

CCNA Quick Notes - IOS Commands

1. What two EXEC modes are supported in the Cisco IOS? The two EXEC modes are: User EXEC mode (user mode) Privileged EXEC mode (enable or privileged mode) In the IOS, what is User EXEC mode? User EXEC mode is the first mode you enter when you log into the IOS. This mode is limited and is mostly used to view statistics. You cannot change a router's configuration in this mode. By default, the greater-than sign (>) indicates that you are in user mode. This is how the router prompt looks in user mode: Router>

2. In the IOS, what is privileged EXEC mode? In privileged EXEC mode, you can view and change the configuration in a router. To enter privileged mode, enter the enable command while in user mode. The pound symbol (#) indicates that you are in privileged mode. This mode is usually protected with a password. You also see the output of the prompt: Router>enable Password: Router#

3. When you are in privileged EXEC mode, how do you return to user EXEC mode? You return to user EXEC mode using the disable, exit, or end IOS commands. Here is an example of using the disable command: Router#disable Router>

4. What two types of content-sensitive help are available in the Cisco IOS? Word help and command syntax help are the two types of content-sensitive help. Word help uses a question mark and identifies commands that start with a character or sequence of characters. For example, the following router output shows the use of word help for any IOS command that starts with the letters cl: Router#cl? clear clock Command syntax help is when you use a question mark after a command so that you can see how to complete the command. For example: Router#clock ? set Set the time and date

5. On a Cisco router, what does the show version command display? The show version command displays the system hardware's configuration, including RAM, Flash memory, software version, configuration register, and boot images. Here is an example of the show version command: Router#show version Cisco Internetwork Operating System SoftwareIOS (tm) 2500 Software (C2500-D-L), Version 12.0(13), RELEASE SOFTWARE (fc1)Copyright (c) 1986-2000 by Cisco Systems, Inc.Compiled Wed 06-Sep-00 01:08 by lindaImage text-base: 0x030388F8, data-base: 0x00001000 ROM: System Bootstrap, Version 5.2(5), RELEASE SOFTWAREBOOTFLASH: 3000 Bootstrap Software (IGS-RXBOOT), Version 10.2(5), RELEASE SOFTWARE (fc1) Router uptime is 50 minutesSystem restarted by power-onSystem image file is "flash:c2500-d-l.120-13.bin" cisco 2505 (68030) processor (revision C) with 8192K/2048K bytes of memory.Processor board ID 02073409, with hardware revision 00000000(text omitted)32K bytes of non-volatile configuration memory.8192K bytes of processor board System flash (Read ONLY) Configuration register is 0x2102

6. On a Cisco router, how do you display the configuration running in RAM? You display the configuration running in RAM using the show running-config privileged mode command. For example: Router#show running-config Building configuration... Current configuration: ! version 12.0service timestamps debug uptime! service timestamps log uptime! no service password-encryption ! hostname Router ! enable password cisco ! --More--

7. On a Cisco router, how do you view the configuration stored in NVRAM? You view the configuration stored in NVRAM using the show startup-config privileged mode command. What Cisco router command would you use to view a list of the most recently used commands? The show history command, by default, displays the last ten commands used. You can also use the up arrow key (or Ctrl-P) to display the last command you entered and the down arrow key (or Ctrl-N) to display the previous commands you entered. The following is an example of the show history command: Router#show history en show running-config show running-config show history enable show version show time show history Router#

8. Command history is enabled by default and records ten commands in its history buffer for the current session. How do you edit the number of commands that are stored in the router's history buffer? To edit the number of command lines stored for the current session, use the terminal history [size number-of-lines] command in privileged EXEC mode. For example, the following changes the history size to 20 lines: Router#terminal history size 20 Note: The maximum number of lines you can set for the current session is 256, but doing so wastes router memory. To turn off terminal history, use the terminal no history privileged mode command. If you want to set the history size longer than the current session, go to the console interface and enter the history [size number-of-lines] interface command as a more permanent way of changing the history buffer. This command is unavailable on a Catalyst 1900 switch.

On a Cisco router, name the enhanced editing commands that are used to do the following:

- Move the cursor to the beginning of the line
- Move the cursor to the end of the line
- Move the cursor forward one character
- Move the cursor back one character
- Move the cursor back one word
- Delete a line
- Complete a line
- Display a line versus a screen
- Move the cursor to the beginning of the line Ctrl-A
- Move the cursor to the end of the line Ctrl-E
- Move the cursor forward one character Ctrl-F
- Move the cursor back one character Ctrl-B
- Move the cursor back one word Esc-B
- Delete all characters from the cursor to the beginning of the command line - Ctrl-U
- Complete a line - Tab
- Display a line versus a screen - Enter

9. What are global commands on a Cisco router? Global configuration commands are commands that affect the entire router. They can be executed only in global configuration mode.

10. How do you enter global configuration mode? To enter global configuration mode, you enter the config terminal command from privileged

EXEC mode. Here is an example of this command: Router#config terminal Enter configuration commands, one per line. End with CNTL/Z. Router(config)#

11.How do you configure a name on a Cisco router? The hostname name global configuration command is used to configure a name on a Cisco router. For example, the following command changes the router's host name to RouterA: Router(config)#hostname RouterA RouterA(config)#

12.How do you add a message-of-the-day (MOTD) banner on a Cisco router? To add a message-of-the-day banner to a Cisco router, enter the banner motd # text # global configuration command. The pound signs (#) are delimiting characters. They can be any character of your choice, but they must be the same and cannot be included in your text. They signify the beginning and end of your text. The following example shows the banner motd command: RouterA(config)#banner motd # Enter TEXT message. End with the character '#'.Warning only authorized users may access this Router. # RouterA(config)# Note: The MOTD banner is displayed to anyone connecting to the router via Telnet, console port, or auxiliary port.

