Cisco Nexus 7000 Series Connectivity Management Processor Configuration Guide

August 20, 2012

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- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Cisco Nexus 7000 Series Connectivity Management Processor Configuration Guide

CONTENTS

Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 7000 Series Connectivity Management Processor Configuration Guide*. It also provides information on how to obtain related documentation.

This preface includes the following sections:

Audience

This guide is for experienced network system administrators who configure and maintain Nexus 7000 Series switches.

Organization

This document is organized as follows:

Chapter	Description
Chapter 1, "Overview"	Describes the Connectivity Management Processor.
Chapter 2, "Connecting, Configuring, and Upgrading the CMP"	Explains how to connect the CMP to the network, how to configure the CMP, and how to upgrade the CMP software image.
Chapter 3, "Using the CMP"	Explains how to use the CMP to monitor the CP and system, how to use the CMP to reboot the CP or system, and how to use the CP to reboot the CMP.

Document Conventions

Command descriptions use these conventions:

Convention	Description
boldface font	Commands and keywords are in boldface.
italic font	Arguments for which you supply values are in italics.
[ ]	Elements in square brackets are optional.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Screen examples use these conventions:

`screen font`	Terminal sessions and information that the switch displays are in screen font.
`boldface screen font`	Information you must enter is in boldface screen font.
`italic screen font`	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following conventions:

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

Related Documentation

This section includes the following topics:

- Hardware Documents, page vi
- Software Documents, page vii

Hardware Documents

Cisco Nexus 7000 Series documentation includes the following documents:

- *Cisco Nexus 7000 Series Site Preparation Guide*
- *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*
- *Cisco Nexus 7000 Series Regulatory Compliance and Safety Information*
- *Cisco Nexus 7000 Series Connectivity Management Processor Configuration Guide*

Software Documents

The Cisco Nexus 7000 Series switches ship with the Cisco NX-OS software. You can find software documentation for the Cisco NX-OS software at the following URL:

http://www.cisco.com/en/US/products/ps9402/tsd_products_support_series_home.html

The Cisco Datacenter Network Manager (DCNM) supports the Cisco Nexus 7000 Series. You can find documentation for DCNM at the following URL:

http://www.cisco.com/en/US/products/ps9369/tsd_products_support_series_home.html

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

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CHAPTER 1

Overview

This chapter provides an overview of the Connectivity Management Processor (CMP).

This chapter includes the following sections:

- Information About CMP, page 1-1

Information About CMP

The CMP is a separate processor on the Cisco Nexus 7000 Series Supervisor 1 module that is in addition to the main control processor (CP). The CMP provides a second network interface to the switch for use even when the CP is not reachable. You can access the CMP to configure it and to perform system operations, such as taking over the CP console or restarting the CP.

Note The CMP is available only on the Supervisor 1 modules, not on the Supervisor 2 nor Supervisor 2E modules.

Each CMP contains its own RAM, bootflash, and front panel management Ethernet port. The CMP eliminates the need for a separate permanent terminal server attached to your supervisor module. You connect to the CMP through its CMP-management Ethernet (CMP-MGMT ETH) port with a Secure Shell (SSH) or Telnet session to monitor or reboot the supervisor module. If the associated supervisor module CP is operational, you can also connect to the CMP from the CP to reboot the CMP.

Each CMP remains operational even if its supervisor module is in standby mode or the switch is down because of issues such as over-temperature alarms. Each CMP gets power from an auxiliary power bus in the switch that remains operational so long as you have at least one power cable attached to the switch.

The CMP provides the following functions:

- Communicates with the Supervisor 1 module and I/O modules even if Cisco NX-OS switch is not responding on the mgmt0 port.
- Maintains connectivity when you reboot the supervisor module.
- Monitors the supervisor module console port.
- Reboots the local supervisor module or the entire system.
- Takes over the supervisor module console port.
- Collects failure logs and watches bootup diagnostic messages.

Note The CMP runs a separate image from Cisco NX-OS (see the "Upgrading the CMP Image" section on page 2-30).

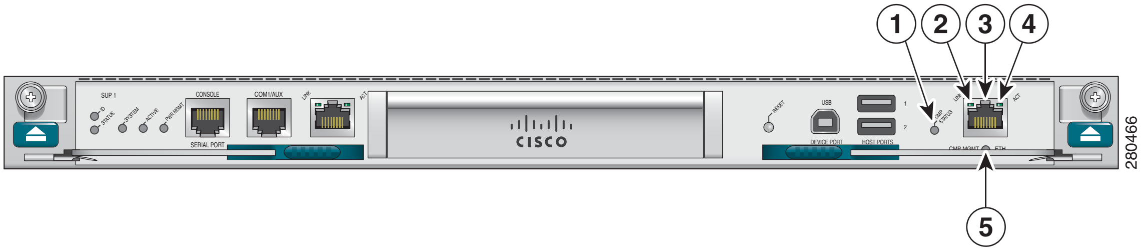
This section includes the following topics:

- CMP MGMT Ethernet Port, page 1-2
- CMP Access, page 1-3
- High Availability, page 1-4

CMP MGMT Ethernet Port

The CMP has a dedicated front-panel Ethernet port but does not have its own front-panel console port. Figure 1-1 shows the Supervisor 1 front panel, with the CMP MGMT Ethernet port on the far right.

Figure 1-1 Supervisor 1 Module Faceplate



1	CMP Status LED		**4**	ACT LED
2	Link LED		**5**	CMP MGMT Ethernet LED
3	CMP MGMT Ethernet port			

The Supervisor 1 module contains a series of LEDs that reflect the status of the CMP and the CMP MGMT Ethernet port. Figure 1-1 identifies the LEDs and Table 1-1 describes their states and the conditions that they indicate.

Table 1-1 CMP LEDs

LED	Status	Description
CMP STATUS	off	CMP is not receiving power.
	red	CMP is not operational.
	amber	CMP is booting.
	green	CMP is operational.
LINK	off	• CMP port link status is down. • Cable is unplugged.
	green	CMP port link status is up.

Table 1-1 CMP LEDs (continued)

LED	Status	Description
ACT	off	• Port is not accessed. • Port is down. • Port cable is unplugged.
	flashing green	Port is being accessed.
CMP MGMT ETH	amber	Interface is not configured.
	green	Interface is configured.

