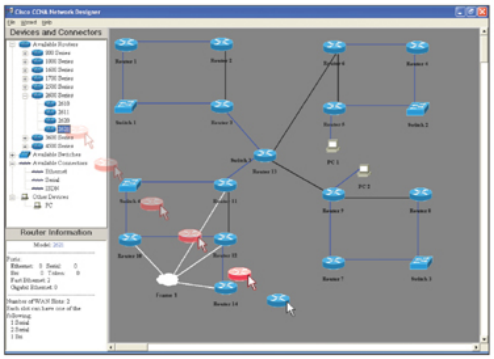
Cisco Systems

CCNA® Self-Study

CISCO CCNA NETWORK SIMULATOR

The most powerful network simulation software for hands-on CCNA 640-801 skills enhancement

- Design a network with up to 200 routers and switches
- Choose from 45 different router and switch models
- Learn from over 100 CCNA labs



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Cisco CCNA Network Simulator

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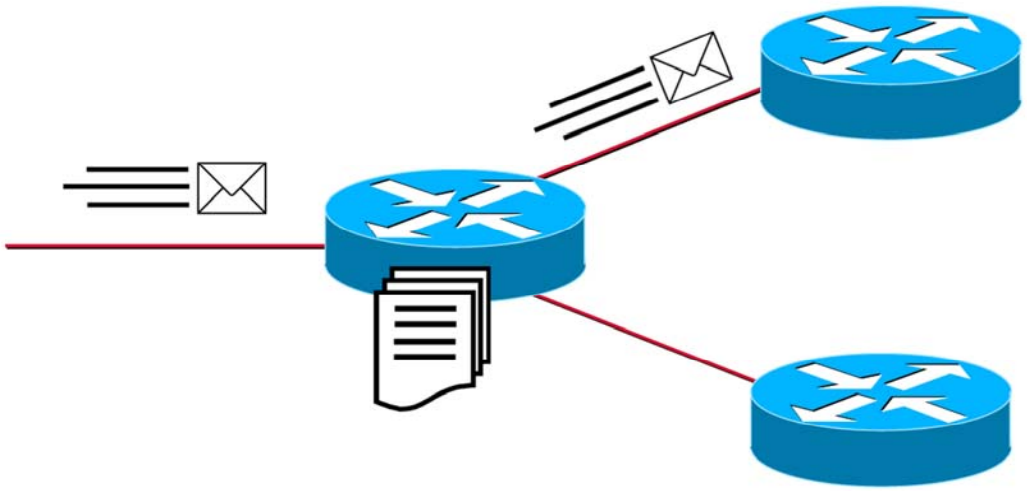
Cisco CCNA Network Simulator Overview

The Cisco CCNA Network Simulator (which includes the Boson Router Simulator®) is a new category of simulation product. Many products simulate the end user experience without actually emulating what is really happening *within* the network. **Boson's Virtual Packet Technology** creates individual packets that are routed and switched through the simulated network, allowing the Cisco CCNA Network Simulator to build an appropriate **Virtual Routing Table for each protocol**, thus fully emulating true networking. This technology allows many uses of the Cisco CCNA Network Simulator, far beyond the scope of the examples or included labs listed below.



Cisco® CCNA® certification is the goal of many people considering the purchase of this product. The Cisco CCNA Network Simulator covers far more than just the full CCNA (640-801), ICND (640-811) and INTRO (641-821) subject matter. The included labs guide you through the configuration of routers and switches in a variety of scenarios. After completing a lab, you can ask the **Cisco CCNA Network Simulator to self-grade the lab** to determine if it was done correctly. As you progress the 100+ labs, the skills needed to be a CCNA are learned and mastered. With the ability to guide and self-grade, the Cisco CCNA Network Simulator can actually be more helpful than using real routers and switches. The Cisco CCNA Network Simulator allows you to get experience without the equipment.

The Cisco CCNA Network Simulator can also be used for many non-certification oriented applications. The included full-version of the **Network Designer** is the optional tool that allows you to design and plan a network. This goes beyond most tools, in that you can actually create the router configurations which are going to be used, saving those configurations, and uploading them to real routers.

Routing Protocol implementation is one of the more challenging tasks you may encounter. The Cisco CCNA Network Simulator can allow you to create a **virtual pilot or test network**, and compare the differences in the results *before* implementing protocols like IGRP, EIGRP, RIP, or OSPF.

Troubleshooting a production network can be a frightening and frustrating experience. Fortunately, you can **create a virtual copy of your network** with the Cisco CCNA Network Designer, and troubleshoot the problems without taking down the network.

In summary, the Cisco CCNA Network Simulator is a flexible and powerful product that can help you become certified, and can aid in the design and troubleshooting of complex networks.

An Overview of Using the Cisco CCNA Network Simulator to Prepare for CCNA Certification

The Cisco CCNA certification requires you to learn and master a number of skills. In this next section we will discuss how to incorporate the Cisco CCNA Network Simulator as part of the learning process and how you can successfully complete the CCNA certification track by using the Cisco CCNA Network Simulator

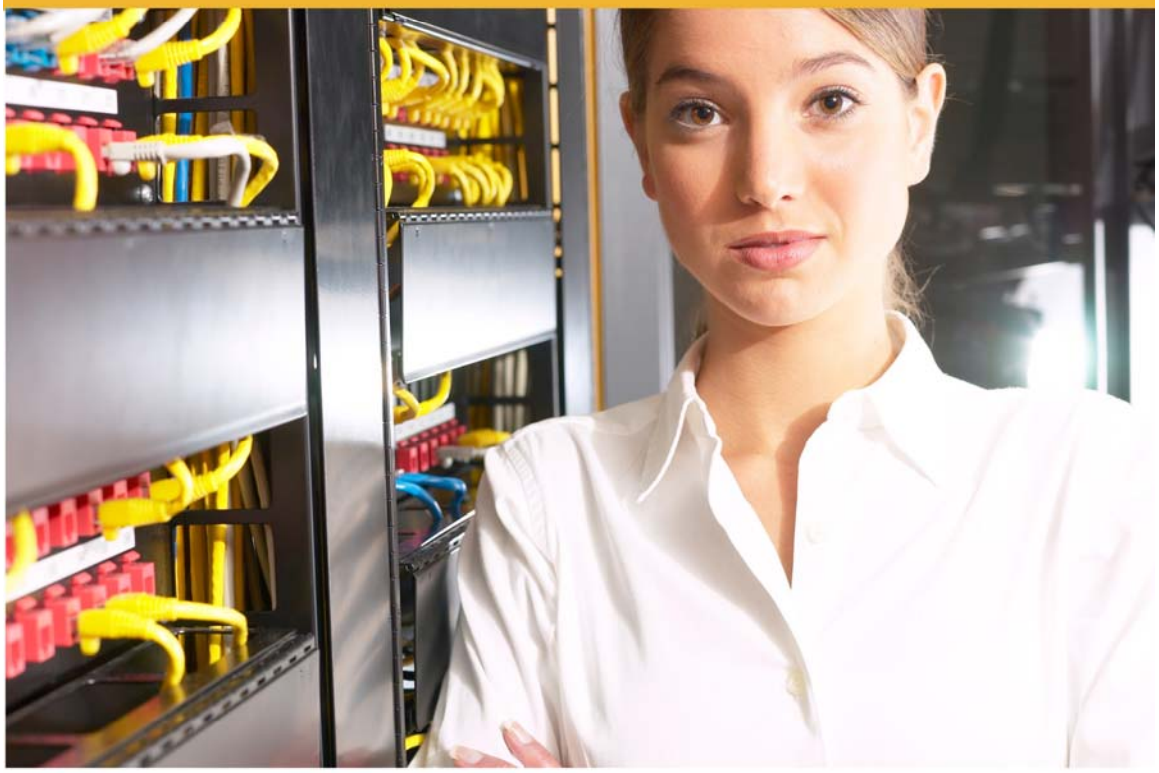
One of the most common ways to use the Cisco CCNA Network Simulator is in conjunction with a book or in an instructor led class. For this example, we will assume that you are using a book or studying from the Cisco published objectives. Basically, learning Cisco routers involve two fundamental tasks; learning and mastering the theory of routers and switches, and the hands-on practical implementation of that theory by configuring the routers in a network and testing them in the lab.

The theory portion of the education can be taught by reading books or listening to an instructor. The purpose of the Cisco CCNA Network Simulator is to help you with the practical hands-on portion of your education, and ensures that you not only understand the concepts of routing, but can actually configure and implement routing on Cisco devices. Once you feel you have mastered both the theory and the practical labs, you can test your knowledge using one of the Boson Practice Tests available at http://www.boson.com which support and contain the industry's newest testing methods of asking hands-on lab questions, drag and drop questions, and other simulation questions, where appropriate.

The Cisco CCNA Network Simulator is the most comprehensive product on the market for learning how to configure a Cisco router. The Cisco CCNA Network Simulator will not only help you become CCNA certified, but will actually help you learn and understand how to configure routers, switches, and networks.

LAB TUTORIAL

Lab 1 - Connecting to a Router



Basic Simulator Features

After installing Cisco CCNA Network Simulator, you can choose one of two ways to start the program. The first way is to double-click on the Cisco CCNA Network Simulator icon placed on your desktop during installation. The second way to start the Cisco CCNA Network Simulator is to click on your Windows® Start Menu (normally in your lower left hand corner), then choose Programs, Cisco CCNA Network Simulator, and finally select the Cisco CCNA Network Simulator icon.

You must agree to be bound by the terms and conditions of the End User License Agreement (EULA) to register, activate, or otherwise use, any portion of the software.

Overview

This tutorial will guide you through the 1st lab, using the Basic Features of the Cisco CCNA Network Simulator. We will only show you how to select a lab, configure the devices, and then grade the lab. The first lab that you will complete is very simple but will provide an understanding of the components of the Cisco CCNA Network Simulator and how they interoperate. Advanced features and more functionality will be covered later.

Simulator Components

The Simulator is actually a suite of programs that interact to provide a total learning experience. The primary components are:

- Lab Navigator
- Network Designer - *optional*
- Network Simulator
- Lab Grader

The purpose of the Lab Navigator is to allow you to view, select, and begin the lab of your choosing. The Lab Navigator provides a friendly interface for your learning experience.

The included Network Designer is the optional tool you can use to create your own custom network. Through this tool you can build a simple network, a complex network, or even model an existing network. Note that the Network Designer is not required to configure the included labs, as they are pre-created and require no additional configuration to complete as-is.

The Network Simulator is the tool that actually simulates the network and routes virtual packets. This program will allow you to control numerous devices and configure them as needed. The Network Simulator is not limited to just what is in the lab, it can do much, much more.

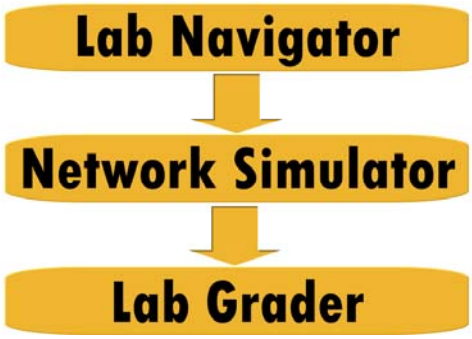
The lab grader will analyze the configuration you have completed and determine if you have completed the lab correctly.

eLearning Lab Flow

For a lab, the three basic parts are:

1. Use the Lab Navigator to load the lab, then
2. Use the Network Simulator to configure the Devices (Routers, Switches, Stations), and
3. Use the Lab Grader tool to check your lab answers (configs).

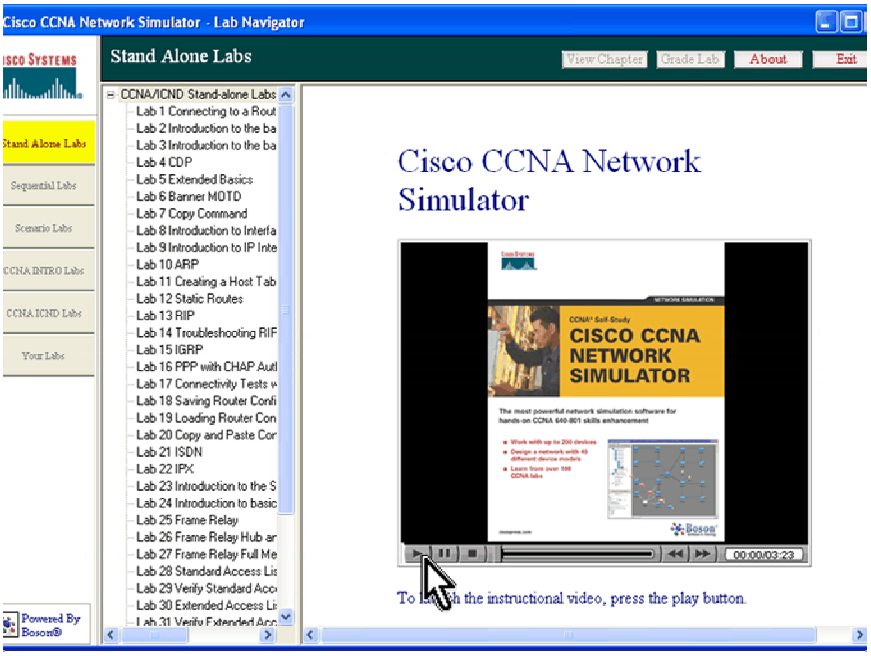
See diagram.



All three basic parts described above will now be covered in detail.

Part 1 – The Lab Navigator

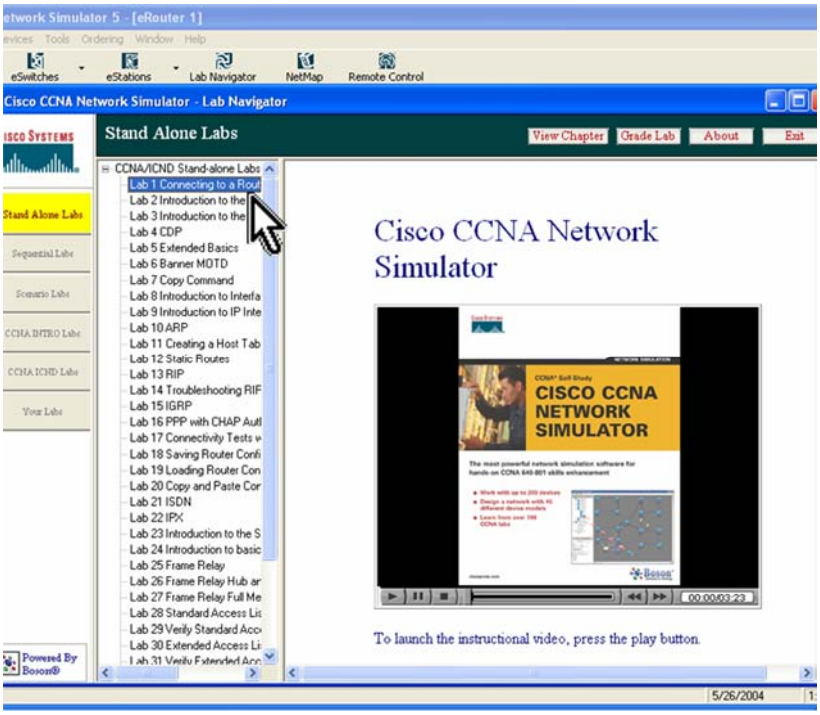
When opening the program you will encounter the first screen below. For a brief overview of the program, click the play button on the video window. This will show a short movie that will introduce you to all components of the program and describe how to use the program. The next couple of pages will further elaborate on the topics covered by the video.



Introduction Video

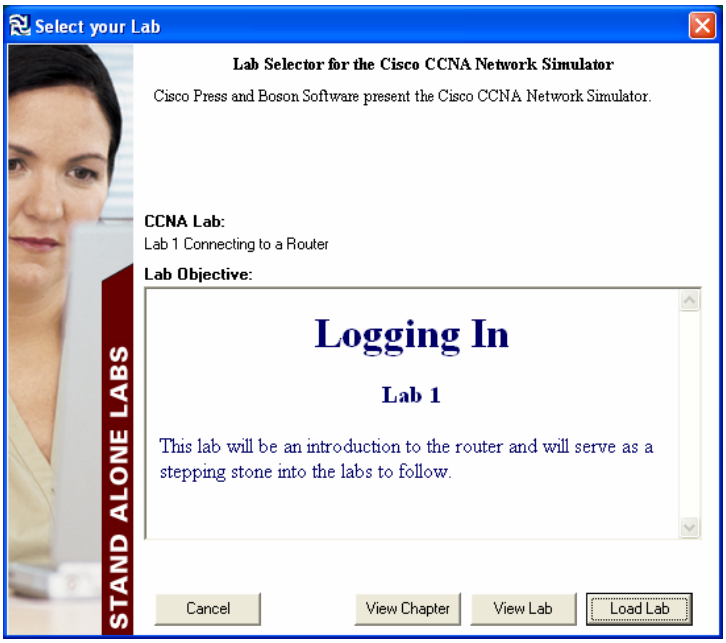
Note The "Advanced Labs" are broken out as the "CCNA INTRO Labs" and the "CCNA ICND Labs" within the simulator.

To get started with the lab, click on the Lab 1: Connecting to a Router lab.



Lab Navigator

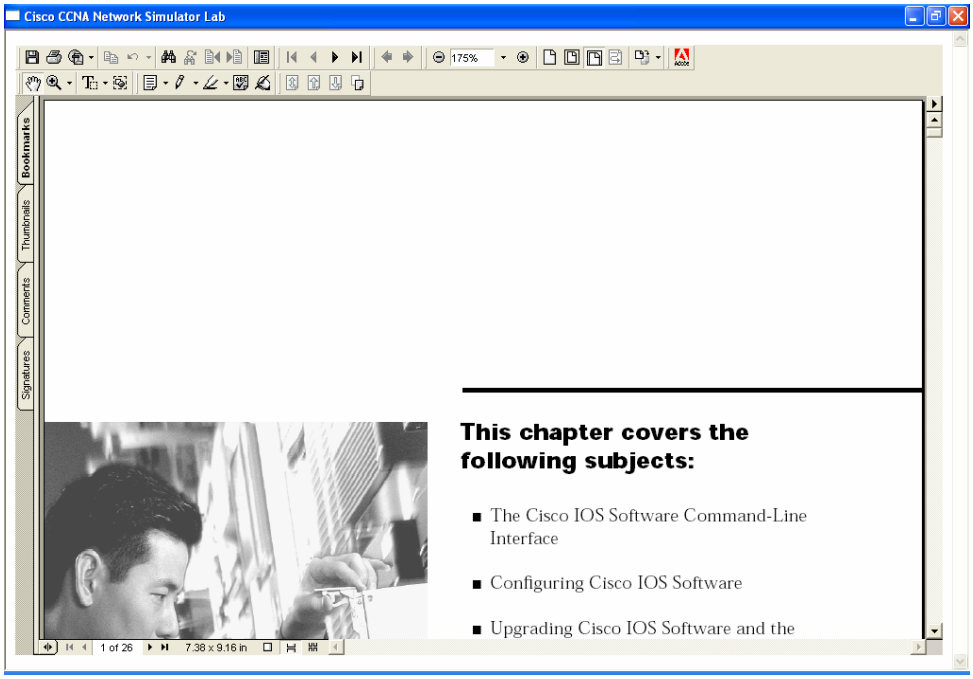
Click on the lab to bring up the 'Select your lab' screen. There will be a brief overview of the lab, and you will be given the option to view the chapter, view the lab, load the lab or cancel. Each of the buttons help you with the individual lab.



Starting a Lab

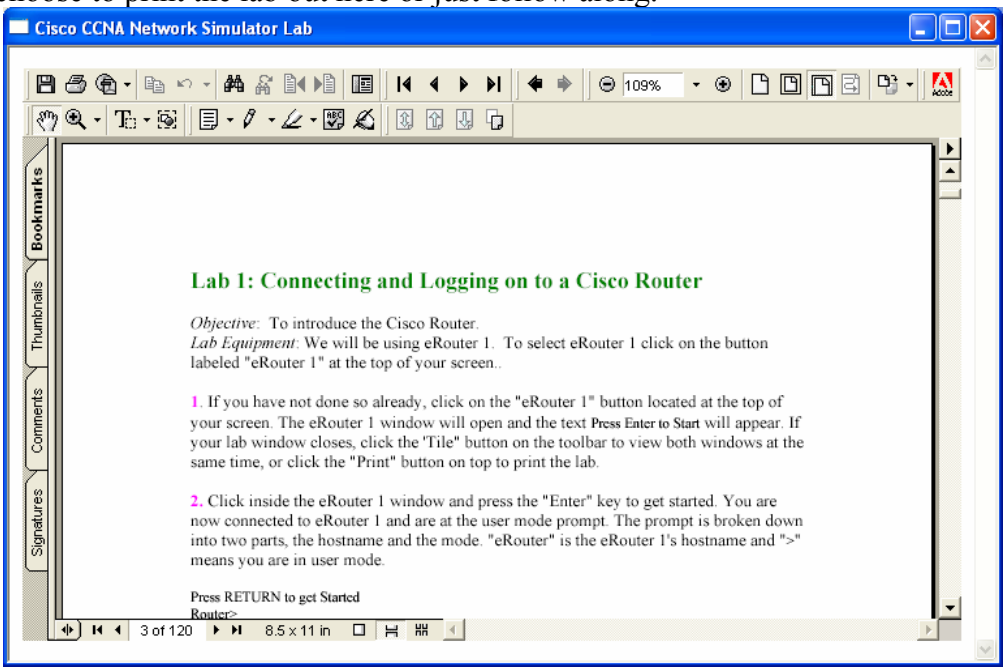
View Chapter

The View Chapter button will load chapters taken straight from the *Cisco CCNA Certification Library* also published by Cisco Press. This will provide the theory and explanation necessary to understand the lab.

