

Use this command when the DPE requires a new software upgrade, using uploaded upgrade files. You can use the FTP facility to copy these files (which end in the file extension *.bpr)* into the incoming directory.

The upgrade process scans all available updates and determines which ones are required. It separates the files into these categories:

- Invalid—Files that do not match the format required by the DPE.
- Not Applicable—Patches that are not accepted because either the update is from an earlier version, or because the difference between versions (the current and updated versions) is too great.
- Applicable—Files that can be used in an upgrade.

Once the command is entered, the DPE upgrade process starts. When the update is complete, a message appears indicating that the update was successful.

Usage Guidelines Use this command only on a hardware DPE.

Syntax Description No keywords or arguments.

Examples

```
dpe# upgrade
Starting BPR upgrade process
+ Scanning for available updates...
+ Determining applicable updates...
+ Compiling list of updates...

Invalid update files:
- update-FOOBAR.bpr

Updates not applicable:
- update-invalid.bpr ... BPR version 2.5

Applicable updates:
1 update-valid.bpr ..... BACC version 2.6

Select update [exit]: 1

Updating with BAC version 2.7.1
+ Starting update executor...
[SNIP]
+ Update successful!
```

uptime

Use this command to identify how long the system has been operational. This information is useful when determining how frequently the device is rebooted. It is also helpful when checking the reliability of the DPE when it is in a stable condition.

Usage Guidelines Use this command on both hardware and Solaris DPEs.

Syntax Description No keywords or arguments.

Examples

```
dpe# uptime
11:54am up 72 days(s), 2:07, 3 users, load average: 0.27, 0.08, 0.02
```

CHAPTER 3

DPE Configuration Commands

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

Note Sample output provided for the commands in this chapter may differ depending on whether you invoke the commands on a hardware DPE or a Solaris DPE.

The commands described in this chapter are:

- no tftp allow-read-access, page 3-15
- tftp allow-write-access, page 3-15
- no tftp allow-write-access, page 3-15
- tftp verify-ip, page 3-16
- no tftp verify-ip, page 3-16

clear cache

Use this 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 Ensure that you stop the DPE before erasing the DPE cache by running the **dpe stop** command. For more information, see dpe start | stop, page 3-9.

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.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

Example 1

```
dpe# clear cache
Clearing DPE cache...
+ 417792 bytes cleared.
```

This result occurs when the cache is successfully cleared.

Example 2

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

This result occurs when the DPE has not been stopped.

Example 3

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

This result occurs when the cache has already been cleared.

docsis shared-secret

Use this command to set a DOCSIS shared secret (DSS) on the DPE. The DSS is used to calculate the CMTS message integrity check.

To disable the DSS, use the **no** form of this command. See no docsis shared-secret, page 3-3.

Usage Guidelines

Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

docsis shared-secret *format secret*

- *format*—Identifies if the shared secret string appears as clear text or as encrypted text. To specify the format, enter:
  - 0 for a clear text string.
  - 7 for a Cisco IOS-encrypted shared-secret text string.
- *secret*—Identifies the actual secret string.

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

Defaults

The default format for the shared secret string is clear text.

Examples

```
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 docsis shared-secret

Use this command to disable the DSS functionality on the DPE. By using this command at the DPE, you do not completely disable the DSS; rather, it results in the RDU global DSS being used instead of the local functionality.

To set a DSS, see docsis shared-secret, page 3-3.

Usage Guidelines

Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

No keywords or arguments.

Examples

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

dpe port

Use this command to specify the port number that the DPE uses to communicate with the Network Registrar extension points. Normally, 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 3-9.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

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

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

dpe provisioning-group primary

Use this 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 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 3-8.

To remove any configured primary provisioning groups, use the **no** form of this command. See no dpe provisioning-group primary, page 3-5.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

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.

Examples

Example 1

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

Example 2

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

no dpe provisioning-group primary

Use this 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 3-8.

To specify the DPE as a member of a specified primary provisioning group, see dpe provisioning-group primary, page 3-4.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

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

dpe provisioning-group secondary

Use this 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 3-8.

To remove configured secondary provisioning groups, use the **no** form of this command. See no dpe provisioning-group secondary, page 3-6.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

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.

Examples

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

no dpe provisioning-group secondary

Use this 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 3-8.

To set secondary provisioning groups for the DPE, see dpe provisioning-group secondary, page 3-6.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

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

dpe rdu-server

Use this command to identify 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.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

dpe rdu-server {*host* | *x.x.x.x*} *port*

- *host*—Identifies the fully qualified domain name (FQDN) of the host on which the RDU is running.
- *x.x.x.x*—Identifies the IP address of the RDU.
- *port*—Identifies the port number on which the RDU is listening for DPE connections.

Defaults

The default port on which the RDU listens for the DPE is 49187.

Examples

Example 1

```
dpe# dpe rdu-server rdu.cisco.com 49187
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you specify the FQDN of the RDU host.

Example 2

```
dpe# dpe rdu-server 10.10.20.1 49187
% OK (Requires DPE restart "> dpe reload")
```

This result occurs when you specify the IP address of the RDU host.

dpe reload

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

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# dpe reload
dpe has been restarted
```

dpe shared-secret

Use this 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. For security reasons, this command is available only through a console connection. It cannot be accessed through a Telnet connection.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

Usage Guidelines

Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

dpe shared-secret *secret*

secret—Identifies the RDU shared secret. The shared secret may appear as encrypted text when the command is run through the console mode. If you run this command through a Telnet session, it may only indicate that the shared secret has been set.

Defaults

The default shared secret used for communications with the RDU is **secret**.

Examples

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

dpe start | stop

Use this command to start or stop the DPE.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

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 agent (bprAgent) forces the DPE to stop, and an alert message, indicating that the DPE has been stopped, appears.

Examples

Example 1

```
dpe# dpe start
Process dpe has been started
```

Example 2

```
dpe# dpe stop
dpe is stopped
```

interface ethernet provisioning enabled

Use this command to control whether the Ethernet interfaces are used to handle provisioning requests. This command allows the use of split-networking techniques to isolate devices facing communication from provisioning system-side communications. Only ports that have provisioning enabled are used for communication with the DHCP server.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

interface ethernet {*0...1* | *intf0*} **provisioning enabled** {**true** | **false**}

- *0...1*—Identifies the Ethernet interface on a hardware DPE.
- *intf0*—Identifies the Ethernet interface on a Solaris DPE.
- **true**—Indicates that provisioning has been enabled for this interface.
- **false**—Indicates that provisioning has been disabled for this interface.

Examples

Example 1

```
dpe# interface ethernet 0 provisioning enabled true
% OK (Requires DPE restart "> dpe reload")
```

This result occurs on a hardware DPE.

Example 2

