

Cisco UCS SmartPlay Configurations for VMware Desktop Virtualization Workloads



The Cisco Unified Computing System™ (Cisco UCS™) is optimized for desktop virtualization workloads. Cisco UCS SmartPlay configurations help you easily and quickly deploy desktop virtualization by providing predefined configurations for every type of deployment scenario.

Desktop and application virtualization are increasingly popular ways for enterprises to reduce capital and operating expenses, improve efficiency, increase control, and expand connectivity. With virtual desktops, users can access their desktop images for laptops, thin clients, smartphones, or other devices from hosted, centralized infrastructure in a data center.

Although many enterprises are increasingly turning to desktop virtualization to address the need for increased business agility, risk mitigation, security, and support for bring-your-own-device (BYOD) initiatives, the appropriate infrastructure is critical to make these initiatives successful.

Cisco UCS provides the most optimized foundation for desktop and application virtualization infrastructure. The industry's first unified data center platform, Cisco UCS delivers a converged, programmable infrastructure that simplifies and accelerates enterprise-class application and service deployment in bare-metal, virtualized and cloud-computing environments. Unified, model-based management, end-to-end provisioning, and migration support come together in this next-generation data center platform to accelerate and simplify application deployment, with greater reliability and security.

Cisco UCS provides these important features:

- Integration of Cisco servers and network and I/O resources into one system
- Improvement of enterprise application availability and performance
- Scalability of service delivery to increase business agility
- Streamlining of data center resources to reduce total cost of ownership (TCO)
- Radical reduction in the number of devices requiring setup, management, power, cooling, and cabling

Cisco UCS is changing the economics and performance of server-hosted client computing, delivering a robust, high-performance computing fabric on which desktop virtualization can be deployed.

These are the primary elements of VMware View desktop virtualization architecture:

- VMware View transforms Microsoft Windows desktops into virtual desktops for on-demand services to users on any device.
- VMware View Manager provides broker and user management services, and VMware View Composer provides provisioning and deployment services.

The Cisco UCS controller node is the management server that hosts the OS or hypervisor management software (such as VMware vCenter), VMware View Manager, and Citrix View Composer. It can also house other management tools to support the environment.

The Cisco UCS desktop workload node hosts the Microsoft Windows XP, 7, and 8 virtual desktops as virtual machines for VMware View deployments.

Figures 1 and 2 show the Cisco[®] desktop virtualization architecture.

Figure 1. Cisco Desktop Virtualization Architecture (Building Blocks)

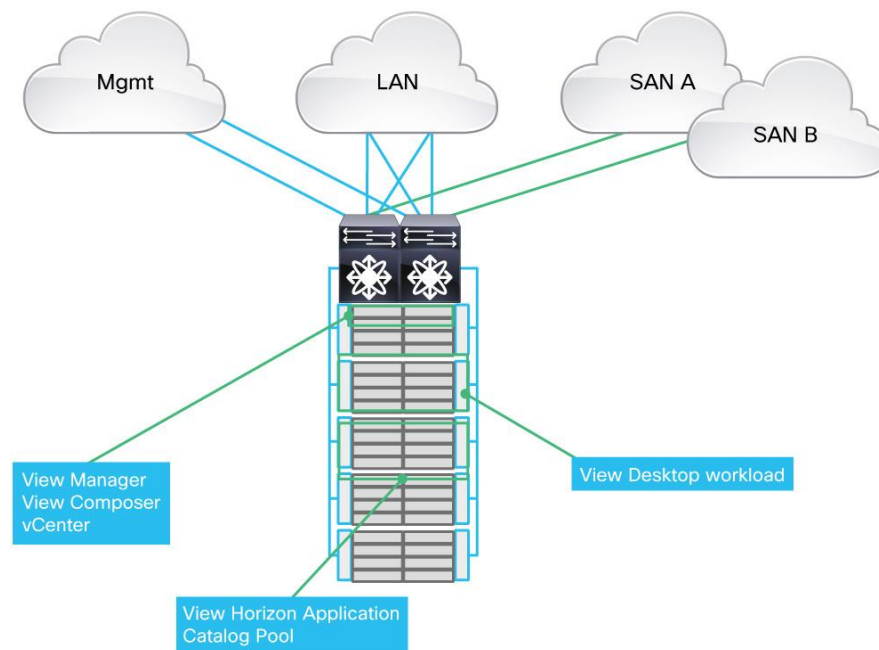
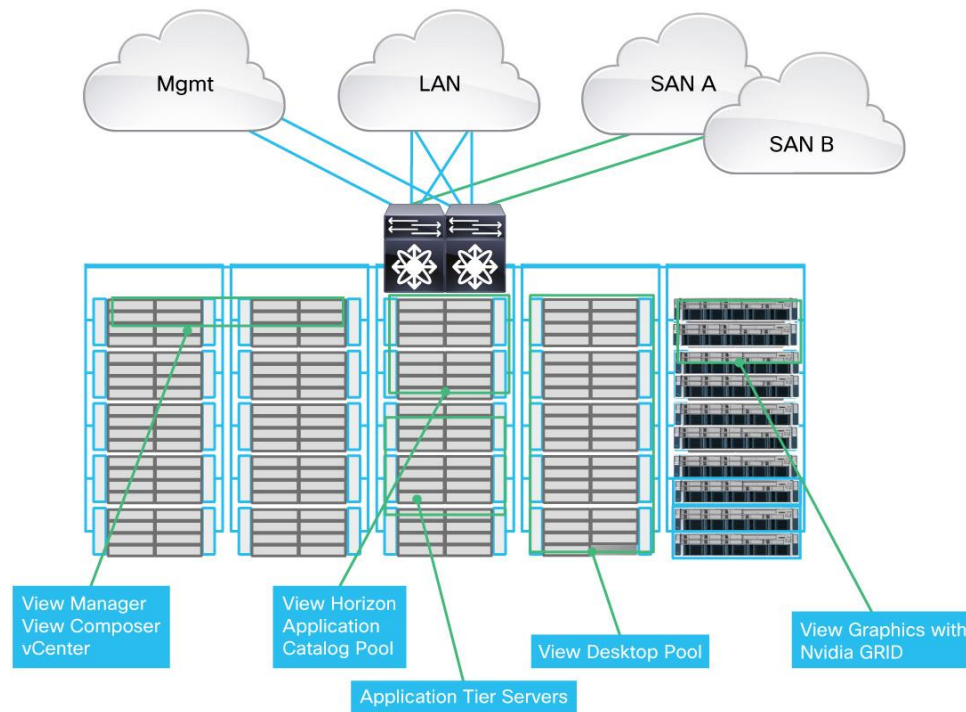


