Cisco VN-Link Virtual Machine Aware Network and Storage Services

At-A-Glance

Introduction

As companies invest in server virtualization for consolidation purposes, they also want to address areas such as resource agility, high availability, and energy efficiency. Virtual machine (VM) portability, or live migration, is central to the value of server virtualization; however, there are a number of challenges that inhibit broader adoption of the technology: 1) inability to apply security and policy at the VM level and have that policy move with the VM, 2) lack of visibility into VMs which complicates accounting and troubleshooting, and 3) organizational challenges introduced by the virtualized environment.

Introducing Cisco VN-Link

Cisco® VN-Link technology was developed to address these challenges. It bridges the server, storage and network management domains so changes in one environment are communicated to the others. For example, when a customer in a VMware ESX environment uses VCenter to initiate VMotion or move a VM from one physical server to another, that event is signalled to the data center network and SAN and the appropriate network profile and storage services move with the VM.

Cisco Nexus 1000V Virtual Switch

The first implementation of Cisco VN-Link network services is with the Cisco Nexus™ 1000V virtual switch, which is designed for the VMware ESX environment. The switch interfaces directly with the ESX hypervisor using VMware's DVS technology to provide a tightly coupled operational environment.

VN-Link Storage Services

Following the established intelligent fabric model, VN-Link storage services are embedded in a fibre channel fabric built with Cisco MDS fibre channel switches.

Benefits

Cisco VN-Link server virtualization technology helps ensure consistent policy-driven network capabilities across all physical and virtual servers in a data center.

Policy-Based Configuration of VM Network Characteristics

- Real-time coordinated configuration of network, security and storage services
- Consistent VM-centric management model for more efficient and flexible server administration

Mobile VM Security & Network Policy

- Policy moves with VMs during VMotion event for persistent network, security, and storage compliance
- Safeguards DRS or live migration from impacts due to disparate VSwitch or port group configurations
- Robust mechanism for business continuance, performance management, and security compliance

Transparent, Flexible, Consistent Management Model

- Aligns management and operations environment for VMs and physical servers in the data center
- Maintains existing VMware operational model while allowing administrators to concurrently define and apply network policies to the infrastructure
- Reduces TCO through operational consistency and visibility in the network
- Offers flexible collaboration between server, network, security, and storage teams while supporting various organizational boundaries (siloed, converged, hybrid) and individual team autonomy

For More Information

For more information, visit http://www.cisco.com/go/vnlink and http://www.cisco.com/go/nexus1000v.

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