```
dpe# interface ethernet hme0 provisioning enabled true
% OK (Requires DPE restart "> dpe reload")
```

This result occurs on a Solaris DPE.

interface ethernet provisioning fqdn

Use this 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 ethernet provisioning enabled, page 3-9.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

interface ethernet {*0...1* | *intf0*} **provisioning fqdn** *fqdn*

- *0...1*—Identifies the Ethernet interface on a hardware DPE.

  Note Enabling both DPE appliance interface IPs and setting the provisioning FQDNs to identical names has no effect on PacketCable because this voice technology always uses the IP address of the first interface.

- *intf0*—Identifies the Ethernet interface on a Solaris DPE.
- *fqdn*—Identifies the FQDN that is set on the specified interface. In the case of a Solaris DPE, this FQDN is sent as the SNMPEntity in DHCP Option 177, suboption 3.

Examples

Example 1

```
dpe# interface ethernet 0 provisioning fqdn dpe.cisco.com
% OK (Requires DPE restart "> dpe reload")
```

This results occur on a hardware DPE.

Example 2

```
dpe# interface ethernet hme0 provisioning fqdn cisco.com
% OK (Requires DPE restart "> dpe reload")
```

This result occurs on a Solaris DPE.

show device-config

Use this command to show 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.
```

Usage Guidelines

Use this command on hardware and Solaris DPEs.

Syntax Description

show device-config *mac*

mac—Specifies the MAC address of a device. The accepted formats for *mac* 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) or exact-size octets (for example, 000102030405 or 00:01:02:03:04:05), assuming that the MAC address header is (1,6).

Examples

This example assumes that the DPE MAC address is 1,6,00:00:00:00:00:03.

```
dpe# dpe show device-config 00:00:00:00:00:03

Retrieved the following configuration from DPE.

DHCP Configuration for device 1,6,00:00:00:00:00:03 in default provisioning-group
...
```

Note The output of this command has been trimmed for demonstration purposes.

show dpe

Use this command to check to see if the DPE is running and displays 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.
```

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description No keywords or arguments.

Examples

Example 1

```
dpe# show dpe
BPR Agent is running
dpe is not running
```

This result occurs when the DPE is not running.

Example 2

```
dpe# show dpe
BPR Agent is running
dpe is running

Version BAC 2.7.1 (cbpr_271_L_000000000000).
Caching 0 device configs and 0 external files.
Received 0 cache hits and 0 misses.
Received 0 lease updates.
Connection status is Disconnected.
Sent 0 SNMP informs and 0 SNMP sets.
Received 0 MTA provisioning successful SNMP informs.
Received 0 MTA provisioning failed SNMP informs.
Running for 6 days 41 mins 35 secs.
```

This result occurs when the DPE is running.

show dpe config

Use this command to display the current settings on the DPE.

Usage Guidelines Use this command on both hardware and Solaris DPEs.

Syntax Description No keywords or arguments.

Syntax Description

```
dpe# show dpe config
dpe port = 49186
rdu host = host.cisco.com
rdu port = 49187
primary groups = Default
secondary groups = [no value]
```

tftp allow-create-dirs

Use this command to allow a TFTP write request to create directories.

Note During a TFTP read operation, the TFTP server looks only in its cache, although, if the tftp allow-read-access command is run, the TFTP server looks at the local file system before looking in the cache. If the required file exists in the local file system, it is read from there. Otherwise, the TFTP server looks in the cache. If the file is not found in the cache, the TFTP server sends a request for the file to the RDU.

TFTP writes are not made to the DPE cache, only to the local file system. Using the tftp allow-write-access command, you can write to the TFTP home directory. By default, you are not allowed to create directories or override files, but you can change these defaults using the tftp allow-create-dirs or the tftp allow-override commands.

To disable the creation of directories by TFTP write requests, see no tftp allow-create-dirs, page 3-13.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# tftp allow-create-dirs
% OK
```

no tftp allow-create-dirs

Use this command to disable the creation of directories by TFTP write requests.

To allow a TFTP write request to create directories, see tftp allow-create-dirs, page 3-13.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no tftp allow-create-dirs
% OK
```

tftp allow-override

Use this command to allow the override of existing files using a TFTP write request.

To disable the overriding of existing files by TFTP write requests, see no tftp allow-override, page 3-14.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# tftp allow-override
% OK
```

no tftp allow-override

Use this command to disable the overriding of existing files by TFTP write requests.

To allow the override of existing files using a TFTP write request, see tftp allow-override, page 3-14.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no tftp allow-override
% OK
```

tftp allow-read-access

Use this command to enable TFTP read requests from the file system. When this command is enabled, and a DPE does not find the required file in the local directory, the DPE cache is searched.

To disable TFTP read requests from the file system, see no tftp allow-read-access, page 3-15.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# tftp allow-read-access
% OK
```

no tftp allow-read-access

Use this command to disable TFTP read requests from the file system.

To enable TFTP read requests from the file system, see tftp allow-read-access, page 3-14.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no tftp allow-read-access
% OK
```

tftp allow-write-access

Use this command to support TFTP write requests to the local file system.

To disable TFTP write requests to the file system, see no tftp allow-write-access, page 3-15.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# tftp allow-write-access
% OK
```

no tftp allow-write-access

Use this command to disable TFTP write requests to the file system.

To enable support TFTP write requests on the local file system, see tftp allow-write-access, page 3-15.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no tftp allow-write-access
% OK
```

tftp verify-ip

Use this command to enable the verification of requestor IP addresses on dynamic configuration TFTP requests.

To disable the verification of requestor IP addresses on dynamic configuration TFTP requests, see no tftp verify-ip, page 3-16.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# tftp verify-ip
% OK
```

no tftp verify-ip

Use this command to disable the verification of requestor IP addresses on dynamic configuration TFTP requests.

To enable the verification of requestor IP addresses on dynamic configuration TFTP requests, see tftp verify-ip, page 3-16.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no tftp verify-ip
% OK
```

CHAPTER 4

PacketCable Voice Technology Commands

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

Note Before using any debug command, ensure that DPE debugging is enabled. To enable this function, run the **debug on** command.

The commands described in this chapter are:

debug dpe

Use this general command form to debug the PacketCable technology on the DPE.

Note If you run the following commands 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.
```

Table 4-1 describes the specific commands you can use to debug the PacketCable services on the DPE.

Table 4-1 List of debug dpe Commands for PacketCable Technology

Command Usage	DPE Support		Examples
	Hardware	Solaris	
debug dpe netsnmp **no debug dpe netsnmp**			

Enables detailed debugging of the PacketCable NetSNMP service on the DPE.
 	
