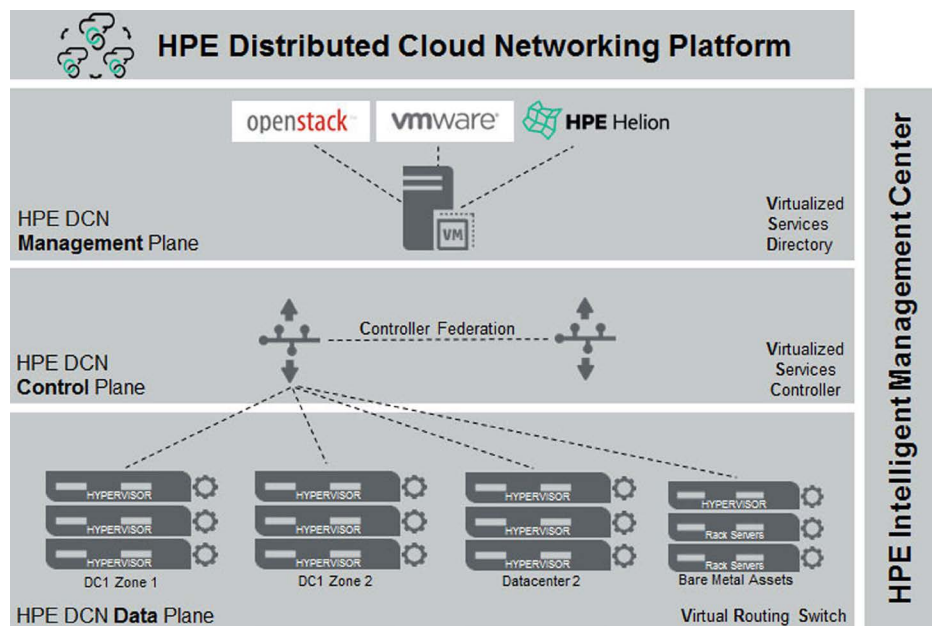


HPE Distributed Cloud Networking



Key features

- Application-driven automated instantiation of network services
- SDN-based unified physical and virtual network configuration across data center networking
- Seamlessly extends policy orchestration across virtual, physical and container environments
- Large-scale tenant support across multiple private, public and hybrid clouds
- Accelerates NFV adoption by providing seamless service insertion and high-performance networking

Product overview

Very large organizations and service providers need to build distributed, scaled-out, federated multi-data center environments in a simple, standard and agile method using SDN and networking virtualization. HPE Distributed Cloud Networking is a complete and comprehensive networking solution that provides the framework to unify private, public, and hybrid clouds by virtualizing existing data center environments and allowing network resources to be easily provisioned and managed. It also interfaces seamlessly with various cloud management platforms such as OpenStack, CloudStack, HPE Helion OpenStack and VMware vSphere. Leveraging programmability of business logic and policy engine, the platform allows an open and agile solution that scales to solve the stringent needs of multi-tenant datacenters.

The solution is comprised of a network layer both physical and virtual, a control layer with federated controllers that can interconnect using MP-BGP within and across data centers, and a service directory layer with advanced programmable policies and analytics framework where IT administrators can define, visualize and control the network without being burdened by network implementation details. They can implement security, load balancing, and user access policy with a high level of abstraction, instead of manual CLI and IP address assignment. Once defined, those policies can dynamically be used to govern network behavior on an as-needed basis triggered by compute instance creation, migration and deletion. It also provides extensive service insight with an analytics engine that collects and stores per-tenant, per-VPN, per-VM statistics.

Finally, HPE Distributed Cloud Networking provides business agility while controlling infrastructure costs. Customers can accelerate their businesses using HPE DCN by lower their time-to-market for critical application and services while staying ahead of the competition.

