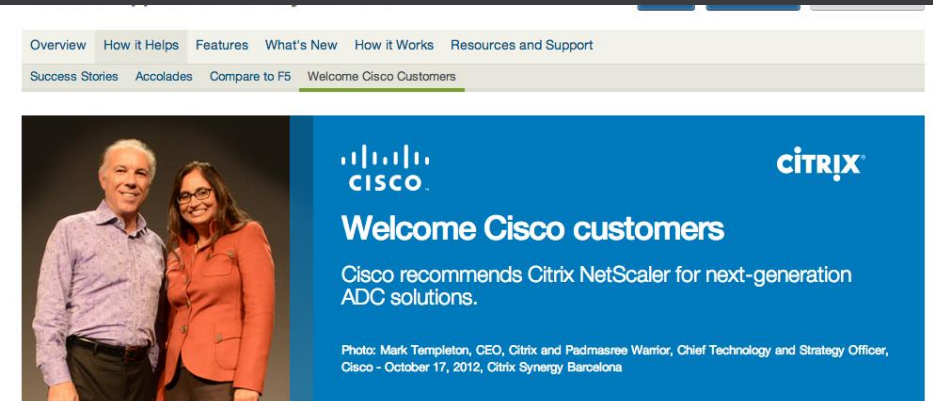
Cisco ACE replacement
Cisco & Citrix Networking

Simeon Bosshard, Systems Engineer

Citrix Systems International GmbH

06.11.2014

Cisco and Citrix work together to enable SDN and data center transformation



NetScaler 1000V
Cisco OEM
Virtual NetScaler

Nexus 1000v
vPath Virtual Network
Overlay

Nexus 7000
RISE Integration

Nexus 9000
ACI APIC

VMDC CVD
VSA 1.0

VMDC CVD
DCI 1.0

Mobile Workspaces CVD
1.0

openstack

Prime Network Services

Open Daylight

FlexPod
Cisco, Citrix NetApp

VCE

VCE Vblock
Cisco, Citrix, EMC

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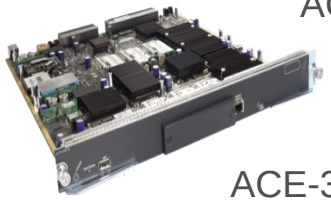
Typical Deployments Sized

1 - 16 Gbps (64 Gbps Max)

CSS & ACE-4710

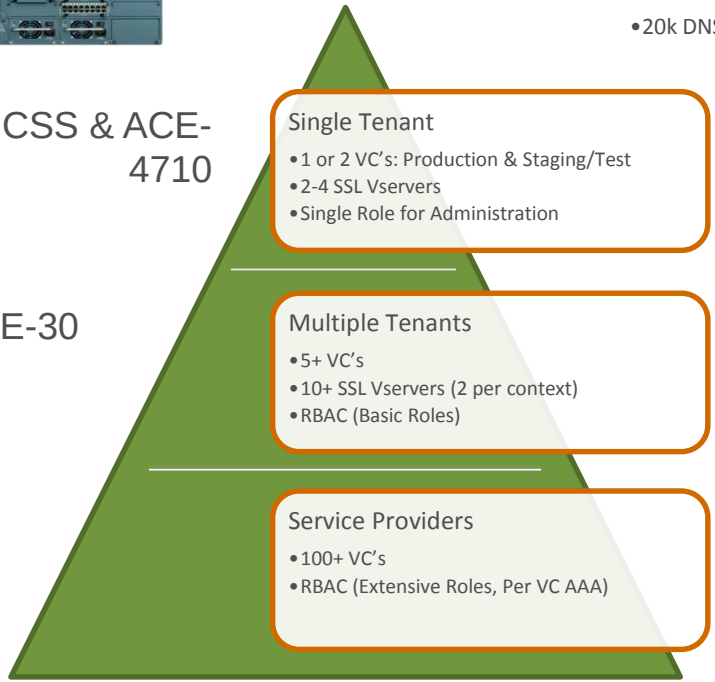
ACE-4710 / ACE-30



ACE-30 Service Module & Multi-Chassis

GSS-4492R – Global Server Load Balancing

- 20k DNS RPS



- Server Load Balancing
- Application Optimization & Application Security
- Virtual Context Support
- Multimedia & Voice Support
- Pay as you grow Throughput license upgrades (SSL, VC's, Compression)
- Support for Cisco Catalyst 6500 & 7600

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Cisco ACE / CSS / CSM to NetScaler

Cisco Model	Throughput	Citrix NetScaler
ACE 4710	0.5 – 4 Gbps	MPX {5550, 5650, 8005}
ACE 30 SM	4, 8, 16 Gbps	MPX {8005, 8015, 11515}
CSS 11501S-C	1.8 Gbps	MPX 5550
CSS 11503	6 Gbps	MPX 5650
CSS 11506	12 Gbps	MPX 11515
Cisco CSM	4 Gbps	MPX 8005
Cisco GSS – All NetScaler MPX Enterprise & Platinum		

Each NetScaler MPX/SDX model matches or beats equivalent Cisco ADC platforms for price & performance

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Cisco ACE/CSS/CSM and Recommended NetScaler ADCs

Cisco Model	Throughput	Citrix NetScaler	Throughput
ACE 4710	0.5 Gbps	MPX 5550	0.5 Gbps
ACE 4710	1 Gbps	MPX 5650	5 Gbps
CSS 11501S-C	1.8 Gbps	MPX 8005	5 Gbps
ACE 4710	2 Gbps	MPX 8005	5 Gbps
ACE 4710	4 Gbps	MPX 8005	5 Gbps
ACE 30 SM	4 Gbps	MPX 8005	5 Gbps
Cisco CSM	4 Gbps	MPX 8005	5 Gbps
CSS 11503	6 Gbps	MPX 8015	15 Gbps
ACE 30 SM	8 Gbps	MPX 11515	15 Gbps
CSS 11506	12 Gbps	MPX 11520	20 Gbps
ACE 30 SM	16 Gbps	MPX 11530	30 Gbps
For Cisco GSS (Global Site Selector) - any NetScaler MPX appliance supporting NetScaler Global Server Load Balancing (GSLB) capabilities – Enterprise or Platinum Edition			

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Citrix NetScaler 1000V – ADC from Cisco

Sold and supported by Cisco

- Virtual NetScaler ADC
- Available as Cisco software
- Sold and supported by Cisco
- ADC for Nexus 1000V Virtualized Data Center