To disable detailed debugging of the PacketCable NetSNMP service, use the **no** form of this command.
	✓	✓	`dpe# debug dpe netsnmp`
			`% OK`
			
			`dpe# no debug dpe netsnmp`
			`% OK`

debug dpe registration **no debug dpe registration**			

Enables debugging of the PacketCable secure registration service on the DPE.
 	
To disable debugging of the PacketCable secure registration service, use the **no** form of this command.
	✓	✓	`dpe# debug dpe registration`
			`% OK`
			
			`dpe# no debug dpe registration`
			`% OK`

Table 4-1 List of debug dpe Commands for PacketCable Technology (continued)

Command Usage	DPE Support		Examples
	Hardware	Solaris	
debug dpe registration-detail **no debug dpe registration-detail**			

Enables the PacketCable registration detail category for debug messages.
 	
To disable debugging of the PacketCable secure registration service, use the **no** form of this command.
	✓	✓	`dpe# debug dpe registration-detail`
			`% OK`
			
			`dpe# no debug dpe registration-detail`
			`% OK`

debug dpe snmp **no debug dpe snmp**			

Enables detailed debugging of the PacketCable SNMP service on the DPE.
 	
To disable detailed debugging of the PacketCable SNMP service, use the **no** form of this command.
	✓	✓	`dpe# debug dpe snmp`
			`% OK`
			
			`dpe# no debug dpe snmp`
			`% OK`

packetcable enable

Use this command to enable PacketCable services on the DPE. To enable PacketCable, you must:

- Configure at least one interface with a fully qualified domain name (FQDN) and enable provisioning.
- Set the service key for the Key Distribution Center (KDC). See packetcable registration kdc-service-key, page 4-5.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

To disable PacketCable services, use the **no** form of this command. See no packetcable, page 4-4.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# packetcable enable
% OK (Requires DPE restart "> dpe reload")
```

no packetcable

Use this command to disable PacketCable services on the DPE.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

To enable PacketCable services, see packetcable enable, page 4-3.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no packetcable
% OK (Requires DPE restart "> dpe reload")
```

packetcable registration encryption

Use this command to enable encryption of MTA configuration files.

To disable encryption on MTA configuration files, use the **no** form of this command. See no packetcable registration encryption, page 4-4.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# packetcable registration encryption
% OK
```

no packetcable registration encryption

Use this command to disable encryption on MTA configuration files.

To enable encryption of MTA configuration files, see packetcable registration encryption, page 4-4.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description No keywords or arguments.

Syntax Description

```
dpe# no packetcable registration encryption
% OK
```

packetcable registration kdc-service-key

Use this command to generate and set a security key for communication between the KDC and DPE.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

Usage Guidelines Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description **packetcable registration kdc-service-key** *password*

password—Identifies the password, which must be from 6 to 20 characters.

Note The password that you enter must match the password that you enter while configuring the KDC using the KeyGen tool. Refer to the *Cisco Broadband Access Center Administrator Guide, 2.7.1,* for information on how to use the KeyGen tool.

You can verify the service key that this command creates by viewing the *dpe.properties* file, which resides in the *BPR_HOME/dpe/conf* directory. Look for the value of the `/pktcbl/regsvr/KDCServiceKey` parameter.

Note You can view the *dpe.properties* file only on a Solaris DPE.

For example:

```
# more dpe.properties
/pktcbl/regsvr/KDCServiceKey=2e:d5:ef:e9:5a:4e:d7:06:67:dc:65:ac:bb:89:e3:2c:bb:
71:5f:22:bf:94:cf:2c
```

The output of this example has been trimmed.

Examples

```
dpe# packetcable registration kdc-service-key ciscosystems101
% OK (Requires DPE restart "> dpe reload")
```

packetcable registration policy-privacy

Use this command to set the customer policy regarding enforcement of SNMP privacy in MTA communications.

Entering a value of zero lets the MTA choose the SNMPv3 privacy option. Entering a nonzero value means that the provisioning server sets the privacy option in SNMPv3 to a specific protocol, which is currently limited to DES.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

packetcable registration policy-privacy *value*

value—Enter any zero or nonzero value to identify the customer policy. Values include:

- 0—Indicates that the MTA selects the privacy option with Privacy being optional.
- 1—Indicates that the policy is enforced, causing all MTAs to use Privacy. If Privacy is not used, the MTA does not start.
- 32—Indicates that there is no Privacy.
- 33—Indicates that Privacy is enabled for all devices.

Defaults

The default value to set the customer policy regarding enforcement of SNMP privacy is 1.

Examples

```
dpe# packetcable registration policy-privacy 1
% OK (Requires DPE restart "> dpe reload">
```

packetcable snmp key-material

Use this command to generate and set a security key on the DPE to permit secure communication with the RDU. The secure communication channel with the RDU is used for PacketCable SNMPv3 cloning support only.

Note You must set the same security key on the RDU using the **generateSharedSecret.sh** command-line tool, which is located in the *BPR_HOME/rdu/bin* directory.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

To clear the SNMPv3 service key and turn off the SNMPv3 cloning support, use the **no** form of this command. See no packetcable snmp key-material, page 4-7.

Usage Guidelines

Although this command is used for both hardware and Solaris DPEs, on the hardware DPE, it is used only in the console mode.

Syntax Description

packetcable snmp key-material *password*

password—Identifies the password that you create, which must be from 6 to 20 characters.

Examples

```
dpe# packetcable snmp key-material ciscosystems101
% OK (Requires DPE restart "> dpe reload")
```

no packetcable snmp key-material

Use this command to clear the SNMPv3 service key and turn off SNMPv3 cloning support. For security reasons, this command is not available during a Telnet session and can be used only via the console mode.

After you use this command, run the **dpe reload** command so that the changes take effect. See dpe reload, page 3-8.

To generate and set a security key on the DPE for secure communication with the RDU, see packetcable snmp key-material, page 4-6.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no packetcable snmp key-material
% OK (Requires DPE restart "> dpe reload")
```

packetcable snmp timeout

Use this command to dynamically set the length of time that the PacketCable SNMP service waits for a response to any SNMP ‘Set’ operation.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

packetcable snmp timeout *time*

time—Indicates the length of time that the PacketCable SNMP service waits, in seconds.

Defaults

The default maximum length of time that the PacketCable SNMP service waits for a response to an SNMP 'Set' operation is 10 seconds.

Examples

```
dpe# packetcable snmp timeout 15
% OK
```

show packetcable snmp log

Use this command to show recent log entries for the PacketCable SNMP provisioning service, which includes information about the general PacketCable SNMP provisioning service and the logging of any MTA provisioning errors or severe problems.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

show packetcable snmp log [**last** *1..9999* | **run**]

- **last** *1..9999*—Identifies the specified number of recent log entries from the PacketCable SNMP log file that you want to display. This keyword is optional.
- **run**—Displays all log messages from the PacketCable SNMP log file. The command continues to run until you press **Enter**. This keyword is optional.