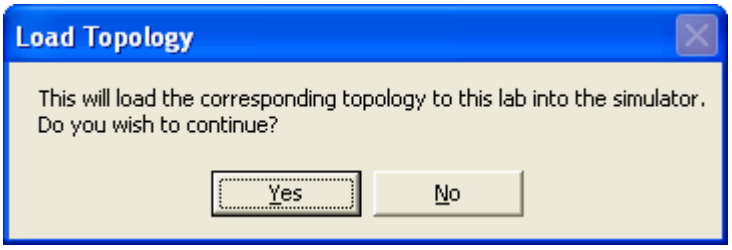


View Lab

The View Lab button will load the lab that you selected. This will open up in Adobe Acrobat. You can choose to print the lab out here or just follow along.



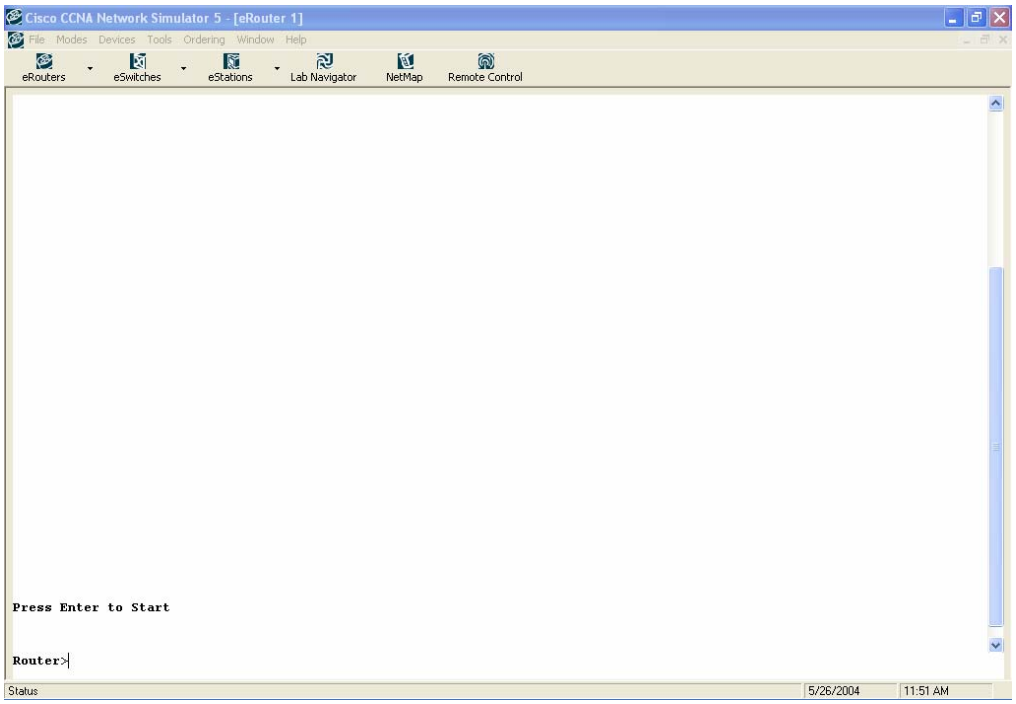
Load Lab
When clicking on the Load Lab button, you will be asked if you would like to load the corresponding topology into the Simulator. Selecting yes to this option will display the Simulator in the background creating new windows where each one represents a new device (eg a router, switch, or pc).



Proceed to Part 2.

Part 2 – The Network Simulator

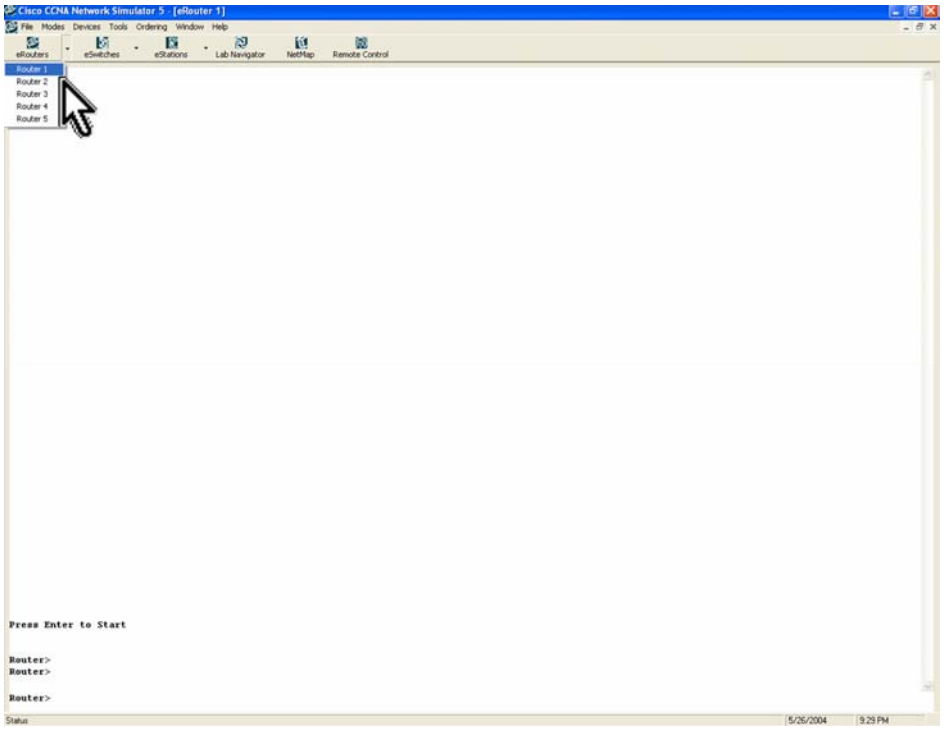
Once the lab is loaded, you will see the screen below:



After this device prompt screen is displayed, we are ready to begin the lab.

We will now follow the lab:

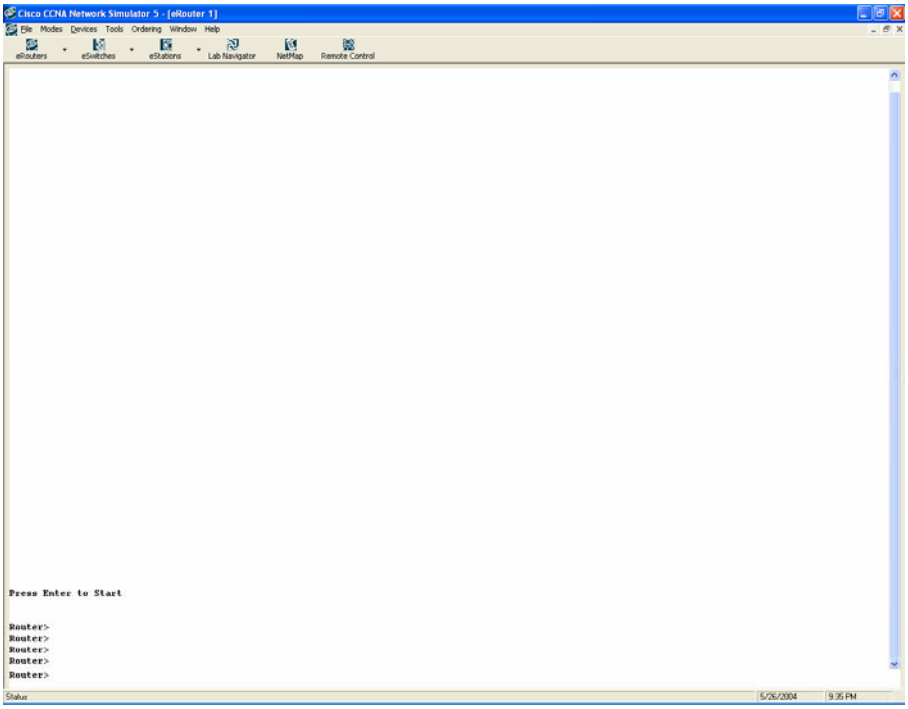
1. If you have not done so already, click on the Routers button located at the top of your screen and select "Router1". The Router1 window will open and the text “Press Enter to Start” will appear as follows:



Note the mouse pointer

2. Click inside the Router1 window and press the "Enter" key to get started. you are now connected to Router1 and are at the usermode prompt. The prompt is broken down into two parts, the hostname and the mode. "Router" is the Router1's hostname, and ">"means you are in usermode. Your input would be as follows:

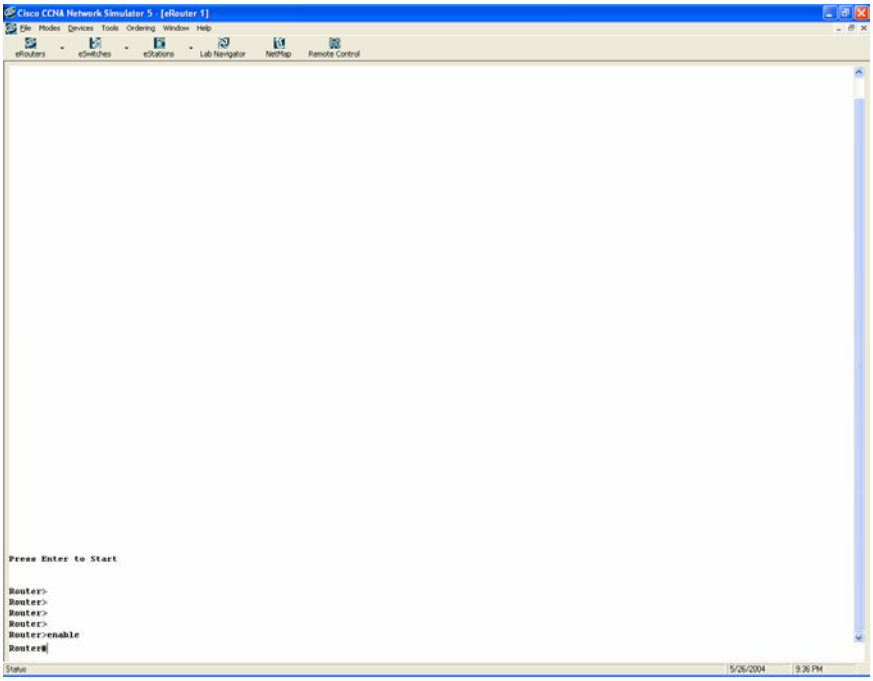
Press RETURN to get Started
Router>



Follow along in the lab

3. Next, type the command " enable"e to get to the privileged mode prompt. Your input would be as follows:

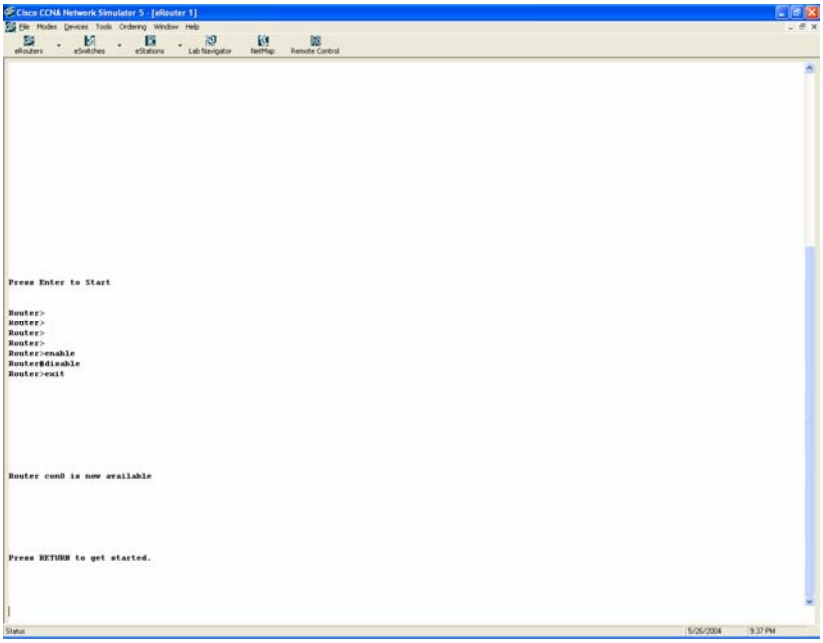
Router>enable
Router#



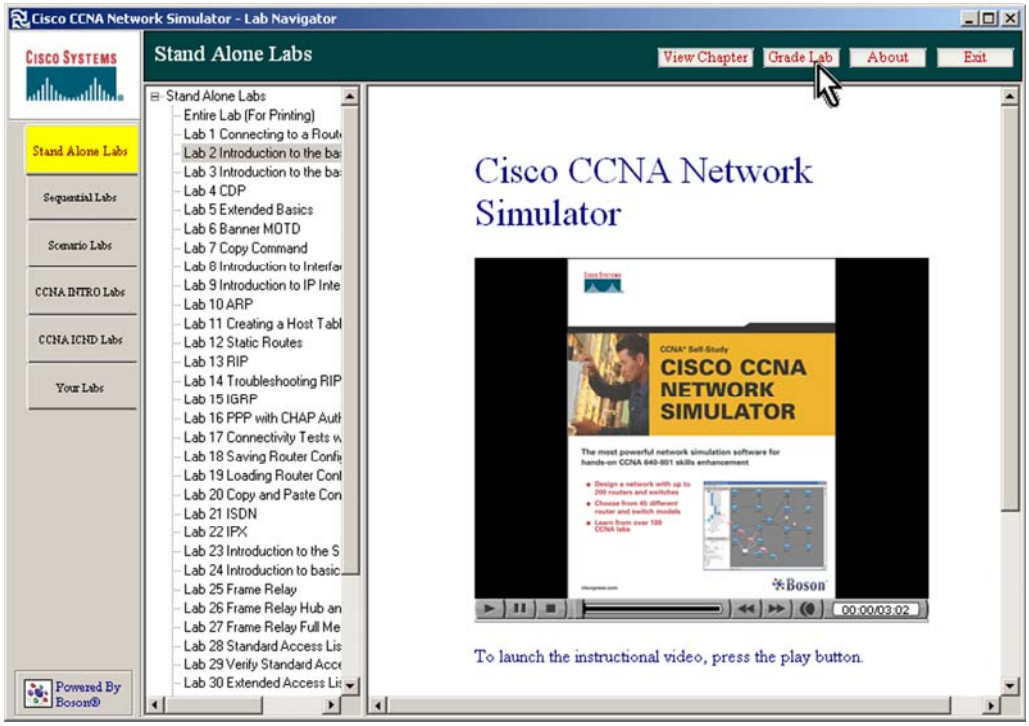
4. Last, to get back to the user mode, simply type disable. From the usermode type logout or exit to leave the router. Your input would be as follows:

Router#disable
Router>
Router>exit

Router con0 is now available
Press RETURN to get started



You have now completed all the steps in this introductory lab. To grade your lab, select the "Grade Me" button on the Lab Navigator, as follows:

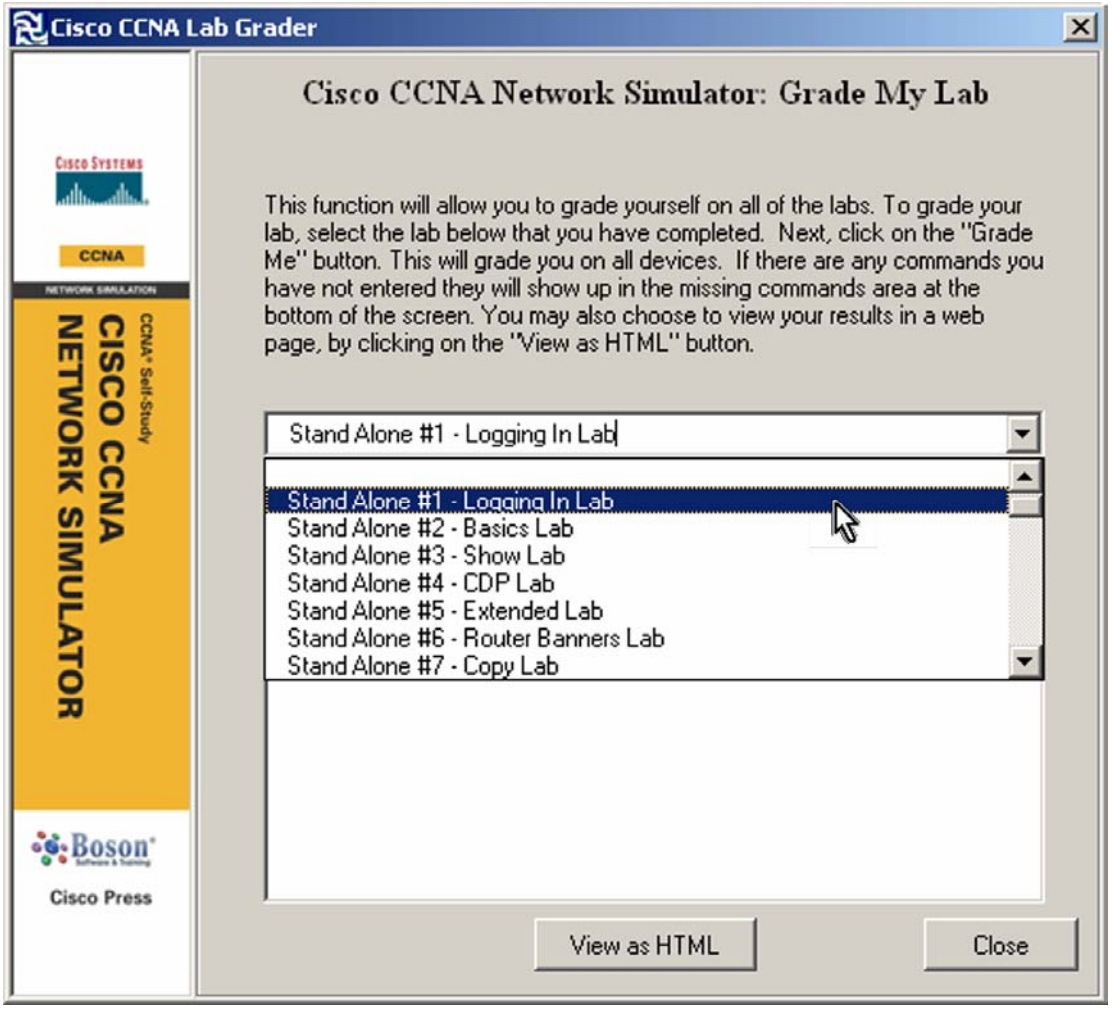


Starting the Grade Lab tool, from within the Lab Navigator

Finally, proceed to Part 3: The Lab Grader.

Part 3 – The Lab Grader

The Lab Grader is an easy to use tool for determining if you have completed the tasks as defined in the lab. This is a useful tool to ensure you are mastering the skills required for the CCNA.