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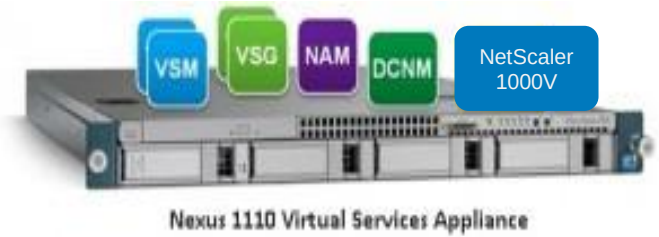
Citrix NetScaler 1000V – Platform Options

Citrix NetScaler 1000V on ESXi (e.g. UCS)
- Up to 4 Gbps throughput
- Works on any commodity server

Citrix NetScaler 1000V on Nexus 1110-X
- Nexus 1110-X – Cloud Services Platform (CSP)
- Platform for multiple Virtualized Network Services
- NetScaler SW + Nexus HW = Cisco ADC



HW SSL for NetScaler 1000V on Nexus 1110-X*

** Roadmap Q3 2014, subject to change*

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Nexus 1000V Integration using vPath

Nexus 1000v vPath Virtual Network Overlay

- Virtual Network Overlay through Service Chaining

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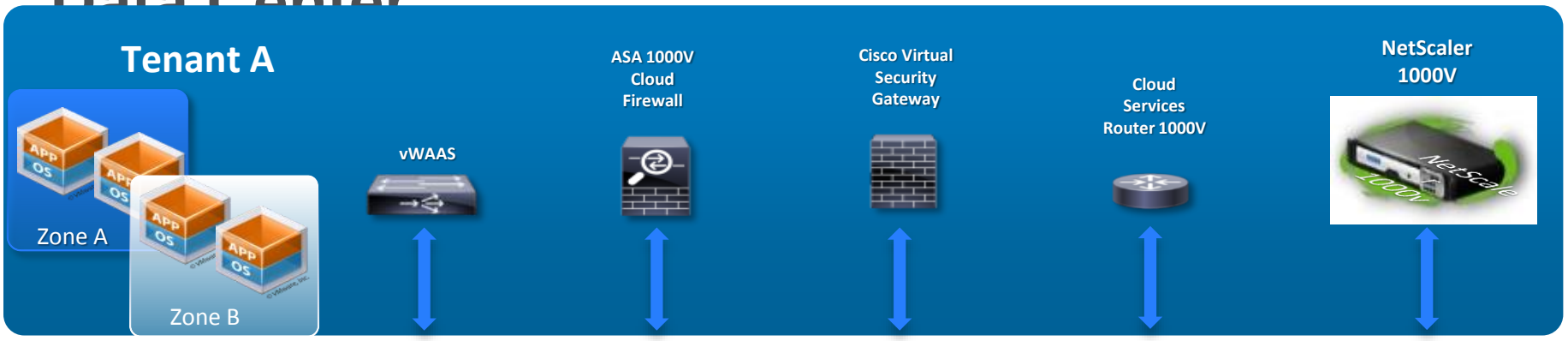
NetScaler 1000V in the Nexus 1000V Virtualized Data Center



Nexus 1000V	vWAAS	ASA 1000V	VSG	CSR 1000V (Cloud Router)	NetScaler 1000V
• Distributed switch • NX-OS consistency	• WAN optimization • Application traffic	• Edge firewall, VPN • Protocol Inspection	• VM-level controls • Zone-based FW	• WAN L3 gateway • Routing and VPN	• Citrix NetScaler Application Delivery Controller • Citrix NetScaler Web App Firewall

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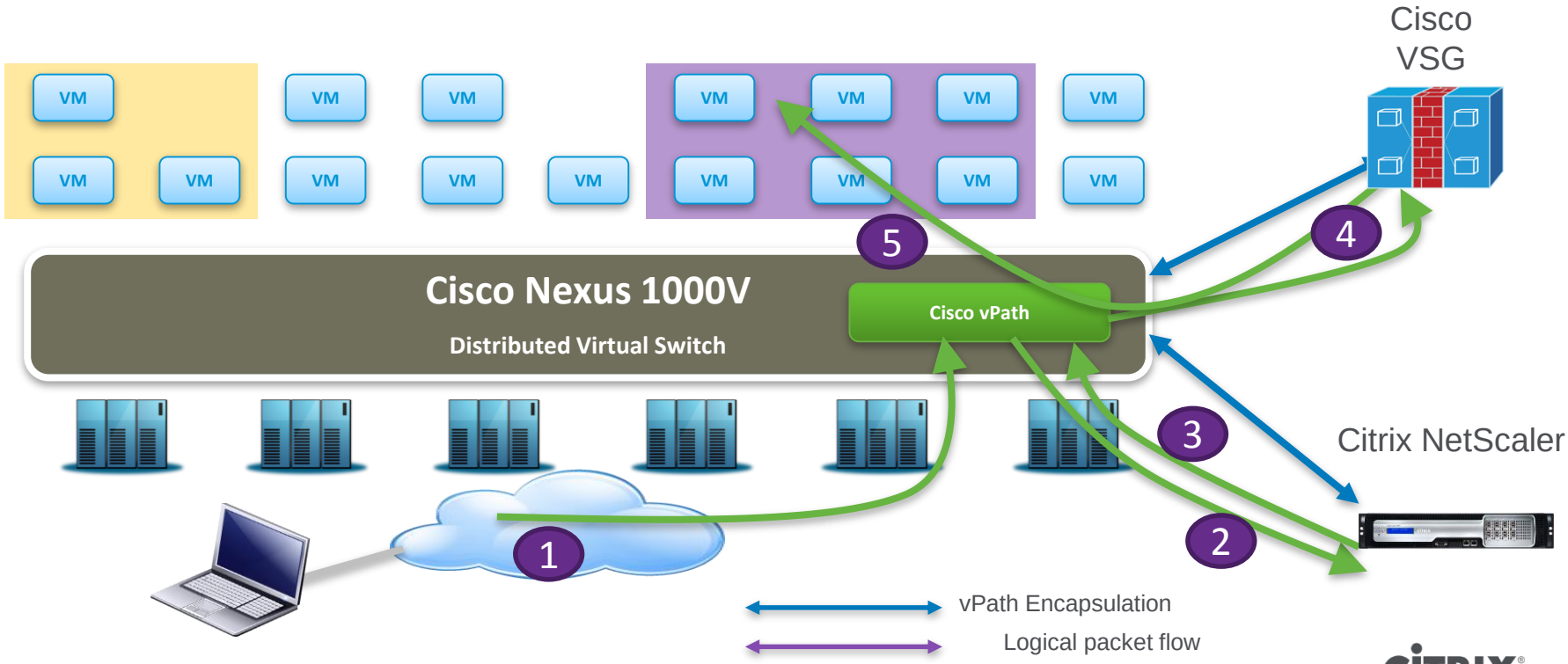
vPath Service Chaining – Virtual Network Overlay

