



Cloud Services Router (CSR 1000V) Technical Deep Dive & Key Use Cases

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www.cisco.com/go/cloudrouter

Cisco ONE/N1K Public Webinars, 1H 2013

Date/Time	Topic
Thur, Feb 21st at 0900 PST	Cisco Open Network Environment (Cisco ONE) – Next Phase of Network Programmability and SDN
Thur, Feb 28th at 0900 PST	Cisco One Platform Kit (onePK): Technical Deep Dive and key use cases
Wed, Mar 6th at 0900 PST	Nexus 1000V for Hyper-V with Microsoft SCVMM integration
Wed, Mar 13th at 0900 PST	Cisco ONE Controller: Technical Deep Dive and key use cases
Wed, Mar 20th at 0900 PST	5000 Seat VDI Reference Architecture: Cisco UCS & Nexus 1000V, Citrix XenDesktop, and EMC VNX
Wed, Mar 27th at 0900 PST	Nexus 1000V v2.2 for vSphere: More scale, Multicast-less VXLAN, and VXLAN Gateway
Wed, April 3rd at 0900 PST	Cloud Services Router (CSR 1000V) is now GA! → technical deep dive and key use cases
Wed, April 10th at 0900 PST	Cloud Security with ASA 1000V and Virtual Security Gateway v2.1 (VSG)
Wed, April 17th at 0900 PST	Secure Hybrid Cloud solution with Nexus 1000V InterCloud & VNMC InterCloud
Wed, April 24th at 0900 PST	Nexus 1100 for Cloud Network Services: New Services & Ecosystem
Wed, May 1st at 0900 PST	Cloud Networking Services: vNAM and vWAAS
Wed, May 8th at 0900 PST	Virtualized Multiservice Data Center (VMDC) solution with Cloud Networking Services
Wed, May 15th at 0900 PST	Nexus 1000V for KVM (with OpenStack and VXLAN)

Register and view recordings/presentations here:

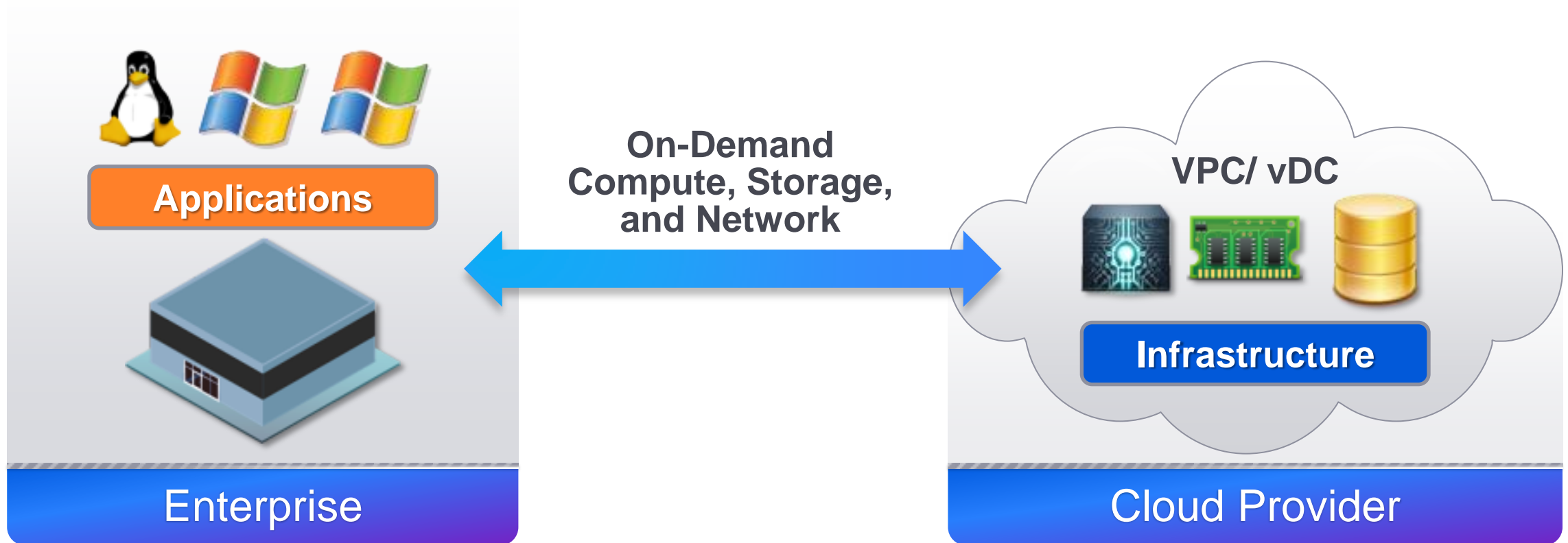
www.cisco.com/go/1000vcommunity

Agenda

- Cloud IaaS Networking Challenges
- What is the CSR 1000V?
- Where is the CSR 1000V deployed?
- CSR 1000V Management and Licensing
- Available for Download and Purchase
- Cisco Virtualized Networking and Security Products
- Q&A as we go (expert panelists are standing by)

Infrastructure as a Service (IaaS)

