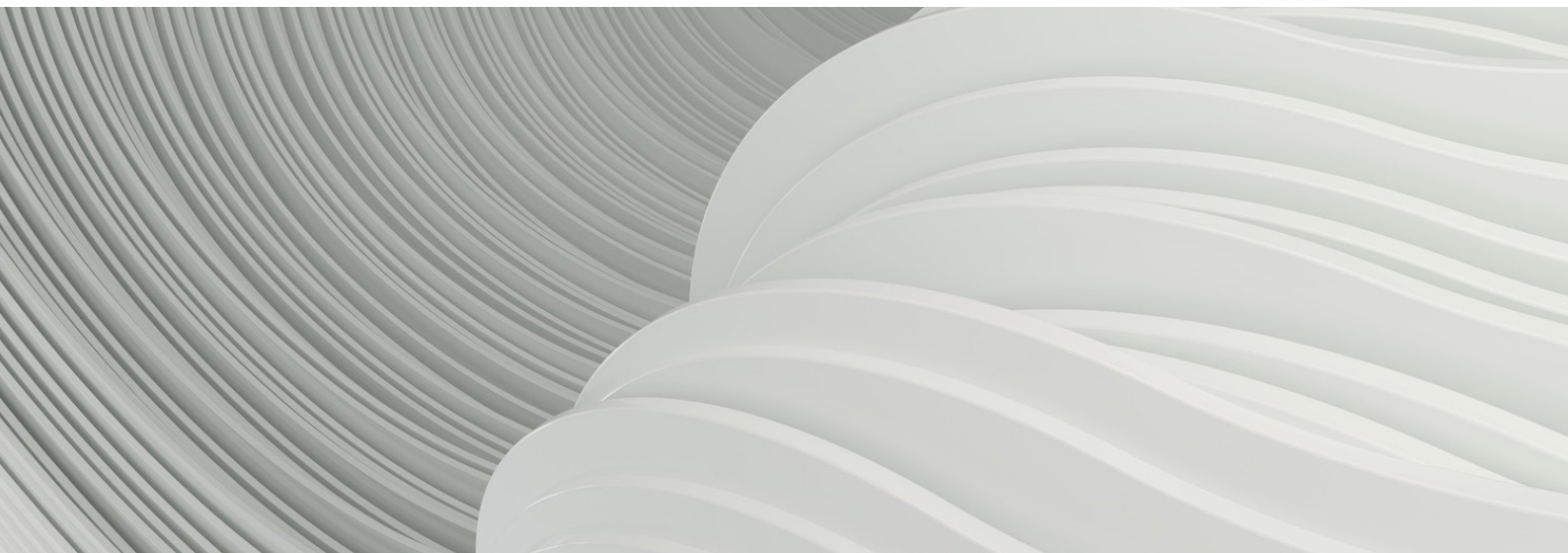**HPE** aruba
networking

HPE Aruba Networking CX Switching

A modern, cloud-native portfolio spanning from the edge

HPE
GreenLake

The HPE Aruba Networking CX advantage

- **A single OS for simplicity**
  A consistent operator experience, simplified network design, and unified management from edge access to data center.

- **Unified management**
  Cloud-based and on-premises management with intuitive workflows and unified views of devices and clients for powerful network visibility, analytics, and control.

- **Intelligent automation**
  Smoothly, safely, and quickly coordinate provisioning and changes using smart automation to validate and deploy error-free configurations and reduce manual tasks.

- **Faster troubleshooting**
  Real-time, network-wide visibility via distributed, embedded analytics to help prevent, detect, and fix issues before operations and users are impacted.

- **Always-on performance**
  Cutting-edge hardware and powerful AOS-CX operating system deliver high availability during live upgrades for the best user experience possible.

- **Dynamic Segmentation**
  Unified role-based access and policy enforcement across wired, wireless, and WAN networks of all sizes.

The growing use of IoT, the demand for cloud-based services, and business critical mobility are crushing legacy networks. Today's enterprise network must be able to quickly, safely connect new devices and users, and scale to handle the massive data generated at the network edge while providing always-on performance that delights users and helps accelerate business. Critically, the network must also reduce complexity with smart, automated insights to help IT more efficiently operate, manage, and secure the network.

HPE Aruba Networking's CX switching portfolio is purpose-built to meet these challenges, satisfying the most demanding use cases from the access layer to the core, and to the data center.

As part of HPE Aruba Networking's Edge Services Platform (ESP), HPE Aruba Networking CX switches play a foundational role in the Unified Infrastructure. Automation, embedded analytics, high availability, and secure segmentation are designed into CX switches with HPE Aruba Networking Central delivering a unified, single view of the network that maximizes operational efficiency across enterprise networks.

