



Intro to Cisco Nexus 1000V



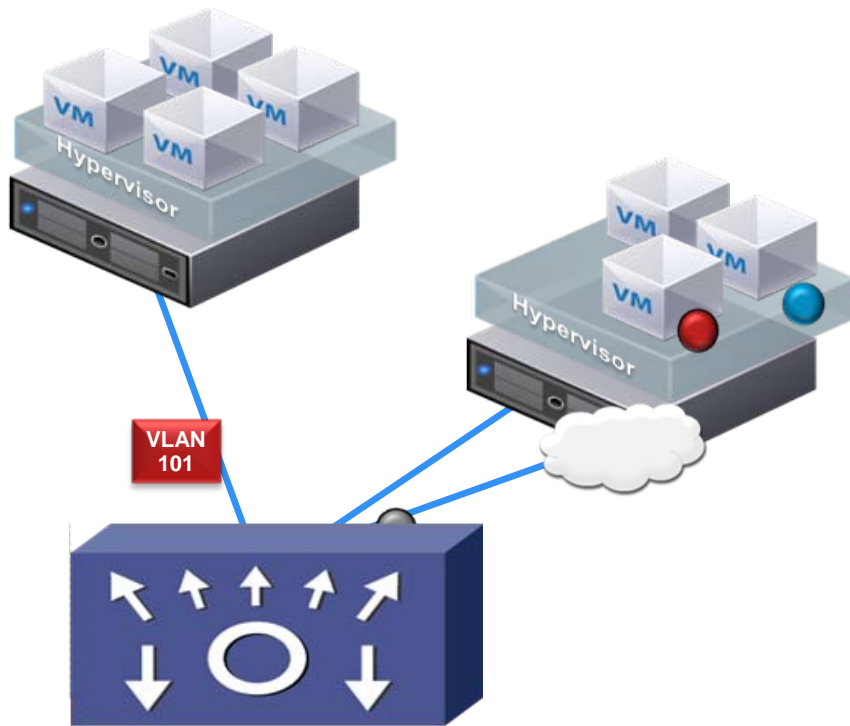
Neal Mueller
Product Manager, Nexus 1000V
Server Access Virtualization Business Unit

What are the Network Hurdles to Virtualization?

- Admins are demanding VM-level troubleshooting and debugging
- Compliance requires VM-level isolation and visibility
- Admins want to manage virtual networks like their physical networks



Nexus 1000V Brings VM Level Granularity



Cisco Nexus 1000V

Problems:

- VMotion may move VMs across physical ports—policy must follow
- Impossible to view or apply policy to locally switched traffic
- Cannot correlate traffic on physical links—from multiple VMs

Cisco Nexus 1000V

- Extends network to the VM
- Consistent services
- Coordinated, coherent management

Cisco Nexus 1000V

Software Based Cisco Switch

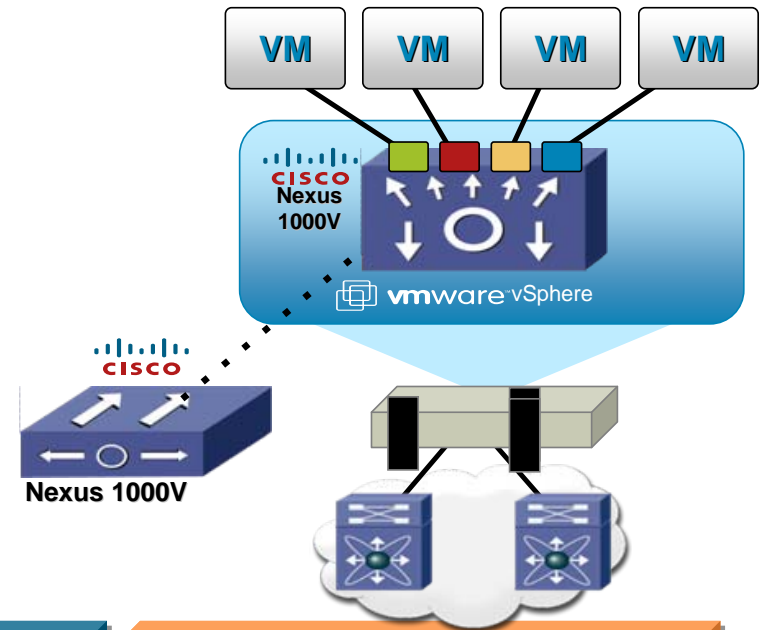
- Industry's first Distributed Virtual Switch for VMware
- Built on Cisco NX-OS
- Compatible with all switching platforms
- Maintain vCenter provisioning model unmodified for server administration; allow network administration of virtual network via familiar Cisco NX-OS CLI

