Architecting Your Next-Generation Workspace with Cisco and Citrix

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SYN253

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Agenda

- Cisco Citrix Partnership
- Cisco NetScaler 1000V and Cisco ACI
- Cisco Citrix DaaS Solution
- Cisco UCS Mini Edge-Scale Computing
- Cisco UCS M Series Cloud-Scale Computing
- GPU Accelerated Desktop Virtualization
- Conclusion

With Intel® Xeon® processor
Cisco and Citrix Alliance Milestones

- **2011**: Cisco 5 Year Strategic Alliance Agreement
- **2011**: Cisco to resell Citrix XenDesktop
- **2012**: Extended partnership: Mobility, Cloud Networking and Services
- **2012**: Cisco reference sells NetScaler ADC
- **2013**: RISE with Citrix NetScaler ADC
- **2013**: Cisco first partner to license HDX specs
- **2013**: 1000s of Virtual Desktops Deployed on UCS
- **2013**: 3 new solutions, RTMs and commercial models
- **2013**: Cisco resell Citrix NetScaler 1000V
- **2014**: Cisco Powered DaaS with Citrix
- **2014**: Cisco Mobile Workspace Solution with Citrix
- **2015**: With Intel Xeon® processor
Cisco and Citrix Solution Landscape

**Cloud DV**
- Traditional DaaS
- CCS Public DaaS
- Private Cloud DaaS

**Mobility**
- XenMobile on ISE
- Packaged Mobility & Security

**Cloud Networking**
- NetScaler 1000V
- ACI/APIC
- I WAN

**IoT**
- XenDesktop on UCS
Single Point-of-Contact Support

Maximize solution uptime and productivity with Cisco Solution Support. With priority access to a single point-of-contact, resolve issues rapidly in your multi-vendor technology.
Cisco ACI and Cisco NetScaler 1000V
Cisco ACI Business Demand:
Transition to Modern Cloud Operations

- **TCO**: Model based, reducing OpEx and CapEx
- **Software ecosystem**: Rapid adoption and DevOps
- **Open customer choice**: No-compromise support for multivendor innovation
- **Simplification**: Automation, management, and operations
- **Transformation**: From traditional to cloud models

Cisco Objective

Enable faster IT delivery and more efficient business processes
Data Center Transformation Response:
Become Application Centric

<table>
<thead>
<tr>
<th>1</th>
<th>Application-Centric Policy Model</th>
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<tbody>
<tr>
<td></td>
<td>• Operationally simple</td>
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<tr>
<td></td>
<td>• Lower TCO</td>
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<td>• Zero-touch provisioning</td>
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| 2 | Physical and Virtual             |
|   | • Performance and scale          |
|   | • Health metrics                 |
|   | • Visibility and telemetry       |

| 3 | Open and Secure                  |
|   | • Open APIs and open source      |
|   | • Secure multitenancy            |
|   | • Extensive ecosystem            |
Cisco ACI plus Citrix NetScaler: Service Automation

- Cisco® Application Policy Infrastructure Controller (APIC) provides extensible policy model through device package
- APIC administrator can import Citrix NetScaler device package
- Device package is an XML file defining device configuration model and parameters required for Layer 4 to 7 use cases
- After it has been imported, APIC can configure NetScaler functions and parameters
- Device scripts translate APIC API callouts to device-specific callouts
## NetScaler: Cisco & Citrix Product Breakout

<table>
<thead>
<tr>
<th>Product</th>
<th>Citrix Product Lineup</th>
<th>Cisco Product Lineup</th>
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<tbody>
<tr>
<td></td>
<td>VPX</td>
<td><strong>NetScaler 1000V</strong></td>
</tr>
<tr>
<td>Platform</td>
<td>x86</td>
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<td></td>
<td>MPX</td>
<td><strong>x86</strong></td>
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<td>SDX</td>
<td><strong>1110-X</strong></td>
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<td><strong>HW Appliance</strong></td>
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<td><strong>HW Appliance</strong></td>
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**Throughputs:** 10M, 200M, 500M, 1G, 2G, 3G, 4G & 5G

Nexus 1000V and vSphere Enterprise Plus are OPTIONAL

HW SSL offload up to 32K TPS for 2048-bit keys

Fully compatible with both ACI/APIC and RISE
Cisco SDN Solutions by the Numbers

- 1700+ Cisco Nexus® 9000 Series and Cisco® ACI Customers Globally
- 300+ Cisco APIC Customers
- 35 Ecosystem Partners
Cisco Citrix DaaS Solution
It’s about CHOICE of Outcomes!

