

Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	172.31.1.1	255.255.255.240	N/A
	S0/0/0	172.31.1.65	255.255.255.240	N/A
R2	G0/0	172.31.1.17	255.255.255.240	N/A
	S0/0/0	172.31.1.66	255.255.255.240	N/A
	S0/0/1	172.31.1.81	255.255.255.240	N/A
R3	G0/0	172.31.1.33	255.255.255.240	N/A
	S0/0/0	172.31.1.97	255.255.255.240	N/A
	S0/0/1	172.31.1.82	255.255.255.240	N/A
R4	G0/0	172.31.1.49	255.255.255.240	N/A
	S0/0/0	172.31.1.98	255.255.255.240	N/A
S1	VLAN 1	172.31.1.2	255.255.255.240	172.31.1.1
S2	VLAN 1	172.31.1.18	255.255.255.240	172.31.1.17
S3	VLAN 1	172.31.1.34	255.255.255.240	172.31.1.33
S4	VLAN 1	172.31.1.50	255.255.255.240	172.31.1.49
PC1	NIC	1732.31.14	255.255.255.240	172.31.1.1
PC2	NIC	172.31.1.30	255.255.255.240	172.31.1.17
PC3	NIC	172.31.1.46	255.255.255.240	172.31.1.33
PC4	NIC	172.31.1.62	255.255.255.240	172.31.1.49

Objectives

Part 1: Design an IP Addressing Scheme

Part 2: Assign IP Addresses to Network Devices and Verify Connectivity

Scenario

In this activity, you are given the network address of 172.31.1.0 /24 to subnet and provide the IP addressing for the network shown in the Topology. The required host addresses for each WAN and LAN link are labeled in the topology.

Part 1: Design an IP Addressing Scheme

Step 1: Subnet the 172.31.1.0/24 network based on the maximum number of hosts required by the largest subnet.

a. Based on the topology, how many subnets are needed?

Ans: 7

b. How many bits must be borrowed to support the number of subnets in the topology table?

Ans: 4-bits

c. How many subnets does this create?

Ans: 16

d. How many usable host addresses does this create per subnet?

Ans: 14

e. Calculate the binary value for the first five subnets. Subnet zero is already shown.

Net 0: 172 . 31 . 1 . 00000000

Net 1: 172 . 31 . 1 . 00010000

Net 2: 172 . 31 . 1 . 00100000

Net 3: 172 . 31 . 1 . 00110000

Net 4: 172 . 31 . 1 . 01000000

f. Calculate the binary and decimal value of the new subnet mask.

