



## **Cisco Prime Network Control System CLI Command Reference Guide**

Release 1.0  
March, 2012

**Americas Headquarters**  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883

Text Part Number: OL-25319-01

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

*CLI Reference Guide for the Cisco Prime Network Control System, Release 1.0.0*  
© 2010 Cisco Systems, Inc. All rights reserved.



# CONTENTS

## **Preface** ix

|  |    |
|--|----|
| Who Should Read This Guide                               | ix |
| How to Use This Guide                                    | ix |
| How This Guide Organized                                 | x  |
| Document Conventions                                     | x  |
| Documentation Updates                                    | xi |
| Related Documentation                                    | xi |
| Obtaining Documentation and Submitting a Service Request | xi |

---

## **CHAPTER 1**

### **Overview of the Cisco NCS Command-Line Interface** 1-1

|  |     |
|--|-----|
| Accessing the Cisco NCS Command Environment  | 1-1 |
| User Accounts and Modes in the Cisco NCS CLI | 1-1 |
| Command Modes in the Cisco NCS CLI           | 1-4 |
| EXEC Commands                                | 1-4 |
| EXEC or System-Level Commands                | 1-4 |
| show Commands                                | 1-6 |
| Configuration Commands                       | 1-7 |
| CLI Audit                                    | 1-9 |

---

## **CHAPTER 2**

### **Using the Cisco NCS Command-Line Interface** 2-1

|  |     |
|--|-----|
| Before Accessing the Cisco NCS CLI                   | 2-1 |
| Running the Setup Utility to Configure the Cisco NCS | 2-1 |
| Accessing the Cisco NCS CLI                          | 2-3 |
| Supported Hardware and Software Platforms            | 2-3 |
| Opening the CLI with Secure Shell                    | 2-4 |
| Opening the CLI Using a Local PC                     | 2-4 |
| Understanding Command Modes                          | 2-5 |
| EXEC Mode  | 2-5 |
| Configuration Mode                                   | 2-6 |
| Configuration Submodes                               | 2-6 |
| Navigating the CLI Commands                          | 2-8 |
| Getting Help   | 2-8 |
| Using the No and Default Forms of Commands           | 2-9 |

Command Line Conventions 2-9

    Command Line Editing Key Conventions 2-9

    Command Line Completion 2-10

    Continuing Output at the --More-- Prompt 2-10

Where to Go Next 2-11

**APPENDIX A**

**Cisco NCS Command Reference A-1**

Disk Space Management in Cisco NCS A-1

**EXEC Commands A-4**

    application install A-5

    application remove A-6

    application reset-config A-7

    application start A-8

    application stop A-9

    application upgrade A-10

    backup A-11

    backup-logs A-12

    clock A-13

    configure A-13

    copy A-14

    debug A-17

    delete A-20

    dir A-21

    exit A-24

    forceout A-24

    halt A-25

    mkdir A-26

    ncs start A-27

    ncs stop A-28

    ncs status A-30

    ncs migrate A-30

    ncs password ftpuser A-31

    ncs password root password A-32

    ncs key genkey A-33

    ncs key importcacert A-34

    ncs key importkey A-35

    ncs key listcacerts A-36

    ncs key deletecacert A-37

    ncs key importsigncert A-38

|                          |      |
|--------------------------|------|
| ncs db sql               | A-38 |
| ncs db reinitdb          | A-39 |
| nslookup                 | A-40 |
| patch install            | A-40 |
| patch remove             | A-42 |
| ping                     | A-43 |
| ping6                    | A-44 |
| reload                   | A-45 |
| restore                  | A-46 |
| rmdir                    | A-48 |
| root                     | A-49 |
| root_enable              | A-49 |
| show                     | A-50 |
| ssh                      | A-52 |
| tech dumptcp             | A-53 |
| telnet                   | A-54 |
| terminal length          | A-54 |
| terminal session-timeout | A-55 |
| terminal session-welcome | A-56 |
| terminal terminal-type   | A-56 |
| traceroute               | A-57 |
| undebug                  | A-57 |
| write                    | A-59 |
| show Commands            | A-61 |
| show application         | A-61 |
| show backup history      | A-63 |
| show cdp                 | A-64 |
| show clock               | A-65 |
| show cpu                 | A-66 |
| show disks               | A-68 |
| show icmp-status         | A-69 |
| show interface           | A-70 |
| show inventory           | A-72 |
| show logging             | A-73 |
| show logins              | A-75 |
| show memory              | A-76 |
| show ntp                 | A-76 |
| show ports               | A-77 |
| show process             | A-79 |
| show repository          | A-81 |

|                         |       |
|-------------------------|-------|
| show restore            | A-82  |
| show running-config     | A-83  |
| show startup-config     | A-84  |
| show tech-support       | A-85  |
| show terminal           | A-86  |
| show timezone           | A-87  |
| show timezones          | A-87  |
| show udi                | A-89  |
| show uptime             | A-89  |
| show users              | A-90  |
| show version            | A-91  |
| Configuration Commands  | A-91  |
| backup-staging-url      | A-92  |
| cdp holdtime            | A-93  |
| cdp run                 | A-93  |
| cdp timer               | A-94  |
| clock timezone          | A-95  |
| do                      | A-97  |
| end                     | A-100 |
| exit                    | A-100 |
| hostname                | A-101 |
| icmp echo               | A-102 |
| interface               | A-103 |
| ipv6 address autoconfig | A-104 |
| ipv6 address dhcp       | A-106 |
| ip address              | A-107 |
| ip default-gateway      | A-108 |
| ip domain-name          | A-109 |
| ip name-server          | A-109 |
| ip route                | A-110 |
| kron occurrence         | A-111 |
| kron policy-list        | A-113 |
| logging                 | A-114 |
| ntp server              | A-115 |
| password-policy         | A-116 |
| repository              | A-117 |
| service                 | A-119 |
| shutdown                | A-119 |
| snmp-server community   | A-120 |
| snmp-server contact     | A-121 |

[snmp-server host](#) A-122  
[snmp-server location](#) A-122  
[username](#) A-123

---

**GLOSSARY**

---

**INDEX**







## Preface

---

This guide describes how you can configure and maintain the Cisco Prime Network Control System (NCS) Release 1.0 using the command-line interface (CLI). Each topic provides a high-level summary of the tasks required for using the CLI for the Cisco NCS in the Cisco Unified Network Solution that runs on supported appliances for small, medium, and large Cisco NCS deployments.

This preface contains the following sections:

- [Who Should Read This Guide, page ix](#)
- [How to Use This Guide, page ix](#)
- [How This Guide Organized, page x](#)
- [Document Conventions, page x](#)
- [Documentation Updates, page xi](#)
- [Related Documentation, page xi](#)
- [Obtaining Documentation and Submitting a Service Request, page xi](#)



**Note**

---

Use this guide in conjunction with the documentation listed in the [“Related Documentation” section on page xi](#).

---

## Who Should Read This Guide

The majority of the instructions in this guide are straightforward; however, a few are complex. Therefore, only experienced users should use these instructions.



**Note**

---

Use this guide in conjunction with the documentation listed in [Related Documentation, page xi](#).

---

## How to Use This Guide

We recommend that you use the information in this guide as follows:

- Read the document in its entirety. Subsequent sections build on information and recommendations discussed in previous sections.
- Use this document for all-inclusive information about the Cisco NCS appliance.

- Do not vary the command-line conventions (see [Document Conventions](#), page x).

## How This Guide Organized

The following table lists the major sections of this guide.

| Chapter    | Title  | Description  |
|------------|--|--|
| Chapter 1  | <a href="#">Overview of the Cisco NCS Command-Line Interface</a> | Provides an overview of the Cisco NCS CLI environment and command modes. |
| Chapter 2  | <a href="#">Using the Cisco NCS Command-Line Interface</a>       | Describes how you can access and administer Cisco NCS using the CLI.     |
| Appendix A | <a href="#">Cisco NCS Command Reference</a>                      | Provides a complete description of all NCS CLI commands.                 |

## Document Conventions

This guide uses the following conventions to convey instructions and information.

| Convention                       | Description  |
|----------------------------------|--|
| <b>bold font</b>                 | Commands and keywords.   |
| <i>italic font</i>               | Variables for which you supply values.   |
| [ ]                              | Keywords or arguments that appear within square brackets are optional.                           |
| {x   y   z}                      | A choice of required keywords appears in braces separated by vertical bars. You must select one. |
| <code>courier font</code>        | Examples of information displayed on the screen.   |
| <b><code>courier font</code></b> | Examples of information you must enter.  |
| < >                              | Nonprinting characters (for example, passwords) appear in angle brackets.                        |
| [ ]                              | Default responses to system prompts appear in square brackets.                                   |



### Note

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



### Tip

Means *the following information will help you solve a problem*. A tip might not consist of an action or troubleshooting help, but could still contain useful information.



### Caution

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

## Documentation Updates

Table 1 lists the documentation update dates.

**Table 1** *Updates to the CLI Reference Guide for the Cisco Prime Network Control System, Release 1.0*

| Date    | Description                                    |
|---------|--|
| 11/1/10 | Cisco Network Control System (NCS) Release 1.0 |

## Related Documentation

Table 2 lists the Cisco Prime NCS documents.

**Table 2** *Product Documentation for Cisco NCS*

| Document Title   | Location  |
|--|---|
| <i>Release Notes for the Cisco Prime Network Control System, Release 1.0</i>           | <a href="http://www.cisco.com/en/US/docs/wireless/ncs/1.0/release/notes/NCS_RN1.0.0.html">http://www.cisco.com/en/US/docs/wireless/ncs/1.0/release/notes/NCS_RN1.0.0.html</a>               |
| <i>Cisco Prime Network Control System Configuration Guide, Release 1.0</i>             | <a href="http://www.cisco.com/en/US/docs/wireless/ncs/1.0/configuration/guide/NCS10cg.html">http://www.cisco.com/en/US/docs/wireless/ncs/1.0/configuration/guide/NCS10cg.html</a>           |
| <i>Cisco Prime Network Control System Appliance Getting Started Guide, Release 1.0</i> | <a href="http://www.cisco.com/en/US/docs/wireless/ncs/appliance/install/guide/primencs_qsg.html">http://www.cisco.com/en/US/docs/wireless/ncs/appliance/install/guide/primencs_qsg.html</a> |
| <i>Cisco Prime Network Control System CLI command Reference, Release 1.0</i>           | <a href="http://www.cisco.com/en/US/docs/wireless/ncs/1.0/command/reference/cli10.html">http://www.cisco.com/en/US/docs/wireless/ncs/1.0/command/reference/cli10.html</a>                   |

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.





# CHAPTER 1

## Overview of the Cisco NCS Command-Line Interface

---

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

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

The chapter contains the following sections:

- [Accessing the Cisco NCS Command Environment, page 1-1](#)
- [User Accounts and Modes in the Cisco NCS CLI, page 1-1](#)
- [Command Modes in the Cisco NCS CLI, page 1-4](#)
- [CLI Audit, page 1-9](#)

## Accessing the Cisco NCS Command Environment

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

- Windows PC running Windows XP/Vista
- Apple Computer running Mac OS X 10.4 or later
- PC running Linux

For detailed information on accessing the CLI, see [Chapter 2, “Using the Cisco NCS Command-Line Interface”](#).

## User Accounts and Modes in the Cisco NCS CLI

Two different types of accounts are available on the Cisco NCS CLI:

- Admin (administrator)
- Operator (user)

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

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

To create more users (with admin and operator privileges) with SSH access to the Cisco NCS CLI, you must enter the **username** command in configuration mode (see [Command Modes in the Cisco NCS CLI, page 1-4](#)).

[Table 1-1](#) lists the command privileges for each type of user account: Admin and Operator (user).

**Table 1-1** Command Privileges

| Command              | User Account |                 |
|----------------------|--------------|-----------------|
|                      | Admin        | Operator (User) |
| application commands | *            |                 |
| backup               | *            |                 |
| backup-logs          | *            |                 |
| cdp run              | *            |                 |
| clock                | *            |                 |
| configure terminal   | *            |                 |
| copy commands        | *            |                 |
| debug                | *            |                 |
| delete               | *            |                 |
| dir                  | *            |                 |
| exit                 | *            | *               |
| forceout             | *            |                 |
| halt                 | *            |                 |
| mkdir                | *            |                 |
| ncs                  | *            |                 |
| nslookup             | *            | *               |
| patch                | *            |                 |
| patch install        | *            |                 |
| patch remove         | *            |                 |
| ping                 | *            | *               |
| ping6                | *            | *               |
| reload               | *            |                 |
| repository           | *            |                 |
| restore commands     | *            |                 |

**Table 1-1** *Command Privileges (continued)*

| Command             | User Account |                 |
|---------------------|--------------|-----------------|
|                     | Admin        | Operator (User) |
| rmdir               | *            |                 |
| root                | *            |                 |
| root_enable         | *            |                 |
| show application    | *            |                 |
| show backup         | *            |                 |
| show cdp            | *            | *               |
| show clock          | *            | *               |
| show cpu            | *            | *               |
| show disks          | *            | *               |
| show icmp_status    | *            | *               |
| show interface      | *            | *               |
| show inventory      | *            | *               |
| show ip route       | *            |                 |
| show logging        | *            | *               |
| show logins         | *            | *               |
| show memory         | *            | *               |
| show ntp            | *            | *               |
| show ports          | *            | *               |
| show process        | *            | *               |
| show repository     | *            |                 |
| show restore        | *            |                 |
| show running-config | *            |                 |
| show startup-config | *            |                 |
| show tech-support   | *            |                 |
| show terminal       | *            | *               |
| show timezone       | *            | *               |
| show timezones      | *            |                 |
| show udi            | *            | *               |
| show uptime         | *            | *               |
| show users          | *            |                 |
| show version        | *            | *               |
| ssh                 | *            | *               |
| tech                | *            |                 |
| telnet              | *            | *               |

**Table 1-1** *Command Privileges (continued)*

| Command           | User Account |                 |
|-------------------|--------------|-----------------|
|                   | Admin        | Operator (User) |
| <b>terminal</b>   | *            | *               |
| <b>traceroute</b> | *            | *               |
| <b>undebg</b>     | *            |                 |
| <b>write</b>      | *            |                 |

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

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

## Command Modes in the Cisco NCS CLI

The Cisco NCS supports the following command modes:

- EXEC—Use the commands in this mode to perform system-level configuration. See [EXEC Commands, page 1-4](#). In addition, refer to the commands in the EXEC mode that generate operational logs as listed in [Table 1-6](#).
- Configuration—Use the commands in this mode to perform configuration tasks in the Cisco NCS. See [Configuration Commands, page 1-7](#). In addition, refer to the commands in configuration mode that generate operational logs as listed in [Table 1-5](#).

## EXEC Commands

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

- [Table 1-2](#) describes the EXEC commands
- [Table 1-3](#) describes the show commands in EXEC mode

For detailed information on EXEC commands, see [Understanding Command Modes, page 2-5](#).

## EXEC or System-Level Commands

[Table 1-2](#) describes EXEC mode commands.

**Table 1-2** *Summary of EXEC Commands*

| Command                    | Description                             |
|----------------------------|---|
| <b>application install</b> | Installs a specific application bundle. |
| <b>application remove</b>  | Removes a specific application.         |



**Table 1-2 Summary of EXEC Commands (continued)**

| <b>Command</b>                  | <b>Description</b>  |
|---------------------------------|---|
| <b>application start</b>        | Starts or enables a specific application.   |
| <b>application stop</b>         | Stops or disables a specific application.   |
| <b>application upgrade</b>      | Upgrades a specific application bundle.   |
| <b>backup</b>                   | Performs a backup and places the backup in a repository.  |
| <b>backup-logs</b>              | Performs a backup of all the logs on the Cisco NCS to a remote location.  |
| <b>clock</b>                    | Sets the system clock on the Cisco NCS server.  |
| <b>configure</b>                | Enters configuration mode.  |
| <b>copy</b>                     | Copies any file from a source to a destination.   |
| <b>debug</b>                    | Displays any errors or events for various command situations; for example, backup and restore, configuration, copy, resource locking, file transfer, and user management. |
| <b>delete</b>                   | Deletes a file in the Cisco NCS server.   |
| <b>dir</b>                      | Lists the files in the Cisco NCS server.  |
| <b>exit</b>                     | Disconnects the encrypted session with a remote system. Exits from the current command mode to the previous command mode.   |
| <b>forceout</b>                 | Forces the logout of all the sessions of a specific Cisco NCS server system user.   |
| <b>halt</b>                     | Disables or shuts down the Cisco NCS server.  |
| <b>help</b>                     | Describes the help utility and how to use it in the Cisco NCS server.   |
| <b>mkdir</b>                    | Creates a new directory.  |
| <b>ncs</b>                      | NCS related commands to start, stop and backup server.  |
| <b>nslookup</b>                 | Queries the IPv4 address or hostname of a remote system.  |
| <b>patch</b>                    | Installs System or Application patch.   |
| <b>ping</b>                     | Determines the IPv4 network connectivity to a remote system.  |
| <b>ping6</b>                    | Determines the IPv6 network connectivity to a remote system.  |
| <b>reload</b>                   | Reboots the Cisco NCS server.   |
| <b>restore</b>                  | Restores a previous backup.   |
| <b>rmdir</b>                    | Removes an existing directory.  |
| <b>root</b>                     | Executes the root shell.  |
| <b>root_enable</b>              | Activates the root command.   |
| <b>show</b>                     | Provides information about the Cisco NCS server.  |
| <b>ssh</b>                      | Starts an encrypted session with a remote system.   |
| <b>tech</b>                     | Provides Cisco Technical Assistance Center (TAC) commands.  |
| <b>telnet</b>                   | Establishes a Telnet connection to a remote system.   |
| <b>terminal length</b>          | Sets terminal line parameters.  |
| <b>terminal session-timeout</b> | Sets the inactivity timeout for all terminal sessions.  |
| <b>terminal session-welcome</b> | Sets the welcome message on the system for all terminal sessions.   |

**Table 1-2 Summary of EXEC Commands (continued)**

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

## show Commands

The **show** commands are used to display the Cisco NCS settings and are among the most useful commands. See [Table 1-3](#) for a summary of the **show** commands.

The commands in [Table 1-3](#) require the **show** command to be followed by a keyword; for example, **show application status**. Some **show** commands require an argument or variable after the keyword to function; for example, **show application version**.

**Table 1-3 Summary of show Commands**

| Command                               | Description   |
|---------------------------------------|---|
| <b>application (requires keyword)</b> | Displays information about the installed application; for example, status information or version information. |
| <b>backup (requires keyword)</b>      | Displays information about the backup.  |
| <b>cdp (requires keyword)</b>         | Displays information about the enabled Cisco Discovery Protocol interfaces.                                   |
| <b>clock</b>                          | Displays the day, date, time, time zone, and year of the system clock.  |
| <b>cpu</b>                            | Displays CPU information.   |
| <b>disks</b>                          | Displays file-system information of the disks.  |
| <b>icmp-status</b>                    | Displays the Internet Control Message Protocol (ICMP) echo response configuration information.                |
| <b>interface</b>                      | Displays statistics for all the interfaces configured on the Cisco NCS.                                       |
| <b>inventory</b>                      | Displays information about the hardware inventory, including the Cisco NCS appliance model and serial number. |
| <b>logging (requires keyword)</b>     | Displays the Cisco NCS server logging information.  |
| <b>logins (requires keyword)</b>      | Displays the login history of the Cisco NCS server.   |
| <b>memory</b>                         | Displays memory usage by all running processes.   |
| <b>ntp</b>                            | Displays the status of the Network Time Protocol (NTP) servers.   |
| <b>ports</b>                          | Displays all the processes listening on the active ports.   |

**Table 1-3 Summary of show Commands (continued)**

| Command                                 | Description   |
|---|---|
| <b>process</b>                          | Displays information about the active processes of the Cisco NCS server.                                      |
| <b>repository</b><br>(requires keyword) | Displays the file contents of a specific repository.  |
| <b>restore</b><br>(requires keyword)    | Displays the restore history in the Cisco NCS.  |
| <b>running-config</b>                   | Displays the contents of the configuration file that currently runs in the Cisco NCS.                         |
| <b>startup-config</b>                   | Displays the contents of the startup configuration in the Cisco NCS.  |
| <b>tech-support</b>                     | Displays system and configuration information that you can provide to the TAC when you report a problem.      |
| <b>terminal</b>                         | Displays information about the terminal configuration parameter settings for the current terminal line.       |
| <b>timezone</b>                         | Displays the current time zone in the Cisco NCS.  |
| <b>timezones</b>                        | Displays all the time zones available for use in the Cisco NCS.   |
| <b>udi</b>                              | Displays information about the unique device identifier (UDI) of the Cisco NCS.                               |
| <b>uptime</b>                           | Displays how long the system you are logged in to has been up and running.                                    |
| <b>users</b>                            | Displays information about the system users.  |
| <b>version</b>                          | Displays information about the currently loaded software version, along with hardware and device information. |

## Configuration Commands

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

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

Table 1-4 describes the configuration commands.

**Table 1-4 Summary of Configuration Commands**

| Command                   | Description   |
|---------------------------|---|
| <b>backup-staging-url</b> | Specifies a Network File System (NFS) temporary space or staging area for the remote directory for backup and restore operations.               |
| <b>cdp holdtime</b>       | Specifies the amount of time the receiving device should hold a Cisco Discovery Protocol packet from the Cisco NCS server before discarding it. |
| <b>cdp run</b>            | Enables Cisco Discovery Protocol.   |
| <b>cdp timer</b>          | Specifies how often the Cisco NCS server sends Cisco Discovery Protocol updates.  |
| <b>clock timezone</b>     | Sets the time zone for display purposes.  |

Table 1-4 Summary of Configuration Commands (continued)

| Command                        | Description   |
|--------------------------------|---|
| <b>do</b>                      | Executes an EXEC-level command from configuration mode or any configuration submode.<br><b>Note</b> To initiate, the <b>do</b> command precedes the EXEC command. |
| <b>end</b>                     | Returns to EXEC mode.   |
| <b>exit</b>                    | Exits configuration mode.   |
| <b>hostname</b>                | Sets the hostname of the system.  |
| <b>icmp echo</b>               | Configures the ICMP echo requests.  |
| <b>interface</b>               | Configures an interface type and enters interface configuration mode.   |
| <b>ipv6 address autoconfig</b> | Enables IPv6 stateless autoconfiguration in interface configuration mode.   |
| <b>ipv6 address dhcp</b>       | Enables IPv6 address DHCP in interface configuration mode.  |
| <b>ip address</b>              | Sets the IP address and netmask for the Ethernet interface.<br><b>Note</b> This is an interface configuration command.  |
| <b>ip default-gateway</b>      | Defines or sets a default gateway with an IP address.   |
| <b>ip domain-name</b>          | Defines a default domain name that a Cisco NCS server uses to complete hostnames.   |
| <b>ip name-server</b>          | Sets the Domain Name System (DNS) servers for use during a DNS query.   |
| <b>kron occurrence</b>         | Schedule one or more Command Scheduler commands to run at a specific date and time or a recurring level.  |
| <b>kron policy-list</b>        | Specifies a name for a Command Scheduler policy.  |
| <b>logging</b>                 | Enables the system to forward logs to a remote system.  |
| <b>logging loglevel</b>        | Configures the log level for the <b>logging</b> command.  |
| <b>no</b>                      | Disables or removes the function associated with the command.   |
| <b>ntp</b>                     | Synchronizes the software clock through the NTP server for the system.  |
| <b>password-policy</b>         | Enables and configures the password policy.   |
| <b>repository</b>              | Enters repository submode.  |
| <b>service</b>                 | Specifies the type of service to manage.  |
| <b>snmp-server community</b>   | Sets up the community access string to permit access to the Simple Network Management Protocol (SNMP).  |
| <b>snmp-server contact</b>     | Configures the SNMP contact the Management Information Base (MIB) value on the system.  |
| <b>snmp-server host</b>        | Sends SNMP traps to a remote system.  |
| <b>snmp-server location</b>    | Configures the SNMP location MIB value on the system.   |
| <b>username</b>                | Adds a user to the system with a password and a privilege level.  |

For detailed information on configuration mode and submode commands, see [Understanding Command Modes, page 2-5](#).

# CLI Audit

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

Table 1-5 describes configuration mode commands that generate operational logs.

**Table 1-5 Configuration Mode Commands for the Operation Log**

| Command               | Description  |
|-----------------------|--|
| <b>clock</b>          | Sets the system clock on the Cisco NCS server.                                 |
| <b>ip name-server</b> | Sets the DNS servers for use during a DNS query.                               |
| <b>hostname</b>       | Sets the hostname of the system.   |
| <b>ip address</b>     | Sets the IP address and netmask for the Ethernet interface.                    |
| <b>ntp server</b>     | Allows synchronization of the software clock by the NTP server for the system. |

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

Table 1-6 describes EXEC mode commands that generate operational logs.

**Table 1-6 EXEC Mode Commands for the Operation Log**

| Command            | Description   |
|--------------------|---|
| <b>backup</b>      | Performs a backup (NCS and ADE OS) and places the backup in a repository. |
| <b>restore</b>     | Restores from backup the file contents of a specific repository.          |
| <b>backup-logs</b> | Backs up system logs.   |





## CHAPTER 2

# Using the Cisco NCS Command-Line Interface

---

This chapter provides helpful tips for understanding and configuring the Cisco Prime Network Control System (NCS) from the command-line interface (CLI). The Cisco NCS can be deployed for small, medium, and large deployments and is available on different platforms and also as a software that can run on VMware. This chapter contains the following sections:

- [Before Accessing the Cisco NCS CLI, page 2-1](#)
- [Accessing the Cisco NCS CLI, page 2-3](#)
- [Understanding Command Modes, page 2-5](#)
- [Navigating the CLI Commands, page 2-8](#)
- [Where to Go Next, page 2-11](#)

## Before Accessing the Cisco NCS CLI

Before logging in to the Cisco NCS CLI, ensure that you have completed the installation tasks as specified in the *Cisco Prime Network Control System Hardware Installation Guide, Release 1.0*.

## Running the Setup Utility to Configure the Cisco NCS

When you power up the Cisco NCS appliances for the first time, you are prompted to run the setup utility to configure the Cisco NCS appliances. Before you run the utility using the **setup** command, ensure that you have values for the following network configuration prompts:

- Hostname
- IP address
- Netmask
- Gateway
- Domain
- Nameserver
- Network Time Protocol (NTP) server (optional)
- User ID
- Password

This example shows sample output of the **setup** command:

```

*****
Please type 'setup' to configure the appliance
*****
localhost login:  setup
Press 'Ctrl-C' to abort setup
Enter hostname[]:  NCS
Enter IP address[]: 172.16.90.183
Enter IP default netmask[]: 255.255.255.0
Enter IP default gateway[]: 172.16.90.1
Enter default DNS domain[]: example.com
Enter primary nameserver[]: 172.16.168.183
Add/Edit another nameserver? Y/N : n
Enter primary NTP server[time.nist.gov]:
Add/Edit secondary NTP server? Y/N : n
Enter username[admin]:
Enter password:
Enter password again:
Bringing up network interface...
Pinging the gateway...
Pinging the primary nameserver...
Do not use 'Ctrl-C' from this point on...
Appliance is configured

```

After you enter the required information, the Cisco NCS appliance automatically reboots and the following login prompt appears:

```
machine_name login:
```

where *machine\_name* identifies the hostname that you specified when you ran the **setup** command.

