

# VMware vSphere Foundation Frequently Asked Questions (FAQs)



## VMware vSphere Foundation Release

VMware vSphere Foundation 5.2

### Q. What's new with VMware vSphere Foundation (VVF) 5.2?

#### A. New Features in VMware vSphere Foundation 5.2

- Boost Operational Efficiency
  - New console experience
  - Live Patching for ESX
  - Intelligent alerts enhancements
- Accelerate Innovation
  - vSphere Kubernetes Service (formerly Tanzu Kubernetes Grid service) as an independent service
  - vGPU profiles and Distributed Resource Scheduler (DRS) support
- Elevate Security
  - Single sign-on for all VVF components
  - Unified licensing

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

### Q. When will VMware vSphere Foundation 5.2 be generally available?

A. VMware vSphere Foundation 5.2 is generally available as of July 23, 2024.

## General Pricing / Packaging

### Q. What is VMware vSphere Foundation?

A. VMware vSphere Foundation (VVF) is the enterprise workload engine built to optimize the IT infrastructure for organizations by boosting operational efficiency,

supercharging workload performance, elevating security, and accelerating innovation. It delivers intelligent operations management, purpose-built to enable the best performance, availability, and efficiency from your infrastructure while providing comprehensive visibility and analytics in one place. vSphere Foundation includes vSAN, a hyperconverged infrastructure (HCI) solution for software-defined storage.

### 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
- VMware vSAN Enterprise Plus - *includes .25 TiB\* capacity per core.*

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

*\*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 5.2?

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](#)



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*\*VMware vSphere Foundation (VVF) entitles a customer to vSAN for .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?

- A. [Broadcom Software Maintenance Essential Support](#) is included in VMware vSphere Foundation

## Q. How can I purchase VMware vSphere Foundation?

- A. VMware vSphere Foundation can be purchased as a subscription. Consult your Broadcom Sales Representative, channel partner, or qualified OEM (Original Equipment Manufacturer) partner for pricing.

## Q. Can I purchase individual components of VMware vSphere Foundation?

- A. Customers can only purchase eligible offerings: VMware Cloud Foundation and VMware vSphere Foundation. The following editions of vSphere can still be purchased to meet a broad spectrum of customer's needs and sizes:

- VMware vSphere Standard (vSphere Standard and vCenter Standard)
- vSphere Enterprise Plus\* (*vSphere Enterprise Plus and vCenter Standard*)
- VMware vSphere Foundation (*vSphere Enterprise Plus, vCenter Standard, vSphere Kubernetes Services, VMware Cloud Foundation Operations, VMware Cloud Operations for logs and VMware Cloud Foundation Operations diagnostics, vSAN Enterprise Plus\*\**)

\*vSphere Enterprise Plus is also available as a component of VMware Cloud Foundation.

\*\*[vSAN Enterprise Plus includes .25 TiB per core of storage](#). Additional vSAN capacity can be licensed with the vSAN add-on.

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

- A. To understand the feature differences between VMware vSphere editions and VMware vSphere Foundation, refer to the [VMware vSphere Product Line Comparison](#). This document provides a detailed comparison of features across various vSphere editions, including vSphere Foundation.

## Q. Where can I find additional information and resources about VMware vSphere Foundation?

- A. You can find additional information about VMware vSphere Foundation:

Product Page:

<https://www.vmware.com/products/cloud-infrastructure/vsphere-foundation>

VCF Operations Datasheet:

<https://www.vmware.com/docs/vmw-vcf-operations-datasheet>

vSAN/HCI Datasheet:

<https://www.vmware.com/docs/vmware-vsan-datasheet>

## Operational Efficiency

### Q. What does VMware Cloud Foundation Operations do in VMware vSphere Foundation?

- A. VMware Cloud Foundation Operations provides advanced tools for managing and monitoring VMware vSphere Foundation. It offers proactive insights, AI-driven visibility, intelligent remediation, predictive analytics, and integrated security and compliance. These capabilities help IT teams efficiently plan, optimize, and scale private cloud environments while maintaining strong performance and security across IT infrastructure, including data pulled from vCenter.

