VMware vSphere & VMware vSphere+ Compute Virtualization

Licensing, pricing, and packaging

vmware®

Table of contents

Executive summary

This guide provides an overview of the licensing, pricing and packaging for VMware vSphere™. The key topics discussed in this guide include:

- VMware vSphere overview
- Licensing overview – Licensing metric and management
- Packaging overview – Packaging options for editions (including VMware vCenter Server®), kits, vSphere, vSphere+
- Version upgrade entitlements for existing customers
- Paid edition upgrades from vSphere 8

VMware vSphere overview

VMware vSphere is the leading server virtualization platform with the best foundation for your applications, your cloud and your business.

vSphere helps you get the best performance, availability and efficiency from your infrastructure and applications. It is the essential building block for modern cloud infrastructure.

Licensing overview

vSphere 8 licensing: Per Processor or Per Core, Per Year

vSphere 8 licensed on a per-processor basis applies to select editions:

vSphere Standard, vSphere Enterprise Plus, vSphere Acceleration Kits, vSphere Essential Kits, and vSphere Scale Out. Each physical processor (CPU) in a server needs to have at least one processor license key assigned to be able to run vSphere.

Each per-processor license will cover CPUs with up to 32 physical cores. If the CPU has more than 32 cores, additional CPU licenses are required. For more information, please refer to the VMware Product Guide or visit *Update to VMware's per-CPU Pricing Model* (https://news.vmware.com/company/cpu-pricing-model-update-feb-2020)

vSphere licensed on a per-core basis applies to the following offerings:

vSphere+, vSphere+ Standard, vSphere Enterprise Plus with Tanzu Kubernetes Grid, vSphere Standard term license.

Each physical processor is required to be licensed with a minimum of 16 core licenses.

The number of core licenses required equals the number of physical cores on the licensed processor, subject to a minimum requirement of 16 core licenses per physical processor.

No limit on the number of virtual machines

There are no restrictions on the number of virtual machines (VMs) that can run on each properly licensed vSphere 8 processor.

vSphere for virtual desktop deployments

VMware vSphere Desktop is specifically designed for licensing vSphere when used to run virtual desktops. It can only be used as a virtualization platform for virtual desktop infrastructure (VDI) deployments with either VMware Horizon® View™ or third-party connection brokers. For more details, see the Packaging overview section.

License management

vSphere 8 licenses are simple license keys (25-character alphanumeric strings) that

contain encrypted information about the vSphere edition or kit purchased and the processor quantity. These license keys do not contain any server-specific information and are not tied to a specific piece of hardware. This means the same license key can be assigned to multiple vSphere hosts as long as the number of licenses required for physical processor units on those hosts does not exceed the encoded license quantity in the license key. To calculate the number of licenses required, consider that each per-processor license includes licensing for up to 32 physical cores in each CPU. If using per core term licenses, calculate the number of physical cores per CPU (requires minimum of 16 cores / CPU for per core licensing).

Centralized licensing with no single point of failure

vCenter Server is the recommended interface for license assignment to vSphere hosts. When a license key is assigned by vCenter Server, it is copied to the host and saved in a persistent format. If the host becomes disconnected from vCenter Server, the license key remains active on the host indefinitely, even after a host reboot. Only a deliberate licensing operation by the user can remove or replace a host license key.

Decentralized licensing option

VMware recommends that customers assign all vSphere licenses centrally through vCenter Server. However, vSphere customers have the option to assign their license keys directly to individual hosts. There is no difference between directly and centrally assigned license keys. When a vSphere host is added to the vCenter Server inventory, any license key already on the host will become available for management, reporting and assignment in vCenter Server, just like any license key added directly via vCenter Server. For more information on licensing, visit the *VMware Licensing Help Center. (https://www.vmware.com/support/support-resources/licensing.html)*

Packaging overview

VMware offers several packaging options designed to meet customers' specific requirements for scalability, size of environment and use cases.

vSphere main editions

VMware vSphere+

vSphere+ is the multi-cloud workload platform that brings the benefits of cloud to on-premises workloads. vSphere+ combines industry-leading virtualization technology, an enterprise-ready Kubernetes environment, and high-value cloud services to transform existing on-prem deployments into SaaS-enabled infrastructure that centralizes management, supercharges productivity, and accelerates innovation. With vSphere+, IT admins and developers can easily build, run, manage, protect, and secure their traditional and next-gen applications. vSphere+ can be purchased through a flexible subscription plan that better aligns with the business.

vSphere perpetual editions

Customers can choose from two editions: VMware vSphere Enterprise Plus and vSphere Standard Edition™ (see Table 1). A support and subscription (SnS) contract is required for every edition purchased.

vSphere Enterprise Plus offers the full range of vSphere features for transforming data centers into dramatically simplified cloud infrastructures, and for running modern applications with the next generation of flexible, reliable IT services.

vSphere Standard provides an entry-level solution for basic server consolidation to slash hardware costs while accelerating application deployment.

