

## 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
	G0/1	172.16.2.1	255.255.255.0	N/A
	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
	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](http://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](http://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

#### Step 1: Determine connectivity issues from PC-01.

- 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.
- 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.

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? (No)

To PC-B? (No)

- c. 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.

Can PC-01 access [www.cisco.pka](http://www.cisco.pka)? (Yes)

Using the web server IP address? (Yes)

- d. Document the issues and provide the solution(s). Correct the issues if possible.

Ans: The IP configuration for PC01 was off. I changed the IP address by going to PC01's configuration.

### Step 2: Determine connectivity issues from PC-02.

- a. 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.
- b. 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.

Ping to default gateway (172.16.1.1)? (Yes)

To web server (209.165.201.2)?

Ping to PC-01? (Yes)

To PC-A? (No)

To PC-B? (No)

- c. Navigate to [www.cisco.pka](http://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)

- d. Document the issues and provide the solution(s). Correct the issues if possible.

Ans: An error occurred in configuring PC02's default gateway. I made changes to the default gateway in PC02's IP configuration.

### Step 3: Determine connectivity issues from PC-A.

- a. 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.
- b. 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.

To web server (209.165.201.2)? (No)

Ping to default gateway (172.16.2.1)? (No)

Ping to PC-B? (Yes)

To PC-01? (No)

To PC-02? (No)

- c. Navigate to [www.cisco.pka](http://www.cisco.pka) using the web browser on PC-A. Record the results.

Can PC-A access [www.cisco.pka](http://www.cisco.pka)? (No)

Using the web server IP address? (No)

- d. Document the issues and provide the solution(s). Correct the issues if possible.

Ans: According to me, there's a communication issue with R1. Configuration must be done remotely because direct access to the router is not possible. Any errors found in the address table must be corrected using the IP, subnet mask, and default gateway listed in the address table.

```
R1#conf t
```

```
R1(config)#int g0/1
```

```
R1(config-if)#ip address 172.16.2.1 255.255.255.0
```

R1(config-if)#no shutdown

R1(config-if)#exit

R1(config)#exit

### Step 4: Determine connectivity issues from PC-B.

- a. 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.
- b. 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.

To web server (209.165.201.2)? (Yes)

Ping to default gateway (172.16.2.1)? (Yes)

Ping to PC-A? (Yes)

To PC-01? (Yes)

To PC-02? (Yes)

- c. Navigate to [www.cisco.pka](http://www.cisco.pka) using the web browser. Record the results.

Can PC-B access [www.cisco.pka](http://www.cisco.pka)? (No)

Using the web server IP address (Yes)

- d. Document the issues and provide the solution(s). Correct the issues if possible.

Ans: PC-B is not able to map the domain name to the IP address.

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

Ans: But there may be a temporary solution. In other words, DNS1 is being used by all end devices and is functioning properly. As a result, changing PC-B's DNS from DNS2 to DNS1 is simple.

**Step 5:      Verify connectivity.**

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