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VMware Cloud Infrastructure
Channel Partner Reference Guide

VMware recognizes that our channel partners are the cornerstone to our success. The combination of VMware’s virtualization and cloud infrastructure solutions, along with our channel partner’s solution and service expertise, has provided our mutual customers with comprehensive, market-leading virtualization and cloud infrastructure solutions.

The Cloud Infrastructure launch — the biggest in VMware’s history — includes VMware’s flagship virtualization product, vSphere 5, as well as vCenter Site Recovery Manager 5, vShield 5, vCloud Director 1.5, and the new vSphere Storage Appliance 1.0. Together, these products deliver an intelligent virtual infrastructure that allows IT to realize greater efficiency, reliability, security and agility.

With the Cloud Infrastructure launch, VMware and our channel partners will further enable our customers to continue their virtualization journey. Our goal is to evolve the conversation to address the complete suite of VMware Cloud Infrastructure products and solutions.

The intent of this reference guide is to arm channel partner pre-sales teams with base-line VMware product information to have a Cloud Infrastructure conversation with their customers.

The guide begins with the overarching themes and features for our Cloud Infrastructure product family and continues with a summary of the new features and top 3 customer benefits for each product included in the launch. The guide concludes with an appendix that provides additional information on vSphere 5 packaging and pricing.

Special attention should be given to sections indicated by this URL symbol. These sections point to additional resources that are posted on the Partner Central Products & Solutions tab. Please note that new Cloud Infrastructure joint messaging will also be posted for partners with a customized page in the Products & Solutions tab.

This symbol points out products that are tailored for Small and Midsize Business (SMB) customers who typically have less than 1,000 employees.
Cloud Infrastructure Overview

VMware cloud infrastructure and management solutions deliver intelligent virtual infrastructure that allows IT to realize greater efficiency, reliability, security, and agility. Built on the industry’s leading virtualization platform known as vSphere, VMware’s solutions ensure consistent security, compliance, management, and service quality regardless of where the customer’s workloads run: in the data center, public cloud or both.

There are three themes for the new Cloud Infrastructure capabilities

1. Run Business-Critical Applications with Confidence
   Business-critical applications are the lifeblood of any business. However, many enterprises are exposed to risks, ensuring application service levels and availability still remains a complex and expensive IT challenge. Fortunately, there is now a solution: businesses of all sizes can leverage VMware’s Cloud Infrastructure products to run their business-critical applications with confidence at lower cost and complexity. VMware’s Cloud Infrastructure offers powerful scalability and performance capabilities, high availability and disaster recovery and broad industry support.

2. Respond to Business Faster: VMware and the Path to Cloud Computing
   VMware’s Cloud Infrastructure solutions empower IT to transform itself into a valuable business partner that can anticipate and meet the needs of its business counterparts. VMware enables enterprises and service providers to optimize their current infrastructures and build clouds to deliver infrastructure-as-a-service (IaaS). With capabilities such as intelligent policy management, resource elasticity and flexible hybrid cloud management: the result is the most agile, efficient and trusted cloud infrastructure that has the capability to leverage the hybrid cloud. End-user consumption and management of these cloud services is dramatically simplified, meaning IT has the ability to both support more projects requested by business consumers, and enable a faster time to market for these new projects.

3. Trust Your Cloud: Virtualized Environments — More Secure than Physical
   Recent customer surveys on cloud computing unanimously cite multiple frameworks for security and control, securing applications and data and IT compliance as the primary concerns preventing adoption of cloud computing. VMware is addressing these concerns head-on with a range of security and compliance solutions specifically for the cloud including: a unified security framework policy for the cloud, adaptive trust zones and strict compliance and accelerated remediation.
About VMware vSphere 5

VMware vSphere is the industry-leading virtualization platform for building cloud infrastructures that enables users to run business critical applications with confidence and respond faster to their business. vSphere accelerates the shift to cloud computing for existing datacenters, while also underpinning compatible public cloud offerings, paving the way for the hybrid cloud.

Target Customers:
• For customers that are in stages 1 and 2 of virtualization journey, target System Administrators, Director IT, and Application Owners.
• For customers that are in the third stage of the virtualization journey, target Enterprise Architects and the CIO.

Top 3 Customer Benefits
1. The Most Trusted Virtual Infrastructure
   • More than 250,000 customers trust vSphere to run applications efficiently, enhance application availability and streamline IT operations.
   • With support from 1,400 ISV partners for over 2,500 applications, vSphere is the industry-wide choice for virtualizing business critical applications.

