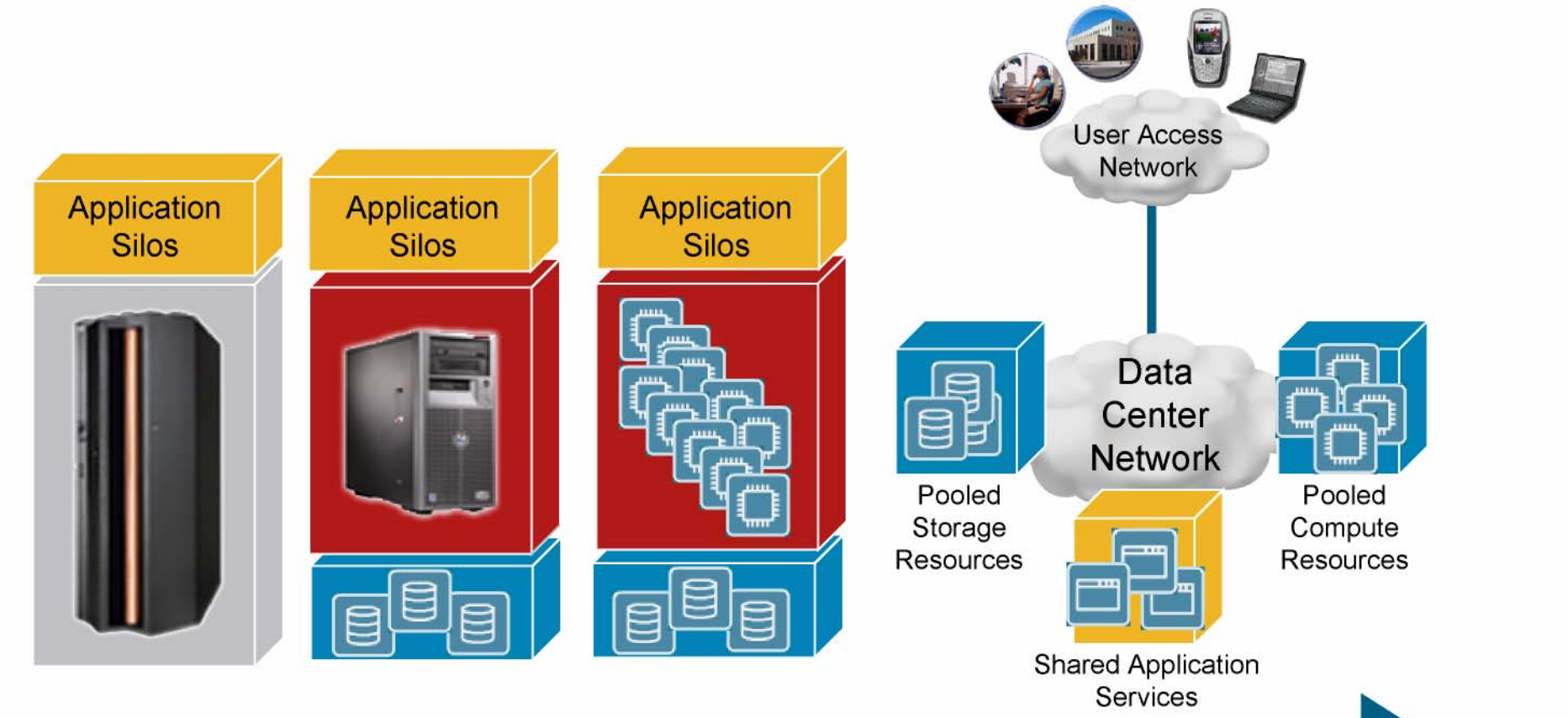
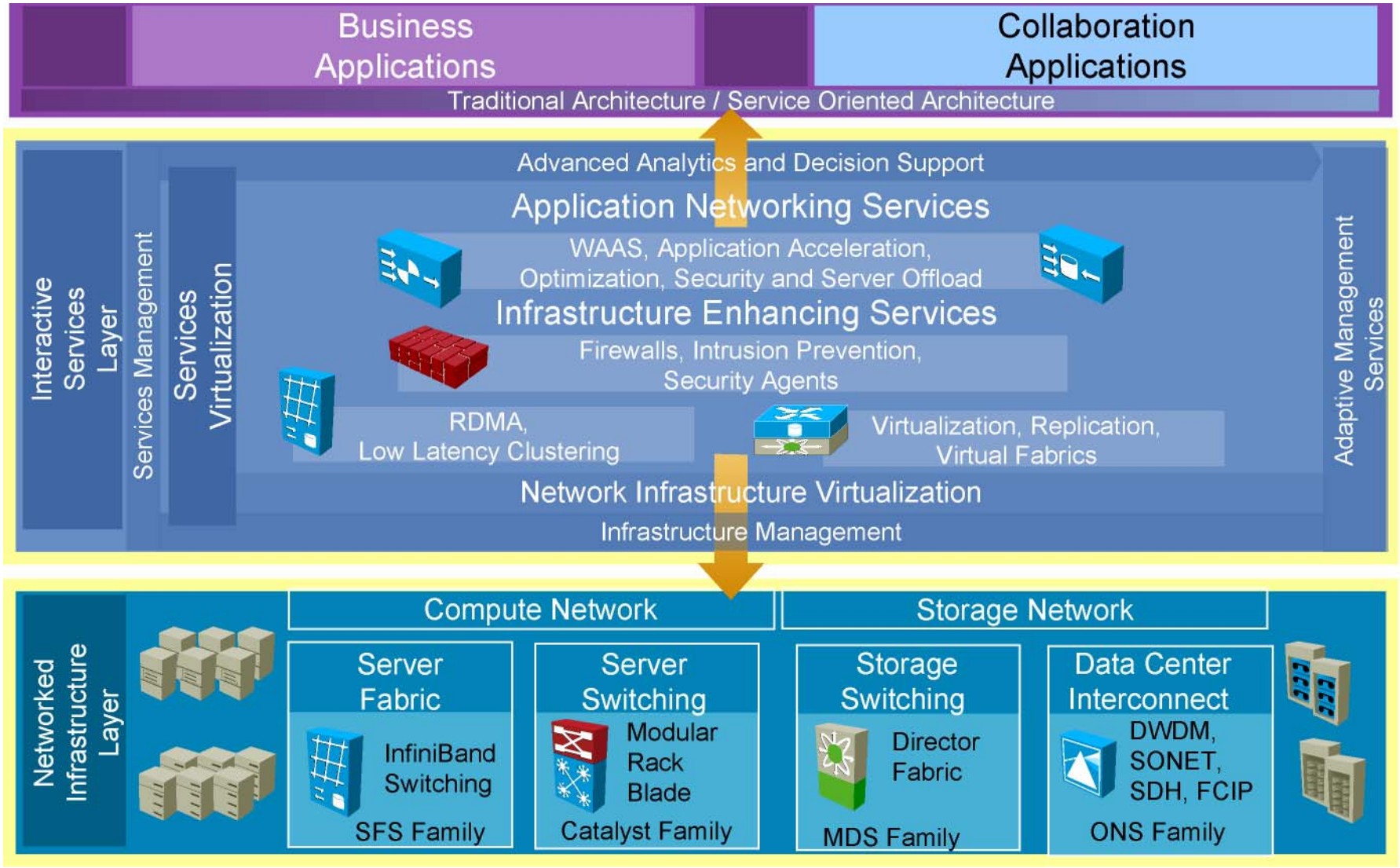
Describing Enterprise Data Center Considerations

