

Learning with CCNA Virtual Lab, Gold Edition

This four-router, two-switch simulator is an instructional tool that you can use to learn how to configure a Cisco network. You start out configuring basic commands and proceed to more advanced topics in the labs. Along the way, you can put into practice what you read. As you interact with the simulator, you will learn what commands are appropriate at each mode, plus the effects they have on the configuration of your network.

It is important to read the Sybex *CCNA Study Guide Deluxe Edition*, either before or during the configuration of the Virtual Lab, which will help explain the concepts of what the labs are trying to teach you.

You learn by doing, by interacting with a network in a safe environment. Unlike practicing on “live” equipment, you don’t have to worry about bringing down a network and affecting other users. This is your customized network that you build in any way you want. You can start over as many times as you like by removing any configuration(s) that you want, one command at a time, or by entering

erase start

and

reload for the 2500 and 2600 routers.

For the 1900 Switches, enter **delete nvram**

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Getting Started with Virtual Lab

When you initially start the program, you will see the Network Visualizer screen. Choose one of the routers or one of the 1900 Switches by clicking the appropriate graphic on the screen that represents that device.

After you choose a device from the Network Visualizer screen, you will see a blinking cursor in the Simulator field. Press Enter, and a prompt appears on the screen. You can now enter commands.

Once you are in a simulator screen, you can go to another device by clicking one of the buttons at the bottom of the screen instead of going back to the Network Visualizer screen.

Are There Any Restrictions to CCNA Virtual Lab, Gold Edition?

CCNA Virtual Lab, Gold Edition, does not restrict you with any prompts. You can interact with the simulator in a free-form fashion. Essentially, if you type in appropriate commands, you will see the fruits of your labor. Otherwise, you will see the same error responses that you would see while working with real routers.

The Network Visualizer presents suggested IP addresses that you will enter as you use the labs. As long as you have IP addresses entered, a protocol is established, and the device interfaces are not shut down, you can communicate between the devices.

Commands Limited to the Labs

With a real router, you can enter hundreds of commands. The commands that can be carried out in this simulator are limited to those that are referenced in the labs. However, you still have a large set of commands available that allow you to completely configure your routers and have them communicate with each other.

Supported Commands

The supported commands are derived from the labs in the Sybex CCNA Virtual Lab, Gold Edition. This does not include every command found in the CCNA Study Guide or all possible IOS commands from a router. However, there is a sufficient number of commands to allow you to

fully configure the four routers and the two switches. Click the Supported Commands button to view those that are supported at each level.

Features of CCNA Virtual Lab, Gold Edition

The CCNA Virtual Lab, Gold Edition, has many features that make it easier to learn how to configure your simulated network environment. This section discusses each of these features in turn.

Net Detective

Net Detective assists you in diagnosing problems incurred while trying to communicate among the four routers and two switches. For example, if you are unsuccessful in trying to ping between routers 2501A and 2501C, Net Detective will provide a suggestion such as “Router 2501B s1 is shut down.” Net Detective can be accessed by clicking the Net Detective button on the bottom of the screen.

Options Button

Clicking the Options button at the bottom of the screen opens a dialog box from which you can decide the following:

If you want to save your configurations to a disk instead of to the Sybex\CCNAGold folder.

Printing and Copying

The CCNA Virtual Lab, Gold Edition, allows you to print your configuration as well as other components:

— You can print the contents from the Help screens.

— You can print the list of supported commands.

— In the Network Visualizer, you can print out the suggested screen or the Your Customized Lab screen.

Additionally, you can copy the text from the simulator field so that you can paste it into another application.

Navigation

The Virtual Lab offers several navigational options. While you are in the simulator field, you can use the F1 and F2 keys to scroll an open lab. When you click in the lab itself, you can use the following keys for navigation: Page Down, Page Up, Down Arrow, Up Arrow,

Ctrl+Home

(to go to the top of the screen), and

Ctrl+End

(to go to the bottom of the screen).

How to Use CCNA Virtual Lab, Gold Edition

When you first start the program and go to the simulator field, you will see a blinking cursor.

Press the Enter key to get started. You should then see a prompt. If you click anything outside of the simulator field (such as another program), you will have to click within the simulator field so that it can gain *focus*.

When in doubt, click within the simulator field; a blinking cursor should then appear at the end of the last line of text..

Cursor Movement and the Mouse

When you scroll your simulator field, moving the cursor off the scroll will cause the simulator prompt (cursor) to “snap” back to the last line in the simulator. As long as you do not move your cursor off of the scrolling portion of the simulator field, the cursor will not snap back. Remember that you can always copy and/or print text from the simulator field.

Scrolling the Simulator Field

In the simulator field, you can view any information that has scrolled out of view. Simply place your cursor in the scrolling region of the simulator field and move to the desired location. Notice that you will not be able to highlight and delete text. However, you can copy or print the text in the simulator field.

