Cisco Identity Services Engine CLI Reference Guide, Release 3.1

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CONTENTS

CHAPTER 1 **Cisco ISE Command-Line Interface** 1

Cisco ISE administration and configuration using CLI 2

Accessing the Cisco ISE CLI using a local system 2

Accessing the Cisco ISE CLI with Secure Shell 3

Cisco ISE CLI administrator account 4

Cisco ISE CLI user accounts 5

Creating a Cisco ISE CLI user account 5

Cisco ISE CLI user account privileges 6

Supported hardware and software platforms for Cisco ISE CLI 7

CHAPTER 2 **Cisco ISE CLI Commands in EXEC Mode** 9

Cisco ISE CLI session begins in EXEC mode 11

application install 12

application configure ise 13

Monitoring database settings 14

Live statistics of profiling events 16

Export and import internal CA store 17

Create missing indexes 19

Key Performance Metrics statistical data 21

Counter attribute collection 22

Localized ISE installation 22

Configure TCP parameters 24

application remove 27

application reset-config 28

application reset-passwd 30

application start 31

application stop 34
application upgrade 36
backup 39
Backing up Cisco ISE configuration data 40
Backing up Cisco ISE operational data 41
backup-logs 42
clear screen 44
clock 45
cls 47
configure 48
copy 49
Running configuration 50
Copying running configuration to a remote location 51
Copying running configuration from a remote location 51
Startup configuration 51
Copying startup configuration to a remote location 52
Copying startup configuration from a remote location 52
Copying log files 52
crypto 54
debug 57
delete 61
dir 62
esr 64
exit 65
forceout 66
generate-password 67
halt 68
help 69
licence esr 70
mkdir 71
nslookup 72
password 74
patch install 75
patch remove 77

permit rootaccess 79
ping 81
ping6 82
reload 84
reset-config 86
restore 87
Restoring Cisco ISE configuration data from the backup 88
Restoring Cisco ISE operational data from the backup 90
Restoring Cisco ISE configuration data and Cisco ADE OS data from the backup 90
rmdir 92
ssh 93
tech 95
Interpreting CPU and memory usage data 96
terminal length 98
terminal session-timeout 99
terminal session-welcome 100
terminal terminal-type 101
traceroute 102
undebug 103
which 106
write 107

CHAPTER 3 Cisco ISE CLI Commands in EXEC Show Mode 109
show 111
show application 112
show backup 115
show banner 117
show cdp 118
show clock 120
show container 121
show cpu 125
show crypto 127
show disks 128
show icmp-status 130

show interface 132
show inventory 134
show ip 136
show ipv6 route 137
show logging 138
show logins 141
show memory 142
show ntp 143
show ports 144
show process 146
show repository 148
show restore 150
show running-config 151
show snmp-server engineid 153
show snmp-server user 154
show startup-config 155
show tech-support 157
show terminal 159
show timezone 160
show timezones 161
show udi 162
show uptime 163
show users 164
show version 166

CHAPTER 4 **Cisco ISE CLI Commands in Configuration Mode** 169
Switch to configuration mode in EXEC mode 171
Configuring Cisco ISE in the configuration mode 172
Configuring Cisco ISE in the configuration submode 174
Default settings of CLI configuration commands 175
backup interface 176
cdp holdtime 180
cdp run 181
cdp timer 182

clear screen 183
clock timezone 184
Changing the time zone on Cisco ISE nodes 185
Common time zones 185
Australia time zones 185
Asia time zones 186
cls 187
conn-limit 188
do 189
end 192
exit 193
hostname 194
icmp echo 196
identity-store 197
interface 198
ip address 200
ip default-gateway 202
ip domain-name 203
ip host 205
ip mtu 207
ip name-server 208
ip route 210
ipv6 address 212
ipv6 address autoconfig 214
Configuring IPv6 auto configuration 214
Verifying the privacy extensions feature 215
ipv6 address dhcp 216
ipv6 enable 217
ipv6 route 218
kron occurrence 220
kron policy-list 223
logging 225
ntp 226
ntp authentication-key 228

ntp maxdistance 230
ntp server 231
Verifying the status of synchronization 233
rate-limit 234
password-policy 236
repository 238
service cache 241
service-ssh 242
service sshd 243
shutdown 245
snmp-server enable 246
snmp-server user 247
snmp-server host 250
snmp-server community 253
snmp-server contact 254
snmp-server location 255
snmp-server trap dskThresholdLimit 256
snmp engineid 257
synflood-limit 258
username 259
which 261

Cisco ISE Command-Line Interface

Note The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on RFP documentation, or language that is used by a referenced third-party product.

This chapter provides information on the Cisco Identity Services Engine (Cisco ISE) command-line interface (CLI) that you can use to configure and maintain Cisco ISE.

- Cisco ISE administration and configuration using CLI, on page 2
- Cisco ISE CLI administrator account, on page 4
- Cisco ISE CLI user accounts, on page 5
- Cisco ISE CLI user account privileges, on page 6
- Supported hardware and software platforms for Cisco ISE CLI, on page 7

Cisco ISE administration and configuration using CLI

The Cisco ISE command-line interface (CLI) allows you to perform system-level configuration in EXEC mode and other configuration tasks in configuration mode (some of which cannot be performed from the Cisco ISE Admin portal), and generate operational logs for troubleshooting.

You can use either the Cisco ISE Admin portal or the CLI to apply Cisco ISE application software patches, generate operational logs for troubleshooting, and backup the Cisco ISE application data. Additionally, you can use the Cisco ISE CLI to start and stop the Cisco ISE application software, restore the application data from a backup, upgrade the application software, view all system and application logs for troubleshooting, and reload or shutdown the Cisco ISE device.

Refer to the chapters "Cisco ISE CLI Commands in EXEC Mode", "Cisco ISE CLI Commands in EXEC Show Mode", or "Cisco ISE CLI Commands in Configuration Mode" in the Cisco ISE Command Reference Guides for command syntax, usage guidelines, and examples.

Accessing the Cisco ISE CLI using a local system

If you need to configure Cisco ISE locally without connecting to a wired Local Area Network (LAN), you can connect a system to the console port in the Cisco ISE device by using a null-modem cable. The serial console connector (port) provides access to the Cisco ISE CLI locally by connecting a terminal to the console port. The terminal is a system running terminal-emulation software or an ASCII terminal. The console port (EIA/TIA-232 asynchronous) requires only a null-modem cable.

- To connect a system running terminal-emulation software to the console port, use a DB-9 female to DB-9 female null-modem cable.
- To connect an ASCII terminal to the console port, use a DB-9 female to DB-25 male straight-through cable with a DB-25 female to DB-25 female gender changer.

The default parameters for the console port are 9600 baud, 8 data bits, no parity, 1 stop bit, and no hardware flow control.

Tip If you are using a Cisco switch on the other side of the connection, set the switchport to duplex auto, speed auto (the default).

Procedure

Step 1 If you use SNS appliances, connect a null-modem cable to the console port in the Cisco ISE device and to the COM port on your system.

In the case of virtual machines or public cloud platforms, carry out the required alternative steps to connect to the console.

Step 2 Set up a terminal emulator to communicate with Cisco ISE. Use these settings for the terminal emulator connection: 9600 baud, 8 data bits, no parity, 1 stop bit, and no hardware flow control.

Step 3 When the terminal emulator activates, press Enter.

Step 4 Enter your username and press Enter.

Step 5 Enter the password and press Enter.

Accessing the Cisco ISE CLI with Secure Shell

Cisco ISE is pre-configured through the setup utility to accept a CLI administrator. To log in with a SSH client (connecting to a wired Wide Area Network (WAN) via a system by using Windows XP or later versions), log in as an administrator.

Before you begin

To access the Cisco ISE CLI, use any Secure Shell (SSH) client that supports SSH v2.

Procedure

Step 1 Use any SSH client and start an SSH session.

Step 2 Press Enter or Spacebar to connect.

Step 3 Enter a hostname, username, port number, and authentication method. **`For example, you enter ise for the hostname or the IPv4/IPv6 IP address of the remote host, admin for the username, and 22 for the port number; and, for the authentication method, choose Password from the drop-down list.`**

Step 4 Click Connect, or press Enter.

Step 5 Enter your assigned password for the administrator.

Step 6 (Optional) Enter a profile name in the **Add Profile** page and click **Add to Profile**.

Step 7 Click **Close** on the **Add Profile** page.

Cisco ISE CLI administrator account

During the initial setup, you are prompted to enter a username and password that creates the CLI administrator account. Log into the Cisco ISE server using this account when you restart Cisco ISE after the initial configuration.

After the initial setup, the passwords for Cisco ISE GUI and Cisco ISE CLI are managed independently. Updating one password does not affect the other password.

You must always protect the CLI administrator account credentials, and use this account to explicitly create and manage additional administrator and user accounts with access to the Cisco ISE server.

CLI administrators can execute all commands to perform system-level configuration in EXEC mode (root access) and other configuration tasks in configuration mode in the Cisco ISE server. You can start and stop the Cisco ISE application software, backup and restore the Cisco ISE application data, apply software patches and upgrades to the Cisco ISE application software, view all system and application logs, and reload or shutdown the Cisco ISE devices.

A pound sign (#) appears at the end of the prompt for an administrator account, regardless of the submode.

Cisco ISE CLI user accounts

Any user whose account you create from the Cisco ISE Admin portal cannot automatically log into the Cisco ISE CLI. You must explicitly create user accounts with access to the CLI using the CLI administrator account. Use the command **generate-password <username>** to generate a password that complies with the Cisco ISE Password Policy for a CLI user account.

Creating a Cisco ISE CLI user account

You must run the **username** command in configuration mode to create CLI user accounts.

Procedure

Step 1 Log into the Cisco ISE CLI using the CLI administrator account.

Step 2 Enter into configuration mode and run the **username** command.

```
ise/admin# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ise/admin(config)# username duke password plain Plain@123 role user email duke@cisco.com
ise/admin(config)# exit
ise/admin#
```

Step 3 Log into the Cisco ISE CLI using the CLI user account.

From Cisco ISE release 3.3, a newly added user is prompted to change their password on the first login.

Cisco ISE CLI user account privileges

User accounts have access to a restricted number of commands, including these commands:

- crypto: Crypto operations
- exit: Exit the management session
- generate-password: Username for which password has to be generated
- license: License operations
- nslookup: DNS lookup for an IP address or hostname
- password: Update Password
- ping: Ping a remote IP address
- ping6: Ping a remote IPv6 address
- show: Show information about the system
- terminal: Set terminal type
- traceroute: Trace the route to a remote IP address

Supported hardware and software platforms for Cisco ISE CLI

You can connect to the Cisco ISE server and access the CLI using:

- A system running Microsoft Windows 10 or later releases.
- A system running Linux, such as Red Hat or Fedora.
- An Apple computer running Mac OS X 10.4 or later.
- Any terminal device compatible with VT100 or ANSI characteristics. On VT100-type and ANSI devices, you can use cursor-control and cursor-movement keys including the left arrow, right arrow, up arrow, down arrow, Delete, and Backspace keys. The Cisco ISE CLI senses the use of the cursor-control keys and automatically uses the optimal device characteristics.

Cisco ISE CLI Commands in EXEC Mode

This chapter describes the Cisco ISE command-line interface (CLI) commands used in EXEC mode. Each command in this chapter is followed by a brief description of its use, command syntax, usage guidelines, and one or more examples.

- Cisco ISE CLI session begins in EXEC mode, on page 11
- application install, on page 12
- application configure ise, on page 13
- application remove, on page 27
- application reset-config, on page 28
- application reset-passwd, on page 30
- application start, on page 31
- application stop, on page 34
- application upgrade, on page 36
- backup, on page 39
- backup-logs, on page 42
- clear screen, on page 44
- clock, on page 45
- cls, on page 47
- configure, on page 48
- copy, on page 49
- crypto, on page 54
- debug, on page 57
- delete, on page 61
- dir, on page 62
- esr, on page 64
- exit, on page 65
- forceout, on page 66
- generate-password, on page 67
- halt, on page 68
- help, on page 69
- licence esr, on page 70
- mkdir, on page 71
- nslookup, on page 72
- password, on page 74

- patch install, on page 75
- patch remove, on page 77
- permit rootaccess, on page 79
- ping, on page 81
- ping6, on page 82
- reload, on page 84
- reset-config, on page 86
- restore, on page 87
- rmdir, on page 92
- ssh, on page 93
- tech, on page 95
- terminal length, on page 98
- terminal session-timeout, on page 99
- terminal session-welcome, on page 100
- terminal terminal-type, on page 101
- traceroute, on page 102
- undebug, on page 103
- which, on page 106
- write, on page 107

Cisco ISE CLI session begins in EXEC mode

When you start a session in the Cisco ISE CLI, you begin in EXEC mode. In EXEC mode, you have permissions to access everything in the Cisco ISE server and perform system-level configuration and generate operational logs.

application install

Note The **application install** command must only be used for installing hot patches.

To install a specific application other than Cisco ISE, use the **application install** command in EXEC mode. To remove an application other than Cisco ISE, use the **application remove** command.

application [**install** {*application-bundle*} {*remote-repository-name*}]

Syntax Description

install	Installs a specific application.
application-bundle	Application bundle filename. Supports up to 255 alphanumeric characters.
remote-repository-name	Remote repository name. Supports up to 255 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Installs the specified application bundle on the appliance. The application bundle file is pulled from a specified repository.

If you issue the **application install** or **application remove** command when another installation or removal operation of an application is in progress, you will see this warning message:

```
An existing application install, remove, or upgrade is in progress. Try again shortly.
```

Example

```
ise/admin# application install ise-hotpatch-appbundle-x.x.tar.gz myrepository
Do you want to save the current configuration? (yes/no) [yes]? yes
Generating configuration...
Saved the running configuration to startup successfully
Initiating Application installation...
Extracting ISE database content...
Starting ISE database processes...
Restarting ISE database processes...
Creating ISE M&T session directory...
Performing ISE database priming...
Application successfully installed
ise/admin#
```

application configure ise

Use the **application configure ise** command in EXEC mode to:

- perform M&T operations
- refresh and display statistics related to the profiler
- export and import options to backup and restore Cisco ISE CA certificates and keys
- generate Key Performance Metrics (KPM) statistics
- enable or disable the ISE counter attribute data collection

application [**configure** {*application-name*}]

Syntax Description

configure	Configures a specific application.
application-name	Application name. Supports up to 255 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.0	Wireless setup support was removed.

Usage Guidelines

You can use this command to update M&T databases and indexes, export and import Cisco ISE CA certificates and keys, generate Key Performance Metrics (KPM) statistics, and enable or disable ISE counter attribute data collection in a Cisco ISE node.

Example

```
ise/admin# application configure ise

Selection configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
```

```
[15]View Admin Users
[16]Get all Endpoints
[19]Establish Trust with controller
[20]Reset Context Visibility
[21]Synchronize Context Visibility With Database
[22]Generate Heap Dump
[23]Generate Thread Dump
[24]Force Backup Cancellation
[25]Recreate undotablespace
[26]Configure TCP params
[27]Reset Upgrade Tables and Proceed with upgrade
[28]Recreate Temp tablespace
[29]Clear Sysaux tablespace
[30]Fetch SGA/PGA Memory usage
[31]Generate Self-Signed Admin Certificate
[32]View Certificates in NSSDB or CA_NSSDB
[33]Enable/Disable/Current_status of RSA_PSS signature for EAP-TLS, select preferred option
 from the following
    E|e - To Enable RSA-PSS signature for EAP-TLS
    D|d - To Disable RSA-PSS signature for EAP-TLS
    C|c - To show current status of RSA-PSS signature for EAP-TLS
[0]Exit
```

Note Cisco ISE does not support Wireless Setup (Wifi setup).

Cisco ISE release 3.1 and later does not support ACS migration.

Monitoring database settings

To configure Monitoring database related tasks, use these options in the **application configure ise** command.

We recommend to reset primary and secondary Monitoring node databases at the same time to prevent discrepancy in log files.

- To reset the monitoring session database, use the option 1.

  The reset option will cause ISE services to be temporarily unavailable until it restarts.

- To rebuild unusable indexes in the monitoring database, use the option 2.

- To purge monitoring operational data, use the option 3.

  The purge option is used to clean up the data and will prompt to ask the number of days to be retained.

- To reset the monitoring database, use the option 4.

  The reset option is used to reset the database to the factory default, so that all the data is be permanently deleted. You can reset the database if the files are consuming too much file system space.

  The reset option will cause Cisco ISE services to be temporarily unavailable until it restarts.

- To refresh the monitoring database statistics, use the option 5.

Example

To reset the monitoring session database, use the option 1.

```
ise/admin# application configure ise

Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit
```

```
1
You are about to reset the M&T session database. Following this operation, an application
restart will be required.
Are you sure you want to proceed? y/n [n]: y
TimesTen Daemon stopped.
TimesTen Daemon startup OK.
Restarting application
Stopping ISE Monitoring & Troubleshooting Log Processor...
ISE Identity Mapping Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE Profiler Database...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
iptables: No chain/target/match by that name.
iptables: No chain/target/match by that name.
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Certificate Authority Service...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE AD Connector...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.

2
You are about to rebuild the M&T database unusable indexes.
Are you sure you want to proceed? y/n [n]: y
Starting to rebuild indexes
Completed rebuild indexes

3
Enter number of days to be retained in purging MnT Operational data [between 1 to 90 days]
For instance, Entering 20 will purge MnT Operational data older than 20 days
Enter 'exit' to return to the main menu without purging
```

```
Enter days to be retained: 20
You are about to purge M&T data older than 20 from your database.
Are you sure you want to proceed? y/n [n]: y
M&T Operational data older than 20 is getting removed from database
4
You are about to reset the M&T database. Following this operation, application will be
restarted.
Are you sure you want to proceed? y/n [n]: y
Stopping application
Stopping ISE Monitoring & Troubleshooting Log Processor...
ISE Identity Mapping Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE Profiler Database...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
Starting Database only
Creating ISE M&T database tables...
Restarting application
ISE M&T Log Processor is not running
ISE Identity Mapping Service is disabled
ISE pxGrid processes are disabled
ISE Application Server process is not running
ISE Certificate Authority Service is not running
ISE Profiler Database is not running
ISE M&T Session Database is not running
ISE AD Connector is not running
Stopping ISE Database processes...
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Certificate Authority Service...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE AD Connector...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.

5
You are about to Refresh Database statistics
Are you sure you want to proceed? y/n [n]: y
Starting to terminate long running DB sessions
Completed terminating long running DB sessions

Gathering Config schema(CEPM) stats ........
Gathering Operational schema(MNT) stats ....
Completed Refresh Database statistics
```

Live statistics of profiling events

To display live statistics from the profiling events by probe and type, use the Display Profiler Statistics option in the **application configure ise** command. This data is collected only from the Policy Service nodes and is not visible in Monitoring nodes.

It leverages existing JMX counters that previously required the root patch or external JConsole to retrieve, and so there is no need to use the root patch to capture this data.

Example

```
ise/admin# application configure ise

Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit



6


Create an RMI connector client and connect it to the RMI connector server
Get an MBeanServerConnection
Retrieve MXBean

Press <Enter> to continue...
Timestamp,Elapsed,EndpointsProfiled,NetflowPacketsReceived,
EndpointsReProfiled,EndpointsDeleted...
Press Ctrl + c
```

Export and import internal CA store

To export Cisco ISE CA certificates and keys from the primary Administration Node (PAN) to be able to import them to the secondary Administration Node in case of a PAN failure, use the **application configure ise** command in EXEC mode.

When you promote your Secondary Administration Node to become the Primary Administration Node (PAN), you must import the Cisco ISE CA certificates and keys that you have exported from the original PAN.

- To export a copy of the Cisco ISE CA certificates and keys, use option 7 in the **application configure ise** command.
- To import a copy of the Cisco ISE CA certificates and keys, use option 8 in the **application configure ise** command.

Example 1

To export a copy of the Cisco ISE CA certificates and keys, use option 7.

```
ise/admin# application configure iseSelection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit


7
Export Repository Name: sftp
Enter encryption-key for export: Test1234
Export on progress..............

The following 4 CA key pairs were exported to repository 'sftp' at
'ise_ca_key_pairs_of_ise60':
        Subject:CN=Certificate Services Root CA - ise60
        Issuer:CN=Certificate Services Root CA - ise60
        Serial#:0x66cfded7-2f384979-9110c0e1-50dbf656

        Subject:CN=Certificate Services Endpoint Subordinate CA - ise60
        Issuer:CN=Certificate Services Root CA - ise60
        Serial#:0x20ff700b-d5844ef8-a029bf7d-fad64289

        Subject:CN=Certificate Services Endpoint RA - ise60
        Issuer:CN=Certificate Services Endpoint Subordinate CA - ise60
        Serial#:0x483542bd-1f1642f4-ba71b338-8f606ee4

        Subject:CN=Certificate Services OCSP Responder Certificate - ise60
        Issuer:CN=Certificate Services Root CA - ise60
        Serial#:0x0ad3ccdf-b64842ad-93dd5826-0b27cbd2

ISE CA keys export completed successfully
```

Example 2

To import a copy of the Cisco ISE CA certificates and keys, use option 8.

```
ise/admin# application configure ise
Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
```

```
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit



8
Import Repository Name: sftp
Enter CA keys file name to import: ise_ca_key_pairs_of_ise60
Enter encryption-key: Test1234
Import on progress..............



The following 4 CA key pairs were imported:
        Subject:CN=Certificate Services Root CA - ise60
        Issuer:CN=Certificate Services Root CA - ise60
        Serial#:0x66cfded7-2f384979-9110c0e1-50dbf656

        Subject:CN=Certificate Services Endpoint Subordinate CA - ise60
        Issuer:CN=Certificate Services Root CA - ise60
        Serial#:0x20ff700b-d5844ef8-a029bf7d-fad64289

        Subject:CN=Certificate Services Endpoint RA - ise60
        Issuer:CN=Certificate Services Endpoint Subordinate CA - ise60
        Serial#:0x483542bd-1f1642f4-ba71b338-8f606ee4

        Subject:CN=Certificate Services OCSP Responder Certificate - ise60
        Issuer:CN=Certificate Services Root CA - ise60
        Serial#:0x0ad3ccdf-b64842ad-93dd5826-0b27cbd2

Stopping ISE Certificate Authority Service...
Starting ISE Certificate Authority Service...
ISE CA keys import completed successfully
```

Create missing indexes

To avoid upgrade failures due to missing indexes, use the **application configure ise** command in EXEC mode.

- To create missing CEPM database indexes, use option 9.
- To create missing monitoring database indexes, use option 10.

Example 1

To create the CEPM database index, use option 9.

```
ise/admin# application configure ise
```

```
Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit
```

```
9
You are about to create missing config indexes.
Are you sure you want to proceed? y/n [n]: y
Starting to create missing config indexes
Completed creating missing config indexes
```

Example 2

To create missing Monitoring database indexes, use option 10.

```
ise/admin# application configure ise

Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit
```

```
10
You are about to create missing MnT indexes.
Are you sure you want to proceed? y/n [n]: y
Starting to create missing MnT indexes
Completed creating missing MnT indexes
```

Key Performance Metrics statistical data

To obtain Key Performance Metrics (KPM), use the Generate Daily KPM Stats or Generate KPM Stats for last 8 Weeks option in the **application configure ise** command. This data is collected from the Monitoring nodes. The output of this command provides statistical information about the endpoints that connect to your deployment. You can choose to generate a report for KPM statistics daily or for the last 8 weeks. The report is saved to the local disk.

If you have reset the Monitoring database (option 4) before generating the KPM statistics, options 12 and 13 will not return any data because the Monitoring database is reset.

Example

```
ise/admin# application configure ise

Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit



12

You are about to generate Daily KPM (Key Performance Metrics).
 % Warning Generating KPM stats may impact ISE performance during the generation of the
report. It is suggested to run this report during non-peak hours and when not
conflicting with other scheduled operations of ISE.
Are you sure you want to proceed? y/n [n]: y
Starting to generate Daily KPM stats
Copying files to /localdisk
Completed generating daily KPM stats. You can find details in following files located under
 /localdisk
```

```
KPM_onboarding_results_27_MAR_2015.xls
KPM_trx_load_27_MAR_2015.xls
```

Counter attribute collection

Cisco ISE counters collect threshold values for various attributes. The values for these different attributes are collected at different intervals (one at five minute interval and another greater than five minutes) and the data is presented in the **ISE Counters** report.

Cisco ISE, by default, collects the values for these attributes. You can choose to disable this data collection from the Cisco ISE CLI using the **application configure ise** command. Choose option 14 to enable or disable counter attribute collection.

Example

To disable counter attribute collection, use option 14.

```
ise/admin# application configure ise
Selection ISE configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
.
.
.
[xx]Exit

14


Do you want to Enable(e) or Disable(d) counter attribute collection? [e/d]d
Completed disabling counter attributes. It will take at the most 30 minute to get effected.
```

Localized ISE installation

While reinstalling Cisco ISE, you can use the Localized ISE Install option (option 36) in the **application configure ise** command to reduce the installation time. By using this option, you can reduce the reinstallation time from an average of 5-7 hours, to approximately 1-2 hours. Though this option can be used for both Cisco Secure Network Server and virtual appliances, it significantly reduces the reinstallation time for Cisco Secure Network Servers.

Important

- **Localized ISE Install** option is supported for Cisco ISE 3.1 patch 9 and above, Cisco ISE release 3.2 patch 5 and above, and Cisco ISE release 3.3 patch 2 and above releases.
- You can use this option to reinstall the current version and higher versions. You cannot install a version that is older than the current version.

To install Cisco ISE using the **Localized ISE Install** option:

1. Copy a Cisco ISE ISO file to the local disk (`disk://`) using the **copy** command. Here is an example:

```
ise/admin#copy ftp://xx.xx.xxx.xx//iseBuild/3.x.x.xxx/ise-3.x.x.xxx.SPA.x86_64.iso disk://
Enter username:admin
Enter password:
```

2. Run the **application configure ise** command.

   These options are displayed:

```
Selection configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
[19]Establish Trust with controller
[20]Reset Context Visibility
[21]Synchronize Context Visibility With Database
[22]Generate Heap Dump
[23]Generate Thread Dump
[24]Force Backup Cancellation
[25]CleanUp ESR 5921 IOS Crash Info Files
[26]Recreate undotablespace
[27]Reset Upgrade Tables
[28]Recreate Temp tablespace
[29]Clear Sysaux tablespace
[30]Fetch SGA/PGA Memory usage
[31]Generate Self-Signed Admin Certificate
[32]View Certificates in NSSDB or CA_NSSDB
[33]Enable/Disable/Current_status of RSA_PSS signature for EAP-TLS
[34]Check and Repair Filesystem
[35]Enable/Disable/Current_status of Audit-Session-ID Uniqueness
[36]Localised ISE Install
[0]Exit
```

3. Choose the **Localized ISE Install** option (option 36).

   The ISO files that are stored in the local disk are listed.

4. Choose the ISO file that you want to install.

5. Verify the MD5 hash value of the chosen ISO file.

If the MD5 checksum of the ISO file is not correct, this error message is displayed:

```
Error in mounting ISO
```

You might face this error if the ISO file download was interrupted due to any network issue. In this case, download the ISO file and verify the MD5 checksum again.

6. Enter **Y** to proceed with installation.

   The contents of the ISO file will be copied to the installer directories, and the appliance will reboot to install the chosen Cisco ISE release. Here is an example:

```
ISO files present in the disk are:
[1] ise-3.x.x.xxx.SPA.x86_64.iso
Choose the ISO you want to install: 1

Computing MD5 hash value of the selected ISO...
File selected: ise-3.x.x.xxx.SPA.x86_64.iso (MD5: 8c3a2a73620bed0e3024044af9ccdf8e)

Warning: Verify the MD5 checksum of the ISO before you proceed.

Proceed with Installation? [y/n] y

Copying ISO contents to installer directories. The copy may take around 5 minutes.

% Notice: The appliance will reboot to install the chosen Cisco ISE release now.
```

Configure TCP parameters

To configure the TCP parameters use the **Configure TCP params** option (option 25) in the **application configure ise** command. Ensure that you are in the Admin CLI.

For the changes to take effect, reload the Cisco ISE server on modifying any of the parameters by using the **reload** command in EXEC mode.

Example

To configure the TCP parameters, use option 25.

```
ise/admin#application configure ise

Selection configuration option
[1]Reset M&T Session Database
[2]Rebuild M&T Unusable Indexes
[3]Purge M&T Operational Data
[4]Reset M&T Database
[5]Refresh Database Statistics
[6]Display Profiler Statistics
[7]Export Internal CA Store
[8]Import Internal CA Store
[9]Create Missing Config Indexes
[10]Create Missing M&T Indexes
[11]Enable/Disable ACS Migration
[12]Generate Daily KPM Stats
[13]Generate KPM Stats for last 8 Weeks
[14]Enable/Disable Counter Attribute Collection
[15]View Admin Users
[16]Get all Endpoints
[17]Enable/Disable Wifi Setup
[18]Reset Config Wifi Setup
```

```
[19]Establish Trust with controller
[20]Reset Context Visibility
[21]Synchronize Context Visibility With Database
[22]Generate Heap Dump
[23]Generate Thread Dump
[24]Force Backup Cancellation
[25]Configure TCP params
[0]Exit

25
This CLI allows admins to modify the TCP parameters recycle/reuse/fin_timeout
For the changes to take effect, RELOAD ISE server on modifying any of the parameter using
the admin cli 'reload'. Until reload is done, the changes will not be persisted.
Select the option to configure/display tcp params.
                        1. tcp recycle
                        2. tcp reuse
                        3. tcp fin_timeout
                        4. display tcp param values
                        0. Exit
                        [1/2/3/4/0]: 1
Enable/Disable tcp recycle parameter? [e/d]: e
param recycle is already enabled..
Select the option to configure/display tcp params.
                        1. tcp recycle
                        2. tcp reuse
                        3. tcp fin_timeout
                        4. display tcp param values
                        0. Exit
                        [1/2/3/4/0]: 2
Enable/Disable tcp reuse parameter? [e/d]: e
param reuse is already enabled..
Select the option to configure/display tcp params.
                        1. tcp recycle
                        2. tcp reuse
                        3. tcp fin_timeout
                        4. display tcp param values
                        0. Exit
                        [1/2/3/4/0]: 3
Set tcp fin_timeout (60 default) <0-180> : 60
updated timeout param..
Select the option to configure/display tcp params.
                        1. tcp recycle
                        2. tcp reuse
                        3. tcp fin_timeout
                        4. display tcp param values
                        0. Exit
                        [1/2/3/4/0]: 4
Current values of the tcp parameters:
Recycle = ENABLED
Reuse = ENABLED
Fin_timeout = 60
Select the option to configure/display tcp params.
                        1. tcp recycle
                        2. tcp reuse
                        3. tcp fin_timeout
                        4. display tcp param values
                        0. Exit
                        [1/2/3/4/0]:
```

Remember

- **tcp reuse** accepts values - 0 (disable), 1 (enable globally) and 2 (enable for loopback traffic only). tcp reuse is set to 2 seconds by default. Enable reuse of TIME-WAIT sockets for new connections when it is safe from protocol viewpoint.
- **tcp recycle** is disabled by default. Enabling tcp recycle enables the fast recycling of TIME-WAIT sockets. Cisco ISE doesn't recommend altering this **tcp recycle** parameter as this can induce undesired behavior when using load balancers. Also, it is not recommended to use tcp recycle with Network Address Translation in place. Contact your network administrator before implementing this recycle operation.
- **tcp fin_timeout** is set to 60 seconds by default. The valid range for tcp fin_timeout is from 0 to 180 seconds. You can set this attribute to a lower value to enhance the TACACS+ performance. To change this to an optimal value, from the root shell of Cisco ISE, execute `netstat -nat | awk '{print $6}' | sort | uniq -c | sort -n`

application remove

Note You are not allowed to run the **application remove** command from the command-line interface (CLI) to remove Cisco ISE unless you are explicitly instructed to do so for an upgrade.

To remove a specific application other than Cisco ISE, use the **application remove** command in EXEC mode.

application [**remove** {*application-name*}]

When you do not want to remove any other application other than Cisco ISE, use the **no** form of this command.

no application [**remove** {*application-name*}]

Syntax Description

remove	Removes or uninstalls an application.
application-name	Application name. Supports up to 255 alphanumeric characters. Removes or uninstalls an application.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Removes or uninstalls an application.

Example

```
ise/admin# application remove ise
Continue with application removal? [y/n] y
Application successfully uninstalled
ise/admin#
```

application reset-config

To reset the Cisco ISE application configuration to factory defaults or retain the existing factory settings, use the **application reset-config** command in EXEC mode. In addition to self-signed certificates, you can also reset server certificates or retain the existing server certificates.

application [**reset-config** {*application-name*}]

Syntax Description

reset-config	Resets the Cisco ISE application configuration and clears the Cisco ISE database.
application-name	Name of the application configuration you want to reset. Supports up to 255 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

You can use the **application reset-config** command to reset the Cisco ISE configuration and clear the Cisco ISE database without reimaging the Cisco ISE appliance or VMware. The reset requires you to enter new Cisco ISE database administrator and user passwords.

Note Although the **application reset-config** command resets the Cisco ISE configuration to factory defaults, the operating system (Cisco ADE-OS) configuration still remains intact. The Cisco ADE-OS configuration includes items such as the network settings, CLI password policy, and backup history.

When you reset the Cisco ISE application configuration from the CLI, it performs a leave operation disconnecting the ISE node from the Active Directory domain if it is already joined. However, the Cisco ISE node account is not removed from the Active Directory domain. We recommend that you perform a leave operation from the Cisco ISE Admin portal with the Active Directory credentials. The leave operation removes the node account from the Active Directory domain.