FEATURES	vSphere+	vSphere+ Standard
vSphere Hypervisor – Provides a robust, production-proven, high-performance virtualization layer	•	•
vSphere vMotion® – Allows live migration of VMs from one ESXi host server to another with no disruption to users or loss of service.	•	•
vSphere Storage vMotion – Allows movement of VM files from one data storage location to another with no disruption to users or loss of service, for example from a local data store to a shared data store.	•	•
Cross-vSwitch vMotion – Allows live migration of VMs from one ESXi host server to another, where the hosts exist across different virtual switches.	•	•
VMware vCenter® Hybrid Linked Mode – Enables unified visibility and management across on- premises vCenter and vCenter on a cloud enabled with vSphere, such as VMware Cloud™ on AWS	•	•
vSphere Virtual Symmetric Multiprocessing (SMP) – Enables VMs to have multiple virtual CPUs	•	•
vSphere High Availability (HA) – Automatically restarts your VMs following physical machine failure	•	•
vSphere Fault Tolerance – Provides continuous availability of any application in the event of a hardware failure with no data loss or downtime	8-vCPU	2-vCPU
VMware vShield Endpoint™ – Secures VMs with offloaded anti-virus and anti-malware solutions, without the need for agents inside the VM	•	•
vSphere Replication™ – Enables efficient, array-agnostic replication of VM data over the LAN or WAN, and simplifies management by enabling replication at the VM level	•	•
Support for 4K native storage – Enhances platform scalability by leveraging high-capacity drives; reduces CapEx	•	•
vSphere Quick Boot™ – Skips hardware initialization steps and dramatically reduces time required for patching and upgrades	•	•
vCenter High Availability – Provides native vCenter Server availability	•	•
vCenter Backup and Restore – Provides native vCenter Server backup and restore	•	•
vCenter Server Appliance™ Migration – Provides single-step migration and upgrade of existing Windows vCenter deployments to vCenter Server Appliance	•	•
TPM 2.0 support and virtual TPM – Supports TPM 2.0 hardware modules and adds a virtual TPM device to shield a guest OS from operator or in-guest attacks	•	•
FIPS 140-2 compliance and TLS 1.2 support – Provides default enhanced security compliance	•	•
VM encryption – Provides data-at-rest encryption for VM data and disks	•	
Support for Microsoft virtualization-based security (VBS) – Supports Windows 10 and Windows 2016 security features, such as Credential Guard, on vSphere	•	•
Per-VM Enhanced vMotion Compatibility – Allows seamless migration across different CPUs across the hybrid cloud by persisting the Enhanced vMotion Compatibility mode per VM during migrations across clusters and during power cycles	•	•
VMware Instant Clone – Reduces provisioning times, especially beneficial for VDI applications	•	•

