Basic Device Management

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Information About Basic Device Management

This section provides information about basic device management.

Guidelines for Password Recovery

Follow these guidelines to recover the password:

- • You must be logged in as admin to change the admin password.

- • For Cisco Nexus 36180YC-R chassis, press Ctrl-L to interrupt the boot process and get the >loader prompt.

Changing the Device Hostname

You can change the device hostname displayed in the command prompt from the default (switch) to another character string.

SUMMARY STEPS

1. **configure terminal**
2. {**hostname** | **switchname**} *name*
3. **exit**
4. (Optional) **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

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

Step 2	{**hostname** | **switchname**} *name*
	
	Example:
	
	Using the **hostname** command:
	
	`switch(config)# hostname Engineering1`
	`Engineering1(config)#`
	
	Using the **switchname** command:
	
	`Engineering1(config)# switchname Engineering2`
	`Engineering2(config)#`
		Changes the device hostname. The *name* argument is alphanumeric, case sensitive, and has a maximum length of 32 characters. The default is switch.
		
		Note The **switchname** command performs the same function as the **hostname** command.

Step 3	**exit**
	
	Example:
	
	`Engineering2(config)# exit`
	`Engineering2#`
		Exits global configuration mode.

Step 4	(Optional) **copy running-config startup-config** **Example:** `Engineering2# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring the MOTD Banner

You can configure the MOTD to display before the login prompt on the terminal when a user logs in. The MOTD banner has the following characteristics:

- Maximum of 80 characters per line
- Maximum of 40 lines

SUMMARY STEPS

1. **configure terminal**
2. **banner motd** *delimiting-character message delimiting-character*
3. **exit**

4. (Optional) **show banner motd**

5. (Optional) **copy running-config startup-config**

DETAILED STEPS

	Command or Action	**Purpose**

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

Step 2	**banner motd** *delimiting-character message delimiting-character*
	
	Example:
	`switch(config)# banner motd #Welcome to the Switch#`
	`switch(config)#`
		Configures the MOTD banner. Do not use the *delimiting-character* in the *message* text.
		
		Note Do not use " or % as a delimiting character.

Step 3	**exit**
	
	Example:
	`switch(config)# exit`
	`switch#`
		Exits global configuration mode.

Step 4	(Optional) **show banner motd** **Example:** `switch# show banner motd`	Displays the configured MOTD banner.
Step 5	(Optional) **copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring the Time Zone

You can configure the time zone to offset the device clock time from UTC.

SUMMARY STEPS

1. **configure terminal**

2. **clock timezone** *zone-name offset-hours offset-minutes*

3. **exit**

4. (Optional) **show clock**

5. (Optional) **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

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

Step 2	**clock timezone** *zone-name offset-hours offset-minutes* **Example:** `switch(config)# clock timezone EST -5 0`	Configures the time zone. The *zone-name* argument is a 3-character string for the time zone acronym (for example, PST or EST). The *offset-hours* argument is the offset from the UTC and the range is from –23 to 23 hours. The range for the *offset-minutes* argument is from 0 to 59 minutes.

Step 3	**exit**
	
	Example:
	
	`switch(config)# exit`
	`switch#`
		Exits global configuration mode.

Step 4	(Optional) **show clock** **Example:** `switch# show clock`	Displays the time and time zone.
Step 5	(Optional) **copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring Summer Time (Daylight Saving Time)

You can configure when summer time, or daylight saving time, is in effect for the device and the offset in minutes.

SUMMARY STEPS

1. **configure terminal**
2. **clock summer-time** *zone-name start-week start-day start-month start-time end-week end-day end-month end-time offset-minutes*
3. **exit**
4. (Optional) **show clock detail**
5. (Optional) **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:**	Enters global configuration mode.

