Network Topologies and Types



Ross Bagurdes
Network Engineer

@bagurdes



Module Goals



Network Topologies

Network Types

WAN Technologies

Virtual Network Concepts



Network Topologies

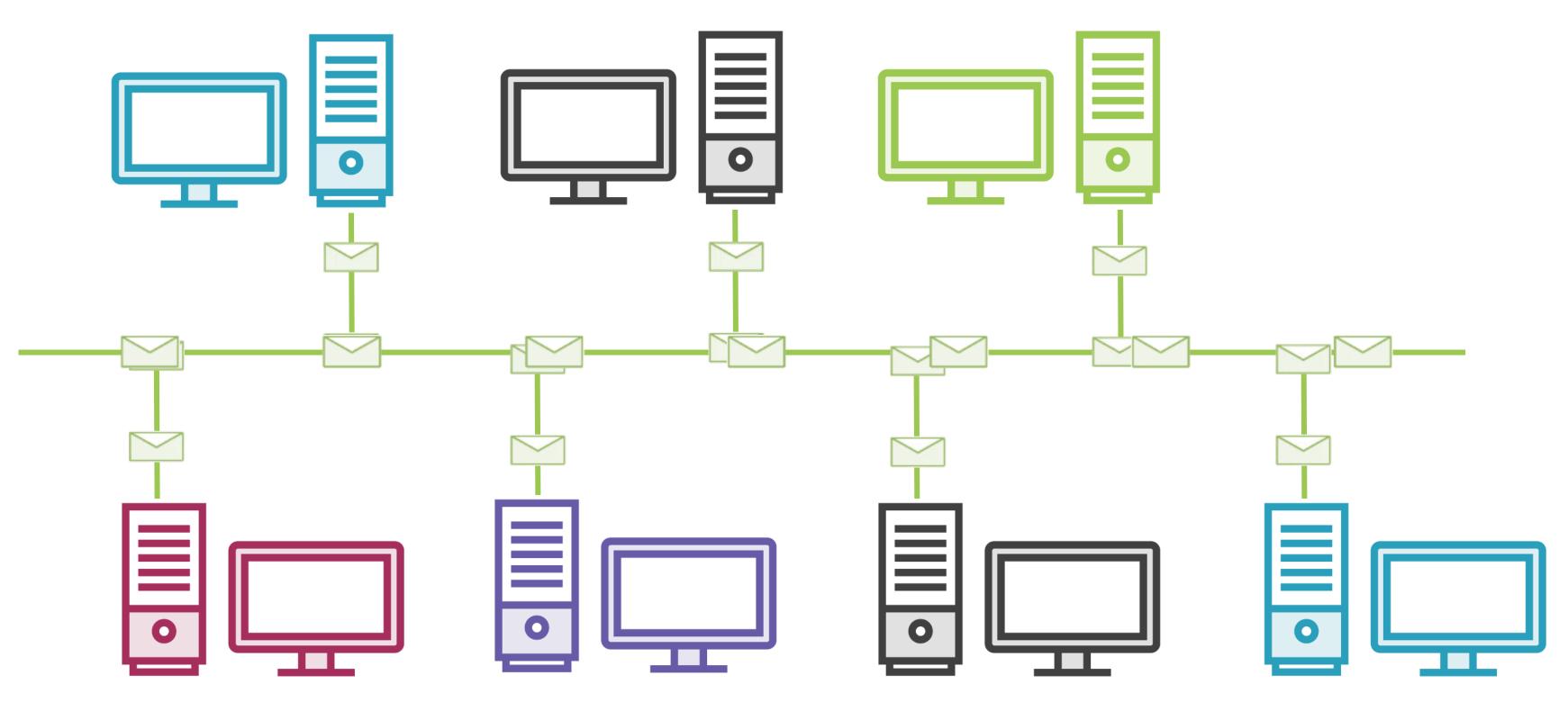




Network Topologies

- Bus
- Ring
- Star
- Hybrid

Bus Topology



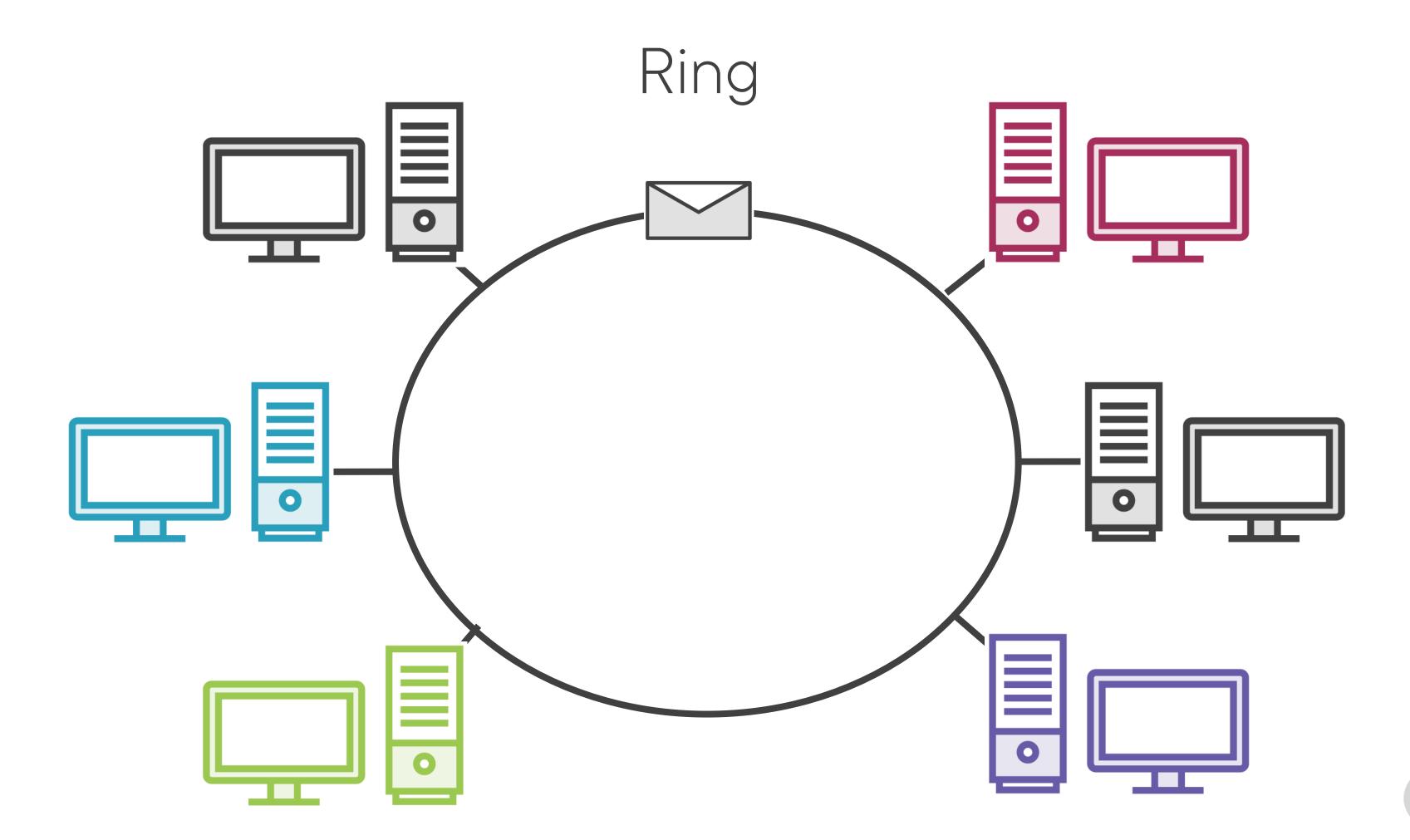


Bus Topology

10Base5 and 10Base2 hardware



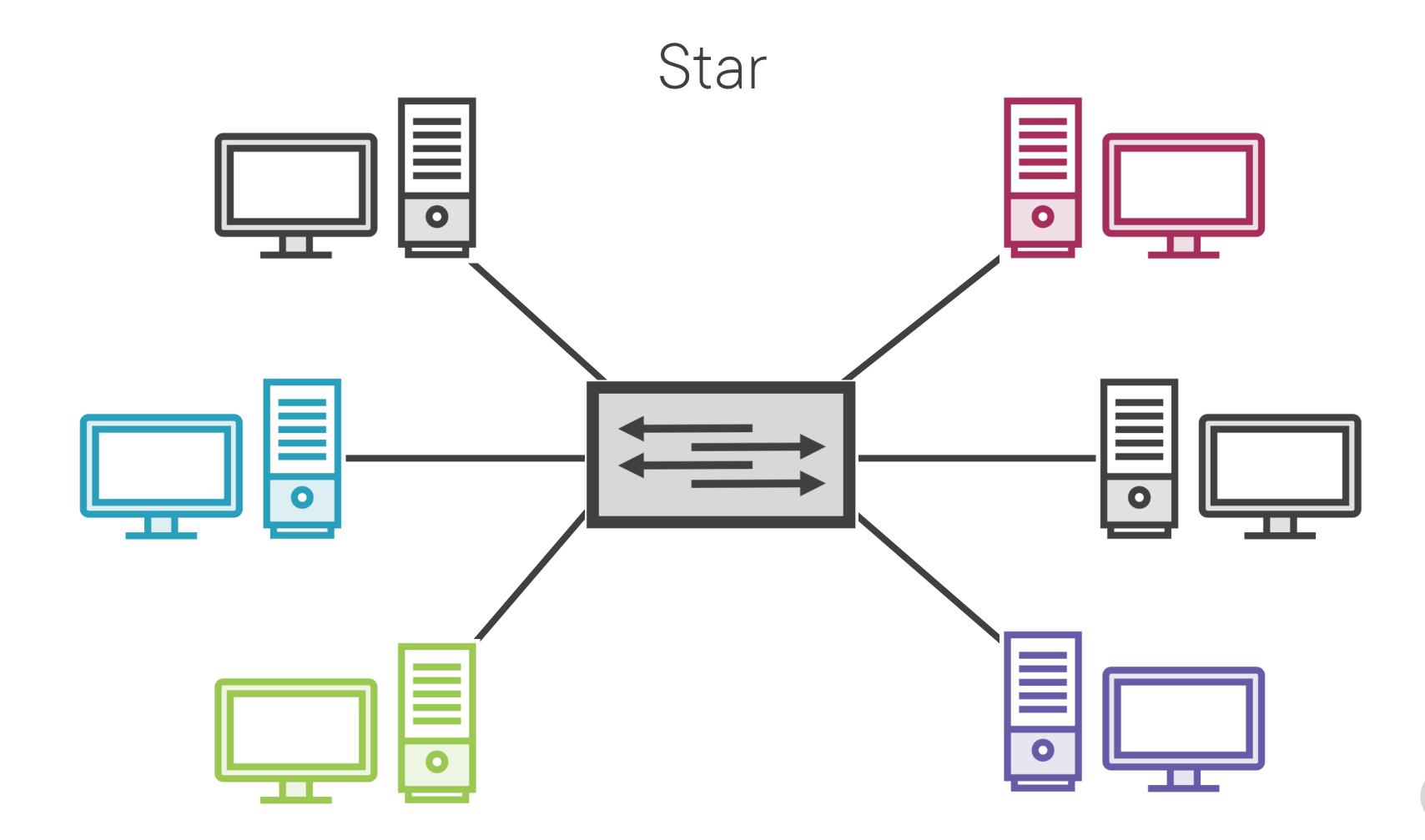




IBM Token Ring MAU





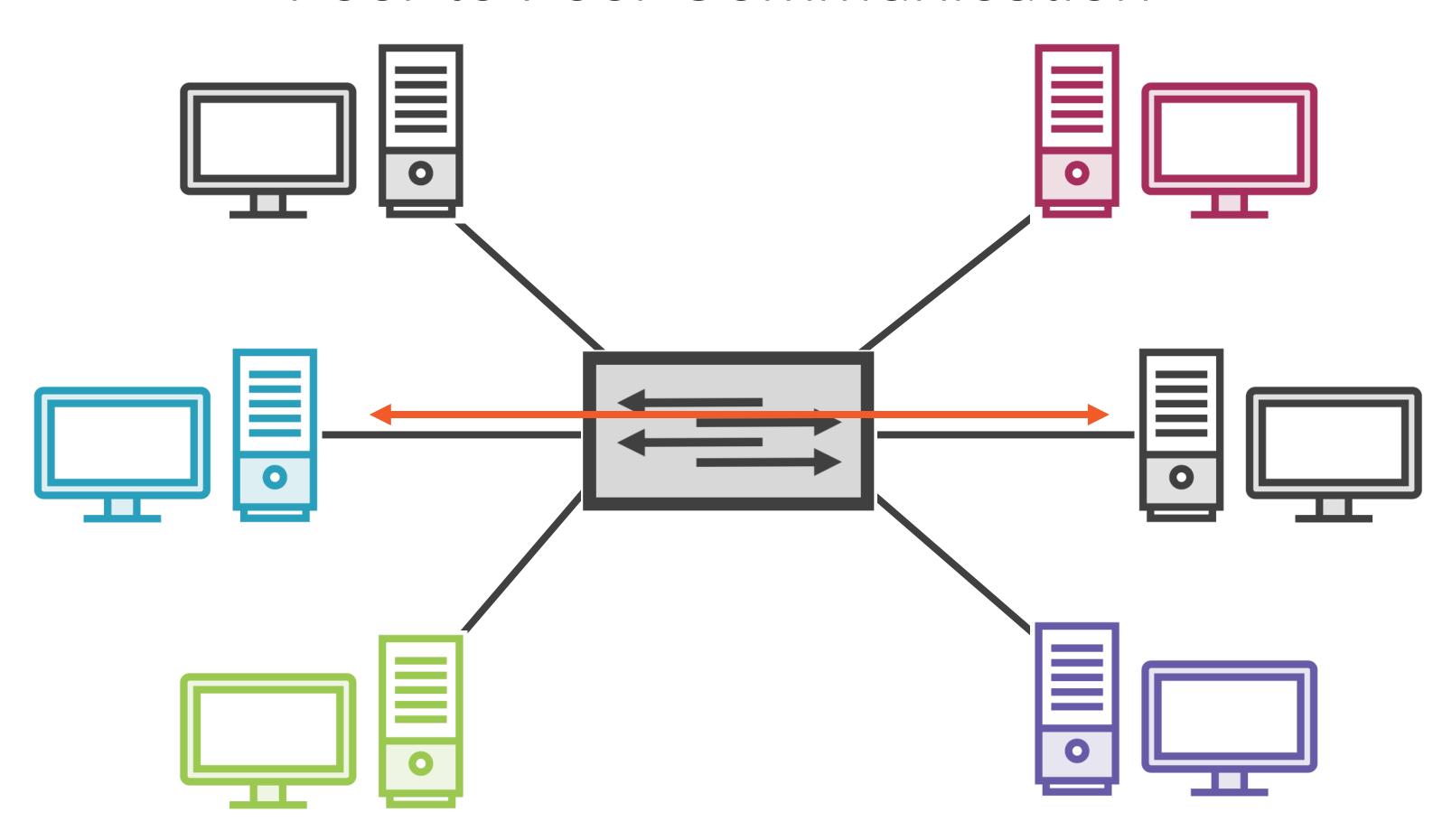


Star



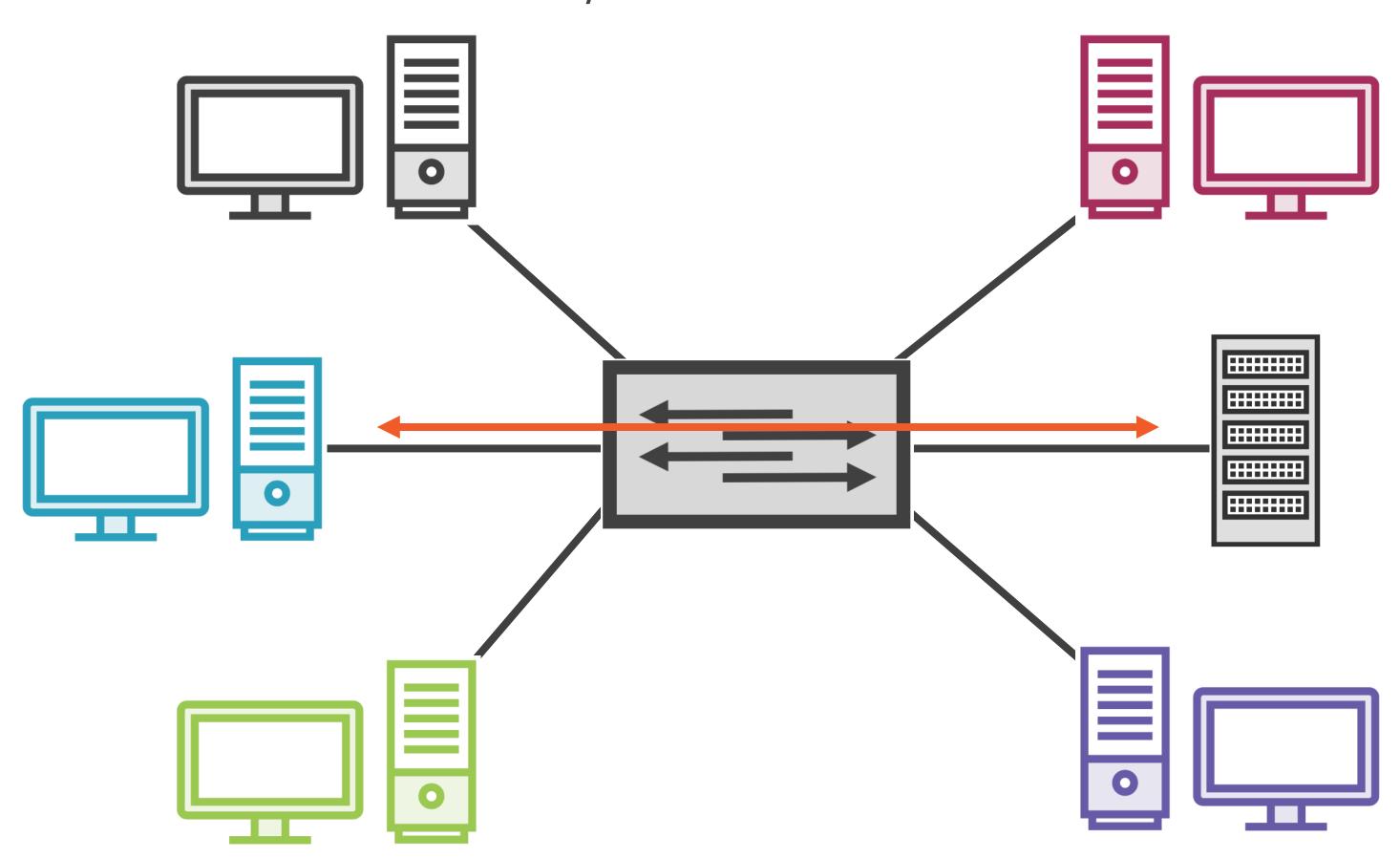


Peer to Peer Communication





Client / Server Network





"Blank" Area Networks









LAN

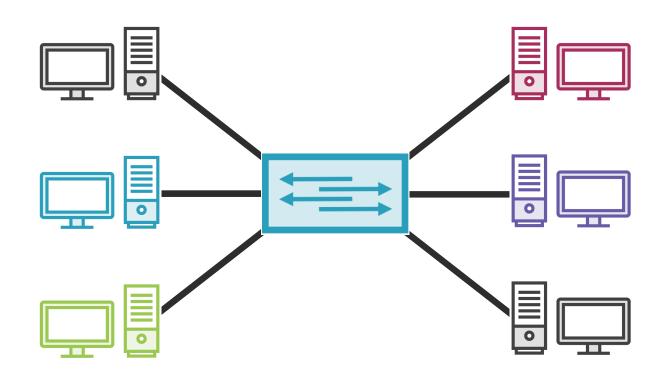
Local Area Network