Example

If a user selects the No option, the command deletes server certificates and regenerates only self-signed certificates. If the user selects the Yes option, the command retains existing server certificates by exporting them to a location. The server certificates are then imported from this location.

```
Initialize your ISE configuration to factory defaults? (y/n): y
Leaving currently connected AD domains if any...
Please rejoin to AD domains from the administrative GUI
Retain existing ISE server certificates? (y/n): y
Reinitializing local ISE configuration to factory defaults...
```

```
Stopping ISE Monitoring & Troubleshooting Log Processor...
PassiveID WMI Service is disabled
PassiveID Syslog Service is disabled
PassiveID API Service is disabled
PassiveID Agent Service is disabled
PassiveID Endpoint Service is disabled
PassiveID SPAN Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE EST Service...
ISE Sxp Engine Service is disabled
Stopping TC-NAC Service ...
Stopping container irf-core-engine-runtime
Stopping container irf-rabbitmq-runtime
Stopping container irf-mongo-runtime
Stopping VA Service...
Stopping ISE VA Database...
Stopping container wifisetup-container
Stopping docker daemon...
Stopping ISE Profiler Database...
Stopping ISE Indexing Engine...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
Enter the ISE administrator username to create[admin]:
Enter the password for 'admin':
Re-enter the password for 'admin':
Extracting ISE database content...
Starting ISE database processes...
Creating ISE M&T session directory...
Creating ISE VA timesten database...
Performing ISE database priming...
Starting ISE Indexing Engine...
TimeoutStartUSec=20min
TimeoutStopUSec=20min
Cleaning up TC-NAC docker configuration...

Starting docker daemon ...
irf-core-engine-runtime is not running
irf-rabbitmq-runtime is not running
irf-mongo-runtime is not running
VA Service is not running
ISE VA Database is not running
Stopping docker daemon...
Calling wifi setup reset-config
application reset-config is success
```

application reset-passwd

To reset the Admin portal login password for a specified user account (usually an existing administrator account) in Cisco ISE after the administrator account has been disabled due to incorrect password entries, use the **application reset-passwd** command in EXEC mode.

application [**reset-passwd** {*application-name*} {**administrator-ID**}]

Syntax Description

reset-passwd	Resets the administrator account password.
application-name	Application name. Supports up to 255 alphanumeric characters.
administrator-ID	Name of a disabled administrator account for which you want to reset the password.

Command Default

No default behavior or values. necessary to disable the administrator account in Cisco ISE

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

These special characters are allowed when resetting the Cisco ISE Admin portal password.

~	**!**	**@**	**$**	**&**	*****	**-**	_
+	=	\	"	,	;	<	>

If you enter an incorrect password for an administrator user ID more than the specified number of times, then the Admin portal “locks you out” of the system. Cisco ISE suspends the credentials for it. administrator user ID until you have an opportunity to reset the password associated with it. You can reset the administrator password only in the Administration ISE node CLI.

UTF-8 admin users can change passwords only through the Cisco ISE Admin portal.

Example

```
ise/admin# application reset-passwd ise admin
Enter new password: ******
Confirm new password: ******
Password reset successfully.
ise/admin#
```

application start

To enable a specific application, use the **application start** command in EXEC mode. To disable starting an application, use the **no** form of this command.

application [**start** {*application-name* [*safe*]}]

no application [**start** {*application-name* [*safe*]}]

Syntax Description

start	Enables an application bundle.
application-name	Name of the predefined application that you want to enable. Supports up to 255 alphanumeric characters.
safe	Starts an application in safe mode.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Enables an application.

You cannot use this command to start Cisco ISE. If you try to, you will be prompted that Cisco ISE is already running.

You can use the **application start** *ise safe* command to start Cisco ISE in a safe mode that allows you to disable access control temporarily to the Admin portal and then restart the application after making necessary changes.

The safe option provides a means of recovery in the event that you as an administrator inadvertently lock out all users from accessing the Cisco ISE Admin portal. This event can happen if you configure an incorrect "IP Access" list in the Administration > Admin Access > Settings > Access page. The 'safe' option also bypasses certificate-based authentication and reverts to the default username and password authentication for logging into the Cisco ISE Admin portal.

Example 1

```
ise/admin# application start ise
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE Indexing Engine...
Starting docker daemon ...
38a408c9a1c8
Starting container wifisetup-container
Starting ISE Certificate Authority Service...
Starting ISE AD Connector...
```

```
Starting ISE EST Service...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.

ise/admin# show application status ise

ISE PROCESS NAME                       STATE            PROCESS ID
--------------------------------------------------------------------
Database Listener                      running          17893
Database Server                        running          62 PROCESSES
Application Server                     running          21962
Profiler Database                      running          19443
ISE Indexing Engine                    running          23331
AD Connector                           running          24955
M&T Session Database                   running          19351
M&T Log Processor                      running          22010
Certificate Authority Service          running          24759
EST Service                            running          891
SXP Engine Service                     disabled
Docker Daemon                          running          24000
TC-NAC Service                         disabled
Wifi Setup Helper Container            running          24465
 Wifi Setup Helper Vault               running          41
 Wifi Setup Helper MongoDB             running          14
 Wifi Setup Helper Web Server          running          213
 Wifi Setup Helper Auth Service        running          123
 Wifi Setup Helper Main Service        running          159
 Wifi Setup Helper WLC Service         running          197
pxGrid Infrastructure Service          disabled
pxGrid Publisher Subscriber Service    disabled
pxGrid Connection Manager              disabled
pxGrid Controller                      disabled
PassiveID WMI Service                  disabled
PassiveID Syslog Service               disabled
PassiveID API Service                  disabled
PassiveID Agent Service                disabled
PassiveID Endpoint Service             disabled
PassiveID SPAN Service                 disabled
DHCP Server (dhcpd)                    disabled
DNS Server (named)                     disabled
```

Starting Cisco ISE Application in Safe Mode

The purpose of the 'safe' option is to bypass access restrictions that may have been caused inadvertently. When the safe mode is used to start Cisco ISE services, this behavior is observed.

- IP access restriction is temporarily disabled to allow administrators logging into correct IP access restrictions if they inadvertently lock themselves.
- On FIPS enabled hosts, if the 'safe' option is passed on application startup, the FIPS integrity check is temporarily disabled. Normally, if FIPS integrity check fails, Cisco ISE services are not started. Users can bypass the FIPS integrity check with the 'safe' option on application start.
- On FIPS enabled hosts, if the 'safe' option is passed on application startup, the hardware random number generator integrity check is disabled.
- Cisco ISE initiates outbound SSH or SFTP connections in FIPS mode even if FIPS mode is not enabled on ISE. Ensure that the remote SSH or SFTP servers that communicate with ISE allow FIPS 140-2 approved cryptographic algorithms.

Cisco ISE uses embedded FIPS 140-2 validated cryptographic modules. For details of the FIPS compliance claims, refer to the FIPS Compliance Letter.

- If certificate-based authentication is used, the 'safe' option on application start will temporarily use username and password based authentication.

Note These changes are temporary and only relevant for that instance of the Cisco ISE application. If the Cisco ISE services are restarted again without the 'safe' option, all of the default functionality is restored.

```
ise/admin# application stop ise
Stopping ISE Monitoring & Troubleshooting Log Processor...
PassiveID WMI Service is disabled
PassiveID Syslog Service is disabled
PassiveID API Service is disabled
PassiveID Agent Service is disabled
PassiveID Endpoint Service is disabled
PassiveID SPAN Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE EST Service...
ISE Sxp Engine Service is disabled
Stopping TC-NAC Service ...
Error response from daemon: no such id: irf-core-engine-runtimeirf-core-engine-runtime is
not running
Error response from daemon: no such id: irf-rabbitmq-runtimeirf-rabbitmq-runtime is not
running
Error response from daemon: no such id: irf-mongo-runtimeirf-mongo-runtime is not running
VA Service is not running
ISE VA Database is not running
Stopping container wifisetup-container
Stopping docker daemon...
Stopping ISE Profiler Database...
Stopping ISE Indexing Engine...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...


ise/admin# application start ise safe

Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE Indexing Engine...
Starting docker daemon ...
38a408c9a1c8
Starting container wifisetup-container
Starting ISE Certificate Authority Service...
Starting ISE AD Connector...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
Starting ISE EST Service...
```

application stop

To disable a specific application, use the **application stop** command in EXEC mode. To disable stopping an application, use the **no** form of this command.

application [**stop** {*application-name*}]

no application [**stop** {*application-name*}]

Syntax Description

stop	Disables an application.
application-name	Name of the predefined application that you want to disable. Supports up to 255 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Disables an application.

If the autofailover configuration is enabled in your deployment, you receive this warning message.

```
PAN Auto Failover feature is enabled, therefore
this operation will trigger a failover if ISE services are not
restarted within the fail-over window. Do you want to continue (y/n)?
```

Type 'y' if you want to continue or 'n' if you want to cancel.

Example

```
ise/admin# application stop ise
Stopping ISE Monitoring & Troubleshooting Log Processor...
Stopping ISE Identity Mapping Service...
Stopping ISE pxGrid processes...
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE Profiler Database...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
ise//admin# show application status ise

ISE PROCESS NAME                       STATE            PROCESS ID
--------------------------------------------------------------------
Database Listener                      not running
Application Server                     not running
Profiler Database                      not running
AD Connector                           not running
M&T Session Database                   not running
M&T Log Processor                      not running
```

```
Certificate Authority Service          disabled
pxGrid Infrastructure Service          not running
pxGrid Publisher Subscriber Service    not running
pxGrid Connection Manager              not running
pxGrid Controller                      not running
Identity Mapping Service               not running
ise//admin#
```

application upgrade

To upgrade a specific application bundle, use the **application** *bundle-name* command in EXEC mode.

application *bundle-name*

Syntax Description

upgrade	Upgrades a specific application bundle in the remote repository.
application-bundle	Application name. Supports up to 255 alphanumeric characters.
remote-repository-name	Remote repository name. Supports up to 255 alphanumeric characters.
cleanup	Cleans previously prepared upgrade bundle and prepares a new upgrade bundle.
prepare	Downloads an upgrade bundle and unzip contents to the local disk to prepare an application for an upgrade.
application-bundle	Application name. Supports up to 255 alphanumeric characters.
remote-repository-name	Remote repository name. Supports up to 255 alphanumeric characters.
proceed	Proceeds with an upgrade using the local file.
Start	Starts the upgrade using the local prepared bundle.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Upgrades an application, and preserves any application configuration data. For more information, refer to the *Cisco Identity Services Engine Upgrade Guide*

- Use the **cleanup** option, if you want to try another upgrade bundle in case of a failure or use a different version.
- Use the **prepare** option to download and extract an upgrade bundle locally.
- Use the **proceed** option to upgrade Cisco ISE using the upgrade bundle you extracted with the prepare option. You can use this option after preparing an upgrade bundle instead of using the **application upgrade** command directly.

- If upgrade is successful, this option removes the upgrade bundle.
- If upgrade fails for any reason, this option retains the upgrade bundle.

If you issue the application upgrade command when another application upgrade operation is in progress, you will see this warning message:

```
An existing application install, remove, or upgrade is in progress. Try again shortly.
```

Caution Do not issue the **backup** or **restore** commands when an upgrade is in progress. This action might cause the database to be corrupted.

Note Before attempting to use the application upgrade command, you must read the upgrade instructions in the release notes supplied with the newer release. The release notes contain important updated instructions and they must be followed.

Example 1

```
ise/admin# application upgrade prepare ise-upgradebundle-3.x.0.x.x86_64.tar.gz local

Getting bundle to local machine...
Unbundling Application Package...
Verifying Application Signature...

Application upgrade preparation successful
```

Example 2

```
ise/admin# application upgrade proceed
Initiating Application Upgrade...
% Warning: Do not use Ctrl-C or close this terminal window until upgrade completes.
-Checking VM for minimum hardware requirements
STEP 1: Stopping ISE application...
STEP 2: Verifying files in bundle...
-Internal hash verification passed for bundle
STEP 3: Validating data before upgrade...
STEP 4: Taking backup of the configuration data...
STEP 5: Running ISE configuration database schema upgrade...
- Running db sanity to check and fix if any index corruption
- Auto Upgrading Schema for UPS Model
- Upgrading Schema completed for UPS Model
ISE database schema upgrade completed.
% Warning: Sanity test found some indexes missing in CEPM schema. Please recreate missing
indexes after upgrade using app configure ise cli
STEP 6: Running ISE configuration data upgrade...
- Data upgrade step 1/14, UPSUpgradeHandler(2.3.0.100)... Done in 53 seconds.
- Data upgrade step 2/14, UPSUpgradeHandler(2.3.0.110)... Done in 1 seconds.
- Data upgrade step 3/14, NetworkAccessUpgrade(2.3.0.145)... Done in 0 seconds.
- Data upgrade step 4/14, NodeGroupUpgradeService(2.3.0.155)... Done in 0 seconds.
- Data upgrade step 5/14, IRFUpgradeService(2.3.0.155)... Done in 0 seconds.
- Data upgrade step 6/14, UPSUpgradeHandler(2.3.0.158)... Done in 0 seconds.
- Data upgrade step 7/14, NetworkAccessUpgrade(2.3.0.178)... Done in 0 seconds.
- Data upgrade step 8/14, NetworkAccessUpgrade(2.3.0.182)... Done in 0 seconds.
- Data upgrade step 9/14, CertMgmtUpgradeService(2.3.0.194)... Done in 3 seconds.
```

```
- Data upgrade step 10/14, UPSUpgradeHandler(2.3.0.201)... Done in 0 seconds.
- Data upgrade step 11/14, NSFUpgradeService(2.3.0.233)... Done in 0 seconds.
- Data upgrade step 12/14, ProfilerUpgradeService(2.3.0.233)... Done in 0 seconds.
- Data upgrade step 13/14, GuestAccessUpgradeService(2.3.0.233)... Done in 7 seconds.
STEP 7: Running ISE configuration data upgrade for node specific data...
STEP 8: Running ISE M&T database upgrade...
ISE M&T Log Processor is not running
ISE database M&T schema upgrade completed.

Gathering Config schema(CEPM) stats ....
Gathering Operational schema(MNT) stats .....
% NOTICE: Upgrading ADEOS. Appliance will be rebooted after upgrade completes successfully.
warning: file /opt/xgrid/gc/pxgrid-controller-1.0.4.18-dist.tar.gz: remove failed: No such
 file or directory

% This application Install or Upgrade requires reboot, rebooting now...

Broadcast message from root@IS137 (pts/3) (Fri Jun  2 12:22:49 2017):

Trying to stop processes gracefully. Reload might take approximately 3 mins

Broadcast message from root@IS137 (pts/3) (Fri Jun  2 12:22:49 2017):

Trying to stop processes gracefully. Reload might take approximately 3 mins

Broadcast message from root@IS137 (pts/3) (Fri Jun  2 12:23:10 2017):

The system is going down for reboot NOW

Broadcast message from root@IS137 (pts/3) (Fri Jun  2 12:23:10 2017):

The system is going down for reboot NOW
The upgrade is now complete.
```

backup

To perform a backup including Cisco ISE and Cisco ADE OS data and place the backup in a repository, use the **backup** command in EXEC mode.

Note Before attempting to use the **backup** command in EXEC mode, you must copy the running configuration to a safe location, such as a network server, or save it as the Cisco ISE server startup configuration. You can use this startup configuration when you restore or troubleshoot Cisco ISE from the backup and system logs.

backup [{*backup-name*} **repository** {*repository-name*} **ise-config encryption-key hash| plain** {*encryption-key name*}]

backup [{*backup-name*} **repository** {*repository-name*} **ise-operational encryption-key hash| plain** {*encryption-key name*}]

Syntax Description

backup-name	Name of backup file. Supports up to 100 alphanumeric characters.
repository	Specifies repository to store the back up file.
repository-name	Location where the files should be backed up to. Supports up to 80 alphanumeric characters.
ise-config	Backs up Cisco ISE configuration data (includes Cisco ISE ADE-OS).
ise-operational	Backs up Cisco ISE operational data.
encryption-key	Specifies user-defined encryption key to protect the backup.
hash	Specifies (Hashed encryption key for protection of backup) an encrypted (hashed) encryption key that follows. Supports up to 40 characters.
plain	Specifies (Plaintext encryption key for protection of backup) an unencrypted plaintext encryption key that follows. Supports up to 15 characters.
encryption-key name	An encryption key in hash | plain format for backup.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

You can encrypt and decrypt backups now by using user-defined encryption keys when you perform a backup of Cisco ISE and Cisco ADE OS data in a repository with an encrypted (hashed) or unencrypted plaintext password with **ise-config**. To perform a backup of only the Cisco ISE application data without the Cisco ADE OS data, use the **ise-operational** command.

You can back up Cisco ISE operational data only from the primary or secondary Monitoring nodes.

Important When performing a backup and restore, the restore overwrites the list of trusted certificates on the target system with the list of certificates from the source system. It is critically important to note that backup and restore functions do not include private keys associated with the Internal Certificate Authority (CA) certificates.

If you are performing a backup and restore from one system to another, you will have to choose from one of these options to avoid errors:

- **Option 1**:

  Export the CA certificates from the source ISE node through the CLI and import them in to the target system through the CLI.

  Pros:Any certificates issued to endpoints from the source system will continue to be trusted. Any new certificates issued by the target system will be signed by the same keys.

  Cons:Any certificates that have been issued by the target system prior to the restore function will not be trusted and will need to be re-issued.

- **Option 2**:

  After the restore process, generate all new certificates for the internal CA.

  Pros:This option is the recommended and clean method, where neither the original source certificates or the original target certificates will be used. Certificates issued by the original source system will continue to be trusted.

  Cons:Any certificates that have been issued by the target system prior to the restore function will not be trusted and will need to be re-issued.

Backing up Cisco ISE configuration data

To backup Cisco ISE configuration data, use the command:

backup *mybackup* **repository** *myrepository* **ise-config encryption-key plain** *lablab12*

Example

```
ise/admin# backup test repository disk ise-config encryption-key plain Test_1234
Internal CA Store is not included in this backup. It is recommended to export it using
"application configure ise" CLI command
Creating backup with timestamped filename: test-CFG-141006-1350.tar.gpg
backup in progress: Starting Backup...10% completed
backup in progress: Validating ISE Node Role...15% completed
backup in progress: Backing up ISE Configuration Data...20% completed
backup in progress: Backing up ISE Logs...45% completed
backup in progress: Completing ISE Backup Staging...50% completed
backup in progress: Backing up ADEOS configuration...55% completed
backup in progress: Moving Backup file to the repository...75% completed
```

```
backup in progress: Completing Backup...100% completed
ise/admin#
```

Backing up Cisco ISE operational data

To backup Cisco ISE operational data, use the command:

backup *mybackup* **repository** *myrepository* **ise-operational encryption-key plain** *lablab12*

Example

```
ise/admin# backup mybackup repository myrepository ise-operational encryption-key plain
lablab12
backup in progress: Starting Backup...10% completed
Creating backup with timestamped filename: mybackup-OPS-130103-0019.tar.gpg
backup in progress: starting dbbackup using expdp.......20% completed
backup in progress: starting cars logic.......50% completed
backup in progress: Moving Backup file to the repository...75% completed
backup in progress: Completing Backup...100% completed
ise/admin#
```

backup-logs

To back up system logs, use the **backup-logs** command in EXEC mode. To remove this function, use the **no** form of this command.

Note Before attempting to use the **backup-logs** command in EXEC mode, you must copy the running configuration to a safe location, such as a network server, or save it as the Cisco ISE server startup configuration. You can use this startup configuration when you restore or troubleshoot Cisco ISE from the backup and system logs.

backup-logs *backup-name* **repository** *repository-name* {**public-key** | {**encryption-key** { **hash** | **plain** } *encryption-key name*}}

Syntax Description

backup-name	Name of one or more files to back up. Supports up to 100 alphanumeric characters.
repository	Repository command.
repository-name	Location where files should be backed up to. Supports up to 80 alphanumeric characters.
public-key	Specifies that Cisco ISE will use the Cisco PKI public keys for encryption. Choose this option if you are going to provide the support bundle to Cisco TAC for troubleshooting. Only Cisco TAC can decrypt the support bundle using the private key. Choose the **encryption-key** option if you are going to troubleshoot the issues locally on premise.
encryption-key	Specifies the encryption key to protect the backup logs.
hash	Hashed encryption key for protection of backup logs. Specifies an encrypted (hashed) encryption key that follows. Supports up to 40 characters.
plain	Plaintext encryption key for protection of backup logs. Specifies an unencrypted plaintext encryption key that follows. Supports up to 15 characters.
encryption-key name	The encryption key in hash or plain format.
|	Output modifier.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Backs up system logs with an encrypted (hashed) or unencrypted plaintext password.

Example 1

```
ise/admin# backup-logs Test repository disk encryption-key plain Test_1234
% Creating log backup with timestamped filename: Test-141006-1351.tar.gpg
% supportbundle in progress: Copying database config files...10% completed
% supportbundle in progress: Copying debug logs...20% completed
% supportbundle in progress: Copying local logs...30% completed
% supportbundle in progress: Copying monitor logs...40% completed
% supportbundle in progress: Copying policy xml...50% completed
% supportbundle in progress: Copying system logs...60% completed
% supportbundle in progress: Moving support bundle to the repository...75% completed
% supportbundle in progress: Completing support bundle generation......100% completed
ise/admin#
```

Example 2

```
ise/admin# backup-logs test repository disk public-key
% Creating log backup with timestamped filename: new-pk-160520-0259.tar.gpg
% supportbundle in progress: Copying database config files...10% completed
% supportbundle in progress: Copying debug logs...20% completed
% supportbundle in progress: Copying local logs...30% completed
% supportbundle in progress: Copying monitor logs...40% completed
% supportbundle in progress: Copying policy xml...50% completed
% supportbundle in progress: Copying system logs...60% completed
% supportbundle in progress: Moving support bundle to the repository...75% completed
% supportbundle in progress: Completing support bundle generation......100% completed
```

clear screen

To clear the contents of terminal screen, use the **clear screen** command in EXEC mode.

clear screen

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

clear screen is a hidden command. Although **clear screen** is available in Cisco ISE, the CLI interactive Help does not display it if you attempt to view it by entering a question mark at the command line.

Example

This example shows how to clear the contents of the terminal.

```
ise/admin# clear screen
ise/admin#
```

clock

To set the system clock, use the **clock** command in EXEC mode. To disable setting the system clock, use the **no** form of this command.

clock [**set** {*month day hh:min:ss yyyy*}]

Syntax Description

set	Sets the system clock.
month	Current month of the year by name. Supports up to three alphabetic characters. For example, Jan for January.
day	Current day (by date) of the month. Value = 0 to 31. Supports up to two numbers.
hh:mm:ss	Current time in hours (24-hour format), minutes, and seconds.
yyyy	Current year (no abbreviation).

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Caution Changing the system time on a Cisco ISE appliance causes the Cisco ISE application to be unusable.

Sets the system clock. You must restart the Cisco ISE server after you reset the clock for the change to take effect. Changing system time impacts different Cisco ISE nodes types of your deployment.

To recover from the impact, perform these steps.

Standalone or Primary Cisco ISE Node

Note Changing the system time after installation is not supported on a standalone or primary Cisco ISE node.

If you inadvertently change the system time, do this.

- Revert to the original system time (the time before it was changed).

- Run the **application reset-config** *ise* command from the CLI of that node.
- Restore from the last known good backup before the time change on that node.

Secondary Cisco ISE Node

Note Changing the system time on a secondary node renders it unusable in your deployment.

To synchronize the system time of the secondary node with the primary node, do this.

- Deregister the secondary Cisco ISE node.
- Correct the system time to be in sync with the primary Cisco ISE node.
- Run the **application reset-config** *ise* command from the CLI of the primary Cisco ISE node.
- Reregister the Cisco ISE node as a secondary Cisco ISE node to the primary Cisco ISE node.

Remember To ensure that you have the correct system time set at the time of installation, the setup wizard requires you to specify an Network Time Protocol (NTP) server and tries to sync with it. You must ensure that the NTP server configured during setup is always reachable so that the system time is always kept accurate, especially in rare situations where the BIOS time can get corrupted because of power failure or CMOS battery failure. This, in turn, can corrupt the Cisco ADE-OS system time during a reboot. If you do not configure an NTP server during setup, then you have to ensure that the system BIOS time is set relative to the Universal Time Coordinated (UTC) time zone, as described in the *Cisco Identity Services Engine Hardware Installation Guide*.

Example

```
ise/admin# clock set August 30 18:07:20 2013
ise/admin# show clock
Fri Aug 30 18:07:26 UTC 2013
ise/admin#
```

cls

To clear the contents of terminal screen, use the **cls** command in EXEC mode.

cls

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

cls is a hidden command. Although **cls** is available in Cisco ISE, the CLI interactive Help does not display it if you attempt to view it by entering a question mark at the command line.

Example

This example shows how to clear the contents of the terminal.

```
ise/admin# cls
ise/admin#
```

configure

To enter in to configuration mode, use the **configure** command in EXEC mode.

configure terminal

Syntax Description		
	terminal	Executes configuration commands from the terminal.

Command Default No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	2.0.0.306	This command was introduced.

Usage Guidelines Use this command to enter in to configuration mode. Note that commands in this mode write to the running configuration file as soon as you enter them.

To exit configuration mode and return to EXEC mode, enter **end**, **exit**, or **Ctrl-z**.

To view the changes made to the configuration, use the **show running-config** command in EXEC mode.

If the **replace** option is used with this command, copies a remote configuration to the system, which overwrites the existing configuration.

Example

```
ise/admin# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
ise/admin(config)#
```

copy

To copy a file (such as a system image or configuration file) from local disk to a repository, use the **copy** command in EXEC mode.

copy disk:/ *filename* **repository** *repository_name*

To copy a file from a repository to local disk, use the **copy** command in EXEC mode.

copy repository *repo_name* **file** *file_name localdisk_destination_path*

Using the **copy** command, you can copy core files and heap dumps from Cisco ISE to a remote repository. Refer to Copying log files, on page 52 for more information.

copy logs [*protocol://hostname/location*]

Syntax Description

running-config	Represents the current running configuration file.
startup-config	Represents the configuration file used during initialization (startup).
protocol	
ftp	Source or destination URL for FTP network server. The syntax for this alias: **ftp**:[[[//*username* [:*password*]@]*location*]/*directory*]/*filename*
sftp	Source or destination URL for an SFTP network server. The syntax for this alias: **sftp**:[[//*location*]/*directory*]/*filename*
tftp	Source or destination URL for a TFTP network server. The syntax for this alias: **tftp**:[[//*location*]/*directory*]/*filename*
hostname	Hostname of destination.
location	Location of destination. Represents the current running configuration file.
logs	The system log files.
all	Copies all Cisco ISE log files from the system to another location. All logs are packaged as iselogs.tar.gz and transferred to the specified directory on the remote host.
filename	Allows you to copy a single Cisco ISE log file and transfer it to the specified directory on the remote host, with its original name.

log_filename	Name of the Cisco ISE log file, as displayed by the **show logs** command (up to 255 characters).
mgmt	Copies the Cisco ISE management debug logs and Tomcat logs from the system, bundles them as mgmtlogs.tar.gz, and transfers them to the specified directory on the remote host.
runtime	Copies the Cisco ISE runtime debug logs from the system, bundles them as runtimelogs.tar.gz, and transfers them to the specified directory on the remote host.
disk	The localdisk from where files can be downloaded or uploaded.
repository	The repository from where files can be downloaded or uploaded.

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines The **copy** command in Cisco ISE copies a running or start up configuration and log files from the system to another location.

The source and destination for the file specified uses the Cisco ISE file system, through which you can specify any supported local or remote file location. The file system being used (a local memory source or a remote system) dictates the syntax used in the command.

You can enter all necessary source and destination information and the username and password to use; or, you can enter the **copy** command and have the server prompt you for any missing information.

The entire copying process might take several minutes and differs from protocol to protocol and from network to network.

Use the filename relative to the directory for file transfers.

Possible errors are standard File Transfer protocol (FTP) error messages.

Running configuration

The Cisco ISE active configuration stores itself in the Cisco ISE RAM. Every configuration command you enter resides in the running configuration. If you reboot a Cisco ISE server, you lose the running configuration. If you make changes that you want to save, you must copy the running configuration to a safe location, such as a network server, or save it as the Cisco ISE server startup configuration.

If you do not save the running configuration, you will lose all your configuration changes during the next reboot of the Cisco ISE server. When you are satisfied that the current configuration is correct, copy your configuration to the startup configuration with the **copy run start** command.

Aliases reduce the amount of typing that you need to do. For example, type **copy run** and press the Tab key, type **start** and press the Tab key, which is the abbreviated form of the **copy running-config startup-config** command).

To replace the startup configuration with the running configuration, use the command:

copy run start

To copy the running configuration to the startup configuration, use the command:

copy running-config startup-config

To merge the startup configuration on top of the running configuration, use the command:

copy start run

Example 1

```
ise/admin# copy run start
Generating configuration...
ise/admin#
```

Example 2

```
ise/admin# copy running-config startup-config
Generating configuration...
ise/admin#
```

Copying running configuration to a remote location

To copy the running configuration to a remote system, use the command.

copy running-config [*protocol://hostname/location*].

Copying running configuration from a remote location

To copy and merge a remote file to the running configuration, use the command.

copy [*protocol://hostname/location*] **running-config**—Copies and merges a remote file to the running configuration.

Startup configuration

You cannot edit a startup configuration directly. All commands that you enter store themselves in the running configuration, which you can copy into the startup configuration.

In other words, when you boot a Cisco ISE server, the startup configuration becomes the initial running configuration. As you modify the configuration, the two diverge: the startup configuration remains the same; the running configuration reflects the changes that you have made. If you want to make your changes permanent, you must copy the running configuration to the startup configuration.

To copy the startup configuration to the running configuration, use the command:

copy startup-config running-config

Example 1

```
ise/admin# copy start run
ise/admin#
```

Example 2

```
ise/admin# copy startup-config running-config
ise/admin#
```

Copying startup configuration to a remote location

To copy the startup configuration to a remote system, use the command.

copy startup-config [*protocol://hostname/location*]

Copying startup configuration from a remote location

To copy but does not merge a remote file to the startup configuration, use this command.

copy [*protocol://hostname/location*] **startup-config**—Copies but does not merge a remote file to the startup configuration

Copying log files

Use the **copy** command to copy system log files from the Cisco ISE system to another location:

copy logs [*protocol://hostname/location*]

Example 1

To copy log files to the local disk, use this command.

```
ise/admin# copy logs disk:/
 Collecting logs...
ise/admin#
```

Example 2

To copy log files to another location, use this command.

```
ise/admin# copy disk://mybackup-100805-1910.tar.gz ftp://myftpserver/mydir
Username:
Password:
ise/admin#
```

Example 3

Cisco ISE moves the core files and heap dumps from the */var/tmp* directory to the *disk:/corefiles* directory on an hourly basis. You can copy these logs from the local disk to a remote repository using the copy command. The core files and heap dumps contain critical information that would help identify the cause of a crash. These logs are created when the application crashes. You can use the **dir** command to view the core files in the local disk.

```
ise/admin# copy disk:/corefiles ftp://192.0.2.2/
Username: ftp
Password:
ise36/admin#
ise36/admin# dir

Directory of disk:/

         70 May 20 2016 00:57:28  1
       4096 May 20 2016 06:34:49  corefiles/
          0 May 20 2016 00:57:28  err.out
       4096 May 20 2016 00:57:28  lost+found/

           Usage for disk: filesystem
                51474489344 bytes total used
                123938643968 bytes free
                184807632896 bytes available
```

crypto

To generate a new public key pair, export the current public key to a repository, and import a public key to the authorized keys list, use the **crypto** command in EXEC mode. It is also possible to view the public key information and delete selected keys.

crypto key [**delete** {*hash* | *authorized_keys* | *rsa*}]

crypto key [**export** {*filename* | *repository*}]

crypto key [**generate** {*rsa*}]

crypto key [**import** {*filename* | *repository*}]

crypto [**host_key** {*add* | *delete*}]

Syntax Description

key	Allows you to perform crypto key operations.
delete	Deletes a public/private key pair.
hash	Hash value. Supports up to 80 characters.
authorized_keys	Deletes authorized keys.
rsa	Deletes an RSA key pair.
export	Exports a public/private key pair to repository.
filename	The filename to which the public key is exported to. Supports up to 80 characters.
repository	The repository to which the public key is exported to.
generate	Generates a public/private key pair.
rsa	Generates an RSA key pair.
import	Imports a public/private key pair.
filename	The filename to which the public key is imported. Supports up to 80 characters.
repository	The repository to which the public key is imported.
host_key	Allows you to perform crypto host key operations.
add	Add trusted host key.
delete	Delete trusted host key.
add	Adds trusted host keys.
host	Specifies hostname.
delete	Deletes trusted host keys.

ntpkey	Public key generated from the NTP server.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The Cisco ADE OS supports public key authentication with out the password for SSH access to administrators and user identities.

Use the **crypto key generate rsa** command to generate a new public/private key pair with a 2048-bit length for the current user. The key attributes are fixed, and supports RSA key types. If the key pair already exists, you will be prompted to permit an over-write before continuing with a passphrase. If you provide the passphrase, you will be prompted for the passphrase whenever you access the public/private key. If the passphrase is empty, no subsequent prompts for the passphrase occurs.

Use the **crypto ntp_import_autokey** command to import the public key generated from the NTP server.

