

FlexPod with UCS Mini

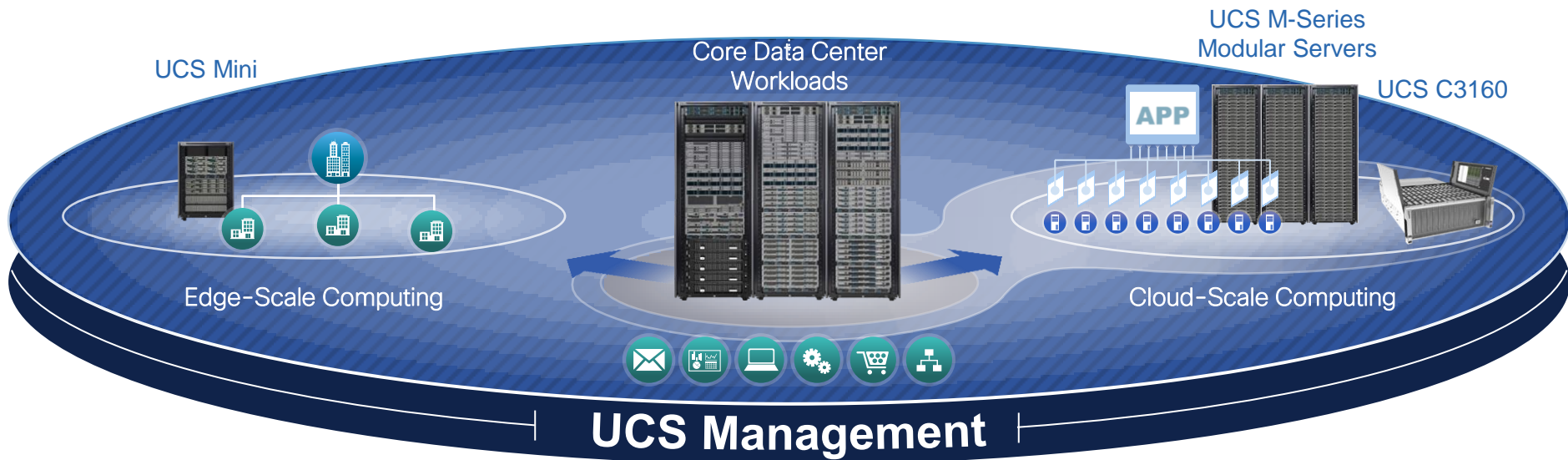
Converging your FlexPod further

Aniket Patankar
UCS Product Manager

Cisco Unified Computing System

Powering Applications at Every Scale

With Intel®
Xeon® processor



Compute • Network • Storage • Virtualization • Management and Automation



Product Concept

- Based on current chassis design
- Embed Fabric Interconnect Capability in the IOM slot
- Match current UCS Network model
 - FI/IOM in End Host Mode
 - External N5K, N6K network infrastructure
- Common Management with UCS
 - UCSM, Service Profiles
- Up to 2 Chassis
 - 2nd Chassis connected via 2204/2208XP FEX
 - Interconnect the two chasses over QSFP passive copper cable.

UCS Mini

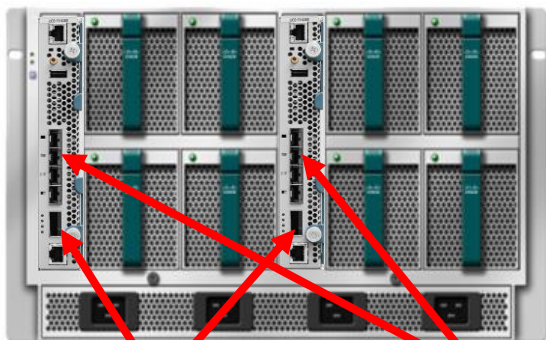




UCS Mini – Use Cases

Market Segment	Use Cases	Deployment Characteristics
Remote or Branch Office	<ul style="list-style-type: none"> • ROBO • Retail Stores, Oil Rigs 	<ul style="list-style-type: none"> • Large number of <i>geo-distributed</i> small domains • Remote and central management
SMB (Small/Medium Businesses) or Commercial	<ul style="list-style-type: none"> • VDI deployments • Regional HQs • Large offices in Metros 	<ul style="list-style-type: none"> • Small to mid number of co-located small domains in a DC • High VIF count support; Small #VLANs • VMFEX performance
SP (or X-aaS)	<ul style="list-style-type: none"> • Small failure domains • Compliance requirements 	<ul style="list-style-type: none"> • Large number of <i>co-located</i> small domains in a DC • High network scale for multi-tenancy support and dense deployment of workloads • Central management
SP or Enterprise	<ul style="list-style-type: none"> • Financial • Trading floors • High frequency trading 	<ul style="list-style-type: none"> • Large number of co-located small domains in DC • Low latency • High multicast group • Central or scripted management