Changing the Cost Economics and Business Responsiveness of IT



Pay-For-Use Pricing, Rapid Provisioning, Elastic Scalability

Cloud Networking Challenges

Lack of Enterprise Network Services Creates Barriers to Adoption

Enterprise

Security

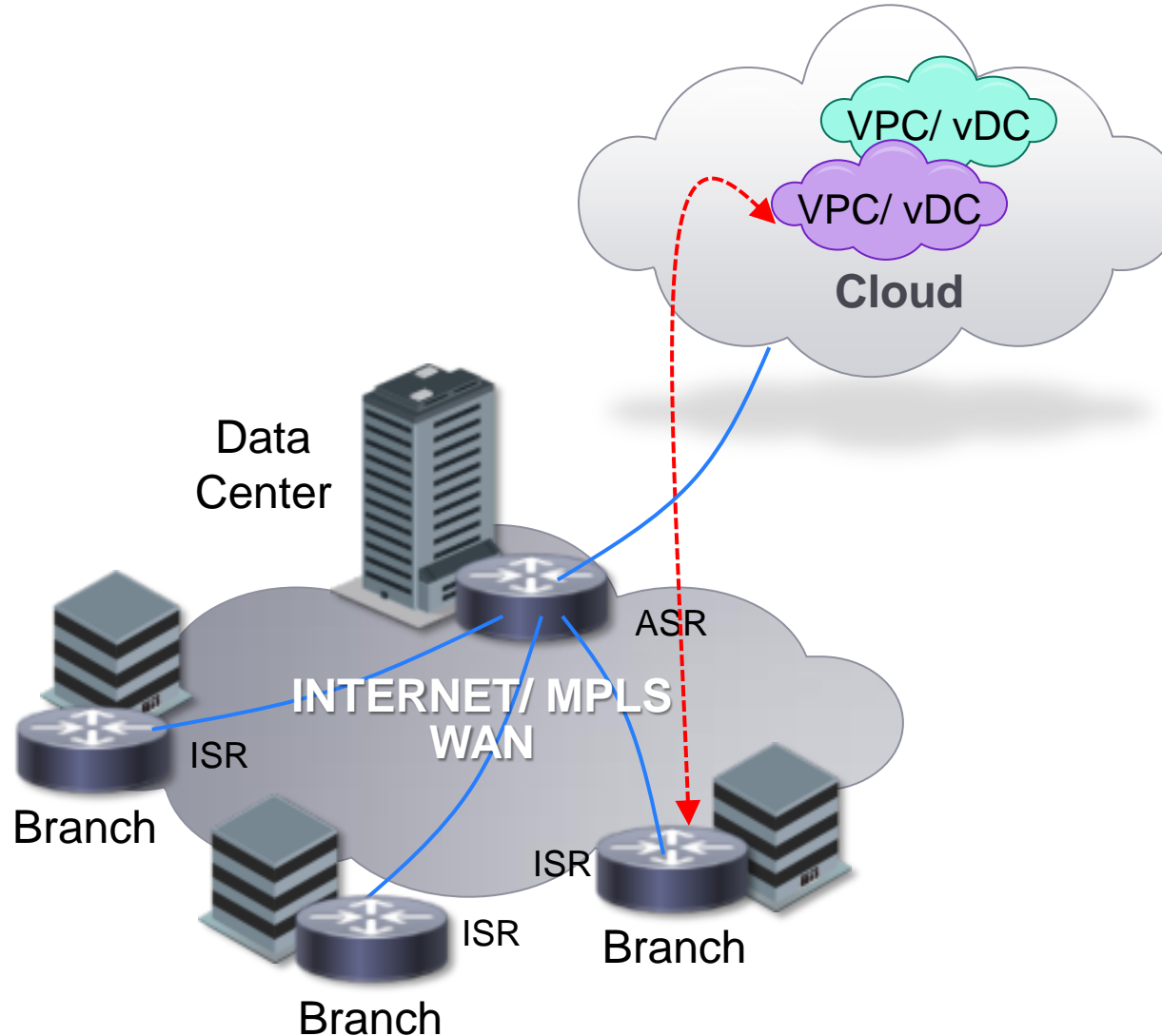
- Inconsistent VPN/ Firewall Policies
- Limited Connection Reliability
- Error-prone Topology Changes

Integration

- Incompatible IP Addressing
- Incomplete Network Services
- Different Management Tools

User Experience

- Indirect Traffic Path through DC
- No Traffic Optimization and QoS
- Limited End-to-End SLAs