Policy-Based
VM Connectivity

Mobility of Network & Security
Properties

Non-Disruptive
Operational Model

BEST OF
vmworld 2008



Cisco Nexus 1000V

Faster VM Deployment

Cisco VN-Link: Virtual Network Link

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Defined Policies

WEB Apps



HR



DB

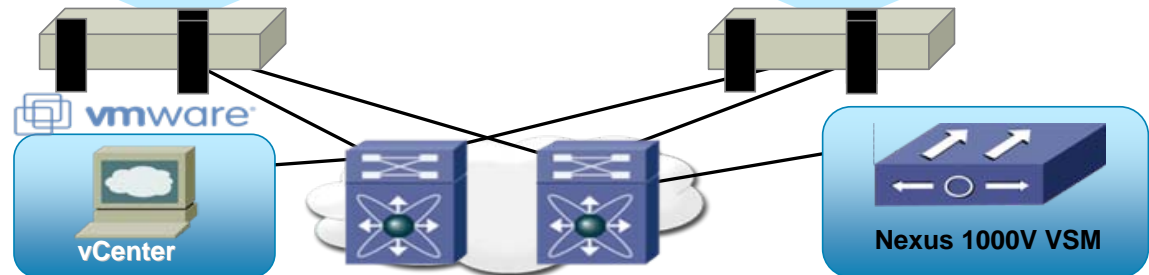
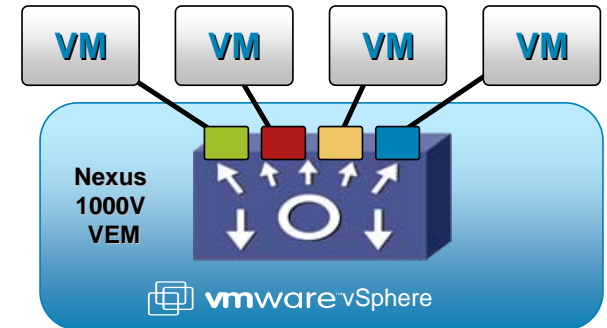
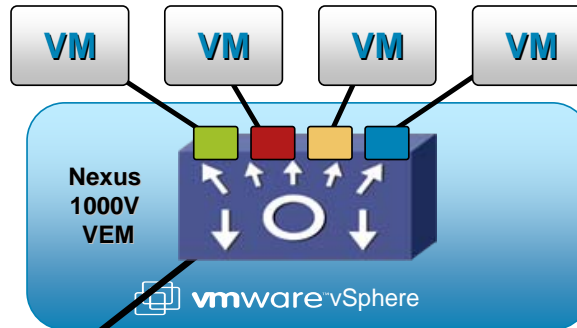