Example 1

This example shows the key management for SFTP repositories.

```
ise/admin# crypto key generate rsa
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
ise/admin# show crypto key
admin public key: ssh-rsa ad:14:85:70:fa:c3:c1:e6:a9:ff:b1:b0:21:a5:28:94 admin@ise
ise/admin# crypto key generate rsa
Private key for user admin already exists. Overwrite? y/n [n]: y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
ise/admin# show crypto key
admin public key: ssh-rsa 41:ab:78:26:48:d3:f1:6f:45:0d:99:d7:0f:50:9f:72 admin@ise
ise/admin# crypto key export mykey_rsa repository myrepository
ise/admin# show crypto key
admin public key: ssh-rsa f8:7f:8a:79:44:b8:5d:5f:af:e1:63:b2:be:7a:fd:d4 admin@ise
ise/admin# crypto key delete  f8:7f:8a:79:44:b8:5d:5f:af:e1:63:b2:be:7a:fd:d4
ise/admin#
ise/admin# crypto key delete rsa
ise/admin# show crypto key
ise/admin#
```

Example 2

This example shows the key management for public keys that can be used to log in to Cisco ISE.

```
ise/admin# show crypto authorized_keys
Authorized keys for admin
ise/admin# crypto key delete authorized_keys
ise/admin# show crypto authorized_keys
ise/admin#
ise/admin# crypto key import mykey_rsa repository myrepository
ise/admin# show crypto key
```

```
admin public key: ssh-rsa f8:7f:8a:79:44:b8:5d:5f:af:e1:63:b2:be:7a:fd:d4 admin@ise
ise/admin#
```

Example 3

```
ise/admin# crypto host_key add host ise
host key fingerprint added
# Host ise found: line 1 type RSA
2048 1d:72:73:6e:ad:f7:2d:11:ac:23:e7:8c:81:32:c5:ea ise (RSA)
ise/admin#
ise/admin# crypto host_key delete host ise
host key fingerprint for ise removed
ise/admin#
```

debug

To display errors or events for executed commands, use the **debug** command in EXEC mode.

debug [**all** | **application** | **backup-restore** | **cdp** | **config** | **copy** | **icmp** | **locks** | **logging** | **snmp** | **system** | **transfer** | **user** | **utils**]

Syntax Description

all	Enables all debugging.
application	Enables debugging application related errors or events. • all—Enables all application debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • install—Enables application install debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • operation—Enables application operation debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • uninstall—Enables application uninstall debug output. Set level between 0 and 7, with 0 being severe and 7 being all.
backup-restore	Enables debugging back up and restore related errors or events. • all—Enables all debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all. • backup—Enables backup debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all. • backup-logs—Enables backup-logs debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all. • history—Enables history debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all. • restore—Enables restore debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all.

cdp	Enables debugging Cisco Discovery Protocol configuration related errors or events. • all—Enables all Cisco Discovery Protocol configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • config—Enables configuration debug output for Cisco Discovery Protocol. Set level between 0 and 7, with 0 being severe and 7 being all. • infra—Enables infrastructure debug output for Cisco Discovery Protocol. Set level between 0 and 7, with 0 being severe and 7 being all.
config	Enables debugging the Cisco ISE configuration related errors or events. • all—Enables all configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • backup—Enables backup configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • clock—Enables clock configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • infra—Enables configuration infrastructure debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • kron—Enables command scheduler configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • network—Enables network configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • repository—Enables repository configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • service—Enables service configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.
copy	Enables debugging copy commands. Set level between 0 and 7, with 0 being severe and 7 being all.
icmp	Enables debugging Internet Control Message Protocol (ICMP) echo response configuration related errors or events. all—Enable all debug output for ICMP echo response configuration. Set level between 0 and 7, with 0 being severe and 7 being all.

locks	Enables debugging resource locking related errors or events. • all—Enables all resource locking debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • file—Enables file locking debug output. Set level between 0 and 7, with 0 being severe and 7 being all.
logging	Enables debugging logging configuration related errors or events. all—Enables all logging configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.
snmp	Enables debugging SNMP configuration related errors or events. all—Enables all SNMP configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.
system	Enables debugging Cisco ISE system related errors and events. • all—Enables all system files debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • id—Enables system ID debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • info—Enables system info debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • init—Enables system init debug output. Set level between 0 and 7, with 0 being severe and 7 being all.
transfer	Enables debugging file transfer. Set level between 0 and 7, with 0 being severe and 7 being all.
user	Enables debugging user management. • all—Enables all user management debug output. Set level between 0 and 7, with 0 being severe and 7 being all. • password-policy—Enables user management debug output for password-policy. Set level between 0 and 7, with 0 being severe and 7 being all.
utils	Enables debugging utilities configuration related errors and events. all—Enables all utilities configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use the **debug** command to display various errors or events in the Cisco ISE server, such as setup or configuration failures.

Example

```
ise/admin# debug all
ise/admin# mkdir disk:/1
ise/admin# 6 [15347]: utils: vsh_root_stubs.c[2742] [admin]: mkdir operation success
ise/admin# rmdir disk:/1
6 [15351]: utils: vsh_root_stubs.c[2601] [admin]: Invoked Remove Directory disk:/1 command
6 [15351]: utils: vsh_root_stubs.c[2663] [admin]: Remove Directory operation success
ise/admin#
ise/admin# undebug all
ise/admin#
```

delete

To delete a file from the Cisco ISE server, use the **delete** command in EXEC mode.

delete [*filename disk:/path*]

Syntax Description

filename	Filename. Supports up to 80 alphanumeric characters.
disk:/path	Location of the file in the repository.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

If you attempt to delete a configuration file or image, the system prompts you to confirm the deletion. Also, if you attempt to delete the last valid system image, the system prompts you to confirm the deletion.

Example

```
ise/admin# delete disk:/hs_err_pid19962.log
ise/admin#
```

dir

To list a file from the Cisco ISE server, use the **dir** command in EXEC mode.

dir

dir *disk:/logs*

dir recursive

Syntax Description

directory-name	Directory name. Supports up to 80 alphanumeric characters. Requires **disk:/** preceding the directory name.
recursive	(Optional). Lists directories and files in the local file system.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

None.

Example 1

```
ise/admin# dir
Directory of disk:/
    2034113 Aug 05 2010 19:58:39 ADElogs.tar.gz
       4096 Jun 10 2010 02:34:03 activemq-data/
       4096 Aug 04 2010 23:14:53 logs/
      16384 Jun 09 2010 02:59:34 lost+found/
    2996022 Aug 05 2010 19:11:16 mybackup-100805-1910.tar.gz
       4096 Aug 04 2010 23:15:20 target/
       4096 Aug 05 2010 12:25:55 temp/
Usage for disk: filesystem
                8076189696 bytes total used
                6371618816 bytes free
               15234142208 bytes available
ise/admin#
```

Example 2

```
ise/admin# dir disk:/logs
0 Aug 05 2010 11:53:52 usermgmt.log
Usage for disk: filesystem
                8076189696 bytes total used
                6371618816 bytes free
```

```
               15234142208 bytes available
ise/admin#
```

Example 3

```
ise/admin# dir recursive
Directory of disk:/
    2034113 Aug 05 2010 19:58:39 ADElogs.tar.gz
       4096 Jun 10 2010 02:34:03 activemq-data/
       4096 Aug 04 2010 23:14:53 logs/
      16384 Jun 09 2010 02:59:34 lost+found/
    2996022 Aug 05 2010 19:11:16 mybackup-100805-1910.tar.gz
       4096 Aug 04 2010 23:15:20 target/
       4096 Aug 05 2010 12:25:55 temp/
Directory of disk:/logs
Directory of disk:/temp
Directory of disk:/activemq-data
Directory of disk:/activemq-data/localhost
Directory of disk:/activemq-data/localhost/journal
Directory of disk:/activemq-data/localhost/kr-store
Directory of disk:/activemq-data/localhost/kr-store/data
Directory of disk:/activemq-data/localhost/kr-store/state
Directory of disk:/activemq-data/localhost/tmp_storage
Directory of disk:/target
Directory of disk:/target/logs
Directory of disk:/lost+found
Usage for disk: filesystem
                8076189696 bytes total used
                6371618816 bytes free
               15234142208 bytes available
ise/admin#
```

esr

To enter the Embedded Services Router console, use the **esr** command in EXEC mode.

esr

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.2.0.470	This command was introduced.

Usage Guidelines

The C5921 ESR software is bundled with Cisco ISE, Releases 2.2 and later. You need an ESR license to enable it. See Cisco 5921 Embedded Services Router Integration Guide for ESR licensing information.

exit

To close an active terminal session by logging out of the Cisco ISE server or to move up one mode level from configuration mode, use the **exit** command in EXEC mode.

This command has no keywords and arguments.

exit

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin# config t
Enter configuration commands, one per line.  End with CNTL/Z.
ise/admin(config)# exit
ise/admin#
```

forceout

To force users out of an active terminal session by logging them out of the Cisco ISE server, use the **forceout** command in EXEC mode.

forceout *username*

Syntax Description		
	username	Name of the user. Supports up to 31 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use the **forceout** command in EXEC mode to force a user from an active session.

Example

```
ise/admin# forceout user1
ise/admin#
```

generate-password

To generate a user password that complies with the Cisco ISE password policy, use the command **generate-password** in EXEC mode..

Syntax Description

<*word*>	Username for which password has to be generated (maximum length is 31).

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
3.1	This command was introduced.

Usage Guidelines

You can also generate a user password through the Cisco ISE GUI when you add a new admin user. In the Cisco ISE GUI, from the main menu, choose **Administration** > **System** > **Admin Access** > **Administrators** > **Admin Users** > **Add New User**. In the **Password** area, click **Generate Password** to automatically generate and assign a password for the admin user you are adding.

In the Cisco ISE CLI, you can generate an admin user password that complies with the Cisco ISE password policy using the **generate-password** command.

Example

```
ise/admin# generate-password <username>
1pNn
ise/admin#configure terminal
Entering configuration mode terminal
ise/admin(config)#username <username> ?
Possible completions:
 password  Password and user role
ise/admin(config)#username <username> password plain ?
Description: Password. Use of % character must be escaped with (Max Size - 127)
Possible Completions:
 <AES encrypted string, min: 1 units, max: 200 units>
ise/admin(config)#username <username> password plain 1pNn ?
Possible completions:
 role
ise/admin(config)#username <username> password plain 1pNn role admin ?
Possible completions:
 disabled  User is diabled
 email  User email address
 <cr>
```

halt

To shut down and power off the system, use the **halt** command in EXEC mode.

This command has no keywords and arguments.

halt

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines Before you issue the **halt** command, ensure that Cisco ISE is not performing any backup, restore, installation, upgrade, or remove operation. First, run the **application stop ise** command to stop Cisco ISE processes. Then, run the **halt** command.

If you issue the **halt** command while the Cisco ISE is performing any of these operations, you will get one of the these warning messages:

```
WARNING: A backup or restore is currently in progress! Continue with halt?
WARNING: An install/upgrade/remove is currently in progress! Continue with halt?
```

If you get any of these warnings, enter Yes to continue the halt operation, or enter No to cancel the halt.

If no processes are running when you use the **halt** command or if you enter Yes in response to the warning message displayed, then you must respond to this question:

```
Do you want to save the current configuration?
```

If you enter Yes to save the existing Cisco ISE configuration, this message is displayed:

```
Saved the running configuration to startup successfully
```

Example

```
ise/admin# halt
ise/admin#
```

help

To display the interactive help system for the Cisco ISE server, use the **help** command in EXEC mode.

This command has no keywords and arguments.

help

Command Default

No default behavior or values.

Command Modes

EXEC and all Configuration (config).

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **help** command provides a brief description of the context-sensitive help system.

- To list all commands available for a particular command mode, enter a question mark (?) at the system prompt.
- To obtain a list of commands that begin with a particular character string, enter the abbreviated command entry immediately followed by ?. This form of help is called word help because it lists only the keywords or arguments that begin with the abbreviation that you entered.
- To list the keywords and arguments associated with a command, enter ? in place of a keyword or argument on the command line. This form of help is called command syntax help, because it lists the keywords or arguments that apply based on the command, keywords, and arguments that you enter.

Example

```
ise/admin# 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.
Two styles of help are provided:
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 pr?'.)
ise/admin#
```

licence esr

To perform esr licence operation, use the **licence esr** command in EXEC mode.

license esr{ **classic** |**smart** }

Syntax Description

classic	Enables ESR classic licensing.
smart	Enables ESR smart licensing.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.2.0.470	This command was introduced.

For information on how to disable **licence esr**, refer to "Configure RADIUS IPSec on Cisco ISE" in the chapter "Secure Access" in the *Cisco ISE Administrator Guide*, Release 2.7 and above.

Usage Guidelines

The C5921 ESR software is bundled with Cisco ISE, Releases 2.2 and later. You need an ESR license to enable it. Refer to Cisco 5921 Embedded Services Router Integration Guide for ESR licensing information.

mkdir

To create a new directory in the Cisco ISE server, use the **mkdir** command in EXEC mode.

mkdir *directory-name*

Syntax Description

directory-name	Name of the directory to create. Supports up to 80 alphanumeric characters. Use *disk:/directory-name*.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use *disk*:/*directory-name*; otherwise, an error appears that indicates that the *disk*:/*directory-name* must be included.

Example

```
ise/admin# mkdir disk:/test
ise/admin# dir
Directory of disk:/
       4096 May 06 2010 13:34:49 activemq-data/
       4096 May 06 2010 13:40:59 logs/
      16384 Mar 01 2010 16:07:27 lost+found/
       4096 May 06 2010 13:42:53 target/
       4096 May 07 2010 12:26:04 test/
Usage for disk: filesystem
                 181067776 bytes total used
               19084521472 bytes free
               20314165248 bytes available
ise/admin#
```

nslookup

To look up the hostname of a remote system in the Cisco ISE server, use the **nslookup** command in EXEC mode.

nslookup {*ip-address* |*hostname*}

nslookup [{*ip-address* |*hostname*} **name-server** {*ip-address* }]

nslookup [{*ip-address* |*hostname*} **querytype** {*query-type*}]

Syntax Description

ip-address	IPv4 or IPv6 address of a remote system. Supports up to 64 alphanumeric characters.
hostname	Hostname of a remote system. Supports up to 64 alphanumeric characters.
name-server	Specifies an alternative name server. Supports up to 64 alphanumeric characters.
querytype	Queries the IPv4 or IPv6 address or hostname of a remote system. It includes query types, such as PTR, A, AAAA, and SRV. Supports up to 16 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example 1

```
ise/admin# nslookup 1.2.3.4
Trying "4.3.2.1.in-addr.arpa"
Received 127 bytes from 171.70.168.183#53 in 1 ms
Trying "4.3.2.1.in-addr.arpa"
Host 4.3.2.1.in-addr.arpa. not found: 3(NXDOMAIN)
Received 127 bytes from 171.70.168.183#53 in 1 ms
ise/admin#
```

Example 2

```
ise/admin# nslookup ipv6.google.com querytype AAAA
Server:         10.106.230.244
Address:        10.106.230.244#53
Non-authoritative answer:
ipv6.google.com canonical name = ipv6.l.google.com.
```

```
ipv6.l.google.com       has AAAA address 2404:6800:4007:803::1001
Authoritative answers can be found from:
google.com      nameserver = ns4.google.com.
google.com      nameserver = ns3.google.com.
google.com      nameserver = ns2.google.com.
google.com      nameserver = ns1.google.com.
ns1.google.com  internet address = 216.239.32.10
ns2.google.com  internet address = 216.239.34.10
ns3.google.com  internet address = 216.239.36.10
ns4.google.com  internet address = 216.239.38.10
ise/admin#
```

password

To update the CLI account password, use the **password** command in EXEC mode.

Note When you create a password for the administrator during installation or after installation in the CLI, do not use the $ character, except when it is the last character of the password. If that character is first or inside the other characters, the password is accepted, but you cannot use it to log on to the CLI.

You can fix this by logging into the console and using the CLI command, or by getting an ISE CD or ISO file. Instructions for using an ISO to reset the password are explained in this document: https://www.cisco.com/c/en/us/support/docs/security/identity-services-engine/200568-ISE-Password-Recovery-Mechanisms.html

Syntax Description

Enter old password	Enter the current CLI password.
Enter new password	Enter the new CLI password.
Confirm new password	Confirm the new CLI password.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin# password
Enter old password:
Enter new password:
Confirm new password:
ise/admin#
```

patch install

Before attempting to use the **patch install** command to install a patch, you must read the patch installation instructions in the release notes supplied with the patch. The release notes contains important updated instructions; and they must be followed.

To install a patch bundle of the application on a specific node from the CLI, use the **patch install** command in EXEC mode.

patch install *patch-bundle* **repository**

Note In a Cisco ISE distributed deployment environment, install the patch bundle from the Admin portal so that the patch bundle is automatically installed on all the secondary nodes.

Syntax Description

install	Installs a specific patch bundle of the application.
patch-bundle	The patch bundle file name. Supports up to 255 alphanumeric characters.
repository	Installs the patch in the specified repository name. Supports up to 255 alphanumeric characters.

If you have the primary Administration node (PAN) auto-failover configuration enabled in your deployment, disable it before you install the patch. Enable the PAN auto-failover configuration after patch installation is complete on all the nodes in your deployment.

When you install a patch on Release 2.0, the patch installation process does not prompt you to verify the hash value of the software. Beginning from Release 2.0 onwards, the patch installation software automatically verifies the integrity of the patch software using digital signatures. Refer to the example given below for a sample output of the **patch install** command.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Installs a specific patch bundle of the application.

If you attempt to install a patch that is an older version of the existing patch, this error message is displayed:

```
% Patch to be installed is an older version than currently installed version.
```

To view the status of a patch installation from the CLI, you must check the ade.log file in the Cisco ISE support bundle.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is
not allowed! Please disable PAN Auto-failover first.
```

Disable the PAN auto-failover configuration and enable it after patch installation is complete on all the nodes in your deployment.

Example

```
ise/admin# patch install ise-patchbundle-2.0.0.306-Patch2-164765.SPA.x86_64.tar.gz disk
%Warning: Patch will be installed only on this node. Install using Primary Administration
node GUI to install on all nodes in deployment. Continue? (yes/no) [yes] ?
Save the current ADE-OS running configuration? (yes/no) [yes] ?
Generating configuration...
Saved the ADE-OS running configuration to startup successfully
Initiating Application Patch installation...

Getting bundle to local machine...
Unbundling Application Package...
Verifying Application Signature...

Patch successfully installed
ise/admin#
```

patch remove

Before attempting to use the **patch remove** command to rollback a patch, you must read the rollback instructions of the patch in the release notes supplied with the patch. The release notes contains important updated instructions: and they must be followed.

To remove a specific patch bundle version of the application, use the **patch remove** command in EXEC mode.

patch [**remove** {*application_name* | *version*}]

Note In a Cisco ISE distributed deployment environment, removing the patch bundle from the Admin portal automatically removes the patch from the secondary nodes.

Syntax Description

remove	The command that removes a specific patch bundle version of the application.
application_name	The name of the application for which the patch is to be removed. Supports up to 255 alphanumeric characters.
version	The patch version number to be removed. Supports up to 255 alphanumeric characters.

If you have the primary Administration node (PAN) auto-failover configuration enabled in your deployment, disable it before you remove a patch. You can enable the PAN auto-failover configuration after patch removal is complete.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

If you attempt to remove a patch that is not installed, then you receive this error message:

```
% Patch is not installed
```

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is
not allowed! Please disable PAN Auto-failover first.
```

Example 1

```
ise/admin# patch remove ise 3
Continue with application patch uninstall? [y/n] y
```

```
Application patch successfully uninstalled
ise/admin#
```

Example 2

```
ise/admin# patch remove ise 3
Continue with application patch uninstall? [y/n] y
% Patch is not installed
ise/admin#
```

permit rootaccess

To access the root of the Cisco ISE CLI, use the **permit rootaccess** command in EXEC mode.

permit rootaccess

Note You must submit the Challenge Token Request as a part of TAC case to obtain the Challenge Response. This TAC case is valid only for 15 minutes. If you did not receive a Challenge Response within 15 minutes, then you must submit it again. The root access received from TAC will be locked by the challenge or response process after you exit the root level access.

Syntax Description This command has no keywords and arguments.

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.7.0.349	This command was introduced.

Example

This example shows how to access the root of the Cisco ISE CLI:

```
ise/admin##
ise/admin# permit rootaccess
1.  Generate Challenge Token Request
2.  Enter Challenge Response for Root Access
3.  Show History
4.  Exit
Enter CLI Option:
1
Generating Challenge.....................................
Challenge String (Please copy everything between the asterisk lines exclusively):
*******************************************************************************
GLOX7gAAAQEBAAQAAAABAgAEAAAAAAMACLmJxgub0hitBAAQiUwv+XeD3pnJ4HLnJy30YQUABAAADhAGA
ANJU0UHAAZJU0VfQ1QIAANJU0UJACcJIDU2NGQ5NjgwLTFmZmEtOWI0ZS0wZjY1LTdlZDllMGQ1M2UzNQo=
*******************************************************************************
Starting background timer of 15mins
1.  Generate Challenge Token Request
2.  Enter Challenge Response for Root Access
3.  Show History
4.  Exit
Enter CLI Option:
2
Please input the response when you are ready .......................
vxOOQQAAAQEBAAQAAAABAgAEAAAAAAMBYjJ0Y1RHUU1oT09FRlFwN0FxUm0wbXJ3eW9UeUhTWmIrV
mlNaHJtbkVqMlJwT09TK1QvTUx2cmtTT2s3em9XK2UNCklJclpFVHdtb3ROci9ac2cveUdCcGFLS0l2MGJ
RVnFxbndIckppM2kzWlJweU5DdDQ5bERlb2oreXpPNlZ3MEMNCmxYT2dackRLRUFCMlZWUUpsU1FOZ3BiNm
xSZEs1bFZtSVhwem9FaUpTRGlWZ1U5RlNhTlQwRGZRbURGclVKbGQNCjdYRjFQeDVteVpScjhUVDk5V0pUN2
```

```
ZhT2drRkhpVW9xOG1EelFwejcxVmtSaVNmS0lBOEJjViswN1hRR0pQQysNCjNsR3JULzREYWpzUW1YRmdBUE
doNkVjZmx1Q0VQd3FBVG1MbllMSFRwczFiYm5jdVIxUzN0Wm5GTlpaRHFyYm0NCkNVS2VyUXE5ZW1RemFrZytaU3F6dkE9PQ==
Response Signature Verified successfully !
Granting shell access
sh-4.2# ls
2.4backup                                config          CT_Deme_Test_Rpm
ct_rolling.txt     lost+found             threadHeapDumpGntr.sh
backup_anc-2.7.0-115.jar                 corefiles       CT_engine-2.7.0-1.0.x86_64.rpm
err.out            prrt-server.log        tomcat-process-log.txt
backup_guestaccess-upgrade-2.7.0-115.jar  corestacks.txt  ct_persistent.txt
Heap_dump20190705  libciscosafec.so.4.0.1  Thread_dump_2019-07-05-19:07:30
sh-4.2# exit
exit
Root shell exited
1.  Generate Challenge Token Request
2.  Enter Challenge Response for Root Access
3.  Show History
4.  Exit
Enter CLI Option:
3
**********************************
                SN No : 1
**********************************
Challenge 3/WcyAAAAQEBAAQAAAABAgAEAAAAAAAMACMt89YhCTVWWBAAQwo9lyianfhO4C5u1+v80AQUABAAADh
AGAANJU0UHAAZJU0VfQ1QIAANJU0UJACcJIDU2NGQ5NjgwLTFmZmEtOWI0ZS0wZjY1LTdlZDllMGQ1M2UzNQo=
generated at 2019-06-12 15:40:01.000
**********************************
                SN No : 2
**********************************
Challenge exNwkAAAAQEBAAQAAAABAgAEAAAAAAAMACCIBbk3qhsFGBAAQQ4UKV7KrKQ7uoHEq7qPG1AUABA
AADhAGAANJU0UHAAZJU0VfQ1QIAANJU0UJACcJIDU2NGQ5NjgwLTFmZmEtOWI0ZS0wZjY1LTdlZDllMGQ1M2UzNQo=
  generated at 2019-06-12 15:43:31.000
1.  Generate Challenge Token Request
2.  Enter Challenge Response for Root Access
3.  Show History
4.  Exit
Enter CLI Option:
4
Exiting.............
ise/admin#
```

ping

To diagnose the basic IPv4 network connectivity to a remote system, use the **ping** command in EXEC mode.

ping {*ip-address* | *hostname*} [**df** *df*] [**packetsize** *packetsize*] [**pingcount** *pingcount*]

Syntax Description

ip-address	IP address of the system to ping. Supports up to 32 alphanumeric characters.
hostname	Hostname of the system to ping. Supports up to 32 alphanumeric characters.
df	(Optional). Specification for packet fragmentation.
df	Specify the value as 1 to prohibit packet fragmentation, or 2 to fragment the packets locally, or 3 to not set df.
packetsize	(Optional). Size of the ping packet.
packetsize	Specify the size of the ping packet; the value can be between 0 and 65507.
pingcount	(Optional). Number of ping echo requests.
pingcount	Specify the number of ping echo requests; the value can be between 1 and 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **ping** command sends an echo request packet to an address, and then waits for a reply. The ping output can help you evaluate path-to-host reliability, delays over the path, and whether or not you can reach a host.

Example

```
ise/admin# ping 172.16.0.1 df 2 packetsize 10 pingcount 2
PING 172.16.0.1 (172.16.0.1) 10(38) bytes of data.
18 bytes from 172.16.0.1: icmp_seq=0 ttl=40 time=306 ms
18 bytes from 172.16.0.1: icmp_seq=1 ttl=40 time=300 ms
--- 172.16.0.1 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 300.302/303.557/306.812/3.255 ms, pipe 2
ise/admin#
```

ping6

To diagnose the basic IPv6 network connectivity to a remote system, use the **ping6** command in EXEC mode. This is similar to the IPv4 **ping** command.

ping6 {*ip-address*} [**GigabitEthernet** {*0-3*}][**packetsize** {*packetsize*}] [**pingcount** {*pingcount*}]

Syntax Description

ip-address	IP address of the system to ping. Supports up to 64 alphanumeric characters.
GigabitEthernet	(Optional). Ethernet interface.
0-3	Select an Ethernet interface.
packetsize	(Optional). Size of the ping packet.
packetsize	Specify the size of the ping packet; the value can be between 0 and 65507.
pingcount	(Optional). Number of ping echo requests.
pingcount	Specify the number of ping echo requests; the value can be between 1 and 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **ping6** command sends an echo request packet to an address, and then waits for a reply. The ping output can help you evaluate path-to-host reliability, delays over the path, and whether or not you can reach a host.

The **ping6** command is similar to the existing **ping** command. The **ping6** command does not support the IPv4 packet fragmentation (**df**, as described in the **ping** command) options, but it allows an optional specification of an interface. The interface option is primarily useful for pinning with link-local addresses that are interface-specific addresses. The packetsize and pingcount options work the same way as they do with the **ping** command.

Example 1

```
ise/admin# ping6 3ffe:302:11:2:20c:29ff:feaf:da05
PING 3ffe:302:11:2:20c:29ff:feaf:da05(3ffe:302:11:2:20c:29ff:feaf:da05) from
3ffe:302:11:2:20c:29ff:feaf:da05 eth0: 56 data bytes
64 bytes from 3ffe:302:11:2:20c:29ff:feaf:da05: icmp_seq=0 ttl=64 time=0.599 ms
64 bytes from 3ffe:302:11:2:20c:29ff:feaf:da05: icmp_seq=1 ttl=64 time=0.150 ms
64 bytes from 3ffe:302:11:2:20c:29ff:feaf:da05: icmp_seq=2 ttl=64 time=0.070 ms
64 bytes from 3ffe:302:11:2:20c:29ff:feaf:da05: icmp_seq=3 ttl=64 time=0.065 ms
--- 3ffe:302:11:2:20c:29ff:feaf:da05 ping statistics ---
```

```
4 packets transmitted, 4 received, 0% packet loss, time 3118ms
rat min./aft/max/endive = 0.065/0.221/0.599/0.220 ms, pipe 2
ise/admin#
```

Example 2

```
ise/admin# ping6 3ffe:302:11:2:20c:29ff:feaf:da05 GigabitEthernet 0 packetsize 10 pingcount
 2
PING 3ffe:302:11:2:20c:29ff:feaf:da05(3ffe:302:11:2:20c:29ff:feaf:da05) from
3ffe:302:11:2:20c:29ff:feaf:da05 eth0: 10 data bytes
18 bytes from 3ffe:302:11:2:20c:29ff:feaf:da05: icmp_seq=0 ttl=64 time=0.073 ms
18 bytes from 3ffe:302:11:2:20c:29ff:feaf:da05: icmp_seq=1 ttl=64 time=0.073 ms
--- 3ffe:302:11:2:20c:29ff:feaf:da05 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1040ms
rat min./aft/max/endive = 0.073/0.073/0.073/0.000 ms, pipe 2
ise/admin#
```

reload

This command has no keywords and arguments. To reboot the Cisco ISE operating system, use the **reload** command in EXEC mode.

reload

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **reload** command reboots the system. Use the **reload** command after you enter configuration information into a file and save the running-configuration to the persistent startup-configuration on the CLI. Save any settings in the Cisco ISE administration portal session.

Before you issue the **reload** command, ensure that Cisco ISE is not performing any backup, restore, installation, upgrade, or remove operation. First, run the **application stop ise** command to stop Cisco ISE processes. Then, run the **reload** command.

If Cisco ISE performs any of these operations and you issue the **reload** command, you get one of these warning messages:

```
WARNING: A backup or restore is currently in progress! Continue with reload?
WARNING: An install/upgrade/remove is currently in progress! Continue with reload?
```

If you get any of these warnings, enter Yes to continue with the reload operation, or No to cancel it.

If no processes are running when you use the **reload** command or you enter Yes in response to the warning message displayed, you must respond to this question:

```
Do you want to save the current configuration?
```

If you enter Yes to save the existing Cisco ISE configuration, this message is displayed:

```
Saved the running configuration to startup successfully
```

If automatic failover is enabled in your deployment, you receive this warning message:

```
PAN Auto Failover feature is enabled, therefore
this operation will trigger a failover if ISE services are not
restarted within the fail-over window. Do you want to continue (y/n)?
```

Type 'y' if you want to continue or 'n' if you want to cancel.

Example 1

```
ise/admin# reload
Do you want to save the current configuration? (yes/no) [yes]? yes
Generating configuration...
Saved the running configuration to startup successfully
```

```
Continue with reboot? [y/n] y
Broadcast message from root (pts/0) (Fri Aug 7 13:26:46 2010):
The system is going down for reboot NOW!
ise/admin#
```

Example 2

```
ise/iseadmin#reload cli
%WARNING: : The Cisco ISE CLI will restart now and will be unavailable for a few minutes.
 Do you want to continue (yes/no) [no] ?yes
Connection to ise closed.
```

reset-config

To reset the ADE-OS network configurations such as ip address/mask/gateway, hostname, domain name, DNS server, and NTP server using the **reset-config** command in EXEC mode. These parameters are essentially the same parameters as that is prompted during setup. The administrator will not be prompted for admin password from this CLI. This command will also not reset the current ISE configuration or operations data as these tasks are achieved by using the **application reset-config** command.

reset-config

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.2.0.470	This command was introduced.

Usage Guidelines All services will be restarted upon completion.

Note Updating the hostname will cause any certificate using the old hostname to become invalid. A new self-signed certificate using the new hostname will be generated now for use with HTTPS/EAP. If CA-signed certificates are used on this node, import the new ones with the correct hostname. In addition, if this node is part of an AD domain, delete any AD memberships before proceeding.

restore

To restore a previous backup of the system, use the **restore** command in EXEC mode. A restore operation restores data related to the Cisco ISE and the Cisco ADE OS.

Use this command to restore data related to the Cisco ISE application and Cisco ADE OS:

restore [{*filename*} **repository** {*repository-name*} **encryption-key hash** | **plain** {*encryption-key-name*}]

restore [{*filename*} **repository** {*repository-name*} **encryption-key hash** | **plain** {*encryption-key-name*} **include-adeos**]

Syntax Description

filename	Name of the backed-up file that resides in the repository. Supports up to 120 alphanumeric characters. **Note** You must add the .tar.gpg extension after the filename (for example, myfile.tar.gpg).
repository	The repository command.
repository-name	Name of the repository from which you want to restore the backup. Supports up to 120 characters.
encryption-key	(Optional). Specifies user-defined encryption key to restore backup.
hash	Hashed encryption key for restoring backup. Specifies an encrypted (hashed) encryption key that follows. Supports up to 40 characters.
plain	Plaintext encryption key for restoring backup. Specifies an unencrypted plaintext encryption key that follows. Supports up to 15 characters.
encryption-key-name	Specifies encryption key in hash | plain format.
include-adeos	Restores back up and reboots Cisco ISE, if ADE-OS configuration data is present in the backup

If you have the Primary Administration Node (PAN) auto-failover configuration enabled in your deployment, disable this configuration before you restore a backup. You can enable the PAN auto-failover configuration after the restore is complete.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

When you use restore commands in Cisco ISE, the Cisco ISE server restarts automatically.

The encryption key is optional while restoring data. To support restoring earlier backups where you have not provided encryption keys, you can use the **restore** command without the encryption key.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is
 not allowed! Please disable PAN Auto-failover first.
```

Note Restoring from Cisco ISE release 1.0 and Cisco ISE, Release 1.0 MR release backups are not supported in Cisco ISE release 1.2.

Note Cisco ISE release 3.5 supports restore from backups obtained from Cisco ISE release 3.2 and later.

Restoring Cisco ISE configuration data from the backup

To restore Cisco ISE configuration data from the backup, use the command:

restore *mybackup-CFG-121025-2348.tar.gpg* **repository** *myrepository* **encryption-key plain** *lablab12*

Example

```
ise/admin# restore latest-jul-15-CFG-140715-2055.tar.gpg repository CUSTOMER-DB-sftp
encryption-key plain Test_1234
% Warning: Do not use Ctrl-C or close this terminal window until the restore completes.
Initiating restore.  Please wait...
% restore in progress: Starting Restore...10% completed
% restore in progress: Retrieving backup file from Repository...20% completed
% restore in progress: Decrypting backup data...25% completed
% restore in progress: Extracting backup data...30% completed
 Leaving the currently connected AD domain
Please rejoin the AD domain from the administrative GUI
% restore in progress: Stopping ISE processes required for restore...35% completed
% restore in progress: Restoring ISE configuration database...40% completed
% restore in progress: Adjusting host data for upgrade...65% completed
UPGRADE STEP 1: Running ISE configuration DB schema upgrade...
- Running db sanity check to fix index corruption, if any...

