

Chapter 3

LAN Media

- **100-Mbps Fast Ethernet**

- 100BASE-TX
- 100BASE-T4
- 100BASE-FX

- **Gigabit Ethernet**

- 1000BASE-T
- 1000BASE-LX
- 1000BASE-SX
- 1000BASE-CX

- **10GE**

- 10GBASE-SR
- 10GBASE-SW
- 10GBASE-LR
- 10GBASE-LW
- 10GBASE-ER
- 10GBASE-EW
- 10GBASE-LX4

- **Fast EtherChannel**

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LAN Hardware

- **Repeaters**
- **Hubs**
- **Bridges**
- **Switches**
- **Routers**
- **Layer 3 Switches**

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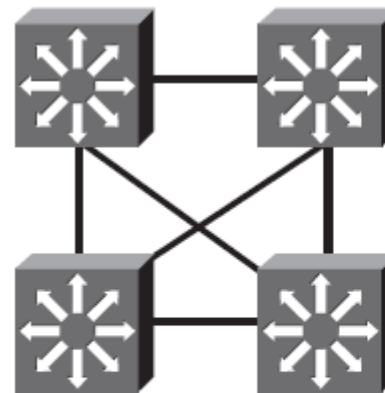
Best Practices – Access

- Limit VLANs to a single closet when possible
- Use RPVST+ if STP is required
- Manually prune unused VLANs
- Disable trunking on host ports
- Consider implementing routing in the access layer

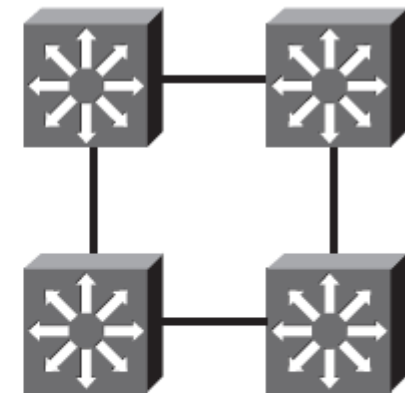
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Best Practices – Distribution

- Use first-hop redundancy protocols. Hot Standby Router Protocol (HSRP) or Gateway Load Balancing Protocol (GLBP)
- Use Layer 3 links between the distribution and core
- Build Layer 3 triangles
- Summarize routes from the distribution to the core



Triangle Links



Square Connectivity
(do not use)

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Best Practices – Core

- Use routing that provides a topology with no Layer 2 loops
- Use Layer 3 switches on the core

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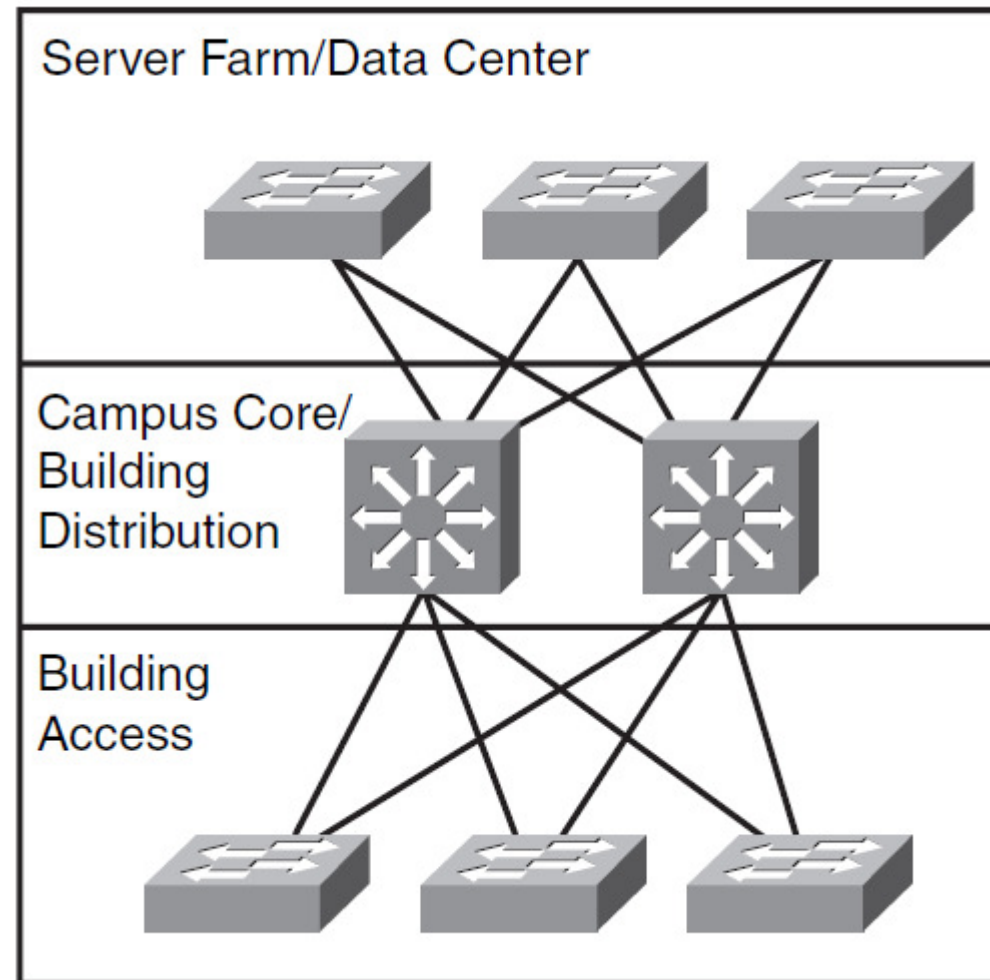
Edge Distribution

