

Cisco Desktop Virtualization and Virtual Workspace (VXI) Smart Solution Ordering Guide

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A Guide to Ordering the Cisco Virtual Workspace (VXI) Smart Solution

Version 2.7

For Partners

Services Operational Enablement

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Introduction

About This Ordering Guide

The purpose of this ordering guide is to provide detailed instructions about how qualified Cisco® partners can order Cisco Virtual Workspace (VXI) Smart Solution components. This document also includes information about how to get support for the ordering process.

With this guide, partners should be able to quickly and easily configure a solution using the Cisco Commerce Workspace (CCW). In addition, this guide will walk you through the solution components along with the ordering process.

Introduction to Desktop Virtualization and the Cisco Virtual Workspace (VXI) Smart Solution

The modern workforce is diverse, geographically dispersed, and mobile, using a variety of devices, such as laptops, ultrabooks, tablets, and smartphones. To maximize potential, IT must implement a strategy that improves security, reduces costs, and enhances organizational flexibility and agility, while offering users ubiquitous access, freedom, and choice. IT leaders need to help the organization move from a physical PC work environment to a model in which desktops, applications, data, and content can be delivered anytime, anywhere, and on any device. Desktop virtualization, also referred to as virtual desktop infrastructure (VDI), provides this solution.

Recently, organizations have begun deploying desktop virtualization on a broad basis and across a variety of user profiles. Increased proliferation of devices, mobile work styles, and bring-your-own-device (BYOD) initiatives, as well as data security and reduced TCO, are cited as primary drivers for this adoption. Desktop virtualization can offer a near-native end-user experience on almost any device, while at the same time providing increased control, greater security, and lower TCO to IT and the business. IT is happy, end users are happy, and the business benefits via greater productivity and reduced costs. **Cisco® Desktop Virtualization Solutions** provide a set of validated data center infrastructure designs that, along with products and services provided by Cisco partners, address a broad range of customer desktop virtualization needs.

Figure 1 Evolving Needs for a Unified Workspace



The solution combines Cisco's industry-leading data center, networking, and collaboration workspace technologies with services, validated designs, and a robust partner ecosystem to help IT simplify deployment, reduce costs, and mitigate risk.

Today's workers may also be connected in ways beyond the traditional desktop. These users are often mobile and have BYOD requirements as well as needs for integrated collaboration and media-rich applications. A complete virtual desktop deployment for these users requires an end-to-end approach that takes into account network, security, collaboration, and user device requirements, in addition to data center needs. The **Cisco Virtual Workspace (VXI) Smart Solution** addresses these requirements by building on the Cisco Desktop Virtualization Solutions with networking, security, and collaboration architectures, together with an ecosystem of leading technology partners, to deliver a complete, validated end-to-end virtual workspace solution (Figure 1).

At the core of the solution is the highly scalable Cisco Unified Data Center, which securely and efficiently hosts virtual desktops and applications and dramatically simplifies deployment and management.

The centrally hosted virtual desktops are delivered to user devices at any location across a secure wired or wireless network infrastructure, optimized to deliver virtual desktop, communications, and collaboration services, based on the Cisco Borderless Network Architecture.

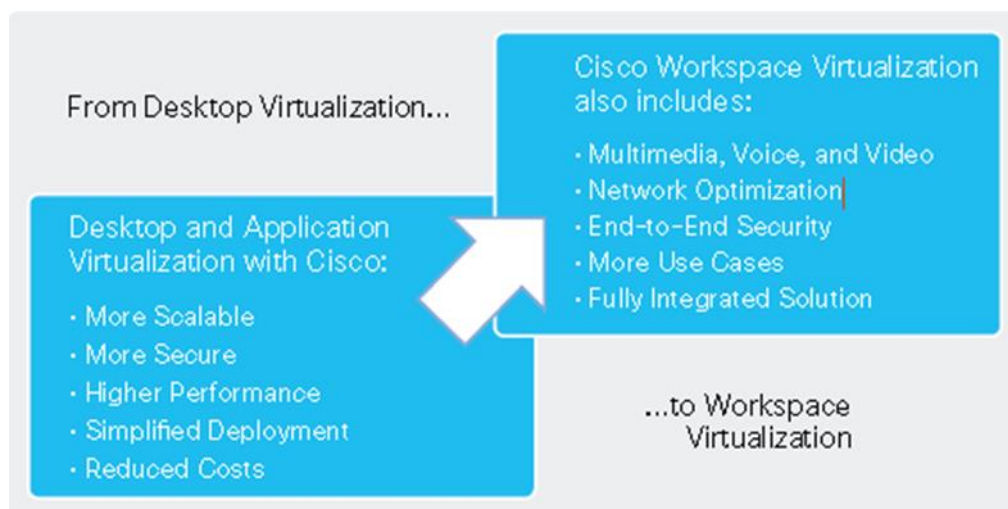
Virtual desktops and applications can be combined with Cisco Collaboration Solutions including the Cisco Jabber™ platform, which allows users to be productive from anywhere, on any device: PCs, Macs, tablets, smartphones, and thin clients. Users have easy access to presence, instant messaging, voice and video, voice messages, and conferencing.

Cisco Virtualization Experience Media Engine (VXME) extends the Cisco Jabber unified collaboration experience to users in virtualized environments by enabling intelligent processing of real-time voice and video traffic on the local device. Organizations can deliver the same uncompromised user experience presented by the Cisco Jabber application on a virtual desktop to thin clients and Microsoft Windows PCs.

The Cisco Virtual Workspace (VXI) Smart Solution delivers an end-to-end workspace solution that provides the security, scalability, and flexibility of desktop and application virtualization together with voice and video capabilities for an uncompromised and productive user experience. Using this virtual approach, desktops and complete unified workspaces, which combine all desktop, enterprise, software-as-a-service (SaaS), and mobile applications with communications and collaboration services, can be consistently delivered to both company-issued and user-owned devices in any location.

Figure 2 Delivering the Cisco Virtual Workspace (VXI) Smart Solution

Cisco Workspace Virtualization Also Includes:



With Cisco Virtual Workspace (VXI) Smart Solution validated designs, IT can accelerate the successful adoption of desktop and application virtualization and a unified workspace with the world's

first fully integrated and validated solution that addresses a broad set of use cases and work styles (Figure 2). Cisco addresses every dimension of planning, deployment, and support for the end-to-end infrastructure to implement virtualized workspaces across organizations, providing the architecture, expertise, and assistance from Cisco and its partners to stay ahead of evolving needs.

Cisco Virtual Workspace (VXI) Smart Solution is a holistic solution, delivering workspaces by combining best-in-class technologies and services from Cisco with technologies from industry-leading desktop virtualization software partners Citrix and VMware and ecosystem partners including NetApp, EMC, Nimble Storage, Intel, and others.

Cisco's approach provides benefits for the entire organization and for a broad variety of organizations and user types:

- For end users: A high-quality user experience on any device from anywhere
- For IT: A scalable and secure infrastructure to deliver IT as a service (ITaaS)
- For the organization: Improved agility and productivity with lower operating costs
- For field teams that need a mobile workspace: Secure access to data, applications, and communications while at the office, in branch offices, engaging with customers, and on the road
- For remote and branch-office users: Access from personal office spaces or shared flex-office spaces to the intranet, collaboration and enterprise systems, and shared resources

The solution offers:

- For teleworkers: The same access at home as in the office to applications, desktops, and collaboration tools
- For knowledge workers: Nonstop access to their desktops, enterprise applications, and communications from a broad set of locations
- For campus and conference-room professionals: Portable voice, video, and data on laptops and tablets; onsite mobility is important to many types of workgroups
- For temporary workers, contractors, and partners: Fast access from the campus or their own offices to many of the same systems as permanent staff

What Is New in Cisco Virtual Workspace (VXI) Smart Solution Version 2.7

The following features are new in Cisco Virtual Workspace (VXI) Smart Solution Version 2.7:

- Integration of Cisco UCS® Storage Accelerator [[PLS ADD THIS PRODUCT NAME TO THE MDF]] with 768 GB of disk space for desktop storage optimization
- Cisco UCS Central Software: a manager for multiple instances of Cisco UCS Manager
- Support for VMware Hypervisor ESXi 5.1 with VMware View 5.1.2
- Support for Citrix XenDesktop 5.6U1 and XenApp 6.5
- Cisco Wide Area Application Services (WAAS) 5.1 (with optimization for Citrix HDX Multi-Stream)
- Cisco VXME and the Cisco Jabber platform within the hosted virtual desktop (HVD)
- Native Cisco Jabber applications
- Cisco TrustSec® 3.0 with Cisco Nexus® 1000V Series Switches
- Cisco BYOD Smart Solution alignment

For detailed information about VMware View 5.1 capabilities, please refer to the appropriate VMware product documentation at <http://www.vmware.com/products/view/overview.html>.

For detailed information about Citrix XenDesktop 5.6 and XenApp 6.5 capabilities, please refer to the appropriate Citrix product documentation at <http://support.citrix.com/proddocs/topic/xendesktop/xd-library-wrapper.html> and <http://support.citrix.com/proddocs/topic/xenapp/ps-library-wrapper.html>.

Cisco Virtual Workspace (VXI) Smart Solution

Benefits for Business and IT

The Cisco Virtual Workspace (VXI) Smart Solution transforms the enterprise by providing a solution that addresses the top business and IT requirements while simplifying the workspace user experience.

The Cisco Virtual Workspace (VXI) Smart Solution delivers the best workspace solution:

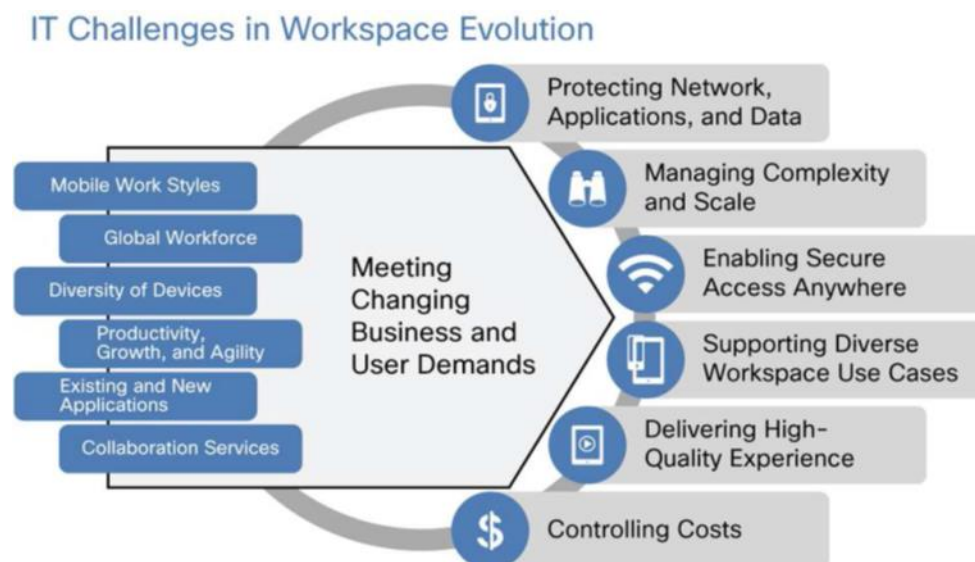
- For end users, with a high-quality user experience on any device at any location
- For IT, providing a scalable and secure infrastructure to deliver IT as a service (ITaaS)
- For business, improving agility and productivity while lowering operating costs

Building the New Unified Workspace

Today's IT departments face a rapidly evolving workplace. The workforce is diverse and geographically dispersed, including knowledge and task workers, executives, partners, consultants, offshore contractors, and distributed call center operations, connecting from locations around the world at all times. This workforce is also increasingly mobile, conducting business in traditional offices, in conference rooms, in customer and partner locations, in home offices, on the road, in shared workplaces, and in local coffee shops.

