

## Complex is Competent Simple is Genius



![](_page_2_Figure_0.jpeg)

![](_page_2_Picture_1.jpeg)

#### The Cloud Has Reset IT Expectations

![](_page_3_Figure_1.jpeg)

![](_page_3_Picture_2.jpeg)

#### Enterprise Datacenters are Complex Despite advances in Server (OS) Virtualization

![](_page_4_Picture_2.jpeg)

![](_page_4_Picture_3.jpeg)

![](_page_5_Picture_0.jpeg)

#### Web-Generation Datacenters Simpler, Scalable, Predictable

![](_page_5_Figure_2.jpeg)

#### **Fundamental Assumptions**

Unbranded x86 servers: fail-fast systems No special purpose appliances All intelligence and services in software Linear, predictable scale-out

facebook.

![](_page_5_Picture_6.jpeg)

#### **Design Goals**

No single point of failure No single point of bottleneck Always-on systems Deep Analytics / Machine Learning

![](_page_5_Picture_9.jpeg)

![](_page_5_Picture_10.jpeg)

![](_page_5_Picture_11.jpeg)

#### Data Is At The Heart Of The Data Center

![](_page_6_Figure_1.jpeg)

- The biggest contributor to complexity is data storage architecture
  - Enterprise storage has tremendous inertia

![](_page_6_Picture_4.jpeg)

#### Enterprise Storage Has Diverse Silos

![](_page_7_Figure_1.jpeg)

![](_page_7_Picture_2.jpeg)

![](_page_8_Figure_0.jpeg)

![](_page_8_Figure_1.jpeg)

![](_page_8_Picture_2.jpeg)

![](_page_9_Figure_0.jpeg)

![](_page_9_Figure_1.jpeg)

![](_page_9_Picture_2.jpeg)

**Scaling Challenges with Traditional Storage** 

![](_page_10_Figure_0.jpeg)

![](_page_10_Picture_1.jpeg)

#### Bringing Web-Scale To The Enterprise

![](_page_11_Figure_1.jpeg)

![](_page_11_Picture_2.jpeg)

#### We Needed a Radically Simplified Architecture

![](_page_12_Figure_1.jpeg)

![](_page_12_Picture_2.jpeg)

#### Scalable, Distributed System Design

![](_page_13_Figure_1.jpeg)

![](_page_13_Picture_2.jpeg)

## **No Storage Silos**

## A simple and beautiful control plane was missing

![](_page_14_Picture_2.jpeg)

![](_page_15_Picture_0.jpeg)

![](_page_15_Picture_1.jpeg)

#### Hypervisors in the non-Cloud era

- Designed for network shared storage
- Not built to scale
- Lack of mobility and lock-in
- Complex management
- Security an after thought
- Hypervisor feature bloat
- Focus on hardware, not applications

![](_page_16_Picture_8.jpeg)

![](_page_16_Picture_9.jpeg)

#### Next Generation Management Planes

![](_page_17_Figure_1.jpeg)

Leveraging Webscale Foundation

![](_page_17_Picture_3.jpeg)

#### Simplifying the Infrastructure & Management Stack

![](_page_18_Figure_1.jpeg)

Full-Stack Management

![](_page_18_Picture_3.jpeg)

![](_page_19_Picture_0.jpeg)

![](_page_20_Figure_0.jpeg)

![](_page_20_Picture_1.jpeg)

![](_page_21_Picture_0.jpeg)

#### Traditional Hypervisors

![](_page_21_Picture_2.jpeg)

#### Next Gen Hypervisors

![](_page_21_Figure_4.jpeg)

![](_page_21_Picture_5.jpeg)

#### Making Virtualization Invisible

![](_page_22_Figure_1.jpeg)

![](_page_22_Figure_2.jpeg)

Built-in Virtualization (AHV) and Integrated Management

![](_page_22_Picture_4.jpeg)

![](_page_23_Picture_0.jpeg)

Hyperconvergence leads to Enterprise Cloud

![](_page_23_Picture_2.jpeg)

![](_page_24_Figure_0.jpeg)

![](_page_25_Figure_0.jpeg)

![](_page_25_Picture_1.jpeg)

![](_page_26_Figure_0.jpeg)

![](_page_27_Figure_0.jpeg)

THE EVERYWHERE NETWORK

![](_page_28_Figure_0.jpeg)

![](_page_28_Picture_1.jpeg)

![](_page_29_Picture_0.jpeg)

#### Right Cloud for Right Workload

![](_page_30_Picture_1.jpeg)

![](_page_30_Picture_2.jpeg)

Predictable

Unpredictable

![](_page_30_Picture_5.jpeg)

#### Nutanix Enterprise Cloud OS

![](_page_31_Picture_1.jpeg)

1-Click Experience
Open Cloud Platform

Web Scale Infrastructure

1-Click Operations (Day 2+) ESX, HyperV, AHV, XS

1-Click Upgrades(Day 0)