CMP Access

When the CP and CMP are both operational, you can log into the CMP through the CP using your NX-OS configured username and password or the admin username and password. If the CP is configured with RADIUS or TACACS, then your authentication is also handled by RADIUS or TACACS. If the CP is operational, the CMP accepts logins from users with network-admin privileges. The CMPs use the same authentication mechanism to configure the CP (that is, RADIUS, TACACS, or local). The CP automatically synchronizes the admin password with the active and standby CMP so that you can use the "admin" username and password when a CP is not operational. For more information on user accounts and user roles, see the *Cisco Nexus 7000 Series NX-OS Security Configuration Guide, Release 5.x*.

Note The active CP also synchronizes all NX-OS configured usernames and passwords with the standby CP so that you can use your NX-OS configured username whenever a CP is operational.

If you are connecting to the CMP through Cisco NX-OS, you must be in the default virtual switch context (VDC). For more information on VDCs, see the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x*.

The SSH server is enabled by default on the CMP. We recommend that you do not disable the SSH server on the CMP, but if required, you can disable the SSH server and enable the Telnet server. Table 1-2 lists the commands that you can use to enable or disable the SSH server and Telnet server.

Table 1-2 Enabling and Disabling Commands for the SSH Server and Telnet Server

Action	Command
Enable SSH server (default setting)	**ssh server enable**
Disable SSH server	**no ssh server enable**
Enable Telnet server	**telnet server enable**
Disable Telnet server	**no telnet server enable**

To view system messages that track who logged into the CMP, use the **show logging** command on the CMP.

High Availability

A fully redundant switch contains two supervisor modules. If these modules are Supervisor 1 modules, they each have a CMP. Although only one supervisor module is active at any one time, the CMP software in each supervisor module is always active. For a high-availability configuration, you should connect four Ethernet cables to these supervisor modules—one for each mgmt 0 interface and one for each cmp-mgmt interface. You should also configure three IP addresses—one for each cmp-mgmt interface and one that is shared between the active and standby supervisor mgmt 0 interfaces.

Note Supervisor module switchovers do not reload the CMPs.

A supervisor module is fully operational only if both the CP and its CMP are operational.

Note A CMP failure does not cause a supervisor module switchover.

CHAPTER 2

Connecting, Configuring, and Upgrading the CMP

This chapter explains how to connect and configure the Connectivity Management Processor (CMP) on a Cisco Nexus 7000 Series switch. It also explains how to update the software image for the CMP.

This chapter includes the following sections:

Connecting to the CMP MGMT Ethernet Port

To connect the CMP to the network, follow these steps for each installed supervisor:

Step 1 Connect a modular, RJ-45, UTP cable to the CMP MGMT ETH port on the Supervisor 1 module.

Step 2 Route the cable through the central slot in the cable management system on the Cisco Nexus 7000 Series chassis.

Step 3 Connect the other end of the cable to the networking device.

You configure the cmp-mgmt interface during the initial setup script on the CP when you first configure your switch. See the *Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide, Release 5.x* for details on the setup script.

Caution To prevent an IP address conflict, do not connect the CMP MGMT port to the network until the initial configuration is complete. For more information on Ethernet connections and cable management, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*.

Configuring the CMP

This section includes the following topics:

- Accessing the CMP from the CP, page 2-2
- Logging Out of a CMP Session, page 2-2
- Configuring the CMP-MGMT Interface, page 2-3
- Configuring an IPv4 Access Control List on the CMP, page 2-8
- Configuring the Cisco Discovery Protocol for the CMP, page 2-9
- Saving Console Output on the CMP, page 2-12
- Logging CMP Messages, page 2-16
- Changing the Communication Settings, page 2-21
- Configuring Flow Control, page 2-26
- Configuring CMPs on a Dual Supervisor System, page 2-28

Accessing the CMP from the CP

You can access the CMP through a console, SSH, or Telnet session with the CP.

Note To access the CMP by SSH or Telnet, you must enable those sessions on the CMP (by default, the SSH server session is enabled). To enable or disable SSH or Telnet sessions, see Table 1-2 on page 1-3.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**

DETAILED STEPS

	Command	Purpose

Step 1	**`attach cmp`**
	
	`Example:`
	`switch# attach cmp`
	
	`Connected`
	`Escape character is '~,'`
	`switch-cmp#`
		Accesses the CMP on the active supervisor module.

Logging Out of a CMP Session

When you log out of a CMP session, you must end the session then exit the mode.

BEFORE YOU BEGIN

You must be accessing the CMP.

SUMMARY STEPS

1. **end**
2. **exit**

DETAILED STEPS

	Command	Purpose

Step 1	**end**
	
	Example:
	`switch-cmp# end`
	
	`switch-cmp#`
		Ends the configuration session.

Step 2	**exit**
	
	Example:
	`switch-cmp# exit`
	`switch#`
		Exits from the CMP configuration mode.

Note If you are in an attached console session, use the ~, command to exit the CMP.

Configuring the CMP-MGMT Interface

You must configure the CMP-MGMT interface before you can connect to the CMP through a SSH or Telnet session.

Note Unlike when you configure the CP, you do not need to use the **copy running-config startup-config** command configuring the CMP-MGMT interface. Each time that you enter a command when configuring the CMP-MGMT interface, the Cisco NX-OS operating system saves the configuration changes on the CMP flash drive.

The following sections explain each of the different ways that you can configure the CMP-MGMT interface:

- Using a Setup Script on the CP to Configure the CMP-MGMT Interface, page 2-4
- Configuring an IPv4 IP Address for the CMP From the CP, page 2-4
- Configuring an IPv4 IP Address for the CMP From the CMP, page 2-5
- Configuring an IPv6 IP Address for the CMP From the CP, page 2-6
- Configuring an IPv6 IP Address for the CMP From the CMP, page 2-7

Using a Setup Script on the CP to Configure the CMP-MGMT Interface

The Cisco NX-OS setup script guides you through configuring the CMP-MGMT interface. To use this script, see the *Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide, Release 5.x*.

Configuring an IPv4 IP Address for the CMP From the CP

You can use the Cisco NX-OS CLI on the CP to configure an IP address (IPv4 format) for the CMP-MGMT interface.

BEFORE YOU BEGIN

Ensure that you are in the default virtual device context (VDC) (or use the **switchback** command).

