Packet Tracer - Router and Switch Resilience

Addressing Table

Device	IP Address	Subnet Mask	Default Gateway	Site
HQ_Router	10.44.1.1	255.255.255.0	N/A	Metropolis Bank HQ

Objectives

Part 1: Hardening the IOS Configuration

Part 2: Activating the Cisco IOS Resilient Configuration Feature

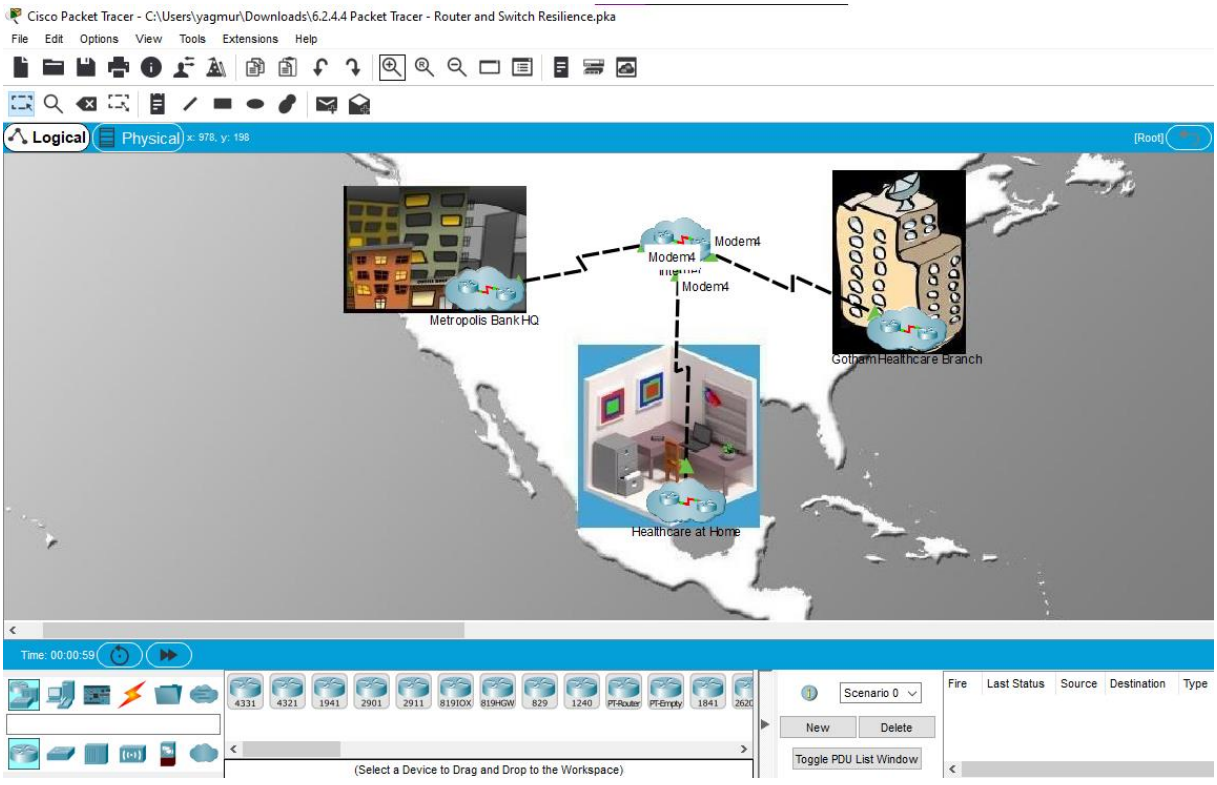
Background

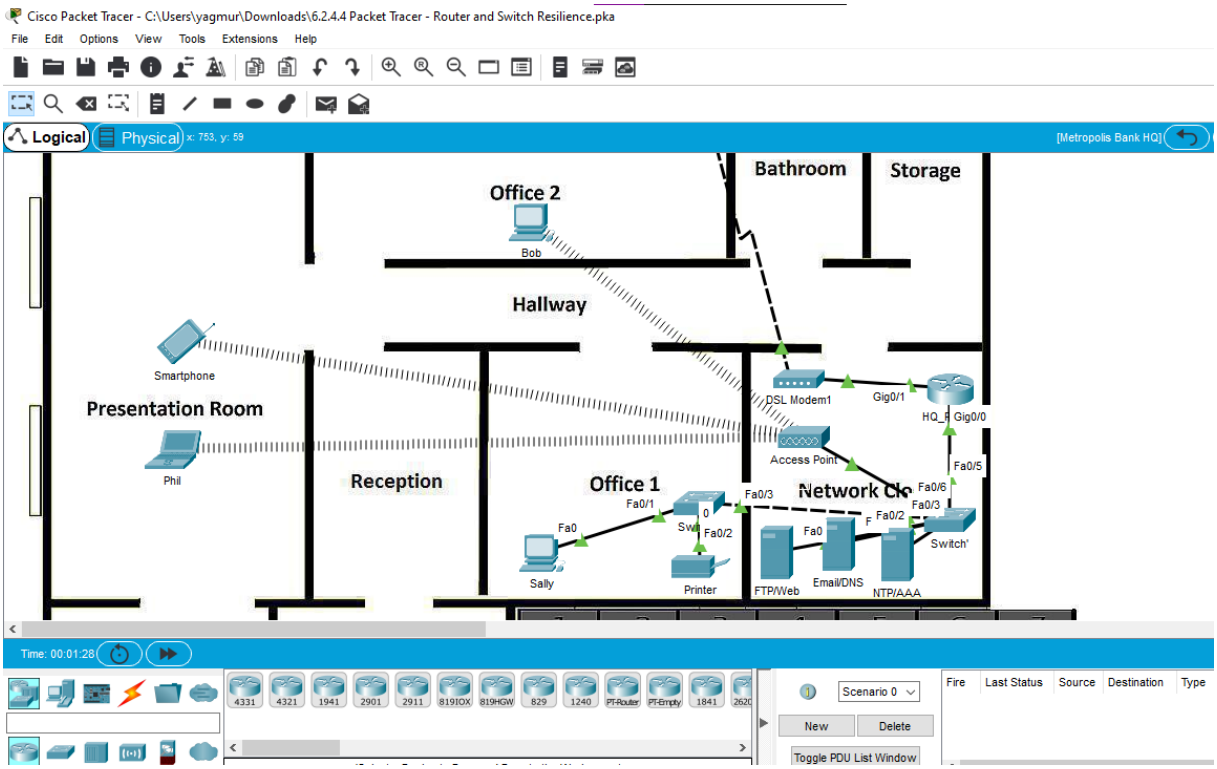
