

## 1.4.1 Introductory Lab 1: Getting Started and Building Start.TXT

### Objective

This lab introduces the CCNP lab equipment and certain IOS features that might be new to you. This introductory activity also describes how to use a simple text editor to create all (or part) of a router configuration file. After you create a text configuration file, you can apply that configuration to a router quickly and easily by using the techniques described in this lab.

### Equipment Requirements

- A single router, preferably a 2600 series router, and a workstation running a Windows operating system
- One 3 1/2-inch floppy disk with label

### Preliminary

**Modular interfaces.** Cisco routers can come with a variety of interface configurations. Some models have only fixed interfaces, meaning that the interfaces can't be changed or replaced by the user. Other models have one or more modular interfaces, allowing the user to add, remove, or replace interfaces as needed.

You might already be familiar with fixed interface identification, such as Serial 0, S0, Ethernet 0, and E0. Modular routers use notation such as Serial 0/0 or S0/1, where the first number refers to the module and the second number refers to the interface. Both notations use 0 as their starting reference, so S0/1 indicates that there is another serial interface S0/0.

**Fast Ethernet.** Many routers today are equipped with Fast Ethernet (10/100 Mbps auto sensing) interfaces. You must use Fast Ethernet 0/0 or Fa0/0 on routers with Fast Ethernet interfaces.

**The `ip subnet-zero` command.** The `ip subnet-zero` command is enabled by default in IOS 12. This command allows you to assign IP addresses in the first subnet, called subnet 0. Because subnet 0 uses only binary zeros in the subnet field, its subnet address can potentially be confused with the major network address. With the advent of classless IP, the use of subnet 0 has become more common. The labs in this manual assume that you can assign addresses to the router's interfaces using subnet 0. If you use any routers that have an IOS earlier than 12.0, you must add the global configuration command, `ip subnet-zero`, to your router's configuration.

**No shutdown.** Interfaces are shut down by default. Remember to explicitly issue a `no shutdown` command in interface configuration mode when you are ready to bring up the interface.

**Passwords.** The `login` command is applied to virtual terminals by default. This means that in order for your router to accept Telnet connections, you must configure a password. Otherwise, your router will not allow a Telnet connection, replying with the error message "password required, but none set."

### Step 1

Take a few moments to examine your router. Familiarize yourself with any serial, BRI (ISDN), PRI (ISDN), and DSU/CSU interfaces on the router. Pay particular attention to any connectors or cables that are new to you.

## Step 2

Establish a HyperTerminal session to the router.

Enter privileged EXEC mode.

## Step 3

To clear the configuration, issue the **erase start** command.

Confirm your intentions when prompted, and answer “no” if you are asked to save changes. The result should look something like this:

```
Router#erase start
Erasing the nvram filesystem will remove all files! Continue?
[confirm]
[OK]
Erase of nvram: complete
Router#
```

When the prompt returns, issue the **reload** command.

Confirm your intentions when prompted. After the router finishes the boot process, choose not to use the AutoInstall facility, as shown:

```
Would you like to enter the initial configuration dialog?
[yes/no]: no
Would you like to terminate autoinstall? [yes]: ← Press Enter to
accept default.
Press RETURN to get started!
```

## Step 4

In privileged mode, issue the **show run** command.

Note the following default configurations as you scroll through the running configuration:

- The version number of the IOS
- The **ip subnet-zero** command, which allows you to use subnet 0
- Each available interface and its name (*Note:* Each interface has the **shutdown** command applied to its configuration.)
- The **no ip http server** command, which prevents the router from being accessed by a Web browser
- No passwords are set for CON, AUX, and VTY sessions, as shown here:

```
line con 0
  transport input none
line aux 0
line vty 0 4
```

## Using Copy and Paste with Notepad

In the next steps, you use the copy and paste feature to edit router configurations. You need to create a text file that can be pasted into your labs and used as a starting point for your router configuration. Specifically, you must build a login configuration that you can use with every lab included in this manual.

### Step 5

If necessary, issue the **show run** command again so that **line con** and **line vty** are showing on your screen:

```
line con 0
  transport input none
line aux 0
line vty 0 4
!
end
```

Select the text as shown above and choose the Copy command from HyperTerminal's Edit menu.

