Configuring Terminal Settings and Sessions

This chapter describes how to configure terminal settings and sessions.

Information About Terminal Settings and Sessions

This section includes information about terminal settings and sessions.

Terminal Session Settings

The Cisco NX-OS software features allow you to manage the following characteristics of terminals:

Terminal type
    Name used by Telnet when communicating with remote hosts
Length
    Number of lines of command output displayed before pausing
Width
    Number of characters displayed before wrapping the line
Inactive session timeout
    Number of minutes that a session remains inactive before the device terminates it

Console Port

The console port is an asynchronous serial port that allows you to connect to the device for initial configuration through a standard RS-232 port with an RJ-45 connector. Any device connected to this port must be capable of asynchronous transmission. You can configure the following parameters for the console port:

Data bits
    Specifies the number of bits in an 8-bit byte that is used for data.

Inactive session timeout
Specifies the number of minutes a session can be inactive before it is terminated.
Parity
Specifies the odd or even parity for error detection.
Speed
Specifies the transmission speed for the connection.
Stop bits
Specifies the stop bits for an asynchronous line.

Configure your terminal emulator with 9600 baud, 8 data bits, 1 stop bit, and no parity.

COM1 Port

A COM1 port is an RS-232 port with a DB-9 interface that enables you to connect to an external serial communication device such as a modem. You can configure the following parameters for the COM1 port:

Data bits
Specifies the number of bits in an 8-bit byte that is used for data.
Hardware flowcontrol
Enables the flow-control hardware.
Parity
Specifies the odd or even parity for error detection.
Speed
Specifies the transmission speed for the connection.
Stop bits
Specifies the stop bits for an asynchronous line.

Configure your terminal emulator with 9600 baud, 8 data bits, 1 stop bit, and no parity.

Virtual Terminals

You can use virtual terminal lines to connect to your Cisco NX-OS device. Secure Shell (SSH) and Telnet create virtual terminal sessions. You can configure an inactive session timeout and a maximum sessions limit for virtual terminals.

Modem Support

You can connect a modem to the COM1 or console ports only on the supervisor 1 module. The following modems were tested on devices running the Cisco NX-OS software:

- MultiTech MT2834BA

- Hayes Accura V.92

Note Do not connect a modem when the device is booting. Only connect the modem when the device is powered up.

The Cisco NX-OS software has the default initialization string (ATE0Q1&D2&C1S0=1\015) to detect connected modems. The default string is defined as follows:

AT
 Attention
E0 (required)
 No echo
Q1
 Result code on
&D2
 Normal data terminal ready (DTR) option
&C1
 Enable tracking the state of the data carrier
S0=1
 Pick up after one ring
\015 (required)
 Carriage return in octal

Configuring the Console Port

You can set the following characteristics for the console port:

- Data bits

- Inactive session timeout

- Parity

- Speed

- Stop bits

Before you begin

Log in to the console port.

SUMMARY STEPS

1. **configure terminal**
2. **line console**
3. **databits** *bits*
4. **exec-timeout** *minutes*
5. **parity** {**even** | **none** | **odd**}
6. **speed** {**300** | **1200** | **2400** | **4800** | **9600** | **38400** | **57600** | **115200**}
7. **stopbits** {**1** | **2**}
8. **exit**
9. (Optional) **show line console**
10. (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	**line console**
	
	Example:
	`switch# line console`
	`switch(config-console)#`
		Enters console configuration mode.

Step 3	**databits** *bits* **Example:** `switch(config-console)# databits 7`	Configures the number of data bits per byte. The range is from 5 to 8. The default is 8.
Step 4	**exec-timeout** *minutes* **Example:** `switch(config-console)# exec-timeout 30`	Configures the timeout for an inactive session. The range is from 0 to 525600 minutes (8760 hours). A value of 0 minutes disables the session timeout. The default is 30 minutes.
Step 5	**parity** {**even** | **none** | **odd**} **Example:** `switch(config-console)# parity even`	Configures the parity. The default is **none**.
Step 6	**speed** {**300** | **1200** | **2400** | **4800** | **9600** | **38400** | **57600** | **115200**} **Example:** `switch(config-console)# speed 115200`	Configures the transmit and receive speed. The default is **9600**.
Step 7	**stopbits** {**1** | **2**} **Example:** `switch(config-console)# stopbits 2`	Configures the stop bits. The default is **1**.

Step 8	**exit**
	
	Example:
	`switch(config-console)# exit`
	`switch(config)#`
		Exits console configuration mode.

Step 9	(Optional) **show line console** **Example:** `switch(config)# show line console`	Displays the console settings.
Step 10	(Optional) **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring the COM1 Port

You can set the following characteristics for the COM1 port:

- Data bits

- Flow control on the hardware

- Parity

- Speed

- Stop bits

Before you begin

Log in to the console port or COM1 port.