Built on cloud-native principles, the CX switch portfolio gives IT the flexibility to deploy a single switch operating system from edge access to the data center that supports intuitive management tools, smart automation, and distributed analytics that transform the IT network operator experience. All with the lasting value and simplified ownership with no switch software licensing and industry leading warranties so you can confidently create a network foundation for the future.

Network challenges

Operational complexity

Dealing with disparate network operating systems, oversubscribed hardware, and complex software licensing overburdens resource-constrained IT teams. The increasing number of IoT devices connecting to the network brings new security concerns, which raises the importance for better visibility into what's running on the network and an easier way to segment traffic.

Limited control and visibility

Quickly determining the root cause of an application or network slowdown is challenging. Existing network analytic tools, typically performed by external devices running separately purchased software, provide fragmented data with limited actionable insights. High network traffic volumes and mission critical network access puts growing pressure on IT teams to diagnosis and resolve issues instantly.

Legacy networks can't keep pace

The shift to digital has disrupted every portion of the network from the edge to the core. As mobile users demand high-performance video, voice, and cloud applications to better collaborate, conduct business, and learn, the amount of data crossing enterprise networks is increasing exponentially. Aging networks are inhibited by closed system architectures with highly manual, hard-coded configs that restrict the adoption of new technologies needed to support time-sensitive networking services and 24x7 access.
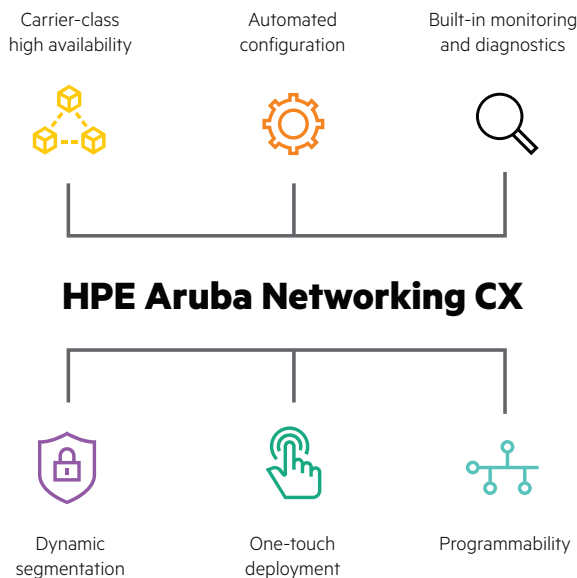
HPE Aruba Networking's CX Switching solution

HPE Aruba Networking simplifies the complexities of managing today's networks with AI-powered automation and policy-driven segmentation. Built from the ground up with a combination of cutting-edge hardware and powerful AOS-CX operating system, our family of switches are designed for today's most demanding enterprise campus, branch, and data center networks.

Based on over 30 years of continuous investment, HPE Aruba Networking's switching ASICs create the basis for unparalleled performance, innovative software feature advancements, and deep network visibility. These programmable ASICs, now in the 7th generation, are purpose-built for a tighter integration of switch hardware and software in campus and data center architectures to maximize network performance and bring new innovations to life more quickly.

Flexible ASIC resources deliver benefits such as high-performance Virtual Output Queuing (VOQ) which optimizes the use of all switch ports by preventing head-of-line blocking, allowing HPE Aruba Networking Network Analytics Engine (NAE) to inspect all data for improved troubleshooting and analytics.

By combining a modern, fully programmable network operating system with NAE, HPE Aruba Networking switches provide industry-leading monitoring and troubleshooting capabilities across the network. Deep visibility with contextual analytics helps simplify network operations, reduces network complexity, and enables faster response times.

Features built for enterprise networks

Carrier-class high availability   Automated configuration   Built-in monitoring and diagnostics

HPE Aruba Networking CX

Dynamic segmentation   One-touch deployment   Programmability

Single OS for edge access to data center

HPE Aruba Networking's AOS-CX is a modern, database-driven network switch operating system that delivers automation, distributed analytics, security, and high availability to campus, branch, and data center networks. It is built with a microservices architecture to automate and simplify IT operations and scales from entry level access to high availability data center switching. By eliminating siloes of separate switch architectures for different deployments such as branch office and campus, AOS-CX helps eliminate complexity with a consistent operator experience, simplified network design, and unified management across the entire network.

