

12.2.11 Troubleshoot IP Configurations

Your Performance

Your Score: 2 of 3 (67%)

Elapsed Time: 12 minutes 20 seconds

Pass Status: **Not Passed**

Required Score: 100%

Task Summary

Actions you were required to perform:

- ✓ On Support, configure an ip address and broadcast address appropriate for this network
- ✓ On Office2, configure the gateway address appropriate for this network
- ✗ On ITAdmin, configure a subnet mask appropriate for this network

Explanation

In this lab, your task is to complete the following:

- Use troubleshooting tools such as **ping**, **ip addr show**, or **traceroute** to diagnose the problems in the network.
- Fix the problem at each workstation.
- Use the troubleshooting tools to confirm the problem's resolution.

Location	Name	IP Address
Networking Closet	CorpServer	192.168.0.10/24
Office 1	Office1	192.168.0.30/24
Office 2	Office2	192.168.0.31/24
Support Office	Support	192.168.0.32/24
IT Administration	ITAdmin	192.168.0.33/24
Executive Office	Exec	192.168.0.34/24
Lobby	Gst-Lap	192.168.0.35/24
ISP	External DNS Server	163.128.78.93/24
Router	Internal Router	198.28.56.1/24

Complete this lab as follows:

1. In the Support Office, begin troubleshooting the problem by verifying the scope of the connectivity problem as follows:
 - a. Under Support Office, select **Support**.
 - b. At the prompt, type **ping 192.168.0.5** and press **Enter** to ping the gateway.
 - c. Press **Ctrl + C**. The ping fails.
 - d. Type **ping 192.168.0.30** and press **Enter** to ping the computer in Office 1.
 - e. Press **Ctrl + C**. The ping fails.
 - f. Type **ifconfig** and press **Enter** to examine the network configuration. The IP configuration for the network interface is on a different network.
2. Correct the problem on Support by configuring the network properties for the interface as follows:
 - a. Type **nano /etc/sysconfig/network-scripts/ifcfg-enp2s1** and press **Enter** to edit the `/etc/sysconfig/network-scripts/ifcfg-enp2s1` file to configure the interface.
 - b. On the IPADDR line, type **192.168.0.32**.
 - c. On the BROADCAST line, type **192.168.0.255**.
 - d. Press **Ctrl + O**.
 - e. Press **Enter** to save the file.
 - f. Press **Ctrl + X** to exit the editor.
 - g. Type **ip link set enp2s1 down** or **ifdown enp2s1** and press **Enter** to bring the interface down.
 - h. Type **ip link set enp2s1 up** or **ifup enp2s1** and press **Enter** to bring the interface back up with the new configuration.
 - i. Type **ip addr show** or **ifconfig** and press **Enter** to verify the correct IP address on the interface.
 - j. Type **ping 192.168.0.5** and press **Enter** to verify connectivity to the gateway.

- k. Press **Ctrl + C**. The ping now succeeds.
3. On Office2, begin troubleshooting the problem by verifying the scope of the connectivity problem as follows:
 - a. From the top navigation tabs, select **Floor 1 Overview**.
 - b. Under Office 2, select **Office2**.
 - c. At the prompt, type **ping 192.168.0.5** and press **Enter** to ping the gateway. The ping succeeds.
 - d. Press **Ctrl + C**.
 - e. Type **ping 192.168.0.30** and press **Enter** to ping the computer in Office 1. The ping succeeds.
 - f. Press **Ctrl + C**.
 - g. Type **ping 198.28.56.1** and press **Enter** to ping the internal router interface.
 - h. Press **Ctrl + C**. The ping fails. Since you have connectivity to the local network, but not beyond the gateway, this indicates a possible problem with the configured gateway address.
 - i. Type **route** and press **Enter** to examine the configured gateway. The gateway is configured incorrectly for this network.
4. Correct the problem on Office2 by configuring the network properties for the interface as follows:
 - a. Type **nano /etc/sysconfig/network-scripts/ifcfg-enp2s0** and press **Enter** to edit the `/etc/sysconfig/network-scripts/ifcfg-enp2s0` file to configure the interface.
 - b. On the GATEWAY line, type **192.168.0.5**.
 - c. Press **Ctrl + O**.
 - d. Press **Enter** to save the file.
 - e. Press **Ctrl + X** to exit the editor.
 - f. Type **ip link set enp2s0 down** or **ifdown enp2s0** and press **Enter** to bring the interface down.
 - g. Type **ip link set enp2s0 up** or **ifup enp2s0** and press **Enter** to bring the interface back up with the new configuration.
 - h. Type **ping 198.28.56.1** and press **Enter** to verify connectivity to the internal router interface. The ping now succeeds.
 - i. Press **Ctrl + C**.
5. On ITAdmin, begin troubleshooting the problem by verifying the scope of the connectivity problem as follows:
 - a. From the top navigation tabs, select **Floor 1 Overview**.
 - b. Under IT Administration, select **ITAdmin**.
 - c. At the prompt, type **ping 192.168.0.5** and press **Enter** to ping the gateway.
 - d. Press **Ctrl + C**. The ping fails.
 - e. Type **ping 192.168.0.30** and press **Enter** to ping the computer in Office 1.
 - f. Press **Ctrl + C**. The ping fails.
 - g. Type **ping 192.168.0.34** and press **Enter** to ping the computer in Executive Office. The ping succeeds.
 - h. Press **Ctrl + C**.
 - i. Type **ifconfig** and press **Enter** to examine the configured subnet mask. The subnet mask is configured incorrectly. Only this workstation and the Exec workstation are on the same network.
6. Correct the problem on ITAdmin by configuring the network properties for the interface as follows:
 - a. At the prompt, type **nano /etc/sysconfig/network-scripts/ifcfg-enp2s0** and press **Enter** to edit the `/etc/sysconfig/network-scripts/ifcfg-enp2s0` file to configure the interface.
 - b. On the NETMASK line, type **255.255.255.0**.
 - c. Press **Ctrl + O**.
 - d. Press **Enter** to save the file.
 - e. Press **Ctrl + X** to exit the editor.
 - f. Type **ip link set enp2s0 down** or **ifdown enp2s0** and press **Enter** to bring the interface down.
 - g. Type **ip link set enp2s0 up** or **ifup enp2s0** and press **Enter** to bring the interface back up with the new configuration.
 - h. Type **ping 192.168.0.5** and press **Enter** to verify connectivity to the gateway. The ping now succeeds.