



VMware vSphere™ 4.1

Pricing, Packaging and Licensing Overview

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WHITE PAPER

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Executive Summary

VMware vSphere™ is the most complete and robust virtualization platform on the market today for building cloud infrastructures. The pricing, packaging and licensing schema for VMware vSphere 4.1 is designed to simplify the experience of buying, deploying and managing VMware products. Several changes in VMware vSphere 4.1 provide customers with additional value and flexibility:

- Current customers will receive the new functionality in VMware vSphere as part of their active support and subscription (SnS) contracts.
- Upgrade paths among VMware vSphere kits and editions provide a cost-effective way to upgrade to more advanced functionality.
- Capacity pricing and centralized license management provide customers with more flexibility and simplify how customers purchase and deploy VMware vSphere.

This white paper outlines the pricing and packaging options available to customers when purchasing VMware vSphere and VMware vCenter™ Server. It also contains information about changes to pricing and licensing, upgrade paths, and SnS entitlements in vSphere 4.1.

VMware vSphere at a Glance

VMware vSphere is the industry's most complete virtualization platform and the best platform for building cloud infrastructures. vSphere transforms datacenters into dramatically simplified cloud infrastructures, enabling the next generation of flexible, reliable IT services.

Key Components

- **ESXi and ESX hypervisors**—vSphere allows for a choice of VMware ESXi™ or VMware ESX® hypervisor architectures. VMware recommends that customers deploy vSphere 4.1 on the ESXi hypervisor architecture as a best practice.
- **Centralized management**—VMware vCenter Server provides unified management for vSphere hosts and virtual machines and unlocks the key features in vSphere. VMware vCenter Server is licensed separately for use with vSphere editions and is included in VMware vSphere Essentials kits and vSphere Acceleration Kits.
- **Agent**—VMware vCenter Server Agent enables central management through vCenter Server.

Key Features

- **Infrastructure services**—Dynamically allocate computing, storage and networking resources.
- **Application services**—Deliver the highest levels of availability, security and scalability.

What's New in vSphere 4.1?

- **VMware Storage I/O Control**—Set quality-of-service priorities for guaranteed access to storage resources.
- **VMware Network I/O Control**—Set network quality-of-service priorities for guaranteed access to network resources.
- **VMware vStorage APIs for Array Integration**—Offload tasks to supported disk arrays for improved performance and more efficient resource utilization.
- **VMware Virtual Serial Port Concentrator**—Enhance management and aggregation through serial ports for low-bandwidth links or Linux environments.

The sections that follow outline the pricing, licensing and packaging options available to vSphere customers, along with support entitlement and upgrade paths for SnS.

SnS is required for all vSphere purchases.

vSphere Licensing Overview

The pricing and licensing model for vSphere 4.1 is designed to simplify and optimize the purchasing, deployment and support experience for all customers.

CPU Capacity

Each vSphere kit or edition is licensed on a **per-processor** basis, according to the number of physical processors (CPUs) on each host. In the case of vSphere kits, the listed entitlement for CPU capacity discussed later in this document applies to more than just one host. Customers can purchase and deploy or redeploy any mix of servers, as required; each processor in a socket may contain multiple cores. Customers may deploy vSphere on physical processors that contain up to six processing cores at no additional charge (see following note). Customers that require limits beyond the processor entitlements must purchase additional vSphere licenses.

Note—VMware vSphere Advanced and Enterprise Plus editions include expanded core entitlements up to 12 cores per CPU.

Memory Capacity (RAM)

Each vSphere kit or edition is entitled to use up to 256GB RAM per physical server (see following note). In the case of vSphere kits, the listed entitlement for RAM capacity discussed later in this document applies to more than just one host. Customers that require memory beyond the entitlements must purchase additional vSphere licenses.

Note—VMware vSphere Enterprise Plus edition has no memory limit or restriction.