SUMMARY STEPS

1. **configure terminal**
2. **interface cmp-mgmt module** *slot*
3. **ip address** *ipv4-address***/***length*
4. **ip default-gateway** *ipv4-address*
5. (optional) **show running-config cmp**

DETAILED STEPS

	Command	Purpose
Step 1	**configure terminal** **Example:** switch# configure terminal switch(config)#	Enters configuration mode.
Step 2	**interface cmp-mgmt module** *slot* **Example:** switch(config)# interface cmp-mgmt module 5 switch(config-if-cmp)#	Enters interface configuration mode for the cmp-mgmt interface on either the active or the standby supervisor.
Step 3	**ip address** *ipv4-address/length* **Example:** switch(config-if-cmp)# ip address 192.0.2.1/16	Configures the IPv4 IP address for this cmp-mgmt interface.
Step 4	**ip default-gateway** *ipv4-address* **Example:** switch(config-if-cmp)# ip default-gateway 192.0.2.10	Configures the default gateway (IPv4 format) for this cmp-mgmt interface.
Step 5	**show running-config cmp** **Example:** switch(config-if-cmp)# show running-config cmp	(Optional) Displays a summary of the CMP interface configuration.

Configuring an IPv4 IP Address for the CMP From the CMP

You can use the Cisco NX-OS CLI on the CP to configure an IP address (IPv4 format) for the CMP-MGMT interface.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **ip default-gateway** *ipv4-address*
4. **interface cmp-mgmt**
5. **ip address** *ipv4-address/length*
6. (optional) **show running-config**
7. (optional) **~,**

DETAILED STEPS

	Command	Purpose
Step 1	**attach cmp** **Example:** switch# attach cmp switch-cmp5 login: admin Password: <password>#	Connects to the CMP from the supervisor CP.
Step 2	**configure terminal** **Example:** switch-cmp# configure terminal switch-cmp(config)#	Enters configuration mode on the CMP.
Step 3	**ip default-gateway** *ipv4-address* **Example:** switch-cmp(config)# ip default-gateway 192.0.2.10	Configures the default gateway for the cmp-mgmt interface.
Step 4	**interface cmp-mgmt** **Example:** switch-cmp(config)# interface cmp-mgmt switch-cmp(config-if)#	Enters interface configuration mode for the cmp-mgmt interface on either the active or the standby supervisor.
Step 5	**ip address** *ipv4-address/length* **Example:** switch-cmp(config-if)# ip address 192.0.2.1/16	Configures the IP address for this cmp-mgmt interface.

	Command	Purpose

Step 6	**`show running-config`**
	Example:
	`switch-cmp(config-if)# show running-config`
		(Optional) Displays the CMP configuration.

Step 7	**`~,`**
	Example:
	`switch-cmp(config-if)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Configuring an IPv6 IP Address for the CMP From the CP

You can configure an IPv6 address for the CMP-MGMT interface from the CP.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **configure terminal**
2. **interface cmp-mgmt module** *slot*
3. **ipv6 address** *ipv6-address*/*length*
4. **ipv6 default-gateway** *ipv6-address*
5. (optional) **show running-config cmp**

DETAILED STEPS

	Command	Purpose

Step 1	**`configure terminal`**
	Example:
	`switch# configure terminal`
	`switch(config)#`
		Enters configuration mode.

Step 2	**`interface cmp-mgmt module`** *`slot`*
	Example:
	`switch(config)# interface cmp-mgmt module 5`
	`switch(config-if-cmp)#`
		Enters interface configuration mode for the CMP-MGMT interface on either the active or the standby supervisor.

Step 3	**`ipv6 address`** *`ipv6-address/length`*
	Example:
	`switch(config-if-cmp)# ipv6 address 2001:DB8:0:1::1/64`
		Configures the IP address (IPv6 format) for this cmp-mgmt interface.

	Command	Purpose
Step 4	**ipv6 default-gateway** *ipv6-address* **Example:** switch(config-if-cmp)# ipv6 default-gateway 2001:DB8:0:1::8/64	Configures the default gateway (IPv6 address) for the cmp-mgmt interface.
Step 5	**show running-config cmp** **Example:** switch(config-if-cmp)# show running-config cmp	(Optional) Displays a summary of the CMP interface configuration.

To remove the IP address for the cmp-mgmt interface, use the **no ipv6 address** command.

To remove the IP address for the default gateway, use the **no ipv6 default-gateway** command.

Configuring an IPv6 IP Address for the CMP From the CMP

You can use the Cisco NX-OS CLI on the CP to configure an IPv6 IP address for the CMP-MGMT interface.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **ipv6 default-gateway** *ipv6-address*
4. **interface cmp-mgmt**
5. **ipv6 address** *ipv6-address/length*
6. (optional) **show running-config**
7. (optional) **~,**

DETAILED STEPS

	Command	Purpose
Step 1	**attach cmp** **Example:** switch# attach cmp switch-cmp5 login: admin Password: <password>#	Connects to the CMP from the supervisor CP.
Step 2	**configure terminal** **Example:** switch-cmp# configure terminal switch-cmp(config)#	Enters configuration mode on the CMP.

	Command	Purpose
Step 3	**ipv6 default-gateway** *ipv6-address* **Example:** `switch-cmp(config)# ipv6 default-gateway 192.0.2.10`	Configures the default gateway (IPv6 format) for the cmp-mgmt interface.

Step 4	**interface cmp-mgmt**
	Example:
	`switch-cmp(config)# interface cmp-mgmt`
	`switch-cmp(config-if)#`
		Enters interface configuration mode for the cmp-mgmt interface on either the active or the standby supervisor.

Step 5	**ipv6 address** *ipv6-address/length* **Example:** `switch-cmp(config-if)# ipv6 address 192.0.2.1/16`	Configures the IPv6 IP address for the cmp-mgmt interface.
Step 6	**show running-config** **Example:** `switch-cmp(config-if)# show running-config`	(Optional) Displays the CMP configuration.

Step 7	**~,**
	Example:
	`switch-cmp(config-if)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Configuring an IPv4 Access Control List on the CMP

You can create an IPv4 access control list (ACL) and apply it to the cmp-mgmt interface. For more information on ACLs, see the *Cisco Nexus 7000 Series NX-OS Security Configuration Guide, Release 5.x*.

Note You can only configure an ACL on the CMP directly. You cannot configure an ACL from Cisco NX-OS software on the supervisor module CP.

BEFORE YOU BEGIN

You are connected to the CMP (see the "Configuring an IPv4 IP Address for the CMP From the CMP" section on page 2-5).

