Configuring an internetwork using Static Routing

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Given the addressing table below you are required to build/configure an internetwork of LANs and WANs as per the stated objectives and requirements.

Objectives:

1) To build a topology involving 3 LAN networks and 3 WAN

networks.

2) Configure the routers and end devices as per the addressing table.

3) Verify connectivity between end devices of different LAN networks.

Requirements

- Assume each LAN 1 has 10 hosts, LAN 2 has 54 hosts, LAN 3 has 34 hosts.
- Given the IP Network 136.47.209.0/24. You are required to subnet the IP network and allocate for all the required LAN and WAN networks.
- Fill up the Addressing Table 1 after applying the subnetting procedure.
- Allocate the IP addresses in addressing table II as per the allocations in table I.
- Implement the connections as per the information provided in the addressing table II.
- In each LAN connect the PCs to a switch and connect the switch to the Router.
- All the devices are configured with IP Addresses as per the addressing table above.
- The routers are configured with static routing protocol to ensure end to

end connectivity.

- Router R1 is to be provided telnet access with password C!sc0.

Addressing Table I

	IP Address prefix length	Subnet Mask network	address	Broadcast address	Host IP Address range	Default gateway
LAN 1	136.47.209.128/28 T0136.47.209143/28	255.255.255.240	136.47.209.128	136.47.209.143	136.47.209.129/28 TO 136.47.209.142/28	136.4.209.129
LAN 2	136.47.209.0/26 TO 136.47.209.63/26	255.255.255.192	136.47.209.0	136.47.209.63	136.47.209.1/28 TO 136.47.209.62/26	136.47.209.1
LAN 3	136.47.209.64/26 TO 136.47.209.127/26	255.255.255.240	136.47.209.64	136.47.209.127	136.47.209.65/26 TO 136.47.209.126/26	136.47.209.65
WAN 1	136.47.209.144 TO 136.47.209.147/30	255.255.255.252	136.47.209.144	136.47.209.147	136.47.209.145 TO 136.47.209.146/30	NA
WAN 2	136.47.209.148/28 TO 136.47.209.151/30	255.255.255.252	136.47.209.148	136.47.209.151	136.47.209.149 TO 136.47.209.150/30	NA
WAN 3	136.47.209.152/28 TO 136.47.209.155/30	255.255.255.252	136.47.209.152	136.47.209.155	136.47.209.153 TO 136.47.209.154/30	NA

Addressing Table II

Network	Device	Interface	IP Address	Subnet Mask	Default Gateway
LAN 1	PC 1	NIC	136.47.209.130	255.255.255.240	136.47.209.129
	PC 2	NIC	136.47.209.131	255.255.255.240	136.47.209.129
	R1	FastEthernet 0/0	136.47.209.129	255.255.255.240	NA
LAN 2	PC 3	NIC	136.47.209.3	255.255.255.192	136.47.209.1
	PC 4	NIC	136.47.209.4	255.255.255.192	136.47.209.1
	R2	FastEthernet 0/0	136.47.209.1	255.255.255.192	NA
LAN 3	PC 5	NIC	136.47.209.67	255.255.255.192	136.47.209.65
	PC 6	NIC	136.47.209.68	255.255.255.192	136.47.209.65
	R3	FastEthernet 0/0	136.47.209.65	255.255.255.192	NA
WAN 1	R1	Serial0/0/0	136.47.209.145	255.255.255.252	NA
	R2	Serial0/0/0	136.47.209.146	255.255.255.252	NA
WAN 2	R1	Serial0/0/1	136.47.209.149	255.255.255.252	NA
	R3	Serial0/0/0	136.47.209.150	255.255.255.252	NA
WAN 3	R2	Serial0/0/1	136.47.209.153	255.255.255.252	NA
	R3	Serial0/0/1	136.47.209.154	255.255.255.252	NA

Conclusion:

The internetwork was successfully configured using static routing, connecting 3 LANs and 3 WANs with efficient IP subnetting and verified end-to-end connectivity. Router R1 was also secured with Telnet access for remote management.