**EXPERIMENT NO. 8**

**AIM**: Study and implementation of various router configuration commands

**MATERIAL:**

1. Router (real or virtual)
2. Console cable (if using a physical router)
3. Computer with terminal emulator software (e.g., PuTTY, Tera Term)
4. Ethernet cables (if setting up a physical network)

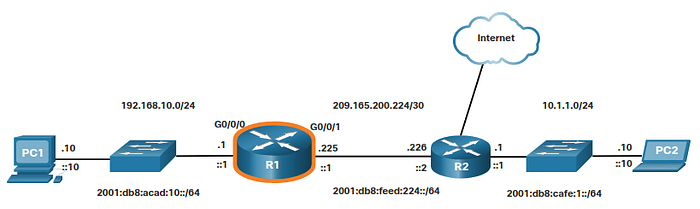
**PROCEDURE**:

**Part 1: Router Initialization and Access**

1. **Power On the Router:** If you have a physical router, ensure it's powered on. For a virtual router, start the VM.
2. **Connect to the Router:** If using a physical router, connect your computer to the router's console port using the console cable. For virtual routers, open your terminal emulator and create a new connection.
3. **Access the Router:** Access the router's command-line interface (CLI). In most cases, press Enter to reach the user EXEC mode, then use the enable command to enter privileged EXEC mode.

**Part 2: Basic Router Configuration Commands**

1. **Router Identification:**
   * Set a hostname for the router: **hostname [hostname]**
2. **Interface Configuration:**
   * Enter the interface configuration mode: **interface [interface-type] [interface-number]**
   * Assign an IP address and subnet mask to an interface: **ip address [IP] [subnet-mask]**
   * Bring the interface up: **no shutdown**
3. **Default Gateway Configuration:**
   * Set the default gateway for the router: **ip route 0.0.0.0 0.0.0.0 [gateway-IP]**
4. **Password Configuration:**
   * Set the console line password: **line con 0**, then **password [password]**
   * Set the enable password: **enable secret [password]**
5. **Save Configuration:**
   * Save the current running configuration to the startup configuration: **write memory** or **copy running-config startup-config**
6. **View Configuration:**
   * Display the router's current configuration: **show running-config**



**Part 3: Testing and Troubleshooting**

1. **Ping Test:**
   * Use the **ping** command to verify connectivity to another device.
2. **Traceroute Test:**
   * Use the **traceroute** or **tracert** command to trace the path to a remote host.
3. **Password Verification:**
   * Test access to privileged mode using the configured enable password.