Product Overview

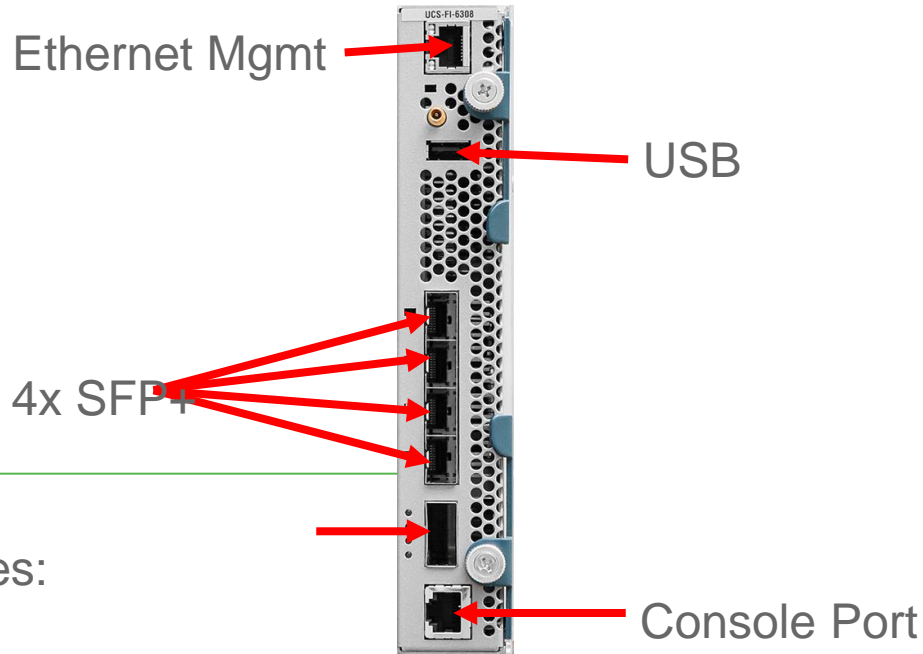


1 QSFP Port

4x SFP+ Ports

- Updated chassis, backwards compatible
- Initial support for B200 M3
- New power supply with US 110V support
 - Limited power @110V
 - $\approx 2,200\text{W N+N}$
 - $\approx 3,500\text{W N+1}$
 - Blade configurations will be constrained
- New integrated Fabric Interconnect
 - Management, Networking and storage control embedded in chassis
 - 4 SFP+ Uplinks
 - 1x QSFP Scalability Port

New In Chassis 6324 Fabric Interconnect



1x QSFP+

Supported roles:

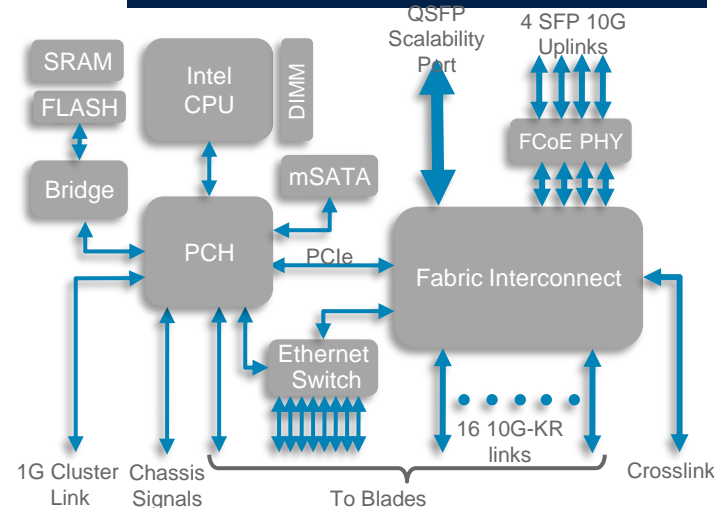
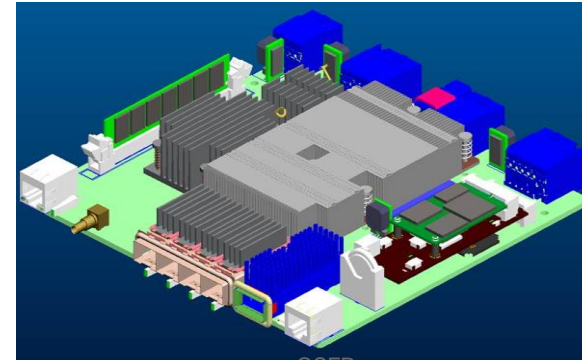
- Server
- Appliance
- FCoE Storage
- Extended Data center interconnect



