



HPE Aruba Networking CX Switching & VMware NSX

Simplify data center networking





Why HPE Aruba Networking CX and VMware® NSX

- **Simplified management:**

HPE Aruba Networking CX and NSX deliver powerful automation and advanced analytics, improving IT efficiency when provisioning, managing, and troubleshooting today's data center networks.

- **Enhanced security:** NSX enables an adaptive micro-segmentation policy by dynamically creating security groups and policies, with automatic updates based on many attributes and Layer 7 information. HPE Aruba Networking CX supports dynamic VXLAN with BGP-EVPN, bringing deep segmentation to underlying networks.

- **High performance:** Powerful L2 connectivity between NSX and HPE Aruba Networking CX switches ensure low-latency, optimized traffic flows between physical and virtual networks.

- **Always-on availability:** HPE Aruba Networking CX delivers Virtual Switching Extension, a robust, yet simple solution for HA that supports live software upgrades, with no downtime.

- **Reduced costs:** Lower CapEx with NSX by consolidating networking and security functions to a single platform, and slash OpEx via simplified operations, reduced errors, and higher uptime with Aruba CX.

Digital transformation continues to disrupt enterprise data centers. Infrastructure is becoming ever-increasingly virtualized, or cloud based and driven by automation as IT teams seek to deploy workloads faster and more frequently in support of new business requirements.

But while compute and storage are more portable and scalable than ever before, these benefits often don't extend to data center networks. Traditional network architectures inhibit the business, and manual operations lead to more errors, missed deadlines, and higher risk of downtime or security breaches.

In response to these challenges, many companies have successfully virtualized parts of their network to improve IT agility. However, the physical networking fabric will continue to deliver significant value in this era of hybrid IT. In particular, ensuring high-performing, resilient connectivity between physical and virtual infrastructure, being able to swiftly address issues, and maintaining smooth operations will be instrumental to achieving desired outcomes as companies continue to transition IT models in support of digital transformation.

Innovation for the evolving data center

HPE Aruba Networking, a Hewlett Packard Enterprise company, and VMware have collaborated to deliver an innovative networking solution to address evolving application architectures in today's data centers. The combination of the HPE Aruba Networking CX Switching portfolio and VMware NSX seamlessly bridges physical and virtual infrastructure, delivering unprecedented performance, agility, and security for data center networks.

HPE Aruba Networking CX Switching portfolio

The [HPE Aruba Networking CX Switching portfolio](#) is designed for the evolving, demanding requirements of data center networks. Built from the ground up with a combination of cutting-edge hardware, a cloud-native operating system, and intuitive management tools, the HPE Aruba Networking CX portfolio simplifies the complexities of managing data center networks.

HPE Aruba Networking CX switches are based on a distributed, non-blocking architecture, enabling customers to build high-performing, scalable, and resilient data center networks.

Flexible hardware platforms address a wide spectrum of customer requirements and architectures, including spine-leaf fabrics



HPE Aruba Networking CX switches are powered by [AOS-CX](#), a cloud-native, microservices operating system that greatly simplifies network operations by delivering:

- Turnkey automation for routine, large-scale network changes with instant and continuous validation checks against device dependencies and corporate policies
- RESTful APIs and support for leading programmability and orchestration platforms such as Ansible and Python to streamline workflows executed across multiple systems
- A built-in monitoring and analytics engine in every switch for actionable insights to rapidly detect issues, speed troubleshooting, and prioritize fixes

The HPE Aruba Networking CX Switching portfolio delivers a consistent operating model from edge access to data center. No extra software licensing or subscriptions are required, delivering a compelling TCO and additional management simplicity.

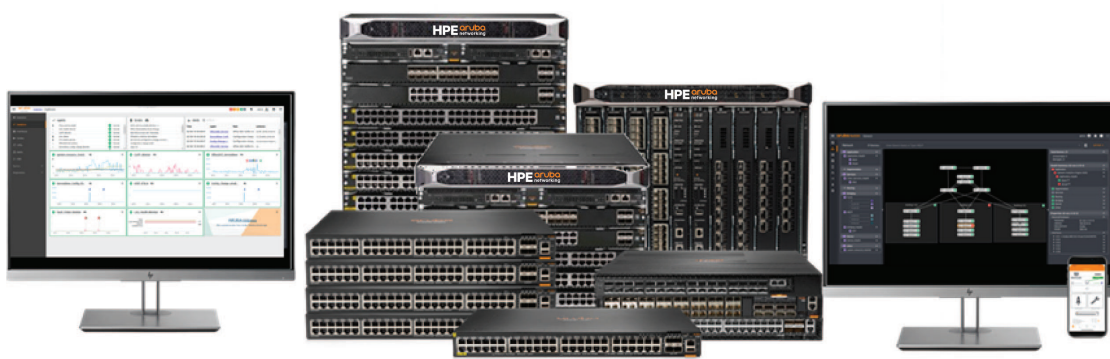


Figure 1. The HPE Aruba Networking CX Switching Portfolio combines cutting-edge hardware and cloud-native software to power and simplify modern data center networks

VMware NSX

VMware NSX® is a L2-L7 network virtualization and security platform that enables the virtual cloud network, a software defined approach to networking that extends across data centers, clouds and application frameworks. With NSX, networking and security are brought closer to the application wherever it's running, from virtual machines (VMs) to containers to bare metal. Like the operational model of VMs, networks can be provisioned and managed independent of underlying hardware.

