

Cisco VN-Link: Accelerate Server Virtualization

Deliver Virtual Machine–Aware Network and Storage Services

Executive Summary

Cisco® VN-Link extends the scope and expands the benefits of a server virtualization strategy. By providing virtual machine–aware network and storage services to a virtual machine, Cisco VN-Link increases infrastructure agility, improves application availability, strengthens security and compliance, and simplifies management.

Challenge

Adoption of server virtualization is expected to markedly increase over the next few years. However, there are a number of impediments to the scalability of current server virtualization strategies. In particular, although servers and applications are now being managed at the virtual machine level, network and storage I/O is still being managed at the physical device level, creating security and compliance problems and management and operations overhead that is increasing in scope and complexity. Solutions that work when 10 percent of production servers are virtualized seldom scale to support virtualization of 50 percent of production servers.

Business Benefits

By delivering network and storage services that can be managed with virtual machine–level granularity, Cisco VN-Link greatly increases the benefits of server virtualization. Beyond the initial benefits derived from server consolidation, the introduction of virtual machine–aware network and storage allows server virtualization to be used to enhance a wide range of IT initiatives, including business continuity, energy efficiency, and resource agility.

Solution

Cisco VN-Link encompasses a number of products and technologies that work together to improve server virtualization strategies:

- **Cisco Nexus™ 1000V virtual switch** is Cisco's first pure software switch. Developed in collaboration with VMware, the Cisco Nexus 1000V integrates directly with the VMware ESX hypervisor. This tight coupling of network and server resources helps ensure that network and security policies automatically follow a virtual machine that is being migrated with VMware VMotion.
- **Network Interface Virtualization (NIV)** is a virtual machine networking protocol jointly developed by Cisco and VMware that allows Cisco VN-Link functions to be implemented in hardware. The protocol has been presented to IEEE for ratification as an open standard.
- **N-Port Virtualizer (NPV)** is a function currently available on the Cisco MDS 9000 family of multilayer switches that allows storage services to follow a virtual machine as it moves.

This tight coupling of the virtual machine to both network and storage services enables policy and security to be managed at the virtual machine and for those services to follow the virtual machine as it moves when features such as VMware's dynamic resource management are used. Cisco VN-Link also provides visibility down to the virtual machine level, simplifying management, troubleshooting, and regulatory compliance. Further, Cisco VN-Link allows the server, storage, and network teams to collaborate more closely while still maintaining team autonomy. For example, the server administrator can add or move a server or virtual machine without having to call the network or storage team or to take on storage or network responsibilities. Similarly, each team can continue to use its favorite management and operations tools.

Why Cisco?

Cisco has a long and proven heritage in virtualization. Cisco introduced network virtualization more than 10 years ago, and Cisco's current data center portfolio includes virtualized networking, storage networking, security, and Layer 4 through 7 services. With its collaboration with VMware, Cisco now brings this expertise to the server virtualization domain.

For More Information

For more information, visit <http://www.cisco.com/go/vnlink>.



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, Cisco Eos, Cisco Lumin, Cisco Nexus, Cisco StadiumVision, Cisco TelePresence, the Cisco logo, DCE, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn and Cisco Store are service marks; and Access Registrar, Aironet, 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 Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. 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. (0807R)