In this example, this prompt appears:

```
NCS login:
```

To log in, use the administrator user account (and the corresponding password) that you created during the setup process. You must also use this Admin account to log in to the NCS CLI for the first time. After accessing the CLI as an administrator, you can create more users (with admin and operator privileges) with SSH access to the CLI by running the **username** command in configuration mode.



#### Note

The administrator user account and the corresponding password (a CLI user account) that you created during the initial setup wizard can be used to manage the NCS application using the CLI. The CLI user has privileges to start and stop the NCS application software, backup and restore the NCS application data, apply software patches and upgrades to the NCS application software, view all the system and the application logs, and reload or shutdown the NCS appliance. To protect the CLI user credentials, explicitly create users with access to the CLI.

See [Accessing the Cisco NCS CLI, page 2-3](#).



#### Note

Any users that you create from the Cisco NCS web interface cannot automatically log in to the Cisco NCS CLI. You must explicitly create users with access to the CLI. To create these users, you must log in to the CLI using the Admin account that you created during setup; then, enter configuration mode, and run the **username** command.



# Accessing the Cisco NCS CLI

Before logging in to the Cisco NCS CLI, ensure that you have completed the hardware installation and configuration process outlined in [Before Accessing the Cisco NCS CLI, page 2-1](#).

To log in to the Cisco NCS server and access the CLI, use an SSH secure shell client or the console port. You can log in from:

- A PC running Windows XP/Vista.
- A PC running Linux.
- An Apple computer running Mac OS X 10.4 or later.
- Any terminal device compatible with VT100 or ANSI characteristics. On the VT100-type and ANSI devices, you can use cursor-control and cursor-movement key. Keys include left arrow, up arrow, down arrow, right arrow, Delete, and Backspace. The CLI senses the use of the cursor-control keys and automatically uses the optimal device characteristics (see [Supported Hardware and Software Platforms, page 2-3](#)).

To exit the CLI, use the **exit** command from EXEC mode. You are currently in one of the configuration modes and you want to exit the CLI, enter the **end**, **exit**, or **Ctrl-z** command to return to EXEC mode, and then enter the **exit** command (see [EXEC Mode, page 2-5](#)).

## Supported Hardware and Software Platforms

The following valid terminal types can access the Cisco NCS:

- 1178
- 2621
- 5051
- 6053
- 8510
- altos5
- amiga
- ansi
- apollo
- Apple\_Terminal
- att5425
- ibm327x
- kaypro
- vt100

See the terminfo database for a complete listing.

You can also access the Cisco NCS through an SSH client or the console port.

## Opening the CLI with Secure Shell

**Note**

To access the Cisco NCS CLI environment, use any SSH client that supports SSH v2.

The following example shows you how to log in with a Secure Shell (SSH) client (connecting to a wired WAN) via a PC by using Windows XP. Assuming that Cisco NCS is preconfigured through the **setup** utility to accept an Admin (administrator) user, log in as Admin.

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

The SSH window appears.

**Step 2** Press **Enter** or **Spacebar** to connect.

The Connect to Remote Host window appears.

**Step 3** Enter a hostname, username, port number, and authentication method.

In this example, you enter **ncs** for the hostname, **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**.

The Enter Password window appears.

**Step 5** Enter your assigned password for the administrator.

The SSH with the Add Profile window appears.

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

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

The Cisco NCS prompt `ncs/admin#` appears. You can now enter Cisco NCS CLI commands.

## Opening the CLI Using a Local PC

If you need to configure NCS locally (without connecting to a wired LAN), you can connect a PC to the console port on the Cisco NCS appliance by using a null-modem cable.

The serial console connector (port) provides access to the CLI locally by connecting a terminal to the console port. The terminal is a PC running terminal-emulation software or an ASCII terminal. The console port (EIA/TIA-232 asynchronous) requires only a null-modem cable.

To connect a PC 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.

**Note**

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

To connect to the console port and open the CLI, complete the following steps:

- 
- Step 1** Connect a null-modem cable to the console port on the Cisco ISE-3315 and to the COM port on your PC.
  - Step 2** Set up a terminal emulator to communicate with the Cisco NCS. Use the following settings for the terminal emulator connection: 9600 baud, 8 data bits, no parity, 1 stop bit, and no flow control.
  - Step 3** When the terminal emulator activates, press **Enter**.
  - Step 4** At the window, enter your username, then press **Enter**.
  - Step 5** Enter the password, then press **Enter**.

When the CLI activates, you can enter CLI commands to configure the Cisco NCS.

---

## Understanding Command Modes

This section describes the Cisco NCS command modes in detail. This section contains the following topics:

- [EXEC Mode, page 2-5](#)
- [Configuration Mode, page 2-6](#)
- [Configuration Submodes, page 2-6](#)

## EXEC Mode

When you start a session on the Cisco NCS, you begin in admin or EXEC mode. From EXEC mode, you can enter configuration mode. Most of the EXEC commands (one-time commands), such as **show** commands, display the current configuration status. The admin or EXEC mode prompt consists of the device name or hostname before a pound sign (#), as shown:

```
ncs/admin# (Admin or EXEC mode)
```



### Note

Throughout this guide, the Cisco NCS server uses the name *ncs* in place of the hostname and *admin* of the Cisco NCS server for the user account.

You can always tell when you are in EXEC mode or configuration mode by looking at the prompt.

- In EXEC mode, a pound sign (#) appears after the NCS server hostname and your username.

For example:

```
ncs/admin#
```

- In configuration mode, the 'config' keyword and a pound sign (#) appear after the hostname of the Cisco NCS server and your username.

For example:

```
ncs/admin# configure
```

Enter configuration commands, one per line. End with CNTL/Z.

```
ncs/admin(config)# (configuration mode)
```

If you are familiar with UNIX, you can equate EXEC mode to *root* access. You could also equate it to the administrator level in Windows NT or the supervisor in NetWare. In this mode, you have permission to access everything in the Cisco NCS server, including the configuration commands. However, you cannot enter configuration commands directly. Before you can change the actual configuration of the Cisco NCS server, you must enter configuration mode by entering the **configure** or **configure terminal (conf t)** command. Enter this command only when in EXEC mode.

For example:

```
ncs/admin# conf t
Enter configuration commands, one per line. End with CNTL-Z.
ncs(config)# (configuration mode)
```

The configuration mode has several submodes; each has its own prompt. To enter these submodes, you must first enter configuration mode by entering the **configure terminal** command.

To exit configuration mode, enter the **end**, **exit**, or **Ctrl-z** command. To exit EXEC mode, enter the **exit** command. To exit both configuration and EXEC modes, enter this sequence of commands:

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

To obtain a listing of commands in EXEC mode, enter a question mark (?):

```
ncs/admin# ?
```

## Configuration Mode

Use configuration mode to make changes to the existing configuration. When you save the configuration, these commands remain across Cisco NCS server reboots, but only if you run either of these commands:

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

To enter configuration mode, run the **configure** or **configure terminal (conf t)** command in EXEC mode. When in configuration mode, the Cisco NCS expects configuration commands.

For example:

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

From this level, you can enter commands directly into the Cisco NCS configuration. To obtain a listing of commands in this mode, enter a question mark (?):

```
ncs/admin(config)# ?
```

The configuration mode has several configuration submodes. Each of these submodes places you deeper in the prompt hierarchy. When you enter **exit**, the Cisco NCS backs you out one level and returns you to the previous level. When you enter **exit** again, the Cisco NCS backs you out to the EXEC level.



### Note

In configuration mode, you can alternatively enter **Ctrl-z** instead of the **end** or **exit** command.

## Configuration Submodes

In the configuration submodes, you can enter commands for specific configurations. For example:

```
ncs/admin# config t
ncs/admin(config)# interface GigabitEthernet 0
ncs/admin(config-GigabitEthernet)#
```

To obtain a list of commands in this mode, enter a question mark (?):

```
ncs/admin(config-GigabitEthernet)# ?
```

Use the **exit** or **end** command to exit this prompt and return to the configuration prompt.

Table 2-1 lists the commands in the interface GigabitEthernet 0 configuration submode. Other configuration submodes exist including those specific to the **kron**, **repository**, and **password policy** commands.

**Table 2-1** Command Options in the Interface GigabitEthernet 0 Configuration Submode

| Command   | Comment   |
|---|---|
| <pre>ncs/admin(config)# <b>interface</b> <b>GigabitEthernet 0</b> ncs/admin(config-GigabitEthernet)# ? Configure ethernet interface:   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 ncs/admin(config-GigabitEthernet)#</pre> | <p>Enter the command that you want to configure for the interface. This example uses the <b>interface GigabitEthernet</b> command.</p> <p>Enter ? to display what you must enter next on the command line. This example shows the available <b>interface GigabitEthernet</b> configuration submode commands.</p>  |
| <pre>ncs/admin(config-GigabitEthernet)# <b>ip ?</b>   address Configure IP address ncs/admin(config-GigabitEthernet)# <b>ip</b></pre>   | <p>Enter the command that you want to configure for the interface. This example uses the <b>ip</b> command.</p> <p>Enter ? to display what you must enter next on the command line. This example shows the available <b>ip</b> configuration submode commands.</p>  |
| <pre>ncs/admin(config-GigabitEthernet)# <b>ip</b> <b>address ?</b>   &lt;A.B.C.D&gt; IPv4 address ncs/admin(config-GigabitEthernet) <b>ip</b> <b>address</b></pre>  | <p>Enter the command that you want to configure for the interface. This example uses the <b>ip address</b> command.</p> <p>Enter ? to display what you must enter next on the command line. In this example, you must enter an IPv4 address.</p> <p>A carriage return &lt;cr&gt; does not appear; therefore, you must enter additional arguments to complete the command.</p> |

**Table 2-1** Command Options in the Interface GigabitEthernet 0 Configuration Submode

| Command   | Comment   |
|---|---|
| <pre>ncs/admin(config-GigabitEthernet)# ip address 172.16.0.1 ? &lt;A.B.C.D&gt; Network mask ncs/admin(config-GigabitEthernet)# ip address 172.16.0.1</pre>                               | <p>Enter the keyword or argument that you want to use. This example uses the 172.16.0.1 IP address.</p> <p>Enter ? to display what you must enter next on the command line. In this example, you must enter a network mask.</p> <p>A carriage return &lt;cr&gt; does not display; therefore, you must enter additional arguments to complete the command.</p> |
| <pre>ncs/admin(config-GigabitEthernet)# ip address 172.16.0.1 255.255.255.224 ? &lt;cr&gt; Carriage Return ncs/admin(config-GigabitEthernet)# ip address 172.16.0.1 255.255.255.224</pre> | <p>Enter the network mask. This example uses the 255.255.255.224 IP address.</p> <p>Enter ? to display what you must enter next on the command line. In this example, you can press <b>Enter</b>.</p> <p>A carriage return &lt;cr&gt; displays; you can press <b>Enter</b> to complete the command.</p>   |

## Navigating the CLI Commands

This section describes how to navigate the commands and modes on the Cisco NCS and contains the following topics:

- [Getting Help, page 2-8](#)
- [Using the No and Default Forms of Commands, page 2-9](#)
- [Command Line Conventions, page 2-9](#)

## Getting Help

Use the question mark (?) and the arrow keys to help you enter commands:

- For a list of available commands, enter a question mark (?):
 

```
ncs/admin# ?
```
- To complete a command, enter a few known characters before ? (with no space):
 

```
ncs/admin# s?
```
- To display keywords and arguments for a command, enter ? at the prompt or after entering part of a command followed by a space:
 

```
ncs/admin# show ?
```

The Cisco NCS displays a list and brief description of available keywords and arguments.

**Note**

The <cr> symbol in command help stands for “carriage return”, which means to press the **Return** or the **Enter** key). The <cr> at the end of command help output indicates that you have the option to press **Enter** to complete the command and that the arguments and keywords in the list preceding the <cr> symbol are optional. The <cr> symbol by itself indicates that no more arguments or keywords are available, and that you must press **Enter** to complete the command.

- To redisplay a command that you previously entered, press the **Up Arrow** key. Continue to press the **Up Arrow** key to see more commands.

## Using the No and Default Forms of Commands

Some EXEC or configuration commands have a **no** form. In general, use the **no** form to disable a function. Use the command without the **no** keyword to re-enable a disabled function or to enable a function disabled by default; for example, an IP address enabled by default. To disable the IP address, use the **no ip address** command; to re-enable the IP address, use the **ip address** command.

Configuration commands can also have a **default** form, which returns the command settings to the default values. Most commands disabled 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.

See [Appendix A, “Cisco NCS Command Reference,”](#) for a description of the complete syntax of the configuration commands, and the **no** and **default** forms of a command.

## Command Line Conventions

This section contains some basic command-line convention and operation information that is essential to the use of this guide. This section contains the following topics:

- [Command Line Editing Key Conventions, page 2-9](#)
- [Command Line Completion, page 2-10](#)
- [Continuing Output at the --More-- Prompt, page 2-10](#)

### Command Line Editing Key Conventions

The Cisco NCS provides a number of keyboard shortcuts that you can use to edit an entered line.

**Tab**

Press **Tab** to try to finish the current command.

If you press the **Tab** key:

- At the beginning of a line, the system lists all the short-form options.
- When you enter a partial command, the system lists all the short form options beginning with those characters.
- When only one possible option is available, the system fills in the option automatically.

**Ctrl-c**

Press **Ctrl-c** to abort the sequence. Pressing this key sequence breaks out of any executing command and returns to the previous mode.

**Ctrl-z**

Press **Ctrl-z** to exit configuration mode and return to previous configuration mode.

**?**

Enter a question mark (?) at the prompt to list the available commands (see [Getting Help, page 2-8](#)).

## Command Line Completion

Command-line completion makes the Cisco NCS CLI more user-friendly. It saves you extra key strokes and helps out when you cannot remember the syntax of a command.

For example, for the **show running-config** command:

```
ncs/admin# show running-config
```

You can:

```
ncs/admin# sh run
```

The Cisco NCS expands the command **sh run** to **show running-config**.

Another shortcut is to press the **Tab** key after you type **sh**; the Cisco NCS CLI fills in the rest of the command, in this case **show**.

If the Cisco NCS CLI does not understand a command, it repeats the entire command line and places a caret symbol (^) under the point at which it is unable to parse the command.

For example:

```
ncs/admin# show unning-configuration
                ^
% Invalid input detected at '^' marker.
```

The caret symbol (^) points to the first letter in the command line that the Cisco NCS does not understand. Usually, this means that you need to provide additional arguments to complete the command or you misspelled the command. In this case, you omitted the “r” in the “unning” command. To fix the error, retype the command.

In another form of command-line completion, you can start a command by entering the first few characters, then pressing the **Tab** key. As long as you can match one command, the Cisco NCS CLI will complete the command. For example, if you type **sh** and press **Tab**, the Cisco NCS completes the **sh** with **show**. If NCS does not complete the command, you can enter a few more letters and press **Tab** again. For more information, see [Tab, page 2-9](#).

## Continuing Output at the --More-- Prompt

When working with the Cisco NCS CLI, output often extends beyond the visible screen length. For cases where output continues beyond the bottom of the screen, such as with the output of many **?** or **show** commands, the output pauses and a **--More--** prompt appears at the bottom of the screen. To resume output, press **Return** to scroll down one line, or press the **spacebar** to display the next full screen of output.



**Tip**

If the output pauses on your screen but you do not see the --More-- prompt, try entering a smaller value for the screen length by using the **terminal length EXEC** command. Command output will not pause if you set the length value to zero (0).

## Where to Go Next

Now that you are familiar with some of the Cisco NCS CLI basics, you can begin to configure the Cisco NCS by using the CLI.

Remember that:

- You can use the question mark (?) and arrow keys to help you enter commands.
- Each command mode restricts you to a set of commands. If you have difficulty entering a command, check the prompt and then enter the question mark (?) to see a list of available commands.
- To disable a feature, enter the keyword **no** before the command; for example, **no ip address**.
- You must save your configuration changes so that you preserve them during a system reload or power outage.

Proceed to [Appendix A, “Cisco NCS Command Reference,”](#) for command listings, descriptions, syntax, usage guidelines, and sample output.





# APPENDIX **A**

## Cisco NCS Command Reference

---

This appendix contains necessary information on disk space management for all types of Cisco Prime Network Control System (NCS) deployments and an alphabetical listing of the commands specific to the Cisco NCS. The commands comprise the following modes:

- EXEC
  - System-level
  - Show
- Configuration
  - configuration submode

Use EXEC mode system-level **config** or **configure** command to access configuration mode.

Each of the commands in this appendix is followed by a brief description of its use, command syntax, usage guidelines, and one or more examples. Throughout this appendix, the Cisco NCS server uses the name *ncs* in place of the Cisco NCS server's hostname.



**Note**

---

If an error occurs in any command usage, use the **debug** command to determine the cause of the error.

---

## Disk Space Management in Cisco NCS

This section provides information on disk space in the Cisco NCS appliances for all types of deployments. Each of the Cisco NCS appliances has different amount of disk space, and managing that disk space is important to enable you to use the Cisco NCS efficiently.

Before proceeding to use the Cisco NCS CLI commands, familiarize yourself with disk space management in the Cisco NCS appliances. You can deploy the Cisco NCS on appliances with small, medium and large form factors and VMware. [Table A-1](#) provides information on Cisco NCS appliances on all the form factors and the available disk space that you need to manage the Cisco NCS.

**Table A-1** Cisco NCS Appliances Configuration

| Appliance Form Factor | Cisco NCS Appliances | Hard Disk Configuration  |
|-----------------------|----------------------|--------------------------|
| Small                 | -                    | 2 x 250GB SATA HDD.      |
| Medium                | -                    | 2 x 300 GB SAS RAID HDD. |

**Table A-1 Cisco NCS Appliances Configuration**

| Appliance Form Factor | Cisco NCS Appliances                           | Hard Disk Configuration  |
|-----------------------|--|--------------------------|
| Large                 | -  | 4 x 300 GB SAS RAID HDD. |
| VMware                | NCS-DEMO-10 (to run a Demo/Evaluation)         | 30GB                     |
|                       | L-NCS-1.0-K9 (to run the PxP production image) | 60GB                     |
|                       | L-NCS-1.0-K9 (to run M&T production image)     | 200GB                    |

Table A-2 lists the disk space that you may use on the /var partition that has a total of 6 GB of disk space. You may use 308 MB of the 6 GB of disk space for the operating system and the Cisco ADE OS 2.0 log files. You can then use the remaining 5.7 GB of disk space for a medium and large type deployment.

**Table A-2 Disk Space on /var Partition**

| Process          | Files                | Small | Medium and Large | VMware | VMware | VMware |
|------------------|----------------------|-------|------------------|--------|--------|--------|
| Linux OS         | System               | -     | 258MB            | -      | -      | -      |
| Cisco ADE OS 2.0 | /var/log/ade/ADE.log | -     | 50MB             | -      | -      | -      |

All the files that you create in the Cisco NCS reside in the /opt partition. You must manage the disk space for the files that you create in the /opt partition so that the files increase in size within the limits that do not have an impact on other files and services in the system.

Table A-3 lists the disk space that you may use on the /opt partition that has a total of 410 GB of disk space. You may use 161 GB of disk space and the remaining of 249 GB for a medium and large type deployment. The remaining 249 GB of disk space can be better utilized for the database growth after you consider the disk space required for backup, restore, and replication.

**Table A-3 Disk Space on /opt Partition**

| Process                      | Files   | Small | Medium and Large | VMware | VMware | VMware |
|------------------------------|---|-------|------------------|--------|--------|--------|
| CSCOpdm                      | Application product files (includes Oracle, Tomcat, and TimesTen) |       | 7.5 GB           |        |        |        |
| PxP Database                 | /opt/oracle/base/oradata/cpm10/cpm01.dbf                          |       | 31 GB            |        |        |        |
| MnT Database                 | opt/oracle/base/oradata/cpm10/mnt01.dbf                           |       | 120 GB           |        |        |        |
| TimesTen User Cache Database | opt/oracle/base/product/11.2.0/dbhome_1/dbs/datfttuser.dbf        |       | 100 GB           |        |        |        |

Table A-3 Disk Space on /opt Partition (continued)

| Process  | Files  | Small | Medium and Large   | VMware | VMware | VMware |
|--|--|-------|--|--------|--------|--------|
| Oracle RDBMS System                              | Redo Logs (redo01.log, redo02.log and redo03.log)<br>Built-in databases:<br>temp01.dbf<br>example01.dbf<br>system01.dbf<br>undotbs01.dbf<br>sysaux01.dbf<br>users01.dbf<br>control01.ctl |       | 50 MB<br><br>30 MB<br>104 MB<br>770 MB<br>160 MB<br>580 MB<br>5 MB<br>9 MB |        |        |        |
| Monit  | /opt/CSCOcpm/logs/monit.log  |       | 55 MB  |        |        |        |
| CPM PSC Log                                      | /opt/CSCOcpm/logs/cpm-psc.log*.*   |       | 200 MB   |        |        |        |
| CPM PrRT Log                                     | /opt/CSCOcpm/logs/cpm-psc.log*.*   |       | 200 MB   |        |        |        |
| CPM Profiler Log                                 | /opt/CSCOcpm/profiler/logs/profiler.log*   |       | 200 MB   |        |        |        |
| MnT Collector Log                                | /opt/CSCOcpm/logs/mnt-collector.out  |       | 20 MB  |        |        |        |
| MnT Decap Log                                    | /opt/CSCOcpm/logs/mnt-decap.out  |       | 100 MB   |        |        |        |
| CPM Client Provisioning agent binaries           | /opt/CSCOcpm/provisioning  |       | 100 MB   |        |        |        |
| Tomcat   | /opt/CSCOcpm/appsrv/apache-tomcat-6.0.18/logs/*  |       | 100 MB   |        |        |        |
| PrRT Audit Logger                                | /opt/CSCOcpm/logs/prrt.log   |       |  |        |        |        |
| CPM Database Backup and Restore Tasks            |  |       |  |        |        |        |
| CPM Replication Streams Queues and Staging Areas |  |       |  |        |        |        |
| MnT Historical Data                              |  |       |  |        |        |        |

For detailed information on logging into the Cisco NCS, refer to the *Cisco Prime Network Control System Configuration Guide, Release 1.0*.

This appendix contains the following sections:

- [EXEC Commands, page A-4](#)
- [show Commands, page A-61](#)
- [Configuration Commands, page A-91](#)

## EXEC Commands

This section lists each EXEC command and each command page includes a brief description of its use, command syntax, any command defaults, command modes, usage guidelines, and an example of the command and any related commands.

[Table A-4](#) lists the EXEC commands described in this section.

**Table A-4** List of EXEC Commands

|  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• <a href="#">application install</a></li> <li>• <a href="#">application remove</a></li> <li>• <a href="#">application reset-config</a></li> <li>• <a href="#">application start</a></li> <li>• <a href="#">application stop</a></li> <li>• <a href="#">application upgrade</a></li> <li>• <a href="#">backup</a></li> <li>• <a href="#">backup-logs</a></li> <li>• <a href="#">clock</a></li> <li>• <a href="#">configure</a></li> <li>• <a href="#">copy</a></li> <li>• <a href="#">debug</a></li> <li>• <a href="#">delete</a></li> <li>• <a href="#">dir</a></li> <li>• <a href="#">exit</a></li> <li>• <a href="#">forceout</a></li> <li>• <a href="#">halt</a></li> <li>• <a href="#">mkdir</a></li> <li>• <a href="#">ncs start</a></li> <li>• <a href="#">ncs stop</a></li> <li>• <a href="#">ncs status</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">ncs migrate</a></li> <li>• <a href="#">ncs password ftpuser</a></li> <li>• <a href="#">ncs password root password</a></li> <li>• <a href="#">ncs key genkey</a></li> <li>• <a href="#">ncs key importcert</a></li> <li>• <a href="#">ncs key importkey</a></li> <li>• <a href="#">ncs key listcerts</a></li> <li>• <a href="#">ncs key deletecacert</a></li> <li>• <a href="#">ncs key importsignedcert</a></li> <li>• <a href="#">ncs db sql</a></li> <li>• <a href="#">ncs db reinitdb</a></li> <li>• <a href="#">nslookup</a></li> <li>• <a href="#">patch install</a></li> <li>• <a href="#">patch remove</a></li> <li>• <a href="#">ping</a></li> <li>• <a href="#">ping6</a></li> <li>• <a href="#">reload</a></li> <li>• <a href="#">restore</a></li> <li>• <a href="#">rmdir</a></li> <li>• <a href="#">root</a></li> <li>• <a href="#">root_enable</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">show</a> (see <a href="#">show Commands</a>)</li> <li>• <a href="#">ssh</a></li> <li>• <a href="#">tech dumptcp</a></li> <li>• <a href="#">telnet</a></li> <li>• <a href="#">terminal length</a></li> <li>• <a href="#">terminal session-timeout</a></li> <li>• <a href="#">terminal session-welcome</a></li> <li>• <a href="#">terminal terminal-type</a></li> <li>• <a href="#">traceroute</a></li> <li>• <a href="#">undebug</a></li> <li>• <a href="#">write</a></li> </ul> |
|--|---|--|

# application install



## Note

You are not allowed to run the **application install** command from the CLI under normal operations because the Cisco NCS application is preinstalled with a Cisco IOS image on all supported appliances and VMware.

To install a specific application other than the Cisco NCS, use the **application install** command in EXEC mode. To remove this function, use the **application remove** command.

**application install** *application-bundle remote-repository-name*

## Syntax Description

|                               |   |
|-------------------------------|---|
| <i>application-bundle</i>     | Application bundle filename. Up to 255 alphanumeric characters. |
| <i>remote-repository-name</i> | Remote repository name. Up to 255 alphanumeric characters.      |

## Defaults

No default behavior or values.