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FEATURES	vSphere+	vSphere+ Standard
Identity federation with Active Directory Federation Services (ADFS) – Provides secure access and account management	•	•
vSphere Trust Authority™ – Provides remote attestation for sensitive workloads	•	
Content Library – Provides simple and effective centralized management for VM templates, virtual appliances, ISO images and scripts	•	•
APIs for storage awareness	•	•
Storage APIs for array integration and multipathing – Improves performance, reliability and scalability by leveraging efficient array-based operations and third-party storage vendor multipath software capabilities	•	•
vSphere Virtual Volumes™ – Virtualizes external storage (SAN and NAS) and provides VM-aware, policy-based storage management through vCenter	•	•
Storage policy-based management – Allows common management across storage tiers and dynamic storage class-of-service automation via a policy-driven control plane	•	•
Next-generation infrastructure image management – Manages infrastructure images to patch, update or upgrade VMware ESXi™ clusters using a desired state model	•	
vSphere Distributed Switch™ – Centralizes provisioning, administration and monitoring by using cluster-level network aggregation	•	
Host Profiles and vSphere Auto Deploy™ – 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	•	
vSphere Distributed Resource Scheduler™ (DRS) and vSphere Distributed Power Management™ (DPM) – Enables usage with business priorities by automatically load balancing across hosts; optimizes power consumption by turning off hosts during periods of reduced demand	•	
vSphere Storage DRS™ – Enables automated load balancing to look at storage characteristics to determine the best place for a given VM's data when it is created and used over time	•	
vSphere Network I/O Control and vSphere Storage I/O Control – 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 VMs according to business needs	•	
Single root I/O virtualization (SR-IOV) support – Allows one PCI Express (PCIe) adapter to be presented as multiple separate logical devices to VMs; allows users to offload I/O processing and reduce network latency	•	
vSphere Persistent Memory™ – Leverages persistent memory to provide DRAM-like performance with flash-like prices	•	
NVIDIA GRID vGPU – Enables native 2D and 3D graphics performance for VMs; supports multiple vGPUs per VM	•	
Predictive DRS – Feature that combines the analytics of vRealize Operations Manager with the logic of vSphere. This collaboration between products allows DRS to execute predictive moves based on the predictive data sent by vRealize Operation	•	
Accelerated graphics for VMs	•	
Dynamic vSphere DirectPath I/O™ – Supports vGPU and vSphere DirectPath I/O initial VM placement	•	•

FEATURES	vSphere+	vSphere+ Standard
vCenter Server Profile – Provides desired-state configuration management capabilities for vCenter Server; helps users to define/validate/apply configuration for multiple vCenters	•	•
vCenter Server update planner – Manages the compatibility and interoperability for vCenter Server for upgrade scenarios; allows users to generate an interoperability and pre-checks report, which helps plan for upgrades	•	•
vSphere Native Key Provider - A mechanism fully within vSphere to enable data-at-rest protections like vSAN Encryption, VM Encryption, and vTPM out of the box, making it a lot easier for customers to take advantage of these security features and improve overall security posture for VM environments.	•	
Cloud Console - Enables IT administrators to consolidate management of all vSphere deployments through a centralized cloud console.	•	•
Global Inventory Service - Visualizes inventory of vSphere resources and capacity to quickly understand resource utilization across vSphere estate.	•	•
Event View Service - Consolidates view of events and alerts to quickly triage areas that need attention across your vSphere estate	•	•
Security Health Check Service - Evaluate the security posture of your entire vSphere infrastructure to identify security weaknesses or exposures.	•	•
VM Provisioning Service - Quickly create provision VMs from the VMware Cloud™ Console within any managed cluster.	•	•
Lifecycle Management Service - 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.	•	•
Configuration Management Service - Standardizes and cascades vCenter configurations across vSphere estate. Detects and remediates vCenter configuration drifts automatically.	•	•
Tanzu Kubernetes Grid™ Service - The Tanzu Kubernetes Grid Service allows developers to manage consistent, compliant, and conformant Kubernetes clusters.	•	
Tanzu Integrated Services - 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.	•	
Tanzu Mission Control™ Essentials - Provides global visibility across your entire Kubernetes footprint,and automates operational tasks such as lifecycle.	•	
VMware vSphere® Distributed Services EngineTM – Install and update ESXi images simultaneously on DPU and CPU. Set alarms for hardware alerts and get performance metrics on core, memory and network throughput, from vCenter. Accelerate vSphere Distributed Switch on the DPU.	•	
vSphere Green Metrics - Get power consumed by workloads, infrastructure services and idling time, at the host level	•	•

