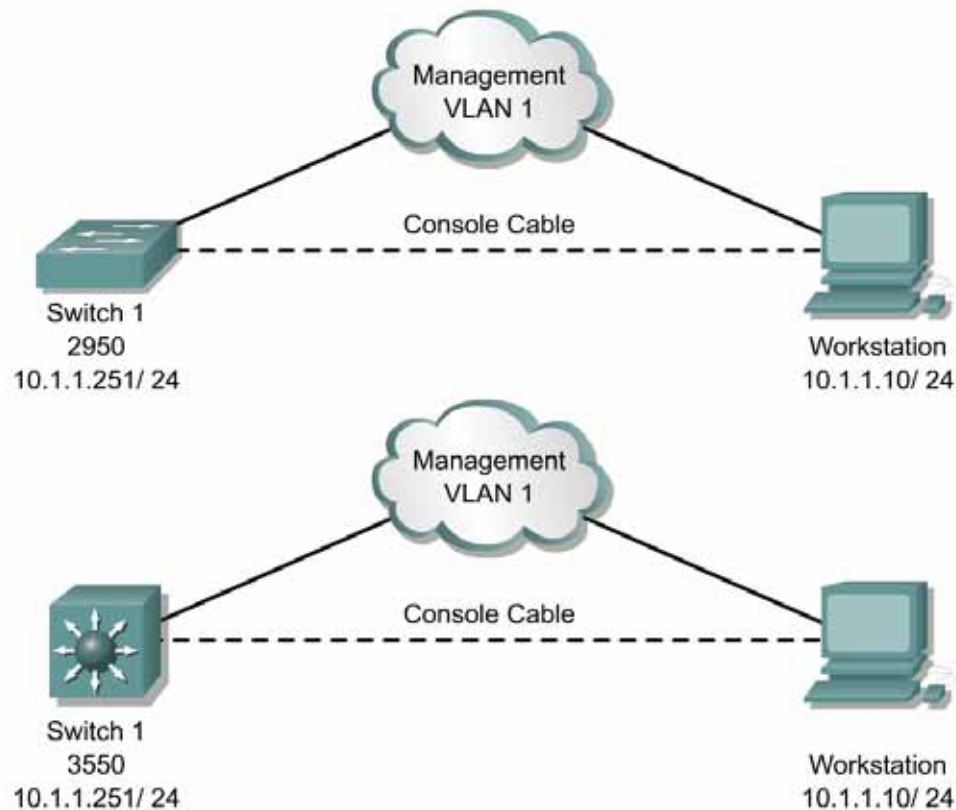


Lab 1.2.9.1 Catalyst 2950T and 3550 Series Basic Setup



Objective

Configure a Cisco Catalyst 2950T or 3550 series Ethernet switch for the first time using the command-line interface (CLI) mode. Basic first time tasks such as configuring a switch name, passwords, and assigning an IP address to the Management VLAN, for remote management purposes will be completed.

Scenario

The standard switch pod used for this course contains Cisco Catalyst WS-C3550-24-EMI and WS-C2950T-24-EI switches. The Catalyst 3550 has 24 10/100 ports and two Gigabit Interface Converter (GBIC) ports. The Catalyst 2950T has 24 10/100 ports and two fixed GBIC-based 1000BASE-X uplink ports. Both switches are standardized on IOS 12.1(11)EA1 with the Enhanced Multilayer Image (EMI) on the 3550 and the Enhanced Software Image (EI) on the 2950T. The respective System Image file names are c3550-i5q312-mz.121-11.EA1.bin and c2950-i6q412-mz.121-11.EA1.bin.

The basic first-time setup for the 2950T and 3550 series switches is very similar with the exception of the fixed 1000BASE-T uplink ports on the 2950T versus the GBIC ports on the 3550.

