Switch Configuration

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Switch

- The *switch is* Physical layer device that serves as a central connection point for several network devices.
- Switches are used to connect multiple devices together on **the same** network.
- Switch builds a table of the MAC addresses of all the devices connected to it.
- **we can access switch configuration by two ways**
  1. Using console cable from pc(RS232 port) to switch console port
  2. Remotely access

Preparing for Basic Switch Management

- To prepare a switch for remote management access,
  - the switch must be configured with an IP address , a subnet mask and default gateway
  - the switch virtual interface (SVI) on S1 should be assigned an IP address. The SVI is a virtual interface, not a physical port on the switch.
  - The virtual terminal should have password
- By default, the switch is configured to have the management of the switch controlled through VLAN 1. All ports are assigned to VLAN 1 by default

Switch Configuration

1. ***Cable the Network and Verify the Default Switch Configuration***

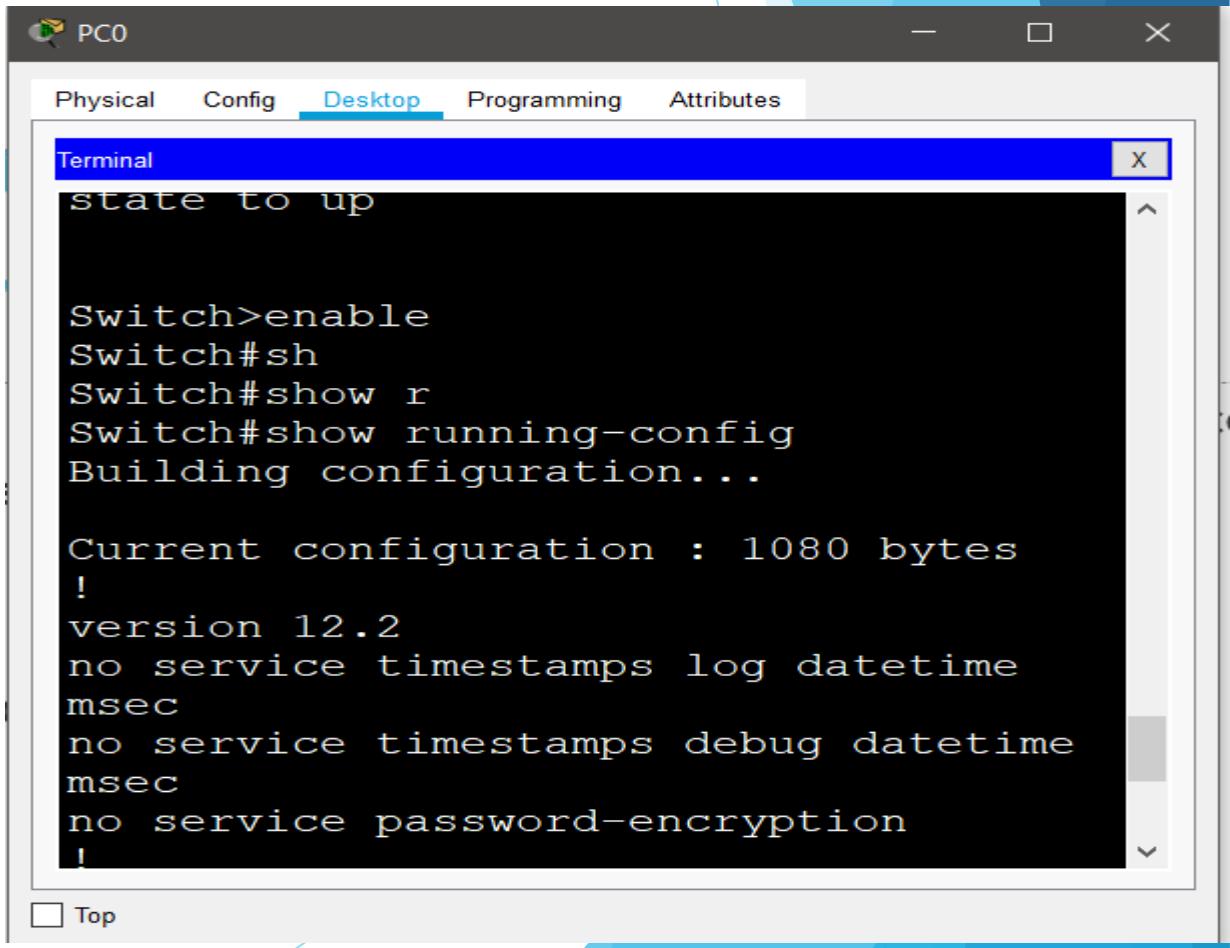
2. ***Configure Basic Network Device Settings***
   - These basic switch settings include device name, interface description, local passwords, IP addressing, and static MAC address.

