

### PRODUCT OVERVIEW

Viptela vEdge Cloud is a software router platform that supports entire range of capabilities available on the physical vEdge-100, vEdge-1000 and vEdge-2000 router platforms. The vEdge Cloud router is offered as a virtual machine (VM) that can be deployed in the variety of private, public and hybrid cloud computing environments. It is supported on all major hypervisor platforms.

Viptela vEdge Cloud router utilizes Intel DPDK infrastructure to ensure the most optimal performance on x86 platforms. The software is also capable of utilizing the AES-NI encryption offload technology available on most Intel platforms. AES-NI offers optimized IPsec performance when utilizing AES encryption algorithms.

### DEPLOYMENT USE CASES

The vEdge Cloud router targets the following main deployment use cases:

- 1 Extend Viptela overlay into public cloud environments
- 2 Virtualized WAN router

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## 1 EXTEND VIPTELA OVERLAY INTO PUBLIC CLOUD ENVIRONMENTS

Hybrid cloud is now the new norm for Enterprises. With hybrid cloud, certain enterprise workloads remain within the boundaries of the private data centers, while others are hosted in the public cloud environments, such as Amazon AWS and Microsoft Azure. This approach provides enterprises the utmost flexibility of consuming compute infrastructure as required.

Viptela SD-WAN solution allows extending ubiquitous connectivity, zero-trust security, end-to-end segmentation and application aware QoS policies of the organizational wide area network into the Infrastructure as a Service (IaaS) public cloud environments.

Transport independent nature of the Viptela SD-WAN solution allows leveraging variety of connectivity methods in the active-active fashion by securely extending SD-WAN fabric into the public cloud environment across all underlying transport networks, such as MPLS, broadband, 3G/4G LTE, satellite and point-to-point links.

Traffic segmentation policies allow creating multiple virtual private networks (VPNs) on top of a single fabric to functionally segregate different types of traffic between the private and public cloud environments. This behavior results in the end-to-end segregation. Application aware topologies and intelligent selection of the best performing path toward the public cloud in accordance with desired SLAs ensure optimal overall quality of experience. Extensive QoS mechanisms present in Viptela vEdge Cloud software router result in differentiated service for application traffic.

Following figure illustrates how Viptela vEdge Cloud router securely extends organizational wide area network into the public cloud environment.

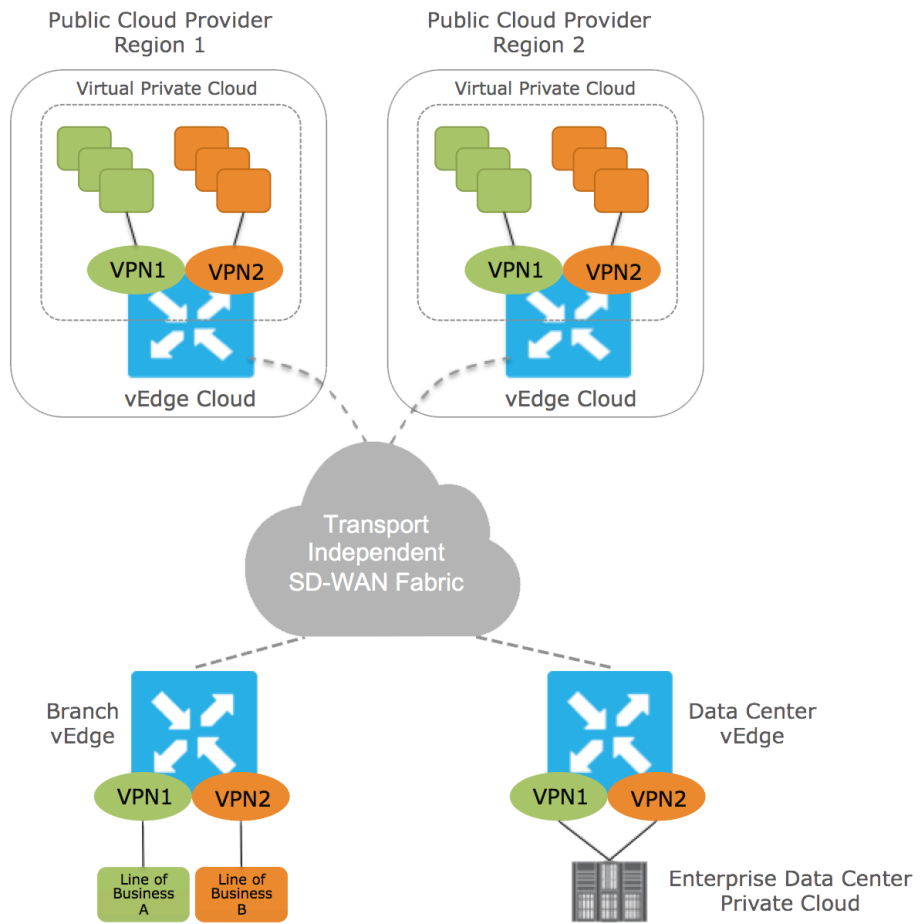


Figure 1: Extending organizational wide area network into the public cloud environment

## 2 VIRTUALIZED WAN ROUTER

A branch network consists of a number of elements. Operating, maintaining and connecting these elements can be simplified by adopting a generic x86 platform on which discrete virtual network functions (VNFs) are instantiated. This form of service delivery is also known as the virtual customer premise equipment or the vCPE. With vCPE, the vEdge Cloud router assumes the role of the WAN router VNF providing secure wide area network connectivity from and to the remote office.