TABLE 1.0. vSphere+

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FEATURES	vSPHERE STANDARD	vSPHERE ENTERPRISE PLUS
vSphere Hypervisor – Provides a robust, production-proven, high-performance virtualization layer	•	•
vSphere vMotion® – Allows live migration of VMs from one ESXi host server to another with no disruption to users or loss of service.	•	•
vSphere Storage vMotion – Allows movement of VM files from one data storage location to another with no disruption to users or loss of service, for example from a local data store to a shared data store.	•	•
Cross-vSwitch vMotion – Allows live migration of VMs from one ESXi host server to another, where the hosts exist across different virtual switches.		•
Cross-vSwitch vMotion – Allows cold migration of VMs from one ESXi host server to another, where the hosts exist across different virtual switches.	•	•
VMware vCenter® Hybrid Linked Mode – Enables unified visibility and management across on- premises vCenter and vCenter on a cloud enabled with vSphere, such as VMware Cloud™ on AWS	vCenter Server Standard™	vCenter Server Standard
vSphere Virtual Symmetric Multiprocessing (SMP) – Enables VMs to have multiple virtual CPUs	•	•
vSphere High Availability (HA) – Automatically restarts your VMs following physical machine failure	•	•
vSphere Fault Tolerance – Provides continuous availability of any application in the event of a hardware failure with no data loss or downtime; for workloads up to 8-vCPU	2-vCPU	8-vCPU
VMware vShield Endpoint™ – Secures VMs with offloaded anti-virus and anti-malware solutions, without the need for agents inside the VM	•	•
vSphere Replication™ – Enables efficient, array-agnostic replication of VM data over the LAN or WAN, and simplifies management by enabling replication at the VM level	•	•
Support for 4K native storage – Enhances platform scalability by leveraging high-capacity drives; reduces CapEx	•	•
vSphere Quick Boot™ – Skips hardware initialization steps and dramatically reduces time required for patching and upgrades	•	•
vCenter High Availability – Provides native vCenter Server availability	vCenter Server Standard™	vCenter Server Standard™
vCenter Backup and Restore – Provides native vCenter Server backup and restore	vCenter Server Standard™	vCenter Server Standard™
vCenter Server Appliance™ Migration – Provides single-step migration and upgrade of existing Windows vCenter deployments to vCenter Server Appliance	vCenter Server Standard™	vCenter Server Standard™
TPM 2.0 support and virtual TPM – Supports TPM 2.0 hardware modules and adds a virtual TPM device to shield a guest OS from operator or in-guest attacks	•	•
FIPS 140-2 compliance and TLS 1.2 support – Provides default enhanced security compliance	•	•
VM encryption – Provides data-at-rest encryption for VM data and disks		•
vSphere Green Metrics - Get power consumed by workloads, infrastructure services and idling time, at the host level	•	•

FEATURES	vSPHERE STANDARD	vSPHERE ENTERPRISE PLUS
Support for Microsoft virtualization-based security (VBS) – Supports Windows 10 and Windows 2016 security features, such as Credential Guard, on vSphere	•	•
Per-VM Enhanced vMotion Compatibility – Allows seamless migration across different CPUs across the hybrid cloud by persisting the Enhanced vMotion Compatibility mode per VM during migrations across clusters and during power cycles	•	•
VMware Instant Clone – Reduces provisioning times, especially beneficial for VDI applications	•	•
Identity federation with Active Directory Federation Services (ADFS) – Provides secure access and account management	•	•
vSphere Trust Authority™ – Provides remote attestation for sensitive workloads		•
Content Library – Provides simple and effective centralized management for VM templates, virtual appliances, ISO images and scripts	•	•
APIs for storage awareness	•	•
Storage APIs for array integration and multipathing – Improves performance, reliability and scalability by leveraging efficient array-based operations and third-party storage vendor multipath software capabilities	•	•
vSphere Virtual Volumes™ – Virtualizes external storage (SAN and NAS) and provides VM-aware, policy-based storage management through vCenter	•	•
Storage policy-based management – Allows common management across storage tiers and dynamic storage class-of-service automation via a policy-driven control plane	•	•
Next-generation infrastructure image management – Manages infrastructure images to patch, update or upgrade VMware ESXi™ clusters using a desired state model	•	•
vSphere Distributed Switch™ – Centralizes provisioning, administration and monitoring by using cluster-level network aggregation		•
Host Profiles and vSphere Auto Deploy™ – 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		•
vSphere Distributed Resource Scheduler™ (DRS) and vSphere Distributed Power Management™ (DPM) – Enables usage with business priorities by automatically load balancing across hosts; optimizes power consumption by turning off hosts during periods of reduced demand		•
vSphere Storage DRS™ – Enables automated load balancing to look at storage characteristics to determine the best place for a given VM's data when it is created and used over time		•
vSphere Network I/O Control and vSphere Storage I/O Control – 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 VMs according to business needs		•
Single root I/O virtualization (SR-IOV) support – Allows one PCI Express (PCIe) adapter to be presented as multiple separate logical devices to VMs; allows users to offload I/O processing and reduce network latency		•
vSphere Persistent Memory™ – Leverages persistent memory to provide DRAM-like performance with flash-like prices		•
NVIDIA GRID vGPU – Enables native 2D and 3D graphics performance for VMs; supports multiple vGPUs per VM		•