UPGRADE STEP 2: Running ISE configuration data upgrade...
- Data upgrade step 1/67, NSFUpgradeService(1.2.1.127)... Done in 0 seconds.
- Data upgrade step 2/67, NetworkAccessUpgrade(1.2.1.127)... Done in 0 seconds.
- Data upgrade step 3/67, GuestUpgradeService(1.2.1.146)... Done in 43 seconds.
- Data upgrade step 4/67, NetworkAccessUpgrade(1.2.1.148)... Done in 2 seconds.
- Data upgrade step 5/67, NetworkAccessUpgrade(1.2.1.150)... Done in 2 seconds.
- Data upgrade step 6/67, NSFUpgradeService(1.2.1.181)... Done in 0 seconds.
- Data upgrade step 7/67, NSFUpgradeService(1.3.0.100)... Done in 0 seconds.
- Data upgrade step 8/67, RegisterPostureTypes(1.3.0.170)... Done in 0 seconds.
- Data upgrade step 9/67, ProfilerUpgradeService(1.3.0.187)... Done in 5 seconds.
- Data upgrade step 10/67, GuestUpgradeService(1.3.0.194)... Done in 2 seconds.
- Data upgrade step 11/67, NetworkAccessUpgrade(1.3.0.200)... Done in 0 seconds.
- Data upgrade step 12/67, GuestUpgradeService(1.3.0.208)... Done in 2 seconds.
- Data upgrade step 13/67, GuestUpgradeService(1.3.0.220)... Done in 0 seconds.
- Data upgrade step 14/67, RBACUpgradeService(1.3.0.228)... Done in 15 seconds.
```

```
- Data upgrade step 15/67, NetworkAccessUpgrade(1.3.0.230)... Done in 3 seconds.
- Data upgrade step 16/67, GuestUpgradeService(1.3.0.250)... Done in 0 seconds.
- Data upgrade step 17/67, NetworkAccessUpgrade(1.3.0.250)... Done in 0 seconds.
- Data upgrade step 18/67, RBACUpgradeService(1.3.0.334)... Done in 9 seconds.
- Data upgrade step 19/67, RBACUpgradeService(1.3.0.335)... Done in 9 seconds.
- Data upgrade step 20/67, ProfilerUpgradeService(1.3.0.360)... ...Done in 236 seconds.
- Data upgrade step 21/67, ProfilerUpgradeService(1.3.0.380)... Done in 4 seconds.
- Data upgrade step 22/67, NSFUpgradeService(1.3.0.401)... Done in 0 seconds.
- Data upgrade step 23/67, NSFUpgradeService(1.3.0.406)... Done in 0 seconds.
- Data upgrade step 24/67, NSFUpgradeService(1.3.0.410)... Done in 2 seconds.
- Data upgrade step 25/67, RBACUpgradeService(1.3.0.423)... Done in 0 seconds.
- Data upgrade step 26/67, NetworkAccessUpgrade(1.3.0.424)... Done in 0 seconds.
- Data upgrade step 27/67, RBACUpgradeService(1.3.0.433)... Done in 1 seconds.
- Data upgrade step 28/67, EgressUpgradeService(1.3.0.437)... Done in 1 seconds.
- Data upgrade step 29/67, NSFUpgradeService(1.3.0.438)... Done in 0 seconds.
- Data upgrade step 30/67, NSFUpgradeService(1.3.0.439)... Done in 0 seconds.
- Data upgrade step 31/67, CdaRegistration(1.3.0.446)... Done in 2 seconds.
- Data upgrade step 32/67, RBACUpgradeService(1.3.0.452)... Done in 16 seconds.
- Data upgrade step 33/67, NetworkAccessUpgrade(1.3.0.458)... Done in 0 seconds.
- Data upgrade step 34/67, NSFUpgradeService(1.3.0.461)... Done in 0 seconds.
- Data upgrade step 35/67, CertMgmtUpgradeService(1.3.0.462)... Done in 2 seconds.
- Data upgrade step 36/67, NetworkAccessUpgrade(1.3.0.476)... Done in 0 seconds.
- Data upgrade step 37/67, TokenUpgradeService(1.3.0.500)... Done in 1 seconds.
- Data upgrade step 38/67, NSFUpgradeService(1.3.0.508)... Done in 0 seconds.
- Data upgrade step 39/67, RBACUpgradeService(1.3.0.509)... Done in 17 seconds.
- Data upgrade step 40/67, NSFUpgradeService(1.3.0.526)... Done in 0 seconds.
- Data upgrade step 41/67, NSFUpgradeService(1.3.0.531)... Done in 0 seconds.
- Data upgrade step 42/67, MDMUpgradeService(1.3.0.536)... Done in 0 seconds.
- Data upgrade step 43/67, NSFUpgradeService(1.3.0.554)... Done in 0 seconds.
- Data upgrade step 44/67, NetworkAccessUpgrade(1.3.0.561)... Done in 3 seconds.
- Data upgrade step 45/67, RBACUpgradeService(1.3.0.563)... Done in 19 seconds.
- Data upgrade step 46/67, CertMgmtUpgradeService(1.3.0.615)... Done in 0 seconds.
- Data upgrade step 47/67, CertMgmtUpgradeService(1.3.0.616)... Done in 15 seconds.
- Data upgrade step 48/67, CertMgmtUpgradeService(1.3.0.617)... Done in 2 seconds.
- Data upgrade step 49/67, OcspServiceUpgradeRegistration(1.3.0.617)... Done in 0 seconds.
- Data upgrade step 50/67, NSFUpgradeService(1.3.0.630)... Done in 0 seconds.
- Data upgrade step 51/67, NSFUpgradeService(1.3.0.631)... Done in 0 seconds.
- Data upgrade step 52/67, CertMgmtUpgradeService(1.3.0.634)... Done in 0 seconds.
- Data upgrade step 53/67, RBACUpgradeService(1.3.0.650)... Done in 8 seconds.
- Data upgrade step 54/67, CertMgmtUpgradeService(1.3.0.653)... Done in 0 seconds.
- Data upgrade step 55/67, NodeGroupUpgradeService(1.3.0.655)... Done in 1 seconds.
- Data upgrade step 56/67, RBACUpgradeService(1.3.0.670)... Done in 4 seconds.
- Data upgrade step 57/67, ProfilerUpgradeService(1.3.0.670)... Done in 0 seconds.
- Data upgrade step 58/67, ProfilerUpgradeService(1.3.0.671)... Done in 0 seconds.
- Data upgrade step 59/67, ProfilerUpgradeService(1.3.0.675)...
.................................Done in 2118 seconds.
- Data upgrade step 60/67, NSFUpgradeService(1.3.0.676)... Done in 1 seconds.
- Data upgrade step 61/67, AuthzUpgradeService(1.3.0.676)... Done in 20 seconds.
- Data upgrade step 62/67, GuestAccessUpgradeService(1.3.0.676)... .......Done in 454
seconds.

- Data upgrade step 64/67, ProvisioningRegistration(1.3.0.700)... Done in 0 seconds.
- Data upgrade step 65/67, RegisterPostureTypes(1.3.0.705)... Done in 0 seconds.
- Data upgrade step 66/67, CertMgmtUpgradeService(1.3.0.727)... Done in 0 seconds.
- Data upgrade step 67/67, ProvisioningUpgradeService(1.3.105.181)... .Done in 103 seconds.
UPGRADE STEP 3: Running ISE configuration data upgrade for node specific data...
% restore in progress: Restoring logs...75% completed
% restore in progress: Restarting ISE Services...90% completed
Stopping ISE Monitoring & Troubleshooting Log Processor...
ISE Identity Mapping Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE Profiler Database...
```

```
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Certificate Authority Service...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE AD Connector...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
% restore in progress: Completing Restore...100% completed
ise/admin#
```

Restoring Cisco ISE operational data from the backup

To restore Cisco ISE operational data from the backup, use the command:

restore *mybackup-OPS-130103-0019.tar.gpg* **repository** *myrepository* **encryption-key plain** *lablab12*

Example

```
ise/admin# restore mybackup-OPS-130103-0019.tar.gpg repository myrepository
encryption-key plain lablab12
% Warning: Do not use Ctrl-C or close this terminal window until the restore completes.
Initiating restore.  Please wait...
% restore in progress: Starting Restore...10% completed
% restore in progress: Retrieving backup file from Repository...20% completed
% restore in progress: Decrypting backup data...40% completed
% restore in progress: Extracting backup data...50% completed
Stopping ISE Monitoring & Troubleshooting Log Processor...

Stopping ISE Application Server...
Stopping ISE Profiler DB...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE Database processes...
% restore in progress: starting dbrestore.......55% completed
% restore in progress: ending dbrestore.......75% completed
 checking for upgrade
Starting M&T DB upgrade
ISE Database processes already running, PID: 30124
ISE M&T Session Database is already running, PID: 484
Starting ISE Profiler DB...
Starting ISE Application Server...
ISE M&T Log Processor is already running, PID: 837
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
% restore in progress: Completing Restore...100% completed
ise/admin#
```

Restoring Cisco ISE configuration data and Cisco ADE OS data from the backup

To restore Cisco ISE configuration data including Cisco ISE ADE OS data, use the command:

restore *mybackup-CFG-130405-0044.tar.gpg* **repository** *myrepository* **encryption-key plain** *Mykey123* **include-adeos**

Example

```
ise/admin# restore mybackup-CFG-130405-0044.tar.gpg repository myrepository encryption-key
 plain Mykey123 include-adeos
% Warning: Do not use Ctrl-C or close this terminal window until the restore completes.
Initiating restore.  Please wait...
% restore in progress: Starting Restore...10% completed
% restore in progress: Retrieving backup file from Repository...20% completed
% restore in progress: Decrypting backup data...25% completed
% restore in progress: Extracting backup data...30% completed
% restore in progress: Stopping ISE processes required for restore...35% completed
% restore in progress: Restoring ISE configuration database...40% completed
% restore in progress: Updating Database metadata...70% completed
% restore in progress: Restoring logs...75% completed
% restore in progress: Performing ISE Database synchup...80% completed
% restore in progress: Completing Restore...100% completed
Broadcast message from root (pts/2) (Fri Apr  5 01:40:04 2013):
The system is going down for reboot NOW!
Broadcast message from root (pts/2) (Fri Apr  5 01:40:04 2013):
The system is going down for reboot NOW!
ise/admin#
```

When you restore the configuration data, if the ADE-OS restore check box is checked, cdp and conn-limit configurations are enabled by default, even if these options were disabled before. To prevent cdp and conn-limit configurations from being enabled after the restore, uncheck the ADE-OS restore check box.

rmdir

To remove an existing directory, use the **rmdir** command in EXEC mode.

rmdir *directory-name*

Syntax Description		
	directory-name	Directory name. Supports up to 80 alphanumeric characters.

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin# mkdir disk:/test
ise/admin# dir
Directory of disk:/
       4096 May 06 2010 13:34:49 activemq-data/
       4096 May 06 2010 13:40:59 logs/
      16384 Mar 01 2010 16:07:27 lost+found/
       4096 May 06 2010 13:42:53 target/
       4096 May 07 2010 12:26:04 test/
Usage for disk: filesystem
                 181067776 bytes total used
               19084521472 bytes free
               20314165248 bytes available
ise/admin#
ise/admin# rmdir disk:/test
ise/admin# dir
Directory of disk:/
4096 May 06 2010 13:34:49 activemq-data/
       4096 May 06 2010 13:40:59 logs/
      16384 Mar 01 2010 16:07:27 lost+found/
       4096 May 06 2010 13:42:53 target/
Usage for disk: filesystem
                 181063680 bytes total used
               19084525568 bytes free
               20314165248 bytes available
ise/admin#
```

ssh

To start an encrypted session with a remote system, use the **ssh** command in EXEC mode.

Note An administrator or user can use this command.

ssh [{*ip-address* | *hostname*}] [*username*] [**port** {*port number* | *version {1 | 2}*]

ssh delete host {*ip-address* | *hostname*}

Syntax Description

ip-address	IPv4/IPv6 address of the remote system. Supports up to 64 alphanumeric characters.
hostname	Hostname of the remote system. Supports up to 64 alphanumeric characters.
username	Username of the user logging in through SSH.
port	(Optional). Indicates the port number of the remote host.
port number	The valid range of ports is from 0 to 65,535. The default port is 22.
version	(Optional). Indicates the version number.
version number	The SSH version number 1 and 2. The default SSH version is 2.
delete	Deletes the SSH fingerprint for a specific host.
host	Hostname of the remote system for which the host key will be deleted.
ip-address	IPv4/IPv6 address of the remote system. Supports up to 64 alphanumeric characters.
hostname	Hostname of the remote system. Supports up to 64 alphanumeric characters.

Command Default

Disabled.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **ssh** command enables a system to make a secure, encrypted connection to another remote system or server. With authentication and encryption, the SSH client allows for secure communication over an insecure network.

Note Cisco ISE initiates outbound SSH or SFTP connections in FIPS mode even if FIPS mode is not enabled on ISE. Ensure that the remote SSH or SFTP servers that communicate with ISE allow FIPS 140-2 approved cryptographic algorithms.

Cisco ISE uses embedded FIPS 140-2 validated cryptographic modules. For details of the FIPS compliance claims, refer to the FIPS Compliance Letter.

Example 1

```
ise/admin# ssh 172.79.21.96 admin port 22 version 2
ssh: connect to host 172.79.21.96 port 22: No route to host
ise/admin#
```

Example 2

```
ise/admin# ssh delete host ise
ise/admin#
```

tech

To dump traffic on a selected network interface, use the **tech** command in EXEC mode.

Syntax Description

dumptcp	Dumps TCP package to the console.
interface	Specify interface name.
stop	Stops all the running TCP dump processes on the node.
iostat	Dumps Central Processing Unit (CPU) statistics and input/output statistics for devices and partitions to the console for every 3 seconds. Refer to Linux iostat command.
iotop	Provides accurate I/O usage per process on ISE node.
killgdb	Kills the GDB process based on the ProcessID
mpstat	Dumps processors related information sent to the console. Refer to Linux mpstat command.
netstat	Dumps network related information sent to the console for every 3 seconds. Refer to Linux netstat command.
top	Dumps a dynamic real-time view of a running system, which runs in batch mode for every 5 seconds. Refer to Linux top command.
vmstat	Dumps summary information of memory, processes, and paging for every 3 seconds. Refer to Linux vmstat command.

Command Default

Disabled.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

If *bad UDP cksum* warnings are included in the tech dumptcp output, it may not be a cause for concern. The **tech dumptcp** command examines outgoing packets before they exit through the Ethernet microprocessor. Most modern Ethernet chips calculate checksums on outgoing packets, and so the operating system software stack does not. Hence, it is normal that outgoing packets are declared as *bad UDP cksum*.

The **tech dumptcp** command has these options as available interfaces:

- br-<...>

- docker0
- GigabitEthernet0 (and other GigabitEthernet interfaces if available)
- lo
- veth<...>

Example 1

```
ise/admin# tech dumptcp 0 count 2
Invoking tcpdump. Press Control-C to interrupt.
tcpdump: listening on eth0, link-type EN10MB (Ethernet), capture size 96 bytes
2 packets captured
2 packets received by filter
0 packets dropped by kernel
02:38:14.869291 IP (tos 0x0, ttl 110, id 4793, offset 0, flags [DF], proto: TCP (6), length:
 40) 10.77.202.52.1598 > 172.21.79.91.22: ., cksum 0xe105 (correct),
 234903779:234903779(0) ack 664498841 win 63344
02:38:14.869324 IP (tos 0x0, ttl  64, id 19495, offset 0, flags [DF], proto: TCP (6), length:
 200) 172.21.79.91.22 > 10.77.202.52.1598: P 49:209(160) ack 0 win
12096
ise/admin#
```

Example 2

```
ise/admin# tech iostat
Linux 2.6.18-348.el5 (ise)         02/25/13
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          7.26    0.73    4.27    0.77    0.00   86.97
Device:            tps   Blk_read/s   Blk_wrtn/s   Blk_read   Blk_wrtn
sda              16.05       415.47      1802.16    3761049   16314264
sda1              0.01         0.23         0.00       2053         22
sda2              0.02         0.22         0.04       1982        354
sda3              0.01         0.29         0.02       2626        152
sda4              0.00         0.00         0.00         14          0
sda5              0.00         0.16         0.00       1479          0
sda6              0.49         0.24         7.45       2189      67400
sda7             15.51       414.27      1794.66    3750186   16246336
ise/admin#
```

Example 3

```
ise/admin# tech mpstat
Linux 2.6.18-348.el5 (ise)         02/25/13
02:41:25     CPU   %user   %nice    %sys %iowait    %irq   %soft  %steal   %idle    intr/s
02:41:25     all    7.07    0.70    3.98    0.74    0.02    0.14    0.00   87.34   1015.49
ise/admin#
```

Interpreting CPU and memory usage data

Usage Guidelines

The **tech top** command output has these options that provide information on memory and CPU usage:

- top shows uptime information
- Tasks shows process status information.

- %Cpu(s) shows various processor values.
- MiB Mem displays physical memory utilization. This value is based on the total amount of physical RAM installed on the system and provides this information:
  - total shows total installed memory.
  - free shows available memory.
  - Used shows consumed memory.
  - buff/cache shows the amount of information cached to be written later.
- MiB Swap displays virtual memory utilization. OS can take advantage of virtual memory when physical memory space is used by borrowing storage space from storage disks. The process of swapping data back and forth between physical RAM and storage drives is time-consuming and uses system resources, so it is best to minimize the use of virtual memory. MiB Swap output provides this information:
  - total shows total swap space.
  - free shows available swap space.
  - used shows consumed swap space.
  - buff/cache shows the amount of information cached for future reads.
- Load average: The load average is broken down into three time increments. The first value displays the load for the last one minute, the second value for the last five minutes, and the final value for the last fifteen-minutes. For Cisco ISE high load average, use the five-minute interval. If the five-minute interval value goes beyond the cores allocated to the node, the load average alarm is triggered.

  Do not consider individual core usage, always monitor the load average for CPU or I/O consumption.

Example:

```
ise/admin# tech top
top - 06:33:08 up 13:03, 1 user
Tasks: 559 total, 1 running, 557 sleeping, 0 stopped, 1 zombie
%Cpu(s): 1.8 us, 0.7 sy, 0.0 ni, 97.3 id, 0.0 wa, 0.2 hi, 0.1 si, 0.0 st
MiB Mem: 31928.6 total, 5691.9 free, 22647.7 used, 3589.1 buff/cache
MiB Swap: 8000.0 total, 7126.7 free, 873.2 used. 6765.0 avail Mem
load average: 0.30, 0.38, 0.66
ise/admin#
```

terminal length

To set the number of lines on the current terminal screen for the current session, use the **terminal length** command in EXEC mode.

terminal length *integer*

Syntax Description

length	Sets the number of lines on the current terminal screen for the current session.
integer	Number of lines on the screen. Contains between 0 to 511 lines, inclusive. A value of zero (0) disables pausing between screens of output.

Command Default

The default number of lines is 24 on the current terminal screen for the current session.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The system uses the length value to determine when to pause during multiple-screen output.

Example

```
ise/admin# terminal length 24
ise/admin#
```

terminal session-timeout

To set the inactivity timeout for all sessions, use the **terminal session-timeout** command in EXEC mode.

terminal session-timeout *minutes*

Syntax Description

session-timeout	Sets the inactivity timeout for all sessions.
minutes	Number of minutes for the inactivity timeout. The valid range is from 0 to 525,600. Zero (0) disables the timeout.

Command Default

The default session-timeout is 30 minutes.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Setting the **terminal session-timeout** command to zero (0) results in no timeout being set.

Example

```
ise/admin# terminal session-timeout 40
ise/admin#
```

terminal session-welcome

To set a welcome message on the system for all users who log in to the system, use the **terminal session-welcome** command in EXEC mode.

terminal session-welcome *string*

Syntax Description

session-welcome	Sets a welcome message on the system for all users who log in to the system.
string	Welcome message. Supports up to 2023 alphanumeric characters. XML reserved characters are not allowed.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Specify a welcome message that will appear on the screen on top of the command prompt when you log in to the CLI.

Example

```
ise/admin# terminal session-welcome Welcome
ise/admin#
```

terminal terminal-type

To specify the type of terminal connected to the current line for the current session, use the **terminal** *terminal-type* command in EXEC mode.

terminal *terminal-type*

Syntax Description

terminal-type	Specifies the type of terminal connected. The default terminal type is VT100.
type	Defines the terminal name and type, and permits terminal negotiation by hosts that provide that type of service. Supports up to 80 alphanumeric characters.

Command Default

VT100

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Indicates the terminal type if it is different from VT100.

You can also use the **show terminal** command to view the information on terminal type.

Example

```
ise/admin# terminal terminal-type vt220
ise/admin#
```

traceroute

To discover the routes that packets take when traveling to their destination address, use the **traceroute** command in EXEC mode.

traceroute [*ip-address* | *hostname*]

Syntax Description

ip-address	IPv4 address of the remote system. Supports up to 64 alphanumeric characters.
hostname	Hostname of the remote system. Supports up to 64 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin# traceroute 172.16.0.11
traceroute to 172.16.0.11 (172.16.0.11), 30 hops max, 38 byte packets
 1 172.16.0.11 0.067 ms 0.036 ms 0.032 ms
ise/admin#
```

undebug

To disable debugging functions, use the **undebug** command in EXEC mode.

undebug [**all** | **application** | **backup-restore** | **cdp** | **config** | **copy** | **icmp** | **locks** | **logging** | **snmp** | **system** | **transfer** | **user** | **utils**]

Syntax Description

all	Disables all debugging.
application	Application files. • all—Disables all application debug output. • install—Disables application install debug output. • operation—Disables application operation debug output. • uninstall—Disables application uninstall debug output.
backup-restore	Backs up and restores files. • all—Disables all debug output for backup-restore. • backup—Disables backup debug output for backup-restore. • backup-logs—Disables backup-logs debug output for backup-restore. • history—Disables history debug output for backup-restore. • restore—Disables restore debug output for backup-restore.
cdp	Cisco Discovery Protocol configuration files. • all—Disables all Cisco Discovery Protocol configuration debug output. • config—Disables configuration debug output for Cisco Discovery Protocol. • infra—Disables infrastructure debug output for Cisco Discovery Protocol.

config	Configuration files. • all—Disables all configuration debug output. • backup—Disables backup configuration debug output. • clock—Disables clock configuration debug output. • infra—Disables configuration infrastructure debug output. • kron—Disables command scheduler configuration debug output. • network—Disables network configuration debug output. • repository—Disables repository configuration debug output. • service—Disables service configuration debug output.
copy	Copy commands.
icmp	ICMP echo response configuration. all—Disable all debug output for ICMP echo response configuration. Set level between 0 and 7, with 0 being severe and 7 being all.
locks	Resource locking. • all—Disables all resource locking debug output. • file—Disables file locking debug output.
logging	Logging configuration files. all—Disables all debug output for logging configuration.
snmp	SNMP configuration files. all—Disables all debug output for SNMP configuration.
system	System files. • all—Disables all system files debug output. • id—Disables system ID debug output. • info—Disables system info debug output. • init—Disables system init debug output.
transfer	File transfer.
user	User management. • all—Disables all user management debug output. • password-policy—Disables user management debug output for password-policy.

utils	Utilities configuration files. all—Disables all utilities configuration debug output.

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin# undebug all
ise/admin#
```

which

To display the contents of commands available in admin CLI, use the **which** command in EXEC mode.

which

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

which is a hidden command. Although **which** is available in Cisco ISE, the CLI interactive Help does not display it if you attempt to view it by entering a question mark at the command line.

Example

This example shows the output of **which** :

```
ise/admin# which
[     1].  application  configure<STRING>
[     2].  application  install<STRING><STRING>
[     3].  application  remove<STRING>
[     4].  application  reset-config<STRING>
[     5].  application  reset-passwd<STRING><STRING>
[     6].  application  start<STRING>
[     7].  application  start<STRING>  safe
[     8].  application  stop<STRING>
[     9].  application  upgrade  cleanup
[    10].  application  upgrade  prepare<STRING><STRING>
```

write

To copy, display, or erase Cisco ISE server configurations, use the **write** command with the appropriate argument in EXEC mode.

write [**erase** | **memory** | **terminal**]

Syntax Description

erase	Erases the startup configuration. This option is disabled in Cisco ISE.
memory	Copies the running configuration to the startup configuration.
terminal	Copies the running configuration to console.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Using the **write** command with the **erase** option is disabled in Cisco ISE.

If you use the write command with the erase option, Cisco ISE displays this error message:

```
% Warning: 'write erase' functionality has been disabled by application: ise
```

Example 1

```
ise/admin# write memory
Generating configuration...
ise/admin#
```

Example 2

```
ise/admin# write terminal
Generating configuration...
!
hostname ise
```

Cisco ISE CLI Commands in EXEC Show Mode

This chapter describes **show** commands in EXEC mode that are used to display the Cisco ISE settings and are among the most useful commands. Each of the commands in this chapter is followed by a brief description of its use, command syntax, usage guidelines, and one or more examples.

Note From Cisco ISE Release 3.0 onwards, if there is an escape character required after running certain show commands, press **Ctrl+C** and then press **Q**.

- show, on page 111
- show application, on page 112
- show backup, on page 115
- show banner, on page 117
- show cdp, on page 118
- show clock, on page 120
- show container, on page 121
- show cpu, on page 125
- show crypto, on page 127
- show disks, on page 128
- show icmp-status, on page 130
- show interface, on page 132
- show inventory, on page 134
- show ip, on page 136
- show ipv6 route, on page 137
- show logging, on page 138
- show logins, on page 141
- show memory, on page 142
- show ntp, on page 143
- show ports, on page 144
- show process, on page 146
- show repository, on page 148
- show restore, on page 150
- show running-config, on page 151
- show snmp-server engineid, on page 153

- show snmp-server user, on page 154
- show startup-config, on page 155
- show tech-support, on page 157
- show terminal, on page 159
- show timezone, on page 160
- show timezones, on page 161
- show udi, on page 162
- show uptime, on page 163
- show users, on page 164
- show version, on page 166

show

To show the running system information, use the **show** command in EXEC mode.

show *keyword*

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

All **show** commands require at least one keyword to function.

Example

```
ise/admin# show application
<name>          <Description>
ise             Cisco Identity Services Engine
ise/admin#
```

show application

To show installed application packages on the system, use the **show application** command in EXEC mode.

show application > *file-name*

show application [**status** {*application_name*}]

show application [**version** {*application_name*}]

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to store the Cisco ISE application information.
status	Displays the status of the installed application.
version	Displays the application version for an installed application (Cisco ISE).
application_name	Name of the installed application.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. |—Output modifier variables for count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10. |—Output modifier variables for last.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view the application status and version about installed packages on the system, use the **show application** commands.

Example 1

```
ise/admin# show application
<name>          <Description>
ise             Cisco Identity Services Engine
ise/admin#
```

Example 2

```
ise/admin# show application version ise
Cisco Identity Services Engine
---------------------------------------------
Version      : 1.3.0.672
Build Date   : Thu Jun 19 19:33:17 2014
Install Date : Thu Jun 19 21:06:34 2014
ise/admin#
```

Example 2

```
ise/admin# show application version ise
Cisco Identity Services Engine
---------------------------------------------
Version      : 1.4.0.205
Build Date   : Tue Mar  3 05:37:10 2015
Install Date : Tue Mar  3 21:06:34 2015
ise/admin#
```

Example 3

Cisco ISE includes the status of processes that are optional (persona-based). Processes like pxGrid, Certificate Authority, M&T, and Identity Mapping Services can be in any one of the these states:

- Running—Cisco ISE services are up and running
- Not Running—Cisco ISE services are shut down
- Disabled—Cisco ISE services are disabled

```
ise/admin# show application status ise
ISE PROCESS NAME                       STATE            PROCESS ID
--------------------------------------------------------------------
Database Listener                      running          3688
Database Server                        running          41 PROCESSES
Application Server                     running          6041
Profiler Database                      running          4533
AD Connector                           running          6447
M&T Session Database                   running          2363
M&T Log Processor                      running          6324
Certificate Authority Service          running          6263
pxGrid Infrastructure Service          disabled
pxGrid Publisher Subscriber Service    disabled
pxGrid Connection Manager              disabled
pxGrid Controller                      disabled
```

```
Identity Mapping Service                disabled
ise/admin#
```

show backup

To display the backup history of the system or the status of the backup, use the **show backup** command in EXEC mode.

show backup [**history** | **status**]

Syntax Description

history	Displays historical information about backups on the system.
progress	Displays the backup status on the system.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view the system backup history and status, use the **show backup** command.

Example 1

```
ise/admin# Show backup history
Wed Apr 10 02:35:29 EDT 2013: backup mybackup-CFG-130410-0226.tar.gpg to repository
myrepository: success
Wed Apr 10 02:40:07 EDT 2013: backup mybackup1-OPS-130410-0239.tar.gpg to repository
myrepository: success
ise/admin#
```

Example 2

```
ise/admin# show backup status
%% Configuration backup status
%% ---------------------------
%      backup name: mybackup
%       repository: myrepository
%       start date: Wed Apr 10 02:26:04 EDT 2013
%        scheduled: no
%   triggered from: Admin web UI
%             host: ise.cisco.com
%           status: backup mybackup-CFG-130410-0226.tar.gpg to repository myrepository:
success
%% Operation backup status
%% ------------------------
%      backup name: mybackup1
%       repository: myrepository
%       start date: Wed Apr 10 02:39:02 EDT 2013
%        scheduled: no
%   triggered from: Admin web UI
%             host: ise.cisco.com
```

```
%           status: backup mybackup1-OPS-130410-0239.tar.gpg to repository myrepository:
success
ise/admin#
```

show banner

To display pre-login and post-login banners, use the **show banner** command in EXEC mode.

show banner [**post-login** | **pre-login**]

The banners are configured in the Cisco ISE GUI in this window:

Administration > **System** > **Admin Access** > **Settings** > **Access**. The **Session** tab contains the fields for configuring the pre-login and post-login banners for Cisco ISE CLI and GUI.

Syntax Description

post-login	Displays the post-login information that is configured in the Cisco ISE server for the current CLI session.
pre-login	Displays the pre-login information that is configured in the Cisco ISE server for the current CLI session.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use the **show banner** command in the active SSH sessions. If the active SSH sessions exceed the Maximum Concurrent Sessions that is configured in the Cisco ISE Admin portal, you get the “WARNING: Maximum active SSH sessions reached” message.

show cdp

To display information about all enabled Cisco Discovery Protocol (CDP) interfaces, use the **show cdp** command in EXEC mode.

show cdp [**all** | **neighbors**]

Syntax Description		
	all	Shows all enabled Cisco Discovery Protocol interfaces.
	neighbors	Shows the Cisco Discovery Protocol neighbors.

Command Default No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	2.0.0.306	This command was introduced.

Usage Guidelines To view enabled Cisco Discovery Protocol interfaces and CDP neighbors, use the **show cdp** command.

Note CDP can be visualized from neighboring IPv4 and IPv6 interfaces

Example 1

```
ise/admin# show cdp all
CDP protocol is enabled...
        broadcasting interval is every 60 seconds.
        time-to-live of cdp packets is 180 seconds.
        CDP is enabled on port GigabitEthernet0.
ise/admin#
```

Example 2

```
ise/admin# show cdp neighbors
CDP Neighbor: 000c297840e5
        Local Interface : GigabitEthernet0
        Device Type     : ISE-1141VM-K9
        Port            : eth0
        Address         : 172.23.90.114
        IPv6 Address    : 2001:420:54ff:4::458:1
CDP Neighbor: isexp-esw5
        Local Interface : GigabitEthernet0
        Device Type     : cisco WS-C3560E-24TD
        Port            : GigabitEthernet0/5
        Address         : 172.23.90.45
       IPv6 Address     : 2001:420:54ff:4::458:5
CDP Neighbor: 000c29e29926
```

```
        Local Interface : GigabitEthernet0
        Device Type     : ISE-1141VM-K9
        Port            : eth0
        Address         : 172.23.90.115
       IPv6 Address     : 2001:420:54ff:4::458:2
CDP Neighbor: 000c290fba98
        Local Interface : GigabitEthernet0
        Device Type     : ISE-1141VM-K9
        Port            : eth0
        Address         : 172.23.90.111
       IPv6 Address     : 2001:420:54ff:4::458:3
ise/admin#
```

show clock

To display the day, month, date, time, time zone, and year of the system software clock, use the **show clock** command in EXEC mode.

This command has no keywords and arguments.

show clock

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines The **show clock** output in this example includes Coordinated Universal Time (UTC) or Greenwich Mean Time (GMT), Great Britain, or Zulu time.

Example

```
ise/admin# show clock
Fri Aug 6 10:46:39 UTC 2010
ise/admin#
```

show container

To view information about the Threat-Centric NAC adapters, use the **show container** command in EXEC mode.

The output of this command provides statistical information about the vulnerability assessment scans, when the adapters were created, how long the adapters were running, and their current statuses. You can further view information about each of the adapters in detail based on the container name or ID.

show container tc-nac {**adapters** | **all** | **inspect** {**container-id** *container-id* | **container-name** *container-name*} | **stats** {**container-id** *container-id* | **container-name** *container-name*}} |}

Syntax Description

tc-nac	Displays information about the Threat-Centric NAC adapters.
all	When used with TC NAC, lists all the adapters that are available in Cisco ISE, including the container name and ID. When used with Wi-Fi Setup, displays the Wi-Fi container setup information.
adapters	Lists the TC NAC adapters that are configured in Cisco ISE. Lists the container ID and name, the time when the adapter was created and how long the adapter has been running, and the current status of the adapter.
inspect{**container-id** *container-id* | **container-name** *container-name*}	Lists detailed information about the specific adapter.
stats {**container-id** *container-id* | **container-name** *container-name*}	Provides statistical information about the specific adapter.
>	Redirects output to a file.

	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. |—Output modifier variables for count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10. |—Output modifier variables for last.

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.2.0.470	This command was introduced.
3.1	This command no longer includes Wi-Fi configurations.

Usage Guidelines To view information about the Threat-Centric NAC adapters, use the **show container** command.