Cable the network

- Devices
  - PC
  - Switch
  - Console cable and straight cable
  - The console port connect switch to the PC to configure switch , in switch it will be connect to console port and for PC it will connect to RS232 port

Display the Default Switch Configuration

- Click on pc then Desktop then terminal
- **Enter privileged EXEC mode by entering the enable command**
- Switch> **enable**
- Switch#
- To show switch configuration run
- Switch# **show running-config**



Display the Default Switch Configuration cont't

- How many Fast Ethernet interfaces does the switch have?
- **24 (**from FastEthernet0/1 to FastEthernet0/24)
- How many Gigabit Ethernet interfaces does the switch have?
- 2 **(** interface GigabitEthernet0/1 and interface GigabitEthernet0/2)
- The virtual terminal or "**VTY**" lines are **virtual lines that allow connecting to the device using telnet or Secure Shell (SSH).**

Show NVRAM configuration

- Which command will display the current contents of non-volatile random-access memory (NVRAM)?
- **Switch#show startup-config**

```
Switch#
Switch#show startup-config
startup-config is not present
Switch#
```

VLAN

- VLAN is Virtual LAN
- SH#show vlan

```
SH#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                Gig0/1, Gig0/2
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

Examine the characteristics of the SVI for VLAN 1.

- To show the properties of VLAN1 run command
- SH#**show interfaces vlan1**
- What is the MAC address of this SVI?
- address is 000a.f312.c997
- Is this interface up?
- Vlan1 is administratively down, line protocol is down

