### \*\*Task 1: Configure Basic Settings in Switches and Routers\*\*

\*\*Objective:\*\* Configure the hostname (RTR1 for the router, SW1 & SW2 for the switch), apply a banner MOTD, and set passwords.

**#### \*\*Step-by-Step Instructions:\*\***

1. \*\*Access the Router (RTR1):\*\*

- If using a simulation tool like Packet Tracer, click on the router (labeled RTR1).

- Go to the CLI tab to access the command-line interface.

- If using a physical device, connect via a console cable and use a terminal emulator (e.g., PuTTY) to access the CLI.

2. \*\*Enter Privileged EXEC Mode:\*\*

- At the prompt (`Router>`), type:

```

**enable**

```

- Press Enter. The prompt should change to `Router#`.

3. \*\*Enter Global Configuration Mode:\*\*

- Type:

```

**configure terminal**

```

- Press Enter. The prompt changes to `Router(config)#`.

4. \*\*Set the Hostname to RTR1:\*\*

- Type:

```

**hostname RTR1**

```

- Press Enter. The prompt should now be `RTR1(config)#`.

5. \*\*Apply a Banner MOTD (Message of the Day):\*\*

- Type:

```

banner motd #Unauthorized access prohibited!#

```

- The `#` symbol acts as a delimiter to start and end the message. You can customize the message, but this is a common example.

6. \*\*Set the Enable Password:\*\*

- Type:

```

**enable secret cisco**

```

- This sets the enable password to "cisco" (case-sensitive). This password is required to enter Privileged EXEC mode.

7. \*\*Set the Console Password:\*\*

- Type:

```

**line console 0**

```

- Press Enter to enter console line configuration mode (`RTR1(config-line)#`).

- Set the password:

```

**password cisco**

```

- Enable login to require the password:

```

login

```

- Exit the console line configuration:

```

exit

```

8. \*\*Set the VTY (Telnet/SSH) Password:\*\*

- Type:

```

**line vty 0 4**

```

- Press Enter to enter VTY line configuration mode.

- Set the password:

```

**password cisco**

```

- Enable login:

```

**login**

```

- Exit:

```

**exit**

```

9. \*\*Save the Configuration:\*\*

- Type:

```

end

```

- Then:

```

write memory

```

- This saves the configuration to NVRAM so it persists after a reboot.

10. \*\*Configure the Switch (SW1):\*\*

- Access the switch (SW1) CLI.

- Repeat steps 2-9, but adjust the hostname:

```

**hostname SW1**

```

- Use the same banner and password settings (`cisco` for both enable and console/VTY passwords).

- Note: The task mentions SW1 & SW2, but since you only have 1 switch, we’ll assume it’s a typo and configure just SW1. If there’s a second switch (SW2), repeat the process for SW2 with `hostname SW2`.

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**### \*\*Task 2: IP Addressing (Router)\*\***

\*\*Objective:\*\* Assign IP addresses to the router (RTR1), configure the subnet mask, power on the router, and provide a default gateway.

#### \*\*Step-by-Step Instructions:\*\*

1. \*\*Access the Router (RTR1) CLI:\*\*

- Follow the steps from Task 1 to enter the CLI and Privileged EXEC mode (`RTR1#`).

2. \*\*Enter Global Configuration Mode:\*\*

- Type:

```

**configure terminal**

```

3. \*\*Configure the Router Interface (IPv4):\*\*

- The task specifies the IP range `172.225.225.181` for the router. Assuming this is for a specific interface (e.g., GigabitEthernet0/0), assign the IP:

- Identify the interface (this depends on your topology; let’s assume GigabitEthernet0/0 connects to the switch):

```

**interface GigabitEthernet0/0**

```

- Assign the IP address and subnet mask:

```

**ip address 172.225.225.181 255.255.255.0**

```

- Activate the interface:

```

**no shutdown**

```

- Exit the interface configuration:

```

**exit**

```

4. \*\*Power On the Router (if not already on):\*\*

- In a simulation tool, ensure the router is powered on by checking the device status (usually a green light indicator).

- On a physical device, ensure the router is powered on via the power switch.

5. \*\*Provide a Default Gateway (for the Network):\*\*

- The default gateway for devices in this network will be the router’s IP address (`172.225.225.181`). This will be used by the PCs, which we’ll configure in the next section.

6. \*\*Save the Configuration:\*\*

- Type:

```

**end**

```

- Then:

```

**write memory**

```

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**### \*\*Task 2 (Continued): IP Addressing (PCs)\*\***

\*\*Objective:\*\* Assign IP addresses to the PCs within the specified range (`172.225.225.201` to `172.225.225.251`), use the subnet mask `255.255.255.0`, and set the default gateway.

#### \*\*Step-by-Step Instructions:\*\*

1. \*\*Access PC1:\*\*

- In a simulation tool, click on the first PC (PC1).

- Go to the "Desktop" tab, then select "IP Configuration."