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## Q. What does the new console in VMware Cloud Foundation Operations do for vSphere Foundation 5.2?

A. In VMware vSphere Foundation 5.2, the new console introduced by VMware Cloud Foundation Operations provides a unified interface for administrators to monitor and manage the entire infrastructure. This console offers consolidated diagnostics, enabling quick identification and remediation of issues, and integrates features such as centralized certificate management. These enhancements streamline operations, improve visibility, and facilitate efficient management of vSphere Foundation components.

## Q. How does VMware vSphere Foundation improve operational efficiency?

A. VMware vSphere Foundation provides intelligent operations and advanced analytics through the following features:

- **Infrastructure visibility:** Ability to collect performance data across all endpoints, from physical to virtual VMs to Kubernetes clusters, to help meet SLAs.
- **VM and container monitoring:** Ensure VMs and containers are running properly, monitoring them for performance, availability, and user experience.
- **AI-driving troubleshooting and remediation:** Provides a troubleshooting workbench with machine learning indexing for efficient anomaly detection and faster troubleshooting and root cause analysis of failures.

## Q. Can VMware vSphere Foundation help in capacity and cost management?

A. Yes, VMware vSphere Foundation helps capacity and cost management. Features include:

- **Capacity:** Efficient capacity management of the workload resources to apply optimal consolidation, proactive planning, and smart procurement. VMware vSphere Foundation

evaluates capacity requirements based on historical resource utilization and real-time predictive projections.

- **Cost:** Application workload costs are based on several attributes such as CPU, memory, server types, etc. VMware vSphere Foundation can help reduce costs by identifying unused resources such as powered-off VMs, orphaned disks, obsolete snapshots, and idle VMs to claim back capacity waste. Additionally, reclamation workflows streamline and automate the identification and reallocation of capacity.
- **Workload Planning:** VMware vSphere Foundation provides the ability to define and use “What-if” scenarios to model proposed changes to capacity, new workloads, or workload migrations. It will check if resources must be added or removed to support the models and provide insight on cost changes.
- **Total Cost of Ownership (TCO) with Showback/Chargebacks:** In VMware vSphere Foundation, dashboards show an overview of costs associated with the workloads and the application owners based on actual use.

These features enable organizations to proactively manage infrastructure, reduce costs, and provide availability to meet business demands,

## Q. What lifecycle management enhancements are available with VMware vSphere Foundation?

A. VMware vSphere Foundation includes several lifecycle management enhancements designed to streamline updates, improve efficiency, and enhance security:

- **VMware ESX Lifecycle Management Service:** Centralizes the orchestration of updates across the entire fleet of VMware ESX hosts. This service reduces the time and effort required for upgrades, enabling more frequent updates to



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maintain security and take advantage of the latest ESX capabilities.

- **Reduced Downtime for vCenter Upgrades:** Upgrade vCenter with minimal disruption, cutting it from approximately an hour to a few minutes. Planned maintenance windows can now be far shorter, enabling more frequent upgrades to benefit from the latest vCenter features.
- **Host Configuration at Cluster Level:** Manage desired host configuration, compliance, remediation, and security standards seamlessly at cluster level. Easily copy host configurations from all hosts when new clusters are created.
- **Live Patching for ESX:** Apply critical updates to ESX hosts without requiring reboots, ensuring minimal disruption to workloads while maintaining security and stability.

## Q. How does Live Patching for ESX in VMware vSphere Foundation 5.2 benefit customers?

- A. Live Patching for ESX in VMware vSphere Foundation 5.2 enables customers to apply updates directly to running hosts without requiring reboots or disrupting workloads. This feature minimizes downtime, accelerates the application of critical security patches, and eliminates the need for disruptive maintenance windows, ensuring a more efficient and secure IT environment.