Next, open Notepad, which is typically found on the Start menu under Programs, Accessories. After Notepad opens, select Paste from the Notepad Edit menu.

Edit the lines in Notepad to look like the following lines (the one-space indent is optional):

```
enable secret class
line con 0
  transport input none
  password cisco
  login
line aux 0
  password cisco
  login
line vty 0 4
  password cisco
  login
```

This configuration sets the enable secret to **class** and requires a login for all console, AUX port (usually a modem), and virtual terminal (Telnet) connections. The password for these connections is set to **cisco**. *Note:* Each of the passwords can be set to something else if you desire.

### Step 6

Save the open file in Notepad to a floppy disk as **start.txt**.

Select all the lines in your Notepad document and choose Edit, Copy.

### Step 7

Use the Windows taskbar to return to your HyperTerminal session, and enter global configuration mode.

From HyperTerminal's Edit menu, choose Paste to Host.

Issue the **show run** command to see if your configuration looks okay.

As a shortcut, you can now paste the contents of your **start.txt** file to any router before getting started with a lab.

### Other Useful Commands

To enhance your **start.txt** file, you might consider adding one of the following commands:

- **ip subnet-zero** ensures that an older IOS allows IP addresses from subnet 0.
- **ip http server** allows you to access your routers using a Web browser. Although this configuration might not be desirable on a production router, it does give you an HTTP server for testing purposes in the lab.
- **no ip domain-lookup** prevents the router from attempting to query a DNS when you input a word that is not recognized as a command or a host table entry. This saves you time if you make a typo or misspell a command.
- **logging synchronous** in the **line con 0** configuration returns you to a fresh line when your input is interrupted by a console logging message.
- **configure terminal (config t)** can be used in your file so that you don't have to type that command before pasting the contents of the file to the router.

### Step 8

Use the Windows taskbar to return to Notepad and edit the lines so that they read as shown:

```
config t
!
enable secret class
ip subnet-zero
ip http server
no ip domain-lookup
line con 0
  logging synchronous
  password cisco
  login
transport input none
line aux 0
password cisco
login
line vty 0 4
password cisco
login
!
end
copy run start
```

Save your file to the floppy disk so that you do not lose your work.

Select and copy all the lines, and return to your HyperTerminal session.

Normally, you would enter global configuration mode before pasting, but because you included the **conf t** command in your script, you do not have to.

If necessary, return to privileged EXEC mode. From the Edit menu, select Paste to Host.

After the paste is complete, you must confirm the copy operation.

Use **show run** to see if your configuration looks okay.

### Using Notepad to Assist in Editing

Understanding how to use Notepad can save you from typing and typos during editing sessions. Another major benefit is that you can do an entire router configuration in Notepad when you are at home or at the office and then paste it to the router's console when you have access. In the next steps, you look at a simple editing example.

### Step 9

Configure the router with the following commands:

```
Router#config t  
Router(config)#router rip  
Router(config)#network 192.168.1.0  
Router(config)#network 192.168.2.0  
Router(config)#network 192.168.3.0  
Router(config)#network 192.168.4.0  
Router(config)#network 192.168.5.0
```

Press Ctrl+Z, and verify your configuration with **show run**. You just set up RIP to advertise a series of networks. Nevertheless, what if you want to change your routing protocol to IGRP? With the **no router rip** command, you easily get rid of RIP, but you would still have to retype the **network** commands. The next steps show an alternative.

### Step 10

Issue the **show run** command and hold the output so that the **router rip** commands are displayed. Using the keyboard or mouse, select the **router rip** command and all **network** statements.

Copy the selection.

Use the taskbar to return to Notepad.

Open a new document and paste the selection onto the blank page.

### Step 11

In the new document, type the word **no** and a space in front of the word **router**.

Press the End key, and press Enter.

Type **router igrp 100** (but do not press Enter). The result should look like this:

```
no router rip  
router igrp 100  
network 192.168.1.0  
network 192.168.2.0  
network 192.168.3.0  
network 192.168.4.0  
network 192.168.5.0
```

### Step 12

Select your results and copy them.

Use the taskbar to return to your HyperTerminal session.

While in global configuration mode, paste the results.

Use the **show run** command to verify your configuration.

### Reflection

How could using copy and paste with Notepad be helpful in other editing situations?

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