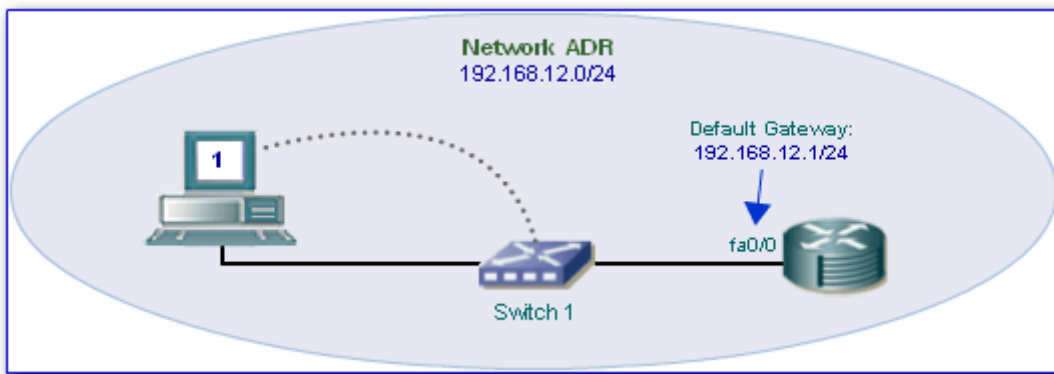


Portfolio Exercise 3a: Basic Switch Configuration and Verification

Objectives

- Configure a switch with a name and an IP address using a CLI (command line interface.)
- Use the Help function (?) on a switch
- Configure passwords to secure access to the switch
- Save the switch configuration.
- View the switch configuration using a browser.
- *Collect portfolio evidence for part of Grading Criteria P3*

Scenario



Cable a network similar to the one in the diagram. The configuration output used in this lab is produced from a 2950 series switch. You should erase any existing switch configuration before proceeding with the lab.

Task 1: Document the Configuration

a. Specify the configuration of the switch and the host

Using the diagram above for reference, fill in the table below. Some of the detail such as the switch name you may decide for yourself.

	Name	Enable Secret Password	VTY and Console Password
Switch 1			

Now decide on and IP address for the host and fill the table below. (Do not use **192.168.12.2** because this will be used later)

	IP Address	Subnet Mask	Default Gateway
Host 1			

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Task 2: Use the Help Function on the Switch

The purpose of this section is to help you become familiar with switch commands.

On connecting to your switch through HyperTerminal, you should be greeted by the User mode prompt:-

```
Switch>
```

Just as with a router, you can enter Privileged mode using the command:-

```
Switch>enable
```

In Privileged mode, enter the question mark (?) to view a list of available commands. Write down in the table below some of the commands you are familiar with from configuring routers. Then write down any unfamiliar commands you think are **specific** to switches.

Now enter Configuration mode using the command:-

```
Switch#configure terminal
```

Again, enter the question mark (?) to view a list of available commands. Write down in the table below some of the commands you are familiar with from configuring routers. Then write down any unfamiliar commands you think are **specific** to switches.

Now enter the interface mode using the *appropriate* command:-

```
Switch#int fa0/1
```

Or

```
Switch#int e0/1
```

Again, enter the question mark (?) to view a list of available commands. Write down in the table below some of the commands you are familiar with from configuring routers. Then write down any unfamiliar commands you think are **specific** to switches.

Familiar Commands	Unfamiliar Commands

Portfolio Exercise 3a: Basic Switch Configuration and Verification**Task 3: Explore Switch Attributes**

Carry out the following tasks to help you become familiar with your switch.

a. Erase any existing configuration

Before exploring your switch, you will need to enter privileged mode and erase any startup configuration. This involves deleting the startup configuration stored in NVRAM and also any `vlan` database information stored in a `vlan.dat` file. You will learn more about the purpose of VLAN's later on.

First delete any VLAN configuration using the command:-

```
Switch#delete flash:vlan.dat
```

It will ask you to confirm deletion if a `vlan.dat` file exists, otherwise the following message is displayed.

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

Now erase the **startup** configuration using the same command you would use for a router. Then **Reload** the router.

b. View Configuration Information

View the running configuration in RAM using the command:-

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

How many Ethernet or Fast Ethernet ports does the switch have? _____

How many VTY lines are there? _____

To see the contents of the startup configuration file, type following command:-

```
Switch#show startup-config
```

If you erased your start-up configuration properly at the beginning of this lab, you should see the following:-

```
Non-volatile configuration memory is not present
```

Now copy your running configuration to NVRAM.

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

What is displayed now when you issue the command `show startup-config`?