## Command Modes

EXEC

## Usage Guidelines

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

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

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

## Examples

### Example 1

```
ncs/admin# application install ncs-appbundle-1.0.2.054.i386.tar.gz myrepository
Do you want to save the current configuration ? (yes/no) [yes] ? y
Please enter yes or no
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 NCS database content...
Starting NCS database processes...
Restarting NCS database processes...
Creating NCS M&T session directory...
Performing NCS database priming...

Application successfully installed
```

### Example 2

```
ncs/admin# application install ncs-appbundle-1.0.2.054.i386.tar.gz myrepository
Do you want to save the current configuration ? (yes/no) [yes] ? no
Initiating Application installation...
Extracting NCS database content...
```

```
Starting NCS database processes...
Restarting NCSdatabase processes...
Creating NCS M&T session directory...
Performing NCS database priming...
```

```
Application successfully installed
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">application remove</a>  | Removes or uninstalls an application.   |
|                  | <a href="#">application start</a>   | Starts or enables an application.   |
|                  | <a href="#">application stop</a>    | Stops or disables an application.   |
|                  | <a href="#">application upgrade</a> | Upgrades an application bundle.   |
|                  | <a href="#">show application</a>    | Shows application information for the installed application packages on the system. |

## application remove



### Note

You are not allowed to run the **application remove** command from the CLI to remove the Cisco NCS application unless you are explicitly instructed to do so for an upgrade.

To remove a specific application other than the Cisco NCS, use the **application remove** command in EXEC mode. To remove this function, use the **no** form of this command.

**application remove** *application-name*

**no application remove** *application-name*

| Syntax Description |  |
|--------------------|--|
|                    | <i>application-name</i> Application name. Up to 255 alphanumeric characters. |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Removes or uninstalls an application.

### Examples

```
ncs/admin# application remove ncs
Continue with application removal? [y/n] y
```

```
Application successfully uninstalled
ncs/admin#
```



| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">application install</a> | Installs an application bundle.   |
|                  | <a href="#">application start</a>   | Starts or enables an application.   |
|                  | <a href="#">application stop</a>    | Stops or disables an application.   |
|                  | <a href="#">application upgrade</a> | Upgrades an application bundle.   |
|                  | <a href="#">show application</a>    | Shows application information for the installed application packages on the system. |

## application reset-config



### Note

This command is not currently supported by the NCS.

To reset an application configuration to factory defaults, use the **application reset-config** command in EXEC mode.

**application reset-config** *application-name*

### Syntax Description

|                         |  |
|-------------------------|--|
| <i>application-name</i> | Name of the application to reset its configuration to factory defaults. Up to 255 alphanumeric characters. |
|-------------------------|--|

### Defaults

No default behavior or values.

### Command Modes

EXEC

### Usage Guidelines

You can use the **application reset-config** command to reset the Cisco NCS configuration to factory defaults without reimaging the Cisco NCS appliance or VMware.

### Examples

#### Example 1

```

ncs/admin# application reset-config ncs
Initialize your identity policy database to factory defaults? (y/n): y
Reinitializing local policy database to factory default state...
Stopping NCS Monitoring & Troubleshooting Log Processor...
Stopping NCS Monitoring & Troubleshooting Log Collector...
Stopping NCS Monitoring & Troubleshooting Alert Process...
Stopping NCS Application Server...
Stopping NCS Monitoring & Troubleshooting Session Database...
Stopping NCS Database processes...
Extracting NCS database content...
Starting NCS database processes...
Restarting NCS database processes...
Creating NCS M&T session directory...
Performing NCS database priming...

```

```
Application successfully reset configuration
```

### Example 2

```
ncs/admin# application reset-config ncs
Initialize your identity policy database to factory defaults? (y/n): n
Existing policy database will be retained.
```

```
Application successfully reset configuration
ncs/admin#
```

## application start

To enable a specific application, use the **application start** command in EXEC mode. To remove this function, use the **no** form of this command.

**application start** *application-name*

|                           |                         |  |
|---------------------------|-------------------------|--|
| <b>Syntax Description</b> | <i>application-name</i> | Name of the predefined application that you want to enable. Up to 255 alphanumeric characters. |
|---------------------------|-------------------------|--|

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Enables an application.

You cannot use this command to start the Cisco NCS application. If you use this command to start the application, you can see that the Cisco NCS is already running.

**Examples**

```
ncs/admin# application start ncs

NCS Database processes is already running, PID: 7585
NCS M&T Session Database is already running, PID: 7851
NCS Application Server process is already running, PID: 7935
NCS M&T Log Collector is already running, PID: 7955
NCS M&T Log Processor is already running, PID: 8005
NCS M&T Alert Processor is already running, PID: 8046

ncs/admin#
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">application install</a> | Installs an application bundle.   |
|                  | <a href="#">application remove</a>  | Removes or uninstalls an application.   |
|                  | <a href="#">application stop</a>    | Stops or disables an application.   |
|                  | <a href="#">application upgrade</a> | Upgrades an application bundle.   |
|                  | <a href="#">show application</a>    | Shows application information for the installed application packages on the system. |

## application stop

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

```
application stop application-name
```

| Syntax Description | <i>application-name</i> | Name of the predefined application that you want to disable. Up to 255 alphanumeric characters. |
|--------------------|-------------------------|---|
|                    |                         |   |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Disables an application.

**Examples**

```
ncs/admin# application stop ncs

Stopping NCS Monitoring & Troubleshooting Log Processor...
Stopping NCS Monitoring & Troubleshooting Log Collector...
Stopping NCS Monitoring & Troubleshooting Alert Process...
Stopping NCS Application Server...
Stopping NCS Monitoring & Troubleshooting Session Database...
Stopping NCS Database processes...

ncs/admin#
```

| Related Commands | Command                             | Description                           |
|------------------|-------------------------------------|---------------------------------------|
|                  | <a href="#">application install</a> | Installs an application bundle.       |
|                  | <a href="#">application remove</a>  | Removes or uninstalls an application. |
|                  | <a href="#">application start</a>   | Starts or enables an application.     |

| Command                          | Description   |
|----------------------------------|---|
| <code>application upgrade</code> | Upgrades an application bundle.   |
| <code>show application</code>    | Shows application information for the installed application packages on the system. |

## application upgrade

To upgrade a specific application bundle, use the **application upgrade** command in EXEC mode. To remove this function, use the **application remove** command.

**application upgrade** *application-bundle remote-repository-name*

| Syntax Description            |  |
|-------------------------------|--|
| <i>application-bundle</i>     | Application name. Up to 255 alphanumeric characters.       |
| <i>remote-repository-name</i> | Remote repository name. Up to 255 alphanumeric characters. |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Upgrades an application bundle, and preserves any application configuration data.

If you enter the **application upgrade** command when another application upgrade operation is in progress, you will see the following warning message:

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



### Caution

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

### Examples

#### Example 1

```
ncs/admin# application upgrade ncs-appbundle-1.0.2.054.i386.tar.gz myremoterepository
Do you want to save the current configuration ? (yes/no) [yes] ? yes
Generating configuration...
Saved the running configuration to startup successfully
Initiating Application Upgrade...
ncs/admin#
```

#### Example 2

```
ncs/admin# application upgrade ncs-appbundle-1.0.2.054.i386.tar.gz myremoterepository
Do you want to save the current configuration ? (yes/no) [yes] ? no
Initiating Application Upgrade...
ncs/admin#
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">application install</a> | Installs an application bundle.   |
|                  | <a href="#">application remove</a>  | Removes or uninstalls an application.   |
|                  | <a href="#">application start</a>   | Starts or enables an application.   |
|                  | <a href="#">application stop</a>    | Stops or disables an application.   |
|                  | <a href="#">show application</a>    | Shows application information for the installed application packages on the system. |

## backup

To perform a backup (including the Cisco NCS and Cisco ADE OS data) and place the backup in a repository, use the **backup** command in EXEC mode. To perform a backup of only the Cisco NCS application data without the Cisco ADE OS data, use the **application** command.

**backup** *backup-name* **repository** *repository-name* **application** *application-name*

| Syntax Description |                         |  |
|--------------------|-------------------------|--|
|                    | <i>backup-name</i>      | Name of backup file. Up to 100 alphanumeric characters.                            |
|                    | <i>repository-name</i>  | Location where the files should be backed up to. Up to 80 alphanumeric characters. |
|                    | <i>application-name</i> | Application name. Up to 255 alphanumeric characters.                               |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Performs a backup of the Cisco NCS and Cisco ADE OS data and places the backup in a repository. To perform a backup of only the Cisco NCS application data without the Cisco ADE OS data, use the **application** command.

### Examples

#### Example 1

```
ncs/admin# backup mybackup repository myrepository
% Creating backup with timestamped filename: mybackup-100805-1222.tar.gpg
ncs/admin#
```

#### Example 2

```
ncs/admin# backup mybackup repository myrepository application ncs
% Creating backup with timestamped filename: mybackup-100805-1240.tar.gpg
ncs/admin#
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">backup-logs</a>         | Backs up system logs.   |
|                  | <a href="#">delete</a>              | Deletes a file from the Cisco NCS server.                             |
|                  | <a href="#">dir</a>                 | Lists a file from the Cisco NCS server.                               |
|                  | <a href="#">reload</a>              | Reboots the system.   |
|                  | <a href="#">repository</a>          | Enters the repository submode for configuration of backups.           |
|                  | <a href="#">restore</a>             | Restores from backup the file contents of a specific repository.      |
|                  | <a href="#">show backup history</a> | Displays the backup history of the system.                            |
|                  | <a href="#">show repository</a>     | Displays the available backup files located on a specific repository. |

## 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.

**backup-logs** *backup-name* **repository** *repository-name*

| Syntax Description |                        |  |
|--------------------|------------------------|--|
|                    | <i>backup-name</i>     | Name of one or more files to back up. Up to 100 alphanumeric characters.       |
|                    | <i>repository-name</i> | Location where files should be backed up to. Up to 80 alphanumeric characters. |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Backs up system logs.

**Examples**

```
ncs/admin# backup-logs mybackup repository myrepository
% Creating log backup with timestamped filename: mybackup-100805-1754.tar.gz
ncs/admin#
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">backup</a>              | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
|                  | <a href="#">restore</a>             | Restores from backup the file contents of a specific repository.                      |
|                  | <a href="#">repository</a>          | Enters the repository submode for configuration of backups.                           |
|                  | <a href="#">show backup history</a> | Shows the backup history of the system.   |
|                  | <a href="#">show repository</a>     | Shows the available backup files located on a specific repository.                    |

## clock

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

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

| Syntax Description |  |   |
|--------------------|--|---|
| <i>month</i>       |  | Current month of the year by name. Up to three alphabetic characters. For example, Jan for January. |
| <i>day</i>         |  | Current day (by date) of the month. Value = 0 to 31. Up to two numbers.                             |
| <i>hh:mm:ss</i>    |  | Current time in hours (24-hour format), minutes, and seconds.                                       |
| <i>yyyy</i>        |  | Current year (no abbreviation).   |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Sets the system clock. You must restart the Cisco NCS server after you reset the clock for the change to take effect.

**Examples**

```
ncs/admin# clock set May 5 18:07:20 2010
ncs/admin# show clock
Thu May 5 18:07:26 UTC 2010
ncs/admin#
```

| Related Commands | Command                    | Description  |
|------------------|----------------------------|--|
|                  | <a href="#">show clock</a> | Displays the time and date set on the system software clock. |

## configure

To enter configuration mode, use the **configure** 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.

**configure terminal**

| Syntax Description | terminal | Executes configuration commands from the terminal. |
|--------------------|----------|--|
|--------------------|----------|--|

**Defaults** No default behavior or values.

**Command Modes** EXEC

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

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

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

### Examples

#### Example 1

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

#### Example 2

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

### Related Commands

| Command                             | Description   |
|-------------------------------------|---|
| <a href="#">show running-config</a> | Displays the contents of the currently running configuration file or the configuration. |
| <a href="#">show startup-config</a> | Displays the contents of the startup configuration file or the configuration.           |

## copy

To copy any file from a source to a destination, use the **copy** command in EXEC mode. The **copy** command in the Cisco NCS copies a configuration (running or startup).

### Running Configuration

The Cisco NCS active configuration stores itself in the Cisco NCS RAM. Every configuration command you enter resides in the running configuration. If you reboot your Cisco NCS 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 NCS server startup 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 NCS 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.

The following command lines show some of the **copy** command scenarios available:



**copy running-config startup-config**—Copies the running configuration to the startup configuration.

**copy run start**—Replaces the startup configuration with the running configuration.

**Note**

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

**copy startup-config running-config**—Copies the startup configuration to the running configuration.

**copy start run**—Merges the startup configuration on top of the running configuration.

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

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

**copy startup-config** [*protocol://hostname/location*]—Copies the startup configuration to a remote system.

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

**copy logs** [*protocol://hostname/location*]—Copies log files from the system to another location.

**Note**

The **copy** command is supported only for the local disk and not for a repository.

**Syntax Description**

|                       |  |
|-----------------------|--|
| <b>running-config</b> | Represents the current running configuration file.   |
| <b>startup-config</b> | Represents the configuration file used during initialization (startup).  |
| <i>protocol</i>       | See <a href="#">Table A-5</a> for protocol keyword options.  |
| <i>hostname</i>       | Hostname of destination.   |
| <i>location</i>       | Location of destination.   |
| <b>logs</b>           | The system log files.  |
| all                   | Copies all Cisco NCS log files from the system to another location. All logs are packaged as ncslogs.tar.gz and transferred to the specified directory on the remote host. |
| filename              | Allows you to copy a single Cisco NCS log file and transfer it to the specified directory on the remote host, with its original name.                                      |
| <i>log_filename</i>   | Name of the Cisco NCS log file, as displayed by the <b>show logs</b> command (up to 255 characters).   |

|         |  |
|---------|--|
| mgmt    | Copies the Cisco NCS 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 NCS runtime debug logs from the system, bundles them as runtimelogs.tar.gz, and transfers them to the specified directory on the remote host.                 |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

The fundamental function of the **copy** command allows you to copy a file (such as a system image or configuration file) from one location to another location. The source and destination for the file specified uses the Cisco NCS 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 on the command line all the 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.

**Timesaver**

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

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 FTP or SCP error messages.

**Table A-5 Protocol Prefix Keywords**

| Keyword     | Source of Destination   |
|-------------|---|
| <b>ftp</b>  | Source or destination URL for FTP network server. The syntax for this alias:<br><b>ftp:[[/username [:password]@]location]/directory]/filename</b> |
| <b>scp</b>  | Source or destination URL for SCP network server. The syntax for this alias:<br><b>scp:[[/username [:password]@]location]/directory]/filename</b> |
| <b>sftp</b> | Source or destination URL for an SFTP network server. The syntax for this alias:<br><b>sftp:[/location]/directory]/filename</b>                   |
| <b>tftp</b> | Source or destination URL for a TFTP network server. The syntax for this alias:<br><b>tftp:[/location]/directory]/filename</b>                    |

**Examples****Example 1**

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

**Example 2**

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

**Example 3**

```
ncs/admin# copy start run
ncs/admin#
```

**Example 4**

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

**Example 5**

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

**Example 6**

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

**Related Commands**

| Command                             | Description   |
|-------------------------------------|---|
| <a href="#">application install</a> | Starts or stops a Cisco NCS instance.   |
| <a href="#">backup</a>              | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
| <a href="#">delete</a>              | Deletes a file from the Cisco NCS server.   |
| <a href="#">dir</a>                 | Lists a file from the Cisco NCS server.   |
| <a href="#">reload</a>              | Reboots the system.   |
| <a href="#">restore</a>             | Restores from backup the file contents of a specific repository.                      |
| <a href="#">show application</a>    | Shows application status and version information.                                     |
| <a href="#">show version</a>        | Displays information about the software version of the system.                        |

**debug**

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

```
debug {all | application | backup-restore | cdp | config | icmp | copy | locks | logging | snmp |
system | transfer | user | utils}
```

| Syntax Description |                       |  |
|--------------------|-----------------------|--|
|                    | <b>all</b>            | Enables all debugging.   |
|                    | <b>application</b>    | Application files. <ul style="list-style-type: none"> <li>• <i>all</i>—Enables all application debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>install</i>—Enables application install debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>operation</i>—Enables application operation debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>uninstall</i>—Enables application uninstall debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul>  |
|                    | <b>backup-restore</b> | Backs up and restores files. <ul style="list-style-type: none"> <li>• <i>all</i>—Enables all debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>backup</i>—Enables backup debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>backup-logs</i>—Enables backup-logs debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>history</i>—Enables history debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>restore</i>—Enables restore debug output for backup-restore. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul> |
|                    | <b>cdp</b>            | Cisco Discovery Protocol configuration files. <ul style="list-style-type: none"> <li>• <i>all</i>—Enables all Cisco Discovery Protocol configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>config</i>—Enables configuration debug output for Cisco Discovery Protocol. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>infra</i>—Enables infrastructure debug output for Cisco Discovery Protocol. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul>  |

|                 |  |
|-----------------|--|
| <b>config</b>   | <p>Configuration files.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Enables all configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>backup</i>—Enables backup configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>clock</i>—Enables clock configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>infra</i>—Enables configuration infrastructure debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>kron</i>—Enables command scheduler configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>network</i>—Enables network configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>repository</i>—Enables repository configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>service</i>—Enables service configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul> |
| <b>icmp</b>     | <p>Internet Control Message Protocol (ICMP) echo response configuration.</p> <p><i>all</i>—Enable all debug output for ICMP echo response configuration. Set level between 0 and 7, with 0 being severe and 7 being all.</p>   |
| <b>copy</b>     | <p>Copy commands. Set level between 0 and 7, with 0 being severe and 7 being all.</p>  |
| <b>locks</b>    | <p>Resource locking.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Enables all resource locking debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>file</i>—Enables file locking debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul>   |
| <b>logging</b>  | <p>Logging configuration files.</p> <p><i>all</i>—Enables all logging configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</p>  |
| <b>snmp</b>     | <p>SNMP configuration files.</p> <p><i>all</i>—Enables all SNMP configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</p>  |
| <b>system</b>   | <p>System files.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Enables all system files debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>id</i>—Enables system ID debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>info</i>—Enables system info debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li>• <i>init</i>—Enables system init debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul>  |
| <b>transfer</b> | <p>File transfer. Set level between 0 and 7, with 0 being severe and 7 being all.</p>  |

|              |   |
|--------------|---|
| <b>user</b>  | User management. <ul style="list-style-type: none"> <li><i>all</i>—Enables all user management debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</li> <li><i>password-policy</i>—Enables user management debug output for password-policy. Set level between 0 and 7, with 0 being severe and 7 being all.</li> </ul> |
| <b>utils</b> | Utilities configuration files. <p><i>all</i>—Enables all utilities configuration debug output. Set level between 0 and 7, with 0 being severe and 7 being all.</p>  |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

Use the **debug** command to identify various failures within the Cisco NCS server; for example, setup failures or configuration failures.

**Examples**

```
ncs/admin# debug all
ncs/admin# mkdir disk:/1
ncs/admin# 6 [15347]: utils: vsh_root_stubs.c[2742] [admin]: mkdir operation success

ncs/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
ncs/admin#

ncs/admin# undebug all
ncs/admin#
```

**Related Commands**

| Command                 | Description   |
|-------------------------|---|
| <a href="#">undebug</a> | Disables the output (display of errors or events) of the <b>debug</b> command for various command situations. |

## delete

To delete a file from the Cisco NCS server, use the **delete** command in EXEC mode. To remove this function, use the **no** form of this command.

```
delete filename [disk:/path]
```

| Syntax Description |                   |   |
|--------------------|-------------------|---|
|                    | <i>filename</i>   | Filename. Up to 80 alphanumeric characters. |
|                    | <i>disk:/path</i> | Location.                                   |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** If you attempt to delete the 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.

**Examples**

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

| Related Commands | Command             | Description                                  |
|------------------|---------------------|--|
|                  | <a href="#">dir</a> | Lists all the files on the Cisco NCS server. |

## dir

To list a file from the Cisco NCS server, use the **dir** command in EXEC mode. To remove this function, use the **no** form of this command.

**dir** [*word*] [**recursive**]

| Syntax Description |                  |  |
|--------------------|------------------|--|
|                    | <i>word</i>      | Directory name. Up to 80 alphanumeric characters. Requires <b>disk:/</b> preceding the directory name. |
|                    | <b>recursive</b> | Lists a local directory or filename recursively.   |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** None.

**Examples****Example 1**

```
ncs/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

ncs/admin#
```

**Example 2**

```
ncs/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

ncs/admin#
```

**Example 3**

```
ncs/admin# dir recursive

Directory of disk:/

 2034113 Aug 05 2010 19:58:39 ADElogs.tar.gz
2996022 Aug 05 2010 19:11:16 mybackup-100805-1910.tar.gz
   4096 Aug 04 2010 23:14:53 logs/
   4096 Aug 05 2010 12:25:55 temp/
   4096 Jun 10 2010 02:34:03 activemq-data/
   4096 Aug 04 2010 23:15:20 target/
  16384 Jun 09 2010 02:59:34 lost+found/

Directory of disk:/logs

    0 Aug 05 2010 11:53:52 usermgmt.log

Directory of disk:/temp

  281 Aug 05 2010 19:12:45 RoleBundles.xml
 6631 Aug 05 2010 19:12:34 PipDetails.xml
   69 Aug 05 2010 19:12:45 GroupRoles.xml
  231 Aug 05 2010 19:12:34 ApplicationGroupTypes.xml
544145 Aug 05 2010 19:12:35 ResourceTypes.xml
45231 Aug 05 2010 19:12:45 UserTypes.xml
   715 Aug 05 2010 19:12:34 ApplicationGroups.xml
  261 Aug 05 2010 19:12:34 ApplicationTypes.xml
 1010 Aug 05 2010 19:12:34 Pdps.xml
1043657 Aug 05 2010 19:12:44 Groups.xml
 281003 Aug 05 2010 19:12:38 Resources.xml
   69 Aug 05 2010 19:12:45 GroupUsers.xml
```



```

2662 Aug 05 2010 19:12:44 RoleTypes.xml
 79 Aug 05 2010 19:12:34 UserStores.xml
4032 Aug 05 2010 19:12:38 GroupTypes.xml
1043 Aug 05 2010 19:12:34 Organization.xml
58377 Aug 05 2010 19:12:46 UserRoles.xml
 300 Aug 05 2010 19:12:45 Contexts.xml
 958 Aug 05 2010 19:12:34 Applications.xml
28010 Aug 05 2010 19:12:45 Roles.xml
122761 Aug 05 2010 19:12:45 Users.xml

Directory of disk:/activemq-data

 4096 Jun 10 2010 02:34:03 localhost/

Directory of disk:/activemq-data/localhost

 0 Jun 10 2010 02:34:03 lock
4096 Jun 10 2010 02:34:03 journal/
4096 Jun 10 2010 02:34:03 kr-store/
4096 Jun 10 2010 02:34:03 tmp_storage/

Directory of disk:/activemq-data/localhost/journal

33030144 Aug 06 2010 03:40:26 data-1
 2088 Aug 06 2010 03:40:26 data-control

Directory of disk:/activemq-data/localhost/kr-store

 4096 Aug 06 2010 03:40:27 data/
 4096 Aug 06 2010 03:40:26 state/

Directory of disk:/activemq-data/localhost/kr-store/data

 102 Aug 06 2010 03:40:27 index-container-roots
 0 Aug 06 2010 03:40:27 lock

Directory of disk:/activemq-data/localhost/kr-store/state

 3073 Aug 06 2010 03:40:26 hash-index-store-state_state
 51 Jul 20 2010 21:33:33 index-transactions-state
 204 Aug 06 2010 03:40:26 index-store-state
 306 Jun 10 2010 02:34:03 index-kaha
 290 Jun 10 2010 02:34:03 data-kaha-1
71673 Aug 06 2010 03:40:26 data-store-state-1
 0 Jun 10 2010 02:34:03 lock

Directory of disk:/activemq-data/localhost/tmp_storage

No files in directory

Directory of disk:/target

 4096 Aug 04 2010 23:15:20 logs/

Directory of disk:/target/logs

 0 Aug 04 2010 23:15:20 ProfilerPDP.log
2208 Aug 05 2010 11:54:26 ProfilerSensor.log

Directory of disk:/lost+found

No files in directory

Usage for disk: filesystem

```

```

8076189696 bytes total used
6371618816 bytes free
15234142208 bytes available

```

```
ncs/admin#
```

| Related Commands | Command                | Description                               |
|------------------|------------------------|---|
|                  | <a href="#">delete</a> | Deletes a file from the Cisco NCS server. |

## exit

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

```
exit
```

**Syntax Description** This command has no arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Use the **exit** command in EXEC mode to exit an active session (log out of the Cisco NCS server) or to move up from configuration mode.

**Examples** ncs/admin# **exit**

| Related Commands | Command              | Description                            |
|------------------|----------------------|--|
|                  | <a href="#">end</a>  | Exits configuration mode.              |
|                  | <a href="#">exit</a> | Exits configuration mode or EXEC mode. |
|                  | <b>Ctrl-z</b>        | Exits configuration mode.              |

## forceout

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

```
forceout username
```

|                           |                 |   |
|---------------------------|-----------------|---|
| <b>Syntax Description</b> | <i>username</i> | The name of the user. Up to 31 alphanumeric characters. |
|---------------------------|-----------------|---|

**Defaults** No default behavior or values.

**Command Modes** EXEC

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

**Examples**

```
ncs/admin# forceout user1
ncs/admin#
```

## halt

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

**halt**

**Syntax Description** No arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Before you enter the **halt** command, ensure that the Cisco NCS is not performing any backup, restore, installation, upgrade, or remove operation. If you enter the **halt** command while the Cisco NCS is performing any of these operations, you will get one of the following 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 halt the 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, the Cisco NCS asks you to respond to the following option:

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

Enter **YES** to save the existing Cisco NCS configuration. The Cisco NCS displays the following message:

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

**Examples**

```
ncs/admin# halt
ncs/admin#
```

**Related Commands**

| Command                | Description         |
|------------------------|---------------------|
| <a href="#">reload</a> | Reboots the system. |

**mkdir**

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

```
mkdir directory-name [disk:/path]
```

**Syntax Description**

|                       |  |
|-----------------------|--|
| <i>directory-name</i> | The name of the directory to create. Up to 80 alphanumeric characters. |
| <i>disk:/path</i>     | Use <i>disk:/path</i> with the directory name.                         |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

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

**Examples**

```
ncs/admin# mkdir disk:/test
ncs/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

ncs/admin#
```

| Related Commands | Command            | Description                                 |
|------------------|--------------------|---|
|                  | <code>dir</code>   | Displays a list of files on the NCS server. |
|                  | <code>rmdir</code> | Removes an existing directory.              |

## ncs start

To start the NCS server, use the **ncs start** command. To see the messages in the console, use the **ncs start verbose** command.

**ncs start [verbose]**

### Syntax Description

|                |  |
|----------------|--|
| <b>verbose</b> | Displays the detailed messages during the start process. |
|----------------|--|

### Defaults

No default behavior or values.

### Command Modes

EXEC

### Examples

This example shows how to start the NCS server:

```
> ncs start verbose
Starting Network Control System...