11111111.11111111.11111111. 11110000

255 . 255 . 255 . 240

g. Complete the **Subnet Table**

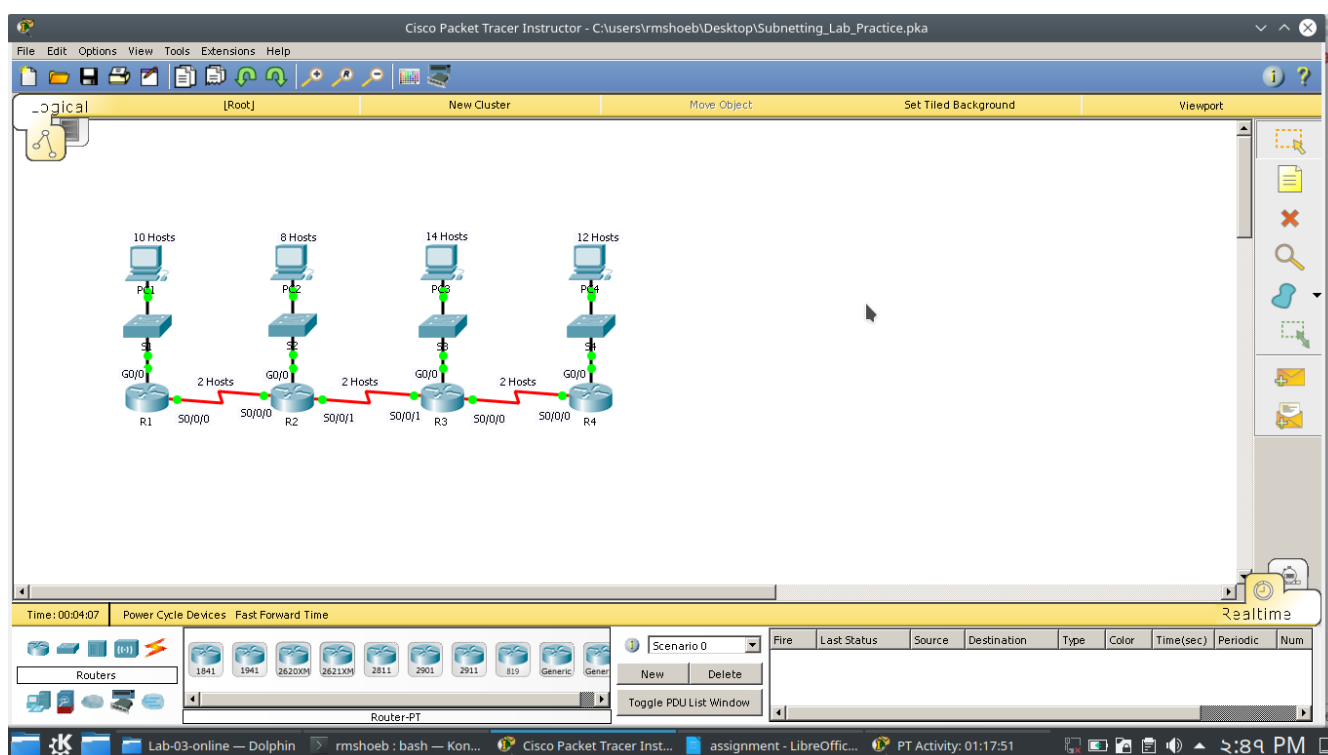
Subnet Table

Subnet Number	Subnet IP	First Usable Host IP	Last Usable Host IP	Broadcast Address
0	172.31.1.0	172.31.1.1	1732.31.14	172.31.1.15
1	172.31.1.16	172.31.1.17	172.31.1.30	172.31.1.31
2	172.31.1.32	172.31.1.33	172.31.1.46	172.31.1.47
3	172.31.1.48	172.31.1.49	172.31.1.62	172.31.1.63
4	172.31.1.64	172.31.1.65	172.31.1.78	172.31.1.79
5	172.31.1.80	172.31.1.81	172.31.1.94	172.31.1.95
6	172.31.1.96	172.31.1.97	172.31.1.110	172.31.1.111
7	172.31.1.112	172.31.1.113	172.31.1.126	172.31.1.127
8	172.31.1.128	172.31.1.129	172.31.1.142	172.31.1.143
9	172.31.1.144	172.31.1.145	172.31.1.158	172.31.1.159
10	172.31.1.160	172.31.1.161	172.31.1.174	172.31.1.175

11	172.31.1.176	172.31.1.177	172.31.1.190	172.31.1.191
12	172.31.1.192	172.31.1.193	172.31.1.206	172.31.1.207
13	172.31.1.208	172.31.1.209	172.31.1.222	172.31.1.223
14	172.31.1.224	172.31.1.225	172.31.1.238	172.31.1.239
15	172.31.1.240	172.31.1.241	172.31.1.254	172.31.1.255

Part 2: Assign IP Addresses to Network Devices and Verify Connectivity

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	S0/0/1	172.31.1.81	255.255.255.240	N/A
S3	VLAN 1	172.31.1.34	255.255.255.240	172.31.1.33
PC4	NIC	172.31.1.62	255.255.255.240	172.31.1.49



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File Edit Options View Tools Extensions Help

Activity Results

Time Elapsed: 01:16:59

Congratulations Guest! You completed the activity.

Overall Feedback | Assessment Items | Connectivity Tests

Expand/Collapse All

Assessment Items	Status	Points	Component(s)	Feedback
Network				
PC4				
Default Gateway	Correct	2	Default Gatewa...	
Ports				
FastEthernet0				
IP Address	Correct	2	IPv4 Host Adre...	
Subnet Mask	Correct	2	IPv4 Subnet Ma...	
R1				
Ports				
GigabitEthernet0/0				
IP Address	Correct	3	IPv4 Host Adre...	
Port Status	Correct	1	Device Interfac...	
Subnet Mask	Correct	3	IPv4 Subnet Ma...	
R2				
Ports				
GigabitEthernet0/0				
IP Address	Correct	3	IPv4 Host Adre...	
Port Status	Correct	1	Device Interfac...	
Subnet Mask	Correct	3	IPv4 Subnet Ma...	
S3				
Default Gateway	Correct	3	Default Gatewa...	
Ports				
Vlan1				
IP Address	Correct	3	IPv4 Host Adre...	
Port Status	Correct	1	Device Interfac...	
Subnet Mask	Correct	3	IPv4 Subnet Ma...	

Score : 30/30

Item Count : 13/13

Component	Items/Total	Score
Default Gateway Configuration	2/2	3/3
Device Interface Configuration	3/3	3/3
IPv4 Host Address Calculation	4/4	11/11
IPv4 Subnet Mask Calculation	4/4	11/11

Close

Lab-03-online — Dolphin

rmshoeb : bash — Konsole

Cisco Packet Tracer Instructor - ...

assignment - LibreOffice Writer

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