In this activity, you will harden the IOS configuration of a router within the Metropolis network. Afterwards, you will enable the IOS resiliency feature on a Cisco router. The IP addressing, network configuration, and service configurations are already complete. You will use the client devices in the Metropolis network to deploy the IOS resiliency configuration.

Part 1: Hardening the IOS configuration

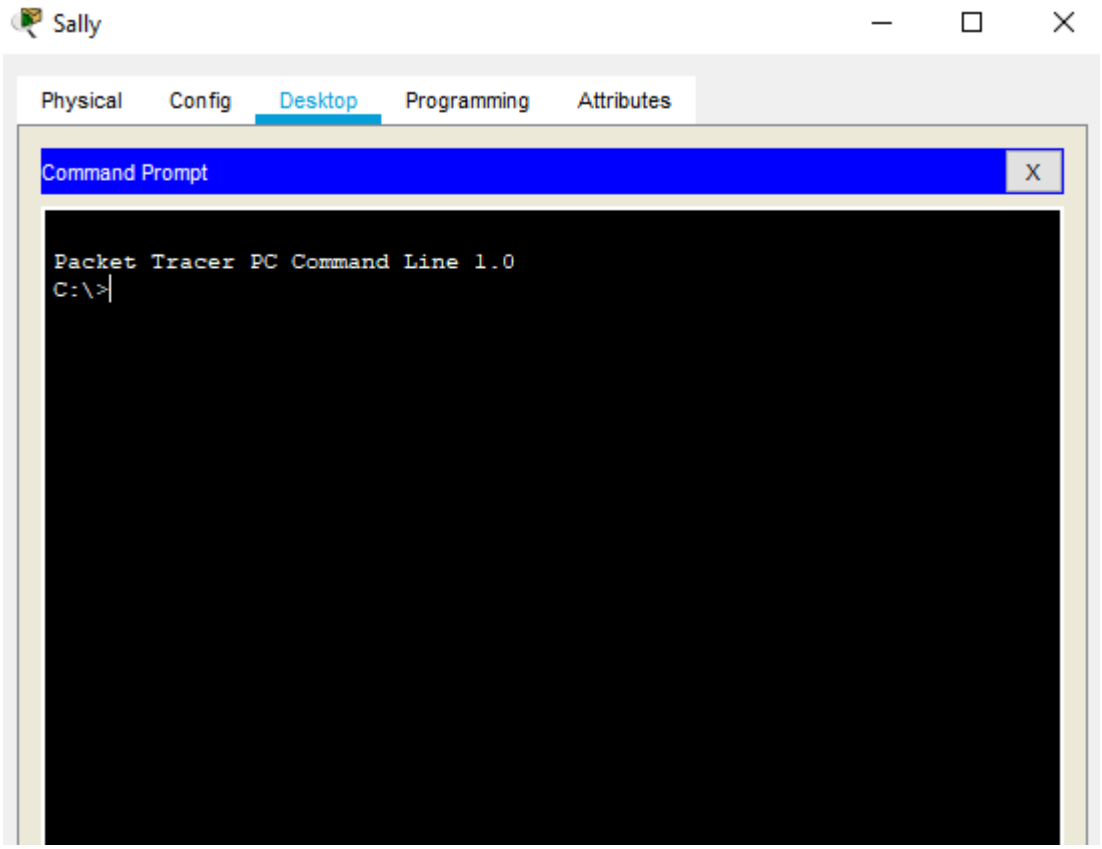
Step 1: Access the command prompt on Sally's computer.