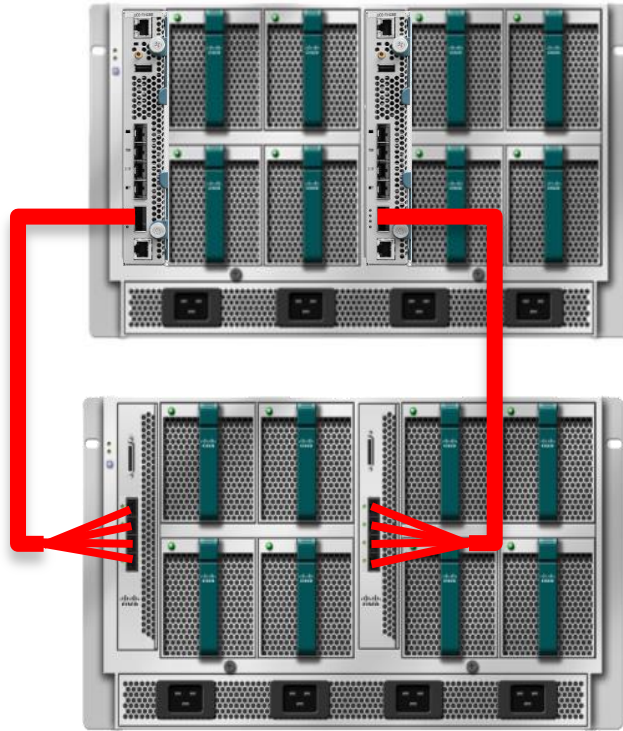
Mini-FI

6324 Fabric Interconnect that fits in the IOM bay of the 5108 Chassis

- Provide FI and IOM functionalities
- 16 x 10G-KR links to servers
- 1 x 10G crosslink
- 4 x 10G SFP+ Unified Ports for Uplink
- 1 x QSFP for scalability link
- New ASIC based on Monticello
- Intel Gladden CPU
- Requires new Switching Code and new UCSM code.



Scalability Port



- Allows connection of 2nd chassis and/or rack servers
- Up to 16 blades per domain
- Up to 4 rack servers
- 40Gbit Total Link
- Standard FEX in subordinate chassis e.g 2204XP
- Available post-FCS
- 1, 3, 5m cables



