DHCP Server Lab Report

# Overview

In this lab, we configured a dedicated DHCP server within a virtualized environment using Ubuntu Server. The objective was to assign IP addresses dynamically to client machines, such as Kali Linux, across an internal VirtualBox network.

# Steps Taken

1. Set up a new Ubuntu Server VM in VirtualBox with two adapters: NAT (for internet access) and Internal Network.  
2. Installed and configured Netplan for static IP configuration.  
3. Installed the ISC-DHCP-Server package.  
4. Configured the DHCP server to serve IP addresses on the internal adapter (e.g., enp0s8).  
5. Verified that the service was active and enabled.  
6. Successfully confirmed IP address assignment to the Kali Linux machine.

# Challenges Faced

• Misconfiguration in the Netplan YAML file caused initial connectivity issues.  
• Needed to troubleshoot adapter assignments in VirtualBox.  
• DNS resolution required setting up nameservers manually.  
• Initial issues with package installation due to lack of internet connectivity.

# Lessons Learned

• Configuring static IPs correctly is crucial in lab environments.  
• DHCP requires correct interface targeting and syntax.  
• Network troubleshooting skills—such as using `ping`, `systemctl`, and logs—are essential.