2. Run Business Critical Applications with Confidence
   • With vSphere 5, organizations can create and run “super-VMs” for even the most resource intensive applications. vSphere 5 VMs support up to 1 terabyte of virtual memory and can enable up to 32 virtual CPUs. As for network throughput, vSphere 5 can support in excess of 1 million I/O operations per second.
   • These capabilities surpass the requirements of even the most resource intensive applications available today, so there are no technical reasons not to virtualize any workload on vSphere.
   • VMware vSphere 5 is compatible with the widest range of industry standard x86 servers, storage solutions, and network equipment.

3. Respond to the Business Faster
   • Intelligent Policy Management of datacenter resources automates previously manual processes.
   • Flexible Hybrid Cloud Management – Manage hybrid cloud resources through a single pane of glass.

New Features
• Scalability and Performance — Enables Virtual Machines (VM) to grow up to 32 virtual CPUs, can support 1TB vRAM, and a variety of next-generation hardware, such as 3D graphics processors and USB 3.0 devices.
• High Availability — Deliver the right availability services with groundbreaking simplicity for any application
• Auto-Deploy — Deploy more vSphere hosts running the ESXi hypervisor architecture in minutes
• Flexible Hybrid Cloud Management — the vCenter Server Appliance is a Linux-based virtual appliance and the Web Client works from any browser anywhere in the world.
### vSphere Editions: Feature and Entitlements

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<th>Enterprise Plus</th>
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### Acceleration Kits

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<td>VS5-EPL-AK-C</td>
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<td>VS5-ENT-AK-P-SSS-C</td>
<td>VS5-EPL-AK-P-SSS-C</td>
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<td>• vCenter Server Standard</td>
<td>• vCenter Server Standard</td>
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<td></td>
<td>• 8 x vSphere Standard CPU licenses</td>
<td>• 6 x vSphere Enterprise CPU licenses</td>
<td>• 6 x vSphere Enterprise Plus CPU licenses</td>
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### SMB Kits

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<th>Essentials Plus Kit for 3 Hosts</th>
<th>Essentials Plus Kit for 3 Hosts and Storage Appliance</th>
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<td>VS5-ESA-BUN-P-SSS-C</td>
<td></td>
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<tr>
<td>vRAM Entitlement</td>
<td>24 GB (144GB Max)</td>
<td>24 GB (144GB Max)</td>
<td>24 GB (144GB Max)</td>
</tr>
<tr>
<td>Includes</td>
<td>Server virtualization for 3 hosts on servers with up to two processors.  Includes vCenter agents, 8-way vSMP, vStorage Thin Provisioning and vCenter Update Manager.</td>
<td>Includes all Essentials features plus VMware HA and VMware Data Recovery and vMotion.</td>
<td>Includes all Essentials Plus features plus the vSphere Storage Appliance.</td>
</tr>
</tbody>
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**What’s This?**
Download a free QR Code app on your Smartphone and scan the vSphere5 code above.

**Go to Partner Central** for additional vSphere 5 pre-sales resources that include:
- ESXi and ESX Info Center
- vSphere Upgrade Center
- Data Sheets
- Cheat Sheet
- Fight Plan
- Sales and Technical Power Point Presentations
- Technical White Papers

vSphere 5 further advances reliability, security and efficiency with the ESXi hypervisor. While previous versions of vSphere were available on two different hypervisor architectures – ESX and ESXi, vSphere 5 is the first major release exclusively on ESXi.
About VMware vCenter Site Recovery Manager 5

vCenter Site Recovery Manager (SRM) is the market-leading disaster recovery product that ensures the simplest and most reliable disaster protection for all virtualized applications. Site Recovery Manager (SRM) leverages cost-efficient vSphere replication or storage-based replication to provide centralized management of recovery plans, enable non-disruptive testing, and automate site recovery and migration processes.

Target Customers

• Existing SRM customer that is using SRM only for Tier 1 applications, and is looking for a more cost-efficient alternative to protecting Tier 2 / 3 applications and smaller sites. This is the ideal prospect for expanding SRM coverage with vSphere Replication, which is 3X less expensive than using storage-based replication.

• New prospect with less than 75 Virtual Machines (VM) per site and looking for cost-efficient Disaster Recovery (DR). This is the ideal prospect for SRM Standard and vSphere Replication.

• New prospect with more than 75 VMs per site and already using or willing to use storage-based replication. This is the ideal prospect for SRM Enterprise and storage-based replication.