Starting Health Monitor
Starting Health Monitor as a primary
Checking for Port 8082 availability... OK
Starting Health Montior Web Server...
Health Monitor Web Server Started.
Starting Health Monitor Server...
Health Monitor Server Started.
Starting Service Name: Reporting
Starting dependency service: NMS Server
Starting dependency service: Matlab
Starting remoting: Matlab Server
Checking for Port 20555 availability... OK
Remoting Service Matlab Server application root: /opt/CSCOncs
Starting Remoting Service Web Server Matlab Server...
Remoting Service Web Server Matlab Server Started.
Starting Remoting Service Matlab Server...
Remoting 'Matlab Server' started successfully.
Starting dependency service: Ftp
Starting remoting: Ftp Server
Checking for Port 20558 availability... OK
Starting up FTP server
Started FTP
FTP Server started
Remoting Service Ftp Server application root: /opt/CSCOncs
Starting Remoting Service Web Server Ftp Server...
Remoting Service Web Server Ftp Server Started.
Starting Remoting Service Ftp Server...
```

```

Remoting 'Ftp Server' started successfully.
Starting dependency service: Tftp
Starting remoting: Tftp Server
Checking for Port 20559 availability... OK
Starting up TFTP server...
TFTP Server started.
Remoting Service Tftp Server application root: /opt/CSCONcs
Starting Remoting Service Web Server Tftp Server...
Remoting Service Web Server Tftp Server Started.
Starting Remoting Service Tftp Server...
Remoting 'Tftp Server' started successfully.
Starting NMS Server
Checking for running servers.
  Checking if DECAP is running.
    00:00 DECAP is not running.
00:00 Check complete. No servers running.
    00:10 DECAP setup complete.
Starting Server ...
Reporting started successfully

Starting Service Name: Ftp
Ftp is already running.

Starting Service Name: Database
00:40 Server started.
00:40 DONE
Done
Database is already running.

Starting Service Name: Tftp
Tftp is already running.

Starting Service Name: Matlab
Matlab is already running.

Starting Service Name: NMS Server
NMS Server is already running.

Network Control System started successfully.

```

## Related Commands

| Command                    | Description                                    |
|----------------------------|--|
| <a href="#">ncs stop</a>   | Stops the NCS server.                          |
| <a href="#">ncs status</a> | Displays the current status of the NCS server. |

## ncs stop

To stop the NCS server, use the **ncs stop** command. To see the detailed messages, use the **ncs stop verbose** command.

```
ncs stop [verbose]
```

**Syntax Description**

|                |   |
|----------------|---|
| <b>verbose</b> | Displays the detailed messages during the stop process. |
|----------------|---|

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples**

This example shows how to stop the NCS server:

```
> ncs stop verbose
Stopping Network Control System...
Stopping Network Control System server
Stopping Service Name: Reporting
Stopping Reporting
Reporting successfully shutdown.
Stopping Service Name: Ftp
Stopping NMS Server
Stopping Reporting Server(XMP) ..DONE
NMS Server successfully shutdown.

Stopping remoting: Ftp Server
Stopping FTP server...
Stopped FTP server.
Stopping Remoting Web Server Ftp Server...
Remoting Web Server Ftp Server stopped.
Remoting 'Ftp Server' stopped successfully.
Stopping Service Name: Database
Shutting down database server ...
Stopping XMP ....DONE

Stopping Service Name: Tftp
Stopping remoting: Tftp Server
Stopping TFTP server...
Stopped TFTP server.
Stopping Remoting Web Server Tftp Server...
Remoting Web Server Tftp Server stopped.
Remoting 'Tftp Server' stopped successfully.
Stopping Service Name: Matlab
Stopping remoting: Matlab Server
Stopping Remoting Web Server Matlab Server...
Remoting Web Server Matlab Server stopped.
Warning: latest version of matlab app-defaults file not found.
Contact your system administrator to have this file installed.
Remoting 'Matlab Server' stopped successfully.

Stopping Service Name: NMS Server
NMS Server is not running.
Stopping Tomcat...
Tomcat Stopped.

Network Control System successfully shutdown.
```

**Related Commands**

| Command                    | Description                                    |
|----------------------------|--|
| <a href="#">ncs start</a>  | Starts the NCS server.                         |
| <a href="#">ncs status</a> | Displays the current status of the NCS server. |

**ncs status**

To display the NCS server status, use the **ncs status** command.

**ncs status****Syntax Description**

This command has no arguments or keywords.

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples**

This example shows how to display the status of NCS server:

```
> ncs status
Health Monitor Server is running.
Reporting is running.
Ftp Server is Success
Database server is running
Tftp Server is Success
Matlab Server is Success
NMS Server is running.
```

**Related Commands**

| Command                   | Description            |
|---------------------------|------------------------|
| <a href="#">ncs start</a> | Starts the NCS server. |
| <a href="#">ncs stop</a>  | Stops the NCS server.  |

**ncs migrate**

To migrate the WCS data to NCS server database, use the **ncs migrate** command.

**ncs migrate wcs-data filename repository repositoryname**



**Syntax Description**

|                       |   |
|-----------------------|---|
| <b>wcs-data</b>       |   |
| <i>filename</i>       | Archieved WCS data file. Filename can contains up to 512 alphanumeric characters.     |
| <b>repository</b>     |   |
| <i>repositoryname</i> | The repository name configured in the NCS where the archived WCS data file is hosted. |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**Examples**

This example shows how to migrate WCS archieved files to NCS server:

```
> ncs migrate wcs-data wcs.zip repository wcs-ftp-repo
```

**Note**

- Use '**ncs stop**' command to stop the NCS server.
- The DB and NCS server may need to be restarted multiple times.
- Execute the '**show repository repositoryname**' command and confirm whether the repository server is reachable and wcs data zip file is existing in the repository server.
- SFTP/FTP/Local as repository is supported in this release. NFS as repository is a not tested feature.

**Related Commands**

| Command                    | Description                                    |
|----------------------------|--|
| <a href="#">ncs start</a>  | Starts the NCS server.                         |
| <a href="#">ncs stop</a>   | Stops the NCS server.                          |
| <a href="#">ncs status</a> | Displays the current status of the NCS server. |

**ncs password ftpuser**

To change the FTP username and password, use the **ncs password ftpuser *username* password *password*** command.

```
ncs passwod ftpuser username password password
```

**Syntax Description**

|                 |   |
|-----------------|---|
| <i>username</i> | The ftpuser name  |
| <i>password</i> | The modified password. The password cannot contain 'cisco' or 'ocsic', or any variant obtained by changing the capitalization of letters therein or by substituting '1', 'l', or '!' for i, '0' for 'o', or '\$' for 's'. |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC Mode.

**Examples**

This example shows how to change the FTP username and password:

```
> ncs password ftpuser
```

**Related Commands**

| Command                                    | Description                                |
|--|--|
| <a href="#">ncs start</a>                  | Starts the NCS sever.                      |
| <a href="#">ncs stop</a>                   | Stops the NCS server.                      |
| <a href="#">ncs status</a>                 | Displays the current status of NCS server. |
| <a href="#">ncs migrate</a>                | Migrates the old WCS data to NCS.          |
| <a href="#">ncs password root password</a> | Changes the root password.                 |

## ncs password root password

To change the root password, use the **ncs password root password** command.

**ncs password root password** *password*

**Syntax Description**

|                 |   |
|-----------------|---|
| <i>password</i> | modified password. The password cannot contain 'cisco' or 'ocsic', or any variant obtained by changing the capitalization of letters therein or by substituting '1', 'l', or '!' for i, '0' for 'o', or '\$' for 's'. |
|-----------------|---|

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**Examples**

This example shows how to migrate WCS archived files to NCS server:

```
> ncs password root password Private123
Loading USER - root
Validating new password..
Resetting password ..
Resetting password COMPLETED.
EXECUTION STATUS : Success
```

**Related Commands**

| Command                              | Description                                |
|--------------------------------------|--|
| <a href="#">ncs start</a>            | Start NCS sever.                           |
| <a href="#">ncs stop</a>             | Stops NCS server.                          |
| <a href="#">ncs status</a>           | Displays the current status of NCS server. |
| <a href="#">ncs migrate</a>          | Migrates the old WCS data to NCS.          |
| <a href="#">ncs password ftpuser</a> | Changes the FTP username and password.     |

**ncs key genkey**

To generate a new RSA key and self-signed certificate, use the **ncs key genkey** command.

```
ncs key genkey -newdn -csr csrfilename repository repositoryname
```

**Syntax Description**

|                       |  |
|-----------------------|--|
| <b>-newdn</b>         | Generates a new RSA key and self-signed cert with domain information.              |
| <b>-csr</b>           | Generates new CSR certificate file.  |
| <b>repository</b>     | Repository command.  |
| <i>csrfilename</i>    | CSR filename.  |
| <i>repositoryname</i> | Location where the files should be backed up to. Up to 80 alphanumeric characters. |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**Examples**

This example shows how to generate new rsa key and certificate files in NCS server:

```
>ncs key genkey -newdn -csr csrfile.cert repository wcs-sftp-repo
Generating RSA key
INFO: no staging url defined, using local space.          rval:2
```

**Related Commands**

| Command                                  | Description   |
|--|---|
| <a href="#">ncs key importcacert</a>     | Applies a CA certificate to trust store in NCS.         |
| <a href="#">ncs key listcacerts</a>      | Lists all the CA certificates exist in NCS trust store. |
| <a href="#">ncs key deletcacert</a>      | Deletes a CA certificates exist in NCS trust store.     |
| <a href="#">ncs key importsignedcert</a> | Applies a RSA key and signed certificate to NCS.        |
| <a href="#">ncs key importkey</a>        | Applies a RSA key and certificate to NCS.               |

**Note**

After entering this command, enter the **ncs stop** and **ncs start** command to restart the NCS server to make changes into effect.

## ncs key importcacert

To apply a CA certificate to a trust store in NCS, use the **ncs key importcacert** command.

```
ncs key importcacert aliasname ca-cert-filename repository repositoryname
```

**Syntax Description**

|                         |  |
|-------------------------|--|
| <i>aliasname</i>        | A short name given for this CA certificate.  |
| <i>ca-cert-filename</i> | CA certificate file name.  |
| <i>repositoryname</i>   | The repository name configured in the NCS where the <i>ca-cert-filename</i> is hosted. |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**Examples**

This example shows how to apply the CA certificate file to a trust store in NCS server:

```
> ncs key importcacert alias1 cacertfile repository wcs-sftp-repo
```

**Note**

After applying this command, enter **ncs stop** and **ncs start** command to restart the NCS server to make changes into effect.

**Related Commands**

| Command                                 | Description   |
|---|---|
| <a href="#">ncs key genkey</a>          | Generates a new RSA key and self-signed certificate.    |
| <a href="#">ncs key listcacerts</a>     | Lists all the CA certificates exist in NCS trust store. |
| <a href="#">ncs key deletcacert</a>     | Deletes a CA certificates exist in NCS trust store.     |
| <a href="#">ncs key importsigndcert</a> | Applies a RSA key and signed certificate to NCS.        |
| <a href="#">ncs key importkey</a>       | Applies a RSA key and certificate to NCS.               |

**ncs key importkey**

To apply an RSA key and signed certificate to NCS, use the **ncs key importkey** command.

```
ncs key importkey key-filename cert-filename repository repositoryname
```

**Syntax Description**

|                       |   |
|-----------------------|---|
| <i>key-filename</i>   | RSA private key file name.  |
| <i>cert-filename</i>  | Certificate file name.  |
| <i>repositoryname</i> | The repository name configured in the NCS where the key-file and cert-file is hosted. |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**Examples**

This example shows how to apply the new RSA key and certificate files to the NCS server.

```
> ncs key importkey keyfile certfile repository wcs-sftp-repo
```

**Note**

After applying this command, enter **ncs stop** and **ncs start** command to restart the NCS server to make changes into effect.

**Related Commands**

| Command                             | Description   |
|-------------------------------------|---|
| <a href="#">ncs key genkey</a>      | Generates a new RSA key and self-signed certificate.    |
| <a href="#">ncs key listcacerts</a> | Lists all the CA certificates exist in NCS trust store. |
| <a href="#">ncs key deletcacert</a> | Deletes a CA certificates exist in NCS trust store.     |

| Command                             | Description                                      |
|-------------------------------------|--|
| <code>ncs key importsigncert</code> | Applies a RSA key and signed certificate to NCS. |
| <code>ncs key importcacert</code>   | Applies a CA certificate to trust store in NCS.  |

## ncs key listcacerts

To list all the CA certificates that exist in the NCS trust store, use the `ncs key listcacerts` command.

### `ncs key listcacerts`

**Syntax Description** This command has no arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC mode.

**Examples** This example shows how to list all the CA certificates exist in NCS trust store:

```
> ncs key listcacerts

Certificate utnuserfirsthardwareca from CN=UTN-USERFirst-Hardware,
OU=http://www.example.com, O=The USERTRUST Network, L=Salt Lake City, ST=UT, C=US
Certificate gtecybertrust5ca from CN=GTE CyberTrust Root 5, OU="GTE CyberTrust Solutions,
Inc.", O=GTE Corporation, C=US
Certificate equifaxsecureebusinessca1 from CN=Equifax Secure eBusiness CA-1, O=Equifax
Secure Inc., C=US
Certificate thawtepersonalfreemailca from EMAILADDRESS=email@example.com, CN=Thawte
Personal Freemail CA, OU=Certification Services Division, O=Thawte Consulting, L=Cape
Town, ST=Western Cape, C=ZA
Certificate addtrustclass1ca from CN=AddTrust Class 1 CA Root, OU=AddTrust TTP Network,
O=AddTrust AB, C=SE
Certificate aolrootca1 from CN=America Online Root Certification Authority 1, O=America
Online Inc., C=US
Certificate geotrustuniversalca from CN=GeoTrust Universal CA, O=GeoTrust Inc., C=US
Certificate digicertglobalrootca from CN=DigiCert Global Root CA, OU=www.example.com,
O=DigiCert Inc, C=US
Certificate certumtrustednetworkca from CN=Certum Trusted Network CA, OU=Certum
Certification Authority, O=Unizeto Technologies S.A., C=PL
Certificate swissignsilverg2ca from CN=SwissSign Silver CA - G2, O=SwissSign AG, C=CH
```

**Related Commands**

| Command                                | Description  |
|--|--|
| <a href="#">ncs key genkey</a>         | Generates a new RSA key and self-signed certificate. |
| <a href="#">ncs key importkey</a>      | Applies a RSA key and signed certificate to NCS.     |
| <a href="#">ncs key deletcacert</a>    | Deletes a CA certificates exist in NCS trust store.  |
| <a href="#">ncs key importsigncert</a> | Applies an RSA key and signed certificate to NCS.    |
| <a href="#">ncs key importcacert</a>   | Applies a CA certificate to trust store in NCS.      |

**ncs key deletcacert**

To delete CA certificates that exist in the NCS trust store, use the **ncs key deletcacert** command.

**ncs key deletcacert** *aliasname*

**Syntax Description**

|                  |   |
|------------------|---|
| <i>aliasname</i> | The short or alias name of the CA certificate which needs to be deleted from NCS trust store. |
|------------------|---|

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**Examples**

This example shows how to delete CA certificates exist in NCS trust store:

```
> ncs key deletcacert certumtrustednetworkca
Deleting certificate from trust store
```

**Related Commands**

| Command                                | Description  |
|--|--|
| <a href="#">ncs key genkey</a>         | Generates a new RSA key and self-signed certificate.     |
| <a href="#">ncs key importkey</a>      | Applies an RSA key and signed certificate to NCS.        |
| <a href="#">ncs key listcacerts</a>    | Lists all CA certificates that exist in NCS trust store. |
| <a href="#">ncs key importsigncert</a> | Applies an RSA key and signed certificate to NCS.        |
| <a href="#">ncs key importcacert</a>   | Applies a CA certificate to trust store in NCS.          |

## ncs key importsignedcert

To apply an RSA key and signed certificate to NCS, use the **ncs key importsignedcert** command.

**ncs key importsignedcert** *signed-cert-filename* **repository** *repositoryname*

### Syntax Description

|                             |   |
|-----------------------------|---|
| <i>signed-cert-filename</i> | Signed certificate filename.  |
| <i>repositoryname</i>       | The repository name configured in the NCS where the key-file and cert-file is hosted. |

### Defaults

No default behavior or values.

### Command Modes

EXEC mode.

### Examples

This example shows how to apply signed certificate files to the NCS server:

```
> ncs key importsingedcert signed-certfile repository wcs-sftp-repo
```



#### Note

After applying this command, enter **ncs stop** and **ncs start** command to restart the NCS server to make changes into effect.

### Related Commands

| Command                              | Description  |
|--------------------------------------|--|
| <a href="#">ncs key genkey</a>       | Generates a new RSA key and self-signed certificate.     |
| <a href="#">ncs key importkey</a>    | Applies an RSA key and signed certificate to NCS.        |
| <a href="#">ncs key deletcacert</a>  | Deletes a CA certificates exist in NCS trust store.      |
| <a href="#">ncs key listcacerts</a>  | Lists all CA certificates that exist in NCS trust store. |
| <a href="#">ncs key importcacert</a> | Applies a CA certificate to trust store in NCS.          |

## ncs db sql

To run the SQL query from the NCS terminal, use the **ncs db sql** command in EXEC mode.

**ncs db sql** *query\_string*

### Syntax Description

|                     |   |
|---------------------|---|
| <i>query_string</i> | Enter the sql query string enclosed in double quotes. |
|---------------------|---|



|                         |  |
|-------------------------|--|
| <b>Defaults</b>         | No default behavior or values.   |
| <b>Command Modes</b>    | EXEC mode  |
| <b>Usage Guidelines</b> | The NCS database server should be in running state to successfully execute this command. |

**Examples** This example shows how to run a DB sql query on the NCS server:

```
ncs/admin# ncs db sql "select count(*) from clientcount"
                COUNT(*)
-----
                        75
ncs/admin#
```

## ncs db reinitdb

To reinitialize the NCS database, use the **ncs db reinitdb** command in EXEC mode. This command removes all data present in the database.

**ncs db reinitdb**

|                           |  |
|---------------------------|--|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--|

|                 |                    |
|-----------------|--------------------|
| <b>Defaults</b> | No default values. |
|-----------------|--------------------|

|                      |           |
|----------------------|-----------|
| <b>Command Modes</b> | EXEC mode |
|----------------------|-----------|

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | You can use this command if the NCS database becomes unstable or unusable, or if you want to remove the old data and start with a clean database. |
|-------------------------|---|

**Examples** This example shows how to run a DB sql query on the NCS server:

```
admin# ncs db reinitdb
-All data will be lost. Do you wish to continue? (y/n)
y
-Creating a new, empty database. This may take 10 to 20 minutes
-Database re-initialization completed
admin#
```

## nslookup

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

**nslookup** *word*

### Syntax Description

|             |  |
|-------------|--|
| <i>word</i> | IPv4 address or hostname of a remote system. Up to 64 alphanumeric characters. |
|-------------|--|

### Defaults

No default behavior or values.

### Command Modes

EXEC

### Examples

#### Example 1

```
ncs/admin# nslookup 209.165.200.225
Trying "209.165.200.225.in-addr.arpa"
Received 127 bytes from 171.70.168.183#53 in 1 ms
Trying "209.165.200.225.in-addr.arpa"
Host 209.165.200.225.in-addr.arpa. not found: 3(NXDOMAIN)
Received 127 bytes from 171.70.168.183#53 in 1 ms

ncs/admin#
```

#### Example 2

```
ncs/admin# nslookup 209.165.200.225
Trying "225.200.165.209.in-addr.arpa"
;; ->HEADER<<- opcode: QUERY, status: NOERROR, id: 65283
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 0

;; QUESTION SECTION:
;225.200.165.209.in-addr.arpa. IN PTR

;; ANSWER SECTION:
225.200.165.209.in-addr.arpa. 86400 IN PTR 209-165-200-225.got.net.

;; AUTHORITY SECTION:
200.165.209.in-addr.arpa. 86400 IN NS ns1.got.net.
200.165.209.in-addr.arpa. 86400 IN NS ns2.got.net.

Received 119 bytes from 171.70.168.183#53 in 28 ms

ncs/admin#
```

## patch install

The **patch install** command installs a patch bundle of the application only on a specific node where you run the **patch install** command from the CLI.

**Note**

In a Cisco NCS distributed deployment environment, install the patch bundle of the application from the primary Policy Administration Point (PAP) node in the Cisco NCS Administration user interface so that the patch bundle automatically gets installed on all the secondary nodes.

To install a patch bundle of the application, use the **patch** command in EXEC mode.

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

**Syntax Description**

|                     |  |
|---------------------|--|
| <i>patch-bundle</i> | The patch bundle file name. Up to 255 alphanumeric characters. |
| repository          | Repository name. Up to 255 alphanumeric characters.            |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC mode.

**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, then you receive the following error message:

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

**Examples****Example 1**

```
ncs/admin# patch install ncs-appbundle-1.0.2.054-3.i386.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 Patch installation...

Patch successfully installed
ncs/admin#
```

**Example 2**

```
ncs/admin# patch install ncs-appbundle-1.0.2.054-3.i386.tar.gz myrepository
Do you want to save the current configuration ? (yes/no) [yes] ? no
Initiating Application Patch installation...

Patch successfully installed
ncs/admin#
```

**Example 3**

```
ncs/admin# patch install ncs-appbundle-1.0.2.054-2.i386.tar.gz disk
Do you want to save the current configuration ? (yes/no) [yes] ? yes
Generating configuration...
Saved the running configuration to startup successfully
Initiating Application Patch installation...
% Patch to be installed is an older version than currently installed version.
ncs/admin#
```

| Related Commands | Command                      | Description   |
|------------------|------------------------------|---|
|                  | <a href="#">patch remove</a> | Removes a specific patch bundle version of the application.   |
|                  | <a href="#">show version</a> | Displays information about the currently loaded software version, along with hardware and device information. |

## patch remove



### Note

In a Cisco NCS distributed deployment environment, remove the patch bundle of the application from the primary Policy Administration Point (PAP) node in the Cisco NCS Administration user interface so that the patch bundle automatically gets uninstalled from all the secondary nodes.

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

```
patch remove word word
```

| Syntax Description | word        | Description  |
|--------------------|-------------|--|
|                    | <i>word</i> | The name of the application for which the patch is to be removed. Up to 255 alphanumeric characters. |
|                    | <i>word</i> | The patch version number to be removed. Up to 255 alphanumeric characters.                           |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Removes a specific patch bundle of the application.

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

```
% Patch is not installed
```

### Examples

#### Example 1

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

Application patch successfully uninstalled
ncs/admin#
```

#### Example 2

```
ncs/admin# patch remove ncs 3
```

```
Continue with application patch uninstall? [y/n] y

% Patch is not installed
ncs/admin#
```

**Related Commands**

| Command                       | Description   |
|-------------------------------|---|
| <a href="#">patch install</a> | Installs a specific patch bundle of the application.  |
| <a href="#">show version</a>  | Displays information about the currently loaded software version, along with hardware and device information. |

## 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**

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

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

The **ping** command sends an echo request packet to an address, then awaits a reply. The ping output can help you evaluate path-to-host reliability, delays over the path, and whether you can reach a host.

**Examples**

```
ncs/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
```

```
ncs/admin#
```

**Related Commands**

| Command               | Description                 |
|-----------------------|-----------------------------|
| <a href="#">ping6</a> | Ping a remote IPv6 address. |

## ping6

Similar to the IPv4 **ping** command, use the IPv6 **ping6** command in EXEC mode.

```
ping6 {ip-address | hostname} [GigabitEthernet 0-3][packetsize packetsize] [pingcount pingcount]
```

**Syntax Description**

|                        |  |
|------------------------|--|
| <i>ip-address</i>      | IP address of the system to ping. Up to 64 alphanumeric characters.            |
| <i>hostname</i>        | Hostname of the system to ping. Up to 64 alphanumeric characters.              |
| <b>GigabitEthernet</b> | Selects the ethernet interface.  |
| <b>packetsize</b>      | Size of the ping packet.   |
| <i>packetsize</i>      | Specifies the size of the ping packet; the value can be between 0 and 65507.   |
| <b>pingcount</b>       | Number of ping echo requests.  |
| <i>pingcount</i>       | Specifies the number of ping echo requests; the value can be between 1 and 10. |

**Command Default**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

The IPv6 **ping6** command sends an echo request packet to an address, then awaits a reply. The ping output can help you evaluate path-to-host reliability, delays over the path, and whether you can reach a host.

The IPv6 **ping6** command is similar to the existing IPv4 ping command that does not support the IPv4 ping fragmentation (df in IPv4) options, but allows an optional specification of an interface. The interface option is primarily useful for pinning with link-local addresses that are interface-specific. The packetsize and pingcount options work identically the same as they do with the IPv4 command.

**Examples****Example 1**

```
ncs/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
rtt min/avg/max/mdev = 0.065/0.221/0.599/0.220 ms, pipe 2
```

```
ncs/admin#
```

### Example 2

```
ncs/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
rtt min/avg/max/mdev = 0.073/0.073/0.073/0.000 ms, pipe 2
```

```
ncs/admin#
```

### Related Commands

| Command              | Description                |
|----------------------|----------------------------|
| <a href="#">ping</a> | Pings a remote IP address. |

## reload

To reload the Cisco NCS operating system, use the **reload** command in EXEC mode.

### reload

### Syntax Description

No arguments or keywords.

### Defaults

No default behavior or values.

### Command Modes

EXEC

### 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 and save any settings in the web Administration user interface session.

Before you enter the **reload** command, ensure that the Cisco NCS is not performing any backup, restore, installation, upgrade, or remove operation. If the Cisco NCS performs any of these operations and you enter the **reload** command, you will notice any of the following 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 halt the operation, or enter NO to cancel the halt.

If no processes are running when you use the **reload** command or you enter YES in response to the warning message displayed, the Cisco NCS asks you to respond to the following option:

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

Enter YES to save the existing Cisco NCS configuration. The Cisco NCS displays the following message:

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

### Examples

```
ncs/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!

ncs/admin#
```

### Related Commands

| Command              | Description          |
|----------------------|----------------------|
| <a href="#">halt</a> | Disables the system. |

## restore

To perform a restore of a previous backup, use the **restore** command in EXEC mode. A restore operation restores data related to the Cisco NCS as well as the Cisco ADE OS. To perform a restore of a previous backup of the application data of the Cisco NCS only, add the **application** command to the **restore** command in EXEC mode. To remove this function, use the **no** form of this command.

Use the following command to restore data related to the Cisco NCS application and Cisco ADE OS:

```
restore filename repository repository-name
```

Use the following command to restore data related only to the NCS application:

```
restore filename repository repository-name application application
```

### Syntax Description

|                         |  |
|-------------------------|--|
| <i>filename</i>         | Name of the backed-up file that resides in the repository. Up to 120 alphanumeric characters.<br><b>Note</b> You must add the .tar.gpg extension after the filename (for example, myfile.tar.gpg). |
| <b>repository</b>       | The repository keyword.  |
| <i>repository-name</i>  | Name of the repository you want to restore from backup.  |
| <b>application</b>      | The application keyword.   |
| <i>application name</i> | The name of the application data to be restored. Up to 255 alphanumeric characters.  |



**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

When you use these two commands in the Cisco NCS, the Cisco NCS server restarts automatically.

**Examples**

```

ncs/admin# restore mybackup-100818-1502.tar.gpg repository myrepository
Restore may require a reboot to successfully complete. Continue? (yes/no) [yes] ? yes
Stopping NCS Monitoring & Troubleshooting Log Processor...
Stopping NCS Monitoring & Troubleshooting Log Collector...
Stopping NCS Monitoring & Troubleshooting Alert Process...
Stopping NCS Monitoring & Troubleshooting Session Database...
Stopping NCS Application Server...
Stopping NCS Database processes...
Starting NCS Database processes...
Starting NCS Application Server...
Starting NCS Monitoring & Troubleshooting Session Database...
Starting NCS Monitoring & Troubleshooting Log Collector...
Starting NCS Monitoring & Troubleshooting Log Processor...
Starting NCS Monitoring & Troubleshooting Alert Process...
Note: NCS Processes are initializing. Use 'show application status ncs'
      CLI to verify all processes are in running state.