Cloud Provider

Tenant Scalability

- VLAN-dependent Tenant Scale
- Limited Number of VLANs
- No WAN Extensibility

Enterprise Services

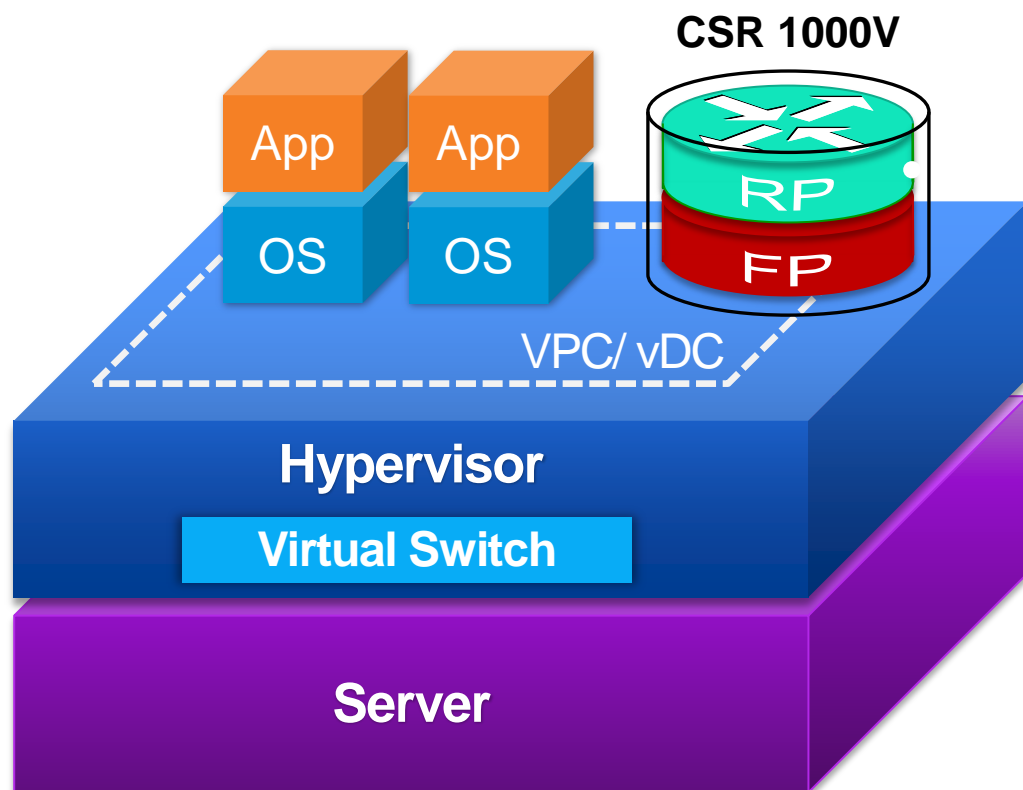
- Lack of Enterprise-class VPNs
- No Traffic Optimization and QoS
- Limited Performance SLAs

Tenant Manageability

- Limited Bandwidth Elasticity
- Limited Programmability
- Inefficient Licensing

Cisco Cloud Services Router (CSR) 1000V

Cisco IOS Software in Virtual Form-Factor



IOS XE Cloud Edition

- Selected Features of IOS XE primarily for Cloud Use Cases

Infrastructure Agnostic

- Server, Switch, Multi-Hypervisor (*ESXi, KVM, Xen, AMI**)

Single-tenant WAN Gateway

- Small Footprint (*reducing from 4 vCPU to 1*), Low Performance

Term and Usage*-based Licenses

- Elastic Capacity (*10 Mbps to 1 Gbps* Throughput, 2 to 8 GB RAM*)

