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, destination host unreachable

To PC-B?

>>No, destination host unreachable

* + 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.

>>The IP address of PC-01 was configured incorrectly. To solve this problem, the IP address has

***been changed 172.168.1.3 to 172.16.1.3 and also PC-A and PC-B could not be reached***.

## 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, destination host unreachable

To PC-B?

>>No, destination host unreachable

* + 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.

>> The default gateway of PC-02 was configured incorrectly. To solve this problem, the default gateway needs to be changed from 172.16.1.11 to 172.16.1.1 Also, PC-A and PC-B could not be reached.

## 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, request timed out.

Ping to default gateway (172.16.2.1)?

>>No, request timed out.

Ping to PC-B?

>>Yes

To PC-01?

>>No, request timed out.

To PC-02?

>>No, request timed out.

* + 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.

>>The IP address of the GigabitEthernet0/1 port of R1 was configured incorrectly. To solve this problem, it has been changed from 172.16.3.1 to 172.16.2.1your answers here.

## 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)?

T>>Yes

Ping to default gateway (172.16.2.1)?

T>>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.

>> There is something wrong with the mapping of the DNS2 server. Since we cannot access DNS2 server, we cannot solve this problem.

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

>> All the issues cannot be resolved on PC-B while still making use of DNS2. As a temporary fix, PC-B could be configured to use DNS1 as its resolver.

## 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