VMware vSphere Product Line Comparison

The enterprise workload engine

VMware vSphere is available in three different editions: VMware vSphere® Standard, VMware vSphere® Enterprise Plus, and VMware vSphere® Foundation. Use this comparison chart to choose the right edition for your organization's needs.

Key Attributes	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Licensing Model	Subscription	Subscription	Subscription
License Metric	Per Core	Per Core	Per Core
VMware vCenter® Edition	Includes vCenter Standard	Includes vCenter Standard	Includes vCenter Standard
VMware Cloud Foundation® Operations	No	No	Yes
VMware vSphere® Kubernetes Service (VKS)	No	No	Yes
VMware vSAN™ Enterprise (0.25 TiB per core)	No	No	Yes*
Admin Services and Intelligent Operations Management	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
vCenter 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.	●	●	●
VCF Operations: Continuous Performance Optimization with VCF Operations, assure workload performance at minimal costs. Based on operational and business intent, real-time predictive analytics and AI drive actions to automatically balance workloads and proactively avoid contention.			●

**Starting 11/22/24, VMware vSphere Foundation (VVF) purchases will receive 0.25 TiB of vSAN capacity for each VVF core. For VVF purchased before 11/22/24, version 8.0U2B or newer is required to access the originally agreed upon vSAN 100 GiB per core trial capacity. Customers can later upgrade to obtain the 0.25 TiB capacity in a future patch release.*

Admin Services and Intelligent Operations Management	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
VCF Operations: Efficient Cost and Capacity Management Reduce cost and improve efficiency with real-time, predictive capacity and cost analytics, delivering optimal consolidation and proactive planning. Using a real time, forward-looking capacity analytics engine, predictive analytics and AI automatically balance workloads to improve performance based on operational and business goals.			●
VCF Operations: Intelligent Remediation Use VCF Operations to predict, prevent and troubleshoot faster with actionable insights correlating metrics, events, logs and configuration data to deliver AI-based anomaly detection across private clouds. Extend monitoring visibility to multiple public clouds as well as physical compute and storage.			●
VCF Operations: Integrated Compliance Reduce risk and enforce IT regulatory standards with VCF Operations integrated compliance and automated drift remediation. Ensure your environment's adherence to common requirements with six out-of-the-box compliance templates— such as for PCI or HIPAA—or create your own custom templates.			●
VCF Operations for Logs Manage log data at scale with centralized infrastructure log management, deep operational visibility, and intelligent analytics for troubleshooting and auditing across environments. Capabilities include interactive logs analysis, Kubernetes log collection, alerts, active directory integration, role-based access control, scheduled dashboard reports, and event forwarding.			●
VCF Operations Diagnostics (formerly Skyline) Avoid issues before they occur. Pinpoint potential problems across your VMware environment and use VCF Operations remediation guidance to fix the issues that can cause disruptive and costly IT downtime.			●
Kubernetes Services for Running VMs and Containers	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
vSphere Kubernetes Service (VKS) The vSphere Kubernetes Service allows developers to manage consistent, compliant and conformant Kubernetes clusters via ClusterClass API.			●

Kubernetes Services for Running VMs and Containers	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
VKS Standard Packages 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.			●
Storage Service The Storage 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.			●
Network Services The Network Service allows developers to manage Virtual Routers and Load Balancers. Leverage existing networking infrastructure using vSphere Distributed Switch's (VDS) centralized interface to configure, monitor and administer switching access for VMs and Kubernetes workloads.			●
Container Registry Service The Registry Service allows developers to store, manage and secure Docker and OCI container images through Harbor as a Supervisor Service.			●
VM Registry Service The Registry Service allows developers to store, manage and secure Docker and OCI container images through Harbor as a Supervisor Service.			●
Network Load Balancing Network load balancing for Supervisor workloads including: VM Service, vSphere Pods, and VKS clusters (and containers).			● AVI Essentials and HA Proxy included
VM Service The VM service allows developers to create virtual machines independently from Kubernetes without requiring access to vSphere Client.			●
Workload Availability Zones Enhance Kubernetes workload HA with availability zones. Provides resilience that spans across multiple clusters and potentially larger geographical areas.			●
Customizable Base OS Images 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.			●