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c. View IOS Information

Examine information about the switch using the **version** command.

```
Switch#show version
```

What is the IOS version that the switch is running? _____

What is the system image file name? _____

What model of switch is it? _____

d. View Interface Information

Examine some of the default properties of the Ethernet interfaces using the following commands:

```
#show run
```

```
#show ip int brief
```

Write down the name of the special interface that is NOT an Ethernet interface. _____

How many interfaces are up, how many are down? _____

What event would make an interface go up? _____

Examine the interface that is up using the *appropriate sh int* command, e.g.

```
#show int fa0/1
```

Or

```
#show int e0/1
```

What is the speed and duplex setting of the interface? _____

e. View VLAN Information

The term VLAN stands for Virtual LAN. VLAN's allow a network manager to logically segment a LAN into different broadcast domains. Different Ethernet ports on a switch can be assigned to different VLAN's. By default, a switch already has VLAN 1 but you can add more.

Examine the following default VLAN settings of the Switch

```
Switch>show vlan
```

What is the name of VLAN 1? _____

Which ports are in VLAN 1 by default? _____

Is VLAN 1 active by default? _____

Portfolio Exercise 3a: Basic Switch Configuration and Verification

Task 4: Configure the Switch and Host

First you will need to configure the switch as follows:-

- o Set the switch name
- o Set the enable, console and VTY passwords
- o Set a switch IP address on the VLAN 1 management port

The various configuration commands for a switch are similar to router configuration commands. The table below shows some basic configuration commands. You will need to be in the appropriate mode, e.g. global configuration mode etc.

Command	Mode to be in to use command	Example
Enable	User Mode	Switch> en Switch#
Configure Terminal	Privileged Mode	Switch# config t Switch(config)#
Enable Password	Configuration Mode	Switch(config)# enable password class
Enable Secret Password	Configuration Mode	Switch(config)# enable secret cisco
Console Password	Configure Line Mode	Switch(config)# line con 0 Switch(config-line)# password cisco Switch(config-line)# login
VTY Passwords	Configure Line Mode	Switch(config)# line vty 0 15 Switch(config-line)# password cisco Switch(config-line)# login
Erase startup configuration in NVRAM	Privileged Mode	Switch# erase startup-config
Erase VLAN database file	Privileged Mode	Switch# delete flash:vlan.data
Copy running configuration to NVRAM	Privileged Mode	Switch# copy run start
View VLAN information	Privileged Mode	Switch# sh vlan
Enter a VLAN interface	Configuration Mode	Switch(config)# int vlan 1

a. Carry out basic configuration of the switch

Using the information in the table, configure the switch as follows

- ◇ Set the switch’s name to the name you chose earlier, using the **hostname** command
- ◇ Set the enable password using the **enable secret** command
- ◇ Set the line console and vty passwords using the **password** and **login** commands

b. Configure the hosts

Configure the host with the IP address, subnet mask and default gateway as specified in your documentation.

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c. Verify Connectivity

Do you think it is possible for you to ping your switch from your host? _____

Try it!

- Ping your Switch 1 from Host 1

What was the result of your ping? _____

d. Configure the VLAN 1 management port

By default, VLAN 1 is the management port. You can set an IP address on the virtual interface just as you would for any normal physical interface. To set VLAN 1 with an IP address of 192.168.1.2 and a subnet mask of 255.255.255.0 carry out the following:

```
Switch(config)#interface VLAN 1
Switch(config-if)#ip address 192.168.12.2 255.255.255.0
Switch(config-if)#exit
```

Like configuring a Host PC, you also need to set the default gateway for the switch as follows: You do this in global configuration mode and NOT in any interface mode. The default gateway address is the address of the port on a Router to which the switch is connected.

```
Switch(config)#ip default-gateway 192.168.12.1
Switch(config)#exit
```

e. Verify the VLAN 1 management port

You can verify the interface settings on VLAN 1 as follows:

```
Switch#show interface VLAN 1
Or
Switch#show ip int brief
```

What are the VLAN states? _____

If the virtual interface is down, enable the interface using the **no shutdown** command

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

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f. Verify Connectivity Again

Do you think it is possible for you to ping your switch from your host now? _____

Try it!

- Ping your Switch 1 from Host 1

What was the result of your ping? _____

~~Screenshot of ipconfig and ping result is required~~

~~Printout of switch configuration is required~~

*Don't forget to save your configuration using the **copy run start** command*

Task 5: Connect to the Switch using a Browser

As a change from using a CLI, try connecting to your switch through a browser.

a. Disconnect HyperTerminal and connect through a browser

Before trying to connect to the switch through a browser, first disconnect your HyperTerminal session. Open up a browser and type in the IP address of the switch. When you connect via a browser, you will see a username/password dialog. Put in the enable password. Leave the name area blank.

~~Screenshot of connection to switch through a browser is required~~

Do you think being able to connect to a switch through a web browser is useful? Explain your answer.

Evidence

Please supply the following evidence to support your implementation of this task

~~Screenshots and configuration files required~~

- Printout of the switch's configuration file, with annotation pointing out parts you specifically configured
- Screenshots showing the **ipconfig** and **ping** results of the host
- Printout showing your connection to the switch through a browser

Please annotate, sign, date, put the portfolio exercise number and task number on all evidence pages