

# VeloCloud Cloud-Delivered WAN

Fast. Simple. Secure.

KUHN CONSULTING GmbH

### Agenda



- 1. Overview and company presentation
- 2. Solution presentation
- 3. Main benefits to show to customers
- 4. Deployment models

# **VeloCloud Company Background**

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# Re-defining Enterprise Wide Area Networks

- Cloud-Based Software Defined Wide Area Network
- Expand the WAN without replacing it (migration)
- Slash the costs of Wide Area Networking (WAN)

#### Company Background

- Founded in 2012
- 85 headcounts
- Team from leading Networking, Cloud and Virtualization companies
- Backed by NEA, Venrock, March Capital, Cisco Investment and The Fabric



## **VeloCloud's Innovative WAN Solution**

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Enable the use of lower cost Internet as a WAN while maintain application performance



Simplify WAN/branch deployment, configuration, monitoring, and remote troubleshooting



Provide flexible WAN architecture for accessing both on-premise applications and SaaS

#### **Cloud Delivered SD-WAN**



#### VeloCloud Cloud-Delivered SD-WAN

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VeloCloud's network service consists of 3 key components: Orchestrator, Cloud Gateways, Edge



## **Cloud-Delivered SD-WAN For Enterprise**



#### **VeloCloud Edge Portfolio**



### **Dynamic Multi-Path Optimization**

#### App performance over broadband, LTE and private circuits



https://www.youtube.com/watch?v=mdNbNn4Ucy4 (2:50 - 5:30)

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### **Cloud VPN Deployment**



#### **VeloCloud Application Recognition**



#### **Ease of Network Services Insertion**



# **Enterprise Account Creation**

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## **Rapid Branch Rollout**

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#### **Traditional WAN Deployment**

- ✗ Truck roll and IT personal required to configure & deploy new branch. No centralized control.
- ✗ Dependency on wired circuit delays branch bring up and reduce productivity



#### VeloCloud Zero Touch Deployment

- $\checkmark$  No local IT touch. Drop ship the unit and activate.
- Plug and play auto-discover WAN links including bandwidth and ISPs
- ✓ Profile based configuration eliminates tedious branch-by-branch configuration
- ✓ Optional DC install greatly simplify branch bring-up

## **Run Real-time Voice or Video**

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The Internet fails to deliver UC 17% of the time\*

VeloCloud Cloud-Delivered SD-WAN > 99% of the time\*



#### **Traditional WAN**

- Poor Internet performance affects voice and video quality
- ✗ High cost from using MPLS to deliver high quality voice and video

# VeloCloud SD-WAN for UC

- Deliver high quality voice and video over the Internet
- ✓ Dynamic error correction mitigates network issues and assure voice ad video performance

\* Source: VeloCloud IQR Q2/2015

#### **Combine All WAN Links with Intelligent Link Bonding**

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#### **Traditional WAN**

- ✗ Typical setup is active/standby WAN. Complex routing protocol tuning required to enable active/active.
- ✗ Link performance degradation will severely affect throughput



#### VeloCloud Cloud-Delivered SD-WAN

- Per-packet load balancing utilizes all links to maximize throughput even for single traffic flow, e.g. large backup
- ✓ Real time link performance awareness on-demand remediation ensures maximum possible throughput

# **Any WAN Services Anywhere**

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#### Traditional Approach to WAN Services

- ➤ Deploy local branch services requires additional appliances and is difficult to manage
- ✗ Centralize service requires backhauling that increases latency and impact performance
- ➤ Utilize services in the cloud requires complex routing configuration

#### VeloCloud's Flexible Service Insertion

- ✓ Per-application service insertion policy
- ✓ Run local services, e.g. firewall, IPS on the VeloCloud hardware. Keep the branch lean.
- ✓ Backhaul select applications to services in the DC
- ✓ Chain cloud services for specific application, e.g. Web browsing is subjected to cloud Web security

## **Connect to Virtual Private Cloud (VPC)**

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#### Traditional WAN to VPC

- Complex to setup. Require full mesh tunnel from every branch to VPCs
- ➤ Poor Internet performance impacts user productivity



### VeloCloud SD-WAN to VPC

- ✓ Simple to setup VeloCloud Gateway eliminates mesh tunnel requirement to VPCs
- ✓ Centralized policy to control branch VPC access
- ✓ High performance, secure connectivity

#### **VeloCloud HA Overview**



- Active and standby edges negotiate role
- Standby edge blocks all ports except the failover link (L1)
- Failover link communicates state information, heartbeat, and surrounding status, e.g. WAN and LAN ports status

#### VeloCloud HA Design – L2 Switch



- The same ISP link mush be connected to the same port on both Edges
  - Use L2 switch to make the same ISP link available to both edges
- The standby edge does not interfere with any traffic by blocking all its ports except the failover link (L1 port)
- The session information is synchronized between active and standby edge through the failover link
- If the active edge detects lost of LAN link it will also failover to another edge assuming it has active LAN link

#### **VeloCloud HA Design – L3 Switch**



- HSRP/VRRP required on the L3 switch pair
- VCE's static route points to the L3 switches' HSRP VIP as next hop to reach the end stations behind L2 switches
- The same ISP link mush be connected to the same port on both Edges
  - Use L2 switch to make the same ISP link available to both edges
- The standby edge does not interfere with any traffic by blocking all its ports except the failover link (L1 port)
- The session information is synchronized between active and standby edge through the failover link
- If the active edge detects lost of LAN link it will also failover to another edge assuming it has active LAN link

#### **VeloCloud Hybrid WAN Architecture**

