Task : Configuring a Router with Telnet, SSH, and Network Services

Scenario:

You are part of an IT infrastructure team tasked with setting up a secure and functional router for a new office network. In addition to securing the router and configuring essential services, you must implement a method to recover passwords in case of loss without losing data.

Task Details:

1. **Set Up Remote Access (Telnet & SSH):**

   ○ Enable both Telnet and SSH for remote access.

   ○ Generate RSA keys for SSH (minimum key size of 2048 bits).

   ○ Create a user admin with a strong password for authentication.

   ○ Secure the console and vty ports to prevent unauthorized access.

2. **Set Hostname and Security:**

   ○ Set the router's hostname to synnefo-R1.

   ○ Configure a login banner that states unauthorized access is prohibited.

   ○ Set an **enable password** and an **enable secret**.

   ○ Encrypt all passwords using the appropriate command.

3. **LAN Connectivity and Access:**

   ○ Configure the router's interface to provide LAN connectivity.

   ○ Ensure the router is accessible from the LAN network.

4. **Date and Time Configuration:**

   ○ Set the router's current date and time to your local timezone.

5. **Syslog Server Configuration:**

   ○ Configure the router to send logs to the syslog server at 10.0.0.100.

6. **DHCP Configuration:**

   ○ Enable and configure DHCP on the router with the following parameters:

      ■ IP Range: 10.0.0.0/16

      ■ Default Gateway: 10.0.0.254

      ■ DNS Server: 1.1.1.1

   ○ Enable DHCP reservations: Assign predefined IP addresses to specific clients based on their MAC addresses.

7. **Password Recovery Procedure:**

   ○ Implement a method to recover passwords without losing the router's configuration. The procedure must include:

      ■ Restarting the router in **ROMMON mode**.

      ■ Bypassing the startup configuration during boot.

      ■ Resetting or recovering the password.

      ■ Re-enabling the startup configuration and saving changes.

      ■ Document the exact steps for the password recovery process.

8. **Save and Validate Configuration:**

   ○ Save all configurations to ensure they persist after a reboot.

   ○ Test the following functionalities:

      ■ Telnet and SSH connectivity.

      ■ LAN access to the router.

      ■ Syslog server logging.

- - DHCP IP leasing and reservations.

  - Password recovery procedure (simulate password loss and document recovery).

Submission Requirements:

1. **Configuration Output:**

   ○ Provide the show running-config output with sensitive information hidden (e.g., passwords).

2. **Validation Logs:**

   ○ Screenshots or logs showing successful Telnet/SSH connections, syslog server messages, and DHCP lease/reservation details.

3. **Password Recovery Documentation:**

   ○ A detailed step-by-step guide on recovering passwords without losing the router's configuration.

4. **Summary Report:**

   ○ A brief document explaining how you configured and tested each task, with challenges faced and solutions implemented.

Additional Notes:

- Use best practices to secure the router and avoid unnecessary vulnerabilities.
- Ensure that all configurations and recovery procedures are thoroughly tested before submission.

- For password recovery, explain the importance of the configuration register and how to set it back to normal.

Good luck!