FEATURES	vSPHERE STANDARD	vSPHERE ENTERPRISE PLUS
Predictive DRS – Feature that combines the analytics of vRealize Operations Manager with the logic of vSphere. This collaboration between products allows DRS to execute predictive moves based on the predictive data sent by vRealize Operation		•
Accelerated graphics for VMs		•
Dynamic vSphere DirectPath I/O™ – Supports vGPU and vSphere DirectPath I/O initial VM placement	•	•
vCenter Server Profile – Provides desired-state configuration management capabilities for vCenter Server; helps users to define/validate/apply configuration for multiple vCenters		vCenter Server Standard
vCenter Server update planner – Manages the compatibility and interoperability for vCenter Server for upgrade scenarios; allows users to generate an interoperability and pre-checks report, which helps plan for upgrades		•
vSphere Native Key Provider - A mechanism fully within vSphere to enable data-at-rest protections like vSAN Encryption, VM Encryption, and vTPM out of the box, making it a lot easier for customers to take advantage of these security features and improve overall security posture for VM environments.	•	•
VMware vSphere® Distributed Services EngineTM – Install and update ESXi images simultaneously on DPU and CPU. Set alarms for hardware alerts and get performance metrics on core, memory and network throughput, from vCenter. Accelerate vSphere Distributed Switch on the DPU.		•

TABLE 1.1. vSphere 8 main editions

VMware vSphere Hypervisor

vSphere Hypervisor is a free product that provides a simple way to get started with virtualization at no cost. It provides only basic virtualization capabilities, allowing customers to virtualize servers and run applications in VMs in a matter of minutes. vSphere Hypervisor cannot connect to vCenter Server and therefore cannot be centrally managed. Users can remotely manage individual vSphere Hypervisor hosts using the VMware vSphere Client. There are no restrictions on the number of physical CPUs per host and on the amount of RAM per server/host. The maximum vCPUs per VM is eight.

VMware vSphere Desktop

vSphere Desktop is designed for licensing vSphere in VDI deployments. vSphere Desktop provides all the functionalities of vSphere Enterprise Plus. It can only be used for VDI deployments and can be leveraged with both Horizon View and third-party VDI connection brokers.

vSphere Desktop is licensed based on the total number of powered-on desktop VMs and can be purchased either standalone in a pack of 100 desktop VMs or included with the Horizon View bundle. For detailed information on pricing, visit *www.vmware.com/products/horizon.html*

VMware vSphere Acceleration Kits

vSphere Acceleration Kits are all-in-one convenience bundles that provide a simple way for customers to purchase all the necessary components to set up a new VMware environment. Each kit consists of six processor licenses for vSphere and a license for one instance of vCenter Server Standard.

Customers can choose from two editions: vSphere Standard Acceleration Kit and vSphere Enterprise Plus Acceleration Kit. An SnS contract is required for every edition purchased.

vSphere Acceleration Kits decompose into their individual kit components after purchase. This allows customers to upgrade and renew SnS for each individual component on its own schedule. Visit the *VMware Store (https://store.vmware.com)* or contact your local reseller for more specific information on the latest available offerings.

VMware vSphere Essentials Kits

vSphere Essentials Kits are all-in-one solutions for small environments (up to three hosts with up to two CPUs each) available in two editions: vSphere Essentials Kit and vSphere Essentials Plus Kit (see Table 2). Each kit consists of six processor licenses for vSphere and a license for one instance of vCenter Server for Essentials™. Scalability limits for the kits are product-enforced and cannot be extended other than by upgrading the whole kit to an Acceleration Kit (see the Paid edition upgrades section). vSphere Essentials Kits and vSphere Essentials Plus Kits are self-contained solutions and may not be decoupled or combined with other vSphere editions. vSphere Essentials Kit is also sold as a term license subscription that is licensed per 96 core packs.

vSphere Essentials Kit is an all-in-one solution ideal for small offices. It enables consolidation and management of applications to reduce hardware and operating costs, all with a low upfront investment. This kit must be purchased along with a one-year subscription to software patches and updates. Support is optional and available on a per-incident basis.

vSphere Essentials Plus Kit adds features such as vSphere vMotion, vSphere HA and vSphere Data Protection™ to vSphere Essentials to enable always-on IT for the small environment. This kit is ideal for small businesses that, in addition to hardware and operational cost savings, are looking for maximization of application availability and business continuity with a low upfront investment. SnS for vSphere Essentials Plus is sold separately. A minimum of one year of SnS is required.