DMZ



VM Connection Policy

- Defined in the network
- Applied in Virtual Center
- Linked to VM UUID



Cisco Nexus 1000V

Richer Network Services

Cisco VN-Link: Virtual Network Link

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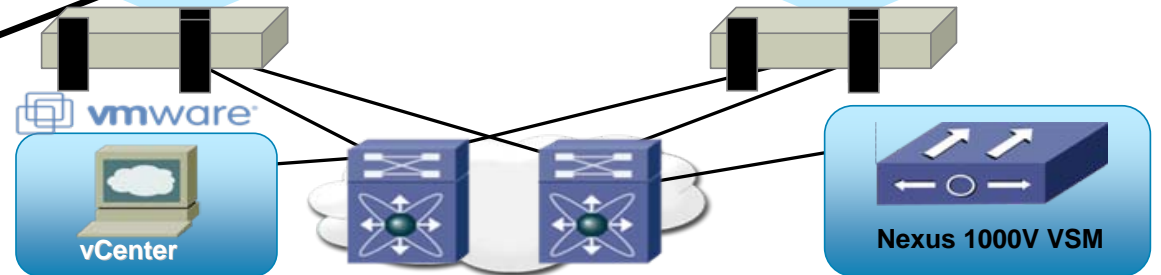
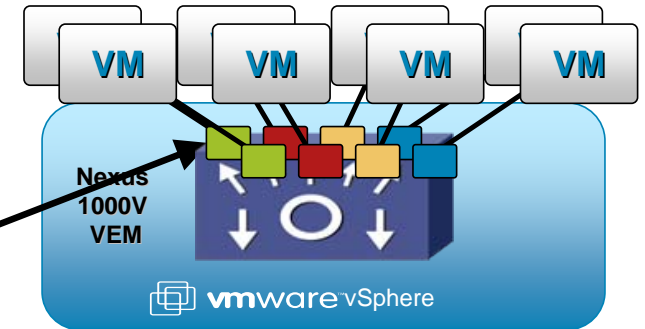
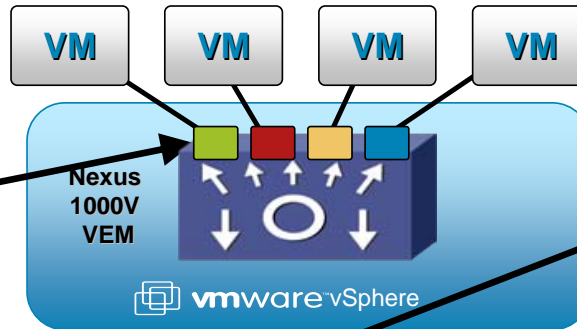
Non-Disruptive
Operational Model

VMs Need to Move

- VMotion
- DRS
- SW Upgrade/Patch
- Hardware Failure

VN-Link Property Mobility

- VMotion for the network
- Ensures VM security
- Maintains connection state



Cisco Nexus 1000V

Increased Operational Efficiency

Cisco VN-Link: Virtual Network Link

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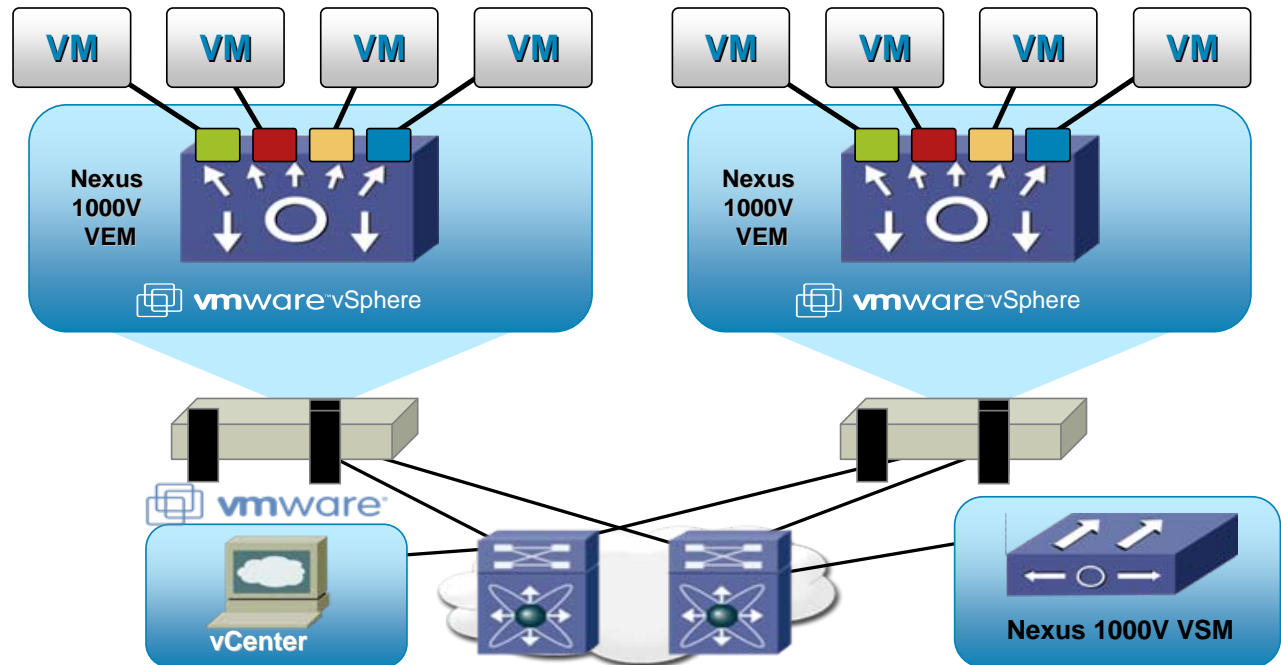
Non-Disruptive
Operational Model

