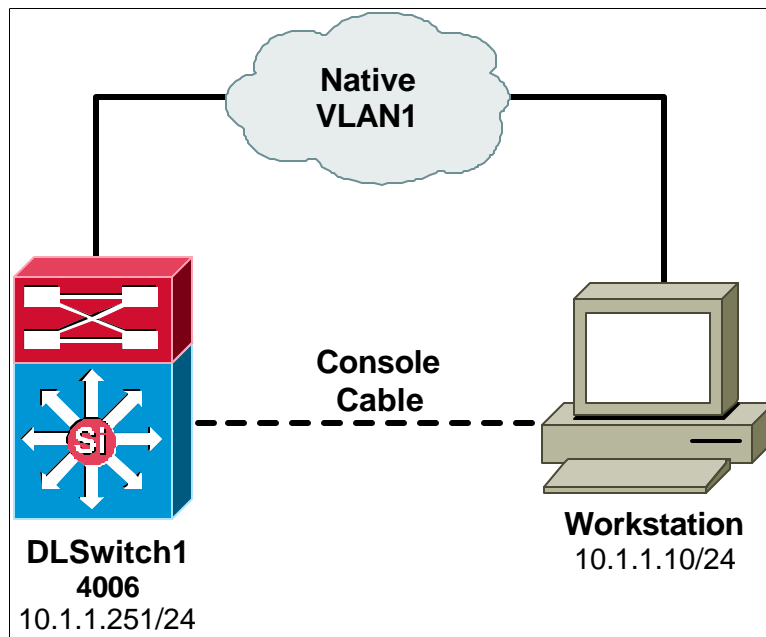


Lab 3.1.3.2: Catalyst 4000 Setup



Objective:

Configure a Cisco Catalyst 4000 Ethernet switch for the first time.

Scenario:

You have just purchased a new Catalyst 4000 Ethernet switch with a supervisor module and a 32 port layer 3 switch module. Configure the supervisor module so that it has a name, IP address, and basic password security using the Command Line Interface (CLI).

Lab Tasks:

1. Connect your serial port to the console port of the Catalyst 4000. You may notice that both the layer 3 switch module and the supervisor module both have a console port. Since you are configuring the switch itself, you will plug into the supervisor module console port.

You will use a standard Cisco console cable kit with a rollover cable to connect.

Use the communications settings: 8 data bits, no parity, 1 stop bit, no flow control.

2. Power on the 4000 switch and watch it start up. It may take several minutes for the 4000 to boot up. You will notice that the 4000 switch is much more verbose in its startup messages than Cisco routers.

```
WS-X4013 bootrom version 5.4(1), built on 2000.04.04 10:48:54
H/W Revisions:      Crumb: 5      Rancor: 8      Board: 2
Supervisor MAC addresses: 00:02:4b:59:30:00 through
00:02:4b:59:33:ff (1024 addresses)
Installed memory: 64 MB
Testing LEDs.... done!
...
```

3. Once boot up is complete, you will be presented with a password prompt:

```
IP address for Catalyst not configured
DHCP/BOOTP will commence after the ports are online
Ports are coming online ...
```

```
Cisco Systems, Inc. Console
```

```
Enter password:
```

Notice that because the switch has not been configured yet and does not have an IP address, the switch will try to obtain an address via DHCP. In the event that the switch does gain an IP address from a DHCP server, you could always use CDP information from a neighboring Cisco device to determine which address it obtained.

To log into the switch, just hit enter at the password prompt. You will be presented with the switch user exec prompt:

```
Console>
```

4. Next, configure the switch name, user exec password, and privileged mode password:

To do this, you will need to be in enable mode:

```
Console> enable
Console> (enable)
```

```
Console> (enable) set system name DLSwitch1
System name set.
DLSwitch1> (enable)
```

Setting the passwords requires that you enter a password setting dialog. This is different from other Cisco devices where you enter the password as part of the password command itself. The Catalyst 4000 has two passwords just like other Cisco IOS devices. The first password is a user-exec password and the second is a privileged exec mode password.

```
DLSwitch1> (enable) set password
Enter old password: (Because you do not currently have a password, just hit enter)
Enter new password: cisco (Password is not displayed)
Retype new password: cisco
Password changed.
```

```
DLSwitch1> (enable) set enablepass
Enter old password: (Because you do not currently have a password, just hit enter)
Enter new password: class (Password is not displayed)
Retype new password: class
Password changed.
```

```
DLSwitch1> (enable)
```

5. Now type in **show config** to look at the configuration of the switch.

This command shows non-default configurations only.

Use 'show config all' to show both default and non-default configurations.

```
.....  
.....  
..  
  
begin  
!  
# ***** NON-DEFAULT CONFIGURATION *****  
!  
#time: Wed Nov 1 2000, 10:13:54 CST  
!  
#version 5.4(2)  
!  
set password $2$CBqb$emYj5ImVlOCgbNQKg.TC31  
set enablepass $2$0o8Z$gGVzWMgEwfQEZIIi2F340Q.  
.  
.  
.
```

Notice the switch tells you that only non-default commands are displayed. If all commands were displayed, the config would be hard to read. The **show config all** command is given as an option if you want to display the entire config.

Type **show config all** just to see how big the config really is.