Example 1

```
ise/admin# show container tc-nac adapters

CONTAINER ID        IMAGE                   COMMAND                  CREATED
STATUS              PORTS                                                NAMES
63b8904f41c6        irf-adapter-nexpose     "/opt/CSCOcpm/vaservi"   19 hours ago
Up 19 hours                                                              nexpose
8389f7e249cf        irf-adapter-tenable     "/opt/CSCOcpm/vaservi"   2 days ago
Up 2 days                                                                tenable

ise/admin#
```

Example 2

```
ise/admin# show container tc-nac all
```

```
CONTAINER ID        IMAGE                    COMMAND                  CREATED
STATUS              PORTS                                                NAMES
63b8904f41c6        irf-adapter-nexpose      "/opt/CSCOcpm/vaservi"   19 hours ago
Up 19 hours                                                              nexpose
8389f7e249cf        irf-adapter-tenable      "/opt/CSCOcpm/vaservi"   2 days ago
Up 2 days                                                                tenable
41921c1539bf        irf-core-engine:2.2.6    "/bin/sh -c 'npm star"   3 days ago
Up 3 days           192.0.2.13:3000->3000/tcp
irf-core-engine-runtime
c4f6ff3cf628        irf-rabbitmq:2.2.6       "/docker-entrypoint.s"   3 days ago
Up 3 days          4369/tcp, 5671-5672/tcp, 15671-15672/tcp, 25672/tcp   irf-rabbitmq-runtime
e682a5a5ad69        irf-mongo:2.2.6          "/entrypoint.sh mongo"   3 days ago
Up 3 days           27017/tcp                                            irf-mongo-runtime

ise/admin#
```

Example 3

```
ise/admin#  show container tc-nac inspect container-name nexpose
[
{
    "Id": "63b8904f41c6ce2a58660d38eb3500104038e650e4e3365e21e0a536a1ba3044",
    "Created": "2016-09-22T11:38:03.146141316Z",
    "Path": "/opt/CSCOcpm/vaservice/nexposeadapter/bin/nexposeadaptercontrol.sh",
    "Args": [
        "start",
        "http://irf-core-engine-runtime:3000/api/adapter/instance/register",
        "07bc6aee-fb9f-4845-86cb-886c7c095188"
    ],
    "State": {
        "Status": "running",
        "Running": true,
        "Paused": false,
        "Restarting": false,
        "OOMKilled": false,
        "Dead": false,
        "Pid": 23433,
        "ExitCode": 0,
        "Error": "",
        "StartedAt": "2016-09-22T11:38:05.609439645Z",
        "FinishedAt": "0001-01-01T00:00:00Z"
    },
    "Image": "06ba3230bd64872b988f4506e7fffddc8c6374c7ece285555ee1cc57743ea7e0",
    "ResolvConfPath":
"/opt/docker/runtime/containers/63b8904f41c6ce2a58660d38eb3500104038e650e4e3365e21e0a536a1ba3044/resolv.conf",

    "HostnamePath":
"/opt/docker/runtime/containers/63b8904f41c6ce2a58660d38eb3500104038e650e4e3365e21e0a536a1ba3044/hostname",

    "HostsPath":
"/opt/docker/runtime/containers/63b8904f41c6ce2a58660d38eb3500104038e650e4e3365e21e0a536a1ba3044/hosts",

    "LogPath":
"/opt/docker/runtime/containers/63b8904f41c6ce2a58660d38eb3500104038e650e4e3365e21e0a536a1ba3044/

              63b8904f41c6ce2a58660d38eb3500104038e650e4e3365e21e0a536a1ba3044-json.log",
    "Name": "/nexpose",
    "RestartCount": 0,
    "Driver": "devicemapper",
    "ExecDriver": "native-0.2",
    "MountLabel": "",
    "ProcessLabel": "",
```

```
    "AppArmorProfile": "",
    "ExecIDs": [
        "d76578aa48118167d9d029037fcb2e56aa7dce8672b8991a736617a6d6879750"
    ],
    .
    .
    .
    "NetworkSettings": {
        "Bridge": "",
        "SandboxID": "9873fb92f86e665039a6de15bfe057bc3fd341f7b39acedee57cbd89b3f56ce0",
        "HairpinMode": false,
        "LinkLocalIPv6Address": "",
        "LinkLocalIPv6PrefixLen": 0,
        "Ports": {},
        "SandboxKey": "/var/run/docker/netns/9873fb92f86e",
        "SecondaryIPAddresses": null,
        "SecondaryIPv6Addresses": null,
        "EndpointID": "",
        "Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "IPAddress": "",
        "IPPrefixLen": 0,
        "IPv6Gateway": "",
        "MacAddress": "",
        "Networks": {
            "irf-internal-nw": {
                "EndpointID":
"8999c12319144cfd66a4e99be40f7fbc228779e43f2a7f20c48867b8b3ca7a49",
                "Gateway": "169.254.1.1",
                "IPAddress": "169.254.1.6",
                "IPPrefixLen": 24,
                "IPv6Gateway": "",
                "GlobalIPv6Address": "",
                "GlobalIPv6PrefixLen": 0,
                "MacAddress": "02:42:a9:fe:01:06"
            }
        }
    }
}
]
```


Example 4

```
ise/admin#  show container tc-nac stats container-name nexpose

CONTAINER           CPU %               MEM USAGE / LIMIT     MEM %               NET I/O
              BLOCK I/O
nexpose             0.07%               327.9 MB / 12.43 GB   2.64%               4.501 MB
 / 2.446 MB   106.4 MB / 21.27 MB
```

show cpu

To display CPU information, use the **show cpu** command in EXEC mode.

To show a summary of CPU usage per Cisco ISE component, use the **show cpu usage** command in EXEC mode. The output of this command provides a snapshot of CPU usage at the moment the command is run.

show cpu > *file-name*

show cpu statistics

show cpu usage

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
statistics	Displays CPU statistics.
cpu usage	Displays the CPU usage per component for an installed application (Cisco ISE).
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. |—Output modifier variables for count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10. |—Output modifier variables for last.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.1.0.474	This command was introduced.

Usage Guidelines

To view CPU information and its statistics, use the **show cpu** command.

Example 1

```
ise/admin# show cpu
processor: 0
model : Intel(R) Xeon(R) CPU           E5320 @ 1.86GHz
speed(MHz): 1861.914
cache size: 4096 KB
ise/admin#
```

Example 2

```
ise/admin# show cpu statistics
user time:             265175
kernel time:           166835
idle time:            5356204
i/o wait time:         162676
irq time:                4055
ise/admin#
```

Example 3

```
ise/admin# show cpu usage

ISE Function                          % CPU Usage           CPU Time     Number of threads
-------------------------------------------------------------------------------------------
Profiler Database                        0.01              1:26.27              3
M&T Session Database                     0.01              1:23.06             18
Certificate Authority Service            0.04              6:57.38             31
M&T Log Processor                        0.09             15:44.23             60
ISE Indexing Engine                      0.12             21:34.76             75
Database Listener                        0.01              0:53.18              2
Database Server                         0.36             62:48.64             64 processes

Admin Webapp                             0.04              6:46.68             53
Profiler                                 0.00              0:02.94             26
NSF Persistence Layer                    0.05              8:09.70             46
Guest Services                           0.00              0:00.32              5
Syslog Processor                         0.00              0:12.79              3
Quartz Scheduler                         0.05              9:08.80             29
RMI Services                             0.00              0:05.98             10
Message Queue                            0.00              0:43.99              4
BYOD Services                            0.00              0:00.00              1
Admin Process JVM Threads                0.19             32:50.67             10
Miscellaneous services                   0.17             30:30.47           3557
Identity Mapping Service                  N/A
SXP Engine Service                        N/A
Threat Centric NAC Docker Service         N/A
Threat Centric NAC MongoDB Container      N/A
Threat Centric NAC RabbitMQ Container     N/A
Threat Centric NAC Core Engine Container  N/A
Vulnerability Assessment Database         N/A
Vulnerability Assessment Service          N/A
```

show crypto

To display information about the public keys and authorized keys for the logged in administrators and users, use the **show crypto** command.

show crypto authorized_keys

show crypto host-keys

show crypto key

Syntax Description

authorized_keys	Displays authorized keys information for the user who is logged in currently.
host_keys	Displays host keys for the user who is logged in currently.
key	Displays key information for the user who is logged in currently.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view authorized keys and keys for currently logged in users, use the **show crypto** command.

Example 1

```
ise/admin# show crypto authorized_keys
Authorized keys for admin
ise/admin#
```

Example 2

```
ise/admin# show crypto key
admin public key: ssh-rsa f8:7f:8a:79:44:b8:5d:5f:af:e1:63:b2:be:7a:fd:d4 admin@ise
ise/admin#
```

show disks

To display the disks file-system information, use the **show disks** command in EXEC mode.

show disks > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. |—Output modifier variables for count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10. |—Output modifier variables for last.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.2	The filename variable is no longer supported.

Usage Guidelines

Only platforms that have a disk file system support the **show disks** command.

Example

```
ise/admin# show disks
Internal filesystems:
```

```
/ : 5% used ( 24124436 of 540283556)
/storedconfig : 7% used ( 5693 of 93327)
/tmp : 2% used ( 35960 of 1976268)
/boot : 4% used ( 17049 of 489992)
/dev/shm : 0% used ( 0 of 1943756)
  all internal filesystems have sufficient free space
ise/admin#
```

Note In Cisco ISE 3.0, the localdisk partition is allocated dynamically.

show icmp-status

To display the Internet Control Message Protocol (ICMP) echo response configuration information, use the **show icmp_status** command in EXEC mode.

show icmp_status > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
|	Output modifier commands: • *begin*—Matched pattern. Supports up to 80 alphanumeric characters. • *count*—Count the number of lines in the output. Add number after the word count. • |—Output modifier commands for count. • *end*—End with line that matches. Supports up to 80 alphanumeric characters. • *exclude*—Exclude lines that match. Supports up to 80 alphanumeric characters. • *include*—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10. • |—Output modifier commands for last.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view the Internet Control Message Protocol (ICMP) echo response configuration information, use the **show icmp_status** command.

Example 1

```
ise/admin# show icmp_status
```

```
icmp echo response is turned on
ise/admin#
```

Example 2

```
ise/admin# show icmp_status
icmp echo response is turned off
ise/admin#
```

show interface

To display the usability status of interfaces configured for IP, use the **show interface** command in EXEC mode.

show interface > *file-name*

show interface GigabitEthernet {*0-3*}

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect interface information.
GigabitEthernet	Shows the specific Gigabit Ethernet interface information.
0-3	Gigabit Ethernet number that may be one of the fallowing: 0. 1, 2, 3.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

In the **show interface GigabitEthernet 0** output, you can find that the interface has three IPv6 addresses. The first internet address (starting with 3ffe) is the result of using stateless autoconfiguration. For this to work, you need to have IPv6 route advertisement enabled on that subnet. The next address (starting with fe80) is a

link local address that does not have any scope outside the host. A link-local address is always visible, whether IPv6 autoconfiguration or DHCPv6 is used. The last address (starting with 2001) is the result obtained from a IPv6 DHCP server.

Example 1

```
ise/admin# show interface
eth0      Link encap:Ethernet  HWaddr 00:0C:29:6A:88:C4
          inet addr:172.23.90.113  Bcast:172.23.90.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:fe6a:88c4/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:48536 errors:0 dropped:0 overruns:0 frame:0
          TX packets:14152 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:6507290 (6.2 MiB)  TX bytes:12443568 (11.8 MiB)
          Interrupt:59 Base address:0x2000
lo        Link encap:Local Loopback
          inet addr:192.0.2.13  Mask:192.0.2.11
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:1195025 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1195025 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:649425800 (619.3 MiB)  TX bytes:649425800 (619.3 MiB)
sit0      Link encap:IPv6-in-IPv4
          NOARP  MTU:1480  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
ise/admin#
```

Example 2

```
ise/admin# show interface GigabitEthernet 0
eth0      Link encap:Ethernet  HWaddr 00:0C:29:AF:DA:05
          inet addr:172.23.90.116  Bcast:172.23.90.255  Mask:255.255.255.0
          inet6 addr: 3ffe:302:11:2:20c:29ff:feaf:da05/64 Scope:Global
          inet6 addr: fe80::20c:29ff:feaf:da05/64 Scope:Link
          inet6 addr: 2001:558:ff10:870:8000:29ff:fe36:200/64 Scope:Global
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:77848 errors:0 dropped:0 overruns:0 frame:0
          TX packets:23131 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:10699801 (10.2 MiB)  TX bytes:3448374 (3.2 MiB)
          Interrupt:59 Base address:0x2000
ise/admin#
```

show inventory

To display information about the hardware inventory, including the Cisco ISE appliance model and serial number, use the **show inventory** command in EXEC mode.

show inventory > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect hardware inventory information.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view the Cisco ISE appliance information, use the **show inventory** command.

Example

```
ise/admin# show inventory
inventory
NAME: "ISE-VM-K9 chassis", DESCR: "ISE-VM-K9 chassis"
PID: ISE-VM-K9, VID: V01, SN: H8JESGOFHGG

Manufacturer: VMware, Inc.
Product Name: VMware7,1
```

```
Total RAM Memory: 16211484 kB
CPU Core Count: 4
CPU 0: Model Info: Intel(R) Xeon(R) Platinum 8280 CPU @ 2.70GHz
CPU 1: Model Info: Intel(R) Xeon(R) Platinum 8280 CPU @ 2.70GHz
CPU 2: Model Info: Intel(R) Xeon(R) Platinum 8280 CPU @ 2.70GHz
CPU 3: Model Info: Intel(R) Xeon(R) Platinum 8280 CPU @ 2.70GHz
Hard Disk Count(*): 1
Disk 0: Device Name: /dev/sda:
Disk 0: Capacity: 300GiB
NIC Count: 1
NIC 0: Device Name: eth0:
NIC 0: HW Address: 00:50:56:bx:aa:bx
NIC 0: Driver Descr: VMware vmxnet3 virtual NIC driver

(*) Hard Disk Count may be Logical.
```

show ip

To display the IP route information, use the **show ip** command in EXEC mode.

show ip route

Syntax Description		
	route	Displays IP route information.

Command Default No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	2.0.0.306	This command was introduced.

Usage Guidelines This command displays the IP routing table.

Example

```
ise/admin# show ip route
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
172.21.79.0     0.0.0.0         255.255.255.0   U     0      0        0 eth0
0.0.0.0         172.21.79.1     0.0.0.0         UG    0      0        0 eth0
ise/admin#
```

show ipv6 route

To display the IPv6 route information, use the **show ipv6 route** command in EXEC mode.

show ipv6 route

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

This command displays the IPv6 routing table.

Example 1

```
ise/admin# show ipv6 route
Destination             Gateway                 Iface
-----------             -------                 ------

2001:DB8:cc00:1::/64    2001:DB8:cc00:1::1      eth0
ff02::1:2/128           ff02::1:2               eth0
ise/admin#
```

Example 2

```
ise/admin# show ipv6 route
Destination             Gateway                 Iface
-----------             -------                 ------
2001:db8::/64           ::                      eth0
2015:db8::/64           ::                      eth3
2020:db8::/64           2001:db8::5             eth0
default                 2001:db8::5             eth0
ise/admin#
```

show logging

To display the state of system logging (syslog) and the contents of the standard system logging buffer, use the **show logging** command in EXEC mode.

show logging > *file-name*

show logging application *application-logfile-name*

show logging container tc-nac {**container-id** *container-id* [**log-name** *name-of-log-file* **tail**] | **container-name** *container-name*}

show logging internal

show logging system *system-logfile-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect system logging information.
application	Displays application logs.
application-logfile-name	Name of the application log file.
container tc-nac	Displays the Threat Centric-NAC containers.
container-id *container-id* [**log-name** *name-of-log-file* **tail**]	Displays the log files related to the specified container (TC-NAC adapter).
container-name *container-name*	Displays the log files related to the specified container (TC-NAC adapter).
internal	Displays the syslog configuration.
system	Displays the list of log files in the logging system.
system-logfile-name	Name of the system log file.
system-file-name	Name of the system log file name.

	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.
2.7	The display environment changed to the Unix less command.

Usage Guidelines

This command displays the state of syslog error and event logging, including host addresses, and for which, logging destinations (console, monitor, buffer, or host) logging is enabled. When you run this command, the content is opened in the Unix less evironment. Typing "H" displays the search and movement commands.

Example 1

```
ise/admin# show logging system
          0 Feb 25 2013 15:57:43  tallylog
       1781 Feb 26 2013 02:01:02  maillog
       4690 Feb 26 2013 02:40:01  cron
          0 Feb 25 2013 15:56:54  spooler
          0 Feb 25 2013 16:10:03  boot.log
          0 Feb 25 2013 16:00:03  btmp
      38784 Feb 26 2013 02:19:48  wtmp
      16032 Feb 26 2013 02:19:47  faillog
      32947 Feb 26 2013 00:38:02  dmesg
      63738 Feb 26 2013 02:19:49  messages
     146292 Feb 26 2013 02:19:48  lastlog
      13877 Feb 26 2013 01:48:32  rpmpkgs
     129371 Feb 26 2013 02:40:22  secure
      27521 Feb 25 2013 16:10:02  anaconda.syslog
     345031 Feb 25 2013 16:10:02  anaconda.log
          0 Jul 28 2011 00:56:37  mail/statistics
    1272479 Feb 26 2013 02:42:52  ade/ADE.log
```

```
     567306 Feb 26 2013 02:40:22  audit/audit.log
      24928 Feb 26 2013 02:40:01  sa/sa26
          0 Feb 25 2013 16:01:40  pm/suspend.log
ise/admin#
```

Example 2

To view application log files on Cisco ISE nodes, use this command:

```
ise/admin# show logging application
       61 Oct 07 2016 03:02:43  dbalert.log
       4569 Oct 07 2016 03:21:18  ad_agent.log
          0 Oct 07 2016 03:13:18  ise-elasticsearch_index_indexing_slowlog.log
          0 Oct 07 2016 03:02:59  edf.log
        124 Oct 07 2016 03:21:59  diagnostics.log
       8182 Oct 07 2016 03:26:45  caservice.log
        426 Oct 07 2016 03:19:17  redis.log
       1056 Oct 07 2016 03:13:07  caservice_bootstrap.log
      49637 Oct 07 2016 03:27:40  passiveid-mgmt.log
          0 Oct 07 2016 03:02:59  passiveid.log
          0 Oct 07 2016 03:13:18  ise-elasticsearch_index_search_slowlog.log
      14152 Oct 07 2016 03:26:03  collector.log
          0 Oct 07 2016 03:02:59  idc-endpoint.log
        134 Oct 07 2016 03:22:34  ocsp.log
          0 Oct 07 2016 03:02:59  dbconn.log
          0 Oct 07 2016 03:02:59  idc-kerberos.log
     100958 Oct 07 2016 03:24:43  crypto.log
          0 Oct 07 2016 03:02:59  idc-syslog.log
          0 Oct 07 2016 03:02:59  replication.log.2016-10-04.1
      10394 Oct 07 2016 03:24:01  guest.log
          0 Oct 07 2016 03:02:59  guest.log.2016-10-07.1
          0 Oct 07 2016 03:02:59  vcs.log.2016-10-04.1
     288624 Oct 07 2016 03:27:25  ise-psc.log
ise/admin#
```

show logins

To display the state of system logins, use the **show logins** command in EXEC mode.

show logins cli

Syntax Description		
	cli	Lists the cli login history.

Command Default No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	2.0.0.306	This command was introduced.

Usage Guidelines Requires the **cli** keyword; otherwise, an error occurs.

Example

```
ise/admin# show logins cli
admin    pts/0        10.77.137.60     Fri Aug 6 09:45   still logged in
admin    pts/0        10.77.137.60     Fri Aug 6 08:56 - 09:30  (00:33)
admin    pts/0        10.77.137.60     Fri Aug 6 07:17 - 08:43  (01:26)
reboot   system boot  2.6.18-164.el5PA Thu Aug 5 18:17          (17:49)
admin    tty1                         Thu Aug 5 18:15 - down   (00:00)
reboot   system boot  2.6.18-164.el5PA Thu Aug 5 18:09          (00:06)
setup    tty1                         Thu Aug 5 17:43 - 18:07  (00:24)
reboot   system boot  2.6.18-164.el5PA Thu Aug 5 16:05          (02:02)
wtmp begins Thu Aug 5 16:05:36 2010
ise/admin#
```

show memory

To display the memory usage of all running processes, use the **show memory** command in EXEC mode.

This command has no keywords and arguments.

show memory

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines To view used memory, use the **show memory** command.

Example

```
ise/admin# show memory
total memory: 4394380 kB
free memory: 206060 kB
cached: 1111752 kB
swap-cached: 9072 kB

output of free command:
total used free shared buffers cached
Mem: 4394380 4188576 205804 0 147504 1111748
-/+ buffers/cache: 2929324 1465056
Swap: 8185108 192728 7992380
ise/admin#
```

show ntp

To show the status of the Network Translation Protocol (NTP) associations, use the **show ntp** command in EXEC mode.

This command has no keywords and arguments.

show ntp

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view the Network Translation Protocol (NTP) associations, use the **show ntp** command.

Example

```
ise-az2/iseadmin#show ntp
Configured NTP Servers:
  xx.x.xxx.x
  0.north-america.pool.ntp.org
  1.north-america.pool.ntp.org
Reference ID    : 62BFD502 (mail.example.com)
Stratum         : 2
Ref time (UTC)  : Thu May 19 15:49:40 2022
System time     : 0.000000384 seconds fast of NTP time
Last offset     : -0.000422698 seconds
RMS offset      : 0.000422698 seconds
Frequency       : 7.323 ppm slow
Residual freq   : +2.728 ppm
Skew            : 0.352 ppm
Root delay      : 0.090078361 seconds
Root dispersion : 0.002209879 seconds
Update interval : 2.1 seconds
Leap status     : Normal

210 Number of sources = 3
MS Name/IP address         Stratum Poll Reach LastRx Last sample
===============================================================================
^? ns-dmz.demo.local             0   7     0     -     +0ns[   +0ns] +/-    0ns
^+ lofn.fancube.com              2   6    17    45  +5381us[+4959us] +/-   67ms
^* mail.intrax.com               1   6    17    44  -3730us[-4153us] +/-   47ms

M indicates the mode of the source.
^ server, = peer, # local reference clock.

S indicates the state of the sources.
* Current time source, + Candidate, x False ticker, ? Connectivity lost, ~ Too much
variability

Warning: Output results may conflict during periods of changing synchronization.
```

show ports

To display information about all processes listening on active ports, use the **show ports** command in EXEC mode.

show ports > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
\	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. |—Output modifier variables for count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10. |—Output modifier variables for last.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

When you run the **show ports** command, the port must have an associated active session.

Example

```
ise/admin# show ports
Process : java (22648)
     tcp: 0.0.0.0:9024, 192.0.2.13:2020, 0.0.0.0:9060, 0.0.0.0:37252, 192.0.2.13:8
```

```
005, 0.0.0.0:9990, 0.0.0.0:8009, 0.0.0.0:8905, 0.0.0.0:5514, 0.0.0.0:1099, 0.0.0
.0:61616, 0.0.0.0:80, 192.0.2.13:8888, 0.0.0.0:9080, 0.0.0.0:62424, 0.0.0.0:8443,
 0.0.0.0:443, 0.0.0.0:8444
     udp: 172.21.79.91:1812, 172.21.79.91:1813, 172.21.79.91:1700, 0.0.0.0:48425,
172.21.79.91:8905, 172.21.79.91:3799, 0.0.0.0:54104, 172.21.79.91:57696, 172.2,
1.79.91:1645, 172.21.79.91:1646
Process : timestenrepd (21516)
     tcp: 192.0.2.13:56513, 0.0.0.0:51312
Process : timestensubd (21421)
     tcp: 192.0.2.13:50598
Process : rpc.statd (3042)
     tcp: 0.0.0.0:680
     udp: 0.0.0.0:674, 0.0.0.0:677
Process : ttcserver (21425)
     tcp: 0.0.0.0:53385, 192.0.2.13:49293
Process : timestensubd (21420)
     tcp: 192.0.2.13:51370
Process : redis-server (21535)
     tcp: 0.0.0.0:6379
Process : portmap (2999)
     tcp: 0.0.0.0:111
     udp: 0.0.0.0:111
Process : Decap_main (22728)
--More--
```

show process

To display information about active processes, use the **show process** command in EXEC mode.

show process > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
|	(Optional). Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Table 1: Show Process Field Descriptions

Field	Description
USER	Logged-in user.
PID	Process ID.
TIME	The time the command was last used.
TT	Terminal that controls the process.

Field	Description
COMMAND	Type of process or command used.

Example

```
ise/admin# show process
USER       PID     TIME TT       COMMAND
root         1 00:00:02 ?        init
root         2 00:00:00 ?        migration/0
root         3 00:00:00 ?        ksoftirqd/0
root         4 00:00:00 ?        watchdog/0
root         5 00:00:00 ?        events/0
root         6 00:00:00 ?        khelper
root         7 00:00:00 ?        kthread
root        10 00:00:01 ?        kblockd/0
root        11 00:00:00 ?        kacpid
root       170 00:00:00 ?        cqueue/0
root       173 00:00:00 ?        khubd
root       175 00:00:00 ?        kseriod
root       239 00:00:32 ?        kswapd0
root       240 00:00:00 ?        aio/0
root       458 00:00:00 ?        kpsmoused
root       488 00:00:00 ?        mpt_poll_0
root       489 00:00:00 ?        scsi_eh_0
root       492 00:00:00 ?        ata/0
root       493 00:00:00 ?        ata_aux
root       500 00:00:00 ?        kstriped
root       509 00:00:07 ?        kjournald
root       536 00:00:00 ?        kauditd
root       569 00:00:00 ?        udevd
root      1663 00:00:00 ?        kmpathd/0
root      1664 00:00:00 ?        kmpath_handlerd
root      1691 00:00:00 ?        kjournald
root      1693 00:00:00 ?        kjournald
root      1695 00:00:00 ?        kjournald
root      1697 00:00:00 ?        kjournald
root      2284 00:00:00 ?        auditd
root      2286 00:00:00 ?        audispd
root      2318 00:00:10 ?        debugd
rpc       2350 00:00:00 ?        portmap
root      2381 00:00:00 ?        rpciod/0
--More--
ise/admin#
```

show repository

To display the file contents of the repository, use the **show repository** command in EXEC mode.

show repository *repository-name*

Syntax Description		
	repository-name	Name of the repository whose contents you want to view. Supports up to 30 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

To view the contents of the repository, use the **show repository** command.

Example

```
ise/admin# show repository myrepository
back1.tar.gpg
back2.tar.gpg
ise/admin#
```

Note If you have enabled PKI authentication for an SFTP repository, you must generate the public key for the repository from the ISE CLI in addition to generating it from the ISE GUI. When the SFTP repository is configured from the ISE GUI, the public key on Cisco ISE is generated only for the root user and not for the admin user (user with which all commands can be run from the CLI). Follow these steps to verify and configure the public key from the ISE CLI:

1. Verify whether the crypto key is yet generated or not. If the output for this command is empty it means that the crypto key is not generated.

```
ise24/admin# show crypto key
```

2. Hence from the CLI EXEC mode generate the key using the command: **crypto key generate rsa passphrase <secretkey>**.
3. From this command we can now confirm that the crypto key is generated successfully:

```
ise24/admin# show crypto key
admin public key: ssh-rsa SHA256:eEziR/ARPyFo1WptgI+y5WNjGIrgfPmEpEswVY7Qjb0 admin@ise24
```

4. After this, the admin needs to export the public key for 'admin' user using the command:**crypto key export <sample-name> repository <another-repository-name>**.
5. Now open the file saved to the **<another-repository-name>** and add it to **/home/<username>/.ssh/authorized_keys** folder in the SFTP server.

show restore

To display the restore history and the status of restore, use the **show restore** command in EXEC mode.

show restore {**history** | **status**}

Syntax Description		
	history	Displays the restore history on the system.
	status	Displays the status of restore on the system.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History	Release	Modification
	2.0.0.306	This command was introduced.

Usage Guidelines

Example

```
ise/admin# show restore history
Wed Apr 10 03:32:24 PDT 2013: restore mybackup-CFG-130410-0228.tar.gpg from repository
myrepository: success
Wed Apr 10 03:45:19 PDT 2013: restore mybackup1-OPS-130410-0302.tar.gpg from repository
myrepository: success
ise/admin#
ise/admin# show restore status
%% Configuration restore status
%% ----------------------------
%  No data found. Try 'show restore history' or ISE operation audit report
%% Operation restore status
%% ------------------------
%  No data found. Try 'show restore history' or ISE operation audit report
ise/admin#
```

show running-config

To display the contents of the currently running configuration file or the configuration, use the **show running-config** command in EXEC mode.

This command has no keywords and arguments.

show running-config

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **show running-config** command displays all of the running configuration information.

Example

```
ise/admin# show running-config
Generating configuration...
!
hostname ise
!
ip domain-name cisco.com
!
interface GigabitEthernet 0
  ip address 172.23.90.113 255.255.255.0
  ipv6 address autoconfig
!
ip name-server 171.70.168.183
!
ip default-gateway 172.23.90.1
!
clock timezone UTC
!
ntp server time.nist.gov
!
username admin password hash $1$JbbHvKVG$xMZ/XL4tH15Knf.FfcZZr. role admin
!
service sshd
!
password-policy
  lower-case-required
  upper-case-required
  digit-required
  no-username
  disable-cisco-passwords
  min-password-length 6
!
logging localhost
logging loglevel 6
!
cdp timer 60
```

```
cdp holdtime 180
cdp run GigabitEthernet 0
!
icmp echo on
!
ise/admin#
```

show snmp-server engineid

To display the default or configured engine ID, use the **show snmp-server engineid** command in EXEC mode. This command displays the identification of the local SNMP engine and all remote engines that have been configured on the device.

show snmp-server engineid

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.1	The command was updated from **show snmp engineid** to **show snmp-server engineid**.

Example

```
ise/admin# show snmp-server engineid
Local SNMP EngineID: 0x1234567

ise/admin#
```

show snmp-server user

To display a list of defined snmp users, use the **show snmp-server user** command in EXEC mode.

show snmp-server user

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.1	The command was updated from **show snmp user** to **show snmp-server user**.

Example

```
ise/admin# show snmp-server user
User: snmp3
  EngineID: 80001f88044b4951504a375248374c55
  Auth Protocol: sha
  Priv Protocol: aes-128

ise/admin#
```

show startup-config

To display the contents of the startup configuration file or the configuration, use the **show startup-config** command in EXEC mode.

This command has no keywords and arguments.

show startup-config

Command Default

None

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **show startup-config** command displays all of the startup configuration information.

Example

```
ise/admin# show startup-config
!
hostname ise
!
ip domain-name cisco.com
!
interface GigabitEthernet 0
  ip address 172.23.90.113 255.255.255.0
  ipv6 address autoconfig
!
ip name-server 171.70.168.183
!
ip default-gateway 172.23.90.1
!
clock timezone UTC
!
ntp server time.nist.gov
!
username admin password hash $1$JbbHvKVG$xMZ/XL4tH15Knf.FfcZZr. role admin
!
service sshd
!
password-policy
  lower-case-required
  upper-case-required
  digit-required
  no-username
  disable-cisco-passwords
  min-password-length 6
!
logging localhost
logging loglevel 6
!
cdp timer 60
cdp holdtime 180
cdp run GigabitEthernet 0
!
icmp echo on
```

```
!
ise/admin#
```

show tech-support

To display technical support information, including e-mail, use the **show tech-support** command in EXEC mode.

show tech-support > *file-name*

show tech-support file *file-name*

Syntax Description

>	Redirects output to a file.
file	Saves any technical support data as a file in the local disk.
file-name	Filename to save technical support data. Supports up to 80 alphanumeric characters.

Command Default

Passwords and other security information do not appear in the output.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **show tech-support** command is useful for collecting a large amount of information about the Cisco ISE server for troubleshooting purposes. You can then provide output to technical support representatives when reporting a problem.

Example

```
ise/admin# show tech-support
*************************************
Displaying ISE version ...
*************************************
Cisco Identity Services Engine
-------------------------------------------
Version      : 1.3.0.862
Build Date   : Tue Oct 14 19:02:08 2014
Install Date : Wed Oct 15 09:08:53 2014


*************************************
Displaying Clock ...
*************************************
Tue Oct 21 11:24:08 IST 2014

*************************************
Displaying UDI ...
*************************************
ISE-VM-K9

*************************************
```

```
Displaying ISE application status ....
**********************************************
ISE PROCESS NAME                       STATE            PROCESS ID
--More--
(press Spacebar to continue)
ise/admin#
```

Example

```
ise/admin# show tech-support
**********************************************
Displaying ISE version ...
**********************************************
Cisco Identity Services Engine
------------------------------------------------
Version      : 1.4.0.205
Build Date   : Tue 03 Mar 2015 05:37:10 AM UTC
Install Date : Tue 03 Mar 2015 08:25:37 PM UTC


**********************************************
Displaying Clock ...
**********************************************
Mon Mar 16 03:51:35 UTC 2015

**********************************************
Displaying UDI ...
**********************************************
ISE-VM-K9

**********************************************
Displaying ISE application status ....
**********************************************
ISE PROCESS NAME                       STATE            PROCESS ID
--More--
(press Spacebar to continue)
ise/admin#
```

show terminal

To obtain information about the terminal configuration parameter settings, use the **show terminal** command in EXEC mode.

This command has no keywords and arguments.

show terminal

Command Default No default behavior or values.

Command Modes EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines This table describes the fields of the **show terminal** output.

Table 2: Show Terminal Field Descriptions

Field	Description
TTY: /dev/pts/0	Displays standard output to type of terminal.
Type: “vt100“	Type of current terminal used.
Length: 27 lines	Length of the terminal display.
Width: 80 columns	Width of the terminal display, in character columns.
Session Timeout: 30 minutes	Length of time, in minutes, for a session, after which the connection closes.

Example

```
ise/admin# show terminal
TTY: /dev/pts/0 Type: "vt100"
Length: 27 lines, Width: 80 columns
Session Timeout: 30 minutes
ise/admin#
```

show timezone

To display the time zone as set on the system, use the **show timezone** command in EXEC mode.

This command has no keywords and arguments.

show timezone

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Example

```
ise/admin# show timezone
UTC
ise/admin#
```

show timezones

To obtain a list of time zones from which you can select, use the **show timezones** command in EXEC mode.