- Policy based traffic steering through virtualized network services



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VMDC CVD
VSA 1.0

VMDC CVD
DCI 1.0

Cisco Validated Designs

- Virtualized Multiservice Data Center (VMDC)

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Cisco VMDC: Virtual Multi Service Data Center

- CVDs incorporating NetScaler

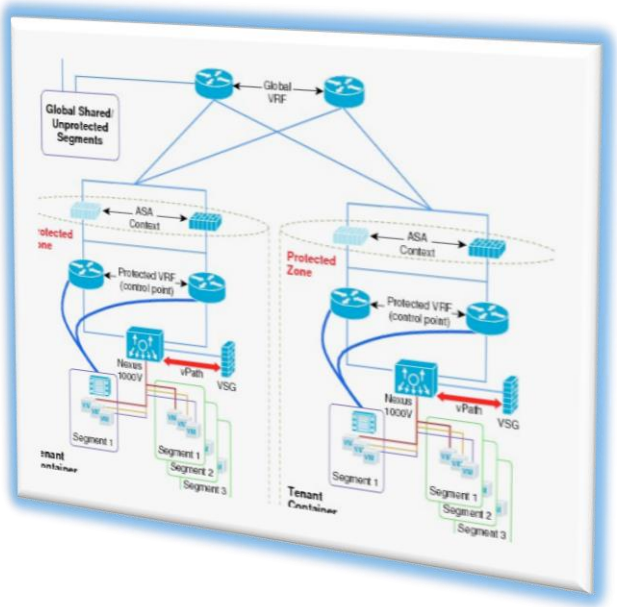
VMDC Virtual Services Architecture (VSA) 1.0

- Logical topology optimized for higher tenancy
- Incorporates NetScaler VPX & NetScaler 1000v

VMDC Data Center Infrastructure (DCI) 1.0

- Virtual private cloud tenant containers in shared data center
- Incorporates NetScaler SDX

- Available on www.cisco.com/go/vmdc



Citrix NetScaler is ADC for VMDC CVDs

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Cisco Prime Network Services Controller

- NetScaler Integration via OpenStack

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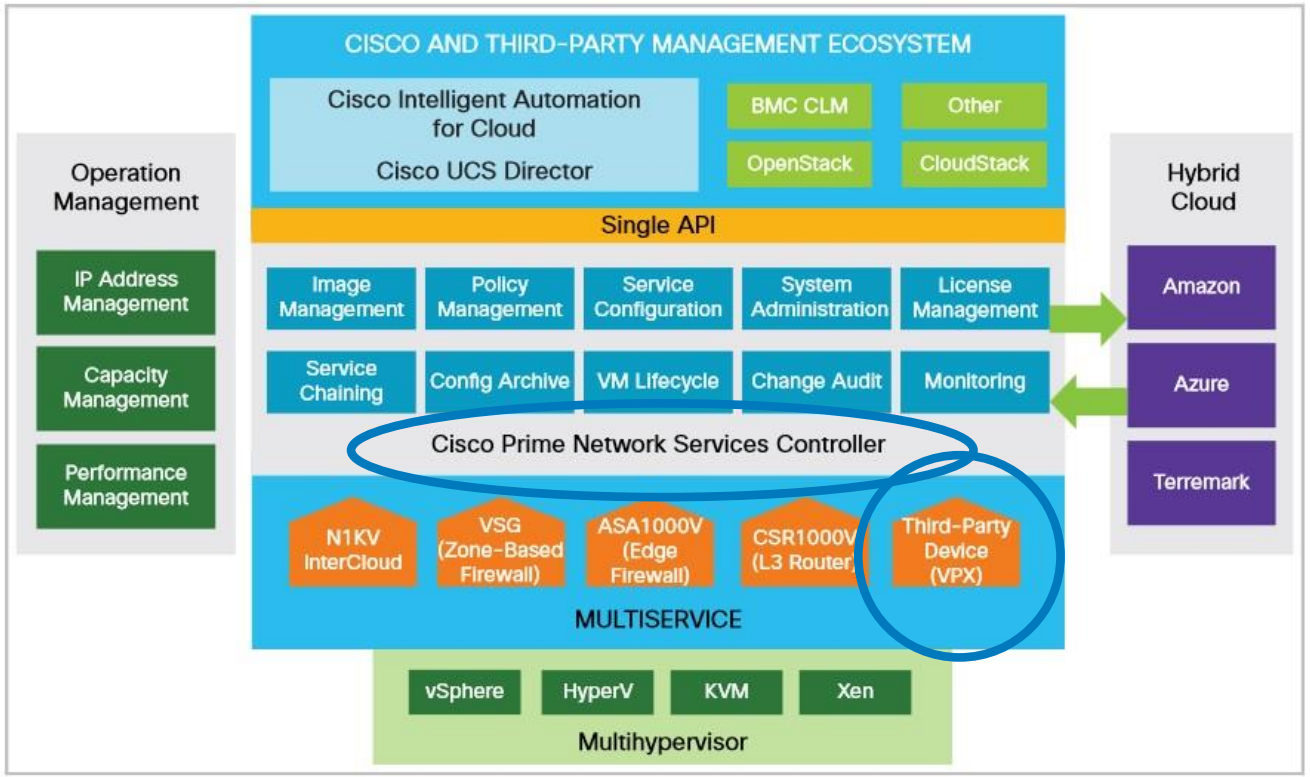
Cisco Prime Network Services Controller

- Able to configure NetScaler using Openstack APIs



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Cisco Prime Network Services Controller

Prime NSC is able to configure and manage NetScaler

- Uses Openstack APIs to configure/manage NetScaler
- Virtual NetScaler instance creation from Prime controller using Openstack
- Platforms: NetScaler VPX and NetScaler 1000V
  - Hypervisor: KVM

NetScaler 1000V is part of Cisco Cloud Service - Cisco Intercloud

- Cisco Cloud Services builds / manages clouds for service provider customers
- http://blogs.cisco.com/news/introducing-ciscos-global-intercloud/