FEATURES	vSPHERE ESSENTIALS	vSPHERE ESSENTIALS PLUS
vSphere Hypervisor – Provides a robust, production-proven, high-performance virtualization layer	•	•
vShield Endpoint – Secures VMs with offloaded anti-virus and anti-malware solutions, without the need for agents inside the VM		•
vSphere Replication – Enables efficient, array-agnostic replication of VM data over the LAN or WAN, and simplifies management by enabling replication at the VM level		•
vSphere Quick Boot – Skips hardware initialization steps and dramatically reduces the time required for patching and upgrades		•
vSphere vMotion – Allows live migration of VMs from one ESXi host server to another with no disruption to users or loss of service		•
Cross-vSwitch vMotion – Allows cold migration of VMs from one ESXi host server to another, where the hosts exist across different virtual switches.		•
vSphere HA – Automatically restarts your VMs following physical machine failure		•
FIPS 140-2 compliance and TLS 1.2 support – Provides default enhanced security compliance		•
Support for Microsoft VBS – Supports Windows 10 and Windows 2016 security features, such as Credential Guard, on vSphere		•
Next-generation infrastructure image management – Manages infrastructure images to patch, update or upgrade ESXi clusters using a desired state model		•
vSphere Native Key Provider - A mechanism fully within vSphere to enable data-at-rest protections like vSAN Encryption, VM Encryption, and vTPM out of the box, making it a lot easier for customers to take advantage of these security features and improve overall security posture for VM environments.	•	•
TPM 2.0 support and virtual TPM – Supports TPM 2.0 hardware modules and adds a virtual TPM device to shield a guest OS from operator or in-guest attacks	•	•
vSphere Green Metrics - Get power consumed by workloads, infrastructure services and idling time, at the host level	•	•

TABLE 2. vSphere 8 Essentials Kit and Essentials Plus Kit editions

VMware vSphere Remote Office Branch Office

VMware vSphere Remote Office Branch Office™ is designed specifically for an IT infrastructure located in remote, distributed sites and delivers improved service levels, standardization, availability and compliance. These editions include 25 VM licenses of vSphere Remote Office Branch Office.

The flexible per-VM pricing model also allows customers to deploy only the number of workloads they require in each remote site. Customers can deploy a maximum of 25 VMs per vSphere Remote Office Branch Office site. Server hosts can be managed by vCenter Server Foundation™ or vCenter Server Standard, purchased separately.

vSphere Remote Office Branch Office Standard – Remote site server virtualization platform with business continuity and backup features.

vSphere Remote Office Branch Office Advanced – Remote site server virtualization offering business continuity and backup with advanced features, such as standardization of host configurations.

vSphere Remote Office Branch Office Enterprise – Remote site server virtualization offering business continuity and backup, standardization of host configurations and data security through encryption.

See Table 3 for details on which features are included in each vSphere Remote Office Branch Office edition.

FEATURES	vSPHERE REMOTE OFFICE BRANCH OFFICE STANDARD	vSPHERE REMOTE OFFICE BRANCH OFFICE ADVANCED	vSPHERE REMOTE OFFICE BRANCH OFFICE ENTERPRISE
vSphere Hypervisor – Provides a robust, production-proven, high-performance virtualization layer	•	•	•
vSphere vMotion – Allows live migration of VMs from one ESXi host server to another with no disruption to users or loss of service	•	•	•
vSphere Virtual SMP – Enables VMs to have multiple virtual CPUs	•	•	•
vSphere HA – Automatically restarts your VMs following physical machine failure	•	•	•
vSphere Storage vMotion – Allows movement of VM files from one data storage location to another with no disruption to users or loss of service, for example from a local data store to a shared data store.	•	•	•
Cross-vSwitch vMotion – Allows live migration of VMs from one ESXi host server to another, where the hosts exist across different virtual switches.	•	•	•
vSphere Fault Tolerance – Provides continuous availability of any application in the event of a hardware failure with no data loss or downtime; for workloads up to 8-vCPU	2-vCPU	8-vCPU	8-vCPU
vShield Endpoint – Secures VMs with offloaded anti-virus and anti-malware solutions, without the need for agents inside the VM	•	•	•
vSphere Replication – Enables efficient, array-agnostic replication of VM data over the LAN or WAN, and simplifies management by enabling replication at the VM level	•	•	•
vSphere Quick Boot – Skips hardware initialization steps and dramatically reduces the time required for patching and upgrades	•	•	•
TPM 2.0 support and virtual TPM – Supports TPM 2.0 hardware modules and adds a virtual TPM device to shield a guest OS from operator or in-guest attacks	•	•	•