Kubernetes Services for Running VMs and Containers	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Independent vSphere Kubernetes Service (VKS) Easily upgrade to the latest Kubernetes releases independent of vSphere releases.			●
Local Consumption Interface (LCI) Simplified self-service access to infrastructure using LCI in the vSphere Supervisor.			●
Supervisor support on vSAN stretched clusters Deploy Supervisor on vSAN stretched cluster spanning two physical locations or sites.			●
Autoscaling for Kubernetes Clusters Easily scale down or scale up your Kubernetes clusters/nodes with autoscaling.			●
Simplified Operations	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
vSphere Lifecycle Manager Manage infrastructure images to patch, update or upgrade VMware ESX clusters using a desired state model.	●	●	●
vCenter Server Profiles Desired state config management capabilities for vCenter Server. It helps the user to define/validate/apply configuration for multiple vCenter Servers.	●	●	●
vCenter Server Update Planner Manage the compatibility and interoperability for vCenter Server for upgrade scenarios. We will allow users to generate the interoperability and pre-checks report, which will help them plan for upgrades.	●	●	●
Content Library Added administrative control and versioning support. Provides simple and effective centralized management for virtual machine templates, virtual appliances, ISO images and scripts.	●	●	●
vSphere Configuration Profiles Set host configuration at the cluster level, verify that hosts are compliant, and remediate hosts that are not compliant.		●	●
Distributed Switch™ Centralizes provisioning, administration, and monitoring by using cluster-level network aggregation.		●	●

Simplified Operations	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Host Profiles and 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.		●	●
Virtual Volumes™ Virtualizes external storage (SAN and NAS) and provides VM-aware, policy-based storage management through vCenter.	●	●	●
Green Metrics Get power consumed by workloads, infrastructure services and idling time, at the host or VM level. Discover opportunities to: 1) optimize carbon footprint of power-hungry workloads and 2) use idle time to consolidate workloads.			●
Live Patching for ESX ESX components, VMware tools and security patches can be applied without reboot or VM evacuation for reduced downtime.	●	●	●
Consolidated Admin Console Unified console for easier management of all VVF components.			●
Intelligent Alerts Intelligent clustering of alerts across a timeline for faster troubleshooting.			●

Built-In Security	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Identity Federation Connect to Microsoft Active Directory, Microsoft Active Directory Federation Services (AD FS), Microsoft Entra ID, Okta, and PingFederate for centralized authentication and multifactor authentication.	●	●	●
vSphere Trust Authority Remote attestation for sensitive workloads.		●	●
Trusted Platform Module Support Supports TPM 2.0 adding hardware security protections to the hypervisor.	●	●	●
Virtual TPM Adds a virtual TPM 2.0 to virtual machines, enabling in-guest security features.	●	●	●

Built-In Security	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
FIPS 140-2, 140-3, and Common Criteria Certification Third-party validation of cryptographic algorithms, and validation of the security inside the hypervisor.	●	●	●
TLS 1.2 and 1.3 Modern data-in-transit cryptographic protections.[1]	●	●	●
Virtual Machine Encryption Data-at-rest encryption for virtual machine data and disks.		●	●
Standard Key Provider Store vTPM, VM Encryption, and vSAN Data-at-Rest Encryption cryptographic keys in an external Key Management System (KMS) using the KMIP protocol.	●	●	●
Native Key Provider Enable vTPM and other data-at-rest protections natively within vSphere.	●	●	●
Support for Microsoft Virtualization-Based Security (VBS) Enable in-guest protections such as Device Guard and Credential Guard on Microsoft Windows guest operating systems.	●	●	●
Per-VM Enhanced vMotion Compatibility 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.		●	●
Instant Clone Reduces provisioning times, especially beneficial for VDI applications.		●	●
vCenter Configuration Drift Detection[2] Detect vCenter configuration drift easily against several vCenter profile templates.			●
Single Sign-On with VMware Identity Broker[2] Single sign-on between vCenter-hosted VMware identity broker. IT admins can sign-in on any one component and not need to sign in again to any other VVF component.			●
Centralized License and Entitlement Management[2] Single place to manage license keys. Provide a-point-in- time and historical view of license consumption.			●

Application Performance	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Distributed Resource Scheduler™ (DRS) 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; this also results in improved cycle time.		●	●
Storage DRS™ 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 over time.		●	●
Distributed Power Management™ (DPM) Optimizes power consumption by turning off hosts during periods of reduced demand.		●	●
Storage Policy-Based Management Allows common management across storage tiers and dynamic storage class-of-service automation via a policy-driven control plane.	●	●	●
I/O Controls (Network and Storage) Prioritizes storage and network access by continuously monitoring I/O load of a storage volume over the network, and dynamically allocating available I/O resources to virtual machines 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 virtual machines. Allows users to offload I/O processing and reduce network latency.		●	●
vSphere Persistent Memory™ Leverages Persistent Memory to get DRAM-like performance with flash-like prices.		●	●
NVIDIA GRID Virtual GPU (vGPU) Enables native 2D and 3D graphics performance for virtual machines. Supports multiple vGPUs per VM.		●	●
Proactive High Availability (HA) Receive server health information and migrate virtual machines from degraded hosts before problems occur.		●	●
Accelerated Graphics for Virtual Machines		●	●
Dynamic DirectPath IO Support for vGPU and DirectPath I/O initial VM placement.	●	●	●

