Overview of the Cisco Prime Infrastructure Command-Line Interface

This chapter provides an overview of how to access the Cisco Prime Infrastructure command-line interface (CLI), the different command modes, and the commands that are available in each mode.

You can configure and monitor the Prime Infrastructure through the web interface. You can also use the CLI to perform the configuration and monitoring tasks described in this guide.

Accessing the Prime Infrastructure Command Environment

You can access the Prime Infrastructure CLI through a secure shell (SSH) client or the console port using one of the following machines:

- Windows PC running Windows 7, 8, and 10.

- Apple Computer running Mac OS X 10.4 or later

- PC running Linux

User Accounts and Modes in Cisco Prime Infrastructure CLI

Two different types of accounts are available on the Prime Infrastructure CLI:

- Admin (administrator)

- Network Admin

- Security Admin

- Operator (user)

When you power on the Prime Infrastructure appliance for the first time, you are prompted to run the setup utility to configure the appliances. During this setup process, an administrator user account, also known as an Admin account, is created. After you enter the initial configuration information, the appliance automatically reboots and prompts you to enter the username and the password that you specified for the Admin account. You must use this Admin account to log in to the Prime Infrastructure CLI for the first time.

An Admin can create and manage Operator (user) accounts (which have limited privileges and access to the Prime Infrastructure server). An Admin account also provides the functionality that is needed to use the Prime Infrastructure CLI.

To create more users (with admin, security-admin, network-admin, and operator privileges) with SSH access to the Prime Infrastructure CLI, you must enter the **username** command in configuration mode (see Command Modes in the Prime Infrastructure CLI).

Table 1: Command Privileges lists the command privileges for each type of user account: Admin and Operator (user).

Table 1: Command Privileges

	User Account	
	Admin	**Operator** **(User)**
application commands	*	
backup	*	
backup-logs	*	
banner	*	
clock	*	
configure terminal	*	
copy commands	*	
debug	*	
delete	*	
dir	*	

	User Account	
	Admin	**Operator** (User)
exit	*	*
forceout	*	
halt	*	
lms	*	
mkdir	*	
ncs	*	
nslookup	*	*
ocsp	*	
patch	*	
patch install	*	
patch remove	*	
ping	*	*
ping6	*	*
reload	*	
repository	*	
restore commands	*	
rmdir	*	
rsakey	*	
shell	*	
show application	*	
show backup	*	
show cdp	*	*
show clock	*	*
show cpu	*	*
show disks	*	*
show icmp_status	*	*

	User Account	
	Admin	Operator (User)
show icmp_status	*	*
show interface	*	*
show ip route	*	
show logging	*	*
show logins	*	*
show memory	*	*
show ntp	*	*
show ports	*	*
show process	*	*
show repository	*	
show restore	*	
show running-config	*	
show startup-config	*	
show tech-support	*	
show terminal	*	*
show timezone	*	*
show timezones	*	
show udi	*	*
show uptime	*	*
show users	*	
show version	*	*
ssh	*	*
tech	*	
telnet	*	*
terminal	*	*
traceroute	*	*

	User Account	
	Admin	**Operator** **(User)**
undebug	*	
write	*	

Logging in to the Prime Infrastructure server places you in operator (user) mode or admin (EXEC) mode, which always requires a username and password for authentication.

You can tell which mode you are in by looking at the prompt. A right angle bracket (>) appears at the end of operator (user) mode prompt; a pound sign (#) appears at the end of admin mode prompt, regardless of the submode.

Command Modes in the Prime Infrastructure CLI

This section describes the command modes supported in Prime Infrastructure.

EXEC Commands

EXEC commands primarily include system-level commands such as **show** and **reload** (for example, application installation, application start and stop, copy files and installations, restore backups, and display information).

- Table 2: Summary of EXEC Commands describes the EXEC commands
- Table 3: Summary of show Commands describes the show commands in EXEC mode

For detailed information on EXEC commands, see Understanding Command Modes, page 2-5.

EXEC or System-Level Commands

Table 2: Summary of EXEC Commands describes EXEC mode commands.