Programmability

- RESTful APIs (*leverages OnePK*) for Automated Management

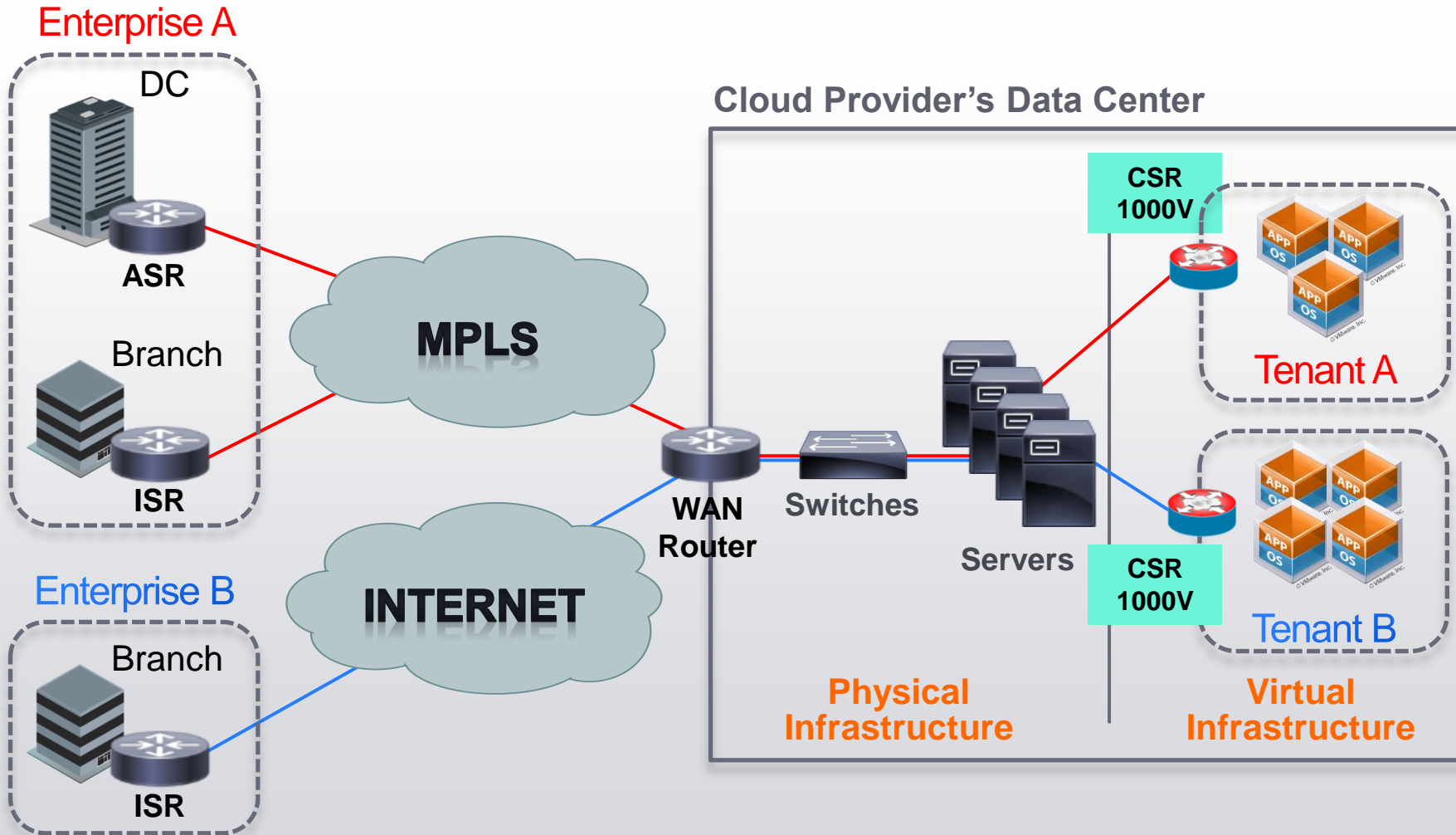
* 2H CY 2013

Enterprise-class Networking with Rapid Deployment and Flexibility

Extending Enterprise WAN to Cloud

Single-Tenant WAN Gateway in Shared Multi-tenant Clouds

Can be deployed by Enterprises or Cloud Providers



Enterprise Use Cases

- Network Services - VPN Gateway, Control Point
- Hybrid Cloud Connectivity – L2/ L3 Extensions

Cloud Provider Use Cases

- MPLS WAN Extension – vCE, vPE
- Network Services - VPN Gateway, Control Point
- Hybrid Cloud Connectivity – L2/ L3 Extensions

CSR 1000V Management

Familiar Management Tools and API Support

	Enterprise - Self-Managed	Cloud Provider - Automated
CSR 1000V	<ul style="list-style-type: none">• Cisco Prime Infrastructure• Cisco IOS CLI and SNMP• Third Party Network Management	CSR 1000V RESTful API ¹
Hypervisor ²	VMware vCenter Server	VMware vSphere Management API
Multi-Tenant Environment ^{2, 3}	<ul style="list-style-type: none">• Cisco VNMC and NSM• VMware vCloud Director	<ul style="list-style-type: none">• Cisco NSM API• VMware vCloud API

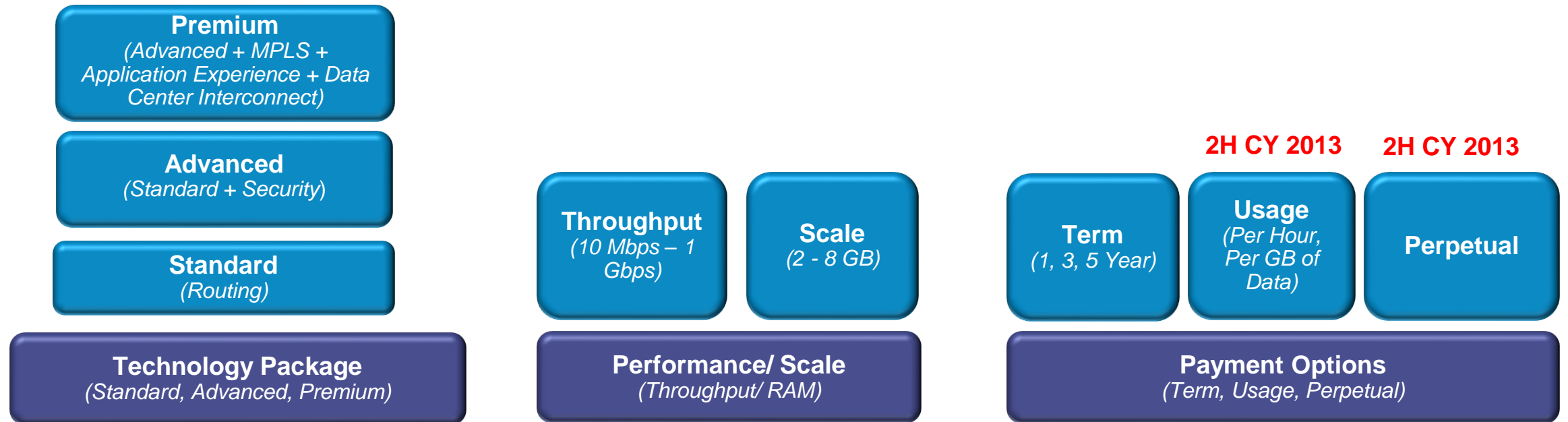
Notes:

