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)?

**Answer:** Yes, successful.

To web server (209.165.201.2)?

**Answer:** Yes, successful.

Ping to PC-02?

**Answer:** Yes, successful.

To PC-A?

**Answer:** No, unsuccessful.

To PC-B?

**Answer:** No, unsuccessful.

* + 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)?

**Answer:** Yes, it can.

Using the web server IP address?

**Answer:** Yes, it can.

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

Answer: The issue was the IP address of PC-01 was incorrect. So, we changed the IP Address from 172.168.1.3 to 172.16.1.3 according to the table above.

## 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)?

**Answer:** Yes, successful

To web server (209.165.201.2)?

**Answer:** Yes, successful

Ping to PC-01?

**Answer:** Yes, successful

To PC-A?

**Answer:** No, unsuccessful

To PC-B?

**Answer:** No, unsuccessful

* + 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)?

**Answer:** Yes, it can

Using the web server IP address?

**Answer:** Yes, it can

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

**Answer:** The issue was the Default Gateway of PC-02 was wrong. So, we changed the Default Gateway Address from 172.16.1.11 to 172.16.1.1 according to the table above.

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)?

**Answer:** No, unsuccessful

Ping to default gateway (172.16.2.1)?

**Answer:** No, unsuccessful

Ping to PC-B?

**Answer:** Yes, successful.

To PC-01?

**Answer:** No, unsuccessful

To PC-02?

**Answer:** No, unsuccessful

* + 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)?

**Answer:** No, it cannot.

Using the web server IP address?

**Answer:** No, it cannot.

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

**Answer:** PC-A cannot even reach the Default Gateway. The Default Gateway port of the router at Gigabit0/1 is 172.16.3.1 but PC-02 Default Gateway is 172.16.2.1. So, we need to change the router R1 configuration for Gigabit0/1 port. As it is locked, we need to remotely change it using a device that is connected with Router R1. We choose PC1 to remotely login to Router R1. The commands are:

SSH -l Admin01 172.16.1.1

conf t

int g0/1

ip address 172.16.2.1 255.255.255.0

## 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)?

**Answer:** Yes, successful.

Ping to default gateway (172.16.2.1)?

**Answer:** Yes, successful.

Ping to PC-A?

**Answer:** Yes, successful.

To PC-01?

**Answer:** Yes, successful.

To PC-02?

**Answer:** Yes, successful.

* + 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)?

**Answer:** No, it cannot.

Using the web server IP address

**Answer:** Yes, it can.

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

**Answer:** The issue is, the DNS of [www.cisco.pka](http://www.cisco.pka) cannot be resolved it meaning there is a problem translating the website's name into its corresponding IP address. It is happening because DNS2, 209.165.201.4 is not functioning properly. DNS1 that is used in PC-A is working properly and we can use that DNS server for PC-B as a solution. So we change the DNS server 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?

**Answer:** No. Solving the issue of DNS2 could involve troubleshooting the server itself, checking its configuration, ensuring it has network connectivity, verifying its DNS service is running correctly, and resolving any potential network or server issues affecting its functionality. DS2 resides in the ISP part and is locked. So we cannot fix that issue rather we use the DNS1.

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