

Versa Universal CPE

Simplifying Branch Infrastructure with Unified Networking, Security, and Edge Computing

Branch locations are taking on more digital responsibilities. Application hosting, telemetry collection, local service continuity, and secure connectivity are just some of the services branches must now support. To support this, infrastructure teams have traditionally required a mix of routers, firewalls, servers, and specialized DevOps tools, leading to unnecessary complexity, costs, and operational inefficiencies.

As a result, traditional branch architectures have become weighed down by hardware sprawl, siloed service management, and fragmented security postures. Every layer from WAN routers to container ecosystems introduces its own operational overhead and security blind spots.

Versa simplifies branch architecture by unifying networking, security, and edge compute services into a single, service-chained platform: Versa Universal CPE (uCPE). Designed for simplicity, scale, and secure edge application delivery, Versa uCPE consolidates SD-WAN, advanced security, and edge workloads into a single platform. Branch locations enjoy reduced hardware sprawl with centralized deployment, monitoring, and policy enforcement without the burden of managing separate infrastructure stacks or specialized DevOps processes.

Versa uCPE Offerings

Versa uCPE is an all-in-one customer premises equipment (CPE) solution powered by the [Versa Operating System \(VOS\)](#). Deployed at the branch, it supports integrated networking, security, and a wide range of distributed edge workloads and services. Versa uCPE can host lightweight virtual machines (VMs) or containers to run customer-specific apps and services, reducing the need for extra hardware at branch sites.

Versa uCPE Capabilities and Features

Centralized Deployment	Deploy locally-run applications in secure VMs or containers from a centralized management portal.
Dynamic Resource Allocation	Allocate memory and computing resources based on per-service or per-app needs.
Integrated Service Chaining	Seamlessly route traffic between applications, security functions, and WAN interfaces.
Centralized Monitoring and Maintenance	Monitor and update edge workloads and policies remotely.
Built-in Security	Get native NGFW and advanced security functions at the edge.

Architecture Overview

Versa uCPE runs on a single physical or virtual appliance deployed at each distributed site. It connects to WAN uplinks (such as broadband, LTE, or private MPLS), internal user devices, local sensors, and hosted workloads.

Versa uCPE is a performance-optimized architecture that removes processing inefficiencies found in traditional uCPE stacks. It supports native service chaining, allowing traffic to flow through integrated and third-party services with minimal latency and no unnecessary packet copies. This architecture leverages fast path optimizations to ensure deterministic performance and low latency for security, routing, and third-party services, even under high-throughput conditions. It also enables dynamic traffic steering, per-flow control, and multi-tenant service chains across internal and external workloads. This flexible approach allows organizations to define and customize traffic flows through services in ways that improve performance, enforce policy, and simplify operations.

Security is enforced between workloads, including east-west traffic between VMs and containers, through built-in Zero Trust policies. This eliminates the need for additional micro segmentation tools. Operationally, Versa simplifies deployment and lifecycle management with centralized orchestration for both Versa-native and third-party applications. With support for Versa-designed or certified appliances, customers retain the flexibility to meet cost, compliance, and supply chain requirements without vendor lock-in.

Versa uCPE also includes multi-tenant capabilities to separate and segment data from different sources.

Versa uCPE Key Components

Versa VOS	Unified multi-service software stack that powers Versa's networking, security, and edge compute services across all deployment models.
Versa SD-WAN	Intelligent, application-aware traffic routing and WAN optimization with enhanced performance and reliability
Versa NGFW	Advanced, inline security with application control, intrusion prevention, URL filtering, and threat detection at the network edge
Versa Service Chain	Enables traffic flows through Versa-native and third-party services with optimized performance, low latency, and customizable routing paths.
Unified control plane	Supports remote provisioning, monitoring, updates, and lifecycle orchestration of both network functions and hosted applications.
Application execution layer	Runs customer-deployed containers and virtual machines in a secure, resource-constrained runtime with CPU/RAM controls and optional segmentation.