The modern workforce wants to use a growing array of devices that is chosen based on personal preference, location, and activity: smartphones, tablets, ultrabooks, personal laptop computers, etc. This shift increases pressure on IT to provide secure network access and a positive user experience on both company-managed and employee-owned devices while helping ensure protection of corporate data. These challenges are compounded by the many combinations of user types, existing and emerging applications, communications and collaboration needs, diverse endpoint devices, and operating systems. IT must meet these new workspace requirements while managing the associated complexity and costs (Figure 3).

Figure 3 IT Challenges as Workspaces Evolve



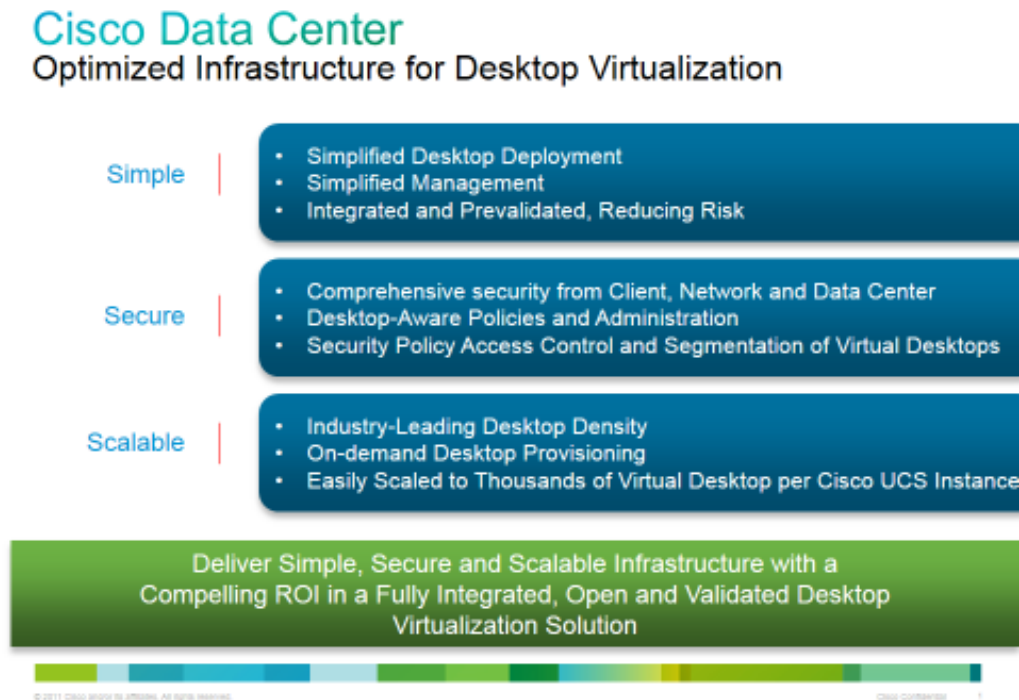
The Cisco Virtual Workspace (VXI) Smart Solution addresses the IT challenges represented in Figure 3 while providing the following business benefits:

- **Flexibility:** The Cisco Virtual Workspace (VXI) Smart Solution supports user choice to accommodate different work styles and combinations of company- and user-owned endpoint devices while enhancing the user experience for improved productivity and user satisfaction. It also provides a flexible, open virtual workspace platform that offers agility for a variety of deployment scenarios and enables rapid response to changing business needs. It allows IT to provision and manage end-user services more quickly and efficiently through centralized control of end-to-end virtual desktop and collaboration infrastructure and services.
- **Security:** The Cisco Virtual Workspace (VXI) Smart Solution improves data confidentiality and integrity by centralizing, protecting, and controlling access to critical data and intellectual property at the data center rather than across diverse endpoints. The Cisco Virtual Workspace (VXI) Smart Solution integrates policy-based identity services that enable device profiling and posture assessment and provide need-to-know access to centralized resources. This approach reduces exposure by protecting the organization from data loss, compliance litigation, loss of revenue, and brand damage. It also allows IT to respond quickly to security attacks and planned and unplanned disruptions: technical, natural, or human made.
- **Uncompromised user experience:** The Cisco Virtual Workspace (VXI) Smart Solution delivers an optimal desktop virtualization user experience for campus, branch-office, and remote users. With the Cisco Virtual Workspace (VXI) Smart Solution delivered with Cisco Unified Communications Manager and the Cisco Jabber platform, users can have a high-definition voice and video collaboration experience on virtual desktops across diverse operating systems and devices.

Benefits for Data Center and IT Managers

In addition to the business benefits just described, the Cisco Virtual Workspace (VXI) Smart Solution provides multiple benefits for IT and data center managers (Figure 4).

Figure 4 Cisco Virtual Workspace (VXI) Smart Solution Benefits for Data Center and IT Managers



The following benefits are provided by the Cisco Virtual Workspace Smart Solution:

- **Unified workspace:** The Cisco Virtual Workspace (VXI) Smart Solution supports a comprehensive ecosystem of endpoints that include unified communications and multimedia capabilities. Endpoints supported by this solution include industry-leading capabilities such as Power over Ethernet (PoE), hardware and software form factors, mobility support, and native unified communication media engines.
- **Integration with Cisco Unified Communications:** Users can connect to HVDs to make and receive voice or video calls from the Cisco Jabber platform, which controls the user's desk phone or Cisco VXME. The control plane is integrated into the virtual desktop. The media plane remains outside the virtual desktop display protocol, which enables the network to perform quality-of-service (QoS) functions such as packet prioritization, call admission control, and path optimization.
- **Simplified configuration:** The Cisco Unified Computing System™ (Cisco UCS) integrates the computing, virtualization, hypervisor, fabric interconnect, and storage functions in the Cisco Virtualized Data Center. Cisco UCS Manager simplifies configuration and improves manageability for all aspects of the Cisco UCS domain. The Cisco Nexus 1000V Series Switches provide switching, traffic isolation, and policy-insertion capabilities for virtualized environments, extending full networking capabilities to the virtual machine level.
- **Network optimization:** Cisco WAAS technologies can improve application response times by optimizing bandwidth consumption. For instance, remote print operations can be launched from a user's virtual desktop within the data center to a network printer at a remote branch office. Cisco WAAS can automatically recognize and compress the printing traffic and spool

the resulting print file at the remote location. This capability provides a superior user experience while improving WAN efficiency.

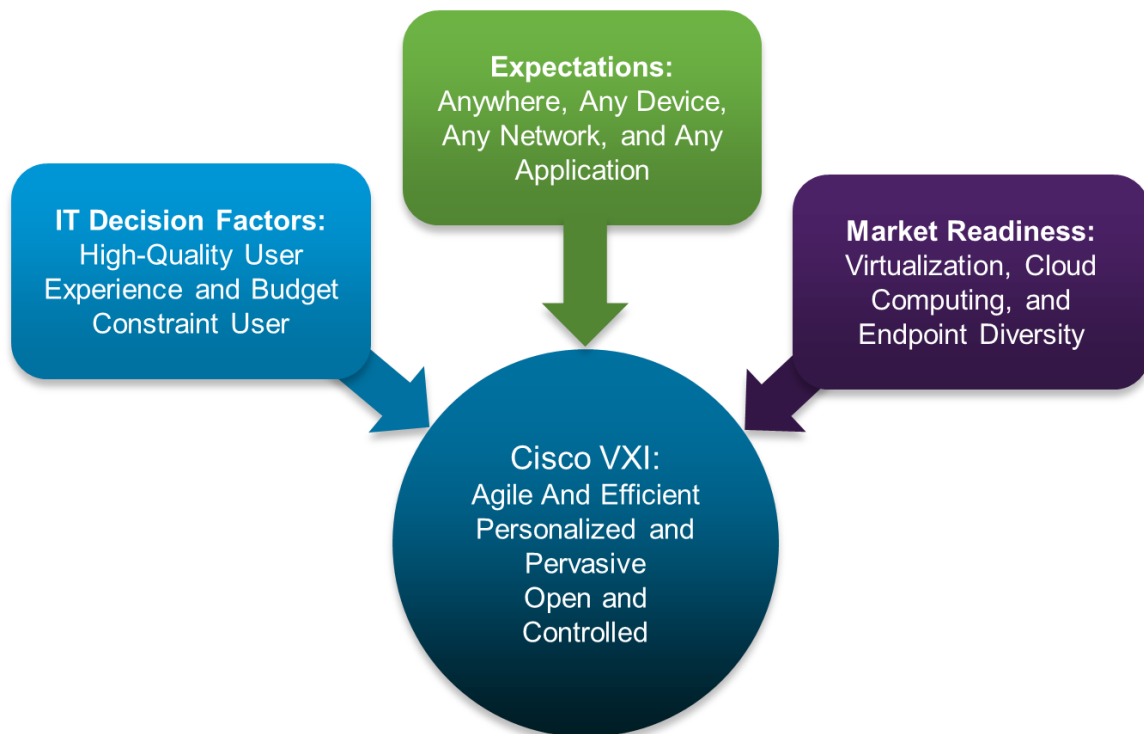
- **Security:** Network connectivity can be controlled at the access layer, using industry-standard IEEE 802.1x for port-level authentication. Cisco access switches can thus enforce a security policy at the physical-device level and user level by interacting with the credentials-based access control integrated with directory services such as Microsoft Active Directory. Teleworker users, such as mobile users using laptop computers, as well as fixed users, such as home-based teleworkers, can use Cisco's award-winning VPN technology to connect to the enterprise network across the Internet. The user's virtual desktop data is fully protected as it traverses the Internet in an encrypted VPN tunnel. This technology can also be deployed for traffic traversing a managed WAN.
- **End-to-end integration and validation:** The Cisco Virtual Workspace (VXI) Smart Solution is an end-to-end system, integrating network and collaboration functions into the virtual desktop experience. The system has been designed and tested as an integrated whole, and mitigates the system integration investment typically required when deploying desktop virtualization and related technologies. The design guidelines and best practices provided in this document reduce the risks associated with desktop virtualization deployments.
- **Services:** Complementing Cisco solutions, Cisco Desktop Virtualization Services deliver comprehensive, expert-based services across the entire system that can help you rapidly implement a desktop virtualization solution of your choice anywhere, with any device, over any medium. These services also help provide the right fit with your existing investments and align your IT and business strategies. Our services can help you plan, build, and manage a secure desktop virtualization solution.

Cisco Virtual Workspace (VXI) Smart Solution System Specifications

Solution Overview

The Cisco Virtual Workspace (VXI) Smart Solution transforms the enterprise with a solution that breaks down the barriers between business units historically associated with the streamlining of the participant workspace. It permits you to deliver to your employees an environment that is both agile and efficient, that enables personalized and pervasive user interactions, and that combines both openness and control through centralized business assets. It creates a dynamic “desktop cloud” that moves with the user, adapts to the user’s location and client device, and enforces enterprise security policies (Figure 5).

Figure 5 Cisco Virtual Workspace (VXI) Smart Solution: Bringing IT Requirements, User Expectations, and Market Forces Together



Cisco Virtual Workspace (VXI) Smart Solution Architecture

The Cisco Virtual Workspace (VXI) Smart Solution provides an optimized end-to-end infrastructure for desktop virtualization deployments. This system architecture consists of three fundamental building blocks: Cisco Virtualized Data Center, Virtualization-Aware Network, and Virtualized Collaborative Workspace (Figure 6).

