

Packet Tracer - Verify Directly Connected Networks

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Addressing Table

Device	Interface	IP Address / Prefix	Default Gateway
R1	G0/0/0	172.16.20.1/25	N/A
	G0/0/1	172.16.20.129/25	N/A
	S0/1/0	209.165.200.225/30	N/A
PC1	NIC	172.16.20.10/25	172.16.20.1
PC2	NIC	172.16.20.138/25	172.16.20.129
R2	G0/0/0	2001:db8:c0de:12::1/64	N/A
	G0/0/1	2001:db8:c0de:13::1/64	N/A
	S0/1/1	2001:db8:c0de:11::1/64	N/A
		fe80::2	N/A
PC3	NIC	2001:db8:c0de:12::a/64	fe80::2
PC4	NIC	2001:db8:c0de:13::a/64	fe80::2

Objectives

- Verify IPv4 Directly Connected Networks
- Verify IPv6 Directly Connected Networks
- Troubleshoot connectivity issues.

Background

Routers R1 and R2 each have two LANs. Your task is to verify the addressing on each device and verify connectivity between the LANs.

Note: The user EXEC password is **cisco**. The privileged EXEC password is **class**.

Instructions

Part 1: Verify IPv4 Directly Connected Networks

Step 1: Verify IPv4 addresses and port status on R1.

- Check the status of the configured interfaces by filtering the output.

```
R1# show ip interface brief | exclude unassigned
```
- Based on the output, correct any port status problems that you see.
- Refer to the **Addressing Table** and verify the IP addresses configured on R1. Make any corrections to addressing if necessary.

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- d. Display the routing table by filtering to start the output at the word **Gateway**.

Note: Terms that are used to filter output can be shortened to match text as long as the match is unique. For example, Gateway, Gate, and Ga will have the same effect. G will not. Filtering is case-sensitive

```
R1# show ip route | begin Gate
```

What is the Gateway of last resort address?

209.165.200.226

```
Gateway of last resort is 209.165.200.226 to network 0.0.0.0
```

- e. Display interface information and filter for **Description** or **connected**.

Note: When using **include** or **exclude** multiple searches can be performed by separating the search strings with a pipe symbol (|)

```
R1# show interface | include Desc|conn
```

What is the Circuit ID displayed from your output?

BCB123450001

```
Serial0/1/0 is up, line protocol is up (connected)
Hardware is HD64570
Description: Circuit ID BCB123450001
```

- f. Display specific interface information for G0/0/0 by filtering for **duplex**.

What is the duplex setting, speed, and media type?

```
Full-duplex, 100Mb/s, media type is RJ45
```

Step 2: Verify connectivity.

PC1 and **PC2** should be able to ping each other and the **Dual Stack Server**. If not, verify the status of the interfaces and the IP address assignments.

Part 2: Verify IPv6 Directly Connected Networks

Step 1: Verify IPv6 addresses and port status on R2.

- a. Check the status of the configured interfaces.

```
R2# show ipv6 int brief
```

What is the status of the configured interfaces?

```
R2#show ipv6 int brief
GigabitEthernet0/0/0      [up/up]
    FE80::2
    2001:DB8:CODE:12::1
GigabitEthernet0/0/1      [up/up]
    FE80::2
    2001:DB8:CODE:14::1
Serial0/1/0               [administratively down/down]
    unassigned
Serial0/1/1               [up/up]
    FE80::2D0:BCFF:FE32:7C24
    2001:DB8:CODE:11::1
Vlan1                    [administratively down/down]
    unassigned
```

- b. Refer to the **Addressing Table** and make any corrections to addressing as necessary.

Note: When changing an IPv6 address it is necessary to remove the incorrect address since an interface is capable of supporting multiple IPv6 networks.

```
R2(config)# int g0/0/1
```

```
R2(config-if)# no ipv6 address 2001:db8:c0de:14::1/64
```

Configure the correct address on the interface.

- c. Display the IPv6 routing table.

Note: Filtering commands do not presently work with the IPv6 commands.

- d. Display all IPv6 addressing configured on interfaces by filtering the output of the **running-config**.

Filter the output on **R2** for **ipv6** or **interface**.

```
R2# sh run | include ipv6|interface
```

How many addresses are configured on each Gigabit interface?

2 IPv6 address per Gigabit interface

```
R2#sh run | include ipv6|interface
ipv6 unicast-routing
no ipv6 cef
interface GigabitEthernet0/0/0
    ipv6 address FE80::2 link-local
    ipv6 address 2001:DB8:CODE:12::1/64
    ipv6 enable
interface GigabitEthernet0/0/1
    ipv6 address FE80::2 link-local
    ipv6 address 2001:DB8:CODE:13::1/64
    ipv6 enable
```

Step 2: Verify connectivity.

PC3 and **PC4** should be able to ping each other and the **Dual Stack Server**. If not, verify the interface status and IPv6 address assignments.

Part 3: 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

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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 - D:\JinBus\1.5.10 Packet Tracer - Verify Directly Connected Networks.pka

File Edit Options View Tools Extensions Window Help

Activity Results Time Elapsed: 00:26:02

Congratulations Danica Marie A. Dumalagan! You completed the activity.

Overall Feedback Assessment Items Connectivity Tests

Expand/Collapse All Show Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
R1				
Ports				
GigabitEthernet0/0/0		0	Other	
Port Status	Correct	5	Physical	
Serial0/1/0				
IP Address	Correct	5	IPv4	
Subnet Mask	Correct	5	IPv4	
R2				
Ports				
GigabitEthernet0/0/1				
IPv6 Addresses				
2001:DB8:C0DE:13::1				
IP Address	Correct	5	IPv6	
Prefix Length	Correct	5	IPv6	

Score : 25/25

Item Count : 5/5

Component	Items/Total	Score
IPv4	2/2	10/10
IPv6	2/2	10/10
Physical	1/1	5/5

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Close