Networking Academy — CISCO

Packet Tracer - Troubleshooting Challenge - Use Documentation to Solve Issues (Instructor Version)

12.6.2 Packet Tracer - Troubleshooting Challenge - Use Documentation to Solve Issues Answers

Addressing Table

Device	Interface	Device Type (router, switch, host)	IP Address	Subnet Mask	Default Gateway
PC1	NIC	host	192.168.1.153	255.255.255.0	192.168.1.1
PC2	NIC	host	192.168.3.50	255.255.255.0	192.168.3.1
PC3	NIC	host	192.168.4.115	255.255.255.0	192.168.4.1
PC4	NIC	host	192.168.5.83	255.255.255.128	192.168.5.1
PC5	NIC	host	192.168.5.227	255.255.255.128	192.168.5.129
PC6	NIC	host	192.168.2.48	255.255.255.224	192.168.2.33
PC7	NIC	host	192.168.2.67	255.255.255.224	192.168.2.65
Hub	G0/0/0	router	192.0.2.1	255.255.255.252	N/A
Hub	S0/1/0	router	192.168.0.1	255.255.255.252	N/A
Hub	S0/1/1	router	192.168.0.5	255.255.255.252	N/A
Hub	S0/2/0	router	192.168.0.9	255.255.255.252	N/A
Hub	S0/2/1	router	192.168.0.13	255.255.255.252	N/A
Branch-1	G0/0/0	router	192.168.1.1	255.255.255.0	N/A
Branch-1	S0/1/0	router	192.168.0.2	255.255.255.252	N/A
Branch-2	G0/0/0	router	192.168.2.33	255.255.255.224	N/A
Branch-2	S0/1/0	router	192.168.0.6	255.255.255.252	N/A
Factory	G0/0/0	router	192.168.3.1	255.255.255.0	N/A
Factory	G0/0/1	router	192.168.4.1	255.255.255.0	N/A
Factory	S0/1/0	router	192.168.0.14	255.255.255.252	N/A
HQ	G0/0/0.1	router	192.168.6.1	255.255.255.0	N/A
HQ	G0/0/0.5	router	192.168.5.1	255.255.255.128	N/A
HQ	G0/0/0.10	router	192.168.5.128	255.255.255.128	N/A

Device	Interface	Device Type (router, switch, host)	IP Address	Subnet Mask	Default Gateway
HQ	S0/1/0	router	192.168.0.10	255.255.255.252	N/A
SW-B1	VLAN 1	switch	192.168.1.252	255.255.255.0	192.168.1.1
SW-B2	VLAN 1	switch	192.168.2.62	255.255.255.0	192.168.2.1
SW-F1	VLAN 1	switch	192.168.3.252	255.255.255.0	192.168.3.1
SW-F2	VLAN 1	switch	192.168.4.252	255.255.255.0	192.168.4.1
SW-HQ1	VLAN 1	switch	192.168.6.252	255.255.255.0	192.168.6.1
SW-HQ2	VLAN 1	switch	192.168.6.253	255.255.255.0	192.168.6.1
SW-HQ3	VLAN 1	switch	192.168.6.254	255.255.255.0	192.168.6.1

Objectives

In this lab, you use network documentation to identify and fix network communications problems.

- Use various techniques and tools to identify connectivity issues.
- Use documentation to guide troubleshooting efforts.
- Identify specific network problems.
- Implement solutions to network communication problems.
- Verify network operation.

Background / Scenario

In this activity, you will use the documentation that you created in the **Packet Tracer - Troubleshooting Challenge - Document the Network** activity to guide network troubleshooting efforts.

It has been discovered that the network that you worked with in the previous PT activity has developed communication problems. Some hosts are unable to ping other hosts and the internet server. It is your job to determine what the issues are and to locate and repair them.

Network issues could exist in any device. Be sure to check for comprehensive errors:

- Addressing configuration
- Interface activation
- Routing
- NAT

Instructions

Passwords for all devices are VTY: **cisco**, Enable secret: **class**

Part 1: Assess Connectivity

All hosts should be able to ping each other and the internet server. Determine if this requirement is met. If not, identify which hosts and networks should be further investigated.

Part 2: Access Network Devices

From the hosts which have communication problems, use ICMP tools to determine where in the network these problems may be located. From the host PCs, access devices in the network and display configurations and operational status.

Part 3: Repair the Network

After locating the issues, reconfigure the devices to repair the connectivity problem. Use your documentation from the previous activity to help you.

Part 4: Document the Issues

Record your issues in the table below.

Device	Issue	Action

from PC2 to the router to inspect its configuration. It will be found that Gigabit Ethernet 0/0/1 interface of the Factory router is shutdown. Activating the interface should enable PC3 to only ping directly connected hosts.

Problem 3:

Even after the LAN interface for PC3 is activated, no devices can ping PC3 except for PC2, which is directly connected to the factory router. Similarly, PC3 can ping no devices on other networks.

Solution:

Inspection of the configuration of the Factory router indicates that the OSPF network statement for the PC3 LAN, 192.168.4.0/24, is missing. Adding this network statement restores connectivity to and from the LAN.

Problem 4:

It is found the PC5 cannot ping its gateway. However, it cannot ping other PCs on the network or Internet Server.

Solution 4:

While it is tempting to go directly to the gateway router to look for the problem. inspection of PC5 addressing shows that it is missing its default gateway address. Adding this address solves the problem. The address should be available in the network documentation or by accessing the HQ router from another PC that has connectivity.

Problem 5:

PC6 and PC7 can ping their default gateway addresses and each other but cannot ping the internet server. In fact, the default gateway router returns a destination host unreachable message, which usually means that a route to the destination network is not known by the gateway router.

Solution 5:

The ping result indicates that the default gateway router, Branch-2, probably does not have a route to reach the internet server. Students may have noticed after displaying routing tables on other routers that a default route is being distributed through OSPF. The student should access the default gateway router and display the routing table. Students should see that no routes have been received through OSPF, including the default route. After inspecting the device configuration, it appears that OSPF is correctly configured. Therefore, the problem must be with the link over which the router should have received the OSPF updates. Inspection indicates that the S0/1/0 interface IP address is misconfigured. The address should be changed to 192.168.0.6/30. This will restore Layer 3 connectivity with the Hub router and allow OSPF updates to be received.