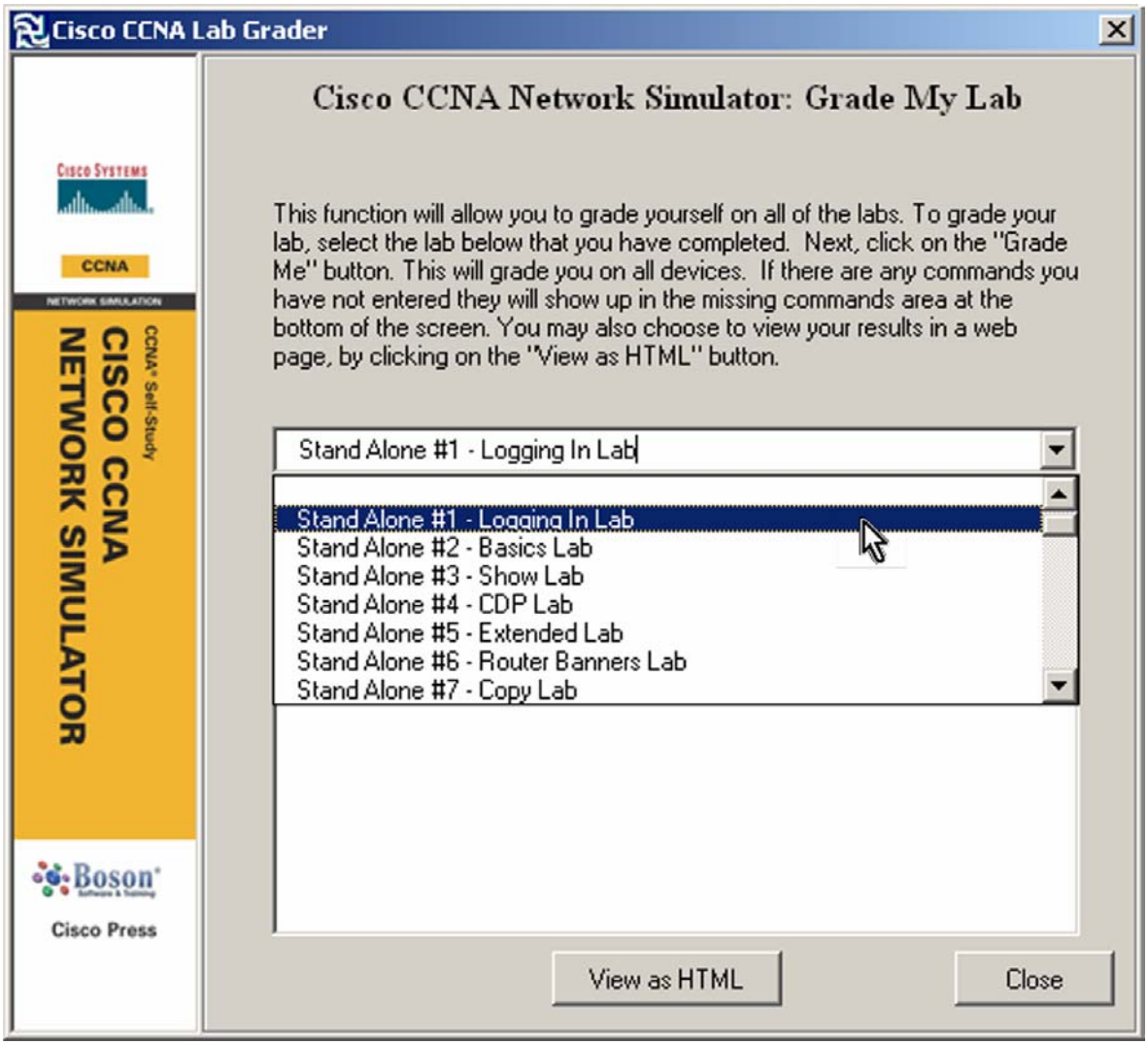


Scrolling through the list of labs to grade

The three basic steps to use the Lab Grader:

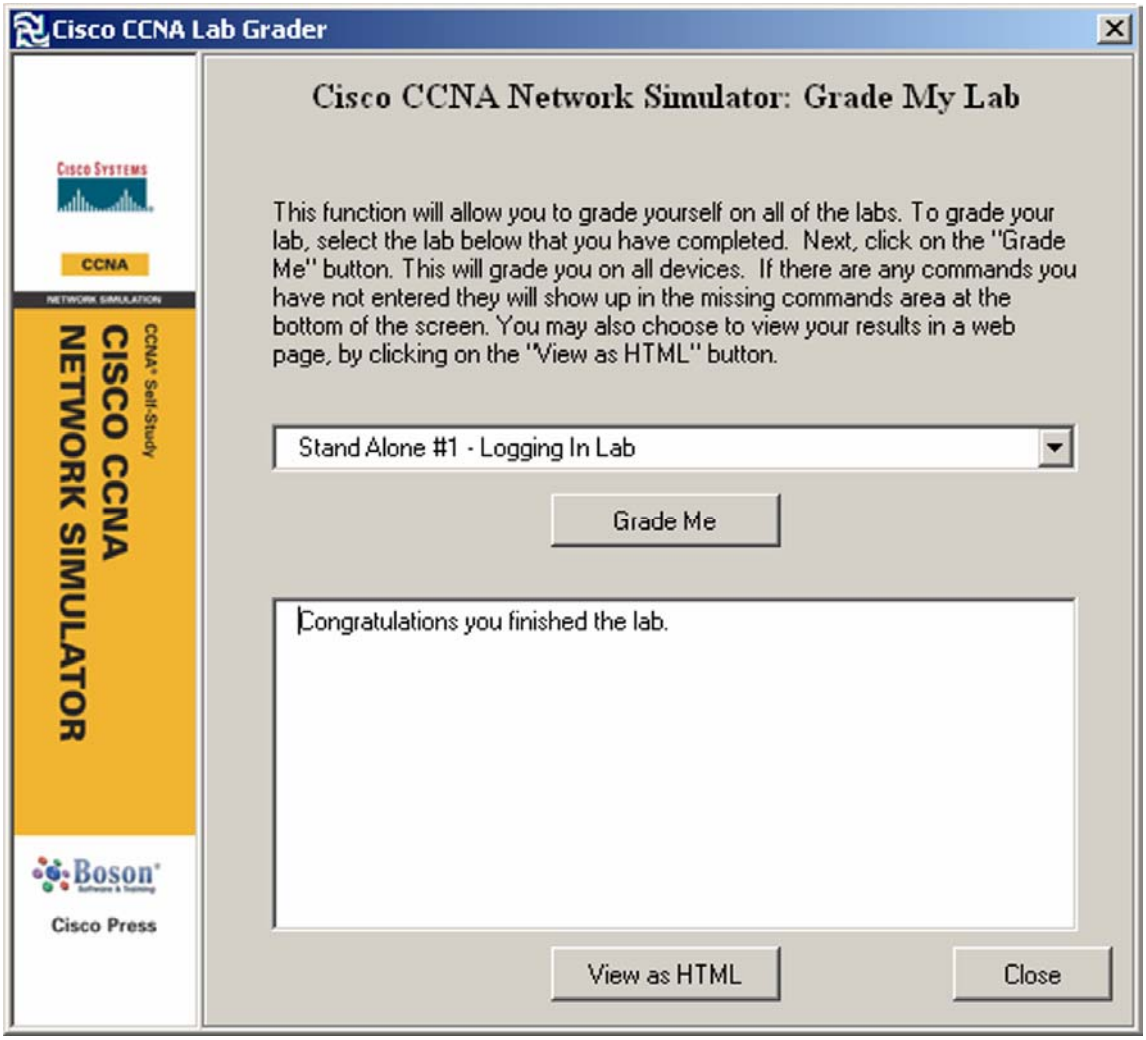
- Select the lab you have completed
- Tell the program to grade your lab
- Review the results.

Select the lab
To select the lab you are working on, click on the down arrow to the right of the drop down box and select the lab you are working on.



Selecting a Lab to Grade

Grade the Lab
After you have select the lab, click the Grade Me button. The program will then begin an analysis of your current router and switch configurations and compare that to the expected configuration of the devices.



The Lab Grader Results

Review Your Results

If your results are as above, you have completed all necessary commands to complete the lab's objectives, and are now ready to move on to the next lab. If not, you need to go back and fix the problems and grade the lab again. At this point you have completed the basic features overview, and are ready to move on to the advanced lab tutorial in the next section.

LAB TUTORIAL

Advanced Lab Tutorial & Walkthrough

Advanced Features Tutorial – Using Telnet

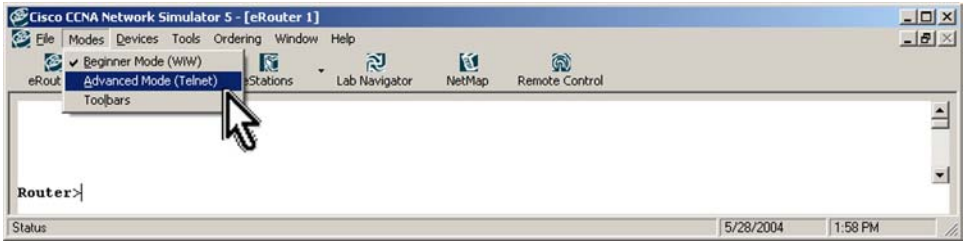
This tutorial will demonstrate the advanced mode within the Cisco CCNA Network Simulator. NOTE: This section assumes you have already gone through the Setup Wizard for Telnet. These advanced features are optional, and you do not have to complete this lab using the Advanced simulator features to properly complete the lab or prepare for the CCNA. However, the advanced mode will teach you valuable skills that will aid you in the field and in the real world. Otherwise, you can complete this lab using the Basic functionality of the simulator as described in the previous section.

Step 1 - Load the Simulator

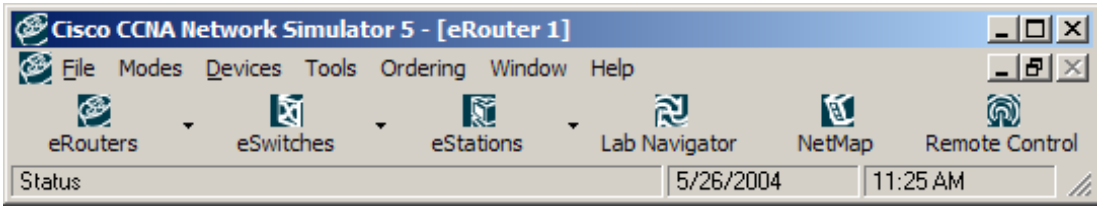
To get started, launch the Cisco CCNA Network Simulator.
Select Lab 2 from the "Stand Alone Labs" option within the Lab Navigator.
When the lab description screen loads, click the "Load Lab" button to launch.

Step 2 - Set Advanced Mode (Telnet)

From within the Cisco CCNA Network Simulator, select the "Advanced Mode (Telnet)" option under the "Modes" pull-down menu, as follows:

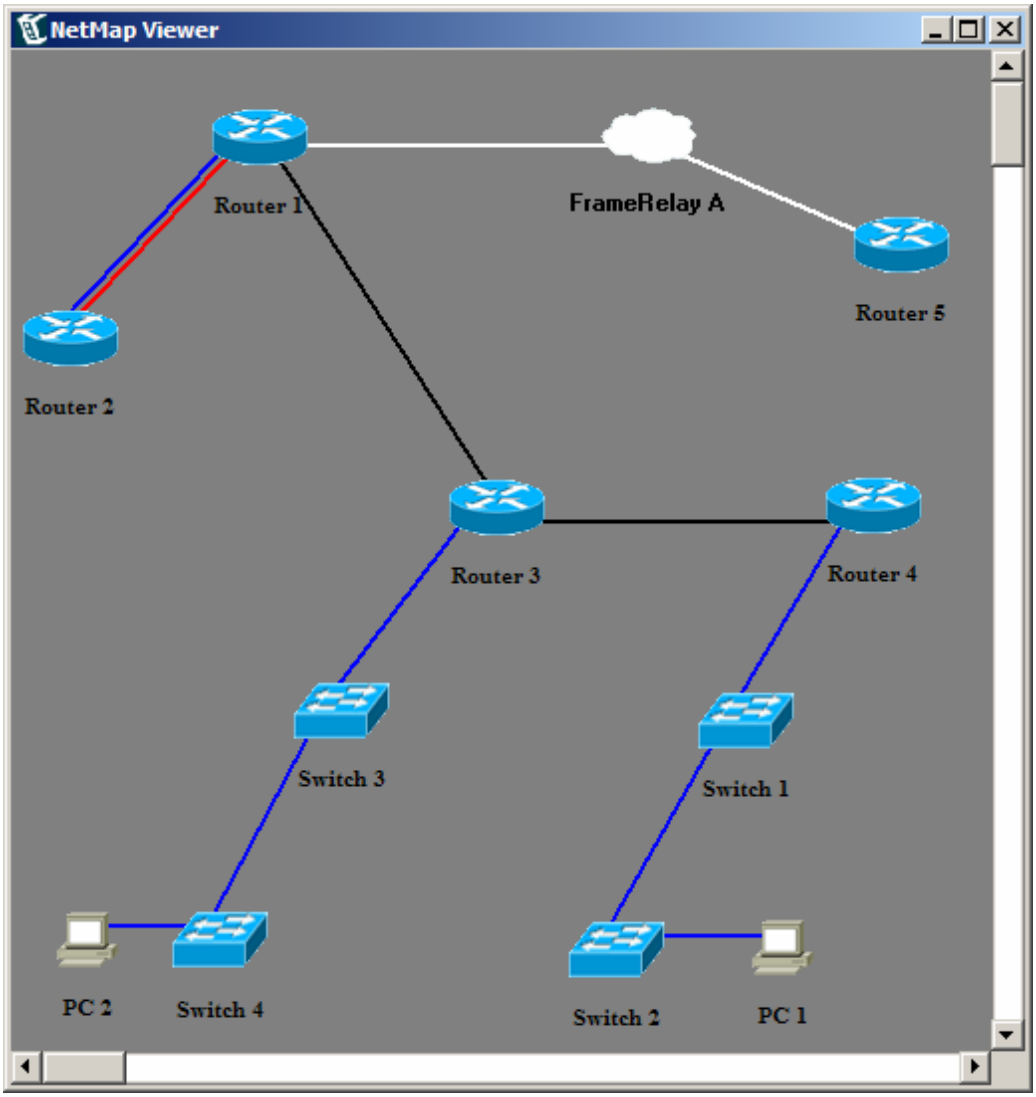


After the Control Panel appears (horizontal toolbar), simply click on the *NetMap* button to review the currently loaded default network topology.



The Cisco CCNA Network Simulator Control Panel horizontal toolbar

This will launch the NetMap Viewer application as a separate process, so you can ALT-TAB between your network diagram and the other Cisco CCNA Network Simulator components. The default NetMap for the lab is shown below:



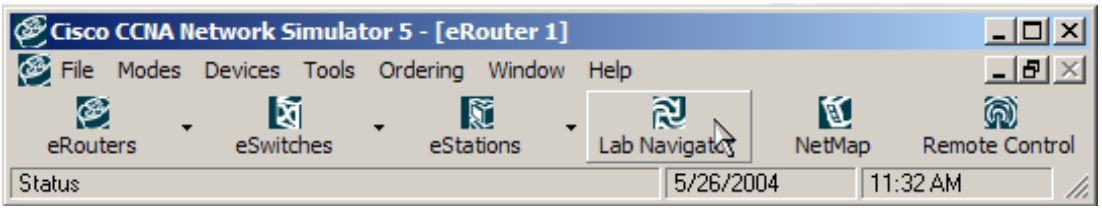
The NetMap Viewer, showing your Current Network Diagram

Color legend, as defined in the Cisco CCNA Network Designer

- Blue is Ethernet
- Red is ISDN/Dialup or PRI
- **Black** is Serial PPP
- White is Serial Frame

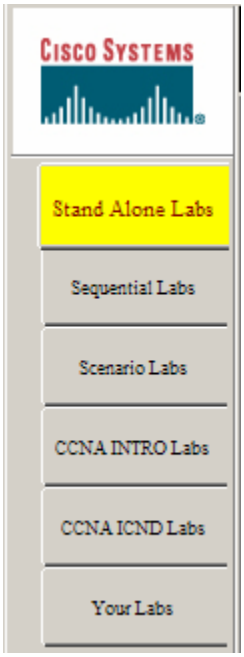
Step 3 - Lab Navigator Utility

To start a lab or lesson, click on the *Lab Navigator* button on the top horizontal tool bar (as shown below), or select it from the pull-down menu under the Window category. This launches the Cisco CCNA Lab Navigator application as a separate process, so you can ALT-TAB between the labs and multiple telnet windows.



The easy way to load the Lab Navigator utility

Within the Lab Navigator, you can access the included labs by selecting a section, which is illustrated by use of tabs, and then by selecting one of your lab choices from within the labs list that appears.



Tips:

The labs are organized into sections to match the Lab Navigator content bar, as shown to the left.

Note The "Advanced Labs" are broken out as the "CCNA INTRO Labs" and the "CCNA ICND Labs" within the simulator.

Step 3: Continued

For the purpose of this lab walkthrough tutorial, please select the Stand Alone labs selection, which will show all of the labs found in that category.

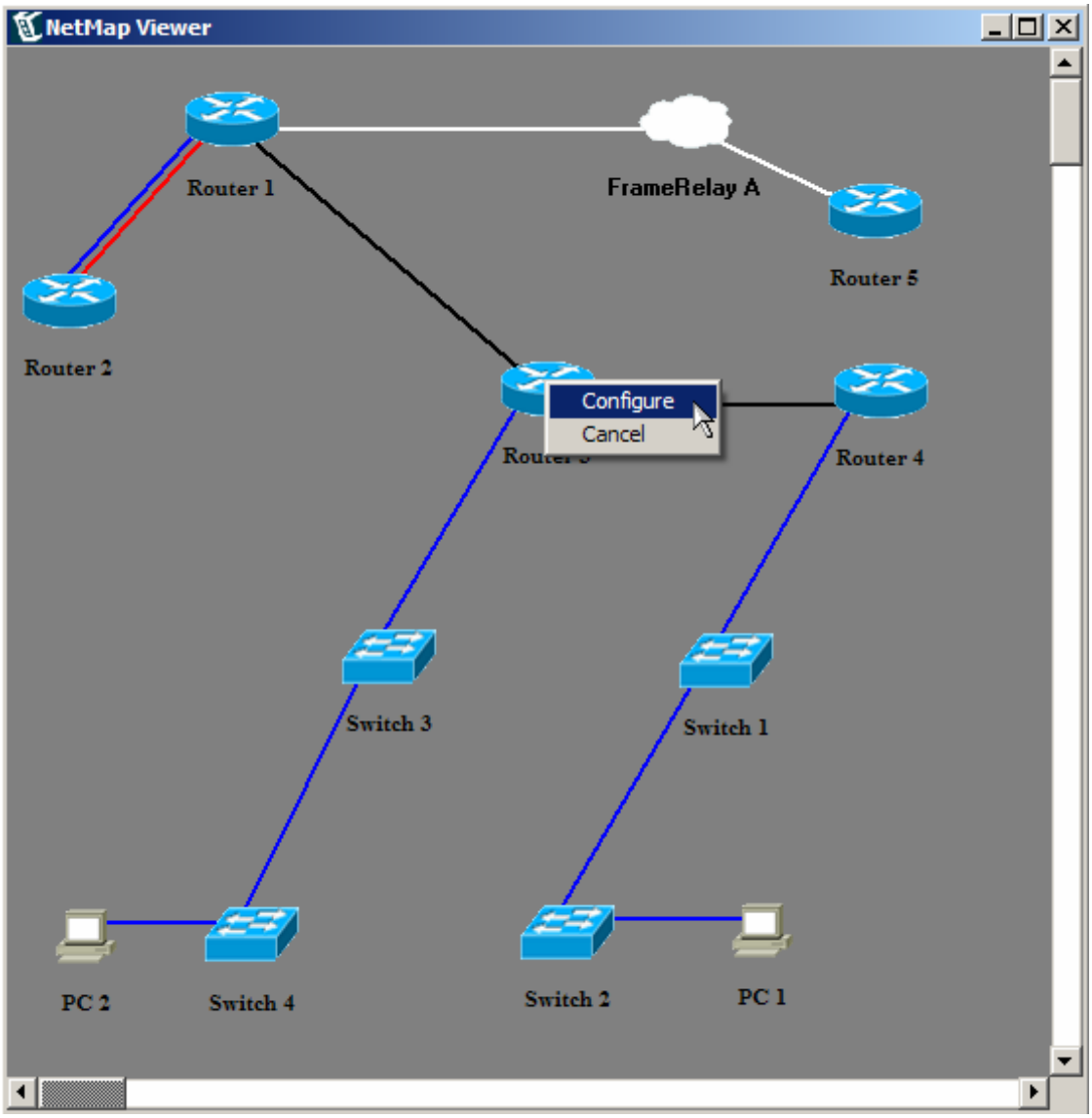
Next, select Lab 2, "The Basics". This is the lab we will use for use this tutorial.

Lab 2 from the Stand Alone Labs

Step 4 - Different Methods for Telnet in Advanced mode

There are a total of four (4) methods for launching your default telnet program and automatically connecting to the selected Device. Pick one to continue with the tutorial, or try experimenting with all four methods. The first step of this lesson's lab is simply to connect using telnet to Router1.

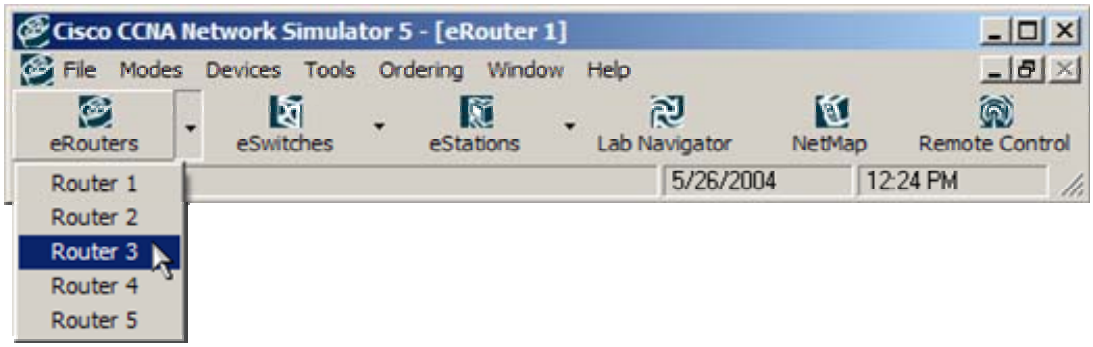
Telnet Method 1 of 4: Directly from within the NetMap viewer, *Right-Click* on Router1 (or any Device), and select "Configure". (Note that if you Double-Click on the Device instead of right-clicking, a Device statistics window will appear instead of telnet).



