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.
* Answer: The IP Address & default gateway was wrong according to the table. Correcting it in PC-01
  + 1. 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?

-Failed. Destination host unreachable.

To PC-B?

- Failed. 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](http://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.

Answer: As stated before, IP address and gateway was incorrect. Solved it by manually setting it up in IP configuration.

## 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.

Answer: The default gateway was wrong according to the table. Correcting it in PC-02

* + 1. 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

To web server (209.165.201.2)?

Answer: Yes

Type you answers here.

Ping to PC-01?

Answer: Yes

To PC-A?

Answer: Failed.

To PC-B?

Answer: Failed.

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

Questions:

Can PC-02 access www.cisco.pka?

Answer: Yes.

Using the web server IP address?

Answer: Yes

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

Answer: The default gateway in PC-02 was wrong, Correcting it manually resolved the issue.

## 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.

Answer: No issues.

* + 1. 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: Failed.

Ping to default gateway (172.16.2.1)?

* Answer: Failed.

Ping to PC-B?

* Answer: Yes.

To PC-01?

* Answer: Failed.

To PC-02?

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

### Questions:

Can PC-A access www.cisco.pka?

* ***Answer: Failed.***

Using the web server IP address?

* Answer: Failed.
  + 1. Document the issues and provide the solution(s). Correct the issues if possible.
* Answer: This PC cannot access anything beyond S2. So the issue is most likely in S2 configuration. We can use PC-01 to ssh into R1 and resolve it.

Code:

C:\>ssh

Cisco Packet Tracer PC SSH

Usage: SSH -l username target

C:\>ssh -l Admin01 172.16.1.1

Password:

Warning: Unauthorized Access is Prohibited.

R1#show ip interface brief

Interface IP-Address OK? Method Status Protocol

GigabitEthernet0/0 172.16.1.1 YES manual up up

GigabitEthernet0/1 172.16.3.1 YES manual up up

Serial0/0/0 209.165.200.226 YES manual up up

Serial0/0/1 unassigned YES unset down down

Vlan1 unassigned YES unset administratively down down

R1#config t

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#interface gigabitether

R1(config)#interface gigabitethernet 0/1

R1(config-if)#ip address 172.16.2.1 255.255.255.0

R1(config-if)#

## 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.

Answer: Everything is okay.

* + 1. 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.

Ping to default gateway (172.16.2.1)?

* Answer: Yes.

Ping to PC-A?

* Answer: Yes.

To PC-01?

* Answer: Yes.

To PC-02?

* Answer: 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.

Answer: DNS Server 2 might be configured incorrectly. There is no way to access DNS Server 2 so there is no solution from our end.

* + 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: We could use DNS to solve the issue for now but it is not possible using DNS2.

## Verify connectivity.

Verify that all the PCs can access the web server [www.cisco.pka](http://www.cisco.pka).

Answer: Verified.

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