¹*RESTful APIs for automated deployment (VM creation, license activation) and config (IOS features)*

²*Additional hypervisor options (KVM, XenServer, Hyper-V) will be available in the future*

³*Multi-tenant management options (including Cisco management stack) available in phases*

CSR 1000V Licensing Structure



IOS-XE Release 3.9 of CSR 1000V is available on cisco.com

The screenshot shows the Cisco Systems website in a Mozilla Firefox browser. The page is titled "Download Software" and displays the "Cisco Cloud Services Router 1000V" release information for "Release 3.9.0aS ED". The page includes a navigation menu with links for Products & Services, Support, How to Buy, Training & Events, and Partners. A sidebar on the left shows a tree view of releases, with "3.9.0aS(ED)" selected under "Latest Releases". The main content area features a table with three rows of software files, each with a "Download" button and an "Add to cart" button.

File Information	Release Date	Size	Download	Add to cart
Cisco CSR 1000V Series ADVANCED ENTERPRISE SERVICES - OVA csr1000v-adventerprisek9.03.09.00a.S.153-2.S0a-C4-M4G-N3-D8.ova	01-APR-2013	302.64 MB	Download	Add to cart
Cisco CSR 1000V Series ADVANCED ENTERPRISE SERVICES - BIN csr1000v-adventerprisek9.03.09.00a.S.153-2.S0a.SPA.bin	01-APR-2013	302.06 MB	Download	Add to cart
Cisco CSR 1000V Series Advanced Enterprise Services - ISO csr1000v-adventerprisek9.03.09.00a.S.153-2.S0a.iso	01-APR-2013	302.45 MB	Download	Add to cart

OVA: Initial deployment. Preferred format.
BIN: Upgrade only
ISO: Initial deployment

CSR 1000V Term Offering – March 2013 – 50 Mbps

License SKU	Term (Years)	Description ¹	Minimum Hardware ⁴	Hypervisor
L-CSR-50M-PRM-1Y=	1	1-year license for 50 Mbps Max throughput ² , Premium package, excludes SASU ³	4 GB RAM 4 virtual CPU	VMware vSphere 5
L-CSR-50M-PRM-3Y=	3	3-year license for 50 Mbps Max throughput ² , Premium package, excludes SASU ³	4 GB RAM 4 virtual CPU	VMware vSphere 5
L-CSR-50M-PRM-5Y=	5	5-year license for 50 Mbps Max throughput ² , Premium package, excludes SASU ³	4 GB RAM 4 virtual CPU	VMware vSphere 5
L-CSR-50M-ADV-1Y=	1	1-year license for 50 Mbps Max throughput ² , Advanced package, excludes SASU ³	4 GB RAM, 4-virtual CPU	VMware vSphere 5
L-CSR-50M-ADV-3Y=	3	3-year license for 50 Mbps Max throughput ² , Advanced package, excludes SASU ³	4 GB RAM, 4-virtual CPU	VMware vSphere 5
L-CSR-50M-ADV-5Y=	5	5-year license for 50 Mbps Max throughput ² , Advanced package, excludes SASU ³	4 GB RAM, 4-virtual CPU	VMware vSphere 5
L-CSR-50M-STD-1Y=	1	1-year license for 50 Mbps Max throughput ² , Standard package, excludes SASU ³	4 GB RAM, 4-virtual CPU	VMware vSphere 5
L-CSR-50M-STD-3Y=	3	3-year license for 50 Mbps Max throughput ² , Standard package, excludes SASU ³	4 GB RAM, 4-virtual CPU	VMware vSphere 5
L-CSR-50M-STD-5Y=	5	5-year license for 50 Mbps Max throughput ² , Standard package, excludes SASU ³	4 GB RAM, 4-virtual CPU	VMware vSphere 5

Similar Set of SKUs for 25 Mbps and 10 Mbps

100 Mbps and 250 Mbps Standard available upon request

¹Software (IOS XE for CSR) available for download from cisco.com with free two-month evaluation license

