Networking Academy
CISCO

Packet Tracer - Implement a Subnetted IPv6 Addressing Scheme

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General Instruction

Place your answers (in **bold red**) inside the box provided or on the table on each question.

Addressing Table

Device	Interface	IPv6 Address	Link-local Address
R1	G0/0	2001:db8:acad:00c8::1/64	fe80::1
	G0/1	**2001:db8:acad:00c9::1/64**	fe80::1
	S0/0/0	**2001:db8:acad:00cc::1/64**	fe80::1
R2	G0/0	**2001:db8:acad:00ca::1/64**	fe80::2
	G0/1	**2001:db8:acad:00cb::1/64**	fe80::2
	S0/0/0	**2001:db8:acad:00cc::2/64**	fe80::2
PC1	NIC	Auto Config	
PC2	NIC	Auto Config	
PC3	NIC	Auto Config	
PC4	NIC	Auto Config	

Objectives

Step 1: Determine IPv6 subnets and addressing scheme.

Step 2: Configure IPv6 addressing on routers and PCs.

Step 3: Verify IPv6 connectivity.

Background / Scenario

Network administrators must know how to implement IPv6 in their networks. You have been asked to set up a network for use by the sales staff for a customer demonstration. The network will use a series of consecutive IPv6 subnets for four LANs. Your job is to assign the subnets to the LANs and configure the routers and PCs with IPv6 addressing. Make certain to configure all the necessary components for IPv6 routing on the routers.

Instructions

Step 1: Determine IPv6 subnets and addressing scheme.

You have been given the IPv6 subnet **2001:db8:acad:00c8::/64** as the starting subnet. You will need four more subnets for each network that is required. Increment the subnet addresses consecutively by one to arrive at the four required subnets. Complete the table below.

Subnet Table

Subnet	Address
R1 G0/0/ LAN	2001:db8:acad:00c8::0/64
R1 G0/1 LAN	**2001:db8:acad:00c9::0/64**
R2 G0/0 LAN	**2001:db8:acad:00ca::0/64**
R2 G0/1 LAN	**2001:db8:acad:00cb::0/64**
R1 to R2 link network	**2001:db8:acad:00cc::0/64**

Step 2: Configure IPv6 addressing on routers and PCs.

Complete the addressing table above to use as a guide for configuring the devices.

- Assign the first IP address in the subnet to the router LAN interfaces.
- Assign the link-local addresses as designated in the addressing table.
- For the connection between the routers, assign the first address in the subnet to R1.
- For the connection between the routers, assign the second address in the subnet to R2.
- Set all four hosts to automatically configure with IPv6 addresses.

Step 3: Verify IPv6 connectivity.

The PCs should be able to ping each other if addressing has been configured properly.

Step 4: Post your screenshots

On the PT Activity window, make sure that the completion grade is **100%**. Click on the **Check Results** button and select the **Assessment Items** tab. Take a screen shot of the whole window, showing the table of assessment items, and the score/item count. Own your photo by placing a watermark on your photo with your name and USC ID Number. Paste your screenshot below:

Cisco Packet Tracer - C:\Users\Jhury\Downloads\12.9.1 Packet Tracer - Implement a Subnetted IPv6 Addressing Scheme.pka

File   Edit   Options   View   Tools   Extensions   Window   Help

Activity Results   Time Elapsed: 00:05:36

Congratulations Jhury! You completed the activity.

Overall Feedback   Assessment Items   Connectivity Tests

Expand/Collapse All   Show Incorrect Items

Score	: 42/42
Item Count	: 30/30

Assessment Items	/	Status	Points	Component(s)	Feedback
Network					
PC1			0	Other	
Ports			0	Other	
FastEthernet0			0	Other	
IPv6 Auto Config		Correct	1	IPv6 Address Co...	
PC2			0	Other	
Ports			0	Other	
FastEthernet0			0	Other	
IPv6 Auto Config		Correct	1	IPv6 Address Co...	
PC3			0	Other	
Ports			0	Other	
FastEthernet0			0	Other	
IPv6 Auto Config		Correct	1	IPv6 Address Co...	
PC4			0	Other	
Ports			0	Other	
FastEthernet0			0	Other	
IPv6 Auto Config		Correct	1	IPv6 Address Co...	
R1					
Ports					
GigabitEthernet0/0					
IPv6 Addresses					
2001:DB8:ACAD:C8::1					
IP Address		Correct	3	IPv6 Host Addre...	
Prefix Length		Correct	1	IPv6 Host Addre...	
Link Local		Correct	1	Ip	
Port Status		Correct	1	Device Interface ...	
GigabitEthernet0/1					
IPv6 Addresses					
2001:DB8:ACAD:C9::1					
IP Address		Correct	3	IPv6 Host Addre...	
Prefix Length		Correct	1	IPv6 Host Addre...	
Link Local		Correct	1	Ip	
Port Status		Correct	1	Device Interface ...	
Serial0/0/0					
IPv6 Addresses					
2001:DB8:ACAD:CC::1					
IP Address		Correct	3	IPv6 Host Addre...	
Prefix Length		Correct	1	IPv6 Host Addre...	
Link Local		Correct	1	Ip	
Port Status		Correct	1	Device Interface ...	
Routesv6			0	Other	
IPv6 Unicast Routing		Correct	1	Routing	
R2					
Ports					
GigabitEthernet0/0					
IPv6 Addresses					
2001:DB8:ACAD:CA::1					
IP Address		Correct	3	IPv6 Host Addre...	
Prefix Length		Correct	1	IPv6 Host Addre...	
Link Local		Correct	1	Ip	
Port Status		Correct	1	Device Interface ...	
GigabitEthernet0/1					

Component	Items/Total	Score
Device Interface Configuration	6/6	6/6
IPv6 Address Configuration	4/4	4/4
IPv6 Host Address Calculation	12/12	24/24
Ip	6/6	6/6
Routing	2/2	2/2

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