Step 1

Select a 2950T or 3550 switch, but do not plug the power cord into the power socket or outlet. Neither switch has an on/off power button or switch. Use the standard process for establishing a HyperTerminal console connection from a workstation with either switch using a rollover cable and serial adapter. The communication settings are as follows:

- 9600 bits per second
- Eight data bits
- No parity
- One stop bit
- No flow control

Power up the switch and watch the boot process on the HyperTerminal display screen. After the boot process is complete, a prompt for the System Configuration Dialog will be displayed. If there is no previously saved configuration, the following prompt will be shown.

<Output omitted>

```
--- System Configuration Dialog ---
```

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

Notice the prompt is the same as a router upon boot up without a previously saved configuration. Similarly, the switch has a Basic and an Extended Management Setup option.

Respond **no** to the configuration dialog prompt since initial configuration will be completed using the command-line interface (CLI) mode. Students may want to redo the lab later using the System Configuration Dialog.

After responding **no** to the configuration prompt, it may be necessary to press the **Enter** key to display the **Switch>** prompt.

```
Press RETURN to get started!  
00:03:18: %LINK-5-CHANGED: Interface Vlan1, changed state to  
administratively down  
00:03:19: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1,  
changed state to down  
Switch>
```

Step 2

Look at the default configuration from the privileged EXEC mode before configuring the switch. Sample outputs from a 2950T-24 and a 3550-24 switch are shown here. The configurations are similar to an IOS-based router.

```
Switch>enable  
Switch#show running-config
```

Use the default configuration for the Catalyst 2950T-24.

```
Building configuration...

Current configuration : 1449 bytes
!
version 12.1
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Switch
!
!
ip subnet-zero
!
spanning-tree mode pvst
no spanning-tree optimize bpdu transmission
spanning-tree extend system-id
!
!
interface FastEthernet0/1
no ip address
!
interface FastEthernet0/2
no ip address
!
interface FastEthernet0/3
no ip address
!
interface FastEthernet0/4
no ip address
!
interface FastEthernet0/5
no ip address
!
interface FastEthernet0/6
no ip address
!
interface FastEthernet0/7
no ip address
!
interface FastEthernet0/8
no ip address
!
interface FastEthernet0/9
no ip address
!
interface FastEthernet0/10
no ip address
!
interface FastEthernet0/11
no ip address
!
interface FastEthernet0/12
no ip address
!
interface FastEthernet0/13
no ip address
!
```

```

interface FastEthernet0/14
no ip address
!
interface FastEthernet0/15
no ip address
!
interface FastEthernet0/16
no ip address
!
interface FastEthernet0/17
no ip address
!
interface FastEthernet0/18
no ip address
!
interface FastEthernet0/19
no ip address
!
interface FastEthernet0/20
no ip address
!
interface FastEthernet0/21
no ip address
!
interface FastEthernet0/22
no ip address
!
interface FastEthernet0/23
no ip address
!
interface FastEthernet0/24
no ip address
!
interface GigabitEthernet0/1
no ip address
!
interface GigabitEthernet0/2
no ip address
!
interface Vlan1
no ip address
no ip route-cache
shutdown
!
ip http server
!
!
line con 0
line vty 5 15
!
end

```

Use the default configuration for the Catalyst 3550-24.

Building configuration...

```

Current configuration : 1451 bytes
!
version 12.1
no service pad
service timestamps debug uptime
service timestamps log uptime