Examples

Example 1

```
dpe# show packetcable snmp log
Error [SS_MSG] 2006-12-18 14:30:44,000 - SNMP Service Tracing Set To 400
...
```

Note The output presented in this example has been trimmed.

Example 2

```
dpe# show packetcable snmp log last 1
Error [SS_MSG] 2006-12-18 14:35:44,000 - SNMP Service Tracing Set To 800
```

Example 3

```
dpe # show packetcable snmp log run
Press <enter> to stop.

2006 12 17 11:43:43 CDT: %CSRC-5: Notification DPE: Device Provisioning Engine starting up
2006 12 17 11:43:44 CDT: %CSRC-6: Info DPE: Attempt to connect to RDU dpe failed;
2006 12 17 11:43:44 CDT: %CSRC-6: Info TFTP: Ready to service requests

Stopped.
```

CHAPTER 5

SNMP Agent Commands

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

The commands described in this chapter are:

snmp-server community

Use this command to set up the community access string to allow access for external SNMP managers to the DPE SNMP agent.

After you use this command, run the **snmp-server reload** command so that the changes take effect. See snmp-server reload, page 5-7.

To delete the specified community string, use the **no** form of this command. See no snmp-server community, page 5-2.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

snmp-server community *string* [**ro** | **rw**]

- *string*—Identifies the SNMP community.
- **ro**—Assigns a read-only community string. Only Get requests (queries) can be performed. The network management system and the managed device must reference the same community string.
- **rw**—Assigns a read-write community string. SNMP applications require **rw** access for Set operations. The **rw** community string enables write access to OID values.

Defaults

The default **ro** and **rw** community strings are **baccread** and **baccwrite**, respectively. We recommend that you change these values before deploying BAC.

Examples

```
dpe# snmp-server community test_community ro
% OK ()
Requires SNMP agent restart "> snmp-server reload"
```

no snmp-server community

Use this command to delete the specified community string that allows access for external SNMP managers to the DPE SNMP agent.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To set up the community access string, see snmp-server community, page 5-2.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

no snmp-server community *string*

string—Identifies the SNMP community.

Examples

```
dpe# no snmp-server community test_community
% OK ()
Requires SNMP agent restart "> snmp-server reload"
```

snmp-server contact

Use this command to enter a string of characters that identify the system contact (sysContact) as defined in the MIB II.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To remove the system contact, use the **no** form of this command. See no snmp-server contact, page 5-3.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

snmp-server contact *text*

text—Identifies the name of the contact responsible for the DPE.

Examples

```
dpe# snmp-server contact terry
% OK (Requires SNMP server restart "> snmp-server reload")
```

no snmp-server contact

Use this command to remove the system contact that is responsible for the DPE.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To enter a string of characters that identify the system contact, use the **snmp-server contact** command. See snmp-server contact, page 5-3.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no snmp-server contact
% OK (Requires SNMP server restart "> snmp-server reload")
```

snmp-server host

Use this command to specify the recipient of all SNMP notifications and to configure the SNMP agent to send traps or informs to multiple hosts. You can use multiple instances of this command to specify more than one notification recipient.

After you use this command, run the **snmp-server reload** command so that the changes take effect. See snmp-server reload, page 5-7.

To remove the specified notification recipient, use the **no** form of this command. See no snmp-server host, page 5-4.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

snmp-server host *host-addr* **notification community** *community* [**udp-port** *port*]

- *host-addr*—Specifies the IP address of the host to which notifications are sent.
- *community*—Specifies the community string to use while sending SNMP notifications.
- *port*—Identifies the UDP port used to send SNMP notifications. The default port number is 162.

Examples

```
dpe# snmp-server host 10.10.10.5 notification community public udp-port 162
% OK ()
Requires SNMP agent restart "> snmp-server reload"
```

no snmp-server host

Use this command to remove the specified notification recipient.

After you use this command, run the **snmp-server reload** command so that the changes take effect. See snmp-server reload, page 5-7.

To specify the recipient of all SNMP notifications, see snmp-server host, page 5-4.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

no snmp-server host *host-add* **notification**

- *host-add*—Identifies the IP address of the host.

Examples

```
dpe# no snmp-server host 10.10.10.5 notification
% OK ()
Requires SNMP agent restart "> snmp-server reload"
```

snmp-server inform

Use this command to specify the type of SNMP notification sent from the SNMP agent to the SNMP manager. Use it to send SNMP informs rather than traps, although traps are sent by default.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To switch the SNMP notifications back to the default setting of traps, use the **no** form of this command. See no snmp-server inform, page 5-5.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

snmp-server inform [**retries** *count* **timeout** *time*]

- *count*—Identifies the number of times an inform can be sent from the SNMP agent to the manager. If the timeout period expires before the configured number of retries is reached, the SNMP server stops sending informs.
- *time*—Identifies the length of time (in milliseconds) that the SNMP server continues to send informs. If the maximum number of retries is reached before the timeout expires, the SNMP server stops sending informs.

Note Specifying the retry count and the timeout while configuring SNMP informs is optional. If you do not specify any values, the default values are used.

Defaults

The default number of retries is 1 and the default timeout is 5000 milliseconds.

Examples

```
dpe# snmp-server inform retries 5 timeout 500
% OK ()
Requires SNMP agent restart "> snmp-server reload"
```

In this example, an SNMP inform will be sent up to a maximum of 5 times before the retries stop. If the timeout of 500 milliseconds expires before the 5 retries take place, the inform is not sent again.

no snmp-server inform

Use this command to switch the SNMP notifications that are sent to the SNMP manager back to the default setting of traps.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To specify the type of SNMP notification sent, see snmp-server inform, page 5-5.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no snmp-server inform
% OK ()
Requires SNMP agent restart "> snmp-server reload"% OK
```

snmp-server location

Use this command to enter a string of characters that identify the system location (sysLocation) as defined in the MIB II.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To remove a system location, use the **no** form of this command. See no snmp-server location, page 5-6.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

snmp-server location *text*

text—Identifies the physical location of the DPE.

Examples

```
dpe# snmp-server location st_louis
% OK (Requires SNMP agent restart "> snmp-server reload")
```

no snmp-server location

Use this command to remove a system location.

After you use this command, run the **snmp-server reload** command to restart the SNMP agent. See snmp-server reload, page 5-7.

