SQL Server on VMware
Frequently Asked Questions (FAQ)

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What are the advantages of running Microsoft SQL Server on VMware® vSphere®?

There are many advantages, including reducing lab and test server costs, quickly deploying architectural scenarios, simplifying patch and software compatibility, and easily deploying multinode test beds with VMware vCloud® Director™. Other advantages include the following:

- Server consolidation:

  o Utilize all your server processor cores.

  o Consolidate SQL Server systems with minimal impact to applications.

  o Consolidate SQL Server licenses.

- Operational advantages:

  o Rapidly respond to changing workloads.

  o Enhance testing and troubleshooting using cloned production virtual machines.

  o Isolate database virtual machines from security threats.

- Higher availability with less complexity:

  o Reduce planned downtime due to hardware or BIOS updates with VMware vSphere® vMotion®.

  o Reduce unplanned downtime due to hardware failure or resource constraints.

  o Implement simple and reliable SQL Server disaster recovery.

How can running SQL Server on vSphere save on costs?

By consolidating database virtual machines onto fewer physical servers, you save on server hardware investments, administrative expenses, and deployment and recovery costs. Running test/development and disaster recovery servers on vSphere can significantly reduce costs by eliminating the need to maintain costly 1:1 server ratios and identical hardware to replicate the production environment.

What are my support options for SQL Server on vSphere?

There are various support options for SQL Server running in VMware virtual machines. For detailed support information, see *Support for Microsoft Software* at www.vmware.com/support/policies/ms_support_statement.html.

What are my licensing options for SQL Server on vSphere?

Licensing can be a complex topic. For specific usage scenarios, see *SQL Server on VMware – Support and Licensing* at http://www.vmware.com/files/pdf/vmware-sql-support-licensing-guide-wp-en.pdf.

What are the performance implications?

SQL Server is an excellent candidate for virtualization, running at 85-95% of native performance. VMware has conducted several performance studies with heavy workloads and aggressive consolidation densities to demonstrate the high performance of SQL Server virtual machines. Performance white papers for SQL Server are available on the VMware Business Critical Applications Web page at http://www.vmware.com/solutions/business-critical-apps/sql/resources.html.

How about deployment and coexistence? What's the upside?

Unlike traditional database consolidation on physical servers, using vSphere to consolidate your databases offers the best possible co-existence strategy, allowing for high consolidation ratios without sacrificing specific application needs. With vSphere, you can consolidate your SQL Server systems as-is, without having to change the database version or patch level, thus reducing the need for expensive and complex application remediation.

How difficult is this solution to manage?

Management is simple. VMware vCenter provides a single user-friendly interface to manage virtual machines, physical servers, network, and storage components.

How do I properly size my environment for virtualization?

There is very little difference between sizing SQL Server virtual machines and sizing physical SQL Server systems; just follow Microsoft guidelines, taking into account application requirements. As you begin to understand the performance characteristics of the environment, you can instantly adjust processor and memory with VMware Hot-add.

How long will it take to deploy and configure SQL Server virtual machines?

Using virtual machine libraries, templates, and SQL Server Sysprep utility, you can provision new SQL Server virtual machines from preconfigured OS and SQL Server images, significantly reduced deployment time to minutes. Alternatively, VMware vFabric Data Director v2.5 provides the capabilities to automate deployment, management and governance of SQL Server 2008 R2 and SQL Server 2012. You may deployment multiple SQL Server systems through the powerful web-based console in just minutes.

Is this solution scalable?

Yes. Virtualization allows the flexibility to initially size servers on the conservative side, and then scale quickly to meet the growing messaging demands of your business. When workloads outpace the capacity of your hardware, vSphere features allow you to migrate to newer hardware with no interruption in service to your application users. In fact, performance tests have shown excellent results in both single virtual machine performance and highly consolidated scenarios with many SQL Server systems on a single physical host (http://www.vmware.com/resources/techresources/10033).

Will running my SQL Server environment on vSphere improve availability?

Yes. VMware vSphere High Availability (HA) provides built-in protection from hardware failure that covers every virtual machine running in the VMware cluster. Even planned downtime can be avoided through the use of vSphere vMotion, allowing server hardware maintenance that does not interrupt service to your end users.

Are features like SQL Server 2012 AlwaysOn supported in a virtual environment?

Yes. VMware supports SQL Server 2012 AlwaysOn Availability Group, AlwaysOn Failover Cluster Instances, in additional to the legacy SQL Server database mirroring and SQL Server failover clustering availability features. Detailed supported options are available on the *Microsoft Clustering on VMware vSphere: Guidelines for Supported Configurations* (http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1037959)

Are VMware features such as VMware vSphere® vMotion®, VMware vSphere High-Availability, VMware vSphere Distributed Resource Scheduling, and VMware vSphere® Fault Tolerance supported for virtualized SQL Server systems?

Yes. All of these features are supported for standalone SQL Server, clustered SQL Server running on non-shared disk architecture, for example, AlwaysOn Availability Group, Data Mirroring. Clustered SQL Server systems running on shared disk architecture, for example, AlwaysOn Failover Cluster Instances, legacy SQL Server Failover Cluster must be configured per the *Microsoft Clustering on VMware vSphere: Guidelines for Supported Configurations* (http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1037959

My SQL Server is running on Direct Attached Storage (DAS), would I be able to vMotion my SQL Server virtual machine?

Yes. vSphere 5.1 now enables users to combine vMotion and VMware vSphere® Storage vMotion® (Storage vMotion) into one operation. The combined migration copies both the virtual machine memory and its disk over the network to the destination host. In smaller environments, the ability to simultaneously migrate both memory and storage enables virtual machines to be migrated between hosts that do not have shared storage. In larger environments, this capability enables virtual machines to be migrated between clusters that do not have a common set of datastores.

I'm concerned about disaster recovery. How can this solution help?

By running SQL Server on vSphere, you can achieve a much more reliable and disaster-tolerant infrastructure. With your SQL Server systems encapsulated into virtual machines, there are many storage-based and software options for replicating to a disaster recovery site. These methods are also very cost-effective, allowing you to avoid costly 1:1 disaster recovery server ratios and eliminating the need for identical hardware.

Where can I get more information?

VMware has a public Web site dedicated to SQL Server virtualization. For more information, go to http://www.vmware.com/solutions/business-critical-apps/sql-virtualization.

See how to make your SQL Server environment more flexible, more reliable, and more cost-effective. Contact your VMware Account Manager today!