



Cisco Data Center Virtualization Planning and Design Service

Speed Your Deployment of An End-to-End Virtualized Architecture

Planning and Designing a Successful Virtualized Environment

While virtualization yields significant operational advantages, it can also introduce network complexity and new management challenges. Unmanaged virtual machines, network, and storage can become a significant security issue. To attain the full benefits of virtualization, the planning and implementation process must be coordinated among server, storage, network, security, and application stakeholders. This coordination might require changing customized processes as well as making security a part of the enterprise plan for virtualized environment governance and lifecycle management. Coworkers across your data center must bridge organizational boundaries to facilitate a productive planning and design phase for your virtualization implementation.

Plan, Implement, and Manage

The Cisco® Data Center Virtualization Planning and Design Service helps you develop and deploy a data center-wide virtualization strategy that is customized to your IT and business needs. Cisco brings together the needed skill sets that may include enterprise and solution architects, virtualization experts, and project managers. These experts work collaboratively with you to provide consulting services that span your technical, business, and financial requirements. They also provide a detailed total cost of ownership (TCO) and return on investment (ROI) analyses for network and server consolidation to help you quantify potential cost savings. Cisco recommends the right technology solutions for your particular challenges and provides end-to-end service delivery and task coordination to help you achieve a successful implementation.

Experts use best practices and proven methodologies to help develop a validated virtualized infrastructure and mitigate risk.

The Cisco Data Center Virtualization Planning and Design Service includes the following components:

- **Virtualization planning:** Cisco experts gather requirements, help you create high-level design architecture, and help expand virtualization knowledge in your organization.
- **Virtualization design and implementation:** Cisco experts create a detailed design for your virtualization solution. Depending on your needs, we also can help you to:
 - Test and validate your solution
 - Identify product acquisition needs
 - Assist in staging and validation of the data center solution
 - Create physical-to-virtual migration plans
 - Implement virtualization over a phased time frame
 - Implement best practices for security across network, storage, and server in a virtualized environment
 - Address your rollout and migration requirements
- **Virtualization project management:** Throughout the planning, design, and implementation phases, Cisco can help you keep your virtualization project running smoothly by creating a detailed work breakdown structure, managing change control, providing weekly status reports, and facilitating communications.

Virtualization Planning

Cisco planning helps you understand the gaps in your data center environment that can affect your virtualization solution. The service includes recommendations to help you obtain a better return from your existing resources and from your investment in virtualization. Also, as the number and complexity of network security threats grows, protecting your data center has never been more important. The Cisco Data Center Virtualization Planning and Design Service (see Tables 1 and 2) is an architectural solution designed for the evolving security landscape to help ensure that your IT assets in the data center are safe and your organization more resilient and reliable.

Cisco focuses on:

- Network Infrastructure and management requirements spanning Layer 4 to Layer 7 services, storage area networking (SAN), and security
- Automation with tools that help deliver cross-data center virtual machine-aware infrastructure such as the following:
 - Cisco VN-link, which helps to ensure consistent policy-driven network capabilities across all servers
 - Cisco FlexAttach, which helps facilitate server and configuration management
- Future requirements for consolidated I/O and unified I/O
- High-level design document covering the Layer 2/Layer 3 infrastructure and integrated design

Virtualization Planning *(Continued)*

- Application optimization
 - Server load balancing
 - Secure Sockets Layer (SSL) offload
 - Smart Domain Name System (DNS) for disaster recovery
 - Network integration
 - Wide area optimization component for the data center
 - XML offload
- Security
 - Firewalls
 - Intrusion prevention and detection
 - Distributed denial of service (DDoS) protection
 - Internet Protocol Security (IPSec) and SSL virtual private network (VPN)
 - Email security
 - Web application firewall
- XML security
 - Certificate and key management
 - Security policies in virtualized environment across network, storage, and server
- Wide area network (WAN) and Multiprotocol Label Switching (MPLS) at the edge
- Storage area networking (SAN)
 - Management
 - Simple Network Management Protocol (SNMP) and syslog best practices
 - Management zones within the data center
 - In-band and out-of-band management recommendations
 - Event correlation
- Requirements gathering, including a financial and capacity analysis
- Server inventory, performance, and utilization assessment of x86 servers running Windows and Linux
- Server virtualization design enablement requirements gathering
- Optimization of the virtual infrastructure across the data center
- Virtualized infrastructure architectural design
 - Architecture and design considerations based on interviews, capacity, and financial analysis
 - Assumptions and risk mitigation considerations