• Prospect is virtualizing business-critical apps, has an existing recovery site and recognizes and values the importance of improving Response Time Objectives (RTO). Prospect is not satisfied with the complexity / reliability of the existing Disaster Recovery plan.

• Prospect recently experienced a disaster or is in a geographic area that recently experienced a disaster.

• Prospect recently failed a Disaster Recovery test.

Top 3 Customer Benefits

1. Customers can Choose the Best Replication Option to Meet Their Needs

   • Leverage vSphere Replication for simple, cost-efficient replication:
     - Eliminate the need for identical high-end storage arrays across sites
     - Manage replication directly through vCenter, at a more granular and flexible ‘virtual machine’ level

   • Use storage-based replication for large, business-critical environments:
     - Choose from a wide variety of storage-based replication products
     - Ensure coordinated recovery with tight integration between storage arrays and Site Recovery Manager

2. Replace Error-Prone Runbooks with Simple Automated Recovery Plans

   • Traditional disaster recovery runbooks are complex and quickly get out of sync with evolving IT configurations. Replace manual runbooks with centralized recovery plans managed directly from VMware vCenter Server.
     - Capture complete recovery process in a simple, centralized recovery plan
     - Simplify set up of recovery plans by automating many of the traditional recovery steps
     - Fulfill compliance requirements with documented recovery plans and test results

New Features

• vSphere Replication – the industry’s first hypervisor-based replication. Purpose built for vSphere and Site Recovery Manager.

• Planned Migration — ensures clean site migrations of virtual machines in an application-consistent state and with zero data loss

• Automatic Failback — applications can move back and forth between sites automatically, without having to set up a new recovery plan for each step

• Flexible VM boot sequence – from 3 priorities in SRM 4 (High, Medium, Low) to complete control of VM boot sequencing
• Meet Response Time Objectives (RTO) with Automated Disaster Recovery Failover and Non-Disruptive Testing

• Traditional site failovers often fail to meet RTO, due to manual processes and out-of-date runbooks. Ensure fast and reliable recovery and meet the customer’s RTO objectives by automating the failover process and testing failover plans frequently.
  - Automate the failover process and eliminate the risk inherent in manual processes
  - Perform frequent failover testing without impacting production systems

3. Streamline Planned Migrations and Preventive Failovers

• Execute preventive failovers to avoid imminent disasters and planned migrations for global load balancing or to avoid downtime due to upcoming maintenance windows. Streamline routine migrations with planned migration and automated failback.
  - Ensure zero data loss and application consistent recovery for planned migrations
  - Automate failback of virtual machines to their initial production site for more efficient routine migrations

Effective September 1, 2011

<table>
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<tr>
<th>VMware vCenter Site Recovery Manager 5 SKUs</th>
<th>Standard</th>
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<td>VC-SRMS-25E-C</td>
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* See price book for Basic Support SKUs
** To change SnS term to 3-years, insert “3” just before the “P-SSS” in the SKU.
  Example VS4-ADV-AK-3P-SSS-C
*** To change a part number to Academic, simply change the -C to -A

Note: SRM can be used to protect all applications except the ones that need sub 15 minute recovery times. These applications would typically use application-level clustering.
About VMware vShield 5

VMware vShield product family is the foundation for trusted cloud infrastructures. vShield enables adaptive and cost-effective security services within a single management framework.

Target Customer
• Existing VMware vSphere customer due for annual renewal of VMware infrastructure
• Small to medium business with limited IT
• Information security or compliance groups raising red flags on virtualized infrastructure
• IT deploys anti-virus to each guest workload Virtual Machine (VM)

Top 3 Customer Benefits
1. Reduce Complexity with Unified Security Policy Framework for the Cloud
   • vShield provides a comprehensive set of services for securing the datacenter at any level - host, network, applications, data and endpoint — in a single management framework integrated with vCenter Server.
   • With vShield, virtualization, security and network administrators gain a command center for managing security services from VMware as well as other vendors.

2. Secure Applications and Data with Adaptive Trust Zones
   • vShield allows organizations deploying cloud infrastructure to create adaptive trust zones that securely isolate applications with different trust levels and also quarantine applications that may have been compromised.

3. Accelerate Compliance and Automate Remediation
   • Exposure or leakage of such data - for example, stolen credit card information or compromised personal health information - can cost an enterprise millions of dollars or harm its reputation.
   • VMware provides organizations with the ability to identify sensitive business information and ensure it is protected. This includes over 80 pre-built templates for the most common standards for protecting sensitive data including PII (Personally Identifiable Information), PCI-DSS cardholder data, and PHI (Private Health Information).