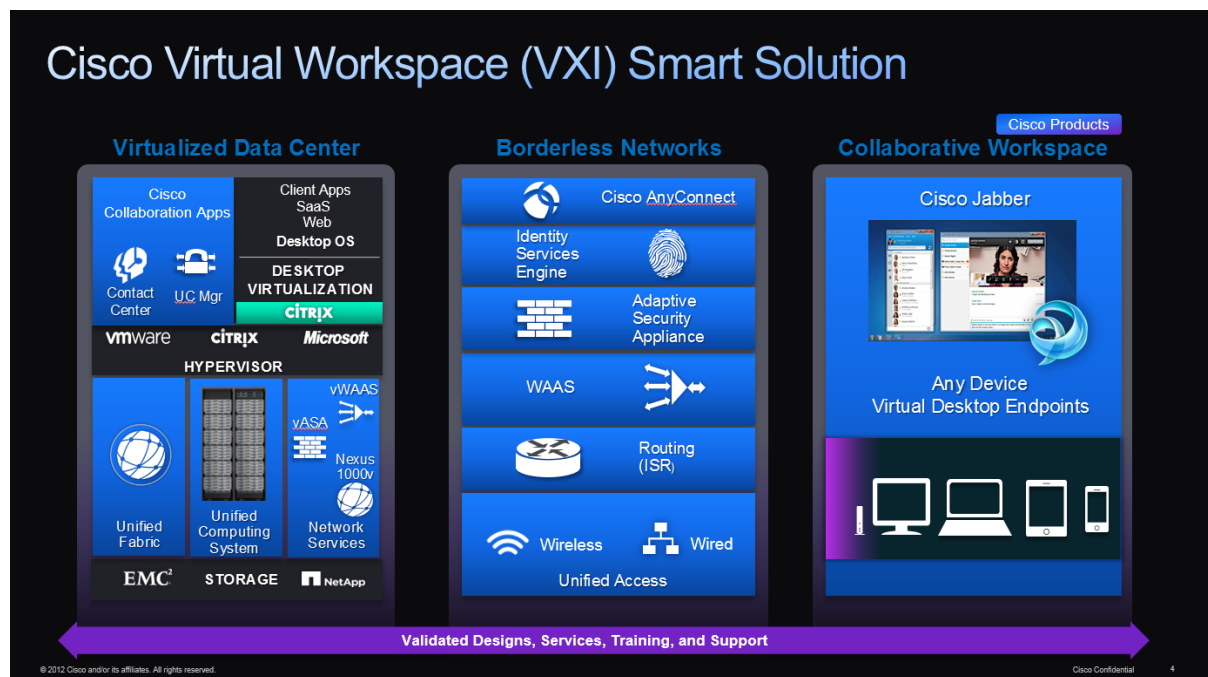
The Cisco Virtualized Data Center is based on the Cisco Unified Data Center architecture, which creates data centers that are efficient, agile, and transformative. Cisco’s Virtualized Data Center provides the computing, switching, storage, and virtualization capabilities needed to support HVD solutions from Citrix and VMware.

The Cisco Virtualization-Aware Network is based on the Cisco Borderless Network architecture, which reduces operation complexity and provides the services needed to connect anyone, anywhere, on any device to the workspace. The Cisco Virtualization-Aware Network connects data centers, enterprise campuses, branch offices, and teleworkers to help ensure that traffic flowing between end users and their hosted desktops is transported securely, reliably, and efficiently. To achieve these goals, the network employs bandwidth optimization, load balancing, QoS, security, and other technologies from Cisco's industry-leading portfolio.

The Cisco Virtualized Collaborative Workspace builds on the Cisco Collaboration architecture, extending the reach of the virtual desktop to a wide range of endpoints while supporting critical collaboration capabilities hosted in the data center. Endpoints can be zero clients, thin clients, mobile devices, or thick clients, and they can include USB-based print and storage capabilities. The Cisco Virtualized Collaborative Workspace includes unique capabilities for integrating Cisco Unified Communications endpoints with HVDs, including the control of Cisco IP Phones from virtual desktops.

The Cisco Virtual Workspace (VXI) Smart Solution also supports management tools for both Cisco and ecosystem partner products, as well as a comprehensive services portfolio that helps enterprises make the most of their virtualization investments.

Figure 6 Cisco Virtual Workspace (VXI) Smart Solution Architecture



The Cisco Virtual Workspace (VXI) Smart Solution combines the fully virtualized user workplace, network, and data center into a manageable, end-to-end strategic asset built on the following architectural pillars:

- The virtualized collaborative workplace, building on Cisco's collaboration architecture and portfolio, extends the reach of the virtual desktop to a diverse range of endpoint platforms, including thin clients, zero clients, smartphones, tablets, and other emerging classes of devices. Unlike today's desktop-only virtualization solutions, this virtual workplace supports critical collaboration capabilities such as telepresence, conferencing, messaging, and integrated workspaces.

- The workplace connects to the desktop cloud through a virtualization-aware network, based on Cisco Borderless Network Architecture. For the first time, the network maintains awareness of the virtual machine user session, permitting quality-of-service (QoS) and security policies to be applied at the virtual desktop level and then prioritizing media and applications within the virtual desktop session. The virtualization-aware network also optimizes the bandwidth consumed by each virtual desktop session and optimizes multimedia, print services, and other capabilities, helping ensure an end-to-end optimal user experience, regardless of geography.
- The core of the Cisco Virtual Workspace (VXI) Smart Solution is the virtualized data center, based on the Cisco Data Center Business Advantage (DCBA) framework, which includes the three foundational elements of unified computing, unified network services, and unified fabric along with industry-leading ecosystem partners. This comprehensive open and standards-based architecture provides computing and network infrastructure simplification and cost reduction, a simplified operating model, and systems excellence delivered through enhanced security, business continuance, virtual machine mobility, energy efficiency, and application performance.

Cisco Virtual Workspace (VXI) Smart Solution Components Overview

The Cisco Virtual Workspace (VXI) Smart Solution includes components from both Cisco and third-party technology partners.

The solution includes baseline components that provide the foundation for a virtualized desktop deployment:

- **Data center:** As part of the Cisco Unified Data Center, Cisco UCS provides the foundational computing elements for the Cisco Virtual Workspace (VXI) Smart Solution. Cisco UCS servers, available in blade and rack form factors, provide outstanding scalability, performance, and density for virtual desktops. The Cisco Unified Fabric includes Cisco Nexus data center switches, SAN switches, and virtual switches. Cisco Unified Management simplifies the deployment and administration of the desktop virtualization infrastructure. [Release 2.7 offers new Cisco UCS capabilities, including Cisco UCS Central Software.](#)
- **Network:** The Cisco Virtual Workspace (VXI) Smart Solution network components include LAN switches, wireless access networks, Cisco Integrated Services Routers (ISRs) for the WAN, and Cisco Wide Area Application Services (WAAS). [Release 2.7 supports Cisco WAAS 5.1 \(with optimization for Citrix HDX Multi-Stream\).](#)
- **Security:** Cisco Adaptive Security Appliances (ASA), Cisco AnyConnect® Secure Mobility Solution, Cisco Virtual Security Gateway (VSG), and Cisco Identity Services Engine (ISE) provide security. [Release 2.7 supports Cisco TrustSec 3.0 within the Cisco Nexus 1000V Series.](#)
- **Storage:** The Cisco Virtual Workspace (VXI) Smart Solution supports SANs, direct-attached storage, and network-attached storage (NAS), including partner and Cisco Virtual Workspace (VXI) Smart Solution validated solutions from EMC and NetApp. The Cisco Virtual Workspace (VXI) Smart Solution also supports a broad set of storage architectures and storage optimization technologies to help ensure the performance and costs efficiencies required for different deployments. [Release 2.7 Integrates the Cisco UCS Storage Accelerator with 768 GB of disk space for desktop storage optimization.](#)
- **Hypervisor:** This component virtualizes host systems so that multiple virtual desktops, running as virtual machines, can share the same hardware resources. Supported hypervisors include Citrix XenServer, Microsoft Hyper-V, and VMware vSphere. [Release 2.7 supports VMware ESXi 5.1.](#)
- **Desktop virtualization:** Desktop images are virtualized for deployment from centralized servers. Connection brokers automate the connection of client endpoints to virtual desktops.

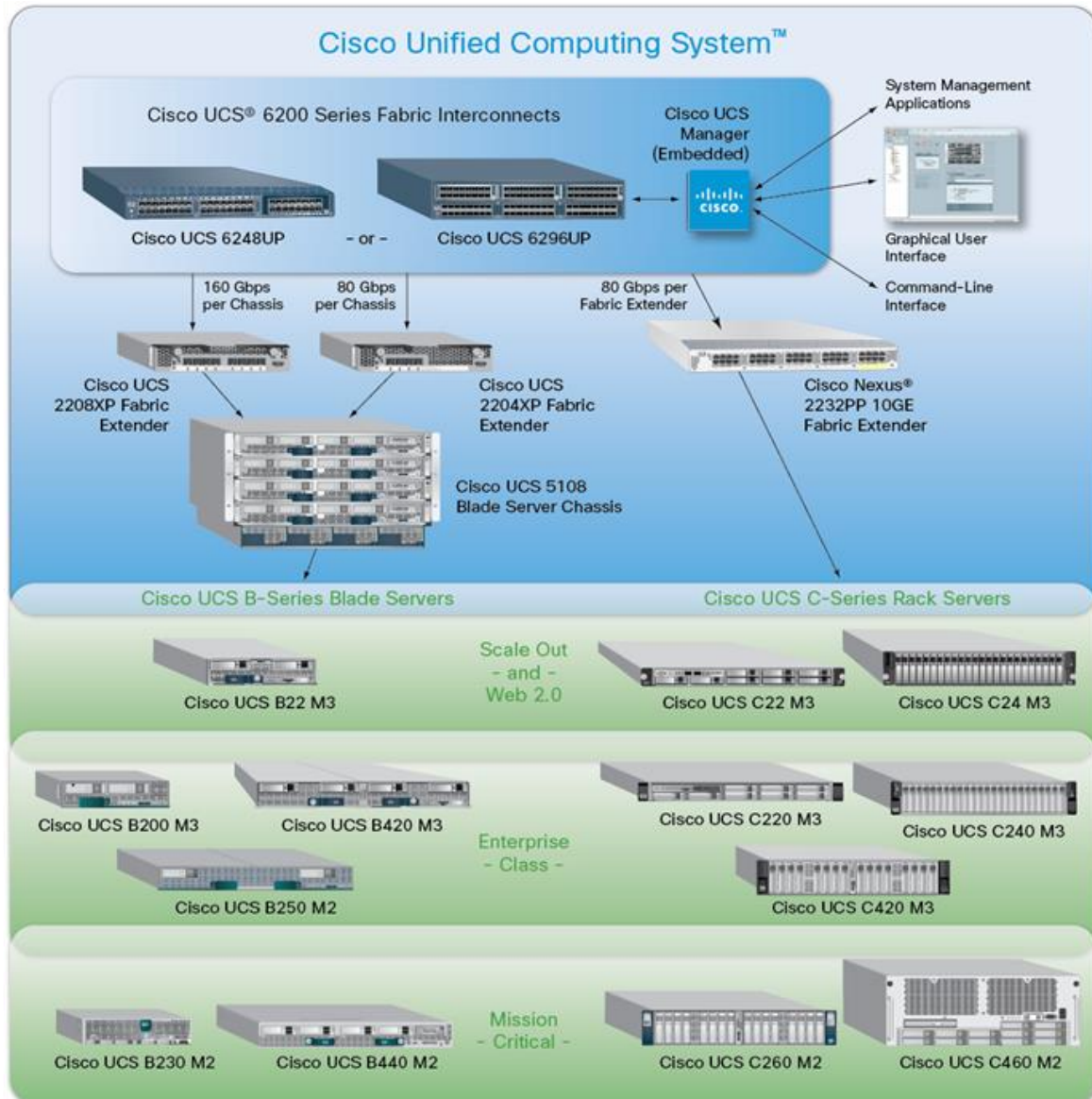
Solutions include Citrix XenDesktop and XenApp and VMware View. [Release 2.7 supports VMware View 5.1.2 along with Citrix XenDesktop 5.6U1 and XenApp 6.5.](#)

- **Collaboration solutions:** The Cisco Virtual Workspace (VXI) Smart Solution can serve as the foundation for Cisco Unified Communications, a platform that securely delivers the right forms of communication (instant messaging, presence, voice, and video) to the right endpoint (IP phones, Cisco Jabber technology on HVDs, desktop and mobile devices, and video endpoints).
- **Endpoints:** Endpoints are the means by which HVDs are accessed and used. The Cisco Virtual Workspace (VXI) Smart Solution supports a broad range of thick clients, thin clients, zero clients, and mobile devices, such as, laptops, ultrabooks, tablets, and smartphones. [Release 2.7 provides a major new capability with the inclusion of Cisco VXME.](#)

Solution Components: Data Center

The Cisco Virtual Workspace (VXI) Smart Solution for desktop virtualization includes mandatory and optional components from both Cisco and third-party technology partners. Mandatory components are those that provide the basic foundation for a virtualized desktop deployment. Cisco UCS components are shown in Figure 7.