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Cisco RISE N7K Integration with Citrix NetScaler

- Data Center Automation

Nexus 7000
RISE Integration

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Data Center Switching and L4-L7 ADC Services

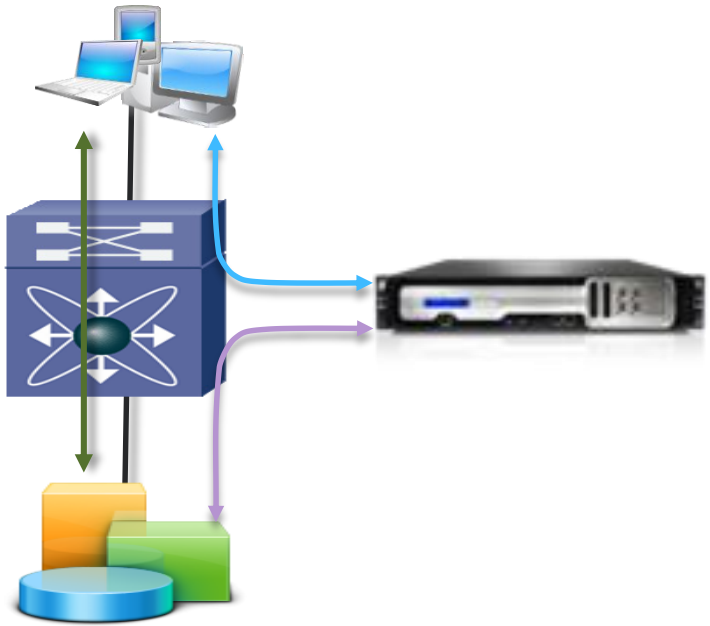
L4-L7 ADC services haven't kept up with L2-3 switching speeds

- Switching speeds are Terabit / sec
- ADC speeds are Gigabit / sec

Rules out inline ADC deployments

One-arm NetScaler deployments are typical

- 70-80% of deployments are one-arm



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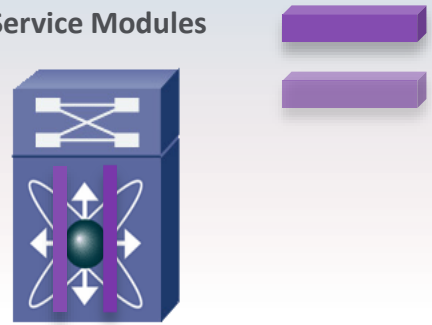
Service Integration Challenges within Data Centers

Service Modules



✓ Tightly embedded with switch backplane

✗ Slot is expensive
✗ Performance bottleneck
✗ Scaling is difficult

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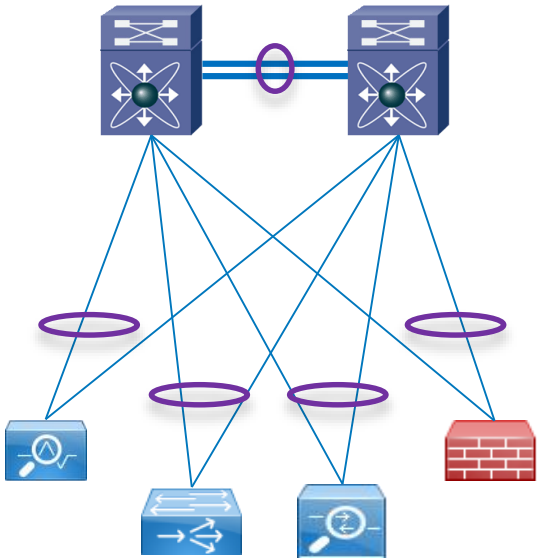
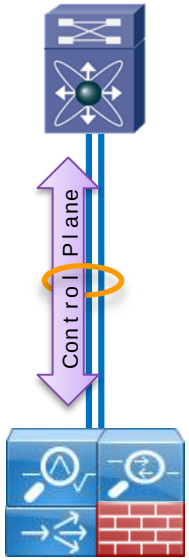
Cisco Remote Integrated Service Engine (RISE)

- Logical integration of a NetScaler with Nexus 7000 and 7700 platforms

Physical Topology



Logical RISE Topology



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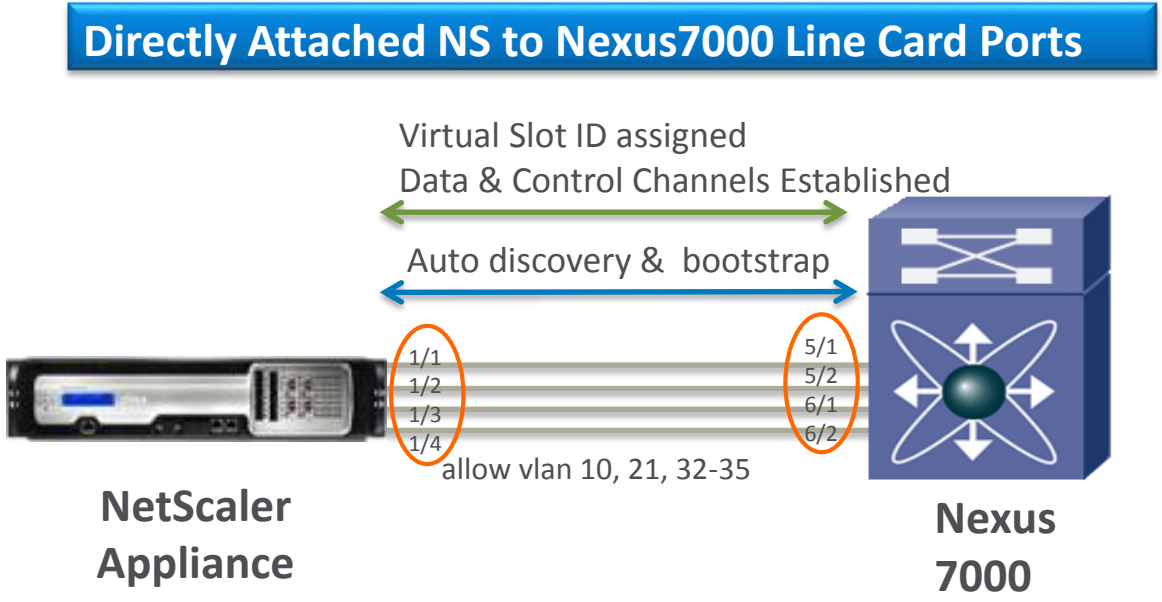
Auto-Discovery/Bootstrap of NetScaler by N7K

