

# Zero-Touch Orchestration at the Software-Defined Edge

## What is the software-defined edge?

Distributed digital infrastructure for connecting, securing, and running workloads across dispersed locations, close to endpoints that produce or consume data.

## Where is the edge?

The edge is where business gets done. Examples include offices, work-from-anywhere locations, cell sites, retail stores, factory floors, medical centers, wind turbines, a first-responder vehicle on the move. Endpoints are connected by SD-WAN and communications service provider networks.

## What are the three essential characteristics of VMware software-defined edge?

- Network programmability
- Right-sized infrastructure
- Zero-touch orchestration

## Learn more

[vmware.com/solutions/software-defined-edge.html](https://vmware.com/solutions/software-defined-edge.html)

Organizations are modernizing operations in diverse, distributed locations, and the edge is undergoing significant transformation. As edge locations increase in number—and demand more, smarter, and faster infrastructure—enterprises encounter challenges such as scaling, network limitations, specialized hardware, lack of onsite technical staff, and the need for unique security measures. To effectively address these challenges, a purpose-built operational technology (OT) software infrastructure is essential for successful edge deployments. The software-defined edge meets these challenges with solutions that address three essential characteristics.

## Zero-touch orchestration

Zero-touch orchestration lets enterprises easily scale management across hundreds, thousands, even millions of devices. Edge devices and systems can be remotely deployed, configured, and managed automatically, reducing the need for on-site personnel. This approach also minimizes the risk, time, and cost of manual interventions.

Traditional IT administration is push-based: IT sends updates to devices on IT's schedule. Pull-based updates work more like the familiar smartphone model. Devices essentially administer themselves and seek out updates, policy, and resources when they are needed, at the correct time, and when the right connectivity is available.

## How does zero-touch orchestration benefit your business?

- Scale edge use cases up easily to thousands of locations and millions of devices
- Reduce operational costs by minimizing manual interventions
- Increase security with software updates that more likely to be deployed because they are easier to implement and manage
- Manage and automate infrastructure and application deployments across multiple edge locations with version control, collaboration, compliance, and continuous integration/continuous deployment (CI/CD)

- Enable better visibility, governance, and security with a centralized control plane
- Solve for limited connectivity with embedded functions that don't rely on the network

### VMware edge solutions

**VMware Edge Compute Stack** is an edge-optimized runtime and orchestration platform for frictionless management of edge apps and infrastructure across many sites with limited resources. **VMware Edge Cloud Orchestrator** is the edge-optimized management component of VMware Edge Compute Stack. Its pull-based architecture works best with many edge sites with varying levels of connectivity. Integrated telemetry provides full visibility into edge applications and network traffic.

- Program the communications service provider network to reserve application network requirements such as high bandwidth and ultra-low latency
- Simplify operations by hiding the complexity of the underlying network
- Dynamically enforce security policies and controls close to device and data sources
- Develop and deploy new edge apps and services quickly using network capabilities exposed by APIs

### VMware VeloCloud SD-WAN

VeloCloud SD-WAN is the intelligent overlay for the software-defined edge. It provides services on top of any circuit, including private line, cable, DSL, 4G-LTE, 5G, fixed wireless, or satellite. Dynamic Multipath Optimization™ (DMPO) and deep application recognition improve delivery reliability.

The intelligent overlay hides network complexity from enterprises, providing resiliency, connectivity, and security over whichever underlay or combination of underlays best serves the business. It can program the underlay to understand the application running on it and obtain the appropriate level of connectivity based on business policy and security needs. This allows enterprises to assign priority to critical services across a distributed network, and allows CSPs to monetize new, differentiated services.

## VMware Telco Cloud Platform

VMware Telco Cloud Platform is the programmable network foundation for the software-defined edge. It facilitates network programmability by enabling telco networks to speak the same cloud-native language as the enterprise applications running on them. Now, the network can expose the compute, connectivity, and RAN resources available to each edge location via APIs. Applications can then program the edge to provide the right resources to each workload, in real time.

With the modern digital infrastructure of the software-defined edge, enterprises can focus on transforming business operations while telco partners manage compute, connectivity, and intelligent orchestration—along with add-ons such as security, collaboration, managed Wi-Fi, or fixed wireless access—on their behalf. CSPs can optimize their networks, differentiate their offerings, and deliver more value to their customers' businesses.

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