Table 2: Summary of EXEC Commands

	Description
application install	Installs a specific application bundle.
application start	Starts or enables a specific application.
application stop	Stops or disables a specific application.
application upgrade	Upgrades a specific application bundle.
backup	Performs a backup and places the backup in a repository.
backup-logs	Performs a backup of all of the logs on the Prime Infrastructure to a remote location.
banner	Sets messages while logging in to CLI (pre-login).
clock	Sets the system clock on the Prime Infrastructure server.
configure	Enters configuration mode.
copy	Copies any file from a source to a destination.
debug	Displays any errors or events for various command situations; for example, backup and restore, configuration, copy, resource locking, file transfer, and user management.
delete	Deletes a file in the Prime Infrastructure server.

	Description
dir	Lists the files in the Prime Infrastructure server.
exit	Disconnects the encrypted session with a remote system. Exits from the current command mode to the previous command mode.
forceout	Forces the logout of all of the sessions of a specific Prime Infrastructure server system user.
halt	Disables or shuts down the Prime Infrastructure server.
lms	Migrates data from LMS server to PI server.
mkdir	Creates a new directory.
ncs	NCS-related commands used to start, stop and back up the server.
nslookup	Queries the IPv4 address or hostname of a remote system.
ocsp	Enables certificate-based authentication for web clients using OCSP responders.
patch	Installs System or Application patch.
ping	Determines the IPv4 network connectivity to a remote system.
ping6	Determines the IPv6 network connectivity to a remote system.
reload	Reboots the Prime Infrastructure server.
restore	Restores a previous backup.
rmdir	Removes an existing directory.
rsakey	Displays a configured RSA key or sets a new RSA public key for user authentication.
show	Provides information about the Prime Infrastructure server.
ssh	Starts an encrypted session with a remote system.
tech	Provides Cisco Technical Assistance Center (TAC) commands.
telnet	Establishes a Telnet connection to a remote system.
terminal length	Sets terminal line parameters.

	Description
terminal session-timeout	Sets the inactivity timeout for all terminal sessions.
terminal session-welcome	Sets the welcome message on the system for all terminal sessions.
terminal terminal-type	Specifies the type of terminal connected to the current line of the current session.
traceroute	Traces the route of a remote IP address.
undebug	Disables the output (display of errors or events) of the **debug** command for various command situations; for example, backup and restore, configuration, copy, resource locking, file transfer, and user management.
write	Erases the startup configuration that forces to run the setup utility and prompt the network configuration, copies the running configuration to the startup configuration, and displays the running configuration on the console.

show Commands

The **show** commands are used to display the Prime Infrastructure settings and are among the most useful commands. See Table 3: Summary of show Commands for a summary of the **show** commands. The **show** commands must be followed by a keyword; for example, **show application status**. Some **show** commands require an argument or variable after the keyword to function; for example, **show application version**.

Table 3: Summary of show Commands

	Description
application (requires keyword)	Displays information about the installed application; for example, status information or version information.
backup (requires keyword)	Displays information about the backup.
banner (requires keyword)	Sets up messages when logging in to CLI.
cdp (requires keyword)	Displays information about the enabled Cisco Discovery Protocol interfaces.
clock	Displays the day, date, time, time zone, and year of the system clock.
cpu	Displays CPU information.
disks	Displays file-system information of the disks.
icmp-status	Displays the Internet Control Message Protocol (ICMP) echo response configuration information.

	Description
interface	Displays statistics for all of the interfaces configured on the Prime Infrastructure.
inventory	Displays information about the hardware inventory, including the Prime Infrastructure appliance model and serial number.
ip route	Displays s ip route details of the application.
logging (requires keyword)	Displays the Prime Infrastructure server logging information.
logins (requires keyword)	Displays the login history of the Prime Infrastructure server.
memory	Displays memory usage by all running processes.
ntp	Displays the status of the Network Time Protocol (NTP) servers.
ports	Displays all of the processes listening on the active ports.
process	Displays information about the active processes of the Prime Infrastructure server.
repository (requires keyword)	Displays the file contents of a specific repository.
restore (requires keyword)	Displays the restore history in the Prime Infrastructure.
running-config	Displays the contents of the configuration file that currently runs in the Prime Infrastructure.
startup-config	Displays the contents of the startup configuration in the Prime Infrastructure.
tech-support	Displays system and configuration information that you can provide to the TAC when you report a problem.
terminal	Displays information about the terminal configuration parameter settings for the current terminal line.
timezone	Displays the current time zone in the Prime Infrastructure.
timezones	Displays all of the time zones available for use in the Prime Infrastructure.
udi	Displays information about the unique device identifier (UDI) of the Prime Infrastructure.