UCS Mini

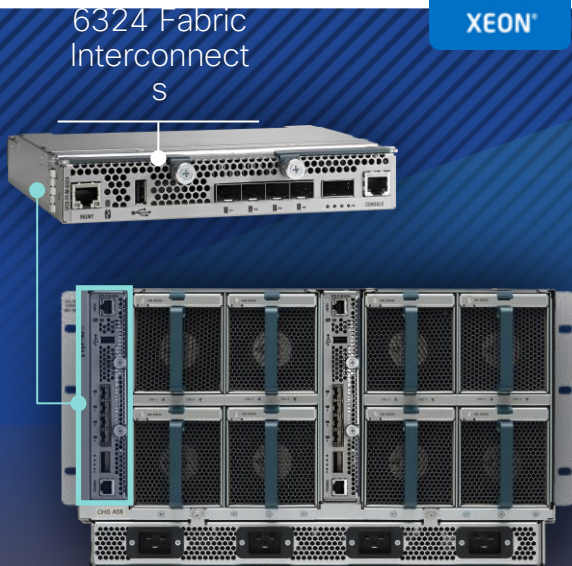
With Intel®
Xeon® processor



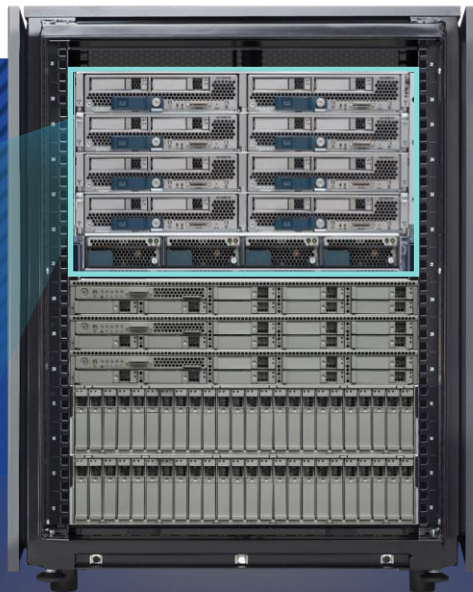
New architectural entry point
for Unified Computing at
1~15 server scale

Full Power UCS in
an all-in-one package:

- Compute
- Networking
- UCS Manager
- Standard UCS Blades /
Fans / Power Supplies



UCS Mini



Enterprise Capability at Edge Scale
Connect up to 7 C-Series
Rack Servers for Expanded Capacity

UP TO
29% CapEx
Savings

UP TO
36% TCO

UP TO
34% Lower
Power

UP TO
80% Fewer
Cables

FlexPod Data Center Designs



Images

- vSphere 5.5 Update 1 hypervisor from VMware.
- B-Series and C-Series M3 servers in the FlexPod CVD
- UCS Release 3.0(1c) with UCS-mini
- NetApp Data ONTAP 8.2.2 in Cluster Mode
- NetApp FAS2552 storage
- Cisco Nexus 9000 Series Switches (Nexus 9372PX used for the validation)

FlexPod Data Center with UCS Mini

UCS Direct-connect FAS with Fiber Channel

FlexPod
Data
Center with
UCS-Mini

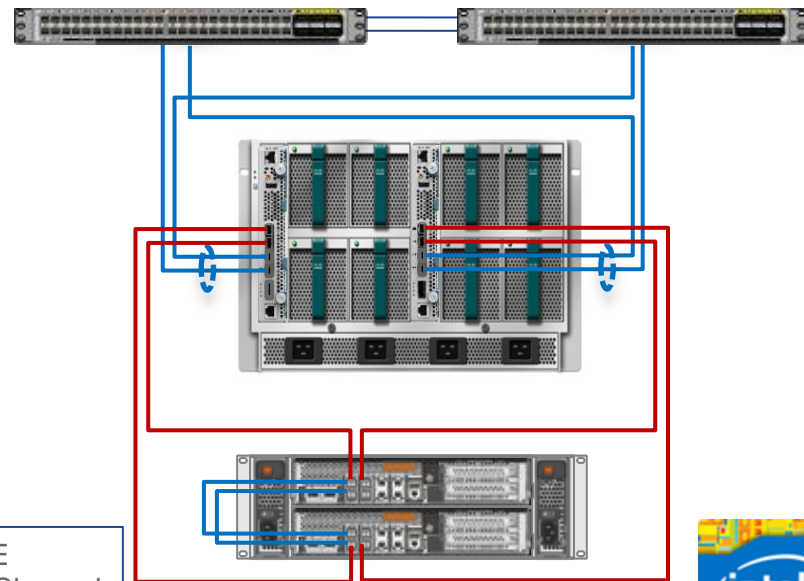
- FlexPod Data Center with UCS Mini

- Nexus 9300, Cisco UCS Mini, NetApp FAS 2500 series
- VMware vSphere 5.5u1 initial model

- Highlights:

- Dual homed UCS Fabric Interconnects using vPC (no storage traffic)
- Switchless cDOT using direct-connect from FAS to UCS domain via Fiber Channel
- Supports FC only storage access
- Compute expansion ports available
 - 1 x QSFP