Figure 2. Cisco Desktop Virtualization Architecture (Scale-Out)



The configurations listed in Tables 1, 2, 3, and 4 provide some guidance on the target workloads based on assumptions about density, workload, and resiliency characteristics¹.

Table 1. Cisco UCS SmartPlay Configurations with VMware View for VMware View Workloads

Configuration	Configuration Description	Target Workload Description
Starter System Bundle 1 (starting with 300 users) UCS-EZ-VDI-ENT-VW	2 Cisco UCS 6248UP 48-Port Fabric Interconnects 1 Cisco UCS chassis with 2 Cisco 2208 IOM Modules 1 Cisco UCS B200 controller blade server <ul style="list-style-type: none"> • CPU: 2 x 2.40-GHz Intel Xeon processors E5-2665 • Memory: 8 x 16 GB (128 GB total) • Cisco UCS Virtual Interface Card VIC 1240 3 Cisco B200 desktop workload blade servers <ul style="list-style-type: none"> • CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 • Memory: 16 x 16 GB (256 GB total) • Cisco UCS VIC 1240 3 VMware View Premier 100 Packs	Networking Infrastructure to support up to 20,000 virtual desktops Management server blades to support up to 2,000 virtual desktops (for redundancy add another UCS B200 M3 Controller Blade) View virtual desktop workload blades to support 300 users 300 View seats with vSphere included Assumptions: Need to upgrade with HDD for OS boot drives or use external storage Need external storage to host VDI and user data storage
Expansion Bundle 1 (100 users) UCS-EZ-VDI-EXP-VW	1 Cisco B200 hosting blade servers <ul style="list-style-type: none"> • CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 • Memory: 16 x 16 GB (256 GB total) • Cisco UCS VIC 1240 1 VMware View Premier 100 Pack	View virtual desktop workload blade to support 100 users 100 View seats with vSphere included Assumptions: Need to upgrade with HDD for OS boot drives or use external storage Need external storage to host VDI and user data storage

¹ The sizing characterization in this document is provided for guidance purposes only. The characterization is based on a Microsoft Windows 7, 32-bit, 2-GB system with a knowledge worker user and the server running with 60 to 70 percent utilization. Cisco recommends that you assess and profile customer requirements to correctly size the workload and identify the appropriate configurations.