The moment you select "Configure", your default Telnet will connect to the selected Router1.

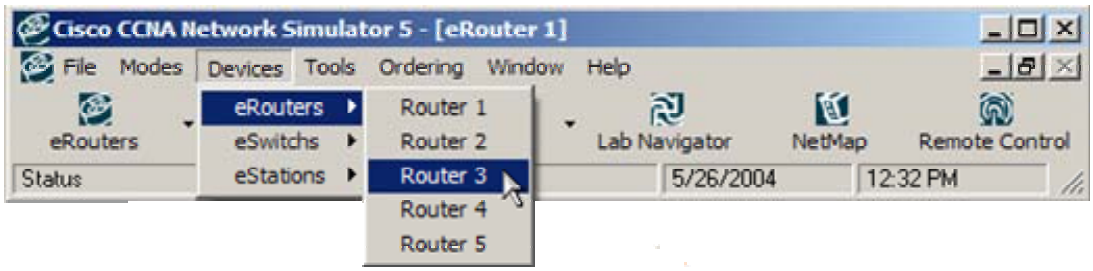
Step 4: Continued

Telnet Method 2 of 4: Left-Click on the "Routers" button on the Control Panel (top horizontal toolbar), to receive a list of Devices currently configured within the existing NetMap Topology.



The moment you select "Router 3", your default Telnet will connect to the selected Router 3.

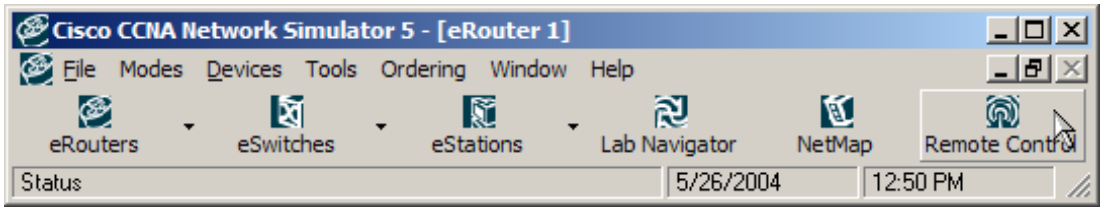
Telnet Method 3 of 4: Select "Devices" from the Control Panel pull-down menu, and then expand "Routers" by simply running the mouse over it, and finally select Router 3.



The moment you select "Router 3", your default Telnet will connect to the selected Router 3.

Step 4: Continued

Telnet Method 4 of 4: If you have closed the Remote Control vertical toolbar, please re-launch the toolbar by clicking on the "Remote Control" button within the Control Panel horizontal toolbar:



The easy way to re-launch the Remote Control vertical toolbar

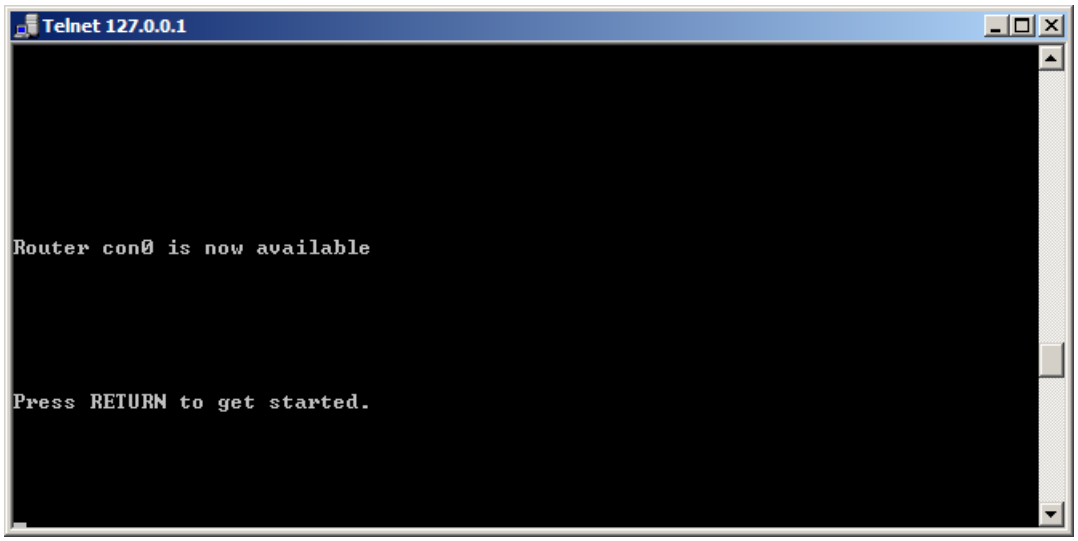
From the Remote Control vertical toolbar, click on the "Telnet to Router" button to receive a list of Routers currently configured within the existing NetMap Topology:

The moment you select "Router 3", your default Telnet will connect to the selected Router 3.

Step 5 - Configuring Router 1 with Telnet

Assuming you are using the default telnet.exe provided by the Windows operating system, you should see a Telnet window with the default Cisco router prompt of "Router>" for Router 3. With what you've just learned, select Router 1.

Carry out the instructions in Lab 2. When you have completed step 8, which is the last step in that particular lab, you would have been shown how to log off of the router. When you type "exit" you will effectively logoff the Router, however, telnet will still be open:

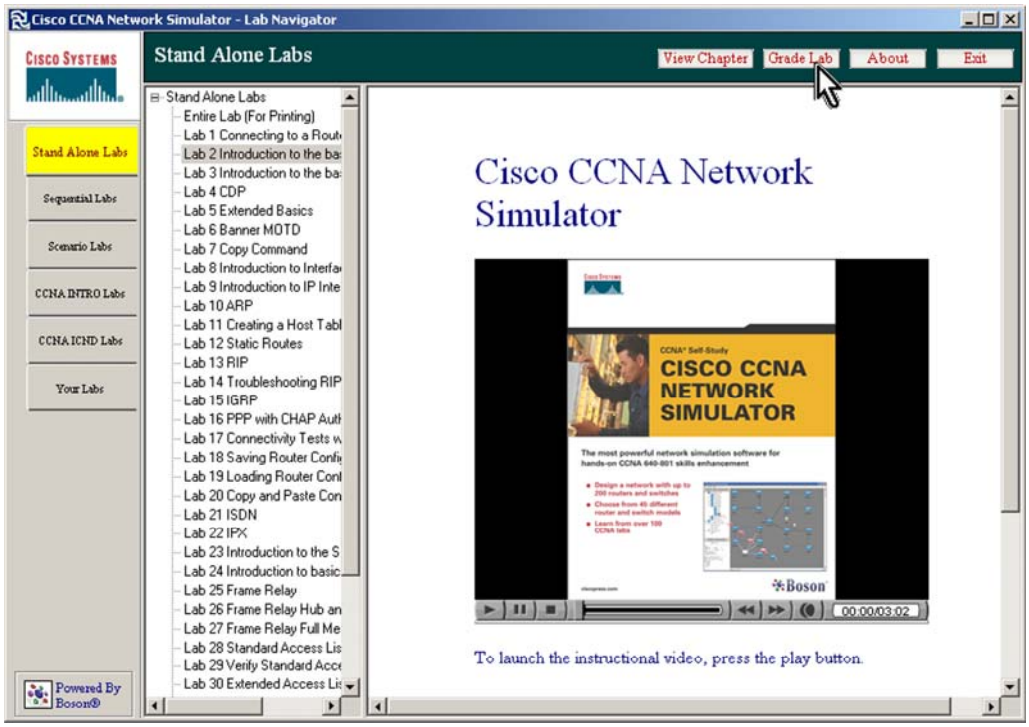


Default Telnet window attached to Router 1, showing the result at the end of Lab 2.

DO NOT close telnet.exe yet, let's grade your lab with the Cisco CCNA Network Simulator lab grader tool first!

Step 6 - Self-Grade Your Lab

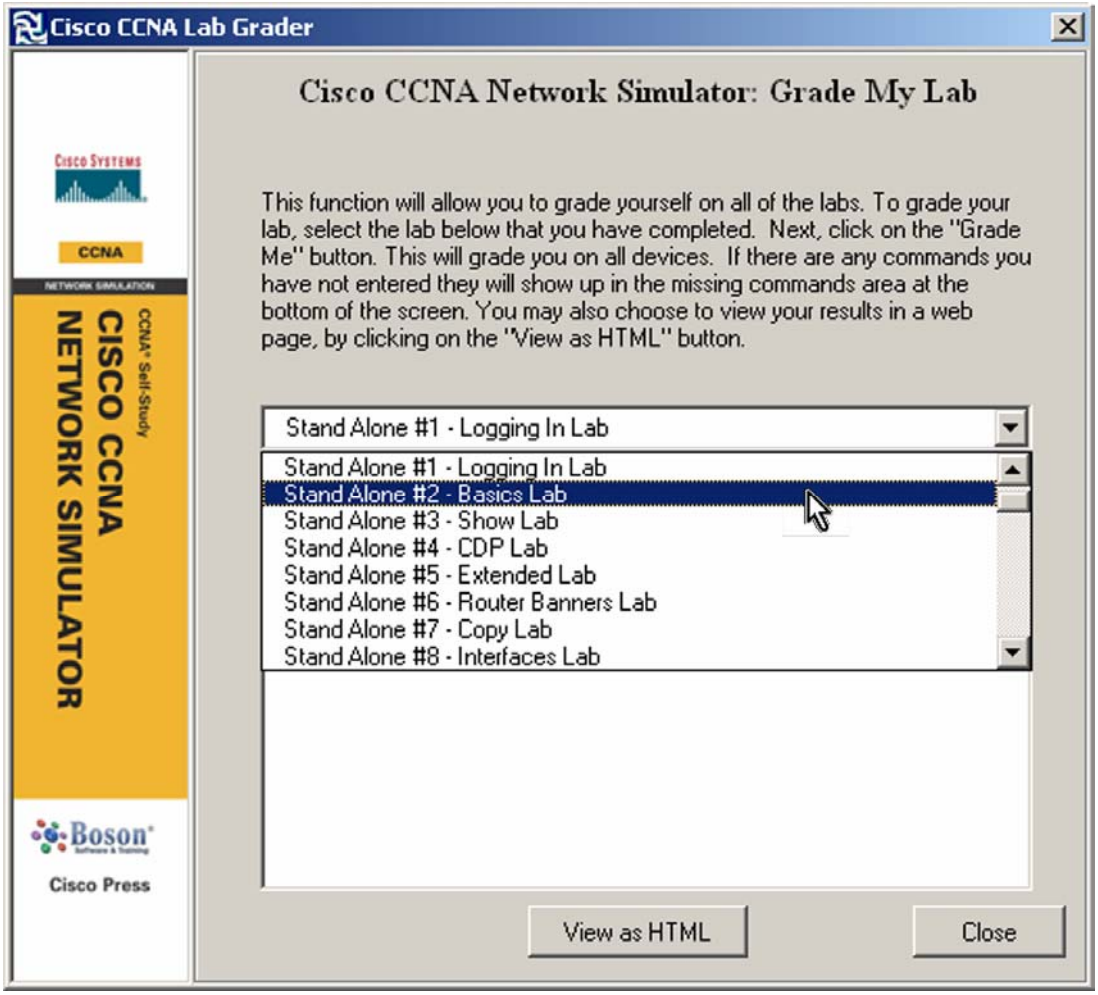
From within the Lab Navigator select the Grade Lab button at the top of the screen.



The "Grade Lab" feature can verify your router configs for the included labs

Once you left-click on the "Grade Lab" menu selection, the Self Grading utility will launch, and default to the Lab in the drop-down list that you last loaded.

Self Grade, Continued…

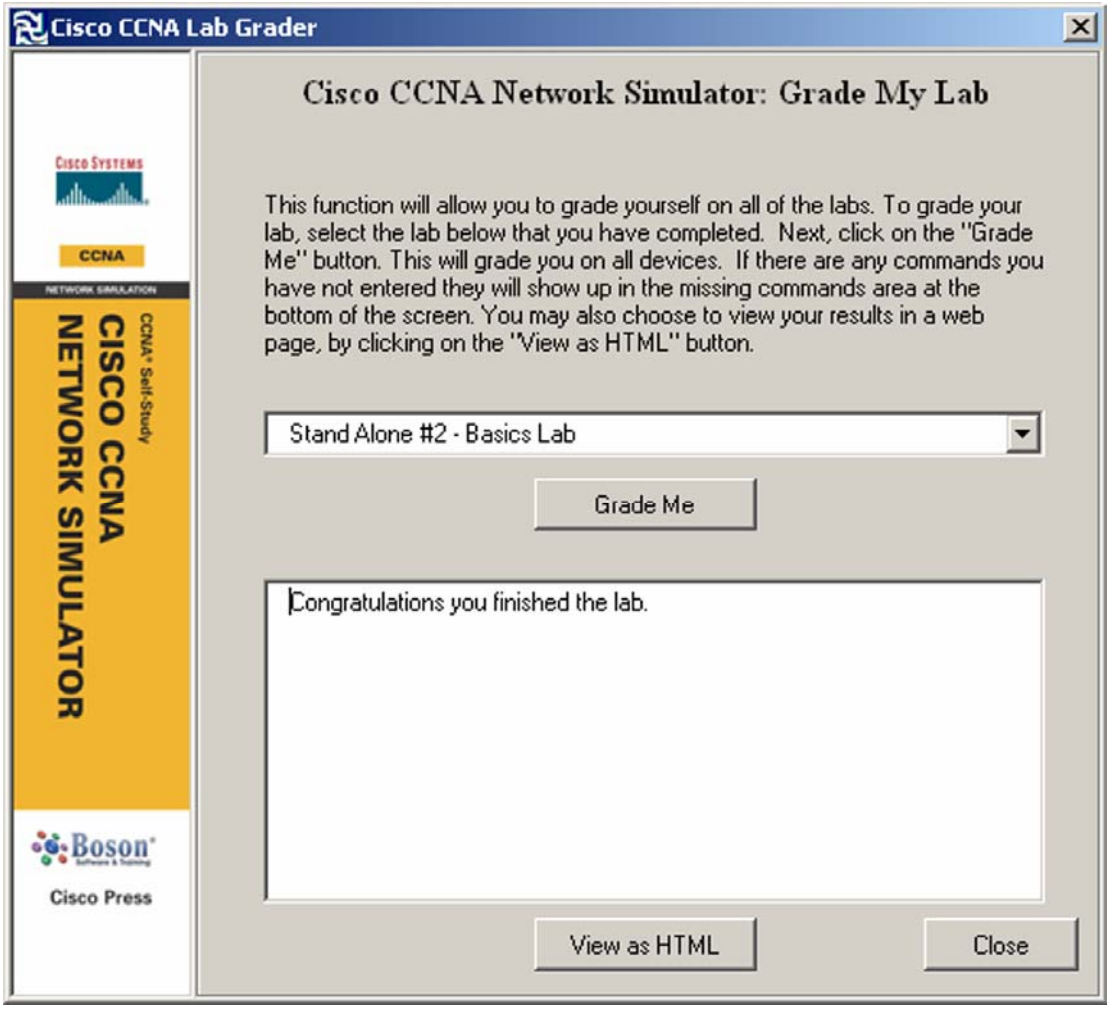


Selecting Lab #2 to Grade

It is important to note that the self-grade utility must be expecting the included lab configuration to function properly. This means that if you are practicing labs that are not the included within the Cisco CCNA Network Simulator labs, then this feature must first be configured to expect the correct lab input.

From within the Grade My Lab screen, use the pull-down menu to select Lab #2, and then click the "Grade Me" button. You should see the results as shown here:

Self Grade, Continued…



If any Device config had an error, it would be displayed in the box below the Grade Me button.

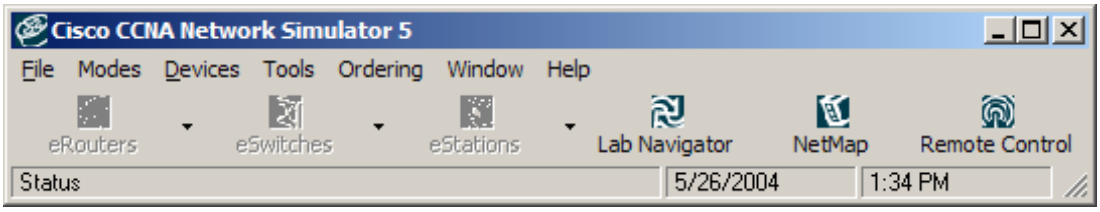
You may now close your telnet program; to do so in the normal Windows fashion, click on the standard upper-right hand corner "X" button (the standard close window button).

Congratulations! You have completed the Advance Lab Tutorial & Walkthrough

Feature Overview

Control Panel (main menus)

Located on the top of the Control Panel (horizontal toolbar) page and accessed one of two ways. The first way is to move the mouse cursor over the Word in the Menu bar and click to open additional menu features. When you find the option you would like to choose, click on it.



You can also hit the ALT key located next to the space bar, push the down arrow and it will also display the contents of the menu bar, or simply press ALT+Underlined letter in the menu bar (i.e. ALT-F brings up the File menu).. You can then use the arrow keys to display the rest of the menu bar. When you find the option you would like to choose, move until it is highlighted and press ENTER.

The first part of this feature overview will cover the main pull-down menus, from left to right.

The second part of the feature overview will cover several advanced buttons along with their purpose, from right to left:

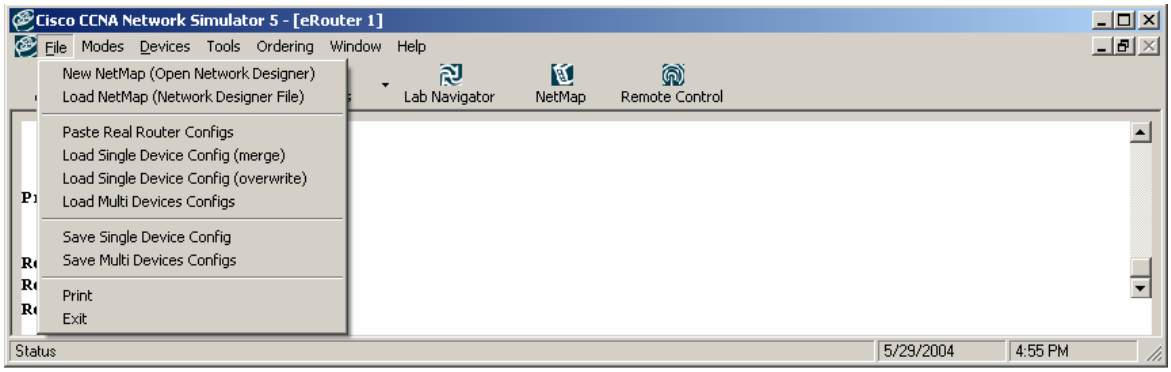
- **Remote Control** button
- **NetMap** button
- **Lab Navigator** button (covered in detail in the Lab Navigator section)

PART 1: MAIN MENU'S

The first part of this feature overview will cover the pull-down main menus, from left to right.

Control Panel - File Menu

Under the File Menu:



New NetMap (Open Network Designer)

Opens the Cisco CCNA Network Designer, which allows you to design a new network topology (NetMap). The topology file (***.top**) will need to be saved within the Network Designer for use with the CCNA Simulator.

Load NetMap (Network Designer File)

Loads the saved Network Designer file (NetMap topology in *.top format), into the Cisco CCNA Network Simulator, which allows you to configure the Devices.

Paste Real Router Configs

Paste the running config from a real router setup with this tool. It will open a small window in which you can then paste your config and the config will be loaded into the active router.

Load Single Device Config (Merge)

Keeps your current Device configuration and loads the Device configurations stored in your previously saved configuration files (*filename***.rtr**). This is NOT how to load a new Network Designer (*.top) file into the Cisco CCNA Network Simulator. To do that, select the Load NetMap menu option under the File pull-down menu.

Load Single Device Config (Overwrite)

Erases your current Device configuration and then loads the saved Device configuration from your saved files (*filename***.rtr**). This is NOT how to load a new Network Designer (*.top) file into the Cisco CCNA Network Simulator. To do that, select the Load NetMap menu option under the File pull-down menu.

Load Multi Devices Configs

The Cisco CCNA Network Simulator will reload your last saved "snapshot" of every single Device configuration that was previously saved using the "Save Multi-Devices Configs" option.

Save Single Device Config

Saves an individual Device config to load with a real Device or with the Cisco CCNA Network Simulator at a later time. Note: All files are saved as "*config*.**rtr**" format.