To enter a string of characters that identify the system location, see snmp-server location, page 5-6.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no snmp-server location
% OK (Requires SNMP server restart "> snmp-server reload")
```

snmp-server reload

Use this command to reload the SNMP agent process on the DPE.

Note When the SNMP process is started on the RDU and DPE, a trap containing the system uptime is sent. BAC trap notifications, however, are disabled by default. You can enable trap notifications only by setting the corresponding MIB object via SNMP. You cannot enable trap notifications via the CLI or the administrator user interface.

This BAC release supports only the trap notifications defined in the CISCO-BACC-SERVER-MIB and CISCO-BACC-RDU-MIB files. For more information, refer to the MIB files in the *BPR_HOME/rdu/mibs* directory.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

Example 1

```
dpe# snmp-server reload
nativeSnmpAgent has been restarted

snmpAgent has been restarted

% OK
dpe#
```

This result occurs on a hardware DPE.

Example 2

```
dpe# snmp-server reload
nativeSnmpAgent has been restarted

dpeSnmpAgent has been restarted

% OK
dpe#
```

This result occurs on a Solaris DPE.

snmp-server start | stop

Use this command to start or stop the SNMP agent process on the DPE.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

snmp-server start | stop

- **start**—Starts the SNMP agent process on the DPE.

  Note Use this command only when the SNMP agent is not running. If you run this command when the SNMP agent is already running, the following message appears:

  ```
  Process snmpAgent is already running
  ```

- **stop**—Stops the SNMP agent process on the DPE.

Examples

Example 1

```
dpe# snmp-server start
nativeSnmpAgent has been started

snmpAgent has been started

% OK
```

Example 2

```
dpe# snmp-server stop
nativeSnmpAgent has been stopped

snmpAgent has been stopped

% OK
```

These results occur when you run **snmp-server start** and **snmp-server stop** on a hardware DPE.

Example 3

```
dpe# snmp-server start
nativeSnmpAgent has been started

dpeSnmpAgent has been started

% OK
```

Example 4

```
dpe# snmp-server stop
nativeSnmpAgent has been stopped

dpeSnmpAgent has been stopped

% OK
```

These results occur when you run **snmp-server start** and **snmp-server stop** on a Solaris DPE.

snmp-server udp-port

Use this command to identify the UDP port number on which the SNMP agent listens.

The DPE requires this command to prevent potential sharing violations between ports that other applications use. The changing of port numbers is used to resolve potential port conflict.

To change the port to which the SNMP agent listens back to the default UDP port number, use the **no** form of this command. See no snmp-server udp-port, page 5-9.

Usage Guidelines

Use this command only on a Solaris DPE.

Syntax Description

snmp-server udp-port *port*

port—Identifies the UDP port to which the SNMP agent listens.

Defaults

The default port number of the SNMP agent is 8001.

Note To eliminate potential port conflicts with other SNMP agents on the Solaris computer, the default port number is different from the standard well-known SMNP agent port.
We recommend that you change the SNMP agent port to the well-known port number 161.

Examples

```
dpe# snmp-server udp-port 161
% OK
```

no snmp-server udp-port

Use this command to change the UDP port to which the SNMP agent listens to the default port (8001).

Note Using a port number other than the standard well-known SNMP agent port number of 161 increases the likelihood of potential port conflicts with other SNMP agents running on the same Solaris computer.

To specify the UDP port number to which the SNMP agent listens, see snmp-server udp-port, page 5-9.

Usage Guidelines

Use this command only on a Solaris DPE.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no snmp-server udp-port
% OK
```

CHAPTER 6

Log System Management Commands

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

Note Before using any debug command, ensure that DPE debugging is enabled. Run the **debug on** command to enable this function.

The commands described in this chapter are:

clear logs

Use this command to remove historic (out-of-date) log files that exist on the system. These files include:

- DPE logs
- hardware
- Syslog

Over time, historic log files accumulate within the DPE. The **support bundle state** command is used to bundle these logs. We recommend that you create a bundle before clearing logs. This ensures that no necessary files are lost accidently.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# clear logs
Clearing historic log files...
+ Removing 1 DPE log files...
+ No more historic logs.
```

debug dpe

Use this general command form to debug the various services on the DPE.

Note If you run the following commands 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 a DPE license.
```

Table 6-1 describes the specific commands you can use to debug the DPE.

Table 6-1 List of debug dpe Commands

Command Usage	DPE Support		Example
	Hardware	Solaris	
debug dpe cache **no debug dpe cache**			
Enables DPE cache debug logging, which involves messages pertaining to the DPE cache including: • Logging requests for cache entries • Updates to the cache • Other interactions by DPE subsystems To disable DPE cache debug logging, use the **no** form of this command.	✓	✓	dpe# **debug dpe cache** % OK dpe# **no debug dpe cache** % OK
debug dpe connection **no debug dpe connection**			
Enables the debugging of the DPE connection, which logs communication subsystem status and error messages. Use this command to identify communication problems between the DPE and the RDU. To disable the debugging of the DPE connection, use the **no** form of this command.	✓	✓	dpe# **debug dpe connection** % OK dpe# **no debug dpe connection** % OK
debug dpe dpe-server **no debug dpe dpe-server**			
Enables debugging of the DPE server, which involves logging messages about the overall status and issues of the DPE server. To disable the debugging of the DPE server, use the **no** form of this command.	✓	✓	dpe# **debug dpe dpe-server** % OK dpe# **no debug dpe dpe-server** % OK

Table 6-1 List of debug dpe Commands (continued)

Command Usage	DPE Support		Example
	Hardware	Solaris	
debug dpe event-manager **no debug dpe event-manager**			
Enables debugging of the DPE event manager, which involves logging messages and conditions showing the state of the event manager. Debugging of the DPE event manager is enabled by default. To disable debugging of the DPE event manager, use the **no** form of this command.	✓	✓	dpe# **debug dpe event-manager** % OK dpe# **no debug dpe event-manager** % OK
debug dpe exceptions **no debug dpe exceptions**			
Enables the debugging of DPE exceptions, which involves logging full stack traces for exceptions occurring during system operation. In unusual situations, such as when the system is apparently corrupt or behaving abnormally, running this command reveals valuable information for the Cisco TAC support. Debugging of DPE exceptions is enabled by default. To disable the debugging of DPE exceptions, use the **no** form of this command.	✓	✓	dpe# **debug dpe exceptions** % OK dpe# **no debug dpe exceptions** % OK
debug dpe framework **no debug dpe framework**			
Enables the debugging of the DPE framework, which involves logging information about the underlying framework of the DPE server. This infrastructure provides for all the various servers in BAC. Debugging of the DPE framework is enabled by default. To disable the debugging of the DPE framework, use the **no** form of this command.	✓	✓	dpe# **debug dpe framework** % OK dpe# **no debug dpe framework** % OK

Table 6-1 List of debug dpe Commands (continued)

Command Usage	DPE Support		Example
	Hardware	Solaris	
debug dpe messaging **no debug dpe messaging**			

Enables debugging of DPE messaging, which involves logging details about the DPE messaging subsystem. This subsystem is used primarily for communication between the DPE and the RDU.
 	
