Cisco Nexus Planning and Design Service

Create a more scalable, efficient, and resilient data center architecture with Cisco® Nexus Planning and Design Service

Efficiently migrate to a 10GbE environment on a Unified Fabric

Cisco Nexus Planning and Design Service

The Cisco Nexus® Planning and Design Service helps you create a more scalable, efficient, and resilient data center architecture based on the Cisco Nexus Family of data center–class switches and Cisco® MDS 9000 Series Multilayer Switches for connecting your LAN and storage area network (SAN).

Our service helps accelerate deployment of your Cisco Nexus solution for a more efficient network with a consolidated LAN and SAN infrastructure. It also facilitates the identification and resolution of planning and design concerns to reduce the risk in changing your IT infrastructure.

Cisco Nexus and MDS Switch Families

Cisco Nexus switches offer the latest in next-generation switching innovations that enable efficient virtualization, high-performance computing, and a unified fabric – the convergence of LANs and SANs. Cisco Nexus switches offer high scalability, performance, resiliency, management simplicity, and optimized capabilities, as well as smart virtual-machine networking. These innovations help lower total cost of ownership (TCO) and increase business agility.

The Cisco portfolio of data center-class switches facilitates and simplifies your data center transformation with wire-speed 10 Gigabit Ethernet switching for increased capacity, Fibre Channel over Ethernet (FCoE) for faster and easier network consolidation, and virtual machine (VM)-optimized networking for server virtualization.

The Cisco Nexus Family, including the Cisco Nexus 7000, Nexus 5000, and Nexus 4000 Series data center switches and Nexus 2000 Series Fabric Extenders (FEX), delivers innovative networking capabilities. Unified fabric; I/O consolidation; and high-performance, low-latency 10 Gigabit Ethernet switching enable scalable server virtualization. These features are critical to efficiently supporting a highly available data center core and server access. They also help you address the higher bandwidth requirements that result from aggregating servers when you consolidate or virtualize your data center network.

The Cisco MDS 9000 Series Multilayer Switches deliver intelligent network services such as virtual SANs (VSANs), comprehensive security, advanced traffic management, sophisticated diagnostics, and unified SAN management.

Simplifying Your Data Center Operations over a Unified Fabric

Cisco Planning and Design Service can help you consolidate your front-end, back-end, and storage networks as well as backup and management network functions over a unified fabric for more simplified data center operations. The Cisco Planning and Design Service also helps maximize your data center investment in your unified fabric with:

- Aggregation of data center fabrics by combining 1 and 10 Gigabit Ethernet networks and Fibre Channel SANs
- Reduced cabling and associated cabling costs
- Fewer server network Interface cards (NICs)

The Cisco Nexus Planning and Design Service includes a broad range of activities to help you quickly and successfully deploy the Cisco Nexus Family in your data center environment.

The service activities include defining an architecture that will meet your business and technical goals, evaluating the gaps between your current infrastructure and your desired architecture, and providing recommendations to help you achieve your goals and reduce the risk in changing your IT infrastructures.

The service helps you design a solution that unifies storage, server, and network resources; lowers overall power and cooling demands; and creates an architecture that supports your organization’s growth, server performance, and storage and virtualization goals.

Cisco experts can help you:

- Consolidate current server Fibre Channel and Ethernet interfaces into a new 10 Gigabit Ethernet and FCoE environment
- Integrate an existing Fibre Channel environment into a consolidated FCoE SAN infrastructure
- Develop intelligent and scalable SAN architectures for enhanced competitive advantage and lower costs
- Deploy a consolidated I/O on time and on budget

- Plan a proactive management strategy to incorporate advanced features and reduce outages
- Transfer knowledge to your server, network, and storage staffs to help them efficiently take advantage of the new capabilities of your data center

The activities and deliverables available with the Cisco Nexus Planning and Design Service are divided into three areas:

- Plan
  - Cisco Nexus network assessment
  - Implementation and migration plan
- Design
  - High-level design review
  - Low-level design review
  - Implementation support
  - Migration support
- Learn
  - Remote knowledge transfer sessions

Plan

Cisco can help you plan effectively, helping to mitigate the risk involved with designing a unified fabric infrastructure. Our data center experts can evaluate the strengths and limitations, services, and solution requirements of your network and validate that planned changes align with your business goals. We also proactively use a management strategy to reduce outages.

We can examine critical readiness factors such as infrastructure design, environmental concerns, and security and make recommendations to help you proactively resolve gaps. The activities and deliverables scoped for the plan phase are outlined in Table 1.