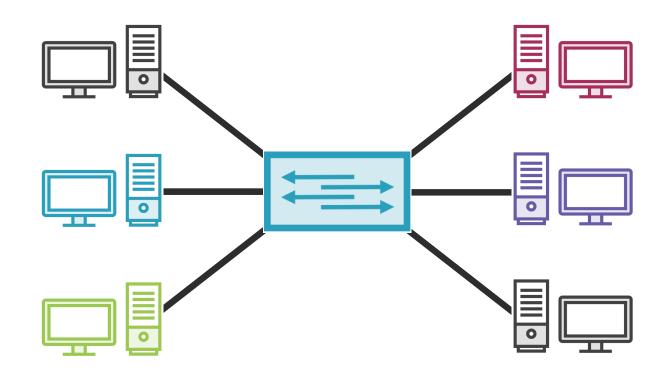
Local Area Network







Local Area Network

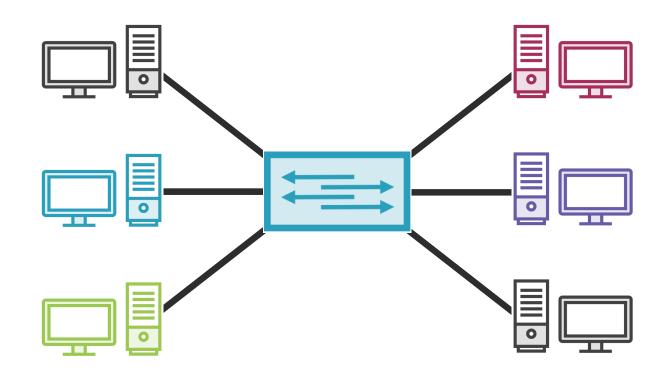








Local Area Network

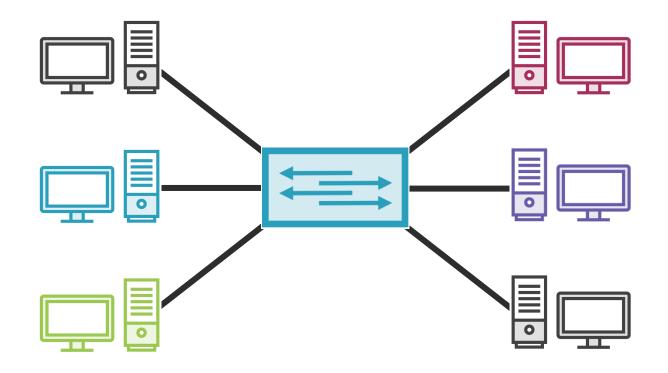


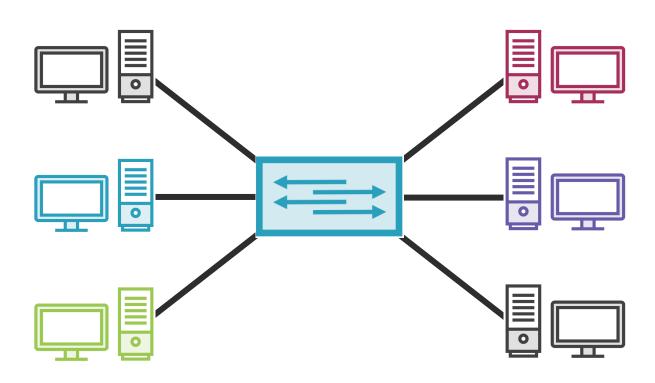






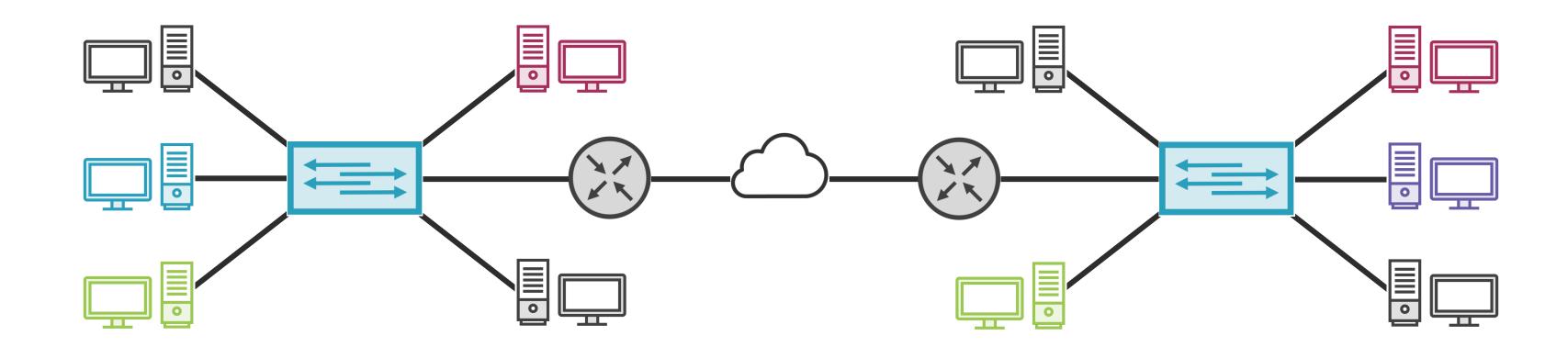
Wide Area Network







Wide Area Network



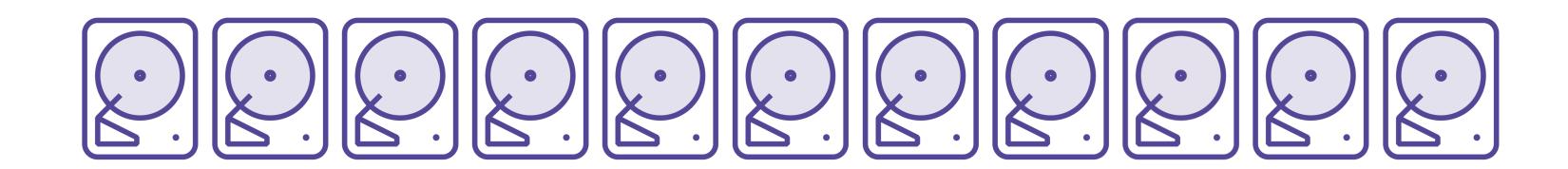


Storage Area Network



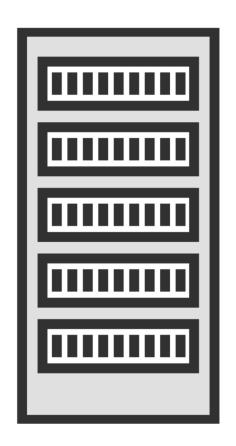


Storage Area Network





Storage Area Network



CAN

MAN

Campus Area Network

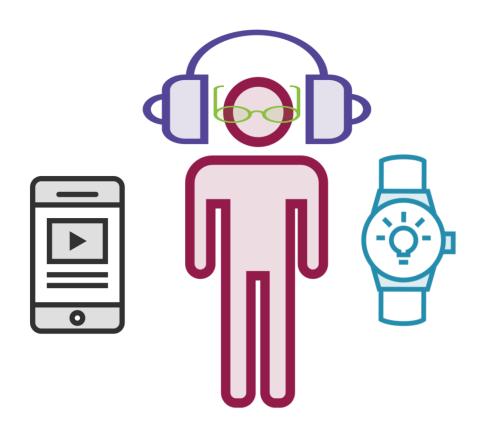
Metropolitan Area Network

PAN

Personal Area Network



Personal Area Network



WAN Technologies





Leased Line

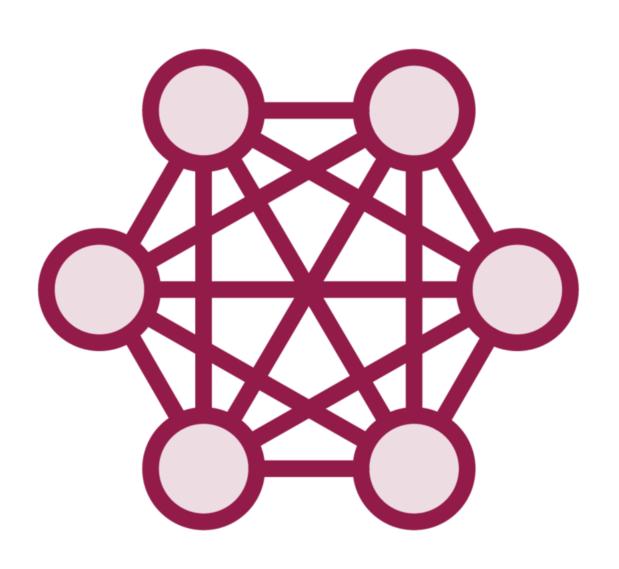
- Copper (T1)

