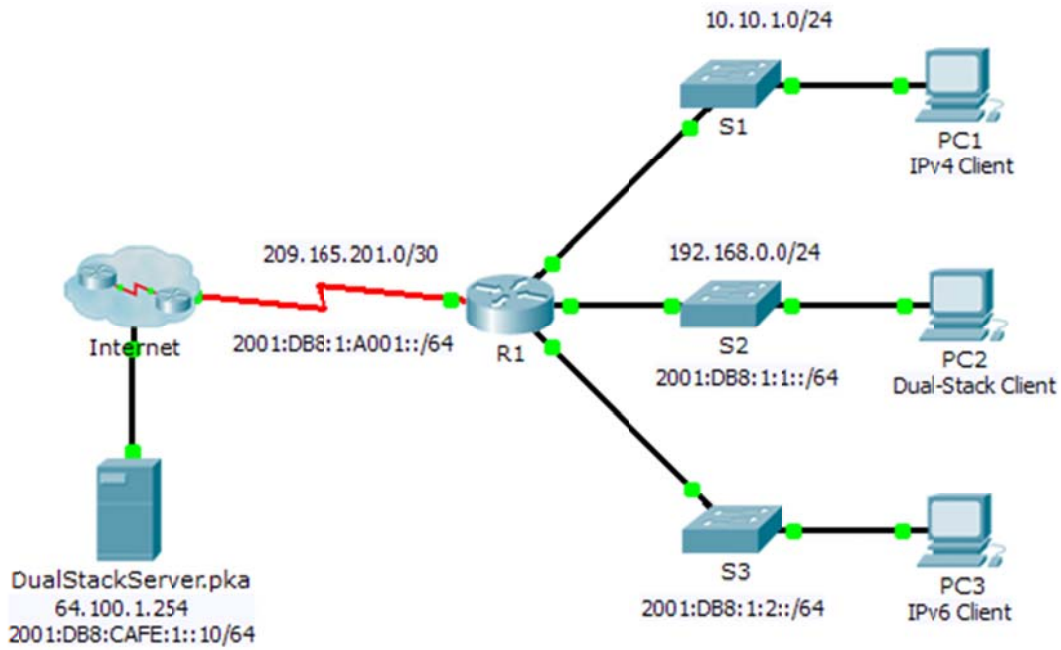


# Packet Tracer - Troubleshooting IPv4 and IPv6 Addressing

## Topology



## Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
		IPv6 Address/Prefix		
R1	G0/0	10.10.1.1	255.255.255.0	N/A
	Ga0/1	192.168.0.1	255.255.255.0	N/A
		2001:DB8:1:1::1/64		N/A
	G0/2	2001:DB8:1:2::1/64		N/A
	S0/0/0	209.165.201.2	255.255.255.252	N/A
		2001:DB8:1:A001::2/64		N/A
	Link-local	FE80::1		N/A
Dual Stack Server	NIC	64.100.1.254	255.255.255.0	64.100.1.1
		2001:DB8:CAFE:1::10/64		FE80::A
PC1	NIC	10.10.1.2	255.255.255.0	10.10.1.1
PC2	NIC	192.168.0.2	255.255.255.0	192.168.0.1
		2001:DB8:1:1::2/64		FE80::1
PC3	NIC	2001:DB8:1:2::2/64		FE80::1

## Objectives

**Part 1: Troubleshoot First Issue**

**Part 2: Troubleshoot Second Issue**

**Part 3: Troubleshoot Third Issue**

## Scenario

You are a network technician working for a company that has decided to migrate from IPv4 to IPv6. In the interim, they must support both protocols (dual-stack). Three co-workers have called the help desk with problems and have received limited assistance. The help desk has escalated the matter to you, a Level 2 support technician. Your job is to locate the source of the problems and implement appropriate solutions.

### Part 1: Troubleshoot First Issue

A customer using **PC1** complains that she cannot access the **dualstackserver.pka** web page.