FEATURES	vSPHERE REMOTE OFFICE BRANCH OFFICE STANDARD	vSPHERE REMOTE OFFICE BRANCH OFFICE ADVANCED	vSPHERE REMOTE OFFICE BRANCH OFFICE ENTERPRISE
vCenter High Availability – Provides native vCenter Server availability	vCenter Server Standard	vCenter Server Standard	vCenter Server Standard
vCenter Backup and Restore – Provides native vCenter Server backup and restore	vCenter Server Standard	vCenter Server Standard	vCenter Server Standard
vCenter Server Appliance Migration – Provides single-step migration and upgrade of existing Windows vCenter deployments to vCenter Server Appliance	vCenter Server Standard	vCenter Server Standard	vCenter Server Standard
FIPS 140-2 compliance and TLS 1.2 support – Provides default enhanced security compliance	•	•	•
Support for Microsoft VBS – Supports Windows 10 and Windows 2016 security features, such as Credential Guard, on vSphere	•	•	•
Identity federation with ADFS – Provides secure access and account management	•	•	•
Content Library – Provides simple and effective centralized management for VM templates, virtual appliances, ISO images and scripts	•	•	•
APIs for storage awareness	•	•	•
vSphere Virtual Volumes – Virtualizes external storage (SAN and NAS) and provides VM-aware, policy-based storage management through vCenter	•	•	•
Storage policy-based management – Allows common management across storage tiers and dynamic storage class-of-service automation via a policy-driven control plane	•	•	•
Next-generation infrastructure image management – Manages infrastructure images to patch, update or upgrade ESXi clusters using a desired state model	•	•	•
Host Profiles and vSphere Auto Deploy – 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		•	•
vSphere Distributed Switch – Centralizes provisioning, administration and monitoring by using cluster-level network aggregation		•	•
Limited DRS (maintenance mode only)			•
VM encryption – Provides data-at-rest encryption for VM data and disks			•
vSphere Native Key Provider - A mechanism fully within vSphere to enable data-at-rest protections like vSAN Encryption, VM Encryption, and vTPM out of the box, making it a lot easier for customers to take advantage of these security features and improve overall security posture for VM environments.	•	•	•
vSphere Green Metrics - Get power consumed by workloads, infrastructure services and idling time, at the host level	•	•	•

TABLE 3. vSphere 8 Remote Office Branch Office editions

VMware vSphere Scale-Out
VMware vSphere Scale-Out™ is a solution that packages all the core vSphere features required for big data and high-performance computing (HPC) workloads at an attractive price point.

vSphere Scale-Out is licensed specially for big data and HPC workloads and sold in packs of eight CPUs.

See Table 4 for details on which features are included in vSphere Scale-Out.

FEATURES	vSPHERE SCALE-OUT
vSphere Hypervisor – Provides a robust, production-proven, high-performance virtualization layer	•
vSphere vMotion – Allows live migration of VMs from one ESXi host server to another with no disruption to users or loss of service	•
vSphere Storage vMotion – Allows movement of VM files from one data storage location to another with no disruption to users or loss of service, for example from a local data store to a shared data store.	•
Cross-vSwitch vMotion – Allows live migration of VMs from one ESXi host server to another, where the hosts exist across different virtual switches.	•
vShield Endpoint – Secures VMs with offloaded anti-virus and anti-malware solutions, without the need for agents inside the VM	•
vSphere Quick Boot – Reduces time required for patching and upgrading	•
vCenter High Availability – Provides native vCenter Server availability	vCenter Server Standard
vCenter Backup and Restore – Provides native vCenter backup and restore	vCenter Server Standard
vCenter Server Appliance Migration – Provides single-step migration and upgrade of existing vCenter Server deployments to vCenter Server Appliance	vCenter Server Standard
FIPS 140-2 compliance and TLS 1.2 support – Provides default enhanced security compliance	•
Support for Microsoft VBS – Supports Windows 10 and Windows 2016 security features, such as Credential Guard, on vSphere	•
Identity federation with ADFS – Provides secure access and account management	•
Content Library – Provides simple and effective centralized management for VM templates, virtual appliances, ISO images and scripts	•
APIs for storage awareness	•
Storage APIs for array integration and multipathing – Improves performance and scalability by leveraging efficient array-based operations	•
vSphere Distributed Switch – Centralizes provisioning, administration and monitoring by using cluster-level network aggregation	•
Host Profiles and vSphere Auto Deploy – Helps IT administrators simplify host deployment and compliance, so hosts can be deployed on the fly	•
vSphere Virtual Volumes – Virtualizes external storage (SAN and NAS) and provides VM-aware, policy-based storage management through vCenter	•