Unified, AI-powered management

HPE Aruba Networking Central is an AI-powered solution that simplifies IT operations, improves agility, and reduces costs by unifying management of all network infrastructure. Built for enterprise-grade resiliency and security, while simple enough for smaller businesses with limited IT staff, HPE Aruba Networking Central is your single point of visibility and control that spans the entire network—from branch to data center, wired and wireless LAN to WAN. Available as a cloud-based or on-premises solution, HPE Aruba Networking Central is designed to simplify day zero through day two operations with streamlined workflows for tasks such as virtual switch stack creation, automated monitoring using AI-powered insights and NAE, as well as a unified view of all devices and users, both wired and wireless. Comprehensive switch management capabilities include configuration, onboarding, monitoring, troubleshooting, and reporting.

Built-in monitoring and diagnostics

HPE Aruba Networking Network Analytics Engine (NAE) provides real-time, network-wide insights to swiftly detect, prioritize, and troubleshoot issues as they occur. Rules-based, real-time monitoring and intelligent notifications automatically correlate to configuration changes to help accelerate diagnostic routines and resolve issues before users and business are impacted. Using advanced telemetry and automation built into select HPE Aruba Networking CX switches, network operators can quickly identify and troubleshoot a network, the system, application, and security-related issues, using python and CLI-based agents and REST APIs.

A built-in Time Series Database (TSDB) stores configuration and operational state data, making it available to network operators to quickly triage and resolve problems. This data may also be used to analyze historical trends, identify anomalies, and predict future problems due to scale, security, and performance bottlenecks.

HPE Aruba Networking Central uses NAE and agents to deliver switch monitoring, analytics, and enhanced troubleshooting for wired assurance. HPE Aruba Networking Switch Multi-Edit Software and third-party tools such as ServiceNow and Slack provide the intelligence to integrate NAE alerts into IT service management processes, speeding problem resolution.

Automated config validation and rollouts

The HPE Aruba Networking CX switching portfolio empowers IT teams to orchestrate multiple switch configuration changes for smooth, end-to-end service rollouts. Using HPE Aruba Networking Central's multi edit mode or standalone HPE Aruba Networking Switch Multi-Edit Software, CX switches support automation that allows for safe, rapid network-wide changes and ensures policy conformance post network updates. Intelligent capabilities include search, edit, validation (including conformance checking), deployment, and audit features. Tight integration with NAE means powerful monitoring and troubleshooting analytics from across the network can be quickly visualized, analyzed, and acted on.

Software-defined orchestration for data center networks

HPE Aruba Networking Fabric Composer is an intelligent, API-driven, software defined orchestration solution that simplifies and accelerates leaf-spine network provisioning and day-to-day operations across rack-scale compute and storage infrastructure. This solution is fully infrastructure and application aware providing automation of various configuration and lifecycle events and can uniquely orchestrate a discrete set of switches as a single networking fabric which significantly simplifies operations and troubleshooting.

High availability

High availability is a must-have requirement at the core and aggregation layers of campus networks, as well as within leaf- spine architectures in data centers. Requirements for 24x7 network availability leave no windows for upgrades and important configuration changes. HPE Aruba Networking Virtual Switching Extension (VSX) has been designed from the ground up to deliver the availability, virtualization, and simplicity requirements for a non-stop, carrier-class network. With unique control plane synchronization for multi-chassis high availability and an architecture that's redundant in both hardware and software, HPE Aruba Networking VSX Live Upgrade offers a better way to ensure business success with a network that is always available, even during software upgrades.

Distributed services switching

The new HPE Aruba Networking CX 10000 distributes advanced services to the data center edge, with unified network and security automation and policy. It allows operators to extend industry standard leaf-spine networking with 800G of distributed micro-segmentation, east-west firewalling, NAT, encryption, and telemetry services—delivered inline, across every port, closer to critical enterprise applications.

HPE Aruba Networking Dynamic Segmentation

Campus and branch fabric

The HPE Aruba Networking Dynamic Segmentation solution enables seamless mobility, consistent policy enforcement, and automated configurations for wired and wireless clients across networks of all sizes. It unifies role-based access and policy enforcement across LAN, WLAN, and SD-WAN networks with centralized policy definition and dedicated enforcement points, ensuring that users and devices can only communicate with destinations consistent with their role - keeping traffic secure and separate. Dynamic Segmentation is based on establishing least privilege access to IT resources by segmenting traffic based on identity, a fundamental concept of both Zero Trust and SASE frameworks where trust is based on roles and policies, not on where and how a user or device connects.

This innovation begins with colorless ports and role- based micro-segmentation technologies. Colorless ports allow wired clients to connect to any switch port, with the configuration automated using RADIUS-based access control. This eliminates the need for manual on-boarding of clients, including IoT devices, onto the network.

