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)?

**Ans. Yes**

Type you answers here.

To web server (209.165.201.2)?

**Ans. Yes**

Type you answers here.

Ping to PC-02?

**Ans. Yes**

Type you answers here.

To PC-A?

**Ans. No**

Type you answers here.

To PC-B?

**Ans. No**

Type you answers here.

* + 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](http://www.cisco.pka)?

**Ans. Yes**

Type you answers here.

Using the web server IP address?

**Ans. Yes**

Type you answers here.

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

**Ans. The IPv4 Address of PC-01 was configured incorrectly. For solving the issue, the IPv4 Address was updated from 172.168.1.13 to 172.16.1.3 and PC-A and PC-B could not be reached from PC-01.**

## 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)?

**Ans. Yes**

Type you answers here.

To web server (209.165.201.2)?

**Ans. Yes**

Type you answers here.

Ping to PC-01?

**Ans. Yes**

Type you answers here.

To PC-A?

**Ans. No**

Type you answers here.

To PC-B?

**Ans. No**

Type you answers here.

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

Questions:

Can PC-02 access [www.cisco.pka](http://www.cisco.pka)?

**Ans. Yes**

Type you answers here.

Using the web server IP address?

**Ans. Yes**

Type you answers here.

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

**Ans. The Default Gateway Address of PC-02 was configured incorrectly. For solving the issue, the Default Gateway Address was updated from 172.16.1.11 to 172.16.1.1 and PC-A and PC-B could not be reached from PC-02 as well.**

Type your answers here.

## 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)?

**Ans. No**

Type you answers here.

Ping to default gateway (172.16.2.1)?

**Ans. No**

Type you answers here.

Ping to PC-B?

**Ans. Yes**

Type you answers here.

To PC-01?

**Ans. No**

Type you answers here.

To PC-02?

**Ans. No**

Type you answers here.

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

### Questions:

Can PC-A access [www.cisco.pka](http://www.cisco.pka)?

**Ans. No**

Type you answers here.

Using the web server IP address?

**Ans. No**

Type you answers here.

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

**Ans. The issue was that Router R1’s interface G0/1 (the port which is connected to both PC-A and PC-B) had an incorrect IP Address, i.e 172.16.3.1. The IP Address was updated from a remote locator (PC-01) to the correct IP Address of 172.16.2.1.**

Type your 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)?

**Ans. Yes**

Type you answers here.

Ping to default gateway (172.16.2.1)?

**Ans. Yes**

Type you answers here.

Ping to PC-A?

**Ans. Yes**

Type you answers here.

To PC-01?

**Ans. Yes**

Type you answers here.

To PC-02?

**Ans. Yes**

Type you answers here.

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

### Questions:

Can PC-B access [www.cisco.pka](http://www.cisco.pka)?

**Ans. No**

Type you answers here.

Using the web server IP address

**Ans. Yes**

Type you answers here.

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

**Ans. The issue here is that the DNS2, which is connected with PC-B has got some problems, which we can tell by seeing that PC-B could access the web server using the IP Address but could not load the webpage using the Hostname (i.e.** [**www.cisco.pka**](http://www.cisco.pka)**). Since we do not have any access to any devices in the cloud, we have got no solution for the issue here. But, a temporary solution could be to change the DNS IP Address for PC-B from DNS2 to DNS1 i.e. from 209.165.201.4 to 209.165.201.3.**

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

**Ans. Since we do not have any access to the devices in the cloud, it means that we cannot configure the DNS2 as well. So, even if all issues on PC-B are resolved, we cannot make use of DNS2. In that case, we can use a temporary solution which would be to change the IP Address of the DNS in PC-B from DNS2’s to DNS1’s IP Address, i.e. from 209.165.201.4 to 209.165.201.3.**

Type your answers here.

## 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