VMware vSphere Foundation Frequently Asked Questions (FAQs)

VMware vSphere Foundation Release

VMware vSphere Foundation 9.0

Q. Where do I find the FAQs for VMware vSphere Foundation 5.2?

A. VMware vSphere Foundation 5.2 FAQs, here.

Q. What's new with VMware vSphere Foundation (VVF) 9.0?

A. New Highlighted Features in VMware vSphere Foundation 9.0

- Boost Operational Efficiency:
  - Installer for simplified VVF deployments
  - Enhanced Integrated storage dashboards
  - NVMe Memory Tiering
- Supercharge Workload Performance:
  - Faster vMotion for GPU workload
  - vSAN traffic separation for improved scalability and performance
  - Monster VM support (increased scale)
- Accelerate Innovation:
  - Quick Supervisor deployment with future scalability and flexibility
  - Independent Supervisor Upgrades from vSphere
  - Unified SDK for Simplified Automation
- Elevate Security & Reslience:
  - Enable agile security with Live Patching for ESX
  - Secure by default the TLS 1.3 enforcement and out-box FIPS 140-2 compliance support
  - Protect against unplanned events with vSAN-to-vSAN Replication

Please reference the respective sections of this FAQ document for additional information.

Q. What are the new features in VMware vSphere Foundation 9.0?

A. Refer to the latest release notes to learn more details and capabilities provided by VMware vSphere Foundation.

Q. What is VMware vSphere Foundation?

A. VMware vSphere Foundation (VVF) is the enterprise workload platform, provides a unified environment where both VMs and containerized applications share the same infrastructure, lifecycle management, security policies and operational tooling. This consolidation simplifies day-to-day operation, accelerates application delivery, and ensures consistent performance and compliance across workloads.

VMware vSphere Foundation brings together compute virtualization via core vSphere and vCenter Server for centralized management. Software defined storage with vSAN, enabling you to pool and manage storage across standard x86 servers. Infrastructure operations and analytics through VMware Cloud Foundation, delivering advanced health monitoring, capacity planning and predictive alerts. VMware vSphere Foundation delivers native Kubernetes services for running containerized workloads alongside traditional VMs.

Q. What operational benefit can I expect from VMware vSphere Foundation?

A. VMware vSphere Foundation offers several operational benefits that simplify IT management and enhance efficiency. Fewer consoles and agents, manage compute, storage and containers from one pane of glass, simplified patching, Live Patching for ESX and one-click vSAN upgrades, predictive health, machine learning alerts, anomaly detection and capacity forecasting.

Q. How steep is the learning curve for existing vSphere admins adopting VMware vSphere Foundation?

A. Nearly zero, admins use the same vCenter UI and familiar Lifecycle Manager workflows and VCF Operations is loaded by the quick start. New tabs appear in VCF Operations for vSAN, Kubernetes, but all other operations follow the same inventory model as the vCenter client.

Overall, vSAN in vSphere Foundation extends a familiar environment with a few clicks—no new appliances, no complex storage OS to learn—delivering enterprise-grade storage.

General Pricing / Packaging

Q. What are the components of VMware vSphere Foundation?

A. VMware vSphere Foundation includes the following components:

- VMware vSphere Enterprise Plus
- VMware vCenter Standard
- VMware vSphere Kubernetes Service *(formerly Tanzu Kubernetes Grid)*
- VMware Cloud Foundation (VCF) Operations*, which include:
    - VCF Operations for logs
    - VCF Operations diagnostics

**Formerly Aria Suite Standard - Aria Operations Advanced, Aria Operations for Logs, and Skyline.*

- VMware vSAN -*includes 0.25 TiB* capacity per core.*

**TiB is a tebibyte (TiB), a unit of measure used to describe storage capacity.*

Q. What are the advanced add-on services available for VMware vSphere Foundation 9.0?

A. The following advanced add-on services are available for VMware vSphere Foundation:

- VMware vSAN Add-on (additional capacity)*
- VMware Live Recovery
- VMware Avi Load Balancer

**VMware vSphere Foundation (VVF) entitles a customer to vSAN for 0.25 TiB of raw capacity for each VVF core. Capacity can be aggregated and used across VVF core licenses. Additional capacity can be purchased separately as vSAN Add-on.*

Q. What technical support options are available for VMware vSphere Foundation 9.0?

A. Broadcom Software Maintenance Essential Support is included in VMware vSphere Foundation

Q. How does the vSAN entitlement work

A. Each licensed VMware vSphere Foundation core includes 0.25 TiB of vSAN capacity. This capacity is pooled across your VVF environment, allowing flexibility in allocating storage where it's needed. If additional storage is required beyond the included entitlement, you can license a vSAN add-on for additional capacity.