```

```
Broadcast message from root (pts/0) (Wed Aug 18 15:34:58 2010):
```

```

The system is going down for reboot NOW!
ncs/admin# Last login: Wed Aug 18 14:00:27 2010 from 10.77.137.60
ncs/admin# show application status ncs

```

```

NCS Database listener is running, PID: 3024
NCS Database is running, number of processes: 34
NCS Application Server is still initializing.
NCS M&T Session Database is running, PID: 2793
NCS M&T Log Collector is running, PID: 3336
NCS M&T Log Processor is running, PID: 3379
NCS M&T Alert Process is running, PID: 3442

```

```
ncs/admin#
```

**Related Commands**

| Command                             | Description   |
|-------------------------------------|---|
| <a href="#">backup</a>              | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
| <a href="#">backup-logs</a>         | Backs up system logs.   |
| <a href="#">repository</a>          | Enters the repository submode for configuration of backups.                           |
| <a href="#">show repository</a>     | Displays the available backup files located on a specific repository.                 |
| <a href="#">show backup history</a> | Displays the backup history of the system.  |

## rmdir

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

**rmdir** *word*

### Syntax Description

|             |   |
|-------------|---|
| <i>word</i> | Directory name. Up to 80 alphanumeric characters. |
|-------------|---|

### Defaults

No default behavior or values.

### Command Modes

EXEC

### Examples

```
ncs/admin# mkdir disk:/test
ncs/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

ncs/admin#

ncs/admin# rmdir disk:/test
ncs/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

ncs/admin#
```

### Related Commands

| Command               | Description                                       |
|-----------------------|---|
| <a href="#">dir</a>   | Displays a list of files on the Cisco NCS server. |
| <a href="#">mkdir</a> | Creates a new directory.                          |

## root

To execute the root shell, use the **root** command in EXEC mode.

### root



**Note** For developer use only, not for end users.



**Note** This command and the `root_enable` command can only be used on the NCS locally hard-wired console port via Telnet. If you try to access this port over a LAN via SSH or Telnet, the commands are disallowed and the following message appears:

```
% Error : root patch only available on a console port.
```

**Syntax Description** This command has no arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Requires installation of the `root_enable` application or patch. The `root` command prompts for the password used with `root_enable` and puts you in a bash shell with root privileges.

There are no defaults for the password.

If the password is already set, the `root_enable` command generates the following error message:

```
% Error : root patch password already set
```

If the password is not set, the `root` command generates the following error message:

```
% Error : root patch password not set.
```

**Examples** The following example illustrates the use of the `root` command:

```
ncs/admin# root
% Error : root patch password not set
```

### Related Commands

| Command                     | Description                        |
|-----------------------------|------------------------------------|
| <a href="#">root_enable</a> | Activates the <b>root</b> command. |

## root\_enable

To activate the **root** command, use the **root\_enable** command in the EXEC mode.

**root\_enable**


---

**Note** For developer use only, not for end users.

---




---

**Note** This command and the **root\_enable** command can only be used on the NCS locally hard-wired console port via Telnet. If you try to access this port over a LAN via SSH or Telnet, the commands are disallowed and the following message appears:

```
% Error : root patch only available on a console port.
```

---



---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** No default behavior or values.

---

**Command Modes** EXEC

---

**Usage Guidelines** Requires installation of the **root\_enable** application or patch. The **root** command prompts for the password used with **root\_enable** and puts you in a bash shell with root privileges.

There are no defaults for the password.

If the password is already set, the **root\_enable** command generates the following error message:

```
% Error : root patch password already set
```

If the password is not set, the **root** command generates the following error message:

```
% Error : root patch password not set
```

---

**Examples** The following example illustrates the use of the **root\_enable** command:

```
ncs/admin# root_enable
% Error : root patch password already set
```

**Related Commands**

| Command                     | Description              |
|-----------------------------|--------------------------|
| <a href="#">root_enable</a> | Executes the root shell. |

**show**

To show the running system information, use the **show** command in EXEC mode. The **show** commands are used to display the Cisco NCS settings and are among the most useful commands.

The commands in [Table A-6](#) require the **show** command to be followed by a keyword; for example, **show application status**. Some **show** commands require an argument or variable after the keyword to function; for example, **show application version**.

For detailed information on all the Cisco NCS **show** commands, see [show Commands, page A-61](#).

**show** *keyword*

### Syntax Description

[Table A-6](#) provides a summary of the **show** commands.

**Table A-6** Summary of show Commands

| Command <sup>1</sup>                                  | Description  |
|---|--|
| <b>application</b><br>(requires keyword) <sup>2</sup> | Displays information about the installed application; for example, status or version.                    |
| <b>backup</b><br>(requires keyword)                   | Displays information about the backup.   |
| <b>cdp</b><br>(requires keyword)                      | Displays information about the enabled Cisco Discovery Protocol interfaces.                              |
| <b>clock</b>  | Displays the day, date, time, time zone, and year of the system clock.                                   |
| <b>cpu</b>  | Displays CPU information.  |
| <b>disks</b>  | Displays file-system information of the disks.   |
| <b>interface</b>                                      | Displays statistics for all the interfaces configured on the Cisco ADE OS.                               |
| <b>logging</b><br>(requires keyword)                  | Displays system logging information.   |
| <b>logins</b><br>(requires keyword)                   | Displays login history.  |
| <b>memory</b>   | Displays memory usage by all running processes.  |
| <b>ntp</b>  | Displays the status of the Network Time Protocol (NTP).  |
| <b>ports</b>  | Displays all the processes listening on the active ports.  |
| <b>process</b>  | Displays information about the active processes of the Cisco NCS server.                                 |
| <b>repository</b><br>(requires keyword)               | Displays the file contents of a specific repository.   |
| <b>restore</b><br>(requires keyword)                  | Displays restore history on the Cisco NCS server.  |
| <b>running-config</b>                                 | Displays the contents of the currently running configuration file on the Cisco NCS server.               |
| <b>startup-config</b>                                 | Displays the contents of the startup configuration on the Cisco NCS server.                              |
| <b>tech-support</b>                                   | Displays system and configuration information that you can provide to the TAC when you report a problem. |
| <b>terminal</b>                                       | Displays information about the terminal configuration parameter settings for the current terminal line.  |

**Table A-6 Summary of show Commands (continued)**

| Command <sup>1</sup> | Description   |
|----------------------|---|
| <b>timezone</b>      | Displays the time zone of the Cisco NCS server.                                 |
| <b>timezones</b>     | Displays all the time zones available for use on the Cisco NCS server.          |
| <b>udi</b>           | Displays information about the unique device identifier (UDI) of the Cisco NCS. |
| <b>uptime</b>        | Displays how long the system you are logged in to has been up and running.      |
| <b>users</b>         | Displays information for currently logged in users.                             |
| <b>version</b>       | Displays information about the installed application version.                   |

1. The commands in this table require that the **show** command precedes a keyword; for example, **show application**.
2. Some **show** commands require an argument or variable after the keyword to function; for example, **show application version**. This **show** command displays the version of the application installed on the system (see [show application, page A-61](#)).

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

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

**Examples**

```
ncs/admin# show application
<name>           <Description>
ncs              Cisco Network Control System
ncs/admin#
```

**ssh**

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

**Note**

An Admin or Operator (user) can use this command (see [Table 1-1](#)).

```
ssh [ip-address | hostname] username port [number] version [1 | 2] delete hostkey word
```

**Syntax Description**

|                               |  |
|-------------------------------|--|
| <i>ip-address</i>             | IP address of the remote system. Up to 64 alphanumeric characters.                     |
| <i>hostname</i>               | Hostname of the remote system. Up to 64 alphanumeric characters.                       |
| <i>username</i>               | Username of the user logging in through SSH.   |
| <b>port</b> [ <i>number</i> ] | (Optional) Indicates the port number of the remote host. From 0 to 65,535. Default 22. |
| <b>version</b> [1   2]        | (Optional) Indicates the version number. Default 2.                                    |

|                       |  |
|-----------------------|--|
| <b>delete hostkey</b> | Deletes the SSH fingerprint of a specific host.                                |
| <i>word</i>           | IPv4 address or hostname of a remote system. Up to 64 alphanumeric characters. |

**Defaults**

Disabled.

**Command Modes**

EXEC (Admin or Operator)

**Usage Guidelines**

The **ssh** command enables a system to make a secure, encrypted connection to another remote system or server. This connection provides functionality similar to that of an outbound Telnet connection except that the connection is encrypted. With authentication and encryption, the SSH client allows for secure communication over an insecure network.

**Examples****Example 1**

```
ncs/admin# ssh ncs1 admin
admin@ncs1's password:
Last login: Wed Jul 11 05:53:20 2008 from ncs.cisco.com

ncs1/admin#
```

**Example 2**

```
ncs/admin# ssh delete host ncs
ncs/admin#
```

## tech dumptcp

To dump a Transmission Control Protocol (TCP) package to the console, use the **tech dumptcp** command in EXEC mode.

```
tech dumptcp gigabit-ethernet
```

**Syntax Description**

|                         |   |
|-------------------------|---|
| <i>gigabit-ethernet</i> | Gigabit Ethernet interface number 0 to 1. |
|-------------------------|---|

**Defaults**

Disabled.

**Command Modes**

EXEC

**Examples**

```
ncs/admin# tech dumptcp 0
140816:141088(272) ack 1921 win 14144
```

```

08:26:12.034630 IP NCS.cisco.com.ssh > dhcp-64-102-82-153.cisco.com.2221: P
141088:141248(160) ack 1921 win 14144
08:26:12.034635 IP dhcp-64-102-82-153.cisco.com.2221 > NCS.cisco.com.ssh: . ack 139632 win
64656
08:26:12.034677 IP NCS.cisco.com.ssh > dhcp-64-102-82-153.cisco.com.2221: P
141248:141520(272) ack 1921 win 14144
08:26:12.034713 IP NCS.cisco.com.ssh > dhcp-64-102-82-153.cisco.com.2221: P
141520:141680(160) ack 1921 win 14144
08:26:12.034754 IP NCS.cisco.com.ssh > dhcp-64-102-82-153.cisco.com.2221: P
141680:141952(272) ack 1921 win 14144
08:26:12.034756 IP dhcp-64-102-82-153.cisco.com.2221 > NCS.cisco.com.ssh: . ack 140064 win
65520
08:26:12.034796 IP NCS.cisco.com.ssh > dhcp-64-102-82-153.cisco.com.2221: P
141952:142112(160) ack 1921 win 14144
1000 packets captured
1000 packets received by filter
0 packets dropped by kernel
ncs/admin#

```

## telnet

To log in to a host that supports Telnet, use the **telnet** command in operator (user) or EXEC mode.

**telnet** [*ip-address* | *hostname*] **port number**

| Syntax Description |  |  |
|--------------------|--|--|
| <i>ip-address</i>  |  | IP address of the remote system. Up to 64 alphanumeric characters.         |
| <i>hostname</i>    |  | Hostname of the remote system. Up to 64 alphanumeric characters.           |
| <i>port number</i> |  | (Optional) Indicates the port number of the remote host. From 0 to 65,535. |

**Defaults** No default behavior or values.

**Command Modes** Operator  
EXEC

**Examples**

```

ncs/admin# telnet 172.16.0.11 port 23
ncs.cisco.com login: admin
password:
Last login: Mon Jul  2 08:45:24 on ttyS0
ncs/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*



|                           |                |  |
|---------------------------|----------------|--|
| <b>Syntax Description</b> | <i>integer</i> | Number of lines on the screen. Contains between 0 to 511 lines, inclusive. A value of zero (0) disables pausing between screens of output. |
|---------------------------|----------------|--|

**Defaults** 24 lines

**Command Modes** EXEC

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

**Examples**

```
ncs/admin# terminal length 0
ncs/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*

|                           |                |  |
|---------------------------|----------------|--|
| <b>Syntax Description</b> | <i>minutes</i> | Sets the number of minutes for the inactivity timeout. From 0 to 525,600. Zero (0) disables the timeout. |
|---------------------------|----------------|--|

**Defaults** 30 minutes

**Command Modes** EXEC

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

**Examples**

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

| Related Commands | Command                                  | Description  |
|------------------|--|--|
|                  | <a href="#">terminal session-welcome</a> | Sets a welcome message on the system for all users who log in to the system. |

## 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*

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>string</i> | Welcome message. Up to 2,048 alphanumeric characters. |
|---------------------------|---------------|---|

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** Specify a message using up to 2,048 characters.

**Examples**

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

| <b>Related Commands</b> | <b>Command</b>                           | <b>Description</b>                            |
|-------------------------|--|---|
|                         | <a href="#">terminal session-timeout</a> | Sets the inactivity timeout for all sessions. |

## 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** *type*

|                           |             |  |
|---------------------------|-------------|--|
| <b>Syntax Description</b> | <i>type</i> | Defines the terminal name and type, and permits terminal negotiation by hosts that provide that type of service. Up to 80 alphanumeric characters. |
|---------------------------|-------------|--|

**Defaults** VT100

**Command Modes** EXEC

**Usage Guidelines** Indicate the terminal type if it is different from the default of VT100.

**Examples**

```
ncs/admin# terminal terminal-type vt220
ncs/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 |  |
|--------------------|--|
| <i>ip-address</i>  | IP address of the remote system. Up to 32 alphanumeric characters. |
| <i>hostname</i>    | Hostname of the remote system. Up to 32 alphanumeric characters.   |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Examples**

```
ncs/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

ncs/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 |   |
|--------------------|---|
| <b>all</b>         | Disables all debugging.   |
| <b>application</b> | Application files. <ul style="list-style-type: none"> <li><i>all</i>—Disables all application debug output.</li> <li><i>install</i>—Disables application install debug output.</li> <li><i>operation</i>—Disables application operation debug output.</li> <li><i>uninstall</i>—Disables application uninstall debug output.</li> </ul> |

|                       |  |
|-----------------------|--|
| <b>backup-restore</b> | <p>Backs up and restores files.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Disables all debug output for backup-restore.</li> <li>• <i>backup</i>—Disables backup debug output for backup-restore.</li> <li>• <i>backup-logs</i>—Disables backup-logs debug output for backup-restore.</li> <li>• <i>history</i>—Disables history debug output for backup-restore.</li> <li>• <i>restore</i>—Disables restore debug output for backup-restore.</li> </ul>   |
| <b>cdp</b>            | <p>Cisco Discovery Protocol configuration files.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Disables all Cisco Discovery Protocol configuration debug output.</li> <li>• <i>config</i>—Disables configuration debug output for Cisco Discovery Protocol.</li> <li>• <i>infra</i>—Disables infrastructure debug output for Cisco Discovery Protocol.</li> </ul>  |
| <b>config</b>         | <p>Configuration files.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Disables all configuration debug output.</li> <li>• <i>backup</i>—Disables backup configuration debug output.</li> <li>• <i>clock</i>—Disables clock configuration debug output.</li> <li>• <i>infra</i>—Disables configuration infrastructure debug output.</li> <li>• <i>kron</i>—Disables command scheduler configuration debug output.</li> <li>• <i>network</i>—Disables network configuration debug output.</li> <li>• <i>repository</i>—Disables repository configuration debug output.</li> <li>• <i>service</i>—Disables service configuration debug output.</li> </ul> |
| <b>copy</b>           | Copy commands.   |
| <b>icmp</b>           | <p>ICMP echo response configuration.</p> <p><i>all</i>—Disable all debug output for ICMP echo response configuration. Set level between 0 and 7, with 0 being severe and 7 being all.</p>  |
| <b>locks</b>          | <p>Resource locking.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Disables all resource locking debug output.</li> <li>• <i>file</i>—Disables file locking debug output.</li> </ul>   |
| <b>logging</b>        | <p>Logging configuration files.</p> <p><i>all</i>—Disables all debug output for logging configuration.</p>   |
| <b>snmp</b>           | <p>SNMP configuration files.</p> <p><i>all</i>—Disables all debug output for SNMP configuration.</p>   |
| <b>system</b>         | <p>System files.</p> <ul style="list-style-type: none"> <li>• <i>all</i>—Disables all system files debug output.</li> <li>• <i>id</i>—Disables system ID debug output.</li> <li>• <i>info</i>—Disables system info debug output.</li> <li>• <i>init</i>—Disables system init debug output.</li> </ul>  |
| <b>transfer</b>       | File transfer.   |

|              |   |
|--------------|---|
| <b>user</b>  | User management. <ul style="list-style-type: none"> <li><i>all</i>—Disables all user management debug output.</li> <li><i>password-policy</i>—Disables user management debug output for password-policy.</li> </ul> |
| <b>utils</b> | Utilities configuration files.<br><i>all</i> —Disables all utilities configuration debug output.  |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** None.

**Examples**

```
ncs/admin# undebug all
ncs/admin#
```

| Related Commands | Command               | Description                                       |
|------------------|-----------------------|---|
|                  | <a href="#">debug</a> | Displays errors or events for command situations. |

## write

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

**write {erase | memory | terminal}**

| Syntax Description | Command         | Description  |
|--------------------|-----------------|--|
|                    | <b>erase</b>    | Erases the startup configuration.                              |
|                    | <b>memory</b>   | Copies the running configuration to the startup configuration. |
|                    | <b>terminal</b> | Copies the running configuration to console.                   |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Examples**

**Example 1**

```
ncs/admin# write memory
```

```
Generating configuration...
ncs/admin#
```

### Example 2

```
ncs/admin# write terminal
```

```
Generating configuration...
!
hostname ncs
!
ip domain-name cisco.com
!
interface GigabitEthernet 0
  ip address 10.201.2.121 255.255.255.0
  ipv6 address autoconfig
!
interface GigabitEthernet 1
  shutdown
!
interface GigabitEthernet 2
  shutdown
!
interface GigabitEthernet 3
  shutdown
!
ip name-server 171.68.226.120
!
ip default-gateway 10.201.2.1
!
clock timezone UTC
!
ntp server clock.cisco.com
!
username admin password hash $1$6yQQaFXM$UBgbp7ggD1bG3kpExywwZ0 role admin
!
service sshd
!
repository myrepository
  url disk:
    user admin password hash 2b50ca94445f240f491e077b5f49fa0375942f38
!
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
!

ncs/admin#
```

# show Commands

This section lists each **show** command, each command includes a brief description of its use, any command defaults, command modes, command syntax, usage guidelines, and an example of the command and any related commands.

Table A-7 lists the show EXEC commands described in this section.

**Table A-7** List of EXEC show Commands

|   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>• <a href="#">show application</a></li> <li>• <a href="#">show backup history</a></li> <li>• <a href="#">show cdp</a></li> <li>• <a href="#">show clock</a></li> <li>• <a href="#">show cpu</a></li> <li>• <a href="#">show disks</a></li> <li>• <a href="#">show icmp-status</a></li> <li>• <a href="#">show interface</a></li> <li>• <a href="#">show inventory</a></li> <li>• <a href="#">show logging</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">show logins</a></li> <li>• <a href="#">show memory</a></li> <li>• <a href="#">show ntp</a></li> <li>• <a href="#">show ports</a></li> <li>• <a href="#">show process</a></li> <li>• <a href="#">show repository</a></li> <li>• <a href="#">show restore</a></li> <li>• <a href="#">show running-config</a></li> <li>• <a href="#">show startup-config</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">show tech-support</a></li> <li>• <a href="#">show terminal</a></li> <li>• <a href="#">show timezone</a></li> <li>• <a href="#">show timezones</a></li> <li>• <a href="#">show udi</a></li> <li>• <a href="#">show uptime</a></li> <li>• <a href="#">show users</a></li> <li>• <a href="#">show version</a></li> </ul> |
|---|---|--|

## show application

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

**show application** [status | version [*app\_name*]]

| Syntax Description |  |
|--------------------|--|
| show application   | The command to display the Cisco NCS application information.                |
| status             | Displays the status of the installed application.                            |
| version            | Displays the application version for an installed application—the Cisco NCS. |
| <i>app_name</i>    | Name of the installed application.   |

|  |   |
|--|---|
|  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables (see <a href="#">Table A-8</a>).</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables (see <a href="#">Table A-8</a>).</li> </ul> </li> </ul> |
|--|---|

**Table A-8**      **Output Modifier Variables for Count or Last**

|  |   |
|--|---|
|  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> </ul> |
|--|---|

### Defaults

No default behavior or values.

### Command Modes

EXEC

### Examples

#### Example 1

```
ncs/admin# show application
<name>          <Description>
ncs              Cisco Network Control System
ncs/admin#
```

#### Example 2

```
ncs/admin# show application version ncs

Cisco Network Control System
```



```

-----
Version      : 1.0.2.051
Build Date   : Mon Aug  2 00:34:25 2010
Install Date : Thu Aug  5 17:48:49 2010

ncs/admin#

```

**Example 3**

```

ncs/admin# show application status ncs

NCS Database listener is running, PID: 21096
NCS Database is running, number of processes: 27
NCS Application Server is running, PID: 21432
NCS M&T Session Database is running, PID: 21365
NCS M&T Log Collector is running, PID: 21468
NCS M&T Log Processor is running, PID: 21494
NCS M&T Alert Process is running, PID: 21524

ncs/admin#

```

| Related Commands | Command                             | Description                           |
|------------------|-------------------------------------|---------------------------------------|
|                  | <a href="#">application install</a> | Installs an application bundle.       |
|                  | <a href="#">application remove</a>  | Removes or uninstalls an application. |
|                  | <a href="#">application start</a>   | Starts or enables an application.     |
|                  | <a href="#">application stop</a>    | Stops or disables an application.     |
|                  | <a href="#">application upgrade</a> | Upgrades an application bundle.       |

## show backup history

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

```
show backup history
```

**Syntax Description** This command has no arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** None.

**Examples**

**Example 1**

```
ncs/admin# show backup history
```

```
Wed Aug 18 12:55:21 UTC 2010: backup logs logs-0718.tar.gz to repository fileserver007:
success
Wed Aug 18 12:55:53 UTC 2010: backup full-0718.tar.gpg to repository fileserver007:
success
ncs/admin#
```

**Example 2**

```
ncs/admin# show backup history
backup history is empty
ncs/admin#
```

**Related Commands**

| Command                         | Description   |
|---------------------------------|---|
| <a href="#">backup</a>          | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
| <a href="#">restore</a>         | Restores from backup the file contents of a specific repository.                      |
| <a href="#">repository</a>      | Enters the repository submode for configuration of backups.                           |
| <a href="#">show repository</a> | Displays the available backup files located on a specific repository.                 |

**show cdp**

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

```
show cdp {all | neighbors}
```

**Syntax Description**

|                  |  |
|------------------|--|
| <b>all</b>       | Shows all the enabled Cisco Discovery Protocol interfaces. |
| <b>neighbors</b> | Shows the Cisco Discovery Protocol neighbors.              |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples****Example 1**

```
ncs/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.
ncs/admin#
```

**Example 2**

```
ncs/admin# show cdp neighbors
CDP Neighbor : 000c297840e5
```

```

Local Interface      : GigabitEthernet0
Device Type         : L-NCS-1.0-50
Port                : eth0
Address             : 172.23.90.114

CDP Neighbor : isexp-esw5
Local Interface : GigabitEthernet0
Device Type    : cisco WS-C3560E-24TD
Port          : GigabitEthernet0/5
Address       : 172.23.90.45

CDP Neighbor : 000c29e29926
Local Interface : GigabitEthernet0
Device Type    : L-NCS-1.0-50
Port          : eth0
Address       : 172.23.90.115

CDP Neighbor : 000c290fba98
Local Interface : GigabitEthernet0
Device Type    : L-NCS-1.0-50
Port          : eth0
Address       : 172.23.90.111

ncs/admin#

```

**Related Commands**

| Command                      | Description   |
|------------------------------|---|
| <a href="#">cdp holdtime</a> | Specifies the length of time that the receiving device should hold a Cisco Discovery Protocol packet from your router before discarding it. |
| <a href="#">cdp run</a>      | Enables the Cisco Discovery Protocol.   |
| <a href="#">cdp timer</a>    | Specifies how often the Cisco NCS server sends Cisco Discovery Protocol updates.  |

**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.

```
show clock
```

**Syntax Description**

No arguments or keywords.

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples**

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



**Note** The **show clock** output in the previous example includes Coordinated Universal Time (UTC) or Greenwich Mean Time (GMT), Great Britain, or Zulu time (see Tables A-16, A-17, and A-18 on pages A-84 and A-85 for sample time zones).

**Related Commands**

| Command               | Description                                 |
|-----------------------|---|
| <a href="#">clock</a> | Sets the system clock for display purposes. |

## show cpu

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

**show cpu** [*statistics*] [*l*] [*l*]

**Syntax Description**

|                   |  |
|-------------------|--|
| <i>statistics</i> | Displays CPU statistics.   |
|                   | Output modifier variables: <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li>—Output modifier variables (see <a href="#">Table A-9</a>).</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li>—Output modifier variables (see <a href="#">Table A-9</a>).</li> </ul> </li> </ul> |

**Table A-9** Output Modifier Variables for Count or Last

|  |   |
|--|---|
|  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> </ul> |
|--|---|

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples****Example 1**

```
ncs/admin# show cpu
```

```
processor : 0
model      : Intel(R) Xeon(R) CPU           E5320  @ 1.86GHz
speed(MHz): 1861.914
cache size: 4096 KB
```

```
ncs/admin#
```

**Example 2**

```
ncs/admin# show cpu statistics
```

```
user time:      265175
kernel time:   166835
idle time:     5356204
i/o wait time: 162676
irq time:      4055
```

```
ncs/admin#
```

**Related Commands**

| Command                     | Description   |
|-----------------------------|---|
| <a href="#">show disks</a>  | Displays the system information of all disks.                       |
| <a href="#">show memory</a> | Displays the amount of system memory that each system process uses. |

## show disks

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

```
show disks [] []
```

### Syntax Description

|  |  |   |
|--|--|---|
|  |  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables (see <a href="#">Table A-10</a>).</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables (see <a href="#">Table A-10</a>).</li> </ul> </li> </ul> |
|--|--|---|

**Table A-10** Output Modifier Variables for Count or Last

|  |  |   |
|--|--|---|
|  |  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> </ul> |
|--|--|---|

### Defaults

No default behavior or values.

