

# VCP410 VMware vSphere Cue Cards

<p><b>VMware ESX 4.0 will only install and run on servers with 64-bit x86 CPUs.</b></p>	<p><a href="#">Source: ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>ESX 4.0 Requires 2GB RAM minimum</b></p>
<p><b>ESX 4.0 requires 1 or more network adapters</b></p>	<p><a href="#">Source: ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>ESX 4.0 requires a SCSI disk, Fibre Channel LUN, or RAID LUN with unpartitioned space for the Service Console</b></p>
<p><b>Virtual Center requires a minimum of 2 x 2Ghz or greater CPU's</b> <b>If you are running the DB on the same machine it may need faster CPU's</b></p>	<p><a href="#">Source: ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>Virtual Center requires a minimum of 3GB RAM. Memory requirements might be higher if the database runs on the same machine</b></p>
<p><b>vCenter Server includes a service called VMware VirtualCenter Management Webservices. This service requires 128MB to 1.5GB of additional memory.</b></p>	<p><a href="#">Source: ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>Virtual Center Requires a minimum of 2Gb Disk space, more will be required if the DB runs on the same machine</b></p>

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<p><b>A Gigabit connection is recommended for Virtual Center</b></p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>The vSphere Client requires a minimum of 1 x 266MHz CPU or higher with 500MHz recommended</b></p>
<p><b>The vSphere client requires a minimum on 200Mb RAM</b></p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>The vSphere Client requires a minimum of 1Gb free disk space for a complete install which includes</b></p> <ul style="list-style-type: none"><li>- Microsoft .NET 2.0</li><li>- Microsoft .NET 3.0 SP1</li><li>- Microsoft Visual J#</li><li>- vSphere Client 4.0</li><li>- vSphere Host Update Utility 4.0</li></ul>
<p><b>Virtual Center requires a 64bit OS when it is managing between 200 – 300 hosts</b></p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>In ESX 4.0, the service console's partitions are stored in a .vmdk file the name of this file is esxconsole-&lt;system-uuid&gt;/esxconsole.vmdk</b></p>
<p><b>The ESX boot disk requires 1.25GB of free space and includes the /boot and vmkcore partitions. The /boot partition alone requires 1100MB.</b></p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p><b>The swap partition requires 600MB recommended Minimum and 1600MB maximum</b></p>

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<p>By default the / partition is 5Gb</p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p>The vmkcore partition is used to store core dumps for debugging and technical support.</p>
<p>The following partitions are optional during the ESX installation /home /tmp /usr and /var/log</p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p>The following DB's are supported for use with Virtual Center, Microsoft SQL server 2005 Express, Microsoft SQL 2005, Microsoft SQL 2008, Oracle 10g and Oracle 11g</p>
<p>Virtual Center must always have a 32bit DSN even when installed on a 64bit system</p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p>The virtual center computer name must be no more than 15 characters</p>
<p>The virtual center should not be installed on a domain controller</p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p>The vCenter Server instances in a Linked Mode group can be in different domains if the domains have atwo-way trust relationship</p>

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<p>vCenter Server 4.0 uses Microsoft ADAM/AD LDS to enable Linked Mode</p>	<p>Source: <a href="#">ESX and vCenter Server Installation Guide, ESX 4.0, vCenter Server 4.0</a></p>	<p>All product licenses are encapsulated in 25-character license keys that you can manage and monitor from vCenter Server</p>
<p>A virtual machine may have a maximum of 8 vCPUs (Virtual SMP)</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>A virtual machine may have a maximum of 255Gb RAM</p>
<p>A virtual machine may have a maximum of 2 floppy disk drives</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>A virtual machine may have a maximum of 4 IDE devices</p>
<p>A virtual machine may have a maximum of 10 v NICs</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>A virtual machine may have a maximum of 4 serial ports and 3 parallel ports</p>

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<p>The maximum size of a Raw Device Map (RDM) is 2Tb – 512B</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>The maximum volume size for a VMFS volume is 64Tb (minus 16K) made up of a maximum of 32 x 2Tb (minus 512B) extents</p>
<p>There can be a maximum of 32 hosts per cluster</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>A host can see a maximum of 256 LUNs (Including local drives / disks)</p>
<p>There can be a maximum of 512 virtual CPU's per host</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>There can be a maximum of 320 virtual machines per host</p>
<p>There can be a maximum of 64 Logical CPUs per host</p>	<p>Source: <a href="#">VMware vSphere 4.0 Configuration Maximums</a></p>	<p>There can be a maximum of 20 virtual CPUs per physical core</p>

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<p><b>You can have a maximum of 1Tb RAM per host</b></p>	<p><a href="#">Source: VMware vSphere 4.0 Configuration Maximums</a></p>	<p><b>By default there is 300Mb RAM memory allocated to the service console in ESX, this can be increased to a maximum of 800Mb</b></p>
<p><b>A standard virtual switch supports a maximum of 4088 ports</b></p>	<p><a href="#">Source: VMware vSphere 4.0 Configuration Maximums</a></p>	<p><b>You can have a maximum of 6000 virtual switch ports per vCenter when using distributed virtual switches</b></p>
<p><b>You may have 64 hosts per distributed virtual switch</b></p>	<p><a href="#">Source: VMware vSphere 4.0 Configuration Maximums</a></p>	<p><b>A vCenter can manage a maximum of 200 hosts when using a 32bit OS for the vCenter server with 2000 powered on VM's and 3000 registered VM's</b></p>
<p><b>A vCenter can manage a maximum of 300 hosts when using a 64bit OS for the vCenter server with 3000 powered on VM's and 4500 registered VM's</b></p>	<p><a href="#">Source: VMware vSphere 4.0 Configuration Maximums</a></p>	<p><b>You are able to link up to 10 vCenter's with vCenter linked mode</b></p>

