VMware vSphere Foundation 9.0

Feature Comparison

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This feature comparison document outlines the key differences between two primary offerings **VMware vSphere Foundation** and **VMware vSphere**.

Whether you are modernizing your private cloud, improving operational efficiency or planning long term infrastructure investments, this guide is designed to help you make an informed decision.

What is VMware vSphere Foundation and VMware vSphere?

1. **VMware vSphere Foundation -** an enterprise-grade workload platform for modern infrastructure delivering virtualized benefits, simplified management, cost efficiency, scalability and serves as the core foundation for VMware Cloud Foundation.
   - Unified workload platform for running VMs and containers side by side with native Kubernetes runtime.
   - Intelligent operations management delivers enhanced visibility and infrastructure optimization.
   - Hyperconverged infrastructure integrates compute and storage virtualization for efficient resource management.
   - Simplified deployment and scalability with a single SKU, enabling faster application delivery and future ready infrastructure.

2. **VMware vSphere** - the enterprise workload engine that modernizes compute infrastructure, provides a powerful foundation for modern workloads and enables security and compliance.

Feature Comparison: VMware vSphere Foundation vs. Previous Products

Features	Previous Products	vSphere Foundation
Compute		
Distributed Resource Scheduler, Distributed Switch	vSphere Enterprise Plus	●
Cross-VC vMotion, Long Distance vMotion, Direct Path vMotion, Storage vMotion	vSphere Enterprise Plus	●
High Availability, Fault Tolerance, Data Protection, Trust Authority	vSphere Enterprise Plus	●
Kubernetes Runtime, Automated Multicluster Operations	Tanzu Kubernetes Grid	●
vCenter: Backup and Restore, Linked Mode, HA	vCenter Server Standard	●
Storage		
Data-at-rest and Data-In-Transit Encryption	vSAN Enterprise	0.25 TiB / Core*
Stretched Cluster with Local Failure Protection	vSAN Enterprise	0.25 TiB / Core
Petabyte Scale, Disaggregated Storage for vSphere	vSAN Enterprise	0.25 TiB / Core
Dedup & Compression	vSAN Enterprise	0.25 TiB / Core
Management		
Operations: Performance Optimization, Capacity Management, Compliance, Monitoring and Troubleshooting, Log Analytics	Aria Operations	●
TVS management packs	Aria Ops for Integrations	●Excludes DB & apps
Support		
Broadcom Essential Support – Regional Coverage, 24x7 Support		●

(*) - vSAN capacity increase to 0.25 TiB is available in vSphere Foundation purchases starting 11/22/24.

Detailed Feature Comparison

- **VMware vSphere Foundation** - includes vSphere, vCenter Standard, vSphere Kubernetes Service, VCF Operations and vSAN.

- **VMware vSphere Enterprise Plus** - includes vSphere (vCenter Standard, ESX Enterprise Plus).

- **VMware vSphere Standard**- includes vSphere (vCenter Standard, ESX Standard).

- **Solution License** - VMware vSphere Foundation now includes a solution license file that enables access to the different components from a single key.

Table of Contents:

Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
Compute			
Kubernetes Runtime and Supervisor Services			
vSphere Kubernetes Service (VKS)			●
VM Service			●
Storage Service			● [2]
Network Service			● [2]
Container Registry Service			●
Harbor Image Registry Service			●
vSphere Pod Service			●
Load Balancer Service			●
External DNS			●
Data Services			●
AI Services			●
Kubernetes Runtime and Supervisor Services			
Customizable base OS Images			●
Operations Management			
vSphere Lifecycle Manager	●	●	●
Live Patching for ESX	●	●	●
vCenter Server Profiles	●	●	●
vCenter Update Planner	●	●	●
Content Library	●	●	●