Application Performance	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Vendor Device Group Combine multiple PCIe devices into a group that is assigned as a unit to a VM, giving it user-prescribed access to that group.		●	●
Heterogeneous vGPU profiles on the same GPU Assign workloads of different vGPU profile types to the same physical GPU, helping to better consume GPU resources.		●	●
DRS automation for vGPU workloads GPU-aware DRS intelligently places workloads to improve GPU utilization.		●	●
Business Continuity	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
vSphere ESX Hypervisor Provides a robust, production-proven, high-performance virtualization layer.	●	●	●
vSphere vMotion 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.	●	●	●
vCenter Hybrid Linked Mode Enables unified visibility and management across on-premises vCenter and vCenter on a vSphere enabled cloud such as VMware Cloud on AWS.	●	●	●
vSMP Virtual symmetric multiprocessing (SMP) enables virtual machines to have multiple virtual CPUs.	●	●	●
High Availability (HA) Automatically restarts your VMs following physical machine failure.	●	●	●
Storage vMotion Avoids application downtime for planned storage maintenance by migrating live virtual machine disk files across storage arrays.	●	●	●
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

Business Continuity	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
vSphere Replication™ 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.	●	●	●
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 (vCenter HA) Automatically restarts your VMs following physical machine failure.	●	●	●
vCenter Backup and Restore Native vCenter Server backup and restore.	●	●	●
vCenter Server Appliance™ Migration A tool for single-step migration and upgrade of existing Windows vCenter deployments to vCenter Server Appliance.	●	●	●
Hybrid Cloud Capabilities	**vSphere Standard**	**vSphere Enterprise Plus**	**vSphere Foundation**
Cross vCenter Mixed Version Provisioning 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 on seamlessly.	●	●	●
Hot and Cold Migration to the Cloud Supports hot and cold migration of workloads across the hybrid cloud.	●	●	●
Storage -vSAN/HCI	**vSphere Standard**	**vSphere Enterprise Plus**	**vSphere Foundation**
vSAN Express Storage Architecture™ (ESA) A single-tier architecture optimized for NVMe-based TLC devices for the most demanding and latency-sensitive workloads.			●
vSAN Original Storage (OSA) A two-tier architecture with cache and capacity tiers.			●

Storage -vSAN/HCI	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation
Storage Policy-Based Management (SPBM) Enables automated, policy-driven control over storage resources to ensure optimal performance, availability, and resilience for each workload.			●
Deduplication[3] and Compression Reduces redundant data globally and compresses data with a highly efficient LZ4 algorithm.			●
vSAN Storage Clusters (ESA Only) A deployment option within vSAN that provides disaggregated storage for vSAN clusters.			●
Data-at-Rest Encryption and Data-in-Transit Encryption Data-at-Rest Encryption secures data at ingest as it's writing to physical disks. Data-in Transit Encryption protects data moving between hosts in the vSAN cluster, preventing unauthorized access.			●
2-Node Cluster Supports a two-host configuration, ideal for remote and edge environments.			●
Stretched Cluster Provides high availability by synchronously replicating data across sites, offering resilience against site failures.			●
vSAN Data Protection (ESA only) Enables quickly recover VMs from operational failures or ransomware attacks, using performant native snapshots stored locally on the vSAN cluster.			●
File Services Enables NFS file shares directly on the vSAN cluster. Integrated with vSAN's storage-based management, it supports SBM, NFSv3 and NFSv4.1 file shares.			●
Cloud Native Storage (CNS) Control Plane with vSAN Container Interface (CSI) Driver Integrates Kubernetes with vSAN, enabling Kubernetes to dynamically provision, monitor, and manage container volumes using SPBM (Storage Based Policy Management) controls.			●

1. For more information about the use of TLS 1.3 with FIPS 140-3 requirements consult the product documentation.
2. Feature enabled via VCF Operations
3. Dedupe announced as part of VVF and VCF 9.0

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