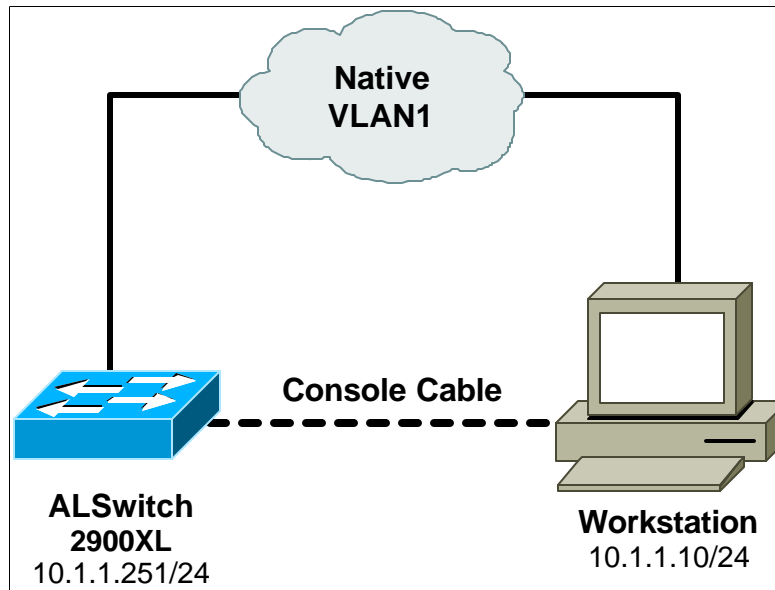


Lab 3.2.3: Catalyst 2900 Setup



Objective:

Configure a Cisco Catalyst 2900 Ethernet switch for the first time.

Scenario:

You have just purchased a new Catalyst 2900 Ethernet switch. Configure the switch 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 2900. The console port for the 2900 is located on the back of the switch, much like the 1900 series switched.

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

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

2. Power on the 2900 switch and watch it start up. It will take a little over 1 minute for the 2900 to boot up.

```
C2900XL Boot Loader (C2900-HBOOT-M) Version 12.0(5)XU, RELEASE
SOFTWARE (fcl)
Compiled Mon 03-Apr-00 17:20 by swati
starting...
Base ethernet MAC Address: 00:02:b9:9a:85:80
Xmodem file system is available.
Initializing Flash...
flashfs[0]: 108 files, 3 directories
flashfs[0]: 0 orphaned files, 0 orphaned directories
flashfs[0]: Total bytes: 3612672
flashfs[0]: Bytes used: 2775040
```

```

flashfs[0]: Bytes available: 837632
flashfs[0]: flashfs fsck took 6 seconds.
...done Initializing Flash.
Boot Sector Filesystem (bs:) installed, fsid: 3
Parameter Block Filesystem (pb:) installed, fsid: 4
Loading "flash:c2900XL-c3h2s-mz-120.5-
XU.bin"...#####
#####
#####
...

```

3. Once the boot up is complete, you should be prompted for the System Configuration Dialog, due to not currently having a saved configuration on this switch.

```

IOS (tm) C2900XL Software (C2900XL-C3H2S-M), Version 12.0(5)XU,
RELEASE SOFTWARE
(fc1)
Copyright (c) 1986-2000 by cisco Systems, Inc.
Compiled Mon 03-Apr-00 16:37 by swati

```

--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.
 Use ctrl-c to abort configuration dialog at any prompt.
 Default settings are in square brackets '[]'.

Continue with configuration dialog? [yes/no]:

We are going to configure the switch manually without the assistance of the setup dialog.
 The setup dialog is much simpler than that of an IOS based router. After you complete this
 lab, please reconfigure the switch using the Setup Configuration Dialog.

You will not be prompted for a password. Hit enter to log directly into user exec mode.

Switch>

4. Before we configure the switch, lets take a look at the current default running configuration prior to adding any configuration commands.

We will need to be in enable mode. Because we do not have an enable password set yet, we
 will not be prompted for one.

Switch>**enable**

Switch#**show running-config**

Building configuration...

Current configuration:

```

!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime

```

```

no service password-encryption
!
hostname Switch
!
ip subnet-zero
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface VLAN1
  no ip directed-broadcast
  no ip route-cache
!
!
line con 0
  transport input none
  stopbits 1
line vty 5 15
!
end

```

Notice that the configuration is very much like that of an IOS based router. The interfaces on the switch are the actually ports of the switch. You will also notice the lack of any routing protocol, etc. Because this is a switch and not a router, you will not see any commands that relate to the routing of packets.