To disable the debugging of DPE messaging, use the **no** form of this command.
	✓	✓	`dpe# debug dpe messaging`
			`% OK`
			
			`dpe# no debug dpe messaging`
			`% OK`

debug dpe tftp **no debug dpe tftp**			

Enables the debugging of TFTP transfers.
 	
To disable the debugging of TFTP transfers, use the **no** form of this command.
	✓	✓	`dpe# debug dpe tftp`
			`%OK`
			
			`dpe# no debug dpe tftp`
			`% OK`

debug on

Use this command to enable debug logging, which can be helpful when troubleshooting possible system problems. Additionally, you must separately enable specific debugging categories with commands such as **debug dpe cache**.

Caution Enabling debug logging may have a severe impact on DPE performance. Do not leave the DPE running with debug turned on for an extended period of time.

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 a DPE license.
```

To disable debug logging, run the **no debug** command. See no debug, page 6-6.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# debug on
% OK
```

no debug

Use this command to disable all debug logging.

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 a DPE license.
```

To enable debug logging, see debug on, page 6-5.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no debug
% OK
```

log level

Use this command to set the level of minimum DPE log messages that are saved, as described in the *Cisco Broadband Access Center Administrator Guide, 2.7.1*.

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 a DPE license.
```

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

log level *number*

number—Identifies the logging level, by number, to be saved. Table 6-2 describes the log levels that BAC supports.

Table 6-2 DPE Log Levels

Log Level No.	Description
0-emergency	Saves all emergency messages
1-alert	Saves all activities that need immediate action and those of a more severe nature
2-critical	Saves all critical conditions and those of a more severe nature
3-error	Saves all error messages and those of a more severe nature
4-warning	Saves all warning messages and those of a more severe nature

Table 6-2 DPE Log Levels (continued)

Log Level No.	Description
5-notification	Saves all notification messages and those of a more severe nature
6-info	Saves all logging messages available

Note Setting a specific log level saves messages less than or equal to the configured level. For example, when you set the log level at 5-notification, all events generating messages with a log level of 4 or less are written into the log file.

The logging system's log levels are used to identify the urgency with which you might want to address log issues. The 0-emergency setting is the most severe level of logging, while 6-info is the least severe, saving mostly informational log messages.

Examples

```
dpe# log level 6
% OK
```

show log

Use this command to show all recent log entries for the DPE. These logs contain general DPE process information, including logging all system errors or severe problems. Check this log when the system is experiencing difficulties. If the log contains insufficient information, enable the debug logging function and experiment with the different categories related to the problem.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

show log [**last** *1..999* | *run*]

- **last** *1..999*—Shows the specified number of recent log entries for the DPE, with *1..999* specifying the number of log entries that you want to display. This keyword is optional.
- **run**—Displays the running DPE log, which starts showing all messages logged to the DPE log. The command continues to run until you press Enter. This keyword is optional.

Examples

Example 1

```
dpe# show log
dpe.cisco.com: 2006 12 21 11:22:20 GMT: %BPR-DPE-5: DPE-0: Device Provisioning Engine
starting up
...
```

Note The output presented in this example has been trimmed for demonstration purposes.

Example 2

```
dpe# show log last 1
dpe.cisco.com: 2006 12 21 11:28:17 GMT: %BPR-DPE-5: DPE-0: Device Provisioning Engine
starting up
```

Example 3

```
dpe# show log run
Press <enter> to stop.
dpe.cisco.com: 2006 12 21 11:43:43 GMT: %BPR-DPE-5: DPE-0: Device Provisioning Engine
starting up
dpe.cisco.com: 2006 12 21 11:43:44 GMT: %BPR-DPE-5: Info DPE: Attempt to connect to RDU
BPR_host.cisco.com:49187 failed;
dpe.cisco.com: 2006 12 21 11:43:44 GMT: %BPR-DPE-5: Info TFTP: Ready to service requests

% Stopped.
```

show syslog

Use this command to show all recent DPE syslog entries. The syslog file contains information about the general DPE system, including alerts from various processes related to the DPE. Check this log when the system is experiencing difficulties.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

show syslog [**last** *1..999* | **run**]

- **last** *1..999*—Shows the specified number of recent syslog log entries, with *1..999* specifying the number of log entries that you want to display. This keyword is optional.
- **run**—Displays the running syslog log, which starts showing all messages logged to the syslog file. The command continues to run until you press Enter. This keyword is optional.

Examples

Example 1

```
dpe# show syslog
Feb  8 14:44:38 test-dpe3 syslogd 1.4.1: restart.
Feb  8 14:49:38 test-dpe3 anacron[1654]: Job `cron.weekly' started
Feb  8 14:49:38 test-dpe3 anacron[3069]: Updated timestamp for job `cron.weekly' to
2007-02-08
Feb  8 14:49:38 test-dpe3 anacron[1654]: Normal exit (2 jobs run)
...
```

Note The output presented in this example has been trimmed for demonstration purposes.

Example 2

```
dpe# show syslog last 1
Feb  8 14:49:38 test-dpe3 anacron[1654]: Normal exit (2 jobs run)
```

Example 3

```
dpe# show syslog run
% Press <enter> to stop.
Jan 2 16:27:37 test-dpe2 BPR: %DPE-1-109: Failed to connect to RDU

% Stopped.
```

syslog log-server

Use this command to configure the log server to send syslog messages whenever the syslog is set in:

- Remote mode, which configures the syslog subsystem to send messages remotely.
- Both mode, which configures the syslog subsystem to send messages to a remote server and a local file system.

When you configure the log server in local mode, changing this setting has no effect. For information on logging the syslog messages in remote, local, or both modes, see syslog mode, page 6-10.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16.

To clear the settings assigned to the syslog server, use the **no** form of this command. See no syslog log-server, page 6-9.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

syslog log-server *x.x.x.x*

x.x.x.x—Identifies the IP address of the log server.

Examples

```
dpe# syslog log-server 10.10.10.15
% OK (Requires appliance restart "> reload")
```

no syslog log-server

Use this command to clear the settings assigned to the syslog server. When the syslog mode is set to **both** or **remote**, clearing the syslog log server results in the log mode being automatically set back to local mode until a new log server is configured.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16.

To configure the log server to send syslog messages whenever the syslog is set in remote or both mode, see syslog log-server, page 6-9.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

No keywords or arguments.

Examples