Configuration	Configuration Description	Target Workload Description
SMB Bundle 1 (100 users) UCS-EZ-VDI-SMB-VW	1 Cisco UCS C240 rack server <ul style="list-style-type: none"> • CPU: 2 x 2.40-GHz Intel Xeon processors E5-2690 • Memory: 16 x 16 GB (256 GB total) • HDD: 24 x 600 GB SAS • Cisco UCS VIC 1225 1 VMware View Premier 100 Pack	All-in-one configuration to support both the management infrastructure and View virtual desktop workload blades to support 100 users 100 View seats with vSphere included Assumptions: OS boot drives on server VDI and user data storage on server; no external storage required
Upgrade Option 1 UCSB-F-FIO-785M	1 Cisco UCS Fusion-io 785 GB module	On-board server storage for non-persistent View virtual desktop workload to support up to 100 users
Upgrade Option 2 UCS-EZ-M8GB-4PK	Memory: 4 x 8 GB (32 GB total)	32GB memory for upgrade to support power users on virtual desktop workload blade
Upgrade Option 3 UCS-EZ-M16GB-4PK	Memory: 4 x 16 GB (64 GB total)	64GB memory for upgrade to support power users on virtual desktop workload blade
Upgrade Option 4 UCS-EZ-300GB-2PK	HDD: 2 x 300 GB	To support either OS boot drives
Upgrade Option 5 UCS-EZ-600GB-2PK	HDD: 2 x 600GB	To support either OS boot drives

Table 2. Cisco UCS B-Series Blade Servers SmartPlay Configurations for VMware View Workloads

Configuration	Configuration Description	Target Workload Description
Starter System Bundle 1 (starting with 300 users) UCS-SP6-PR-B200	2 Cisco UCS 6248UP interconnects 1 Cisco UCS chassis with 2 Cisco 2208 IOM Modules 4 Cisco UCS B200 desktop workload blade servers <ul style="list-style-type: none"> • CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 • Memory: 16 x 16 GB (256 GB total) • Cisco UCS VIC 1240 	Networking infrastructure to support up to 20,000 virtual desktops Management server blades to support up to 2000 virtual desktops (for redundancy, add another Cisco UCS B200 M3 controller blade server) VMware View virtual desktop workload blades to support 300 users Assumptions: Need to upgrade HDD for OS boot drives or use external storage Need external storage to host virtual desktop infrastructure (VDI) and user data storage
Starter System Bundle 2 (starting with 400 users) UCS-EZ-VDI-B200KT	2 Cisco UCS 6296UP interconnects 1 Cisco UCS chassis with 2 Cisco UCS 2208 IOM Modules 2 Cisco UCS B200 controller blade servers <ul style="list-style-type: none"> • CPU: 2 x 2.40-GHz Intel Xeon processors E5-2665 • Memory: 8 x 16 GB (128 GB total) • Cisco UCS VIC 1240 • 2 x 300-GB HDD 4 Cisco UCS B200 desktop workload blade servers <ul style="list-style-type: none"> • CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 • Memory: 16 x 16 GB (256 GB total) • Cisco UCS VIC 1240 • 2 x 300-GB HDD 	Networking infrastructure to support up to 20,000 virtual desktops Management server blades to support up to 2000 virtual desktops (with N+N redundancy) VMware View virtual desktop workload blades to support 400 users Assumptions: OS boot drives on server Need external storage to host VDI and user data storage
Expansion Bundle 1 (100 users) UCS-EZ-PERF-B200PK	1 Cisco UCS B200 hosting blade servers <ul style="list-style-type: none"> • CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 • Memory: 16 x 16 GB (256 GB total) • Cisco UCS VIC 1240 	VMware View virtual desktop workload blade to support 100 users Assumptions: Need to upgrade HDD for OS boot drives or use external storage Need external storage to host VDI and user data storage

Configuration	Configuration Description	Target Workload Description
Expansion Bundle 2 UCS-EZ-VDI-B200PK	1 Cisco UCS B200 hosting blade servers <ul style="list-style-type: none"> CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 Memory: 8 x 16 GB (128 GB total) Cisco UCS VIC 1240 	VMware View virtual desktop workload blade to support 60 users (with option to upgrade memory to 384 GB) (or hosting VMware View ThinApp hosted applications or application catalog) Assumptions: Need to upgrade HDD for OS boot drives or use external storage Need external storage to host VDI and user data storage
Expansion Bundle 2 (100 users) UCS-EZ-PR-FIO-B200	1 Cisco UCS B200 hosting blade servers <ul style="list-style-type: none"> CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 Memory: 16 x 16 GB (256 GB total) Cisco UCS VIC 1240 Cisco UCS Fusion-io 785 GB Module 	VMware View virtual desktop workload blade to support 100 users On-board server storage for nonpersistent VMware View virtual desktop workload to support 100 users (includes VDI storage) Assumptions: Need to upgrade HDD for OS boot drives or use external storage External storage to host user data storage only
Upgrade Option 1 UCSB-F-FIO-785M	1 Cisco UCS Fusion-io 785 GB Module	On-board server storage for nonpersistent VMware View virtual desktop workload to support up to 100 users
Upgrade Option 2 UCS-EZ-M8GB-4PK	Memory: 4 x 8 GB (32 GB total)	32 GB of memory for upgrade to support power users on virtual desktop workload blade
Upgrade Option 3 UCS-EZ-M16GB-4PK	Memory: 4 x 16 GB (64 GB total)	64 GB of memory for upgrade to support power users on virtual desktop workload blade
Upgrade Option 4 UCS-EZ-300GB-2PK	HDD: 2 x 300 GB	Supports either OS boot drive
Upgrade Option 5 UCS-EZ-600GB-2PK	HDD: 2 x 600 GB	Supports either OS boot drive

