Lab 5.1.3 Using the Boot System Command
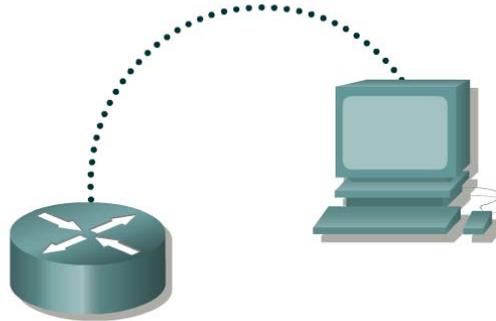

Router designation	Router name	Enable secret passwor	Enable/VTY/ and Console passwords
Router 1	GAD	class	cisco

Straight-through cable	
Serial cable	
Console (Rollover)	
Crossover cable	

Objective

- Display information about the Cisco IOS Image (software) that is currently running.

- Determine where the IOS is booting from.

- Check the amount of RAM, Flash and NVRAM memory the router has.

- Check the IOS image and Flash for space used and available.

- Document the parts of the IOS image file name.

- Check and document the configuration register settings related to boot method.

- Document a fallback boot sequence.

Background/Preparation

Setup a network as displayed in the figure. Any router that meets the interface requirements may be used. Possible routers include 800, 1600, 1700, 2500, 2600 routers, or a combination. Refer to the chart at the end of the lab to correctly identify the interface identifiers to be used based on the equipment in the lab. The configuration output used in this lab is produced from 1721 series routers. Any other router used may produce slightly different output. Start a HyperTerminal session as performed in the Establishing a HyperTerminal session lab.

Note: Go to the erase and reload instructions at the end of this lab. Perform those steps on the router in this lab assignment before continuing.

Step 1 Login to the router

    a.   Connect to the router and login.

Step 2 Enter privileged EXEC mode

    a.   Enter **enable** at the command prompt.

Step 3 Save the existing running-config to the startup-config

    a.   At the privileged EXEC command prompt enter:

        Router#**copy running-config startup-config**

        Destination filename [startup-config]? **Enter**

This will save the current blank configuration.

Step 4 Configure the router and view the running configuration file

    a.   Configure the router with the information in the table on page 1.

    b.   Enter **show running-config** at the router prompt. The router will display information on the running configuration file stored in RAM.

    c.   Does the configuration display the changes entered?

    _____

Step 5 Show information about the backup configuration file

    a.   Enter **show startup-config** at the router prompt. The router will display information on the backup configuration file stored in NVRAM.

    b.   Does the configuration display the changes entered?

    _____

    c.   If not, why? _____

    d.   What command would make the running-config file and startup-config file identical?

    _____

    e.   Why is the startup-config file so important? _____

    f.   Is there any indication of the configuration register setting? _____

Step 6 Display IOS version and other important information

    a.   Enter **show version** command at the router prompt.

    The router will return information about the IOS that is running in RAM.

    b.   What is the IOS version and revision level? _____

    c.   What is the name of the system image (IOS) file? _____

    d.   Where was the router IOS image booted from? _____

    e.   What type of processor and how much RAM does this router have?

    _____

    f.   What kind of router (platform type) is this? _____

    g.   The router backup configuration file is stored in Non-Volatile Random Access Memory (NVRAM). How much NVRAM does this router have?

    _____

h. The router operating system (IOS) is stored in Flash memory. How much flash memory does this router have?

_____

i. What is the configuration register set to? What boot type does this setting specify?

_____

Step 7 Create the statements to perform the following functions

a. Assuming that the `config-register` is set to 0x2102, write the global configuration commands specifying that the IOS image should be loaded from:

ROM Monitor: _____

Flash (without checking for `boot system` commands): _____

Flash (checks for `boot system` commands first):

_____

ROM IOS:

_____

Note: ROM IOS is the default on older platforms.

Step 8 Show information about the Flash memory device

a. Enter `show flash` at the router prompt.

The router will respond with information about the flash memory and what IOS image file(s) are stored there.

b. Document the following information:

How much flash memory is available and used? _____

What is the file that is stored in flash memory? _____

What is the size in bytes of the flash memory? _____

Step 9 Specify a fallback boot sequence

a. Write the `boot system` command to specify that the IOS image should load from:

Flash: _____

A TFTP server: _____

ROM: _____

Will this be a full IOS image? _____

b. To ensure that these commands are available for the router to use the next time it is restarted, which task would need to be completed before reloading or power cycling the router?

_____

Upon completion of the previous steps, logoff by typing **exit**. Turn the router off.

Erasing and reloading the router

Enter into the privileged EXEC mode by typing **enable**.

```
Router>enable
```

If prompted for a password, enter **class**. If "class" does not work, ask the instructor for assistance.

At the privileged EXEC mode, enter the command **erase startup-config**.

```
Router#erase startup-config
```

The responding line prompt will be:

```
Erasing the nvram filesystem will remove all files! Continue?
[confirm]
```

Press **Enter** to confirm.

The response should be:

```
Erase of nvram: complete
```

Now at the privileged EXEC mode, enter the command **reload**.

```
Router#reload
```

The responding line prompt will be:

```
System configuration has been modified. Save? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Proceed with reload? [confirm]
```

Press **Enter** to confirm.

In the first line of the response will be:

```
Reload requested by console.
```

After the router has reloaded the line prompt will be:

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Press RETURN to get started!
```

Press **Enter**.

The router is ready for the assigned lab to be performed.

Router Interface Summary

Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2	Interface #5
800 (806)	Ethernet 0 (E0)	Ethernet 1 (E1)			
1600	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)	
1700	FastEthernet 0 (FA0)	FastEthernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)	
2500	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)	
2600	FastEthernet 0/0 (FA0/0)	FastEthernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)	
In order to find out exactly how the router is configured, look at the interfaces. This will identify the type of router as well as how many interfaces the router has. There is no way to effectively list all of the combinations of configurations for each router class. What is provided are the identifiers for the possible combinations of interfaces in the device. This interface chart does not include any other type of interface even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in IOS command to represent the interface.					