```
dpe# no syslog log-server
% OK (Requires appliance restart "> reload")
```

syslog mode

Use this command to configure the syslog subsystem to send messages to a remote server, a local file system, or both.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

syslog mode {**remote** | **local** | **both**}

- **remote**—Configures the syslog subsystem to log messages to a remote server and not to a local server. The remote system must be configured to accept syslog messages.
- **local**—Configures the syslog subsystem to log messages to a local file server only.
- **both**—Configures the syslog subsystem to send messages to a remote server and also to the local file server.

Examples

Example 1

```
dpe# syslog mode remote
% OK (Requires appliance restart "> reload")
```

Example 2

```
dpe# syslog mode local
% OK (Requires appliance restart "> reload")
```

Example 3

```
dpe# syslog mode both
% OK (Requires appliance restart "> reload")
```

CHAPTER 7

Support and Troubleshooting Commands

This chapter contains the command-line interface (CLI) commands that you can use to provide troubleshooting support for the Broadband Access Center (BAC) Device Provisioning Engine (DPE).

The commands described in this chapter include:

clear bundles

Use this command to clear any existing archived bundles on the DPE. You create these bundles by using the **support bundle** commands that normally contain archived logs and archived state information of use to the Cisco TAC. You must ensure that all bundles are retrieved before using this command because the archived state is lost.

After you enter this command, a prompt appears to indicate that the bundles are being cleared. When the bundling is complete, the amount of disk space cleared (in bytes) appears.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

Example 1

```
dpe# clear bundles
Clearing Cisco support bundles...
+ 90112 bytes cleared.
```

This result occurs when existing archived bundles are cleared.

Example 2

```
dpe# clear bundles
Clearing Cisco support bundles...
+ No bundles to clear.
```

This result occurs when there are no archived bundles to clear.

host

Use this command to look up the:

- Hostname for the specified IP address. You can use this command to verify if an IP address is reverse-mapped correctly in DNS. The IP address is looked up in reverse on each of the configured name servers until the IP address is found.
- IP address of a host using DNS. You can use this command to verify if the IP address of the RDU can be resolved successfully. If a system domain name is specified, this command automatically attempts searching that domain as well when resolving hostnames.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

host {*host* | *x.x.x.x*}

- *host*—Identifies the fully qualified domain name (FQDN) of the host to resolve through DNS.
- *x.x.x.x*—Identifies the IP address being looked up.

Examples

Example 1

```
dpe# host dpe.cisco.com
dpe.cisco.com has address 10.10.10.5
```

This result occurs when you specify the FQDN of a host.

Example 2

```
dpe# host 10.10.10.5
5.10.10.10.in-addr.arpa domain name pointer dpe.cisco.com
```

This result occurs when you specify the IP address of a host.

ping

Use this command to ping a host. Use one of the following values to specify the host:

- FQDN
- IP address

Press Enter to stop the process. The **ping** command is useful in diagnosing network connectivity issues.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

ping {*host* | *x.x.x.x*}

host—Identifies the host being pinged.

x.x.x.x—Identifies the IP addesss of the host.

Examples

Example 1

```
dpe# ping dpe.cisco.com
% Press <enter> to stop.
PING dpe.cisco.com (10.10.10.5) from 10.10.20.20 : 56(84) bytes of data.
64 bytes from 10.10.10.5: icmp_seq=1 ttl=255 time=0.178 msec
64 bytes from 10.10.10.5: icmp_seq=2 ttl=255 time=0.189 msec
64 bytes from 10.10.10.5: icmp_seq=3 ttl=255 time=0.183 msec

% Stopped.
```

This result occurs when you specify the FQDN of a host.

Example 2

```
dpe# ping 10.10.20.5
% Press <enter> to stop.
PING 10.10.10.5 (10.10.10.5) from 10.10.20.20 : 56(84) bytes of data.
64 bytes from 10.10.10.5: icmp_seq=1 ttl=255 time=0.238 msec
64 bytes from 10.10.10.5: icmp_seq=2 ttl=255 time=0.186 msec
64 bytes from 10.10.10.5: icmp_seq=3 ttl=255 time=0.177 msec

% Stopped.
```

This result occurs when you specify the IP address of a host.

show bundles

Use this command to display all bundles currently available in the outgoing directory. You create these bundles by using the **support bundle** commands; the bundles are accessible from the FTP server of the DPE.

The command identifies the bundles that are archived. If there are no bundles, a prompt appears, indicating that no bundles are available.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

Example 1

```
dpe# show bundles
/outgoing/state-20061201-135042.bpr
/outgoing/cache-20061201-135202.bpr
```

This result occurs when bundles are currently archived.

Example 2

```
dpe# show bundles
No bundles currently available.
```

This result occurs when no bundles are currently archived.

support bundle cache

Use this command to bundle the current DPE cache. This command is useful when archiving the cache for delivery to Cisco TAC. Once the bundle is created, it is available from the outgoing directory of the FTP server.

After the command creates the cache bundle, it displays the bundle specifics, including the compressed size of the bundle file.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# support bundle cache
Creating cache bundle for Cisco support...
+ /outgoing/cache-20070101-135202.bpr
+ Adding and compressing DPE cache...
+ Size: 9881 bytes
```

support bundle state

Use this command to bundle the current DPE state. This command is useful when archiving configuration and log files for the DPE for delivery to the Cisco TAC. Once the bundle is created, it is available from the outgoing directory of the FTP server.

Note When sending information to the Cisco TAC, you should send the DPE bundle obtained with this command, and the state bundle obtained at the RDU. You generate this bundle by running the **bundleState.sh** script from the *BPR_HOME/rdu/bin* directory.

You can use the script available on the RDU in *BPR_HOME/rdu/bin/bundlestate*. This script enables you to bundle the RDU system state, including logs, when sending information to the TAC.

The command bundles together the current state of the DPE, and the bundle file is compressed and identified for use by the TAC.

Usage Guidelines

Use this command on both hardware and Solaris DPEs.

Syntax Description

No keywords or arguments.

Examples

```
dpe# support bundle state
Creating state bundle for Cisco support...
+ /outgoing/state-20061201-135042.bpr
+ Adding a process listing to the support bundle...
+ Adding a network connection listing to the support bundle...
+ Adding and compressing files for support bundle...
+ Size: 1205782 bytes
```

support daemon ftp | telnet enabled

Use this command to enable or disable:

- FTP service on a hardware DPE. You can use the FTP service to upload upgrade bundles and to download support bundles. You can disable and enable the service for short periods of time to perform these tasks.
- Telnet protocol on a hardware DPE. Because Telnet is a relatively insecure protocol, you can make the system more secure by disabling Telnet; you can still access the system from the console mode.

After you use this command, run the **reload** command so that the changes take effect. See reload, page 2-16.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

support daemon {**ftp** | **telnet**} **enabled** {**true** | **false**}

- **ftp**—Enables or disables the FTP service.
- **telnet**—Enables or disables the Telnet protocol.
- **true**—Enables the FTP service or the Telnet interface.
- **false**—Disables the FTP service or the Telnet interface.