- IP spoofing
- Unauthorized access
- Network reconnaissance
- Packet sniffers

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Medium Site LANs

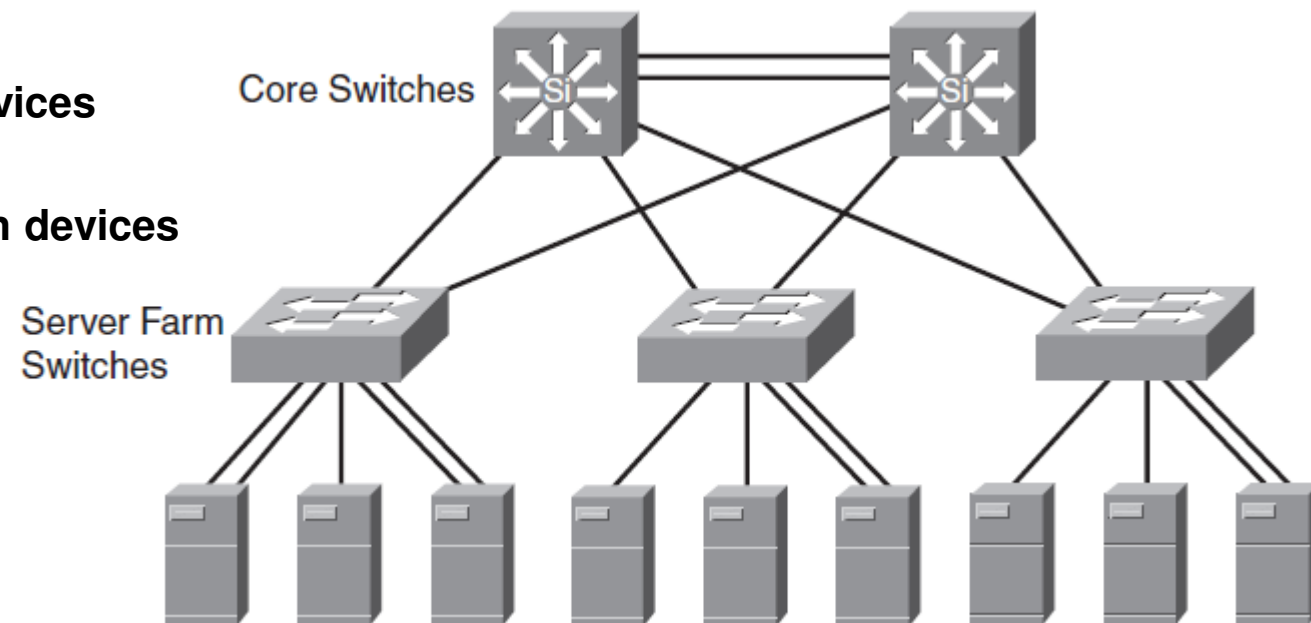
- Collapsed core
- 200-1000 enheder



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Server-Farm Module

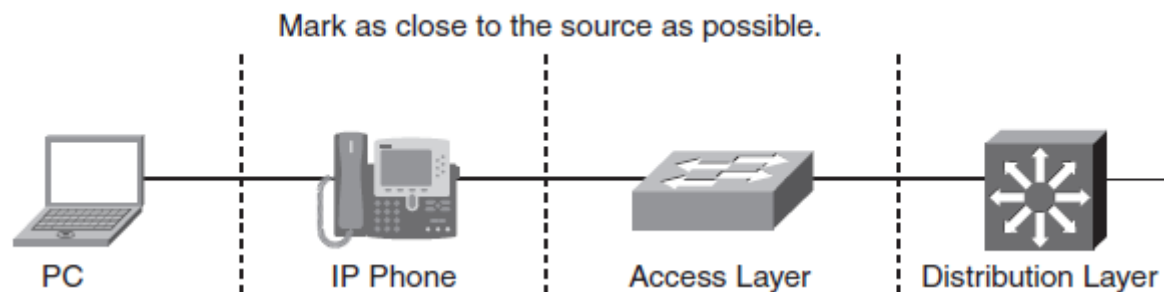
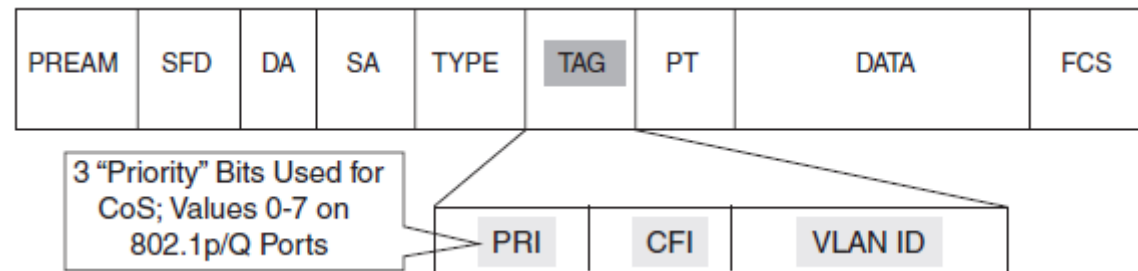
- Single NIC
- Dual NIC EtherChannel
- Content switching