Table 1. Virtualization Planning Activities, Deliverables, and Benefits

Activities and Deliverables	Benefits
<p>Activities:</p> <ul style="list-style-type: none"> • Cisco helps you identify technology and business requirements that affect the virtualization design. The process involves: <ul style="list-style-type: none"> – Interviewing stakeholders across the IT organization using a workshop-based methodology – Using a questionnaire to gather requirements – Reviewing existing IT documents on infrastructure diagrams – Identifying security solution goals and future requirements for the virtualized environment – Evaluating future security technology plans <p>Deliverables:</p> <ul style="list-style-type: none"> • Customer requirements document (CRD) 	<ul style="list-style-type: none"> • Accelerate adoption of your virtualization solution across your IT organization with participation in developing a customer requirements document
<p>Activities:</p> <ul style="list-style-type: none"> • Create an end-to-end virtualized architecture covering network, network services, security, SAN, and optimized server integration • Provide a high-level logical design of virtualized infrastructure • Review documentation, including technology readiness assessment report, design specifications, and network/storage topology diagrams • Define relationships and dependencies between components • Map customer requirements into a high-level design <p>Deliverables:</p> <ul style="list-style-type: none"> • Customer requirements document (CRD) 	<ul style="list-style-type: none"> • Obtain more from your virtualization initiative by developing an end-to-end virtualized reference architecture • Establish a robust solution for an end-to-end virtualized infrastructure that will protect your business by identifying requirements associated with security policies, availability, capacity, and performance • Address increasing network bandwidth requirements driven by server virtualization • Plan for smooth deployment of an end-to-end virtualization solution with a single set of recommendations developed by Cisco experts
<p>Activities:</p> <ul style="list-style-type: none"> • Conduct informal sessions to transfer knowledge about server and network virtualization design best practices to your IT organization to assist in operational readiness for the new architecture <p>Deliverables:</p> <ul style="list-style-type: none"> • Workshop 	<ul style="list-style-type: none"> • Plan for smooth deployment of an end-to-end virtualization solution with a knowledge transfer process

Virtualization Design and Implementation

Cisco helps you create a complete roadmap to guide you through a successful virtualization solution implementation. Cisco experts focus on their respective areas of core competence and work together to best integrate the components of your virtualization solution.

Cisco provides recommendations that include:

- Low-level design for the Layer 2/Layer 3 infrastructure and integrated design, including logical designs and device configurations
- Application optimization
- Security
- WAN and MPLS at the edge
- SAN
- Infrastructure and automation using tools and technologies such as VN-link and FlexAttach
- Low-level server infrastructure design
- Infrastructure configuration and installation procedures
- Infrastructure test and validation plan
- Infrastructure rollout and migration plan

Table 2. Virtualization Design and Implementation Activities, Deliverables, and Benefits

Activities and Deliverables	Benefits
<p>Activities:</p> <ul style="list-style-type: none"> • Develop a low-level design plan for your virtualization and security solution that includes your servers, network, and storage environment and the associated device configurations <p>Deliverables:</p> <ul style="list-style-type: none"> • Cisco low-level design document 	<ul style="list-style-type: none"> • Design a solution that helps reduce operating costs • Reduce expensive, time-consuming redesign by creating a well-engineered, end-to-end virtualization design to the extent possible
<p>Activities: Test, Stage, Validate</p> <ul style="list-style-type: none"> • Test and validate your server virtualization solution • Use the Cisco network virtualization and security test plan to conduct an end-to-end, integrated test of network, storage, and security layers • Prepare for deployment with focus on developing and documenting the security solution architecture, detailed design, and a system test plan <p>Deliverables:</p> <ul style="list-style-type: none"> • Test plan • Cisco network virtualization and security test plan 	<ul style="list-style-type: none"> • Mitigate the risk of infrastructure downtime and of costs from potential rework and speed implementation and migration of new security solutions and technologies through time-tested design methodologies
<p>Activities:</p> <ul style="list-style-type: none"> • Rely on Cisco's collection of design documents, diagrams, and plans to help you systematically build a specific virtual infrastructure • Vulnerability and configuration management • Virtual machine intrusion prevention, identity, and access management • Virtual machine network access control <p>Cisco network experts provide a low-level design of the network, including physical and logical topologies, scalability, security, and redundancy considerations, recommended features and functions, software versions, and configurations</p> <p>Deliverables:</p> <ul style="list-style-type: none"> • Product acquisition and implementation plan • Configuration guide • Standard procedures guide 	<ul style="list-style-type: none"> • Deliver a multilayer defense against security threats and improve data center security, reliability, maintainability, and performance through world-class security design across network, storage, and server

<p>Activities:</p> <ul style="list-style-type: none"> • Plan for a smooth migration from your existing environment to a virtualized environment that helps you to: <ul style="list-style-type: none"> – Perform live migrations with zero downtime – Continuously and automatically optimize virtual machines within resource pools – Perform hardware maintenance without scheduling downtime and disrupting business operations – Proactively move virtual machines away from failing or underperforming servers – Accelerate implementation with detailed network infrastructure plan – Migrate to a Cisco recommended virtualization architecture using a step-by-step plan – Identify ongoing issues affecting implementation or migration of the recommended designs – Coordinate migration and implementation support among the organizational boundaries spanning applications, server, storage, network, and security teams • Rely on coordinated delivery from Cisco <p>Deliverables:</p> <ul style="list-style-type: none"> • Cisco virtualization rollout and migration plan 	<ul style="list-style-type: none"> • Accelerate enhanced application availability, scalability, and manageability using any-to-any connectivity
--	--

Virtualization Project Management

Virtualization project management (Table 3) helps you keep the planning and design phase of your virtualization project on track and running smoothly. Cisco provides project management deliverables and provides a single point of contact for all communications.