```

```
no service password-encryption
!
hostname Switch
!
!
ip subnet-zero
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
!
!
interface FastEthernet0/1
no ip address
!
interface FastEthernet0/2
no ip address
!
interface FastEthernet0/3
no ip address
!
interface FastEthernet0/4
no ip address
!
interface FastEthernet0/5
no ip address
!
interface FastEthernet0/6
no ip address
!
interface FastEthernet0/7
no ip address
!
interface FastEthernet0/8
no ip address
!
interface FastEthernet0/9
no ip address
!
interface FastEthernet0/10
no ip address
!
interface FastEthernet0/11
no ip address
!
interface FastEthernet0/12
no ip address
!
interface FastEthernet0/13
no ip address
!
interface FastEthernet0/14
no ip address
!
interface FastEthernet0/15
no ip address
!
interface FastEthernet0/16
no ip address
!
interface FastEthernet0/17
no ip address
```

```

!
interface FastEthernet0/18
no ip address
!
interface FastEthernet0/19
no ip address
!
interface FastEthernet0/20
no ip address
!
interface FastEthernet0/21
no ip address
!
interface FastEthernet0/22
no ip address
!
interface FastEthernet0/23
no ip address
!
!
no ip address
!
interface GigabitEthernet0/1
no ip address
!
interface GigabitEthernet0/2
no ip address
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip http server
!
!
!
line con 0
line vty 5 15
!
end

```

Step 3

Configure a switch name, enable password, privileged password, console password, and virtual terminal password. The commands are the same commands that were used to configure routers in previous courses and labs.

```

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname Switch1
Switch1(config)#enable password cisco
Switch1(config)#enable secret class
Switch1(config)#line con 0
Switch1(config-line)#password cisco
Switch1(config-line)#login
Switch1(config-line)#line vty 0 15
Switch1(config-line)#password cisco
Switch1(config-line)#login
Switch1(config-line)#^z

```

Note Notice that 16 VTY lines (0 – 15) have been configured.

Issue a **show running-config** command to check the operating configurations.

Issue a **copy running-config startup-config** command to save the configurations.

Issue the **show startup-config** command to view the configuration in NVRAM, which is also known as the startup configuration.

```
Switch#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
Switch(config)#hostname Switch1
Switch1(config)#enable password cisco
Switch1(config)#enable secret class
Switch1(config)#line con 0
Switch1(config-line)#password cisco
Switch1(config-line)#login
Switch1(config-line)#line vty 0 15
Switch1(config-line)#password cisco
Switch1(config-line)#login
Switch1(config-line)#^Z
Switch1#
00:04:58: %SYS-5-CONFIG_I: Configured from console by
console
2950T Switch
```

```
Switch1#show running-config
01:18:15: %SYS-5-CONFIG_I: Configured from console by
console
Building configuration...
```

```
Current configuration : 1625 bytes
!
version 12.1
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Switch1
!
enable secret 5 $1$uLDP$Ten7HF8asJKS9fgvzrz2E/
enable password cisco
!
ip subnet-zero
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
!
!
interface FastEthernet0/1
no ip address
!
```

```
interface FastEthernet0/2
  no ip address
!
interface FastEthernet0/3
  no ip address
!
interface FastEthernet0/4
  no ip address
!
interface FastEthernet0/5
  no ip address
!
interface FastEthernet0/6
  no ip address
!
interface FastEthernet0/7
  no ip address
!
interface FastEthernet0/8
  no ip address
!
interface FastEthernet0/9
  no ip address
!
interface FastEthernet0/10
  no ip address
!
interface FastEthernet0/11
  no ip address
!
interface FastEthernet0/12
  no ip address
!
interface FastEthernet0/13
  no ip address
!
interface FastEthernet0/14
  no ip address
!
interface FastEthernet0/15
  no ip address
!
interface FastEthernet0/16
  no ip address
!
interface FastEthernet0/17
  no ip address
!
interface FastEthernet0/18
  no ip address
!
interface FastEthernet0/19
  no ip address
!
interface FastEthernet0/20
  no ip address
!
```



```

interface FastEthernet0/21
  no ip address
!
interface FastEthernet0/22
  no ip address
!
interface FastEthernet0/23
  no ip address
!
interface FastEthernet0/24
  no ip address
!
interface GigabitEthernet0/1
  no ip address
!
interface GigabitEthernet0/2
  no ip address
!
interface Vlan1
  no ip address
  shutdown
!
ip classless
ip http server
!
!
!
line con 0
  password cisco
  login
line vty 0 4
  password cisco
  login
line vty 5 15
  password cisco
  login
!
end

Switch1#