Examples

Example 1

```
dpe# support daemon ftp enabled true
% OK (Requires appliance restart "> reload")
```

Example 2

```
dpe# support daemon ftp enabled true
% OK (Requires appliance restart "> reload")
```

These results occur when you enable or disable the FTP service.

Example 3

```
dpe# support daemon telnet enabled true
% OK (Requires appliance restart "> reload")
```

Example 4

```
dpe# support daemon telnet enabled false
% OK (Requires appliance restart "> reload")
```

These results occur when you enable or disable the Telnet protocol.

traceroute

Use this command to identify the route to a specified host, including each hop between the DPE and the destination host. This command is useful when verifying communication and determining if gateways and routes are correctly configured.

Usage Guidelines

Use this command only on a hardware DPE.

Syntax Description

traceroute {*host* | *x.x.x.x*}

- *host*—Identifies the fully qualified domain name (FQDN) of a remote host.
- *x.x.x.x*—Identifies the IP address of a remote host.

Examples

Example 1

```
dpe# traceroute BAC_host.cisco.com
Press <enter> to stop.
traceroute to BACC_host.cisco.com (10.10.10.5), 30 hops max, 38 byte packets
1 10.10.10.5 0.454 ms 0.239 ms 0.230 ms

% Stopped.
```

This result occurs when you specify the FQDN of a remote host.

Example 2

```
dpe# traceroute 10.10.10.5
Press <enter> to stop.
traceroute to 10.10.10.5 (10.10.10.5), 30 hops max, 38 byte packets
1 10.10.10.5 0.454 ms 0.239 ms 0.230 ms

% Stopped.
```

This result occurs when you specify the IP address of a remote host.

GLOSSARY

A

agent A watchdog agent is a daemon process that is used to monitor, stop, start, and restart BAC component processes such as the RDU, Tomcat, and the SNMP agent.

alert A syslog or SNMP message notifying an operator or administrator of a network problem.

API Application programming interface. Specification of function-call conventions that defines an interface to a service.

B

BAC An integrated solution for data-over-cable service providers to configure and manage broadband modems, and enable and administer subscriber self-registration and activation. BAC is a scalable product capable of supporting millions of devices.

bandwidth The difference between the highest and lowest frequencies available for network signals. The term is also used to describe the rated throughput capacity of a given network medium or protocol.

broadband A transmission system that multiplexes multiple independent signals onto one cable. In telecommunications terminology, any channel having a bandwidth greater than a voice-grade channel (4 kHz); in LAN terminology, a coaxial cable on which analog signaling is used.

Broadband Access Center for Cable *See* BAC.

C

cable modem termination system *See* CMTS.

CableHome A CableLabs initiative to develop a standardized infrastructure to let cable operators extend high-quality, value-added services to the home local-area network.

caching A form of replication in which information learned during a previous transaction is used to process later transactions.

CMTS Cable modem termination system. A CMTS is a component that exchanges digital signals with cable modems on a cable network. The CMTS is usually located in the cable provider's local office.

CMTS shared secret *See* shared secret.

configuration file A file containing configuration parameters for the device to be provisioned.

configuration generation The process of generating configurations at the RDU for devices and distributing them to the DPE. The configuration instructions are cached by the DPE and informed about any action needed to be performed on the CPE.

CPE Customer premises equipment. Terminating equipment, such as telephones, computers, and modems, supplied and installed at a customer location.

D

DPE Device Provisioning Engine. The DPE caches device information. These distributed servers automatically synchronize with the RDU to obtain the latest configurations and provide BAC scalability.

DOCSIS Data Over Cable Service Interface Specification. DOCSIS defines functionality in cable modems involved in high-speed data distribution over cable television system networks.

F

FQDN Fully qualified domain name. FQDN is the full name of a system, rather than just its hostname. For example, cisco is a hostname and www.cisco.com is an FQDN.

I

IP address An IP address is a 32-bit number that identifies each sender or receiver of information that is sent in packets across the Internet.

K

KDC Key Distribution Center. The KDC implements limited Kerberos functionality. Used in the provisioning of PacketCable MTAs.

M

MAC address Standardized data-link layer address that is required for every port or device that connects to a LAN. Other devices in the network use these addresses to locate specific ports in the network and to create and update routing tables and data structures. MAC addresses are 6 bytes long and are controlled by IEEE. Also known as hardware address, MAC-layer address, or physical address. Compare with *network address*.

Media Terminal Adapter *See* MTA.

MSO Multiple system operator. A company that operates more than one cable TV or broadband system.

MTA Equipment at the customer end of a broadband (packetcable) network.

multiple service operator *See* MSO.

N

NAT Network address translation. Mechanism for reducing the need for globally unique IP addresses. NAT allows an organization with addresses that are not globally unique to connect to the Internet by translating those addresses into globally routable address space. Also known as Network Address Translation.

network address Network layer address referring to a logical, rather than a physical, network device. Also called a protocol address. Compare with *MAC address*.

network administrator Person responsible for operation, maintenance, and management of a network. *See also* network operator.

network operator Person who routinely monitors and controls a network, performing such tasks as reviewing and responding to alarms, monitoring throughput, configuring new circuits, and resolving problems. *See also* network administrator.

Network Time Protocol *See* NTP.

NR Cisco Network Registrar. A software product that provides IP addresses, configuration parameters, and DNS names to DOCSIS cable modems and PCs, based on network and service policies.

NTP Network Time Protocol. NTP is a protocol designed to synchronize server clocks over a network.

P

provisioning API A series of BAC functions that programs can use to make the operating system perform various functions.

provisioning groups Groupings of devices with a defined set of associated DPE and DHCP servers, based on either network topology or geography.

R

RDU Regional Distribution Unit. The RDU is the primary server in the BAC provisioning system. It manages generation of device configurations, processes all API requests, and manages the BAC system.

realm The logical network served by a single Kerberos database and a set of Key Distribution Centers.

realm names By convention, realm names are generally all uppercase letters to differentiate the realm from the Internet domain. *See* realm.

redundancy In internetworking, the duplication of devices, services, or connections so that, in the event of a failure, the redundant devices, services, or connections can perform the work of those that failed.

S

selection tags Selection tags associated with Network Registrar scopes. These tags define the clients and client-classes associated with a scope.

shared secret A character string used to provide secure communication between two servers or devices.

T

TFTP Trivial File Transfer Protocol. Simplified version of File Transfer Protocol (FTP) that allows files to be transferred from one computer to another over a network.

INDEX

A

B

C

D

E

F

G

H

I

K

L

M

N

P

R

S

T

U

V