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Lab 5.4.2 Powering Up a Cisco Catalyst 2960 Switch

Objectives

- Set up a new Cisco LAN switch.

- Connect a computer to the router console interface.

- Configure HyperTerminal so that the computer can communicate with the router.

Background / Preparation

This lab focuses on the initial setup of the Cisco 2960 switch. If a Cisco 2960 switch is not available, you can use another switch model. The information in this lab applies to other switches. The Cisco 2960 switch is a fixed-configuration, standalone device that does not use modules or flash card slots. It is appropriate for small-sized to medium-sized businesses and for ISP-managed customers.

The following resources are required:

- Cisco 2960 or other comparable switch

- Power cable

- Windows PC with terminal emulation program

- Console cable

Step 1: Position and ground the switch (Optional)

NOTE: This step is optional and is required only if the switch is being set up for the first time. Read through it to become familiar with the process.

a. Position the switch chassis to allow unrestricted airflow for chassis cooling. Keep at least 3 inches (7.6 cm) of clear space beside the cooling inlet and exhaust vents.

b. Connect the chassis to a reliable earth ground using a ring terminal and size 14 AWG (2 mm) wire using these steps:

NOTE: Your instructor should inform you where a reliable earth ground is.

1) Strip one end of the ground wire to expose approximately 3/4 inch (20 mm) of conductor.

2) Crimp the 14 AWG (2 mm) green ground wire to a UL Listed/CSA certified ring terminal using a crimping tool that is recommended by the ring terminal manufacturer.

3) Attach the ring terminal to the chassis. Use a Number 2 Phillips screwdriver and the screw that is supplied with the ring terminal and tighten the screw.

Step 2: Connect the computer to the switch

Connect the PC to the Cisco 2960 switch using an RJ-45-to-DB-9 connector console cable, as shown in the figure below. To view the switch startup messages, connect the PC to the switch, power up the PC and start the terminal emulation program before powering up the switch.

CAUTION: To ensure adequate cooling, never operate the switch unless the cover is installed.
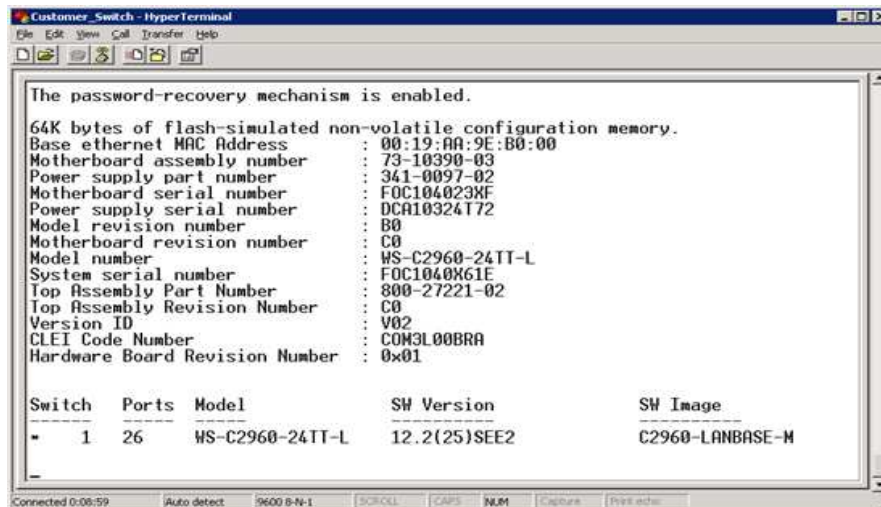
Step 3: Configure the PC terminal emulation program

    a.   Load the terminal emulation program on the PC.

    b.   Select a COM port that matches the port where the RJ-45-to-DB-9 connector is connected to the PC. The COM port is usually COM1 or COM2.

    c.   Configure the terminal emulation parameters as follows:

- 9600 baud
- 8 data bits
- no parity
- 1 stop bit
- no flow control and no parity

Step 4: Power up the switch

    a.   Connect the power cable to the Cisco 2960 switch and to the electrical outlet to power the switch on. The 2960 switch does not have a power switch, but other switches may have one.