SUMMARY STEPS

1. **configure terminal**
2. **ip access-list** *name*
3. {**permit | deny**} *protocol source destination*
4. **exit**
5. **interface cmp-mgmt**
6. **ip access-group** *access-list* **in**
7. (optional) **show running-config**

DETAILED STEPS

	Command	Purpose
Step 1	**configure terminal** **Example:** switch-cmp# configure terminal switch-cmp(config)#	Enters global configuration mode on the CMP.
Step 2	**ip access-list** *name* **Example:** switch-cmp(config)# ip access-list acl-01 switch-cmp(config-acl)#	Creates the IPv4 ACL and enters IP ACL configuration mode. The *name* argument can be up to 64 characters.
Step 3	{**permit** | **deny**} *protocol source destination* **Example:** switch-cmp(config-acl)# permit ip 192.168.2.0/24 0.0.0.0/0	Creates a rule in the IPv4 ACL. The **permit** and **deny** commands support many ways of identifying traffic. For more information, see the *Cisco Nexus 7000 Series NX-OS Security Command Reference, Release 5.x*.
Step 4	**exit** **Example:** switch-cmp(config-acl)# exit switch-cmp(config)#	Exits to configuration mode.
Step 5	**interface cmp-mgmt** **Example:** switch-cmp(config)# interface cmp-mgmt switch-cmp(config-if)#	Enters interface configuration mode for the cmp-mgmt interface on either the active or the standby supervisor.
Step 6	**ip access-group** *access-list* **in** **Example:** switch-cmp(config-if)# ip access-group acl-01 in	Applies an IPv4 ACL to the cmp-mgmt interface for traffic flowing into the interface.
Step 7	**show running-config** **Example:** switch-cmp(config-if)# show running-config	(Optional) Displays the CMP configuration.

Configuring the Cisco Discovery Protocol for the CMP

The Cisco Discovery Protocol (CDP) is a media- and protocol-independent protocol that runs on all Cisco-manufactured equipment including routers, bridges, access and communication servers, and switches. You can use CDP to discover and view information about all the Cisco devices that are directly attached to the switch.

CDP gathers protocol addresses of neighboring devices and discovers the platform of those devices.

Each switch that you configure for CDP sends periodic advertisements to a multicast address. The advertisements also contain hold-time information, which indicates the length of time that a receiving device should hold CDP information before removing it. You can configure the advertisement or refresh timer and the hold timer.

This section includes the following topics:

- Enabling and Disabling the CDP, page 2-10

Enabling and Disabling the CDP

CDP is enabled by default. You can disable CDP and then reenable it at a later time.

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **cdp enable**

DETAILED STEPS

	Command	Purpose

Step 1	**`attach cmp`**
	`Example:`
	`switch# attach cmp`
	`Connected`
	`Escape character is '~,' [tilde comma]`
	`[EOT]`
	`switch#`
		Attaches the CMP.

Step 2	**`configure terminal`**
	`Example:`
	`switch# configure terminal`
	`Enter configuration commands, one per line. End with CNTL/Z`
	`switch(config)#`
		Places you in global configuration mode.

Step 3	**`cdp enable`**
	`Example:`
	`switch(config)# cdp enable`
		Enables the CDP feature on the entire switch. This feature is enabled by default.

To disable the CDP feature on the switch, use the **no cdp enable** command.

Configuring Optional CDP Parameters

You can use the following optional commands in global configuration mode to modify CDP:

Command	Purpose

cdp advertise {**v1** | **v2**}
 	
Example:
`switch(config)# cdp advertise v1`
	Sets the CDP version supported by the switch. The default is v2.

cdp format device-id {**mac-address** | **serial-number** | **system-name**}
 	
Example:
`switch(config)# cdp format device-id mac-address`
	Sets the CDP device ID. The options are as follows:
	• mac-address—MAC address of the chassis
	• other—Chassis serial number
	• serial-number—Chassis serial number/Organizationally Unique Identifier (OUI)
	• system-name—system name or domain name
	The default is system-name.

Default Settings

Table 2-1 lists the CDP default settings.

Table 2-1 CDP Default Settings

Parameter	Default
CDP	Enabled globally and on all interfaces
CDP version	Version 2
CDP device ID	Serial number
CDP timer	60 seconds
CDP hold time	180 seconds

Additional References

For additional information related to implementing CDP, see Table 2-2.

Table 2-2 Related Documents

Related Topic	Document Title
CDP CLI commands	*Cisco Nexus 7000 Series NX-OS System Management Command Reference, Release 5.x*
VDCs and VRFs	*Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x*

Saving Console Output on the CMP

Beginning with Cisco NX-OS Release 5.0, you can log console output on the CMP to help you troubleshoot problems that you might encounter when reloading the CP on your Cisco Nexus 7000 Series switch. To manage the log file on the CMP, you can specify the size of the file, display its logs, archive the file on the CP log flash drive, and clear logs from the file. The changes that you make to manage the logging of console output are recorded in the running configuration. To activate these changes for future sessions, you must copy the running configuration to the startup configuration after making the changes.

This section includes the following topics:

- Logging Console Output on the CMP, page 2-12
- Specifying the Size of the Logging File, page 2-13
- Showing Logged Output, page 2-14
- Archiving a Log File, page 2-14
- Clearing the Log File, page 2-15

Logging Console Output on the CMP

When you enable the logging of console output on the CMP, you can either use the default file size (50 kilobytes [KB]) for the logs or specify another file size between 10 KB and 100 KB. You can enable or disable this logging function while working in the CP or in the CMP.

Note When the log file fills with logs, the system creates another file and begins filling it with logs.

BEFORE YOU BEGIN

If you are operating in an attach CMP or detach CMP mode, your configuration change to enable or disable the logging is recorded in the running configuration but the switch does not change this function for the current session.

SUMMARY STEPS

1. **configure terminal**
2. **capture cp console** [*file_size*]
3. (optional) **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose

Step 1	**`configure terminal`**
	
	Example:
	`switch# configure terminal`
	`Enter configuration commands, one per line. End with CNTL/Z`
	`switch(config)#`
		Places you in global configuration mode.

Step 2	**`capture cp console 100`**
	
	Example:
	`switch(config)# capture cp console 100`
		Enables the logging of console output on the CMP in a file of the size specified by this integer in this command or in a default sized file (50 KB) if a file size is not specified.

Step 3	**`copy running-config startup-config`**
	
	Example:
	`switch(config)# copy running-config startup-config`
		(Optional) Saves this configuration change.

Note To disable the logging of console output, use the **no capture cp console** command. When you use this command on the CP, it applies the CMP configuration to both the active and standby supervisor modules.

