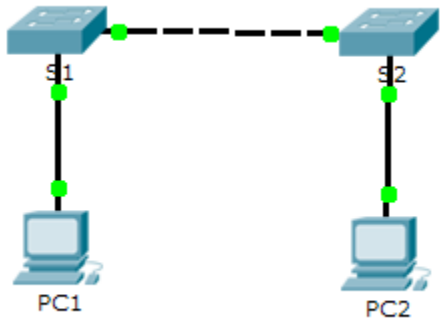
Lab. 4: Configuring Initial Switch Settings

Topology



Objectives

Part 1: Verify the Default Switch Configuration

Part 2: Configure a Basic Switch Configuration

Part 3: Configure a MOTD Banner

Part 4: Save Configuration Files to NVRAM

Part 5: Configure S2

Background

In this activity, you will perform basic switch configurations. You will secure access to the command-line interface (CLI) and console ports using encrypted and plain text passwords. You will also learn how to configure messages for users logging into the switch. These banners are also used to warn unauthorized users that access is prohibited.

Part 1: Verify the Default Switch Configuration

Step 1: Enter privileged mode.

You can access all switch commands from privileged mode. However, because many of the privileged commands configure operating parameters, privileged access should be password-protected to prevent unauthorized use.

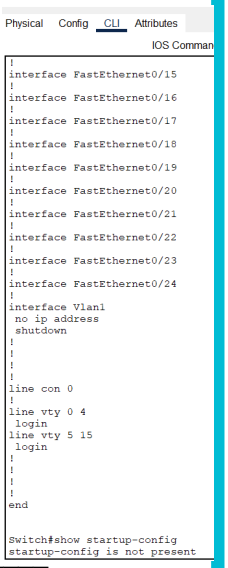
The privileged EXEC command set includes those commands contained in user EXEC mode, as well as the **configure** command through which access to the remaining command modes are gained.

a. Click **S1** and then the **CLI** tab. Press **<Enter>**.

b. Enter privileged EXEC mode by entering the **enable** command:

```
Switch> enable
Switch#
```

Notice that the prompt changed in the configuration to reflect privileged EXEC mode.



Step 2: Examine the current switch configuration.

a. Enter the **show running-config** command.

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

b. Answer the following questions:

How many FastEthernet interfaces does the switch have? 24 FastEthernet

How many Gigabit Ethernet interfaces does the switch have? 2 line vty

What is the range of values shown for the vty lines? 0-4 and 5-15

Which command will display the current contents of non-volatile random-access memory (NVRAM)?

show startup-config يظهر اعدادات ال NVRAM

Why does the switch respond with `startup-config is not present`?

غير موجود لاننا لم نحفظ اي شي في ال NVRAM

فلايوجد اي اعدادات انحفظت في ال NVRAM

Part 2: Create a Basic Switch Configuration

Step 1: Assign a name to a switch.

To configure parameters on a switch, you may be required to move between various configuration modes. Notice how the prompt changes as you navigate through the switch.

```
Switch# configure terminal
Switch(config)# hostname S1
S1(config)# exit
S1#
```

غيرت اسم ال switch الى S1

Step 2: Secure access to the console line.

To secure access to the console line, access config-line mode and set the console password to **letmein**.

```
S1# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
S1(config)# line console 0
S1(config-line)# password letmein
S1(config-line)# login
S1(config-line)# exit
S1(config)# exit
%SYS-5-CONFIG_I: Configured from console by console
S1#
```

اضفنا كلمة مرور لل console line

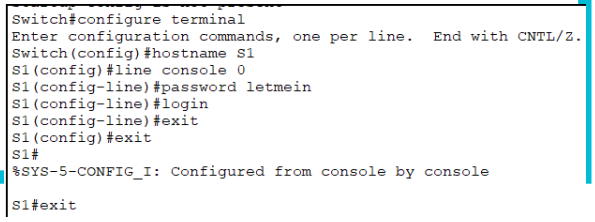
Why is the **login** command required?

ليطلب منا كلمة مرور عند تسجيل الدخول

Step 3: Verify that console access is secured.

نتاكد من انه تم اضافة كلمة المرور

Exit privileged mode to verify that the console port password is in effect.



```
S1# exit
Switch con0 is now available
Press RETURN to get started.

User Access Verification
Password:
S1>
```

Note: If the switch did not prompt you for a password, then you did not configure the **login** parameter in Step 2.

Step 4: Secure privileged mode access.

Set the **enable** password to **c1$c0**. This password protects access to privileged mode.

Note: The **0** in **c1$c0** is a zero, not a capital O. This password will not grade as correct until after you encrypt it in Step 8.

```
S1> enable
S1# configure terminal
S1(config)# enable password c1$c0
S1(config)# exit
%SYS-5-CONFIG_I: Configured from console by console
S1#
```

اضفنا كلمة مرور على ال privileged mode

Step 5: Verify that privileged mode access is secure.

a. Enter the **exit** command again to log out of the switch.

b. Press **<Enter>** and you will now be asked for a password:

```
User Access Verification
Password:
```

c. The first password is the console password you configured for **line con 0**. Enter this password to return to user EXEC mode.

d. Enter the command to access privileged mode.

e. Enter the second password you configured to protect privileged EXEC mode.

f. Verify your configurations by examining the contents of the running-configuration file:

```
S1# show running-config
```

Notice how the console and enable passwords are both in plain text. This could pose a security risk if someone is looking over your shoulder.