a. Click the **Metropolis Bank HQ** site and then click the computer **Sally**.





b. Click the **Desktop** tab and then click **Command Prompt**.



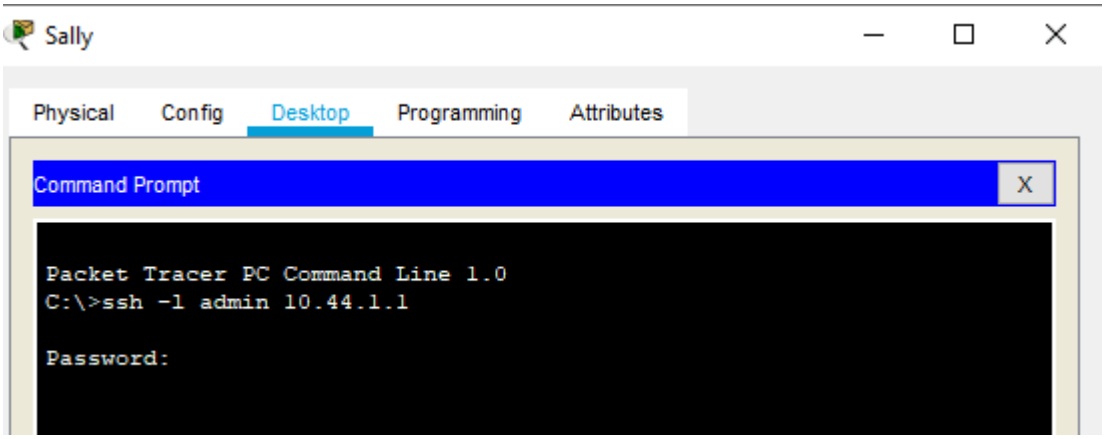
Step 2: Remotely connect to the router HQ_Router.

a. SSH to the **HQ_Router** by entering **ssh –l admin 10.44.1.1** in the command prompt. Use the password of **cisco12345** when prompted.

b. At the prompt, type **enable** and enter the enable password **class** when prompted.

Your prompt should display:

```
HQ_Router#
```



c. Were you prompted with any warning message preventing unauthorized users from accessing theHQ_Router?

NO.

Step 3: Create a legal notification message on the HQ_Router.

a. At the `HQ_Router#` prompt, enter global configuration mode using the **configure terminal** command.

b. At the `HQ_Router(config)#` prompt, paste in the following commands:

```
banner motd #
UNAUTHORIZED ACCESS TO THIS DEVICE IS PROHIBITED
You must have explicit, authorized permission to access or configure this
device.
Unauthorized attempts and actions to access or use this system may result in
civil and/or
criminal penalties.
All activities performed on this device are logged and monitored.
#
```

c. At the `HQ_Router(config)#` prompt use the **end** and **logout** command to end your connection to **HQ_Router**.

d. SSH into the **HQ_Router** again from the computer **Sally**. The SSH password is **cisco12345**.

Were you prompted with any additional text/information when you connected successfully to the HQ_Router? What is shown?

YES, the MOTD banner configured in step 3.b is displayed after successfully forming an SSH connection with router HQ_Router

```
HQ_Router#logout

[Connection to 10.44.1.1 closed by foreign host]
HQ_Router>enable
Password:
HQ_Router#configure terminal
```

Step 4: Enforce password security on the HQ_Router.

a. At the prompt, type **enable** and enter the enable password **class** when prompted.

b. Enter global configuration mode using the **configure terminal** command. At the `HQ_Router(config)#` prompt, paste in the following commands:

```
!encrypts plain-text passwords in the running-config
service password-encryption

!enforces any new configured passwords to have a minimum of 10 characters
security passwords min-length 10
```

```
HQ_Router(config)#!encrypts plain-text passwords in the running-
config
HQ_Router(config)#!enforces any new configured passwords to have a
minimum of 10 characters
HQ_Router(config)#
```