### Command Modes

EXEC

**Usage Guidelines**

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

**Examples**

```
ncs/admin# show disks

temp. space 2% used (17828 of 988116)
disk: 3% used (143280 of 5944440)

Internal filesystems:
  all internal filesystems have sufficient free space

ncs/admin#
```

**Related Commands**

| Command                     | Description   |
|-----------------------------|---|
| <a href="#">show cpu</a>    | Displays CPU information.   |
| <a href="#">show memory</a> | Displays the amount of system memory that each system process uses. |

**show icmp-status**

To display the Internet Control Message Protocol echo response configuration information, use the **show icmp\_status** command in EXEC mode.

```
show icmp_status {> file | |}
```

**Syntax Description**

|             |   |
|-------------|---|
| >           | Output direction.   |
| <i>file</i> | Name of file to redirect standard output (stdout).  |
|             | Output modifier commands: <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word count. <ul style="list-style-type: none"> <li>–  —Output modifier commands (see <a href="#">Table A-11</a>).</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word last. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li>–  —Output modifier commands (see <a href="#">Table A-11</a>).</li> </ul> </li> </ul> |

**Table A-11** Output Modifier Variables for Count or Last

|  |   |
|--|---|
|  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> </ul> |
|--|---|

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples****Example 1**

```
ncs/admin# show icmp_status
icmp echo response is turned on
ncs/admin#
```

**Example 2**

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

**Related Commands**

| Command                   | Description  |
|---------------------------|--|
| <a href="#">icmp echo</a> | Configures the Internet Control Message Protocol (ICMP) echo requests. |

## show interface

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

```
show interface [GigabitEthernet] |
```



| Syntax Description | <i>GigabitEthernet</i> | Shows the Gigabit Ethernet interface. Either 0 or 1.  |
|--------------------|------------------------|---|
|                    |                        | Output modifier variables: <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the interface. Add number after the word <i>count</i>.</li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10.</li> </ul> |

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** None.

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. You always see a link local address regardless of the IPv6 autoconfiguration or DHCPv6 configuration. The last address (starting with 2001) is the result obtained from an IPv6 DHCP server.

## Examples

### Example 1

```

ncs/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:127.0.0.1  Mask:255.0.0.0
        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)
```

```
ncs/admin#
```

### Example 2

```
ncs/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
```

| Related Commands | Command                                 | Description  |
|------------------|---|--|
|                  | <a href="#">interface</a>               | Configures an interface type and enters the interface configuration submenu. |
|                  | <a href="#">ipv6 address autoconfig</a> | Enables IPv6 stateless autoconfiguration on an interface.                    |
|                  | <a href="#">ipv6 address dhcp</a>       | Enables IPv6 address DHCP on an interface.                                   |

## show inventory

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

```
show inventory |
```

| Syntax Description |  |
|--------------------|--|
|                    | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li><i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li><i>count</i>—Count the number of lines in the interface. Add number after the word <i>count</i>.</li> <li><i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li><i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li><i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li><i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10.</li> </ul> |

### Defaults

No default behavior or values.

**Command Modes** EXEC**Examples**

```

ncs/admin# show inventory

NAME: "L-NCS-1.0-50 chassis", DESCR: "L-NCS-1.0-50 chassis"
PID: L-NCS-1.0-50 , VID: V01 , SN: H8JESGOFHGG
Total RAM Memory: 1035164 kB
CPU Core Count: 1
CPU 0: Model Info: Intel(R) Xeon(R) CPU           E5320  @ 1.86GHz
Hard Disk Count(*): 1
Disk 0: Device Name: /dev/sda
Disk 0: Capacity: 64.40 GB
Disk 0: Geometry: 255 heads 63 sectors/track 7832 cylinders
NIC Count: 1
NIC 0: Device Name: eth0
NIC 0: HW Address: 00:0C:29:6A:88:C4
NIC 0: Driver Descr: eth0: registered as PCnet/PCI II 79C970A

(*) Hard Disk Count may be Logical.

ncs/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 { application [application-name] } { internal } { system } |
```

**Syntax Description**

|                               |   |
|-------------------------------|---|
| <code>application</code>      | Displays application logs.  |
| <code>application-name</code> | Application name. Up to 255 alphanumeric characters. <ul style="list-style-type: none"> <li>- <code>tail</code>—Tail system syslog messages.</li> <li>- <code>count</code>—Tail last count messages. From 0 to 4,294,967,295.</li> </ul> <p>—Output modifier variables (see below).</p>   |
| <code>internal</code>         | Displays the syslogs configuration.   |
| <code>system</code>           | Displays the system syslogs.  |
|                               | Output modifier variables: <ul style="list-style-type: none"> <li>• <code>begin</code>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <code>count</code>—Count the number of lines in the interface. Add number after the word <code>count</code>.</li> <li>• <code>end</code>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <code>exclude</code>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <code>include</code>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <code>last</code>—Display last few lines of output. Add number after the word <code>last</code>. Up to 80 lines to display. Default 10.</li> </ul> |

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**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.

**Examples****Example 1**

```
ncs/admin# show logging system
ADEOS Platform log:
-----

Aug  5 10:44:32 localhost debugd[1943]: [16618]: config:network: main.c[252] [setup]:
Setup is complete
Aug  5 10:45:02 localhost debugd[1943]: [17291]: application:install cars_install.c[242]
[setup]: Install initiated with bundle - ncs.tar.gz,
repo - SystemDefaultPkgRepos
Aug  5 10:45:02 localhost debugd[1943]: [17291]: application:install cars_install.c[256]
[setup]: Stage area - /storeddata/Installing/.1281030
302
Aug  5 10:45:02 localhost debugd[1943]: [17291]: application:install cars_install.c[260]
[setup]: Getting bundle to local machine
Aug  5 10:45:03 localhost debugd[1943]: [17291]: transfer: cars_xfer.c[58] [setup]: local
copy in of ncs.tar.gz requested
Aug  5 10:45:46 localhost debugd[1943]: [17291]: application:install cars_install.c[269]
[setup]: Got bundle at - /storeddata/Installing/.1281
030302/ncs.tar.gz
Aug  5 10:45:46 localhost debugd[1943]: [17291]: application:install cars_install.c[279]
[setup]: Unbundling package ncs.tar.gz
Aug  5 10:47:06 localhost debugd[1943]: [17291]: application:install cars_install.c[291]
[setup]: Unbundling done. Verifying input parameters.
..
Aug  5 10:47:06 localhost debugd[1943]: [17291]: application:install cars_install.c[313]
[setup]: Manifest file is at - /storeddata/Installing
/.1281030302/manifest.xml
Aug  5 10:47:07 localhost debugd[1943]: [17291]: application:install cars_install.c[323]
[setup]: Manifest file appname - ncs
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[386]
[setup]: Manifest file pkgtype - CARS
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[398]
[setup]: Verify dependency list -
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[410]
[setup]: Verify app license -
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[420]
[setup]: Verify app RPM's
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[428]
[setup]: No of RPM's - 9
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[439]
[setup]: Disk - 50
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[325]
[setup]: Disk requested = 51200 KB
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[345]
[setup]: More disk found Free = 40550400, req_disk = 51200
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[450]
[setup]: Mem requested by app - 100
```

```

Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[369]
[setup]: Mem requested = 102400
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[384]
[setup]: Found MemFree = MemFree:          13028 kB
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[390]
[setup]: Found MemFree value = 13028
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[393]
[setup]: Found Inactive = Inactive:        948148 kB
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[399]
[setup]: Found Inactive MemFree value = 948148
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[409]
[setup]: Sufficient mem found
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install ci_util.c[415]
[setup]: Done checking memory...
Aug  5 10:47:09 localhost debugd[1943]: [17291]: application:install cars_install.c[461]
[setup]: Verifying RPM's...
--More--
(prompt Spacebar to continue)

```

```
ncs/admin#
```

### Example 2

```
ncs/admin# show logging internal

log server:          localhost
Global loglevel:    6
Status:              Enabled
ncs/admin#
```

### Example 3

```
ncs/admin# show logging internal

log server:          localhost
Global loglevel:    6
Status:              Disabled
ncs/admin#
```

## show logins

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

### show logins cli

|                           |  |                                     |
|---------------------------|--|-------------------------------------|
| <b>Syntax Description</b> | cli  | Lists the <b>cli</b> login history. |
| <b>Defaults</b>           | No default behavior or values.                               |                                     |
| <b>Command Modes</b>      | EXEC   |                                     |
| <b>Usage Guidelines</b>   | Requires the <b>cli</b> keyword; otherwise, an error occurs. |                                     |

**Examples**

```

ncs/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

ncs/admin#

```

**show memory**

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

```
show memory
```

**Syntax Description**

No arguments or keywords.

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples**

```

ncs/admin# show memory
total memory: 1035164 kB
free memory: 27128 kB
cached: 358888 kB
swap-cached: 142164 kB

ncs/admin#

```

**show ntp**

To show the status of the NTP associations, use the **show ntp** command in EXEC mode.

```
show ntp
```

**Syntax Description**

No arguments or keywords.

**Defaults**

No default behavior or values.

**Command Modes** EXEC

### Examples

#### Example:1

```
ncs/admin# show ntp
Primary NTP   : cd-ncs-ntp.cisco.com

synchronised to NTP server (10.56.60.29) at stratum 3
  time correct to within 99 ms
  polling server every 1024 s

      remote          refid          st t when poll reach  delay  offset  jitter
=====
  127.127.1.0        .LOCL.           10 l  36   64  377   0.000   0.000   0.001
*10.56.60.29        64.103.34.15     2 u  906 1024 377  270.657  3.831  14.345
```

Warning: Output results may conflict during periods of changing synchronization.  
ncs/admin#

#### Example:2

```
ncs/admin# show ntp
% no NTP servers configured
ncs/admin#
```

### Related Commands

| Command                    | Description  |
|----------------------------|--|
| <a href="#">ntp server</a> | Allows synchronization of the software clock by the NTP server for the system. |

## show ports

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

**show ports** [!] [!]

**Syntax Description**

|  |  |
|--|--|
|  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the interface. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables (see <a href="#">Table A-12</a>).</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables (see <a href="#">Table A-12</a>).</li> </ul> </li> </ul> |
|--|--|

**Table A-12 Output Modifier Variables for Count or Last**

|  |   |
|--|---|
|  | <p>Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10. <ul style="list-style-type: none"> <li> —Output modifier variables.</li> </ul> </li> </ul> |
|--|---|

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Usage Guidelines**

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

**Examples**

```
ncs/admin# show ports
Process : timestensubd (21372)
      tcp: 127.0.0.1:11298
Process : timestenorad (21609)
      tcp: 127.0.0.1:51715
      udp: ::1:28314, ::1:59055, ::1:45113, ::1:49082, ::1:64737, ::1:62570, ::1:19577,
      ::1:29821
Process : ttcserver (21382)
```



```

        tcp: 127.0.0.1:16612, 0.0.0.0:53385
Process : timestenrepd (21579)
        tcp: 127.0.0.1:62504, 0.0.0.0:18047
        udp: ::1:51436
Process : timestend (21365)
        tcp: 0.0.0.0:53384
Process : rpc.statd (2387)
        tcp: 0.0.0.0:873
        udp: 0.0.0.0:867, 0.0.0.0:870
Process : timestensubd (21373)
        tcp: 127.0.0.1:43407
Process : portmap (2350)
        tcp: 0.0.0.0:111
        udp: 0.0.0.0:111
Process : Decap_main (21468)
        tcp: 0.0.0.0:2000
        udp: 0.0.0.0:9993
Process : timestensubd (21369)
        tcp: 127.0.0.1:37648
Process : timestensubd (21374)
        tcp: 127.0.0.1:64211
Process : sshd (2734)
        tcp: 172.23.90.113:22
Process : java (21432)
        tcp: 127.0.0.1:8888, :::2080, :::2020, ::ffff:127.0.0.1:8005, :::8009, :::8905,
        :::8010, :::2090, :::1099, :::9999, :::61616, :::8080, ::
        :80, :::60628, :::8443, :::443
        udp: 0.0.0.0:1812, 0.0.0.0:1813, 0.0.0.0:1700, 0.0.0.0:10414, 0.0.0.0:3799,
        0.0.0.0:1645, 0.0.0.0:1646, :::8905, :::8906
Process : monit (21531)
        tcp: 127.0.0.1:2812
Process : java (21524)
        tcp: ::62627
Process : java (21494)
        tcp: ::ffff:127.0.0.1:20515
        udp: 0.0.0.0:20514
Process : tnslsnr (21096)
        tcp: ::1521
Process : ora_d000_ncs1 (21222)
        tcp: ::26456
        udp: ::1:63198
Process : ntpd (2715)
        udp: 172.23.90.113:123, 127.0.0.1:123, 0.0.0.0:123, ::1:123, fe80::20c:29ff:fe6a:123,
        :::123
Process : ora_pmon_ncs1 (21190)
        udp: ::1:51994
Process : ora_mmon_ncs1 (21218)
        udp: ::38941
Process : ora_s000_ncs1 (21224)
        udp: ::1:49864

ncs/admin#
```

## show process

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

```
show process |
```

|                           |  |   |
|---------------------------|--|---|
| <b>Syntax Description</b> |  | <p>(Optional) Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the interface. Add number after the word <i>count</i>.</li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10.</li> </ul> |
|---------------------------|--|---|

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Usage Guidelines** None.

**Examples** See [Table A-13](#) for process field descriptions.

```

ncs/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--
ncs/admin#

```

**Table A-13** 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. |
| COMMAND | Type of process or command used.    |

## show repository

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

```
show repository repository-name
```

### Syntax Description

|                        |   |
|------------------------|---|
| <i>repository-name</i> | Name of the repository whose contents you want to view. Up to 30 alphanumeric characters. |
|------------------------|---|

### Defaults

No default behavior or values.

### Command Modes

EXEC

### Examples

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

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">backup</a>              | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
|                  | <a href="#">restore</a>             | Restores from backup the file contents of a specific repository.                      |
|                  | <a href="#">repository</a>          | Enters the repository submode for configuration of backups.                           |
|                  | <a href="#">show backup history</a> | Displays the backup history of the system.  |

## show restore

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

```
show restore { history }
```

| Syntax Description | history | Displays the restore history. |
|--------------------|---------|-------------------------------|
|--------------------|---------|-------------------------------|

**Defaults** No default behavior or values.

**Command Modes** EXEC

### Examples

#### Example 1

```
ncs/admin# show restore history

ncs/admin#
```

#### Example 2

```
ncs/admin# show restore history
restore history is empty
ncs/admin#
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">backup</a>              | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
|                  | <a href="#">restore</a>             | Restores from backup the file contents of a specific repository.                      |
|                  | <a href="#">repository</a>          | Enters the repository submode for configuration of backups.                           |
|                  | <a href="#">show backup history</a> | Displays the backup history of the system.  |

## 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.

### show running-config

---

**Syntax Description** No arguments or keywords.

---

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

---

**Command Modes** EXEC

---

**Examples**

```
ncs/admin# show running-config
Generating configuration...
!
hostname ncs
!
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
!
```

```
ncs/admin#
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">configure</a>           | Enters configuration mode.  |
|                  | <a href="#">show startup-config</a> | Displays the contents of the startup configuration file or the configuration. |

## show startup-config

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

**show startup-config**

**Syntax Description** No arguments or keywords.

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

**Command Modes** EXEC

### Examples

```
ncs/admin# show startup-config
!
hostname ncs
!
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
!
ncs/admin#
    
```

**Related Commands**

| Command                             | Description   |
|-------------------------------------|---|
| <a href="#">configure</a>           | Enters configuration mode.  |
| <a href="#">show running-config</a> | Displays the contents of the currently running configuration file or the configuration. |

## show tech-support

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

```
show tech-support file [word]
```

**Syntax Description**

|             |  |
|-------------|--|
| <b>file</b> | Save any technical support data as a file in the local disk. |
| <i>word</i> | Filename to save. Up to 80 alphanumeric characters.          |

**Defaults**

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

**Command Modes**

EXEC

**Usage Guidelines**

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

**Examples**

```

ncs/admin# show tech-support
#####
Application Deployment Engine(ADE) - 2.0.0.568
Technical Support Debug Info follows...
#####

*****
Checking dmidecode Serial Number(s)
    
```

```

*****
None
VMware-56 4d 14 cb 54 3d 44 5d-49 ee c4 ad a5 6a 88 c4

*****
Displaying System Uptime...
*****
12:54:34 up 18:37, 1 user, load average: 0.14, 0.13, 0.12

*****
Display Memory Usage(KB)
*****
                total      used      free      shared    buffers    cached
Mem:           1035164    1006180    28984         0       10784     345464
-/+ buffers/cache:    649932    385232
Swap:          2040244    572700    1467544

*****
Displaying Processes(ax --forest)...
*****
  PID TTY          STAT       TIME COMMAND
   1 ?            Ss          0:02 init [3]
   2 ?            S<          0:00 [migration/0]
   3 ?            SN          0:00 [ksoftirqd/0]
   4 ?            S<          0:00 [watchdog/0]
   5 ?            S<          0:00 [events/0]
--More--
(press Spacebar to continue)

ncs/admin#

```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <a href="#">show interface</a>      | Displays the usability status of the interfaces.            |
|                  | <a href="#">show process</a>        | Displays information about active processes.                |
|                  | <a href="#">show running-config</a> | Displays the contents of the current running configuration. |

## show terminal

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

```
show terminal
```

**Syntax Description** No arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC



**Examples**

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

Table A-14 describes the fields of the **show terminal** output.

**Table A-14 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: 24 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. |

**show timezone**

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

```
show timezone
```

**Syntax Description**

No arguments or keywords.

**Defaults**

No default behavior or values.

**Command Modes**

EXEC

**Examples**

```
ncs/admin# show timezone
UTC
ncs/admin#
```

**Related Commands**

| Command                        | Description                                      |
|--------------------------------|--|
| <a href="#">clock timezone</a> | Sets the time zone on the system.                |
| <a href="#">show timezones</a> | Displays the time zones available on the system. |

**show timezones**

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

**show timezones**

|                           |  |
|---------------------------|--|
| <b>Syntax Description</b> | No arguments or keywords.  |
| <b>Defaults</b>           | No default behavior or values.   |
| <b>Command Modes</b>      | EXEC   |
| <b>Usage Guidelines</b>   | See <a href="#">clock timezone</a> , page A-95, for examples of the time zones available for the NCS server. |

**Examples**

```

ncs/admin# show timezones
Africa/Blantyre
Africa/Dar_es_Salaam
Africa/Dakar
Africa/Asmara
Africa/Timbuktu
Africa/Maputo
Africa/Accra
Africa/Kigali
Africa/Tunis
Africa/Nouakchott
Africa/Ouagadougou
Africa/Windhoek
Africa/Douala
Africa/Johannesburg
Africa/Luanda
Africa/Lagos
Africa/Djibouti
Africa/Khartoum
Africa/Monrovia
Africa/Bujumbura
Africa/Porto-Novo
Africa/Malabo
Africa/Ceuta
Africa/Banjul
Africa/Cairo
Africa/Mogadishu
Africa/Brazzaville
Africa/Kampala
Africa/Sao_Tome
Africa/Algiers
Africa/Addis_Ababa
Africa/Ndjamena
Africa/Gaborone
Africa/Bamako
Africa/Freetown
--More--
  (press Spacebar to continue)

ncs/admin#

```

| Related Commands | Command                        | Description                               |
|------------------|--------------------------------|---|
|                  | <a href="#">show timezone</a>  | Displays the time zone set on the system. |
|                  | <a href="#">clock timezone</a> | Sets the time zone on the system.         |

## show udi

To display information about the UDI of the Cisco ISE 3315 appliance, use the **show udi** command in EXEC mode.

```
show udi
```

**Syntax Description** No arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC

### Examples

#### Example 1

```
ncs/admin# show udi
SPID: L-NCS-1.0-50
VPID: V01
Serial: LAB12345678

ncs/admin#
```

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

#### Example 2

```
ncs/admin# show udi
SPID: L-NCS-1.0-50
VPID: V01
Serial: 5C79C84ML9H

ncs/admin#
```

## show uptime

To display the length of time that you have been logged in to the Cisco NCS server, use the **show uptime** command in EXEC mode.

```
show uptime |
```

|                           |  |  |
|---------------------------|--|--|
| <b>Syntax Description</b> |  | <p>(Optional) Output modifier variables:</p> <ul style="list-style-type: none"> <li>• <i>begin</i>—Matched pattern. Up to 80 alphanumeric characters.</li> <li>• <i>count</i>—Count the number of lines in the output. Add number after the word <i>count</i>.</li> <li>• <i>end</i>—End with line that matches. Up to 80 alphanumeric characters.</li> <li>• <i>exclude</i>—Exclude lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>include</i>—Include lines that match. Up to 80 alphanumeric characters.</li> <li>• <i>last</i>—Display last few lines of output. Add number after the word <i>last</i>. Up to 80 lines to display. Default 10.</li> </ul> |
|---------------------------|--|--|

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Examples**

```
ncs/admin# show uptime
3 day(s), 18:55:02
ncs/admin#
```

## show users

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

```
show users
```

**Syntax Description** No arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** EXEC

**Examples**

```
ncs/admin# show users
USERNAME          ROLE    HOST                TTY    LOGIN DATETIME
admin             Admin  10.77.137.60       pts/0  Fri Aug  6 09:45:47 2010
ncs/admin#
```

## show version

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

**show version**

---

**Syntax Description** No arguments or keywords.

---

**Defaults** No default behavior or values.

---

**Command Modes** EXEC

---

**Usage Guidelines** This command displays version information about the Cisco ADE-OS software running on the Cisco NCS server, and displays the Cisco NCS version.

---

### Examples

```
ncs/admin# show version
Cisco Application Deployment Engine OS Release: 2.0
ADE-OS Build Version: 2.0.0.568
ADE-OS System Architecture: i386

Copyright (c) 2005-2010 by Cisco Systems, Inc.
All rights reserved.
Hostname: pmbudev-vm3
```

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

```
Cisco Prime Network Control System
-----
Version      : 1.0.2.051
Vendor       : Wireless Networking Business Unit
ncs/admin#
```

## Configuration Commands

This section lists each configuration command. Each command includes a brief description of its use, command syntax, any command defaults and modes, usage guidelines, and an example of the command and any related commands.

Configuration commands include **interface** and **repository**.



### Note

---

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

---

To access configuration mode, you must use the **configure** command in EXEC mode.

Table A-15 lists the configuration commands described in this section.

**Table A-15 List of Configuration Commands**

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• backup-staging-url</li> <li>• cdp holdtime</li> <li>• cdp run</li> <li>• cdp timer</li> <li>• clock timezone</li> <li>• do</li> <li>• end</li> <li>• exit</li> <li>• hostname</li> <li>• icmp echo</li> <li>• interface</li> <li>• ipv6 address autoconfig</li> <li>• ipv6 address dhcp</li> <li>• ip address</li> <li>• ip default-gateway</li> <li>• ip domain-name</li> </ul> | <ul style="list-style-type: none"> <li>• ip name-server</li> <li>• ip route</li> <li>• kron occurrence</li> <li>• kron policy-list</li> <li>• logging</li> <li>• ntp server</li> <li>• password-policy</li> <li>• repository</li> <li>• service</li> <li>• shutdown</li> <li>• snmp-server community</li> <li>• snmp-server contact</li> <li>• snmp-server host</li> <li>• snmp-server location</li> <li>• username</li> </ul> |
|---|--|

## backup-staging-url

To allow you to configure a Network File System (NFS) location that the backup and restore operations will use as a staging area to package and unpackage backup files, use the **backup-staging-url** command in configuration mode.

**backup-staging-url** *word*

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>word</i> | NFS URL for staging area. Up to 2048 alphanumeric characters. Use <b>nfs://server:path</b> <sup>1</sup> . |
|---------------------------|-------------|---|

1. *Server* is the server name and *path* refers to /subdir/subsubdir. Remember that a colon (:) is required after the server.

|                 |                                |
|-----------------|--------------------------------|
| <b>Defaults</b> | No default behavior or values. |
|-----------------|--------------------------------|

|                      |               |
|----------------------|---------------|
| <b>Command Modes</b> | Configuration |
|----------------------|---------------|

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The URL is NFS only. The format of the command is <b>backup-staging-url nfs://server:path</b> . |
|-------------------------|---|

**Warning**

Ensure that you secure your NFS server in such a way that the directory can be accessed only by the IP address of the Cisco NCS server.

**Examples**

```
ncs/admin(config)# backup-staging-url nfs://loc-filer02a:/vol/local1/private1/jdoe
ncs/admin(config)#
```

## cdp holdtime

To specify the amount of time for which the receiving device should hold a Cisco Discovery Protocol packet from the Cisco NCS server before discarding it, use the **cdp holdtime** command in configuration mode. To revert to the default setting, use the **no** form of this command.

**cdp holdtime** *seconds*

**Syntax Description**

|                |  |
|----------------|--|
| <i>seconds</i> | Specifies the hold time, in seconds. Value from 10 to 255 seconds. |
|----------------|--|

**Defaults**

180 seconds

**Command Modes**

Configuration

**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.

**Examples**

```
ncs/admin(config)# cdp holdtime 60
ncs/admin(config)#
```

**Related Commands**

| Command                   | Description  |
|---------------------------|--|
| <a href="#">cdp timer</a> | Specifies how often the Cisco NCS server sends Cisco Discovery Protocol updates. |
| <a href="#">cdp run</a>   | Enables the Cisco Discovery Protocol.  |

## cdp run

To enable the Cisco Discovery Protocol, use the **cdp run** command in configuration mode. To disable the Cisco Discovery Protocol, use the **no** form of this command.

**cdp run** [*GigabitEthernet*]

|                           |                        |  |
|---------------------------|------------------------|--|
| <b>Syntax Description</b> | <i>GigabitEthernet</i> | Specifies the GigabitEthernet interface on which to enable the Cisco Discovery Protocol. |
|---------------------------|------------------------|--|

**Defaults** No default behavior or values.

**Command Modes** Configuration

**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.

**Examples**

```
ncs/admin(config)# cdp run GigabitEthernet 0
ncs/admin(config)#
```

| <b>Related Commands</b> | <b>Command</b>               | <b>Description</b>   |
|-------------------------|------------------------------|--|
|                         | <a href="#">cdp holdtime</a> | Specifies the length of time that the receiving device should hold a Cisco Discovery Protocol packet from the Cisco NCS server before discarding it. |
|                         | <a href="#">cdp timer</a>    | Specifies how often the Cisco NCS server sends Cisco Discovery Protocol updates.   |

## cdp timer

To specify how often the Cisco NCS server sends Cisco Discovery Protocol updates, use the **cdp timer** command in configuration mode. To revert to the default setting, use the **no** form of this command.

**cdp timer** *seconds*

|                           |                |  |
|---------------------------|----------------|--|
| <b>Syntax Description</b> | <i>seconds</i> | Specifies how often, in seconds, the Cisco NCS server sends Cisco Discovery Protocol updates. Value from 5 to 254 seconds. |
|---------------------------|----------------|--|

**Defaults** 60 seconds



**Command Modes** Configuration

**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.

**Examples**

```
ncs/admin(config)# cdp timer 60
ncs/admin(config)#
```

| Related Commands | Command                      | Description  |
|------------------|------------------------------|--|
|                  | <a href="#">cdp holdtime</a> | Specifies the amount of time that the receiving device should hold a Cisco Discovery Protocol packet from the Cisco NCS server before discarding it. |
|                  | <a href="#">cdp run</a>      | Enables the Cisco Discovery Protocol.  |

## clock timezone

To set the time zone, use the **clock timezone** command in configuration mode. To disable this function, use the **no** form of this command.