```
SH#show interface f0/6
FastEthernet0/6 is up, line protocol is up (connected)
  Hardware is Lance, address is 00e0.f93c.bc06 (bia 00e0.f93c.bc06)
 BW 100000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s
  input flow-control is off, output flow-control is off
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:08, output 00:00:05, output hang never
```

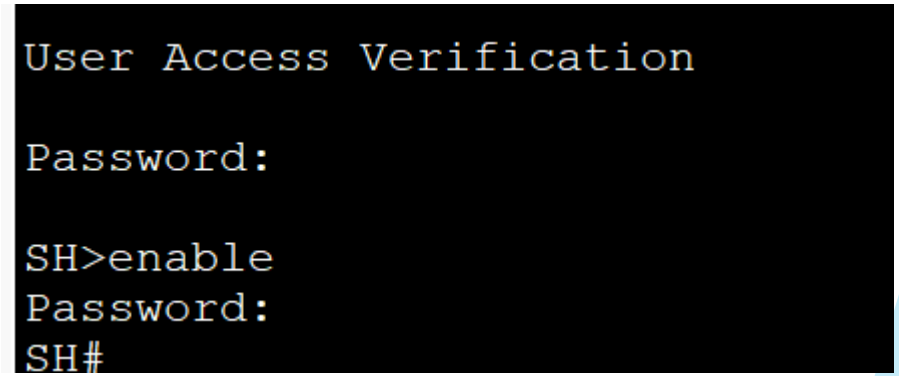
- **Examine the default properties of the FastEthernet interface**
- **SH#show interface f0/6**

Create a Basic Switch Configuration

- Before you run any configuration for switch you should enter configuration mode by running command
  - Switch# **configure terminal or conf t**
- **To change switch name run the command**
  - Switch(config)#
  - Switch(config)#hostname SH
  - SH(config)#exit
  - SH#
  - %SYS-5-CONFIG_I: Configured from console by console
  -
  - SH#

Secure privileged mode access.

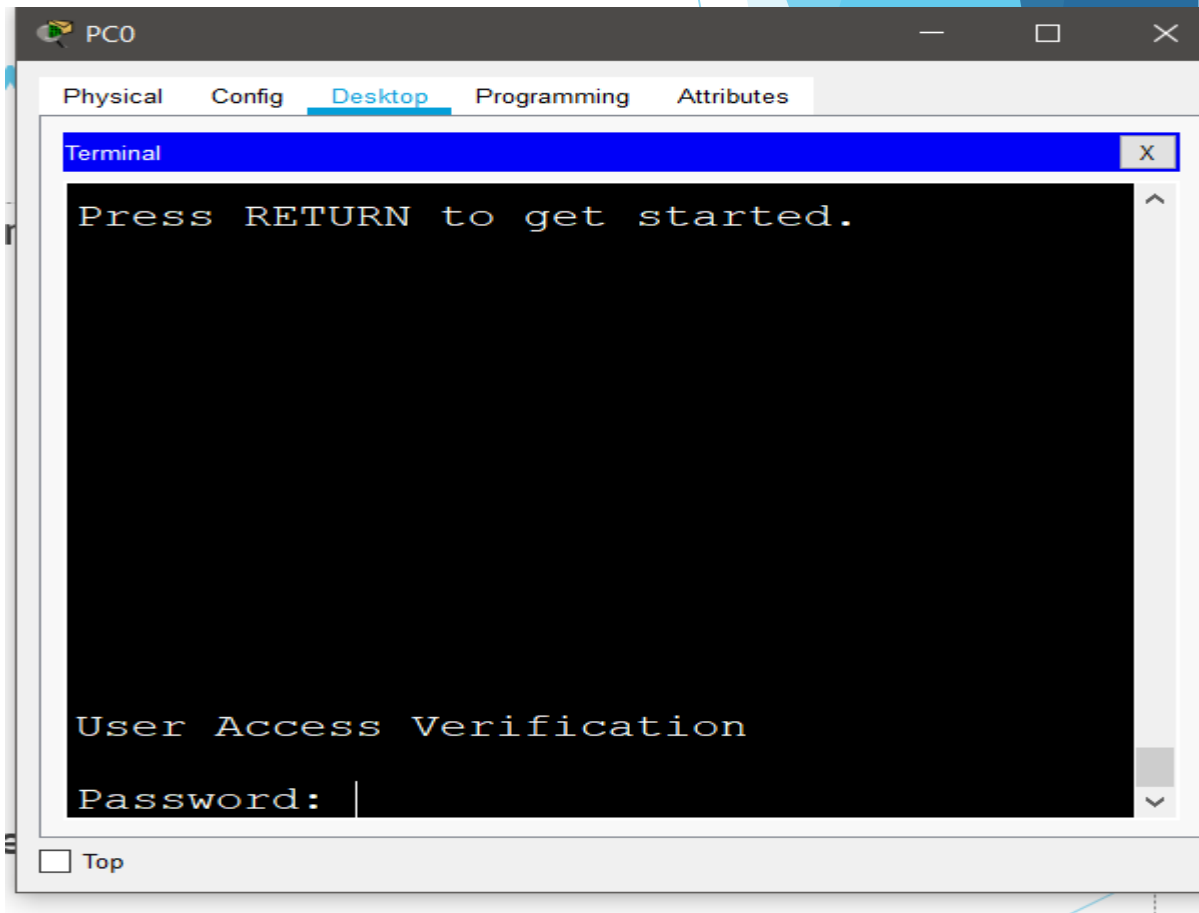
- This step to add password when run enable command
- SH#config t
- SH(config)#enable password shkh
- SH(config)#exit
- Run
- SH#show running-config
- Create encrypted password
- SH(config)# **enable secret asd**



Create a Basic Switch Configuration

- **Secure access to the console line.(exit password)**
- To secure access to the console line, access config-line mode and set the console password to **cisco**.
- SH#config t
- SH(config)# line 0
- SH(config-line)#password cisco
- SH(config-line)#login

- **Verify that console access is secured.**
- Run exit command



Save and Verify Configuration Files to NVRAM

- SH# copy running-config startup-config
- Destination filename [startup-config]? Press Enter
- Building configuration...

- Note that the copy command executed in the privilege mode

Assign IP address to VLAN 1

- **Set the IP address of the switch to 192.168.1.2 with a subnet mask of 255.255.255.0 on the internal virtual interface VLAN 1**
  - SH(config)#interface vlan 1
  - SH(config-if)#
  - SH(config-if)#ip address 192.168.1.2 255.255.255.0
  - SH(config-if)#no shutdown
  - SH(config-if)#exit

Configure the default gateway for S1.

- If no default gateway is set, the switch cannot be managed from a remote network that is more than one router away. Although this activity does not include an external IP gateway, assume that you will eventually connect the LAN to a router for external access. Assuming that the LAN interface on the router is 192.168.1.1, set the default gateway for the switch.
- **SH(config)#ip default-gateway 192.168.1.1**
-

Configure the virtual terminal (vty) lines for the switch to allow telnet access.

- If you do not configure a vty password, you will not be able to telnet to the switch.
- SH(config)#line vty 0 15
- SH(config-line)#password cisco
- SH(config-line)#login
- SH(config-line)#end
- SH#
- %SYS-5-CONFIG_I: Configured from console by console
-

Test and verify remote management of the switch

- From PC open desktop then command prompt
- C:\>telnet 192.168.1.2
- Trying 192.168.1.2 ...Open
- User Access Verification
- Password: cisco
- SH>enable
- Password: shkh

Thank You