VI Admin Benefits

- Maintains existing VM mgmt
- Reduces operational workload

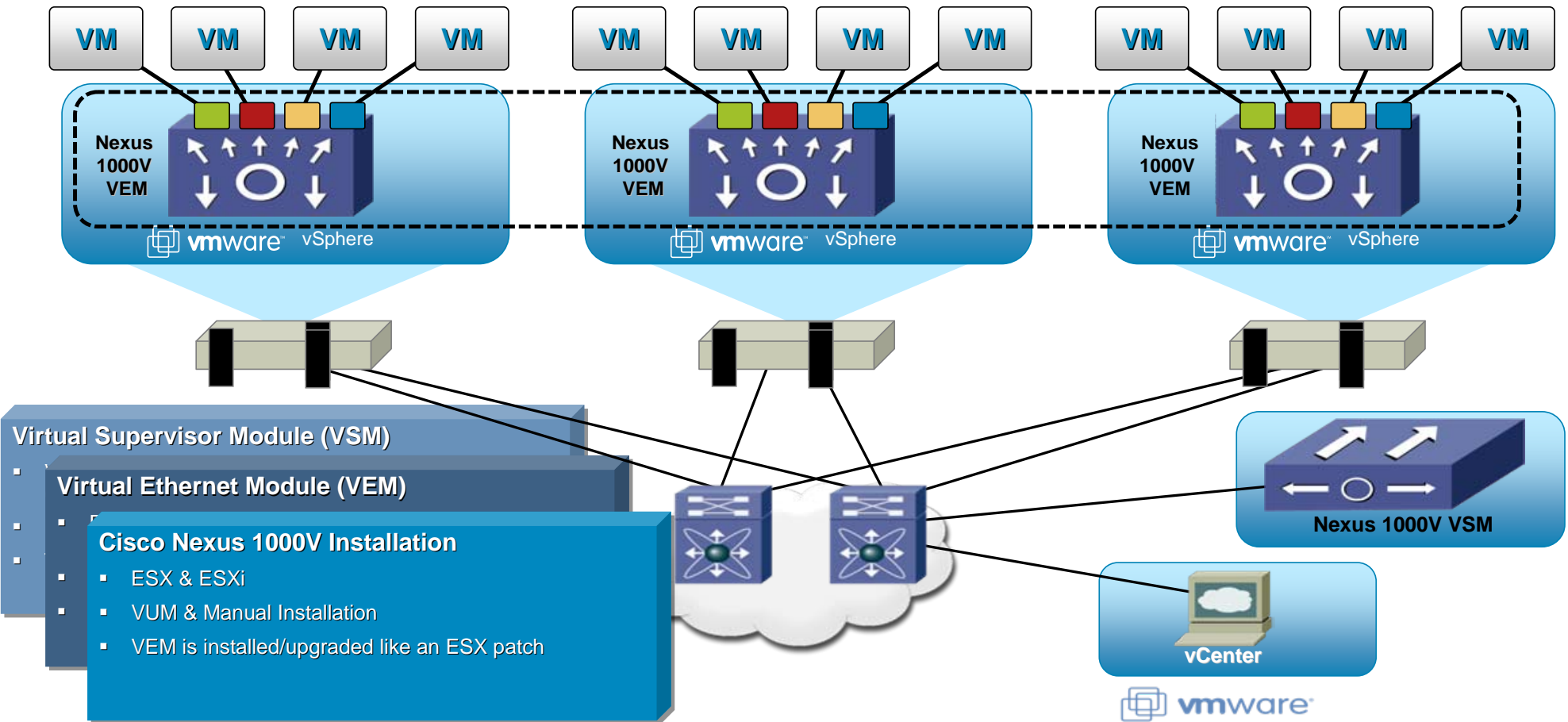
Network Admin Benefits

- Use the tools you are used to
- Use the same workflow to manage physical and virtual networks





Cisco Nexus 1000V Architecture



Hundreds are Using Nexus 1000V



University of Arizona



terremark®



Broad Ecosystem for Nexus 1000V



Nexus 1000V Return on Investment

- Customer Example:

VMware Standard Switch (vSS): 100 servers, 290 apps, 10% of servers virtualized

