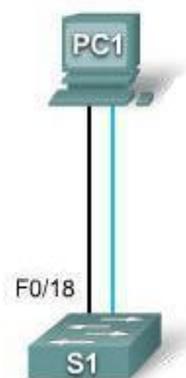


Felix Rohrer

Lab 2.5.3: Managing Switch Operating System and Configuration Files Challenge

Topology Diagram



Addressing Table

Device	Hostname	Interface	IP Address	Subnet Mask	Default Gateway
PC1	Host-A	NIC	172.17.99.21	255.255.255.0	172.17.99.1
S1	ALSwitch	VLAN99	172.17.99.11	255.255.255.0	172.17.99.1

Learning Objectives

Upon completion of this lab, you will be able to:

- Create and save a basic switch configuration
- Set up a TFTP server on the network
- Back up the switch Cisco IOS software to a TFTP server and then restore it
- Back up the switch configuration to a TFTP server
- Configure a switch to load a configuration from a TFTP server
- Upgrade the Cisco IOS software from a TFTP server
- Recover the password for a Cisco 2960 switch (2900 series)

Scenario

In this lab, you will explore file management and password recovery procedures on a Cisco Catalyst switch.

Task 1: Cable and Initialize the Network

Step 1: Cable a network.

Cable a network that is similar to the one in the topology diagram. Then, create a console connection to the switch. If necessary, refer to Lab 1.3.1. The output shown in this lab is from a 2960 switch. If you use other switches, the switch outputs and interface descriptions may appear different.

Step 2: Clear the configuration on the switch.

Set up a console connection to the switch. Erase the configuration on the switch.

Step 3: Create a basic configuration.

Configure the switch with the following hostname and access passwords. Then enable secret passwords on the switch.

Hostname	Console Password	Telnet Password	Command Password
ALSwitch	cisco	cisco	class

Create VLAN 99. Assign IP address 172.17.99.11 to this interface. Assign the FastEthernet 0/18 port to this VLAN.

Step 4: Configure the host attached to the switch.

Configure the host to use the IP address, mask, and default gateway identified in the Addressing table. This host acts as the TFTP server in this lab.

Step 5: Verify connectivity.

To verify that the host and switch are correctly configured, ping the switch IP address from the host.

Was the ping successful? **Yes** _____

If the answer is no, troubleshoot the host and switch configurations.

Appendix 1: Password Recovery for the Catalyst 2960

Recovering a Lost or Forgotten Password

The default configuration for the switch allows an end user with physical access to the switch to recover from a lost password by interrupting the boot process during power-on and by entering a new password. These recovery procedures require that you have physical access to the switch.



Note On these switches, a system administrator can disable some of the functionality of this feature by allowing an end user to reset a password only by agreeing to return to the default configuration. If you are an end user trying to reset a password when password recovery has been disabled, a status message shows this during the recovery process.

These sections describes how to recover a forgotten or lost switch password:

- **Procedure with Password Recovery Enabled**
- **Procedure with Password Recovery Disabled**

You enable or disable password recovery by using the **service password-recovery** global configuration command. Follow the steps in this procedure if you have forgotten or lost the switch password.

Step 1 Connect a terminal or PC with terminal-emulation software to the switch console port.

Step 2 Set the line speed on the emulation software to 9600 baud.

Step 3 Power off the switch. Reconnect the power cord to the switch and, within 15 seconds, press the **Mode** button while the System LED is still flashing green. Continue pressing the **Mode** button until the System LED turns briefly amber and then solid green; then release the **Mode** button.

Several lines of information about the software appear with instructions, informing you if the password recovery procedure has been disabled or not.

- If you see a message that begins with this:

```
The system has been interrupted prior to initializing the flash  
file system.
```

```
The following commands will initialize the flash file system
```

proceed to the "Procedure with Password Recovery Enabled" section, and follow the steps.

- If you see a message that begins with this:

The password-recovery mechanism has been triggered, but is currently disabled.

proceed to the "Procedure with Password Recovery Disabled" section, and follow the steps.

Step 4 After recovering the password, reload the switch:

```
Switch> reload
```

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

Procedure with Password Recovery Enabled

If the password-recovery mechanism is enabled, this message appears:

The system has been interrupted prior to initializing the flash file system.

The following commands will initialize the flash file system, and finish loading the operating system software:

```
flash_init  
load_helper  
boot
```

Step 1 Initialize the flash file system:

```
switch: flash_init
```

Step 2 If you had set the console port speed to anything other than 9600, it has been reset to that particular speed. Change the emulation software line speed to match that of the switch console port.

