Brochure

Cisco Unified Fabric Creates Business Advantage

What You Will Learn

Businesses need to address three main problems in the current demanding environment. Growth, margin, and risk must be managed efficiently and effectively for businesses to succeed. Customer, business partner, and employee expectations have risen to new levels. Innovations come from every direction, and accelerated business processes and new business models all put additional competitive pressure on businesses. IT can help businesses meet these new challenges.

Cisco® Unified Fabric brings convergence, scalability, and intelligence to the data center and campus core in the form of a single, fault-tolerant, high-performance, data center-class network. Unified fabric simplifies the infrastructure. Maintenance, cabling, and overall power and cooling costs are reduced with a concomitant reduction in overall complexity. Cisco Unified Fabric is a low-latency, lossless environment designed for even the most critical traffic. Technologies such as Cisco Fabric Path and Overlay Transport Virtualization (OTV) are designed with flexibility and reliability in mind.

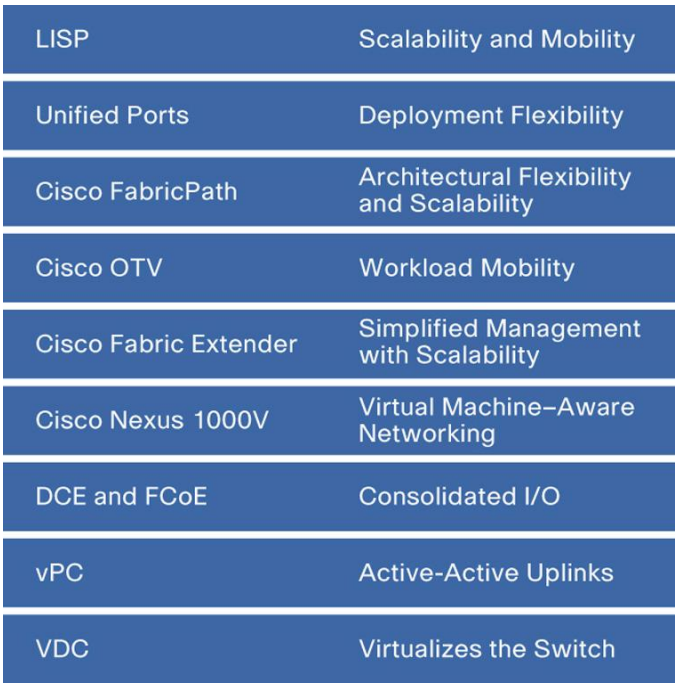
Benefits of Cisco Unified Fabric

A Cisco Unified Fabric network offers these benefits:

- Simplified infrastructure: Faster troubleshooting
- Simplified operations: Speedier deployment
- Secure virtual machine mobility: Operational security
- Fluid virtual machine networking: Faster virtual machine movement
- Integrated application delivery: Simplified deployment
- Inter- and intra-data center networking: Simplified WAN
- Simplified and secure multi-tenancy: Efficiency and security for customers

Coupled with support for popular server virtualization environments, Cisco Unified Fabric products such as the Cisco Nexus® 1000V Switch powered by Cisco NX-OS Software transform the data center network into a smoothly operating component of the fully virtualized and automated data center (Figure 1).

Figure 1. Cisco Unified Fabric Features



IT Business Focus

The ultimate goal of IT today, and the reason for IT's emphasis on automation, unification, consolidation, and cloud-based technologies, is to change its focus from maintenance and instead concentrate on tasks that benefit the business. Achieving this goal requires the creation of a data center fabric. The ability of your business to respond to market changes and implement new revenue ideas depends on IT. With IT personnel freed from nonstop maintenance duties, IT can quickly respond to business needs to the advantage of the business. Cisco Unified Fabric is a critical component in reducing the complexity of your data center and, therefore, the overall cost in IT time and effort needed to run your data center.

Convergence

Unification of data center networks brings a number of benefits that allow IT to respond more quickly to the needs of the business. The data centers of the past grew organically, with multiple networks composed of components that were optimized to their specific tasks. The Fibre Channel storage network is a good example of a task-specific network in the data center. Other networks grew out of the need for different network characteristics, and these networks were often based on Ethernet and IP. This model created I/O infrastructure sprawl and complexity, resulting in performance and agility barriers, particularly in virtualized data center environments.

Cisco Unified Fabric offers multiprotocol convergence, putting the protocols and, more important, the performance characteristics of multiple protocols on data center-class 10 Gigabit Ethernet. One of the foundations of Cisco Unified Fabric is Cisco NX-OS, which is a unifying operating system across Cisco Nexus and Cisco MDS 9000 Family products. Cisco NX-OS provides easy support for multiple protocols, giving you the flexibility you need to preserve your current hardware investments while moving forward.

