

Modernizing the Quick Serve Restaurant Edge

The modern quick service restaurant (QSR) runs more software at the store than many bank branches. AI drive-thru ordering, kitchen display and automation, computer vision, connected equipment, self-service kiosks, and mobile ordering all need to run seamlessly. Each of these services, along with security and networking, needs hardware to run on. But QSRs have little space for it, operate in environments that are hard on electronics, and have no on-site IT staff. Traditionally, each function ran on its own box. Across thousands of locations, this multiplies cost, failure points, and technician visits. In an industry where downtime means lost sales, every added failure point carries real cost.

Versa takes a different approach. A single software platform collapses networking, security, and edge compute into deployments a remote IT team can manage across thousands of sites, modernizing the restaurant edge as it consolidates it.

The changing restaurant edge

The restaurant edge has evolved faster than the infrastructure beneath it. Brands compete on how quickly they roll out new customer experiences, and a single store now carries five or more distinct traffic classes that need to be secured, from payment to drive-thru voice AI to guest Wi-Fi. PCI DSS 4.x adds further complication, requiring payment to stay strictly segmented from the rest.

Continuity is non-negotiable in this industry. Stores run 18 to 24 hours a day with almost no maintenance window, and the drive-thru accounts for nearly 75% of daily sales. When the network slows or a device fails, cars leave and revenue goes with them; high availability becomes a baseline requirement.

That same pressure has pushed QSRs to be cloud-native pioneers. Leading brands run Kubernetes clusters at the store, so kitchen IoT, forecasting, and order orchestration keep running even when the WAN does not.

For this fast-paced industry, an edge that cannot adapt quickly becomes a limit on how fast the business can move.

What the QSR edge demands

No other vertical combines these pressures under one roof: revenue-critical latency and uptime, a hostile physical environment, zero IT presence, and cloud-native ambition. To run reliably in this environment, the platform underneath has to meet all of these demands at once.

QSR challenge	Platform requirement
Hardware sprawl: Multiple boxes per store multiply failure points, truck rolls, and cost across every site	Hardware consolidation
Zero on-site IT: Setup must be simple and equipment must rarely fail	Zero-touch deployment and centralized management
Hostile environment: Kitchen environment with heat, grease, dust, and vibration shortens hardware life, causing premature failure	Fan-less, ruggedized hardware
No dedicated security or network team: Manual, per-site configuration drives up cost, invites drift and security gaps	Consistent policy applied everywhere
Revenue tied to continuity: every second of downtime is lost revenue, on thin margins that depend on sales volume	Low latency, high availability, and continuity through a WAN outage
Multiple traffic classes and compliance: Stores carry 5+ traffic classes, with payment under PCI DSS 4.x	Strict segmentation across payment, POS, drive-thru, IoT, and guest traffic
Cloud and container-first strategy: as leading tech adopters, brands differentiate through constant change	Flexibility to run any application model

QSR edge challenges mapped to platform requirements

The Versa approach

The Versa Operating System (VOS), the software core of the [VersaONE Universal SASE Platform](#), converges enterprise networking, SD-WAN, and advanced security into one image. That single platform addresses the full set of QSR edge demands, across networking, security, and compute.

Eliminate hardware sprawl

VOS reduces hardware at each store to a single high-availability (HA) pair, converging routing, SD-WAN, NGFW, and IoT security into one architecture that can also host store applications. Every store function runs on that pair, on Versa's CSG appliances or certified third-party hardware. This includes fan-less, ruggedized models better suited to kitchen-adjacent placement, as fan-cooled gear fails faster when it pulls in grease-laden air.

Deliver high performance and availability

VOS service chains routing, security, and application traffic in a single pass, so drive-thru and payment traffic doesn't bounce between separate boxes, and fast-path handling keeps latency low even when order volume surges. The HA pair keeps the store running through a device failure, while application-aware SD-WAN steers each traffic class over the best available link (broadband, 5G/LTE, and MPLS) and fails over when one degrades. If the WAN drops, local processing keeps payment and orders moving so the store sells through the outage.