Fiber Optic

- Dark Fiber
- Metro Ethernet

Internet

- DSL
- Fiber Optic
- Satellite
- Cable



T1 Link (E1 in Europe)

- Bell Labs
- 24 channels @ 64K each + framing bit =1.544Mbps

T3 (E3)

- 44.736Mbps

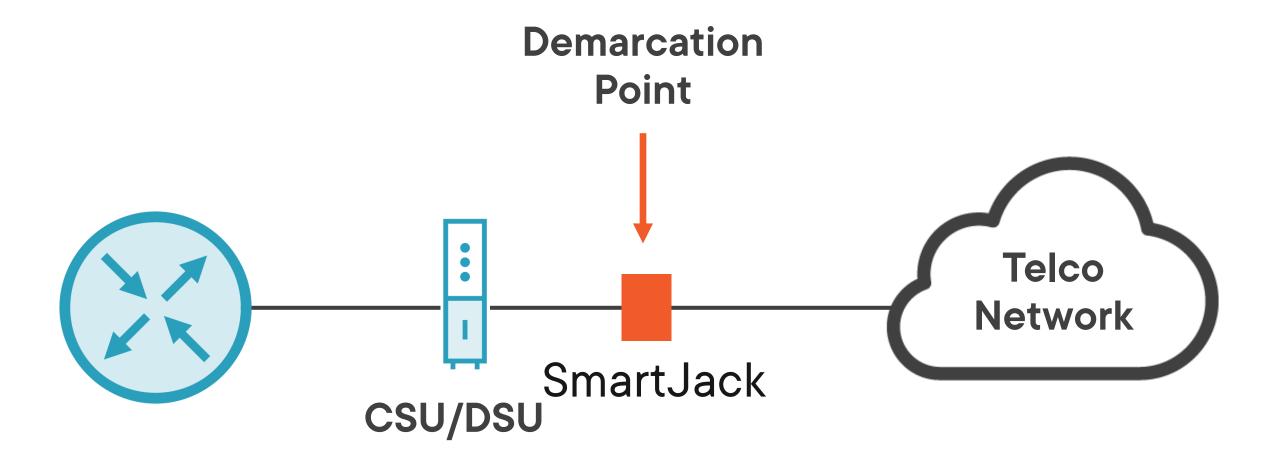
ISDN

Primary Rate Interface (PRI)

