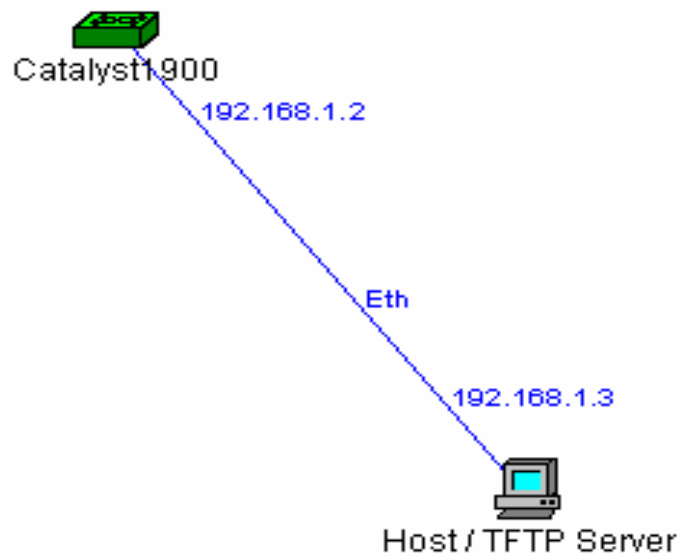# Lab – Managing Configurations and Image Files for the Catalyst 1900 series switch

Estimated Time: 60 minutes

Objectives:

- Demonstrate knowledge of Catalyst 1900 series command line interface
- Show satisfactory skills in managing configuration files and IOS images

Background:

This lab focuses on the management of configuration files and Internet Operating System (IOS) images on the Catalyst 1900 series switch. The Catalyst 1900 switch has two modes of configuration: command line and set menus. The command line interface (CLI) is much like that of the Cisco 2600 series router. Each command is entered one at a time in various modes of configuration. The set menu interface uses a single keyboard character to stand for a command or configuration mode. For this lab, you will be using the set menus.

The protocol that will be used to transfer the file images is Trivial File Transfer Protocol (TFTP). TFTP is a Simplified version of File Transfer Protocol (FTP) that allows files to be transferred from one device to another over a network. TFTP is commonly used for management of configuration files and IOS images for internetworking devices because of its practicality and ease of use. Using TFTP, a network manager can keep copies of the configurations of all devices under his control on a file server in case of system failures or hacker-related failures. Also, the manager can keep updates of IOS images on the server and schedule uploads of the images to each device during off peak hours.

Specific Terminology:

Trivial File Transfer Protocol (TFTP) – Simplified version of FTP that allows files to be transferred from one computer to another over a network

Command Line Interface (CLI) – Text-based interface where commands are input one line at a time.

Preparation/Resources Required:

Before you begin this lab, you should familiarize yourself with the Catalyst 1900 switch menus and a TFTP program, preferably Cisco TFTP Server v1.1. Read the chapter on switching in the Semester 3 Cisco curriculum. You will also need:

- One Catalyst 1900 series switch
- Workstation with a TFTP program
- The switch needs the required configuration already programmed (see running-config below)

Website Resources:

- Cisco documentation: http://www.cisco.com/warp/public/473/10.html#3a

Notes:

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```
!
hostname "Switch1"
!
ip address 192.168.1.1 255.255.255.0
!
enable secret cisco
!
interface Ethernet 0/1
!
interface Ethernet 0/2
!
interface Ethernet 0/3
!
interface Ethernet 0/4
```

```
!
interface Ethernet 0/5
!
interface Ethernet 0/6
!
interface Ethernet 0/7
!
interface Ethernet 0/8
!
interface Ethernet 0/9
!
interface Ethernet 0/10
!
interface Ethernet 0/11
!
interface Ethernet 0/12
!
interface FastEthernet 0/26
!
interface FastEthernet 0/27
!
line console
end
```

Steps:

Step 1 – Setup the lab according to the diagram:

1. What is the IP address of the host/TFTP server?

   _____

2. What type of physical media is required for the host to be able to configure the switch and act as a TFTP server?

   _____

Step 2 – Connect to the switch via the console and prepare to upload the new image.

Enter the command line interface from User Interface Menu.

```
    [M]  Menus
    [K]  Command Line

Enter Selection:   K
```

3. What does the ">" symbol indicate?

   _____

Use the `enable` command to get into privileged mode, then enter the **show ip** and **show version** commands to answer the following questions:

4. What is the ip address of the switch?

_____

5. What version of Cisco IOS is running and from where was it copied?

_____

6. Does the host have to be in the same subnet as the switch?

_____

Step 3 – Upload a new image file.

Now disconnect the rollover cable and telnet into the switch. Enter into command line interface and then into privileged mode. Turn on the TFTP server program on the computer and check again to make sure the IP addresses are correct (192.168.1.1 for the switch and 192.168.1.3 for the host).

Use "**?**" after the **copy** command and record all the options below:

Option:	Help reference:

The option to copy from a tftp server works like a web browser in the syntax because you have to specify what ip address to search for and where the file is on that computer:

Switch1#**copy tftp://192.168.1.3/*.bin opcode**

* - this is where the filename is entered, which in this case should be cat1900en.9.00.04(.bin)

7. What other option is available besides **opcode**?

_____

Once you have entered the command, quickly check back to the tftp program and you should see (#) being printed across if the command was entered in successfully.

Once the switch has reset itself, you should be disconnected. Telnet back into the switch after the light above the connected port turns green and use the **show version** command to confirm the transfer.

8. What version of Cisco IOS is running now? Was the transfer successful?
_____

Step 4 – Copy a configuration from the switch.

Now you are going to copy the current configuration from the switch to the TFTP server. In enable mode, enter the **copy** command followed by "**?**" again to see the options.

9. What option will you choose in order to copy the configuration to a TFTP server?
_____

Enter the command to copy the configuration to the TFTP server with a unique name so that you can identify it on the server. Remember that you must specify the filepath where the file is to be saved.

Switch1#**copy nvram tftp://192.168.1.3/*.bin**

* is the name you chose for your file

10. Did the file copy to the host?
_____

Now enter into configuration mode and change the **enable secret** password to "cisco". Exit configuration and then out of privileged mode. Enter back into privileged mode.

11. Which password did you have to use?
_____

Using the copy command, reload the configuration saved via TFTP back onto the switch.

12. What command did you use?
_____

Exit command line interface again and try to re-enter with the "cisco" password.

13. Were you able to enter privileged mode?

_____

Student Comments:

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