Specifying the Size of the Logging File

You can specify the size of the console output logging file separately from enabling or disabling the logging function. You can do this action while working in the CP or in the CMP.

BEFORE YOU BEGIN

If you are configuring the CMP from the CP, you must not be in an attach CMP mode.

If you are configuring the CMP from the CMP, you must not be in a monitor CP mode.

Note If you are operating in an attach CMP or detach CMP mode, your configuration change to enable or disable the logging is recorded in the running configuration but the switch does not change this function for the current session.

SUMMARY STEPS

1. **configure terminal**
2. **capture cp size** [*file_size*]
3. (optional) **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose

Step 1	**configure terminal**
	
	Example:
	`switch# configure terminal`
	`Enter configuration commands, one per line. End with CNTL/Z`
	`switch(config)#`
		Places you in global configuration mode.

Step 2	**capture cp size 100** **Example:** `switch(config)# capture cp size 100`	Changes the KB size of the console output log file. Specify an integer between 10 and 100. The default is 50.
Step 3	**copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	(Optional) Saves this configuration change.

Showing Logged Output

You can display the contents of a console output log file or the last number of logs that you specify.

PROCEDURE

Command	Purpose
show capture all	Displays all of the logs in the log file.
show capture last *number_of_lines*	Displays the most recently logged output. You include an integer to specify the number of lines to display.

Archiving a Log File

You can archive the console output log file on the CP while working in the CP or in the CMP. By default, the switch archives the log file.

BEFORE YOU BEGIN

If you are configuring the CMP from the CP, you must not be in an attach CMP mode.

If you are configuring the CMP from the CMP, you must not be in a monitor CP mode.

Note If you are operating in an attach CMP or detach CMP mode, your configuration change to enable or disable the logging is recorded in the running configuration but the switch does not change this function for the current session.

SUMMARY STEPS

1. **configure terminal**
2. **capture cp archive enable**
3. (optional) **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose

Step 1	**configure terminal**
	Example:
	`switch# configure terminal`
	`Enter configuration commands, one per line. End with CNTL/Z`
	`switch(config)#`
		Places you in global configuration mode.

Step 2	**capture cp archive enable** **Example:** `switch(config)# capture cp archive enable`	Enables the archiving of console output log files on the CP.
Step 3	**copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	(Optional) Saves this configuration change.

Note To stop the archiving of the console output to the CP, use the **no capture cp archive enable** command.

Clearing the Log File

You can clear the contents of a log file while configuring in the CMP.

SUMMARY STEPS

1. **configure terminal**
2. **clear capture cp**
3. (optional) **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose

Step 1	**`configure terminal`**
	Example:
	`switch# configure terminal`
	`Enter configuration commands, one per line. End with CNTL/Z`
	`switch(config)#`
		Places you in global configuration mode.

Step 2	**`clear capture cp`**
	Example:
	`switch(config)# clear capture cp`
		Clears the contents of the log file.

Step 3	**`copy running-config startup-config`**
	Example:
	`switch(config)# copy running-config startup-config`
		(Optional) Saves this configuration change.

Logging CMP Messages

You can save up to 256 CMP messages in a log file, and you can specify a severity threshold for the messages saved. When the file has 256 messages, the CMP automatically removes the oldest message whenever it saves a new message. Table 2-3 describes the message levels and types of messages that the CMP saves. When you specify a severity level, the CMP saves messages for that level and all levels below it in the log file.

Table 2-3 CMP Message Severity Levels

Level	Messages Saved	Description
0 - Emergency	—	—
1 - Alert	CP on this SUP has reset.	CMP detected a nonmaskable interrupt on the CP.
2 - Critical	CP is not online (could not establish communication with CP). Connected with CP! LOG CP IS ONLINE. Connection reset with CP!!	CMP cannot communicate with the CP. CMP and CP can communicate. CMP cannot detect the maximum number of CP heartbeats.
3 - Error	—	—
4 - Warning	—	—
5 - Notification	—	—
6 - Informational	—	—
7 - Debugging	—	—

This section includes the following topics:

- Displaying Saved Messages, page 2-17
- Configuring the Logging Level, page 2-17
- Clearing the Log File, page 2-18

Displaying Saved Messages

You can display all of the messages saved in the CMP log file.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **show logging logfile**
3. (optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**`attach cmp`**
	Example:
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**`show logging logfile`**
	Example:
	`switch-cmp# show logging logfile`
		Shows the saved logfile messages.

Step 3	**`~,`**
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Configuring the Logging Level

By default, the CMP saves level 2 messages and below for each CMP process in the log file. You can specify a different level for the CMP to save for a process by using the **logging level** command.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**

2. **configure terminal**
3. (optional) **show logging level** *process*
4. **logging level** *process* [**1** | **2** | **3** | **4** | **5** | **6** | **7**]
5. (optional) **show logging level** *process*
6. (optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**`attach cmp`**
	
	`Example:`
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**`configure terminal`**
	
	`Example:`
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**`show logging level`** *process*
	
	`Example:`
	`switch-cmp(config)# show logging level user`
	`Facility      Default Severity     Current Session Severity`
	`--------      ----------------     ------------------------`
	`user                  2                    2`
	`...`
	`switch-cmp(config)#`
		(Optional) Displays the current logging level for the specified process.

Step 4	**`logging level`** *process* `[`**`1`**` | `**`2`**` | `**`3`**` | `**`4`**` | `**`5`**` | `**`6`**` | `**`7`**`]`
	
	`Example:`
	`switch-cmp(config)# logging level user 3`
	`switch-cmp(config)#`
		Configures a new logging level threshold for a process.

Step 5	**`show logging level`** *process*
	
	`Example:`
	`switch-cmp(config)# show logging level user`
	`Facility      Default Severity     Current Session Severity`
	`--------      ----------------     ------------------------`
	`user                  3                    3`
	`...`
	`switch-cmp(config)#`
		(Optional) Displays the current logging level for the specified process.

Step 6	**`~,`**
	
	`Example:`
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Clearing the Log File

You can clear the contents of the log file.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **clear logging logfile**
4. (optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**`attach cmp`**
	
	`Example:`
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**`configure terminal`**
	
	`Example:`
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**`clear logging logfile`**
	
	`Example:`
	`switch-cmp(config)# clear logging logfile`
	`switch-cmp(config)#`
		Clears the contents of the log file.