Designing Basic Enterprise Campus Networks

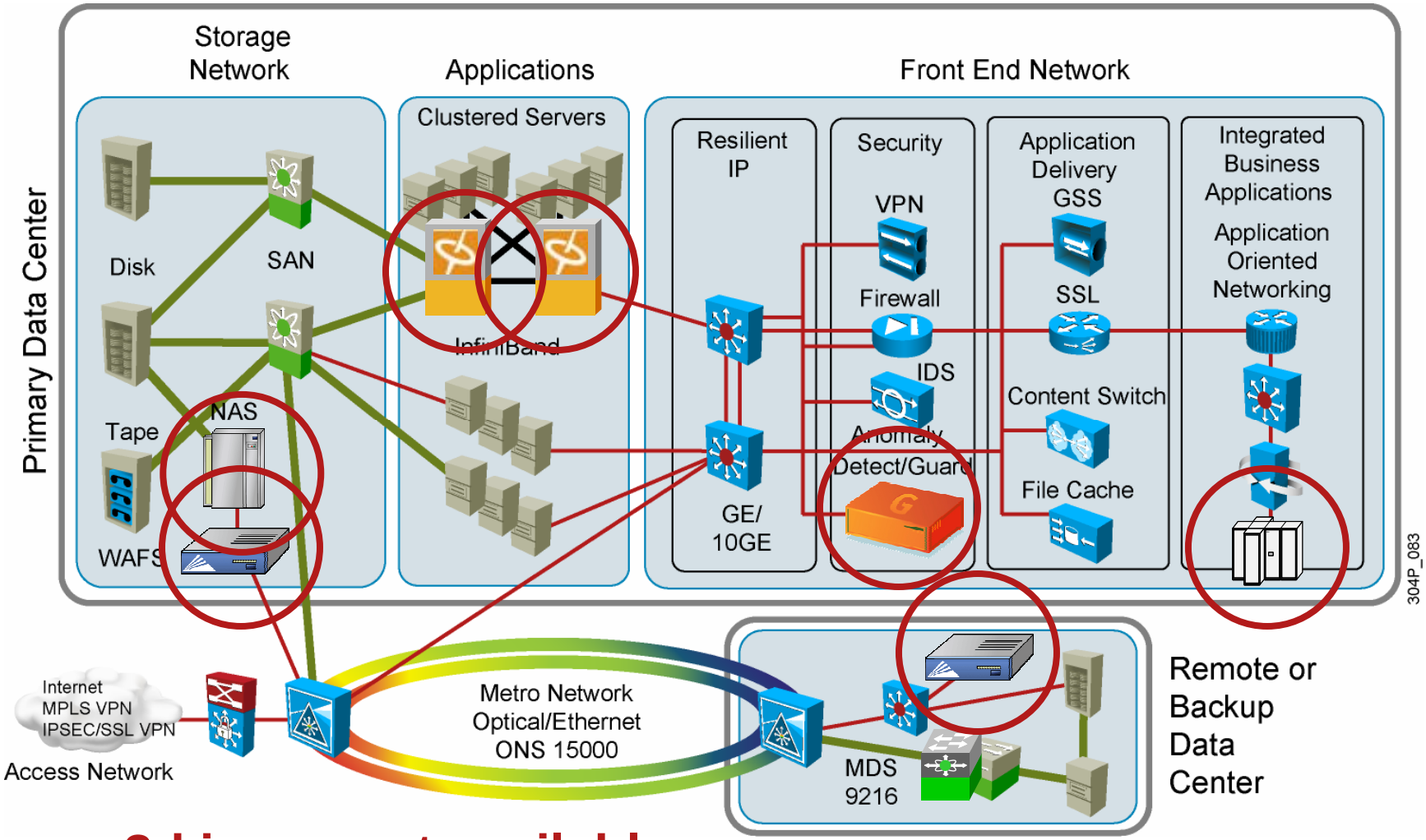
Server-Centric to Service-Centric