What do you notice about the passwords that are stored in the config?
Are they encrypted?

Was there anything special you had to do to encrypt them?

6. Next, configure the IP address on the switch so that you can communicate with the switch via the network for management purposes.

Notice that there is a port on the supervisor module that is labeled "10/100 MGT". This is not a normal switch port, but rather an Ethernet interface that can be used to plug the management part of the switch into another network. This is sometimes referred to as "out-of-band" management. This port would be connected to some other Ethernet network that is not part of the normal production network. In the event that the Ethernet networks within this switch failed for some reason, this would allow you to still communicate with the switch through this external Ethernet interface. This out-of-band Ethernet port is much like a NIC card that exists on the switch.

The 10/100 MGT port is referred to as interface ME1 on the switch.

There is also a virtual interface inside the switch. This is a virtual connection to the backplane of the switch and can be configured to be a member of any VLAN that the switch has configured.

This virtual interface is called **sc0**.

You will configure your management IP address on the **sc0** virtual interface. By configuring the **sc0** interface you are allowing access to the switch management through the normal

switch ports on the 4000. You will not be using the ME1 10/100 MGT port.

```
DLSwitch1> (enable) set interface sc0 10.1.1.250 255.255.255.0
```

Another option would be to configure what VLAN the **sc0** virtual interface is a part of:

```
DLSwitch1> (enable) set interface sc0 1
```

This places the virtual management interface in VLAN 1. By default the **sc0** interface is in VLAN 1, so this command is not entirely necessary but would be if you wanted to associate the management to a different VLAN.

This is a switch and not a router, so you are not able to configure any routing protocols on this device. To ensure that you are able to reach all of the networks that are a part of your internetwork, you need to configure a default router to send all traffic to when you are unsure of what path to take to get to the destination.

```
DLSwitch1> (enable) set ip route default 10.1.1.1
```

This command installs a default route that points at the 10.1.1.1 router.

7. Configure your workstation so that it is a part of the 10.1.1.0/24 network, which is the same network as the switch's management port.

Plug your workstation into any of the Ethernet switch ports on the L3 ROUTING MODULE. By default, all of the ports in the switch are in VLAN 1. So if you left your virtual management interface **sc0** in VLAN 1, you should be able to communicate with the switch.

Telnet to the switch by using the IP address that you configured (10.1.1.250).

Log in using the password that you configured (cisco).

8. Using the telnet interface, explore some of the 4000 show commands:

Type **show module** from the user exec prompt.

This command gives you information about what modules are installed in this switch. Because the 4000 is a modular switch with removable blades, this display could vary. You are also able to see what hardware, firmware, and software each of the modules are running. This is very useful when determining which modules need to be upgraded.

```
DLSwitch1> sh mod
```

Mod	Slot	Ports	Module-Type	Model	Sub	Status
1	1	2	1000BaseX Supervisor	WS-X4013	no	ok
2	2	34	Router Switch Card	WS-X4232-L3	no	ok

Mod	Module-Name	Serial-Num
1		JAB043402VU
2		JAB04300JN8

Mod	MAC-Address(es)	Hw	Fw	Sw
1	00-03-6b-0b-7c-00 to 00-03-6b-0b-7f-ff	1.2	5.4(1)	5.5(1)
2	00-01-96-c8-e4-c6 to 00-01-96-c8-e4-e7	1.5	12.0(7)W5(12.0(7)W5(15d)

Type **show system** from the user exec prompt.

This command gives you information about the physical operation of the switch. It tells you the status of the power supplies, status of the fans, system uptime, and the percentage of current and peak traffic the switch has observed.

```
DLSwitch1> sh system
PS1-Status PS2-Status PS3-Status PEM Installed
-----
ok          ok          none       no

Fan-Status Temp-Alarm Sys-Status Uptime d,h:m:s Logout
-----
ok          off         ok         1,00:52:12 20 min

PS1-Type    PS2-Type    PS3-Type
-----
WS-C4008    WS-C4008    none

Modem      Baud   Traffic Peak Peak-Time
-----
disable    9600   0%      0% Thu Nov 2 2000, 10:43:34

System Name      System Location      System Contact      CC
-----
```

Type **show port** from the user exec prompt.

This command gives you the status of the ports that are installed on this switch. Based on what modules you have installed, this display could vary.

```
DLSwitch1> sh port
Port  Name      Status      Vlan      Level  Duplex  Speed  Type
-----
1/1    notconnect 1           normal    full    1000    No GBIC
1/2    notconnect 1           normal    full    1000    No GBIC
2/1    connected  1           normal    full    1000    No GBIC
2/2    connected  1           normal    full    1000    No GBIC
2/3    notconnect 1           normal    auto    auto    10/100BaseTX
2/4    notconnect 1           normal    auto    auto    10/100BaseTX
2/5    notconnect 1           normal    auto    auto    10/100BaseTX
2/6    notconnect 1           normal    auto    auto    10/100BaseTX
2/7    notconnect 1           normal    auto    auto    10/100BaseTX
2/8    notconnect 1           normal    auto    auto    10/100BaseTX
2/9    notconnect 1           normal    auto    auto    10/100BaseTX
2/10   notconnect 1           normal    auto    auto    10/100BaseTX
```