Support flexible deployment models

VOS supports three deployment models. Operators can pick one that matches existing store operations or use more than one model across the estate, all without rearchitecting.

- **Host virtual machines with Versa uCPE**

Versa Universal CPE (uCPE) can host third-party virtual machines (VMs) running POS middleware or back-office applications alongside VOS's own network functions at store locations. VM traffic is service-chained through the VOS data plane with Zero Trust policies enforced between workloads, and VM lifecycle management runs centrally from a single console. The model keeps application and network teams fully separated.

- **Execute containers natively on VOS**

For container-first stores, VOS can run containers directly on the platform, attached to the data plane with security policy applied per container so no separate container host is required. VOS can also host a VM dedicated to Docker workloads for teams that want a container host under their own control.

- **Run VOS as a VM on the store's platform**

Some operators already run a Kubernetes-based edge platform that manages store compute. Here, VOS deploys as a VM on that existing platform, so the full routing, SD-WAN, and security stack becomes another workload it schedules and monitors, removing dedicated networking hardware entirely. VOS supports KVM, VMware ESXi, Hyper-V, and Xen, plus the major public clouds for hub and headend functions.

Simplify security and compliance

VOS segments store traffic into operator-defined classes, such as payment, POS, kitchen display, cameras and IoT, and guest Wi-Fi. Payment stays isolated through east-west Zero Trust with no lateral paths in or out, removing the need for separate microsegmentation tools. A built-in NGFW stack (IPS, URL filtering, and threat detection) delivers enterprise-grade security without a separate appliance or on-site staff. For compliance, that same isolation keeps PCI scope contained as stores add systems, and automated reporting keeps evidence audit-ready.

Centralize provisioning and operations

Central management simplifies day-to-day operations and cuts operational costs like truck rolls to each restaurant. Zero-touch provisioning brings each new location online without a technician on site: staff simply unbox the device and plug it in. From there, single-pane monitoring covers both network functions and hosted store apps, so admins can address issues remotely before customers are affected. Updates, policy changes, and remote fixes apply consistently across every location, preventing configuration drift and security gaps. Multi-tenancy can run many franchisees on shared infrastructure, each isolated and independently managed, so one platform can serve an MSP's or franchisor's entire base.

At-a-glance: how Versa meets QSR requirements

- **One HA pair per store:** consolidate router, firewall, SD-WAN, and app-server stack on Versa CSGs
- **Performance and availability:** single-pass processing keeps drive-thru and payment traffic fast, with HA and multi-link failover (broadband, 5G/LTE, MPLS)
- **Three deployment models:** host VMs on uCPE, run containers natively, or run VOS as a VM on an existing edge platform
- **Native microsegmentation:** segment traffic classes, stay PCI compliant, and deliver enterprise-grade security with no separate appliance
- **Zero-touch provisioning and central management:** bring stores online without on-site support and apply consistent policies everywhere

One platform for the modern QSR edge

The QSR edge places demands on IT that legacy, single-function hardware cannot meet: low latency, high availability, strict segmentation, a small footprint, survivability in a harsh physical space, remote operability, and application flexibility, all at once and across thousands of locations.

Versa meets those demands with one software platform. VOS converges networking, security, and edge compute on a single HA pair per store, keeps payment isolated, and runs whichever application model an operator chooses, all managed centrally without adding on-site staff. For teams looking to cut hardware sprawl, lower operational cost, and lead cloud adoption in the restaurant space, Versa collapses the restaurant edge into something one lean team can run.

Reach out to your Versa representative to get started.



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About Versa

Versa, the global leader in unified networking and security, enables organizations to create self-protecting networks that radically simplify and automate their network and security infrastructure. Powered by AI, the VersaONE Universal SASE Platform delivers converged SSE, SD-WAN, and SD-LAN solutions that protect data and defend against cyberthreats while providing a superior digital experience. Thousands of customers globally, with hundreds of thousands of sites and millions of users, trust Versa with their mission-critical networks and security. Versa is privately held and funded by investors such as Sequoia Capital, Mayfield, and BlackRock. For more information, visit <https://www.versa-networks.com> and follow Versa on LinkedIn and X (Twitter) @versanetworks.

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