

Cisco Commercial Data Center for Companies with Growing IT Infrastructure Requirements

The Challenges of Keeping the Business on Track

Managing growth, improving margins, and succeeding in your market increasingly depend on your IT investments as much as your business acumen. Your ability to quickly launch a new product or service, track the business in real time, and provide superior customer service can all be helped or inhibited by the technology in your data center and across the company.

Even if you have a relatively modest IT operation, you have probably accumulated a growing collection of storage devices, servers, applications, networking equipment, and other resources. These data center infrastructure assets are typically deployed in isolation to meet specific needs, rather than as part of an overall architecture or long-term plan, over time leading to complexity and costs that increase with each new deployment, and ultimately yielding an unresponsive, uncompetitive business.

But midmarket enterprises do not have the resources of larger organizations, and you likely do not want to start over or embark on risky transformation projects. So what do you do?

EXECUTIVE SUMMARY	
CITY OF FORT WAYNE	<ul style="list-style-type: none"> • Government (Municipal) • Fort Wayne, Indiana • 1900 employees
BUSINESS CHALLENGE	<ul style="list-style-type: none"> • Enable centralization of remote application, file, and print servers for operational efficiencies • Avoid the cost of purchasing additional bandwidth to city buildings and to achieve LAN-like user experiences for media-rich applications • Enable the use of video conferencing, video on demand, and other technologies that enhance learning and avoid the need for travel
NETWORK SOLUTION	<ul style="list-style-type: none"> • Cisco Wide Area Application Services (WAAS) • Cisco Catalyst 6500 Series Switches • Cisco 1800 and 7600 Series Routers
BUSINESS RESULTS	<ul style="list-style-type: none"> • Decrease of 40-50 percent, on average, in bandwidth consumption for file transfers, translating to a 12-18 month payback period for the Cisco WAAS deployment • Eliminate additional T1 WAN link costs • Ability to introduce additional bandwidth-intensive voice and video applications without additional cost

The Cisco® data center networking portfolio of products offers medium-sized companies an architecture that uses their existing network assets that support short-term business goals. Cisco developed its data center network architecture to address the need for low complexity and minimal risk, providing solutions that offer these benefits:

- Simple deployment
- Easy management
- Reduced costs
- Increased security
- Improved productivity
- Compatibility with future versions to accommodate business growth

Figure 1 presents an example summary of the business value of Cisco's Data Center solutions that provide secure, accelerated application and data access from anywhere, at any time to improve the customer experience and boost employee productivity.

Cisco also offers medium-sized companies the same

building blocks that have been tested in real-world deployments at some of the most demanding enterprise data centers in the world, together with best practices and immediately available design and management features that reduce cost and complexity. With these features, you can plan an enterprise-class data center architecture and implement it incrementally at your own pace, justifying your investment with cost savings and reducing your risk by using an established solution.

Cisco has proven over numerous years the value of integrating advanced features and functions into the network, including virtual LAN (VLAN) and virtual storage area network (VSAN) capabilities, improving the approach to architecture evolution and development and leading to more flexible connectivity to support business growth.

Cisco Comprehensive Data Center Solutions

Business and IT leaders of medium-sized companies are looking for ways to regain control over their rapidly growing information and IT assets—essential for all companies that rely on technology to compete in an increasingly global economy, but that find that the cost, complexity, and

robustness of their current server and storage infrastructure are putting them at risk.

Figure 2 presents the business value of Cisco's Data Center solutions in lowering costs by consolidating and virtualizing servers, storage, branch office infrastructure, and physical facilities.

Cisco offers a roadmap that addresses the rapid growth in data and controls the capital and operating costs of applications, bandwidth, and servers. This roadmap is built around a broader vision of the network as a platform that grows incrementally to provide the following:

EXECUTIVE SUMMARY
<p>ARIZONA PUBLIC SERVICE (APS)</p> <ul style="list-style-type: none"> • Industry: Energy/Utilities • Headquarters: Phoenix, Arizona, United States • Employees: 6,400
<p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Cost-effectively deliver differentiated network services for different parts of the company • Rapidly deploy applications and servers to support growing business needs • Streamline and reduce operating costs in the data center
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • Deploy Cisco Catalyst 4948-10GE Switches for top-of-rack server aggregation • Use Cisco Catalyst 4948-10GE Switches to tailor bandwidth and security, and create zones to isolate network problems and minimize impact of network failures
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • Cuts cabling deployment time by 92 percent, a savings of \$21,000 per year • Allows IT to rapidly deploy new servers to support business needs • Improves system reliability • Simplifies network management and delivers differentiated services to business units

- Increased IT productivity and enhanced server backup and maintenance
- Consolidation of costly branch-office server, storage, and backup infrastructure in a centrally managed location
- Reduction in bandwidth and communication costs
- Simplified data availability, protection, and compliance through centralization of storage management, backup, retention, and recovery procedures

- LAN-like performance for applications delivered from a central location to branch-office users
- Maximization of WAN bandwidth and evolution of the business with new applications while reducing the total cost of ownership (TC) for the network

EXECUTIVE SUMMARY	
THE PANALPINA GROUP	<ul style="list-style-type: none"> • Air and Ocean Freight Services • Location: Basel, Switzerland and New Jersey, United States • Number of Employees: 14,000
BUSINESS CHALLENGE	<ul style="list-style-type: none"> • Shift IT spending from systems maintenance to delivery of innovation • Avoid US\$500,000 in capital cost for Toronto data center upgrade • Help ensure high employee productivity through excellent application performance
NETWORK SOLUTION	<ul style="list-style-type: none"> • Cisco WAAS for WAN optimization • Cisco MDS 9500 Series Multilayer Directors for storage networking • Cisco Catalyst 6500 Series Switches for data center networking
BUSINESS RESULTS	<ul style="list-style-type: none"> • US\$1 million of cost savings from data center centralization • Increased employee productivity and data integrity • Reduced operating costs

Figure 3 presents the business value of Cisco's Data Center solutions in providing improved responsiveness by provisioning applications and infrastructure from centralized computing, storage, and network resources.