License Management

VMware vSphere licenses are simple license keys (25-character alphanumeric strings) that contain encrypted information about the kit or edition purchased and the processor quantity. These license keys do not contain any server-specific information and are not tied to a specific piece of hardware. This means that the same license key can be assigned to multiple vSphere hosts, as long as the sum of physical processors on those hosts does not exceed the encoded processor quantity in the license key.

Centralized Licensing with No Single Point of Failure

VMware vCenter Server is the recommended interface for license assignment to VMware vSphere hosts. When a license key is assigned by vCenter Server, it is copied to the host and saved in a persistent format. In the event that the host becomes disconnected from VMware vCenter Server, the license key remains active on the host indefinitely, even after a host reboot. Only a deliberate licensing operation by the user can remove or replace a host license key.

Decentralized Licensing Option

Although VMware recommends that customers assign all vSphere licenses centrally through VMware vCenter Server, customers also have the option to assign their license keys directly to individual hosts. There is no difference between license keys assigned directly and those assigned centrally. When a vSphere host is added to the vCenter Server inventory, any license key already on the host will become available for management, reporting and assignment in vCenter Server, just like any license key added directly via VMware vCenter Server.

For more information on VMware vSphere licensing, visit <http://www.vmware.com/support/licensing.html>.

vSphere Kits and Editions

To simplify and streamline the experience of purchasing and deploying vSphere, VMware offers several vSphere kits and editions designed for a wide variety of deployment scenarios and customer types.

vSphere Essentials Kits

VMware vSphere Essentials kits are all-in-one solutions that combine virtualization for up to three physical servers (up to two processors each) with centralized management capabilities. The kits are self-contained solutions and may not be decoupled or combined with other VMware vSphere editions.

vSphere Essentials

The VMware vSphere Essentials kit provides an all-in-one solution for small offices to virtualize three physical servers for consolidating and managing applications to reduce hardware and operating costs with a low upfront investment. vSphere Essentials includes the following components:

- Hypervisor, with choice of ESXi or ESX architectures (VMware recommends ESXi)
- VMware vStorage VMFS
- Four-way virtual SMP
- VMware vCenter Server Agent
- VMware vStorage APIs for Data Protection
- VMware vCenter Update Manager
- VMware vCenter Server for Essentials

The VMware vSphere Essentials kit must be purchased along with a one-year subscription to software patches and updates. Support is optional and available on a per-incident basis.

SnS is required for all vSphere purchases.

vSphere Essentials Plus

The VMware vSphere Essentials Plus kit provides an all-in-one virtualization solution that includes application availability and data protection capabilities for always-on IT. vSphere Essentials Plus includes all the capabilities of vSphere Essentials, along with the following additional features:

- VMware vMotion™ (new)
- VMware High Availability
- VMware Data Recovery

SnS for VMware vSphere Essentials Plus is sold separately, and a minimum of one year of SnS is required.

vSphere Essentials for Retail and Branch Office Kits

VMware vSphere Essentials kits are also available for Retail and Branch Offices. These kits offer a package solution for each of a mid-size or enterprise's branch offices in order to extend agility, security and efficiency across the organization. Unlike the Essentials and Essentials Plus kits discussed earlier, these retail and branch office packages can be managed at the remote office or be centrally managed from another location running vCenter Server.

vSphere Essentials for Retail and Branch Offices

VMware vSphere Essentials Plus for Retail and Branch Offices provides a turnkey solution to transform all of a mid-size or enterprise's branch offices into more agile, secure and cost-effective businesses.

vSphere Essentials for Retail and Branch Offices includes the following:

- Hypervisor, with choice of ESXi or ESX architectures (VMware recommends ESXi)
- VMware vStorage VMFS
- Four-way virtual SMP
- VMware vCenter Server Agent
- VMware vStorage APIs for Data Protection
- VMware vCenter Update Manager
- VMware vCenter Server for Essentials

The VMware vSphere Essentials kit for Retail and Branch Offices must be purchased along with a one-year subscription to software patches and updates. Support is optional and available on a per-incident basis. There is a maximum of three virtualized hosts per site and a minimum initial order of a starter kit (covering 10 sites) plus the ability to add-on sites (per 1) as required.