Moving the data center to a single network reduces the total number of connections needed, which reduces the complexity of the physical network: for example, requiring cables, connectors, and physical switches. This reduction in cabling and switching hardware represents considerable initial cost savings, but the real savings is in management. Cisco Unified Fabric is a wire-once infrastructure with a single point of management. Single-point management reduces the time and effort required to efficiently manage large networks. These features give you increased return on their investments, effectively enabling greater business performance for the IT money spent.

Scalability

Virtualization in the data center environment is progressing far beyond simple server consolidation. Companies not only want entire data centers virtualized and automated, but they want to extend these benefits across multiple data centers and across multiple tenants in the data center. In addition, IT departments need to be able to take advantage of the benefits of cloud computing.

Cisco Unified Fabric simplifies the adoption of cloud computing, whether it is a private cloud in your own data center or a public cloud from a popular service provider. Cisco Unified Fabric integrated with the overall virtualization in the data center can help you achieve your overall data center and business goals. Cisco has the knowledge, experience, and adoption in all market segments, both large and small.

The capability to scale your data center to address all these scenarios and across different deployment environments is critical to helping ensure that your business is flexible and agile. Cisco Unified Fabric can scale up or down with equal facility as your needs change. Scale is also important as your business grows either organically or through acquisition. In the acquisition scenario, it is important that your data center be open so you can smoothly incorporate acquired systems and other IT assets. Cisco is committed to open standards, and Cisco Unified Fabric is no exception. Cisco has leadership positions on several standards committees, and advances standards wherever it can. Maintaining compatibility with widely accepted industry standards is essential for most data center managers and chief information officers (CIOs).

Intelligence

Integration and automation focused on infrastructure virtualization are central to the modern data center environment. In the past, ensuring that each workload's networking and security settings moved with the workload was a time-consuming and frustrating task, taking time from server administration, networking, and security teams. This cumbersome process prevented organizations from achieving the full benefits of a virtualized data center environment. Cisco Unified Fabric integrates tightly with many popular virtualization environments to provide a truly fluid movement of virtualized workloads.

Cisco Unified Fabric uses policy for both networking and security to help ensure that the characteristics assigned to each workload, whether it is broad policy or application-specific policy, moves smoothly when the workload moves. This movement encompasses server-to-server, rack-to-rack, data center-to-data center, and data center-to-cloud workload movement. Cisco Unified Fabric brings the intelligence to these operations that is needed to help ensure that virtualized workload movement is simple and manageable, giving IT administrators more time to concentrate their efforts on business-critical tasks instead of maintenance tasks.