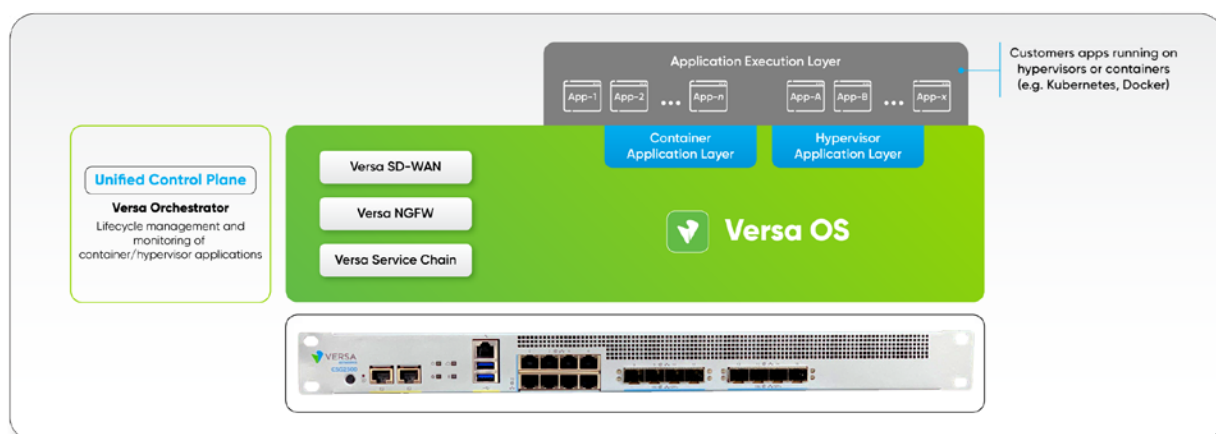


Fig. 1. Versa uCPE component overview

Why Versa uCPE?

Most branch environments rely on a patchwork of hardware appliances and loosely integrated service chains that are difficult to orchestrate, monitor, and secure. Critical services like WAN routing, firewalling, application hosting, and monitoring often operate in silos, each requiring separate management interfaces and hardware dependencies. The result is increased CAPEX, higher power and cooling costs, and greater security risk due to lack of coordinated visibility or policy enforcement between functions.

Versa addresses these issues head-on with an integrated, performance-optimized service chaining architecture that can steer traffic seamlessly between native and third-party functions, enforce Zero Trust policies between containers and VMs, and minimize processing overhead through intelligent flow handling.

Versa uCPE helps organizations modernize branch infrastructure by reducing complexity, reduce costs, and accelerating service delivery. Key benefits for IT and operations teams include:

Lower TCO and Reduced Hardware Sprawl

Consolidated networking, security, and application hosting within a single device eliminates the need for multiple appliances and reduces the number of orchestration platforms at the branch.

Integrated Security

Versa uCPE delivers inline firewall, intrusion prevention, URL filtering, and other protections directly at the edge. Unlike traditional architectures that do not inspect intra-host traffic, Versa uCPE enforces Zero Trust policies across all traffic flows, including east-west traffic between virtualized applications on the same appliance. This prevents lateral movement and ensures consistent policy enforcement between guest VMs and containers.

Centralized Deployment and Operational Efficiency

Organizations can provision remotely and standardize rollout across distributed locations through a central management portal.

Operational efficiency and reduced time-to service is gained through:

- Zero-touch provisioning and template-based workflows;
- Unified lifecycle management simplifying onboarding, scaling, and updating applications; and
- Built-in orchestration tools to automate VM and container deployment, tag-based traffic steering, and application health monitoring.

Integrated Monitoring and Maintenance

Built-in tools let admins monitor system health, reboot or reload services, and manage performance from a centralized portal.

Plug-and-Play Deployments

Customers can customize pre-packaged and standardized applications, security, and networking for repeatable deployments at scale.

Resilient Edge Services

Applications continue to function even when connection to WAN is lost.

Common Use Cases

Customers use Versa uCPE to run a variety of infrastructure and industry-specific workloads, with the most common being firewalls, session border controllers (SBCs), monitoring and telemetry agents, local encryption services, and Windows or Ubuntu-based business applications. Popular use cases for Versa uCPE includes the following.

Quick-Serve Restaurants (QSR)

Run customer-facing kiosk apps or restaurant-specific systems directly on Versa uCPE. Monitor and manage the application connectivity, performance and upgrades centrally. Simplify compliance monitoring by generating automatic uptime reports. .

Local IP Camera Processing

Handle high-volume video streams locally with edge processing. Accelerate response times and minimize bandwidth over WAN links. Save bandwidth and enable faster incident response by sending flagged events only (e.g. accidents, suspicious behavior, etc.) to central systems.

Multi-Tenant Branch Environments

Support separate user groups or downstream customers on shared hardware using Versa's native segmentation and multi-tenancy.

Conclusion

Versa uCPE transforms the branch by unifying networking, security, and local application execution into a single platform. It empowers infrastructure teams to deploy and scale edge services including customer-specific apps quickly, securely, and cost-effectively.

To learn more about Versa uCPE or request a demo, contact your Versa sales representative.

About Versa

Versa is a trusted leader in Secure SD-WAN, SSE, and SASE, delivering integrated networking and security to federal, defense, and public sector agencies. Our VersaONE platform – validated in the DISA Thunderdome initiative for ZTNA, SWG, NGFW, and CASB – is aligned with DoD Zero Trust architecture and proven across both enterprise and tactical environments. It's built to help you modernize with confidence, reduce risk, and achieve your goals with efficiency and clarity.