Save Multi Devices Configs

The Cisco CCNA Network Simulator will take a "snapshot" of every single Device that is currently loaded in the Cisco CCNA Network Simulator, and allow you to save ALL of your Device configs to disk at once. In effect, this is like making a TFTP config backup of all Devices (routers, switches, and stations) on your entire network, with the click of a button. Note: This will save one *.RTR file, for each Device currently loaded in the Cisco CCNA Network Simulator. This will also save one *.NWC (network configuration) file, that will be used to link all the *.RTR files together.

Print

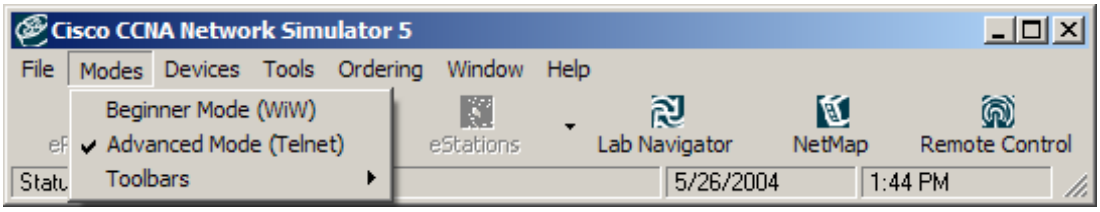
Prints a screenshot of the current workspace.

Exit

Quits the program.

Control Panel – View Menu

Under the View Menu



Beginner Mode (Window – in – Window)

Window – in – Window Interface will open the main window and display the Router 1 screen. From this screen you can access all of the additional features of the Cisco CCNA Network Simulator or continue to work with Router 1. Switching between the different devices is as easy as clicking on the button of the device you would like to configure. You can also use the F keys to switch between devices. F1 is for Device 1, F2 is for Device 2 and so on.

Advanced Mode (Telnet)

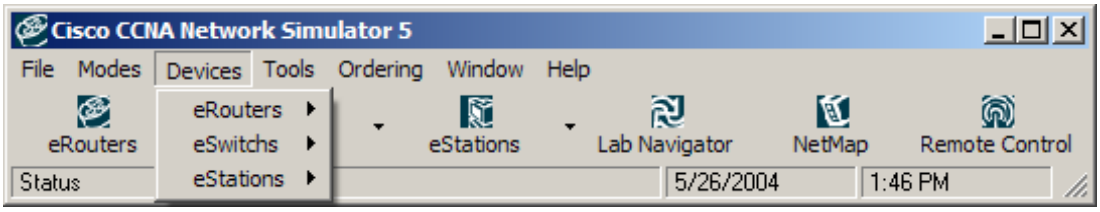
Telnet Interface will hide the main window and also bring up the Remote Control. You can turn off the Remote Control by clicking on View, selecting Toolbars and Clicking on Remote Control. Telnet interface gives you the option to launch Routers, Switches and Stations as well as the Lab Navigator and NetMap. This view will bring up a different Telnet window for each device you would like to configure. When you are finished configuring the device you can just close the Telnet window. The Simulator also has a built in method of switching between devices inside of one Telnet window. When you are ready to connect to a different device, you can also use the hotkey **CTRL-Q** (press down Control and Q key at the same time). That will bring up a menu listing of all devices available, using the Virtual Terminal Server. See the Virtual Terminal Server section for more details.

Toolbar/Remote Control

The Remote Control is a new addition to the Cisco CCNA Network Simulator and is designed to allow for easy navigation while using the program. The features of the Remote Control include buttons for quick launching to the Devices along with easy access to the Lab Navigator and the Net Map. You can also switch views or hide the main screen. This makes the Remote Control the easiest way to interface with the different devices within the program.

Control Panel – Devices Menu

Under the Devices Menu



Permits fast and easy access to the various simulated device command prompts, which are within your simulate network.

eRouters

The Emulated Routers used in the Cisco CCNA Network Simulator are designed to replicate real routers by simulating commands, routing tables, protocols and interfaces.

eSwitches

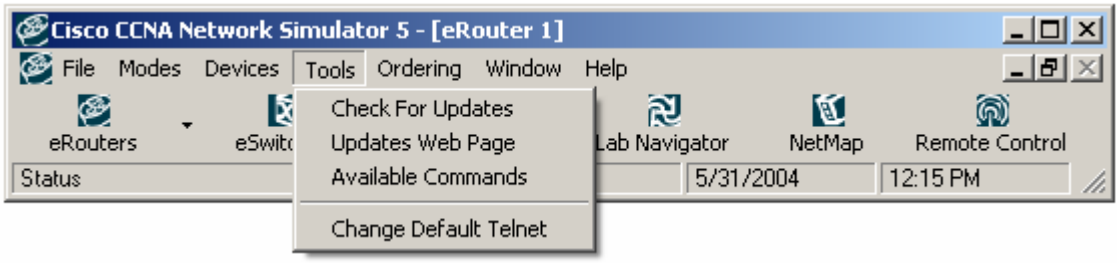
The Emulated Switches used in the Cisco CCNA Network Simulator are designed to replicate real switches by simulating commands, bridge tables, protocols and interfaces.

eStations

The Emulated Stations are simulated personal computers running the Boson Operating System Simulator (BOSS) command-line interface. The Stations are comprised of non-descript PC's with 1 Ethernet connection. When you Telnet to the Station, the BOSS command window will open. Type "?" for a list of available BOSS commands, or "help" for an overview.

Control Panel – Tools Menu

Under the Tools Menu



Check For Updates

This option will load a program to automatically check with Boson's update server and determine if there are any product updates available. If there are available updates for any of the components, the program will list them separately and give you the option to easily download and install them. As with any software product, it is suggested that you check for product updates, feature enhancements, and bug fixes, which may not have been available at the time of physical duplication. Updates can be obtained free of charge for a period of 90 days from the date of registration and activation.

Updates Web Page

If you do not have Internet access on the computer you wish to check for updates, or you are behind a firewall that restricts the update utility, then you can also use the more traditional manual update method of downloading a product update file for later installation. Update files can be manually downloaded for a period of 90 days from the date of registration and activation from http://www.boson.com/netsim/cp

Available Commands

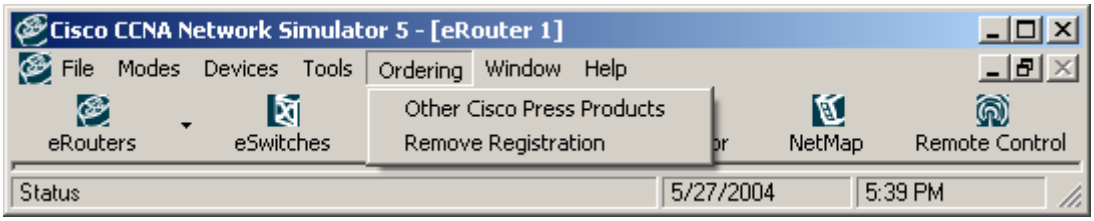
Clicking on this feature will open a new window giving you the choice to display the current available commands for the routers and switches. You can also choose between the different command modes which include User, Privileged, Configuration, Interface and All Modes. Selecting the different modes gives you option to view the available commands for each mode or all of the commands together.

Change Default Telnet

This feature allows individuals and companies to set-up their Telnet application to default to your favorite telnet program, and even supports passing custom command-line settings to the EXE.

Control Panel – Ordering Menu

Under the Ordering Menu



Other Cisco Press Products

No additional purchase or upgrade is required once the software is registered and activated, using the included Unique Serial Number (license key). Once registered, all functionality is unlocked and the full version is fully operational. This option is only to inform you of special offers and other products available from Cisco Press and its partners, by optionally bringing you to the Cisco Press web site.

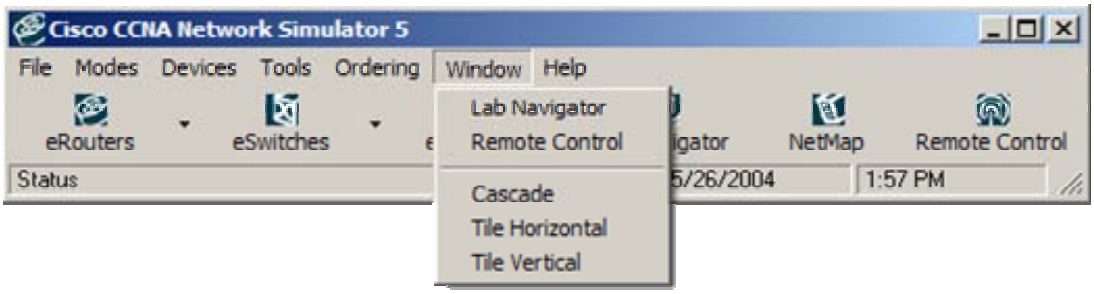
Remove Registration.

This special option should never be used unless instructed to do so by Boson technical support. This option will permanently remove your Unique Serial Number (license key) from your computer, and generate a special unique removal code. You should keep a copy of the removal code, and your correspondence with Boson's technical support instructing you to do so, for your own records.

CAUTION: This function is used to remove the license from your computer. Selecting this feature will open a new window to Remove the registered version of the Cisco CCNA Network Simulator from your computer. To complete the process of removing the Cisco CCNA Network Simulator license key from your computer, type 99 into the open space and Click OK. If you do not want to complete this operation; click on Cancel.

Control Panel – Window Menu

Under the Window Menu



Lab Navigator

The Lab Navigator is designed to assist by supplying an easy way for the user to see all the labs and lessons available in the CCNA Network Simulator. The Lab Navigator also provides the user with a simple way to select the lab they would like to try by simply clicking on the name. You can also use your arrow keys to maneuver through the menu and the Enter key will select the lab or lesson you would like to run.

Remote Control

The Remote Control toolbar is critical to navigating the CCNA Network Simulator, and is designed to allow for ease of use. The features of the Remote Control include buttons for quick launching of the Telnet to Router, Telnet to Switch, Telnet to Station, Lab Navigator, or NetMap. You can also switch views or hide the main screen.

Cascade

Clicking on Cascade will layer the all of the currently open windows on top of each other displayed within the Cisco CCNA Network Simulator unless the window is minimized at the bottom of the work space. If the window is minimized, it will be displayed as a menu bar at the bottom of the workspace and contain the name, Lab Navigator or name of the device.

Tile Horizontal

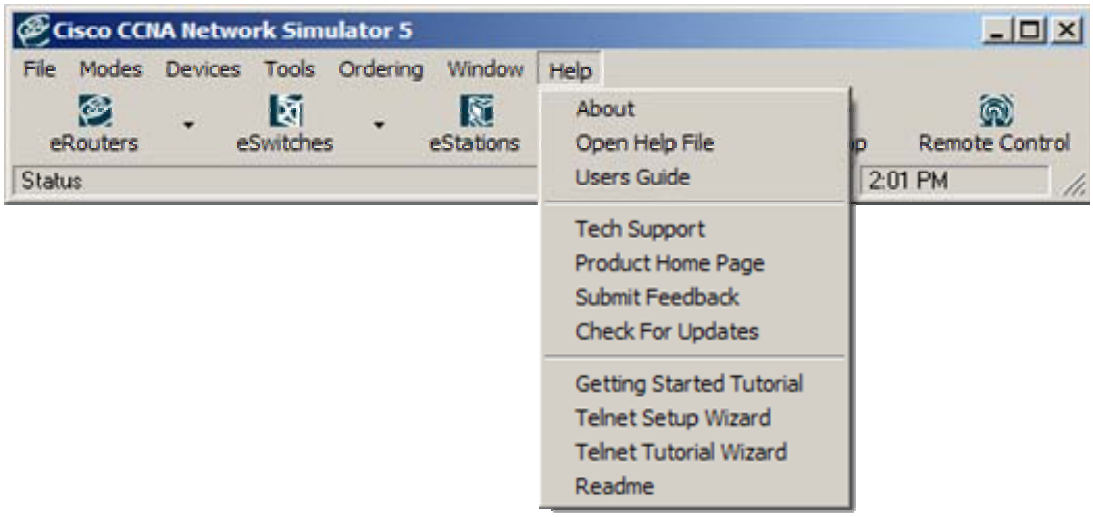
Clicking on Tile Horizontal will place windows horizontally (left to right) across the screen so that they do not overlap.

Tile Vertical

Clicking on Tile Vertically will place windows vertically (top to bottom) on the screen so that they do not overlap.

Control Panel – Help Menu

Under the Help Menu



About

Clicking on the About button will display basic information about the Cisco CCNA Network Simulator version and company information. You also have the option in this window to view your system information by clicking on the System Info button within the About screen.

Open Help File.

The Help File contains information and tutorials for both the CCNA Simulator and Network Designer.

User Guide

The User Guide is the product manual, which is designed to assist the Cisco CCNA Network Simulator user understand the features and operations of the program. It is the document you are reading now.

Tech Support

Cisco Press

- 800 East 96th Street, 3rd Floor
- Indianapolis, IN 46240
- Phone: 800-858-7674
- Updates: http://www.ciscopress.com/1587201313

Boson Software

- 12655 Race Track Rd
- Tampa, FL 33626
- Phone: 813-925-0700
- Updates: http://www.boson.com/netsim/cp

Product Home Page

Selecting this will load the Boson web page http://www.boson.com/netsim/cp where you can download the latest revisions, check for updates; research the latest FAQ's, etc.

Submit Feedback

Selecting this feature will launch a web browser to boson.com's feedback page. If you have feature requests or product suggestions, please enter them here. This service does not offer any technical support, although Boson highly respects and values any and all feature requests, or other suggestions for product enhancement that you submit.

Check for Updates

See the "Tools → Check For Updates" documentation above, in the Tools pull-down menu section, for more information.

Getting Started Tutorial

Walkthrough of the 3 basic concepts required to completing a lab in the Cisco CCNA Network Simulator, as further described in the "Basic Simulator Features" section of this document.

Telnet Setup Wizard

This Wizard will test and configure your default Telnet application, for use with the Cisco CCNA Network Simulator.

Telnet Tutorial Wizard

This tutorial-wizard is fully scripted and automated, to walk you through many of the common steps necessary for working in the Cisco CCNA Network Simulator with Telnet.

It will automatically guide you through the basic steps required for three things:

1. Basic operation of the Cisco CCNA Network Simulator,
2. Building your own emulated network,
3. Performing a simple practice lab.

Readme

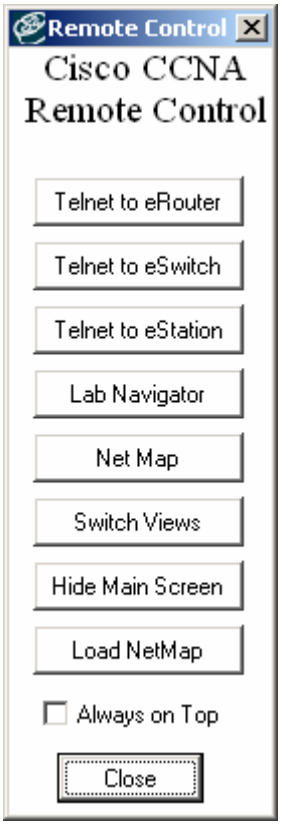
A file listing any last-second errata, the required computer components, minimum and recommended PC requirements, and the basics of getting started. This is in addition to the Getting Started Guide.

PART 2: ADVANCED

The second part of the feature overview will cover several main features along with their purpose.

Remote Control Toolbar

Clicking the "Remote Control" button causes this vertical Tool Bar to appear:



Clicking on any of the top 3 "Telnet to…" buttons will result in a side-bar selector to appear, allowing selection from a list of all active devices of that type.

Clicking on the Lab Navigator button launches the Cisco CCNA Network Simulator Lab menu system, permitting the selection of numerous included labs.

Clicking on the Net Map button shows a current network topology diagram of all Devices currently loaded.

Clicking on the Switch Views button toggles between the Window-in-Window (WiW) interface, and the industry-standard Telnet interface.

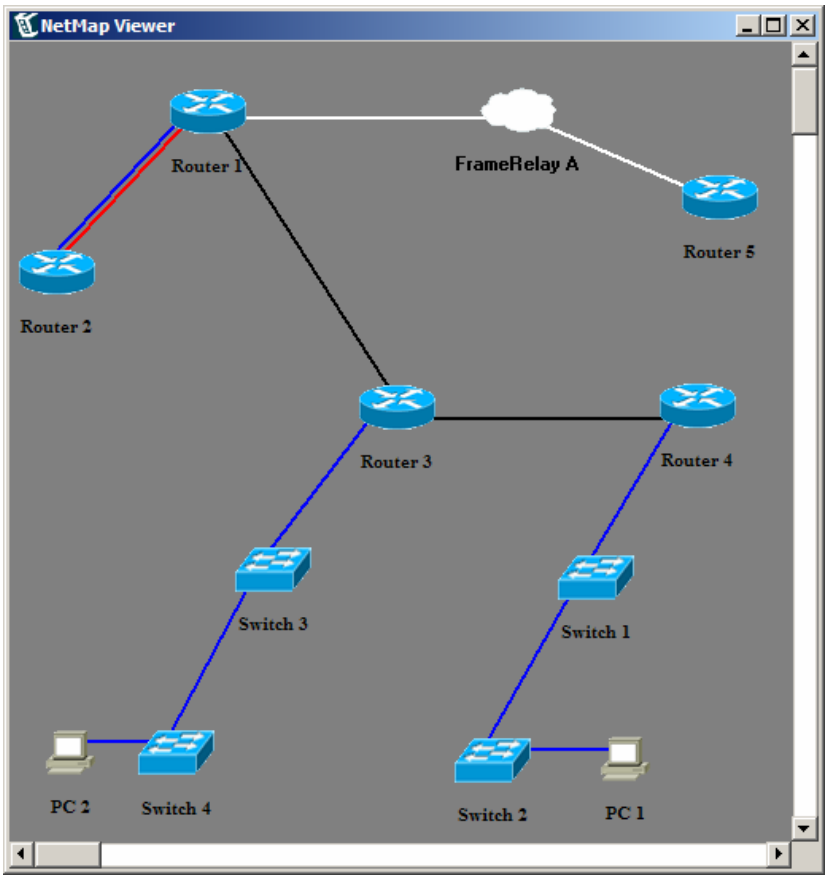
Clicking on the Hide Main Screen button has a different affect depending upon the current WiW or Telnet mode. If in WiW mode, hide all Devices. If in Telnet mode, hide the Control Panel.

Clicking on the Load Netmap button will open a dialog box allowing you to choose the Network topology you would like to load into the Simulator.

NetMap (Topology Viewer)

Clicking the "NetMap" button causes this NetMap Viewer to appear:

The NetMap button loads the currently active Network Designer (*.top file), into the Network Designer, in a read-only mode, as further shown and described below:



The NetMap Viewer displays a current snapshot of all Devices currently loaded.

There are 2 ways to access this topology screen.

1.) Click on the "NetMap" button on the Control Panel (horizontal toolbar).

2.) Click on the "NetMap" button on the Remote Control (vertical toolbar).

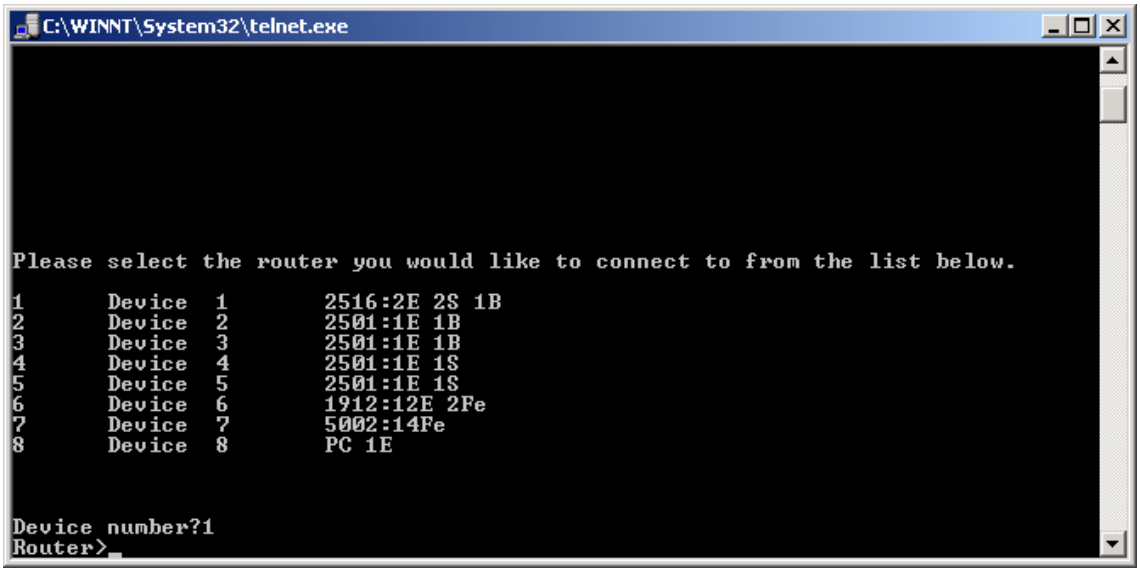
Note: You can right-click on any Device for a quick-config menu option.