Compared to Cisco Nexus 1000V: 24 servers, 290 apps, 40% of servers virtualized

Capex		Opex		Availability	
vSS*	1000V	vSS*	1000V	vSS*	1000V
100 servers	24 servers	288 hrs/yr	155 hrs/yr	0.8 errors	0.4 errors
3-Year Savings \$325,574		3-Year Savings \$14,094		3-Year Savings \$3,600	

3-Year Savings \$ \$1,029,805
10 x 1000V + 3yr support (\$24,340)
1000V ROI \$1,005,465

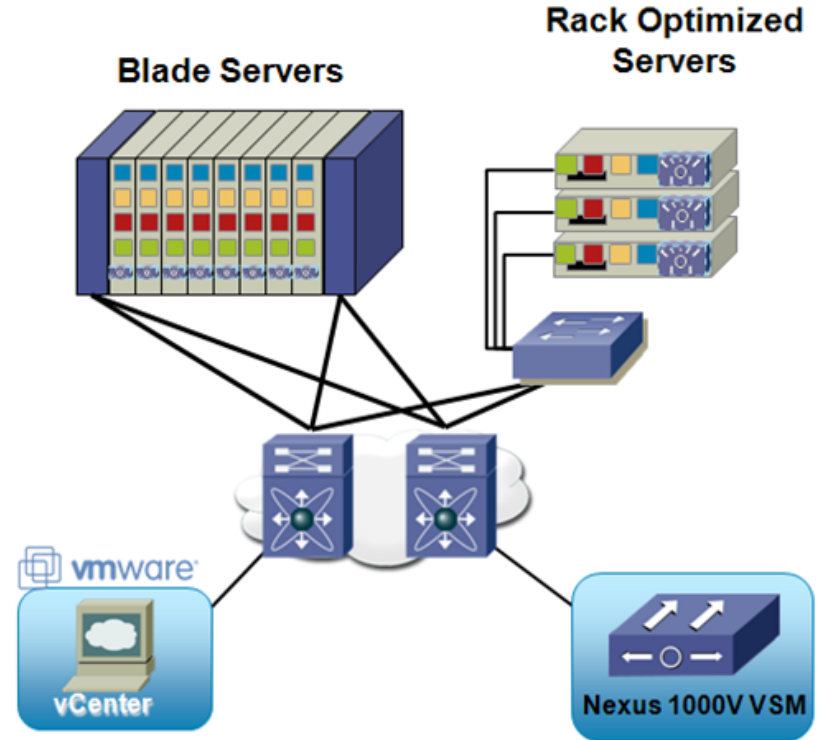


*vSS = VMware Standard Switch with Enterprise Edition

Source: Customer case studies, Lightreading analyst study, VMmark Benchmark Study, Cisco/VMware ROI Model