Figure 7 Cisco Unified Computing System Components



The solution also supports the Vblock™ Infrastructure Systems, VSPEX, and FlexPod prepackaged infrastructure platforms. See <http://www.vce.com/solutions/> for more information about the Vblock architecture. See www.cisco.com/go/vspex for more information about VSPEX. See <http://www.netapp.com/us/technology/flexpod/> and <http://www.cisco.com/> for more information about FlexPod.

Also see the Cisco Virtual Workspace (VXI) Smart Solution 2.7 Performance and Capacity Results Guide for Citrix and VMware for sizing virtual resource requirements. This document can be found at

the following link:

http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/VXI/CVD/VXI_PCV_C.pdf

Summary of Data Center Computing Components

Tables 1, 2, and 3 summarize and provide software release information for the Cisco data center products that are part of the Cisco Virtual Workspace (VXI) Smart Solution.

Table 1 Cisco Data Center Computing Components

Component	Software Release
Cisco Unified Computing System ® Options <ul style="list-style-type: none"> • Cisco UCS 5108 Blade Server • Cisco UCS B200 M2, M2, and M3 Blade Servers • Cisco UCS B250 M2 Extended Memory Blade Server • Cisco UCS B230 M1 and M2 Blade Servers • Cisco UCS B420 M3 Blade Server • Cisco UCS C220 M3 Rack Server • Cisco UCS C240 M3 Rack Server 	Software Release 2.1.1a
<ul style="list-style-type: none"> • Cisco UCS 6248UP 48-Port Fabric Interconnect 	
<ul style="list-style-type: none"> • Cisco UCS Manager 	

Table 2 Cisco Data Center Storage Components

Component	Software Release
<ul style="list-style-type: none"> • Cisco MDS 9506 • Cisco MDS 9134 	Software Release 5.2(6a)

Table 3 Cisco Data Center Core Network Components

Component	Software Release
<ul style="list-style-type: none"> • Cisco Nexus 1000V Series 	4.2 (1) SV2.(1.1 a)
<ul style="list-style-type: none"> • Cisco Nexus 5000 Series Switches 	5.2 (1) N1 (3)
<ul style="list-style-type: none"> • Cisco Nexus 7000 10-Slot Switch 	Cisco NX-OS 6.1 (2)
<ul style="list-style-type: none"> • Cisco Application Control Engine (ACE) 4710 	5(1.1)
<ul style="list-style-type: none"> • Cisco ACE Device Manager 	5(1.1)
<ul style="list-style-type: none"> • Cisco Adaptive Security Appliance (ASA) 5580 	8.3(1)4
<ul style="list-style-type: none"> • Cisco Adaptive Security Device Manager (ASDM) 	6.3(1)
<ul style="list-style-type: none"> • Cisco WAAS Central Manager 	5.1.1 build b16

More specific information about the data center components is provided in the next section.

Unified Computing: Cisco UCS Servers

Cisco UCS B-Series Blade Servers

Cisco UCS B-Series Blade Servers are based on Intel Xeon processors and offer exceptional memory capacity. Each blade server's front panel provides direct access to video connections, USB ports, and console connections.



Each Cisco UCS B-Series Blade Server uses a converged network adapter (CNA) card for access to the unified fabric. This design reduces the number of adapters, cables, and access-layer switches while still allowing traditional LAN and SAN connectivity. This Cisco innovation reduces capital expenditures (CapEx) and operating expenses (OpEx), including administrative overhead and power and cooling costs.

Cisco has validated several models of the Cisco UCS B-Series Blade Server, and in the Cisco Validated Designs for Cisco Virtual Workspace (VXI) Smart Solution Version 2.7, Cisco is specifically validating the Cisco UCS B200 M3 Blade Server. The blade servers connect to the chassis by means of CNA cards, such as the Cisco UCS Virtual Interface Card (VIC) 1240 and 1280.

The specific Cisco UCS B-Series Servers validated by the Cisco Validated Designs for Cisco Virtual Workspace (VXI) Smart Solution Version 2.7 are the:

- Cisco UCS B200 M3 Blade Server
- Cisco UCS B230 M2 Blade Server
- Cisco UCS B420 M3 Blade Server (new)

The validated servers used the following interface modules:

- Cisco UCS VIC 1240 or 1280
- Cisco UCS Storage Accelerator (new) 768-GB multilevel cell (MLC; PCI Express [PCIe] flash memory card on Cisco UCS B-Series Blade Servers)
- NVIDIA GRID K1 and K2 graphics processing units (GPUs)

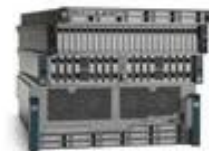
Cisco UCS B-Series Blade Servers:

- Increase performance, flexibility, and scalability for virtualized and non-virtualized applications
- Enable you to deploy applications faster and manage connectivity as needed
- Provide memory and I/O capacity to meet almost every need
- Reduce the number of adapters, cables, and access-layer switches needed for LAN and SAN connectivity

For more information, please see <http://www.cisco.com/en/US/products/ps10280/index.html>.

Cisco UCS C-Series Rack Servers

The Cisco UCS C-Series Rack Servers extend Cisco UCS innovations to an industry-standard rack-mount form factor. The Cisco UCS C-Series servers can operate both in standalone environments and as part of the Cisco Unified Computing System. The Cisco UCS C-Series servers can be deployed incrementally according to an organization's timing and budget.



Cisco UCS C-Series servers interface with the Cisco Unified Communications System through network adapters such as the Cisco UCS P81E VIC. This card is a dual-port 10 Gigabit Ethernet PCIe adapter that provides dynamically configurable virtual interfaces.

The specific Cisco UCS C-Series servers validated by the Cisco Validated Designs for Cisco Virtual Workspace (VXI) Smart Solution Version 2.7 are the:

- Cisco UCS C220 M3 Rack Server
- Cisco UCS C240 M3 Rack Server

- Cisco UCS C260 M2 Rack Server

The validated servers used the following interface modules:

- Cisco UCS P81E VIC
- Cisco UCS VIC 1225

Cisco UCS C-Series Blade Servers:

- Reduce total cost of ownership (TCO) and increase business agility
- Balance simplicity, performance, and density for production-level virtualization, web infrastructure, and data center workloads
- Extend the benefits of Cisco Unified Computing with Cisco Extended Memory Technology and VIC technology

For more information, please see <http://www.cisco.com/en/US/products/ps10493/index.html>.

Unified Computing: Cisco UCS B-Series Blade Server Chassis

Cisco UCS 5100 Series Blade Server Chassis

The Cisco UCS 5100 Series Blade Server Chassis provides an enclosure for Cisco UCS B-Series Blade Servers. It is six rack units (6RU) high, can mount in an industry-standard 19-inch rack, and uses standard front-to-back cooling. Each chassis can accommodate up to eight half-width or four full-width Cisco UCS B-Series Blade Servers. The chassis also supports up to four single-phase hot-swappable power supplies.



The Cisco UCS 5100 Series Blade Server Chassis:

- Accommodates up to 8 half-width or 4 full-width Cisco UCS B-Series Blade Servers
- Accelerates deployment using unified fabric and fabric extender technology for data centers
- Improves density using smaller units of scale and reduces the system footprint
- Reduces the number of physical components needed, eliminates isolated management, and improves data center efficiency

For more information, please see <http://www.cisco.com/en/US/products/ps10279/index.html>.

Unified Computing: Cisco UCS Fabric Interconnects and Fabric Extenders

Cisco UCS 6100 and 6200 Series Fabric Interconnects

Typically deployed in pairs to provide highly available network connectivity and management capabilities for Cisco UCS, the fabric interconnects offer line-rate, low-latency, lossless 10 Gigabit Ethernet, Fibre Channel over Ethernet (FCoE), and Fibre Channel functions. All chassis and servers attached to the fabric interconnects become part of a single, highly available management domain. The fabric interconnects provide connectivity between Cisco UCS and the rest of the data center network.



Cisco UCS 6100 and 6200 Series Fabric Interconnects:

- Deliver line-rate, lossless 10 Gigabit Ethernet and FCoE with native Fibre Channel SAN connectivity
- Provide more than twice the ports of the prior generation of interconnects, with universal port connectivity
- Reduce barriers to deployment of a virtualized environment for data centers
- Provide single-wire connectivity for LAN, SAN, and unified management, including connectivity for rack servers
- Support native storage zoning and direct-attached storage

The recommended fabric interconnects are:

- Cisco UCS 6248UP 48-Port and 6296UP 48-Port Fabric Interconnects

For more information, please see <http://www.cisco.com/en/US/products/ps11544/index.html>.

Cisco Fabric Extenders

The Cisco UCS 2100 and 2200 Series Fabric Extenders reside in the Cisco UCS 5100 Series Blade Server Chassis and provide 10 Gigabit Ethernet connections between servers and fabric interconnects. The fabric extenders function as distributed line cards and are managed as extensions of the fabric interconnects.



The Cisco UCS 2000 Series Fabric Extenders connect rack-mount servers to the fabric interconnects. Like the Cisco UCS fabric extenders, the Cisco Nexus fabric extenders function as line cards for the parent switch.



Cisco UCS 2200 Series Fabric Extenders:

- Provide converged LAN, SAN, and management connectivity to blade servers with the same hardware
- Offer the flexibility of LAN Ethernet, FCoE 1 and 10 Gigabit Ethernet, and SAN native Fibre Channel
- Improve bandwidth utilization through the use of PortChannels for load balancing
- Help manage chassis power supply, fans, and blades

The Cisco Validated Solutions for Cisco Virtual Workspace (VXI) Smart Solution Version 2.7 used the following fabric extender:

- Cisco Nexus 2232PP Fabric Extender

For more information, please see

http://www.cisco.com/en/US/prod/collateral/ps10265/ps10276/data_sheet_c78-675243.html.

Unified Computing: Third-Party Storage

The Cisco Virtual Workspace (VXI) Smart Solution and Cisco UCS infrastructure support connectivity to a variety of storage solutions from a variety of providers, including:

- NetApp
- EMC
- Nimble
- Hitachi Data Systems (HDS)
- Dell
- HP
- IBM

The Cisco Validated Designs for Cisco Virtual Workspace (VXI) Smart Solution Version 2.7 were tested using EMC and NetApp solutions.

The Cisco and NetApp partnership extends back to 2003. Together, the two companies are developing solutions that deliver the value and performance that meet customer IT requirements for next-generation virtual data centers.

Cisco and EMC are collaborating on solutions and professional services to help build, deploy, and manage IT infrastructure that adapts to changing needs and business demands. Industry-leading

EMC information infrastructure and intelligent Cisco networking products, including Cisco UCS, reduce the complexity of data centers.

For more information, please see:

- NetApp: <http://www.cisco.com/en/US/netsol/ns964/index.html>
- EMC: <http://www.cisco.com/en/US/netsol/ns959/index.html>

Storage Area Network

Providing industry-leading availability, scalability, security, and management, the Cisco MDS 9500 Series allows businesses to deploy the highest-performance SANs, with the lowest TCO in the industry. Layering a rich set of intelligent features onto a high-performance, protocol-independent switch fabric, the Cisco MDS 9500 Series Multilayer Directors address the stringent requirements of large data center storage environments.



Cisco MDS 9500 Series features include:

- 1/2/4/8-Gbps and 10-Gbps Fibre Channel
- Flexibility and investment protection
- TCO-focused design
- Multiprotocol support
- Intelligent network services
- Integrated Cisco Storage Media Encryption (SME) as a distributed fabric service
- Open platform for intelligent storage applications
- Comprehensive security framework
- Sophisticated diagnostics
- Unified SAN management
- Cisco TrustSec® Fibre Channel link encryption

For more information, please see <http://www.cisco.com/en/US/products/ps5990/index.html>.