1-Click Provisioning (Day 1)

AWS, Azure, Containers

Single Fabric for Mode 1 + Mode 2 Intentful Machine Intelligent

![](_page_31_Picture_6.jpeg)

# THE EVERYWHERE NETWORK Powered silver peak<sup>®</sup>

### Cloud Success: New ERA, New QUESTIONS

<b>use the</b> <b>internet</b> to connect users directly to cloud applications?	cor deliv app perfor every critic	<b>ntinuously</b> <b>er</b> WOW blication mance for business- cal app?	kee chang WAN going de	ep up with <b>jes to my</b> I without device by evice?	de <b>applio</b> 1000 acros clouds the	liver <b>new</b> cations to s of sites, s multiple , in 10% of e time?	see everything and always know which WAN <b>issues to focus</b> <b>on</b> across 1000s of sites?	
reduce l error in a c and ever-ch environm	human omplex nanging nent?	delive <b>more ban</b> at the edu the same b	er <b>10x</b> <b>dwidth</b> ge, for budget?	make s WAN is n <b>roadbl</b> and always pace wit busine	ure my ever a <b>ock</b> s keeps h the ss?	protect business cloud is a accessible everythin connect	ct my when open, e and ng is ted?	
					SUL	THE EVERY		

AND IT'S ONLY GOING TO GET WORSE...

Business is ever-changing Applications are constantly evolving Clouds are offering new service

And Every Cloud and Application is Unique

![](_page_34_Picture_3.jpeg)

## ...and must be Managed across Hundreds or Thousands of Locations

## WHICH ARE ALL DIFFERENT

![](_page_35_Picture_2.jpeg)

## What is a Software Defined WAN?

![](_page_36_Figure_1.jpeg)

# silver peak®

Powering the Self-Driving Wide Area Network

![](_page_37_Picture_2.jpeg)

### Silver Peak is a Quadrant Leader

![](_page_38_Figure_1.jpeg)

Cisco: Viptela (Aug. 2017)

• Vmware: VeloCloud (Aug. 2017)

![](_page_38_Figure_4.jpeg)

## Why Silver Peak SD-WAN

![](_page_39_Figure_1.jpeg)

#### Silver Peak uses Business Intent Overlays

![](_page_40_Figure_1.jpeg)

#### Sites and Topologies

Location	Transport	Тороlоду	Typical Connectivity	Users Application
Head- Office	Carrier Ethernet, Broadband, Private Line, T1-E1	Hub and Spoke Full Mesh	Multiple MPLS Multiple Internet 3 <sup>rd</sup> Party NG-Firewall	Mix of Users and Apps VolP and Conferencing Hub
Branch Office	Carrier Ethernet, Broadband, Private Line, T1-E1, Satellite, WiMax, 4GLTE	Hub and Spoke Full Mesh Internet Breakout	MPLS 1 or 2 Internet Satellite / LTE Backup	Users Local Storage Local Compute VoIP
Home / Mobile	DSL, Cable, Wifi, LTE	Hub and Spoke Internet Breakout	Residential Internet Fixed Mobile / LTE	Users and VolP
Cloud	Carrier Ethernet, PVC, L2-Circuit	Hub and Spoke Full Mesh	Dedicated Cloud Link Internet	Dedicated Apps Head Office / DC Overflow

THE EVERYWHERE NETWORK

## Typical Legacy Site

![](_page_42_Figure_1.jpeg)

## **Ideal Production Configuration**

![](_page_43_Figure_1.jpeg)

## **Tunnel Bonding and Failover**

• Tunnel Bonding Provides Greater Resiliency Against WAN Link Failure

![](_page_44_Picture_2.jpeg)

**Resiliency or Throughput Emphasis** 

Packet Based Multipathing

**Brownout Aware** 

![](_page_44_Picture_6.jpeg)

## Silver Peak's Application-Driven SD-WAN

![](_page_45_Figure_1.jpeg)

Granular, intelligent breakout of SaaS and trusted internetbound traffic directly from the branch

Avoid added latency through direct access to where the app resides

Backhaul only untrusted traffic to corporate FW

Avoid consumption of expensive MPLS circuits where not necessary

![](_page_45_Picture_7.jpeg)

## Functional components of Silver Peak

Deployed in Minutes to Leverage both MPLS and Broadband Connectivity

#### -3-08000000

#### **SD-WAN Edge**

- Zero-Touch Provisioning (physical appliance)
- Dynamic Path Control
- WAN Hardening with 256-bit Encryption
- Path Conditioning
- Cloud Intelligence for Best Path to SaaS

![](_page_46_Figure_9.jpeg)

#### **Unity Orchestrator**

- Single Screen Administration
- Automated Business Intent Policies
- Visibility into Legacy and Cloud Applications
- Bandwidth Cost Savings Reports