Q. What if I have compute-only clusters?

A. No problem. vSAN entitlement can be aggregated across clusters, so unused capacity from compute-only clusters can be applied to vSAN-enabled clusters, improving overall efficiency.

Q. Do I need to enable vSAN in all clusters?

A. No. You're not required to enable vSAN in every cluster. However, the included entitlement can be used in any clusters where vSAN is enabled, giving you the flexibility based on your architecture and use cases.

Q. Can I use VMware vSphere Foundation in a compute-only cluster, or does vSAN need to be enabled?

A. You can run compute-only clusters with VMware vSphere Foundation. The entitlement can be pooled across your VMware vSphere Foundation environment, allowing unused vSAN capacity from compute only clusters to be allocated to storage clusters.

Q. Is vSAN required for VMware vSphere Foundation?

A. No, vSAN is not required for the VMware vSphere Foundation 9.0. VMware vSphere Foundation 9.0 supports either vSAN, NFS and FC.

Q. Is VMware vSphere Virtual Volumes (vVols) supported in VVF 9.0?

A. VMware vSphere Virtual Volumes (vVols) capabilities will be depreciated beginning with the release of VMware vSphere Foundation 9.0 and VMware Cloud Foundation 9.0 and will be fully removed at a future release. Support for vVols (critical bug fixes only) will continue for versions vSphere 8.x, VMware vSphere Foundation 5.2, and other older supported versions until end-of-support of those releases.

Limited time support may be considered on a case-by-case basis for customers desiring vVols support in VMware vSphere Foundation 9.0. Such customers should contact their Broadcom representative or Broadcom support for further guidance

Q. What happens if I exceed the included vSAN capacity?

A. If your usage goes beyond the entitled amount, you can purchase additional capacity through vSAN advanced add on service.

Q. What set of vSAN features are included in VMware vSphere Foundation?

A. VMware vSphere Foundation delivers every vSAN capability—no more editions to choose from. Advanced features like data-at-rest and in-transit encryption, stretched clusters, vSAN storage clusters (formerly vSAN Max), and comprehensive storage protection are all included for VMware vSphere Foundation customer.

Q. How do I monitor my vSAN entitlement usage?

A. You can track vSAN capacity through vCenter or VCF Operations, both which are included in VMware vSphere Foundation. These tools provide real time visibility into storage consumption and cluster health. In VMware vSphere Foundation environment is where VCF Operations can provide that view vs a single vCenter only view of vSAN.

Q. Does vSAN require a specific hardware configuration?

A. Yes, vSAN required certified vSAN Ready nodes, from a certified hardware from Broadcom Compatibility Guide.

Q. Are standalone SKUs for vSphere Standard and vSphere Enterprise Plus available for version 9.0?

A. No. Version 9.0 will only be available for VMware Cloud Foundation and VMware vSphere Foundation.

Q. I've heard that updates going forward will involve a unique URL with a client ID for every customer, and there will be no general download mirror anymore. Will this only be for 9.0 release forward?

A. In March 2025, we ended all vSphere, vSphere Foundation and VMware Cloud Foundation downloads.

Q. What are the feature differences between editions VMware vSphere Foundation and VMware Cloud Foundation?

A. To understand the feature differences between VMware vSphere Foundation and VMware Cloud Foundation Foundation, refer to this link. The document provides a detailed comparison of features across various vSphere editions, including VMware vSphere Foundation.

Boost Operational Efficiency

Q. What is the VMware Cloud Foundation Installer in vSphere Foundation 9.0?

A. The VMware Cloud Foundation Installer is a guided deployment tool that simplifies the setup of VMware vSphere Foundation components in greenfield deployment. The installation process automates the deployment and configuration of the various components. It's part of the broader VMware Cloud Foundation Operations experience and is designed to accelerate time to value while reducing manual efforts, errors and configuration inconsistencies.

Q. What is NVMe Memory Tiering in VMware vSphere Foundation 9.0, what are the benefits?

A. NVMe Memory Tiering in VMware vSphere Foundation 9.0 enables hosts to use local NVMe drives as a secondary memory tier alongside DRAM, transparently offloading less-frequently accessed pages to high-speed NVMe storage without requiring any changes to VMs or guest operating systems. This approach effectively increases available memory capacity, allowing larger or more virtual machines to run on the same hardware while alleviating core-to-memory bottlenecks.

Q. Is the memory tiering with NVMw supported on both traditional VMs and VM Service Based VMs?

A. Memory tiering happens transparently at host level. This is done at the ESX level, completely transparent to how the VM was created, so it works for both traditional VMs and Kubernetes VMs.