Server and Application Optimization

The Cisco ACE Application Control Engine is a state-of-the-art virtualized load balancer and an application delivery solution that includes server load balancing, content switching, server offloading, and application optimization. Server load balancing, the primary capability of Cisco ACE, is a mechanism for distributing traffic across multiple servers, offering high application availability and server resource utilization.



Cisco ACE features include:

- Application switching
- Predictors
- Server health monitoring
- Persistence and stickiness
- Redundancy
- User Datagram Protocol (UDP) booster
- SSL acceleration

For more information, please see <http://www.cisco.com/en/US/products/ps6906/index.html>.

Unified Management: Cisco UCS Manager and Cisco UCS Central Software (New)

Cisco UCS Manager

Cisco UCS Manager provides embedded management of all Cisco UCS software and hardware components across multiple chassis and rack-mount servers and thousands of virtual machines. It manages the system as a single entity through an intuitive GUI, a command-line interface (CLI), or an XML API. Cisco UCS Manager is embedded on a pair of Cisco UCS 6100 or 6200 Series Fabric Interconnects using a clustered, active-standby configuration for high availability. The manager participates not only in server provisioning, but also in device discovery, inventory, configuration, diagnostics, monitoring, fault detection, auditing, and statistics collection.



Cisco UCS Manager:

- Manages Cisco UCS servers across multiple blade chassis and rack servers as one logical, highly available entity
- Provides Cisco UCS visibility and control to management ecosystem partners using a comprehensive XML API
- Automates and simplifies infrastructure provisioning and maintenance, allowing more time for strategic initiatives
- Improves IT productivity and agility with an automated programmable infrastructure
- Automates policy-based QoS and security compliance with Cisco UCS Manager service profiles and templates

Cisco UCS Central Software (New)

Cisco UCS Central Software manages multiple, globally distributed Cisco UCS domains with thousands of servers from a single pane. It can simplify global policy compliance. Cisco UCS provides unified, embedded management of all software and hardware components with Cisco UCS Manager. Every instance of Cisco UCS Manager and all the components managed by it form a domain. Cisco UCS Central Software integrates with Cisco UCS Manager and uses it to provide global configuration capabilities for pools, policies, and firmware.



Cisco UCS Central Software:

- Simplifies management of multiple Cisco UCS domains across data centers and locations with global templates and policies
- Provides a centralized fault summary for faster problem resolution and improved reliability
- Improves IT productivity with centralized inventory and automated policy-based firmware upgrades
- Uses the same interface as Cisco UCS Manager and maintains role-based access control (RBAC) for both Cisco UCS Manager and Cisco UCS Central Software

The recommended versions of Cisco UCS Manager and Cisco UCS Central Software are:

- Cisco UCS Manager Version 2.1 or later
- Cisco UCS Central Software Version 1.0 or later

For more information, please see <http://www.cisco.com/en/US/products/ps10281/index.html>.

Unified Fabric: Cisco Nexus 5000 and 7000 Series Switches

Cisco Nexus 7000 Series Switches

A modular switch available in 9-, 10-, and 18-slot configurations, the Cisco Nexus 7000 Series Switches are capable of more than 15 terabits per second (Tbps) of switching capacity and offer market-leading 1 and 10 Gigabit Ethernet density with support for IEEE Data Center Bridging (DCB), which improves the reliability and scalability of Ethernet for data center purposes.



Cisco Nexus 7000 Series Switches:

- Highest switching capacity; up to 550 Gigabits per slot, 17.6 terabits per chassis
- Highest 1, 10, 40, and 100 Gigabit Ethernet scalability
- Advanced Services and high availability; hitless In-Service Software Upgrade (ISSU)
- Comprehensive Data Center Interconnect (DCI) solution technologies
- Supports core, aggregation, and various access-layer implementations

For more information, please see <http://www.cisco.com/en/US/products/ps9402/>.

Cisco Nexus 5000 Series Switches

Even with their slim rack switch form factor, the Cisco Nexus 5000 Series Switches offer numerous innovations. The low-latency, low-cost, 10 Gigabit Ethernet switches were the first to market with support for standards-based DCB. The switches were also the first to deliver FCoE, which allows storage traffic to be reliably carried over an Ethernet infrastructure.



Cisco Nexus 5000 Series Switches:

- Increases agility with faster, more pervasive data center virtualization
- Broad connectivity support including GE, 10 GE, 10GBase-T, 40 GE, FC and FCoE
- Supports comprehensive Layer 2 and 3 features for LAN and SAN traffic
- Enhances business resilience through greater operational continuity

The specific Cisco Nexus 5000 Series Switches validated by the Cisco Validated Designs for the Cisco Virtual Workspace (VXI) Smart Solution are:

- Cisco Nexus 5548UP Switch
- Cisco Nexus 5596UP Switch

For more information, please see <http://www.cisco.com/en/US/products/ps9670/index.html>.

Unified Fabric: Cisco Nexus 1000V Series Switches, Cisco Data Center Virtual Machine Fabric Extender Technology, and Cisco Virtual Firewall

Cisco Nexus 1000V Series Switches are the industry's most advanced software switches for VMware vSphere, providing switching for up to 64 VMware ESX hosts from a single point of management. Built on Cisco NX-OS Software, they offer advanced features such as QoS, access control lists (ACLs), Encapsulated Remote Switched Port Analyzer (ERSPAN), NetFlow, control-plane security features, and integration of network services.

[The Cisco Virtual Workspace \(VXI\) Smart Solution Release 2.7 adds support for Cisco TrustSec 3.0 within the Cisco Nexus 1000V Series.](#)

The first product to deliver Cisco Data Center Virtual Machine Fabric Extender (VM-FEX) is the Cisco Nexus 1000V Switch. Cisco Data Center VM-FEX technology makes the network infrastructure virtual machine aware. It provides tools with the same level of visibility, security, and troubleshooting for virtual machines as customers are accustomed to using for physical devices.

Virtual machine–aware networking and security features include:

- Integration with the VMware ESX hypervisor
- Definition and management of network services at the virtual machine level
- Network policy defined with virtual machine–level detail
- Network troubleshooting performed with network-level detail
- Advanced hypervisor and high-performance hardware switching

For more information, please see

http://www.cisco.com/en/US/prod/collateral/switches/ps9441/ps9902/whitepaper_c11-620065.html.

Virtualization Software

The Cisco Virtual Workspace (VXI) Smart Solution for desktop virtualization includes mandatory and optional components from both Cisco and third-party technology partners. Mandatory components are those that provide the basic foundation for a virtualized desktop deployment.

Hypervisor: VMware vSphere 5.1 or Citrix XenServer 6.1

VMware vSphere consists of the management infrastructure and virtual center server software and the hypervisor software that virtualizes the hardware resources on the servers.

Citrix XenServer is an enterprise-ready, cloud-proven virtualization platform with all the capabilities needed to create and manage a virtual infrastructure at half the cost of other solutions.

New features in VMware vSphere 5.1 include:

- Larger virtual machines
- New virtual machine format
- Flexible space-efficient storage for virtual desktops
- Single-root I/O virtualization (SR-IOV) support
- New VMware vSphere vMotion capabilities
- VMware vSphere data protection
- VMware vSphere replication
- Zero-downtime upgrade for VMware tools
- VMware vShield endpoint
- VMware vSphere Storage DRS and Profile-Driven Storage
- VMware vSphere Auto Deploy
- VMware vCenter Operations Manager Foundation

New features in Citrix XenServer 6.1 include:

- Storage Citrix XenMotion
- Citrix Live VDI Migration
- Added support for the EMC VNX storage array through the inclusion of SMI-S.
- Link Aggregation Control Protocol (LACP) support
- Server load balancing (SLB) improvements
- Address Resolution Protocol (ARP) and IP spoofing and traffic sniffing prevention and IP Security (IPsec) support
- Microsoft System Center Virtual Machine Manager (SCVMM) constrained service deployment support
- Multitenancy improvements
- VLAN scalability improvements
- Emergency network reset
- IPv6 guest support
- Citrix XenServer Conversion Manager
- Vhostmd support
- New installation mechanism for Citrix XenServer tools
- GPU pass-through extended support
- Increased performance and scalability
- Introduction of automated vendor self-certification kit

- Enhanced guest OS support ‘

For more information, please see:

- VMware vSphere: <http://www.cisco.com/en/US/netsol/ns971/index.html>
- Citrix XenServer: <http://www.cisco.com/en/US/netsol/ns1099/index.html>

Virtual Desktop Management: Citrix XenDesktop 5.6 Feature Pack 1 and XenApp 6.5 or VMware View 5.1

Citrix XenDesktop 5.6 Feature Pack 1

Citrix XenDesktop is a desktop virtualization solution that delivers Microsoft Windows desktops as an on-demand service to any user, anywhere. With Citrix FlexCast delivery technology, Citrix XenDesktop can quickly and securely deliver individual applications or complete desktops to users across the entire enterprise, whether they are task workers, knowledge workers, or mobile workers. Users now have the flexibility to access their desktops on any device, at any time, with a high-definition user experience. With Citrix XenDesktop, IT departments can manage single instances of each operating system, application, and user profile and then dynamically assemble them to increase business agility and greatly simplify desktop management. The open architecture of Citrix XenDesktop enables customers to easily adopt desktop virtualization using any hypervisor, storage, or management infrastructure.

New features in Citrix XenDesktop 5.6 include the following:

- Citrix XenDesktop Desktop Studio offers a new virtual user drive technology called personal vDisk to permit administrators and even users to install applications without affecting the master image.
- A new user profile manager unifies and manages user settings across Microsoft Windows platforms.
- Microsoft Windows folder redirection keeps user data out of the virtual machine for efficiency and high availability.
- Organizations gain the end-user benefits of desktop virtualization instantly without the need to migrate desktops to the data center.
- Remote PCs can be easily provisioned for thousands of users with the Citrix XenDesktop Desktop Studio auto-assignment tool.
- Citrix simplifies desktop transformation by creating an easy entryway for desktop virtualization.
- New Citrix Receiver clients support more than 2 billion devices, including devices running iOS, Android, Chrome OS, Mac OS, Linux, and Microsoft Windows.
- New Citrix Receiver clients deliver Microsoft Windows performance that is more than three times faster than previously.
- The new Citrix Receiver client for Linux powers a new generation of low-cost thin clients.
- Real-time audio streaming reduces the impact of network latency on voice traffic.
- Webcam compression and peer-to-peer connections for popular unified communications applications enable enterprise-scale video conferencing.
- Graphics command redirection decreases bandwidth an additional 33 percent while delivering a local-type experience.
- Intelligent local rendering takes the load off the server, enabling 10 times greater density.

Citrix XenApp 6.5

Citrix XenApp empowers users with on-demand self-service for enterprise applications. Used by more than 100 million people worldwide, the Citrix XenApp application delivery solution enables any Microsoft Windows application to be virtualized, centralized, and managed in the data center and instantly delivered as a service to users anywhere and on any device. Virtual application delivery with Citrix XenApp enables organizations to improve application management by:

- Centralizing applications in the data center to reduce complexity and reduce the cost of desktop management by up to 50 percent

- Controlling and encrypting access to data and applications to improve security
- Delivering applications instantly to users anywhere and on any device
- Simplifying and automating the process for delivering or updating applications, enabling IT to focus on strategic initiatives

VMware View 5.1

With VMware View, desktop administrators can virtualize the operating system, applications, and user data and deliver modern desktops to end users. It gives organizations centralized automated management of these components for increased control and cost savings, and it improves business agility while providing a flexible high-performance desktop experience for end users across a variety of network conditions.

VMware View 5.1 features include:

- Storage optimization
- VMware View persona management
- VMware vCenter operations for VMware View
- VMware View Administrator enhancements
- VMware View Administrator language support
- USB enhancements
- Additional PC over IP (PCoIP) enhancements

For more information, please see:

VMware View 5.1: <http://www.cisco.com/en/US/netsol/ns971/index.html>

Citrix XenDesktop: <http://www.cisco.com/en/US/netsol/ns1099/index.html>

Solution Components: Borderless Networking

The Cisco Virtual Workspace (VXI) Smart Solution for desktop virtualization includes mandatory and optional components from both Cisco and third-party technology partners. Mandatory components are those that provide the basic foundation for a virtualized desktop deployment.

