Packet Tracer - Troubleshoot Connectivity Issues

Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	172.16.1.1	255.255.255.0	N/A
R1	G0/1	172.16.2.1	255.255.255.0	N/A
R1	S0/0/0	209.165.200.226	255.255.255.252	N/A
R2	G0/0	209.165.201.1	255.255.255.224	N/A
R2	S0/0/0 (DCE)	209.165.200.225	255.255.255.252	N/A
PC-01	NIC	172.16.1.3	255.255.255.0	172.16.1.1
PC-02	NIC	172.16.1.4	255.255.255.0	172.16.1.1
PC-A	NIC	172.16.2.3	255.255.255.0	172.16.2.1
PC-B	NIC	172.16.2.4	255.255.255.0	172.16.2.1
Web	NIC	209.165.201.2	255.255.255.224	209.165.201.1
DNS1	NIC	209.165.201.3	255.255.255.224	209.165.201.1
DNS2	NIC	209.165.201.4	255.255.255.224	209.165.201.1

Objectives

In this Packet Tracer activity, you will troubleshoot and resolve connectivity issues, if possible. Otherwise, the issues should be clearly documented so they can be escalated.

Background / Scenario

Users are reporting that they cannot access the web server, www.cisco.pka after a recent upgrade that included adding a second DNS server. You must determine the cause and attempt to resolve the issues for the users. Clearly document the issues and any solution(s). You do not have access to the devices in the cloud or the server www.cisco.pka. Escalate the problem if necessary.

Note: Router R1 can only be accessed using SSH with the username **Admin01** and password **cisco12345**. Router R2 is in the ISP cloud and is not accessible by you.

Instructions

Step 1:   Determine connectivity issues from PC-01.

a. On PC-01, open the command prompt. Enter the command **ipconfig** to verify what IP address and default gateway have been assigned to PC-01. Correct as necessary according to the Addressing Table.

b. After verifying/correcting the IP addressing issues on PC-01, issue pings to the default gateway, web server, and other PCs. Were the pings successful? Record the results.

Questions:

Ping to default gateway (172.16.1.1)?

Successful.

To web server (209.165.201.2)?

Successful.

Ping to PC-02?

Successful.

To PC-A?

Unsuccessful.

To PC-B?

Unsuccessful.

c. Use the web browser to access the web server on PC-01. Access the web server by first entering the URL http://www.cisco.pka and then by using the IP address 209.165.201.2. Record the results.

Questions:

Can PC-01 access www.cisco.pka?

Successful.

Using the web server IP address?

Successful.

d. Document the issues and provide the solution(s). Correct the issues if possible.

Issues: PC-01's IP Address(172.168.1.3) configured incorrectly.

Solution: First of all, GOTO PC-01's "Config" then selected "FastEthernet0" and then updated the

IPv4 Address to 172.16.1.3

Step 2:   Determine connectivity issues from PC-02.

a. On PC-02, open the command prompt. Enter the command **ipconfig** to verify the configuration for the IP address and default gateway. Correct as necessary.

b. After verifying/correcting the IP addressing issues on PC-02, issue pings to the default gateway, web server, and other PCs. Were the pings successful? Record the results.

Questions:

Ping to default gateway (172.16.1.1)?

Successful.

To web server (209.165.201.2)?

Successful.

Ping to PC-01?

Successful.

To PC-A?

Unsuccessful.

To PC-B?

Unsuccessful.

c. Navigate to www.cisco.pka using the web browser on PC-02. Record the results.

Questions:

Can PC-02 access www.cisco.pka?

Successful.

Using the web server IP address?

Successful.

d. Document the issues and provide the solution(s). Correct the issues if possible.

Issues: PC-02's Default Gateway was wrong.

Solution: First of all, GOTO PC-02's "Config" then selected "Settings" and then updated the Default Gateway to 172.16.1.1.

Step 3:   Determine connectivity issues from PC-A.

a. On PC-A, open the command prompt. Enter the command **ipconfig** to verify the configuration for the IP address and default gateway. Correct as necessary.

b. After correcting the IP addressing issues on PC-A, issue the pings to the web server, default gateway, and other PCs. Were the pings successful? Record the results.

Questions:

To web server (209.165.201.2)?

Unsuccessful.

Ping to default gateway (172.16.2.1)?

Unsuccessful.

Ping to PC-B?

Successful.

To PC-01?

Unsuccessful.

To PC-02?

Unsuccessful.

c. Navigate to www.cisco.pka using the web browser on PC-A. Record the results.

Questions:

Can PC-A access www.cisco.pka?

Unsuccessful.

Using the web server IP address?

Unsuccessful.

d. Document the issues and provide the solution(s). Correct the issues if possible.

Issues: R1 router's GigabitEthernet0/1 IP Address configured incorrectly.

Solution: As R1 router interface is locked and PC-A can only access the local LAN, we cannot directly change anything through router. We've to change through PC-1 or PC-2. So, First of all, GOTO PC-01's "Command Prompt" then typed "SSH -I Admin01 172.16.3.1(IP of R1 G0/1), taken password "cisco12345" then R1# configure terminal then R1(config)# interface GigabitEthernet0/1 then R1(config-if)# ip address 172.16.2.1 255.255.255.0. Then for save given command "no shut" then "end" and at last "copy running-config startup-config".

Step 4:   Determine connectivity issues from PC-B.

a. On PC-B, open the command prompt. Enter the command **ipconfig** to verify the configuration for the IP address and default gateway. Correct as necessary.

b. After correcting the IP addressing issues on PC-B, issue the pings to the web server, default gateway, and other PCs. Were the pings successful? Record the results.

Questions:

To web server (209.165.201.2)?

Successful.

Ping to default gateway (172.16.2.1)?

Successful.

Ping to PC-A?

Successful.

To PC-01?

Successful.

To PC-02?

Successful.

c. Navigate to www.cisco.pka using the web browser. Record the results.

Questions:

Can PC-B access www.cisco.pka?

Unsuccessful.

Using the web server IP address

Successful.

d. Document the issues and provide the solution(s). Correct the issues if possible.

Issues: PC-B is configured with DNS2 instead of DNS1, so it is failing to access the web server by using the url www.cisco.pka but can access by web server IP directly.

Solution: First of all, GOTO PC-B's "Config" then selected "Settings" and then updated the DNS Server to 209.165.201.3

e. Could all the issues be resolved on PC-B and still make use of DNS2? If not, what would you need to do?

No, the issues can't be fixed on PC-B because it doesn't control the DNS. The DNS is provided by the ISP, so need to contact the person responsible for the DNS2 server and report the configuration problems.

Step 5:   Verify connectivity.

Verify that all the PCs can access the web server www.cisco.pka.

Your completion percentage should be 100%. If not, verify that the IP configuration information is correct on all devices and that it matches what is shown in the addressing table.

End of document