

# VMware vSphere Edge

## Feature list

VMware vSphere® Edge is included with VMware Edge Compute Stack Standard and Advanced editions and is optimized to manage and operate virtual machines at edge locations.

### Key attributes

VMware vSphere Edge	
On-premises	Yes
Cloud Connectivity	No
Licensing Model	Term License
License Management	Required
License Metric	Per Core
vCenter Standard	Included

### Developer services

	VMware vSphere Edge
<b>Tanzu Kubernetes Grid™ Service</b> The Tanzu Kubernetes Grid Service allows developers to manage consistent, compliant, and conformant Kubernetes clusters.	✓
<b>Tanzu Integrated Services</b> Streamlines the deployment and management of local and in-cluster platform services—like logging, monitoring, networking, and storage services—to easily configure and maintain a production-ready Kubernetes environment.	✓
<b>Tanzu Mission Control™ Essentials</b> Provides global visibility across your entire Kubernetes footprint, and automates operational tasks such as lifecycle management, access, security management, and more.	✓
<b>Cloud Consumption Interface</b> Fast, easy access to IaaS services for DevOps and development teams. Manage self-service access to IaaS services across vSphere cloud infrastructure from an intuitive cloud console.	
<b>vSphere Pod Service</b> The vSphere Pod Service allows developers to run Kubernetes containers directly on the hypervisor for improved security, performance, and manageability.	

## Developer services (continued)

	VMware vSphere Edge
<p><b>Storage Service</b> The Volume Service allows developers to manage persistent disks for use with containers, Kubernetes and virtual machines. Deploy existing block and file storage infrastructure for containerized workloads.</p>	✓
<p><b>Network Service</b> The Network Service allows developers to manage Virtual Routers, Load Balancers and Firewall Rules. Leverage existing networking infrastructure using vSphere Distributed Switch's (VDS) centralized interface to configure, monitor and administer switching access for VMs and Kubernetes workloads.</p>	✓
<p><b>Registry Service</b> The Registry Service allows developers to store, manage and secure Docker and OCI container images.</p>	✓
<p><b>Network Load Balancing</b> Network load balancing for Tanzu Kubernetes clusters.</p>	
<p><b>VM Service</b> The VM service allows developers to create virtual machines independently from Kubernetes without requiring access to vSphere Client.</p>	✓
<p><b>Workload Availability Zones</b> Enhance Kubernetes workload HA with availability zones. Provides resilience that spans across multiple clusters and potentially larger geographical areas</p>	
<p><b>Simplified TKG cluster lifecycle management</b> Easily configure TKG clusters at deployment time. Declarative TKG cluster deployment configuration through Kubernetes upstream aligned ClusterClass.</p>	
<p><b>TKG cluster package management</b> Easily manage TKG cluster packages. Configure preferred packages for TKG cluster configuration through Carvel and Tanzu CLI.</p>	
<p><b>Customizable base OS images</b> Customize base OS images for fast, consistent deployments. For example, customize images to include logging or monitoring tools, change OS parameters, adjust user configuration files, add firewall rules, etc.</p>	

## Simplified operations

	VMware vSphere Edge
<b>Next-Gen Infrastructure Image Management</b> Manage infrastructure images to patch, update or upgrade ESXi clusters using a desired state model.	✓
<b>vCenter Server® Profiles</b> Desired state config management capabilities for vCenter Server. It helps the user to define/ validate/apply configuration for multiple vCenter Servers.	✓
<b>vCenter Server Update Planner</b> Manage the compatibility and interoperability for vCenter Server for upgrade scenarios. We will allow users to generate the interoperability & pre-checks report, which will help them plan for upgrades.	✓
<b>Content Library</b> Added administrative control and versioning support. Provides simple and effective centralized management for virtual machine templates, virtual appliances, ISO images and scripts.	✓
<b>APIs for Storage Awareness</b>	✓
<b>Storage APIs for Array Integration, Multipathing</b> Improves performance, reliability, and scalability by leveraging efficient array-based operations and third-party storage vendor multipath software capabilities.	✓
<b>Distributed Switch™</b> Centralizes provisioning, administration, and monitoring by using cluster-level network aggregation.	✓
<b>Host Profiles and Auto Deploy™</b> Captures host-level configuration settings and saves them as a template to configure other vSphere hosts. Monitors hosts for configuration changes and automatically alerts vSphere administrators if a host falls out of compliance.	✓
<b>Virtual Volumes™</b> Virtualizes external storage (SAN and NAS) and provides VM-aware, policy-based storage management through vCenter.	✓
<b>Green Metrics</b> Get power consumed by workloads, infrastructure services and idling time, at the host level. Discover opportunities to 1) optimize carbon footprint of power-hungry workloads and 2) use idle time to consolidate workloads.	