Table 3. Cisco UCS C-Series Rack Servers SmartPlay Configurations for VMware View Workloads

Configuration	Configuration Description	Target Workload Description
Starter System Bundle 1 (starting with 300 users) UCS-EZ-VDI-C220KT	2 Cisco UCS 6248UP interconnects 2 Cisco Nexus® 2232PP 10GE Fabric Extenders 2 Cisco UCS C220 controller blade servers <ul style="list-style-type: none"> CPU: 2 x 2.40-GHz Intel Xeon processors E5-2665 Memory: 8 x 16 GB (128 GB total) Cisco UCS VIC 1225 4 Cisco UCS C220 M3 Rack Servers <ul style="list-style-type: none"> CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 Memory: 8 x 16 GB (128 GB total) Cisco UCS VIC 1225 	Networking infrastructure to support up to 20,000 virtual desktops Management server to support up to 2000 virtual desktops VMware View virtual desktop workload blades to support 300 users (with memory upgrade to 256 GB per server) Assumptions: Need to upgrade HDD for OS boot drives or use external storage External storage to host VDI and user data storage
Expansion Bundle 1 (100 users) UCS-EZ-VDI-C220PK	1 Cisco C220 M3 Rack Server <ul style="list-style-type: none"> CPU: 2 x 2.70-GHz Intel Xeon processors E5-2680 Memory: 8 x 16 GB (128 GB total) LSI MegaRAID Cisco UCS VIC 1225 	VMware View virtual desktop workload blade to support 100 users (with memory upgrade to 256 GB per server) Assumptions: Need to upgrade HDD for OS boot drives or use external storage External storage to host VDI and user data storage
Upgrade Option 1 UCS-EZ-M8GB-4PK	Memory: 4 x 8 GB (32 GB total)	32 GB of memory for upgrade to support power users on virtual desktop workload server
Upgrade Option 2 UCS-EZ-M16GB-4PK	Memory: 4 x 16 GB (64 GB total)	64 GB of memory for upgrade to support power users on virtual desktop workload server
Upgrade Option 3 UCS-EZ-300GB-2PK	HDD: 2 x 300 GB	Supports either OS boot drive or VDI storage on rack servers
Upgrade Option 4 UCS-EZ-600GB-2PK	HDD: 2 x 600 GB	Supports either OS boot drive or VDI storage on rack servers

Table 4. Small and Medium-Sized Business (SMB) Cisco UCS C-Series Rack Servers SmartPlay Configurations for VMware View Workloads

Configuration	Configuration Description	Target Workload Description
SMB Bundle 1 (100 users) UCS-EZ-C240-2690	1 Cisco UCS C240 Rack Server <ul style="list-style-type: none">• CPU: 2 x 2.40-GHz Intel Xeon processors E5-2690• Memory: 16 x 16 GB (256 GB total)• HDD: 24 x 600-GB SAS• Cisco UCS VIC 1225	All-in-one configuration to support both the management infrastructure and VMware View virtual desktop workload blades to support 100 users Assumptions: OS boot drives on server VDI and user data storage on server; no external storage required

For More Information

- Cisco Desktop Virtualization: <http://www.cisco.com/go/vdi>
- Cisco Desktop Virtualization Reference Architectures: <http://www.cisco.com/go/vdidesgins>
- Cisco Quick Catalog for SmartPlay Bundles: <http://www.cisco.com/go/quickcatalog>
- Cisco Unified Computing System: Programmable Infrastructure:
<http://www.cisco.com/en/US/netsol/ns1166/index.html>
- Unified Model-Based Management: <http://www.cisco.com/en/US/netsol/ns1169/index.html>
- Cisco Servers for the Cisco Unified Computing System:
http://www.cisco.com/en/US/prod/ps10265/cisco_servers_for_ucs.html



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