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<p><b>vNetwork Distributed Switch (vDS) not only allow you to span a single virtual switch across multiple hosts they also allow</b></p> <ul style="list-style-type: none"><li>- Private VLANs</li><li>- Network VMotion—tracking of VM networking state, improving troubleshooting and enabling 3rd Party Virtual Switch support with the Cisco Nexus 1000V Series Virtual Switch</li><li>- Bi-directional traffic shaping</li></ul>	<p>Source: <a href="#">What's New in VMware vSphere™ 4: Virtual Networking</a></p>	<p><b>Distributed Virtual Port Groups (DV Port Groups) are port groups associated with a vDS and specify port configuration options for each member port.</b></p>
<p><b>Distributed Virtual Uplinks (dvUplinks) are a new concept introduced with vDS. dvUplinks provide a level of abstraction for the physical NICs (vmnics) on each host. NIC teaming, load balancing, and failover policies on the vDS and DV Port Groups are applied to the dvUplinks and not the vmnics on individual hosts</b></p>	<p>Source: <a href="#">What's New in VMware vSphere™ 4: Virtual Networking</a></p>	<p><b>Private VLANs enable users to restrict communication between virtual machines on the same VLAN or network segment, significantly reducing the number of subnets needed for certain network configurations.</b></p>
<p><b>Network VMotion is the tracking of virtual machine networking state (e.g. counters, port statistics) as the VM moves from host to host on a vNetwork Distributed Switch.</b></p>	<p>Source: <a href="#">What's New in VMware vSphere™ 4: Virtual Networking</a></p>	<p><b>VMs on the Promiscuous Private VLAN can communicate with all VMs; VMs on the Community Private PVLAN can communicate amongst themselves and those on the Promiscuous Private VLAN; VMs on the isolated Private VLAN can only communicate with VMs on the Promiscuous Private VLAN</b></p>
<p><b>IPv6 support is extended to include the vmkernel and service console allowing IP storage and other ESX services to communicate over IPv6.</b></p>	<p>Source: <a href="#">What's New in VMware vSphere™ 4: Virtual Networking</a></p>	<p><b>VMDirectPath is a new capability provided in vSphere for direct assignment of PCI devices to a VM for guest control of physical hardware.</b></p>

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<p>Each ESX host can concurrently operate a mixture of virtual switches as follows:</p> <ul style="list-style-type: none"><li>• One or more vNetwork Standard Switches</li><li>• One or more vNetwork Distributed Switches</li><li>• A maximum of one Cisco Nexus 1000V (VEM or Virtual Ethernet Module).</li></ul> <p>Note that physical NICs (vmnics) cannot be shared between virtual switches (i.e. each vmnic only be assigned to one switch at any one time).</p>	<p>Source: VMware® vNetwork Distributed Switch: Migration and Configuration</p>	<p>VMs attached to a vDS (a dvport on a vDS) can only migrate using VMotion to another port on the same vDS.</p> <p>Any host within the VMotion domain must share a common vDS.</p>
<p>Data Recovery is built on the VMware vStorage API for Data Protection.</p>	<p>Source: VMware Data Recovery Administrators Guide</p>	<p>Data Recovery uses a virtual machine appliance and a client plug-in to manage and restore backups. The backup appliance is provided in open virtualization format (OVF). The Data Recovery plug-in requires the VMware vSphere Client.</p>
<p>Backups can be stored on any virtual disk supported by VMware ESX™. You can use storage area networks (SANs), network attached storage (NAS) devices, or Common Internet File System (CIFS) based storage such as SAMBA. All backed-up virtual machines are stored in a deduplicated store.</p>	<p>Source: VMware Data Recovery Administrators Guide</p>	<p>Data Recovery can concurrently back up a maximum of eight virtual machines. To start multiple backups, CPU utilization must be less than 90 percent. Due to memory constraints,</p>
<p>Data Recover does not support using more than two backup destinations simultaneously. If more than two backup destinations must be used, configure them to be used at different times.</p>	<p>Source: VMware Data Recovery Administrators Guide</p>	<p>Each Data recovery backup appliance can protect a total of 100 virtual machines. It is possible to create backup jobs that are configured to protect more than 100 virtual machines, but the backup appliance only protects 100 virtual machines and any additional virtual machines are omitted.</p>

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<p><b>You are able to test VM restores with the "Restore Rehearsal" functionality</b></p>	<p><a href="#">Source VMware Data Recovery FAQ</a></p>	<p><b>VMware Data Recovery is not compatible with vCenter Server 4 Linked Mode</b></p>
<p><b>File level recovery is experimental and for only Windows VM's you will require the file level restore utility</b></p>	<p><a href="#">Source VMware Data Recovery FAQ</a></p>	<p><b>It is recommended that each VMware Data Recovery appliance have no more than two dedupe destinations and that each dedupe destination be no more than 1Tb</b></p>