2. \*\*Assign an IP Address to PC1:\*\*

**- Set the IPv4 address to `172.225.225.201` (within the given range).**

**- Set the subnet mask to `255.255.255.0`.**

**- Set the default gateway to the router’s IP: `172.225.225.181`.**

3. \*\*Access PC2:\*\*

**- Repeat the process for the second PC (PC2).**

4. \*\*Assign an IP Address to PC2:\*\*

**- Set the IPv4 address to `172.225.225.202` (the next available IP in the range).**

**- Set the subnet mask to `255.255.255.0`.**

**- Set the default gateway to `172.225.225.181`.**

5. \*\*Verify Connectivity (Optional):\*\*

- From PC1, open the Command Prompt (in the Desktop tab) and ping PC2:

```

**ping 172.225.225.202**

```

- You should get a reply if everything is configured correctly.

- Similarly, ping the router’s IP (`172.225.225.181`) to ensure the PCs can reach the router.

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**### \*\*Task 3: Perform File Sharing and Printer Sharing\*\***

\*\*Objective:\*\* Set up file sharing and printer sharing between the two PCs.

#### \*\*Step-by-Step Instructions:\*\*

Since this is a Cisco networking lab setup, file and printer sharing are typically performed at the PC level (e.g., in a Windows environment). However, the network must be properly configured to allow communication between the PCs, which we’ve already done. Here’s how to set up sharing:

1. \*\*Ensure Network Connectivity:\*\*

- Confirm that PC1 and PC2 can ping each other (as tested in Task 2). If not, double-check the IP configurations, subnet masks, and default gateway settings.

2. \*\*Enable File and Printer Sharing on PC1:\*\*

- In a simulation tool like Packet Tracer, file and printer sharing are often simplified or assumed to work once the network is configured. However, in a real Windows environment, you’d do the following:

- Go to PC1’s Desktop > Open "Command Prompt" or access the OS settings (simulated).

- In a real setup: Go to Control Panel > Network and Sharing Center > Advanced Sharing Settings.

- Enable "File and Printer Sharing" and turn on "Network Discovery."

- Share a folder:

- Right-click a folder (e.g., "SharedFolder"), select "Properties," go to the "Sharing" tab, and click "Share."

- Add "Everyone" or specific users and set permissions (e.g., Read/Write).

3. \*\*Enable File and Printer Sharing on PC2:\*\*

- Repeat the same steps on PC2 to enable file and printer sharing.

4. \*\*Share a Printer (if applicable):\*\*

- In a real setup:

- On PC1, go to Control Panel > Devices and Printers.

- Right-click the printer, select "Printer Properties," go to the "Sharing" tab, and enable "Share this printer."

- In Packet Tracer, you may need to simulate this by ensuring a printer is connected to one PC and accessible via the network.

5. \*\*Access Shared Files and Printer from the Other PC:\*\*

- On PC2, open the file explorer (or equivalent in Packet Tracer).

- Look for PC1 in the network (e.g., via Network Discovery).

- Access the shared folder (e.g., `\\172.225.225.201\SharedFolder`).

- For the printer, go to "Add Printer" on PC2 and select the shared printer from PC1.

6. \*\*Test the Sharing:\*\*

- Copy a file from PC1 to the shared folder and verify that PC2 can access it.

- Print a test page from PC2 using the shared printer on PC1.

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### \*\*Summary of Configuration:\*\*

- \*\*Router (RTR1):\*\*

- Hostname: RTR1

- Banner: Unauthorized access prohibited!

- Enable password: cisco

- Console/VTY password: cisco

- Interface IP: `172.225.225.181`, Subnet Mask: `255.255.255.0`

- \*\*Switch (SW1):\*\*

- Hostname: SW1

- Banner: Unauthorized access prohibited!

- Enable password: cisco

- Console/VTY password: cisco

- \*\*PC1:\*\*

- IP: `172.225.225.201`

- Subnet Mask: `255.255.255.0`

- Default Gateway: `172.225.225.181`

- \*\*PC2:\*\*

- IP: `172.225.225.202`

- Subnet Mask: `255.255.255.0`

- Default Gateway: `172.225.225.181`

- \*\*File and Printer Sharing:\*\*

- Enabled on both PCs, with a shared folder and printer accessible over the network.

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### \*\*Additional Notes:\*\*

- \*\*Topology Assumption:\*\* I assumed a basic topology where the PCs are connected to the switch (SW1), and the switch is connected to the router (RTR1). If your topology differs (e.g., additional interfaces or VLANs), you may need to adjust the interface configurations.

- \*\*Simulation vs. Real Devices:\*\* The steps are tailored for both Cisco Packet Tracer and physical devices. In Packet Tracer, some steps (like file sharing) are simplified, while on real devices, you’d need to configure the OS settings for sharing.

- \*\*Troubleshooting:\*\* If the PCs can’t ping each other, ensure:

- The switch ports are up (`no shutdown` on switch interfaces if needed).

- The correct IP range and subnet mask are used.

- The router interface is active and reachable.