- Reduces Steps to Install



Four Simple Steps to Getting Connected

1. Create port-channel
2. Set up trunk vlans
3. Create rise service to get an assigned slot
4. Interconnect the NetScaler with the N7k

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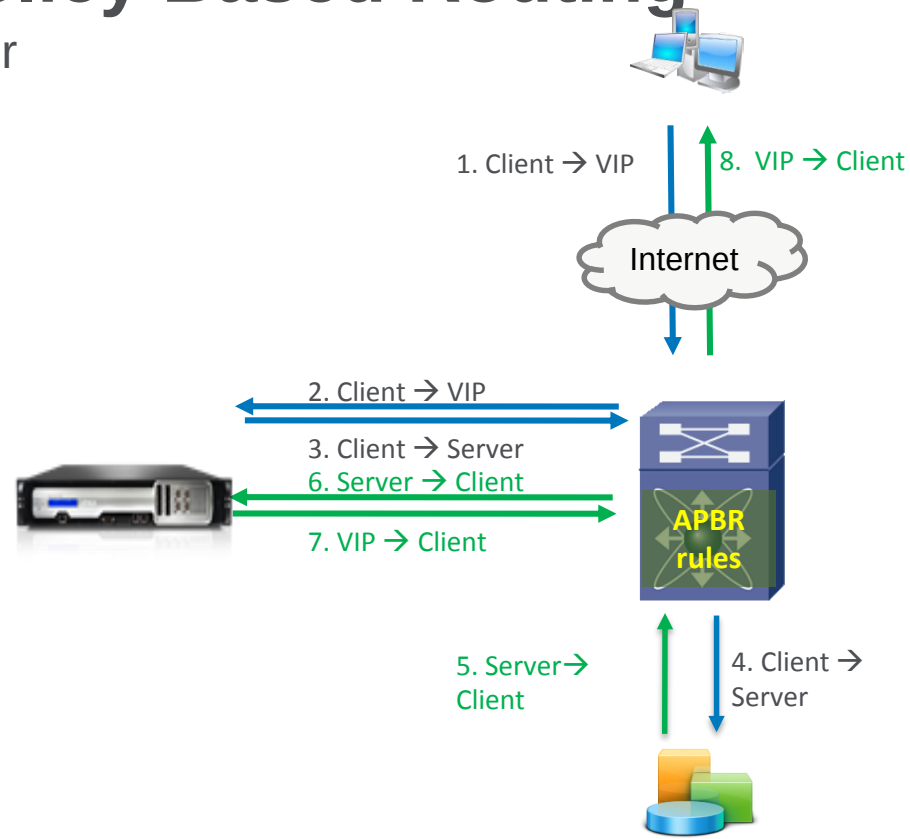
RISE Automated Policy Based Routing

- Optimized traffic flows in the data center

- Traffic flows are directed to the NetScaler
- APBR Rules redirect return traffic to NetScaler
- **Benefits**
- No need for Source-NAT
- No manual PBR configuration needed



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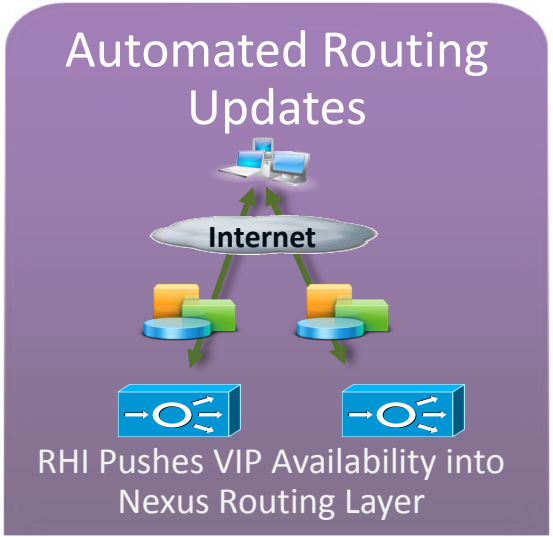
RISE Automated Routing Updates*

- Integrated Routing using RISE

- Route updates are communicated over the RISE control channel
- Allows NetScaler ADC to advertise (add or delete) the VIPs to Nexus 7000 dynamically based on operational status of VIPs
- Routing protocols on Nexus 7000 can redistribute VIP routes to rest of the network



** Roadmap Q3 2014, subject to change*

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Netscaler Appears as Virtual Service Module

- N7k SUP recognizes NetScaler as a RISE service module.

```
switch# show service rise summary
Service          Service
Name             Type        Interface     Module    State     Version
---------------- ----------- ------------- --------- --------- ----------------
tme-rise         RISE        N/A           332       active    NetScaler NS10.5
```

- N7K SUP can attach a RISE module and access NetScaler CLI via SSH from N7K
- Access to NetScaler CLI from N7k

```
'attach rise slot X'
'attach rise name ABC'
```