Table 1. Cisco Nexus Planning and Design Service Plan Activities, Deliverables, and Benefits

Activities and Deliverables	Benefits
Cisco Nexus Network Assessment • Detailed network assessment report	• Includes the advanced features on the Cisco Nexus platform • Enables a collaborative approach for a best-in-class solution • Provides a prioritized list of recommendations based on identified and documented Cisco leading practices • Provides a detailed project plan that can be used for future Cisco Nexus deployments • Minimizes expensive, time-consuming, and intrusive redesign by facilitating proper design early in the lifecycle

Activities and Deliverables	Benefits
Implementation and Migration Plan • Recommended configuration of new switches • Migration plan outlining configuration and topology changes • Step-by-step procedures for implementation or migration • Hardware and software resource assessments and recommendations • Recommended implementation or migration sequence and scheduling • Assessment of the effects of changes on the existing environment and architecture	• Accelerates successful Cisco Nexus implementation • Improves your ability to meet an aggressive deployment schedule • Proactively identifies potential risks to help minimize disruption to the existing infrastructure during deployment • Potentially reduces the duration of maintenance windows • Helps ensure that your Cisco Nexus implementation plan is complete and that it contains the critical elements required for a predictable, successful deployment
Unified Fabric Readiness Assessment • Determine the health of the SAN and report concerns prior to introducing FCoE • Provide recommendations to prepare the environment to FCoE migration	• Helps ensure proper consolidation of SAN and LAN networks into FCoE • Provides best-in-class solution • Provides a prioritized list of recommendations based on identified and documented Cisco leading practices • Minimizes expensive, time-consuming, and intrusive redesign by facilitating proper design early in the lifecycle

Design

Developing a detailed design is essential to reducing risk, delays, and the total cost of network deployments. Cisco provides an implementation-ready design that you can use to engineer your network. We consider your technical requirements and network design goals to create an architecture optimized for your organization that can reduce the need for costly redesign, improve performance, and scale to support future changes. The activities and deliverables for the design phase are outlined in Table 2.

Table 2. Cisco Nexus Planning and Design Service Design Activities, Deliverables, and Benefits

Activities and Deliverables	Benefits
High-Level Design • Existing storage topology diagrams • Functional requirements • Feature recommendations • Scalability design considerations • Deliverable • Provides architecture that interoperates with the current infrastructure and optimizes application call flows	• Provides an architecture that validates your specific goals for deploying the Cisco Nexus solution • Enables efficient platform migration • Provides a unified fabric (Cisco Nexus) strategy and roadmap aligned with assessment recommendations • Improves the performance, resiliency, and availability of your unified fabric (Cisco Nexus) infrastructure

Activities and Deliverables	Benefits
Unified Fabric High-Level Design Provides an overall FCoE architecture **Deliverable** Produces a design document containing: • Proposed unified fabric (LAN and SAN) topology diagrams • Functional requirements • Feature recommendations • Scalability design considerations	• Provides FCoE architecture that interoperates with existing data center infrastructure and optimizes application call flows • Enables efficient fabric scaling • Aligns unified fabric (Cisco Nexus) strategy and roadmap with assessment recommendations • Accelerates migration to unified fabric with the Cisco Nexus switches • Creates a more scalable, efficient, and resilient data center architecture
Low-Level Design Review • Reviews existing Cisco Nexus deployments or provide a detailed review of a customer-provided Cisco Nexus design • Verifies that the chosen platform, features, and functions meet the design objectives • Reviews the customer-provided design to verify that it integrates the technical requirements and design goals • Reviews the configuration to verify conformance to or compliance with Cisco best practices • Assesses and validates the scalability and design limitations of the design • Identifies opportunities to improve design performance, security, and availability • Provides guidance on parameter and feature selection • Provides guidance related to any known concerns or defects applicable to designs under review	• Verifies that your technical requirements and design goals are integrated into your Cisco Nexus design through the use of proven design principles • Helps ensure compliance with Cisco best practices • Helps ensure software selection is appropriate for the features selected
Unified Fabric Low-Level Design **Deliverables** Provides a detailed design for the proposed unified fabric architecture Provides detailed reference documentation for the proposed unified fabric architecture, which includes detailed configuration specifications including features such as: • VSANs, VLANs, zoning, and N port virtualization (NPV) • Virtual PortChannels (vPCs) and virtual device contexts (VDCs) • Host to Cisco Nexus connectivity • Cisco Nexus 5000 and Nexus 7000 configuration • Cisco Nexus to MDS connectivity	• Minimizes expensive, time-consuming, and intrusive redesign by facilitating proper design early in the lifecycle • Improves the performance, resiliency, and availability of your unified fabric (Cisco Nexus) infrastructure • Creates a troubleshooting reference for the support team to use for future reference • Provides a “living” design document to record moves, additions, and changes
Implementation Support • Includes onsite and remote device configuration support for installing, managing, and implementing the recommended solutions **Deliverable** • Provides leading practices recommendations for using Cisco configuration tools and methods and assistance in loading configurations	• Helps you install, configure, and manage your network and unified architecture • Mitigates risks and rapidly addresses any concerns that may arise • Helps avoid unexpected or extended outages during implementation