Features and benefits

Virtualization

- Network Virtualization
HPE Distributed Cloud Networking supports the NVO3 framework for data center network virtualization with Layer 2 and 3 NVE support; allow seamless VM mobility across data centers and scalable management of tenants across the network
- Scalable Architecture
Federated SDN control architecture based on MP-BGP and BGP-EVPNs which allows seamless extension of L2 and L3 networks across data centers and MPLS networks
- Traffic Isolation
VXLAN and MPLSoIP-GRE used for interoperability with existing Layer 3 VPN services
- Tunneling Capabilities
Layer 2 and Layer 3 services through distributed virtual switching using VXLAN tunneling and BGP EVPN control plane to extend the service across controllers
- Quality of Service
Multiple class of traffic; rate limiting; programmatic rate setting
- VPN Integration
Seamless integration based on MP-BGP with use of standard BGP functionality
- Virtual Machine Mobility
Unrestricted within and across data centers
- Hypervisor Integration
Supports extension of service and orchestration of network functions across heterogeneous hypervisor types (ESXi, KVM, XEN and Hyper-v)
- OSS/App Integration
Northbound interface access through RESTful APIs and HTML5-based web portal for user self service
- Cloud Management
Pluggable architecture to support various Cloud Management Systems including HPE Helion OpenStack, OpenStack, CloudStack and VMware vCenter
- Analytics Engine
Distributed and scalable analytics engine based on Elastic Search for improved scale, performance and reliability

- Access Security
 - Provides a distributed policy-based L2 through L4 stateful firewall capability
- OpenFlow TLS Authentication
 - Provides certificate-based mutual authentication of VSC and VRS
- Network Security Policy
 - Policy-based Routing (PBR)
 - Allows the steering of flows matching a specified criteria to a next hop, bypassing the regular routing
 - Ethertype Match Criteria Identifies non-IP traffic
 - Port-range Criteria
 - Specifies a range of TCP/UDP ports
 - Egress ACL Security Policy
 - Provides policy application in the egress direction
 - Global Security
 - Granular, flexible security groups beyond the subnet or zone boundaries
- Split Subnet
 - Split subnet using proxy ARP enables a subnet to span a VLAN-based environment and a dVRS service
- DHCP Enhancements
 - DHCP ranges and DNS attributes
- Multiple Shared Domains
 - Support for multiple shared domains in VSD Architect
- Service Chaining
 - Provides the ability to template a complex service topology where the traffic between application hosts may be steered according to match criteria through a number of service appliances offering different service functions (FW, LB, NAT, IPS/IDS, etc.)
- High Performance Networking for NFV
 - DPDK-based traffic acceleration within hypervisor allow line-rate 10 G and 40 G throughput on multiple server interfaces to support high-performance NFV applications and workloads
- Docker Networking
 - Fully supports and integrates with Docker architecture to seamlessly allow connectivity and policy extension across virtual, physical and Docker environments

HPE Distributed Cloud Networking

Specifications

	HPE DCN Virtual Services Controller Software and E-LTU (JL026AAE)	HPE DCN Virtual Services Directory Software and E-LTU (JL025AAE)	HPE DCN Hardware VTEP Orchestration Software and E-LTU (JL331AAE)	HPE DCN Virtual Routing Switch/Federated/Policy and Analytics 10GbE ESXi Software and E-LTU (JL176AAE)
Recommended software	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>KVM on Red Hat® Enterprise Linux® 6.5, 6.6, and 7</p> <p>KVM on Ubuntu 12.04.x LTS and 14.04.x LTS</p>	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>KVM on Red Hat Enterprise Linux 6.5, 6.6, and 7</p> <p>KVM on Ubuntu 12.04.x LTS and 14.04.x LTS</p>	<p>Supported as DCN hardware gateway and configurable on a per VSC (JL026AAE) basis.</p> <p>Standard VSC software and server requirements apply.</p>	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p>
Notes	<p>Deployed and delivered as a virtual appliance on a dedicated physical server. For supported hypervisor types and server hardware resource requirements please refer to the product release documentation.</p> <p>libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.</p>	<p>Deployed and delivered as a virtual appliance. For supported hypervisor types please refer to the product release documentation.</p> <p>libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.</p>	<p>One license per 48 server attached physical ports (regardless of speed 10G/40G/100G).</p> <p>IRF cluster requires license for individual switches in the cluster.</p>	<p>License is limited to one (1) active GbE or 10GbE interface running on VMware ESXi.</p>
Services	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>

