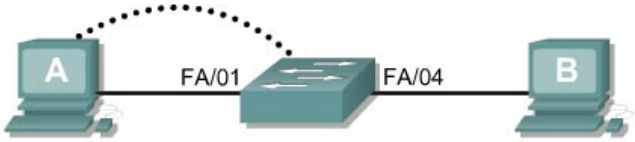
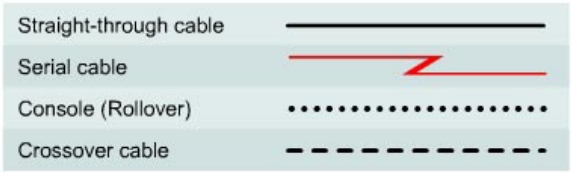
Lab 8.2.3 Configuring Static VLANs



Switch Designation	Switch Name	Enable Secret Password	Enable, VTY, and Console Passwords	VLAN 1 IP Address	Default Gateway IP Address	Subnet Mask
Switch 1	Switch_A	class	cisco	192.168.1.2	192.168.1.1	255.255.255.0



Objective

- Create a basic switch configuration and verify it.
- Determine the switch firmware version.
- Create two VLANs, name them and assign member ports to them.

Background/Preparation

When managing a switch, the Management Domain is always VLAN 1. The Network Administrator's workstation must have access to a port in the VLAN 1 Management Domain. All ports are assigned to VLAN 1 by default.

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 Configure the switch

Configure the hostname, access and command mode passwords, as well as the management LAN settings. These values are shown in the chart. If problems occur while performing this configuration, refer to the Basic Switch Configuration lab.

Step 2 Configure the hosts attached to the switch

Configure the host to use the same subnet for the address, mask, and default gateway as on the switch.

Step 3 Verify connectivity

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

b. Was the ping successful? _____

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

Step 4 Show the IOS version

a. It is very important to know the version of the operating system. Differences between versions may change how commands are entered. Type the **show version** command at the User EXEC or Privileged EXEC mode prompt as follows:

```
Switch_A#show version
```

b. What version of the switch IOS is displayed? _____

c. Does this switch have standard edition or Enterprise edition software? _____

d. What is the Firmware or IOS Version running on this switch? _____

Step 5 Display the VLAN interface information

a. On Switch_A, type the command **show vlan** at the Privileged EXEC prompt as follows:

```
Switch_A#show vlan

1900:
Switch_A#show vlan-membership
```

b. Which ports belong to the default VLAN? _____

c. How many VLANs are set up by default on the switch? _____

d. What does the VLAN 1003 represent? _____

e. How many ports are in the 1003 VLAN? _____

Step 6 Create and name two VLANs

Enter the following commands to create and name two VLANs:

```
Switch_A#vlan database
Switch_A(vlan)#vlan 2 name VLAN2
Switch_A(vlan)#vlan 3 name VLAN3
Switch_A(vlan)#exit
1900:
Switch_A#config terminal
Switch_A(config)#vlan 2 name VLAN2
Switch_A(config)#vlan 3 name VLAN3
```


Step 7 Display the VLAN interface information

a. On Switch_A, type the command **show vlan** at the Privileged EXEC prompt as follows:

```
Switch_A#show vlan
```

b. Are there new VLANs in the listing? _____

1900:

```
Switch_A#show vlan-membership
```

c. Do they have any ports assigned to them yet? _____

Step 8 Assign ports to VLAN 2

Assigning ports to VLANs must be done from the interface mode. Enter the following commands to add port 2 to VLAN 2:

```
Switch_A#configure terminal
Switch_A(config)#interface fastethernet 0/2
Switch_A(config-if)#switchport mode access
Switch_A(config-if)#switchport access vlan 2
Switch_A(config-if)#end
```

1900:

```
Switch_A#config terminal
Switch_A(config)#interface Ethernet 0/2
Switch_A(config-if)#vlan static 2
Switch_A(config)#end
```

Step 9 Display the VLAN interface information

a. On Switch_A, type the command **show vlan** at the Privileged EXEC prompt as follows:

```
Switch_A#show vlan
```

1900:

```
Switch_A#show vlan-membership
```

b. Is port 2 assigned to VLAN 2? _____

c. Is the port still listed in the default VLAN? _____

Step 10 Assign a port to VLAN 3

Assigning ports to VLANs must be done from the interface mode. Enter the following commands to add port 3 to VLAN3

```
Switch_A#configure terminal
Switch_A(config)#interface fastethernet 0/3
Switch_A(config-if)#switchport mode access
Switch_A(config-if)#switchport access vlan 3
Switch_A(config-if)#end
```

1900:

```
Switch_A#config terminal
Switch_A(config)#interface Ethernet 0/3
Switch_A(config)#vlan static 3
Switch_A(config)#end
```

Step 11 Look at the VLAN interface information

a. On Switch_A, type the command **show vlan** at the Privileged EXEC prompt as follows:

```
Switch_A#show vlan
```

1900:

```
Switch_A#show vlan-membership
```

b. Is port 3 assigned to VLAN 3? _____

c. Is the port still listed in the default VLAN? _____

Step 12 Look at only VLAN2 information

a. Instead of displaying all of the VLANs type the **show vlan id 2** command at the Privileged EXEC mode prompt as follows:

```
Switch_A#show vlan id 2
```

1900:

```
Switch_A#show vlan 2
```

b. Does this command supply any more information than the show VLAN command? _____

Step 13 Look at only VLAN2 information with a different command (1900: Omit this step)

a. Instead of displaying all of the VLANs type the **show vlan name VLAN2** command at the Privileged EXEC mode prompt.

```
Switch_A#show vlan name VLAN2
```


b. Does this command supply any more information than the show VLAN command? _____

Once the steps are completed, log off 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**.

