Right-Sized Infrastructure 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

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.

Right-sized infrastructure

Right-sized infrastructure "shrinks the stack" into a ruggedized unit that can fit in small spaces and use any available network. It is adaptable to multiple locations and use cases, balancing resource constraints to meet the specialized demands of edge workloads while reducing cost and administrative complexity.

Edge locations often have limited compute or network, multiple sites, or few to no technical staff, making it difficult to use traditional administration methods. In the data center, enterprises have the luxury of optimizing for a large area with abundant compute resources. At the edge, the focus shifts to small, distributed locations with limited hardware capacity. Right-sizing the infrastructure to fit the specific edge environment becomes crucial.

How does right-sized infrastructure benefit your business?

- Enable the operations you need anywhere, from an offshore oil rig to a retail store office to a hospital complex
- Support highly specialized edge workloads with a smaller virtualization scale compared to data centers
- Increase efficiency and reduce costs by tailoring computing and storage resources to the specific needs of each edge use case
- Decrease weight, space, and power consumption in small mobile deployments such as vehicles or boats

- 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 Edge Compute Stack

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. For organizations that want to build, run, manage, connect, and protect applications across many edge sites with limited compute, network, and IT resources, VMware Edge Compute Stack expertly runs operational workloads, including real-time applications, and its simplified operations reduce complexity and cost.

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