This command has no keywords and arguments.

show timezones

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Refer to the clock timezone section to view examples of the time zones available for the Cisco ISE server.

Example

```
ise/admin# show timezones
Africa/Cairo
Africa/Banjul
Africa/Nouakchott
Africa/Gaborone
Africa/Bangui
Africa/Malabo
Africa/Lusaka
Africa/Conakry
Africa/Freetown
Africa/Bamako
--More--
(press Spacebar to continue)
ise/admin#
```

show udi

To display information about the Unique Device Identifier (UDI) of the Cisco ISE appliance, use the **show udi** command in EXEC mode.

This command has no keywords and arguments.

show udi

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Example 1

```
ise/admin# show udi
SPID: ISE-3415-K9
VPID: V01
Serial: LAB12345678
ise/admin#
```

Example 2

This output appears when you run the **show udi** command on VMware servers.

```
ise/admin# show udi
SPID: ISE-VM-K9
VPID: V01
Serial: 5C79C84ML9H
ise/admin#
```

show uptime

To display the length of time, the Cisco ISE server has been up since the last reboot, use the **show uptime** command in EXEC mode.

show uptime > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use this **show uptime** to check for how long the Cisco ISE server has been up since the last reboot.

Example

```
ise/admin# show uptime
16:49:35 up 6 days,  2:49,  1 user, load average: 1.51, 0.79, 0.81
```

show users

To display the list of users logged in to the Cisco ISE server, use the **show users** command in EXEC mode.

show users > *file-name*

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use this **show users** command to check the list of users logged into the Cisco ISE server.

Example

```
ise/admin# show users
USERNAME         ROLE   HOST                    TTY      LOGIN DATETIME
admin            Admin  10.77.202.52            pts/0    Tue Feb 26 20:36:41 2013
-------------------
DETACHED SESSIONS:
-------------------
USERNAME             ROLE                STARTDATE
```

```
% No disonnected user sessions present
ise/admin#
```

show version

To display information about the software version of the system and software installation information, use the **show version** command in EXEC mode.

show version > *file-name*

show version history

Syntax Description

>	Redirects output to a file.
file-name	Name of the file to redirect.
history	Shows software version history information.
|	Output modifier variables: • begin—Matched pattern. Supports up to 80 alphanumeric characters. • count—Count the number of lines in the output. Add number after the word count. • end—End with line that matches. Supports up to 80 alphanumeric characters. • exclude—Exclude lines that match. Supports up to 80 alphanumeric characters. • include—Include lines that match. Supports up to 80 alphanumeric characters. • last—Display last few lines of output. Add number after the word last. Supports up to 80 lines to display. Default 10.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

This command displays version information about the Cisco ADE-OS software running in the Cisco ISE server, and also displays the Cisco ISE version.

Example 1

```
ise/admin# show version

Cisco Application Deployment Engine OS Release: 3.0
```

```
ADE-OS Build Version: 3.0.3.030
ADE-OS System Architecture: x86_64

Copyright (c) 2005-2014 by Cisco Systems, Inc.
All rights reserved.
Hostname: docs-ise-23-lnx


Version information of installed applications
---------------------------------------------

Cisco Identity Services Engine
---------------------------------------------
Version      : 2.3.0.297
Build Date   : Mon Jul 24 18:51:29 2017
Install Date : Wed Jul 26 13:59:41 2017

ise/admin#
```

Example 2

```
ise/admin# show version history
---------------------------------------------
Install Date: Wed Jul 26 19:02:13 UTC 2017
Application: ise
Version: 2.3.0.297
Install type: Application Install
Bundle filename: ise.tar.gz
Repository: SystemDefaultPkgRepos
ise/admin#
```

Cisco ISE CLI Commands in Configuration Mode

This chapter describes commands that are used in configuration (config) mode in the Cisco ISE command-line interface (CLI). Each of the command in this chapter is followed by a brief description of its use, command syntax, usage guidelines, and one or more examples.

- Switch to configuration mode in EXEC mode, on page 171
- Configuring Cisco ISE in the configuration mode, on page 172
- Configuring Cisco ISE in the configuration submode, on page 174
- Default settings of CLI configuration commands, on page 175
- backup interface, on page 176
- cdp holdtime, on page 180
- cdp run, on page 181
- cdp timer, on page 182
- clear screen, on page 183
- clock timezone, on page 184
- cls, on page 187
- conn-limit, on page 188
- do, on page 189
- end, on page 192
- exit, on page 193
- hostname, on page 194
- icmp echo, on page 196
- identity-store, on page 197
- interface, on page 198
- ip address, on page 200
- ip default-gateway, on page 202
- ip domain-name, on page 203
- ip host, on page 205
- ip mtu, on page 207
- ip name-server, on page 208
- ip route, on page 210
- ipv6 address, on page 212
- ipv6 address autoconfig, on page 214
- ipv6 address dhcp, on page 216
- ipv6 enable, on page 217

- ipv6 route, on page 218
- kron occurrence, on page 220
- kron policy-list, on page 223
- logging, on page 225
- ntp, on page 226
- ntp authentication-key, on page 228
- ntp maxdistance, on page 230
- ntp server, on page 231
- rate-limit, on page 234
- password-policy, on page 236
- repository, on page 238
- service cache, on page 241
- service-ssh, on page 242
- service sshd, on page 243
- shutdown, on page 245
- snmp-server enable, on page 246
- snmp-server user, on page 247
- snmp-server host, on page 250
- snmp-server community, on page 253
- snmp-server contact, on page 254
- snmp-server location, on page 255
- snmp-server trap dskThresholdLimit, on page 256
- snmp engineid, on page 257
- synflood-limit, on page 258
- username, on page 259
- which, on page 261

Switch to configuration mode in EXEC mode

In EXEC mode, you can enter into configuration mode by running the **configure** or **configure terminal (conf t)** command.

You cannot enter configuration commands directly in EXEC mode from the Cisco ISE CLI. Some of the configuration commands require you to enter the configuration submode to complete the command configuration.

To exit configuration mode, enter the **exit**, **end**, or **Ctrl-z** command.

Configuration commands include **interface**, **Policy List**, and **repository**.

You can perform configuration tasks in configuration mode. You must save your configuration changes so that you preserve them during a system reload or power outage.

When you save the configuration, these commands remain across Cisco ISE server reboots, but only if you run either of these commands:

- **copy running-config startup-config**
- **write memory**

Configuring Cisco ISE in the configuration mode

You can enter configuration and configuration submodes commands to change the actual configuration of the Cisco ISE server in configuration mode.

Procedure

Step 1 Enter **configure terminal** to enter into the configuration mode.

```
ise/admin# configure terminal
Enter configuration commands, one per line. End with CNTL-Z.
ise/admin(config)# (configuration mode)
```

Step 2 Enter a question mark (?) to obtain a listing of commands in the configuration mode.

```
ise/admin(config)# ?
Configure commands:
cdp                CDP Configuration parameters
clock              Configure timezone
conn-limit         Configure a TCP connection limit from source IP
do                 EXEC command
end                Exit from configure mode
exit               Exit from configure mode
hostname           Configure hostname
icmp               Configure icmp echo requests
interface          Configure interface
ip                 Configure IP features
kron               Configure command scheduler
logging            Configure system logging
no                 Negate a command or set its defaults
ntp                Specify NTP configuration
password-policy    Password Policy Configuration
rate-limit         Configure a TCP/UDP/ICMP packet rate limit from source IP
repository         Configure Repository
service            Specify service to manage
snmp-server        Configure snmp server
synflood-limit     Configure a TCP SYN packet rate limit
username           User creation
```

Step 3 Enter into the configuration submode. The configuration mode has several configuration submodes. Each of these submodes places you deeper in the prompt hierarchy. From this level, you can enter commands directly into the Cisco ISE configuration.

```
ise/admin(config)# interface GigabitEthernet 0
ise/admin(config-GigabitEthernet)#
```

Step 4 Enter **exit** in sequence at the command prompt to exit both Configuration and EXEC modes. When you enter **exit**, Cisco ISE backs you out one level and returns you to the previous level. When you enter **exit** again, Cisco ISE backs you out to the EXEC level.

```
ise/admin(config)# exit
ise/admin# exit
```

Configuring Cisco ISE in the configuration submode

You can enter commands for specific configurations in the configuration submodes. You can use the **exit** or **end** command to exit this prompt and return to the configuration prompt.

Procedure

Step 1 Enter **configure terminal** to enter into the configuration mode.

```
ise/admin# configure terminal
Enter configuration commands, one per line. End with CNTL-Z.
ise/admin(config)# (configuration mode)
```

Step 2 Enter into the configuration submode.

```
ise/admin# configure terminal
ise/admin(config)# interface GigabitEthernet 0
ise/admin(config-GigabitEthernet)# ?
Configure ethernet interface:
  backup    Configure NIC bonding feature
  do        EXEC command
  end       Exit from configure mode
  exit      Exit from this submode
  ip        Configure IP features
  ipv6      Configure IPv6 features
  no        Negate a command or set its defaults
  shutdown  Shutdown the interface
ise/admin(config-GigabitEthernet)#
```

Step 3 Enter **exit** at the command prompt to exit both configuration submode and configuration mode.

```
ise/admin(config-GigabitEthernet)# exit
ise/admin(config)# exit
ise/admin#
```

Default settings of CLI configuration commands

CLI configuration commands can have a default form, which returns the command settings to the default values. Most commands disable by default, so in such cases using the default form has the same result as using the **no** form of the command.

However, some commands are enabled by default and have variables set to certain default values. In these cases, the default form of the command enables the command and sets the variables to their default values.

backup interface

To configure two Ethernet interfaces in to a single virtual interface for high availability (also called as the NIC bonding or NIC teaming feature), use the **backup interface** command in configuration submode. To remove the NIC bonding configuration, use the **no** form of this command. When two interfaces are bonded, the two NICs appear to be a single device with a single MAC address.

The NIC bonding feature in Cisco ISE does not support load balancing or link aggregation features. Cisco ISE supports only the high availability feature of NIC bonding.

The bonding of interfaces ensures that Cisco ISE services are not affected when there is:

- Physical interface failure
- Loss of switch port connectivity (shut or failure)
- Switch line card failure

When two interfaces are bonded, one of the interfaces becomes the primary interface and the other becomes the backup interface. When two interfaces are bonded, all traffic normally flows through the primary interface. If the primary interface fails for some reason, the backup interface takes over and handles all the traffic. The bond takes the IP address and MAC address of the primary interface.

When you configure the NIC bonding feature, Cisco ISE pairs fixed physical NICs to form bonded NICs. This table outlines which NICs can be bonded together to form a bonded interface.

Cisco ISE Physical NIC Name	Linux Physical NIC Name	Role in Bonded NIC	Bonded NIC Name
Gigabit Ethernet 0	Eth0	Primary	Bond 0
Gigabit Ethernet 1	Eth1	Backup	
Gigabit Ethernet 2	Eth2	Primary	Bond 1
Gigabit Ethernet 3	Eth3	Backup	
Gigabit Ethernet 4	Eth4	Primary	Bond 2
Gigabit Ethernet 5	Eth5	Backup	

The NIC bonding feature is supported on all supported platforms and node personas. The supported platforms include:

- SNS-3400 series appliances - Bond 0 and 1 (Cisco ISE 3400 series appliances support up to 4 NICs)
- SNS-3500 series appliances - Bond 0, 1, and 2
- VMware virtual machines - Bond 0, 1, and 2 (if six NICs are available to the virtual machine)
- Linux KVM nodes - Bond 0, 1, and 2 (if six NICs are available to the virtual machine)

Syntax Description		
	backup interface	Configures the NIC bonding feature.

GigabitEthernet	Configures the Gigabit Ethernet interface specified as the backup interface.
0 - 3	Number of the Gigabit Ethernet port to configure as the backup interface.

Command Default No default behavior or values.

Command Modes Interface configuration submode (config-GigabitEthernet)#

Command History

Release	Modification
2.1.0.474	This command was introduced.

Usage Guidelines

- As Cisco ISE supports up to six Ethernet interfaces, it can have only three bonds, bond 0, bond 1, and bond 2.
- You cannot change the interfaces that are part of a bond or change the role of the interface in a bond. Refer to the above table for information on which NICs can be bonded together and their role in the bond.
- The Eth0 interface acts as both the management interface as well as the runtime interface. The other interfaces act as runtime interfaces.
- Before you create a bond, the primary interface (primary NIC) must be assigned an IP address. The Eth0 interface must be assigned an IPv4 address before you create bond 0. Similarly, before you create bond 1 and 2, Eth2 and Eth4 interfaces must be assigned an IPv4 or IPv6 address, respectively.
- Before you create a bond, if the backup interface (Eth1, Eth3, and Eth5) has an IP address assigned, remove the IP address from the backup interface. The backup interface should not be assigned an IP address.
- You can choose to create only one bond (bond 0) and allow the rest of the interfaces to remain as is. In this case, bond 0 acts as the management interface and runtime interface, and the rest of the interfaces act as runtime interfaces.
- You can change the IP address of the primary interface in a bond. The new IP address is assigned to the bonded interface because it assumes the IP address of the primary interface.
- When you remove the bond between two interfaces, the IP address assigned to the bonded interface is assigned back to the primary interface.
- If you want to configure the NIC bonding feature on a Cisco ISE node that is part of a deployment, you must deregister the node from the deployment, configure NIC bonding, and then register the node back to the deployment.
- If a physical interface that acts as a primary interface in a bond (Eth0, Eth2, or Eth4 interface) has static route configured, the static routes are automatically updated to operate on the bonded interface instead of the physical interface.

Example 1 - Configure NIC Bonding

This procedure explains how you can configure bond 0 between Eth0 and Eth1 interfaces.

Note If a physical interface that acts as a backup interface (for example, Eth1, Eth3, Eth5 interfaces), is configured with an IP address, you must remove the IP address from the backup interface. The backup interface should not be assigned an IP address.

```
ise/admin# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ise/admin(config)# interface gigabitEthernet 0
ise/admin(config-GigabitEthernet)# backup interface gigabitEthernet 1
Changing backup interface configuration may cause ISE services to restart.
Are you sure you want to proceed? Y/N [N]: Y
Stopping ISE Monitoring & Troubleshooting Log Processor...
ISE PassiveID Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE EST Service...
ISE Sxp Engine Service is disabled
Stopping ISE Profiler Database...
Stopping ISE Indexing Engine...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Indexing Engine...
Starting ISE Certificate Authority Service...
Starting ISE EST Service...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE AD Connector...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
ise/admin(config-GigabitEthernet)#
```

Example 2 - Verify NIC Bonding Configuration

To verify if NIC bonding feature is configured, run the **show running-config** command from the Cisco ISE CLI. An output similar to this is displayed.

```
!
interface GigabitEthernet 0
  ipv6 address autoconfig
  ipv6 enable
  backup interface GigabitEthernet 1
  ip address 192.168.118.214 255.255.255.0
!
```

In the output above, "backup interface GigabitEthernet 1" indicates that NIC bonding is configured on Gigabit Ethernet 0, with Gigabit Ethernet 0 being the primary interface and Gigabit Ethernet 1 being the backup

interface. Also, the ADE-OS configuration does not display an IP address on the backup interface in the running config, even though the primary and backup interfaces effectively have the same IP address.

You can also run the **show interfaces** command to get the information on the bonded interfaces.

```
ise/admin# show interface
bond0: flags=5187<UP,BROADCAST,RUNNING,PRIMARY,MULTICAST>  mtu 1500
        inet 10.126.107.60  netmask 255.255.255.0  broadcast 10.126.107.255
        inet6 fe80::8a5a:92ff:fe88:4aea  prefixlen 64  scopeid 0x20<link>
        ether 88:5a:92:88:4a:ea  txqueuelen 0  (Ethernet)
        RX packets 1726027  bytes 307336369 (293.0 MiB)
        RX errors 0  dropped 844  overruns 0  frame 0
        TX packets 1295620  bytes 1073397536 (1023.6 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

GigabitEthernet 0
        flags=6211<UP,BROADCAST,RUNNING,SUBORDINATE,MULTICAST>  mtu 1500
        ether 88:5a:92:88:4a:ea  txqueuelen 1000  (Ethernet)
        RX packets 1726027  bytes 307336369 (293.0 MiB)
        RX errors 0  dropped 844  overruns 0  frame 0
        TX packets 1295620  bytes 1073397536 (1023.6 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device memory 0xfab00000-fabfffff

GigabitEthernet 1
        flags=6147<UP,BROADCAST,SUBORDINATE,MULTICAST>  mtu 1500
        ether 88:5a:92:88:4a:ea  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device memory 0xfaa00000-faafffff
```

cdp holdtime

To specify the amount of time for which the receiving device should hold a Cisco Discovery Protocol packet from the Cisco ISE server before discarding it, use the **cdp holdtime** command in configuration mode.

cdp holdtime *seconds*

To revert to the default setting, use the **no** form of this command.

no cdp holdtime

Syntax Description

holdtime	Specifies the Cisco Discovery Protocol hold time advertised.
seconds	Advertised hold time value, in seconds. The value ranges from 10 to 255 seconds.

Command Default

The default CDP holdtime, in seconds is 180.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Cisco Discovery Protocol packets transmit with a time to live, or hold time, value. The receiving device will discard the Cisco Discovery Protocol information in the Cisco Discovery Protocol packet after the hold time has elapsed.

The **cdp holdtime** command takes only one argument; otherwise, an error occurs.

Example

```
ise/admin(config)# cdp holdtime 60
ise/admin(config)#
```

cdp run

To enable the Cisco Discovery Protocol on all interfaces, use the **cdp run** command in configuration mode.

cdp run *GigabitEthernet*

To disable the Cisco Discovery Protocol, use the **no** form of this command.

no cdp run

Syntax Description

run	Enables the Cisco Discovery Protocol. Disables the Cisco Discovery Protocol when you use the **no** form of the **cdp run** command.
GigabitEthernet	(Optional). Specifies the GigabitEthernet interface on which to enable the Cisco Discovery Protocol.
0-3	Specifies the GigabitEthernet interface number on which to enable the Cisco Discovery Protocol.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The command has one optional argument, which is an interface name. Without an optional interface name, the command enables the Cisco Discovery Protocol on all interfaces.

Note The default for this command is on interfaces that are already up and running. When you are bringing up an interface, stop the Cisco Discovery Protocol first; then, start the Cisco Discovery Protocol again.

Example

```
ise/admin(config)# cdp run GigabitEthernet 0
ise/admin(config)#
```

cdp timer

To specify how often the Cisco ISE server sends Cisco Discovery Protocol updates, use the **cdp timer** command in configuration mode.

cdp timer *seconds*

To revert to the default setting, use the **no** form of this command.

no cdp timer

Syntax Description

timer	Refreshes at the time interval specified.
seconds	Specifies how often, in seconds, the Cisco ISE server sends Cisco Discovery Protocol updates. The value ranges from 5 to 254 seconds.

Command Default

The default refreshing time interval value, in seconds is 60.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Cisco Discovery Protocol packets transmit with a time to live, or hold time, value. The receiving device will discard the Cisco Discovery Protocol information in the Cisco Discovery Protocol packet after the hold time has elapsed.

The **cdp timer** command takes only one argument; otherwise, an error occurs.

Example

```
ise/admin(config)# cdp timer 60
ise/admin(config)#
```

clear screen

To clear the contents of terminal screen, use the **clear screen** command in configuration mode.

clear screen

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

clear screen is a hidden command. Although **clear screen** is available in Cisco ISE, the CLI interactive Help does not display it if you attempt to view it by entering a question mark at the command line.

Example

This example shows how to clear the contents of the terminal.

```
ise/admin(config)# clear screen
ise/admin#
```

clock timezone

To set the time zone, use the **clock timezone** command in configuration mode.

clock timezone *timezone*

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

no clock timezone

Syntax Description

timezone	Configures system timezone.
timezone	Name of the time zone visible when in standard time. Supports up to 64 alphanumeric characters.

If you have the primary Administration node (PAN) auto-failover configuration enabled, disable it before you set the time zone. You can enable it after the time zone is set.

Command Default

Coordinated Universal Time (UTC)

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.2	The no form of this command is no longer supported.

Usage Guidelines

The system internally keeps time in UTC. If you do not know your specific time zone, you can enter the region, country, and city (refer to Tables 4-1, 4-2, and 4-3 for common time zones and time zones for Australia and Asia to enter on your system).

Note Several more time zones are available to you. Enter **show timezones** and a list of all time zones available appears in the Cisco ISE server. Choose the most appropriate one for your time zone.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears.

```
PAN Auto Failover is enabled, this operation is not
allowed! Please disable PAN Auto-failover first.
```

Example

```
ise/admin(config)# clock timezone EST
ise/admin(config)# exit
ise/admin# show timezone
EST
ise/admin#
```

Changing the time zone on Cisco ISE nodes

Changing the time zone on the PSN or MnT nodes of a Cisco ISE appliance after installation, causes some known issues with the sorting order of the live logs and live sessions pages. The old logs and sessions are not displayed in the right sorting order based on timestamps. New sessions created after the time zone change are sorted and displayed in the right order. Cisco ISE reports may also have data inconsistencies in the timestamp fields and incorrect sorting order.

Common time zones

Table 3: Table 4-1 Common time zones (Continued)

Acronym or name	Time zone name
Europe	
GMT, GMT0, GMT-0, GMT+0, UTC, Greenwich, Universal, Zulu	Greenwich Mean Time, as UTC
GB	British
GB-Eire, Eire	Irish
WET	Western Europe Time, as UTC
CET	Central Europe Time, as UTC + 1 hour
EET	Eastern Europe Time, as UTC + 2 hours
United States and Canada	
EST, EST5EDT	Eastern Standard Time, as UTC - 5 hours
CST, CST6CDT	Central Standard Time, as UTC - 6 hours
MST, MST7MDT	Mountain Standard Time, as UTC - 7 hours
PST, PST8PDT	Pacific Standard Time, as UTC - 8 hours
HST	Hawaiian Standard Time, as UTC - 10 hours

Australia time zones

Enter the country and city together with a forward slash (/) between them for the Australia time zone; for example, Australia/Currie.

Table 4: Table 4-2 Australia time zones (Continued)

Australia			
Australian Capital Territory (ACT)	Adelaide	Brisbane	Broken_Hill

Australia			
Canberra	Currie	Darwin	Hobart
Lord_Howe	Lindeman	Lord Howe Island (LHI)	Melbourne
North	New South Wales (NSW)	Perth	Queensland
South	Sydney	Tasmania	Victoria
West	Yancowinna		

Asia time zones

The Asia time zone includes cities from East Asia, Southern Southeast Asia, West Asia, and Central Asia. Enter the region and city or country together separated by a forward slash (/); for example, Asia/Aden.

Table 5: Table 4-3 Asia time zones (continued)

Asia			
Aden	Almaty	Amman	Anadyr
Aqtau	Aqtobe	Ashgabat	Ashkhabad
Baghdad	Bahrain	Baku	Bangkok
Beirut	Bishkek	Brunei	Calcutta
Choibalsan	Chongqing	Columbo	Damascus
Dhakar	Dili	Dubai	Dushanbe
Gaza	Harbin	Hong_Kong	Hovd
Irkutsk	Istanbul	Jakarta	Jayapura
Jerusalem	Kabul	Kamchatka	Karachi
Kashgar	Katmandu	Kuala_Lumpur	Kuching
Kuwait	Krasnoyarsk	-	-

cls

To clear the contents of terminal screen, use the **cls** command in configuration mode.

cls

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

cls is a hidden command. Although **cls** is available in Cisco ISE, the CLI interactive Help does not display it if you attempt to view it by entering a question mark at the command line.

Example

This example shows how to clear the contents of the terminal.

```
ise/admin(config)# cls
ise/admin#
```

conn-limit

To configure the limit of incoming TCP connections from a source IP address, use the **conn-limit** command in configuration mode. To remove this function, use the **no** form of this command.

Syntax Description

<1-2147483647>	Number of TCP connections.
ip	(Optional). Source IP address to apply the TCP connection limit.
mask	(Optional). Source IP mask to apply the TCP connection limit.
port	(Optional). Destination port number to apply the TCP connection limit.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.2	This command is updated to include assigning a name for the conn-limit that you configure.

Usage Guidelines

Use this **conn-limit** command for more than 99 TCP connections. For less than 100 connections, the system displays this warning:

```
% Warning: Setting a small conn-limit may adversely affect system performance
```

Example

```
ise/admin(config)# conn-limit 25000 ip 10.0.0.1 port 22
ise/admin(config)# end
ise/admin
```

do

To execute an EXEC-system level command from configuration mode or any configuration submode, use the **do** command in any configuration mode.

do *EXEC commands*

Syntax Description

EXEC commands	Specifies to execute an EXEC-system level command (refer to Table 4-4).

Table 6: Table 4-4 Command Options for Do Command (Continued)

Command	Description
application configure	Configures a specific application.
application install	Installs a specific application.
application remove	Removes a specific application.
application reset-config	Resets application configuration to factory defaults.
application reset-passwd	Resets application password for a specified user.
application start	Starts or enables a specific application
application stop	Stops or disables a specific application.
application upgrade	Upgrades a specific application.
backup	Performs a backup (Cisco ISE and Cisco ADE OS) and places the backup in a repository.
backup-logs	Performs a backup of all logs in the Cisco ISE server to a remote location.
clock	Sets the system clock in the Cisco ISE 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 Cisco ISE server.
dir	Lists files in the Cisco ISE server.
forceout	Forces the logout of all sessions of a specific Cisco ISE node user.
halt	Disables or shuts down the Cisco ISE server.

Command	Description
mkdir	Creates a new directory.
nslookup	Queries the IPv4 or IPv6 address or hostname of a remote system.
password	Updates the CLI account password.
patch	Installs a Patch Bundle or uninstalls an Application patch.
ping	Determines the IPv4 address or hostname of a remote system.
ping6	Determines the IPv6 address of a remote system.
reload	Reboots the Cisco ISE server.
restore	Performs a restore and retrieves the backup out of a repository.
rmdir	Removes an existing directory.
show	Provides information about the Cisco ISE server.
ssh	Starts an encrypted session with a remote system.
tech	Provides Technical Assistance Center (TAC) commands.
terminal length	Sets terminal line parameters.
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, displays the running configuration on the console.

Command Default No default behavior or values.

Command Modes Configuration (config)# or any configuration submode (config-GigabitEthernet)# and (config-Repository)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use this **do** command to execute EXEC commands (such as **show**, **clear**, and **debug** commands) while configuring the Cisco ISE server. After the EXEC command is executed, the system will return to configuration mode you were using.

Example

```
ise/admin(config)# do show run
Generating configuration...
!
hostname ise
!
ip domain-name cisco.com
!
interface GigabitEthernet 0
  ip address 172.23.90.113 255.255.255.0
  ipv6 address autoconfig
!
ip name-server 10.0.0.1
ip default-gateway 172.23.90.1
!
clock timezone EST
!
ntp server time.nist.gov
!
username admin password hash $1$JbbHvKVG$xMZ/XL4tH15Knf.FfcZZr. role admin
!
service sshd
!
backup-staging-url nfs://loc-filer02a:/vol/local1/private1/jdoe
!
password-policy
  lower-case-required
  upper-case-required
  digit-required
  no-username
  disable-cisco-passwords
  min-password-length 6
!
logging localhost
logging loglevel 6
!
--More--
ise/admin(config)#
```

end

To end the current configuration session and return to EXEC mode, use the **end** command in configuration mode.

This command has no keywords and arguments.

end

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

This command brings you back to EXEC mode regardless of what configuration mode or submode you are in.

Use this command when you finish configuring the system and you want to return to EXEC mode to perform verification steps.

Example

```
ise/admin(config)# end
ise/admin#
```

exit

To exit any configuration mode to the next-highest mode in the CLI mode hierarchy, use the **exit** command in configuration mode.

exit

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **exit** command is used in the Cisco ISE server to exit the current command mode to the next highest command mode in the CLI mode hierarchy.

For example, use the **exit** command in configuration mode to return to EXEC mode. Use the **exit** command in the configuration submodes to return to configuration mode. At the highest level, EXEC mode, the **exit** command exits EXEC mode and disconnects from the Cisco ISE server.

Example

```
ise/admin(config)# exit
ise/admin#
```

hostname

To set the hostname of the system, use the **hostname** command in configuration mode.

hostname *hostname*

Syntax Description

hostname	Name of the host. Supports up to 19 alphanumeric characters and a hyphen (-). The hostname must begin with a character that is not a space.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Tip If 'Ctrl-C' is issued during the CLI configuration change of 'hostname' command, the system might end up in a state where some application components might have the old hostname while some components might use the new hostname. This will bring the Cisco ISE node to a non-working state.

The workaround for this issue is to run the 'hostname' configuration command again to set the hostname to the desired value.

You can use the **hostname** command to change the current hostname. A single instance type of command, **hostname** only occurs once in the configuration of the system. The hostname must contain one argument; otherwise, an error occurs.

When you update the hostname of the Cisco ISE server with this command, this warning message is displayed:

```
% Warning:  Updating the hostname will cause any certificate using the old
%           hostname to become invalid. Therefore, a new self-signed
%           certificate using the new hostname will be generated now for
%           use with HTTPs/EAP.  If CA-signed certs were used on this node,
%           please import them with the correct hostname. If Internal-CA
%           signed certs are being used, please regenerate ISE Root CA certificate.
%           In addition, if this ISE node will be joining a new Active Directory
%           domain, please leave your current Active Directory domain before
%           proceeding. If this ISE node is already joined to
%           an Active Directory domain, then it is strongly advised
%           to rejoin all currently joined join-points in order to
%           avoid possible mismatch between current and previous
%           hostname and joined machine account name.
```

Example

```
ise/admin(config)# hostname new-hostname
```

```
% Changing the hostname will cause ISE services to restart
Continue with hostname change?  Y/N [N]: y

Stopping ISE Monitoring & Troubleshooting Log Processor...
ISE Identity Mapping Service is disabled
ISE pxGrid processes are disabled
Stopping ISE Application Server...
Stopping ISE Certificate Authority Service...
Stopping ISE Profiler Database...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE AD Connector...
Stopping ISE Database processes...
ISE Database processes already running, PID: 9651
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler Database...
Starting ISE Application Server...
Starting ISE Certificate Authority Service...
Starting ISE Monitoring & Troubleshooting Log Processor...
Starting ISE AD Connector...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
ise-1/admin#
```

icmp echo

To configure the Internet Control Message Protocol (ICMP) echo responses, use the **icmp echo** command in configuration mode.

icmp echo {*off* | *on*}

Syntax Description

echo	Configures ICMP echo response.
off	Disables ICMP echo response
on	Enables ICMP echo response.

Command Default

The system behaves as if the ICMP echo response is on (enabled).

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use this **icmp echo** to turn on or turn off ICMP echo response.

Example

```
ise/admin(config)# icmp echo off
ise/admin(config)#
```

identity-store

To join a CLI Administrator to an Active Directory domain, use the **identity-store** command in config mode. If the Cisco ISE node has joined multiple domains, you can only join one domain with this command. Each CLI Administrator joins individually. Please allow five minutes for Cisco ISE to complete the operation.

If the domain you join with this command is the same as the one that was joined to the ISE node, then you must rejoin the domain in the Administrators console. The Admin CLI user must be a Super Admin.

Command History

Release	Modification
2.6.0.156	This command was introduced.

Example

```
identity-store active-directory domain-name <aDomainFQDN> user <adUserNameWithJoinPrivs>
```

Active Directory CLI does not support authentication using child domain users. Child domain is considered as a separate domain which needs to be explicitly joined for its corresponding users to be used for authentication.

interface

To configure an interface type and enter the interface configuration mode, use the **interface** command in configuration mode. This command does not have a **no** form.

Restriction VMware virtual machine may have a number of interfaces available that depends on how many network interfaces (NIC) are added to the virtual machine.

interface GigabitEthernet {*0* | *1* | *2* | *3*}

Syntax Description

GigabitEthernet	Configures the Gigabit Ethernet interface.
0 - 3	Number of the Gigabit Ethernet port to configure.

After you enter the Gigabit Ethernet port number in the **interface** command, you enter the **config-GigabitEthernet** configuration submode (refer to the Syntax Description).

Syntax Description

backup	Configures the NIC bonding feature to provide high availability for the physical interfaces.
do	EXEC command. Allows you to perform any EXEC commands in this mode.
end	Exits the config-GigabitEthernet submode and returns you to EXEC mode.
exit	Exits the config-GigabitEthernet configuration submode.
ip	Sets the IP address and netmask for the Gigabit Ethernet interface.
ipv6	Configures IPv6 autoconfiguration address and IPv6 address from DHCPv6 server.
no	Negates the command in this mode. Two keywords are available: • ip—Sets the IP address and netmask for the interface. • ipv6—Sets the IPv6 address for the interface. • shutdown—Shuts down the interface.
shutdown	Shuts down the interface.

Command Default No default behavior or values.

Command Modes Interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines You can use the **interface** command to configure the interfaces to support various requirements.

Example

```
ise/admin(config)# interface GigabitEthernet 0
ise/admin(config-GigabitEthernet)#
```

ip address

To set the IP address and netmask for the GigabitEthernet interface, use the **ip address** command in interface configuration mode.

ip address *ip-address network mask*

To remove an IP address or disable IP processing, use the **no** form of this command.

no ip address

Tip You can configure the same IP address on multiple interfaces. You might want to do this to limit the configuration steps that are needed to switch from using one interface to another.

Important The **no ip address** command is not applicable to the GigabitEthernet 0 interface. However, you can modify the IP address using the **ip address** command.

We do not recommend configuring two interfaces with the same subnet on Cisco ISE because of the difficulty in ascertaining the interface that will be used for data transmission.

Syntax Description

ip-address	IPv4 address.
network mask	Mask of the associated IP subnet.

If you have the primary Administration node (PAN) auto-failover configuration enabled, disable it before you set the IP address. You can enable the PAN auto-failover configuration after the IP address is configured.

Command Default

Enabled.

Command Modes

Interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Note If '"Ctrl-C" is issued during the CLI configuration change of **ip address** command, and an IP address change is in progress, Cisco ISE may enter an inconsistent state where some application components retain the old IP address while others use the new IP address. This condition can cause the Cisco ISE node to become non-operational.