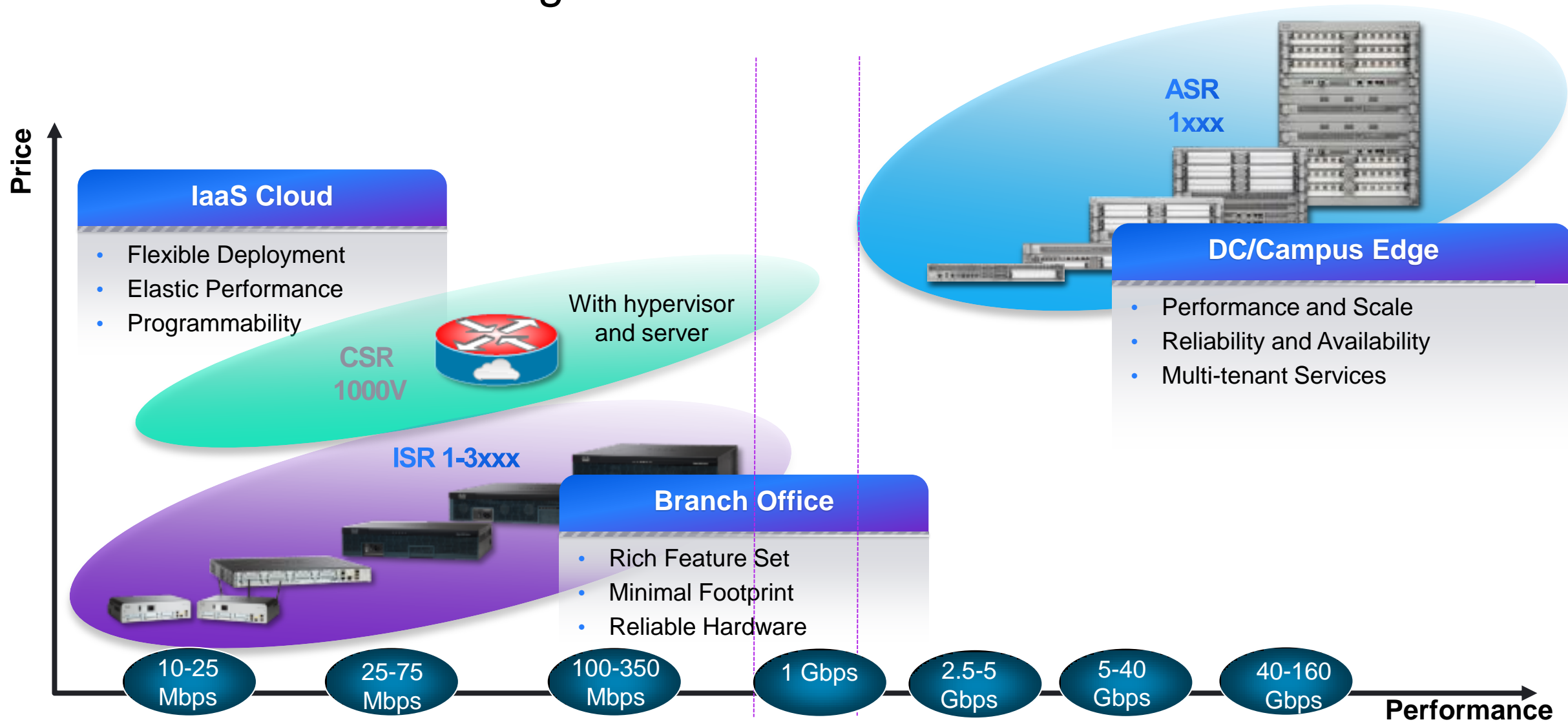
²Max Throughput is the license-limited throughput, i.e. CSR throughput cannot exceed this limit

³Software Updates and Support (SASU) sold separately and is 20% of product list price

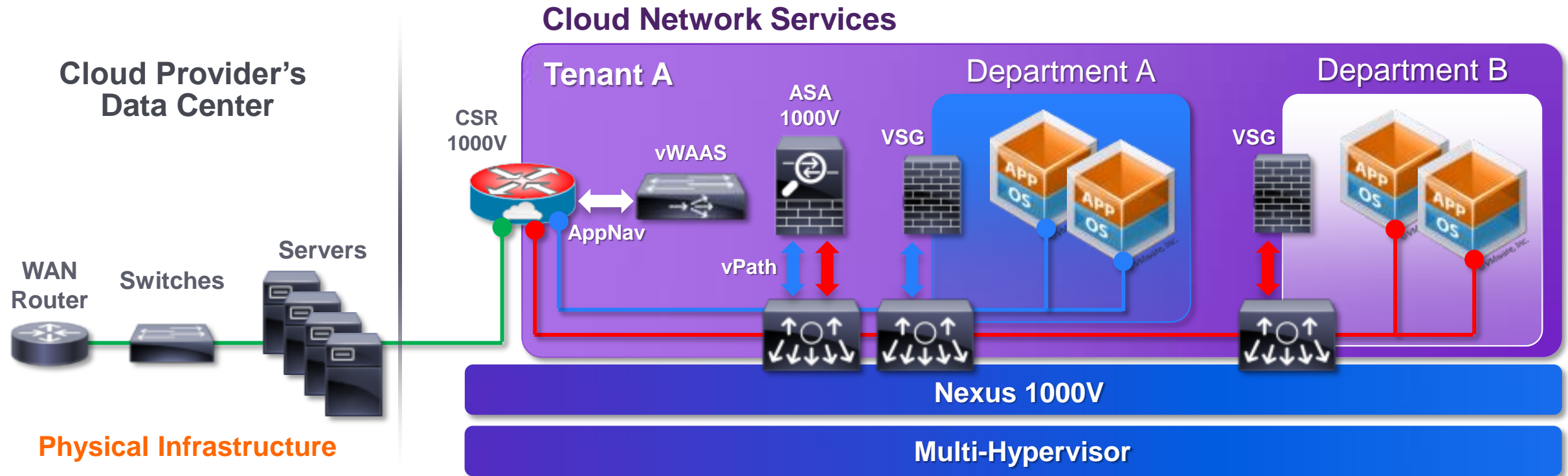
⁴Minimum Physical CPU Requirements: Intel Nehalem processor family or higher