Nexus 1000V Works with Everything

All servers on VMware Compatibility List
All hardware switches, including Cisco
1G & 10G NICs



Available Now

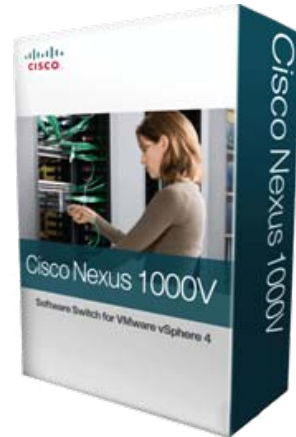
Download and Evaluate Free
www.cisco.com/go/1000veval



Buy the Upgrade Bundle for \$795
(limited time offer)



Until 12/15/09



Daily Dose of Cisco Nexus 1000V

Monday

6:15-6:45PM (Cisco booth) Introduction to Nexus 1000V

Tuesday

2:50-3:20PM (Cisco booth) Return on Investment for the Cisco Nexus 1000V

Wednesday

10:10-10:40PM (Cisco booth) Securing the Virtualized Data Center with Nexus 1000V

3:00-4:00PM (Room 135) Deploying Nexus 1000V in a VMW vSphere environment

Thursday

12:10-12:40PM (Cisco booth) Nexus 1000V in a High-Density VM environment



Port Profile – Network View

```
n1000v-RC# show port-profile
port-profile web-server-dmz-2
  description: Web Server - DMZ-2
  status: enabled
  capability uplink: no
  system vlans: none
  port-group: Web Server - DMZ-2
  max-ports: 32
  inherit:
  config attributes:
    switchport mode access
    switchport access vlan 5
    ip port access-group web-secure in
    ip flow monitor output
    no shutdown
  evaluated config attributes:
    switchport mode access
    switchport access vlan 5
    ip port access-group web-secure in
    ip flow monitor output
    no shutdown
  assigned interfaces:
    Vethernet10
```

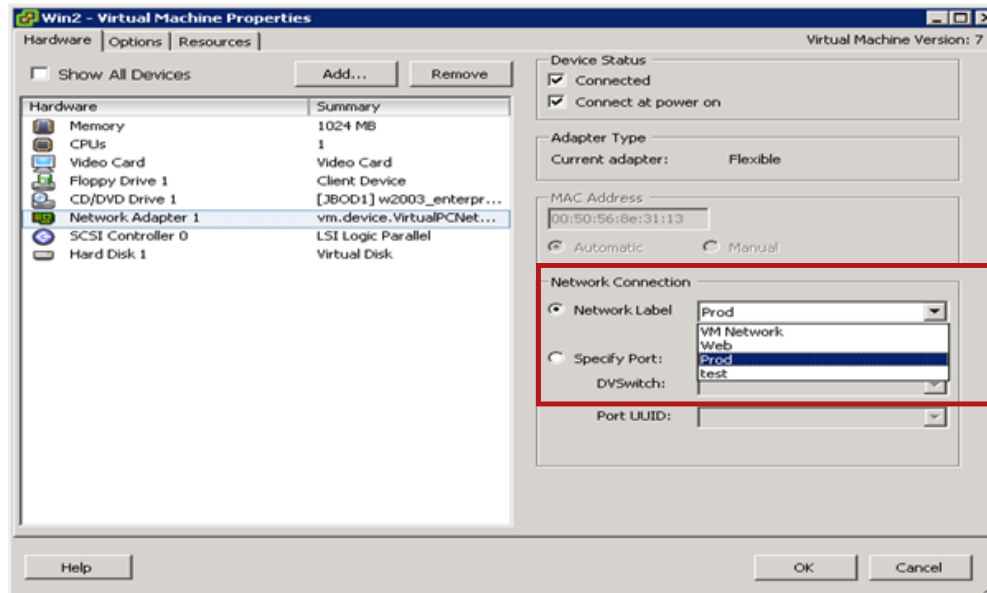
Port Group
Name

ACL

Interfaces

Port Groups - VI Admin View

- Consistent Workflow: VI admin selects Port Groups when configuring a VM through vSphere Client