#### Step 1: Verify a detailed help desk ticket.

The help desk collected the following information from the customer, over the phone. Verify that it is correct.

Help Desk Ticket	
<b>Client Identifier:</b> PC1	
<b>Issue:</b> Unable to access the dualstackserver.pka web page.	
Detailed information about the issue	
<b>Test:</b> Does the computer have an IP address using <b>ipconfig</b> ?	Yes
<b>Test:</b> Can the computer contact its gateway using <b>ping</b> ?	Yes
<b>Test:</b> Can the computer contact the server using <b>tracert</b> ?	Yes
<b>Test:</b> Can the computer contact the server using <b>nslookup</b> ?	No
<b>Resolution:</b> Escalate to Level 2 support.	

### Step 2: Consider probable causes for the failure.

- Note the tests that have been conducted. If possible, discuss possible scenarios that would create this situation with your fellow network technicians (classmates).
- Run more tests if it helps visualize the problem. Simulation mode is available.

### Step 3: Propose a solution to solve the problem.

Make a list of things that could be changed to solve this problem. Start with the solution that is most likely to work.

### Step 4: Implement the plan.

Try the most likely solution from the list. If it has already been tried, move on to the next solution.

### Step 5: Verify the solution resolved the problem.

- Repeat the tests from the help desk ticket. Did it solve the problem?
- If the problem still exists, reverse the change if you are not sure it is correct and return to Step 4.

### Step 6: Document the solution.

Record the solution to the problem. If you ever encounter the same problem again, your notes will be very valuable.

## Part 2: Troubleshoot Second Issue

A customer using PC2 complains that he cannot access files on the **DualStackServer.pka** at 2001:DB8:CAFE:1::10.

### Step 1: Verify a detailed help desk ticket.

The help desk collected the following information from the customer, over the phone. Verify that it is correct.

Help Desk Ticket	
<b>Client Identifier:</b> PC2	
<b>Issue:</b> Unable to access the FTP service of 2001:DB8:CAFE:1:10.	
Detail information about the Issue	
<b>Test:</b> Does the computer have an IPv6 address using <b>ipv6config</b> ?	Yes
<b>Test:</b> Can the computer contact its gateway using <b>ping</b> ?	Yes
<b>Test:</b> Can the computer contact the server using <b>tracert</b> ?	No
<b>Resolution:</b> Escalate to Level 2 support.	

**Step 2: Complete Steps 2 to 5 from Part 1 for this problem.**

**Step 3: Document the solution.**

Record the solution to the problem. If you ever encounter the same problem again, your notes will be very valuable.

### Part 3: Troubleshoot Third Issue

A customer using **PC1** complains that he cannot communicate with **PC2**.

**Step 1: Verify a detailed help desk ticket.**

The help desk collected the following information from the user over the phone. Verify that it is correct.

Help Desk Ticket	
<b>Client Identifier:</b> PC3	
<b>Issue:</b> Unable to communicate with PC2.	
Detail information about the Issue	
<b>Test:</b> Does the computer have an IP address using <b>ipconfig</b> ?	Yes
<b>Test:</b> Does computer have an IPv6 address using <b>ipv6config</b> ?	Yes
<b>Test:</b> Can the computer contact its IPv4 gateway using <b>ping</b> ?	No
<b>Test:</b> Can the computer contact its IPv6 gateway using <b>ping</b> ?	Yes
<b>Test:</b> Can the computer contact the IPv4 client using <b>tracert</b> ?	No
<b>Test:</b> Can the computer contact the IPv6 client using <b>tracert</b> ?	Yes
<b>Resolution:</b> Escalate to Level 2 support.	

**Step 2: Complete Steps 2 to 5 from Part 1 for this problem.**

**Step 3: Document the solution.**

Record the solution to the problem. If you ever encounter the same problem again, your notes will be very valuable.