The following figure illustrates Viptela vEdge Cloud router solution elements.

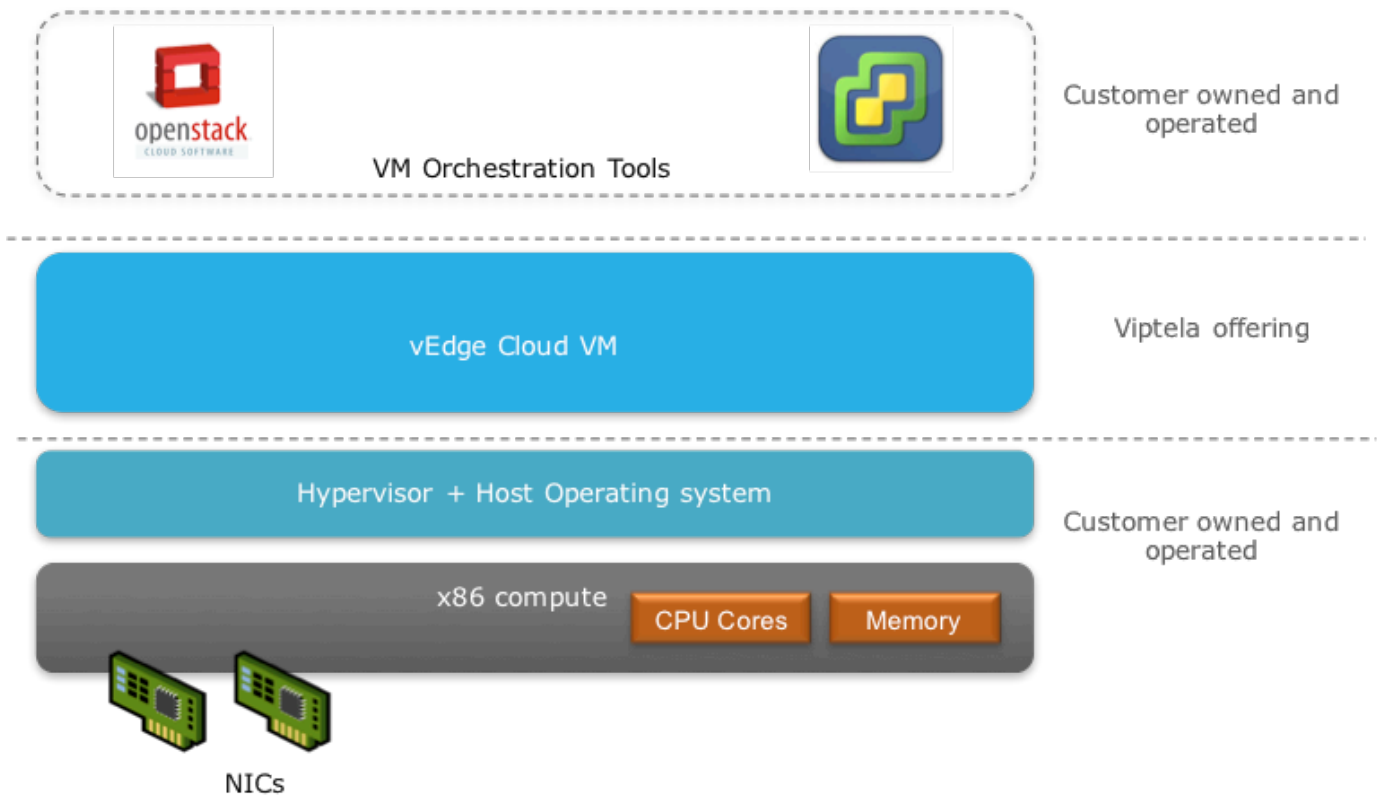


Figure 2: Solution elements of the Viptela vEdge Cloud router

Viptela SD-WAN solution supports numerous intelligent in-line and off-path methods of integrating vEdge Cloud router with the rest of the vCPE elements. This integration includes routing, policy based routing, bridging and service insertion methods.

vEdge Cloud routers can be deployed as a redundant active-active pair leveraging either OSPF/BGP protocols for routed environments or VRRP for bridged environments. This deployment ensures higher degree of connectivity resilience and uptime for the remote offices.

