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

Type you answers here.

To web server (209.165.201.2)? Yes

Type you answers here.

Ping to PC-02? Yes

To PC-A? No

Type you answers here.

To PC-B? 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)? YES

Type you answers here.

Using the web server IP address? YES

Type you answers here.

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

The IP address of PC1 was incorrect and we had to update it to the correct ip address to fix it.

***PC-A and PC-B couldn’t 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?

Noere.

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](http://www.cisco.pka)? Yes

Using the web server IP address? Yes

Type you answers here.

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

The default gateway was set incorrectly. We had to update it with the correct one.

## 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

Type you answers here.

Ping to default gateway (172.16.2.1)? no

Type you answers here.

Ping to PC-B? yes

Type you answers here.

To PC-01? no

Type you answers here.

To PC-02? 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)? no

Type you answers here.

Using the web server IP address? no

Type you answers here.

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

***Since PC-B is on the same network, PC-A can only access PC-B and cannot access any other PCs. So, the problem is with the router. PC-A also cannot access www.cisco.pka but URL or by IP address. The IP address given at ethernet G0/1 was incorrect. It had to be changed from 172.16.3.1 to 172.16.2.1 to resolve the issues.***

## 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)?

NO

Ping to default gateway (172.16.2.1)? Yes

Type you answers here.

Ping to PC-A?

Yes

To PC-01?

Yes

To PC-02?

Yes

here.

* + 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 must be something wrong with the DNS. All the devices are using the 1st DNS so the problem must lie with the 2nd DNS. Since we do not have access to the 2nd DNS we cannot solve it. A temporary solution would be to manually change the second DNS server’s address to the first one so that the website can be accessed.

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

We can't fix this problem since we don't have access to the DNS server. However, we may set PC-B to utilize the IP address of the DNS1 server, which is 209.165.201.3. Since PC-1 PC-2 PC-A are all utilizing 209.165.201.3 or DNS1 server and properly resolving their DNS requests, PC-B will be able to visit www.cisco.pka normally and in accordance with its intended purpose once configured.

## 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