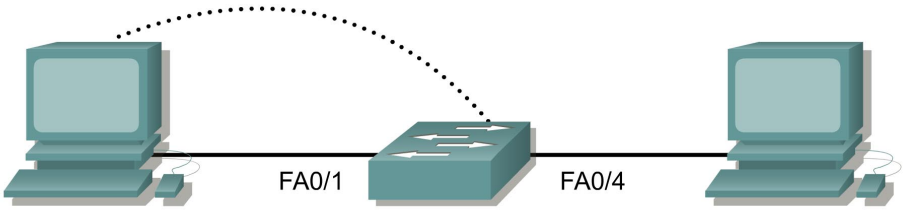
Lab 6.2.2 Basic Switch Configuration



Switch Designation	Switch Name	Enable Secret Password	Enable, VTY, and Console Passwords
Switch 1	ALSwitch	class	cisco

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

Objective

- Configure a switch with a name and an IP address.
- Configure passwords to ensure that access to the CLI is secured.
- Configure switch port speed and duplex properties for an interface.
- Save the active configuration.
- View the switch browser interface.

Background/Preparation

Cable a network similar to the one in the diagram. The configuration output used in this lab is produced from a 2950 series switch. Any other switch used may produce different output. The following steps are to be executed on each switch unless specifically instructed otherwise. Instructions are also provided for the 1900 Series switch, which initially displays a User Interface Menu. Select the “Command Line” option from the menu to perform the steps for this lab.

Start a HyperTerminal session.

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

Step 1 Enter privileged mode

a. Privileged mode gives access to all the switch commands. Many of the privileged commands configure operating parameters. Therefore, privileged access should be password-protected to prevent unauthorized use. The privileged command set includes those commands contained in user EXEC mode, as well as the **configure** command through which access to the remaining command modes is gained.

```
Switch>enable
Switch#
```

1900:

```
>enable
#
```

b. Notice the prompt changed in the configuration to reflect privileged EXEC mode.

Step 2 Examine the current switch configuration

a. Examine the following current running configuration file:

```
Switch#show running-config
```

b. How many Ethernet or Fast Ethernet interfaces does the switch have? _____

c. What is the range of values shown for the VTY lines? _____

d. Examine the current contents of NVRAM as follows:

```
Switch#show startup-config
%% Non-volatile configuration memory is not present
```

e. Why does the switch give this response?

_____

Step 3 Assign a name to the switch

a. Enter **enable** and then the configuration mode. The configuration mode allows the management of the switch. Enter **ALSwitch**, the name this switch will be referred to in the following:

```
Switch#configure terminal
```

Enter the configuration commands, one for each line. End by pressing **Ctrl-Z**.

```
Switch(config)#hostname ALSwitch
ALSwitch(config)#exit
```

b. Notice the prompt changed in the configuration to reflect its new name. Type **exit** or press **Ctrl-Z** to go back into privileged mode.

Step 4 Examine the current running configuration

a. Exam the current configuration that follows to verify that there is no configuration except for the hostname:

```
ALSwitch#show running-config
```

b. Are there any passwords set on the lines? _____

c. What does the configuration show as the hostname of this switch? _____

Step 5 Set the access passwords (1900: Skip to Step 6)

Enter config-line mode for the console. Set the password on this line as **cisco** for login. Configure the vty lines 0 to 15 with the password cisco as follows:

```
ALSwitch#configure terminal
```

Enter the configuration commands, one for each line. End by pressing **Ctrl-Z**.

```
ALSwitch(config)#line con 0
ALSwitch(config-line)#password cisco
ALSwitch(config-line)#login

ALSwitch(config-line)#line vty 0 15
ALSwitch(config-line)#password cisco
ALSwitch(config-line)#login

ALSwitch(config-line)#exit
```

Step 6 Set the command mode passwords

a. Set the **enable password** to cisco and the **enable secret password** to **class** as follows:

```
ALSwitch(config)#enable password cisco
ALSwitch(config)#enable secret class

1900:

ALSwitch(config)#enable password level 15 cisco
ALSwitch(config)#enable secret class

2950:
#show interface fastethernet 0/4        (Note: this can be a trunk or access port)
Or
#show interface gigabitethernet 0/1     (Note: this can be a trunk or access port)
```

b. Which password takes precedence, the enable password or enable secret password? _____

Step 7 Configure the layer 3 access to the switch

a. Set the IP address of the switch to 192.168.1.2 with a subnet mask of 255.255.255.0 as follows:

Note: This is done on the internal virtual interface VLAN 1.

```
ALSwitch(config)#interface VLAN 1
ALSwitch(config-if)#ip address 192.168.1.2 255.255.255.0
ALSwitch(config-if)#exit
```



```
1900:
ALSwitch(config)#ip address 192.168.1.2 255.255.255.0
ALSwitch(config)#exit
```

b. Set the default gateway for the switch and the default management VLAN to 192.168.1.1 as follows:

```
ALSwitch(config)#ip default-gateway 192.168.1.1
ALSwitch(config)#exit
```

```
1900:
ALSwitch(config)#ip default-gateway 192.168.1.1
ALSwitch(config)#exit
```

Step 8 Verify the management LANs settings (1900: Skip to Step 10)

a. Verify the interface settings on VLAN 1 as follows:

```
ALSwitch#show interface VLAN 1
```

b. What is the bandwidth on this interface? _____

c. What are the VLAN states: VLAN1 is _____, Line protocol is _____

d. Enable the virtual interface using the **no shutdown** command

```
ALSwitch(config)#interface VLAN 1
ALSwitch(config-if)#no shutdown
ALSwitch(config-if)#exit
```

e. What is the queuing strategy? _____

Step 9 Save the configuration

a. The basic configuration of the switch has just been completed. Back up the running configuration file to NVRAM as follows:

Note: This will ensure that the changes made will not be lost if the system is rebooted or loses power.

```
ALSwitch#copy running-config startup-config
Destination filename [startup-config]?[Enter]
Building configuration...
[OK]
ALSwitch#
```

1900:

b. The configuration is automatically saved to NVRAM within approximately one minute of entering a command. To save the configuration to a TFTP server, enter the following:

```
ALSwitch#copy nvram tftp://tftp server ip add/destination_filename
```

c. Configuration upload is successfully completed.

Step 10 Examine the startup configuration file (1900: Skip to Step 11)

a. To see the configuration that is stored in NVRAM, type **show startup-config** from the privileged EXEC (enable mode).

```
ALSwitch#show startup-config
```

b. What is displayed? _____

c. Are all the changes that were entered recorded in the file? _____

Step 11 Exit the switch

Logoff the switch by typing **exit** as follows:

```
ALSwitch#exit
```

Once these steps are completed, logoff by typing **exit**, and turn all the devices off. Then remove and store the cables and adapter.

Erasing and Reloading the Switch

For the majority of the labs in CCNA 3 and CCNA 4 it is necessary to start with an unconfigured switch. Use of a switch with an existing configuration may produce unpredictable results. These instructions allow preparation of the switch prior to performing the lab so previous configuration options do not interfere. The following is the procedure for clearing out previous configurations and starting with an unconfigured switch. Instructions are provided for the 2900, 2950, and 1900 Series switches.

2900 and 2950 Series Switches

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

   If prompted for a password, enter **class** (if that does not work, ask the instructor).

   ```
   Switch>enable
   ```

2. 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)
   ```

3. Remove the switch startup configuration file from NVRAM.

   ```
   Switch#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
   ```

4. Check that VLAN information was deleted.

   Verify that the VLAN configuration was deleted in Step 2 using the **show vlan** command. If previous VLAN configuration information (other than the default management VLAN 1) is still present it will be necessary to 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. Then plug it back in.

   If the VLAN information was successfully deleted in Step 2, go to Step 5 and restart the switch using the **reload** command.

5. Software restart (using the **reload** command)

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

a. At the privileged EXEC mode enter the command **reload**.

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

The responding line prompt will be:

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

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

The responding line prompt will be:

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

The first line of the response will be:

```
Reload requested by console.
```

After the switch has reloaded, the line prompt will be:

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

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

The responding line prompt will be:

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

1900 Series Switches

1. Remove VLAN Trunking Protocol (VTP) information

```
#delete vtp
This command resets the switch with VTP parameters set to factory
defaults.
All other parameters will be unchanged.

Reset system with VTP parameters set to factory defaults, [Y]es or
[N]o?
```

Enter **y** and press **Enter**.

2. Remove the switch startup configuration from NVRAM.

```
#delete nvram
```

This command resets the switch with factory defaults. All system parameters will revert to their default factory settings. All static and dynamic addresses will be removed.

Reset system with factory defaults, [**Y**]es or [**N**]o?

Enter **y** and press **Enter**.