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## PRODUCT SPECIFICATIONS

Viptela vEdge Cloud routers can be deployed on a variety of x86 platforms. The following table lists minimum x86 platform requirements.

Table 1: Minimum x86 platform requirements for Viptela vEdge Cloud router

Services and Slot Density	
Image Formats	QCOW2, OVA, AMI, VDX
Recommended host Operating Systems	<ul style="list-style-type: none"><li>• Ubuntu 14.04 LTS</li><li>• Red Hat Enterprise Linux 7.0</li></ul>
Supported hypervisors	<ul style="list-style-type: none"><li>• VMware ESXi 5.5</li><li>• KVM</li><li>• Amazon Machine Image (AMI) on Amazon Web Services</li></ul>
Supported I/O	<ul style="list-style-type: none"><li>• E1000</li><li>• VMXNET3</li><li>• VirtIO</li><li>• SR-IOV</li></ul>
Server specifications	<ul style="list-style-type: none"><li>• Intel Sandy Bridge with a clock frequency of 2.0GHz</li><li>• Intel ATOM Rangely with a clock frequency of 2.0GHz</li><li>• WAN Interface: Gigabit Ethernet NICs</li><li>• CPU: 2 virtual CPUs (vCPUs)</li><li>• Memory: 2GB</li><li>• Disk Space: 8GB</li><li>• Network interfaces: Up to 8 vNICs per VM</li></ul>

### AWS host requirements

The vEdge Cloud software router is supported on any EC2 instance type that supports enhanced networking. Recommended EC2 instance types are: m4.large, c4.large and c3.large.

## SOFTWARE CAPABILITIES

Viptela vEdge Cloud routers leverage standards based features for the LAN (Service) and WAN (Transport) side of the network. The following table lists key software capabilities of the Viptela vEdge Cloud routers

Table 2: Key software capabilities of the Viptela vEdge Cloud router

CATEGORY	FEATURES
AAA	TACACS+, RADIUS, local, Role Based Access Control
Routing	OSPF, eBGP, iBGP, static, connected, OMP
Bridging	802.1Q, native VLAN, bridge domains, IRB, host-mode bridging
Security	Zero-trust, whitelisting, DTLS/TLS, IPSec, ESP-256-CBC, AH, HMAC-SHA1, DDOS protection, control plane protection, NAT traversal
Forwarding and QoS	Classification, prioritization, low latency queuing, remarking, shaping, scheduling, policing, mirroring, NAT/PAT
Multicast	IGMP v1/v2, PIM, Auto-RP, scale-out traffic replication
Policy	Route policies, App Aware Routing, control policy, data policy, ACL policy, VPN membership policy, service advertisement and insertion policy
System and Network Services	IPv4, SNMP, NTP, DNS client, DHCP client, DHCP server, DHCP relay, config archival, Syslog, SSH, SCP, NAT/PAT, Cflowd v10 IPFIX export
Lifecycle Management	VMware vCenter, OpenStack

## ORDERING INFORMATION

Viptela vEdge Cloud router is sold as a software subscription license. No additional SKUs are required to operationalize this product. The following table lists SKUs for Viptela vEdge Cloud router.

Table3: SKUs for Viptela vEdge Cloud router

vEdge-Plus-10M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 10 Mbps
vEdge-Plus-20M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 20 Mbps
vEdge-Plus-50M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 50 Mbps
vEdge-Plus-100M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 100 Mbps
vEdge-Plus-10M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 10 Mbps
vEdge-Plus-20M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 20 Mbps
vEdge-Plus-50M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 50 Mbps
vEdge-Plus-100M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 100 Mbps
vEdge-Plus-10M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 10 Mbps

vEdge-Plus-20M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 20 Mbps
vEdge-Plus-50M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 50 Mbps
vEdge-Plus-100M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Plus license, 100 Mbps
vEdge-Pro-10M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 10 Mbps
vEdge-Pro-20M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 20 Mbps
vEdge-Pro-50M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 50 Mbps
vEdge-Pro-100M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 100 Mbps
vEdge-Pro-10M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 10 Mbps
vEdge-Pr-20M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 20 Mbps
vEdge-Pr-50M-3YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 50 Mbps
vEdge-Pr-100M-3YR	3 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 100 Mbps
vEdge-Pro-10M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 10 Mbps
vEdge-Pro-20M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 20 Mbps
vEdge-Pro-50M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 50 Mbps
vEdge-Pro-100M-5YR	5 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Professional license, 100 Mbps
vEdge-Ent-10M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Enterprise license, 10 Mbps
vEdge-Ent-20M-1YR	1 Year Software (SD-WAN controller & CPE software) Subscription License to use SEN capabilities on vEdge, Enterprise license, 20 Mbps
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FOR MORE INFORMATION ON THE VIPTELA SOLUTION AND HOW IT CAN HELP YOUR NETWORK, PLEASE CONTACT [SALES@VIPTELA.COM](mailto:SALES@VIPTELA.COM)



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