New Features
• Policy management framework — provides one common console for consistent implementation of corporate security policies across VMware and third party solutions
• Role based access control — provides a clear separation of workflow for VI and security administrators
• Layer 2 firewall — protects against password sniffing, DHCP snooping, ARP spoofing/poisoning attacks, etc.
• Improved scalability and performance — meets requirements for enterprise-class cloud deployments
• Sensitive Data Discovery — provides over 80 regulations from across the world (NA, EMEA, APAC) for simple invocation into tailored policies
• Validate compliance against regulatory requirements reduces chances of failed audits
Effective September 1, 2011

**VMware vShield 5 Security Bundle**

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<td>1 Year Production SnS</td>
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<td>Includes</td>
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<tr>
<td>vShield Edge</td>
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<tr>
<td>vShield App with Data Security</td>
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<td>vShield Endpoint</td>
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<td>vShield Manager</td>
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* See price book for Basic Support SKUs
** To change SnS term to 3-years, insert “3” just before the “P-SSS” in the SKU. Example VS4-ADV-AK-3P-SSS-C
*** To change a part number to Academic, simply change the -C to -A

**What’s This?**
Download a free QR Code app on your Smartphone and scan the vShield 5 code above.

**Go to Partner Central** for additional vShield pre-sales resources that include:
- Data Sheet
- Cheat Sheet
- FAQ
- Sales and Technical Power Point Presentations

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**VMware vShield Manager**

**VMware vCenter**

**VMware vSphere**

Cluster A

Cluster B
About VMware vCloud Director 1.5

Build your customer’s cloud using the industry-leading VMware vCloud solution to give end users secure, on-demand access to shared infrastructure resources while simplifying datacenter management. Only vCloud offers cloud without compromise — run an efficient cloud securely within the datacenter with the option to bridge to an ecosystem of over 3,000 service provider partners with a hybrid cloud.

Target Customer
• Enterprise customers experienced with virtualization

Top 3 Customer Benefits
1. Policy-Driven Management & Security
• Companies prepared to run workloads on cloud infrastructure require security and performance SLAs, especially when consolidating multi-tenant business units onto the same infrastructure.
• vCloud Director offers the ability to manage shared infrastructure with confidence. Multi-tenant organizations can run on shared infrastructure with security and access control to ensure the lowest cost of delivery.

2. Agile Access to Cloud Infrastructure
• End users have begun going around corporate IT to use third-party commodity public clouds in search of agility.
• vCloud Director offers the ability to offer infrastructure-as-a-service to accelerate the rate of provisioning. End users can get access to standardized virtual machines with greater speed and agility.

3. Portability with Hybrid Cloud
• As companies look for flexibility and cost efficiency, companies want to avoid being locked down with a specific deployment model.
• vCloud Director offers the ability to deploy standardized vApp workloads on either a private, public, or hybrid basis. Companies are able to get the benefits of infrastructure-as-a-service without losing the flexibility to migrate workloads.

New Features
• Fast Provisioning using VMware’s Linked Clone technology to dramatically speed up provisioning time and reduce storage costs
• SQL Server support & Cisco Nexus 1000v integration for easier integration with existing environments
• Custom Extensions and an Expanded vCloud API to integrate vCloud Director to existing enterprise systems (e.g. CMDB, IPAM)
• vShield Edge VPN integration to enable secure networking between isolated organizations across multiple clouds
• Internationalized to accept foreign characters & install on foreign OS into 6 new languages
What's This?
Download a free QR Code app on your Smartphone and scan the vCloud Director 1.5 code above.

Go to Partner Central for additional vCloud Director pre-sales resources that include:
• Data Sheet
• Cheat Sheet
• Fight Plan
• Sales and Technical Power Point Presentations
About VMware vSphere Storage Appliance 1.0

The vSphere Storage Appliance (VSA) targets the Small and Medium Business (SMB) audience. The VSA 1.0 scales to support up to 3 virtualized hosts.

Target Customer
• SMBs who deploy up to three virtualized hosts (the standard configuration for vSphere Essentials and Essentials Plus).
• Within the larger enterprise, the VSA can meet the needs of branch office and remote office environments.

Top 3 Customer Benefits
1. Five Click Simplicity
• Before vSphere Storage Appliance, implementing virtualization required specialized knowledge in shared storage hardware. For example, a Storage Area Network configuration may require an FC Switch, a Server HBA, FC cables, and an external RAID Storage hardware.
• With VSA, installation involves just a few mouse clicks, and entering the desired IP address. And because VSA is integrated with vCenter Server, SMB customers can manage the entire IT environment in one place.