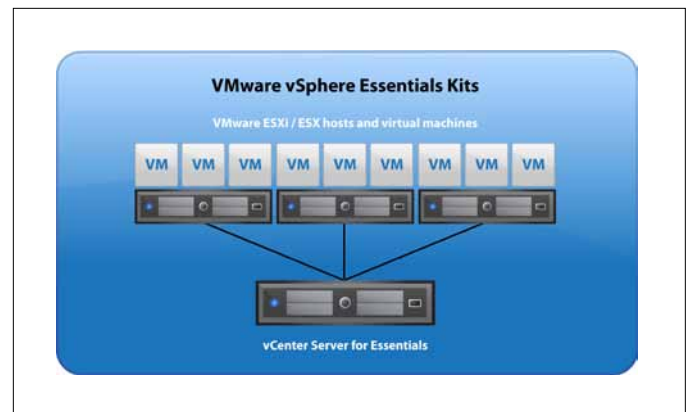
vSphere Essentials Plus for Retail and Branch Offices

VMware vSphere Essentials Plus for Retail and Branch Offices provides a turnkey solution to transform all of an enterprise's branch offices into more agile, secure and cost-effective businesses with superior application availability and data protection.

vSphere Essentials Plus for Retail and Branch Offices has all the features of the Essentials for Retail and Branch Offices kit plus the following features:

- VMware High Availability
- VMware Data Recovery
- VMware vMotion

The VMware vSphere Essentials Plus kit for Retail and Branch Offices follows the same purchase rules described for the Essentials kit for Retail and Branch Offices (starter kit purchase, add-ons, three hosts per site, etc.). The difference is that this kit requires SnS (not just subscription) for a minimum of one year in addition to the feature additions listed above.



VMware vSphere Essentials kits are all-inclusive packages that enable you to virtualize and consolidate many application workloads onto three physical servers running vSphere and centrally manage them with VMware vCenter™ Server for Essentials.

vSphere Editions

vSphere editions are highly scalable virtualization solutions for midsize and enterprise organizations that want to optimize existing IT investments, streamline IT operations and deliver IT as a service through private, public and hybrid cloud infrastructures.

vSphere Standard

VMware vSphere Standard edition provides an entry-level solution for basic consolidation of applications to slash hardware costs while accelerating application deployment. vSphere Standard includes the following key features:

- Hypervisor, with choice of ESXi and ESX architectures (VMware recommends ESXi)
- VMware vStorage Virtual Machine File System (VMFS)
- Four-way virtual symmetric multiprocessing (SMP)
- VMware vCenter Server Agent
- VMware vStorage APIs for Data Protection
- VMware vCenter Update Manager

SnS is required for all vSphere purchases.

- VMware High Availability
- VMware vStorage Thin Provisioning
- VMware vMotion (new)

VMware vSphere Standard is licensed per processor with up to six cores, for use on a server with up to 256GB of memory per physical server.

vSphere Advanced

VMware vSphere Advanced edition provides a strategic consolidation solution that protects all applications against planned and unplanned downtime to provide superior application availability. vSphere Advanced includes all of the capabilities found in vSphere Standard, along with the following additional features:

- VMware Hot Add
- VMware Fault Tolerance
- VMware Data Recovery
- VMware vShield Zones
- VMware Virtual Serial Port Concentrator

VMware vSphere Advanced is licensed per processor with up to 12 cores, for use on a server with up to 256GB of memory per physical server.

vSphere Enterprise

VMware vSphere Enterprise edition is a robust solution that customers can use to optimize IT assets, ensure cost-effective business continuity and streamline IT operations through

automation. vSphere Enterprise includes all of the capabilities found in vSphere Advanced, along with the following additional features:

- VMware Storage vMotion
 - VMware Distributed Resource Schedule
 - VMware Distributed Power Management
 - VMware vStorage APIs for Array Integration and Multipathing
- VMware vSphere Enterprise edition is licensed per processor with up to six cores, for use on a server with up to 256GB of memory per physical server.