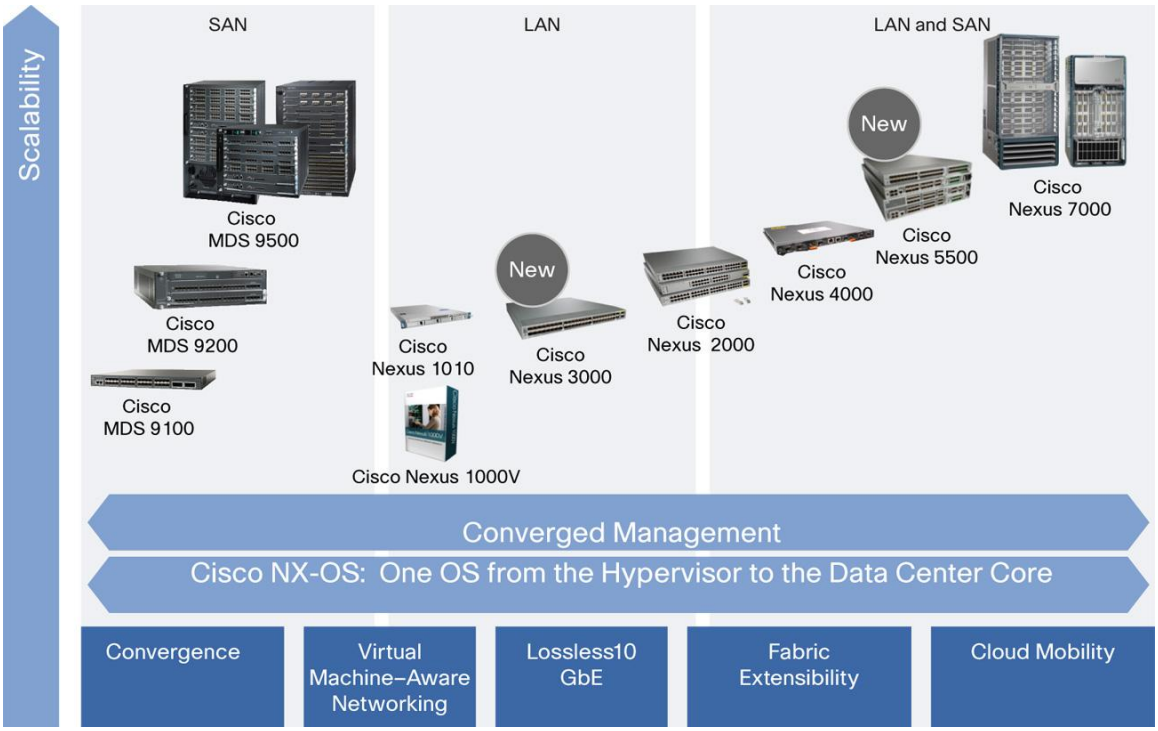
Cisco Unified Fabric Portfolio

Cisco offers a full spectrum of technologies and products that enable IT to get the most out of the data center (Figure 2). The Cisco Unified Fabric product portfolio includes:

- Cisco Nexus 7000 Series Switches: Exceptional scalability with continuous operation and outstanding deployment flexibility
- Cisco Nexus 5000 Series Switches and 2000 Series Fabric Extenders: High-performance, low-latency Ethernet-based fabric for data center convergence
- Cisco MDS 9000 Family: Multiprotocol, services-oriented SAN optimized for virtual machines
- Cisco Nexus 1000V Series Switches: Scalable virtual switching, enabling connectivity to cloud environments
- Cisco Catalyst® 6500 Series Switches: Ideal for deployments from the data center to the wiring closet
- Cisco Catalyst 4900 Series Switches: High-performance Layer 2 and 3 top-of-rack (ToR) switching with copper options

Uptime and reliability are critical to the data center. Cisco Unified Fabric products such as Cisco Nexus Family and Cisco MDS 9000 Family switches are designed for single-wire multiprotocol deployment. These product families both employ Cisco's advanced switch operating system, Cisco NX-OS, creating ease of use across products as well as a highly reliable and tested code base.

Figure 2. Cisco Unified Fabric Portfolio



Focus Where It Matters

Cisco's focus is always on the customer. Cisco Unified Fabric is designed for implementation as quickly or as slowly as the customer's needs dictate. Cisco does not adhere to a rigid architecture, but instead works with customers to create solutions that fit their unique business needs and reduce disruption in the data center.

Cisco's investment in research and development in data center technologies brings significant value to customers. Cisco has years of experience in mission-critical data center environments and so can provide considerable expertise and insight that directly benefits customers. Cisco provides investment protection for its customers with upgrades, new features, and a clear technology path for evolutionary upgrades that prevents periodic rip-and-replace operations in critical data center environments. Cisco also offers peace of mind with a world-class support organization that can handle the needs of customers of any size.

Intelligent Networking with Cisco Data Center Business Advantage

Cisco Data Center Business Advantage is an architectural framework that delivers tangible business value for dynamic networked organizations.

To meet the changing business needs of customers, the Cisco Data Center Business Advantage framework provides architectural flexibility and openness to deliver increased business value through technology innovation, systems excellence, and solution differentiation.

These four elements form a powerful architecture that only Cisco can deliver:

- Technology innovation: Cisco transforms data centers through continuous standards-based innovation and a choice of platforms so businesses can quickly deliver new capabilities and enter new markets
- Systems excellence: Cisco dramatically reduces complexity, creating an agile and efficient data center capable of responding to rapidly changing business demands
- Solution differentiation: Cisco, together with our partner ecosystem, provides complete, holistic offerings to address customers' IT and business needs
- Business value: Cisco offers customers business value through increased choice and flexibility, a unified architecture, and improved investment protection

The data center is at the center of IT and business innovation, and Cisco Data Center Business Advantage directly addresses the top business and IT priorities such as faster service creation, improved profitability, and transformative new business models.

Cisco's data center vision has evolved in response to customers' needs, giving customers efficiencies across the data center and IT infrastructure while providing the business agility needed to respond to changing demands. The result is an open, controlled, and transformative environment, moving the data center from a cost center to a competitive advantage.

Why Cisco?

At Cisco, we are changing the way you think about IT. Today's IT focuses on providing value to the business, instead of devoting most of its time to the maintenance of existing systems. Cisco Unified Fabric is designed from the start with ease of use, compatibility, and the whole data center in mind. Cisco's data center products offer:

- Reduced complexity
- Increased uptime
- Strong virtualization integration
- Change of focus from managing to doing

Get Started Today

Create converged, scalable, intelligent data center networks with Cisco Unified Fabric.

For more information, see http://www.cisco.com/en/US/netsol/ns945/index.html.

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