VMware vSphere
The Essential Services for the Modern Hybrid Cloud

**vSphere 7** delivers simplified lifecycle management, intrinsic security and control, and application and hardware acceleration for enterprise applications.

**What’s New in Version 7?**
- Simplified Lifecycle Management- new tools for simplified upgrades, patching and configurations
- Intrinsic Security and Control- vSphere Trust Authority and Identity federation
- Application and Hardware Acceleration- Elastic infrastructure for AI/ML applications. Enhancements in DRS and vMotion for large and mission critical workloads

**vSphere 7 with Kubernetes,** available through **VMware Cloud Foundation,** delivers VMware Cloud Foundation Services and application-focused management for streamlined development, agile operations, and accelerated innovation. Applications can be deployed using any combination of virtual machines, containers and Kubernetes.

**What’s available in vSphere 7 with Kubernetes?**
- All capabilities of Version 7 such as simplified lifecycle management, intrinsic security and control, and application and hardware acceleration to name a few.
- **VMware Cloud Foundation Services** – Newly introduced services for developers using vSphere with Kubernetes, which is available in VMware Cloud Foundation
- **Application-focused management**– Organize Kubernetes clusters, containers and virtual machines within vCenter server.
New features in vSphere 7

- **vSphere Lifecycle Manager**

  - **Next-Gen Infrastructure Image Management** Manage infrastructure images to patch, update or upgrade ESXi clusters using a desired state model

  - **vCenter Server Profiles** Desired state configuration 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 & interoperability for vCenter Server for upgrade scenarios. We will allow users to generate the interoperability & 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.

- **Identity federation with ADFS** Secure access and account management

- **vSphere Trust Authority** Remote attestation for sensitive workloads

- **Dynamic DirectPath IO** Support for vGPU and DirectPath I/O initial VM placement

- **DRS** Redesigned with a more workload centric approach, DRS balances resources allocated to workloads in a vSphere cluster.

- **vSphere Bitfusion** Delivery of elastic infrastructure for AI/ML applications using cloud pools of hardware accelerators such as GPUs.

- **vMotion®** The recent enhancements in vMotion logic provides non-disruptive operations, irrespective of the size of VMs, specifically for large and mission critical workloads

Features of vSphere 7 with Kubernetes (available through VMware Cloud Foundation)

- **VMware Cloud Foundation Services** consists of two families of services - Tanzu Runtime Services and Hybrid Infrastructure Services. Powered by innovations in vSphere 7 with Kubernetes, these services enable a self-service experience through Kubernetes APIs.

  - **Tanzu Runtime Services** allow developers to build applications with freedom using the upstream conformant Kubernetes distributions.

  - **Hybrid Infrastructure Services** allow developers to provision and work with infrastructure such as compute, storage, and networking.

- **Tanzu Kubernetes Grid Service** The Tanzu Kubernetes Grid Service allows developers to manage consistent, compliant and conformant Kubernetes clusters

- **vSphere Pod Service** The vSphere Pod Service allows developers to run containers directly on the hypervisor for improved security, performance, and manageability

- **Storage Service** The Storage Service allows developers to manage persistent disks for use with containers, Kubernetes and virtual machines

- **Network Service** The Network Service allows developers to manage Virtual Routers, Load Balancers and Firewall Rules

- **Registry Service** The Registry Service allows developers to store, manage and secure Docker and OCI images
Key vSphere editions

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<td>Consolidate data center hardware and enable business continuity through server</td>
<td>VMware vSphere Enterprise Plus includes the full range of vSphere features for</td>
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<td>virtualization, VM-aware storage and live migration capabilities. Share data</td>
<td>transforming datacenters into a simplified cloud operating environment providing</td>
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<td>center resources across the boundaries of clusters. Get stronger virtualization</td>
<td>the next generation of speed, security and simplicity.</td>
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<td>security with enhanced endpoint protection.</td>
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Key vSphere features:

- vMotion
- Distributed Resource Scheduling
- Proactive High Availability
- VM-Aware Storage
- API and Policy Driven Storage Capabilities
- Support for 4K Native Storage
- vSphere Persistent Memory
- vCenter Hybrid Linked Mode
- Per-VM Enhanced vMotion Compatibility
- Live Migration of Workloads
- Protect VM and Data
- VM-level Encryption
- Support for TPM 2.0
- Virtual TPM 2.0
- FIPS 140-2 Compliance
- Ensure System Uptime
- Share Data Center Resources
- Endpoint Security
- Fault Tolerance
- Instant Clone
- Centralized Network Management
- Load Balancing
- Prioritize Resources to Virtual Machines
- Rapid Deployment and Provisioning
- Accelerated Graphics for Virtual Machines
- Elastic infrastructure for AI/ML applications using vSphere Bitfusion
- Support for Suspend, Resume, vMotion, multi- vGPU per VM and Snapshot for NVIDIA vGPUs
- Automated Discovery of Application Assets, Intent, and Communication
- Contextual Intelligence of Application State
- Orchestrated or Automated Responses to Security Threats
- Prioritized Vulnerability Reporting Across the Entire Data Center
For additional details on features in each vSphere edition and/or version, please refer to the technical resources below:

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