Summary of Borderless Network Components

Table 4 summarizes and provides software release information for the Cisco Borderless Networks products that are part of the Cisco Virtual Workspace (VXI) Smart Solution.

Table 4 Cisco Borderless Networks Components

Component	Software Release
• Cisco Catalyst 6504-Sup720	12.2(33)SX15
• Cisco 7206VXR NPE-G1	15.2(4)S1
• Cisco Catalyst 4507R-E	122-54.SG
• Cisco Wide Area Application Engine (WAE) 674	5.1.1 build b16
• Cisco Adaptive Security Appliance (ASA) 5540	9.0
• Cisco Integrated Services Router (ISR) 3945 G2	15.2(3) T
• Cisco Aironet Access Point	7.0.116.0
• Cisco 5508 Wireless Controller	7.0.116.0
• Cisco Wireless Control System	7.0.172.0
• Cisco Mobility Service Engine	7.0.201.0
• Cisco Identity Service Engine	1.1.1

More specific information about the Cisco Borderless Networks components is provided in the next section.

Security: Cisco ASA Adaptive Security Appliances

The Cisco ASA 5500 Series IPS Solution delivers superior scalability, a broad span of technology and solutions, and effective, always-on security designed to meet the needs of a variety of deployments. By integrating the world's most proven firewall; a comprehensive, highly effective intrusion protection system (IPS) with Cisco Global Correlation and guaranteed coverage; and a high-performance VPN, the Cisco ASA 5500 Series helps organizations provide secure, high-performance connectivity and protects critical assets for optimal productivity.



Connect with Krupa on ASA models for 2.7

Cisco ASA Adaptive Security Appliances features include:

- Fast throughput and high connection speed and capacity for exceptional scalability and investment protection
- Adaptable architecture for rapid and customized security services deployment
- Versatile, always-on remote access integrated with IPS and web security for highly secure mobility and enhanced productivity

For more information, please see <http://www.cisco.com/en/US/products/ps6120/index.html>.

WAN Optimization: Cisco Wide Area Application Services

Cisco Wide Area Application Services (WAAS) Software is a comprehensive WAN optimization solution that accelerates applications



over the WAN, delivers video to branch offices, and provides local hosting of branch-office IT services. It allows IT departments to centralize applications and storage in the data center while maintaining LAN-like application performance, rapidly deliver local branch-office IT services, and reduce the device footprint in the branch office.



Cisco Virtual Workspace (VXI) Smart Solution Release 2.7 adds support for Cisco WAAS 5.1, with optimization for Citrix HDX Multi-Stream.

The Cisco Wide Area Application Virtualization Engines (WAVE) product line comprises cost-effective, cloud-ready, video-enabled solution offerings for the branch office and the data center. With the industry's broadest product portfolio and flexible deployment models, Cisco WAAS cost-effectively addresses the WAN optimization needs of small, medium-sized, and large customers.

Cisco WAVE Appliances for the Branch Office

Cisco WAVE appliances deployed in the branch office enable customers to meet the following business objectives:

- Improve employee productivity by enhancing the user experience for important business applications delivered over the WAN
- Reduce the cost of branch-office operations by centralizing IT resources in the data center and lowering the cost of WAN bandwidth and by hosting Microsoft Windows-based applications on the Cisco WAVE branch-office appliance
- Deliver enterprise-class video while reducing WAN bandwidth consumption with the Cisco WAAS video application optimizer or hosted Cisco Application and Content Networking System (ACNS) virtual blade
- Increase IT agility by reducing the time and resources required to deliver new IT services to the branch office
- Simplify branch-office data protection for regulatory compliance purposes

Cisco WAVE Appliances for the Data Center

Cisco WAVE data center appliances provide the high performance, scalable WAN optimization that solutions require. Benefits include:

- User-selectable I/O modules with support for 10 Gigabit Ethernet fiber, 1 Gigabit Ethernet copper, and 1 Gigabit Ethernet fiber
- Flexible deployment models including inline and Web Cache Communication Protocol (WCCP) deployment models for high performance, scalability, and network availability
- High performance for video, virtual desktop infrastructure (VDI), and cloud applications as well as traditional enterprise applications; in conjunction with context-aware Data Redundancy Elimination (DRE), the Cisco WAVE appliances can adapt caching behavior based on the characteristics of individual applications, resulting in higher throughput and lower application latency

For more information about Cisco WAN optimization, please see <http://www.cisco.com/en/US/products/ps6870/index.html>.

Solution Components: Collaboration and Unified Workspace

The Cisco Virtual Workspace (VXI) Smart Solution for desktop virtualization includes mandatory and optional components from both Cisco and third-party technology partners. Mandatory components are those that provide the basic foundation for a virtualized desktop deployment.

Summary of Collaboration and Unified Workspace Components

Table 5 summarizes and provides software release information for the Cisco Collaboration and Unified Workspace products that are part of the Cisco Virtual Workspace (VXI) Smart Solution.

Table 5 Cisco Collaboration and Unified Workspace Components

Component	Software Release
• Cisco Unified Communications Manager	9.1.1
• Cisco Unity Connection	9.0.1ES
• Cisco Unified Presence Server (CUP)	9.0.1
• Cisco Jabber	9.1.3.13181
• Cisco AnyConnect	3.1

More specific information about the Cisco Collaboration and Unified Workspace components is provided in the next section.

Unified Communications on Cisco UCS

With the Cisco Unified Computing System, Cisco Unified Communications applications run in a virtualized environment. This environment includes VMware solutions, Cisco UCS servers, and Fibre Channel SAN storage. Primary capabilities include:

- Deployment flexibility for easy adaptation to your business, improving productivity and resource use
- Improved TCO, with fewer infrastructure components to purchase and fewer elements to manage
- Scalability so that you can add more software and services without increasing cooling, power, space, or cabling costs
- Management tool consolidation, so administrators can use familiar single tools or sets of tools, reducing operating costs
- Simpler installation and upgrades through the use of service profiles, virtual machines, and centralized management

Cisco UCS enables efficient, flexible, and scalable unified communications deployment and operations, with Cisco Unified Communications applications running in a virtualized environment. This environment includes VMware solutions, Cisco UCS servers, and Fibre Channel SAN storage. Organizations can run call manager, Cisco Unity®, and presence applications on Cisco UCS B-Series and C-Series servers. Cisco Unified Communications applications are supported on the Cisco UCS B200 M1 Blade Server, C200 M1 High-Density Rack-Mount Server, and C210 M1 General-Purpose Rack-Mount Server.

The following applications are supported:

- Cisco Unified Communications Manager
- Cisco Unified Presence
- Cisco Unity Voice Messaging
- Cisco Unity Connection
- Cisco Unified Contact Center Enterprise

- Cisco Customer Voice Portal
- Cisco Jabber

Using the Cisco Jabber platform, organizations can deliver superior collaboration capabilities in virtualized environments that allow users to experience a unified workspace on any device. The Cisco Jabber platform allows:

- Collaboration from any devices: PCs, Macs, tablets, smartphones, and thin clients
- Access to presence, IM, voice and video, desktop sharing, and conferencing

Cisco Virtualization Experience Media Engine



Cisco VXME extends the robust collaboration experience of Cisco Jabber for Windows to virtualized environments by enabling the intelligent processing of real-time voice and video on the local device.

Cisco Jabber simplifies communications and enhances productivity by unifying presence, instant messaging, video, voice, voice messaging, and conferencing capabilities securely into one client on your desktop.

With Cisco VXME, organizations implementing virtualization strategies can deliver the same comprehensive, uncompromised user experience of the Cisco Jabber platform to virtualized desktops in addition

to PCs, Macs, tablets, and smartphones.

In virtualized environments, the Cisco Jabber platform is deployed in the data center; Cisco VXME runs on the local client. With Cisco Jabber running on your HVD, you can see presence status, send an instant message, check voice messages, and collaborate over a video call. Voice and video traffic is processed locally by Cisco VXME and routed point to point between clients, bypassing the data center and eliminating the “hairpin” effect of media. With this optimized architecture delivered by Cisco VXME, in virtualized settings you benefit from the same uncompromised user experience that you achieve with the Cisco Jabber platform.

Innovative unified communications accessories designed for Cisco by Jabra and Logitech are tightly integrated with Cisco Jabber and Cisco VXME call control to further enhance your collaborative experience.

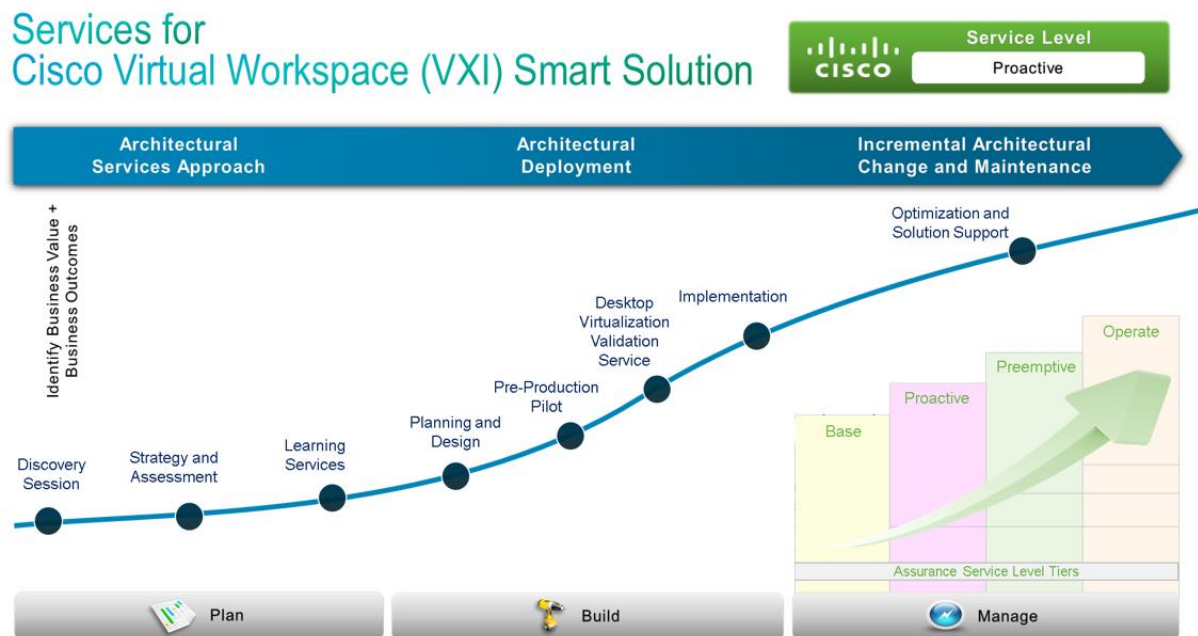
For more information, please see <http://www.cisco.com/en/US/products/ps12862/index.html>.

Cisco Virtual Workspace (VXI) Smart Solution Services

Cisco Virtual Workspace (VXI) Smart Solution Services help you extend your customer's benefits of desktop virtualization to multimedia applications and services, so you can help your customer achieve an optimal user experience, protect information and intellectual property, and reduce TCO.

After your customer's solution is deployed, Cisco Services, available through your company, can provide technical support and optimization services to help maintain an optimal Cisco Virtual Workspace (VXI) Smart Solution as your customer's data center and business needs evolve. Cisco Virtual Workspace (VXI) Smart Solution Services enable you to help your customer strategize, plan, design, migrate, and operate a cost-effective, secure, end-to-end DVI solution for any user in any environment, enterprise or cloud, with little business risk (Figure 8).

Figure 8 Cisco Virtual Workspace (VXI) Smart Solution Services Portfolio



Services Options

Cisco Virtual Workspace (VXI) Smart Solution Services can be used separately or in combination.

