

Shaun Lim

## Packet Tracer - Design and Implement a VLSM Addressing Scheme

### Addressing Table (ASSIGN LAST USABLE TO HOST DEVICES)

Device	Interface	IP Address	Subnet Mask	Default Gateway
East	G0/0	192.168.203.129 (ES1)	255.255.255.240	N/A
	G0/1	<b>192.168.203.97</b> (ES2)	<b>255.255.255.224</b>	N/A
	S0/0/0	192.168.203.145	255.255.255.252	N/A
West	G0/0	<b>192.168.203.65</b> (WS1)	<b>255.255.255.224</b>	N/A
	G0/1	192.168.203.1 (WS2)	255.255.255.192	N/A
	S0/0/0	192.168.203.146	255.255.255.252	N/A
ES-1	VLAN 1	192.168.203.130	255.255.255.240	192.168.203.129
ES-2	VLAN 1	<b>192.168.203.98</b>	<b>255.255.255.224</b>	<b>192.168.203.97</b>
WS-1	VLAN 1	<b>192.168.203.66</b>	<b>255.255.255.224</b>	<b>192.168.203.65</b>
WS-2	VLAN 1	192.168.203.2	255.255.255.192	192.168.203.1
E1-22	NIC	192.168.203.142	255.255.255.240	192.168.203.129 (ES1)
E2-47	NIC	<b>192.168.203.126</b>	<b>255.255.255.224</b>	<b>192.168.203.97</b>
W1-201	NIC	<b>192.168.203.94</b>	<b>255.255.255.224</b>	<b>192.168.203.65</b>
W2-87	NIC	192.168.203.62	255.255.255.192	192.168.203.1

### Objectives

In this lab you will design a VLSM addressing scheme given a network address and host requirements. You will configure addressing on routers, switches, and network hosts.

- Design a VLSM IP addressing scheme given requirements.

- Configure addressing on network devices and hosts.
- Verify IP connectivity.
- Troubleshoot connectivity issues as required.

### Background / Scenario

You have been asked to design, implement, and test an addressing scheme for a customer. The customer has given you the network address that is suitable for the network, the topology, and the host requirements. You will implement and test your design.

### Instructions

You have been given the network address **192.168.203.0/24** by your customer. The host address requirements are:

### Requirements

#### Host Requirements:

LAN	Number of Addresses Required
ES-1	14
ES-2	21
WS-1	19
WS-2	32

#### Design Requirements

- Create the addressing design. Follow guidelines provided in the curriculum regarding the order of the subnets.
- The subnets should be contiguous. There should be no unused address space between subnets.
- Provide the most efficient subnet possible for the point-to-point link between the routers.
- Document your design in a table such as the one below.

Subnet Description	Number of Hosts Needed	Subnet Mask	Network Address/CIDR	First Usable Host Address	Broadcast Address
WS-2	32	/26	192.168.203.0	192.168.203.1	192.168.203.63
ES-2	21	/27	192.168.203.64	192.168.203.65	192.168.203.95
WS-1	19	/27	192.168.203.96	192.168.203.97	192.168.203.127
ES-1	14	/28	192.168.203.128	192.168.203.129	192.168.203.143
WAN LINK (West to East)	2	/30	192.168.203.144	192.168.203.145	192.168.203.147

#### Configuration Requirements

**Note:** You will configure addressing on **all** devices and hosts in the network.

- Assign the first usable IP addresses in the appropriate subnets to `[[R1Name]]` for the two LAN links and the WAN link.

## Packet Tracer - Design and Implement a VLSM Addressing Scheme

- Assign the first usable IP addresses in the appropriate subnets to [[R2Name]] for the two LANs links. Assign the last usable IP address for the WAN link.
- Assign the second usable IP addresses in the appropriate subnets to the switches.
- The switch management interface should be reachable from hosts on all of the LANs.
- Assign the last usable IP addresses in the appropriate subnets to the hosts.

If the addressing design and implementation are correct, all hosts and devices should be reachable over the network.

*End of document*

Cisco Packet Tracer - C:\Users\Shaun Lim\Downloads\11.10.1 Packet Tracer - Design and Implement a VLSM Addressing Scheme.pka - Shaun Lim - 2023-07-24 16:27:51

File Edit Options View Tools Extensions Window Help

Activity Results Time Elapsed: 01:28:33

Congratulations (Shaun Lim) You completed the activity.

Overall Feedback Assessment Items Connectivity Tests

Expand/Collapse All Show Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
E1-22				
Default Gateway	Correct	3	Default Ga...	
Ports				
FastEthernet0				
IP Address	Correct	3	PC Address	
Subnet Mask	Correct	3	PC Address	
E2-47				
Default Gateway	Correct	3	Default Ga...	
Ports				
FastEthernet0				
IP Address	Correct	3	PC Address	
Subnet Mask	Correct	3	PC Address	
East				
Ports				
GigabitEthernet0/0				
IP Address	Correct	3	VLSM Add...	
Port Status	Correct	1	Device Inte...	
Subnet Mask	Correct	3	VLSM Add...	
GigabitEthernet0/1				
IP Address	Correct	3	VLSM Add...	
Port Status	Correct	1	Device Inte...	
Subnet Mask	Correct	3	VLSM Add...	
Serial0/0/0				
IP Address	Correct	3	VLSM Add...	
Port Status	Correct	1	Device Inte...	
Subnet Mask	Correct	3	VLSM Add...	
ES-1				
Default Gateway	Correct	3	Default Ga...	

Component	Items/Total	Score
Default Gateway	6/6	18/18
Default Gateway Configuration	2/2	6/6
Device Interface Configuration	9/9	9/9
PC Address	6/6	18/18
VLSM Addressing Implementation	20/20	60/60

Score : 111/111  
Item Count : 43/43

Close

Windows taskbar: 29°C, 5:56 PM, 7/24/2023