Port Profile Configuration

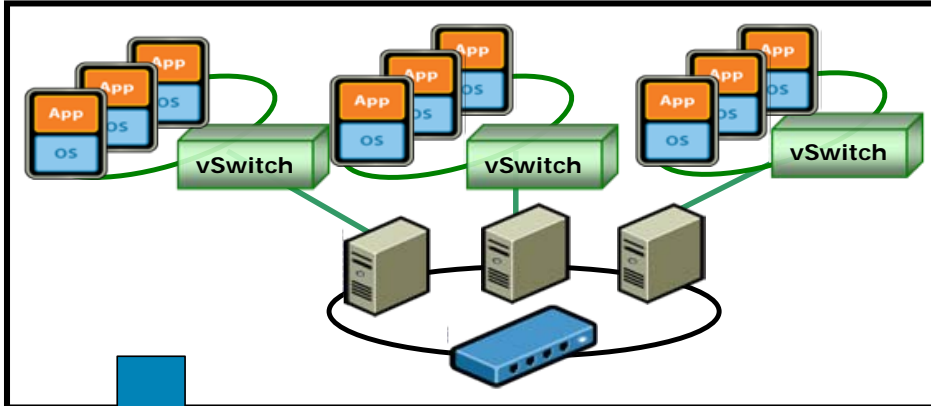
```
n1000v# show port-profile name WebProfile
port-profile WebProfile
  description:
  status: enabled
  capability uplink: no
  system vlans:
  port-group: WebProfile
  config attributes:
    switchport mode access
    switchport access vlan 110
    no shutdown
  evaluated config attributes:
    switchport mode access
    switchport access vlan 110
    no shutdown
  assigned interfaces:
    Veth10
```

Support Commands Include:

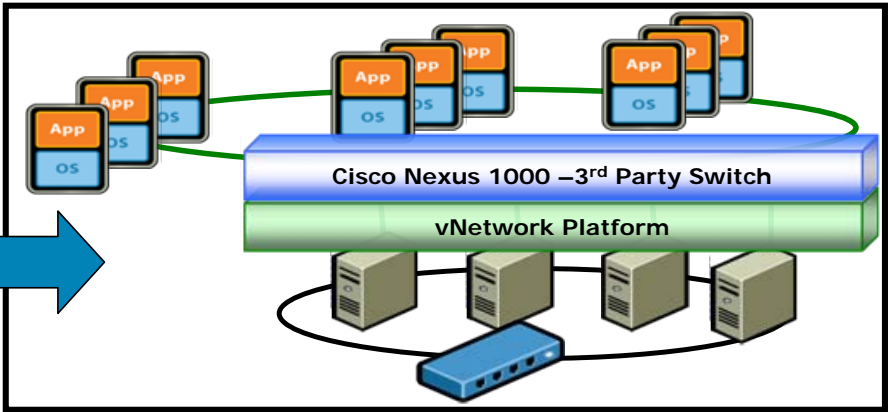
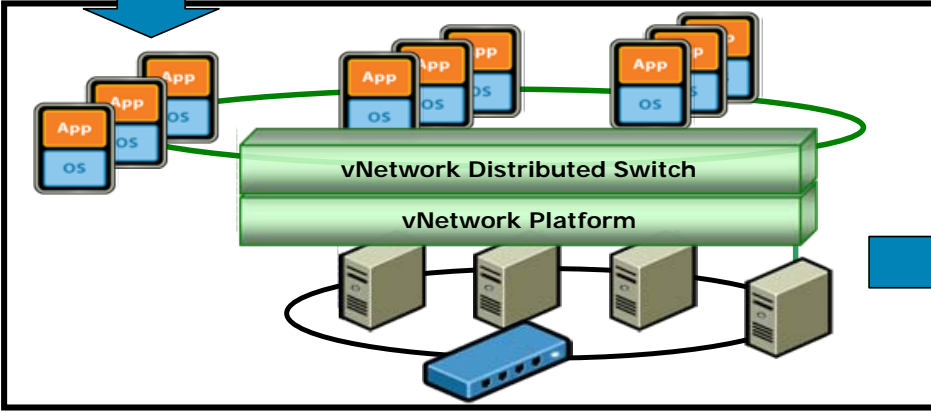
- ✓ Port management
- ✓ VLAN
- ✓ PVLAN
- ✓ Port-channel
- ✓ ACL
- ✓ Netflow
- ✓ Port Security
- ✓ QoS