	Command or Action	Purpose
	```switch# configure terminal``` ```switch(config)#```	
Step 2	**clock summer-time** *zone-name start-week start-day start-month start-time end-week end-day end-month end-time offset-minutes* **Example:** ```switch(config)# clock summer-time PDT``` ```1 Sunday March 02:00 1 Sunday``` ```November 02:00 60```	Configures summer time or daylight saving time. The *zone-name* argument is a three character string for the time zone acronym (for example, PST and EST). The values for the *start-day* and *end-day* arguments are **Monday**, **Tuesday**, **Wednesday**, **Thursday**, **Friday**, **Saturday**, and **Sunday**. The values for the *start-month* and *end-month* arguments are **January**, **February**, **March**, **April**, **May**, **June**, **July**, **August**, **September**, **October**, **November**, and **December**. The value for the *start-time* and *end-time* arguments are in the format *hh***:***mm*. The range for the *offset-minutes* argument is from 0 to 1440 minutes.
Step 3	**exit** **Example:** ```switch(config)# exit``` ```switch#```	Exits global configuration mode.
Step 4	(Optional) **show clock detail** **Example:** ```switch(config)# show clock detail```	Displays the configured MOTD banner.
Step 5	(Optional) **copy running-config startup-config** **Example:** ```switch# copy running-config startup-config```	Copies the running configuration to the startup configuration.

Manually Setting the Device Clock

You can set the clock manually if your device cannot access a remote time source.

Before you begin

Configure the time zone.

SUMMARY STEPS

1. **clock set** *time day month year*
2. (Optional) **show clock**

DETAILED STEPS

	Command or Action	Purpose

Step 1	**clock set** *time day month year*
	
	Example:
	`switch# clock set 15:00:00 30 May 2008`
	`Fri May 30 15:14:00 PDT 2008`
		Configures the device clock.
		
		The format for the *time* argument is *hh***:***mm***:***ss*.
		
		The range for the *day* argument is from 1 to 31.
		
		The values for the *month* argument are **January**, **February**, **March**, **April**, **May**, **June**, **July**, **August**, **September**, **October**, **November**, and **December**.
		
		The range for the *year* argument is from 2000 to 2030.

Step 2	(Optional) **show clock** **Example:** `switch(config)# show clock`	Displays the current clock value.

Related Topics

Setting the Clock Manager

You can configure the clock manager to synchronize all the clocks of the components in the Cisco Nexus chassis.

SUMMARY STEPS

1. **clock protocol** *protocol* **vdc** *vdc-num*
2. (Optional) **show run clock_manager**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**clock protocol** *protocol* **vdc** *vdc-num* **Example:** `# clock protocol ptp vdc 2`	Configures the clock manager. The values for the *protocol* argument are **ptp**, **ntp**, and **none**. The following describes the values: • **ptp**—Synchronizes clocks with Precision Time Protocol (PTP) as described by IEEE 1588. • **ntp**— Synchronizes clocks with Network Time Protocol (NTP). • **none**—Use **clock set** to set supervisor clocks. **Note** When **none** is used, the clock in the specified VDC must be configured.

	Command or Action	Purpose
		Note Once the protocol is configured, the clock in the specified VDC must use that protocol. For example, if the **clock protocol ptp vdc 2** command is entered, then PTP should be configured in VDC 2. The range for the *vdc* argument is 1 to 8.
Step 2	(Optional) **show run clock_manager** **Example:** `#show run clock_manager`	Displays the configuration of the clock manager.

Managing Users

You can display information about users logged into the device and send messages to those users.

Verifying the Device Configuration

To verify the configuration after bootstrapping the device using POAP, use one of the following commands:

Command	Purpose
show running-config	Displays the running configuration.
show startup-config	Displays the startup configuration.
show time-stamp running-config last-changed	Displays the timestamp when the running configuration was last changed.

For detailed information about the fields in the output from these commands, see the Cisco Nexus command reference for your device.

Default Settings for Basic Device Parameters

This table lists the default settings for basic device parameters.

Table 1: Default Basic Device Parameters

Parameters	Default
MOTD banner text	User Access Verification
Clock time zone	UTC

Consistency Checker Commands

Cisco NX-OS provides consistency checker commands to validate the software state with the hardware state. The result of the consistency checker is logged as either PASSED or FAILED.