## Q. What are the different alert enhancements in VMware vSphere Foundation 5.2?

- A. VMware vSphere Foundation 5.2 introduces Intelligent Alert Clustering, which consolidates multiple alerts related to the same issue into a single view. This reduces alert noise and enables more efficient focus on critical issues. The streamlined alerting enables faster troubleshooting and potentially reduced downtime, improving operational efficiency.

## vSphere Supervisor Service

### Q. What is the vSphere Kubernetes Service (VKS)?

- A. vSphere Kubernetes Service (VKS) is an integrated Kubernetes runtime in VMware vSphere Foundation. It enables organizations to run both VMs and containers on the same platform. VKS provides a single API for management, seamlessly combining the benefits of VM operations with modern container orchestration. This simplifies infrastructure management and empowers Dev Ops and Platform Engineering teams to deploy and manage consistent, compliant, and conformant Kubernetes clusters.

### Q. What is new with vSphere Kubernetes Service in VMware vSphere Foundation 5.2?

- A. vSphere Kubernetes Service (VKS) is now an independent service. The independent VKS feature decouples VKS from vCenter, enabling asynchronous updates that align with upstream Kubernetes versions. This feature allows businesses to update VKS independently of the standard vSphere release cycle, ensuring access to the latest Kubernetes enhancements, flexibility, and improved control over Kubernetes deployments.

### Q. What is VM Service in VMware vSphere Foundation?

- A. VM Service in VMware vSphere Foundation enables developers to create and manage VMs directly through Kubernetes, eliminating the need for access to vSphere Client. This integration allows developers to provision VMs using Kubernetes-native tools and APIs, streamlining the deployment process and enhancing collaboration between development and operations teams.

### Q. What capabilities does Local Consumption Interface (LCI) provide VMware vSphere Foundation 5.2?

- A. In VMware vSphere Foundation 5.2, the Local Consumption Interface (LCI) introduces a new UI within

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vCenter, integrated with the vSphere Supervisor. This interface allows users to provision and manage VMs and Kubernetes clusters, configure load balancers and persistent volumes, and access essential infrastructure services directly within each Namespace. It also supports advanced configurations for VMs and Kubernetes clusters and generates YAML files for users who prefer API-based interactions.

## Performance

### Q. What is autoscaling for Kubernetes in VMware vSphere Foundation 5.2?

A. Autoscaling for Kubernetes in VMware vSphere Foundation 5.2 automatically adjusts the number of worker nodes in a cluster based on resource demand. This feature enables scaling down of underutilized nodes to optimize costs and scaling up of nodes to accommodate increased workloads, ensuring efficient resource utilization while maintaining consistent performance.

### Q. How does vSphere Foundation 5.2 enhance AI workload performance and optimize GPU resources?

A. VMware vSphere Foundation 5.2 enhances AI workload performance by supporting larger models, reducing training times, and using NVIDIA NVSwitch for high-speed GPU interconnects. It optimizes GPU resources by supporting heterogeneous virtual GPU (vGPU) profiles, allowing for better resource sharing and efficient utilization through GPU-aware Distributed Resource Scheduler (DRS) for efficient utilization.

### Q. What are the GPU enhancements in VMware vSphere Foundation 5.2?

A. VMware vSphere Foundation 5.2. The release introduces support for up to 16 vGPUs per VM, utilizes NVIDIA NVSwitch for high-speed GPU interconnects, and allows for heterogeneous vGPU profiles to optimize resource allocation. Additionally, it features GPU-aware

Distributed Resource Scheduler (DRS) for intelligent workload placement and efficient resource utilization, enhancing performance and flexibility for GPU-intensive workloads.

### Q. How does VMware Foundation 5.2 enable hosting different types of workloads on a single GPU, and what are the benefits?

A. VMware vSphere Foundation 5.2 enables hosting different workloads on a single GPU by supporting heterogeneous vGPU profiles, allowing different workloads to be assigned to the same physical GPU. Further, these vGPU profiles can have different memory sizes, allowing better sharing of precious GPU resources, increasing GPU utilization, and reducing costs by minimizing workload fragmentation.