2. Four Nine Availability Without Shared Storage Hardware
• vSphere Storage Appliance runs on multiple servers simultaneously, so SMB customers can have the confidence that data is available to all workloads, even when a server fails.
• With vSphere's availability features, SMB customers can restart snapshots of virtual machines automatically when a server fails or use fault tolerant protection so applications run interrupted.
• Finally, perform maintenance with zero impact to the end user by migrating application live from one server to another using vMotion.

3. World-class Datacenter Capabilities for Small Environments
• vSphere Storage Appliance empowers smaller IT environments with the performance and efficiency of world-class datacenters.
• VSA enables SMB customers to get the most out of their hardware by pooling workloads for higher utilization.
• And using the unique set-and-forget automation features of vSphere, SMB customers will be able to guarantee application service levels for your most important applications without constantly monitoring compute, network, or storage resources.
Effective August 22, 2011

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<td><strong>To change a part number to Academic, simply change the -C to –A</strong></td>
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Appendix: vSphere 5 Pricing and Packaging FAQ

vSphere 5 Licensing Definition

Q1.1: What is changing about vSphere licensing?
A: VMware vSphere 5.0 will continue to be licensed on a per-processor (CPU) basis. However, each license will now come with a vRAM capacity entitlement. Each license will entitle you to a specific amount of vRAM, which can be pooled across a single instance of vCenter Server or by multiple instances of vCenter Server in Linked Mode.

Q1.2: What is vRAM?
A: vRAM is defined as the virtual memory configured to one or more virtual machines. When a virtual machine is created, it is configured with a certain amount of virtual memory (vRAM) available to the virtual machine.

Q1.3: What is pooled vRAM?
A: An important feature of the new licensing model is the concept of pooling the vRAM entitlements for all processor licenses. The vRAM entitlements of VMware vSphere CPU licenses are pooled—that is, aggregated—across all CPU licenses managed by a VMware vCenter instance (or multiple linked VMware vCenter instances) to form a total available pooled vRAM capacity. If workloads on one server are not using their full vRAM entitlement, the excess capacity can be used by other virtual machines within the VMware vCenter instance. If a Virtual Machine is powered off, it does not count against the available pooled vRAM capacity.

Q1.4: How big can I make a vRAM “pool”?
A: The pooled vRAM capacity can be extended indefinitely. (Note that exceptions to this are vSphere 5 Essentials and Essentials Plus, which are limited to 3 hosts with 6 total processors and 144 GB of total vRAM.)

Q1.5: Why is VMware making these changes?
A: Significant innovations in hardware design—such as CPUs with ever-larger number of cores, high-density memory chips, solid-state drives and hyperthreading—were causing the hardware limits in VMware vSphere 4.x licensing to become outdated and posing difficulties for customers to plan future investments in infrastructure and virtualization.

Moreover, VMware vSphere 4.x licensing does not reflect the fact that VMware vSphere excels at pooling physical hardware resources across the entire datacenter and presenting them as a single, unified, shared infrastructure—an innovation that is one of the core pillars of cloud infrastructure. With the modification to VMware vSphere licensing, we accomplish two objectives:
• Free customers from restrictive hardware-based entitlements
• Align the VMware vSphere licensing model with IT as a service
Q1.6: Will this licensing model cost me more?
A: While it is impossible to predict the effects of the new model in every type of environment, the licensing model has been designed to minimize this risk for existing environments and to provide room for growth. vRAM entitlements have been set to provide enough capacity to scale well beyond today's typical consolidation ratios. In addition, thanks to pooling, you will be able to share entitlements among multiple hosts making more efficient use of your available unused vRAM capacity.

Q1.7: Does vSphere 5 have a core restriction?
A: No. vSphere 5 does not have the concept of core entitlement. In other words, each processor license is no longer limited to a certain number of cores.

Q1.8: Are the licensing terms dependent on which server I deploy vSphere 5?
A: No. There are no vSphere license entitlements that are linked to physical characteristics of the server on which vSphere is deployed.

Tracking and Compliance

Q2.1: How do I track license usage and compliance?
A: The number of CPUs as well as available and consumed vRAM capacity can be monitored and managed using the licensing-management module of VMware vCenter Server 5. You can create reports and set up alerts to obtain automated notification of when the level of vRAM consumption surpasses a specified level of the available pooled capacity. VMware's policy is that you should purchase licenses in advance of use to be in compliance.