This will bring the Cisco ISE node into a non-working state. To resolve this issue, reissue the **ip address** configuration command with the desired IP address and netmask to ensure all components are synchronized.

This requires exactly one address and one netmask; otherwise, an error occurs.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is not
allowed! Please disable PAN Auto-failover first.
```

Example

```
ise/admin(config)# interface GigabitEthernet 1
ise/admin(config-GigabitEthernet)# ip address 209.165.200.227 255.255.255.224
Changing the hostname or IP may result in undesired side effects,
such as installed application(s) being restarted.
........
To verify that ISE processes are running, use the
'show application status ise' command.
ise/admin(config-GigabitEthernet)#
```

ip default-gateway

To define or set a default gateway with an IP address, use the **ip default-gateway** command in configuration mode.

ip default-gateway *ip-address*

Deleting the default gateway is not recommended since it is mandatory for packet traffic to go out of the system. You can enable the default gateway function on another interface instead. If you want to have a quad zero static route, it is recommended that you add that on an interface that is not configured as the default gateway.

Syntax Description

default-gateway	Defines a default gateway with an IP address.
ip-address	IP address of the default gateway.

Command Default

Disabled.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

If you enter more than one argument or no arguments at all, an error occurs.

Example

```
ise/admin(config)# ip default-gateway 209.165.202.129
Adding/Changing gateway may cause ise services to restart.
Are you sure you want to proceed? Y/N [N]:
```

Remember When you add or change the gateway, you must restart the services for the changes to take effect.

ip domain-name

To define a default domain name that the Cisco ISE server uses to complete hostnames, use the **ip domain-name** command in configuration mode.

ip domain-name *domain-name*

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

no ip domain-name

Syntax Description

domain-name	Defines a default domain name.
domain-name	Default domain name used to complete the hostnames. Contains at least 2 to 64 alphanumeric characters.

Command Default

Enabled.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Note If '"Ctrl-C" is issued during the CLI configuration change of **ip address** command, and an IP address change is in progress, Cisco ISE may enter an inconsistent state where some application components retain the old IP address while others use the new IP address. This condition can cause the Cisco ISE node to become non-operational.

This will bring the Cisco ISE node into a non-working state. To resolve this issue, reissue the **ip address** configuration command with the desired IP address and netmask to ensure all components are synchronized.

If you enter more or fewer arguments, an error occurs.

If you update the domain name for the Cisco ISE server with this command, it displays this warning message:

```
% Warning:  Updating the domain name will cause any certificate using the old
%           domain name to become invalid. Therefore, a new self-signed
%           certificate using the new domain name will be generated now for
%           use with HTTPs/EAP.  If CA-signed certs were used on this node,
%           please import them with the correct domain name. If Internal-CA
%           signed certs are being used, please regenerate ISE Root CA certificate.
%           In addition, if this ISE node will be joining a new Active Directory
%           domain, please leave your current Active Directory domain before
%           proceeding.
```

Example

```
ise/admin(config)# ip domain-name cisco.com
ise/admin(config)#
```

ip host

To associate a host alias and fully qualified domain name (FQDN) string to an ethernet interface such as eth1, eth2, and eth3 other than eth0, use the **ip host** command in global configuration mode.

When Cisco ISE processes an authorization profile redirect URL, it replaces the IP address with the FQDN of the Cisco ISE node.

ip host [*ipv4-address* | *ipv6-address*] [*host-alias* | *FQDN-string*]

To remove the association of host alias and FQDN, use the **no** form of this command.

no ip host [*ipv4-address* | *ipv6-address*] [*host-alias* | *FQDN-string*]

Syntax Description

ipv4-address	IPv4 address of the network interface.
ipv6-address	IPv6 address of the network interface.
host-alias	Host alias is the name that you assign to the network interface.
FQDN-string	Fully qualified domain name (FQDN) of the network interface.

If you have the Primary Administration Node (PAN) auto-failover configuration enabled, disable it before you change the host alias and FQDN of an ethernet interface. You can enable the PAN auto-failover configuration after the host alias and FQDN configuration is complete.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is
not allowed! Please disable PAN Auto-failover first.
```

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Supported IPv6 address formats include:

- Full notation: Eight groups of four hexadecimal digits separated by colons. For example, 2001:0db8:85a3:0000:0000:8a2e:0370:7334
- Shortened notation: Exclude leading zeros in a group; replace groups of zeros with two consecutive colons. For example: 2001:db8:85a3::8a2e:370:7334
- Dotted-quad notation (IPv4-mapped and IPv4 compatible-IPv6 addresses): For example, ::ffff:192.0.2.128

Use the **ip host** command to add host alias and fully qualified domain name (FQDN) string for an IP address mapping. It is used to find out the matching FQDN for ethernet interfaces such as eth1, eth2, and eth3. Use the **show running-config** command to view the host alias definitions.

You can provide either the host alias or the FQDN string, or both. If you provide both the values, the host alias must match the first component of the FQDN string. If you provide only the FQDN string, Cisco ISE replaces the IP address in the URL with the FQDN. If you provide only the host alias, Cisco ISE combines the host alias with the configured IP domain name to form a complete FQDN, and replaces the IP address of the network interface in the URL with the FQDN.

We recommend that you include the host alias in the **ip host** command for Cisco ISE 3.1 and later versions.

Example 1

```
ise/admin(config)# ip host 172.21.79.96 ise1 ise1.cisco.com
Host alias was modified. You must restart ISE for change to take effect.
Do you want to restart ISE now? (yes/no) yes
Stopping ISE Monitoring & Troubleshooting Log Processor...
Stopping ISE Application Server...
Stopping ISE Profiler DB...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE Database processes...
Starting ISE Database processes...
Stopping ISE Database processes...
Starting ISE Database processes...
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler DB...
Starting ISE Application Server...
Starting ISE Monitoring & Troubleshooting Log Processor...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
ise/admin(config)#
```

Example 2

```
ise/admin(config)# ipv6 host 2001:db8:cc00:1::1 ise1 ise1.cisco.com
Host alias was modified. You must restart ISE for change to take effect.
Do you want to restart ISE now? (yes/no) yes
Stopping ISE Monitoring & Troubleshooting Log Processor...

Stopping ISE Application Server...
Stopping ISE Profiler DB...
Stopping ISE Monitoring & Troubleshooting Session Database...
Stopping ISE Database processes...
Starting ISE Database processes...
Stopping ISE Database processes...
Starting ISE Database processes...
Starting ISE Monitoring & Troubleshooting Session Database...
Starting ISE Profiler DB...
Starting ISE Application Server...
Starting ISE Monitoring & Troubleshooting Log Processor...
Note: ISE Processes are initializing. Use 'show application status ise'
      CLI to verify all processes are in running state.
ise/admin(config)#
```

ip mtu

To set the maximum transmission unit (MTU) size of IP packets sent and received on an interface, use the **ip mtu** command in the interface configuration mode. To restore the default MTU size, use the **no** form of this command.

ip mtu *bytes*

no ip mtu *bytes*

Syntax Description

mtu	Configures the MTU on a Cisco ISE interface.

Command Default

The MTU is set as 1500.

Command Modes

Interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.4.0.357	This command was introduced.

Usage Guidelines

If an IP packet exceeds the MTU set for the interface, the Cisco ISE will fragment it. All devices on a physical medium must have the same protocol MTU in order to operate.

The maximum MTU value is limited by several factors, such as the hypervisor, firmware, NIC, and operating system. The recommended range is simply a guideline based on typical MTU values. Before configuring a jumbo frame MTU value, make sure that all components in your environment support it.

Example

This example shows how to configure the MTU on an interface:

```
ise/admin(config)# int GigabitEthernet 1
ise/admin(config-GigabitEthernet)# ip mtu ?
<1280-9999>  Recommended range VM:1280-9216;appliance:1280-9999
```

This example shows the output that is displayed after configuring the MTU.

```
ise/admin# show run | in mtu
ip mtu 1350
```

ip name-server

To set the Domain Name Server (DNS) for use during a DNS query, use the **ip name-server** command in configuration mode. You can configure one to three DNS servers.

ip name-server *ip-address* {*ip-address**}

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

no ip name-server *ip-address* {*ip-address**}

Note Using the **no** form of this command removes all the name servers from the configuration. The **no** form of this command and one of the IP names removes only that name server.

Syntax Description

name-server	Configures the IP addresses of the name server(s).
ip-address	Address of a name server.
*ip-address**	(Optional). IP addresses of additional name servers. **Note** You can configure any combination of IPv4 and/or IPv6 addresses. Ensure that the ISE eth0 interface is statically configured with an IPv6 address if you want to add a name-server with an IPv6 address.

If you have the primary Administration node (PAN) auto-failover configuration enabled in your deployment, remove it before you run the ip name-server command and enable it after you configure the DNS server(s).

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The first name server that is added with the **ip name-server** command occupies the first position and the system uses that server first to resolve the IP addresses.

You can add name servers to the system using IPv4 or IPv6 addresses. You can configure one to three IPv4 or IPv6 addresses through a single command. If you have already configured the system with four name servers, you must remove at least one server to add additional name servers.

To place a name server in the first position so that the subsystem uses it first, you must remove all name servers with the **no** form of this command before you proceed.

Restriction If you modified this setting for AD connectivity, you must restart Cisco ISE for the changes to take effect. Also, ensure that all DNS servers configured in Cisco ISE are able to resolve all relevant AD DNS records. If the configured AD join points are not correctly resolved after the DNS settings are changed, you must manually perform the Leave operation and re-join the AD join point.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is not
allowed! Please disable PAN Auto-failover first.
```

Example 1

```
ise/admin(config)# ip name-server ?
<A.B.C.D>|<valid IPv6 format>  Primary DNS server IP address
<A.B.C.D>|<valid IPv6 format>  DNS server 2 IP address
<A.B.C.D>|<valid IPv6 format>  DNS server 3 IP address

ise/admin(config)# ip name-server
```

Example 2

This output is displayed after you configure the IP name server.

```
ise/admin# show run | in name-server
ip name-server 10.0.0.1 10.0.1.1
3201:db8:0:20:f41d:eee:7e66:4eba
ise/admin#
```

Example 3

```
ise/admin(config)# ip name-server ?
ip name-server 10.126.107.120 10.126.107.107 10.106.230.244
DNS Server was modified. If you modified this setting for AD connectivity, you must restart
 ISE for the change to take effect.
Do you want to restart ISE now? (yes/no)
```

ip route

To configure the static routes, use the **ip route** command in configuration mode. To remove static routes, use the **no** form of this command.

ip route *prefix mask* **gateway** *ip-address*

no ip route *prefix mask*

Syntax Description

prefix	IP route prefix for the destination.
mask	Prefix mask for the destination.
ip-address	IP address of the next hop that can be used to reach that network.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Static routes are manually configured, which makes them inflexible (they cannot dynamically adapt to network topology changes), but extremely stable. Static routes optimize bandwidth utilization, because no routing updates need to be sent to maintain them. They also make it easy to enforce routing policy.

While the **ip route** command can be used to define static routes on individual Cisco ISE node, this command is enhanced to define a default route for each interface and reduce the effects of asymmetrical IP forwarding, which is inherent in multi-interface IP nodes.

When a single default route is configured on a multi-interface node, all IP traffic received from any of the node's IP interfaces is routed to the next hop of the default gateway that produces asymmetrical IP forwarding. Configuring multiple default routes on the Cisco ISE node eliminates the effects of asymmetric forwarding.

Theis example describes how to configure multiple default routes:

Consider this interface configuration on Cisco ISE node eth0, eth1, eth2, and eth3 interfaces respectively:

```
ISE InterfaceIPNetworkGateway
192.168.114.10 192.168.114.0 192.168.114.1
192.168.115.10 192.168.115.0 192.168.115.1
192.168.116.10 192.168.116.0 192.168.116.1
192.168.117.10 192.168.117.0 192.168.117.1
```

The **ip route** command is used here to define default routes for each interface. This **ip default-gateway** is the route of last resort for all interfaces.

```
ise/admin(config)# ip route 0.0.0.0 0.0.0.0 192.168.114.1
```

```
ise/admin(config)# ip route 0.0.0.0 0.0.0.0 192.168.115.1
ise/admin(config)# ip route 0.0.0.0 0.0.0.0 192.168.116.1
ise/admin(config)# ip route 0.0.0.0 0.0.0.0 192.168.117.1
ise/admin(config)# ip default-gateway 192.168.118.1
```

The **show ip route** command displays the output of the static routes created using the **ip route** command (default routes and non-default routes) and system created routes including the one configured using **ip default gateway** command. It displays the outgoing interface for each of the routes.

Attention When you change the IP address of an interface and if any static route becomes unreachable due to an unreachable gateway, the static route gets deleted from the running configuration. The console displays the route that has become unreachable.

Example 2

```
ise/admin(config)# ip route 192.168.0.0 255.255.0.0 gateway 172.23.90.2
ise/admin(config)#
```

ipv6 address

To configure a static IPv6 address based on an IPv6 general prefix and enable IPv6 processing for an interface, use the **ipv6 address** command in interface configuration mode.

ipv6 address *ipv6-address/prefix-length*

To remove an IPv6 address or disable IPv6 processing, use the **no** form of this command.

no ipv6 address *ipv6-address/prefix-length*

Syntax Description

ipv6-address	IPv6 address.
prefix-length	The length of the IPv6 prefix. A decimal value between 0 and 128 that indicates how many of the high-order contiguous bits of the address comprise the prefix (the network portion of the address). A slash must precede the decimal value.

If you have the Primary Administration Node (PAN) auto-failover configuration enabled, disable it before you set the IPv6 address. You can enable the PAN auto-failover configuration after the IPv6 address is configured.

If you have the PAN auto-failover configuration enabled in your deployment, this message appears:

```
PAN Auto Failover is enabled, this operation is not
allowed! Please disable PAN Auto-failover first.
```

Command Default

No default behavior or values.

Command Modes

Interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Supported IPv6 address formats include:

- Full notation: Eight groups of four hexadecimal digits separated by colons. For example, 2001:0db8:85a3:0000:0000:8a2e:0370:7334
- Shortened notation: Exclude leading zeros in a group; replace groups of zeros with two consecutive colons. For example: 2001:db8:85a3::8a2e:370:7334
- Dotted-quad notation (IPv4-mapped and IPv4-compatible IPv6 addresses): For example, ::ffff:192.0.2.128

Using the fe80 prefix assigns a link-local address. Assigning a global address to the interface automatically creates a link-local address.

Note If '"Ctrl-C" is issued during the CLI configuration change of **ip address** command, and an IP address change is in progress, Cisco ISE may enter an inconsistent state where some application components retain the old IP address while others use the new IP address. This condition can cause the Cisco ISE node to become non-operational.

This will bring the Cisco ISE node into a non-working state. To resolve this issue, reissue the **ip address** configuration command with the desired IP address and netmask to ensure all components are synchronized.

Example 1

```
ise/admin(config)# interface GigabitEthernet 1
ise/admin(config-GigabitEthernet)# ipv6 address 2001:DB8:0:1::/64
Changing the IPv6 address may result in undesired side effects on any installed
application(s).
Are you sure you want to proceed? Y/N[N]: y
........
Note: ISE Processes are initializing. Use 'show application status ise' CLI to verify all
processes are in running state.
ise/admin(config-GigabitEthernet)#
```

Example 2

```
ise/admin(config)# interface GigabitEthernet 1
ise/admin(config-GigabitEthernet)# ipv6 address fe80::250:56ff:fe87:4763/64
ise/admin(config-GigabitEthernet)#
```

ipv6 address autoconfig

To enable automatic configuration of IPv6 addresses using stateless autoconfiguration on an interface and enable IPv6 processing on the interface, use the **ipv6 address autoconfig** command in interface configuration mode.

IPv6 address autoconfiguration is enabled by default in Linux. Cisco ADE 2.0 shows the IPv6 address autoconfiguration in the running configuration for any interface that is enabled.

ipv6 address autoconfig

Use the **no** form of this command to disable autoconfiguration of IPv6 addresses from an interface.

Command Default

No default behavior or values.

Command Modes

Interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

IPv6 stateless autoconfiguration has the security downfall of having predictable IP addresses. This downfall is resolved with privacy extensions. You can verify that the privacy extensions feature is enabled by using the **show interface** command.

Example

```
ise/admin(config-GigabitEthernet)# ipv6 address autoconfig
ise/admin(config)#
```

Configuring IPv6 auto configuration

To enable IPv6 stateless autoconfiguration, use the **interface GigabitEthernet 0** command in interface configuration mode:

```
ise/admin# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ise/admin(config)# interface GigabitEthernet 0
ise/admin(config)# (config-GigabitEthernet)# ipv6 address autoconfig
ise/admin(config)# (config-GigabitEthernet)# end
ise/admin#
```

When IPv6 autoconfiguration is enabled, the running configuration displays these interface settings:

```
!
interface GigabitEthernet 0
  ip address 172.23.90.116 255.255.255.0
  ipv6 address autoconfig
!
```

You can use the **show interface GigabitEthernet 0** command to display the interface settings. In the given example, the interface has three IPv6 addresses. The first IP address (starting with 3ffe) is obtained using the stateless autoconfiguration.

For the stateless autoconfiguration to work, you must have IPv6 route advertisement enabled on that subnet. The next address (starting with fe80) is a link-local address that does not have any scope outside the host.

There will always be a link local address regardless of the IPv6 autoconfiguration or DHCPv6 configuration. The last address (starting with 2001) is obtained from a IPv6 DHCP server.

```
ise/admin# show interface GigabitEthernet 0
eth0      Link encap:Ethernet  HWaddr 00:0C:29:AF:DA:05
          inet addr:172.23.90.116  Bcast:172.23.90.255  Mask:255.255.255.0
          inet6 addr: 3ffe:302:11:2:20c:29ff:feaf:da05/64 Scope:Global
          inet6 addr: fe80::20c:29ff:feaf:da05/64 Scope:Link
          inet6 addr: 2001:558:ff10:870:8000:29ff:fe36:200/64 Scope:Global
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:77848 errors:0 dropped:0 overruns:0 frame:0
          TX packets:23131 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:10699801 (10.2 MiB)  TX bytes:3448374 (3.2 MiB)
          Interrupt:59 Base address:0x2000
ise/admin#
```

Verifying the privacy extensions feature

To verify that the privacy extensions feature is enabled, you can use the **show interface GigabitEthernet 0** command. Two IPv6 autoconfiguration addresses are displayed: one address without privacy extensions, and the other with privacy extensions.

In the given example, the MAC address is 3ffe:302:11:2:20c:29ff:feaf:da05/64 and the non-RFC3041 address contains the MAC, and the privacy-extension address is 302:11:2:9d65:e608:59a9:d4b9/64.

This output is displayed:

```
ise/admin# show interface GigabitEthernet 0
eth0      Link encap:Ethernet  HWaddr 00:0C:29:AF:DA:05
          inet addr:172.23.90.116  Bcast:172.23.90.255  Mask:255.255.255.0
          inet6 addr: 3ffe:302:11:2:9d65:e608:59a9:d4b9/64 Scope:Global
          inet6 addr: 3ffe:302:11:2:20c:29ff:feaf:da05/64 Scope:Global
          inet6 addr: fe80::20c:29ff:feaf:da05/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:60606 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2771 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:9430102 (8.9 MiB)  TX bytes:466204 (455.2 KiB)
          Interrupt:59 Base address:0x2000
ise/admin#
```

ipv6 address dhcp

To acquire an IPv6 address on an interface from the Dynamic Host Configuration Protocol for IPv6 (DHCPv6) server, use the **ipv6 address dhcp** command in the interface configuration mode. To remove the address from the interface, use the **no** form of this command.

ipv6 address dhcp

Command Default

No default behavior or values.

Command Modes

Interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Example

```
ise/admin# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ise/admin(config)# interface GigabitEthernet 1
ise/admin(config-GigabitEthernet)# ipv6 address dhcp
ise/admin(config-GigabitEthernet)# end
ise/admin#
```

When IPv6 DHCP is enabled, the running configuration displays these interface settings:

```
!
interface GigabitEthernet 1
  ipv6 address dhcp
  ipv6 enable
!
```

Remember The IPv6 stateless autoconfiguration and IPv6 address DHCP are not mutually exclusive. It is possible to have both IPv6 stateless autoconfiguration and IPv6 address DHCP on the same interface.

You can use the **show interface** command to display what IPv6 addresses are in use for a particular interface.

When both the IPv6 stateless autoconfiguration and IPv6 address DHCP are enabled, the running configuration displays these interface settings:

```
!
interface GigabitEthernet 1
    ipv6 address dhcp
    ipv6 address autoconfig
    ipv6 enable
!
```

ipv6 enable

To enable IPv6 on all interfaces, use the **ipv6 enable** command in global configuration mode.

To disable IPv6 on all interfaces, use the **no** form of this command in global configuration mode.

To enable IPv6 on an interface, use the **ipv6 enable** command in interface configuration mode.

To disable IPv6 on an interface, use the **no** form of this command in interface configuration mode.

Command Default

No default behavior or values.

Command Modes

Global configuration (config)# or interface configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use the **ipv6 enable** command in global configuration mode to enable IPv6 on all interfaces.

```
ise/admin(config)# ipv6 enable
```

Use the **ipv6 enable** command in interface configuration mode to enable IPv6 on an interface and automatically generate the link-local address based on the interface MAC address.

```
ise/admin(config)# interface GigabitEthernet 1
ise/admin(config-GigabitEthernet)# ipv6 enable
ise/admin(config-GigabitEthernet)#
```

ipv6 route

To manually configure IPv6 static routes and define an explicit path between two networking devices, use the **ipv6 route** command in global configuration mode. Static routes are not automatically updated and you must manually reconfigure the static routes if the network topology changes.

ipv6 route *ipv6-address/prefix-length* **gateway** *route-specific gateway*

To remove an IPv6 static route, use the **no** form of this command.

no ipv6 route *ipv6-address/prefix-length* **gateway** *route-specific gateway*

To configure a default static route with an IPv6 address, use the **ipv6 route ::/0 gateway** *route-specific gateway* command in global configuration mode. To disable the default static route with an IPv6 address, use the **no** form of this command.

Syntax Description

ipv6-address	IPv6 address.
prefix-length	The length of the IPv6 prefix. A decimal value between 0 and 128 that indicates how many of the high-order contiguous bits of the address comprise the prefix (the network portion of the address). A slash mark must precede the decimal value.
route-specific gateway	IPv6 address of the next hop that can be used to reach that network.

Command Default

No default behavior or values.

Command Modes

Global configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Supported IPv6 address formats include:

- Full notation: Eight groups of four hexadecimal digits separated by colons. For example, 2001:0db8:85a3:0000:0000:8a2e:0370:7334
- Shortened notation: Exclude leading zeros in a group; replace groups of zeros with two consecutive colons. For example: 2001:db8:85a3::8a2e:370:7334
- Dotted-quad notation (IPv4-mapped and IPv4-compatible IPv6 addresses): For example, ::ffff:192.0.2.128

Use the **show ipv6 route** command to view the configured IPv6 routes.

Example 1

```
ise/admin(config)# ipv6 route 2001:DB8:cc00:1::/64 gateway 2001:DB8::cc00:1::1
```

Example 2

```
ise/admin(config)# ipv6 route ::/0 gateway 2001:db::5
```

where ::/0 indicates a default route prefix.

kron occurrence

To schedule one or more Command Scheduler commands to run at a specific date and time or a recurring level, use the **kron occurrence** command in configuration mode. To delete this schedule, use the **no** form of this command.

kron occurrence *occurrence-name*

Syntax Description

occurrence	Schedules Command Scheduler commands.
occurrence-name	Name of the occurrence. Supports up to 80 alphanumeric characters. (Refer to the note and Syntax Description.)

Note After you enter the *occurrence-name* in the **kron occurrence** command, you enter the config-Occurrence configuration submode (refer to the Syntax Description).

Syntax Description

at	Identifies that the occurrence is to run at a specified calendar date and time. Usage: at [*hh:mm*] [*day-of-week* | *day-of-month* | *month day-of-month*].
do	EXEC command. Allows you to perform any EXEC commands in this mode.
end	Exits the kron-occurrence configuration submode and returns you to EXEC mode.
exit	Exits the kron-occurrence configuration mode.
no	Negates the command in this mode. Three keywords are available: • at—Usage: at [hh:mm] [day-of-week | day-of-month | month day-of-month]. • policy-list—Specifies a policy list to be run by the occurrence. Supports up to 80 alphanumeric characters. • recurring—Execution of the policy lists should be repeated.
policy-list	Specifies a Command Scheduler policy list to be run by the occurrence.

recurring	Identifies that the occurrences run on a recurring basis. **Note** If kron occurrence is not recurring, then the kron occurrence configuration for the scheduled backup is removed after it has run.

Command Default

No default behavior or values.

Command Modes

Configuration (config-Occurance)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use the **kron occurrence** and **policy-list** commands to schedule one or more policy lists to run at the same time or interval.

Use the **kron policy-list** command in conjunction with the **cli** command to create a Command Scheduler policy that contains the EXEC CLI commands to be scheduled to run in the Cisco ISE server at a specified time.

Attention When you run the **kron** command, backup bundles are created with a unique name (by adding a time stamp) to ensure that the files do not overwrite each other.

Important It is recommended that you schedule configuration or monitoring backups through the GUI by using the **Administration > System > Backup and Restore** page.

Example 1: Weekly Backup

```
ise/admin(config)# kron occurrence WeeklyBackup
ise/admin(config-Occurrence)# at 14:35 Monday
ise/admin(config-Occurrence)# policy-list SchedBackupPolicy
ise/admin(config-Occurrence)# recurring
ise/admin(config-Occurrence)# exit
ise/admin(config)#
```

Example 2: Daily Backup

```
ise/admin(config)# kron occurrence DailyBackup
ise/admin(config-Occurrence)# at 02:00
ise/admin(config-Occurrence)# exit
ise/admin(config)#
```

Example 3: Weekly Backup

```
ise/admin(config)# kron occurrence WeeklyBackup
ise/admin(config-Occurrence)# at 14:35 Monday
ise/admin(config-Occurrence)# policy-list SchedBackupPolicy
ise/admin(config-Occurrence)# no recurring
ise/admin(config-Occurrence)# exit
ise/admin(config)#
```

kron policy-list

To specify a name for a Command Scheduler policy and enter the kron-Policy List configuration submode, use the **kron policy-list** command in configuration mode. To delete a Command Scheduler policy, use the **no** form of this command.

kron policy-list *list-name*

Syntax Description

policy-list	Specifies a name for Command Scheduler policies.
list-name	Name of the policy list. Supports up to 80 alphanumeric characters.

Note After you enter the list-name in the **kron policy-list** command, you enter the config-Policy List configuration submode. Refer to the Syntax Description for details.

Syntax Description

cli	Command to be executed by the scheduler. Supports up to 80 alphanumeric characters.
do	EXEC command. Allows you to perform any EXEC commands in this mode.
end	Exits from the config-Policy List configuration submode and returns you to EXEC mode.
exit	Exits this submode.
no	Negates the command in this mode. One keyword is available: • cli—Command to be executed by the scheduler.

Command Default No default behavior or values.

Command Modes Configuration (config-Policy List)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines Use the **kron policy-list** command in conjunction with the **cli** command to create a Command Scheduler policy that contains the EXEC CLI commands to be scheduled to run on the ISE server at a specified time. Use the **kron occurrence** and **policy list** commands to schedule one or more policy lists to run at the same time or interval.

Note You cannot use the **kron policy-list** command to schedule configuration and operational data backups from the CLI. You can schedule these backups from the Cisco ISE Admin portal.

Example

```
ise/admin(config)# kron policy-list BackupLogs
ise/admin(config-Policy List)# cli backup-logs ScheduledBackupLogs repository SchedBackupRepo
 encryption-key plain xyzabc
ise/admin(config-Policy List)# exit
ise/admin(config)#
```

logging

To configure the log level, use the **logging** command in configuration mode.

logging loglevel {*0* | *1* | *2* | *3* | *4* | *5* | *6* | *7*}

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

no logging

Syntax Description

loglevel	The command to configure the log level for the logging command.
0-7	The desired priority level to set the log messages. Priority levels are (enter the number for the keyword): • 0-emerg—Emergencies: System unusable. • 1-alert—Alerts: Immediate action needed. • 2-crit—Critical: Critical conditions. • 3-err—Error: Error conditions. • 4-warn—Warning: Warning conditions. • 5-notif—Notifications: Normal but significant conditions. • 6-inform—(Default) Informational messages. • 7-debug—Debugging messages.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

This command requires the **loglevel** keyword.

Example

```
ise/admin(config)# logging loglevel 0
ise/admin(config)#
```

ntp

To specify an NTP configuration, use the **ntp** command in configuration mode with **authentication-key**, **maxdistance**, and **server** commands.

ntp authentication-key <*key id*> <*authentication key encryption type*> **hash** | **plain** <*key value*>

ntp maxdistance <*maximum distance*>

ntp reselectdistance <*reselect distance*>

ntp server {*ip-address* | *hostname*} *key* <*peer key number*>

no ntp server

Syntax Description

authentication-key	Specifies authentication keys for trusted time sources.
maxdistance	Maximum allowed root distance of the sources to not be rejected. By default, the maximum root distance configured in Cisco ISE is 16 seconds.
reselectdistance	Fixed distance for sources that are currently not selected. By default, the distance is 100 microseconds.
server	Specifies NTP server to use.

Command Default

None

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Use the **ntp** command to specify an NTP configuration.

To terminate NTP service on a device, you must enter the **no ntp** command with keywords or arguments such as **authentication-key**, **maxdistance** and **server**. For example, if you previously issued the **ntp server** command, use the **no ntp** command with **server**.

Example

```
ise/admin(config)# ntp ?
  authentication-key  Authentication key for trusted time sources
  maxdistance         Maximum allowed root distance of the sources to not be rejected
  reselectdistance    Fixed distance for sources that are currently not selected
  server              Specify NTP server to use
ise/admin(config)#
ise/admin(config)# no ntp server
ise/admin(config)# do show ntp
% no NTP servers configured
ise/admin(config)#
```

```
ise/admin(config)# ntp reselectdistance ?
  <1-10000000>  Reselect distance in microseconds
ise/admin(config)# ntp reselectdistance 3000
```

ntp authentication-key

To specify an authentication key for a time source, use the **ntp authentication-key** command in configuration command with a unique identifier and a key value.

ntp authentication-key <*key id*> **md5 hash | plain** *key value*

ntp authentication-key <*key id*> **sha1 hash | plain** *key value*

ntp authentication-key <*key id*> **sha256 hash | plain** *key value*

ntp authentication-key <*key id*> **sha512 hash | plain** *key value*

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

no ntp authentication-key

Syntax Description

authentication-key	Configures authentication keys for trusted time sources.
key id	The identifier that you want to assign to this key. Supports numeric values from 1–65535.
md5	The encryption type for the authentication key.
sha1	The encryption type for the authentication key.
sha256	The encryption type for the authentication key.
sha512	The encryption type for the authentication key.
hash	Hashed key for authentication. Specifies an encrypted (hashed) key that follows the encryption type. Supports up to 4112 length.
plain	Plaintext key for authentication. Specifies an unencrypted plaintext key that follows the encryption type. Supports up to 1028 length.
key value	The key value in the format matching either <*authentication key encryption type*>**plain** | **hash**, above. **Note** Hex key value can be added with the prefix **HEX:**.

Important The **hash** <value> is an encrypted form of the plain text entered in the command **ntp authentication-key** <key> **sha1 plain** <value>.

This value is based on the plain text you provide and improves security, but it is not the actual SHA or MD5 hash.

Command Default None

Command Modes Configuration (config)#.

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines Use the **ntp authentication-key** command to set up a time source with an authentication key for NTP authentication and specify its pertinent key identifier, key encryption type, and key value settings. Add this key to the trusted list before you add this key to the **ntp server** command.

Time sources without the NTP authentication keys that are added to the trusted list will not be synchronized.

Note The **show running-config** command will always show keys that are entered in Message Digest 5 (MD5) plain format converted into hash format for security. For example, **ntp authentication-key** 1 **md5 hash** *ee18afc7608ac7ecdbeefc5351ad118bc9ce1ef3*.

Example 1

```
ise/admin# configure
ise/admin(config)#
ise/admin(config)# ntp authentication-key 1 ?
  md5     MD5 authentication
  sha1    SHA1 authentication
  sha256  SHA256 authentication
  sha512  SHA512 authentication
```

Example 2

```
ise/admin# configure
ise/admin(config)#
ise/admin(config)# ntp authentication-key 1 sha1 plain ?
  <WORD>  Plain text or hexadecimal number with the HEX: prefix key for a (Max Size - 1028)
```

Example 3

```
ise/admin(config)# no ntp authentication-key 3
(Removes authentication key 3.)
```

Example 4

```
ise/admin(config)# no ntp authentication-key
(Removes all authentication keys.)
```

ntp maxdistance

The **ntp maxdistance** command sets the maximum allowed root distance of the sources to not be rejected by the source selection algorithm. The distance includes the accumulated dispersion, which might be large when the source is no longer synchronised, and half of the total round-trip delay to the primary source.

By default, the maximum root distance configured in Cisco ISE is 16 seconds.

To reset to the default value, use the **no** form of this command.

ntp maxdistance

Syntax Description

maxdistance	Maximum allowed root distance of the sources to not be rejected.

Command Default

None

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Setting **maxdistance** to a larger value can be useful to allow synchronisation with a server that only has a very infrequent connection to its sources and can accumulate a large dispersion between updates of its clock.

Example

