



## CCNA Router Commands for the 640–607 exam (version 1.0)

### Basics

Enter Privileged Exec Mode	<b>enable</b>
Leave Privileged Exec Mode and go back to User Mode	<b>disable</b>
Log out of the router, end the console session, same as exit command	<b>exit</b>
Log out of the router, end the console session, same as logout command	<b>logout</b>
Setup a basic configuration by answering questions	<b>setup</b>
Show the current configuration stored in RAM	<b>show running-config</b>
Show the startup configuration stored in NVRAM	<b>show startup-config</b>
Display IOS version (configuration register value is also displayed)	<b>show version</b>
Show IOS files stored in flash and available free space	<b>show flash</b>
Save the current configuration into NVRAM	<b>copy running-config startup-config</b>
Use the startup configuration stored in NVRAM	<b>copy startup-config running-config</b>
Load a saved configuration from a TFTP server into NVRAM	<b>copy tftp running-config</b>
Upgrade the IOS stored in flash from an image stored on a TFTP server	<b>copy tftp flash</b>
Create a backup of router IOS and store it in a file on a TFTP server	<b>copy flash tftp</b>
Instruct the router to boot from a specific IOS image stored in flash	<b>boot system flash [filename]</b>
Instruct the router to boot from a specific IOS image stored on a TFTP server	<b>boot system tftp [filename]</b>
Enter Global Configuration Mode	<b>config terminal</b>
Set a Message-of-the-day banner to be displayed before the user logs in to the router	<b>banner motd # message #</b>
Set a login message to be displayed before the user logs in to the router	<b>banner login # message #</b>
Set a banner to be displayed after the user logs in to the router	<b>banner exec # message #</b>
(incoming is displayed with a reverse telnet connection, exec with all others)	<b>banner incoming # message #</b>
Give the router a hostname (default is router)	<b>hostname [name]</b>
Disable DNS lookups (enabled by default)	<b>no ip domain-lookup</b>
Specify DNS servers for for hostname and address resolution	<b>ip name-server server-ip1 [server-ip2...server-ip6]</b>
Disable the HTTP server (enabled by default)	<b>no ip http server</b>
Change the size of the history buffer (default is 10 commands)	<b>terminal history size 20</b>

### Passwords

Set a password for Privileged Exec Mode	<b>enable password [password]</b>
Set an encrypted password for Privileged Exec Mode	<b>enable secret [password]</b>
Set password TELNET access	<b>line vty 0 4 login password [passwords]</b>

Set a password for Console Port access

```
line console 0
login
password [passwords]
```

### Interface configuration

Configure the interface Ethernet 0

**interface e 0**

Configure the first Serial interface

**interface s 0**

Configure the second Token Ring interface

**interface t 1**

Enable an interface

**no shutdown**

Disable an interface

**shutdown**

Set the clock rate on a DCE (make a router a DCE)

**clock rate 56000**

Set the bandwidth

**bandwidth 64**

Display the status of an interface

**show interface serial 1**

Display DTE/DCE state

**show controller serial 1**

Set keepalive period

**keepalive 10**

### IP

Disable IP routing (IP routing is enabled by default)

**no ip routing**

Display IP routing table

**show ip route**

Configure an interface with an IP address

**ip address 192.168.1.12 255.255.255.0**

Enable RIP

```
router rip
  network [network-address1]
  network [network-address2...]
```

Enable Split Horizon on an interface

**ip split-horizon**

Enable RIP Triggered updates (only send updates when routing table has changed instead of every 30 seconds)

**ip rip triggered**

Disable automatic route summarization

**no auto-summary**

Enable IGRP

```
router igrp [as-number]
  network [network-address1]
  network [network-address2...]
```

### PPP

Enable PPP on an interface

**encapsulation ppp**

Set PPP authentication method to PAP

**ppp authentication PAP**

Set PPP authentication method to CHAP

**ppp authentication CHAP**

Set PPP authentication method to first try PAP and then CHAP

**ppp authentication PAP CHAP**

Set PPP authentication method to first try CHAP and then PAP

**ppp authentication CHAP PAP**

Configure CHAP username to use to connect (default is hostname)

**ppp chap hostname [username]**

Configure CHAP password to use to connect (default is enable password)

**ppp chap password [password]**

Configure PAP username to use to connect (default is hostname)

```
ppp pap sent-username [username]
[password]
```

Create a username to use for connecting routers to log in	<b>username [username] password [password]</b>
Enable PPP compression on an interface	<b>ppp compress [predictor   stac]</b>
Enable Multilink PPP on an interface	<b>ppp multilink</b>
Display information about the multilink bundle	<b>show ppp multilink</b>