## Intrinsic security

	VMware vSphere Edge
<b>Identity federation with ADFS</b> Secure access and account management	✓
<b>vSphere Trust Authority</b> Remote attestation for sensitive workloads	✓
<b>TPM 2.0 Support &amp; Virtual TPM</b> Supports TPM 2.0 hardware modules and adds a virtual TPM device to shield guest OS from Operator or in-guest attacks.	✓
<b>FIPS 140-2 Compliance &amp; TLS 1.2 Support</b> Default enhanced security compliance	✓
<b>Virtual Machine Encryption</b> Data-at-rest encryption for virtual machine data and disks.	✓
<b>Support for MSFT VBS</b> Supports Windows 10 and Windows 2016 security features, like Credential Guard, on vSphere.	✓
<b>Per-VM Enhanced vMotion Compatibility</b> Allows seamless migration across different CPUs across the hybrid cloud by persisting the EVC mode per-VM during migrations across clusters and during power cycles.	
<b>Instant Clone</b> Reduces provisioning times, especially beneficial for VDI applications.	
<b>Simplified NSX Security Setup from vSphere Client</b> vSphere Client now includes a tab for setting up and configuring NSX security.	

## Application performance

	VMware vSphere Edge
<b>vSphere Bitfusion</b> Delivery of AI/ML infrastructure applications using GPUs.	
<b>Distributed Resource Scheduler™ (DRS)<sup>1</sup></b> Redesigned with a more workload centric approach, DRS balances resources allocated to workloads in a vSphere cluster; versus the previously used cluster wide deviation model; also resulting in an improved cycle time.	✓
<b>Storage DRS™</b> Automated load balancing now looks at storage characteristics to determine the best place for a given virtual machine's data when it is created and used overtime.	
<b>Distributed Power Management™ (DPM)</b> Optimizes power consumption by turning off hosts during periods of reduced demand.	

## Application performance (continued)

	VMware vSphere Edge
<b>Storage Policy-Based Management</b> Allows common management across storage tiers and dynamic storage class-of-service automation via a policy-driven control plane.	✓
<b>I/O Controls (Network and Storage)</b> Prioritizes storage and Network access by continuously monitoring I/O load of a storage volume and over the network, and dynamically allocating available I/O resources to virtual machines according to business needs.	
<b>Single Root I/O Virtualization (SR-IOV) Support</b> Allows one PCI Express (PCIe) adapter to be presented as multiple separate logical devices to virtual machines. Allows users to offload I/O processing and reduce network latency.	✓
<b>vSphere Persistent Memory™</b> Leverages Persistent Memory to get DRAM like performance with flash like prices.	
<b>NVIDIA GRID vGPU</b> Enables native 2D and 3D graphics performance for virtual machines. Supports multiple vGPUs per VM.	✓
<b>Proactive HA</b> Receive server health information and migrate virtual machines from degraded hosts before problems occur.	
<b>Accelerated Graphics for Virtual Machines</b>	✓
<b>Dynamic DirectPath IO</b> Support for vGPU and DirectPath I/O initial VM placement	✓
<b>VMware vSphere® Distributed Services Engine™</b> Accelerate infrastructure network functions on the DPU. Reduce operational burden of managing DPUs with integrated vSphere workflows. Use proven vCenter interfaces to get DPU alerts and performance metrics. Utilize available CPU cycles achieve higher workload consolidation per host.	
<b>Vendor Device Group</b> Combine multiple PCIe devices into a group that is assigned as a unit to a VM, giving it user-prescribed access to that group.	

1. DRS is additionally restricted: Predictive DRS is restricted, Resource pools limited to 3 per host, Compute policies restricted, other changes to DRS automation, DRS aggressiveness levels, DRS VM overrides to disable/manual on the VM, Datastore topology is restricted.

