Automation Network Configuration with DHCP and Hostname Updates

Monday, November 18, 2024 1:22 PM

This project simplifies the network infrastructure upgrade by automating the network configuration and hostname assignment for all servers in the network using a centralized DHCP server. The goal is to streamline the management process and align machine hostnames with their functional roles while maintaining their existing IP addresses.

Key Features

1. **Centralized DHCP Server Setup**:
    - Installed and configured the **ISC DHCP server** on **Machine A** (router.dundermifflin.com) to serve network configurations and hostnames for Machines B-F.
    - Defined two DHCP pools:
        - LAN subnet pool: Assigned IPs with last octet in the range **100-199**.
        - DMZ subnet pool: Assigned IPs with last octet in the range **100-199**.
2. **Custom DHCP Configurations**:
    - Set the **lease time** to **10 minutes** for flexibility during testing and updates.
    - Configured DNS settings:
        - Primary and secondary name servers: 128.138.240.1 and 128.138.130.30.
        - Search domain: dundermifflin.com.
3. **Dynamic Hostname Assignment**:
    - Updated hostnames for Machines B-F to reflect their functional purposes:
        - **Machine B** → dns0.dundermifflin.com (Primary DNS and NTP).
        - **Machine C** → web0.dundermifflin.com (Primary Web Server).
        - **Machine D** → web1.dundermifflin.com (Secondary Web Server).
        - **Machine E** → nfs.dundermifflin.com (File Server).
        - **Machine F** → dns1.dundermifflin.com (Secondary DNS).
4. **DHCP Client Configuration**:
    - Configured Machines B-F to obtain their network settings (IP, hostname, DNS) dynamically from **Machine A** using DHCP.
5. **Reboot and Validation**:
    - Rebooted Machines A-F in order to apply the changes and verify the updated network configurations and hostnames.

This project demonstrates effective use of DHCP for centralized network management, ensuring a smooth and automated upgrade process for server infrastructure.