Direct Attached FC Solution



Nexus
9300

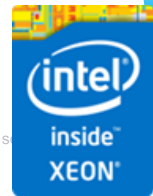
UCS-
Mini

FAS
2552



- 10 GbE
- Fibre Channel
- vPC

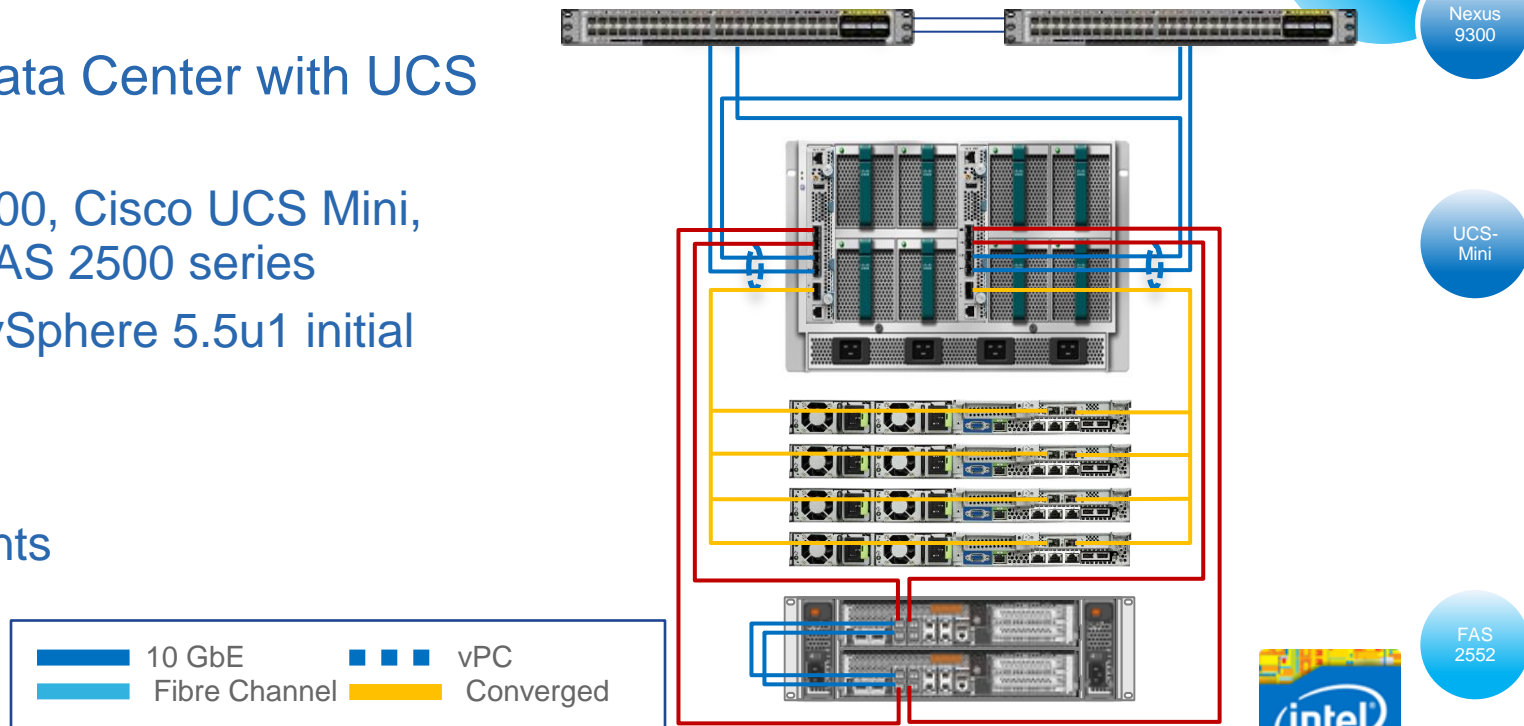
With Intel®
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FlexPod Data Center with UCS Mini

UCS Direct-connect FAS with Fiber Channel

- FlexPod Data Center with UCS Mini
 - Nexus 9300, Cisco UCS Mini, NetApp FAS 2500 series
 - VMware vSphere 5.5u1 initial model
- Highlights:
 - Scale points