	Inbound		Outbound							
Reduction %		ytes	E	Reduction %						
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88.0	2.8T	334G	335G	2	8T	88.0				
58.4	2.51	1.17	1.17	25	ť.	58.4				
63.9		1.8T 651G	6516	1.8T		63.9				
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75.1		1.2T 2956	2966 1.21			75.:				
0		952G	952G			1				

#### **Unity Boost**

- Optional Performance Pack
- Latency Mitigation / Data Reduction (Apply only Where Needed)

## Unity EdgeConnect Hardware Platforms

	EdgeConnect US	eConnect US EdgeConnect XS		EdgeConnect M	EdgeConnect L	EdgeConnect XL		
		000008-5-						
Model	EC-US	EC-XS	EC-S	EC-M	EC-L	EC-XL		
Typical Deployment	Small Branch/ Home Office	Small Branch	Large Branch	Head Office Small Hub	Data Center Large Hub	Data Center Large Hub		
Typical WAN Bandwidth	1–100 Mbps	2–200 Mbps	10–1000 Mbps	50–2000 Mbps	1–5 Gbps	2–10 Gbps		
Simultaneous Connections	256,000	256,000	256,000	2,000,000	2,000,000	2,000,000		
Recommended Boost up to	25 Mbps	50 Mbps	200 Mbps	500 Mbps	1 Gbps	5 Gbps		
Redundancy/ FRUs	No	No	No	Power and SSD	Power and SSD	Power and SSD		
Data Path Interfaces	3 x RJ45 10/100/1000	4 x RJ45 10/100/1000	6 x RJ45 1/10G Option	4 x RJ45 2 x 1/10G Fiber	4 x RJ45 2 x 1/10G Fiber	4 x 1/10G Fiber		

## **Centralized Orchestration & Automation**

![](_page_48_Figure_1.jpeg)

![](_page_49_Figure_0.jpeg)

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![](_page_51_Picture_1.jpeg)

![](_page_52_Figure_0.jpeg)

THE EVERYWHERE NETWORK

![](_page_53_Figure_0.jpeg)

![](_page_53_Picture_1.jpeg)

![](_page_54_Figure_0.jpeg)

![](_page_55_Figure_0.jpeg)

#### And then

#### we went

## Beyond

## The NETWORK

The EVERYWHERE network is more than just a network.

It is a fully managed ecosystem that seamlessly integrates

Datacenters, Remote Offices and Public Clouds

**Under Common Management** 

## Remote offices are Overbuilt...

![](_page_58_Picture_1.jpeg)

## ... or Overlooked

![](_page_58_Picture_3.jpeg)

- Poor or No Redundancy.
- Weak Security.
- Direct Connection to Corporate Network

![](_page_58_Picture_7.jpeg)

![](_page_59_Picture_0.jpeg)

![](_page_59_Picture_1.jpeg)

![](_page_59_Picture_2.jpeg)

does not

has LATENCY

![](_page_59_Picture_5.jpeg)

cannot handle LOCALIZED data

![](_page_59_Picture_7.jpeg)

![](_page_59_Picture_8.jpeg)

![](_page_59_Picture_9.jpeg)

![](_page_59_Picture_10.jpeg)

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## **40%** of data will be stored, processed and analyzed at the edge of the network

![](_page_60_Picture_2.jpeg)

of new WAN Edge initiatives will be based on SD-WAN and /or vCPE Platforms

![](_page_60_Picture_4.jpeg)

![](_page_60_Picture_5.jpeg)

## Introducing the EVERYWHERE Edge<sup>TM</sup>

Powered by NUTANIX, The EVERYWHERE Edge™ is a Cloud Managed, Software Driven, Converged Platform Streamlined to run Infrastructure Services and Business Applications at the Edge.

![](_page_61_Picture_2.jpeg)

## **NUTANIX** Converges:

- Compute
- Storage
- Hypervisor
- Management

![](_page_62_Figure_5.jpeg)

![](_page_62_Picture_6.jpeg)

#### **NUTANIX** Centralized Management with PRISM

![](_page_63_Figure_1.jpeg)

## WIT-ONE EVERYWHEREConnect<sup>™</sup>

 EVERYWHEREConnect<sup>™</sup> leverages the EVERYWHERE Network<sup>™</sup> and EQUINIX's Cloud Exchange to link Internet-based client sites to Public Clouds over private connections.

 By placing EVERYWHEREConnect™ Points of Presence (PoPs) close to client's locations, EVERYWHEREConnect™ combines low-cost Internet access circuits with the usage cost and QOS of Dedicated Cloud Circuits

![](_page_64_Picture_3.jpeg)

![](_page_65_Picture_0.jpeg)

## Why Equinix

- Equinix is the World's Largest IBX Datacenter and Colocation Provider.
- Equinix MI1 is the Premier Datacenter in Miami interconnecting Latin America and the Caribbean to the rest of the World.

![](_page_66_Picture_3.jpeg)

![](_page_67_Figure_0.jpeg)

## TONE - The Everywhere Team

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