On Prem DV

Managed DV

Hosted DV

DaaS

Announcing Cisco Powered DaaS with Citrix
Citrix Service Provider DaaS Architecture Benefits

- Choice of isolation models
  - Deploy with dedicated or shared resources
  - Match tenant security requirements and SLAs

- Simple deployment and management
  - Easy to deploy and manage
  - Built-in Monitoring
  - High user density

- Cloud-scale provisioning and orchestration
  - Rapidly deploy desktops and apps
  - Leverage multiple datacenters
  - Delegate management, enable self-service

- HDX Mobile optimizations
  - Multi-touch experience
  - High-performance over mobile networks
UCS Director 5.2 + Baremetal Agent

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Design Highlights: Hardware Connectivity Diagram
Cisco UCS Mini Edge-Scale Computing
Edge-Scale Computing Needs

At the Edge of Large IT

- Central IT
  - Remote Sites
  - Branch Offices
  - Customer Premise

Customer Needs
- Computing proximity for IoE and fog computing
- Comprehensive remote management at global scale
- Small footprint: space, power, and cooling
- Consistent configuration and policy enforcement
- Hardware separation (compliance and security)

Enabling Small-Scale IT

- Small and Medium Organizations
- Test/Dev

Customer Needs
- "No assembly required" total computing solution
- Simplified systems management
- 1-15 servers
Cisco UCS Mini: At the Edge of Large IT Configurations

Central IT

Cisco UCS Mini

Cisco UCS® Mini

Cisco UCS Mini

Cisco UCS Mini

UCS Management

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Cisco UCS Mini Product Concept

- Based on current chassis design
- Embed Fabric Interconnect Capability in the IOM slot
- Match current UCS Network model
- Common Management with UCS

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New In Chassis: Cisco UCS 6324 Fabric Interconnect

1 x 40G QSFP+
- License Required
- Ethernet and FCoE Only
- 4 x 10G Breakout or 1 x 40G
- Scalability Port
- Server Port
  - Direct-Attached C-series-No FEX
- Appliance Port
- FCoE Storage Port

4 x 10G SFP+
- Unified Ports
  - Uplink (Ethernet, Fibre Channel, and FCoE)
  - Server: Direct-Attached Only-No FEX
  - Appliance Port
  - Fibre Channel and FCoE Storage Port
  - Support for 1G or 10G

Management Port
- 10/100/1000 Mbps

USB Port
- Firmware Upgrades

Console Port

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Storage Architectural Support

**Network Attached Storage**
- iSCSI/NAS
- ETH 1
- ETH 2

**Direct Attached Storage**
- iSCSI/NAS/FC/FCoE
- ETH 1
- ETH 2

**SAN Attached Storage**
- iSCSI/NAS/FC/FCoE
- LAN
- SAN

Cisco MDS Nexus 5000

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Network Attached File/Block
No certification required
Design Highlights: Nimble CS300 Storage Connectivity

Nimble Storage SmartStack Physical Reference Architecture (Front View)

- 1 Cisco UCS 5108 Blade Chassis
- 4 Cisco UCS B200 M3 Blade Servers
- 2 Cisco UCS 6324 Fabric Interconnects
- 1 Nimble CS300 Storage Array

Blade Allocation
- 2 Blades for Software Infrastructure plus 8 Citrix XenApp_Virtual Machines
- 2 Blades for 300 Nonpersistent Citrix XenDesktop_Virtual Machines

Nimble Storage SmartStack Physical Reference Architecture (Connectivity View)

- Cisco Nexus Switch
- Cisco UCS 6324 Fabric Interconnects
- Cisco UCS 5108 Blade Chassis 4 x B200 M3
- Nimble Storage CS300 Array

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Testing Results: Full Scale, Mixed Workload, 500 Users