```
ise/admin(config)# ntp maxdistance ?
     <1-128>
```

ntp server

To allow for software clock synchronization by the NTP server for the system, use the **ntp server** command in configuration mode. Allows up to three servers each with a key in a separate line. The key is an optional parameter but the key is required for NTP authentication.

The Cisco ISE always requires a valid and reachable NTP server.

Although key is an optional parameter, it must be configured if you need to authenticate an NTP server.

To disable this capability, use the **no** form of this command only when you want to remove an NTP server and add another one.

ntp server {*ip-address* | *hostname*} **minpoll** <*minimum poll*> **key**<*peer key number*>

ntp server {*ip-address* | *hostname*} **trust**

Syntax Description

server	Allows the system to synchronize with a specified server.
ip-address | *hostname*	IPv4 or IPv6 address or hostname of the server providing the clock synchronization. Arguments are limited to 255 alphanumeric characters. Ensure that the Cisco ISE eth0 interface is statically configured with an IPv6 address if you want to add an NTP server with an IPv6 address.
key	(Optional). Peer key number. Supports up to 65535 numeric characters. This key needs to be defined with a key value, by using the **ntp authentication-key** command. For authentication to work, the key and the key value should be the same as that which is defined on the actual NTP server.
minpoll	Minimum interval between requests sent to the server as a power of 2 in seconds. For example, **minpoll 5** would mean that the polling interval should not drop below 32 seconds. The default is 6 (64 seconds), the minimum is -6 (1/64th of a second), and the maximum is 24 (6 months).
trust	Assume time from this source is always true. If two or more NTP servers are required for redundancy, use the trust option to configure one server as the truechimer. For example: **ntp server** <*NTP-server-1*> **ntp server** <*NTP-server-2*> **trust** **ntp server** <*NTP-server-3*>

Note *key* and **minpoll** options can be interchanged.

Command Default No servers are configured by default.

Command Modes Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines The **show ntp** command displays the status of synchronization. If none of the configured NTP servers are reachable or not authenticated (if NTP authentication is configured), then this command displays synchronization to local with the least stratum.

If an NTP server is not reachable or is not properly authenticated, then its reach as per this command statistics will be 0.

Note This command gives conflicting information during the synchronization process. The synchronization process can take up to 20 minutes to complete.

Example

```
ise/admin# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ise/admin(config)# ntp server 209.165.200.225 ?
  key            Peer key number
  minpoll      Minimum interval between requests sent to the server



trust      Assume time from this source is always true


ise/admin# show running-config
interface GigabitEthernet 0
  ip address 209.165.200.225 255.255.255.0
  ipv6 address autoconfig
  ipv6 enable
!
ip name-server 209.165.200.226
!
ip default-gateway 209.165.200.227
!
ip route 2.2.2.0 255.255.255.0 gateway 192.0.2.13
!
!
clock timezone Asia/Kolkata
!
ntp authentication-key nn md5 hash xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

ntp server 209.165.200.228 key nn
```

```
ntp server 209.165.200.229
!


ise/admin(config)# ntp server 209.165.200.225 trust
ise/admin(config)# ntp server 209.165.200.225 key 2 trust
ise/admin(config)# ntp server 209.165.200.225 key 2 minpoll 7 trust
ise/admin(config)# ntp server 209.165.200.225 minpoll 7 trust
ise/admin(config)# ntp server 209.165.200.225 minpoll 7 key 2 trust
```

Verifying the status of synchronization

To check the status of synchronization, use the **show ntp** command.

Example 1

```
ise/admin# show ntp
Primary NTP   : ntp.esl.cisco.com
Secondary NTP : 171.68.10.80
Tertiary NTP : 171.68.10.150
synchronised to local net at stratum 11
   time correct to within 448 ms
   polling server every 64 s
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
*127.127.1.0     .LOCL.          10 l   46   64   37    0.000    0.000   0.001
 171.68.10.80    .RMOT.          16 u   46   64    0    0.000    0.000   0.000
 171.68.10.150   .INIT.          16 u   47   64    0    0.000    0.000   0.000
Warning: Output results may conflict during periods of changing synchronization.
ise/admin#
```

Example 2

```
ise/admin# show ntp
Primary NTP   : ntp.esl.cisco.com
Secondary NTP : 171.68.10.150
Tertiary NTP : 171.68.10.80
synchronised to NTP server (171.68.10.150) at stratum 3
   time correct to within 16 ms
   polling server every 64 s
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
 127.127.1.0     .LOCL.          10 l   35   64  377    0.000    0.000   0.001
+171.68.10.80    144.254.15.122   2 u   36   64  377    1.474    7.381   2.095
*171.68.10.150   144.254.15.122   2 u   33   64  377    0.922   10.485   2.198
Warning: Output results may conflict during periods of changing synchronization.
ise/admin#
```

rate-limit

To configure the limit of TCP, UDP, or ICMP packets from a source IP address, use the **rate-limit** command in configuration mode. To remove this function, use the **no** form of this command.

rate-limit 250 ip-address net-mask port

Syntax Description

<1-10000>	Average number of TCP, UDP, or ICMP packets per second.
ip-address ***ip*** or ***ipv6***	The source IP address to which the packet rate limit must be applied. Enter **ip** for IPv4 addresses and **ipv6** for IPv6 addresses.
net-mask	Source IP mask to which the packet rate limit must be applied.
port	Destination port number to which the packet rate limit must be applied.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The actual rate limit that is set may differ from the number that you have configured due to the design of the netfilter hashlimit. The following is a list of how netfilter rounds off rate limit values, at the time of writing this document:

- For limit values from 5001/s to 10000/s, Netfilter rounds up the value to 10000/s.
- For limit values from 3334/s to 5000/s, Netfilter rounds up the value to 5000/s.
- For limit values from 2501/s to 3333/s, Netfilter rounds up the value to 3333/s.
- For limit values from 2001/s to 2500/s, Netfilter rounds up the value to 2500/s.
- For limit values from 1667/s to 2000/s, Netfilter rounds up the value to 2000/s.
- For limit values from 1429/s to 1666/s, Netfilter rounds up the value to 1666/s.
- For limit values from 1251/s to 1428/s, Netfilter rounds up the value to 1428/s.
- For limit values from 1112/s to 1250/s, Netfilter rounds up the value to 1250/s.
- For limit values from 1001/s to 1111/s, Netfilter rounds up the value to 1111/s.

- For limit values from 910/s to 1000/s, Netfilter rounds up the value to 1000/s.
- For limit values from 834/s to 909/s, Netfilter rounds up the value to 909/s.
- For limit values under 150, no rounding is done.

Refer to netfilter documentation for more details on how hashlimits work.

Example

```
ise49/admin(config)# rate-limit 4000 ip 20.20.20.20 port 443
% Notice : Actual rate limit rounded up by iptables to 5000 per second
ise49/admin(config)# do show running-config | incl rate
rate-limit 5000 ip 20.20.20.20 port 443
ise49/admin(config)#
ise49/admin(config)# rate-limit 6000 ip 10.10.10.10 port 443
% Notice : Actual rate limit rounded up by iptables to 10000 per second
ise49/admin(config)# do show running-config | incl rate
rate-limit 10000 ip 10.10.10.10 port 443
rate-limit 5000 ip 20.20.20.20 port 443
ise49/admin(config)#
```

password-policy

Note You can also configure the password policy from the Cisco ISE GUI. Note that if a password policy is configured through the Cisco ISE GUI, it overwrites and takes precedence over any password policy configured through the Cisco ISE CLI.

To enable or configure the passwords on the system, use the **password-policy** command in configuration mode. To disable this function, use the **no** form of this command.

password-policy *options*

Note The **password-policy** command requires a policy option (refer to Syntax Description). You must enter the **password-expiration-enabled** command before the other password-expiration commands.

Note After you enter the **password-policy** command, you can enter the config-password-policy configuration submode.

Syntax Description

digit-required	Requires a digit in user passwords.
disable-cisco-password	Disables the ability to use the word Cisco or any combination as the password.
disable-repeat-chars	Disables the ability of the password to contain more than four identical characters.
do	Exec command.
end	Exit from configure mode.
exit	Exit from this submode.
lower-case-required	Requires a lowercase letter in user passwords.
min-password-length	Minimum number of characters for a valid password. Supports up to 40 characters.
no	Negate a command or set its defaults.
no-previous-password	Prevents users from reusing a part of their previous password.
no-username	Prohibits users from reusing their username as a part of a password.

password-delta	Number of characters to be different from the old password.
password-expiration-days	Number of days until a password expires. Supports an integer up to 3650.
password-expiration-enabled	Enables password expiration. **Note** You must enter the **password-expiration-enabled** command before the other password-expiration commands.
password-expiration-warning	Number of days before expiration that warnings of impending expiration begin. Supports an integer up to 3650.
password-lock-enabled	Locks a password after several failures.
password-lock-retry-count	Number of failed attempts before user password locks. Supports an integer up to 20.
password-lock-timeout	Sets the time in minutes after which the account lockout is cleared. Supports time values from 5 minutes to 1440 minutes.
special-required	Requires a special character in user passwords.
upper-case-required	Requires an uppercase letter in user passwords.

Command Default No default behavior or values.

Command Modes Configuration (config-password-policy)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines None.

Example

```
ise/admin(config)# password-policy
ise/admin(config-password-policy)# password-expiration-days 30
ise/admin(config-password-policy)# exit
ise/admin(config)#
```

repository

To enter the repository submode for configuration of backups, use the **repository** command in configuration mode.

repository *repository-name*

Syntax Description		
	repository-name	Name of repository. Supports up to 80 alphanumeric characters.

Note After you enter the name of the repository in the **repository** command, you enter the config-Repository configuration submode (refer to the Syntax Description).

Syntax Description		
	do	EXEC command. Allows you to perform any of the EXEC commands in this mode.
	end	Exits the config-Repository submode and returns you to EXEC mode.
	exit	Exits this mode.
	no	Negates the command in this mode. Two keywords are available: • url—Repository URL. • user—Repository username and password for access.
	url	URL of the repository. Supports up to 300 alphanumeric characters (refer to Table 4-5).
	user	Configure the username and password for access. Supports up to 30 alphanumeric characters for username and supports 40 alphanumeric characters for password. Passwords can include these characters: 0 through 9, a through z, A through Z, -, ., |, @, #, $, %, ^, &, *, (,), +, and =.

Note Server is the server name and path refers to /subdir/subsubdir. Remember that a colon(:) is required after the server for an NFS network server.

Table 7: Table 4-5 URL Keywords (Continued)

Keyword	Source of Destination
URL	Enter the repository URL, including server and path information. Supports up to 80 alphanumeric characters.
cdrom:	Local CD-ROM drive (read only).
disk:	Local storage. You can run the **show repository** repository_name to view all files in the local repository. **Note** All local repositories are created on the /localdisk partition. When you specify disk:// in the repository URL, the system creates directories in a path that is relative to /localdisk. For example, if you entered **disk://backup,** the directory is created at /localdisk/backup.
ftp:	Source or destination URL for an FTP network server. Use url ftp://server/path.
http:	Source or destination URL for an HTTP network server (read only).
https:	Source or destination URL for an HTTPS network server (read only).
nfs:	Source or destination URL for an NFS network server. Use url nfs://server:/path.
sftp:	Source or destination URL for an SFTP network server. Use url sftp://server/path.
tftp:	Source or destination URL for a TFTP network server. Use url tftp://server/path. **Note** You cannot use a TFTP repository for performing a Cisco ISE upgrade.

Command Default No default behavior or values.

Command Modes Configuration (config-Repository)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

When configuring **url sftp:** in the submode, you must first load the RSA fingerprint (AKA host-key) from the target SFTP host into ISE. You can do this by using the **crypto host_key add** command through the CLI.

To disable this function, use the command **crypto host_key delete** in the EXEC mode.

Cisco ISE displays this warning when you configure a secure ftp repository in the Cisco ISE Admin portal in **Administration > System > Maintenance > Repository > Add Repository**.

The host key of the SFTP server must be added through the CLI by using the host-key option before this repository can be used.

A corresponding error is thrown in the Cisco ADE logs when you try to back up into a secure FTP repository without configuring the host-key.

Note Cisco ISE initiates outbound SSH or SFTP connections in FIPS mode even if FIPS mode is not enabled on ISE. Ensure that the remote SSH or SFTP servers that communicate with ISE allow FIPS 140-2 approved cryptographic algorithms.

Cisco ISE uses embedded FIPS 140-2 validated cryptographic modules. For details of the FIPS compliance claims, refer to the FIPS Compliance Letter.

After you restore the configuration on a different system, reconfigure the SFTP repository password so that the repository works.

service cache

To cache the DNS requests for hosts, use the **service cache enable** command in configuration mode. Enabling this feature will reduce the load on DNS server.

service cache enable hosts ttl *ttl*

To disable this feature, use the no form of this command.

Syntax Description

ttl	You can configure the Time to Live (TTL) value, in seconds, for a host in the cache while enabling the cache. There is no default setting for *ttl*. The valid range for *ttl* is from 1 to 2147483647.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Usage Guidelines

TTL value is honored for negative responses. The TTL value set in the DNS server is honored for positive responses. If there is no TTL defined on the DNS server, then the TTL configured from the command is honored. Cache can be invalidated by disabling the feature.

Example

```
ise/admin(config)# service cache enable hosts ttl 10000
Enabling dns cache
ise/admin(config)# exit
```

service-ssh

To specify a service to manage, use the **service ssh** command in configuration mode.

service ssh

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

no service

Remember Use only FIPS complaint algorithms when Cisco ISE is in FIPS mode for optimal service sshd function.

Syntax Description

ssh	Secure Shell Daemon.
host-key-algorithm	Configures SSH encryption algorithms. These supported algorithms are ecdsa-sha2-nistp256 rsa-sha2-256 rsa-sha2-512 ssh-rsa.
encryption-mode	Configures SSH encryption mode on system. The supported modes are cbc (configures cbc cipher suites) and ctr (configures ctr cipher suites).
diffie-hellman-group14-sha1	Restricts key exchange algorithm to diffie-hellman-group14-sha1.
Loglevel	Specifies the log level of messages from sshd to secure system log. • 1—QUIET • 2—FATAL • 3— ERROR • 4—INFO (default) • 5—VERBOSE • 6—DEBUG • 7—DEBUG1 • 8 —DEBUG2 • 9—DEBUG3

service sshd

To specify a service to manage, use the **service** command in configuration mode.

service sshd

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

no service

Remember Use only FIPS complaint algorithms when Cisco ISE is in FIPS mode for optimal service sshd function.

Syntax Description

sshd	Secure Shell Daemon. The daemon program for SSH.
enable	Enables sshd service.
encryption-algorithm	Configures SSH encryption algorithms. The supported algorithms are a, aes128-cbc, aes128-ctr, aes256-cbc, and aes256-ctr.
encryption-mode	Configures SSH encryption mode on system. The supported modes are cbc (configures cbc cipher suites) and ctr (configures ctr cipher suites).
diffie-hellman-group14-sha1	Restricts key exchange algorithm to diffie-hellman-group14-sha1.
Loglevel	Specifies the log level of messages from sshd to secure system log. • 1—QUIET • 2—FATAL • 3— ERROR • 4—INFO (default) • 5—VERBOSE • 6—DEBUG • 7—DEBUG1 • 8 —DEBUG2 • 9—DEBUG3

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.
3.3 Patch 4	**MAC algorithm, hostkey, hostkey algorithm, SSH client hostkey algorithms, key-exchange-algorithm** keywords added.
3.4 Patch 1	**MAC algorithm, hostkey, hostkey algorithm, SSH client hostkey algorithms, key-exchange-algorithm** keywords added.

Usage Guidelines

None.

Example

```
ise/admin(config)# service sshd
ise/admin(config)# service sshd enable
ise/admin(config)# service sshd encryption-algorithm
 Configure aes128-cbc algo
 Configure aes128-ctr algo
 Configure aes256-cbc algo
 Configure aes256-ctr algo
ise/admin(config)# service sshd encryption-mode
 Configure cbc cipher suites
 Configure ctr cipher suites
ise/admin(config)# service sshd key-exchange-algorithm diffie-hellman-group14-sha1
ise/admin(config)# service sshd loglevel 4
ise/admin(config)#
```

```
ise/admin(config)# service sshd
ise/admin(config)# service sshd enable
ise/admin(config)# service sshd encryption-algorithm
 Configure aes128-cbc algo
 Configure aes128-ctr algo
 Configure aes256-cbc algo
 Configure aes256-ctr algo
ise/admin(config)# service sshd encryption-mode
 Configure cbc cipher suites
 Configure ctr cipher suites
ise/admin(config)# service sshd key-exchange-algorithm diffie-hellman-group14-sha1
ise/admin(config)# service sshd loglevel 4
ise/admin(config)#
```

shutdown

To shut down an interface, use the **shutdown** command in the interface configuration mode. To disable this function, use the **no** form of this command.

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

Configuration (config-GigabitEthernet)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

When you shut down an interface using this command, you lose connectivity to the Cisco ISE appliance through that interface (even though the appliance is still powered on).

However, if you have configured the second interface on the appliance with a different IP and have not shut down that interface, you can access the appliance through that second interface.

To shut down an interface, you can also modify the ifcfg-eth[0,1] file, which is located at /etc/sysconfig/network-scripts, using the ONBOOT parameter:

- Disable an interface: set ONBOOT="no”
- Enable an interface: set ONBOOT="yes"

  You can also use the **no shutdown** command to enable an interface.

Example

```
ise/admin(config)# interface GigabitEthernet 0
ise/admin(config-GigabitEthernet)# shutdown
```

snmp-server enable

To enable the SNMP server on Cisco ISE, use the **snmp-server enable** command in global configuration mode.

snmp-server enable

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

Command Default The SNMP server is enabled.

Command Modes Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin(config)# snmp-server enable
ise/admin(config)#
```

MIBs

The SNMP agent on the Cisco ISE provides read-only access to these MIBs for all versions of SNMP:

- SNMPv2-MIB
- RFC1213-MIB
- IF-MIB
- IP-MIB
- IP-FORWARD-MIB
- TCP-MIB
- UDP-MIB
- HOST-RESOURCES-MIB
- ENTITY-MIB-Only 3 MIB variables are supported on the ENTITY-MIB:

  Product ID: entPhysicalModelName

  Version ID: entPhysicalHardwareRev

  Serial Number: entPhysicalSerialNumber
- DISMAN-EVENT-MIB
- NOTIFICATION-LOG-MIB
- CISCO-CDP-MIB

snmp-server user

To configure a new SNMP user, use the **snmp-server user** command in global configuration mode.

snmp-server user *username* **v3** {**hash** | **plain**} *auth-password priv-password*

snmp-server user *username* **v3 sha1**{**hash** | **plain**} *auth-password priv-password*

snmp-server user *username* **v3 sha224**{**hash** | **plain**} *auth-password priv-password*

snmp-server user *username* **v3 sha256**{**hash** | **plain**} *auth-password priv-password*

snmp-server user *username* **v3 sha384**{**hash** | **plain**} *auth-password priv-password*

snmp-server user *username* **v3 sha512**{**hash** | **plain**} *auth-password priv-password*

Note This command must be used only for SNMP version 3.

To remove a specified SNMP user, use the **no** form of this command.

Syntax Description

user	Configure a new user.
username	The name of the user on the host that belongs to the SNMP agent.
v3	Version of the SNMP used to send the traps. Specifies that the SNMP Version 3 security model should be used for enabling the priv and the auth keywords.
{**hash** | **plain**}	Password is in encrypted or plain format. Encrypted passwords must be in hexadecimal format.

auth-password	Specifies the authentication user password. The minimum length for a password is one character; however, we recommend that you use at least nine characters for security. To create a password with the hash symbol (#) or exclamation mark (!), you must first enter the backslash symbol (\), for example, **abc\!23**, **abc12\#**, and so on. **Note** If you forget a password, you cannot recover it, and must reconfigure the user. You can specify a plain-text password or a localized digest. The localized digest must match the authentication algorithm selected for the user, which can be either MD5 or SHA. When the user configuration is displayed on the console or is written to a file (for example, the startup-configuration file), the localized authentication and privacy digests are always displayed instead of the plain-text password.
priv-password	Specifies the encryption user password. The minimum length for a password is one character; however, we recommend that you use at least eight characters for security. To create a password with the hash symbol (#) or exclamation mark (!), you must first enter the backslash symbol (\), for example, **abc\!23**, **abc12\#**, and so on. **Note** If you forget a password, you cannot recover it, and must reconfigure the user. You can specify a plain-text password or a localized digest. The localized digest must match the authentication algorithm selected for the user, which can be either MD5 or SHA. When the user configuration is displayed on the console or is written to a file (for example, the startup-configuration file), the localized authentication and privacy digests are always displayed instead of the plain-text password.
sha1	Sha1 authentication type.
sha224	Sha224 authentication type.
sha256	Sha256 authentication type.
sha384	Sha384 authentication type.
sha512	Sha512 authentication type.

Command Default Disabled.

Command Modes Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

After you configure users, make sure to configure SNMP Version 3 hosts. Along with the target IP address, you must configure a username, because traps are only sent to a configured user.

Example

```
ise/admin(config)# snmp-server user testuser v3 ?
   hash   Hash Passwords
   plain  Plain Passwords
   sha1   Sha1 authentication
   sha224 Sha224 authentication
   sha256 Sha256 authentication
   sha384 Sha384 authentication
   sha512 Sha512 authentication

ise/admin(config)# snmp-server user testuser v3 hash authpassword privpassword
ise/admin(config)#
```

snmp-server host

To send SNMP traps to a recipient, use the **snmp-server host** command in configuration mode. By default, SNMP traps are enabled. By default, the UDP port is 162.

Note SNMP user needs to be created before using the `snmp-server host` command.

snmp-server host {*ip-address* | *hostname*} **version** {{*1* | *2c*} *community* | *3 username engine_ID* {**hash** | **plain**} *auth-password priv-password*}

snmp-server host {*ip-address* | *hostname*} **version** {{*1* | *2c*} *community* | *3 username engine_ID* **sha1** {**hash** | **plain**} *auth-password priv-password*}

snmp-server host {*ip-address* | *hostname*} **version** {{*1* | *2c*} *community* | *3 username engine_ID* **sha224** {**hash** | **plain**} *auth-password priv-password*}

snmp-server host {*ip-address* | *hostname*} **version** {{*1* | *2c*} *community* | *3 username engine_ID* **sha256** {**hash** | **plain**} *auth-password priv-password*}

snmp-server host {*ip-address* | *hostname*} **version** {{*1* | *2c*} *community* | *3 username engine_ID* **sha384** {**hash** | **plain**} *auth-password priv-password*}

snmp-server host {*ip-address* | *hostname*} **version** {{*1* | *2c*} *community* | *3 username engine_ID* **sha512** {**hash** | **plain**} *auth-password priv-password*}

To remove trap forwarding, use the **no** form of this command.

Note When SNMP Version 3 hosts are configured in Cisco ISE, a user must be associated with that host because traps are sent only to a configured user. To receive traps, after you have added the **snmp-server host** command, you must configure the user credentials on the NMS with the same credentials as those configured in Cisco ISE.

Syntax Description

host	Configures hosts to receive SNMP notifications.
ip-address	IP address of the SNMP notification host. Supports up to 32 alphanumeric characters.
hostname	Name of the SNMP notification host. Supports up to 32 alphanumeric characters.

version {*1* | *2c* | *3*}	(Optional). Version of the SNMP used to send the traps. Default = 1. If you use the version keyword, specify one of these keywords: • 1—SNMPv1. • 2c—SNMPv2C. • 3—SNMP v3.
community	Specifies the shared secret key between Cisco ISE and the NMS. Case-sensitive value that can be up to 32 characters in length. Spaces are not allowed. The default community-string is "public." Cisco ISE users this key to determine whether the incoming SNMP request is valid.
username	(Optional; required only if you choose SNMP version 3) Associates a user with the host when SNMP Version 3 hosts are configured in Cisco ISE.
engine_ID	(Optional; required only if you choose SNMP version 3) Remote engine ID. **Note** You must add the "0x" prefix to the SNMP engine ID for Cisco ISE to correctly interpret the value of the engine ID.
auth-password	(Optional; required only if you choose SNMP version 3) Specifies the authentication user password.
priv-password	(Optional; required only if you choose SNMP version 3) Specifies the encryption user password.
sha1	Sha1 authentication type.
sha224	Sha224 authentication type.
sha256	Sha256 authentication type.
sha384	Sha384 authentication type.
sha512	Sha512 authentication type.

Command Default Enabled.

Command Modes Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Cisco ISE sends a 'coldStart(0)' trap when the appliance boots up (reloads), if SNMP is already configured. Cisco ISE uses the Net-SNMP client that sends a 'coldStart(0)' trap when it first starts up, and an enterprise-specific trap 'nsNotifyShutdown' when it stops.

It generates an enterprise-specific trap 'nsNotifyRestart' (rather than the standard 'coldStart(0)' or 'warmStart(1)' traps) typically after you reconfigure SNMP using the **snmp-server host** command.

Note If the SNMP trap target is specified by hostname or FQDN and resolved by DNS to both IPv4 and IPv6 addresses, Cisco ISE sends SNMP traps to IPv6 dual-stack target receivers through IPv4 and not through IPv6. To ensure that the traps are sent through IPv6, an ISE admin may either resolve hostname or FQDN only to IPv6 by DNS, or specify the IPv6 address directly, when configuring SNMP traps.

Examples

```
ise/admin(config)# snmp-server community new ro
ise/admin(config)# snmp-server host 209.165.202.129 version 1 password
ise/admin(config)#
```

```
ise/admin(config)# snmp-server host ise1 version 2c public
ise/admin(config)# snmp-server community public ro
2012-09-24T18:37:59.263276+00:00 ise1 snmptrapd[29534]: ise1.cisco.com [UDP:
[192.168.118.108]:44474]: Trap ,
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (29) 0:00:00.29, SNMPv2-MIB::snmpTrapOID.0
 = OID: SNMPv2-MIB::coldStart,
SNMPv2-MIB::snmpTrapEnterprise.0 = OID: NET-SNMP-MIB::netSnmpAgentOIDs.10
ise/admin(config)# snmp-server contact admin@cisco.com
2012-09-24T18:43:32.094128+00:00 ise1 snmptrapd[29534]: ise1.cisco.com [UDP:
[192.168.118.108]:53816]: Trap ,
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (33311) 0:05:33.11, SNMPv2-MIB::snmpTrapOID.0
 = OID: NET-SNMP-AGENT-MIB::nsNotifyRestart, SNMPv2-MIB::snmpTrapEnterprise.0 = OID:
NET-SNMP-MIB::netSnmpNotificationPrefix
```

```
ise/admin(config)# snmp-server host a.b.c.d version 3 testuser 0x12439343 hash authpassword
 privpassword
ise/admin(config)#
```

```
ise/admin(config)# snmp-server host a.b.c.d version 3 testuser 0x12439343 ?
   hash   Hash Passwords
   plain  Plain Passwords
   sha1   Sha1 authentication
   sha224 Sha224 authentication
   sha256 Sha256 authentication
   sha384 Sha384 authentication
   sha512 Sha512 authentication
```

snmp-server community

To set up the community access string to permit access to the Simple Network Management Protocol (SNMP), use the **snmp-server community** command in configuration mode.

snmp-server community *community-string* **ro**

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

no snmp-server

Syntax Description

community	Sets SNMP community string.
community-string	Accessing string that functions much like a password and allows access to SNMP. No blank spaces allowed. Supports up to 255 alphanumeric characters.
ro	Specifies read-only access.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **snmp-server community** command requires a community string and the **ro** argument; otherwise, an error occurs.

Example

```
ise/admin(config)# snmp-server community new ro
ise/admin(config)#
```

snmp-server contact

To configure the SNMP contact Management Information Base (MIB) value on the system, use the **snmp-server contact** command in configuration mode. To remove the system contact information, use the **no** form of this command.

snmp-server contact *contact-name*

Syntax Description

contact	Identifies the contact person for this managed node. Supports up to 255 alphanumeric characters.
contact-name	String that describes the system contact information of the node. Supports up to 255 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

None.

Example

```
ise/admin(config)# snmp-server contact Luke
ise/admin(config)#
```

snmp-server location

To configure the SNMP location MIB value on the system, use the **snmp-server location** command in configuration mode. To remove the system location information, use the **no** form of this command.

snmp-server location *location*

Syntax Description

location	Configures the physical location of this managed node. Supports up to 255 alphanumeric characters.
location	String that describes the physical location information of the system. Supports up to 255 alphanumeric characters.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

Cisco recommends that you use underscores (_) or hyphens (-) between the terms within the *word* string. If you use spaces between terms within the *word* string, you must enclose the string in quotation marks (“).

Example 1

```
ise/admin(config)# snmp-server location Building_3/Room_214
ise/admin(config)#
```

Example 2

```
ise/admin(config)# snmp-server location “Building 3/Room 214”
ise/admin(config)#
```

snmp-server trap dskThresholdLimit

To configure the SNMP server to receive traps if one of the Cisco ISE partitions reaches its threshold disk utilization limit, use the **snmp-server trap dskThresholdLimit** command in Configuration mode.

snmp-server trap dskThresholdLimit *value*

To stop sending disk threshold utilization limit traps, use the **no** form of this command.

Syntax Description

value	Number that represents the percentage of available disk space. The value ranges from 1 to 100.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.1.0.474	This command was introduced.

Usage Guidelines

This configuration is common for all the partitions in Cisco ISE. If you configure the threshold limit as 40, then you will receive a trap as soon as a partition utilizes 60% of its disk space and only 40% of the disk space is available. That is, a trap is sent when the configured amount of free space is reached.

After you configure this command from the Cisco ISE CLI, a kron job runs every five minutes and monitors the Cisco ISE partitions one by one. If any one of the partitions reaches its threshold limit, then Cisco ISE sends a trap to the configured SNMP server with the disk path and the threshold limit value. Multiple traps are sent if multiple partitions reached the threshold limit. You can view the SNMP traps using the traps receiver in a MIB browser.

Example

```
ise/admin(config)# snmp-server trap dskThresholdLimit 40
ise/admin(config)#
```

snmp engineid

To change the existing engine ID to a new value, use the **snmp engineid command** in configuration mode. This command displays a warning that all existing users need to be re-created.

snmp engineid *engine_ID_string*

To remove the configured engine ID, use the **no** form of this command.

Syntax Description

engineid	Changes an existing engine ID to a new value that you specify.
engine_ID_string	String of maximum 24 characters that identifies the engine ID.

Command Default

No command defaults.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Example

```
ise/admin(config)# snmp engineid Abcdef129084B
% Warning: As a result of engineID change, all SNMP users will need
           to be recreated.
ise/admin(config)#
```

synflood-limit

To configure a TCP SYN packet rate limit.

synflood-limit ?

Syntax Description		
	synflood-limit	Average number of TCP SYN packets allowed per second.
	?	The valid range is from 1 to 2147483647.

Command Default No default behavior or values.

Command Modes Configuration (config)#

Command History	Release	Modification
	2.0.0.306	This command was introduced.

Usage Guidelines Use this **synflood-limit** to configure a TCP SYN packet rate limit.

The actual rate limit that is set may differ from the number that you have configured due to the design of the synflood limits. This is a list of how limit values are rounded up, at the time of writing this document:

- For limit values from 5001/s to 10000/s, the value is rounded up to 10000/s.
- For limit values from 3334/s to 5000/s, the value is rounded up to 5000/s.
- For limit values from 2501/s to 3333/s, the value is rounded up to 3333/s.
- For limit values from 2001/s to 2500/s, the value is rounded up to 2500/s.
- For limit values from 1667/s to 2000/s, the value is rounded up to 2000/s.
- For limit values from 1429/s to 1666/s, the value is rounded up to 1666/s.
- For limit values from 1251/s to 1428/s, the value is rounded up to 1428/s.
- For limit values from 1112/s to 1250/s, the value is rounded up to 1250/s.
- For limit values from 1001/s to 1111/s, the value is rounded up to 1111/s.
- For limit values from 910/s to 1000/s, the value is rounded up to 1000/s.
- For limit values from 834/s to 909/s, the value is rounded up to 909/s.
- For limit values under 150, no rounding is done.

Example

```
ise49/admin(config)# synflood-limit 5099
ise49/admin(config)# do show running-config | include syn
synflood limit 10000
```

username

To add a user who can access the Cisco ISE appliance using SSH, use the **username** command in configuration mode. If the user already exists, the password, the privilege level, or both change with this command. To delete the user from the system, use the **no** form of this command.

username *username* **password hash** | **plain** {*password*} **role admin** | **user email** {*email-address*}

For an existing user, use this command option:

username *username* **password role admin** | **user** {*password*}

Syntax Description

username	Only one word for the username argument. Blank spaces and quotation marks (“) are not allowed. Supports up to 31 alphanumeric characters.
password	Specifies password.
password	Password character length up to 40 alphanumeric characters. You must specify the password for all new users.
hash | **plain**	Type of password. Supports up to 34 alphanumeric characters.
role admin | **user**	Sets the user role and the privilege level for the user.
disabled	Disables the user according to the user’s email address.
email	Sets user’s email address.
email-address	Specifies the user’s email address. For example, user1@mydomain.com.

Command Default

The initial user during setup.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

The **username** command requires that the username and password keywords precede the hash | plain and the admin | user options.

Example 1

```
ise/admin(config)# username admin password hash ###### role admin
ise/admin(config)#
```

Example 2

```
ise/admin(config)# username admin password plain Secr3tp@swd role admin
ise/admin(config)#
```

Example 3

```
ise/admin(config)# username admin password plain Secr3tp@swd role admin email
admin123@mydomain.com
ise/admin(config)#
```

which

To display the contents of commands available in admin CLI, use the **which** command in configuration mode.

which

Syntax Description

This command has no keywords and arguments.

Command Default

No default behavior or values.

Command Modes

Configuration (config)#

Command History

Release	Modification
2.0.0.306	This command was introduced.

Usage Guidelines

which is a hidden command. Although **which** is available in Cisco ISE, the CLI interactive Help does not display it if you attempt to view it by entering a question mark at the command line.

Example

This example shows the output of **which** :

```
ise/admin(config)# which
[     1].  application  configure<STRING>
[     2].  application  install<STRING><STRING>
[     3].  application  remove<STRING>
[     4].  application  reset-config<STRING>
[     5].  application  reset-passwd<STRING><STRING>
[     6].  application  start<STRING>
[     7].  application  start<STRING>  safe
[     8].  application  stop<STRING>
[     9].  application  upgrade  cleanup
[    10].  application  upgrade  prepare<STRING><STRING>
```

which