**clock timezone** *timezone*

| Syntax Description | <i>timezone</i> | Name of the time zone visible when in standard time. Up to 64 alphanumeric characters. |
|--------------------|-----------------|--|
|                    |                 |  |

**Defaults** UTC

**Command Modes** Configuration

**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 (see Tables [A-16](#), [A-17](#), and [A-18](#) for sample time zones to enter on your system).

**Table A-16 Common Time Zones**

| Acronym or name  | Time Zone Name                           |
|--|--|
| <b>Europe</b>  |  |
| 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    |
| <b>United States and Canada</b>                          |  |
| 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 |

**Table A-17 Australia Time Zones**

| <b>Australia<sup>1</sup></b> |                  |                  |             |
|------------------------------|------------------|------------------|-------------|
| ACT <sup>2</sup>             | Adelaide         | Brisbane         | Broken_Hill |
| Canberra                     | Currie           | Darwin           | Hobart      |
| Lord_Howe                    | Lindeman         | LHI <sup>3</sup> | Melbourne   |
| North                        | NSW <sup>4</sup> | Perth            | Queensland  |
| South                        | Sydney           | Tasmania         | Victoria    |
| West                         | Yancowinna       |                  |             |

1. Enter the country and city together with a forward slash (/) between them; for example, Australia/Currie.
2. ACT = Australian Capital Territory
3. LHI = Lord Howe Island
4. NSW = New South Wales

**Table A-18 Asia Time Zones**

| <b>Asia<sup>1</sup></b> |         |          |           |
|-------------------------|---------|----------|-----------|
| Aden <sup>2</sup>       | Almaty  | Amman    | Anadyr    |
| Aqtau                   | Aqtobe  | Ashgabat | Ashkhabad |
| Baghdad                 | Bahrain | Baku     | Bangkok   |
| Beirut                  | Bishkek | Brunei   | Calcutta  |

**Table A-18 Asia Time Zones (continued)**

| <b>Asia<sup>1</sup></b> |             |              |          |
|-------------------------|-------------|--------------|----------|
| 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 |              |          |

1. The Asia time zone includes cities from East Asia, Southern Southeast Asia, West Asia, and Central Asia.
2. Enter the region and city or country together separated by a forward slash (/); for example, Asia/Aden.

**Note**

Several more time zones are available to you. On your Cisco NCS server, enter the **show timezones** command. A list of all the time zones available in the Cisco NCS server appears. Choose the most appropriate one for your time zone.

**Examples**

```
ncs/admin(config)# clock timezone EST
ncs/admin(config)# exit
ncs/admin# show timezone
EST
ncs/admin#
```

**Related Commands**

| <b>Command</b>                 | <b>Description</b>                                     |
|--------------------------------|--|
| <a href="#">show timezones</a> | Displays a list of available time zones on the system. |
| <a href="#">show timezone</a>  | Displays the current time zone set on the system.      |

**do**

To execute an EXEC-level command from configuration mode or any configuration submode, use the **do** command in any configuration mode.

**do** *arguments*

**Syntax Description**

|                  |  |
|------------------|--|
| <i>arguments</i> | The EXEC command to execute (see <a href="#">Table A-19</a> ). |
|------------------|--|

**Table A-19** Command Options for the Do Command

| <b>Command</b>                  | <b>Description</b>  |
|---------------------------------|---|
| <b>application install</b>      | Installs a specific application.  |
| <b>application remove</b>       | Removes a specific application.   |
| <b>application start</b>        | Starts or enables a specific application  |
| <b>application stop</b>         | Stops or disables a specific application.   |
| <b>application upgrade</b>      | Upgrades a specific application.  |
| <b>backup</b>                   | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository.   |
| <b>backup-logs</b>              | Performs a backup of all the logs on the Cisco NCS server to a remote location.   |
| <b>clock</b>                    | Sets the system clock on the Cisco NCS server.  |
| <b>configure</b>                | Enters configuration mode.  |
| <b>copy</b>                     | Copies any file from a source to a destination.   |
| <b>debug</b>                    | Displays any errors or events for various command situations; for example, backup and restore, configuration, copy, resource locking, file transfer, and user management. |
| <b>delete</b>                   | Deletes a file on the Cisco NCS server.   |
| <b>dir</b>                      | Lists files on the Cisco NCS server.  |
| <b>forceout</b>                 | Forces the logout of all the sessions of a specific Cisco NCS node user.  |
| <b>halt</b>                     | Disables or shuts down the Cisco NCS server.  |
| <b>help</b>                     | Describes the help utility and how to use it on the Cisco NCS server.   |
| <b>mkdir</b>                    | Creates a new directory.  |
| <b>nslookup</b>                 | Queries the IPv4 address or hostname of a remote system.  |
| <b>patch</b>                    | Install System or Application patch.  |
| <b>pep</b>                      | Configures the Inline PEP node.   |
| <b>ping</b>                     | Determines the IPv4 network activity on a remote system.  |
| <b>ping6</b>                    | Determines the IPv6 network activity on a IPv6 remote system.   |
| <b>reload</b>                   | Reboots the Cisco NCS server.   |
| <b>restore</b>                  | Performs a restore and retrieves the backup out of a repository.  |
| <b>rmdir</b>                    | Removes an existing directory.  |
| <b>show</b>                     | Provides information about the Cisco NCS server.  |
| <b>ssh</b>                      | Starts an encrypted session with a remote system.   |
| <b>tech</b>                     | Provides Technical Assistance Center (TAC) commands.  |
| <b>telnet</b>                   | Establishes a Telnet connection to a remote system.   |
| <b>terminal length</b>          | Sets terminal line parameters.  |
| <b>terminal session-timeout</b> | Sets the inactivity timeout for all terminal sessions.  |
| <b>terminal session-welcome</b> | Sets the welcome message on the system for all terminal sessions.   |

**Table A-19** Command Options for the Do Command (continued)

| Command                       | Description   |
|-------------------------------|---|
| <b>terminal terminal-type</b> | Specifies the type of terminal connected to the current line of the current session.  |
| <b>traceroute</b>             | Traces the route of a remote IP address.  |
| <b>undebug</b>                | Disables the output (display of errors or events) of the <b>debug</b> command for various command situations; for example, backup and restore, configuration, copy, resource locking, file transfer, and user management.     |
| <b>write</b>                  | 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 or any configuration submode

**Usage Guidelines**

Use this command to execute EXEC commands (such as **show**, **clear**, and **debug** commands) while configuring your server. After the EXEC command executes, the system will return to configuration mode you were using.

**Examples**

```
ncs/admin(config)# do show run
Generating configuration...
!
hostname ncs
!
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 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--

ncs/admin(config)#

```

## end

To end the current configuration session and return to EXEC mode, use the **end** command in configuration mode.

**end**

### Syntax Description

No arguments or keywords.

### Defaults

No default behavior or values.

### Command Modes

Configuration

### 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.

### Examples

```

ncs/admin(config)# end
ncs/admin#

```

### Related Commands

| Command                     | Description  |
|-----------------------------|--|
| <a href="#">exit</a>        | Exits configuration mode.  |
| <a href="#">exit (EXEC)</a> | Closes the active terminal session by logging out of the Cisco NCS server. |

## exit

To exit any configuration mode to the next-highest mode in the CLI mode hierarchy, use the **exit** command in configuration mode.

**exit**

**Syntax Description** No arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** The **exit** command is used in the Cisco NCS 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 the EXEC mode and disconnects from the Cisco NCS server (see [exit](#), page A-24, for a description of the **exit** (EXEC) command).

**Examples**

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

| Related Commands | Command                     | Description  |
|------------------|-----------------------------|--|
|                  | <a href="#">end</a>         | Exits configuration mode.  |
|                  | <a href="#">exit</a> (EXEC) | Closes the active terminal session by logging out of the Cisco NCS server. |

## hostname

To set the hostname of the system, use the **hostname** command in configuration mode. To delete the hostname from the system, use the **no** form of this command, which resets the system to localhost.

**hostname** *word*

| Syntax Description | hostname    | The command to configure the hostname.   |
|--------------------|-------------|--|
|                    | <i>word</i> | Name of the host. Contains at least 2 to 64 alphanumeric characters and an underscore ( _ ). The hostname must begin with a character that is not a space. |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines**

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.

**Examples**

```
ncs/admin(config)# hostname ncs-1
Changing the hostname or IP may result in undesired side effects,
such as installed application(s) being restarted.
Are you sure you want to proceed? [y/n] y
Stopping NCS Monitoring & Troubleshooting Log Processor...
Stopping NCS Monitoring & Troubleshooting Log Collector...
Stopping NCS Monitoring & Troubleshooting Alert Process...
Stopping NCS Application Server...
Stopping NCS Monitoring & Troubleshooting Session Database...
Stopping NCS Database processes...
Starting NCS Database processes...
Starting NCS Monitoring & Troubleshooting Session Database...
Starting NCS Application Server...
Starting NCS Monitoring & Troubleshooting Log Collector...
Starting NCS Monitoring & Troubleshooting Log Processor...
Starting NCS Monitoring & Troubleshooting Alert Process...
Note: NCS Processes are initializing. Use 'show application status ncs'
      CLI to verify all processes are in running state.

ncs-1/admin(config)#

ncs-1/admin# show application status ncs

NCS Database listener is running, PID: 11142
NCS Database is running, number of processes: 29
NCS Application Server is still initializing.
NCS M&T Session Database is running, PID: 11410
NCS M&T Log Collector is running, PID: 11532
NCS M&T Log Processor is running, PID: 11555
NCS M&T Alert Process is running, PID: 11623

ncs-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**

|            |                             |
|------------|-----------------------------|
| <i>off</i> | Disables ICMP echo response |
| <i>on</i>  | Enables ICMP echo response. |

**Defaults**

The system behaves as if the ICMP echo response is on (enabled).

**Command Modes**

Configuration



**Examples**

```
ncs/admin(config)# icmp echo off
ncs/admin(config)#
```

**Related Commands**

| Command                          | Description   |
|----------------------------------|---|
| <a href="#">show icmp-status</a> | Display ICMP echo response configuration information. |

## interface

To configure an interface type and enter the interface configuration mode, use the **interface** command in configuration mode.

**Note**

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**

|                        |   |
|------------------------|---|
| <b>GigabitEthernet</b> | Configures the Gigabit Ethernet interface.        |
| <b>0 - 3</b>           | Number of the Gigabit Ethernet port to configure. |

**Note**

After you enter the Gigabit Ethernet port number in the **interface** command, you enter the config-GigabitEthernet configuration submode (see the following Syntax Description).

|          |   |
|----------|---|
| do       | EXEC command. Allows you to perform any EXEC commands in this mode (see <a href="#">do</a> , page A-97).  |
| 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 Ethernet interface (see <a href="#">ip address</a> , page A-107).   |
| ipv6     | Configures IPv6 autoconfiguration address and IPv6 address from DHCPv6 server. (see <a href="#">ipv6 address autoconfig</a> , page A-104 and <a href="#">ipv6 address dhcp</a> , page A-106).                     |
| no       | Negates the command in this mode. Two keywords are available: <ul style="list-style-type: none"> <li>ip—Sets the IP address and netmask for the interface.</li> <li>shutdown—Shuts down the interface.</li> </ul> |
| shutdown | Shuts down the interface (see <a href="#">shutdown</a> , page A-119).   |

**Defaults**

No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** You can use the **interface** command to configure subinterfaces to support various requirements.

**Examples**

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

| Related Commands | Command   | Description   |
|------------------|---|---|
|                  | <a href="#">show interface</a>                            | Displays information about the system interfaces.                     |
|                  | <a href="#">ip address</a> (interface configuration mode) | Sets the IP address and netmask for the interface.                    |
|                  | <a href="#">shutdown</a> (interface configuration mode)   | Shuts down the interface (see <a href="#">shutdown</a> , page A-119). |

## ipv6 address autoconfig

To enable IPv6 stateless autoconfiguration, use the **interface GigabitEthernet 0** command in configuration mode. This command does not have a **no** form.

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.

```
interface GigabitEthernet 0
```

| Syntax Description |                 |   |
|--------------------|-----------------|---|
|                    | interface       | The command to configure an interface.            |
|                    | GigabitEthernet | Configures the Gigabit Ethernet interface.        |
|                    | <0 - 3>         | Number of the Gigabit Ethernet port to configure. |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**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 using the **show** command.

### Example 1

```
ncs/admin# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
ncs/admin(config)# interface GigabitEthernet 0
ncs/admin(config)# (config-GigabitEthernet)# ipv6 address autoconfig
```

```
ncs/admin(config)# (config-GigabitEthernet)# end
ncs/admin#
```

When IPv6 autoconfiguration is enabled, the running configuration shows the interface settings similar to the following:

```
!
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 example 2, you can see that the interface has three IPv6 addresses. The first 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. You will always see 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.

### Example 2

```
ncs/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
```

```
ncs/admin#
```

The following RFC provides the IPv6 stateless autoconfiguration privacy extensions:

<http://www.ietf.org/rfc/rfc3041.txt>

To verify that the privacy extensions feature is enabled, you can use the **show interface GigabitEthernet 0** command. You can see two autoconfiguration addresses: one address is without the privacy extensions, and the other is with the privacy extensions.

In the example 3 below, the MAC 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.

The output appears similar to the following:

### Example 3

```
ncs/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
```

```
ncs/admin#
```

| Related Commands | Command   | Description   |
|------------------|---|---|
|                  | <a href="#">show interface</a>                            | Displays information about the system interfaces.                                       |
|                  | <a href="#">ip address</a> (interface configuration mode) | Sets the IP address and netmask for the interface.                                      |
|                  | <a href="#">shutdown</a> (interface configuration mode)   | Shuts down the interface (see <a href="#">shutdown</a> , page A-119).                   |
|                  | <a href="#">ipv6 address dhcp</a>                         | Enables IPv6 address DHCP on an interface.  |
|                  | <a href="#">show running-config</a>                       | Displays the contents of the currently running configuration file or the configuration. |

## ipv6 address dhcp

To enable IPv6 address DHCP, use the **interface GigabitEthernet 0** command in configuration mode. This command does not have a **no** form.

```
interface GigabitEthernet 0
```

| Syntax Description |                 |  |
|--------------------|-----------------|--|
|                    | interface       | The command to configure an interface.         |
|                    | GigabitEthernet | Configures the Gigabit Ethernet interface.     |
|                    | 0               | Gigabit Ethernet port number to be configured. |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** None.

### Examples

```
ncs/admin# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
ncs/admin(config)# interface GigabitEthernet 0
ncs/admin(config-GigabitEthernet)# ipv6 address dhcp
ncs/admin(config-GigabitEthernet)# end
ncs/admin#
```

When IPv6 DHCPv6 is enabled, the running configuration shows the interface settings similar to the following:

```
!
interface GigabitEthernet 0
```

```
ip address 172.23.90.116 255.255.255.0
ipv6 address dhcp
!
```

**Note**

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** 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 shows the interface settings similar to the following:

```
!
interface GigabitEthernet 0
 ip address 172.23.90.116 255.255.255.0
 ipv6 address dhcp
!
```

**Related Commands**

| Command   | Description   |
|---|---|
| <a href="#">show interface</a>                            | Displays information about the system interfaces.                                       |
| <a href="#">ip address</a> (interface configuration mode) | Sets the IP address and netmask for the interface.                                      |
| <a href="#">shutdown</a> (interface configuration mode)   | Shuts down the interface (see <a href="#">shutdown</a> , page A-119).                   |
| <a href="#">ipv6 address autoconfig</a>                   | Enables IPv6 stateless autoconfiguration on an interface.                               |
| <a href="#">show running-config</a>                       | Displays the contents of the currently running configuration file or the configuration. |

## ip address

To set the IP address and netmask for the Ethernet interface, use the **ip address** command in interface configuration mode. To remove an IP address or disable IP processing, use the **no** form of this command.

```
ip address ip-address netmask
```

**Note**

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.

**Syntax Description**

|                   |                                   |
|-------------------|-----------------------------------|
| <i>ip-address</i> | IPv4 version IP address.          |
| <i>netmask</i>    | Mask of the associated IP subnet. |

**Defaults**

Enabled.

**Command Modes** Interface configuration

**Usage Guidelines** Requires exactly one address and one netmask; otherwise, an error occurs.

**Examples**

```
ncs/admin(config)# interface GigabitEthernet 1
ncs/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 NCS processes are running, use the
'show application status ncs' command.
ncs/admin(config-GigabitEthernet)#
```

**Related Commands**

| Command   | Description  |
|---|--|
| <a href="#">shutdown</a> (interface configuration mode) | Disables an interface (see <a href="#">shutdown</a> , page A-119). |
| <a href="#">ip default-gateway</a>                      | Sets the IP address of the default gateway of an interface.        |
| <a href="#">show interface</a>                          | Displays information about the system IP interfaces.               |
| <a href="#">interface</a>                               | Configures an interface type and enters the interface mode.        |

## ip default-gateway

To define or set a default gateway with an IP address, use the **ip default-gateway** command in configuration mode. To disable this function, use the **no** form of this command.

**ip default-gateway** *ip-address*

**Syntax Description**

|                   |                                    |
|-------------------|------------------------------------|
| <i>ip-address</i> | IP address of the default gateway. |
|-------------------|------------------------------------|

**Defaults** Disabled.

**Command Modes** Configuration

**Usage Guidelines** If you enter more than one argument or no arguments at all, an error occurs.

**Examples**

```
ncs/admin(config)# ip default-gateway 209.165.202.129
ncs/admin(config)#
```

| Related Commands | Command   | Description   |
|------------------|---|---|
|                  | <a href="#">ip address</a> (interface configuration mode) | Sets the IP address and netmask for the Ethernet interface. |

## ip domain-name

To define a default domain name that the Cisco NCS server uses to complete hostnames, use the **ip domain-name** command in configuration mode. To disable this function, use the **no** form of this command.

**ip domain-name** *word*

| Syntax Description | word | Description  |
|--------------------|------|--|
|                    |      | Default domain name used to complete the hostnames. Contains at least 2 to 64 alphanumeric characters. |

**Defaults** Enabled.

**Command Modes** Configuration

**Usage Guidelines** If you enter more or fewer arguments, an error occurs.

**Examples**

```
ncs/admin(config)# ip domain-name cisco.com
ncs/admin(config)#
```

| Related Commands | Command                        | Description                                      |
|------------------|--------------------------------|--|
|                  | <a href="#">ip name-server</a> | Sets the DNS servers for use during a DNS query. |

## ip name-server

To set the Domain Name Server (DNS) servers for use during a DNS query, use the **ip name-server** command in configuration mode. You can configure one to three DNS servers. To disable this function, use the **no** form of this command.



### Note

Using the **no** form of this command removes all the name servers from the configuration. Using the **no** form of this command and one of the IP names removes only that IP name server.

**ip name-server** *ip-address* [*ip-address*\*

| Syntax Description          |             |   |
|-----------------------------|-------------|---|
| <code>ip name-server</code> |             | The command to configure IP addresses of name server(s) to use. |
| <code>ip-address</code>     |             | Address of a name server.                                       |
| <code>ip-address*</code>    |             | (Optional) IP addresses of additional name servers.             |
|                             | <b>Note</b> | You can configure a maximum of three name servers.              |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**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 one at a time or all at once, until you reach the maximum (3). If you already configured the system with three 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.

**Examples** `ncs/admin(config)# ip name-server 209.165.201.1`

To verify that NCS processes are running, use the 'show application status ncs' command.  
`ncs/admin(config)#`

You can choose not to restart the Cisco NCS server; nevertheless, the changes will take effect.

| Related Commands | Command                     | Description   |
|------------------|-----------------------------|---|
|                  | <code>ip domain-name</code> | Defines a default domain name that the server uses to complete hostnames. |

## 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.

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.

**ip route** *prefix mask gateway ip-address*

**no ip route** *prefix mask*



| Syntax Description |                   |  |
|--------------------|-------------------|--|
|                    | <i>prefix</i>     | IP route prefix for the destination.                               |
|                    | <i>mask</i>       | Prefix mask for the destination.                                   |
|                    | <i>ip-address</i> | IP address of the next hop that can be used to reach that network. |

**Defaults** No default behavior or values.

**Command Modes** Configuration.

**Examples**

```
ncs/admin(config)# ip route 192.168.0.0 255.255.0.0 gateway 172.23.90.2
ncs/admin(config)#
```

## 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 |                        |  |
|--------------------|------------------------|--|
|                    | <b>occurrence</b>      | Schedules Command Scheduler commands.  |
|                    | <i>occurrence-name</i> | Name of the occurrence. Up to 80 alphanumeric characters. (See the following note and Syntax Description.) |



**Note**

After you enter the *occurrence-name* in the **kron occurrence** command, you enter the config-occurrence configuration submode (see the following syntax description).

|      |  |
|------|--|
| at   | Identifies that the occurrence is to run at a specified calendar date and time. Usage: at [ <i>hh:mm</i> ] [ <i>day-of-week</i>   <i>day-of-month</i>   <i>month day-of-month</i> ]. |
| do   | EXEC command. Allows you to perform any EXEC commands in this mode (see <a href="#">do</a> , page A-97).   |
| 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.<br>Three keywords are available: <ul style="list-style-type: none"> <li>at—Usage: at [hh:mm] [day-of-week   day-of-month   month day-of-month].</li> <li>policy-list—Specifies a policy list to be run by the occurrence. Up to 80 alphanumeric characters.</li> <li>recurring—Execution of the policy lists should be repeated.</li> </ul> |
| policy-list | Specifies a Command Scheduler policy list to be run by the occurrence.  |
| recurring   | Identifies that the occurrences run on a recurring basis.   |

**Defaults**

No default behavior or values.

**Command Modes**

Configuration

**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 on the Cisco NCS server at a specified time. See [kron policy-list, page A-113](#).

**Examples**

**Note** 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.

**Example 1: Weekly Backup**

```
ncs/admin(config)# kron occurrence WeeklyBackup
ncs/admin(config-Occurrence)# at 14:35 Monday
ncs/admin(config-Occurrence)# policy-list SchedBackupPolicy
ncs/admin(config-Occurrence)# recurring
ncs/admin(config-Occurrence)# exit
ncs/admin(config)#
```

**Example 2: Daily Backup**

```
ncs/admin(config)# kron occurrence DailyBackup
ncs/admin(config-Occurrence)# at 02:00
ncs/admin(config-Occurrence)# exit
ncs/admin(config)#
```

**Related Commands**

| Command                          | Description                                      |
|----------------------------------|--|
| <a href="#">kron policy-list</a> | Specifies a name for a Command Scheduler policy. |

## 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

|                    |  |
|--------------------|--|
| <b>policy-list</b> | Specifies a name for Command Scheduler policies.           |
| <i>list-name</i>   | Name of the policy list. 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 (see the following Syntax Description).

|      |  |
|------|--|
| cli  | Command to be executed by the scheduler. Up to 80 alphanumeric characters.   |
| do   | EXEC command. Allows you to perform any EXEC commands in this mode (see <a href="#">do</a> , page A-97).   |
| 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: <ul style="list-style-type: none"> <li>cli—Command to be executed by the scheduler.</li> </ul> |

### Defaults

No default behavior or values.

### Command Modes

Configuration

### 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 NCS 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. See [ip route](#), page A-110.

### Examples

```
ncs/admin(config)# kron policy-list SchedBackupMonday
ncs/admin(config-Policy List)# cli backup SchedBackupMonday repository SchedBackupRepo
ncs/admin(config-Policy List)# exit
ncs/admin(config)#
```

| Related Commands | Command                  | Description   |
|------------------|--------------------------|---|
|                  | <a href="#">ip route</a> | Specifies schedule parameters for a Command Scheduler occurrence and enters the config-Occurrence configuration mode. |

## logging

To enable the system to forward logs to a remote system or to configure the log level, use the **logging** command in configuration mode. To disable this function, use the **no** form of this command.

**logging** {*ip-address* | *hostname*} {**loglevel** *level*}

| Syntax Description |  |   |
|--------------------|--|---|
| <i>ip-address</i>  |  | IP address of remote system to which you forward logs. Up to 32 alphanumeric characters.  |
| <i>hostname</i>    |  | Hostname of remote system to which you forward logs. Up to 32 alphanumeric characters.  |
| <b>loglevel</b>    |  | The command to configure the log level for the <b>logging</b> command.  |
| <i>level</i>       |  | Number of the desired priority level at which you set the log messages. Priority levels are (enter the number for the keyword): <ul style="list-style-type: none"> <li>• 0-emerg—Emergencies: System unusable.</li> <li>• 1-alert—Alerts: Immediate action needed.</li> <li>• 2-crit—Critical: Critical conditions.</li> <li>• 3-err—Error: Error conditions.</li> <li>• 4-warn—Warning: Warning conditions.</li> <li>• 5-notif—Notifications: Normal but significant conditions.</li> <li>• 6-inform—(Default) Informational messages.</li> <li>• 7-debug—Debugging messages.</li> </ul> |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** This command requires an IP address or hostname or the **loglevel** keyword; an error occurs if you enter two or more of these arguments.

### Examples

**Example 1**

```
ncs/admin(config)# logging 209.165.200.225
ncs/admin(config)#
```

**Example 2**

```
ncs/admin(config)# logging loglevel 0
ncs/admin(config)#
```

**Related Commands**

| Command                      | Description                           |
|------------------------------|---------------------------------------|
| <a href="#">show logging</a> | Displays list of logs for the system. |

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

```
ntp server { ip-address | hostname } [ip-address | hostname] [ip-address | hostname]
```

**Syntax Description**

|                                     |   |
|-------------------------------------|---|
| <i>ip-address</i>   <i>hostname</i> | IP address or hostname of the server providing the clock synchronization. Arguments are limited to 255 alphanumeric characters. |
|-------------------------------------|---|

**Defaults**

No servers are configured by default.

**Command Modes**

Configuration

**Usage Guidelines**

Use this command if you want to allow the system to synchronize with a specified server.

To terminate NTP service on a device, you must enter the **no ntp** command without keywords or arguments. For example, if you previously entered the **ntp server** command and you now want to remove not only the server synchronization capability, but all NTP functions from the device, use the **no ntp** command without any keywords. This command ensures that all NTP functions are disabled and that the NTP service also terminates.

**Note**

This command gives conflicting information during the sync process. The sync process can take up to 20 minutes to complete.

**Examples**

```
ncs/admin(config)# ntp server ncs ncs1 ncs2
ncs/admin(config)#
```

```
ncs/admin# show ntp
Primary NTP   : ncs
Secondary NTP : ncs1
Tertiary NTP  : ncs2
```

```
synchronised to local net at stratum 11
time correct to within 11 ms
```

```

polling server every 1024 s

      remote          refid          st t when poll reach  delay  offset  jitter
-----
*127.127.1.0        .LOCL.          10 1  22  64  377  0.000  0.000  0.001
172.23.90.113      .INIT.          16 u   - 1024  0  0.000  0.000  0.000
172.23.90.114      .INIT.          16 u   - 1024  0  0.000  0.000  0.000
172.23.90.115      .INIT.          16 u   - 1024  0  0.000  0.000  0.000

```

Warning: Output results may conflict during periods of changing synchronization.  
ncs admin#

**Related Commands**

| Command                  | Description   |
|--------------------------|---|
| <a href="#">show ntp</a> | Displays the status information about the NTP associations. |

## password-policy

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** *option***Note**

The **password-policy** command requires a policy option (see Syntax Description). You must enter the **password-expiration-enabled** command before the other password-expiration commands.

