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***

***Type you answers here.***

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 IPv4 address of PC1 was not configured correctly . We need to correct the IPv4 address correctly as 172.16.1.3***

## 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***

***Type you answers here.***

To web server (209.165.201.2)? ***yes***

***Type you answers here.***

Ping to PC-01?  ***yes***

***Type you answers here.***

To PC-A?  ***no***

***Type you answers here.***

To PC-B? ***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)? ***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 default gateway for PC1 was not configured correctly. We have to correct the default gateway correctly as 172.16.1.1***

***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)?  ***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*** Host Name Unresolved

***Type you answers here.***

Using the web server IP address?  ***no***  Request Timeout

***Type you answers here.***

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

***PC A was not able to even reach its default gateway, that is why it could not reach the DNS server. As a result, it showed the error that “Host Name Unresolved” since it could not resolve the IP address from the host name.***

***In the second scenario, we have given the IP address and there is no need to visit DNS Server. PC A could not reach the default gateway, i.e., it could not reach the web server. For this reason, it showed the error “Request Timeout.”***

***The problem was R1’s GigabitEthernet0/1 interface was configured incorrectly as 172.16.3.1. We need to correct the IP address of GigabitEthernet0/1 port as 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)?  ***yes***

***Type you answers here.***

Ping to default gateway (172.16.2.1)? ***yes***

***Type you answers here.***

Ping to PC-A? ***yes***

***Type you answers here.***

To PC-01? ***yes***

***Type you answers here.***

To PC-02? ***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)? ***no***

***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.

***DNS for PC B is 209.165.201.4 (DNS 2). But PC B was not able to navigate to www.cisco.pka using the web browser through DNS2. though other three devices were able to access www.cisco.pka through DNS 1 (209.165.201.3), but we can configure the DNS for PC B as DNS 1.***

* + 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. The DNS is maintained by the ISP network. So, we cannot do anything from PC B that can configure the DNS.***

***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*