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Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
Compute			
vSphere Configuration Profiles		●	●
Host Profiles		●	●
Auto Deploy		●	●
Virtual Volumes (vVols)	●	●	●
Green Metrics	●	●	●
Built-in Security			
Identity Federation	●	●	●
Hardware TPM 2.0 Support	●	●	●
Virtual TPM 2.0	●	●	●
FIPS 140-2, and Common Criteria Certification	●	●	●
TLS 1.2	●	●	●
TLS 1.3	● [4]	● [4]	● [4]
Virtual Machine Encryption		●	●
Standard Key Provider (External KMS)	●	●	●
Native Key Provider	●	●	●
Application Performance			
Per-VM Enhanced vMotion Compatibility (EVC)		●	●
Instant Clone		●	●
Distributed Resource Scheduler (DRS)		●	●
Storage DRS		●	●
Distributed Power Management (DPM)		●	●
Storage Policy-Based Management	●	●	●
I/O Controls (storage)		●	●
Single Root I/O Virtualization (SR-IOV)		●	●
vSphere Persistent Memory		●	●
Memory Tiering		●	●
NVIDIA GRID vGPU		●	●
Accelerated Graphics for VMs		●	●

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Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
Compute			
Dynamic DirectPath IO	●	●	●
Enhanced DirectPath I/O		●	●
Vendor Device Group		●	●
Heterogeneous vGPU profiles on same GPU		●	●
DRS automation for vGPU workloads		●	●
Business Continuity			
vMotion	●	●	●
Cross-vCenter vMotion	●	●	●
vCenter Enhanced Linked Mode	●	●	●
vSMP	●	●	●
vSphere High Availability (HA)	●	●	●
Proactive HA			●
Storage vMotion	●	●	●
Business Continuity			
Fault Tolerance	● (2 vCPU)	●	●
vSphere Replication	●	●	●
Support for 4k Native Storage	●	●	●
vSphere Quick Boot	●	●	●
vCenter File-Based Backup and Restore	●	●	●
Cross vCenter Mixed Version Provisioning	●	●	●
Hot and Cold Migration to the Cloud	●	●	●
Policy-based Governance		●	●
Kubernetes Automation			●
Workload Lifecycle Management		●	●
vCenter Orchestration & Extensibility	●	●	●

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Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
Storage			
vSAN Express Storage Architecture (ESA)			●
vSAN Original Storage Architecture (OSA)			●
All-Flash Hardware			●
Basic Compression and Deduplication			● (OSA Only)
Advanced Compression and Global Deduplication			● (ESA Only)
Data-at-Rest Encryption			●
Data in-Transit Encryption			●
Storage Policy-Based Management			●
Software Checksum			●
vSAN over RDMA			●
Quality of Service (QoS) – IOPS Limit			●
Erasure Coding (RAID-5/6)			●
vSAN storage clusters			●
Remote Datastores			●
Stretched Cluster			●
2-Node Cluster			●
File Services			●
iSCSI Target Service			●
Cloud Native Storage (CNS) Control Plane			●
vSphere Container Storage Interface (CSI) Driver			●
Rack Awareness (Fault Domains)			●
vSAN Data Persistence Platform			●
Snapshot Manager			●
Immutable Snapshots			●
vSAN-to-vSAN Replication			●

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Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
External Storage			
VMFS - Fibre Channel	●	●	●
VMFS - iSCSI	●	●	●
VMFS - FCoE	●	●	●
VMFS - NVMe/FC	●	●	●
VMFS - NVMe/TCP	●	●	●
VMFS - NVMe/RDMA	●	●	●
NFS - v3	●	●	●
NFS - v4.1	●	●	●
vVols - Fibre Channel	●	●	●
vVols - iSCSI	●	●	●
vVols - NVMe/FC	●	●	●
vVols - NVMe/TCP	●	●	●
vVols - NFS v3	●	●	●
Storage I/O QoS Controls (SIOC)		●	●
Storage Array Integration (VAAI) for Block Storage	●	●	●
Storage Array Integration (VAAI) for NFS Storage	●	●	●
Workload (VMDK) Clustering	●	●	●
Auto config with NFS	●	●	●
3rd party storage plugins	●	●	●
Host commissioning and cluster management	●	●	●
Networking			
vSphere Distributed Switch		●	●
Link Aggregation Control Protocol (LACP)		●	●
Load-Based Teaming		●	●
Network I/O QoS Control (NIOC)		●	●
Private VLAN		●	●
MAC Learning		●	●
BPDU Guard		●	●

Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
Networking			
Guest VLAN Tagging		●	●
VLAN Backed Networking	●	●	●
L2 Multicast		●	●
Quality of Service (QoS)		● (NIOC)	● (NIOC)
Container Networking with Antrea			●
Layer 4 Load Balancing for vSphere Supervisor (including VM Service, vSphere PODs, and VKS Clusters) [11],[12]			●
Port Mirroring		●	●
Netflow/IPFIX		●	●
Packet Capture		●	●
VCF Operations			
Install			●
Lifecycle Management			(vSphere Foundation customers utilize vLCM)
License Management		●	●
Global inventory			●
Identity and Access Management, Single Sign-on			●
GPU & vGPU monitoring			●
Audit events across vCenter, vSphere, vSAN, and NSX			●
Log Management			●
VCF Health and Diagnostics			●
Storage Operations (vSAN)			●
Visualization (OOTB; Custom): Alerts, Dashboards, Views, Reports, Heat Map, Performance Charts, Super Metrics, Metric Correlation, Relationship Mapping			●
Performance Monitoring and Analytics			●
Compliance Management, including regulatory compliance (CSA, DISA, FISMA, ISO, CIS, PCI, HIPAA), custom compliance templates, vSphere hardening			●

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Features	vSphere Standard[1]	vSphere Enterprise Plus[1]	vSphere Foundation
VCF Operations			
Real-Time predictive capacity management, including trending (Workload What-If analysis), right-sizing, workload optimization (manual and automated)			●
Troubleshooting with guided remediation			●
Cost Management and Optimization with Fine-Grained Cost Analytics (Service and Data Center costs, Reclamation, Planning)			●
Custom Profiles for VMs			●
Data Protection and Recovery (Integrated VMware Live Cyber Recovery and VMware Live Site Recovery)			●
Service Discovery and Application Dependency Mapping			●
Extensibility via VMW & 3rd-Party Infrastructure Management Packs (SDDC, Compute, Storage, Network, K8s/Container)			●
Logs Alerting			●
Logs Query API			●
Logs Scheduled dashboard reports			●
Logs Partitioning			●
Logs Content Pack support vSphere, HCX, VCF Operations fleet management			●
Supervisor Cluster monitoring (Metrics and Dashboard)			●
vSphere Kubernetes Service Cluster monitoring (Telegraf Agent)			●
Advanced Services (Add-ons) [13]			
Additional Storage Capacity - vSAN			●
Disaster Recovery and Ransomware Recovery			●
Load Balancing			●

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Footnotes

[1] - VMware vSphere is available in two standalone editions, VMware vSphere Standard and VMware vSphere Enterprise Plus, and is also included as a component in VMware Cloud Foundation and VMware vSphere Foundation. Note that vSphere Standard and vSphere Enterprise Plus are only available as versions up to the 8 Update 3 release. Currently, vSphere 9.0 features are only available as part of VMware vSphere Foundation 9.0 and VMware Cloud Foundation 9.0.

[2] - Denotes features that are limited to the support of VM Service and VKS.

[3] - Denotes features compatible with VCF but not integrated with VCF Operations fleet management.

[4] - For more information about using TLS 1.3 with FIPS 140-3 requirements, consult the product documentation.

[5] - Available in both Org for All Apps and VM Apps

[6] - Available in Org for All Apps

[7] - Available in Org for VM Apps

[8] - Requires Firewall add-on

[9] - Requires Avi LB add-on

[10] - Requires PAIF-N add-on

[11] - Ingress / Gateway API provided by Contour Ingress Controller / Supervisor Service.

[12] - It is recommended that customers who need general purpose and advanced load balancing features purchase Avi Load Balancer.

[13] - Advanced services are available for separate purchases and are not included in the core VMware Cloud Foundation or VMware vSphere Foundation offerings.

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