**Syntax Description**

|               |                            |
|---------------|----------------------------|
| <i>option</i> | Different command options. |
|---------------|----------------------------|

**Note**

After you enter the **password-policy** command, you can enter the config-password-policy configuration submode.

|                           |  |
|---------------------------|--|
| digit-required            | Requires a digit in the password.  |
| disable-repeat-characters | Disables the ability of the password to contain more than four identical characters.                   |
| disable-cisco-password    | Disables the ability to use the word Cisco or any combination as the password.                         |
| do                        | Exec command.  |
| end                       | Exit from configure mode.  |
| exit                      | Exit from this submode.  |
| lower-case-required       | Requires a lowercase letter in the password.   |
| min-password-length       | Specifies a minimum number of characters for a valid password. Integer length from 0 to 4,294,967,295. |
| 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-expiration-days    | Number of days until a password expires. Integer length from 0 to 80.  |
| password-expiration-enabled | Enables password expiration.<br><b>Note</b> You must enter the <b>password-expiration-enabled</b> command before the other password-expiration commands. |
| password-expiration-warning | Number of days before expiration that warnings of impending expiration begin. Integer length from 0 to 4,294,967,295.                                    |
| password-lock-enabled       | Locks a password after several failures.   |
| password-lock-retry-count   | Number of failed attempts before password locks. Integer length from 0 to 4,294,967,295.   |
| upper-case-required         | Requires an uppercase letter in the password.  |
| special-required            | Requires a special character in the password.  |

**Defaults**

No default behavior or values.

**Command Modes**

Configuration

**Examples**

```
ncs/admin(config) # password-policy
ncs/admin(config-password-policy) # password-expiration-days 30
ncs/admin(config-password-policy) # exit
ncs/admin(config) #
```

**repository**

To enter the repository submode for configuration of backups, use the **repository** command in configuration mode.

**repository** *repository-name*

**Syntax Description**

|                        |   |
|------------------------|---|
| <i>repository-name</i> | Name of repository. 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 (see the syntax description).

|      |   |
|------|---|
| do   | EXEC command. Allows you to perform any of the EXEC commands in this mode (see <a href="#">do</a> , page A-97). |
| end  | Exits the config-Repository submode and returns you to EXEC mode.   |
| exit | Exits this mode.  |

|      |   |
|------|---|
| no   | Negates the command in this mode.<br>Two keywords are available: <ul style="list-style-type: none"> <li>url—Repository URL.</li> <li>user—Repository username and password for access.</li> </ul> |
| url  | URL of the repository. Up to 80 alphanumeric characters (see <a href="#">Table A-20</a> ).  |
| user | Configure the username and password for access. Up to 30 alphanumeric characters.   |

**Table A-20** URL Keywords

| Keyword       | Source of Destination  |
|---------------|--|
| <i>word</i>   | Enter the repository URL, including server and path info. Up to 80 alphanumeric characters.  |
| <b>cdrom:</b> | Local CD-ROM drive (read only).  |
| <b>disk:</b>  | Local storage.<br>You can run the <b>show repository repository_name</b> to view all the files in the local repository.<br><b>Note</b> All local repositories are created on the /localdisk partition. When you specify <b>disk://</b> in the repository URL, the system creates directories in a path that is relative to /localdisk. For example, if you entered <b>disk://backup</b> , the directory is created at /localdisk/backup. |
| <b>ftp:</b>   | Source or destination URL for an FTP network server. Use <code>url ftp://server/path<sup>1</sup></code> .  |
| <b>nfs:</b>   | Source or destination URL for an NFS network server. Use <code>url nfs://server:path<sup>1</sup></code> .  |
| <b>sftp:</b>  | Source or destination URL for an SFTP network server. Use <code>url sftp://server/path<sup>1</sup></code> .  |
| <b>tftp:</b>  | Source or destination URL for a TFTP network server. Use <code>url tftp://server/path<sup>1</sup></code> .<br><br><b>Note</b> You cannot use a TFTP repository for performing a Cisco NCS upgrade.  |

- <sup>1</sup> *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.

**Defaults**

No default behavior or values.

**Command Modes**

Configuration

**Examples****Example 1**

```

ncs/admin# configure terminal
ncs/admin(config)# repository myrepository
ncs/admin(config-Repository)# url sftp://example.test.com/repository/system1
ncs/admin(config-Repository)# user luke password example
ncs/admin(config-Repository)# exit
ncs/admin(config)# exit

```



```
ncs/admin#
```

### Example 2

```
ncs/admin# configure terminal
ncs/admin(config)# repository myrepository
ncs/admin(config-Repository)# url disk://
ncs/admin(config-Repository)# user luke password plain example
ncs/admin(config-Repository)# exit
ncs/admin(config)# exit
ncs/admin#
```

### Related Commands

| Command                             | Description   |
|-------------------------------------|---|
| <a href="#">backup</a>              | Performs a backup (Cisco NCS and Cisco ADE OS) and places the backup in a repository. |
| <a href="#">restore</a>             | Performs a restore and takes the backup out of a repository.                          |
| <a href="#">show backup history</a> | Displays the backup history of the system.  |
| <a href="#">show repository</a>     | Displays the available backup files located on a specific repository.                 |

## service

To specify a service to manage, use the **service** command in configuration mode. To disable this function, use the **no** form of this command.

```
service sshd
```

### Syntax Description

|         |  |
|---------|--|
| service | The command to specify a service to be managed.  |
| sshd    | Secure Shell Daemon. The daemon program for SSH. |

### Defaults

No default behavior or values.

### Command Modes

Configuration

### Examples

```
ncs/admin(config)# service sshd
ncs/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.

### Syntax Description

No arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** Interface configuration

**Usage Guidelines** When you shut down an interface using this command, you lose connectivity to the Cisco ISE-3315 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.

**Examples**

```
ncs/admin(config)# interface GigabitEthernet 0
ncs/admin(config-GigabitEthernet)# shutdown
```

| Related Commands | Command   | Description   |
|------------------|---|---|
|                  | <a href="#">interface</a>                                 | Configures an interface type and enters interface mode.     |
|                  | <a href="#">ip address</a> (interface configuration mode) | Sets the IP address and netmask for the Ethernet interface. |
|                  | <a href="#">show interface</a>                            | Displays information about the system IP interfaces.        |
|                  | <a href="#">ip default-gateway</a>                        | Sets the IP address of the default gateway of an interface. |

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

**snmp-server community** *word* **ro**

| Syntax Description | word      | Accessing string that functions much like a password and allows access to SNMP. No blank spaces allowed. Up to 255 alphanumeric characters. |
|--------------------|-----------|---|
|                    | <b>ro</b> | Specifies read-only access.   |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** The **snmp-server community** command requires a community string and the **ro** argument; otherwise, an error occurs.

**Examples**

```
ncs/admin(config)# snmp-server community new ro
ncs/admin(config)#
```

| Related Commands | Command                              | Description   |
|------------------|--------------------------------------|---|
|                  | <a href="#">snmp-server host</a>     | Sends traps to a remote system.                       |
|                  | <a href="#">snmp-server location</a> | Configures the SNMP location MIB value on the system. |
|                  | <a href="#">snmp-server contact</a>  | Configures the SNMP contact MIB value on the system.  |

## 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** *word*

| Syntax Description | <i>word</i> | String that describes the system contact information of the node. Up to 255 alphanumeric characters. |
|--------------------|-------------|--|
|                    |             |  |

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** None.

**Examples**

```
ncs/admin(config)# snmp-server contact Luke
ncs/admin(config)#
```

| Related Commands | Command                          | Description                     |
|------------------|----------------------------------|---------------------------------|
|                  | <a href="#">snmp-server host</a> | Sends traps to a remote system. |

| Command                               | Description   |
|---------------------------------------|---|
| <a href="#">snmp-server community</a> | Sets up the community access string to permit access to the SNMP. |
| <a href="#">snmp-server location</a>  | Configures the SNMP location MIB value on the system.             |

## snmp-server host

To send SNMP traps to a remote user, use the **snmp-server host** command in configuration mode. To remove trap forwarding, use the **no** form of this command.

**snmp-server host** {*ip-address* | *hostname*} **version** {*1* | *2c*} *community*

| Syntax Description               |  |  |
|----------------------------------|--|--|
| <i>ip-address</i>                |  | IP address of the SNMP notification host. Up to 32 alphanumeric characters.  |
| <i>hostname</i>                  |  | Name of the SNMP notification host. Up to 32 alphanumeric characters.  |
| version { <i>1</i>   <i>2c</i> } |  | (Optional) Version of the SNMP used to send the traps. Default = 1.<br>If you use the version keyword, specify one of the following keywords: <ul style="list-style-type: none"> <li>• 1—SNMPv1.</li> <li>• 2c—SNMPv2C.</li> </ul> |
| <i>community</i>                 |  | Password-like community string that is sent with the notification operation.   |

**Defaults** Disabled.

**Command Modes** Configuration

**Usage Guidelines** The command takes arguments as listed; otherwise, an error occurs.

### Examples

```
ncs/admin(config)# snmp-server community new ro
ncs/admin(config)# snmp-server host 209.165.202.129 version 1 password
ncs/admin(config)#
```

| Related Commands | Command                               | Description   |
|------------------|---------------------------------------|---|
|                  | <a href="#">snmp-server community</a> | Sets up the community access string to permit access to SNMP. |
|                  | <a href="#">snmp-server location</a>  | Configures the SNMP location MIB value on the system.         |
|                  | <a href="#">snmp-server contact</a>   | Configures the SNMP contact MIB value on the system.          |

## 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** *word*

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>word</i> | String that describes the physical location information of the system. Up to 255 alphanumeric characters. |
|---------------------------|-------------|---|

**Defaults** No default behavior or values.

**Command Modes** Configuration

**Usage Guidelines** We recommend 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 (“”).

**Examples****Example 1**

```
ncs/admin(config)# snmp-server location Building_3/Room_214
ncs/admin(config)#
```

**Example 2**

```
ncs/admin(config)# snmp-server location "Building 3/Room 214"
ncs/admin(config)#
```

**Related Commands**

| Command                               | Description   |
|---------------------------------------|---|
| <a href="#">snmp-server host</a>      | Sends traps to a remote system.                               |
| <a href="#">snmp-server community</a> | Sets up the community access string to permit access to SNMP. |
| <a href="#">snmp-server contact</a>   | Configures the SNMP location MIB value on the system.         |

**username**

To add a user who can access the Cisco ISE-3315 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} [disabled [email
email-address]] [email email-address]
```

For an existing user, use the following command option:

```
username username password role {admin | user} password
```

| Syntax Description                |  |   |
|-----------------------------------|--|---|
| <i>username</i>                   |  | Only one word for the username argument. Blank spaces and quotation marks (“”) are not allowed. Up to 31 alphanumeric characters. |
| <b>password</b>                   |  | The command to use specify password and user role.  |
| <i>password</i>                   |  | Password character length up to 40 alphanumeric characters. You must specify the password for all new users.                      |
| <b>hash   plain</b>               |  | Type of password. Up to 34 alphanumeric characters.   |
| <b>role admin   user</b>          |  | Sets the privilege level for the user.  |
| <b>disabled</b>                   |  | Disables the user according to the user’s email address.  |
| <b>email</b> <i>email-address</i> |  | The user’s email address. For example, <i>user1@example.com</i> .   |

**Defaults** The initial user during setup.

**Command Modes** Configuration

**Usage Guidelines** The **username** command requires that the username and password keywords precede the hash | plain and the admin | user options.

### Examples

#### Example 1

```
ncs/admin(config)# username admin password hash ##### role admin
ncs/admin(config)#
```

#### Example 2

```
ncs/admin(config)# username admin password plain Secr3tp@swd role admin
ncs/admin(config)#
```

#### Example 3

```
ncs/admin(config)# username admin password plain Secr3tp@swd role admin email
admin123@example.com
ncs/admin(config)#
```

| Related Commands | Command                         | Description   |
|------------------|---------------------------------|---|
|                  | <a href="#">password-policy</a> | Enables and configures the password policy.   |
|                  | <a href="#">show users</a>      | Displays a list of users and their privilege level. It also displays a list of logged-in users. |



## GLOSSARY

---

### A

**ADE** Application Deployment Engine.

---

### C

**CDP** Cisco Discovery Protocol. A proprietary tool that network administrators use to access a summary of protocol and address information about other devices that are directly connected to the device initiating the command.

CDP runs over the data-link layer connecting the physical media to the upper-layer protocols. Because CDP operates at this level, two or more CDP devices that support different network layer protocols (for example, IP and Novell IPX) can learn about each other.

Physical media supporting the Subnetwork Access Protocol (SNAP) encapsulation connect CDP devices. These can include all LANs, Frame Relay, and other WANs, and ATM networks.

**Cisco Discovery Protocol** *See CDP.*

**CLI** command-line interface. An interface through which the user can interact with the software operating system by entering commands and optional arguments.

**client** Node or software program that requests services from a server. For example, the Secure Shell (SSH) client. *See also* [server](#).

**command-line interface** *See CLI.*

**community string** A text string that acts as a password, which is used to authenticate messages sent between a management station and an IP Transfer Point (ITP) containing a SNMP agent. The community string sends in every packet between the manager and the agent.

---

### D

**DNS** Domain Name System. DNS associates various sorts of information with so-called domain names; most importantly, it serves as the “phone book” for the Internet: it translates human-readable computer hostnames (for example, *en.wikipedia.org*) into the IP addresses that networking equipment needs for delivering information. It also stores other information, such as the list of mail exchange servers that accept e-mail for a given domain. In providing a worldwide keyword-based redirection service, the DNS is an essential component of contemporary Internet use.

---

|                           |  |
|---------------------------|--|
| <b>DNS name</b>           | Initial name of a node.  |
| <b>domain name</b>        | The style of identifier—a sequence of case-insensitive ASCII labels separated by dots (.) (for example, <i>example.com.</i> )—defined for subtrees in the Internet DNS [R1034] and used in other Internet identifiers, such as hostnames, mailbox names, and URLs. |
| <b>Domain Name System</b> | <i>See</i> DNS.  |

---

## F

|            |  |
|------------|--|
| <b>FTP</b> | File Transfer Protocol. Application protocol, part of the TCP/IP protocol stack, used for transferring files between network nodes. FTP is defined in RFC 959. |
|------------|--|

---

## H

|                 |   |
|-----------------|---|
| <b>host</b>     | Computer system on a network. Similar to the term node; except, that host usually implies a computer system, whereas node generally applies to any network system, including access servers and ITPs. |
| <b>hostname</b> | The name of the operating system's server or computer that contains the major program files.  |

---

## I

|                   |   |
|-------------------|---|
| <b>IP</b>         | Internet Protocol. Network layer protocol in the TCP/IP stack offering a connectionless internetwork service. IP provides features for addressing, type-of-service specification, fragmentation and reassembly, and security. Documented in RFC 791.  |
| <b>IP address</b> | 32-bit address assigned to hosts by using TCP/IP. An IP address belongs to one of five classes (A, B, C, D, or E) and written as 4 octets separated by periods (.) (dotted-decimal format). Each address consists of a network number, an optional subnetwork number, and a host number. For routing, the network and subnetwork numbers stay together, while the host number addresses an individual host within the network or subnetwork. A subnet mask extracts network and subnetwork information from the IP address. |

---

## M

|            |  |
|------------|--|
| <b>MIB</b> | Management Information Base. A directory listing information used and maintained by a network's management protocol, such as SNMP. |
|------------|--|



---

**N**

**name server** A name server is a computer server that implements a name-service protocol. It will normally map a computer-usable identifier of a host to a human-usable identifier for that host. For example, a DNS server might translate the domain name *en.wikipedia.org* to the IP address 145.97.39.155.

**Network Time Protocol** *See* NTP.

**NTP** Network Time Protocol. A protocol for synchronizing the clocks of computer systems over packet-switched, variable-latency data networks. NTP uses User Datagram Protocol (UDP) port 123 as its transport layer. NTP is designed particularly to resist the effects of variable latency (jitter).

NTP is one of the oldest Internet protocols still in use (since before 1985). NTP was originally designed by Dave Mills of the University of Delaware, who still maintains it, along with a team of volunteers.

NTP is not related to the much simpler DAYTIME (RFC 867) and TIME (RFC 868) protocols.

**NFS** Network File System. NFS allows a system to share directories and files with others over a network. By using NFS, users and programs can access files on remote systems almost as if they were local files. In NCS, the NFS must be open shared which basically mean that it should not need any credentials.

---

**P**

**port** In IP terminology, an upper-layer process that receives information from lower layers. Each numbered port associates with a specific process. For example, SMTP associates with port 25.

---

**S**

**Secure Shell** *See* SSH.

**server** An application or device that performs services for connected clients as part of a client-server architecture. A server application, as defined by RFC 2616 (HTTP/1.1), is “an application program that accepts connections in order to service requests by sending back responses.” Server computers are devices designed to run such an application or applications, often for extended periods of time, with minimal human direction. Examples of servers include web servers, e-mail servers, and file servers.

*See also* [client](#).

**Simple Network Management Protocol** *See* SNMP.

- SSH** Secure Shell. A network protocol in which data is exchanged over a secure channel between two computers. Encryption provides confidentiality and integrity of data. SSH uses public-key cryptography to authenticate the remote computer and allow the remote computer to authenticate the user.
- SSH is typically used to log in to a remote machine and execute commands; but, it also supports tunneling, forwarding arbitrary TCP ports, and X Window System (X11) connections. It can transfer files by using the associated SSH File Transfer Protocol (SFTP) or Secure Copy (SCP) protocols.
- An SSH server, by default, listens on the standard TCP port 22. An SSH client program is typically used for establishing connections to an `sshd` daemon accepting remote connections. Both are commonly present on most modern operating systems. Proprietary, freeware, and open-source versions of various levels of complexity and completeness exist.
- SNMP** Simple Network Management Protocol. Network management protocol used almost exclusively in TCP/IP networks. SNMP provides a means to monitor and control network devices, and to manage configurations, statistics collection, performance, and security.
- SNMPv1** SNMPv1 is a simple request/response protocol. In the SNMPv1 framework, the network-management system installed a request, and managed devices return responses.
- SNMPv2C** The second release of SNMP, described in RFC 1902. It provides additions to data types, counter size, and protocol operations. SNMPv2C support includes a bulk-retrieval mechanism and more detailed error message reporting to management stations. The bulk-retrieval mechanism supports the retrieval of tables and large quantities of information, minimizing the number of round-trip transmissions required. SNMPv2C improved error-handling support includes expanded error codes that distinguish different kinds of error conditions; these conditions are reported through a single error code in SNMPv1. Error return codes now report the error type. Three kinds of exceptions are also reported: No such object, No such instance, and End of MIB view.

---

## T

- TCP** Transmission Control Protocol. Connection-oriented transport-layer protocol that provides reliable full-duplex data transmission. Part of the TCP/IP protocol stack.
- Telnet** Telnet (TELEtype NETwork). A network protocol used on the Internet or LAN connections. It was developed in 1969 beginning with RFC 0015 and standardized as IETF STD 8, one of the first Internet standards.
- The term Telnet also refers to software that implements the client part of the protocol. Telnet clients have been available on most UNIX systems for many years and are available for virtually all platforms. Most network equipment and operating systems with a TCP/IP stack support some kind of Telnet service server for their remote configuration (including ones based on Windows NT). Recently, Secure Shell has begun to dominate remote access for UNIX-based machines.
- Most often, a user telnets to a UNIX-like server system or a simple network device such as a switch. For example, you might “telnet in from home to check your e-mail at work.” In doing so, you would be using a Telnet client to connect from your computer to one of your servers. Once the connection is established, you would then log in with your account information and execute the operating system commands remotely on that computer, such as `ls` or `cd`.

|                                       |  |
|---------------------------------------|--|
| <b>TFTP</b>                           | Trivial File Transfer Protocol. Simplified version of FTP that allows files to be transferred from one computer to another over a network. |
| <b>Transmission Control Protocol</b>  | <i>See</i> TCP.  |
| <b>Trivial File Transfer Protocol</b> | <i>See</i> TFTP.   |

---

## U

|                                 |  |
|---------------------------------|--|
| <b>UDI</b>                      | <p>Unique Device Identifier. Each identifiable product is an entity, as defined by the Entity MIB (RFC 2737) and its supporting documents. Some entities, such as a chassis, will have subentities like slots. An Ethernet switch might be a member of a super entity like a stack. Most Cisco entities that are orderable products will leave the factory with an assigned UDI. The UDI information is printed on a label that is affixed to the physical hardware device, and it is also stored electronically on the device in order to facilitate remote retrieval.</p> <p>A UDI consists of the following elements: product identifier (PID), version identifier (VID), and serial number (SN).</p> <p>The PID is the name by which the product can be ordered; it has been historically called the “Product Name” or “Part Number.” You use this identifier to order an exact replacement part.</p> <p>The VID is the version of the product. Whenever a product is revised, the VID is incremented, according to a rigorous process derived from Telcordia GR-209-CORE, an industry guideline that governs product change notices.</p> <p>The SN is the vendor-unique serialization of the product. Each manufactured product carries a unique serial number assigned at the factory, which cannot be changed in the field. This number identifies an individual, specific instance of a product.</p> |
| <b>Unique Device Identifier</b> | <i>See</i> UDI.  |





## INDEX

---

### A

accessing, CLI  
    about [2-3](#)  
    console port [2-4](#)  
    prerequisites  
        hardware installation [2-1](#)  
        setup configuration [2-1](#)  
    SSH [2-4](#)  
    supported platforms [2-3](#)

accounts, user [1-1](#)

admin user [1-1](#)

audience [iii-ix](#)

---

### C

CLI  
    accessing [2-1](#)  
    commands, navigating [2-8](#)

CLI audit logs [1-9](#)

command  
    modes  
        configuration [1-7](#)  
        EXEC [1-4, 1-6](#)  
        understanding [2-5](#)  
    types of [1-4](#)

command-line  
    editing, key [2-9](#)  
    More prompt [2-10](#)

commands  
    configuration  
        backup-staging-url [A-92](#)  
        cdp holdtime [A-93](#)

cdp run [A-93](#)  
cdp timer [A-94](#)  
clock timezone [A-95](#)  
do [A-97](#)  
end [A-100](#)  
exit [A-100](#)  
hostname [A-101](#)  
icmp echo [A-102](#)  
interface [A-103](#)  
ip address [A-107](#)  
ip default-gateway [A-108](#)  
ip domain-name [A-109](#)  
ip name-server [A-109](#)  
ip route [A-110](#)  
ipv6 autoconfig [A-104](#)  
ipv6 dhcp [A-106](#)  
kron occurrence [A-111](#)  
kron policy-list [A-113](#)  
logging [A-114](#)  
ntp server [A-115](#)  
password-policy [A-116](#)  
repository [A-117](#)  
service [A-119](#)  
shutdown [A-119](#)  
snmp-server community [A-120](#)  
snmp-server contact [A-121](#)  
snmp-server host [A-122](#)  
snmp-server location [A-122](#)  
username [A-123](#)

### EXEC

application install [A-5](#)  
application remove [A-6](#)  
application reset-config [A-7](#)

- application start [A-8](#)
  - application stop [A-9](#)
  - application upgrade [A-10](#)
  - backup [A-11](#)
  - backup-logs [A-12](#)
  - clock [A-13](#)
  - configure [A-13](#)
  - copy [A-14](#)
  - debug [A-17](#)
  - delete [A-20](#)
  - dir [A-21](#)
  - exit [A-24](#)
  - forceout [A-24](#)
  - halt [A-25](#)
  - mkdir [A-26](#)
  - ncs db reinitdb [A-39](#)
  - nslookup [A-40](#)
  - patch install [A-40](#)
  - patch remove [A-42](#)
  - ping [A-43](#)
  - ping6 [A-44](#)
  - reload [A-45](#)
  - restore [A-46](#)
  - rmdir [A-48](#)
  - show [A-50, A-61](#)
  - ssh [A-52](#)
  - tech [A-53](#)
  - telnet [A-54](#)
  - terminal length [A-54](#)
  - terminal session-timeout [A-55](#)
  - terminal session-welcome [A-56](#)
  - terminal terminal-type [A-56](#)
  - traceroute [A-57](#)
  - undebug [A-57](#)
  - write [A-59](#)
  - show [1-6](#)
    - show application [A-61](#)
    - show backup history [A-63](#)
    - show cdp [A-64](#)
    - show clock [A-65](#)
    - show cpu [A-66](#)
    - show disks [A-68](#)
    - show icmp-status [A-69](#)
    - show interface [A-70](#)
    - show inventory [A-72](#)
    - show logging [A-73](#)
    - show logins [A-75](#)
    - show memory [A-76](#)
    - show ntp [A-76](#)
    - show ports [A-77](#)
    - show process [A-79](#)
    - show repository [A-81](#)
    - show restore [A-82](#)
    - show running-configuration [A-83](#)
    - show startup-configuration [A-84](#)
    - show tech-support [A-85](#)
    - show terminal [A-86](#)
    - show timezone [A-87](#)
    - show timezones [A-87](#)
    - show udi [A-89](#)
    - show uptime [A-89](#)
    - show users [A-90](#)
    - show version [A-91](#)
  - configuration commands [1-7, 2-6, A-91](#)
  - console port [1-1](#)
  - conventions
    - command-line, completion [2-10](#)
    - command-line, editing [2-9](#)
    - document [iii-x](#)
    - more prompt [2-10](#)
- 
- ## D
- default forms of commands, using [2-9](#)
  - disk space, managing [A-1](#)
  - document
    - audience [iii-ix](#)
    - conventions [iii-x](#)

organization [iii-x](#)  
 related [iii-xi](#)  
 using [iii-ix](#)

---

## E

EXEC commands [1-4, A-4](#)

---

## H

help, getting [2-8](#)

---

## M

mode

about [1-4](#)  
 configuration [2-6](#)  
 configuration, submodes [2-6](#)  
 EXEC [2-5](#)

---

## N

navigating, commands [2-8](#)  
 no forms of commands, using [2-9](#)

---

## O

Operator (user) [1-1](#)

---

## R

related documentation [iii-xi](#)

---

## S

setup utility [1-2, 2-1](#)  
 show commands [1-6, A-50, A-61](#)  
 SSH [1-1, 2-4](#)

submodes, configuration [2-6](#)  
 supported platforms  
     hardware [2-3](#)  
     software [2-3](#)

---

## T

types of commands [1-4](#)

---

## U

user

accounts [1-1](#)  
 command privileges (table) [1-2](#)  
 modes [1-4](#)

using

PC locally [2-4](#)  
 SSH [2-4](#)

utility, setup [2-1](#)