## Business continuity

	VMware vSphere Edge
<b>vSphere Hypervisor</b> Provides a robust, production-proven, high-performance virtualization layer.	✓
<b>vMotion<sup>2</sup></b> Enables live migration of virtual machines with no disruption to users or loss of service, eliminating the need to schedule application downtime for planned server maintenance. The recent enhancements in vMotion logic provides non-disruptive operations, irrespective of the size of VMs, specifically for large and mission critical workloads.	✓
<b>vCenter® Hybrid Linked Mode</b> Enables unified visibility and management across on-premises vCenter and vCenter on a vSphere enabled cloud such as VMware Cloud on AWS.	
<b>vSMP</b> Virtual symmetric multiprocessing (SMP) enables virtual machines to have multiple virtual CPUs.	✓
<b>High Availability (HA)</b> Automatically restarts your VMs following physical machine failure.	✓
<b>Storage vMotion</b> Avoids application downtime for planned storage maintenance by migrating live virtual machine disk files across storage arrays.	✓
<b>Fault Tolerance</b> Provides continuous availability of any application in the event of a hardware failure — with no data loss or downtime. For workloads up to 4-vCPU.	✓
<b>vShield Endpoint™</b> Secures virtual machines with offloaded anti-virus and anti-malware solutions, without the need for agents inside the virtual machine.	
<b>vSphere Replication™</b> Enables efficient, array-agnostic replication of virtual machine data over the LAN or WAN and simplifies management by enabling replication at the virtual machine level.	
<b>Support for 4K Native Storage</b> Enhances platform scalability by leveraging high-capacity drives. Reduce CAPEX.	✓
<b>vSphere Quick Boot™</b> Skips hardware initialization steps and dramatically reduces time required for patching and upgrades.	
<b>vCenter High Availability</b> Native vCenter Server availability	

## Business continuity (continued)

<b>vCenter Backup and Restore</b> Native vCenter Server backup and restore	✓
<b>vCenter Server Appliance™ Migration</b> A tool for single-step migration and upgrade of existing Windows vCenter deployments to vCenter Server Appliance.	✓

2. Under vMotion the following features are further restricted: XvMotion, svMotion, cross VC vmotion, long distance vMotion

## Hybrid cloud capabilities

	VMware vSphere Edge
<b>vCenter Hybrid Linked Mode</b> Enables unified visibility and management across on-premises vCenter and vCenter on a vSphere enabled cloud such as VMware Cloud on AWS.	
<b>Cross vCenter Mixed Version Provisioning</b> Uses different vCenter versions across on-premises and vSphere based public cloud environments, while allowing provisioning operations such as vMotion, Full Clone and Cold Migrate to continue seamlessly.	
<b>Hot and Cold Migration to the Cloud</b> Supports hot and cold migration of workloads across the hybrid cloud.	
<b>Per VM Enhanced vMotion Compatibility</b> Allows seamless migration across different CPUs across the hybrid cloud by persisting the EVC mode per-VM during migrations across clusters and during power cycles.	

## Admin services

	VMware vSphere Edge
<b>Cloud Console</b> Enables IT administrators to consolidate management of all vSphere deployments through a centralized cloud console	
<b>Global inventory Service</b> Visualizes inventory of vSphere resources and capacity to quickly understand resource utilization across vSphere estate.	
<b>Event View Service</b> Consolidates view of events and alerts to quickly triage areas that need attention across your vSphere estate.	

## Admin services (continued)

	VMware vSphere Edge
<b>Security Health Check Service</b> Evaluate the security posture of your entire vSphere infrastructure to identify security weaknesses or exposures	
<b>VM Provisioning Service</b> Quickly create provision VMs from the VMware Cloud Console within any managed cluster	
<b>Lifecycle Management Service</b> Simplifies the lifecycle management of vCenter instances with a single click. Reduces maintenance window making it easier to schedule updates sooner, allowing more rapid access to new features.	
<b>Configuration Management Service</b> Standardizes and cascades vCenter configurations across vSphere estate. Detects and remedies vCenter configuration drifts automatically	
<b>Capacity Visibility Service</b> Gain visibility into capacity availability and time remaining in clusters before running out of capacity.	

For the details on VMware vSphere® Product Line Comparison, refer to:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>.