```

Step 4

By default, the 2950T and 3550 series switches use VLAN 1 as the Management VLAN for network connection. On the catalyst 3550, the Vlan1 interface configuration was displayed after the GigabitEthernet 0/2 interface as follows:

<Output omitted>

```

interface GigabitEthernet0/2
no ip address
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip http server

```

<Output omitted>

To enable a network connection, an IP address must be assigned to VLAN 1. A default gateway to the router must also be configured to enable inter-VLAN communication. A default gateway does not need to be configured in this lab since no router is being used and no inter-VLAN communication will occur. However, the gateway should be configured for practice.

Configure an IP address, subnet mask, and default gateway on the switch for access to the network for management purposes.

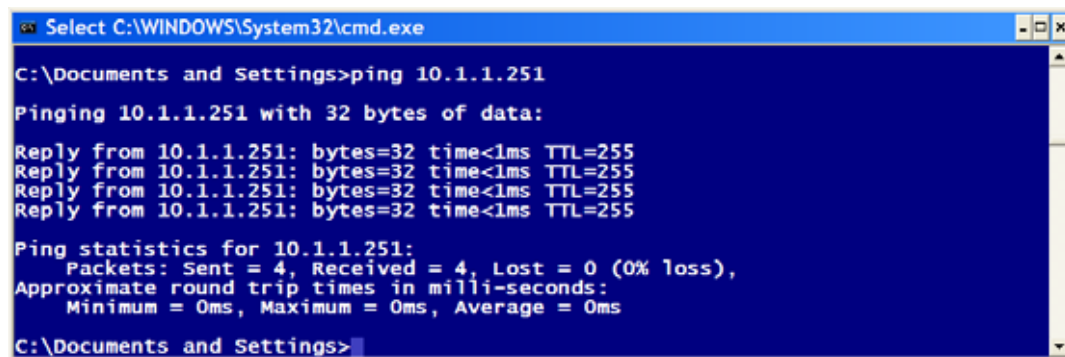
```
Switch1#configure terminal
Switch1(config)#interface vlan 1
Switch1(config-if)#ip address 10.1.1.251 255.255.255.0
Switch1(config-if)#no shutdown
Switch1(config-if)#exit
Switch1(config)#ip default-gateway 10.1.1.1
Switch1(config)#exit
```

Additional VLAN interfaces can be created by issuing the **interface vlan** command. The IP address assigned to the VLAN must be a valid address from the subnet to which the VLAN belongs. Remember that a VLAN is equated with a subnet.

Step 5

By default, all ports are members of VLAN 1. Therefore, all devices plugged into any port must belong to the same subnet as the IP address that was previously assigned to VLAN 1. Configure the workstation with the IP address and subnet mask, which is 10.1.1.10 255.255.255.0.

Plug a straight-through cable from the workstation into any switch port. This should enable communications between the workstation and the switch. Verify connectivity with a **ping** from the workstation to Vlan1 interface on the switch, which is 10.1.1.251, and from the switch to the workstation.



```
Select C:\WINDOWS\System32\cmd.exe
C:\Documents and Settings>ping 10.1.1.251
Pinging 10.1.1.251 with 32 bytes of data:
Reply from 10.1.1.251: bytes=32 time<1ms TTL=255
Reply from 10.1.1.251: bytes=32 time<1ms TTL=255
Reply from 10.1.1.251: bytes=32 time<1ms TTL=255
Reply from 10.1.1.251: bytes=32 time<1ms TTL=255
Ping statistics for 10.1.1.251:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Documents and Settings>
```

```
Switch1#ping 10.1.1.10
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.10, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4
ms
Switch1#
```