Step 4	`~,`
	
	`Example:`
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Directing Syslog Messages Externally

You can direct the CMP syslog messages to a maximum of five external devices (consoles and terminals), and you can specify the maximum level of the messages directed to each external device.

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **logging server** *ip_address|ipv6_address* {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**} **facility {auth** | **daemon** | **kernel** | **user}**
   logging console {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**}
   logging monitor {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**}
   logging level *logging_facility* {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**}

4. (Optional) **show logging**
   (Optional) **show logging server**
   (Optional) **show logging console**
   (Optional) **show logging monitor**
   (Optional) **show logging level**
5. (Optional) **-,**

DETAILED STEPS

	Command	Purpose

Step 1	**attach cmp**
	Example:
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**configure terminal**
	Example:
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**logging server** {*ip_address* | *ipv6_address*} {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**} **facility** {**auth** | **daemon** | **kernel** | **user**}
	Example:
	`switch-cmp(config)# logging server 22.22.22.22 6 facility crit`
	`switch-cmp(config)#`
		Configures the syslog server to send messages to *ip_address* or *ipv6_address*. This command also specifies the maximum logging level (0 for emergency, 1 for alert, 2 for critical, 3 for error, 4 for warning, 5 for notification, 6 for information, or 7 for debug) and the logging facility (authentication, daemon, kernel, or user).

	logging console {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**}
	Example:
	`switch-cmp(config)# logging console 6`
	`switch-cmp(config)#`
		Configures the console to receive syslog messages up to the type specified (0 for emergency, 1 for alert, 2 for critical, 3 for error, 4 for warning, 5 for notification, 6 for information, or 7 for debug).

	logging monitor {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**}
	Example:
	`switch-cmp(config)# logging monitor 5`
	`switch-cmp(config)#`
		Configures the monitor to receive syslog messages up to the type specified (0 for emergency, 1 for alert, 2 for critical, 3 for error, 4 for warning, 5 for notification, 6 for information, or 7 for debug).

	logging level {**auth** | **daemon** | **kernel** | **user**} {**0** | **1** | **2** | **3** | **4** | **5** | **6** | **7**}
	Example:
	`switch-cmp(config)# logging level daemon 6`
	`switch-cmp(config)#`
		Configures the maximum logging level (0 for emergency, 1 for alert, 2 for critical, 3 for error, 4 for warning, 5 for notification, 6 for information, or 7 for debug) for a logging domain (facility).

	Command	Purpose

Step 4	**`show logging`**
	
	Example:
	`switch-cmp(config)# show logging`
	`logging console:              enabled (Severity :crit)`
	`logging monitor:              enabled (Severity :`
	`notice)`
	`...`
	`switch#`
		(Optional) Displays all of the logging configurations for the server, console, monitor, and logging filters.

	`show logging server`
	
	Example:
	`switch-cmp(config)# show logging server`
	`logging server:        enabled`
	`switch-cmp(config)#`
		(Optional) Displays the logging configurations for the server.

	`show logging console`
	
	Example:
	`logging console:              enabled (Severity : crit)`
	`...`
	`switch-cmp(config)#`
		(Optional) Displays the logging configuration for the console displaying syslog messages.

	`show logging monitor`
	
	Example:
	`switch-cmp(config)# show logging monitor`
	`logging monitor:            enabled (Severity : notice)`
	`switch-cmp(config)#`
		(Optional) Displays the logging configuration for the monitor displaying syslog messages.

	`show logging level`
	
	Example:
	`switch-cmp(config)# show logging level`
	`Facility   Default Severity   Current Session Severity`
	`--------   ----------------   ------------------------`
	`auth              2                     2`
	`...`
	`switch-cmp(config)#`
		(Optional) Displays the logging filter configuration.

Step 5	**`-,`**
	
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Changing the Communication Settings

You can change the communication speed, number of bits in a byte, terminal parity, asynchronous line stop bits, and flow control settings so that the CMP can communicate with its CP.

This section includes the following topics:

- Changing the Speed, page 2-22
- Changing the Number of Bits in a Transmitted Character, page 2-23
- Changing the Parity Checking, page 2-24
- Changing the Asynchronous Stop Bits, page 2-25

Changing the Speed

The CP and CMP must use the same speed (baud rate). If the CP and CMP use different speeds, you must change the speed used by the CMP so that it matches the CP speed.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **line com1**
4. (Optional) **show line**
5. **speed** *number*
6. (Optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**attach cmp**
	Example:
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**configure terminal**
	Example:
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**line com1**
	Example:
	`switch-cmp(config)# line com1`
	`switch-cmp(config-com1)#`
		Configures the main configuration line.

Step 4	**show line** **Example:** `switch-cmp(config-com1)# show line`	(Optional) Displays the communications settings.
Step 5	**speed** *number* **Example:** `switch-cmp(config-com1)# speed 9600`	Configures a speed at 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115,200 baud.

Step 6	**~,**
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Changing the Number of Bits in a Transmitted Character

The CP and CMP must use the same number of data bits in the characters that they transmit. If the CP and CMP use different numbers of data bits, you can change the number used by the CMP so that it matches the CP usage.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **line com1**
4. (Optional) **show line**
5. **databits** *number*
6. (Optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**`attach cmp`**
	
	`Example:`
	`Connected`
	`Escape character is '~,'`
	
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**`configure terminal`**
	
	`Example:`
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**`line com1`**
	
	`Example:`
	`switch-cmp(config)# line com1`
	`switch-cmp(config-com1)#`
		Configures the main configuration line.

Step 4	**`show line`**
	
	`Example:`
	`switch-cmp(config-com1)# show line`
		(Optional) Displays the communications settings.

	Command	Purpose
Step 5	**databits** *number* **Example:** `switch-cmp(config-com1)# databits 8`	Configures the number of bits in a character (between 5 and 8).

Step 6	**~,**
	
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Changing the Parity Checking

The CP and CMP must use the same type of parity checking. If the CP and CMP use different types, you must change the type used by the CMP so that it matches the CP type.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **line com1**
4. (Optional) **show line**
5. **parity** {**even** | **odd** | **none**}
6. (Optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**attach cmp**
	
	Example:
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**configure terminal**
	
	Example:
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**line com1**
	
	Example:
	`switch-cmp(config)# line com1`
	`switch-cmp(config-com1)#`
		Configures the main configuration line.

Step 4	**show line** **Example:** `switch-cmp(config-com1)# show line`	(Optional) Displays the communications settings.