```
2019 May 1 16:31:39 switch vshd: CC_LINK_STATE:
Consistency Check: PASSED
```

Consistency checker is a tool that performs the following functions:

- Checks for system consistency

- Helps perform root cause analysis and fault isolation

- Checks for consistency between software and hardware tables

Cisco NX-OS supports the following consistency checker commands.

Table 2: Consistency Checker Commands

Command	Description
show consistency-checker copp	Verifies CoPP programming.
show consistency-checker egress-xlate private-vlan	Verifies the private VLAN egress-xlate in the hardware.
show consistency-checker forwarding single-route {**ipv4** | **ipv6**} *ip-address* **vrf** *vrf-name*} [**brief** | **detail**]	Checks for Layer 3 route consistency for a specific route.
show consistency-checker kim interface {**ethernet** *slot/port* | **port-channel** *number* | **vlan** *vlan-id*} [**brief** | **detail**]	Verifies the internal connectivity between the supervisor and the line card.
show consistency-checker l2 module *module-number*	Verifies that learned MAC addresses are consistent between the software and the hardware. It also shows extra entries that are present in the hardware but not in the software and missing entries in the hardware.
show consistency-checker l3-interface interface ethernet *slot/port* [**brief** | **detail**]	Checks for Layer 3 settings of an interface in the hardware and for the following configuration in the hardware: L3 VLAN, CML Flags, IPv4 Enable, VPN ID. This command works for physical interfaces and interfaces that are part of a port channel. It does not validate subinterfaces or FEX interfaces.
show consistency-checker l3-interface module *module-number* [**brief** | **detail**]	Checks for Layer 3 settings of all interfaces in the module and for the following configuration in the hardware: L3 VLAN, CML Flags, IPv4 Enable, VPN ID. This command works for physical interfaces and interfaces that are part of a port channel. It does not validate subinterfaces.

Command	Description
show consistency-checker link-state module *module-number* [**brief** | **detail**]	Verifies the software link state of all the interfaces in the module against its hardware link state. This command works for physical Ethernet interfaces and physical Ethernet interfaces that are part of a port channel. It does not validate subinterfaces or FEX interfaces.
show consistency-checker membership port-channels [**interface port-channel** *channel-number*] [**brief** | **detail**]	Checks for port-channel membership in the hardware in all modules and validates it with the software state. This command runs per port channel.
show consistency-checker membership port-channels [**brief** | **detail**]	Checks for port-channel membership in the hardware in all modules and validates it with the software state. This command runs for all port channels in the system.
show consistency-checker membership vlan *vlan-id* {**native-vlan** | **private-vlan interface** {**ethernet** *slot/port* | **port-channel** *number* | **native-vlan**}} [**brief** | **detail**]	Determines that the VLAN membership in the software is the same as programmed in the hardware. It also ignores the interfaces that are in the STP BLK state. **Note** The **private-vlan** command does not support the **brief** or **detail** option.
show consistency-checker port-state [**module** *module-number*] [**brief** | **detail**]	Verifies the port state for the specified module.
show consistency-checker stp-state vlan *vlan-id* [**brief** | **detail**]	Determines whether the spanning tree state in the software is the same as programmed in the hardware. This command is run only on interfaces that are operational (up).

Multicast Consistency Checker

The multicast consistency checker is a single-route consistency checker for Layer 2 and Layer 3 routes for verifying the state of multicast routes. The multicast consistency checker executes the show commands in each component, parses the relevant information, and then compares the processed information against the other components to check for inconsistencies. The multicast consistency checker commands terminate upon encountering a failure. The **show consistency-checker l2 multicast group** and **show consistency-checker l3 multicast group** commands return the differences in the expected value and the actual value.

The commands support the following output formats:

- **verbose**: Displays the results in text format.

- **detail**: Displays the results in JSON format.

- **brief**: Displays the results in JSON format with minimal details.

The multicast consistency checker verifies the programming consistency of the following Layer 2 components:

- IGMP snooping

- MFDM

- MFIBPI

- MFIBPD

- Hardware tables

The multicast consistency checker verifies the programming consistency of the following Layer 3 components:

- PIM

- MRIB

- IGMP snooping

- MFDM

- MFIBPI

- MFIBPD

- Hardware tables

Output Examples for Multicast Consistency Checker Commands

The following is an example of IGMP snooping output:

```
switch# show ip igmp snooping groups 225.12.12.28 225.12.12.28 vlan 222
Type: S - Static, D - Dynamic, R - Router port, F - Fabricpath core port
Vlan  Group Address     Ver  Type  Port list
222   225.12.12.28      v3   D     Eth1/2 Eth1/3 Po12 Po100 Po18
```

The following is an example of MFDM output:

```
switch# show forwarding distribution l2 multicast vlan 222 group 225.12.12.28 source
225.12.12.28
Vlan: 222, Group: 225.12.12.28, Source: 225.12.12.28
  Outgoing Interface List Index: 4
  Reference Count: 204
  Num L3 usages: 4
  Platform Index: 0xa00004
  Vpc peer link exclude flag set
  Number of Outgoing Interfaces: 5
    Ethernet1/2
    Ethernet1/3
    port-channel12
    port-channel18
    port-channel100
```

The following is an example of comparing IGMP snooping with MFDM (passed):

```
**********************************************************************
Comparing IGMP Snooping with MFDM
**********************************************************************
L2 Eth Receivers :
IGMP Snooping: 1/2, 1/3
MFDM: 1/2, 1/3
```

```
L2 PC Receivers :
IGMP Snooping: 100, 12, 18
MFDM: 12, 100, 18

CC between IGMP Snooping and MFDM PASSED
```

The following is an example of comparing IGMP snooping with MFDM (failed):

```
***********************************************************************
Comparing IGMP Snooping with MFDM
***********************************************************************
L2 Eth Receivers:
IGMP Snooping: 1/2, 1/3
MFDM: 1/2,  1/3

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
L2 PC Receivers:
IGMP Snooping: 100, 12, 18
MFDM: 12, 100, 16
Consistency check failed!!!
Missing elements are: 18
Additional elements are: 16
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```