Virtual Terminal Server

The Virtual Terminal Server permits you to virtually attach to simulated devices and cycle between them without the need for separate telnet sessions.

During any Telnet session to any Device (Router, Switch, Station), you can access the Virtual Terminal Server by using the Hotkey combination: **CTRL-Q**. Hold down the Control key while at the same time you press Q (CONTROL-Q).

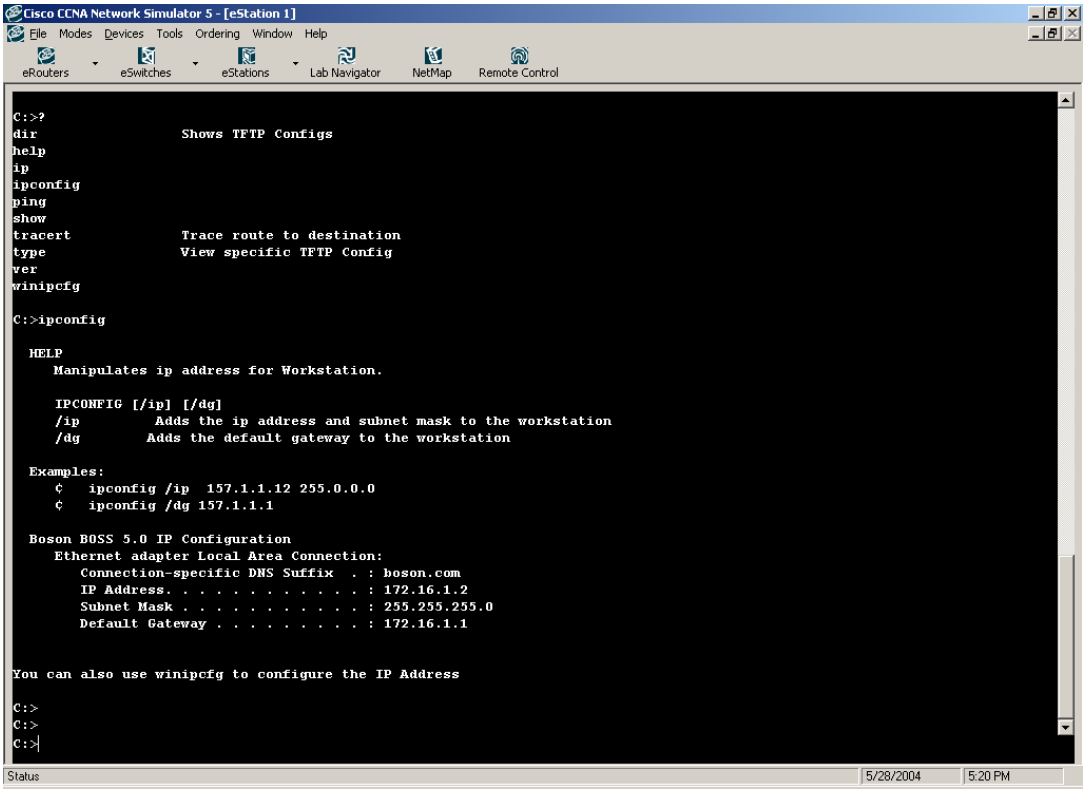
The example below shows Device 1 forming a session:



The Virtual Terminal Server

Simulated Workstations

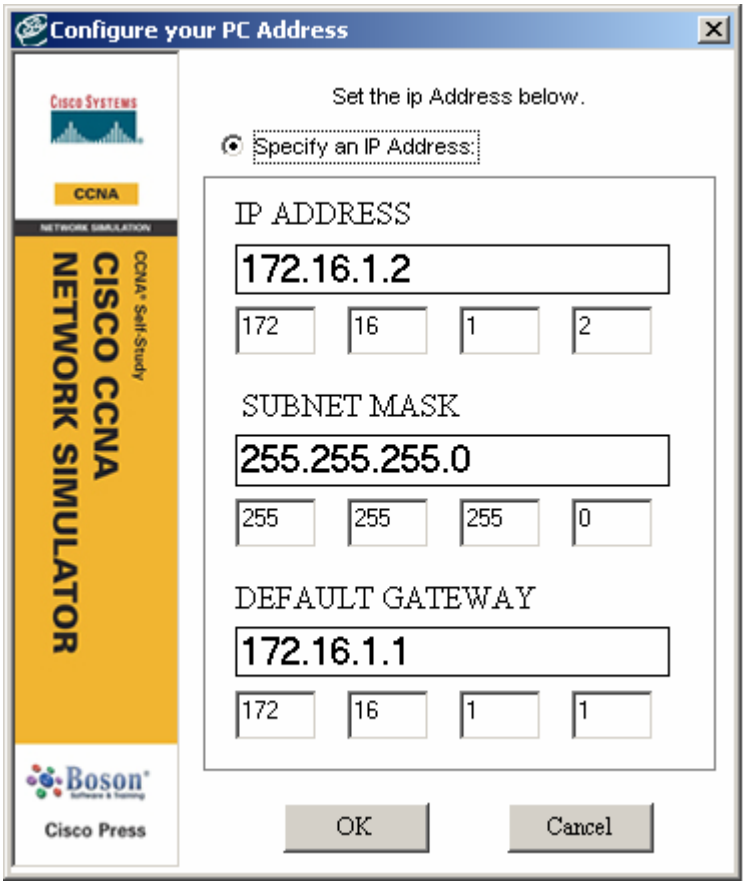
When you telnet to the Station, the Boson Operating System Simulator (BOSS) command window will open. Type "?" for a list of available BOSS commands, or "help" for an overview.



Simulated Workstation Interface

Changing TCP/IP settings on the BOSS Station:

Unlike other actual operating systems, the BOSS Station permits you to directly modify its TCP/IP settings directly within the WINIPCFG utility, launched from the command line, as shown below:



WINIPCFG

LAB NAVIGATOR

Clicking on the "Lab Navigator" button displays the Lab Navigation and Menu System

Overview

The Lab Navigator is your one stop source for over 100 CCNA level labs. You have grading options after you've completed a lab. You have the ability to view study information on each topic as this package comes bundled with a digital copy of Wendell Odom's CCNA Self-Study books for both the CCNA INTRO and the CCNA ICND. Each lab is highly accessible, being only just a few mouse clicks away. Study at your own pace and study well knowing that these labs have been individually tested by a CCIE® test panel.

Getting Started

The Lab Navigator starts up automatically when you launch the Cisco CCNA Network Simulator. If for some reason you closed the package, just locate the Lab Navigator button on the toolbar in the Simulator. To launch the Network Simulator, locate the shortcut on either you desktop, or within your "Start" menu.

When the Lab Navigator is launched, you will see that the interface is fairly well organized. The topics from which you'll locate your labs are laid out in a tab format. The yellow highlighted tab indicates that the tab is the current topic at hand.

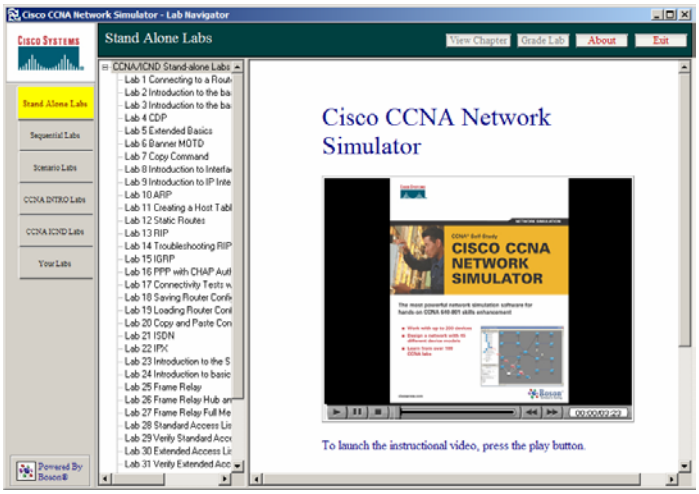


Figure 1: Lab Navigator

To the right of the tabs is the current list of labs for that topic that you've selected. To select a lab, you click on one of the individual labs. A new window will appear as shown in figure 2. When the Select Your Lab window opens, you will be greeted with the topic and a brief overview on what the lab will entail, along with any special instructions you may need to follow before loading it. You'll have three options plus a cancel button to select from. The CCNA Self-Study Guides are linked to each topic. To view information from one of these chapters, click on the button "View Chapter".

You will need a PDF viewer, such as Adobe® Acrobat® Reader, which can be found at http://www.adobe.com, in order to view these chapters. The lab manual is also stored in digital format, requiring a PDF viewer, and can be viewed by clicking on the "View Lab" button. It is here that you will find the text to lead you on your way to performing these labs.

View the lab PDF, and load the lab into the Network Simulator. To do this you'll click on the "Load Lab" button.

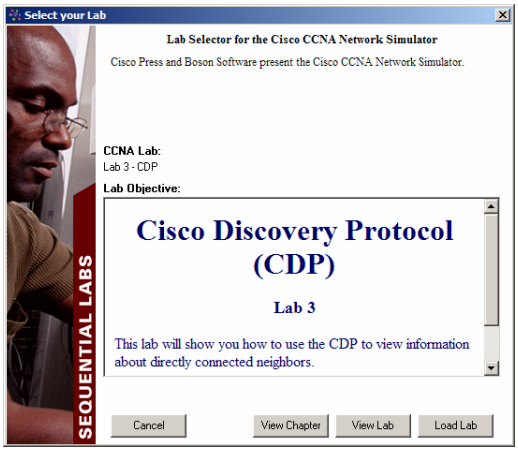


Figure 2: Select Your Lab screen

Lab Topics

To print the labs at any time, simply select the print option within the lab PDF itself, after you have launched it from within the Lab Navigator.

For the Cisco CCNA Network Simulator you will find that the 100 plus labs are split between six (6) categories. They are:

1. Stand Alone Labs
2. Sequential Labs
3. Scenario Labs
4. CCNA INTRO Labs (Advanced)
5. CCNA ICND Labs (Advanced)
6. Your Labs

Let us look at these in reverse order.

Your Labs

This category allows you to maintain a custom list of your very own labs. This is ideal for professors getting their own content into the coursework for their students. You have the ability to add web based lab manuals, and even associate a lab topology to load.

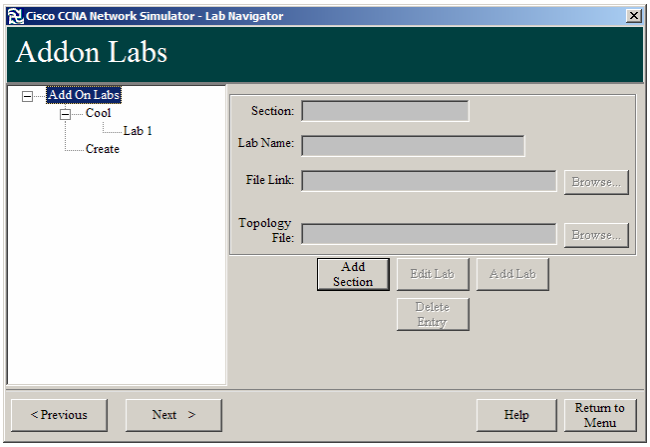


Figure 4: Add-on Labs

The Addon Labs screen provides easy organization with sections and will not save your changes until you return back to the Lab Navigator. Making edits and changes are simple too, the interface is fairly easy to understand.

To add a section, click on the "Add Section" button. This will allow you to enter information into the Section box at the top. Click "Save Section" to save it. Then after you've created your first section, you can add labs to it. To do this you make sure the section is highlighted, then you click on the "Add Lab" button. This will enable the lab name to be added and then you can select both a topology file, which is optional, and a lab html file. Click "Save Lab" to save it.

Advanced Labs (from INTRO/ICND books)

These labs are taken from the CCNA Self-Study books from Cisco Press, written by Wendell Odom. They offer an in-depth review on the various technologies that will be tested in the CCNA certification exam, but they split them up for the 640-811 (ICND) and 640-821 (INTRO).

Scenario Labs
In these labs you'll be given the opportunity to read a scenario and from there work on your own to get the lab done. Besides the scenario, you are provided with a simple running configuration list illustrating the major points that should be included in your attempts to correctly complete the lab. Unlike some of the other labs, these labs are designed to make you work and practice your skills that you've learned.

Sequential Labs
As the name implies, these labs build up on each other. They use one common topology and work in a sequence to gradually help you build up your skills. They are also designed to assist you in understanding how all of these technologies come together to provide an efficient networking experience. Unless you save your topology, you cannot stop, shutdown the program, and then just restart a new later lab and expect the instructions to carry you from the first step. In the case you shutdown the Simulator before you've completed them, make sure you save your work. If you don't save, you'll end up need to repeat quite a few steps depending on what area you are working on.

Stand Alone Labs
Unlike the Sequential Labs, you can come and go as you please with the Stand Alone Labs because each lab is independent, except for a few cases.

They are designed to cover the various CCNA topics at an easy pace. They can also can serve as refresher labs too because you do each lab separate.

With the topology varying between most of the labs, you don't get bored.

They couldn't be any easier to follow, especially since each lab provides to you step by step instructions, along with study notes after each lab.

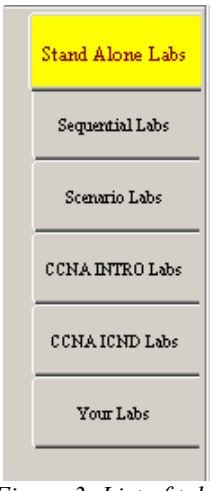


Figure 3: List of tabs

Grade Lab

In self paced learning software you don't have people to guide you or to track your progress. The Cisco CCNA Network Simulator comes packaged with a Grade My Labs feature. After you've configured your topology and you think you've gotten all the requirements, go a head and select the Grade Lab button on the main screen.

Figure 5: Grade Lab button, disabled on the left and when it's enabled on the right.

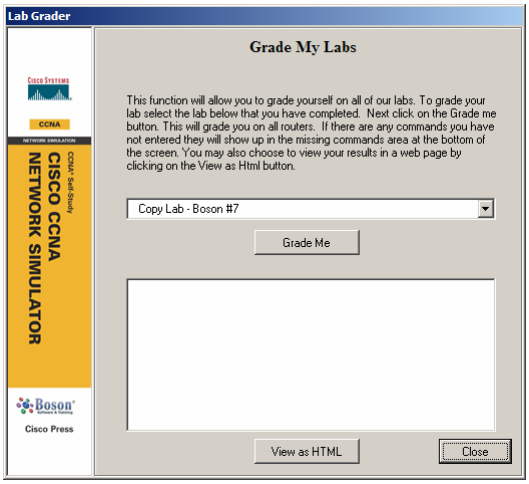


Figure 6: Grade My Labs

The Grade Lab button is not available until you start looking at the labs. It is fairly smart too as it will select the current lab that you've loaded, or the current lab that you've selected. But say if you want to select a different lab to grade? That's fine; you have a drop down list to use to select the labs. If you pass there's nothing to worry about, but if you are missing some key points of interest then you'll be alerted to the missing requirements.

You can also add your own custom labs to the Grade My Lab feature.

Configuring your own labs for use with the "Grade Lab" feature.

This powerful feature allows you to customize the Cisco CCNA Network Simulator to grade any custom lab that you make on your own. In order to have a lab that the Grade My Lab feature can accommodate, you must perform the following steps:

1. Open the Cisco CCNA Network Designer

2. Design the network topology that your lab will use.

3. Name and Save the topology that you have created.

4. Open the Cisco CCNA Network Simulator and add all of the devices configurations.

   Note: This step is of particular importance. Make sure that all devices and connections are properly configured. Whenever the "Grade My Lab" feature runs on your lab it will check the lab in question against your configurations. Any configuration errors in your lab will result in inaccurate results on the part of the "Grade My Lab" feature

5. Name and Save your configurations.

6. Open the "Completed Labs" folder.

7. Copy your NWC and RTR files into the "Completed Labs" folder.

8. Open the file "GradeMeLabs.txt"

   Note: Once you have opened "GradeMeLabs.txt" on the line after the last line of the text file, add the name of the lab as you would like displayed then a "," followed by the name of your .NWC file. *Example: My Own Lab - #2, lab 2

9. Save the "GradeMeLabs.txt" file (do not rename it.)

The next time you open the "Grade My Labs" feature, you will see the customized lab that you added.

NETWORK DESIGNER

About the Network Designer

The included full-version of the Network Designer is the optional tool you can use to create your own custom network. Through this tool you can build a simple network, a complex network, or even model an existing network. Note that the Network Designer is not required to configure the included labs, as they are pre-created and require no additional configuration to complete as-is.

The two primary concepts involved are:

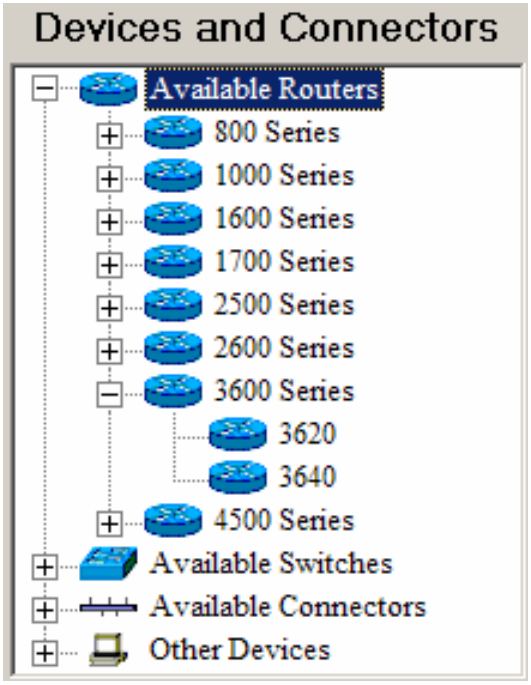
1. Network Designer NetMap/Topology files (*.TOP format) are the *PHYSICAL* layout of your network, as seen in the NetMap Viewer. The *ONLY* way to add or delete Devices within your physical NetMap Topology, or load/save "TOP" files, is by using the Network Designer.

2. Topology files are unrelated to the Device configs (*.RTR format) that you will create within the Cisco CCNA Network Simulator. The *ONLY* way to configure a Device once it's physically created, or load/save "RTR" files, is by using the Simulator.

Using the Network Designer

To avoid confusion, although not required, it is recommended that you design and create your custom networks in the following sequence until you are familiar with the process:

1. Load the Cisco CCNA Network Simulator, and ignore the Lab Navigator.
2. Under the File menu, select "New NetMap (Opens Network Designer)"
3. Using the Network Designer, create your custom network (NetMap)
4. Save the Network Designer file, called a NetMap topology (*.top) file
5. Exit the Network Designer and return to the Simulator
6. From under the File menu, select "Load NetMap (Network Designer File)"
7. Point at the topology "*filename*.**top**" file you created in the steps above
8. Using the Simulator, you can then configure the Device configs



The Network Designer drag-and-drop interface

Notes:

The Network Designer makes it possible to design your own custom network topologies, and then configure them with the Cisco CCNA Network Simulator.

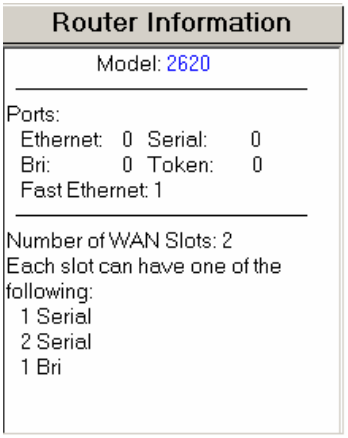
Presently, the Network Designer allows access to over 40 different Router models, 2 different Switch models, and command-line PC's.

The program will support up to 200 devices per simulated network, and is licensed to only be used in conjunction with the Cisco CCNA Network Simulator.

Network Designer - Device Information

Device information including Device Model, Available Ports, and Slot Options will be displayed in the Device Information Box which is located in the lower left had portion of the Network Designer, right below the "Devices and Connectors" box.