Desktop Virtualization Strategy Service

The Cisco Desktop Virtualization Strategy Service helps your customer understand the value that a desktop virtualization solution can bring to the organization and provides the metrics that you need to validate the investment. The service uses a comprehensive approach that encompasses people and the organizational structures in which they work, the processes and governance that promote daily operations, and the tools and underlying metrics that dictate and subsequently measure the success of the operation environment. This holistic analysis can encompass your customer's complete technology strategy, including the server and storage infrastructure, operating systems, and applications. It is based on a customized, next-generation data center architecture and uses detailed discovery to calculate potential CapEx and OpEx savings.

The Cisco Desktop Virtualization Strategy Service has two components:

- Desktop Virtualization Business Case Definition and Solution Strategy: Determines how a virtual desktop solution can reduce costs, simplify operations, secure data, and improve the end-user experience and prepares for an in-depth design activity by mapping business and technical requirements to one or more virtual desktop solution models
- Desktop Virtualization Operational Readiness Assessment: Promotes the operation aspects of the virtual desktop strategy and business case by undertaking an operation readiness review, defining the operation requirements, and developing a transformation roadmap to an efficient virtual desktop architecture

For more information, please see

http://www.cisco.com/web/services/downloads/services_for_unified_workspace_aag.pdf

Desktop Virtualization Planning and Design Service

When you use the Cisco Desktop Virtualization Planning and Design Service, skilled data center and collaboration architects work with you to design a secure, end-to-end virtualization solution and develop a migration plan that facilitates rapid project implementation. The process includes evaluating desktop virtualization opportunities, assessing primary applications for fit, developing an operationally viable strategy, creating a phased roadmap to implementation, and supporting you through design and deployment.

The Cisco Desktop Virtualization Planning and Design Service consists of the following components:

- Desktop Virtualization Planning: Evaluates the consolidation and virtualization opportunities against your customer's current desktop infrastructure, multimedia applications, and management systems to help your customer better understand the benefits and costs of migrating to a virtualized desktop infrastructure using Cisco and third-party virtualization technologies
- Desktop Virtualization Design and Implementation: Creates a high-level design for your customer's desktop virtualization solution and a plan for the physical-to-virtual migration process involving complementary Cisco and third-party solutions
- Desktop Virtualization Operations Management: Provides a full range of underlying operations capabilities for your customer's desktop virtualization solution as well as consulting and engineering services

For more information, please see

http://www.cisco.com/web/services/downloads/services_for_unified_workspace_aag.pdf

Cisco Virtual Workspace (VXI) Smart Solution Services

Cisco Services provides the cross-domain expertise you need to smooth your customer's transition to a Cisco Virtual Workspace (VXI) Smart Solution. Backed by proven expertise in data center, borderless networks, and collaboration technologies; an architectural approach; and a broad ecosystem of partners, Cisco Virtual Workspace (VXI) Smart Solution Services enables you to build and optimize a highly scalable and secure Cisco Virtual Workspace (VXI) Smart Solution. The solution extends the benefits of desktop virtualization to multimedia applications and services, so you can provide an optimal user experience, protect your customer's information and intellectual property, and reduce TCO.

With Cisco Virtual Workspace (VXI) Smart Solution Services, our consultants include enterprise and solution architects, project managers, and professionals with broad expertise in data center, borderless networks, and collaboration technologies. Working together with you, Cisco Services will provide the leading practices, expertise, and skill sets needed to accelerate deployment and help mitigate risks while smoothly integrating virtualized data centers, networks, and user workspaces with essential desktop virtualization services such as multimedia, security, and performance acceleration.

For more information, please see

http://www.cisco.com/web/services/downloads/services_for_unified_workspace_aag.pdf

Eligibility and Support

Using a unified view of data center resources, Cisco and our industry-leading partners deliver services that accelerate the transition to a unified computing environment. Cisco Unified Computing Services help businesses quickly deploy data center resources and optimize ongoing operations to better meet their business needs.

Integration of storage, computing, network, and virtualization resources into a single platform requires an architectural strategy for the data center. Cisco Unified Computing Services help accelerate the transition to a unified computing architecture and sustain and optimize the performance of that architecture after it is deployed. Cisco can extend the benefits of unified computing to help tune the entire data center environment to meet financial and technical objectives.

Eligibility

- Cisco direct customers and Authorized Technology Provider (ATP), Data Center Architecture (DCA) Specialization, and Unified Computing Technology (UCT) Specialization partners are eligible to order the entire Cisco Technical Services and Advanced Services portfolios from Cisco for both the Cisco UCS B-Series and C-Series products.
- 2-Tier registered resellers, Cisco distributors, and 1-Tier partners other than Cisco ATP, DCA, and UCT partners are eligible to order Cisco Technical Services for the Cisco UCS C-Series products. Exceptions can be made on a case-by-case basis.

Note: Some services are not applicable to the Cisco UCS C-Series.

The Cisco Advanced Services phased services introduction to improve the ordering experience and improve operation efficiency is now almost complete. This phased introduction allows Cisco direct, 1-Tier ATP, DCA, and UCT; and 2-Tier ATP, DCA and UCT partners to order a selected set of fixed-price, fixed-scope Cisco Advanced Services using a simplified quoting and ordering process.

For more information about Cisco Unified Computing Services, please see

www.cisco.com/en/US/products/ps10312/serv_group_home.html.

Cisco Service Contract Center

Cisco Service Contract Center is a primary tool used by Cisco Direct and 1-Tier partners to order Cisco Services.

Cisco Service Contract Center for Indirect Resellers and Distributors

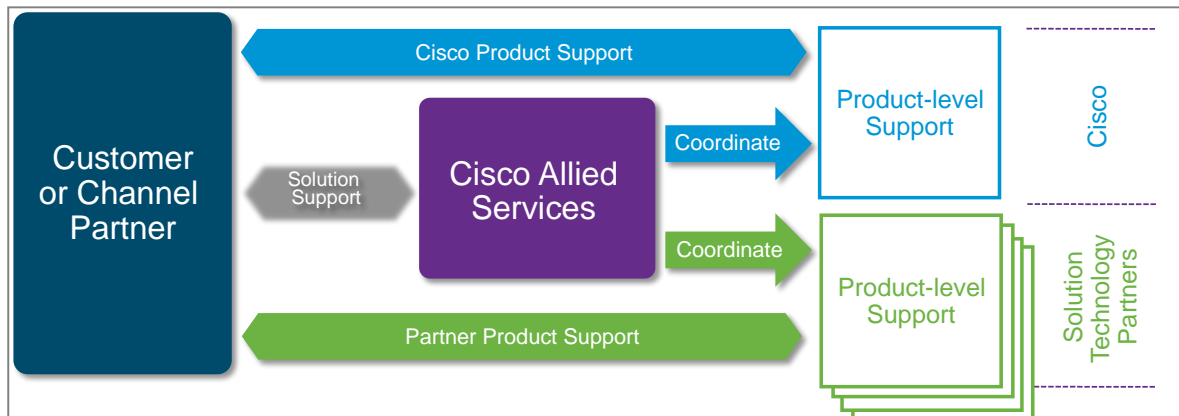
Cisco Service Contract Center (SCC) for Indirect Resellers and Distributors is a primary knowledge resource with an associated order implementation tool known as SMS3 that is used by distributors and 2-Tier partners (resellers) to order Cisco Services. Both Cisco SCC and SMS3 have been populated with Cisco UCS service programs to enable quote and order processes. Additional systems processes are not required to implement these programs.

Cisco Allied Services

Cisco Allied Services provide customers with a single point of contact to manage problems that may arise in their solutions. For example, Cisco Allied Services for the Cisco Virtual Workspace (VXI) Smart Solution provides access to Cisco cross-domain experts, who are trained in third-party products that are part of the Cisco Virtual Workspace (VXI) Smart Solution and VDI and are qualified to troubleshoot and resolve problems. With Cisco Allied Services, the customer's IT department can rely on Cisco for solution expertise and problem resolution, helping ensure solution uptime and employee productivity.

Cisco Allied Services provide overall Cisco support for the entire solution to complement Cisco and Cisco technology partner product support through a higher-level solution support service (Figure 9).

Figure 9 Cisco Allied Services Engagement Model



Benefits of Cisco Allied Services

Cisco Allied Services meet the business-critical support needs of customers with supported Cisco Validated Designs in complex environments served by Cisco and multiple technology partners. Cisco Allied Services help you:

- Gain priority access to technology solution experts
- Accelerate resolution of solution-level problems across your entire design
- Increase the performance of IT operations
- Increase the uptime of the applications supported in the solution environment
- Achieve the full value of your technology and Cisco Validated Design investments

With Cisco Allied Services, you and your customer have direct access to a team of Cisco solution experts who are ready to lead in the resolution of any incident that occurs in the supported solution. When the customer's case is brought to the Cisco Allied Services team, the team will work to resolve the problem with both direct action and actions to coordinate any product-level activity needed by Cisco and our solution technology partners. Note that Cisco Allied Services does not replace product support.

Cisco Allied Services for the Cisco Virtual Workspace (VXI) Smart Solution is offered on an annual subscription basis. Contact your local Cisco account manager about availability in your area.

For more information about Cisco Allied Services for the Cisco Virtual Workspace (VXI) Smart Solution, please see www.cisco.com/en/US/products/ps11235/services_segment_service_home.html.

Training and Certification

Partner Training

Training for partners is made available through the Cisco Partner Education Connection (PEC). Cisco PEC provides training for products, tools, and solutions to help you keep ahead of the competition as a Cisco partner. You can achieve and retain your organization's partnership status by following the training curricula required for career certifications and technology specializations. To access Cisco PEC, you must have a Cisco user ID and be a registered Cisco partner.

For more information about Cisco PEC, please see

http://www.cisco.com/web/learning/le36/learning_partner_e-learning_connection_tool_launch.html.

Cisco Unified Computing Services Education

Cisco UCS training material and collateral for partners is posted on the Cisco Communities Partners Data Center website at <https://communities.cisco.com/community/partner/datacenter/partnertraining>.

Service-specific articles for Cisco UCS are available on the Cisco Services Support Center Resources page at <http://forums.cisco.com/ecom/web/service-programs-acquisitions>.

To find a list of Cisco ATP partners, please visit the Steps to Success Cisco UCS Spotlight, which links to the Cisco Partner Locator Tool, among other topics:

<http://tools.cisco.com/s2slv2/ViewDocument?docName=EXT-AS-225495>.

Cisco Borderless Network Architecture Specialization

The Cisco Borderless Network Architecture Specialization tests knowledge in selling, designing, installing, and supporting the Cisco Borderless Network Architecture.

The Cisco Borderless Network Architecture Specialization helps your company:

- Develop sales, technical, and service capabilities for integrated networking solutions
- Increase technical competency within your company
- Achieve recognition as a specialized partner in the Cisco Partner Locator Tool

This specialization also entitles you to a range of additional benefits. You can:

- Participate in Cisco channel incentive programs
- Receive invitations to Cisco sponsored partner events
- Access Cisco Partner Education Connection
- Use My Cisco to personalize web content and get information quickly
- Send a press release for your accomplishment
- Gain access to the Cisco Design Zone for tested designs and configurations

For more information about how to become a Cisco Borderless Network Architecture Specialist, please see

http://www.cisco.com/web/partners/partner_with_cisco/channel_partner_program/resale/specializations/adv_borderless_arch.html.

Partner Certification

Cisco Premier Certification expands technical competency in the integration of basic routing and switching, wireless LANs, and security technologies. It recognizes and rewards partners who have achieved the Express Foundation Specialization.

Cisco Premier Certified Partners benefit from an increased level of support from Cisco, including access to best-in-class products and services, technical support, productivity tools, online training,

and marketing resources. In addition to branding as a Cisco Premier Certified Partner, benefits of Cisco Premier certification include:

- Recognition as a Cisco Premier Certified Partner in the Cisco Partner Locator
- Eligibility to participate in Cisco channel partner incentives programs, with greater economic incentives than for the partners at the Select certification level
- Eligibility to sell Cisco Smart Care Services
- A Cisco Certified Partner kit that contains resources such as sales tools, logos, guidelines, and information

For more information about Cisco partner certification, please see

http://www.cisco.com/web/partners/partner_with_cisco/channel_partner_program/resale/specializations/premier.html.

