Enterprise NOC Simulation - Topology Details

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Environment: Cisco Packet Tracer

Objective: Simulate an enterprise NOC network with VLAN segmentation, inter-VLAN routing, and server integration.

🧩 Device Inventory

Device	Role	IP Address	VLAN	Subnet	Notes
CORE-RTR01	Core Router	10.10.10.1 / 10.10.20.1 / 10.10.30.1	-	Multiple sub-interfaces	Handles inter-VLAN routing
SW01	Main Switch	N/A	VLAN 10 & 20	Trunk to CORE-RTR01	Connects Admin & Ops VLANs
SW02	Secondary Switch	N/A	VLAN 30	Trunk to CORE-RTR01	Connects Security VLAN
NOC-SRV01	Server	10.10.10.10	VLAN 10	10.10.10.0/24	Central file/log server
PC-ADMIN	Admin Workstation	10.10.10.24	VLAN 10	10.10.10.0/24	Management access
PC-OPS	Operations Workstation	10.10.20.24	VLAN 20	10.10.20.0/24	NOC monitoring
PC-SEC	Security Workstation	10.10.30.24	VLAN 30	10.10.30.0/24	SOC/Security testing

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🌐 VLAN Summary

VLAN ID	Department	Subnet	Gateway
10	Admin	10.10.10.0/24	10.10.10.1
20	Operations	10.10.20.0/24	10.10.20.1
30	Security	10.10.30.0/24	10.10.30.1

🔗 Connections

Connection	Interface	Description
CORE-RTR01 ↔ SW01	G0/0.1–0.3	Trunk for VLANs 10, 20, 30
SW01 ↔ SW02	G0/1	Trunk link
PCs ↔ Switches	F0/x	Access ports for VLANs 10, 20, and 30

✅ Verification Commands

Use these to confirm successful setup:

```bash
show vlan brief

show ip interface brief

show ip route

ping 10.10.10.24

ping 10.10.20.24

ping 10.10.30.24
```