Top

Part 2: Activating the Cisco IOS Resilient Configuration Feature

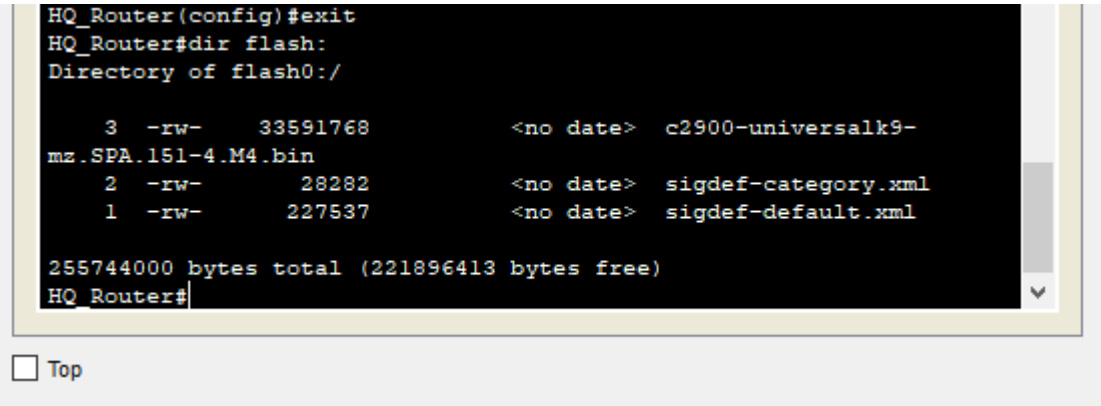
Step 1: View the current IOS image.

a. While connected via SSH from **Sally's** computer, enter the **exit** command to return to the `HQ_Router#` prompt.

b. Enter the command **dir flash:** to view the current IOS.bin file.

What is the name of the current .bin file in flash?

c2900-universalk9-mz.SPA.151-4.M4.bin



Step 2: Secure the running image and configuration.

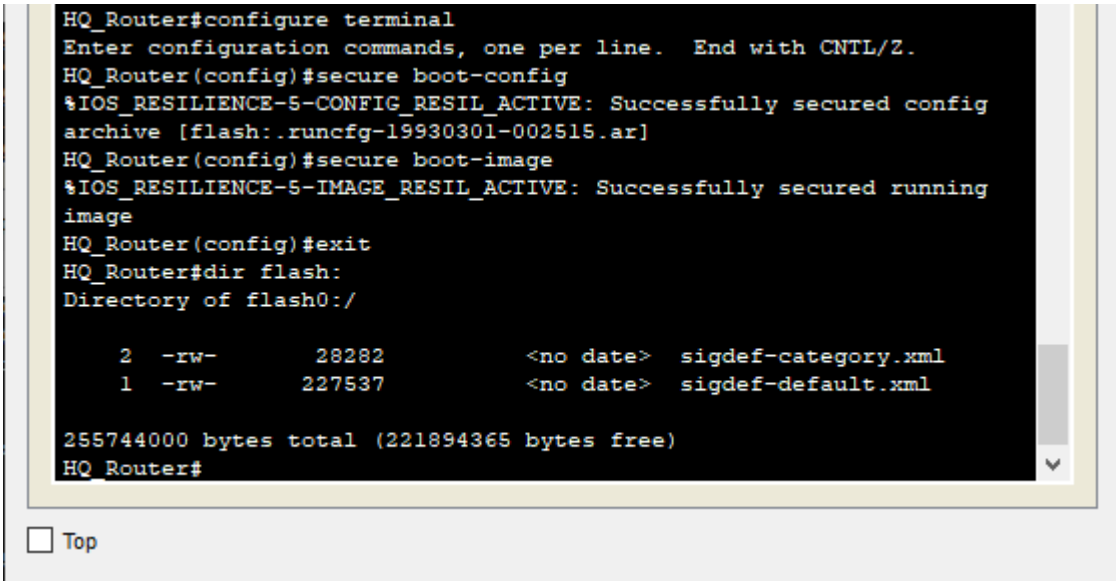
a. At the `HQ_Router#` prompt, enter global configuration mode using the **configure terminal** command.

b. Use the **secure boot-image** command within the `HQ_Router(config)#` prompt to activate IOS image resilience and prevent the IOS file from both showing in the directory output and prevents the deletion of the secured IOS file.

c. Use the **secure boot-config** command within the `HQ_Router(config)#` prompt to store a secure copy of the running configuration and prevent deletion of the secured configuration file.

d. Return to privileged EXEC mode by entering the **exit** command. Now enter the command **dir flash:** to view the current IOS.bin file.

Are there any IOS.bin file listed? ***NO***



e. At the `HQ_Router#` prompt, enter the command **show secure bootset** to view the status of the Cisco IOS image and configuration resilience.