Q. What is the new Storage Dashboard in VMware vSphere Foundation 9.0?

A. The new Storage Dashboard in vSphere Foundation 9.0 provides a unified, federated view of all storage components, offering a single pane of glass for operational data such as alerts, health, performance, and capacity metrics. It delivers a complete performance overview of the entire vSAN infrastructure, including latency, IOPS, throughput, and storage diagnostics.

New in this release is support for vSAN Performance Diagnostics, which allows users to run diagnostics tests on clusters facing performance issues. The dashboard provides real-time insights and actionable recommendations to help identify root causes and resolve problems quickly. This capability enables organizations to proactively manage storage, improve availability, and optimize performance—while reducing costs and operational complexity.

Accelerate Innovation - Modern Workloads and Developer Experience

Q. What is VMware vSphere Kubernetes Service (VKS)?

A. VMware vSphere Kubernetes (VKS) in a built-in Kubernetes runtime service in VMware vSphere Foundation. IT run modern applications alongside traditional workloads. Running modern applications on VKS within VMware vSphere Foundation offers enterprises a powerful, unified platform that integrates with the broader VMware ecosystem, delivering a scalable, secure and efficient foundation for modern workloads.

Q. Does vSphere upstream conformant Kubernetes?

A. Yes, VMware vSphere Foundation runs a fully conformant Kubernetes distribution that is certified by Cloud Native Computing Foundation (CNCF).

Q. What's VMware Broadcom's contribution to the CNCF community?

A. VMware by Broadcom ranks among the top three contributors to the CNCF ecosystem over the past decade, demonstrating a deep and sustained commitment to open source and cloud-native innovation. Originating several key Kubernetes projects—such as Velero, Contour, Harbor, Antrea, and Pinniped—Broadcom has helped shape the Kubernetes ecosystem. The company also supports critical upstream projects including Cluster API, etcd, containerD, run, and controller-runtime. Beyond code, Broadcom actively champions Kubernetes through advocacy and thought leadership: supporting CNCF and the Linux Foundation, organizing Kubernetes Community Days and Meetups, engaging in Special Interest Groups (SIGs) to drive innovation, and contributing to CNCF Technical Advisory Groups (TAGs).

Q. How quickly can Kubernetes be deployed with VMware vSphere Kubernetes Services?

A. vSphere Kubernetes Service (VKS) offers minimal day 0 configuration, so teams can set up Kubernetes quickly and evolve later as needed.

Q. How does VMware vSphere Foundation 9.0 simplify Day 0 Kubernetes setup?

A. A new Minimal Day 0 Supervisor configuration allows teams to deploy Kubernetes with default settings and evolve the architecture later (e.g. load balancers and Workload Zones).

Q. What is the benefit of decoupling Supervisor lifecycle for VMware vSphere Foundation?

A. It allows asynchronous updates to the Kubernetes layer, enabling access to the latest innovations without waiting for VMware vSphere Foundation upgrades.

Q. How does unified SDK tooling accelerate innovation for developers?

A. The unified SDK simplifies automation and integration by providing a single, OpenAPI 3.0–compliant interface across the entire vSphere Foundation stack. With a consolidated API set and tooling, developers and administrators no longer need to manage multiple toolchains for different infrastructure components. This streamlines development, enables faster automation, and accelerates innovation.

Supercharge Workload Performance

Q. How does VMware vSphere Foundation 9.0 support high performance and large scale enterprise applications?

A. VMware vSphere Foundation 9.0 is designed to run demanding, large-scale enterprise applications by delivering industry-leading performance and scalability. It supports large VMs with up to 950 vCPUs and 16TB of memory, making it ideal for workloads like SAP HANA. Customers can consolidate workloads onto fewer hosts while improving power efficiency and simplifying infrastructure. With enhanced processor support, VMware vSphere Foundation 9.0 accommodates modern CPUs such as AMD Turin/Venice and Intel Sapphire Rapids, scaling 960 cores per socket to support the most compute-intensive environments.

Q. How does new traffic separation improve performance in vSAN storage clusters?

A. Traffic separation in vSAN storage clusters enables the use of dedicated networks for storage and compute traffic, improving efficiency and performance. By isolating storage traffic, customers can boost storage performance by up to 25%, avoid traditional I/O bottlenecks, and accelerate storage operations.

This approach allows organizations to leverage existing network infrastructure for compute, reducing costs while freeing up bandwidth for storage. In a disaggregated architecture, it also enables independent scale of compute and storage resources, providing flexibility, resilience and performance as business needs grow.