VMware vNetwork 3rd Party Switch

CURRENT

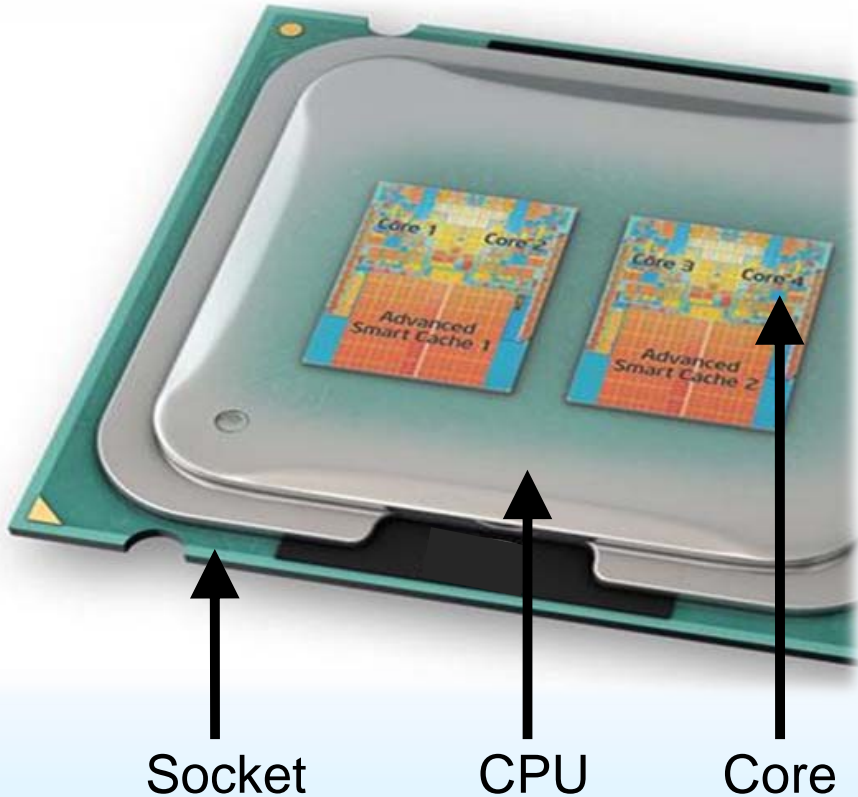


vNetwork



- Enterprise networking vendors can provide their own implementations of the virtual switch leveraging the vNetwork switch API interfaces
- Enables support for 3rd party networking capabilities, including new features, monitoring and management of the virtual network
- The Cisco Nexus 1000V is the first 3rd Party vNetwork Distributed Switch

How is the Product Priced?



- Nexus 1000V is licensed per CPU socket, each CPU requires 1 license, no limit on the number of cores per CPU
- CPU licensing is inline with VMware vSphere licensing, provides customer flexibility for increasing number of cores per socket
- Today's server motherboards can accommodate 1-8 CPUs and each CPU has 1-6 cores



For more information visit:
www.cisco.com/go/vmworld09