Activities and Deliverables	Benefits
Migration Support • Provides help transitioning existing environment to a Cisco Nexus access layer for unified fabric connectivity • Supports incident management	• Provides onsite and remote assistance to help ensure a smooth and successful transition with problems addressed quickly to help avoid costly delays • Supports both Cisco Nexus and Cisco MDS platforms

Implementation and Migration Plan

Activities and Deliverables	Benefits
Implementation Planning • Includes basic site setup such as switch names, VSANs, VLANs, zoning and aliasing, and end-device assignment • Provides management, security, port configuration, and VDC configuration • Supports migration and cutover tasks from the existing Fibre Channel connectivity to FCoE connectivity • Provides detailed rollback plan for each phase of the implementation **Deliverable** • Implementation and Migration Plans	• Provides roles, responsibilities, and timeframes to help ensure a smooth transition to a unified fabric infrastructure • Sets expectations related to downtime and support requirements

Learn

Help increase your team's self-sufficiency by sharing knowledge and leading practices. The activities and deliverables scoped for the learn phase are outlined in Table 3.

Table 3. Cisco Nexus Planning and Design Service Learn Activities, Deliverables, and Benefits

Activities and Deliverables	Benefits
Remote Knowledge-Transfer Sessions • Delivers remote knowledge-transfer sessions about Cisco products and technologies you use; this activity typically includes the following: • Provides informal educational sessions • Conducts chalk talks • Communicates regularly by conference calls and email messages	• Provides anytime access to our industry-leading expertise and intellectual property • Helps train your operations staff on leading practices for deploying and integrating Cisco Nexus solutions • Improves staff proficiency through knowledge exchange with Cisco experts

Prerequisite Services

Before you implement the Cisco Nexus solution, Cisco recommends the Cisco Architecture Value Analysis Service. This service identifies the operational and financial commitments required to build a new infrastructure. For larger businesses, Cisco recommends the Cisco Virtualization Operations Management Assessment Service. This service identifies the barriers and risks limiting the ability to efficiently operate a virtualized data center and transforms operating models and management silos.

Follow-On Services

To realize the value of the architecture, network devices and applications need to be

secure and available, and they need to operate reliably. Cisco recommends the Cisco Data Center Optimization Service as a next step after the Cisco Nexus Planning and Design Service. The Cisco Data Center Optimization Service provides optimization services specific to Cisco Nexus switches in addition to the Cisco Application Control Engine (ACE), SAN, unified computing, Cisco Wide Area Application Services (WAAS), end-to-end architecture, and virtualization.

Why Cisco Data Center Services

Today, the data center is a strategic asset in a world that demands better integration among people, information, and ideas. Your business and your data center work better when technology products and services are aligned with your business needs and opportunities. Using an innovative, unified view of data center assets, Cisco and our industry-leading partners deliver services that accelerate the transformation of your data center. Cisco takes an architectural approach to help you efficiently integrate and manage data center resources. Cisco Data Center Services can help you reduce costs and deliver high availability and application performance.

Cisco Expertise

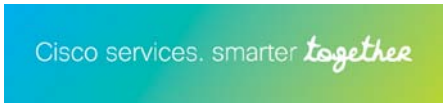
Cisco and our partners use leading practices and proven methodologies to help you quickly and efficiently plan and deploy a high-performance, resilient, and scalable architecture. The Cisco Nexus Planning and Design Services are delivered by Cisco Advanced Services experts who hold a wide array of industry certifications and are subject-matter experts in business and technology architectures and data center technologies. They have direct experience in planning, designing, and supporting unified fabric (Cisco Nexus) infrastructures. Our product and technology expertise is continuously enhanced by hands-on experience with real-life networks and broad exposure to the latest technology and implementations.

Availability

The Cisco Nexus Planning and Design Service is a subscription-based service and is widely available. Contact your local Cisco account manager for information about availability in your area.

For More Information

For more information about the Cisco Nexus Services, visit www.cisco.com/go/nexusservices or contact your local Cisco account manager.



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