CSR 1000V Complements the ISR G2 and ASR 1000

End-to-End IOS Networking



Cisco Virtual Networking and Cloud Network Services



CSR 1000V

- WAN Gateway
- IOS Networking

vWAAS

- WAN Optimization
- Application Traffic

ASA 1000V

- Edge Firewall
- Protocol Inspection

VSG

- Zone-based Firewall
- VM-level Control

Nexus 1000V

- Distributed Switch
- NX-OS Consistency

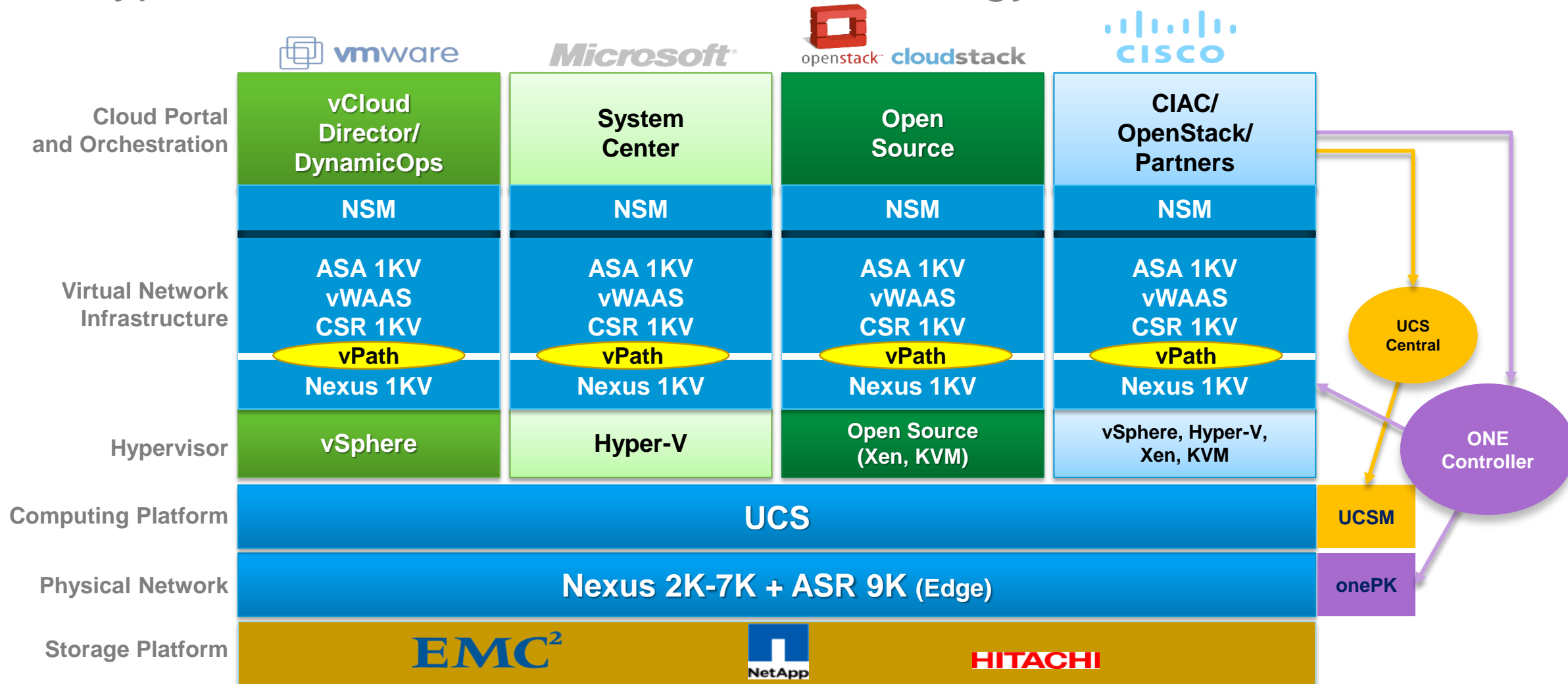
Ecosystem Services

- Citrix NetScaler VPX ADC
- Imperva Web App. Firewall



Cisco ONE - Cloud Technology Stacks

Multi-Hypervisor and Multi-Orchestration Strategy

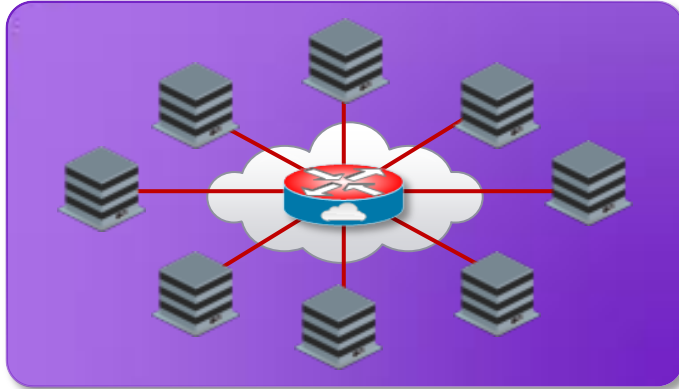