- SIP trunk alternate

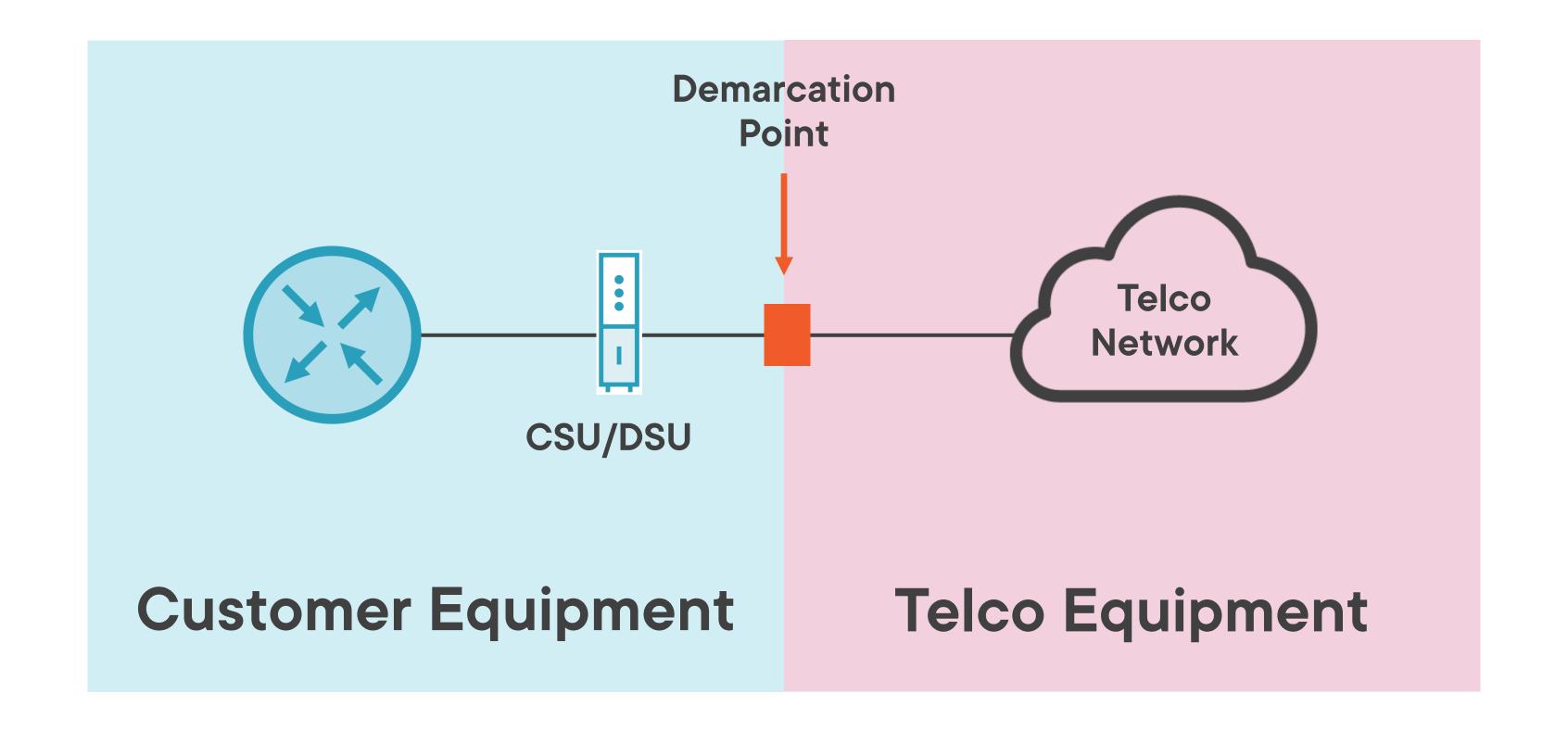


T1 – Leased Line



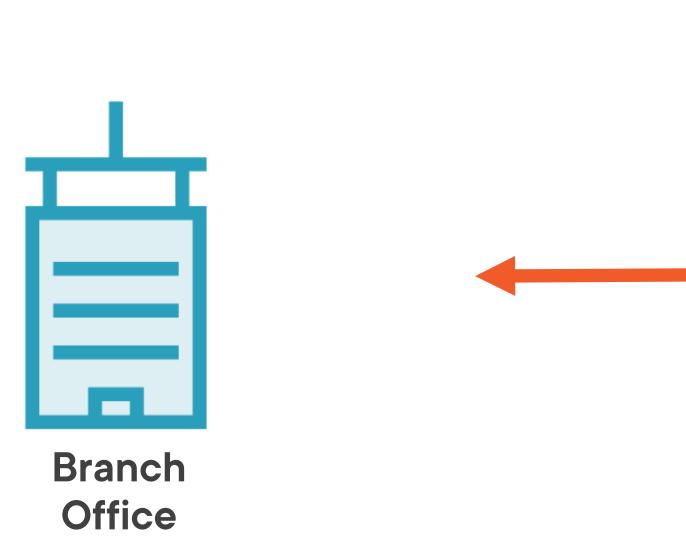


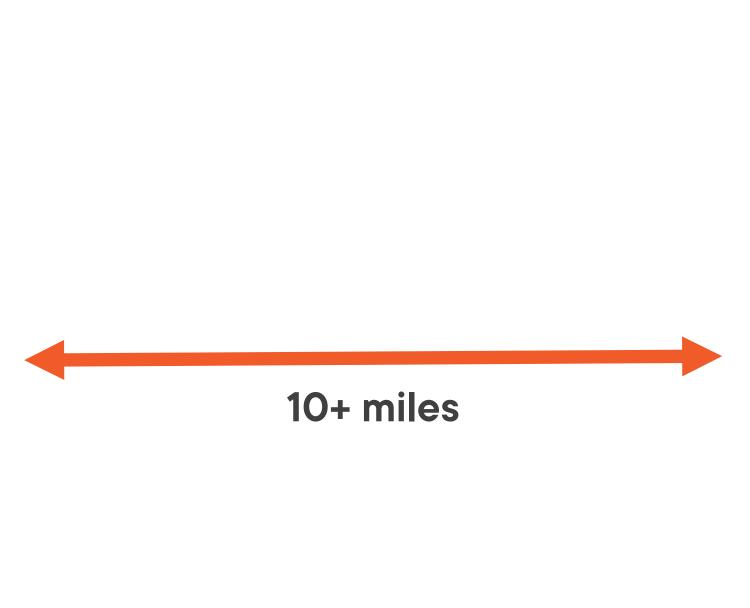
T1 Connection Hardware





Optical WAN





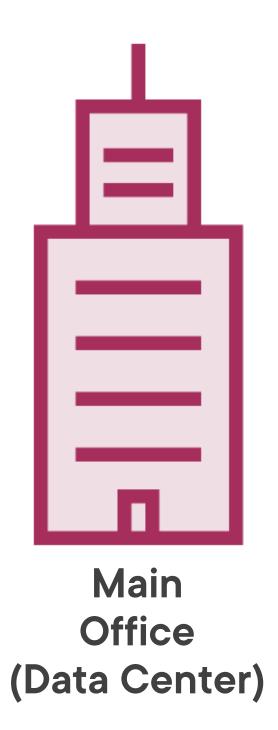




Optical WAN