VDI Host Blade 1 of 2: VDI/XenDesktop Sessions

Citrix XenDesktop 7.6
500 Users

VDI Cluster: 300 Users
- 300 VMs total
- 150 VMs per blade
- 2 blades

RDS Cluster: 200 Users
- 8 VMs total
- 4 VMs per blade
- 2 blades

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Cisco UCS M Series
Cloud- Scale Computing

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Cisco UCS: Powering Applications at Every Scale

- Edge-Scale Computing
- Core Data Center Workloads
- Cloud-Scale Computing

Seamlessly Extend the Data Center to the Edge
Power and Operational Simplicity in the Data Center Core
More Efficient Way to Power Cloud-Scale Applications

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Cloud-Scale Inverts Computing Architecture

Core Enterprise Workloads
- SCM
- ERP/Financial
- Legacy
- CRM
- Email

Single Server

Hypervisor
- Many VMs

Many Applications

Cloud Scale

Single Application

Many Servers
- Online Content
- Gaming
- Mobile
- IoT
- E-Commerce

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Cisco System Link Technology
Extending the UCS Fabric inside the server

Compute

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Extending the UCS Fabric inside the server

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Extending the UCS Fabric inside the server

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Cisco UCS M-Series Overview

Front View
- 2 RU
- 8 Cartridges
- Intel Xeon E3 (4 Cores)
- 32 GB Memory
- 4 x SSD – Scale from 480 GB SATA to 6.4 TB SAS

Rear View
- Power Supplies – 2 x 1400 Watts
- 2 x 40 Gb Uplinks

Typical Rack Deployment
- 10 Gb 62xx Fabric
- Interconnects

Rack Capacity
- Chassis – 20
- Servers – 320
- Cores – 1280
- Memory – 10TB
- Storage – 128TB

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Design Highlights: Tested Use Cases
Cisco UCS M-Series Cartridge Servers running Citrix XenApp 7.6

Remote Desktop Session Host
Cisco UCS M142 Cartridge Server 1
Citrix XenApp 7.6
Hosted Shared Desktops
Windows Server 2012 R2

Remote Desktop Session Host
Cisco UCS M142 Cartridge Server 2
Citrix XenApp 7.6
Hosted Shared Desktops
Windows Server 2012 R2

With Intel® Xeon® processor
GPU Accelerated VDI
Evolving to VDI 2.0

VDI BC
RDP to W2K
VM on ESX

VDI 1.0
Thin prov, non-pers, Nehalem, 8GB dimms, no like Vista

VDI 1.5
Broker thingy better, XP good, expensive server and storage

VDI 1.1
AFA good, cheaper Servers, users want Win7

VDI 2.0
Multiple monitors, multimedia, 3D accelerated devices: End users are spoiled with desktops while I stumbled through VDI 1.0 and 1.1. GPU for VDI is here to save the day!


Problem:
Most VDI Infrastructure is Here

Users and Apps are Here
GPU Requirement for VDI User Profile

Regardless of “profile”...

All users can benefit from a GPU enhanced experience.

DESIGNER
Graphics and Media Professionals, Design Engineers

POWER USER
Financial Analysts, Traders, Design Reviewers

KNOWLEDGE WORKER
Office workers, productivity and line-of-business workers
It’s about getting the GPU to the VM…
Let’s Review!

- Cisco Citrix Partnership
- Cisco NetScaler 1000V and Cisco ACI
- Cisco Citrix DaaS Solution
- Cisco UCS Mini Edge-Scale Computing
- Cisco UCS M Series Cloud-Scale Computing
- GPU Accelerated Desktop Virtualization

What do you think? Questions? Ideas?

With Intel® Xeon® processor
Cisco and Citrix: Driving Business Outcomes

- Strong partnership from 2 technology leaders
- Continued innovation
- Validated solutions
- Services and support
Cisco and Citrix Session

Architecting Innovation with Cisco and Citrix (Best Practices)

Session: SYN405
Day/Time: Thursday, May 14

Room: W224A
Time: 10:30 – 11:15 am

Speakers:

Mike Brennan
Manager Desktop Virtualization Performance Solutions, Cisco

Rob Briggs
Principal Solution Architect, Strategic Alliances, Citrix
Continue the Journey with Cisco at Citrix Synergy

Visit Cisco Booth 202 to meet with Cisco experts on the solutions featured in today’s session.

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