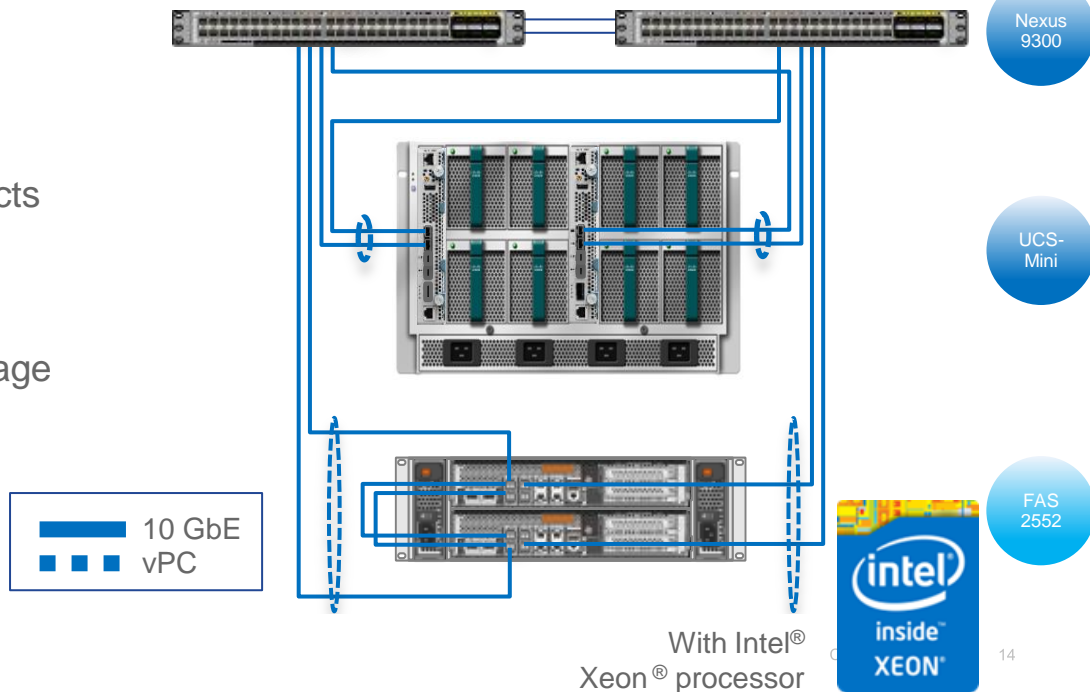


FlexPod Data Center with UCS Mini Ethernet Only Solution (phase 2)

FlexPod
Data
Center with
UCS-Mini

- FlexPod Data Center with UCS Mini
 - Nexus 9300, Cisco UCS Mini, NetApp FAS 2500 series
 - VMware vSphere 5.5u1 initial model
- Highlights:
 - Dual homed UCS Fabric Interconnects using vPC
 - Dual homed FAS using vPC
 - Switchless cDOT
 - Supports NFS, SMB and iSCSI storage access
 - Compute expansion ports available
 - 2 x SFP
 - 1 x QSFP

Ethernet Only Solution



FlexPod Data Center with UCS Mini UCS Direct-connect FAS with FCoE (FUTURE)

FlexPod
Data
Center with
UCS-Mini

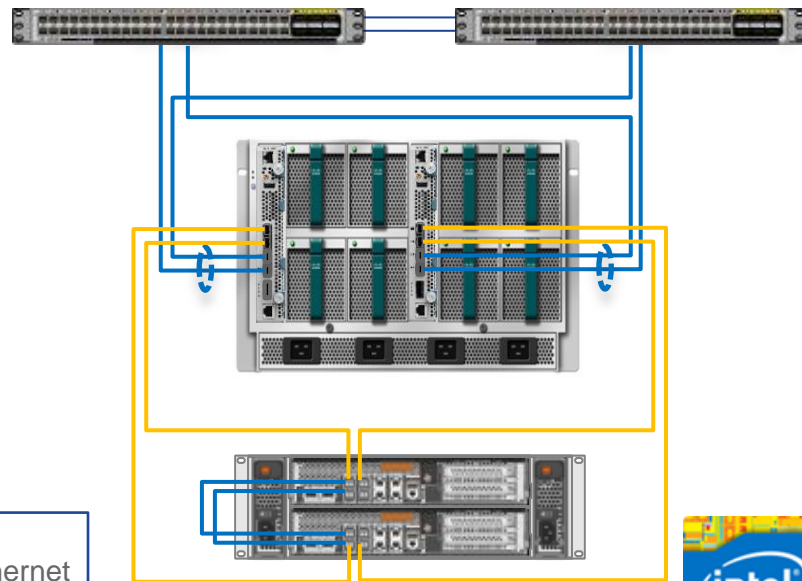
- FlexPod Data Center with UCS Mini

- Nexus 9300, Cisco UCS Mini, NetApp FAS 2500 series
- VMware vSphere 5.5u1 initial model

- Highlights:

- Dual homed UCS Fabric Interconnects using vPC (no storage traffic)
- Switchless cDOT using direct-connect from FAS to UCS domain via FCoE
- Supports FCoE only storage access
- Compute expansion ports available
 - 1 x QSFP

Direct Connect FC Solution



Nexus
9300

UCS-
Mini

FAS
2552

FlexPod Express Designs

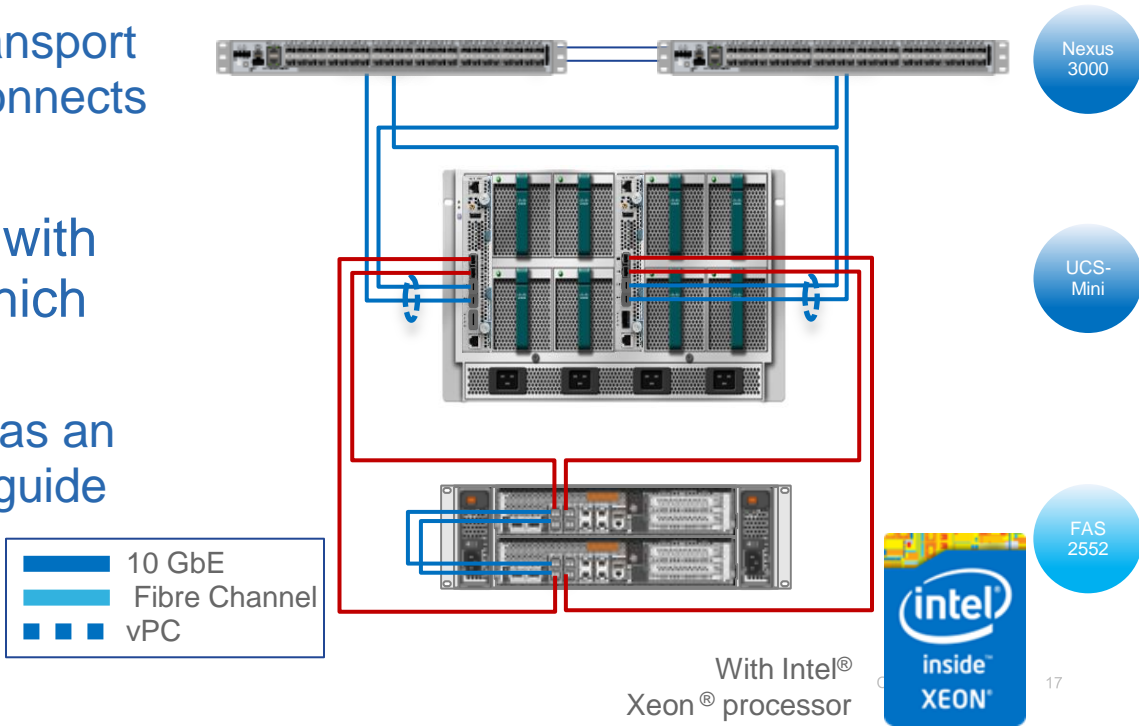
FlexPod Express with UCS Mini

UCS Direct Connect FAS with Fiber Channel

FlexPod
Express
with UCS-
Mini

- Generic switch approach
 - Switches provide reliable transport between UCS Fabric Interconnects (vMotion)
- FlexPod Express validated with the Nexus 3524 platform which supports vPC
 - This model will be captured as an example in the deployment guide