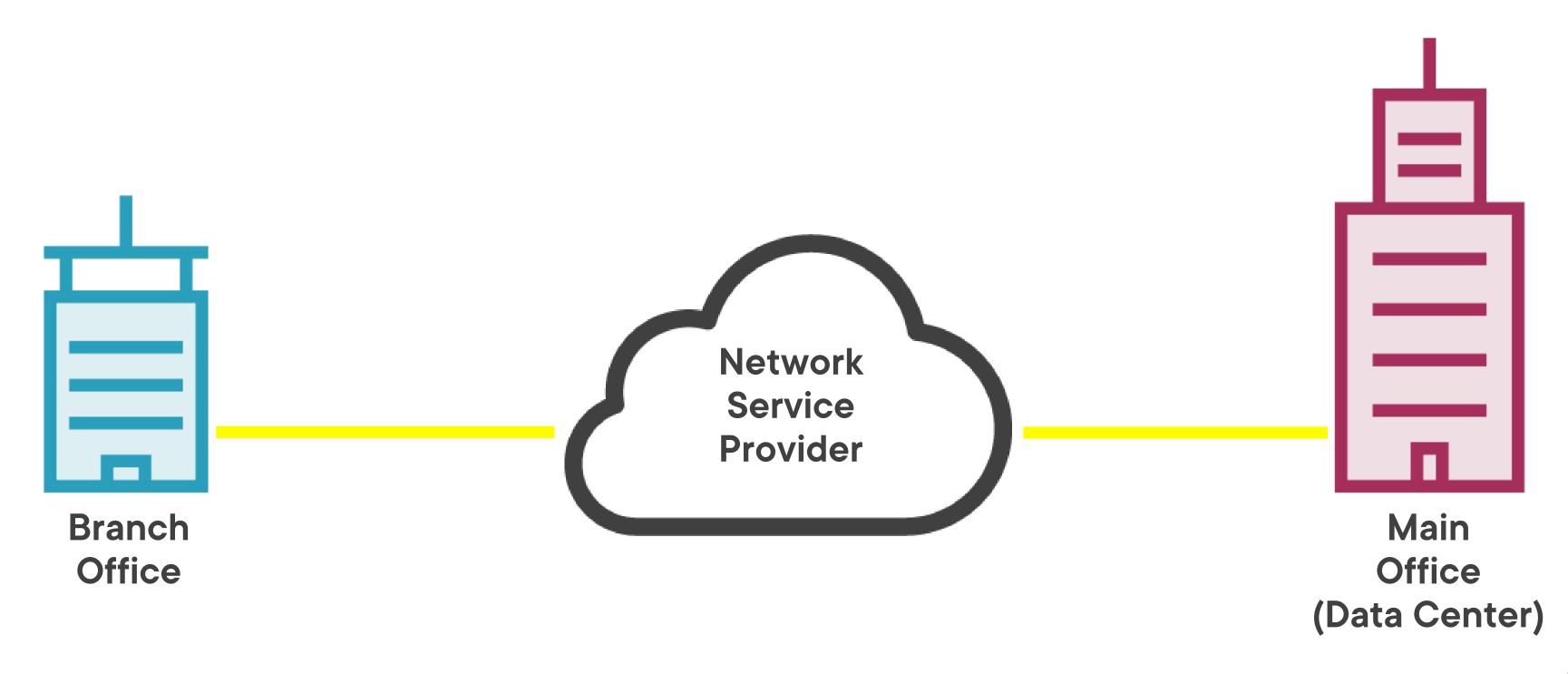






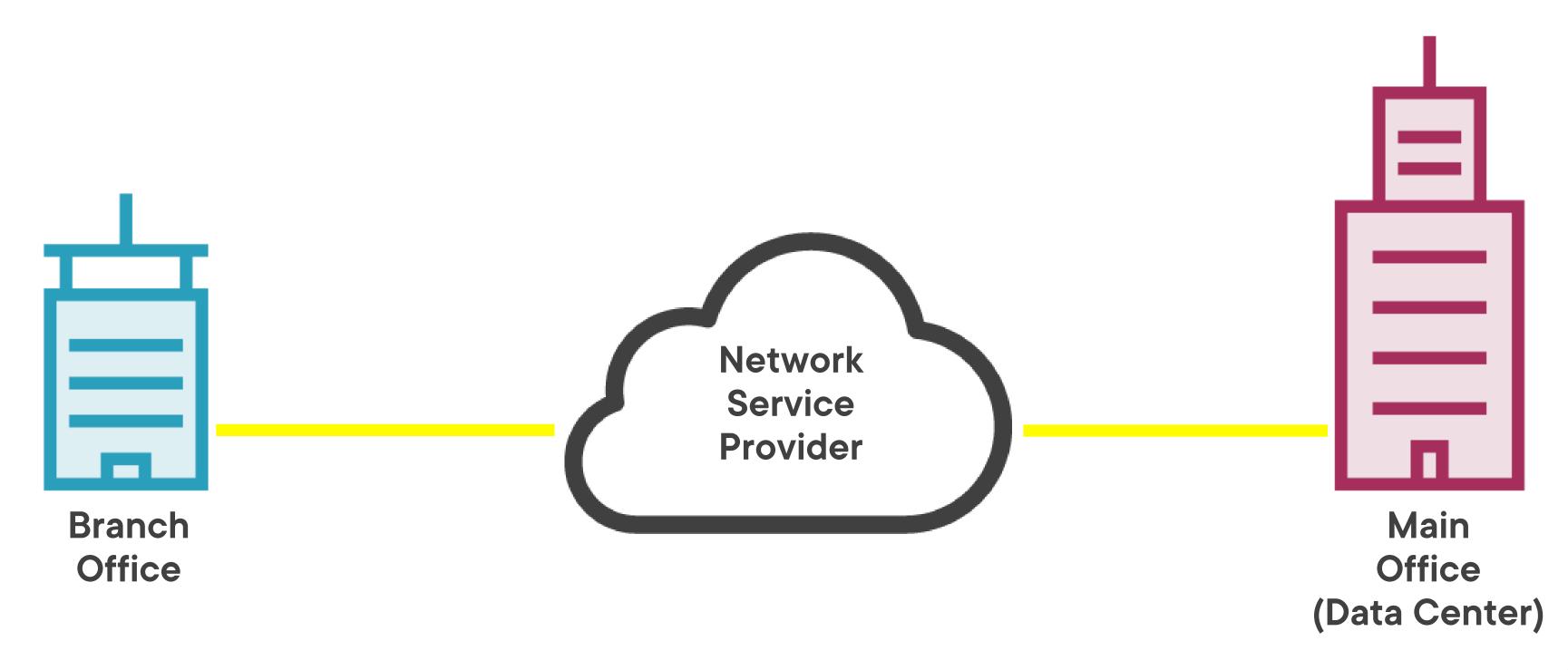


Metro Ethernet



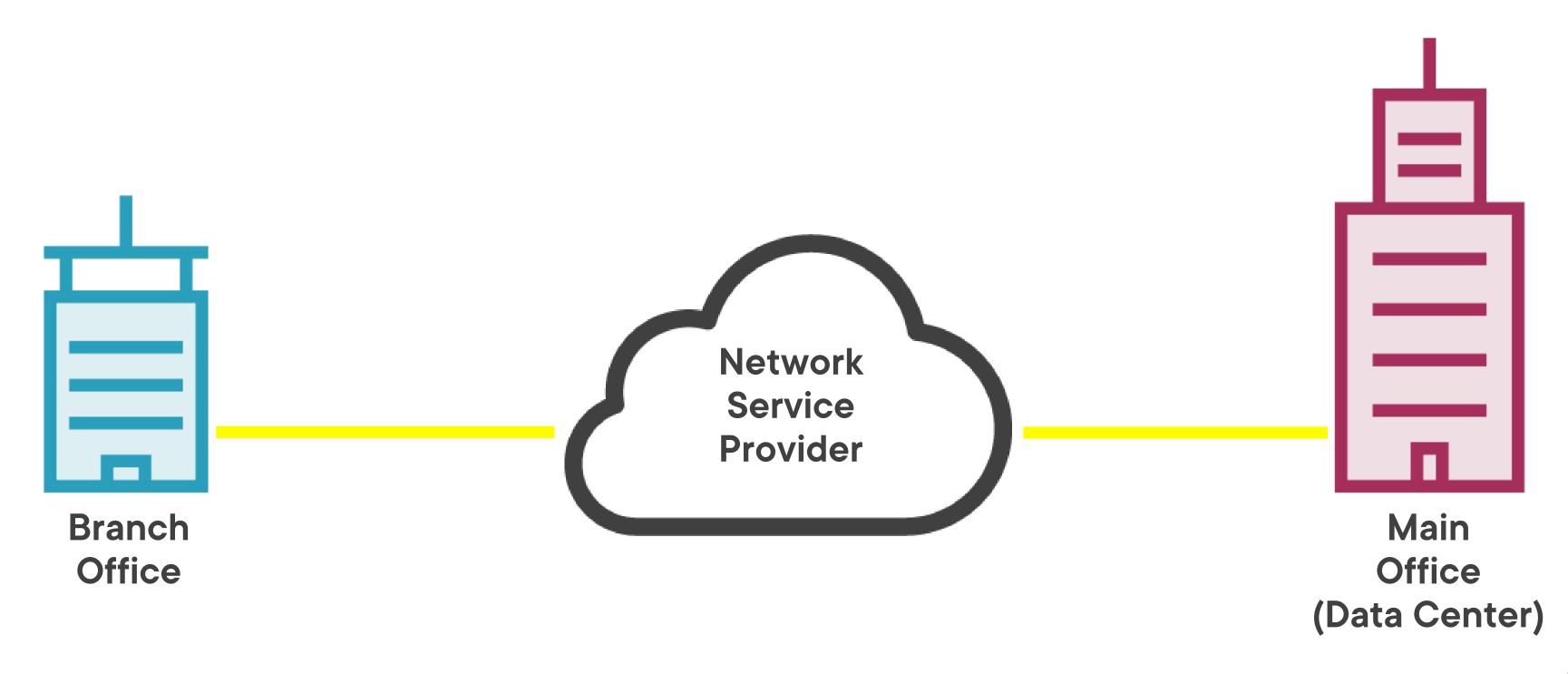


Dark Fiber



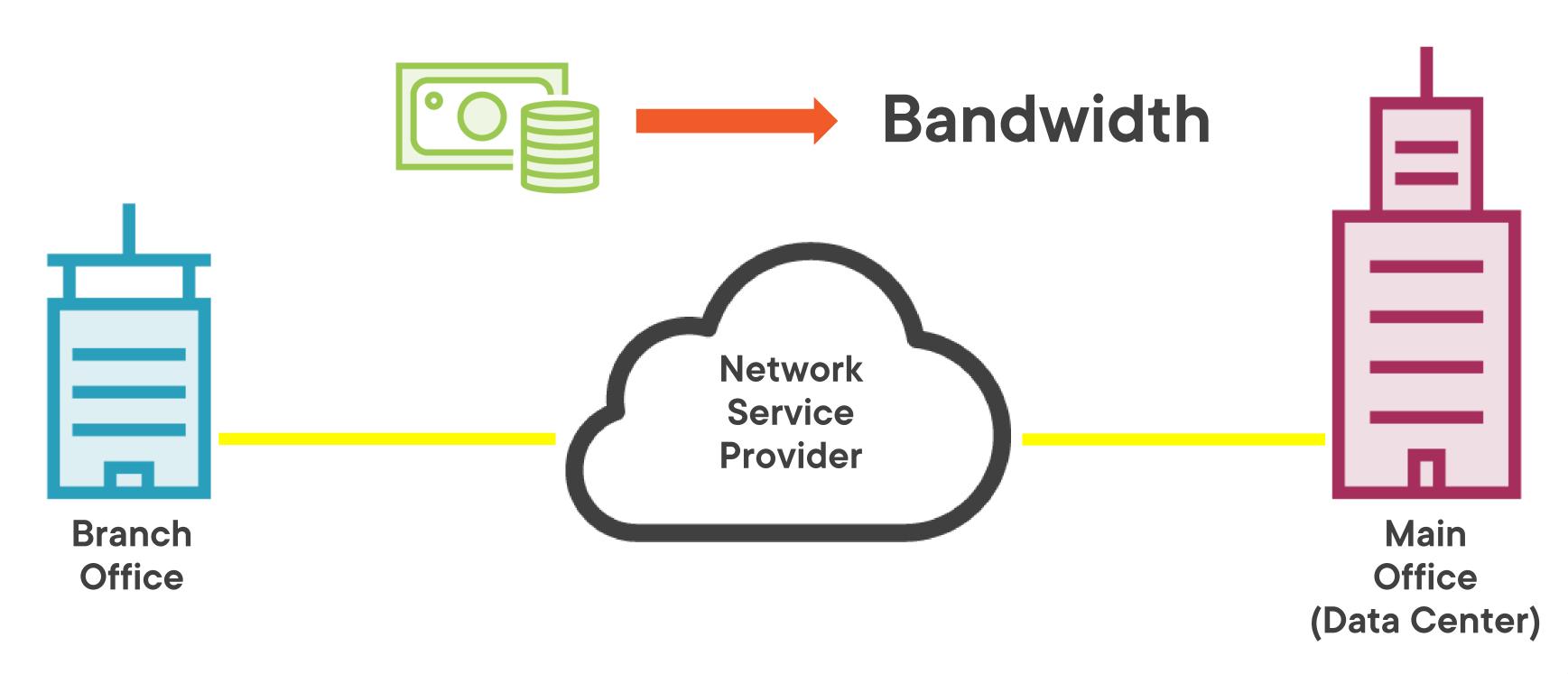


Metro Ethernet





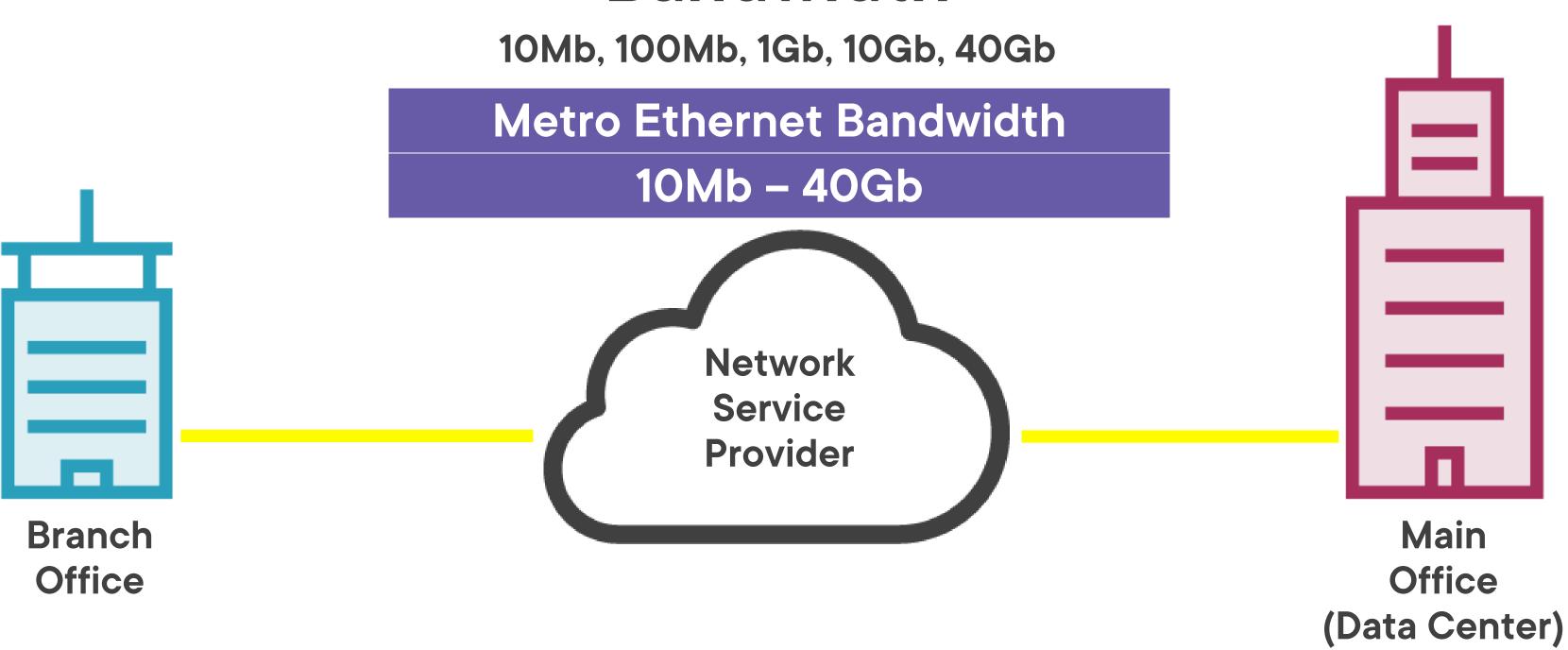
Metro Ethernet