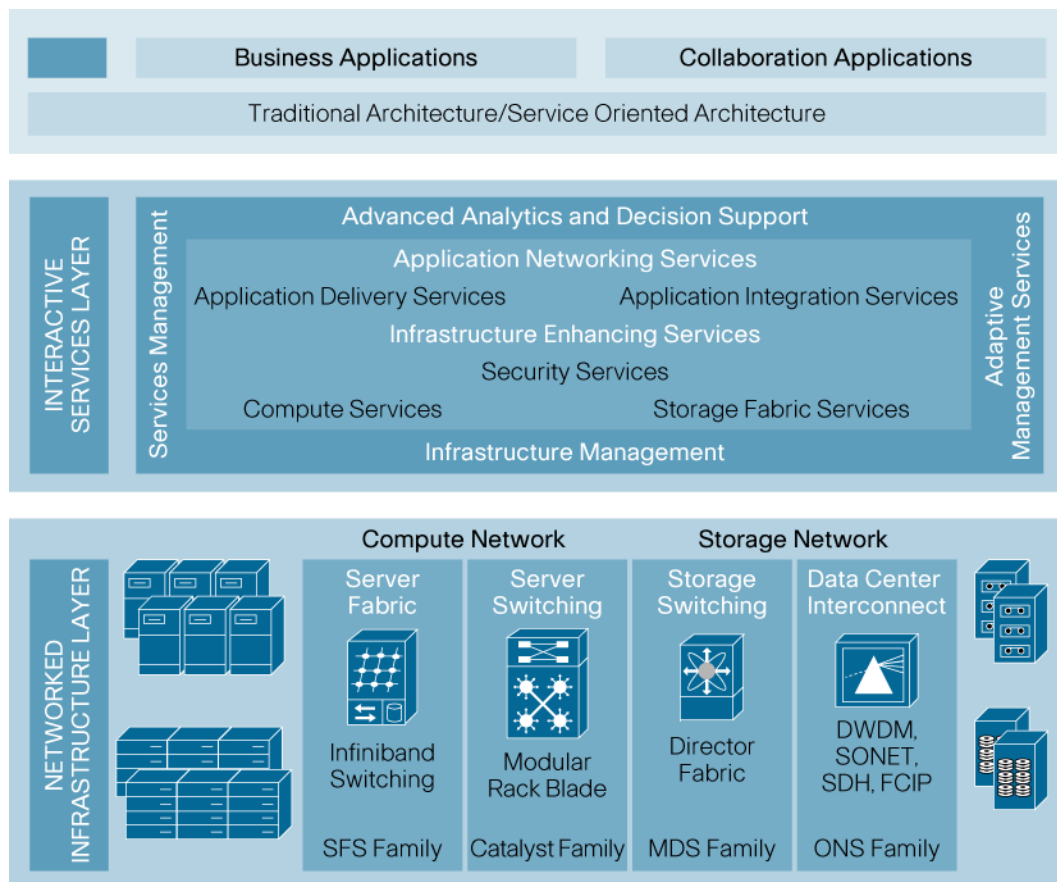
Cisco has developed its data center network architecture to address these challenges. It is built around a broader vision of the network as a platform, not just a conduit for moving information. The architecture is flexible enough to support, and align with, a company's business strategy.

Cisco Data Center Network Architecture Framework

The data center contains your business-critical applications. It can also be where you perform data migration, server consolidation, storage consolidation, application performance, WAN optimization, etc. Cisco and its partners offer an end-to-end solution that helps enterprises extend their data center networking services.

Although medium-sized companies may not require every element, you can select the ones you need from the same blueprint offered to the largest enterprises. The Cisco data center network architecture consists of two main layers of services that support your applications and connect them to your existing data center network (Figure 4):

- **Networked infrastructure layer:** The foundation of the Cisco data center network architecture, this layer provides intelligent connectivity services for networked elements within the data center, such as servers and storage, as well as connection to external users or other data centers. The network fabric is built with highly resilient, scalable platforms that integrate intelligent services directly into the fabric.
- **Interactive services layer:** This layer provides infrastructure enhancement services and application networking services that reside on the networking platforms and which are crucial to the delivery of a service-centric data center. Data center architects can deploy, manage, and protect applications, information, and supporting server and storage infrastructure quickly, securely, and reliably with a network infrastructure that displays system-level intelligence, such as storage virtualization, policy-based provisioning, adaptive threat defense, and enhanced application optimization.

Figure 4. Cisco Data Center Network Architecture

Within the Cisco data center architecture framework, Cisco offers a comprehensive portfolio that was first developed for the enterprise market, providing the benefits of the world's most demanding networks but at an affordable price. This comprehensive portfolio of integrated data center networking solutions and best practices allows medium-sized customers to build a foundation that facilitates immediate projects, meeting immediate and future needs. Its features include the following:

- New level of application control, scalability, security, and infrastructure simplification
- Scalability and improved data availability
- Reduced cost and reduced operational complexity while managing multiple firewalls from the same management platform
- Industry-leading applications and device performance with centralized management for application services
- Superior on-site services support from Certified Cisco Partners

Cisco is committed to helping all customers by offering affordable technology solutions to help enterprises regain control of IT assets.

To learn more about how Cisco and its channel partners can help you get to your next stage of business growth and to view architecture and recommended fast-start configurations for the data center, visit <http://www.cisco.com/go/integratednetwork>.

