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

## Determine connectivity issues from PC-01.

* + 1. 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.
    2. 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)?

Yes

To web server (209.165.201.2)?

Yes

Ping to PC-02?

Yes

To PC-A?

No

To PC-B?

No

* + 1. 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?

Yes

Using the web server IP address?

Yes

* + 1. Document the issues and provide the solution(s). Correct the issues if possible.

PC-01 had an incorrectly configured IP address. To fix this problem, the IP address was changed from 172.168.1.3 to 172.16.1.3. However, PC-01 still cannot ping the PCs on the 172.16.2.0/24 network successfully.

## Determine connectivity issues from PC-02.

* + 1. 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.
    2. 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)?

Yes

To web server (209.165.201.2)?

Yes

Ping to PC-01?

Yes

To PC-A?

No

To PC-B?

No

* + 1. Navigate to www.cisco.pka using the web browser on PC-02. Record the results.

Questions:

Can PC-02 access www.cisco.pka?

Yes

Using the web server IP address?

Yes

* + 1. Document the issues and provide the solution(s). Correct the issues if possible.

After correcting the default gateway to 172.16.1.1 on PC-02, it can access the web server using the IP address. However, PC-02 still cannot ping the PCs on the 172.16.2.0/24 network successfully.

## Determine connectivity issues from PC-A.

* + 1. 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.
    2. 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)?

No

Ping to default gateway (172.16.2.1)?

No

Ping to PC-B?

Yes

To PC-01?

No

To PC-02?

No

* + 1. Navigate to www.cisco.pka using the web browser on PC-A. Record the results.

### Questions:

Can PC-A access www.cisco.pka?

No

Using the web server IP address?

No

* + 1. Document the issues and provide the solution(s). Correct the issues if possible.

PC-A is only able to access the local LAN because the G0/1 interface on router R1 is incorrectly configured. To fix this issue, the IP address on the G0/1 interface needs to be changed from 172.16.3.1 to 172.16.2.1. This can be done by accessing router R1 using SSH from either PC-01 or PC-02.

## Determine connectivity issues from PC-B.

* + 1. 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.
    2. 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)?

Yes

Ping to default gateway (172.16.2.1)?

Yes

Ping to PC-A?

Yes

To PC-01?

Yes

To PC-02?

Yes

* + 1. Navigate to www.cisco.pka using the web browser. Record the results.

### Questions:

Can PC-B access www.cisco.pka?

No

Using the web server IP address

Yes

* + 1. Document the issues and provide the solution(s). Correct the issues if possible.

PC-B can only access the web server using the IP address, even though it is configured with the correct DNS-2 server address. This suggests that the DNS-2 server may be incorrectly configured. To temporarily fix this issue, the DNS server address can be changed to 209.165.200.3. However, the issue with the DNS-2 server needs to be escalated because you do not have administrative access to devices outside your network.

* + 1. Could all the issues be resolved on PC-B and still make use of DNS2? If not, what would you need to do?

No. DNS2 apparently has configuration issues. You would need to contact the person in charge of the DNS2 server and report your findings.

## 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