VMware vSphere®

The enterprise workload engine to optimize your IT infrastructure

VMware vSphere At a glance

Foundation for path to private cloud

vSphere provides an enterprise grade platform that helps keep pace with technological innovation to support modern and traditional workloads

vSphere helps to extract the maximum performance for workloads via easier management of underlying infrastructure, dynamically load balancing of workloads and freeing up CPUs to do more by offloading infrastructure functions

vSphere provides the best intrinsically secure platform to enforce security across the entire infrastructure stack

Modernize Compute Infrastructure

Simplifies Management to make it easy for Cloud admins to operate their infrastructure efficiently

Delivers a robust future-ready infrastructure that allows scaling for growth

Reduces TCO, and maximizes utilization to make the most out of current investments

Deliver a future-ready private cloud infrastructure

VMware vSphere with VCF 9.0 is the enterprise workload engine that modernizes compute infrastructure with a future-ready, scalable infrastructure and simplified management that allows organizations to reduce TCO, maximize utilization and make the most of their current investments. vSphere provides a powerful foundation for modern workloads with easy self-service access to infrastructure services and a built-in Kubernetes runtime, with upstream conformant certified Kubernetes distributions to run containers consistently alongside VMs. vSphere enables an intrinsically secure platform with better regulatory compliance of security configurations and industry best practices out-of-the-box.

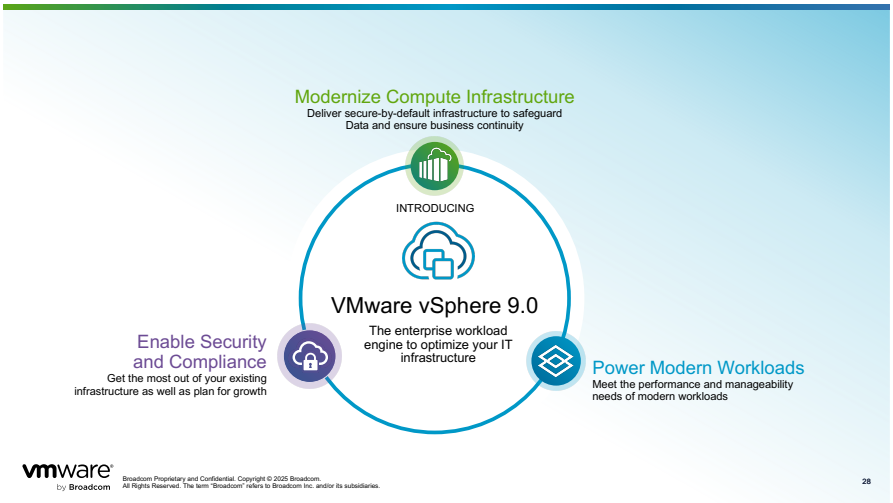

Figure 1: Drive towards a successful path to private cloud infrastructure with vSphere

Overcoming IT complexity

Building a private cloud for infrastructure is a key focus of many organizations today, yet its progress is often hindered by the complexity of existing infrastructure environments. While IT environments have always been intricate, the rapid evolution of hardware technologies and software development has further amplified this complexity. At the same time, organizations must continue supporting traditional applications built on legacy three-tier, siloed architectures, even as modern applications increasingly rely on containerization and microservices.

To address these challenges, IT organizations must embrace a unified approach—integrating legacy and modern technologies, closing skill gaps, optimizing resource utilization, and implementing scalable management solutions. By simplifying management processes, enabling efficient lifecycle management, and maintaining cost-conscious strategies, businesses can enhance agility, improve operational efficiency, and drive towards a successful

Power Modern Workloads

Delivers a single platform for running VMs and containers with consistent tools

Provides a built-in Kubernetes runtime with upstream conformant certified Kubernetes distribution

Improves consumer experience via easy self-service access for consumers and platform engineering teams to a robust set of cluster services

Enables Security and Compliance

Intrinsically secure platform with built-in out-of-the-box security configurations

Standards based federated authentication with enterprise identity providers

Better regulatory compliance of security configurations and industry best practices

path to private cloud infrastructure. Learn how vSphere helps meet these challenges today.

Key Features and Capabilities

Simplified Operations

• vSphere makes it easy for VI admins and Cloud admins to operate their infrastructure efficiently.

• vSphere provides faster, easier lifecycle management via pre-staging ESX images, remediating hosts in parallel as well as by applying updates in parallel across clusters.

• vSphere can manage infrastructure images to patch, update, or upgrade clusters using a desired state model.

• vSphere can reduce maintenance windows via reduced downtime upgrades for vCenter as well as Live patching for ESX for near zero downtime for security patches.

Enhanced Workload Performance

• With a broad ecosystem of supported GPUs, vSphere significantly enhances workload performance, especially for modern AI workloads

• vSphere on DPUs (VMware vSphere® Distributed Services EngineTM) helps accelerate infrastructure network functions on the Data Processing Unit (DPU) by utilizing available CPU cycles achieve higher workload consolidation per host, further improving performance.

• Distributed Resource SchedulerTM (DRS) enables automatic load balancing of resources allocated to workloads in a vSphere cluster. Storage DRS optimizes VM data placement as the VM is created and used over time.

Kubernetes runtime and Supervisor services

• One API to provision and manage both VMs and containers: A single, consistent API allows users to create, deploy, and manage both VMs and Kubernetes clusters

• Self-service access to cloud services with governance: Through a role-based access model, platform engineers can leverage self-service capabilities to provision infrastructure resources (compute, storage, and networking) on demand.

• Upstream conformant Certified Kubernetes Release independent from vSphere: VCF runs a fully upstream conformant Kubernetes distribution that is certified by Cloud Native Computing Foundation (CNCF). Kubernetes clusters and the vSphere Kubernetes.

• Integrated VKS Cluster Management and Service Mesh in VCF: VKS Cluster Management (previously known as Tanzu Mission Control) and Service Mesh are now part of VCF. With the integration of both tools, it completes VCF with unified Kubernetes operations with visibility, governance, and control,

and further enhances end-to-end security and observability for distributed applications.

• Flexibility to enable OS FIPS Mode: With vSphere Kubernetes Service 3.3, it introduces a new configuration option for enabling FIPS mode at the OS level.

• Cluster Autoscaler: Clusters can now scale up from zero and down to zero worker nodes when using VKr versions 1.31.4 and later.

Improved Efficiency

• Advanced memory tiering with NVMe, especially for data intensive workloads, helps in better workload and VM consolidation, improving CPU utilization while lowering TCO.

• Multi-instance GPU and virtual GPU support along with heterogeneous vGPU profiles enables better sharing of precious GPU resources improving utilization and further reducing TCO.

Increased Business Continuity

• High Availability with vSphere automatically restarts your VMs following physical machine failure.

• Fault Tolerance provides continuous availability of any application in the event of a hardware failure with no data loss or downtime.

• 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. Storage vMotion avoids downtime for planned storage maintenance.

Built-in Security

• Identity federation with Microsoft Entra ID (formerly Azure AD), ADFS and Okta: Secure access and account management.

• Virtual Machine Encryption: Data-at-rest encryption for virtual machine data and disks.

• vSphere Trust Authority: Remote attestation for sensitive workloads.

For more information or to purchase VMware by Broadcom products

Call 877-4-VMWARE (outside North America, +1-650-427-5000)

Learn More

Get more detail about product capabilities, new features as well access to useful resources by visiting VMware vSphere product and resources pages.

Learn how you can leverage VMware vSphere as part of VMware Cloud Foundation and VMware vSphere Foundation, by visiting the product pages.

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