Ordering Process

Cisco channel partners can rely on multiple tools to order products. This section presents instructions for ordering products through the Cisco Commerce Workspace and Guided System Selling (GSS), the primary tool for ordering Cisco UCS products.

Cisco Commerce Workspace and Guided System Selling

The Cisco Commerce Workspace is a comprehensive configuration and ordering tool that enables authorized partners to order Cisco products. With the Cisco Commerce Workspace, channel partners can:

- Create deals and quotes in a single workspace with flexible entry points
- Collaborate strategically with colleagues, distributors, and Cisco sales and engineering teams in the workspace
- Access a consistent look and feel across the workspace, resulting in less time spent training to use the Cisco Commerce Workspace and more time for activities that add value

Cisco Guided System Selling

Cisco GSS is integrated directly into the Cisco Commerce Workspace and provides easier configuration of complete solutions with Cisco Validated Designs (Figures 10, 11, and 12):

- Guided configurations are based on validated system designs, including Cisco Validated Designs for Cisco Virtual Workspace (VXI) Smart Solution.
- Novice and expert users can select from a set of predefined and validated designs, or answer a few questions to see the types of systems available to address customer business needs.
- A bill of materials (BOM) ready for import as a configuration set is provided for the final configuration, quote, and order in the Cisco Commerce Workspace.
- Cisco GSS is fully integrated with the Cisco Commerce Workspace.
- The BOM from Cisco GSS can also be exported to Microsoft Excel or to XML.

Figure 10 Cisco GSS Example 1: Desktop Virtualization Configuration

Solution

- Site Structure ☒
- Main Site ☒
 - Site Details ☒
 - Enterprise Deployment ☒
 - Desktop Virtualization ☒
 - User Profile ☒
 - Data Center Storage ☒
 - User Profiles (Advanced) ☒
 - Output ☒
 - Virtualization Experience Client ☒

Desktop Virtualization

Click the 'Apply' button – before leaving the page to show potential follow up questions and/or updated results.

VXI:Desktop Virtualization Solution	HVD	HSD
Connection Broker	VMware View	Citrix XenApp
Display Protocol	PCoIP	ICA
Is Memory Oversubscription Enabled?	Yes	
Resources Reserved for High Availability	12.5 Percent	

Apply Reset < Back Next >

Figure 11 Cisco GSS Example 2: Cisco UCS Configuration

Solution

- Site Structure ☒
- Main Site ☒
 - Site Details ☒
 - Enterprise Deployment ☒
 - Desktop Virtualization ☒
 - User Profile ☒
 - Data Center Storage ☒
 - User Profiles (Advanced) ☒
 - Output ☒
 - Virtualization Experience Client ☒

Output

Click the 'Apply' button – before leaving the page to show potential follow up questions and/or updated results.

Data Center Compute	Output
Type of UCS Servers for HVD User Desktops	B200 M2
Number of B200 M2 servers with 12 x 16 GB DIMMs (with Full or Equally Distributed Memory)	0
Number of B200 M2 Servers (With Partial Memory)	0
Total number of B200 M2 servers required	0
Average CPU Utilization	0%
Average Memory Utilization	0%
Do You Want to Add Solid State Drives to the B200 M2 Servers?	No
Type of UCS Servers for HSD User Desktops	B200 M3
Number of B200 M3 Servers	3
Average CPU Utilization	90.1%
Average Memory Utilization	90.1%
Type of UCS Servers for Management & Network Infrastructure VMs	B200 M2
Number of B200 M2 servers with 6 x 8 GB DIMMs (Does not account for HA)	2

Apply Reset < Back Next >

Figure 12 Cisco GSS Output Sample: Bill of Materials

Bill of Materials Summary [Back to Solution](#) [Convert to Configset](#)

Review products for your solution. From here you can export to an Excel, XML or convert to a Configuration Set that you can customize and add to an Order or Quote.

☒ Some line items are improperly configured. Please check the individual line items below.

Solution Preferences

Items [Expand All](#) | [Collapse All](#) [Add a Non-Cisco SKU to Solution](#) [Add Services](#) [Add Subscription](#)

Hardware, Software, and Services	Estimated Lead Time	Unit List Price	Qty	Extended List Price
Main - (Main Site)				
1.0 CVXC-4000W-BDL= VXC 4000 for Windows Bundle Valid as of 08-May-2013 03:04	21 Days	\$77,400.00	1	\$77,400.00
2.0 WS-C3750X-48PF-S Catalyst 3750X 48 Port Full PoE IP Base Valid as of 08-May-2013 03:04	14 Days	\$14,000.00	2	\$28,000.00
3.0 WS-C4507RE56L+96V+ 4507R+E Chassis, TwoWS-X4648-RJ45V+E, Sup6L-E Valid as of 08-May-2013 03:04	21 Days	\$32,990.00	6	\$197,940.00
4.0 C2921-WAAS-SEC/K9 Cisco 2921, SRE 700, WAAS Enterprise Medium and SEC PAK bundle Valid as of 08-May-2013 03:04	21 Days	\$11,495.00	3	\$34,485.00
5.0 C2951-WAAS-SEC/K9 Cisco 2951, SRE 900, WAAS Enterprise Large and SEC PAK bundle Valid as of 08-May-2013 03:04	21 Days	\$16,995.00	7	\$118,965.00
6.0 ACE30-MOD-K9= Application Control Engine 30 Hardware Valid as of 08-May-2013 03:04	21 Days	\$54,995.00	2	\$109,990.00
7.0 N20-B6625-1-UPG UCS B200 M2 Blade Server w/o CPU, memory, HDD, mezzanine Invalid as of 08-May-2013 03:04 Some products or services cannot be validated or ordered in this configuration. (CS136)	10 Days	\$32,631.00	2	\$65,262.00
8.0 N20-C6508-UPG UCS 5108 Blade Svr AC Chassis/0 PSU/8 fans/0 fabric extender Valid as of 08-May-2013 03:04	18 Days	\$5,999.00	2	\$11,998.00
9.0 UCS-FI-6248UP-UPG UCS 6248UP 1RU Fabric Int/No PSU/32 UP/ 12p LIC Invalid as of 08-May-2013 03:04 Some products or services cannot be validated or ordered in this configuration. (CS136)	18 Days	\$34,800.00	2	\$69,600.00
10.0 ASA5580-20-8GE-K9 ASA 5580-20 Appliance with 8 GE, Dual AC, 3DES/AES Valid as of 08-May-2013 03:04	21 Days	\$59,995.00	2	\$119,990.00
11.0 UCS-B200-M3-U UCS B200 M3 Blade Server w/o CPU, mem, HDD, mLOM/mezz (UPG) Invalid as of 08-May-2013 03:04 Product configuration is not valid. You can fix this issue after the solution has been converted to a configset. (CS025)	18 Days	\$3,154.00	1	\$3,154.00
12.0 CTX-XD6ET-500-1S=	15 Days	\$186,000.00	1	\$186,000.00

Requesting Cisco Commerce Workspace Access

Access to the Cisco Commerce Workspace is controlled, and only approved partners are granted access. Contact Cisco Internet Commerce Support at ic-support@cisco.com or 1- 800-553-6387 (select Option 2 and then Option 3) in the United States. For contact information for other countries, see <http://www.cisco.com/web/siteassets/contacts/international.html#~tab-b?reloaded=true>.

Three Easy Steps to Log into Cisco Commerce Workspace

1. Log into Profile Manager and associate your Cisco ID with your company's bill ID (BID) or Customer ID (CID) and price list.
2. Click Additional Access.
3. Click Add Bill to IDs (BIDs) to Profile for Ordering or Support Cases.

Users who submit orders need to sign the Internet Commerce Agreement (ICA) at <http://www.cisco.com/cgi-bin/front.x/ica/ica.pl>.

Contact Cisco Internet Commerce Support at ic-support@cisco.com or 1- 800-553-6387 (select Option 2 and then Option 3) for U.S. support.

Note: Japanese customers can directly contact cs-support-nihon@cisco.com (Language Support).

Users who create orders need to request that their Internetworking Product Center (IPC) access be set to Yes.

Cisco Commerce Workspace Training

Both 1- and 2-Tier channel partners can access training for setup and login instructions:

- 1-Tier training: http://www.cisco.com/E-Learning/Is-rob/cdc_bulk/Enterprise/CCW7_1_Tier_Configuration/CCW7_Tier1_Config.pdf
- 2-Tier training: http://www.cisco.com/web/partners/downloads/events/pdr/CCW_Live_Training_for_2_Tier.pdf

Cisco QuickCatalog

Please refer to Cisco QuickCatalog for Cisco UCS SmartPlays and Cisco VDI Solution Paks:
www.cisco.com/go/QuickCatalog.

VMware View and Citrix XenDesktop Resell Options

The following resale options are available for VMware View and Citrix XenDesktop:

- Citrix XenDesktop Enterprise: 1 to 499 seats
- Citrix XenDesktop Enterprise: 500 to 999 seats
- Citrix XenDesktop Enterprise: 1000 or more seats
- Citrix XenDesktop Platinum: 1 to 499 seats
- Citrix XenDesktop Platinum: 500 to 999 seats
- Citrix XenDesktop Platinum: 1000 or more seats
- VMware View Enterprise: 10 seats
- VMware View Premier: 10 seats
- VMware View Enterprise: 100 seats to be launched with Cisco Virtual Workspace (VXI) Smart Solution 2.7 at first customer shipment (FCS)
- VMware View Premier: 100 seats to be launched with Cisco Virtual Workspace (VXI) Smart Solution 2.7 FCS

For More Information

See Table 6 for more information about the Cisco Virtual Workspace (VXI) Smart Solution and VDI.

Table 6 For More Information

Cisco Virtual Workspace (VXI) Smart Solution and VDI	
Cisco VDI homepage	http://www.cisco.com/go/vdi
Cisco Virtual Workspace (VXI) Smart Solution homepage	http://www.cisco.com/go/vxi
Cisco VDI design and configuration guides (Cisco Validated Designs)	http://www.cisco.com/go/vdidesigns
Cisco Virtual Workspace (VXI) Smart Solution design guides	http://www.cisco.com/go/designzone_vxi
Cisco Virtual Workspace (VXI) Smart Solution configuration guide	http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/VXI/configuration/VXI_Config_Guide.pdf
Cisco Data Center Business Advantage	http://www.cisco.com/go/dc
Cisco Borderless Networks	http://www.cisco.com/go/borderless

Cisco Collaboration	http://www.cisco.com/go/uc
Services	
Cisco Desktop Virtualization Services	http://www.cisco.com/web/services/enterprise-it-services/virtualization/documents/services_desktop_virtualization_overview.pdf
Cisco Services for Desktop Virtualization	http://www.cisco.com/web/services/enterprise-it-services/virtualization/index.html
Cisco Plan, Build, and Manage Services	http://www.cisco.com/web/services/portfolio/index.html
Cisco Planning, Design, and Implementation Help Desk	http://www.cisco.com/web/partners/tools/pdihd.html
Cisco Ordering	
Cisco Customer Service Support	http://www.cisco.com/web/siteassets/contacts/index.html
Cisco Ordering, Status, and Notification Tool	http://www.cisco.com/web/ordering/root/index.html
Cisco Commerce Workspace Training Library	http://www.cisco.com/web/partners/downloads/events/downloads/training_library_partner.pdf
Cisco Commerce Workspace login and instructions	<p>1st-Tier: http://www.cisco.com/E-Learning/ls-rob/cdc_bulk/Enterprise/CCW7_1_Tier_Login_to_Workspace/CCW7_Tier1_login.pdf</p> <p>2nd-Tier: http://www.cisco.com/E-Learning/ls-rob/cdc_bulk/Enterprise/CCW7_2_Tier_Login_to_Workspace/CCW7_Tier2_login.pdf</p>

About Cisco

Cisco is the worldwide leader in networking that transforms the way that people connect, communicate, and collaborate. Cisco has shaped the future of the Internet by creating exceptional value and opportunity for customers, employees, investors, and ecosystem partners and has become the worldwide leader in networking, transforming the way that people connect, communicate, and collaborate. Additional information about Cisco can be found at www.cisco.com.



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