Q2.2: How is consumed vRAM capacity determined?
A: Consumed vRAM is equal to the sum total of vRAM configured to all powered on VMs managed by a single instance of vCenter Server or by multiple instances of vCenter Server in Linked Mode. At any given point in time, the vRAM capacity consumed by all powered-on virtual machines within a pool must be equal to or lower than the pooled vRAM capacity.

Q2.3: What if I exceed my total vRAM entitlement?
A: VMware's policy is that you should purchased licenses in advance of use to be compliant with this licensing model. However, vCenter Server will not impose a hard limit (with the exception of vCenter Server for Essentials, which comes with vSphere 5 Essentials and vSphere 5 Essentials Plus) on consumed vRAM, but will provide alerts that consumed vRAM is approaching or has surpassed available vRAM pooled capacity.

To be compliant, consumed vRAM must be equal or less than the available pooled vRAM entitlement. To expand pooled vRAM capacity, you can either

a. Add more VMware vSphere CPU licenses of the same edition to the vRAM pool. (Under this use case, it is possible to have more CPU licenses than CPUs deployed.) Note that new licenses need to be combined with existing licenses on the VMware License Portal for the additional vRAM to be recognized by vCenter Server. See this KB article for instructions on how to combine the licenses.

b. Upgrade all CPU licenses in the vRAM pool to a VMware vSphere edition with a higher base vRAM entitlement. Contact Sales for more information.
Q2.4: How can I estimate the total vRAM that I will need?
A: There are two different scenarios to consider:

1. Existing deployments – While vCenter Server 5 does display vRAM usage, vCenter Server 4 does not. To assist, VMware is making an advisor available to help measure that amount of vRAM used by an existing deployment.

2. New deployments – For new deployments, vRAM can be estimated by estimating the total amount of physical memory and making allowances for how much of that memory is consumed and the amount of overcommit. For example, a deployment with 100 GB of physical memory that is 80% consumed, and an overcommit of 50% would need 120 GB of vRAM (100 * 0.8 * 1.5).

Q2.5: I have received an alert from vCenter that I have exceeded the available pooled vRAM, but the product did not prevent me from deploying a new VM. What is going on?
A: Only vSphere Essentials and Essentials Plus implement a hard enforcement of pooled vRAM capacity. vCenter Server Standard will not prevent you from exceeding the available pooled vRAM capacity, but it will signal that you are out of compliance. VMware licensing policy is that customers should buy licenses in advance of use, so we recommend monitoring the vRAM consumption and extending the available pooled vRAM capacity before exceeding it. Contact VMware Sales or your local reseller to purchase more licenses.

Q2.6: I purchased a vSphere license to add vRAM capacity (and the number of CPU licenses exceeds number of actual CPUs I deployed). Can I later assign that vSphere license to CPUs from a server that I added to my environment?
A: Yes, as long as you have enough vSphere licenses for the number of CPUs in use and have enough pooled vRAM capacity.
vSphere Editions and vCenter

Q3.1: What are the MSRP for the different vSphere 5 editions?
A: vSphere 5 MSRP can be found here.

Q3.2: What is the vRAM entitlement for each vSphere edition?
A: The vRAM entitlements are summarized below.

<table>
<thead>
<tr>
<th>vSphere 5 Edition</th>
<th>License Unit</th>
<th>Product Includes</th>
<th>vRAM Entitlement</th>
<th>vCPU/VM</th>
</tr>
</thead>
</table>
| VMware vSphere 5 Essentials       | 3 hosts (max 2 processors per host) | • VMware vCenter Server 5 Essentials  
• VMware vSphere 5 Essentials for 3 hosts | 24 GB per processor, 144 GB total | 8-way   |
| VMware vSphere 5 Essentials Plus  | 3 hosts (max 2 processors per host) | • VMware vCenter Server 5 Essentials  
• VMware vSphere 5 Essentials Plus for 3 hosts | 24 GB per processor, 144 GB total | 8-way   |
| VMware vSphere 5 Standard         | Per CPU      | 1 CPU of VMware vSphere 5 Standard                     | 24 GB                                 | 8-way   |
| VMware vSphere 5 Enterprise       | Per CPU      | 1 CPU of VMware vSphere 5 Enterprise                   | 32 GB                                 | 8-way   |
| VMware vSphere 5 Enterprise Plus  | Per CPU      | 1 CPU of VMware vSphere 5 Enterprise Plus              | 48 GB                                 |         |

Q3.3: Can I add vRAM to an Essentials or Essentials Plus kit?
A: No, the total vRAM capacity of Essentials and Essentials Plus kits cannot be extended. If you need additional vRAM capacity, you should upgrade to another edition of vSphere.