vSphere Enterprise Plus

VMware vSphere Enterprise Plus edition offers the full range of vSphere features for transforming datacenters into dramatically simplified cloud infrastructures, for running today's applications right alongside the next generation of flexible, reliable IT services. vSphere Enterprise Plus includes all the capabilities found in vSphere Enterprise, along with the following additional features:

- Eight-way virtual SMP (only edition with this capability)
- VMware vNetwork Distributed Switch
- VMware Host Profiles
- VMware Storage I/O Control
- VMware Network I/O Control

VMware vSphere Enterprise Plus edition is licensed per processor with up to 12 cores, and no memory limitation per physical server, and can be bundled with the Cisco Nexus 1000V.

VMware vSphere Kits and Editions Compared				
	CONSOLIDATION Optimize existing infrastructure by converting physical systems to virtual machines	AVAILABILITY Enable high availability, data recovery and leverage live migration for applications	AUTOMATED RESOURCE ALLOCATION Deliver load balancing, power management and live storage migration (Storage vMotion) without manual intervention	SIMPLIFIED IT OPERATIONS Advanced networking (distributed network switch) and host configuration templates (host profiles) for more OpEx savings
Essentials*	✓			
Essentials Plus*	✓	✓		
Standard**	✓	✓		
Advanced**	✓	✓		
Enterprise**	✓	✓	✓	
Enterprise Plus**	✓	✓	✓	✓
* All vSphere Essentials Kits contain a version of VMware vCenter Server for centralized management.				
** A version of VMware vCenter Server (licensed separately) is required for all vSphere editions.				

SnS is required for all vSphere purchases.

VMware vCenter Server

VMware vCenter Server provides unified management for vSphere environments and is a required component of a complete VMware vSphere deployment. One instance of vCenter Server is required to centrally manage virtual machines and their hosts and to enable all vSphere features.

vCenter Server Packages

VMware vCenter Server is available in the following packages:

- **VMware vCenter Server for Essentials kits**—Integrated management for vSphere Essentials kits
- **VMware vCenter Server Foundation**—Centralized management for up to three vSphere hosts
- **VMware vCenter Server Standard**—Highly scalable management with rapid provisioning, monitoring, orchestration and control of all virtual machines in a vSphere environment

Key Components

All editions of vCenter Server include the following components:

- **Management server**—Acts as universal hub for provisioning, monitoring and configuring virtualized environments
- **Database server**—Stores persistent configuration data and performance information
- **Search engine**—Allows administrators to search the entire object inventory of multiple VMware vCenter Servers from one place
- **vSphere Client**—Provides administrators with a feature-rich console for accessing one or more VMware vCenter Servers simultaneously
- **vCenter Web Access portal**—Provides secure remote access to vCenter Server from any system
- **VMware vCenter APIs and .NET Extension**—Allows integration between vCenter Server and other tools, with support for customized plug-ins to the vSphere Client

VMware vCenter Server Standard also includes the following additional features:

- **vCenter Orchestrator**—Streamlines and automates key IT processes
- **vCenter Server Linked Mode**—Enables a common inventory view across multiple instances of vCenter Server

À la Carte Features

In addition to the kits and editions listed previously, customers can obtain the following products on an à la carte (standalone) basis:

- **VMware vSphere Hypervisor**—A powerful enterprise-class hypervisor that is free to license for a single server, with options for supplemental SnS.
- **VMware Data Recovery**—An add-on module available for purchase, treated as an upgrade to the VMware vSphere Standard license.
- **Cisco Nexus 1000V**—A software network switch that integrates with VMware vSphere to deliver virtual-machines-aware network services and is available for purchase as an add-on product for use with vSphere Enterprise Plus.

vSphere Acceleration Kits

VMware provides acceleration kits to simplify the initial purchase and deployment of VMware vSphere and VMware vCenter Server. Each acceleration kit consists of a number of licenses for VMware vSphere, along with a license for one instance of a VMware vCenter Server. The acceleration kits are often offered at promotional discounts. Visit <http://www.vmware.com/vmwarestore/buyvsphere-acceleration-kits.html> or contact your local reseller for more specific information on the latest available acceleration kit offerings.