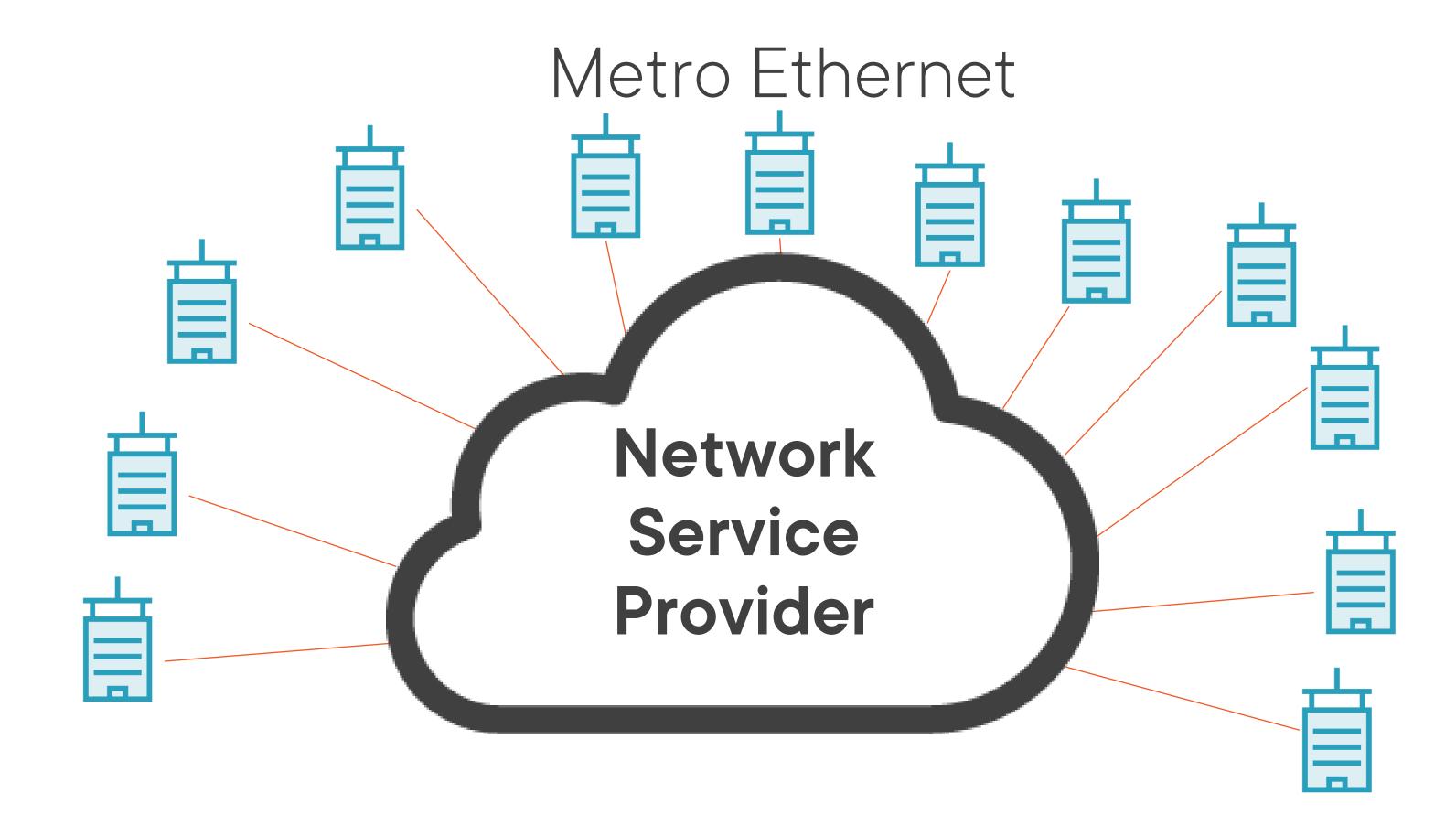


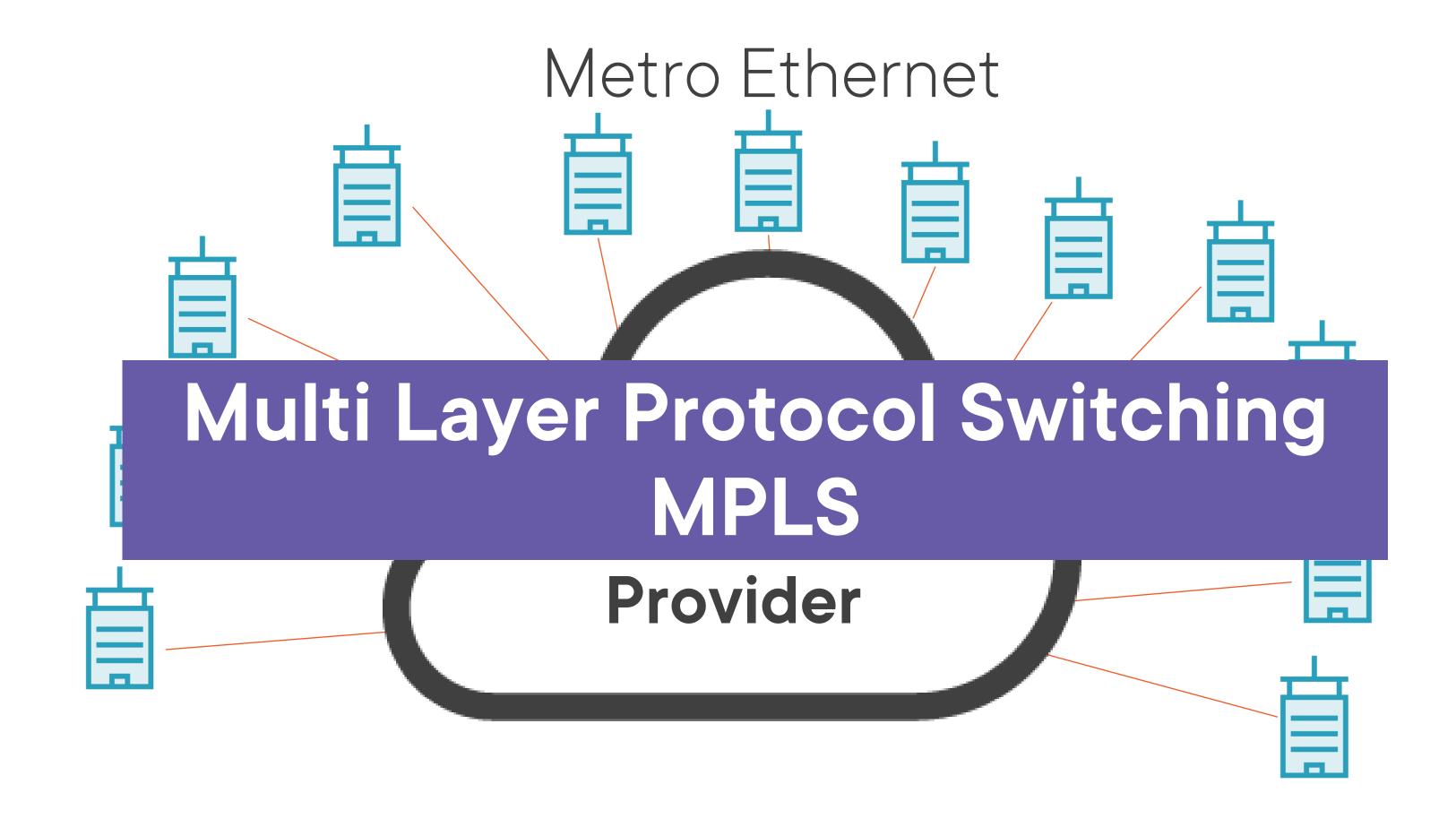


Metro Ethernet

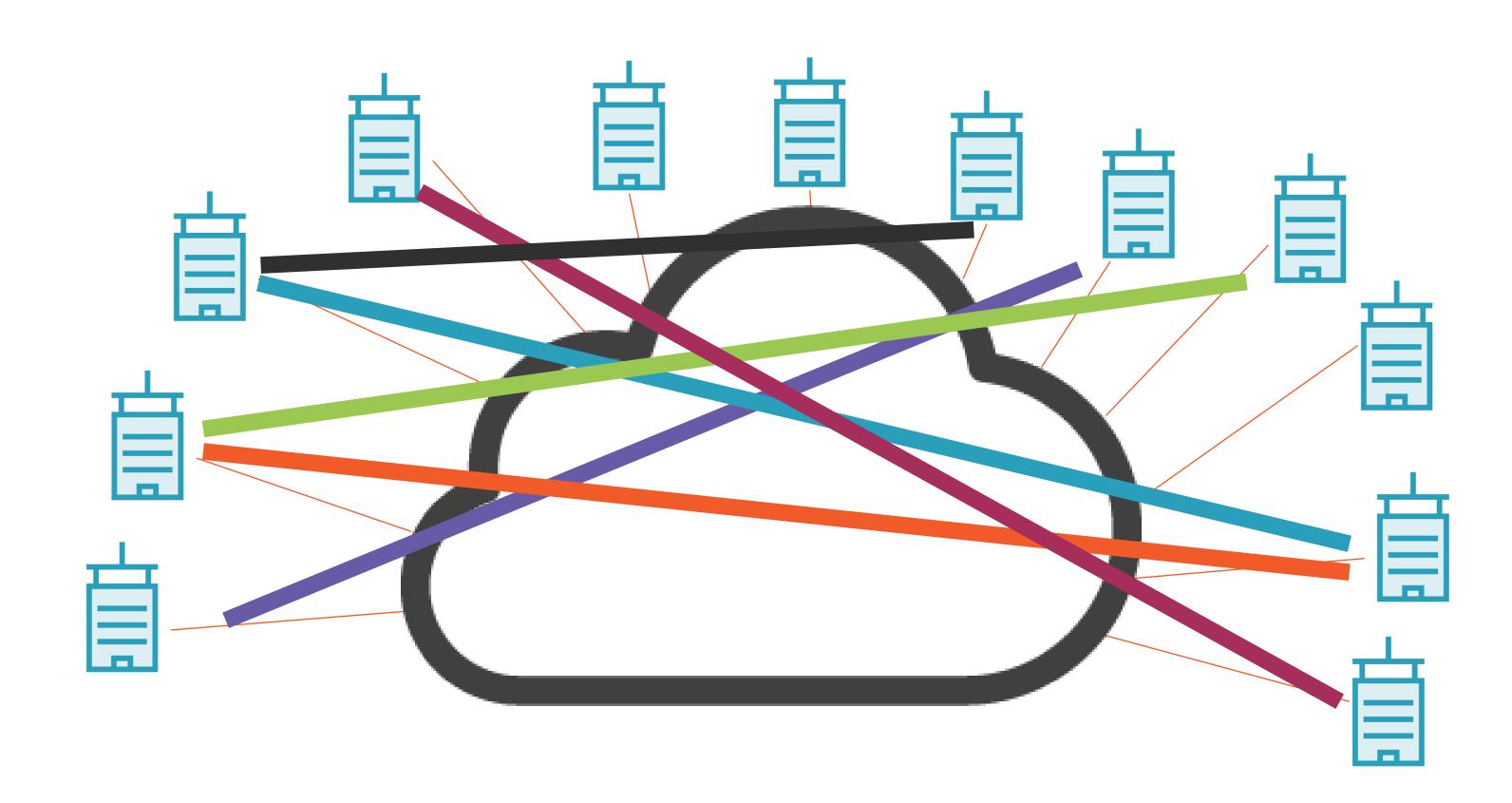
Bandwidth

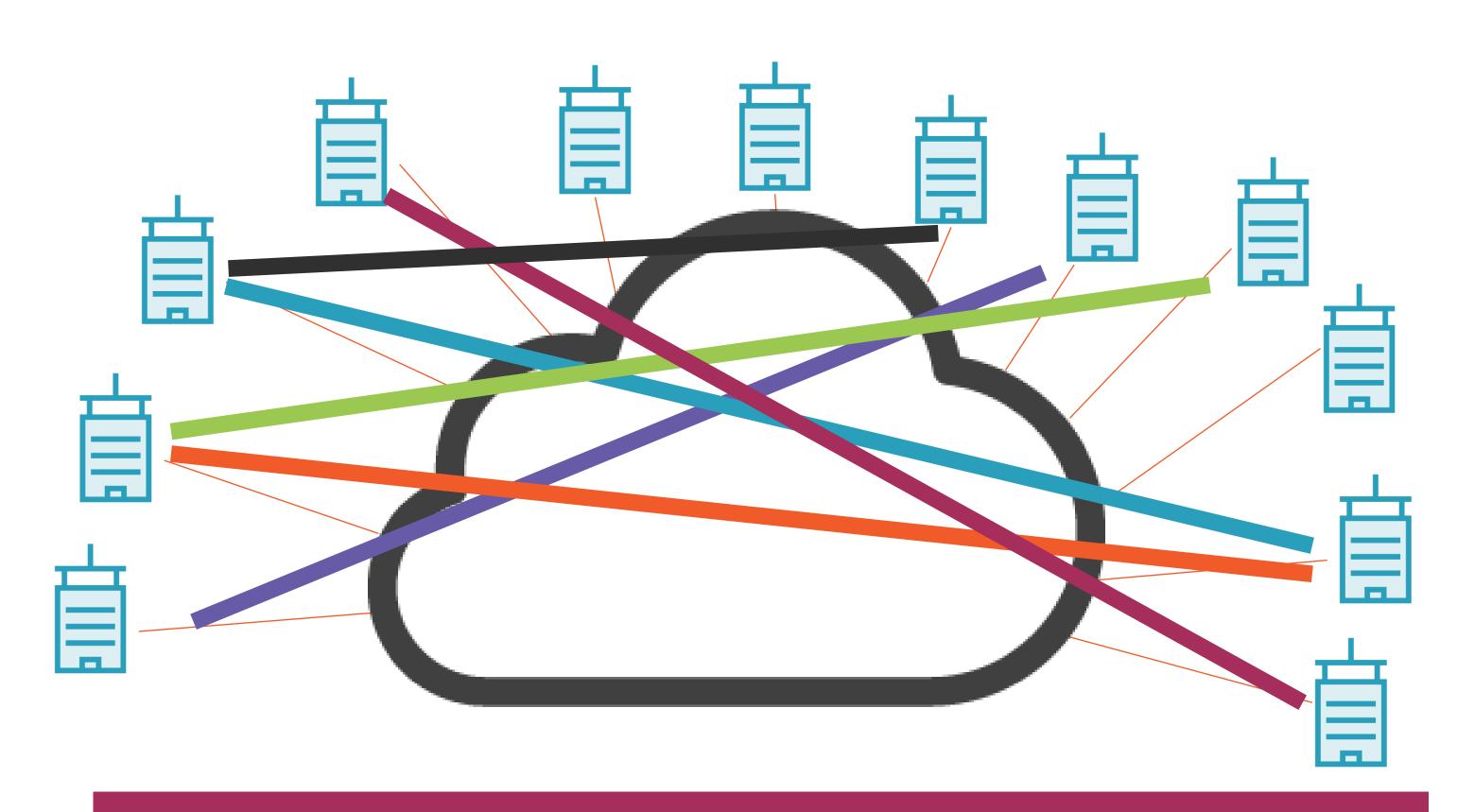




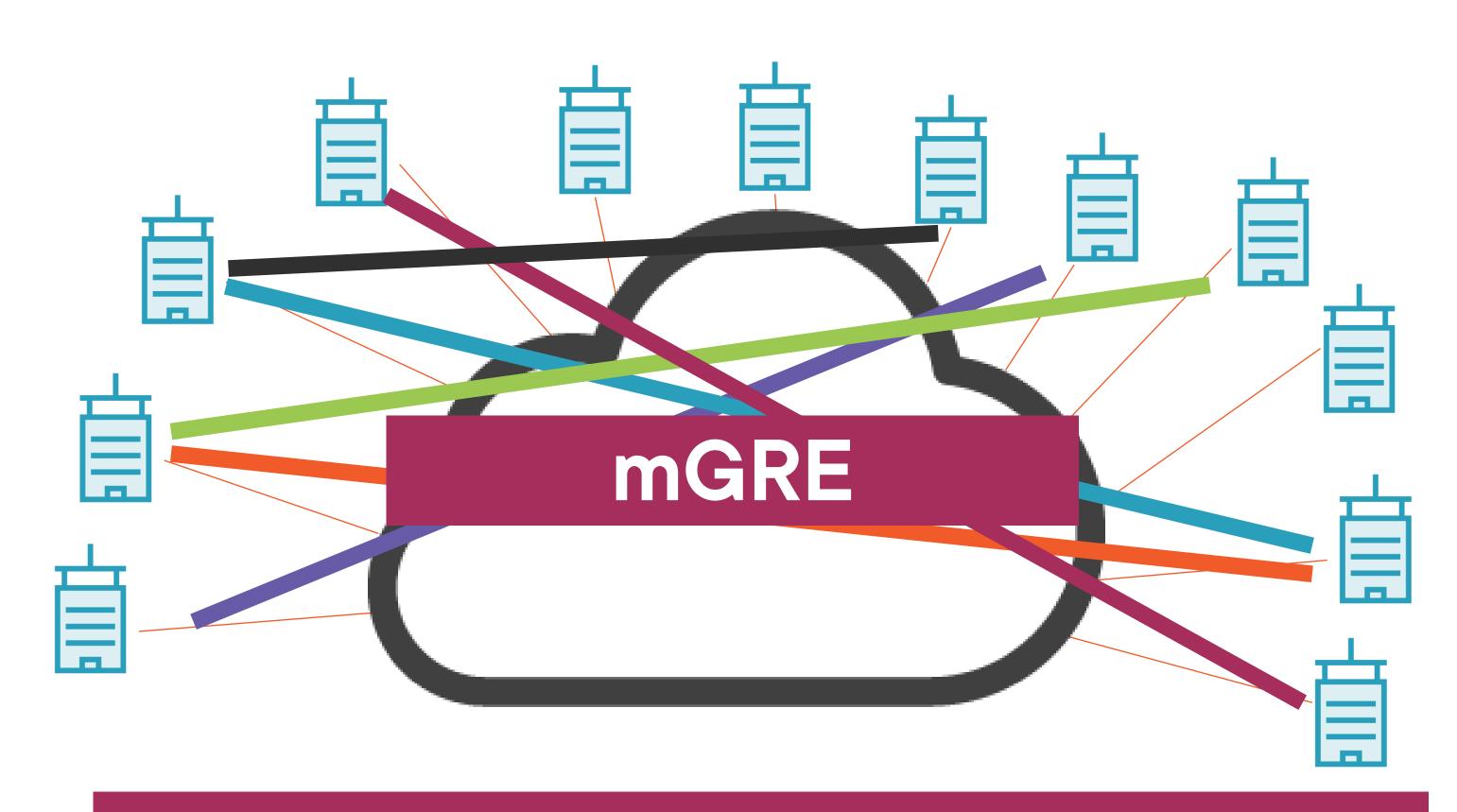








SDWAN







Virtualized Networks