to ssh to appliance/vm

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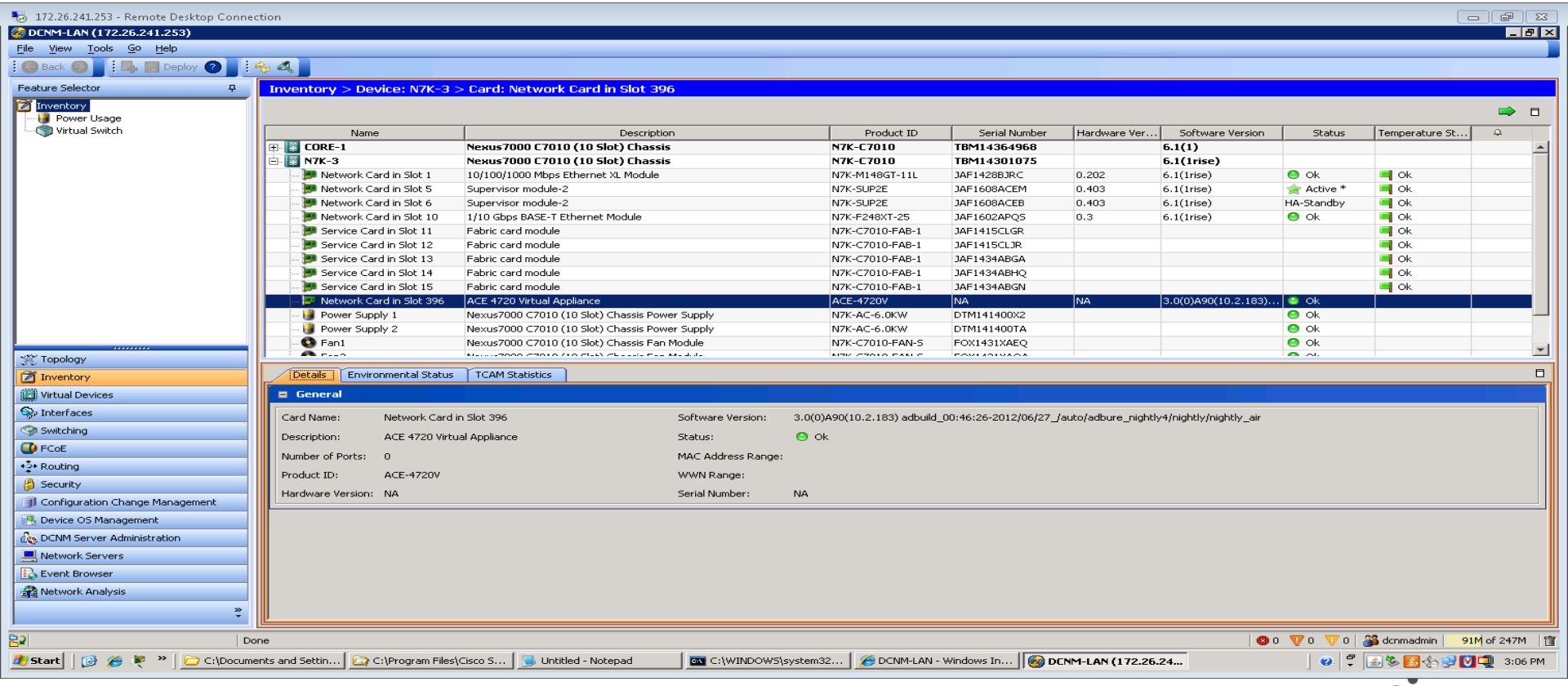
NetScaler Monitoring in Nexus DCNM



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HW, Versions, and License Requirements

Platforms
- Nexus 7000 Series Switches – M-Series and F-Series Modules
- NetScaler MPX, SDX, VPX. Also NetScaler 1000V from Cisco
- Cisco Prime NAM has added RISE support in version 6.02

Versions
- Nexus NX-OS 6.2.8
- NetScaler 10.1e Build 124, 10.5 and later

Licenses
- Nexus Enhanced Layer 2
- NetScaler Enterprise Edition, Platinum Edition

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Nexus 9000
ACI APIC

Cisco ACI

- Application-Centric Networking (SDN)

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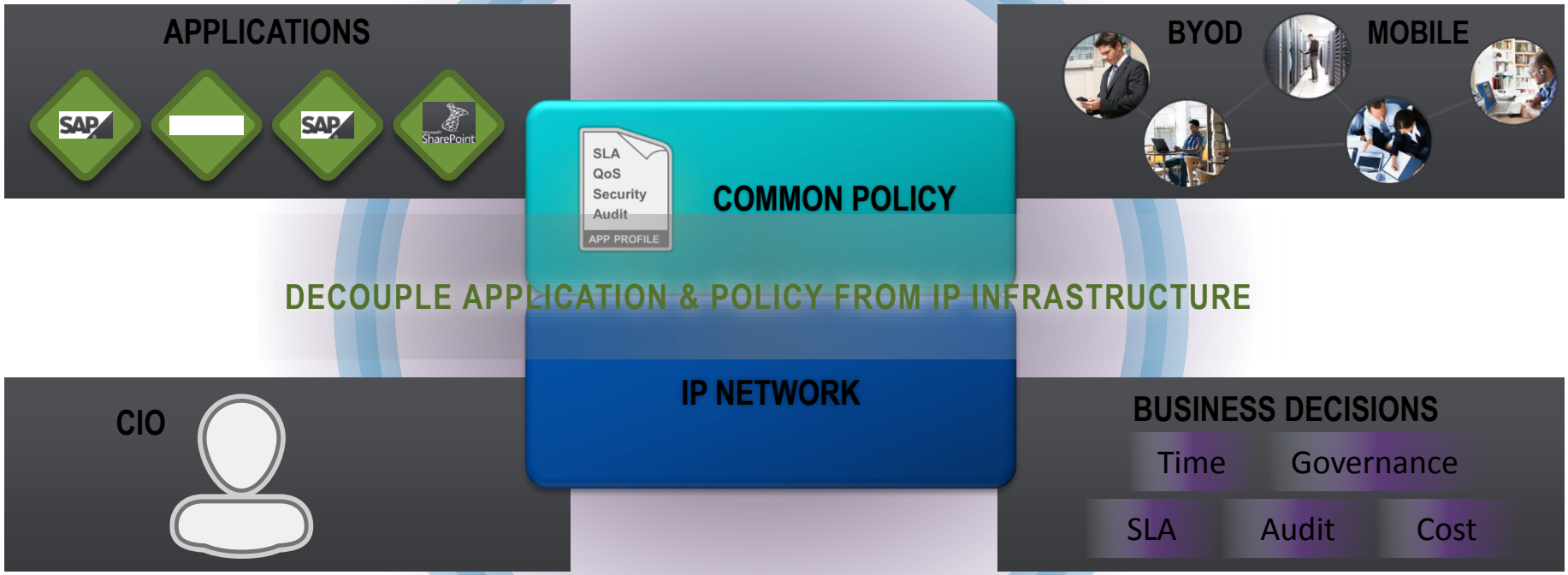
ACI – driving business transformation