Direct Connect FC Solution



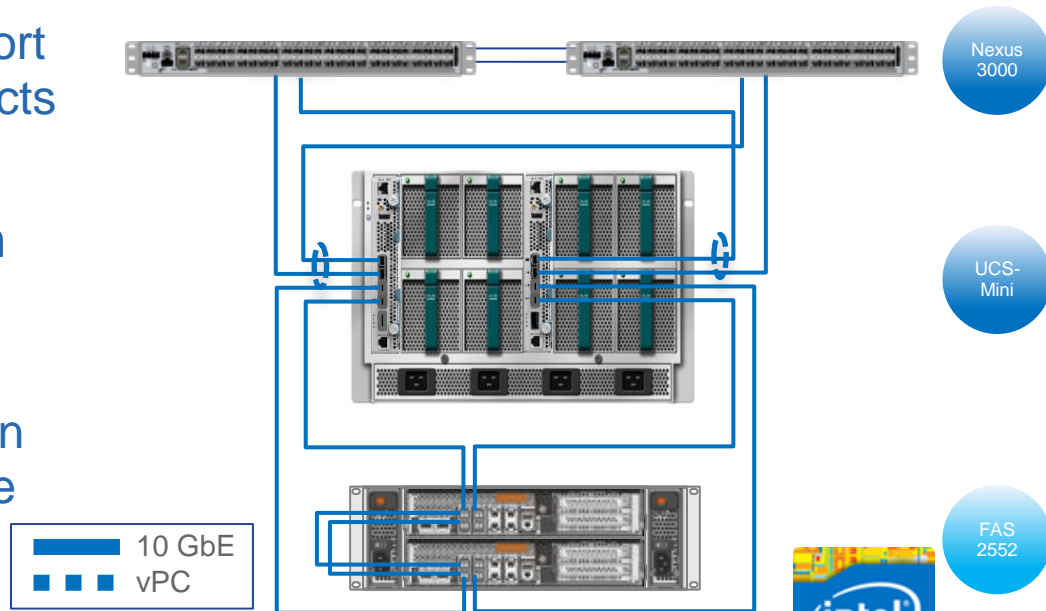
FlexPod Express with UCS Mini

UCS Direct Connect FAS with iSCSI (phase 2)

FlexPod
Express
with UCS-
Mini

- Generic switch approach
 - Switches provide reliable transport between UCS Fabric Interconnects (vMotion)
- FlexPod Express validated with the Nexus 3524 platform which supports vPC
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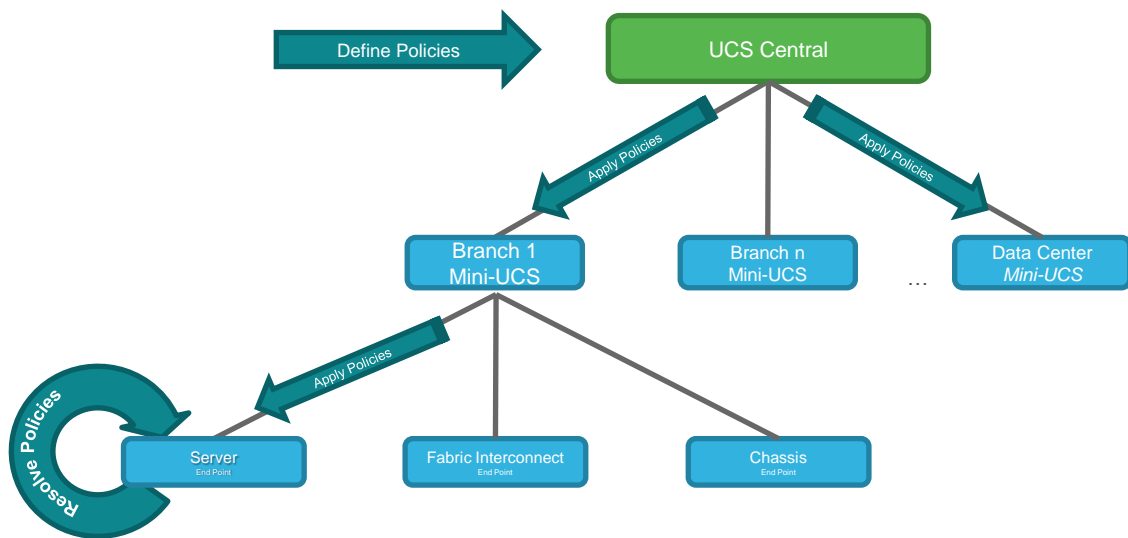
Direct Connect FC Solution



FlexPod Data Center & Express Management

FlexPod Data Center with UCS Mini

Centralized Policy Management with UCS Central



- Centralized management of policy with UCS Central
- Consistency, compliance for configurations from HQ to Branch office environment

With Intel®
Xeon® processor



FlexPod Data Center Management (local)

- UCS Manager
- UCS Central
- vSphere vCenter local
- OnCommand System & Unified Manager & VSC
- FAS Command Line
- Nexus Command Line

FlexPod Express with UCS Mini Management

- UCS Manager (local)
- UCS Central extended from the Data Center
- Nexus 1000v local & remote
- vSphere vCenter local & extended from the Data Center
- OnCommand System & Unified Manager, VSC (local and remote)
- FAS Command line
- Nexus Command Line



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TOMORROW starts here.