	Command	Purpose

Step 5	**parity** {**even** | **odd** | **none**}
	Example:
	`switch-cmp(config-com1)# parity none`
		Sets single-bit parity checking to check for even parity, odd parity, or ignore parity.

Step 6	**~,**
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Changing the Asynchronous Stop Bits

The CP and CMP must use the same number of stop bits. If the CP and CMP use different numbers of stop bits, you must change the number used by the CMP so that it matches the CP number.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **line com1**
4. **stopbits** {**1** | **2**}
5. **exit**
6. (Optional) **show line**
7. (Optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	**attach cmp**
	Example:
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	**configure terminal**
	Example:
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters the configuration mode on the CMP.

Step 3	**line com1**
	Example:
	`switch-cmp(config)# line com1`
	`switch-cmp(config-com1)#`
		Configures the main configuration line.

	Command	Purpose

Step 4	**stopbits** {**1** | **2**}
	Example:
	`switch-cmp(config-com1)# stopbits 1`
		Configures the number of stop bits included in a character frame.

Step 5	**exit**
	Example:
	`switch-cmp(config-com1)# exit`
	`switch-cmp(config)#`
		Exits COM1 configuration mode.

Step 6	**show line** **Example:** `switch-cmp(config-com1)# show line`	(Optional) Displays the communications settings.

Step 7	**~,**
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Configuring Flow Control

You can use a hardware version of flow control to regulate the flow of data traffic over the internal serial connection between the CMP and CP. When enabled for both the CMP and CP, flow control delays the flow of frames until earlier frames are processed by the receiving processor.

This section includes the following topics:

- Enabling or Disabling Flow Control for the CMP, page 2-26
- Enabling or Disabling Flow Control for the CP, page 2-27

Enabling or Disabling Flow Control for the CMP

You can enable or disable the CMP to use a hardware version of flow control with the CP.

BEFORE YOU BEGIN

You must enable flow control on the CP (see the "Enabling or Disabling Flow Control for the CP" section on page 2-27).

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **attach cmp**
2. **configure terminal**
3. **line com1**
4. {**flowcontrol hardware**} | {**no flowcontrol hardware**}
5. (Optional) **show line com1**
6. **exit**
7. (Optional) **~,**

DETAILED STEPS

	Command	Purpose

Step 1	`attach cmp`
	Example:
	`switch# attach cmp`
	`switch-cmp#`
		Connects to the CMP from the supervisor CP.

Step 2	`configure terminal`
	Example:
	`switch-cmp# configure terminal`
	`switch-cmp(config)#`
		Enters configuration mode.

Step 3	`line com1`
	Example:
	`switch-cmp(config)# line com1`
	`switch-cmp(config-com1)#`
		Specifies to configure the CMP serial line.

Step 4	`{flowcontrol hardware} | {no flowcontrol hardware}`
	Example:
	`switch-cmp(config-com1)# flowcontrol hardware`
		Enables or disables flow control.

Step 5	`show line com1`
	Example:
	`switch-cmp(config-com1)# show line com1`
		(Optional) Displays the interface status, which includes the flow control parameters.

Step 6	`exit`
	Example:
	`switch-cmp(config-com1)# exit`
	`switch-cmp(config)#`
		Exits COM1 configuration mode.

Step 7	`~,`
	Example:
	`switch-cmp(config)# ~,`
	`switch#`
		(Optional) Exits the CMP console and returns to the Cisco NX-OS CLI on the CP.

Enabling or Disabling Flow Control for the CP

You can enable or disable the CP to use a hardware version of flow-control with the CMP.

BEFORE YOU BEGIN

You must enable flow control on the CMP (see the "Enabling or Disabling Flow Control for the CMP" section on page 2-26).

SUMMARY STEPS

1. **configure terminal**
2. **line console**
3. {**flowcontrol hardware**} | {**no flowcontrol hardware**}
4. (Optional) **show line console**
5. **exit**

6. **exit**

DETAILED STEPS

	Command	Purpose

Step 1	**configure terminal**
	Example:
	`switch# configure terminal`
	`switch(config)#`
		Enters configuration mode.

Step 2	**line console**
	Example:
	`switch(config)# line console`
	`switch(config-com1)#`
		Specifies the serial line to the CMP.

Step 3	{**flowcontrol hardware**} | {**no flowcontrol hardware**}
	Example:
	`switch(config-com1)# flowcontrol hardware`
	`switch(config-com1)#`
		Enables or disables flow control.

Step 4	**show line console**
	Example:
	`switch(config-com1)# show line console`
	`switch(config-com1)`
		(Optional) Displays the interface status, which includes the flow control parameters.

Step 5	**exit**
	Example:
	`switch(config-com1)# exit`
	`switch(config)#`
		Exits the COM1 configuration mode.

Step 6	**exit**
	Example:
	`switch(config)# exit`
	`switch#`
		Exits the configuration mode.

Configuring CMPs on a Dual Supervisor System

The CMP runs in active mode on both supervisor modules, even when only one supervisor module is active, so you must configure each CMP individually. You can configure the unique IP address for each CMP from the active CP by using Cisco NX-OS commands through either the CLI or scripts. To perform all other CMP configuration functions, connect directly to the CMP that you are configuring to perform those functions.

Verifying the CMP Configuration

To display CMP configuration information from the Cisco NX-OS CLI on the CP, use the following commands:

Command	Purpose
show running-config cmp	Displays the running configuration for the CMP.
show tech-support cmp	Displays the technical support output for the CMP.
show logging logfile | include cmp	Displays the logs for the CMP.

To display CMP configuration information from the CMP CLI, use the following commands:

Command	Purpose
show attach sessions	Displays information about active or suspended attach or monitor sessions.
show capture {all | last number}	Displays the captured logs.
show cdp all	Displays all interfaces that have CDP enabled.
show cdp configuration	Displays the current CDP configuration.
show cdp global	Displays the CDP global parameters.
show cdp neighbors [**detail**]	Displays the CDP neighbor status.
show cdp traffic	Displays the CDP traffic statistics on an interface.
show clock	Displays the current date and time.
show hardware	Displays information about the CMP hardware.
show interface	Displays information about the cmp-mgmt interface.
show logging {console | level | logfile | monitor | server}	Displays the CMP log files.
show logs	Displays the CMP syslog messages.
show processes	Displays information about the CMP processes.
show running-config	Displays the running configuration for the CMP.
show sprom	Displays the SPROM contents on the CMP.
show ssh key	Displays information about SSH key.
show system resources	Displays information about CMP system resources.
show users	Displays the users logged into the system.
show version	Displays the software image versions for the supervisor CP and the CMP.