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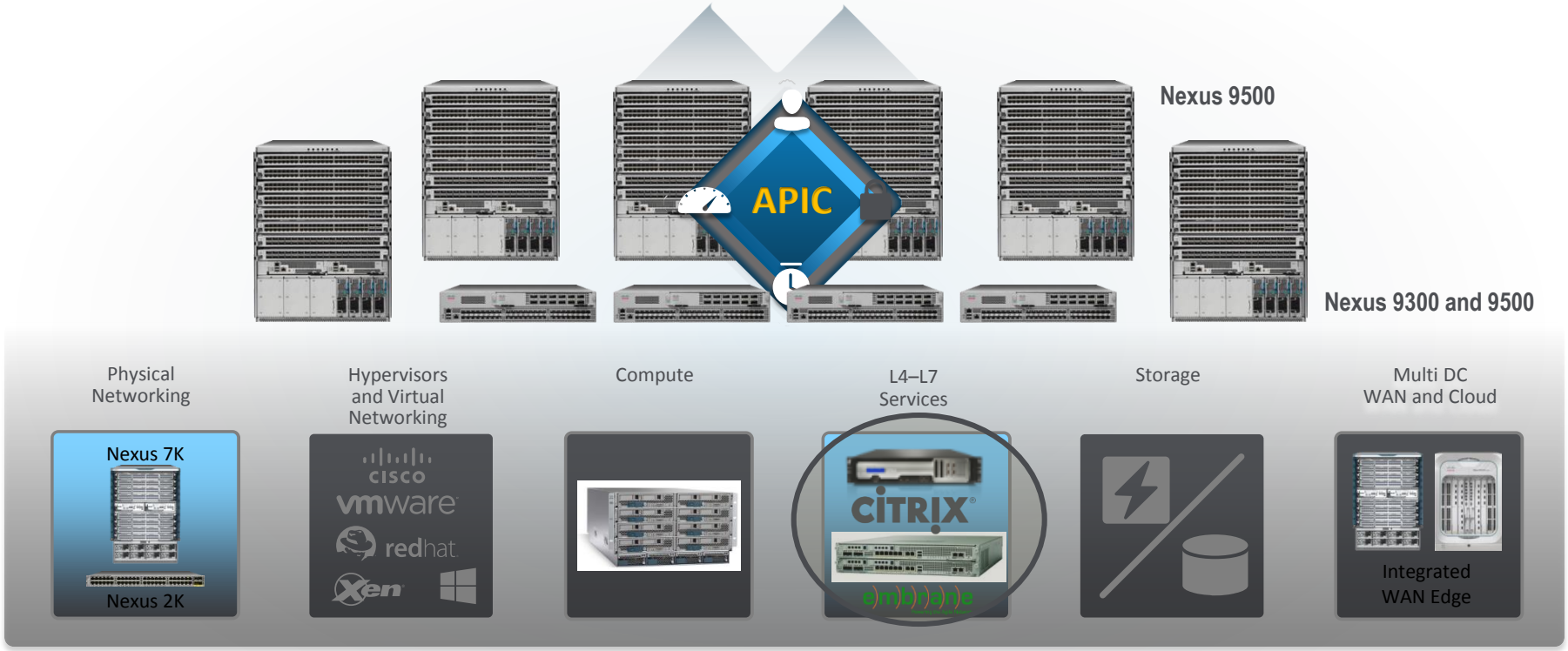
Application centric infrastructure



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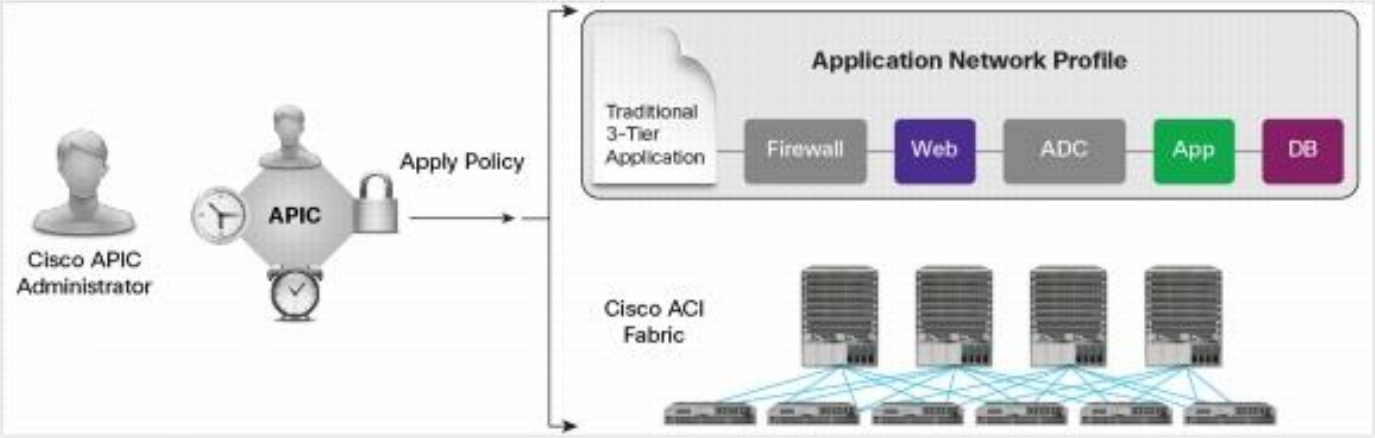
APIC - Application Policy Infrastructure Controller

Cisco APIC is single point of automation and fabric element management

- Common policy, management and operations interface
- Application control and automation over both physical and virtual networking components