Step 3 Load any helper files:

```
switch: load_helper
```

Step 4 Display the contents of flash memory:

```
switch: dir flash:
```

The switch file system appears:

Directory of flash:

```
  13  drwx           192   Mar 01 1993 22:30:48  c2960-lanbase-  
mz.122-25.FX  
  11  -rwx          5825   Mar 01 1993 22:31:59  config.text  
  18  -rwx           720   Mar 01 1993 02:21:30  vlan.dat
```

16128000 bytes total (10003456 bytes free)

Step 5 Rename the configuration file to config.text.old.

This file contains the password definition.

```
switch: rename flash:config.text flash:config.text.old
```

Step 6 Boot the system:

```
switch: boot
```

You are prompted to start the setup program. Enter **N** at the prompt:

```
Continue with the configuration dialog? [yes/no]: N
```

Step 7 At the switch prompt, enter privileged EXEC mode:

```
Switch> enable
```

Step 8 Rename the configuration file to its original name:

```
Switch# rename flash:config.text.old flash:config.text
```

Step 9 Copy the configuration file into memory:

```
Switch# copy flash:config.text system:running-config  
Source filename [config.text]?  
Destination filename [running-config]?
```

Press **Return** in response to the confirmation prompts.

The configuration file is now reloaded, and you can change the password.

Step 10 Enter global configuration mode:

```
Switch# configure terminal
```

Step 11 Change the password:

```
Switch (config)# enable secret password
```

The secret password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, and allows spaces but ignores leading spaces.

Step 12 Return to privileged EXEC mode:

```
Switch (config)# exit  
Switch#
```

Step 13 Write the running configuration to the startup configuration file:

```
Switch# copy running-config startup-config
```

The new password is now in the startup configuration.



Note This procedure is likely to leave your switch virtual interface in a shutdown state. You can see which interface is in this state by entering the **show running-config** privileged EXEC command. To re-enable the interface, enter the **interface vlan *vlan-id*** global configuration command, and specify the VLAN ID of the shutdown interface. With the switch in interface configuration mode, enter the **no shutdown** command.

Step 14 Reload the switch:

```
Switch# reload
```

Procedure with Password Recovery Disabled

If the password-recovery mechanism is disabled, this message appears:

```
The password-recovery mechanism has been triggered, but  
is currently disabled. Access to the boot loader prompt  
through the password-recovery mechanism is disallowed at
```

this point. However, if you agree to let the system be reset back to the default system configuration, access to the boot loader prompt can still be allowed.

Would you like to reset the system back to the default configuration (y/n)?



Caution Returning the switch to the default configuration results in the loss of all existing configurations. We recommend that you contact your system administrator to verify if there are backup switch and VLAN configuration files.

- If you enter **n** (no), the normal boot process continues as if the **Mode** button had not been pressed; you cannot access the boot loader prompt, and you cannot enter a new password. You see the message:

Press Enter to continue.....

- If you enter **y** (yes), the configuration file in flash memory and the VLAN database file are deleted. When the default configuration loads, you can reset the password.
-

Step 1 Elect to continue with password recovery and lose the existing configuration:

Would you like to reset the system back to the default configuration (y/n)? **Y**

Step 2 Load any helper files:

Switch: **load_helper**

Step 3 Display the contents of flash memory:

switch: **dir flash:**

The switch file system appears:

```
Directory of flash:
13  drwx          192   Mar 01 1993 22:30:48 c2960-lanbase-
mz.122-25.FX.0
```

```
16128000 bytes total (10003456 bytes free)
```

Step 4 Boot the system:

```
Switch: boot
```

You are prompted to start the setup program. To continue with password recovery, enter **N** at the prompt:

```
Continue with the configuration dialog? [yes/no]: N
```

Step 5 At the switch prompt, enter privileged EXEC mode:

```
Switch> enable
```

Step 6 Enter global configuration mode:

```
Switch# configure terminal
```

Step 7 Change the password:

```
Switch (config)# enable secret password
```

The secret password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, and allows spaces but ignores leading spaces.

Step 8 Return to privileged EXEC mode:

```
Switch (config)# exit  
Switch#
```

Step 9 Write the running configuration to the startup configuration file:

```
Switch# copy running-config startup-config
```

The new password is now in the startup configuration.



Note This procedure is likely to leave your switch virtual interface in a shutdown state. You can see which interface is in this state by entering the **show running-config** privileged EXEC command. To re-enable the interface, enter the **interface vlan *vlan-id*** global configuration command, and specify the VLAN ID of the shutdown interface. With the switch in interface configuration mode, enter the **no shutdown** command.

Step 10 You must now reconfigure the switch. If the system administrator has the backup switch and VLAN configuration files available, you should use those.