NSX reproduces the entire network model in software, enabling any network topology — from simple to complex multitier networks — to be created and provisioned in seconds. Users can create multiple virtual networks with diverse requirements, leveraging a combination of the services offered via NSX or from a broad ecosystem of third-party integrations — ranging from next-generation firewalls to performance management solutions — to build inherently more agile and secure environments. These services can then be extended to a variety of endpoints within and across clouds.

How it works

The [HPE Aruba Networking CX 8325 Switch Series](#) has been certified by VMware to provide direct Open vSwitch Database (OVSDb) management protocol interoperability with VMware NSX.



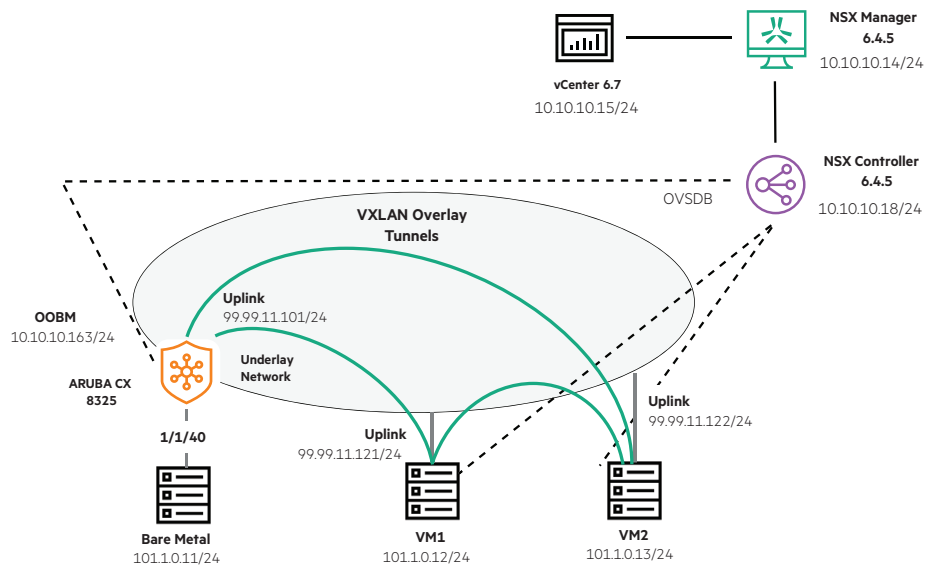


Figure 2. Network topology for VMware NX5-V and HPE Aruba Networking CX 8325 integration

HPE Aruba Networking CX 8325 is an advanced, compact 1U switch that provides wire speed 1/10/25/40/100GbE connectivity. It supports Virtual Extensible LAN (VXLAN) and can function as a VXLAN hardware gateway and virtual tunnel endpoint (VTEP), enabling traffic to flow seamlessly between VMs attached to NSX logical switches and bare metal servers or other devices on the physical network.

In this role, the HPE Aruba Networking CX 8325 switch encapsulates Layer 2 ethernet frames received from software applications that run directly on a physical server in VXLAN packets. The VXLAN packets are tunneled over a Layer 3 transport network. Upon receipt of the VXLAN packets, software VTEPs de-encapsulate the packets and forward them to VMs.

In this VXLAN environment, HPE Aruba Networking CX 8325 switches providing hardware VTEP capability can communicate with VMware NSX controllers using the OVSDB management protocol. Using OVSDB, VMware NSX controllers and other network devices can exchange MAC addresses of entities in the physical and virtual networks. This exchange of MAC addresses enables HPE Aruba Networking CX 8325 switches to forward traffic to software VTEPs in the NSX virtual network, and vice-versa.

Flexible consumption models

To attain the public-cloud economics of scalability with on-premises infrastructure, customers can deploy [HPE GreenLake for Networking](#), an IT consumption-based model that lets companies only pay for the IT infrastructure they use, on a pay-as-you-go basis.



Partner solution overview

Our solution partners



VMware software powers the world's complex digital infrastructure. The company's cloud, app modernization, networking, security, and digital workspace offerings help customers deliver any application on any cloud across any device. Headquartered in Palo Alto, California, VMware is committed to being a force for good, from its breakthrough technology innovations to its global impact. For more information, please visit vmware.com/company.html.

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HPE GreenLake for Networking is available for VMware NSX — available as a standalone offering or as part of a comprehensive VMware Cloud Foundation deployment.

For HPE Aruba Networking CX switching, [HPE GreenLake for Networking](#) offers similar pay-as-you-go flexibility and simplified service delivery, freeing IT resources to focus more time on other strategic initiatives.

Accelerate your data center transformation

As data center environments continue to evolve, IT leaders need networks that are more adaptable, with uninterrupted availability of services. The combination of HPE Aruba Networking CX Switching, and VMware NSX delivers an end-to-end solution to automate data center networking fabrics and dramatically simplify operations — ensuring peak performance and the most granular levels of security.

The integration between HPE Aruba Networking CX and VMware NSX continues a 75-year history of IT innovation between HPE and VMware. [Explore other HPE-VMware solutions](#) that are delivering game-changing results for 200,000+ shared customers worldwide.

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