13.On a Cisco router, how do you add a password to the console terminal? To add a password to the console terminal, use the line console 0 global configuration command, followed by the login and password password line subcommands: RouterA(config)#line console 0 RouterA(config-line)#login RouterA(config-line)#password CCNA In this example, the login subcommand forces the router to prompt for authentication. Without this command, the router will not authenticate a password. The password CCNA command sets the console password to CCNA. The password you set is case-sensitive.

14.How do you add a password for Telnet access on a Cisco router? To add a password for Telnet access, enter the line vty 0 4 global configuration command, the login command, and finally the password line subcommand. The password is case-sensitive. In this example, the Telnet password is set to CCNA: RouterA(config)#line vty 0 4 RouterA(config-line)#login RouterA(config-line)#password CCNA

15.What command do you use to add a password to the auxiliary interface on your Cisco router? To add a password to the auxiliary interface, use the line aux global configuration command, followed by the login and password subcommands. is the number of the auxiliary port you want to add a password to. The password is case-sensitive. The following example sets the password for the auxiliary port to CCNA: RouterA(config)#line aux 0 RouterA(config-line)#login RouterA(config-line)#password CCNA

16.On a Cisco router, how do you set a password to restrict access to privileged EXEC mode? You set a password to restrict access to privileged EXEC mode using the enable password global configuration command: RouterA(config)#enable password CCNA This example sets the password to enter privileged mode to CCNA.

17.By default, when you view the router's configuration, the enable password is not encrypted. What command can you enter to use an encrypted enable password? To use an encrypted enable password, use the enable secret password global configuration command, where password is a case-sensitive password you assign: RouterA(config)#enable secret Cisco If you have an enable password on your router, the IOS will allow you to use the same password as your enable password for your secret password, but this is not recommended. This is because the enable password is not encrypted and anyone can view it. If you have both an enable and secret password configured on your router, the router will use the secret password and not the enable password. When you view the configuration on Cisco routers, only the enable secret password is encrypted.

18.How do you encrypt user mode and the enable password? To encrypt user mode and the enable password, use the service password-encryption global command: RouterA(config)#service password-encryption

19.How do you configure Cisco router interfaces? To configure an interface on a Cisco router, use the interface interface-type number global command, where interface-type number is the interface type and number you want to configure. For example, if you want to configure the second serial interface on your router, you would enter the following: RouterA(config)#interface serial 1 RouterA(config-if)# Cisco interfaces start with 0 instead of 1. So the first interface would be number 0. The prompt also changes to RouterA(config-if)# to tell you that you are in interface mode. If you have a router with module slot, such as the Cisco 3600, you would enter into interface mode by entering the slot/port number. For example, if you have a Cisco 3600 router with two module serial interfaces and you want to configure the first serial interface on the second module you would enter interface s1/0.

20.How do you administratively disable an interface on a Cisco router? You administratively disable an interface on a Cisco router by issuing the shutdown interface configuration command. In this example, the serial interface is issued the shutdown command: RouterA(config)#int s0 RouterA(config-if)#shutdown 00:27:14: %LINK-5-CHANGED: Interface Serial0, changed state to administratively down To administratively enable an interface, use the no shutdown interface command.

21.What are some of the things the show interface interface-type number command displays? The show interface command displays the following: · Whether the interface is administratively down· Whether the line protocol is up or down· An Internet address (if one is configured)· MTU and bandwidth· Traffic statistics on the interface· Interface encapsulation type RouterA#show interface s0 Serial0 is down, line protocol is down Hardware is HD64570 Internet address is 192.168.1.1/24 MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255 Encapsulation HDLC, loopback not set, keepalive set (10 sec) Last input never, output never, output hang never Last clearing of "show interface" counters never Input queue: 0/75/0 (size/max/drops); Total output drops: 0 Queuing strategy: weighted fair Output queue: 0/1000/64/0 (size/max

total/threshold/drops) Conversations 0/0/256 (active/max active/max total) Reserved Conversations 0/0 (allocated/max allocated) 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec 0 packets input, 0 bytes, 0 no buffer Received 0 broadcasts, 0 runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0 packets output, 0 bytes, 0 underruns 0 output errors, 0 collisions, 2 interface resets 0 output buffer failures, 0 output buffers swapped out 0 carrier transitions DCD=up DSR=up DTR=down RTS=down CTS=up

22. On your Cisco router, you enter `show interface s0` and notice that the port is administratively down. What does this mean, and how do you fix it? When an interface is administratively down, it has been shut down manually. To remedy this, enter the interface command `no shut`.

23. What two commands can you use to show the clock rate on a serial interface? To view the clock rate on a serial interface, you can use the `show running-config enable` command and the `show controllers enable` command.

24. Assuming that you are using no CSU/DSU and you are using back-to-back DTE/DCE serial cables, what command would you use to set the serial interface on a router to provide clocking to another router at 64 Kbps? The command to set the serial interface on a router to provide clocking to another router at 64 Kbps is `clock rate 64000`. Setting the clock rate on an interface makes it a DCE interface.

25. What Cisco IOS router command would you use to find out whether a serial interface is a DCE or DTE interface (providing clocking)? To see whether a serial interface is providing clocking, use the enable command `show controllers serial-interface-type serial-number`. The following example shows that serial interface 0 is providing clock rate at 56 Kbps:

```
RouterA#show controllers s 0 HD unit 0, idb = 0xCCE04, driver structure at 0xD2298buffer size 1524 HD unit 0, V.35 DCE cable, clockrate 56000cpb = 0x81, eda = 0x4940, cda = 0x4800RX ring with 16 entries at 0x814800
```

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