HPE Distributed Cloud Networking (continued)

Specifications (continued)

	HPE DCN Virtual Routing Switch/Federated/Policy and Analytics 10GbE KVM Software and E-LTU (JL177AAE)	HPE DCN Virtual Routing Switch/Federated/Policy and Analytics 40GbE ESXi Software and E-LTU (JL180AAE)	HPE DCN Virtual Routing Switch/Federated/Policy and Analytics 40GbE KVM Software and E-LTU (JL181AAE)
Recommended software	Server: KVM on Red Hat Enterprise Linux 6.5, 6.6, and 7 KVM on Ubuntu 12.04.x LTS and 14.04.x LTS	Server: Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0 Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0	Server: KVM on Red Hat Enterprise Linux 6.5, 6.6, and 7 KVM on Ubuntu 12.04.x LTS and 14.04.x LTS
Notes	License is limited to one (1) active GbE or 10GbE interface running on KVM. libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.	License is limited to one (1) active 40GbE interface running on VMware ESXi.	License is limited to one (1) active 40GbE interface running on KVM. libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.
Services	Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.	Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.	Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.

HPE Distributed Cloud Networking (continued)

Specifications (continued)

	HPE DCN Virtual Services Gateway/Federated/Policy and Analytics 10GbE Software and E-LTU (JL175AAE)	HPE DCN Virtual Services Gateway/Federated/Policy and Analytics 40GbE Software and E-LTU (JL179AAE)
Recommended software	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>KVM on Red Hat Enterprise Linux 6.5, 6.6, and 7</p> <p>KVM on Ubuntu 12.04.x LTS and 14.04.x LTS</p>	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>KVM on Red Hat Enterprise Linux 6.5, 6.6, and 7</p> <p>KVM on Ubuntu 12.04.x LTS and 14.04.x LTS</p>
Notes	<p>License is limited to one (1) active GbE or 10GbE interface running on supported hypervisor. For hypervisor support please refer to the product release documentation.</p> <p>libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.</p>	<p>License is limited to one (1) active 40GbE interface running on supported hypervisor. For hypervisor support please refer to the product release documentation.</p> <p>libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.</p>
Services	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>

HPE Distributed Cloud Networking (continued)

Specifications (continued)

	HPE DCN Virtual Services Directory High Availability Cluster Add-on Redundancy Software and E-LTU (JL174AAE)	HPE DCN plug-in for VMware vCenter and E-LTU (JL027AAE)
Recommended software	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>KVM on Red Hat Enterprise Linux 6.5, 6.6, and 7</p> <p>KVM on Ubuntu 12.04.x LTS and 14.04.x LTS</p>	<p>Server:</p> <p>Hypervisor: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p> <p>Management: VMware vSphere ESXi 5.0, 5.1, 5.5, 6.0</p>
Notes	<p>Deployed and delivered as a virtual appliance. For supported hypervisor types please refer to the product release documentation.</p> <p>libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.</p>	<p>Supports VMware vSphere infrastructure. For supported version details please refer to the product release documentation.</p>
Services	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>	<p>Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.</p>

HPE Distributed Cloud Networking (continued)

Specifications (continued)

	HPE DCN Accelerated Virtual Routing Switch 10GbE KVM Software and E-LTU (JL269AAE)	HPE DCN Accelerated Virtual Routing Switch 40GbE KVM Software and E-LTU (JL270AAE)
Recommended software	Server: KVM on Wind River Linux 6.x KVM on Ubuntu 14.04.x LTS	Server: KVM on Wind River Linux 6.x KVM on Ubuntu 14.04.x LTS
Notes	License is limited to one (1) active 10GbE interface running on KVM. libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.	License is limited to one (1) active 40GbE interface running on KVM. libvirt: VRS requires that libvirt be installed on the hypervisor. For compatible releases please refer to the product release documentation.
Services	Refer to the Hewlett Packard Enterprise website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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