Cisco Data Center Network Architecture Framework



Example: Data Center Network Topology



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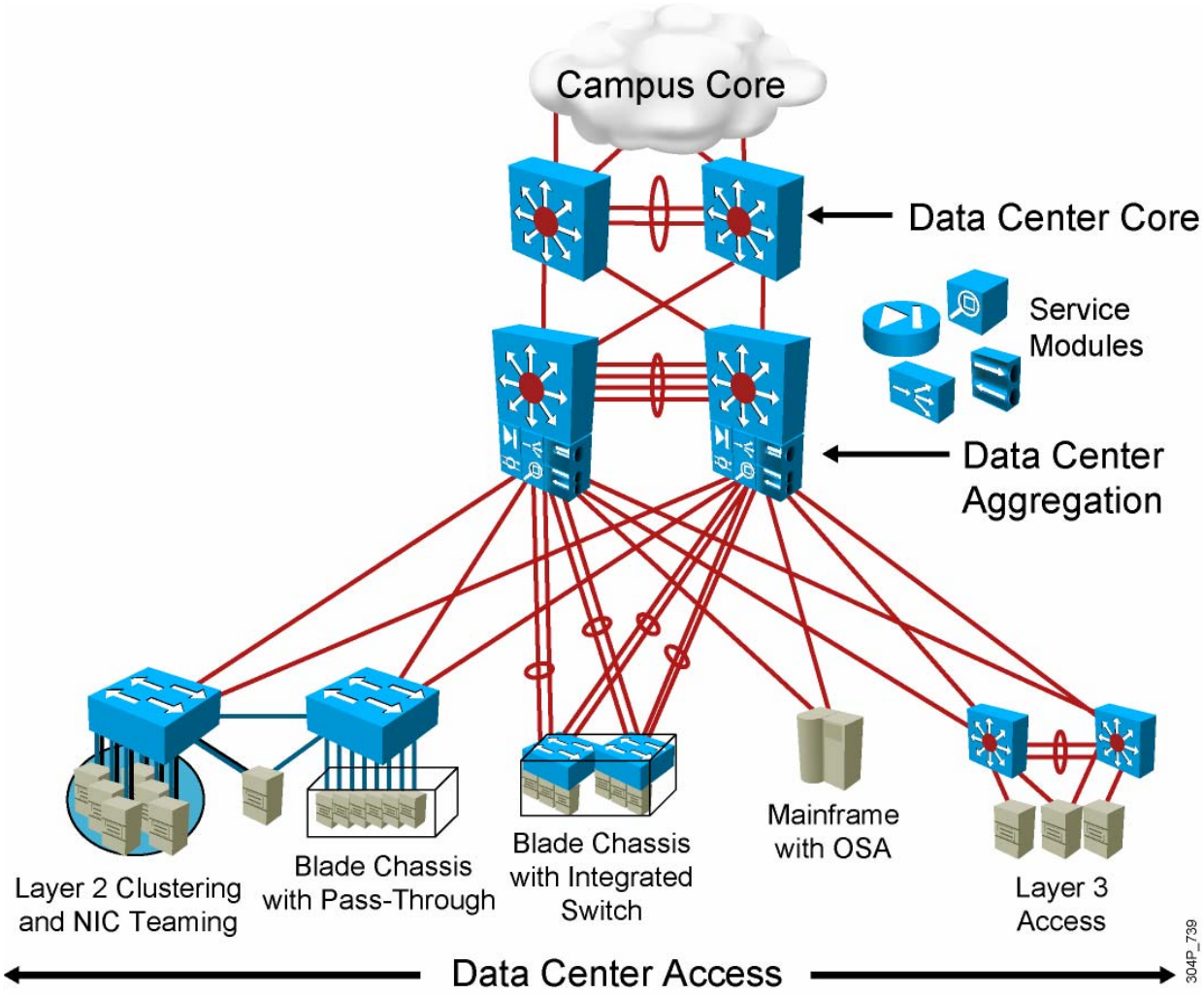
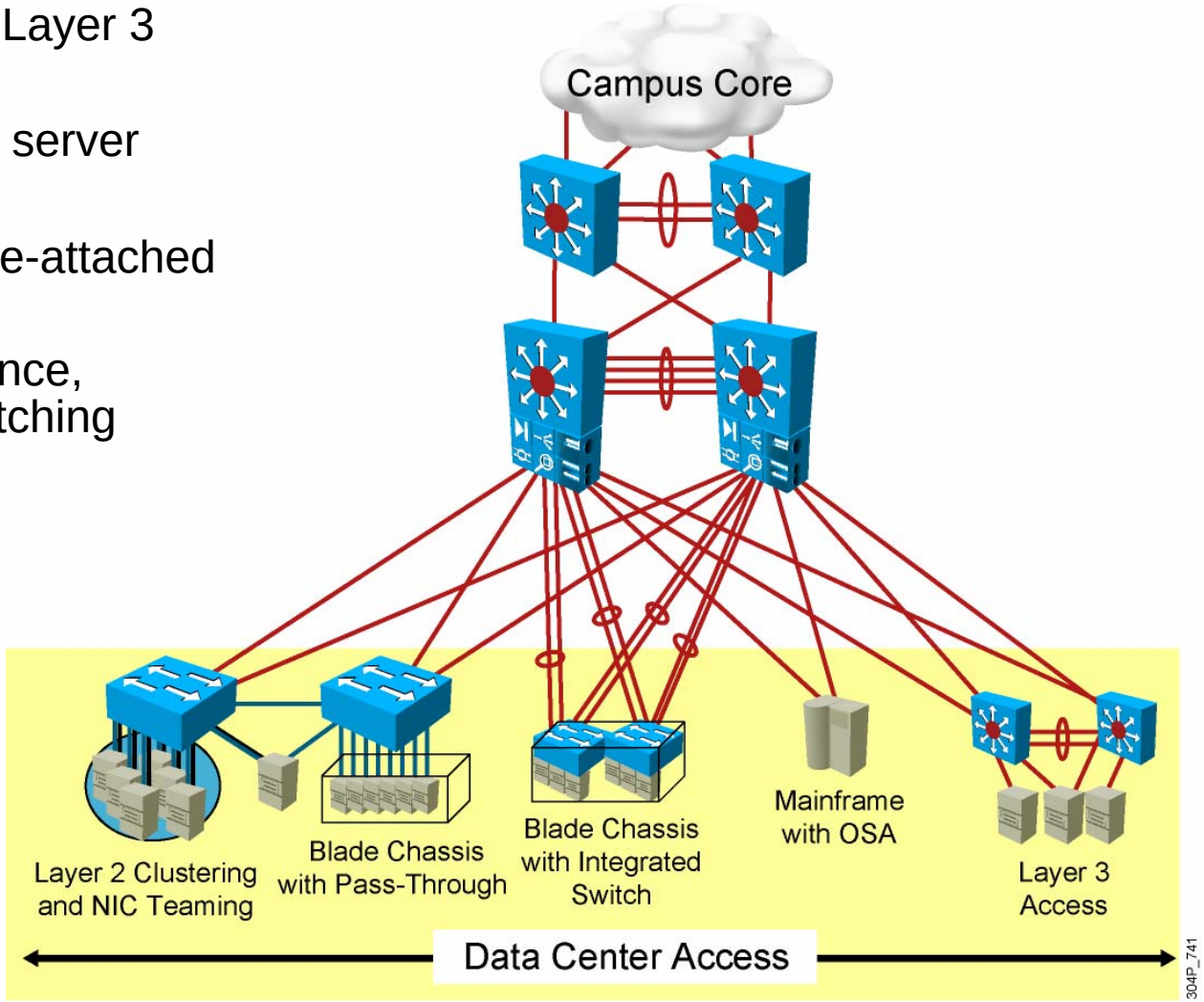
Data Center Infrastructure Overview