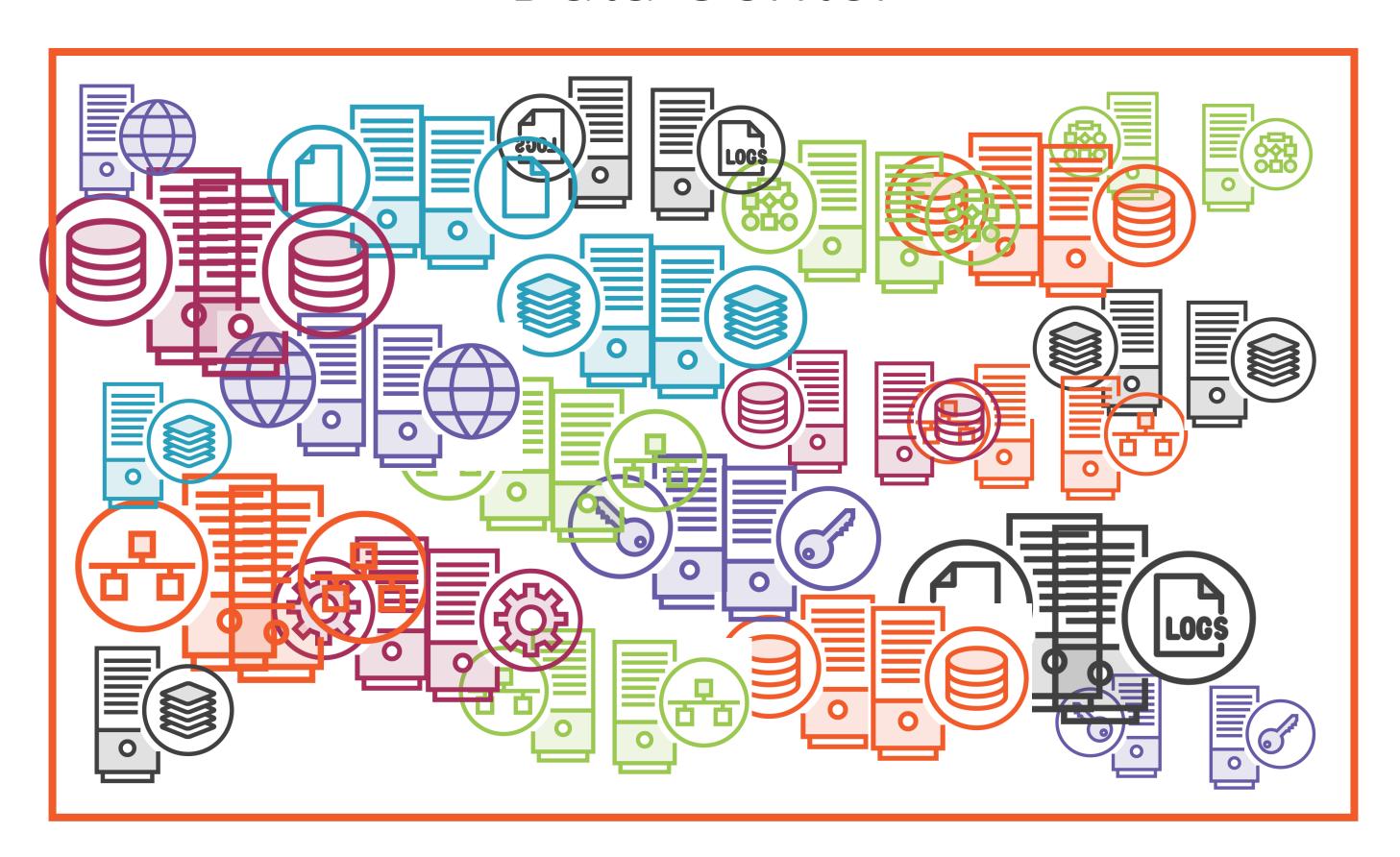




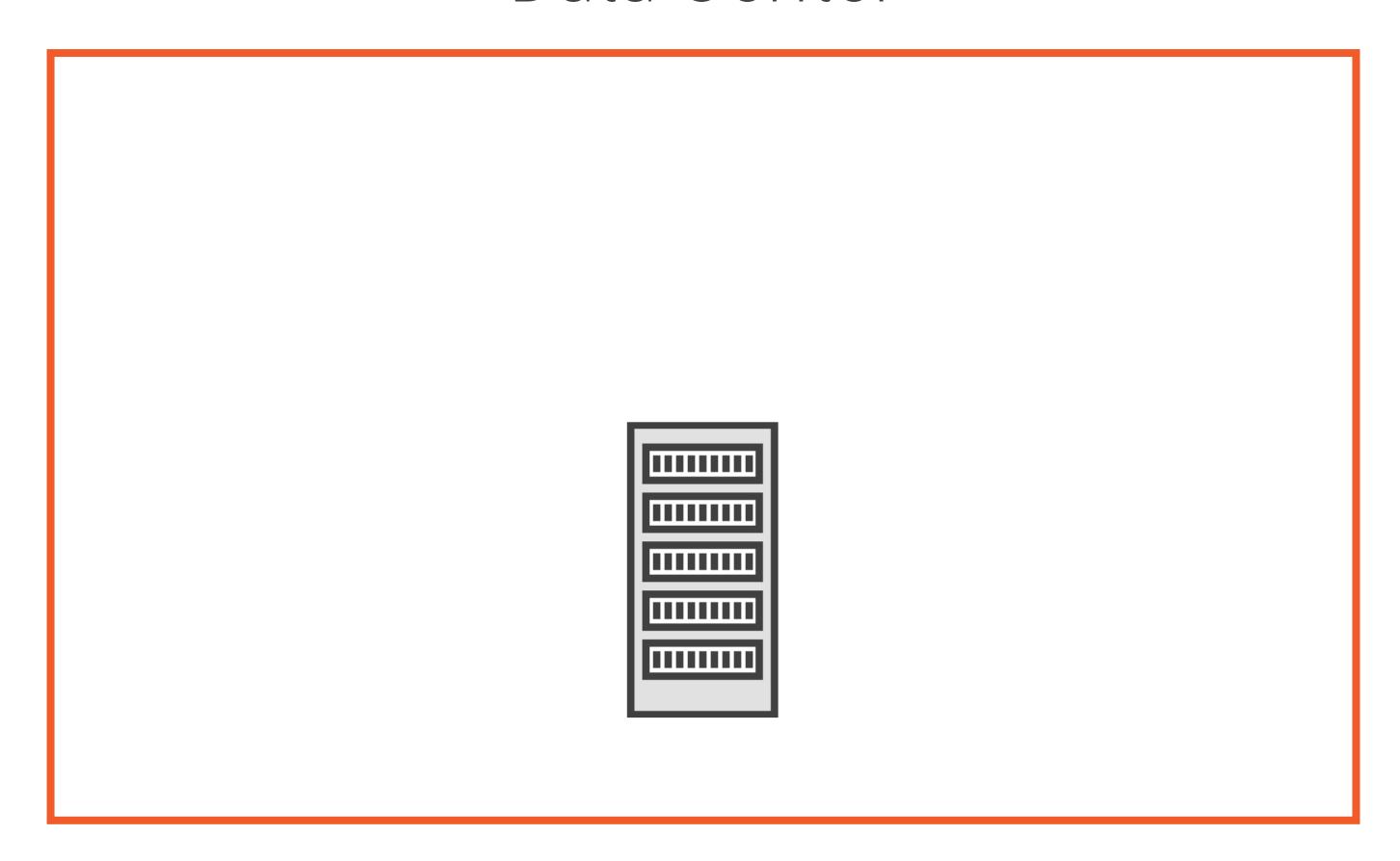


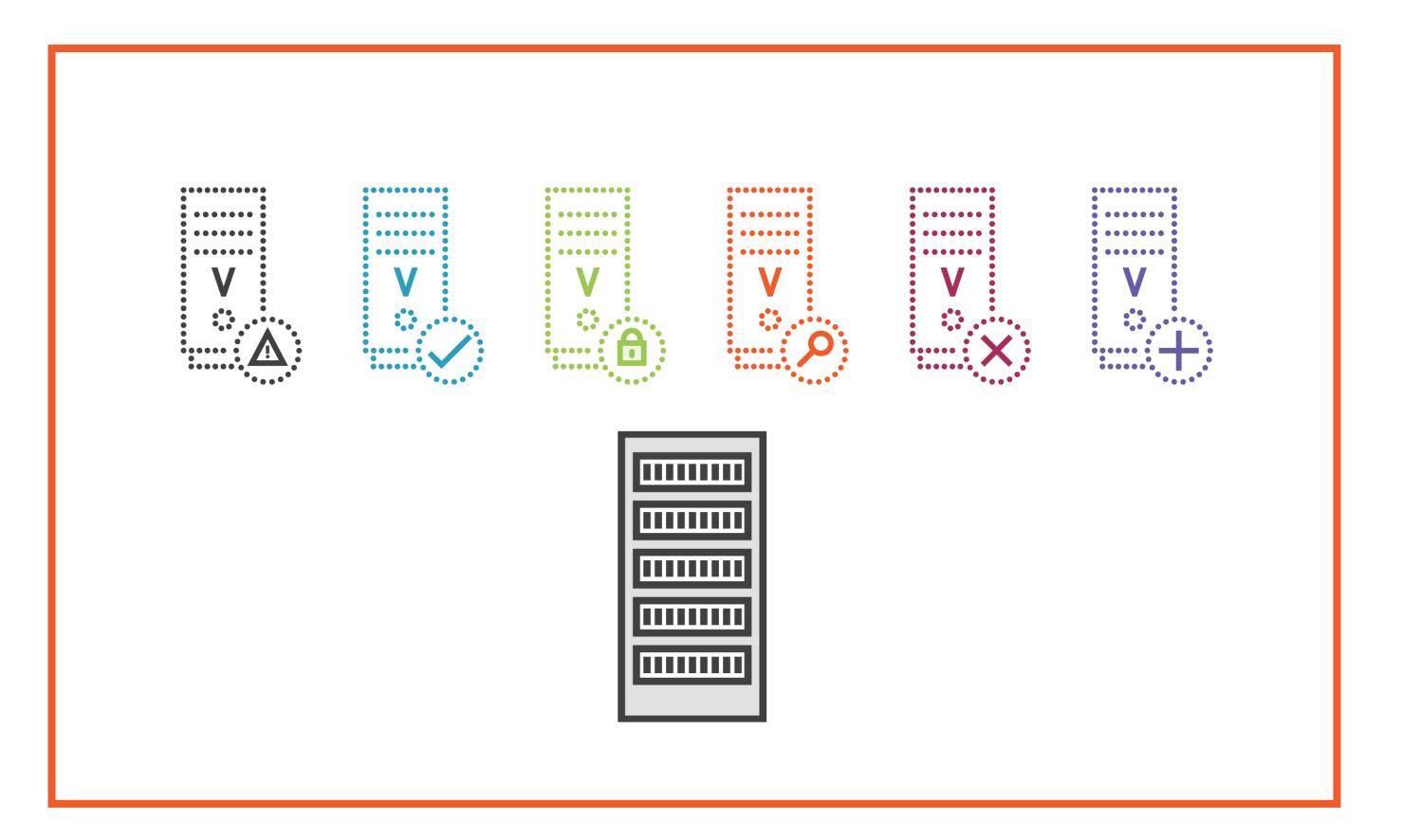


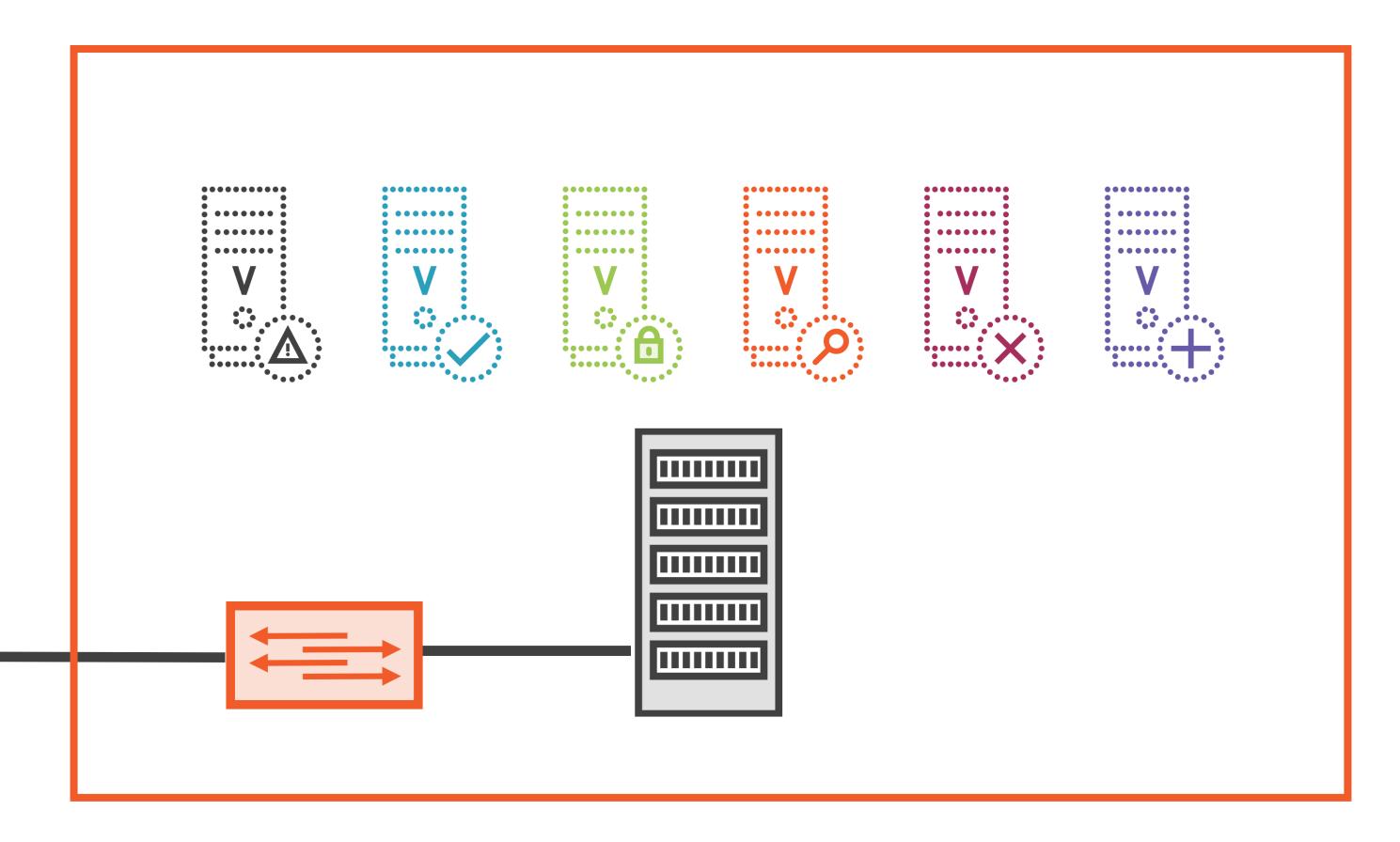


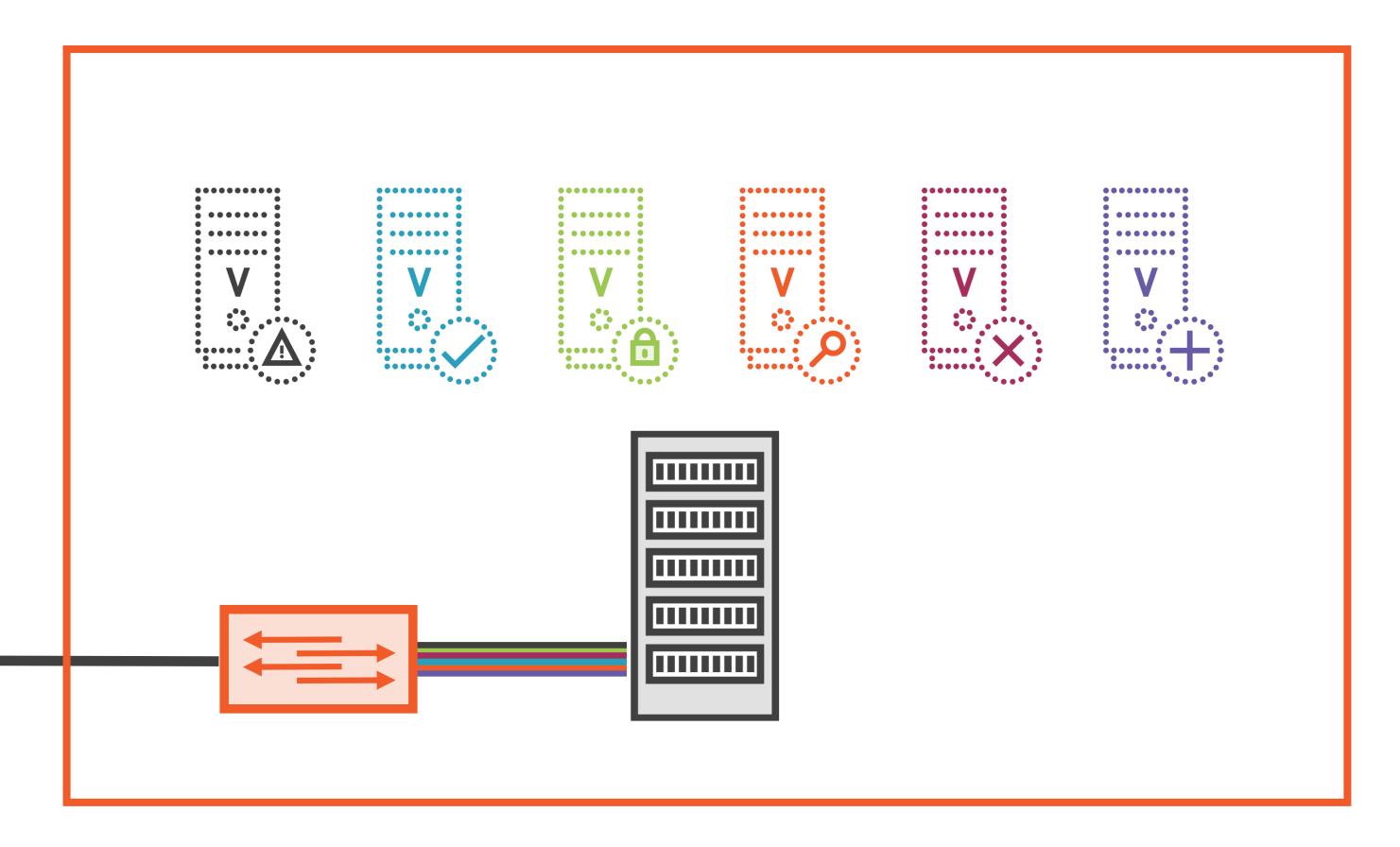


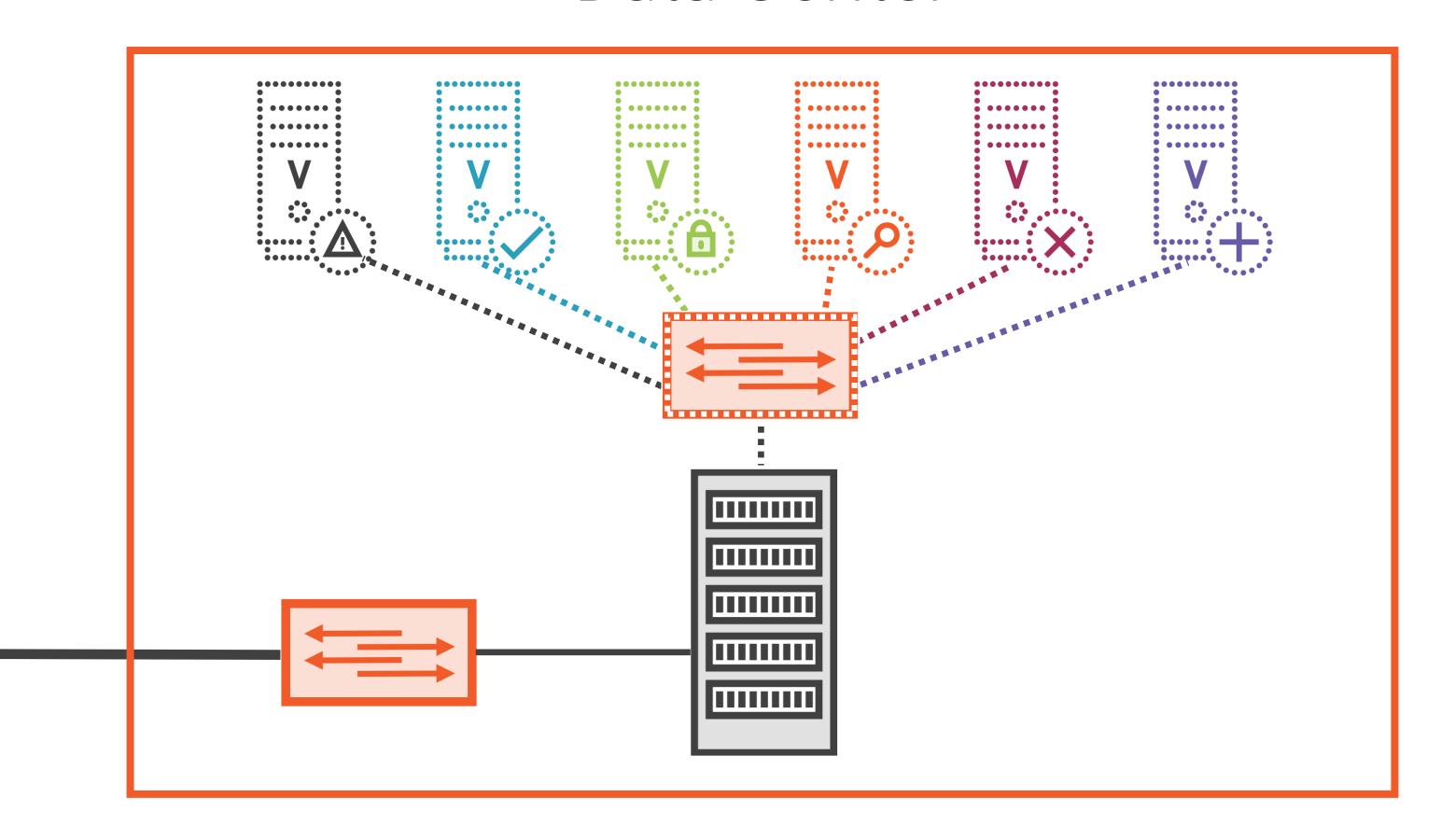


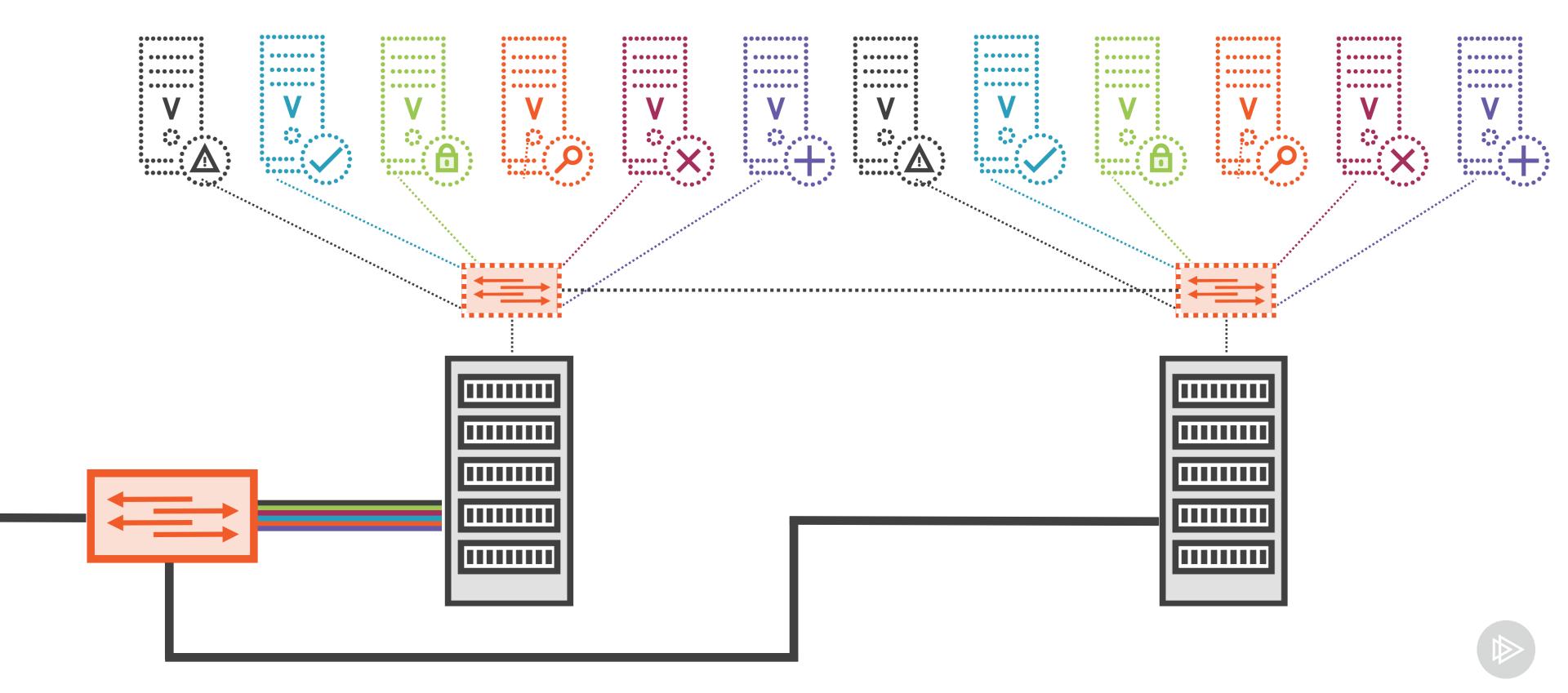


