# CloudEngine 1800V
# Virtual Switch

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## Product Overview

Huawei CloudEngine 1800V (CE1800V) is a distributed Virtual Switch (vSwitch) designed by Huawei for data center virtualization environments. Supporting an abundance of functionality, the CE1800V is open, easy-to-manage, and compatible with the virtualization platforms of VMware and Microsoft, as well as other open-source virtualization platforms. Through Huawei's close cooperation with VMware and Microsoft, the CE1800V can run on the virtualization platforms of VMware and Microsoft, delivering a strong distributed, virtual switching capability for Virtual Machines (VMs). In addition, the CE1800V can work with Huawei's CE series hardware switches and Agile Controller to provide a complete network virtualization solution for customers.

## Product Highlights

### Providing a Powerful Virtualization Capability

- Supporting network-wide virtualization solutions: The CE1800V extends the network management and control granularity to the interior of servers. It supports full-path network virtualization solutions by managing VM traffic in a fine-grained manner.

- Flexibly adapting to Software-Defined Networking (SDN) architecture: The CE1800V supports processing multi-level OpenFlow flow tables. Working as the starting and end points of a Virtual Extensible LAN (VXLAN) tunnel, the CE1800V encapsulates and decapsulates VXLAN packets that enter and exit a VM. In this way, VM deployment does not depend on physical network devices. As a result, differences among physical networks are shielded, and service requirements on physical networks are lowered. Therefore, the CE1800V fully adapts to the SDN architecture.

- Supporting smooth multi-tenant migration: By leveraging the VXLAN to extend traditional VLANs, the CE1800V supports a tenant network that has up to one million tenants. Additionally, the CE1800V is able to isolate tenants into different subnets, and supports flexible VM migration across Layer 3.

### Supporting Standard NBIs

- Supporting the OpenFlow protocol: The CE1800V supports the standard OpenFlow1.0/1.3 protocol that serves as a Northbound Interface (NBI) protocol. It also supports a variety of standard SDN controllers, and separates the control plane from the forwarding plane in the SDN architecture.

- Supporting the OVSDB protocol: The CE1800V supports the OVSDB protocol that serves as a northbound management interface protocol, and provides independent configuration channels. Standard SDN controllers can manage and configure the CE1800V using the OVSDB protocol.

### Supporting Multiple Virtualization Platforms

- The CE1800V features good compatibility. It can run on multiple mainstream virtualization platforms in the industry, such as VMware ESXi, Microsoft Hyper-V, and KVM. By shielding the implementation differences among different virtualization platforms, the CE1800V makes network Operations and

Maintenance (O&M) and development of new services easier than ever before. Based on its support for multiple virtualization platforms, the CE1800V can forward and process inter-VM data traffic in a highly efficient fashion.

## Centralized Network Control and Management

- Controlling virtual networks in the way physical networks are controlled: Through Huawei's Agile Controller, network administrators can centrally control the CE1800V and physical network devices (for example, CE series hardware switches), and complete multiple functions such as delivering OpenFlow flow tables and guiding traffic forwarding, implementing separation of the control plane from the forwarding plane.

- Managing virtual networks in the way physical networks are managed:By using Huawei's unified network O&M and management tool – eSight Network Management System (NMS), network administrators can centrally manage and monitor the CE1800V and physical network devices (for example, CE series hardware switches), and completemultiple functions such as automatic version upgrades.

## Product Specifications

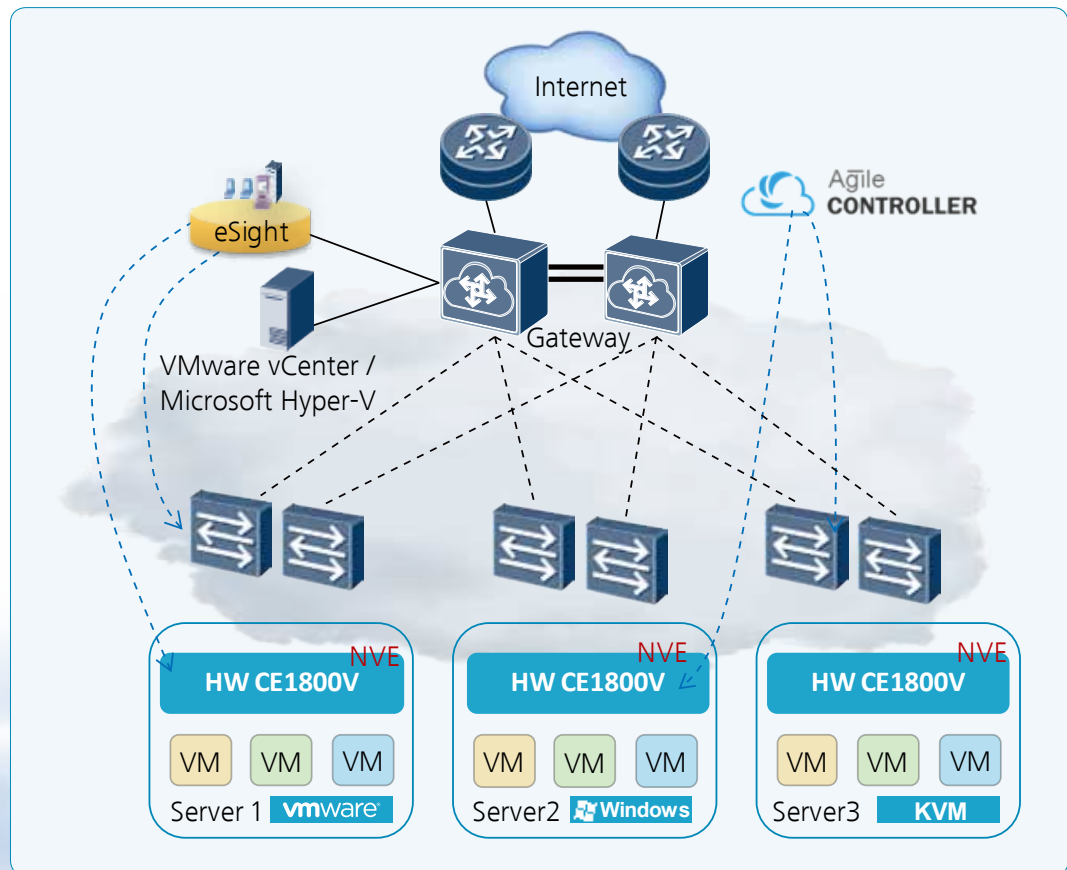| Item | CE1800V |
|------|---------|
| SDN | OpenFlow1.0 |
| | OpenFlow1.3 |
| | OVSDB |
| Overlay | VXLAN |
| | VNI: 30K |
| Layer 2 forwarding | VLAN: 4,094 |
| | MAC: 8,192 |
| | LAG members: 8 |
| Multicast | Broadcasting multicast packets in a VLAN |
| Management and maintenance | SPAN |
| | RSPAN |
| | ERSPAN |
| Link | LACP LAG |
| IPv4 | IPv4 packet forwarding |
| | Encapsulating IPv4 headers in VXLAN headers |
| IPv6 | IPv6 packet forwarding |
| Security group | Security group capability based on iptables |