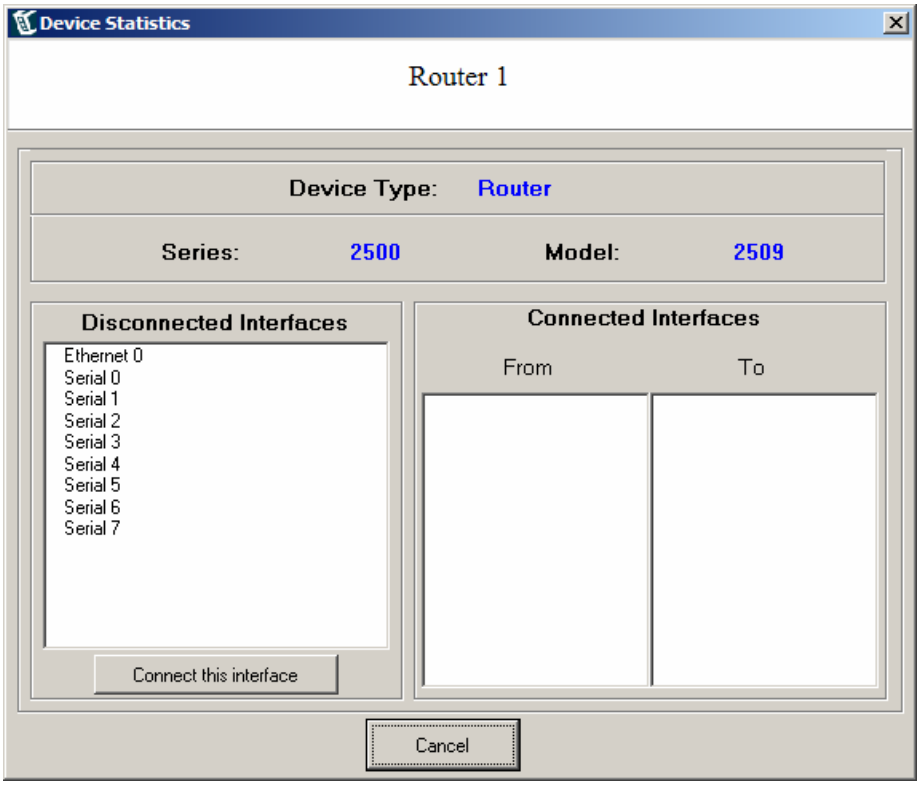
This box will only refresh when you click on a specific Device under the “Devices and Connectors” on the left-hand side of the program. .It’s primarily used for showing you stats of the Device *BEFORE* you add them to your NetMap Topology.



The information for the device selected will be presented automatically.

Network Designer - Display Device Statistics

To access the Device Information and Statistics box *AFTER* you have added it to your NetMap Topology worksheet, Double-Click the device within the worksheet.



Device Stats & Interfaces Window

The "Connect This Interface" button allows for connections to be made by selecting an interface from the Disconnected Interfaces box. Selecting this option will close the Device statistics window, and automatically launch you directly to the correct step in the Add Connector Wizard.

Network Designer - Adding a Device with Drag-n-Drop

Manually Adding Devices. Note: An Add Device Wizard is also available.

Adding eRouters

The Network Design Topology supports 8 series of routers, 800, 1000, 1600, 1700, 2500, 2600, 3600, and 4500 series. To add a router to the layout area, simply follow the steps below.

1. Left - Click the plus sign next to "Available Routers"
2. After the device type has been selected the option expands to show all available Router series.
3. Left - Click on the plus sign next to the Router series to reveal all available models.
4. While holding the left mouse button down, **Drag and Drop** the selected Router to the desired location in your NetMap Topology physical layout worksheet.

Adding eSwitches

The Network Design Topology supports 2 series of switches the Catalyst 1900, and 2900 series. To add a Switch to the layout area, simply follow the steps below.

1. Left - Click the plus sign next to "Available Switches"
2. After the type has been selected the option expands to show all available Switch series'.
3. Left - Click on the plus sign next to the Switch series to reveal all available models.
4. While holding the left mouse button down, **Drag and Drop** the selected Switch to the desired location in your NetMap Topology physical layout worksheet.

Adding eStations

To add a PC to the layout area, simply follow the steps below.

1. On the left of the screen, click the plus sign next to the Other Devices button.
2. The available Stations (PC's) will be displayed.
3. Left click the PC you would like to add, **Drag and Drop** it to the desired location in your NetMap Topology physical layout worksheet.

Note: In the simulated PC box, type "?" for available commands, and type "help" for an overview. See the section entitled "Simulated Workstations" for more information.

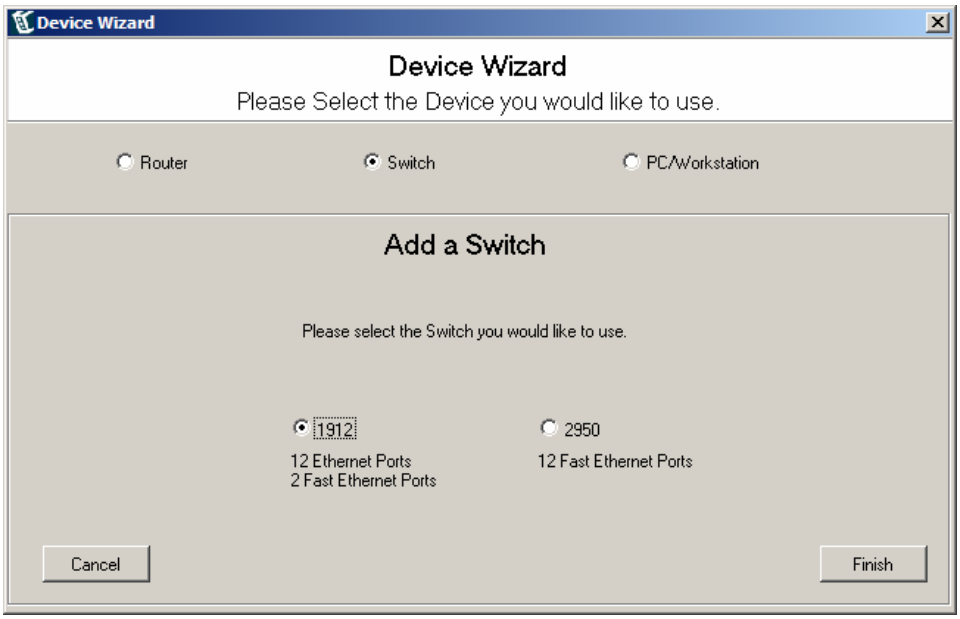
Network Designer - Using the Device Wizard

To launch the Device Wizard, simply select Wizard from the Horizontal Toolbar (top pull-down menu). The Device Wizard will then guide you through the following selection and configuration process:

Select the Device (Router, Switch, Station) that you would like to add: Depending upon your selection, the screen options will change:

If adding a Router, there are 2 ways for how you would like to find the interfaces you require. Method 1 of 2: The "Find By Model Number" selection, which lists Devices based on router series and model number.

If adding a Router, there are 2 ways for how you would like to find the interfaces you require. Method 2 of 2: The "Find By Interface Type" selection, lists Devices based on the checkboxes you select, which automatically lists supporting Routers.



If adding a Switch, simply select the model number from the list. Each Switch model has not only different interfaces, but also a slightly different command set.

Note: If adding a Station, simply click Finish to add the device, as there are no configurable options to pick from in the Wizard.

Network Designer - Deleting a Device

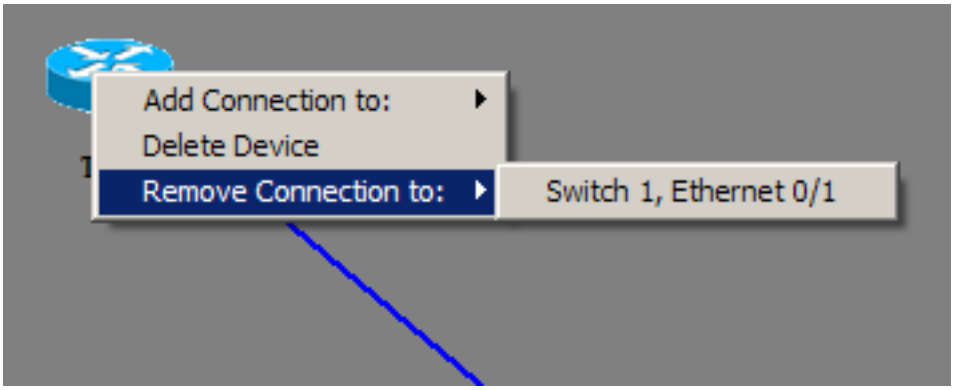
Deleting Devices

From within the NetMap Topology physical layout window:

1. Left click the Device you want to terminate.

2. Choose Delete Device from the pop-up menu.

3. The Network Designer will remove the selected Device from the NetMap Topology layout window, and automatically delete all associated Connectors.



If there are any connections to the device they will be terminated and removed

Network Designer - Making Interface Connections Between Devices with Drag-n-Drop

Manually Making Connections.

Note: An Add Connector Wizard is also available.

The Network Designer supports five different types of interface connections:

Serial, Ethernet, Fast Ethernet, ISDN/PRI, and Frame Relay.

To select an Interface Connection Type

1. Left - Click the plus sign next to "Available Connections"
2. After "Available Connections" has been selected, the option expands to show all available Connections.
3. Left - Click on the plus sign next to the selected Connection Type.
4. **Drag-n-Drop** the selected Connection Type to the NetMap Topology physical layout window.

* A note on Fast Ethernet connections. Fast Ethernet does not have its own connection item in the tree view. If a device has Fast Ethernet connections available they can be accessed by selecting Ethernet.

* A note on Frame Relay Connections. Because Frame Relays are Point to Multi-Point Serial connections, they must be selected from within the Serial connection type.

Network Designer - How To Set Interface Connection Parameters

Interface Connection Paramters

When you make certain physical Device-to-Device interface connections, a screen will appear asking you to set the connection parameters. The following interface connections have parameters that can be set by the user:

Frame Relay Connection

ISDN/PRI Connection

The parameters for these Devices do not need to be set by the user as they are loaded with default values. However, if you wish to change these values and set the interface connection parameters yourself you can do so during this step. Alternatively after the fact, you can:

1. Right click on the Frame Relay (not ISDN) icon in the NetMap Topology physical layout window.
2. Click the Set Parameters option from the pop-up menu.
3. The Set Parameters window will appear.
4. After making changing parameters, click OK to close the window and return to the layout window.

If you need to change the interface connection parameters for ISDN, please delete and re-create the device in the NetMap Topology physical layout window.

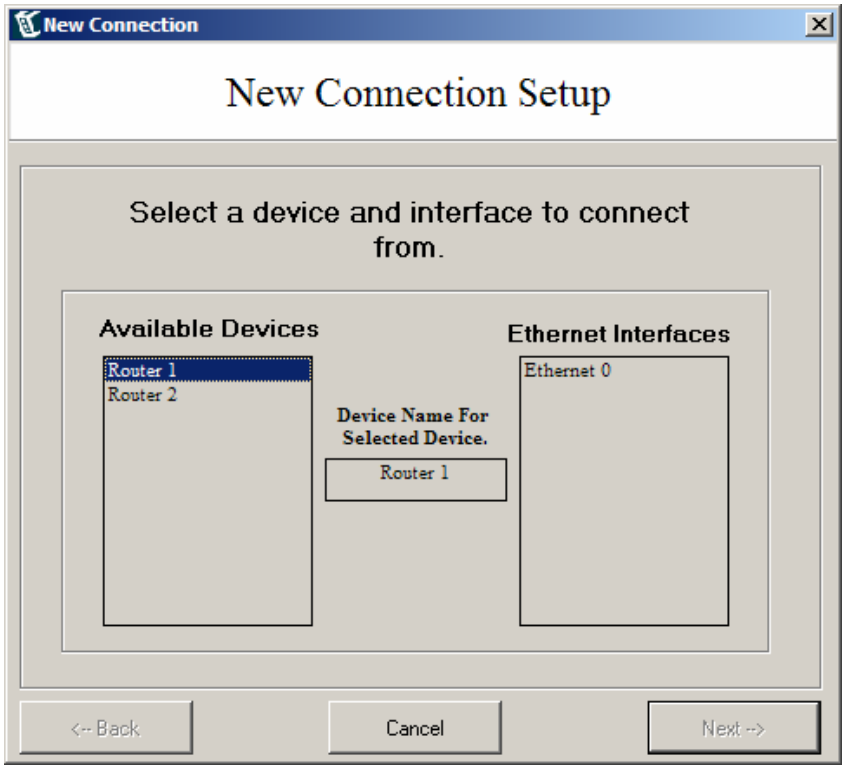
Note: For additional information on PRI please see the “sequential labs”.

Network Designer - Connecting Ethernet Between Devices

Manually connecting Ethernet between Devices

Note: If using the Add Connector Wizard, select Ethernet to be guided through the process.

1. Left-Click on the Ethernet connection to add.
2. The New Connection box will appear, listing all Devices that have Ethernet ports correlating to the Ethernet connection type that was selected.
3. Select a Ethernet-capable Device to connect from the Available Devices box



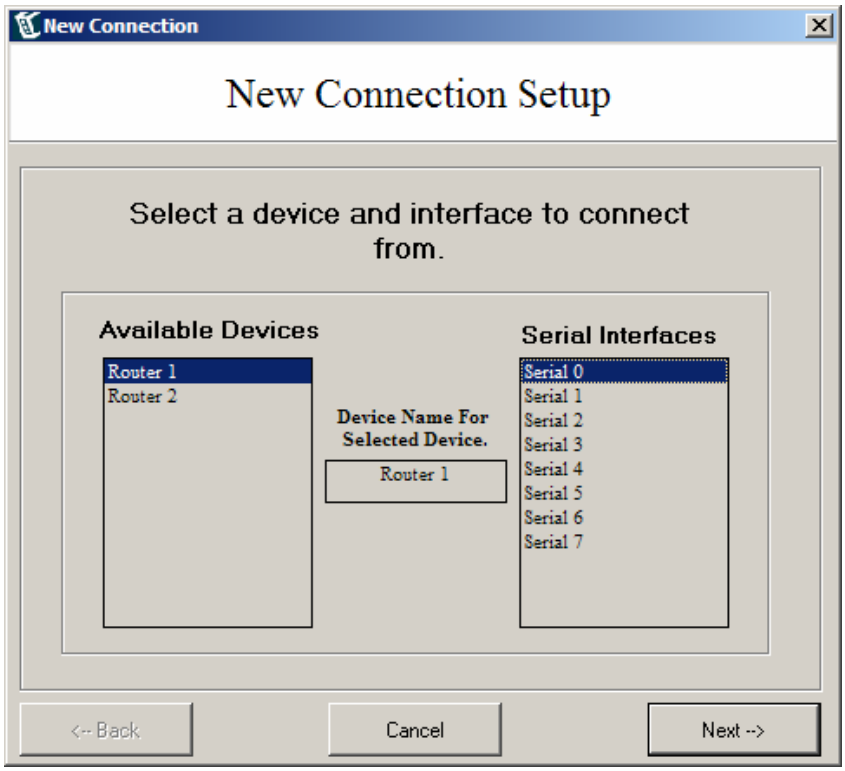
4. Select an Ethernet interface from the Interfaces box.
5. Repeat process for other devices
6. Click Finish when done.

Network Designer - Connecting Serial PPP Between Devices

Manually Connecting Serial PPP Between Devices

Note: If using the Add Connector Wizard, select Serial PPP to be guided through the process.

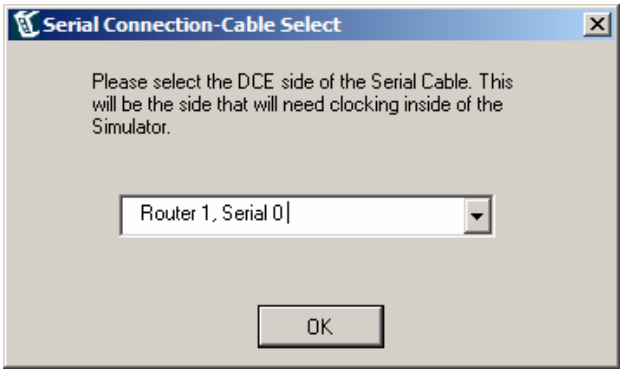
1. Left-Click on the Serial connection to add.
2. Select the "Point to Point Serial connection (serial cable)" option.
3. The New Connection box will appear, listing all Devices that have Serial ports correlating to the Serial connection type that was selected.
4. Select a Serial-capable Device to connect from the Available Devices box



4. Select a Serial interface from the Interfaces box.
5. Repeat process for other devices
6. Click Finish when done.

Network Designer - Selecting DCE/DTE

Before the Serial connection can be completed one router must be designated as the DCE side of the connection:



*It is important to remember that the DCE device will need to have its clock rate manually set.

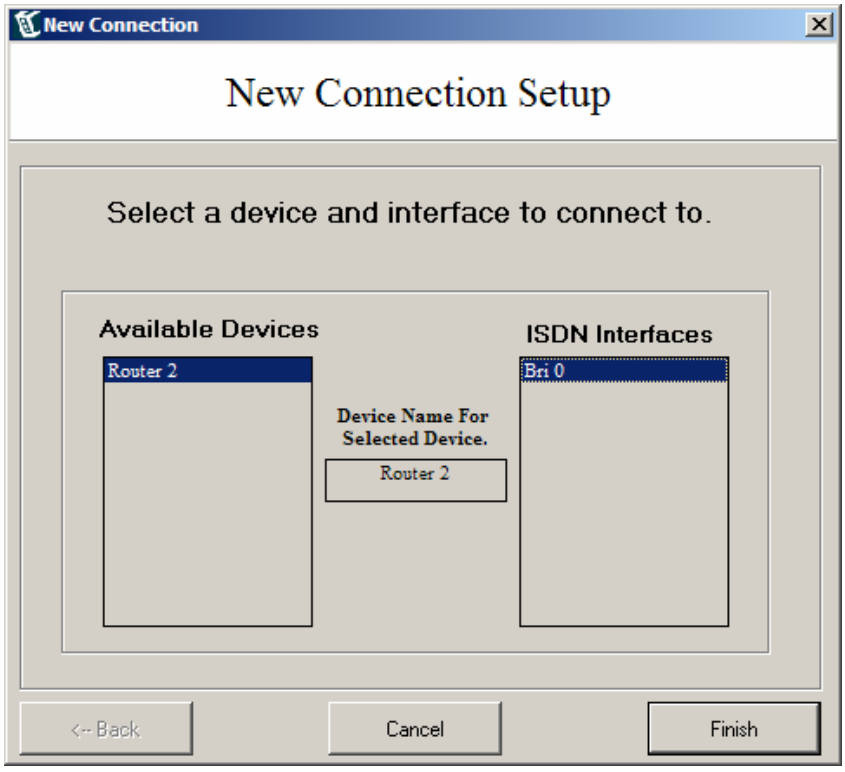
Note: Frame Relay is configured separately.

Network Designer - Connecting ISDN between Devices

Manually connecting ISDN between Devices

Note: If using the Add Connector Wizard, select ISDN to be guided through the process.

1. Left-Click on the ISDN connection to add.
2. The New Connection box will appear, listing all Devices that have ISDN ports correlating to the ISDN connection type that was selected.
3. Select a ISDN-capable Device to connect from the Available Devices box



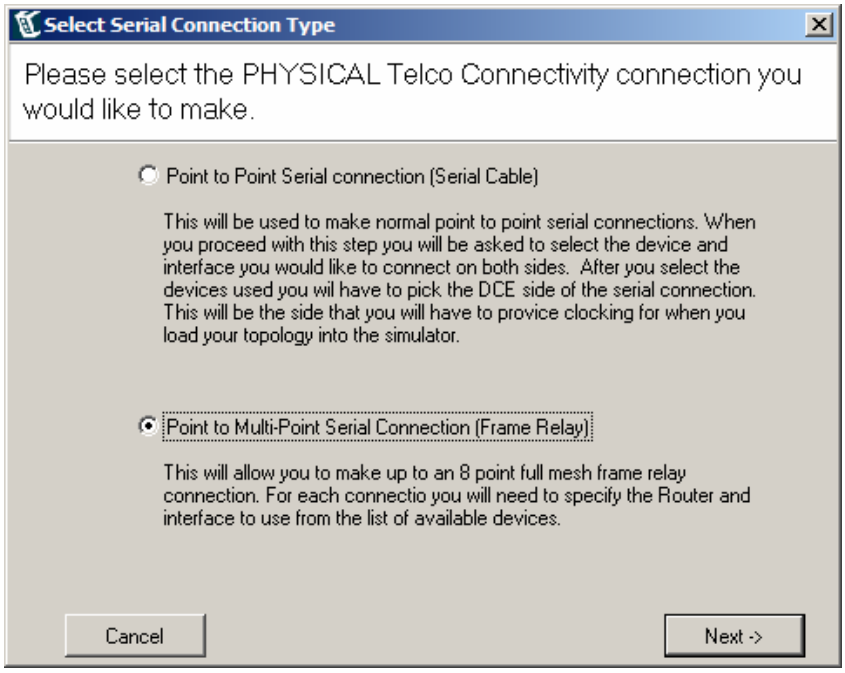
4. Select an ISDN interface from the Interfaces box.
5. Repeat process for other devices
6. Click Finish when done.

Note: PRI interfaces are also supported, see the “Sequential Labs” for more information.