NetScaler integrates with Cisco APIC for L4-L7 ADC

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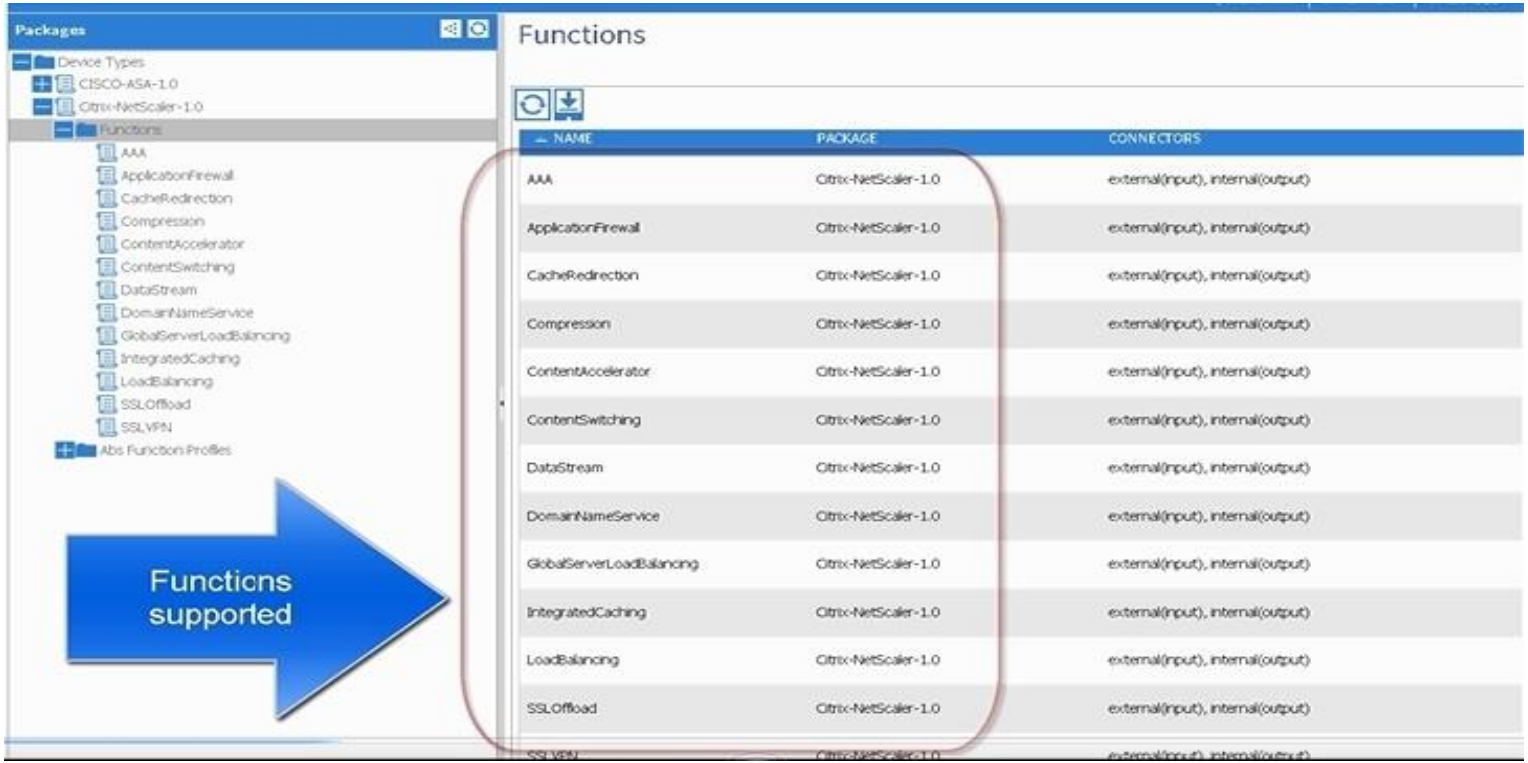
APIC DEVICE PACKAGE FOR NETSCALER

- Full NetScaler Feature Set



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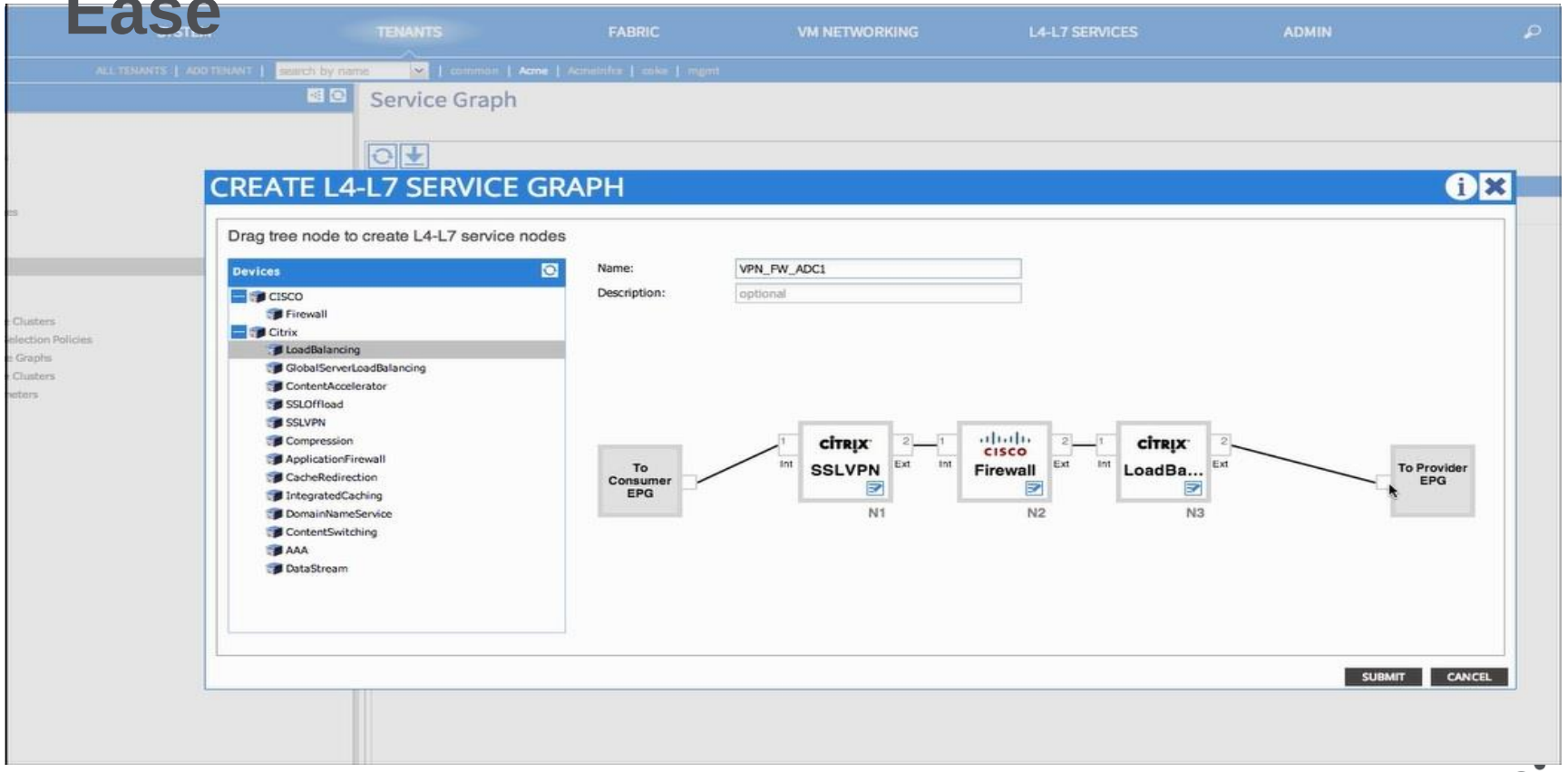
Service Graphs – Drag and Drop Configuration Ease



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Q&A

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