### Frame Relay

Enable Frame–Relay on an interface and set the encapsulation type (use ietf when not all the routers are Cisco)	<b>encapsulation frame–relay [cisco   ietf]</b>
Manually specify the LMI type (auto–detected on IOS 11.2+ routers)	<b>frame–relay lmi type [ansi   cisco   q9331]</b>
Set the bandwidth for the frame relay interface (in kilobits)	<b>bandwidth 64</b>
Manually specify the address to DLCI mappings (when Inverse Arp is unavailable) example: frame–relay map ip 10.10.10.10 100 broadcast	<b>frame–relay map protocol protocol–address dlci [broadcast] [ietf   cisco]</b>
Manually specify DLCI (when LMI is not available)	<b>frame–relay local–dlci [number]</b>
Display traffic statistics about permanent virtual circuits (PVCs)	<b>show frame relay pvc</b>
Display statistics about Local Management Interface (LMI)	<b>show frame relay lmi</b>
Display the current static and dynamic map entries	<b>show frame relay map</b>

### ISDN

Set the ISDN switch type	<b>isdn switch–type</b>
Configure interface BRI 1	<b>interface bri 1</b>
Specify the SPID number for the B1 channel	<b>isdn spid1 spid–number</b>
Specify the SPID number for the B2 channel	<b>isdn spid2 spid–number</b>
Display information about the D Channel B channels of ISDN BRI interface 0	<b>show interfaces bri 0</b>
Display information about the ISDN BRI interface 0	<b>show controllers bri 0</b>

### CDP

Display directly connected neighbors	<b>show cdp neighbor</b>
Display detailed information about directly connected neighbors	<b>show cdp neighbor detail</b>
Disable CDP for the whole router	<b>no cdp run</b>
Disable CDP for a particular interface	<b>no cdp enable</b>
Set the period between sending CDP information (in seconds)	<b>cdp timer 90</b>
Specify the amount of time the receiving device should hold a packet (in seconds)	<b>cdp holdtime 180</b>
Clear the information about neighbors in the CDP table	<b>clear cdp table</b>

## Access Control Lists

### IP Standard Access Lists (Range 1 to 99)

Objective: Configure interface ethernet 0 to deny inbound packets originated from subnet 192.168.1.0 255.255.255.0

- |   |  |
|---|--|
| 1. Deny the subnet  | <b>access-list 1 deny 192.168.1.0 0.0.0.255</b>            |
| 2. Permit all others (because of the implicit <b>deny all</b> in Step 1.) | <b>access-list 1 permit any</b>                            |
| 3. Bind the access list to the interface ethernet 0                       | <b>interface ethernet 0</b><br><b>ip access group 1 in</b> |

### IP Extended Access Lists (Range 100 to 199)

Objective: Configure interface ethernet 0 to deny subnet 192.168.1.0 from surfing the web

- |   |   |
|---|---|
| 1. Deny the subnet                                  | <b>access-list 100 deny tcp 192.168.1.0 0.0.0.255 any eq 80</b> |
| 2. Permit all others                                | <b>access-list 100 permit ip any any</b>                        |
| 3. Bind the access list to the interface ethernet 0 | <b>interface ethernet 0</b><br><b>ip access group 100 out</b>   |

Objective: Configure interface serial 1 to deny host 192.168.1.222 from telnetting to any host on the subnet 172.16.8.1 255.255.0.0

- |   |   |
|---|---|
| 1. Deny the subnet                                | <b>access-list 101 deny tcp host 192.168.1.222 172.16.8.1 0.0.255.255 eq 23</b> |
| 2. Permit all others                              | <b>access-list 101 permit ip any any</b>  |
| 3. Bind the access list to the interface serial 1 | <b>interface serial 1</b><br><b>ip access group 101 out</b>                     |

## Key Sequences

- |   |                                  |
|---|----------------------------------|
| Recall the previous command from the history buffer | <b>CTRL-P or Up arrow key</b>    |
| Recall the next command in the history buffer       | <b>CTRL-N or Down arrow key</b>  |
| Auto-complete commands                              | <b>TAB</b>                       |
| End configuration mode                              | <b>CTRL-Z</b>                    |
| Move the cursor back one character.                 | <b>Ctrl-B or Left Arrow key</b>  |
| Move the cursor forward one character.              | <b>Ctrl-F or Right Arrow key</b> |
| Move the cursor to the start of the command line.   | <b>Ctrl-A</b>                    |
| Move the cursor to the end of the command line.     | <b>Ctrl-E</b>                    |

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