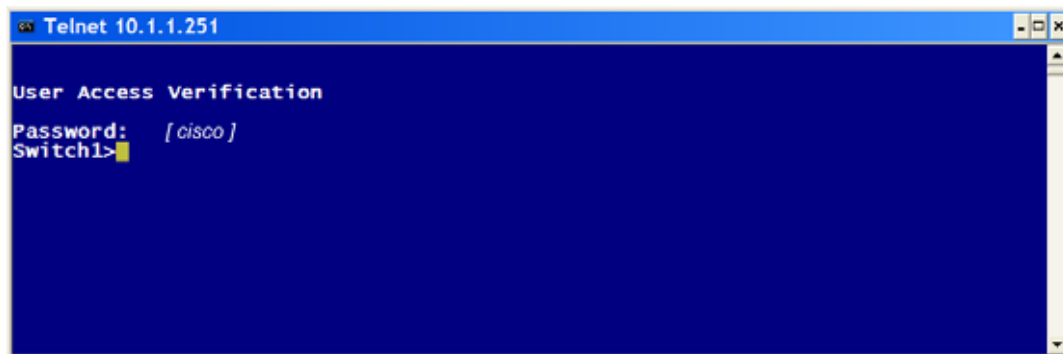
The switch can now be accessed from the workstation by using Telnet or through a Web browser. Notice in the following sample output that the HTTP capability has been enabled by default.

<Output omitted>

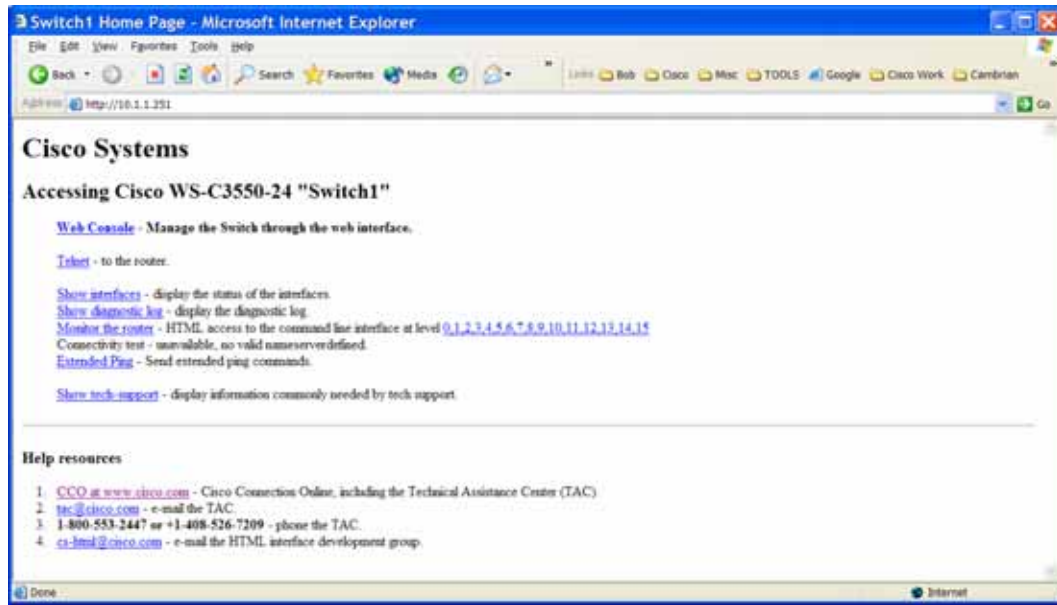
```
interface GigabitEthernet0/2
no ip address
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip http server
```

<Output omitted>

Telnet from the workstation to the switch with the Management VLAN 1 IP address that was previously assigned, which is 10.1.1.251. Respond to the password prompt with the vty cisco login password that was previously configured.



Open a Web browser on the workstation and enter the Management VLAN 1 IP address, which is 10.1.1.251, in the address field. No username will be required. Respond to the password prompt with the privileged password "class". An output similar to the sample 3550 output will appear to indicate a successful connection.



Using the CLI mode, students have successfully completed a basic first time configuration of a Catalyst 2950T or Catalyst 3550 switch with network access capability for management purposes.

Save the configuration for use in the next lab.