VMware NSX overview
The Software Defined Datacenter
There are two approaches

Hardware Defined Data Center (HDDC)
- Any Application
- HDDC Platform
- Integrated x86
- Integrated Storage
- Vendor Specific Network

OR

Software Defined Data Center (SDDC)
- Any Application
- SDDC Platform
- Data Center Virtualization
- Any x86
- Any Storage
- Any IP network
Component requirements

switch# configure terminal
switch(config)# interface ethernet 3/1
switch(config-if)# switchport mode trunk
Building an SDDC
A data center network…
Compute infrastructure....
Hypervisors and vSwitches...
NSX | The “Network Hypervisor”
Virtual Networks – Like Virtual Machines for the Network
What is a virtual network?
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Programmatically Provisioned
Physical Workloads and Legacy VLANs
Security – Complete Isolation
Central Policies, Distributed Enforcement, Move with VMs
Inner workings
Architecture

Management Plane
- vCD/vCAC
- vCenter Server
- NSX Manager

Control Plane
- NSX Edge Distributed Router
- Controller

Data Plane
- Security VXLАН DR DFW
- Security VXLАН DR DFW
- Security VXLАН DR DFW
- NSX Edge Services Router
Management Plane

- Self service and on-demand Provisioning of Infrastructure
  - Abstracted pool of services (Compute/Storage/Network)
  - Catalogue of applications

- Provisioning and Management of
  - Compute/Memory
  - Storage
  - Virtual Switch

- Provisioning and Management of Network and Network services
  - VXLAN Preparation
  - Logical Network Consumption
  - Network Services Configuration
Control Plane

- Dynamic Routing
- VXLAN – VLAN Bridging

- Scale Out
- VXLAN - no Multicast
- ARP suppression
- Distributed Routing

NSX Edge Distributed Router

Controller
Dataplane

Data Plane

ESX Host
- Kernel Modules
- Message Bus
- User World Agent

NSX Edge Services Router
- NAT
- DHCP
- LB
- VPN
Distributed Services
Routing & Firewalling

Features
- OSPF/eBGP/iBGP
- Virtualization and identity context firewall

Scale & Performance
- Remove hairpins and bottlenecks
- Line rate performance with distributed scale out architecture

Use Cases
- Create on demand networks to speed up application provisioning
Load Balancing

Features
- TCP, HTTP, HTTPS with Stateful HA
- Multiple Virtual IPs each with separate server pool and configurations
- Multiple load balancing algorithms
- Multiple Session Persistence methods
- Configurable health checks
- Application Rules
- SSL Termination with Certificate Management
- Transparent/Full Proxy Mode
- IPv6

Scale & Performance
- 10Gb/s throughput
- 50,000 CPS
- 1M Concurrent Connections

Use Cases
- Per Tenant Cloud LB
- Dynamic VIP for applications
VPN services

Features
- Interoperable IPsec tested with major vendors
- Clients on all major OS (Win, Apple, Linux)
- Remote Authentication via Active Directory, RSA Secure ID, LDAP, Radius
- TCP Acceleration
- Encryption – 3DES, AES128, AES256
- AESNI H/W Offload
- NAT & Perimeter Firewall Traversal

Scale and Performance
- High Performance – AES-NI acceleration
- 2 Gb/s throughput per tenant

Use Cases
- Cloud to Corporate
- Cloud On-boarding
- Remote Office/Branch Office
- Remote Management
Thank You

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