



Microsoft Private Cloud Fast Track

What Is Microsoft Private Cloud Fast Track?

MICROSOFT PRIVATE CLOUD FAST TRACK is a reference architecture for building private clouds that combines Microsoft software, consolidated guidance, and validated configurations with Cisco technology—including compute, network, and storage—as well as value-added software components.

The latest reference architecture is built on the Windows Server 2012 Hyper-V technology and Microsoft System Center 2012 SP1 solutions. Microsoft private cloud offerings can help customers and service providers build dedicated infrastructure as a service (IaaS) environments that transform the way they deliver IT services. Specifically, Microsoft Private Cloud Fast Track solutions provide a streamlined approach to delivering scalable, preconfigured, and validated infrastructure platforms for on-premises private cloud implementations. With local control over data and operations, IT can dynamically pool, allocate, secure, and manage resources for agile IaaS. Likewise, business units can deploy line-of-business applications with speed and consistency using self-provisioning (and decommissioning) and automated data center services in a virtualized environment.

PRIVATE CLOUD ON YOUR TERMS

FASTER DEPLOYMENT

Rich features and support make private clouds easy to construct, deploy, and manage.

- End-to-end architectural and deployment guidance
- Streamlined infrastructure planning due to predefined capacity
- Enhanced functionality and automation through deep knowledge of infrastructure
- Integrated management for virtual machine and infrastructure deployment

REDUCED RISK

Validated configurations mean you can implement with confidence.

- Tested, end-to-end interoperability for compute, storage, and network
- Predefined, out-of-box solutions based on a common cloud architecture
- High degree of service availability through automated load balancing

CISCO ADVANTAGE

Cisco provides a Microsoft private cloud reference architecture optimized for Hyper-V.

- Validated technologies from an industry leader in computing, storage, networking, and server virtualization
- Single platform built from unified computing, fabric, and storage technologies, with popular and trusted software virtualization
- Integrated components that help you centrally manage all your infrastructure pools
- Open management framework that integrates with System Center 2012 infrastructure management solutions

Microsoft and **Cisco** deliver on the promise of agile private cloud computing through an interoperable hardware and software platform based on standardized reference architecture. A private cloud from Cisco can greatly reduce time-to-value for virtualization infrastructure investments because it unites shared compute, network, and storage resources into a flexible, cost-effective solution based on off-the-shelf components. Microsoft Private Cloud Fast Track solutions provide a highly productive application and service experience by delivering workloads faster, keeping them up and running more reliably, and ultimately enabling more predictable service level agreements. Windows Server 2012 offers flexibility to build infrastructure across premises on an open, scalable, and elastic web and application platform to support your workloads. The reference architecture defines a common set of requirements to help IT consolidate hardware platforms into an environment that is more manageable, better used, and less consumptive.



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Why Cisco?

CISCO IS COMMITTED TO PRIVATE CLOUD as the next-generation dynamic data center, and our message to business leaders is clear: Private cloud is ready—and it's here now. Together, Cisco and Microsoft deliver a compelling private cloud solution based on the Microsoft Private Cloud Fast Track reference architecture and Cisco Unified Data Center architecture. With this solution, customers can purchase and deploy private cloud infrastructure in a fast, low-risk manner. These infrastructure options are prevalidated and pretested to provide a scalable, reliable, and flexible environment that meets business demands.

In our Fast Track solution, the Cisco Unified Computing System (UCS) complements Windows Server 2012 by enabling the features of Windows Server while adding capabilities based on Cisco's experience and innovations related to the UCS technology. The result is a Microsoft private cloud reference architecture composed of these complementary Cisco data center technologies:

- Cisco UCS platform
- Cisco Nexus 1000V (N1KV) Switch for Microsoft Hyper-V, Cisco Virtual Machine Fabric Extender (VM-FEX)
- UCS Manager, UCS PowerTool, and UCS/System Center 2012 integration

Windows Server 2012 provides a tremendous step forward in server virtualization—and in cloud platforms—with enhancements in the Windows Server operating system and the Hyper-V role. The UCS platform, combined with the Nexus 1000V and VM-FEX, provides a complete platform for Windows Server 2012 Hyper-V, enabling organizations to not only take full advantage of Hyper-V capabilities, but also extend them through Cisco innovations. When Windows PowerShell and System Center 2012 are integrated with UCS Manager, organizations gain a single, unified way to manage all aspects of the Microsoft and Cisco solution. Together, Windows Server 2012 and UCS provide an optimal and complete solution that enables organizations to embrace virtualization and the private cloud.

For organizations looking to implement a fully integrated and proven architecture that capitalizes on Cisco UCS and Windows Server 2012 capabilities, Cisco partners with NetApp and EMC to offer two complete converged infrastructure solutions: FlexPod and VSPEX, respectively. By having multiple storage options, we give our partners and customers more choice when considering integrated Microsoft private cloud solutions.