Defining the Data Center Access Layer

- Can support Layer 2 or Layer 3 access
- Provides port density to server farm
- Supports dual and single-attached servers
- Provides high-performance, low-latency Layer 2 switching
- Mix of oversubscription requirements
- Many uplink options

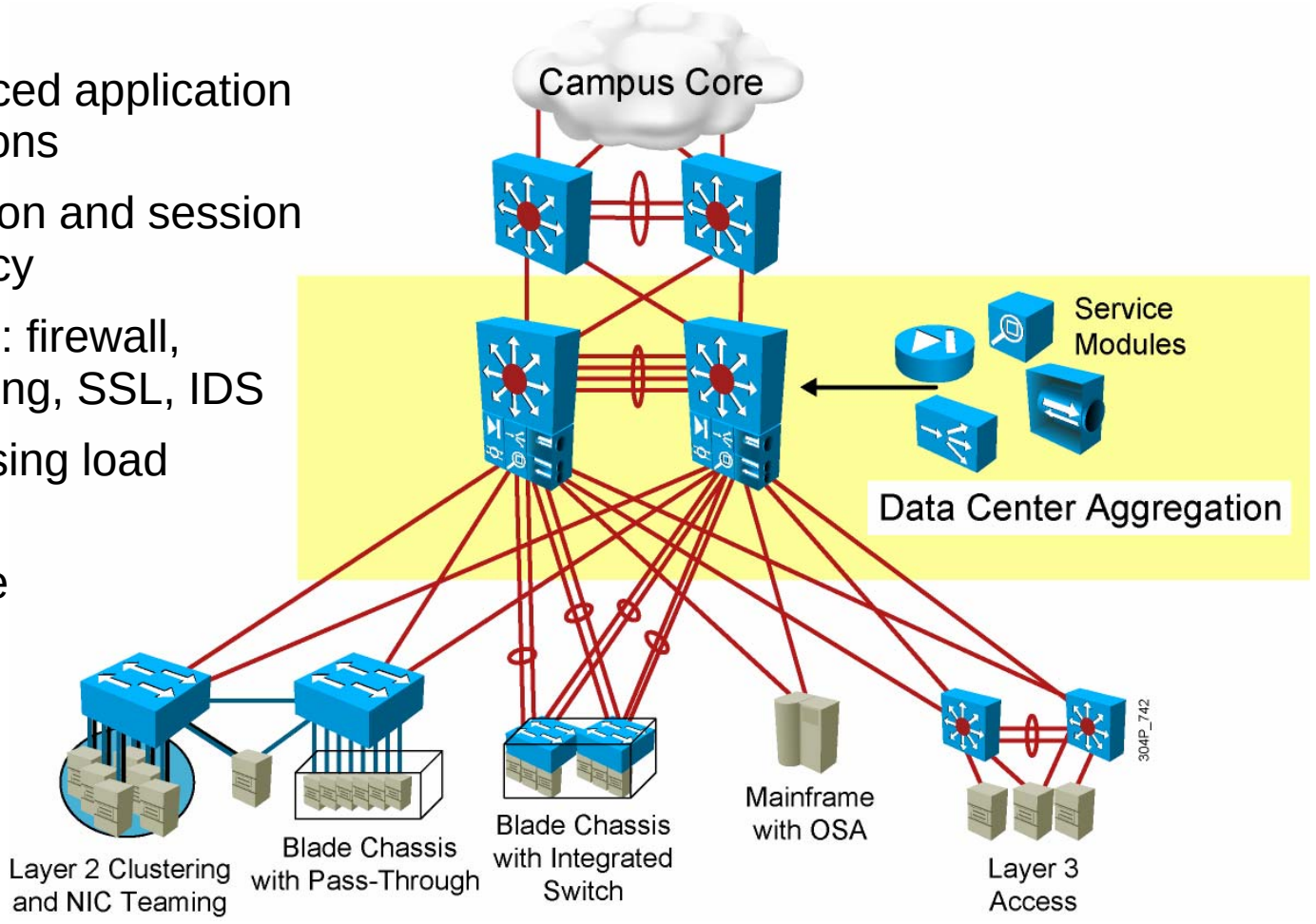


Density and Scalability Implications

- Where are the issues?
  - Cabling
  - Power
  - Cooling

Defining the Data Center Aggregation Layer

- Aggregates traffic to data center core
- Aggregates advanced application and security functions
- Maintains connection and session state for redundancy
- Layer 4–7 services: firewall, server load balancing, SSL, IDS
- Large STP processing load
- High flexibility and economies of scale