Q3.4: What if I have multiple vSphere editions (e.g., Standard, Enterprise, Enterprise Plus)?
A: Multiple editions can be managed by vCenter. Pooling is measured by edition, so you must be in compliance for each edition of vSphere in use.

Q3.5: How is vCenter Server licensing affected by the changes to vSphere?
A: vCenter Server 5 will continue to be licensed on a per instance basis.

Q3.6: What version of vCenter Server should I use?
A: vCenter Server 5 is required for managing vSphere 5 hosts and VMs. vCenter Server 5 will also manage vSphere 4 hosts and VMs, and it will even manage environments that contain both vSphere 4 and vSphere 5 hosts and VMs. However, licenses are unique to the vSphere version, so vSphere 4 licenses will not increase the size of the available pooled vRAM capacity.
Fulfillment and Version Upgrades

Q4.1: For my existing license(s) with active Support and Subscription (SnS), what should I receive when vSphere 5 is released?
A: Customers with active SnS agreements on the date of vSphere 5 GA will be entitled to receive vSphere 5. Customers who are listed as Primary License Administrators will see an alert in the License Portal that they have licenses eligible to upgrade.

Q4.2: For my existing license(s) with active Support and Subscription (SnS), what edition of vSphere 5 will I receive?
A: Below is a table that maps vSphere 4 to vSphere 5 editions

<table>
<thead>
<tr>
<th>vSphere 4 Edition</th>
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<tbody>
<tr>
<td>VMware vSphere 4 Essentials</td>
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<tr>
<td>VMware vSphere 4 Essentials Plus</td>
<td>VMware vSphere 5 Essentials Plus</td>
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<tr>
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<tr>
<td>VMware vSphere 4 Standard Plus Data Recovery</td>
<td>VMware vSphere 5 Standard*</td>
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<tr>
<td>VMware vSphere 4 Advanced</td>
<td>VMware vSphere 5 Enterprise</td>
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<tr>
<td>VMware vSphere 4 Advanced Acceleration Kit (6 CPUs)</td>
<td>VMware vSphere 5 Enterprise Acceleration Kit components</td>
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<td>VMware vSphere 4 Enterprise Plus AK</td>
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<tr>
<td>VMware vSphere 4 Enterprise Plus for 1 processor with Cisco Nexus 1000V Bundle</td>
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</table>

*Note: DRS was previously added to vSphere Standard.

Q4.3: My Support and Subscription (SnS) contract expired before the vSphere 5 release. What will I receive?
A: As your SnS is expired, you are not entitled to receive vSphere 5 licenses or binaries. To receive vSphere 5, you will need to renew your SnS and pay the appropriate reinstatement fee. To renew your agreement, you may request a quote.
Q4.4: Can I perform a version upgrade to vSphere 5 on a subset of my licenses?
A: Yes. You can perform a version upgrade on all, some, or none of your vSphere 4.x. For example, if you have 10 vSphere 4.x licenses and only want to upgrade 4 of them, you will have 4 vSphere 5 license and 6 vSphere 4 licenses.

Q4.5: My Subscription and Support (SnS) contract is active, but I do not wish to upgrade my licenses to vSphere 5 right now. Can I wait to perform a version upgrade?
A: Yes. As long as you have an active SnS contract at the time of General Availability of vSphere 5, you are entitled to upgrade your vSphere 4.x licenses at any time.

Q4.6: I currently have an active Support and Subscription (SnS) contract for vSphere 4 Advanced and noticed that it is no longer available with vSphere 5. What will I receive? Will anything else change?
A: For each license of vSphere 4 Advanced with active SnS, you will receive a license of vSphere 5 Enterprise. Your current SnS contract will be valid, and you will receive support on vSphere 5 Enterprise. (Please note you may see a slight increase in SnS fees at time of renewal.)