5. Now let's configure the switch name, user exec password, and privileged exec mode password:

The Catalyst 2900 uses IOS style configuration commands. These will all look very similar to configuring a router.

Set the switch name.

```

Switch#config terminal
Switch(config)#host ALSwitch

```

```
ALSwitch(config)#
```

Set the passwords.

```
ALSwitch(config)#enable password class
ALSwitch(config)#line con 0
ALSwitch(config-line)#password cisco
ALSwitch(config-line)#login
ALSwitch(config-line)#line vty 0 15
ALSwitch(config-line)#password cisco
ALSwitch(config-line)#login
```

Like the IOS, use the copy command to save the current running-configuration.
(older software uses the **write** command)

```
ALSwitch#copy running-config startup-config
```

6. Now let's configure the IP address on the switch so that we can communicate with the switch via the network for management purposes.

The management portion of the 2900 series switch defaults to using VLAN 1 as their network connection. When you did your **show running-config** earlier, you should note that interface vlan 1 is part of the default configuration.

All ports default to membership of VLAN 1. Therefore, we will configure our switch management to also use VLAN 1. You will configure interface vlan 1 just like you would a router interface when assigning the switch's management IP address.

```
ALSwitch#config terminal
ALSwitch(config)#interface vlan 1
ALSwitch(config-if)#ip address 10.1.1.251 255.255.255.0
```

This immediately assigns the IP address of the switch to VLAN 1. The 2900 can be configured with multiple VLANs simultaneously. You would have to make sure that each VLAN interface has an IP address from that VLAN. You can create additional VLAN interfaces on the fly by using the **interface vlan x** command, where x is the VLAN number.

Since this is a switch and not a router, we are not able to configure any routing protocols on this device. To be able to reach all of the networks that are a part of our internetwork, we need to configure a default router to send all traffic when we need to route between VLANs.

```
ALSwitch(config)#ip default-gateway 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 switch ports that reside on your switch. By default all of the ports in the switch will be in VLAN 1, so as long as you configured your management IP address on VLAN 1 you should be able to communicate with the switch.

Telnet to the switch by using the IP address that you configured (10.1.1.251).

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

8. Using the telnet interface, let's explore some of the commands in the 2900. You will notice that the 2900XL is very much like other IOS devices.

Use the **show interfaces** command to look at the switch ports. Notice that the command output is very similar to that of a router.

```
ALSwitch#show interfaces
FastEthernet0/1 is down, line protocol is down
  Hardware is Fast Ethernet, address is 0002.fd49.7b81 (bia
0002.fd49.7b81)
  MTU 1500 bytes, BW 0 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Auto-duplex , Auto Speed , 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1 packets input, 64 bytes
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog, 0 multicast
    0 input packets with dribble condition detected
    1 packets output, 64 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
--More--
```

What other types of interfaces do you see besides the switch ports?

Type **show version** and look at the hardware/software information.

```
ALSwitch#show version
Cisco Internetwork Operating System Software
IOS (tm) C2900XL Software (C2900XL-C3H2S-M), Version 12.0(5)XU,
RELEASE SOFTWARE
(fc1)
Copyright (c) 1986-2000 by cisco Systems, Inc.
Compiled Mon 03-Apr-00 16:37 by swati
Image text-base: 0x00003000, data-base: 0x00301398
```

ROM: Bootstrap program is C2900XL boot loader

ALSwitch uptime is 16 minutes

System returned to ROM by power-on

System image file is "flash:c2900XL-c3h2s-mz-120.5-XU.bin"

cisco WS-C2924-XL (PowerPC403GA) processor (revision 0x11) with
8192K/1024K byte

s of memory.

Processor board ID 0x0E, with hardware revision 0x01

Last reset from power-on

Processor is running Enterprise Edition Software

Cluster command switch capable

Cluster member switch capable

24 FastEthernet/IEEE 802.3 interface(s)

32K bytes of flash-simulated non-volatile configuration memory.

Base ethernet MAC Address: 00:02:FD:49:7B:80

Motherboard assembly number: 73-3382-08

Power supply part number: 34-0834-01

Motherboard serial number: FAB04301ANJ

Power supply serial number: PHI04150042

Model revision number: A0

Motherboard revision number: B0

Model number: WS-C2924-XL-EN

System serial number: FAB0432S2GJ

Configuration register is 0xF

ALSwitch#

What type of memory is included in the Catalyst 2900 series switch, but is not listed in the show version output?