Saving Information (IMPORTANT)

It will not be uncommon for you to work with this simulator over a span of several days. Any information that you enter, as it relates to configuring the routers, can be saved.

In Privileged mode (at the Router# prompt), the command `copy run start` can be typed in, and after you press Enter, the configuration for that router will be saved to a text file.

The 1900 Switches save their configuration automatically to NVRAM, just like real switches.

If you accidentally delete the text file associated with configuration settings for a router, nothing will happen to the program. However, you will have to start over and reconfigure your router or switch. It would be like starting up with nothing in your NVRAM.

Interacting with Network Visualizer

The Virtual Lab allows you to view two lab diagrams. When you click the Network Visualizer button on the Virtual Lab’s main screen, you will see Your Customized Lab, which displays the configuration information that you enter.

On this screen, you can click the View Suggest Lab button to view the Suggested Lab diagram, which presents the suggested network settings as they relate to your connected network. It also displays the suggested IP addresses that are referred to in the various labs.

If you want to observe your progress as you configure the routers, you can quickly see where you are by examining Your Customized Lab. More important, if you’re having trouble communicating between routers, this diagram may provide you with important information as to why communication is not taking place. You can also use Net Detective to assist you in diagnosing a problem, as discussed earlier.

Using Supported Commands

As you start looking at the bigger picture in terms of how everything is related, you may want to know about the availability of commands for each mode.

Depending on which mode you are in (User, Privileged, Configuration, or Interface), the Supported Commands feature provides a list of all commands available for that mode. The commands are divided into IOS commands and help commands. This saves time if you want to quickly look up available commands for a specific mode.

For example, you may be interested in the Show Commands feature. By using Supported Commands, you will quickly see which commands are available.

Automatically Performing the Commands

As you view the list of supported commands, you can have the program perform a command by clicking once on the item from the list. In this way, for example, you can rapidly perform all the Show commands and view the output on the screen.

Some of the commands will not automatically execute because you need to complete the command by entering additional information. An example would be when you click the word *ping*. It will appear on the screen, but no action will take place because you need to finish the command by entering an IP address.

Printing Field Content

You can print the contents of the simulator field by clicking the Print button. This allows you to have a hard copy of your interaction with the simulator. You can then examine what you have typed and the effects it has had on the simulator and the configuration of routers 2501A, 2501B, and 2501C, and of the switches.

Pressing the Tab Key to Finish Commands

Just as you can with a real router, you can type in a partial command and press the Tab key to see the full command on the next line. Then press your Enter key to execute the command.

Starting Over

There are two ways in which you can restart a lab. First, you can totally remove your startup configuration. For each router, type in the command ***erase start*** and press the Tab key to see the entire command, or press Enter.

This will reinitialize your configuration files. At this point, if you want to remove the configuration that you have existing in memory, use the ***reload*** command.

Another way to start over is to delete your text files. All configuration data is stored in the following files:

— Start1.txt
(router 2501A)

— Start2.txt
(router 2501B)

— Start3.txt
(router 2501C)

— Start4.txt
(router 2621A)

— Start7.txt
(Switch 1900A)

— Start8.txt
(Switch 1900B)

— Options.txt
(Options)

Shortcut Commands

A number of shortcut commands are available in this simulator. For example, if you want to enter the command

show startup-config, you can type in **sh start**

Another example is if you want to see a history of commands that you have entered into the program. The longhand command is

show history, but you can also type in **sh history**, **sh hist**, or **sh his**

Ping or Telnet Not Working

If you can ping, you can telnet, and vice versa. Here are some things to check for if you cannot communicate with another router

1. Make sure that all interfaces between the two points of communication have IP addresses.
2. Make sure that all interfaces between the two points of communication are not shut down (remember to do a **no shut** after entering IP addresses).
3. Make sure that you have established a routing protocol—either through a static route, rip route, or IGRP route.
- 4.

Be sure to use Net Detective to help you diagnose problems.

The labs in this booklet are numbered to correspond to the chapters in the Sybex *CCNA Study Guide Deluxe Edition* so that you can follow along with ease. The commands within the labs will appear in lowercase code font, and in lowercase **bold text** when it is user input, unless otherwise noted. When a given command is followed by a period, please note that the period is not part of the command but part of the punctuation, as seen in this example: Log in by typing **en** or **enable**. For the command to work, you would not type in the period. Also, there are many notes in this booklet that offer tidbits of information, reminders, and warnings. Generally, they are positioned below the material to which they refer.

Now, you should have a good understanding of the product's benefits as well as the limitations of the simulator. It's a great product, and it is the only one on the market that lets you practice virtually, on your own PC, whenever you need to practice configuring routers and switches.

Check out the RouterSim Web site for upgrade information for all Virtual Lab products. Just go to www.routersim.com/Sybex/upgrade.htm. Good luck!

Please note that, even after the software has been installed, the CD must be present in the drive in order for the software to run. If you encounter problems with the CD, please read the readme.txt file on the root of the CD for support information.