SUMMARY STEPS

1. **configure terminal**
2. **line com1**
3. **databits** *bits*
4. **flowcontrol hardware**
5. **parity** {**even** | **none** | **odd**}
6. **speed** {**300** | **1200** | **2400** | **4800** | **9600** | **38400** | **57600** | **115200**}
7. **stopbits** {**1** | **2**}
8. **exit**
9. (Optional) **show line com1**
10. (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	**line com1**
	
	 Example:
	
	 ```switch# line com1```
	 ```switch(config-com1)#```
		Enters COM1 configuration mode.

Step 3	**databits** *bits* **Example:** ```switch(config-com1)# databits 7```	Configures the number of data bits per byte. The range is from 5 to 8. The default is 8.

	Command or Action	**Purpose**
Step 4	**flowcontrol hardware** **Example:** switch(config-com1)# flowcontrol hardware	Enables flow control on the hardware. The default is enabled. Use the **no flowcontrol hardware** command to disable flow control on the hardware.
Step 5	**parity** {**even** | **none** | **odd**} **Example:** switch(config-com1)# parity even	Configures the parity. The default is **none**.
Step 6	**speed** {**300** | **1200** | **2400** | **4800** | **9600** | **38400** | **57600** | **115200**} **Example:** switch(config-com1)# speed 115200	Configures the transmit and receive speed. The default is **9600**.
Step 7	**stopbits** {**1** | **2**} **Example:** switch(config-com1)# stopbits 2	Configures the stop bits. The default is **1**.
Step 8	**exit** **Example:** switch(config-com1)# exit switch(config)#	Exits COM1 configuration mode.
Step 9	(Optional) **show line com1** **Example:** switch(config)# show line com1	Displays the COM1 port settings.
Step 10	(Optional) **copy running-config startup-config** **Example:** switch(config)# copy running-config startup-config	Copies the running configuration to the startup configuration.

Configuring Virtual Terminals

This section describes how to configure virtual terminals on Cisco NX-OS devices.

Configuring the Inactive Session Timeout

You can configure a timeout for inactive virtual terminal sessions on a Cisco NX-OS device.

SUMMARY STEPS

1. **configure terminal**
2. **line vty**
3. • **exec-timeout** *minutes*

> • **absolute-timeout** *minutes*

4. **exit**
5. (Optional) **show running-config all | begin vty**
6. (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	**line vty**
	
	Example:
	`switch# line vty`
	`switch(config-line)#`
		Enters line configuration mode.

Step 3	• **exec-timeout** *minutes*
	
	• **absolute-timeout** *minutes*
	
	Example:
	`switch(config-line)# exec-timeout 30`
	
	Example:
	`switch(config-line)# absolute-timeout 30`
		Configures the inactive session timeout. The range is from 0 to 525600 minutes (8760 hours). A value of 0 minutes disables the timeout. The default value is 30.
		
		Sets a timeout interval on a virtual terminal (vty) line. The range is from 0 to 10000.
		
		The **absolute-timeout** command terminates the connection after the specified time period has elapsed, regardless of whether the connection is being used at the time of termination. You can specify an absolute-timeout value for each port. The user is given 20 seconds notice before the session is terminated. You can use this command along with the **logout-warning** command, which notifies the user of an impending logout.

Step 4	**exit**
	
	Example:
	`switch(config-line)# exit`
	`switch(config)#`
		Exits line configuration mode.

Step 5	(Optional) **show running-config all	begin vty** **Example:** `switch(config)# show running-config all	begin vty`	Displays the virtual terminal configuration.
Step 6	(Optional) **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring the Session Limit

You can limit the number of virtual terminal sessions on your Cisco NX-OS device.

SUMMARY STEPS

1. **configure terminal**
2. **line vty**
3. **session-limit** *sessions*
4. **exit**
5. (Optional) **show running-config all | being vty**
6. (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	**line vty**
	
	Example:
	`switch# line vty`
	`switch(config-line)#`
		Enters line configuration mode.

Step 3	**session-limit** *sessions* **Example:** `switch(config-line)# session-limit 10`	Configures the maximum number of virtual sessions for the Cisco NX-OS device. The range is from 1 to 60. The default is 32.

Step 4	**exit**
	
	Example:
	`switch(config-line)# exit`
	`switch(config)#`
		Exits line configuration mode.

Step 5	(Optional) **show running-config all	being vty** **Example:** `switch(config)# show running-config all	begin` `vty`	Displays the virtual terminal configuration.
Step 6	(Optional) **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring Modem Connections

You can connect a modem to either the COM1 port or the console port.

We recommend that you use the COM1 port to connect the modem.

Enabling a Modem Connection

You must enable the modem connection on the port before you can use the modem.

Before you begin

Log in to the console port.

SUMMARY STEPS

1. **configure terminal**
2. Enter one of the following commands:
3. **modem in**
4. **exit**
5. (Optional) **show line**
6. (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	Enter one of the following commands: | Command	Purpose
---	---
line com1	Enters COM1 configuration mode.
line console	Enters console configuration mode. | **Example:** ``` switch# line com1 switch(config-com1)# ```	Enters COM1 configuration mode or console configuration mode.
Step 3	**modem in** **Example:** ``` switch(config-com1)# modem in ```	Enables modem input on the COM1 or console port.