Q. How does VMware vSphere Foundation 9.0 enhance vMotion for GPU workloads?

A. VMware vSphere Foundation 9.0 introduces faster vMotion for GPU-enabled workloads, dramatically reducing migration times and minimizing disruption. With stun times under 2 seconds, organizations can achieve near-zero downtime during live migrations of AI/ML applications. This improvement is powered by parallel TCP connections, support for 100 Gbps networks, and secure memory transmission using offload engines like Intel QAT, ensuring faster and encrypted data transfer without performance overhead. These enhancements make it easier to keep GPU-intensive workloads highly available and mobile across the infrastructure.

Security, Resilience & Compliance

Q. What are the new upgraded compliance pack as a part of VMware vSphere Foundation 9.0?

A. The new upgrade compliance packs are:

New Compliance Packs:

a. NIST SP 800-171, Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations

b. NIST SP 800-53 R5
c. CIS Compliance Pack for VMware vSphere Foundation

Upgrade Compliance Packs:

a. PCI DSS Defined Approach Requirements, Version 4.0
b. The International Organization for Standardization ISO/IEC 27001:2022
c. HIPAA

Q. What encryption standards are included in VMware vSphere Foundation 9.0?

A. **Encryption standards**:

a. NIST SP 800-171, Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations
b. Fallback to TLS 1.2 support for legacy systems
c. FIPS 140-2 certified cryptographics modules are active out of the box
d. vTMP, Secure Boot, Single Sign On and Multi Factor Authentication (MFA), further enhance platform hardening.

Q. What version of TLS does VMware vSphere support?

A. VMware vSphere Foundation supports both TLS 1.2 and TLS 1.3. With the latest release, VMware vSphere Foundation supports the TLS 1.3 protocol by default. If needed, vSphere provides the ability to fail back to TLS 1.2 as well to support legacy product integration.

Q. What is new FIPS compliance?

A. VMware vSphere Foundation runs in FIPS-compliant mode by default, utilizing FIPS 140-2 certified cryptographic modules as recommended by the US government. This ensures compliance with regulations, enhances data security by protecting sensitive information from breaches and cyberattacks, and faster trust and confidence in the VMware software.

Q. Is license management in this VMware vSphere Foundation 9.0 release?

A. The unified licensing model gives customers a single place to manage license keys across deployments, providing a centralized view of license, reducing administrative overhead, improving license tracing accuracy, and providing a centralized view of license consumption. This saves time and effort during audits and planning, ensuring more efficient management license entitlement.

Q. How does Live Patching of ESX enhance security?

A. It applies patches without VM migration or downtime enabling faster migration of vulernabilities with zro disruption.

Q. What is vSAN-to-vSAN Replication with Deep Snapshots in vSphere Foundation 9.0?

A. vSAN-to-vSAN Replication with Deep Snapshots is a simple, high-performance, and cost-effective replication solution for vSphere VMs and containers. Built on vSAN ESA (Express Storage Architecture) snapshots, it offers scalable, low-overhead replication with minimal performance impact. This feature is easy to configure using a guided workflow in vCenter, requires minimal infrastructure, and is more affordable than traditional array-based solutions. It helps enhance resilience and accelerate recovery, making it ideal for modern workloads in both primary and secondary sites.

vSAN/HCI Storage:

Q. What is vSAN?

A. VMware vSAN is enterprise software-defined storage built natively into the vSphere hypervisor. It aggregates the local disks and flash devices of ESX hosts into a single, shared datastore—eliminating the need for traditional SAN or NAS arrays and delivering storage services right in the hypervisor layer.

Q. How does VMware vSAN deliver hyperconverged infrastructure (HCI)?

A. VMware vSAN is embedded in the ESX hypervisor on standard x86 servers, allowing compute and storage to share a common hardware pool. Each host contributes its local disks to a single, distributed datastore, and Storage Policy-Based Management

(SPBM) defines performance, capacity, and resilience at the VM, virtual disk, or Kubernetes persistent-volume level. Policy-driven automation places, replicates, or erasure-codes data across nodes to ensure workloads—whether traditional VMs or containerized applications—meet SLAs. Adding another host immediately increases CPU, memory, and storage resources in one step. All SPBM policies, health monitoring, and lifecycle updates are managed through vCenter Server via the vSphere Client, resulting in a unified, scale-out platform that delivers simplicity, cost savings, and operational agility.

Q. Can I use vSAN for Kubernetes workloads with VMware vSphere Foundation?

A. Yes, vSAN is fully supported for vSphere with Kubernetes (VKS) workloads, which is also supported in VMware vSphere Foundation. This helps deliver a performant and resilient storage layer for modern apps.

Q. Where can I find more information and resources?

A. You can find VMware vSphere Foundation information here:

VMware vSphere Foundation

Tech Doc

Component Product Pages:

- vSphere
- vSAN
- VCF Operations

Community

Broadcom Software Maintenance Essential Support: VMware Learning

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