SnS is required for all vSphere purchases.

Upgrading to VMware vSphere 4.1

VMware vSphere customers with an active SnS are entitled to vSphere 4.1 binaries of their kit or edition or may purchase an upgrade to a higher VMware vSphere offering. For example, VMware vSphere Standard customers can upgrade to either VMware vSphere Advanced or VMware vSphere Enterprise Plus. Upgrade paths are listed in Figure 3 under “License Upgrade.”

When customers upgrade supported licenses to a higher VMware vSphere edition, the original license key is deactivated and a new license key is issued for the upgraded edition. The SnS fee is then calculated. This new SnS contract will be extended by the value remaining on the base edition. This process ensures that only a single license key exists that has a single SnS contract with a single termination date. This simplifies renewals.

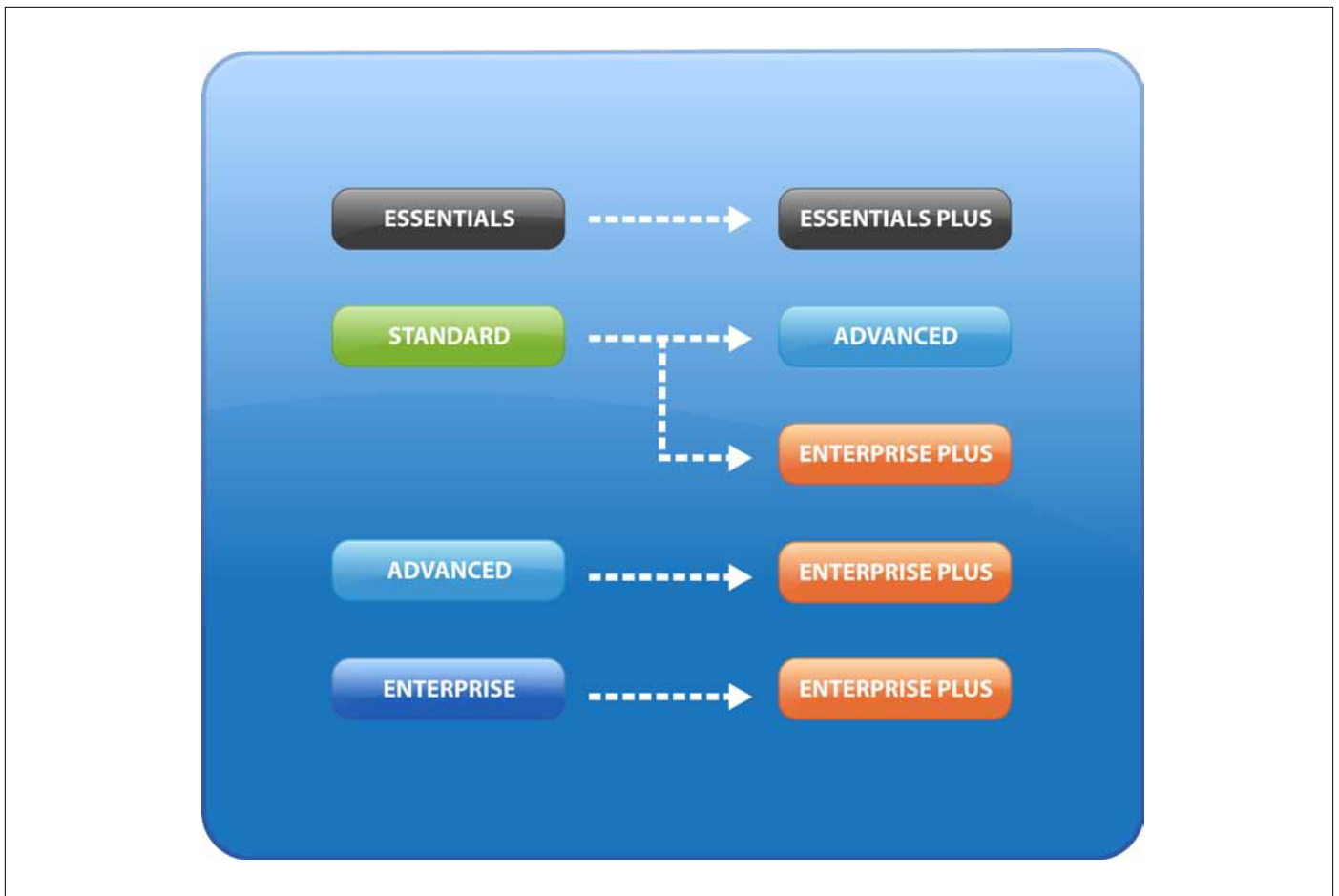


Figure 3 Upgrade Paths among VMware vSphere Editions

Upgrade Entitlements for Current Customers

One benefit of VMware support and subscription is the entitlement rights to new features and upgrades. Existing VMware Infrastructure 3 customers that have active SnS contracts will receive new VMware vSphere 4.x licenses at no extra charge.

In cases where support and subscription has expired for an extended period, purchasing a new license may be more cost-effective than reinstating the expired services.

For more information, visit the VMware vSphere Upgrade Center to determine the appropriate upgrade path for your organization: <http://www.vmware.com/products/vsphere/upgrade-center/>.

VMWARE INFRASTRUCTURE 3 (VI3)	VMWARE VSPHERE 4.1	ADDED FUNCTIONALITY
VI 3 Foundation	vSphere Standard	vStorage Thin Provisioning High Availability vMotion
VI 3 Standard	vSphere Standard	vStorage Thin Provisioning vMotion
VI 3 Enterprise	vSphere Enterprise	vStorage Thin Provisioning vStorage APIs for Array Integration vStorage APIs for Multipathing Fault Tolerance Hot Add vShield Zones Data Recovery Virtual Serial Port Concentrator