	Description
uptime	Displays how long the system you are logged in to has been up and running.
users	Displays information about the system users.
version	Displays information about the currently loaded software version, along with hardware and device information.

Configuration Commands

Configuration commands include **interface** and **repository**. To access configuration mode, run the **configure** command in EXEC mode.

Some of the configuration commands require that you enter the configuration submode to complete the configuration.

Table 4: Summary of Configuration Commands describes the configuration commands.

Table 4: Summary of Configuration Commands

	Description
aaa authentication	Logs in to Prime Infrastructure server remotely.
backup-staging-url	Specifies a Network File System (NFS) temporary space or staging area for the remote directory for backup and restore operations.
cdp holdtime	Specifies the amount of time the receiving device should hold a Cisco Discovery Protocol packet from the Prime Infrastructure server before discarding it.
cdp run	Enables Cisco Discovery Protocol.
cdp timer	Specifies how often the Prime Infrastructure server sends Cisco Discovery Protocol updates.
clock timezone	Sets the time zone for display purposes.
do	Executes an EXEC-level command from configuration mode or any configuration submode. **Note** To initiate, the **do** command precedes the EXEC command.
end	Returns to EXEC mode.
exit	Exits configuration mode.
hostname	Sets the hostname of the system.

	Description
icmp echo	Configures the ICMP echo requests.
interface	Configures an interface type and enters interface configuration mode.
ipv6 address autoconfig	Enables IPv6 stateless autoconfiguration in interface configuration mode.
ipv6 address dhcp	Enables IPv6 address DHCP in interface configuration mode.
ip address	Sets the IP address and netmask for the Ethernet interface. **Note** This is an interface configuration command.
ip default-gateway	Defines or sets a default gateway with an IP address.
ip domain-name	Defines a default domain name that a Prime Infrastructure server uses to complete hostnames.
ip name-server	Sets the Domain Name System (DNS) servers for use during a DNS query.
kron occurrence	Schedule one or more Command Scheduler commands to run at a specific date and time or a recurring level.
kron policy-list	Specifies a name for a Command Scheduler policy.
logging	Enables the system to forward logs to a remote system.
logging loglevel	Configures the log level for the **logging** command.
no	Disables or removes the function associated with the command.
ntp	Synchronizes the software clock through the NTP server for the system.
password-policy	Enables and configures the password policy.
repository	Enters repository submode.
service	Specifies the type of service to manage.
snmp-server community	Sets up the community access string to permit access to the Simple Network Management Protocol (SNMP).
snmp-server contact	Configures the SNMP contact the Management Information Base (MIB) value on the system.

	Description
snmp-server host	Sends SNMP traps to a remote system.
snmp-server location	Configures the SNMP location MIB value on the system.
username	Adds a user to the system with a password and a privilege level.

For detailed information on configuration mode and submode commands, see Understanding Command Modes, page 2-5.

CLI Audit

You must have administrator access to execute the Prime Infrastructure configuration commands. Whenever an administrator logs in to configuration mode and executes a command that causes configurational changes in the Prime Infrastructure server, the information related to those changes is logged in the Prime Infrastructure operational logs.

Table 5: Configuration Mode Commands for the Operation Log describes configuration mode commands that generate operational logs.

Table 5: Configuration Mode Commands for the Operation Log

	Description
clock	Sets the system clock on the Prime Infrastructure server.
ip name-server	Sets the DNS servers for use during a DNS query.
hostname	Sets the hostname of the system.
ip address	Sets the IP address and netmask for the Ethernet interface.
ntp server	Allows synchronization of the software clock by the NTP server for the system.

In addition to configuration mode commands, some commands in EXEC mode generate operational logs.

Table 6: EXEC Mode Commands for the Operation Log describes EXEC mode commands that generate operational logs.

Table 6: EXEC Mode Commands for the Operation Log

	Description
backup	Performs a backup and places the backup in a repository.
restore	Restores from backup the file contents of a specific repository.
backup-logs	Backs up system logs.