FlexPod with Microsoft Private Cloud is an integrated NetApp and Cisco reference implementation of Microsoft Private Cloud Fast Track, which delivers IT as a service (ITaaS) through a cost-effective, flexible, highly manageable, and automated infrastructure that will grow with an organization. It is a combined infrastructure stack of NetApp, Microsoft, and Cisco technologies that is available through channel partners and is validated by Microsoft through the Microsoft Private Cloud Fast Track program. FlexPod with Microsoft Private Cloud has the flexibility to be sized and optimized to accommodate many different use cases, including application workloads such as Microsoft SQL Server, Exchange Server, SharePoint Server, and others. FlexPod with Microsoft Private Cloud enables simplified management with repeatable deployments.

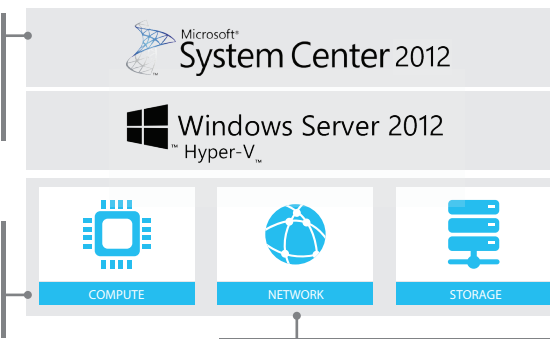
VSPEX Private Cloud for Microsoft Windows Server with Hyper-V is a complete virtualization solution, proven by Cisco and EMC to run Microsoft applications and delivered by a trusted partner. Designed for flexibility and validated to help facilitate interoperability and fast deployment, VSPEX works with a Microsoft-based environment while removing the complexity and risk that typically accompanies the design, integration, and deployment of a best-in-class solution.

Private Cloud Fast Track Reference Architecture

The Cisco Business-Ready Configuration is pre-engineered, tested, and optimized for virtualization. It supports the operating system, virtualization (compute, storage, and networking), and management capabilities offered by Windows Server 2012, Hyper-V, and System Center 2012 SP1.

Microsoft System Center 2012 SP1 (optional): Organizations can realize the benefits of cloud computing by providing a common toolset for the management of physical and virtual resources and cloud-hosted apps, whether they are deployed in public, private, or partner-hosted cloud environments.

Compute: The server fabric consists of similarly configured, swappable server blades that can be replaced for upgrades, repair, and capacity changes. Automated load balancing limits service interruption.



Windows Server 2012 Hyper-V: Customers can take advantage of the cost savings of virtualization through the massive scale capabilities of Windows Server 2012 Hyper-V. They also can make optimal use of server hardware investments by consolidating multiple server roles as separate virtual machines.

Storage: Storage Spaces provides a complete storage virtualization solution. It supports aggregation and elastic capacity expansion, building virtual disks from storage pools of capacity, and thin provisioning with full TRIM support. Other storage deployments also can be validated for Private Cloud Fast Track reference architectures, according to customer requirements.

Network: Networking is virtualized, consolidated, and automated. It supports advanced multitenant isolation and connectivity to public clouds, allowing organizations to take full advantage of hybrid IT.

Private Cloud Technologies

Windows Server 2012 Hyper-V™

Windows Server 2012 Hyper-V delivers massive scale capabilities and improved performance—in the data center, on the desktop, and now in the cloud. This technology:

- Offers customers significant cost savings through virtualization.
- Improves virtualization density and makes optimal use of server hardware investments by consolidating multiple server roles as separate virtual machines. These virtual machines can use Hyper-V to efficiently run multiple operating systems—Microsoft Windows, Linux, and others—in parallel, on a single server.
- Extends virtualization capabilities with more features, greater scalability, and built-in reliability mechanisms.

Microsoft® System Center 2012

A cloud and data center management solution, Microsoft System Center 2012 SP1 builds on the core capability provided by Windows Server 2012. It delivers a flexible, cost-effective private cloud infrastructure in a self-service model, while using existing data center hardware and software investments. This solution:

- Provides a common management experience across public, private, and partner-hosted clouds.
- Provides comprehensive, end-to-end management for infrastructure and applications, including interoperability for heterogeneous environments.
- Offers deep application insight—down to client script performance—to deliver an optimal experience for modern applications across diverse devices.
- Delivers tools and capabilities to negotiate challenges surrounding the explosive growth of data from social networking and new application patterns. These features also enable organizations to scale application capacity and, where necessary, to take advantage of public cloud resources.

FOR MORE INFORMATION

- www.microsoft.com/privatecloud
- www.cisco.com/go/flexpod
- www.cisco.com/go/vspex
- www.cisco.com/servers
- www.cisco.com/go/microsoft
- <http://developer.cisco.com/web/unifiedcomputing/microsoft> (System Center integrations)
- <http://developer.cisco.com/web/unifiedcomputing/pshell-download> (PowerTool)

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