Solutions: Vblock, FlexPOD, VMDC, VDI, HCS, Cross-DC Mobility

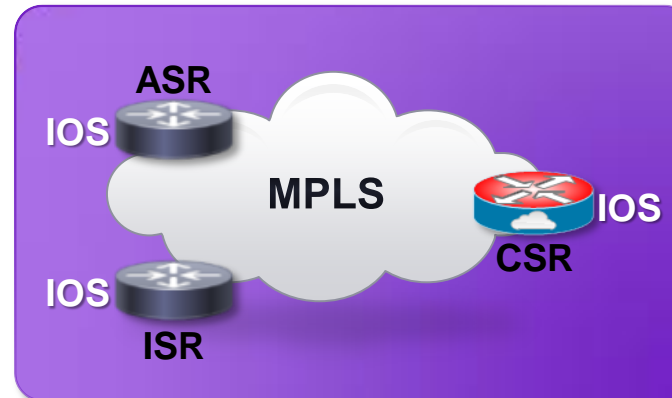
CSR 1000V Benefits

Reducing Barriers to IaaS Adoption

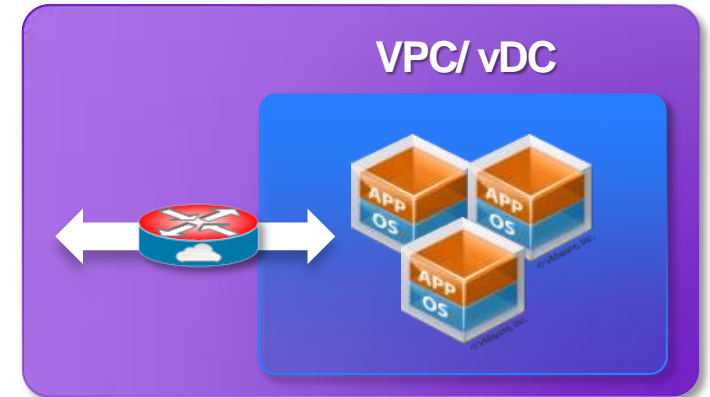
Any-to-Any Connectivity



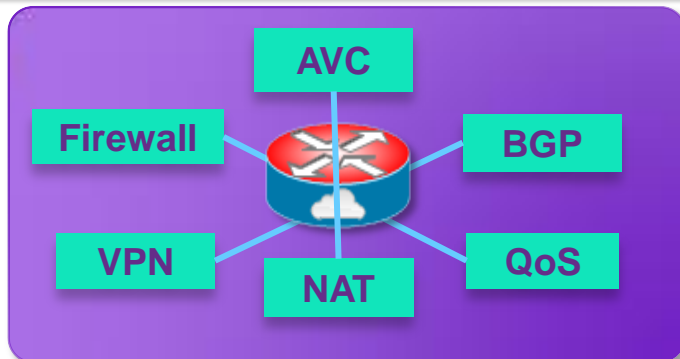
Network Consistency



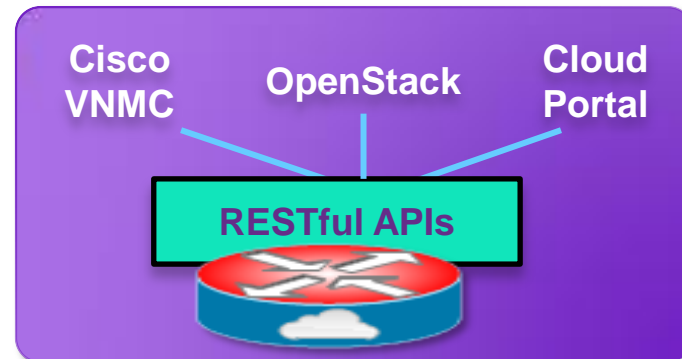
Traffic Redirection/ Control



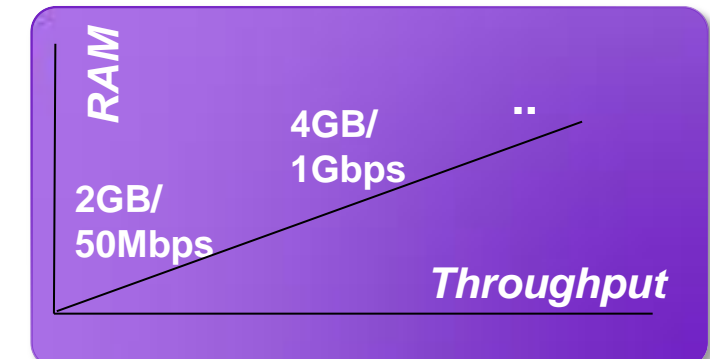
Integrated Services



Programmability



Licensing Elasticity



CSR 1000V Availability

- For questions and ordering information, contact your local Cisco sales representative
- For information on CSR 1000V, visit <http://www.cisco.com/go/cloudrouter/>

Thank you.