Q4.7: I currently have an active Support and Subscription (SnS) contract for vSphere 4 Advanced and do not want to perform a version upgrade to vSphere 5. Since this product is no longer available, will I continue to receive patches and support for vSphere 4 Advanced?
A: Yes. Similar to other editions of vSphere 4, you will continue to receive patches and support for vSphere 4 Advanced until the product is at End of Life (EOL). VMware’s lifecycle policy can be found here.
Implications for vSphere 4.x and VI 3.5

Q5.1: Does the new vSphere 5 licensing model apply to existing licenses of vSphere 4.x or prior versions?
A: No. If you are using vSphere 4.x, the 4.x licensing model (per CPU with core and physical memory per server restrictions) will remain in effect as long as you are using vSphere 4.x. Upon a version upgrade to vSphere 5, the vSphere 5 licensing model will apply. If you are using VI 3.5, the 3.5 licensing model (per CPU with core restriction) will remain in effect as long as you are using VI 3.5.

Q5.2: When upgrading from existing licenses of vSphere 4.x or older to vSphere 5, can I retain the vSphere 4.x licensing model?
A: No. The vSphere 5 licensing model must be used. In order to complete the version upgrade, the new vSphere 5 EULA must be accepted.

Q5.3: How does the new licensing model impact SnS (support and subscription)?
A: SnS pricing is unaffected by this licensing change. For each vSphere 5 license, you must purchase a minimum 1 year Basic SnS contract.

Q5.4: I noticed that I cannot purchase vSphere 4.x licenses. Can I downgrade from vSphere 5 to a previous version?
A: Yes, vSphere licenses can be downgraded to vSphere 4.x or VI 3.5 licenses. This is done via VMware’s license portal located here. After downgrading, the appropriate license metric for that version of the product will apply. (e.g., vSphere 4.x is licensed per processor and has a core restriction as the license metric). When downgrading, you agree to discontinue use of the vSphere 5 license keys. To perform the downgrade, you must have an active Support and Subscription (SnS) contract for that license.

Q5.5: Can I upgrade licenses on which I previously performed a version downgrade back to vSphere 5?
A: Yes. This is done via VMware’s license portal located here. When performing a version upgrade, the licensing model for that version applies (e.g., CPU with vRAM entitlement for vSphere 5), and you must agree to discontinue use of the vSphere 4.x or VI 3 licenses used for the version upgrade.

Q5.6: Can I use vSphere 5 license keys in my vSphere 4.x or VI 3.5 environment?
A: No. License keys are specific to the major version of the product. vSphere 5 license keys only work with vSphere 5. You may, however, perform a version downgrade of your vSphere 5 licenses to license vSphere 4.x. Other FAQs will address this in more detail.

Q5.7: How does the new licensing model impact ELA and MSLA customers?
A: The impact on ELA and MSLA customers depends on the specific contract(s) in place. Please work with your VMware partner or representative to determine how it specifically impacts you.
Acceleration Kits

Q6.1: What’s new about the vSphere 5 Acceleration Kits?
A: VMware will continue to offer Acceleration Kits with vSphere 5. Like vSphere 4.x, each kit consists of licenses for VMware vSphere and VMware vCenter Server. To provide flexibility in upgrades and Support and Subscription (SnS) contracts, VMware vSphere 5 Acceleration Kits “decompose” into their individual kit components after purchase. This means Acceleration Kit customers can upgrade their individual products directly (just like a la carte customers).

Q6.2: I have a vSphere 4.x Acceleration Kit. What are my options for performing a version upgrade to vSphere 5?
A: By maintaining active SnS, you will receive access to vSphere 5 binaries. In most cases, customers with a vSphere 4 Acceleration Kit will be able to continue to renew their SnS at current vSphere 4 rates and won't be asked to decompose their kits unless they request to do so (no different than today). Upon a version upgrade to vSphere 5, the AK will not “decompose”. (See question 6.1 for a description of decomposition.)

Q6.3: I have a vSphere 4.x Acceleration Kit. Is my SnS affected?
A: In most cases, your SnS will be unaffected. The exceptions are vSphere 4.x Advanced Acceleration Kit customers. See question 6.4 for additional details.

Q6.4: I have a vSphere 4.x Advanced Acceleration Kit, what am I entitled to with vSphere 5?
A: If you have a vSphere 4.x Advanced Acceleration Kit and are current with Support and Subscription (SnS), you will be entitled to vSphere 5 Enterprise licenses at no additional charge. Upon renewal, there will be a modest increase in SnS fees; however, the new SnS fees will still be lower than the SnS fees for the new vSphere 5 Enterprise Acceleration Kit.

Q6.5: My vSphere 4.x Edition or Acceleration Kit is not available with vSphere. Which vSphere 5 Edition will I receive when I perform a version upgrade to vSphere 5?
A: The chart below shows what will be fulfilled for the vSphere 4.x Editions and Acceleration Kits that are not offered for vSphere 5.

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