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FEATURES	vSPHERE SCALE-OUT
Storage policy-based management – Allows common management across storage tiers and dynamic storage class-of-service automation via a policy-driven control plane	•
vSphere Network I/O Control and vSphere Storage I/O Control) – Prioritizes access by monitoring I/O load and dynamically allocating available I/O resources to VMs according to business needs	•
SR-IOV support – Allows users to offload I/O processing and reduce network latency	•
Next-generation infrastructure image management – Manages infrastructure images to patch, update or upgrade ESXi clusters using a desired state model	•
vSphere Native Key Provider - A mechanism fully within vSphere to enable data-at-rest protections like vSAN Encryption, VM Encryption, and vTPM out of the box, making it a lot easier for customers to take advantage of these security features and improve overall security posture for VM environments.	•
vSphere Green Metrics - Get power consumed by workloads, infrastructure services and idling time, at the host level	•

TABLE 4. vSphere 8 Scale-Out

vCenter Server editions

vCenter Server provides unified management for vSphere environments and is a required component of a complete vSphere deployment. One instance of vCenter Server is required to centrally manage VMs and their hosts, and to enable all vSphere features.

vCenter Server is available in the following packages:

• vCenter Server for Essentials – Integrated management for vSphere Essentials Kits.

• vCenter Server Foundation – Powerful management tool for smaller environments looking to rapidly provision, monitor and control VMs.

• vCenter Server Standard – Highly scalable management with rapid provisioning, monitoring, orchestration and control of all VMs in a vSphere environment. vCenter Server High Availability does not require a separate vCenter Server Standard license for the passive or witness node.

	vCENTER SERVER FOR ESSENTIALS	vCENTER SERVER FOUNDATION	vCENTER SERVER STANDARD
Number of hosts	Up to 3	Up to 4	Unlimited
vSphere licenses managed	vSphere Essentials and vSphere Essentials Plus	vSphere Standard, vSphere Enterprise Plus and VMware vCloud Suite®	vSphere Standard, vSphere Enterprise Plus and vCloud Suite

TABLE 6. vCenter Server editions.

Version upgrade entitlements for existing customers

vSphere customers with an active SnS contract are entitled to a version upgrade to vSphere 8 at no extra charge. All version upgrades to vSphere 8 require acceptance of the new end-user licensing agreement (EULA).

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Visit the *vSphere Upgrade Center (https://www.vmware.com/products/vsphere/upgrade-center.html)* for more information and to determine the appropriate upgrade path for your organization.

Version downgrades for vSphere
vSphere can version downgrade.

Reinstatement options for customers with inactive SnS contracts
Customers who have an expired SnS contract must pay reinstatement fees to purchase supported upgrades. Reinstatement fees are based on the following criteria:

• The applicable SnS fees for the current contract term

• Fees that would have been paid for the period of time that the customer's SnS contract was not active

• A 20 percent fee on the sum of the fees in the preceding two criteria

Paid edition upgrades

Customers may purchase and upgrade to a higher vSphere edition. For example, vSphere Standard customers may upgrade to vSphere Enterprise Plus. When customers upgrade supported licenses to a higher edition, the original license key is deactivated, and a new license key is issued for the upgraded edition. An SnS contract for the edition upgraded to must be purchased at the time of the upgrade purchase. This new SnS contract will be extended by the original SnS contract value remaining on the edition from which the customer upgraded. SnS contracts as short as two months are available for customers with a significant value remaining in their existing contract. This process ensures that only a single license key exists that has a single SnS contract with a single termination date.

Because vSphere Acceleration Kits decompose into individual kit components after purchase, customers upgrade using the same upgrade paths as vSphere customers. There are no Acceleration Kit to Acceleration Kit upgrades.