VI 3 Foundation and vMotion	vSphere Standard and Storage vMotion	vStorage Thin Provisioning VMware HA
VI 3 Standard and vMotion	vSphere Standard and Storage vMotion	vStorage Thin Provisioning
VI 3 Foundation and vMotion and DRS	vSphere Enterprise	vStorage Thin Provisioning vStorage APIs for Array Integration vStorage APIs for Multipathing High Availability Fault Tolerance Hot Add vShield Zones Data Recovery Virtual Serial Port Concentrator
VI 3 Standard and vMotion and DRS	vSphere Enterprise	vStorage Thin Provisioning vStorage APIs for Array Integration vStorage APIs for Multipathing Fault Tolerance Hot Add vShield Zones Data Recovery Virtual Serial Port Concentrator

Reinstatement Options for Customers with Inactive SnS Contracts

Customers who have an expired SnS must pay reinstatement fees to purchase supported upgrades. Reinstatement fees are based on the following criteria:

- The applicable SnS fees for the current contract term
- Fees that would have been paid for the period of time that the customer's SnS contract was not active
- A 20 percent fee on the sum of the fees in the previous two criteria

SnS is required for all vSphere purchases.

How to Buy

To purchase VMware vSphere, use the online VMware Partner Locator to find an authorized reseller in your area:

<http://partnerlocator.vmware.com/>

You can also visit the online VMware Store to determine which kit or edition of vSphere is right for your organization:

http://www.vmware.com/vmwarestore/vsphere_purchaseoptions.html

Learn More

For information or to purchase VMware products, call 877-4-VMWARE (outside of North America dial 650-427-5000), visit <http://www.vmware.com/products>, or search online for an authorized reseller. For detailed specifications and systems requirements, refer to the VMware vSphere documentation.

SnS is required for all vSphere purchases.