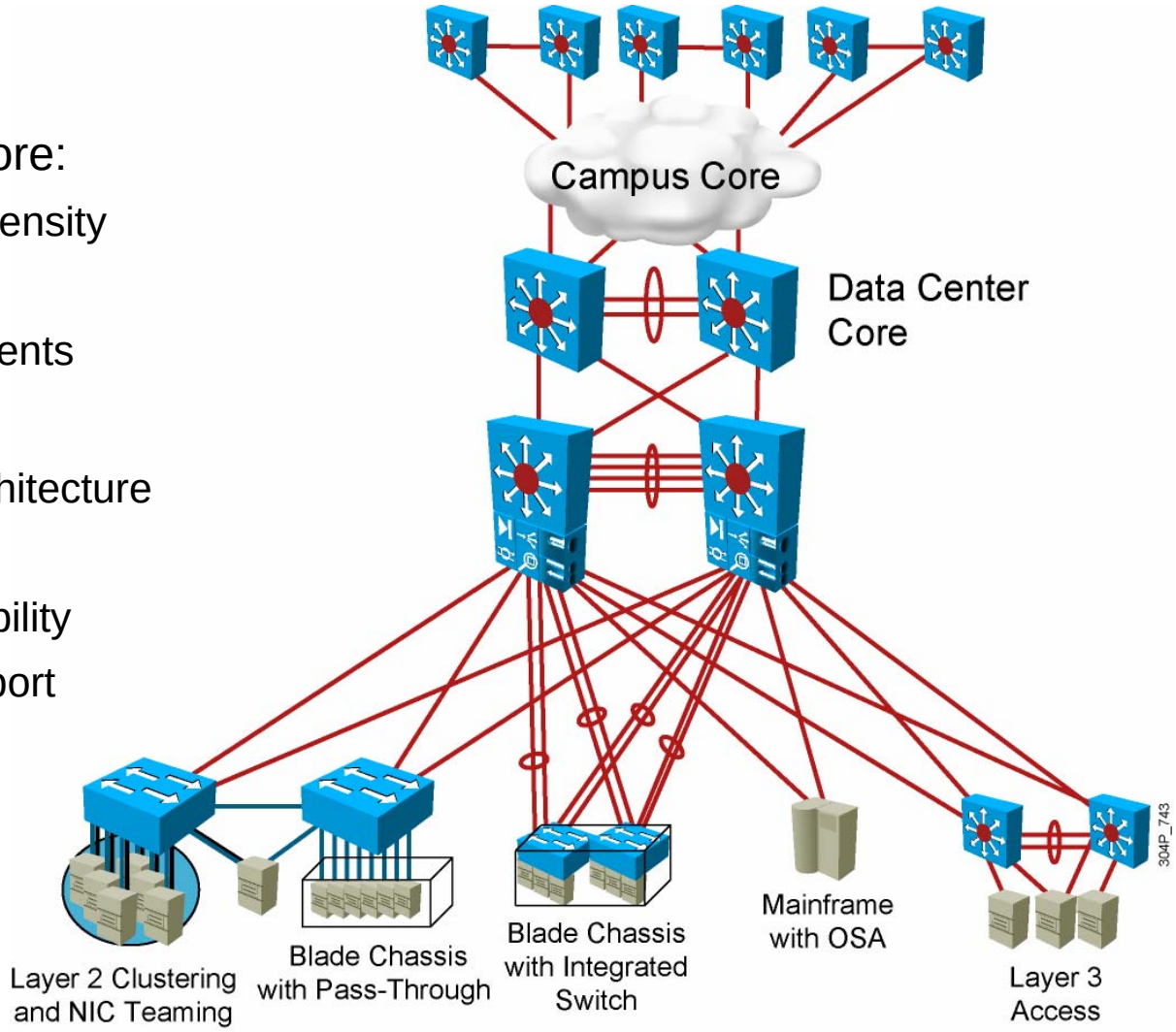
Defining the Data Center Core Layer

Drivers for a data center core:

- 10-Gigabit Ethernet port density
- Administrative domains
- Anticipate future requirements

Key core characteristics:

- Distributed forwarding architecture
- Low latency switching
- 10-Gigabit Ethernet scalability
- Scalable IP multicast support



Summary

- Enterprise data centers support a rich set of applications and servers.
- The SONA-based Cisco Enterprise Data Center Architecture provides a modular hierarchical approach to align data center resources with business applications.