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As the Cisco IOS is riddled with thousands of commands, configuring it can be challenging. This download will help you master the 10 commands to know, inside and out, when using the Cisco IOS.

1

**The "?"** – It may seem entirely too obvious that you should know how to type `?` to ask for help when using the Cisco IOS. However, the Cisco IOS is completely different from other operating systems when it comes to using the question mark (help key). As the IOS is a command line operating system with thousands of possible commands and parameters, using the `?` can save your day.

You can use the command in many ways. First, use it when you don't know what command to type. For example, type `?` at the command line and for a list of all possible commands. You can also use `?` when don't know what a commands next parameter should be. For example, you should type **show ip ?** If the router requires no other parameters for the command, the router will offer "`<CR>`" as the only option. Finally, use `?` to see all commands start with a particular letter. For example, **show c?** will return a list of command the start with the letter "c".

2

**Show running-configuration** – The `show running-config` command shows the router, switch, or firewall's current configuration. The running-configuration is the config that is in the router's memory. You change this config with you makes changes to the router. Keep in mind that that config is not saved until you do a **copy running-configuration startup-configuration**. This command can be abbreviated **sh run**.

3

**Copy running-configuration startup-configuration** – This command will save the configuration that is currently being modified (in RAM), also known as the running-configuration, to the non-volatile RAM (NVRAM). If the power is lost, the NVRAM will preserve this configuration. In other words, if you edit the router's configuration, don't use this command, and reboot the router--those changes will be lost. This command can be abbreviated **copy run start**. The copy command can also be used to copy the running or startup configuration off of the router to a TFTP server in case something happens to the router.

4

**Show interface** – The `show interface` command displays the status of the router's interfaces. This output provides the following:

- interface status (up/down),
- protocol status on the interface
- utilization
- errors
- MTU
- and much more.

This command is a "must have" for troubleshooting a router or switch. This can also be used by specifying a certain interface like **sh int fa0/0**.

5

**Show ip interface** – Even more popular than show interface are the `show ip interface` and `show ip interface brief`. The `show ip interface` provides tons of useful information about the configuration and status of the IP protocol and its services, on all interfaces. The `show ip interface brief` command provides a quick status of the interfaces on the router, including their IP address, Layer 2 status, and Layer 3 status.

6

**Config terminal, enable, interface, and router**– Cisco routers have different modes where only certain things can be shown or certain things can be changed. Mastering moving between these modes is critical to successfully configuring the router.

For example, when logging in, you start off at the user mode (where the prompt looks like >). From there, you type **enable** to move to privileged mode (where the prompt looks like #). In privileged mode, you can show anything but not make changes. Next, type **config terminal** (or config t) to go to global configuration mode (where the prompt looks like router(config)# ). From here, you can change global parameters. To change a parameter on an interface (like the IP address), go to interface configuration mode with the **interface** command (where the prompt looks like router(config-if)#). Also from the global configuration mode you can go into router configuration using the **router {protocol}** command. To exit from a certain mode, type **exit**.

7

**No shutdown** – The **no shutdown** command enables an interface (brings it up). This command must be used in interface configuration mode. It is useful for new interfaces and for troubleshooting. When having trouble with an interface, you may want to try a **shut** and **no shut**. Of course, to bring the interface down, reverse the command and just say **shutdown**. This command can be abbreviated **no shut**.

8

**Show ip route** – The **show ip route** command is used to show the router's routing table. This is the list of all networks that the router can reach, their metric (the router's preference for them), and how to get there. This command can be abbreviated **sh ip ro** and it can have parameters after it, like **sh ip ro ospf** for all OSPF routers. To clear the routing table of all routes, you do **clear ip route \*** or to clear it of just one route do **clear ip route 1.1.1.1** for clearing out that particular network.

6

**Show version** – The **show version** command gives you the router's configuration register (essentially, the router's firmware settings for booting up the router), the last time the router was booted, the version of the IOS, name of the IOS file, model of the router, and the router's amount of RAM and Flash. This command can be abbreviated **sh ver**.

10

**Debug** – The debug command has many different options after it and does not work by itself. It provides detailed debugging output on a certain application, protocol, or service. For example, **debug ip route** will tell you every time a router is added or removed on the router.

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## Version history

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