Step 6: Configure an encrypted password to secure access to privileged mode.

The **enable password** should be replaced with the newer encrypted secret password using the **enable secret** command. Set the enable secret password to **itsasecret**.

```
S1# config t
S1(config)# enable secret itsasecret
S1(config)# exit
S1#
```

اضفنا كلمة مرور مشفره على ال privileged mode

Note: The **enable secret** password overrides the **enable** password. If both are configured on the switch, you must enter the **enable secret** password to enter privileged EXEC mode.

Step 7: Verify that the enable secret password is added to the configuration file.

a. Enter the **show running-config** command again to verify the new **enable secret** password is configured.

Note: You can abbreviate **show running-config** as

```
S1# show run
```

b. What is displayed for the **enable secret** password?

enable secret 5 1mERrSIL.wq/b7kc.7X/ejA4Aosn كلمة مرور مشفره ليست كالتي ادخلناها

c. Why is the **enable secret** password displayed differently from what we configured?

لانها مشفرة فتظهر بشكل مختلف حتى لا تظهر للشخص الذي بجانبك

Step 8: Encrypt the enable and console passwords.

As you noticed in Step 7, the **enable secret** password was encrypted, but the **enable** and **console** passwords were still in plain text. We will now encrypt these plain text passwords using the **service password-encryption** command.

```
S1# config t
S1(config)# service password-encryption   يشفر جميع كلمات المرور
S1(config)# exit
```

If you configure any more passwords on the switch, will they be displayed in the configuration file as plain text or in encrypted form? Explain why?

in encrypted form, Because we used password-encryption command, which encrypts all the passwords we enter so that the other person doesn't see them.

Part 3: Configure a MOTD Banner

Step 1: Configure a message of the day (MOTD) banner.

The Cisco IOS command set includes a feature that allows you to configure messages that anyone logging onto the switch sees. These messages are called message of the day, or MOTD banners. Enclose the banner text in quotations or use a delimiter different from any character appearing in the MOTD string.

```
S1# config t
S1(config)# banner motd "This is a secure system. Authorized Access
Only!"
S1(config)# exit                                    يُظهر لنا رسالة للمستخدم
%SYS-5-CONFIG_I: Configured from console by console
S1#
```

When will this banner be displayed?

When you enter the show running command

Why should every switch have a MOTD banner?

very switch should have a banner to warn unauthorized users that access is prohibited but can also be used for sending messages to network personnel/technicians

Part 4: Save Configuration Files to NVRAM

Step 1: Verify that the configuration is accurate using the show run command.

Step 2: Save the configuration file.

You have completed the basic configuration of the switch. Now back up the running configuration file to NVRAM to ensure that the changes made are not lost if the system is rebooted or loses power.

```
S1# copy running-config startup-config
Destination filename [startup-config]?[Enter]
Building configuration...
[OK]
```

نسوي نسخة عشان نحفظ نسخة في ال NVRAM

What is the shortest, abbreviated version of the **copy running-config startup-config** command?

Copy run start

Step 3: Examine the startup configuration file.

Which command will display the contents of NVRAM?

Show start-up configuration

Are all the changes that were entered recorded in the file? yes

Part 5: Configure S2

You have completed the configuration on S1. You will now configure S2. If you cannot remember the commands, refer to Parts 1 to 4 for assistance.

Configure S2 with the following parameters:

a. Name device: **S2**

b. Protect access to the console using the **letmein** password.

c. Configure an enable password of **c1$c0** and an enable secret password of **itsasecret**.

d. Configure a message to those logging into the switch with the following message:

```
Authorized access only. Unauthorized access is prohibited and
violators will be prosecuted to the full extent of the law.
```

e. Encrypt all plain text passwords.

f. Ensure that the configuration is correct.

g. Save the configuration file to avoid loss if the switch is powered down.

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Show running-config of S1

Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```
S1#show running-config
Building configuration...

Current configuration : 1190 bytes
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname S1
!
enable secret 5 $1$mERr$ILwq/b7kc.7X/ejA4Aosn0
enable password 7 08221D0A0A49
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
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 FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface Vlan1
 no ip address
 shutdown
!
banner motd ^CThis is a secure system. Authorized Access
Only!^C
!
!
!
line con 0
 password 7 082D495A041C0C19
 login
!
line vty 0 4
 login
line vty 5 15
 login
!
!
!
!
end

S1#
```

Ctrl+F6 to exit CLI focus

Copy Paste

Show running-config of S2

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```
S2#show running-config
Building configuration...

Current configuration : 1263 bytes
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname S2
!
enable secret 5 $1$mERr$ILwq/b7kc.7X/ejA4Aosn0
enable password 7 08221D0A0A49
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
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interface FastEthernet0/9
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interface FastEthernet0/10
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interface FastEthernet0/11
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interface FastEthernet0/12
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interface FastEthernet0/13
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interface FastEthernet0/14
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interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface Vlan1
 no ip address
 shutdown
!
banner motd ^CAuthorized access only. unauthorized access is
prohibited and violators will be prosecuted to the full
extent of the law.^C
!
!
!
line con 0
 password 7 082D495A041C0C19
 login
!
line vty 0 4
 login
line vty 5 15
 login
!
!
!
!
end


S2#
```

Ctrl+F6 to exit CLI focus

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