Table 3. Virtualization Project Management Activities, Deliverables, and Benefits

Activities and Deliverables	Benefits
<p>Activities:</p> <ul style="list-style-type: none"> • Project management <ul style="list-style-type: none"> – Conduct project kick-off meeting – Develop work breakdown structure (WBS) – Plan task durations and dependencies – Provide project schedule including critical dependencies – Maintain project contact and resource lists – Provide and manage project change control and escalation procedures – Provide a Cisco project point of contact for all communications – Provide weekly status reporting on project tasks, milestones, and schedule and project issues <p>Deliverables:</p> <ul style="list-style-type: none"> • Project plan • Weekly status reports • Ongoing communications throughout project 	<ul style="list-style-type: none"> • Keep your virtualization project running smoothly • Simplify management with a single project manager who keeps track of all deliverables and communications • Increase transparency with the project management team that is reviewing and monitoring interdependencies to the extent possible

Benefits

Cisco Data Center Virtualization Planning and Design Service helps you plan and design an end-to-end virtualization solution that can help you to:

- Understand the gaps in your environment that can affect your virtualization solution
- Manage risk by working closely with experts in networking and virtualization
- Increase application uptime and performance
- Increase the security of your virtualized architecture
- Bring new applications online faster with automated resource provisioning
- Enhance application availability, scalability, and manageability using any-to-any connectivity
- Lower ongoing operating costs

Prerequisites

The Cisco Data Center Virtualization Planning and Design Service typically follows the Cisco Virtualization Strategy and Roadmap Services.

Follow-On Services

It is recommended that the Cisco Data Center Virtualization Planning and Design Service be followed by the Cisco Data Center Optimization Service. This service is ideal for those customers who want to maintain a high level of performance with their virtualized architecture as their data center evolves.

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. Cisco and our industry-leading partners deliver intelligent, personalized services that accelerate the transformation of your data center. Using a unique, network-based perspective and a unified view of data center assets, Cisco takes an architectural approach to help you efficiently consolidate, virtualize, and manage data center resources. Cisco Data Center Services help transform, optimize, and protect your data center to reduce costs, deliver high availability, and improve application performance.

Cisco and Partner Expertise

Cisco and our industry-leading partners use best practices and proven methodologies to help you quickly and efficiently plan and deploy a high-performance, resilient, and scalable virtualized architecture for your business.

The Cisco Data Center Virtualization Services are delivered by Cisco experts who hold a wide array of industry certifications and are subject matter experts in business and technology architecture and data center technologies. They have direct experience in planning, designing, and supporting virtualization solutions. Cisco offers the following expertise:

- Data center solutions architect
- Layer 2 and Layer 3 infrastructure architect
- SAN architect
- Layer 4 to Layer 7 architect
- Professional consultants certified on VMware
- Information security expert
- Network management architect
- Customer system architect and administrator
- Project manager

Cisco product and technology expertise is continually enhanced by hands-on experience with real-life networks and broad exposure to the latest technology and implementations.

Availability

Cisco Data Center Virtualization Planning and Design Service is widely available. Contact your local Cisco account manager about availability in your area.

To Find Out More

For more information about Cisco Data Center Virtualization Planning and Design Service, as well as the broad array of Cisco Services for the data center, contact your local Cisco account manager or visit www.cisco.com/go/dcservices.

Cisco Services.
Making Networks Work.
Better Together.



Americas Headquarters
 Cisco Systems, Inc.
 San Jose, CA

Asia Pacific Headquarters
 Cisco Systems (USA) Pte. Ltd.
 Singapore

Europe Headquarters
 Cisco Systems International BV
 Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCDE, CCENT, CCSI, Cisco Eos, Cisco Explorer, Cisco HealthPresence, Cisco IronPort, the Cisco logo, Cisco Nurse Connect, Cisco Pulse, Cisco SensorBase, Cisco StackPower, Cisco StadiumVision, Cisco TelePresence, Cisco TrustSec, Cisco Unified Computing System, Cisco WebEx, DCE, Flip Channels, Flip for Good, Flip Mino, Flipshare (Design), Flip Ultra, Flip Video, Flip Video (Design), Instant Broadband, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn, Cisco Capital, Cisco Capital (Design), Cisco-Financed (Stylized), Cisco Store, Flip Gift Card, and One Million Acts of Green are service marks; and Access Registrar, Aironet, AllTouch, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Lumin, Cisco Nexus, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, Continuum, EtherFast, EtherSwitch, Event Center, Explorer, Follow Me Browsing, GainMaker, iLYNX, IOS, iPhone, IronPort, the IronPort logo, Laser Link, LightStream, Linksys, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, PCNow, PIX, PowerKEY, PowerPanels, PowerTV, PowerTV (Design), PowerVu, Prisma, ProConnect, ROSA, SenderBase, SMARTnet, Spectrum Expert, StackWise, WebEx, and the WebEx logo are registered trademarks of Cisco and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1002R)