Upgrading the CMP Image

You can upgrade the CMP image, which is part of the Cisco NX-OS system image and contains a subset of commands to support the CMP features.

Note The CMP image is independent of the CP image, so the version of the CMP image might not match the version of the CP image. To make sure that the CMP is running the latest compatible image, use the **install all** command from the Cisco NX-OS CLI on the CP.

To upgrade the Cisco NX-OS kickstart image, system image, and CMP image at the same time, use the **install all** command from the Cisco NX-OS CLI on the CP. This command automatically upgrades the software on both CMPs. After the software is upgraded, you must manually reload the CMP on each supervisor. For more information on software images, see the *Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x*.

Use the following procedure if you want to update only the CMP image.

BEFORE YOU BEGIN

Ensure that you are in the default VDC (or use the **switchback** command).

SUMMARY STEPS

1. **copy** {**ftp** | **tftp**} *remote-location local-location*
2. (Optional) **show module**
3. **install module** *active-slot* **cmp system** *local-location*
4. **install module** *standby-slot* **cmp system** *local-location*
5. **reload cmp module** *active-slot*
6. **reload cmp module** *standby-slot*
7. (Optional) **show version**

DETAILED STEPS

	Command	Purpose
Step 1	**copy** {**ftp** | **tftp**} *remote-location local-location* **Example:** `switch# copy ftp://10.1.7.2/n7000-s1-dk9.4.0.3.bin bootflash:n7000-s1-dk9.4.0.3.bin`	Copies the CMP image from an FTP server to the supervisor module.
Step 2	**show module** **Example:** `switch# show module`	(Optional) Displays information about the location and status of modules on the switch.

	Command	Purpose
Step 3	**install module** *active-slot* **cmp system** *local-location* **Example:** switch# install module 5 cmp system bootflash:/n7000-s1-dk9.4.0.3.bin	Extracts the CMP image from the Cisco NX-OS system image and installs the CMP image on the CMP on the active supervisor module. The *local-location* argument consists of the file location and the filename. For more information on installing images, see the *Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x*.
Step 4	**install module** *standby-slot* **cmp system** *location* **Example:** switch# install module 6 cmp system bootflash:/n7000-s1-dk9.4.0.3.bin	Extracts the CMP image from the Cisco NX-OS system image and installs the CMP image on the CMP on the standby supervisor module, if present. The location argument consists of the file location and the filename. For more information on installing images, see the *Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x*.
Step 5	**reload cmp module** *active-slot* **Example:** switch# reload cmp module 5	Reloads the CMP for the active supervisor module to complete the upgrade.
Step 6	**reload cmp module** *standby-slot* **Example:** switch# reload cmp module 5	Reloads the CMP for the standby supervisor module, if present, to complete the upgrade.
Step 7	**show version** **Example:** switch# show version	(Optional) Displays the BIOS and software image versions of the CMP.

Default Settings for CMP Parameters

Table 2-4 lists the default settings for CMP parameters.

Table 2-4 Default CMP Parameter Settings

Parameters	Default
Logging level	2 (critical level)
SSH server	Enabled
Telnet server	Disabled

CHAPTER 3

Using the CMP

This chapter explains how to use the Connectivity Management Processor (CMP) to monitor the supervisor module control processor (CP) on the active Supervisor 1 module and to reboot the CP or Cisco NX-OS switch. It also explains how you can reboot the CMP from the CP or the CMP.

This chapter includes the following sections:

Monitoring the CP

You can monitor the CP from the CMP.

To monitor the supervisor module CP, use the following optional commands:

Command	Purpose

monitor cp
 	
Example:
`switch-cmp# monitor cp`
`This command will disconnect the front-panel console`
`on this supervisor module -`
` proceed(y/n)? y`
`Connected`
`Escape character is '~,'`
`switch#`
	Monitors all output on the local supervisor module CP console port.

attach cp
 	
Example:
`switch-cmp# attach cp`
`This command will disconnect the front-panel console`
`on this supervisor module -`
` proceed(y/n)? y`
`Connected`
`Escape character is '~,'`
`switch#`
	Takes control of the local supervisor module CP console port.

~,
 	
Example:
`switch# ~,`
`switch-cmp#`
	Exits from the CP console and returns to CMP.

ping *ip-address* **Example:** `switch-cmp# ping 192.0.2.15`	Pings a remote IP address and displays the results.
show cp state **Example:** `switch-cmp# show cp state`	Displays status information about the supervisor module CP.
show version **Example:** `switch-cmp# show version`	Displays the BIOS and software image versions of the CMP.
traceroute *ip-address* **Example:** `switch-cmp# traceroute 192.0.2.15`	Tests the connection to a remote IP address and displays the results of each hop along the route.

Rebooting the CP

You can reboot the CP from the CMP.

To reboot the supervisor module CP from the CMP, use the following command:

Command	Purpose
reload cp **Example:** `switch-cmp# reload cp`	Reboots the supervisor module.

Note If you reboot a supervisor module from the Cisco NX-OS command-line interface (CLI) on the CP, the CMP also reboots. Use the **reload soft** command to reboot only the supervisor module CP and not the CMP.

Rebooting the Entire Cisco NX-OS Device from the CMP

To reboot the entire Cisco NX-OS device from the CMP, use the following command:

Command	Purpose
reload system **Example:** `switch-cmp# reload system`	Reboots the Cisco NX-OS device.

Rebooting the CMP from the CP

You can reboot the CMP from the CP.

To reboot the CMP from Cisco NX-OS on the supervisor module CP, use the following command:

Command	Purpose
reload cmp module *slot* **Example:** `switch# reload cmp module 5`	Reboots the CMP.

Rebooting the CMP from the CMP

You can reboot the CMP from the CP.

To reboot the CMP from the CMP, use the following command:

Command	Purpose
reload cmp **Example:** `switch-cmp# reload cmp`	Reloads the CMP.

Rebooting the System

You can reboot the system from the CMP on the active supervisor module while keeping the CMP session active by using the **reload soft** command. In addition, this command allows you to reset the active CP, power cycle the standby CP, and power cycle the modules.

Note To reload the complete system, including the CMPs, use the **reload system** command from the CMP.

To reboot the system, use the following command:

Command	Purpose

`reload soft`
`Example:`
`switch-cmp# reload soft`
	Reloads the operating system for the system hardware on the CPs and standby CMP.
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