Cisco Modeling Labs (CML) - Instruction Guide

This guide provides step-by-step instructions for setting up and completing each Cisco Modeling Labs (CML) topology included in this repository. Follow these steps to import, configure, and verify each lab.

General Setup for All Labs

1. Importing a CML Topology

1. Open Cisco Modeling Labs (CML).
2. Navigate to File > Import Lab.
3. Select the .yaml file for the lab you want to use.
4. Click Open, then Start the Lab.
5. Wait for all devices to boot up before proceeding to configuration.

2. Verifying Device Connections

1. Open the CLI for each router and switch.
2. Run the following command to check interface status:

   show ip interface brief

3. Ensure all interfaces are up and assigned the correct IP addresses.
4. Use ping to test connectivity between devices:

   ping [destination IP]

3. Saving Configuration

After completing the lab, save your configuration:

   write memory # or

   copy running-config startup-config

Troubleshooting Guide

Devices Cannot Ping Each Other

Possible Causes:

- Interfaces are down.
- Incorrect IP addressing or subnet mask.
- Missing routing configuration.

Solution:

1. Use 'show ip interface brief' to check interface status.

1. Use 'show running-config' to verify correct IP assignments.

1. Ensure routing is configured properly using 'show ip route'.

No DHCP IP Address Assignment

Possible Causes:

- DHCP service not enabled.

- No DHCP pool configured.

- DHCP relay (helper address) missing.

Solution:

1. Check 'show ip dhcp binding' to see assigned addresses.

1. Use 'show run | include dhcp' to verify DHCP pool setup.

1. If using a relay, verify 'ip helper-address' is configured.

Instructions for Each Lab

CIS270B_Wk1_Ex1-TCP-IP Connections

File: CIS270B_Wk1_Ex1-TCP-IP_Connections.yaml

Objective: Establish basic TCP/IP communication between devices.

Steps:

1. Assign IP addresses to routers and PCs.

2. Enable interfaces and verify connectivity using ping.

3. Configure static routes if necessary.

Verification:

Use 'show ip route' to confirm routing tables.

Use 'ping' and 'traceroute' to test network reachability.

Troubleshooting:

Ensure interfaces are up ('show ip interface brief').

Check IP addresses and masks ('show run | include interface').

Verify routing table entries ('show ip route').