## Security

### Q. How does VMware vSphere Foundation deliver platform security?

A. VMware vSphere Foundation delivers comprehensive platform security with features like secure boot and hardware TPM integration to ensure hypervisor integrity, data-at-rest encryption for safeguarding sensitive information, and vSphere Trust Authority for attesting trusted hosts. It supports access control through single sign-on (SSO), multi-factor authentication (MFA), and federated identity management with providers like Microsoft Active Directory and Okta. Additionally, virtual TPM (vTPM) enhances in-guest security, while these measures collectively ensure data confidentiality, integrity, and availability across the virtualized environment.

### Q. What is single sign-on with VMware vSphere Foundation 5.2?

A. Single sign-on with VMware vSphere Foundation 5.2 allows IT admins to sign in once to gain access to all integrated components in VMware vSphere



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Foundation, streamlining authentication across the platform.

## Q. How do customers benefit from a unified licensing model in VMware vSphere Foundation?

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 VMware vSphere Foundation support compliance with industry regulations?

A. VMware vSphere Foundation includes VMware Cloud Foundation Operations for logs, which offer built-in compliance features to help organizations meet standards like PCI-DSS, HIPAA, and GDPR. With real-time compliance monitoring and automated audit reporting, VMware vSphere Foundation enables IT teams to enforce regulatory requirements and maintain continuous compliance across their infrastructure.

## Storage

### Q. What is vSAN?

A. VMware vSAN is enterprise-grade storage virtualization software for hyperconverged infrastructure (HCI). It aggregates local storage from vSphere hosts into a shared datastore, eliminating the need for traditional external storage arrays. Seamlessly integrated with vSphere Foundation, vSAN provides efficient, scalable, and high-performance storage, simplifying management and reducing costs.

## Q. How is VMware vSphere Foundation a Hyperconverged Infrastructure (HCI) solution?

A. In VMware vSphere Foundation, vSAN is integrated with vSphere to provide an enterprise-grade Hyperconverged Infrastructure solution. This integration combines compute (vSphere) and storage (vSAN) resources on industry-standard x86 servers. vSAN is embedded directly into the VMware ESX hypervisor, virtualizing local physical storage resources on ESX hosts to create a shared storage pool that can be allocated to VMs, applications, and containers. Additionally, vSAN/HCI simplifies data center operations and reduces total cost of ownership (TCO) by leveraging standard servers and enabling incremental scaling.

## Q. How does vSAN, as part of hyperconverged infrastructure (HCI) within vSphere, enhance storage and resiliency?

A. As a key component of hyperconverged infrastructure (HCI) within vSphere Foundation, vSAN aggregates the local storage of each vSphere host into a single shared pool accessible to all VMs and containers, eliminating the need for separate storage arrays. Using Storage Policy-Based Management (SPBM), administrators can define specific storage policies to optimize data placement for performance and availability. This tight integration of vSphere and vSAN simplifies management, scales seamlessly, and enhances fault tolerance across clusters.

## Q. What benefit does VMware Cloud Foundation Operations bring to vSphere Foundation with vSAN?

A. VMware Cloud Foundation Operations enhances vSphere Foundation with vSAN by providing intelligent operations tailored to storage management. It offers proactive monitoring, capacity planning, and advanced analytics to optimize storage performance, ensure efficient resource utilization, and improve overall operational efficiency.

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**Q. How does vSAN support Kubernetes workloads on VMware vSphere Foundation?**

A. vSAN provides persistent, reliable storage for Kubernetes workloads on VMware vSphere Foundation. It enables containerized applications to run efficiently by integrating with Kubernetes to deliver scalable and high-performance storage directly within the vSphere environment. vSAN ensures seamless operations for Kubernetes workloads by leveraging Storage Policy-Based Management (SPBM) to define policies for availability, performance, and capacity.

**Q. How do I learn more about vSAN?**

A. You can find additional information about VMware vSAN.

Webpage: <https://www.vmware.com/products/cloud-infrastructure/vsan>

Whitepaper: [VMware vSAN Technology Overview](#)