



# VMware vNetwork Distributed Switch

## Simplify and Enhance Virtual Machine Networking

### AT A GLANCE

VMware® vNetwork Distributed Switch simplifies and enhances the provisioning, administration and monitoring of virtual machine networks.

### BENEFITS

- Simplified provisioning and administration of virtual networking through a centralized interface.
- Simplified end-to-end physical and virtual network management through third-party virtual switch extensions for the Cisco Nexus 1000V virtual switch.
- Enhanced provisioning and traffic management capabilities through private VLAN support and bi-directional virtual machine rate-limiting.
- Enhanced security and monitoring for virtual machines migrated via VMware VMotion through maintenance and migration of port runtime state.

### What is the VMware vNetwork Distributed Switch?

VMware vNetwork Distributed Switch provides a central point of control for datacenter-level virtual networking. It enables administrators to move beyond per host network configuration to a centralized interface for all virtual machine networking in VMware vSphere environments. VMware vNetwork Distributed Switch maintains network runtime state for virtual machines as they live migrate from one host to another and allows higher security by enabling inline monitoring and centralized firewall services.

### How is VMware vNetwork Distributed Switch Used in the Enterprise?

Virtualization administrators typically manage virtual machine networking at the physical server level, using virtual switches inside the hypervisor. Since the virtual switches need to be configured consistently across many physical hosts and aligned with the physical network, virtualization and network administrators have to work closely to ensure proper virtual machine connectivity. Once deployed, both teams continue to work closely together for joint troubleshooting and monitoring of the virtualized datacenter. Many customers also require that the security procedures and policies of virtual machines conform to those of physical servers for security audits.

The VMware vNetwork Distributed Switch simplifies and enhances the provisioning, administration and monitoring of virtual machine networking by:

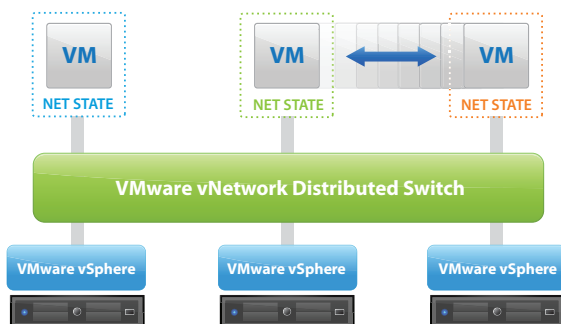
#### Centralizing the setup and change of virtual machine networking

VMware vNetwork Distributed Switch spans many VMware ESX hosts and aggregates networking to the datacenter level. VMware vNetwork Distributed Switch abstracts configuration of individual virtual switches and enables centralized administration through VMware vCenter Server (formerly VMware VirtualCenter Server).

Adding new hosts results in a standard network configuration being applied to the host, simplifying the addition of new servers to the environment. Changes to virtual machine networking can also be done centrally, once across many physical servers.

#### Enhancing the security of virtual machines

VMware vNetwork Distributed Switch maintains the network runtime state of virtual machines as they live migrate from one host to another in VMware environments, enabling inline monitoring and centralized firewall services.



vNetwork Distributed Switch retains network statistics for virtual machines as they live migrate.

## KEY FEATURES

### Providing support for third-party virtual switches

VMware vNetwork Distributed Switch includes support for third-party virtual switches such as the Cisco Nexus 1000V virtual switch. The Cisco Nexus 1000V provides customers with virtual machine granularity and control using familiar networking tools, allowing end-to-end network management across both physical and virtual machine environments.

### How Does VMware vNetwork Distributed Switch Work?

- VMware vNetwork Distributed Switch abstracts the configuration of virtual switches from the host level to an aggregate centralized datacenter level. VMware vNetwork Distributed Switch is administered through VMware vSphere clients attached to VMware vCenter Server.
- VMware vNetwork Distributed Switch consists of distributed port groups that are configured similar to port groups on standard switches, but extend across multiple hosts. This simplifies configuration of virtual machines across multiple hosts and facilitates easy setup for VMware VMotion.
- VMware vNetwork Distributed Switch maintains network port state centrally as virtual machines are migrated from one VMware ESX host to another with VMware VMotion. This enables consistent statistics monitoring and facilitates security monitoring with products requiring consistent state, such as intrusion detection systems and intrusion prevention systems.

### Find Out More

VMware vNetwork Distributed Switch is included in the purchase of VMware vSphere Enterprise Plus edition. VMware vNetwork Distributed Switch requires VMware vCenter Server for administration.

For information on how to purchase, please refer to <http://www.vmware.com/go/vsphere/buy>

Note that third-party switches such as the Cisco Nexus 1000v are purchased separately.

For information or to purchase VMware products, call 1-877-4VMWARE (outside of North America dial +1-650-427-5000), visit [www.vmware.com/products](http://www.vmware.com/products), or search online for an authorized reseller. For detailed product specifications and systems requirements, please refer to the VMware vNetwork Distributed Switch install and configure guide.

### Key Features of VMware vNetwork Distributed Switch

The below table shows a comparison of features across the VMware vNetwork Distributed Switch against the VMware vNetwork Standard Switch available by default as part of all editions of VMware vSphere. The VMware vNetwork Standard Switch connects virtual machines to the physical network and is configured per ESX host. The VMware vNetwork Standard Switch and VMware vNetwork Distributed Switch can be used simultaneously as long as they do not interface with the same physical NIC.

Feature	vNetwork Standard Switch	vNetwork Distributed Switch
<b>Switch Features</b>		
<b>Layer 2 Forwarding</b>	Yes	Yes
<b>IEEE 802.1Q VLAN Tagging</b>	Yes	Yes
<b>Multicast Support</b>	Yes	Yes
<b>Network Policy VMotion</b>	-	Yes
<b>Physical Switch Connectivity</b>		
<b>EtherChannel</b>	Yes	Yes
<b>Load Balancing Algorithms</b>		
<b>Virtual Port ID</b>	Yes	Yes
<b>Source MAC</b>	Yes	Yes
<b>Source-Destination IP</b>	Yes	Yes
<b>Traffic Management Features</b>		
<b>Tx Rate Limiting</b>	Yes	Yes
<b>Rx Rate Limiting</b>	-	Yes
<b>Security Features</b>		
<b>Port Security</b>	Yes	Yes
<b>VMsafe Compatible</b>	Yes	Yes
<b>Private VLANs</b>	-	Yes
<b>Management Features</b>		
<b>VMware vCenter Support</b>	Yes	Yes
<b>Third Party Accessible APIs</b>	Yes	Yes
<b>Network Policy Groups</b>	Yes	Yes
<b>Netflow v5</b>	Yes*	Yes*
<b>CDP v1/v2</b>	Yes	Yes
<b>Syslog</b>	**	**

\* Experimental Support

\*\* Virtual switch network syslog information is exported and included with VMware ESX events.