        As the switch powers on, the power-on self-test (POST) begins. POST is a series of tests that run automatically to ensure that the switch is functioning properly. POST lasts approximately 1 minute. When the switch begins POST, the **System, Status, Duplex**, and **Speed** LEDs turn green. The **System** LED blinks green, and the other LEDs remain solid green.

    b.   Observe the startup messages as they appear in the terminal emulation program window. While these messages are appearing, do not press any keys on the keyboard. Pressing a key interrupts the switch startup process. Some examples of startup messages displayed are the amount of flash memory installed and the Cisco IOS software version the computer is using. Can you find these example startup messages in the following figure?

The figure shows that there is 64 KB of flash memory installed in the switch, and that the Cisco IOS software version is 12.2(25)SEE2. Startup messages are generated by the operating system of the switch. The messages vary depending on the software installed on the switch. These messages can scroll by quickly and can take a few minutes to stop.

When the POST completes successfully, the **System** LED remains green. The other LEDs turn off and then reflect the switch operating status.

c. When the switch is finished starting up, the following system message appears in the terminal emulation window:

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

NOTE: If the message above does not appear, the switch may have been previously configured and needs to be restored to factory default settings according to the procedure described at the end of this lab.

d. Now turn the switch off by disconnecting the power cord from the switch.

Step 5: Troubleshoot a non-working switch

If the switch fails POST, the **System** LED turns amber. If your switch fails POST, unplug the switch and tell your instructor.

Step 6: Reflection

a. Which LED shows after the POST completes successfully and what color does it show?

4) **Status** LED blinks green

5) **Speed** LED blinks green

6) **Status** LED blinks amber

7) **System** LED is solid green

b. What is the minimum amount of space required around the Cisco 2960 switch ventilation openings?

1) 1 inch (2.54 cm)

2) 2 inches (5.08 cm)

3) 3 inches (7.6 cm)

    c.   When the Cisco 2960 switch is finished starting up for the first time, what task are you asked to perform?

        1)   You are asked to perform an initial configuration of the switch.

        2)   You are not asked to do anything. The switch system prompt appears.

        3)   If your switch is configured with Cisco SDM, you are told that con0 is available.

Erasing and Reloading the Switch

For the majority of the labs in CCNA Discovery, it is necessary to start with an unconfigured switch. Using a switch with an existing configuration may produce unpredictable results. The following instructions prepare the switch prior to performing the lab so that previous configuration options do not interfere. Instructions are provided for the 2900 and 2950 series switches.

    d.   Enter into privileged EXEC mode by typing **enable**. If prompted for a password, enter **class** (if that does not work, ask the instructor).

```
Switch>enable
```

    e.   Remove the VLAN database information file.

```
Switch#delete flash:vlan.dat
Delete filename [vlan.dat]?[Enter]
Delete flash:vlan.dat? [confirm] [Enter]
```

If there was no VLAN file, this message is displayed:

```
%Error deleting flash:vlan.dat (No such file or directory)
```

    f.   Remove the switch startup configuration file from NVRAM.

```
Switch#erase startup-config
```

The responding line prompt is:

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

Press **Enter** to confirm.

The response should be:

```
Erase of nvram: complete
```

    g.   Check that VLAN information was deleted.

Verify that the VLAN configuration was deleted in Step b using the **show vlan** command. If previous VLAN configuration information (other than the default management VLAN 1) is still present, you must power cycle the switch (hardware restart) instead of issuing the **reload** command. To power cycle the switch, remove the power cord from the back of the switch or unplug it, and then plug it back in. If the VLAN information was successfully deleted in Step b, go to Step e and restart the switch using the **reload** command.

    h.   Restart the software using the **reload** command.

NOTE: This step is not necessary if the switch was restarted using the power cycle method.

        4)   At the privileged EXEC mode, enter the **reload** command:

```
Switch(config)#reload
```

The responding line prompt is:

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

5) Type **n,** and then press **Enter**.

The responding line prompt is:

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

The first line of the response is:

```
Reload requested by console.
```

After the switch has reloaded, the line prompt is:

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

6) Type **n,** and then press **Enter**.

The responding line prompt is:

```
Press RETURN to get started! [Enter]
```