## Ordering Information

| Item | Description | Remarks |
|------|-------------|---------|
| CE18-LIC-B11-V | CE1800V basic software–VMware platform | Mandatory; customers configure the corresponding basic software based on different server virtualization platforms. |
| CE18-LIC-B11-K | CE1800V basic software–KVM platform | |
| CE18-LIC-B11-H | CE1800Vbasic software – Hyper-V platform | |
| CE18-LIC-1C | CE1800V License, managing 1CPU | Mandatory; customers select the corresponding licensebased on the CPU capability of CE1800V's operating environment. |
| CE18-LIC-2C | CE1800V License, managing 2CPUs | |
| CE18-LIC-4C | CE1800V License, managing 4CPUs | |
| CE18-LIC-8C | CE1800V License, managing 8CPUs | |
| CE18-LIC-16C | CE1800V License, managing 16CPUs | |
| CE18-LIC-32C | CE1800V License, managing 32CPUs | |
| CE18-LIC-64C | CE1800V License, managing 64CPUs | |
| CE18-1C-SNS1Y | CE1800V: 1CPU;SnS–1 year | Mandatory; customers select the subscription and support (SnS)based on the CPU license they have selected and the SnSservice period. |
| CE18-1C-SNS3Y | CE1800V: 1CPU;SnS–3 years | |
| CE18-1C-SNS5Y | CE1800V: 1CPU;SnS–5 years | |
| CE18-2C-SNS1Y | CE1800V: 2 CPUs;SnS–1 year | |
| CE18-2C-SNS3Y | CE1800V: 2 CPUs;SnS–3 years | |
| CE18-2C-SNS5Y | CE1800V: 2 CPUs;SnS–5 years | |
| CE18-4C-SNS1Y | CE1800V: 4 CPUs;SnS–1 year | |
| CE18-4C-SNS3Y | CE1800V: 4 CPUs;SnS–3 years | |
| CE18-4C-SNS5Y | CE1800V: 4 CPUs;SnS–5 years | |
| CE18-8C-SNS1Y | CE1800V: 8 CPUs;SnS– 1 year | |
| CE18-8C-SNS3Y | CE1800V: 8 CPUs;SnS– 3 years | |
| CE18-8C-SNS5Y | CE1800V: 8 CPUs;SnS–5 years | |
| CE18-16C-SNS1Y | CE1800V: 16 CPUs;SnS– 1 year | |
| CE18-16C-SNS3Y | CE1800V: 16 CPUs;SnS– 3 years | |
| CE18-16C-SNS5Y | CE1800V: 16 CPUs;SnS–5 years | |
| CE18-32C-SNS1Y | CE1800V: 32 CPUs;SnS– 1 year | |
| CE18-32C-SNS3Y | CE1800V:32 CPUs;SnS– 3 years | |
| CE18-32C-SNS5Y | CE1800V:32 CPUs;SnS–5 years | |
| CE18-64C-SNS1Y | CE1800V:64 CPUs;SnS– 1 year | |
| CE18-64C-SNS3Y | CE1800V:64 CPUs;SnS– 3 years | |
| CE18-64C-SNS5Y | CE1800V:64 CPUs;SnS–5 years | |

## Networking Application

Huawei CE1800V is able to control and manage network traffic in virtualization environments of data centers that are deployed with the Hypervisor of VMware, Microsoft, or KVM.

As shown in the following networking diagram, Huawei's Agile Controller seamlessly works with the CE1800V and hardware switches, as well as other devices and systems. Through the standard OpenFlow/OVSDB protocol, network administrators can implement multiple functions such as delivering OpenFlow flow tables and guiding traffic forwarding, achieving separation of the control plane from the forwarding plane. In addition, through the VXLAN function, the CE1800V can shield differences among upper-layer hardware devices by working as a Network Virtual Endpoint (NVE), thus reducing the constraints on upper-layer device deployment and implementing multi-tenant migration on different platforms. Moreover, Huawei's eSight NMS can centrally manage and monitor the CE1800V and physical network devices (for example, CE series hardware switches).

HUAWEI TECHNOLOGIES CO.,LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129,P.R.China
Tel: +86 755 28780808

www.huawei.com