	Command or Action	Purpose

Step 4	**exit**
	
	Example:
	`switch(config-com1)# exit`
	`switch(config)#`
		Exits COM1 or console configuration mode.

Step 5	(Optional) **show line** **Example:** `switch(config)# show line`	Displays the console and COM1 settings.
Step 6	(Optional) **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Downloading the Default Initialization String

The Cisco NX-OS software provides a default initialization string that you can download for connecting with the modem. The default initialization string is ATE0Q1&D2&C1S0=1\015.

Before you begin

Log in to the console port.

SUMMARY STEPS

1. **configure terminal**
2. Enter one of the following commands:
3. **modem init-string default**
4. **exit**
5. (Optional) **show line**
6. (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	Enter one of the following commands: | Option	Description
---	---
line com1	Enters COM1 configuration mode.
line console	Enters console configuration mode.		

	Command or Action	Purpose

	Example:
	`switch# line com1`
	`switch(config-com1)#`	

Step 3	**modem init-string default** **Example:** `switch(config-com1)# modem init-string default`	Writes the default initialization string to the modem.

Step 4	**exit**
	Example:
	`switch(config-com1)# exit`
	`switch(config)#`
		Exits COM1 or console configuration mode.

Step 5	(Optional) **show line** **Example:** `switch(config)# show line`	Displays the COM1 and console settings.
Step 6	(Optional) **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Configuring and Downloading a User-Specified Initialization String

You can configure and download your own initialization when the default initialization string is not compatible with your modem.

Before you begin

Log in to the console port.

SUMMARY STEPS

1. **configure terminal**
2. Enter one of the following commands:
3. **modem set-string user-input** *string*
4. **modem init-string user-input**
5. **exit**
6. (Optional) **show line**
7. (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	Enter one of the following commands: **Option** | **Description** **line com1** | Enters COM1 configuration mode. **line console** | Enters console configuration mode. **Example:** switch# line com1 switch(config-com1)#	
Step 3	**modem set-string user-input** *string* **Example:** switch(config-com1)# modem set-string user-input ATE0Q1&D2&C1S0=3\015	Sets the user-specified initialization string for the COM1 or console port. The initialization string is alphanumeric and case sensitive, can contain special characters, and has a maximum of 100 characters. **Note** You must first set the user-input string before initializing the string.
Step 4	**modem init-string user-input** **Example:** switch(config-com1)# modem init-string user-input	Writes the user-specified initialization string to the modem connected to the COM1 or console port.
Step 5	**exit** **Example:** switch(config-com1)# exit switch(config)#	Exits COM1 or console configuration mode.
Step 6	(Optional) **show line** **Example:** switch(config)# show line	Displays the COM1 and console settings.
Step 7	(Optional) **copy running-config startup-config** **Example:** switch(config)# copy running-config startup-config	Copies the running configuration to the startup configuration.

Initializing a Modem for a Powered-Up Cisco NX-OS Device

If you connect a modem to a powered-up physical device, you must initialize the modem before you can use it.

Before you begin

After waiting until the Cisco NX-OS device has completed the boot sequence and the system image is running, connect the modem to either the COM1 port or the console port on the device.

Enable the modem connection on the port.

SUMMARY STEPS

1. **modem connect line** {**com1** | **console**}

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**modem connect line** {**com1**	**console**} **Example:** `switch# modem connect line com1`	Initializes the modem connected to the device.

Related Topics

Clearing Terminal Sessions

You can clear terminal sessions on the Cisco NX-OS device.

SUMMARY STEPS

1. (Optional) **show users**
2. **clear line** *name*

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	(Optional) **show users** **Example:** `switch# show users`	Displays the user sessions on the device.
Step 2	**clear line** *name* **Example:** `switch# clear line pts/0`	Clears a terminal session on a specific line. The line name is case sensitive.

Displaying Terminal and Session Information

To display terminal and session information, perform one of the following tasks:

Command	Purpose
show terminal	Displays terminal settings.
show line	Displays the COM1 and console ports settings.
show users	Displays virtual terminal sessions.
show running-config [**all**]	Displays the user account configuration in the running configuration. The **all** keyword displays the default values for the user accounts.

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

Default Settings for Terminal Display and Session Parameters

This table lists the default settings for terminal displays and session parameters.

Table 1: Default Terminal Display and Session Parameter Settings

Parameters	Default
Terminal type	ansi
Terminal length	0 lines for console sessions 31 lines for virtual terminal sessions
Terminal width	80 columns
Terminal inactive session timeout	Disabled (0 minutes)
Console session data bits	8
Console inactive session timeout	Disabled (0 minutes)
Console session parity	none
Console session speed	11520 bps
Console session stop bits	1
COM1 session data bits	8
COM1 hardware flow control	Enabled
COM1 session parity	none
COM1 session speed	9600 bps
COM1 session stop bits	1
Virtual terminal inactive session timeout	Disabled (0 minutes)

Parameters	Default
Virtual terminal sessions limit	32
Modem default initialization string	ATE0Q1&D2&C1S0=1\015