Network Designer - Connecting Multipoint Serial between Devices

Manually Connecting Frame Relay Interfaces

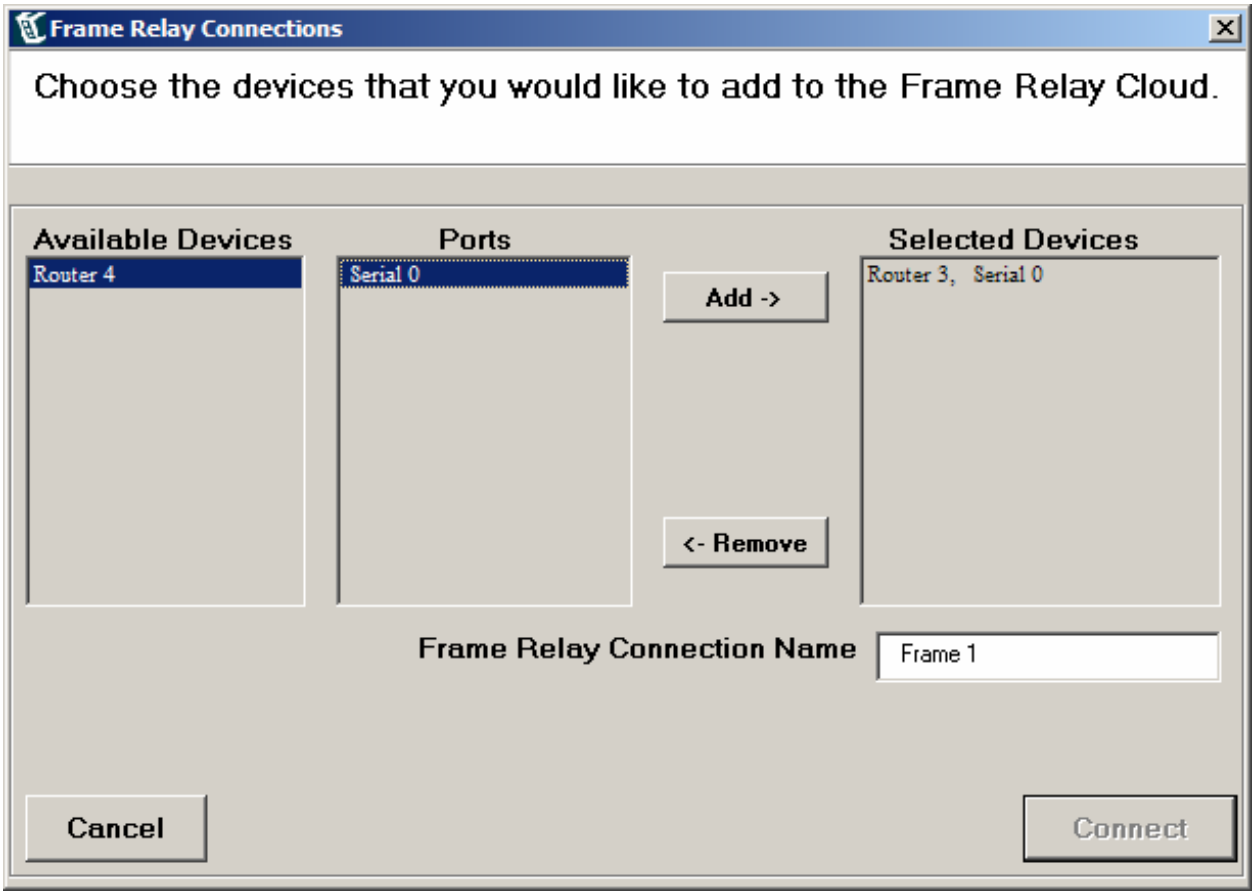
Note: If you use the Add Connector Wizard, select the Serial Interface, then Multi-Point option, to be guided through the process.



Select the Point to Multi-Point Serial Connection for Frame Relay

1. Select Serial from the "Available Connections" list
2. The Network Designer will ask what type of serial connection you would like to make.
3. Select Point to Multi-Point Serial Connection (Frame Relay)

…continued…



Click each Available Device to highlight and select it

4. Next, select the router you would like to connect from the Available Devices box

5. Selecting a Router will cause the Ports list to be populated with all available serial ports for the selected router.

6. After selecting the serial port that will be used, click the Add→ button to place the Device and selected interface in the Selected Devices box.

7. When you are finished adding Devices, click the Connect button to complete the connection.

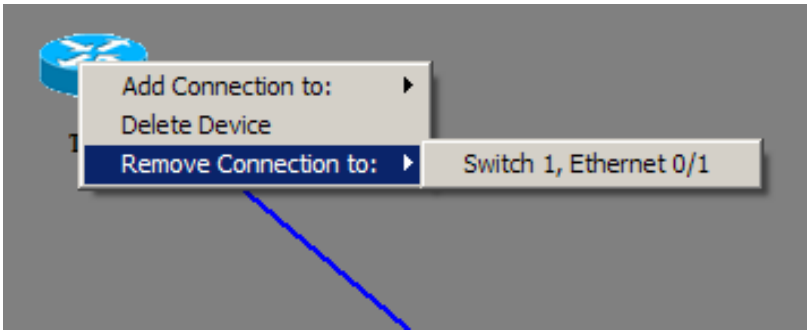
Do this for each router included in the Frame Relay (up to 8 routers maximum in Full Mesh).

Network Designer - Removing Connectors

Removing Connections

From within the NetMap Topology physical layout window:

1. Left click the Connection you want to terminate.
2. Choose Remove Connection from the pop-up menu.
3. Select the connection to disconnect.
4. The connection will be removed from the NetMap Topology layout window.



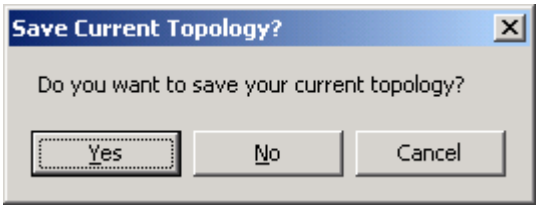
This action will not modify the associated Devices

Network Designer - Clearing the Network Map (Topology)

Clearing (deleting) the NetMap Topology physical layout

1. Click on the File menu item.

2. Select menu option New, and you will be asked to confirm:.



Wipe Out the Entire Network?

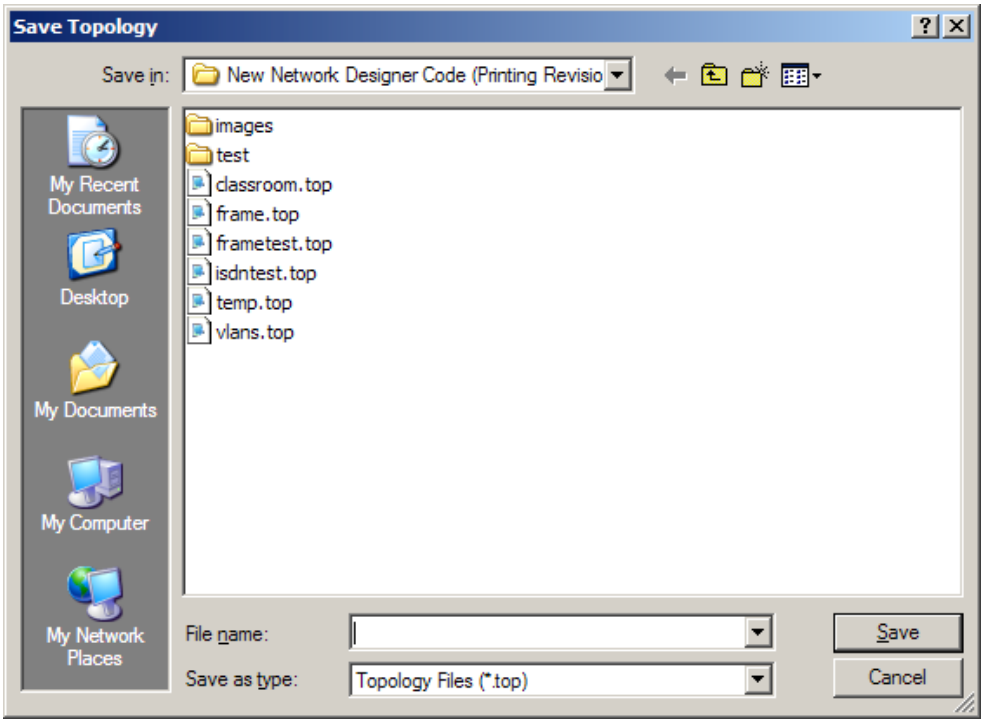
3. The current topology will be erased and cleared.

Network Designer - Saving a Custom Topology

Saving your NetMap Topology physical layout:

Click the File menu item.

1. Click the Save option.
2. A window will appear to verify that you have chosen to save the topology.
3. Click the OK button.
4. Name the file and browse to the location you would like to save the topology.
5. Click the Save button.



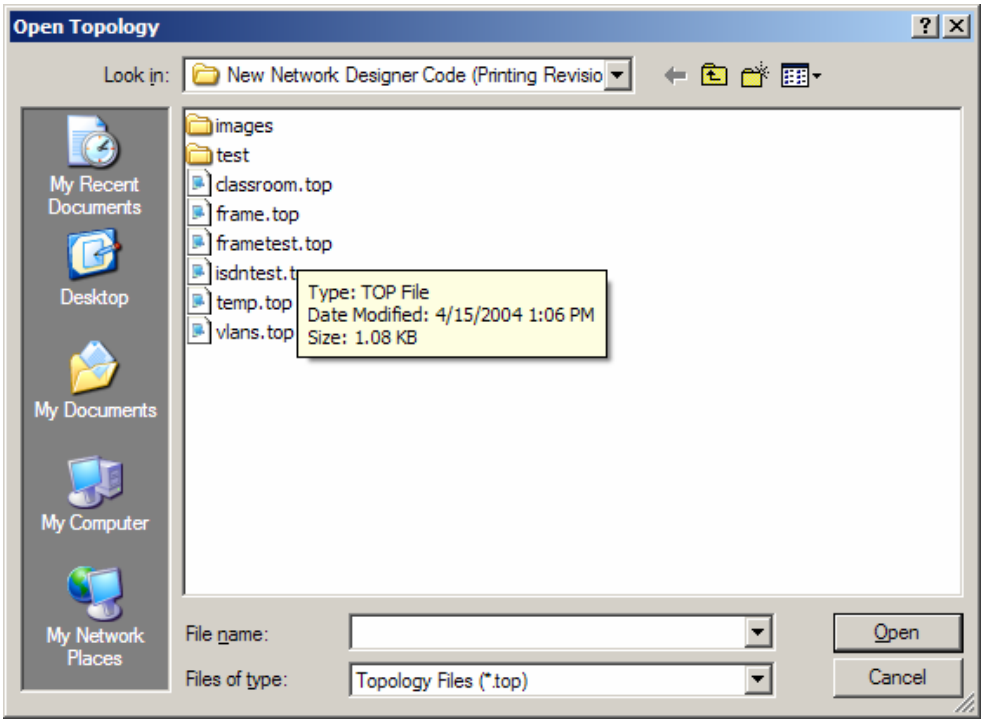
*After the Topology is saved, you can **then** load it with the CCNA Simulator*

Note: Physical NetMap Topology files are saved as "*filename*.**top**".

Network Designer - Opening/Loading a Custom Topology

Opening/Loading

1. Click the File menu option.
2. Click the Open option.
3. Browse to the location of your topology file (remember, the default file extension for topology files is ".top").
4. Select the file you would like to open.
5. Click the Open button.



Re-load your saved custom Topology, for additional editing in the Network Designer

Note: Physical NetMap Topology files are saved as "*filename*.**top**".

Network Designer - Printing the NetMap Topology

Printing your NetMap Topology physical layout for future reference:

1. Click the Print button from with in the File menu.

2. Here you will be able to select which printer you want to send your image to, and you can click on Preferences to adjust the printing options.

FEATURE OVERVIEW COMPLETE

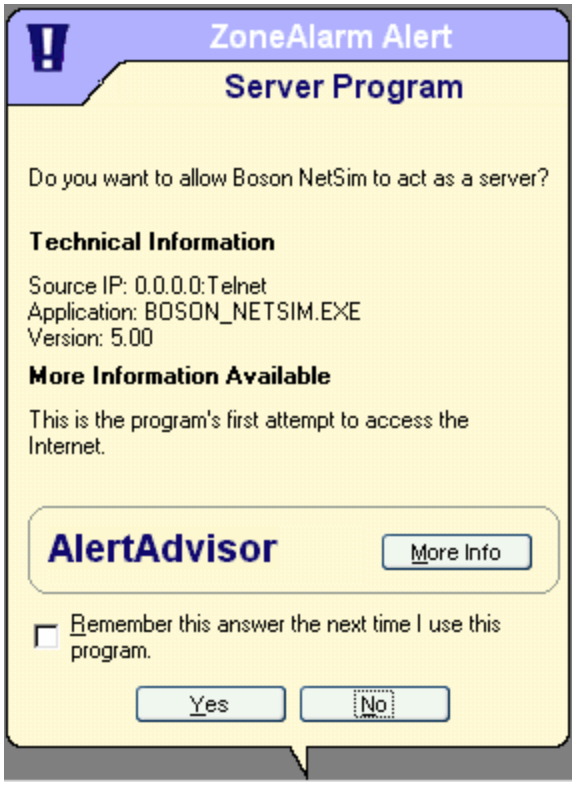
APPENDICES

Appendix A: **Tested 3rd-Party Firewalls**

Note: Any use of a product name or company name herein does not imply any sponsorship of, recommendation of, endorsement of, or affiliation with, Boson Software, its licensors, licensees, partners, affiliates, and/or publishers.

Zone Alarm

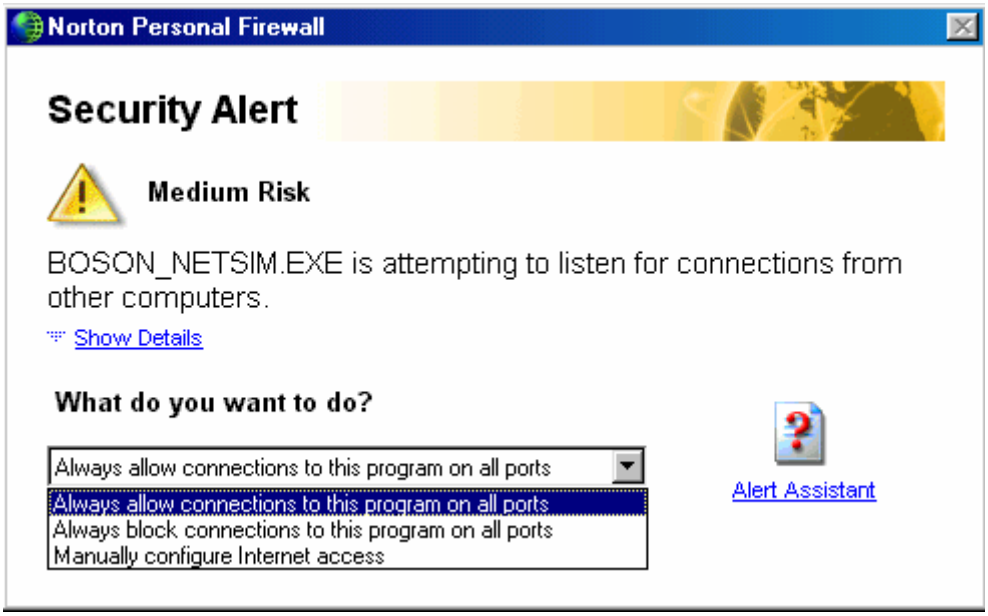
Upon launching the Cisco CCNA Network Simulator, a warning message box from ZoneAlarm™ (if installed) might appear with a similar window to this one:



You must permit Telnet sessions to loopback IP 127.0.0.1 (ZoneAlarm shows this as IP 0.0.0.0) for the Simulator to function properly. Click on the check box "Remember this answer the next time I use this program." To finish, click on the Yes button.

Norton Personal Firewall

Upon launching the Cisco CCNA Network Simulator, the Norton™ Personal Firewall™ (if installed) might appear with a similar window to this one:



You must select the "Always allow connections to this program on all ports" pull down option, and then click the Ok button. This will give the program access to establish Telnet sessions. If you desire to play with the "Manually configure Internet access" option, you must configure to permit loopback IP 127.0.0.1 on Telnet port 23.

The above third-party programs were tested only so far as basic compatibility for use with the advanced features of the Cisco CCNA Network Simulator. No other testing was completed.

Appendix B: **Tested 3rd-Party Telnets**

Note: Any use of a product name or company name herein does not imply any sponsorship of, recommendation of, endorsement of, or affiliation with, Boson Software, its licensors, licensees, partners, affiliates, and/or publishers.

- **Absolute Telnet** - No problems found
- **Telnet 2000** - No problems found
- **NetTerm** - No problems found
- **Koala Term** - No problems found
- **Tiny Term** - No problems found

The above third-party programs were tested only so far as basic compatibility for use with the advanced features of the Cisco CCNA Network Simulator. No other testing was completed.

Appendix C: **Supported Devices:**

Fixed-Interface Routers

Cisco CCNA Network Simulator Supported Fixed Interface Routers:

Series	Model	Fast Ethernet	Ethernet	Serial	ISDN
800	801	0	1	0	1
800	802	0	1	0	1
800	803	0	1	0	1
800	804	0	1	0	1
800	805	0	1	1	0
800	808	0	2	0	0
1000	1003	0	1	0	1
1000	1004	0	1	0	1
1000	1005	0	1	1	0

2500	2501	0	1	2	0
2500	2502	0	0	2	0
2500	2503	0	1	2	1
2500	2504	0	0	2	1
2500	2505	0	1	2	0
2500	2507	0	1	2	0
2500	2509	0	1	8	0
2500	2511	0	1	16	0
2500	2513	0	1	2	0
2500	2514	0	2	2	0
2500	2515	0	0	2	0
2500	2516	0	1	2	1
2500	2520	0	1	4	1
2500	2521	0	0	4	1
2500	2522	0	1	10	1
2500	2523	0	0	10	1

Slot-Based Routers

Cisco CCNA Network Simulator Supported Slot-Based Routers:

Series	Model	Slot Options	Available Interfaces
1600	1601	1	1s, 1b
1600	1602	1	1s, 1b
1600	1603	1	1s, 1b
1600	1604	1	1s, 1b
1600	1605	1	1s, 1b
1700	1720	2	1s, 2s, 1b, 1e
1700	1721	2	1s, 2s, 1b, 1e
1700	1750	2	1s, 2s, 1b, 1e
1700	1751	2	1s, 2s, 1b, 1e
1700	1760	2	1s, 2s, 1b, 1e
2600	2610	2	1s, 2s, 1b
2600	2611	2	1s,2s,1b
2600	2620	2	1s,2s,1b
2600	2621	2	1s,2s,1b
3600	3620	2	1e, 4e, 1e: 1s, 2e: 1s, 1f, 1f: 1b, 1f: 2b, 4s, 4b,
3600	3640	4	1e, 4e, 1e: 1s, 2e: 1s, 1f, 1f: 1b, 1f: 2b,4s,4b
4500	4500	3	2e, 6e, 1f, 2s, 4s, 4b, 8b

Legend: e=Ethernet, s=Serial, e=Ethernet, f=FastEthernet, b=ISDN/BRI

Switches and Stations

Cisco CCNA Network Simulator Supported Switches:

Series	Model	Fast Ethernet	Ethernet
1900	1912	2	12
2900	2950	12	0

Cisco CCNA Network Simulator Support Stations

The Emulated Stations are simulated personal computers running the Boson Operating System Simulator (BOSS) command-line interface. The Stations are comprised of non-descript PC's with 1 Ethernet connection.

From within the command window, type “?” for a list of available commands, or “help” for an overview. See the “Simulated Workstations” section for more assistance.

Appendix D: **File Naming Conventions**

Internally to the Cisco CCNA Network Simulator, the following file name extensions are used:

- NWC = Network Configuration. This file is the "glue" that links all of the ".RTR" running-config files together when saving or loading a Snapshot of all network configs. You can *only* load the Snapshot into the originally corresponding unmodified topology.

- RTR = Router/Switch Configuration. This file is the saved "running-config" of an individual router or switch device *within* the physical network map topology. Things like individual device TCP/IP addresses are stored in this file.

- TOP = Topology Configuration. This file is generated by the Network Designer, and is used to describe the *physical* network map topology. Things like ISDN, Serial, and Ethernet wired connectivity are stored in this file.

The following 3rd-Party file name extensions are referenced:

- PDF = Portable Document Format. See www.adobe.com for details.

- TXT = Generic ASCII text document (eg. Notepad)

Appendix E: **Special Offer**

In a special arrangement with Boson Software (a Cisco Learning Partner and Cisco Premier Reseller), with your Cisco CCNA Network Simulator purchase, you are eligible to receive 50% off the current retail price of any one Boson.com Shopping Cart software order! Multiple software items, such as Boson's Practice Tests and the Boson NetSim for CCNP, are permitted in your single half-off Shopping Cart software order. (Other items such as Training, Bootcamps, Study Guides, CDROM's, etc, are not included in this offer).

To take advantage of this limited time offer, simply use your 9-digit Unique Serial Number included with the Cisco CCNA Network Simulator as a "Coupon" in the Boson Shopping Cart at the link below:

http://www.boson.com/netsim/cp

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