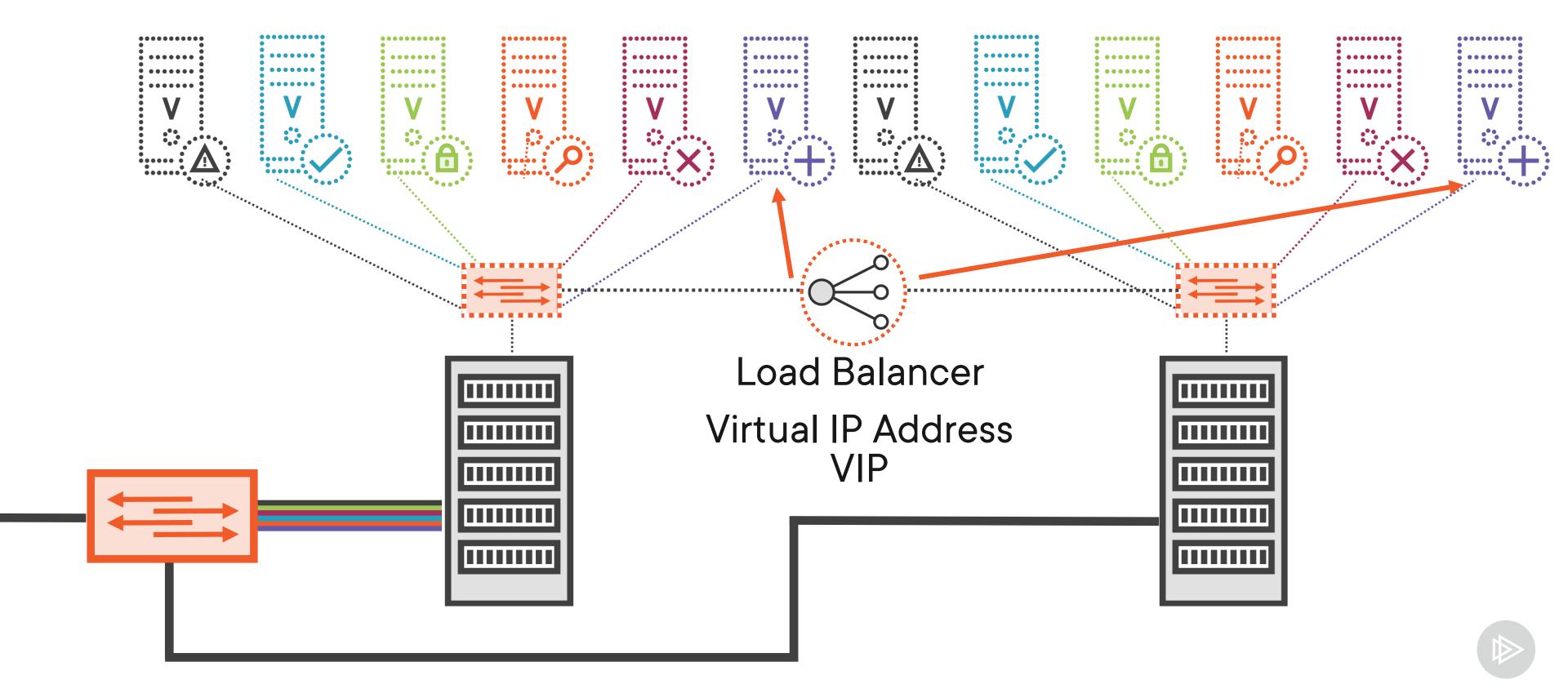


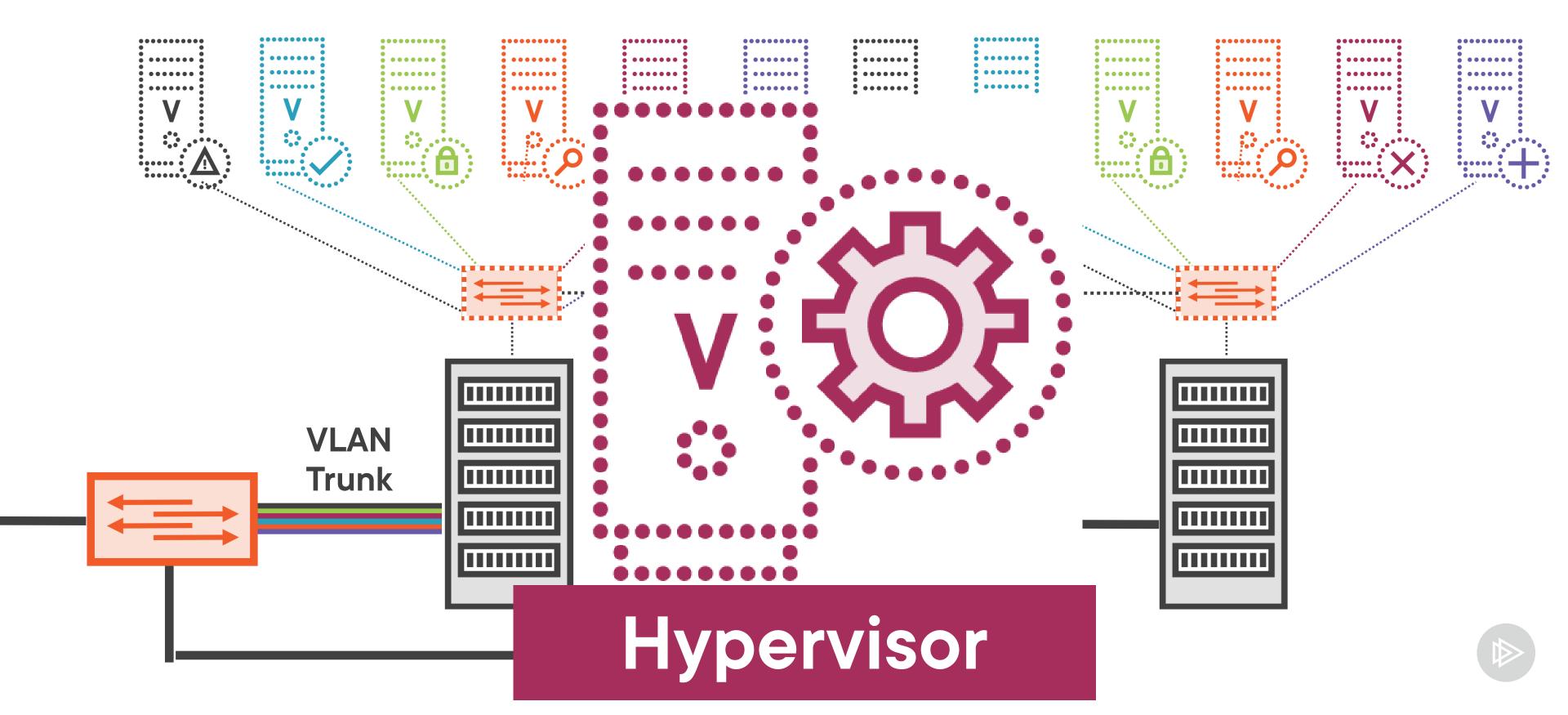




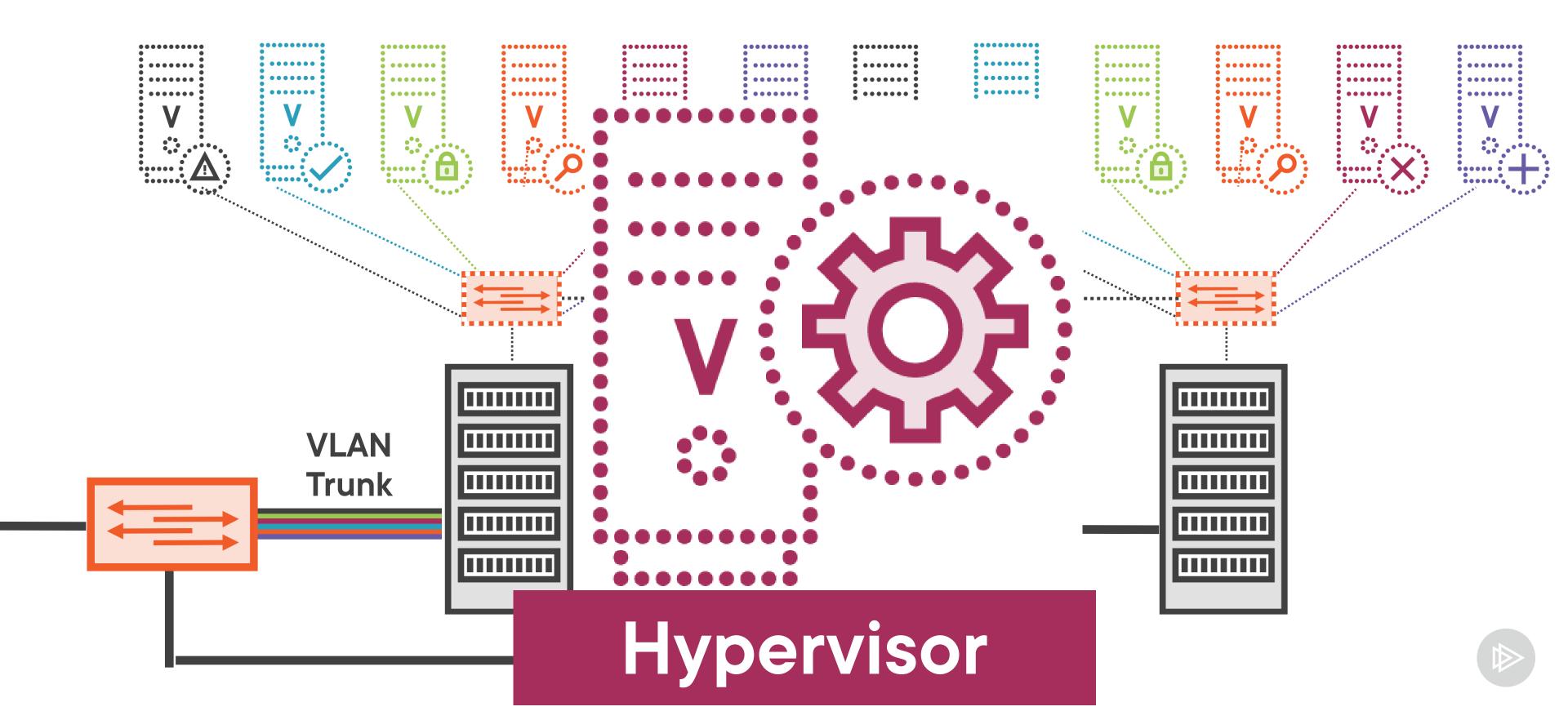








Network Function Virtualization (NFV)



Summary



Network Topologies

Network Types

WAN Technologies

Virtual Network Concepts