Role-based micro-segmentation delivers benefits of reduced subnet and VLAN sprawl, simplified policy definition, and scalable policy enforcement by introducing the concept of client user roles. Independent of network constructs such as VLANs and VRFs, clients can be grouped into a user role based on their identity, allowing the colorless ports technology to be extended to the centralized overlay fabric, as clients are on-boarded with automatic tunnel creation based on the associated user roles policy. The user roles policy offers the choice between micro-segmentation using centralized and unified policy enforcement for wireless and wired traffic with Layer 7 stateful firewall on gateways or a distributed approach with a Layer 4 role-role ACL on switches.

Dynamic Segmentation provides scale and flexibility in network design by allowing the stretching of VLANs and subnets across the entire network with an EVPN/VXLAN- based distributed overlay fabric. Fabric overlays use VXLAN or VXLAN-GBP tunnels on the data plane and provide the option of a Multi-Protocol BGP EVPN control plane for large deployments, or a static Layer 2 control plane for simplified deployments.

Overlay-based automation

Extending HPE Aruba Networking's Dynamic Segmentation capabilities, HPE Aruba Networking Central NetConductor delivers cloud-native connectivity and security services designed to accelerate and simplify the provisioning of network configuration and role-based access control across large, distributed networks. To eliminate the complex and highly manual tasks of creating and setting security policies and configuration required to properly route and securely segment enterprise-wide network traffic, the HPE Aruba Networking Central NetConductor policy manager facilitates identity- based access control with a simple business-logic interface and workflow that defines user and device groups and creates the associated access enforcement rules for the physical network.

HPE Aruba Networking CX switches* supported by HPE Aruba Networking Central NetConductor provide in-line policy enforcement via role-based policy information contained in the group policy identifier (GPID), eliminating the need to send traffic outside its optimal path for security inspection. GPIDs are interpreted in-line by HPE Aruba Networking Central NetConductor-capable switches and gateways with precision traffic segmentation enforced based on the assigned role and its real-time destination and access privileges.

To simplify configuration and automate deployment of the fabric overlay, the HPE Aruba Networking Central NetConductor fabric wizard facilitates the definition of the VXLAN fabric overlay with an intuitive, graphical UI. This wizard automates and simplifies the setup of supported switches and gateways by generating and distributing configuration instructions for routing and access privileges defined in the GPID.

Based on widely adopted protocols such as EVPN/VXLAN and created to scale across disparate network topologies and geographically dispersed locations, a HPE Aruba Networking Central NetConductor- capable infrastructure can co-exist alongside current network management and security services without requiring a rip and replace of the installed infrastructure. This intelligent distributed overlay fabric enables organizations to protect their investments by modernizing at their own pace and can be consumed either as-a-service through HPE Aruba Networking Central or on-premises through HPE Aruba Networking Central on Premises (CoP).

Switches for any enterprise environment

Data center, campus, and branch

From small to large enterprise environments, HPE Aruba Networking's comprehensive portfolio includes solutions ideal for access, aggregation, core, and data center deployments. The power of the HPE Aruba Networking CX switching portfolio provides a choice of fixed ports or modular chassis with non-blocking speeds from 1GbE to 100GbE. This gives you the flexibility to start with a low port count and scale to full-density switches—all with built-in automation and analytics—as your business requires.

Features include high availability platforms with redundant management, fabric, power, and fans and high-density industry-standard high power 60W Class 6 and HPE Smart Rate multi-gigabit ports. Designed to handle extreme temperatures, the ruggedized switch series is ready to extend your enterprise network beyond the office to challenging, harsh environmental spaces.

Customer first customer last support

When your network is important to your business, then your business needs the backing of HPE Aruba Networking Support Services.

Partner with HPE Aruba Networking product experts to increase your team productivity, keep pace with technology advances and software releases and obtaining break-fix support. Our Foundation Care for HPE Aruba Networking support services include priority access to HPE Aruba Networking Technical Assistance Center (TAC) engineers 24x7x365, flexible hardware and onsite support options and total coverage for HPE Aruba Networking products.

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* Switches supported at first release include the HPE Aruba Networking CX 6300, CX 6400, CX 8325, CX 8360 using Central 2.5.6 and AOS-CX 10.10.

Network migration services

HPE Aruba Networking offers industry-leading global high touch Professional Network Services for network design, installation and enablement services. Work with our team of HPE Aruba Networking experts and partners that have in-depth technical know-how to accelerate and simplify your migration to AOS-CX.

Become an expert on CX

HPE Aruba Networking Education Services offers comprehensive training and certification programs from fundamental to advanced levels to give you the skills to fully utilize the power of AOS-CX.

Learn more

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