PRIFYSGOL CYMRU
Y Drindod Dewi Sant
UNIVERSITY OF WALES
Trinity Saint David
SWANSEA - ABERTAWE

Applied Computing

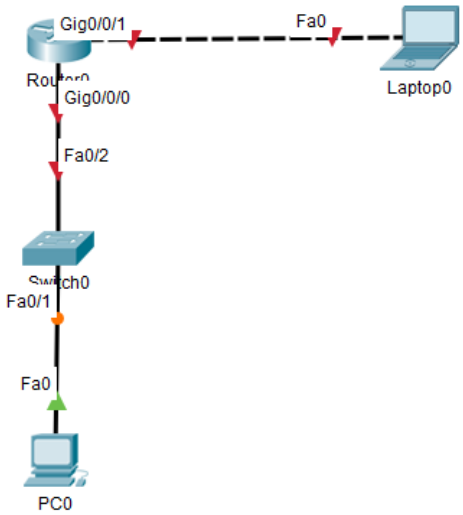
Wales Institute of Science and Art (WISA)

Advanced Networking (ACCA5024)

Lab 7: Basic Routing Configurations

Cisco | Networking Academy®
Mind Wide Open™

Design the topology and execute basic configuration as stated below



Device	Interface	IP Address	Subnet Mask	Default Gateway
Router 0	G0/0/0	192.168.0.1	255.255.255.0	N/A
	G0/0/1	192.168.1.1	255.255.255.0	N/A
PC0	NIC	192.168.1.3	255.255.255.0	192.168.1.1
Laptop0	NIC	192.168.0.3	255.255.255.0	192.168.0.1

Tasks:

1. **Set Up the Topology and Initialize Devices**
2. **Configure Devices and Verify Connectivity**

   Assign static IPv4 information to the PC interfaces.

   Configure basic router settings.

   Verify network connectivity.

   Configure the router for SSH.
3. **Display Router Information**

   Retrieve hardware and software information from the router.

   Interpret the output from the startup configuration.

   Interpret the output from the routing table.

   Verify the status of the interfaces.

Cable the network as shown in the topology

Initialize and reload the router and switch

Configure Devices and Verify Connectivity

Configure the IP address, subnet mask, and default gateway settings on PC0 and Laptop0.

Configure the router

a. Hostname R0
b. Disable DNS lookup
c. Require that a minimum of 10 characters be used for all passwords.
d. Assign **cisco12345** as the privileged EXEC encrypted password.
e. Assign **ciscoconpass** as the console password, establish a timeout, enable login, and add the **logging synchronous** command. The **logging synchronous** command synchronizes debug and Cisco IOS software output and prevents these messages from interrupting your keyboard input.
f. Assign **ciscovtypass** as the vty password, establish a timeout, enable login, and add the **logging synchronous** command.
g. Encrypt the clear text passwords.
h. Create a banner that warns anyone accessing the device that unauthorized access is prohibited.
i. Configure an IP address and interface description. Activate both interfaces on the router.
j. Save the running configuration to the startup configuration file.

Verify network connectivity.

k. Ping PC-B from a command prompt on PC-A.
l. Remotely access R1 from PC-A using Telnet.

Configure the router for SSH access.

m. Enable SSH connections and create a user in the local database of the router.
n. Remotely access R1 from PC-A using SSH.

Establish an SSH session to R1.

From PC-B, open an SSH session to R1 at IP address 192.168.0.1 and log in

Retrieve important hardware and software information. (Write the commands and the output)

Name of the IOS image that the router is running?

Non-volatile random-access memory (NVRAM) does the router have?

How much Flash memory does the router have?

What is the boot process for the router on the next reload?

How are passwords presented in the output?

What code is used in the routing table to indicate a directly connected network?

How many route entries are coded with a C code in the routing table?

What command changed the status of the Gigabit Ethernet ports from administratively down to up?