- SSL offloading devices
- Firewalls
- Intrusion detection devices



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Campus LAN Quality of Service

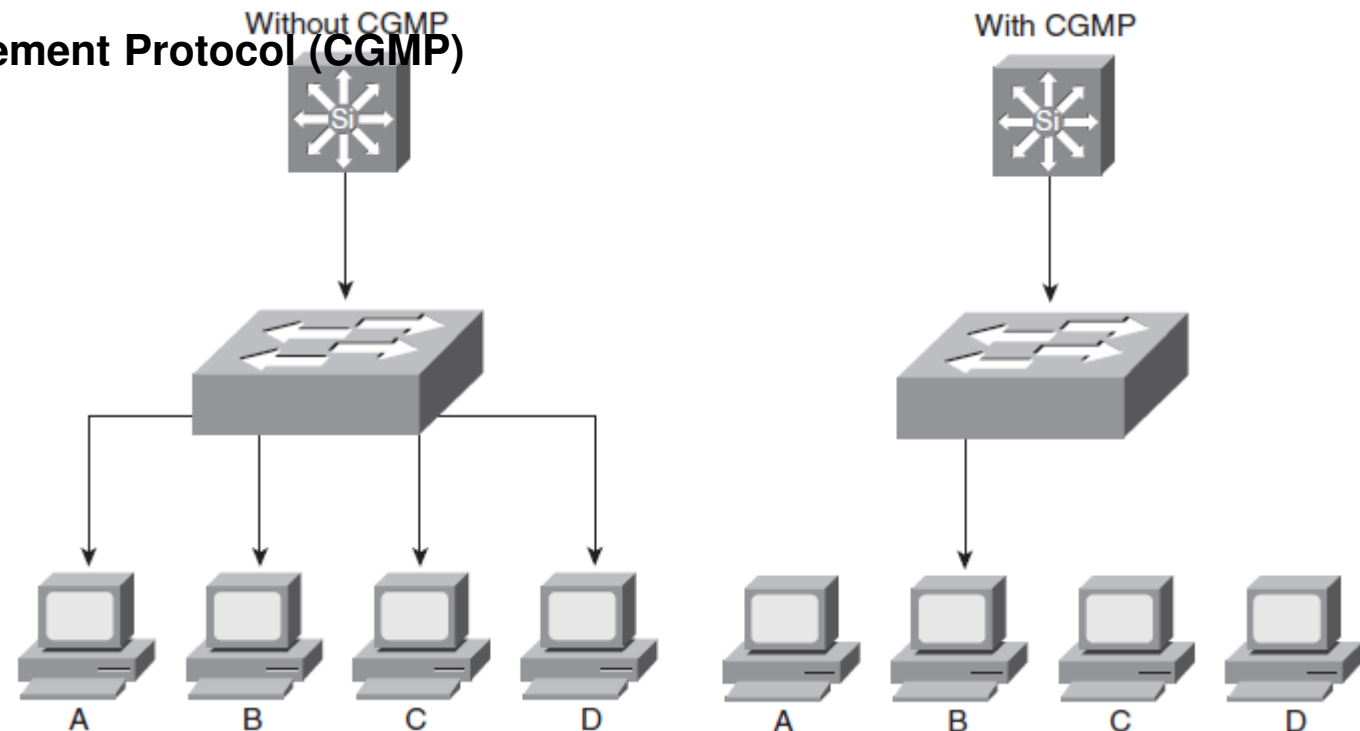
- Inter-Switch Link (ISL)
- IEEE 802.1p/802.1Q



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Multicast Traffic Considerations

- IGMP Snooping
- Cisco Group Management Protocol (CGMP)





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