TOP FIVE REASONS WHY CUSTOMERS USE EMC AND VMWARE TO VIRTUALIZE ORACLE ENVIRONMENTS

Leverage EMC and VMware To Improve The Return On Your Oracle Investment

ESSENTIALS

Better Performance At Lower Cost

- Run Oracle 3x Faster with 80% More Efficiency

Continuous Oracle Availability

- Active-active Oracle availability across long distances

**Infrastructure-As-A-Service**

- Standardize infrastructure without changing existing Oracle software assets or processes

Removing the physical 1:1 relationship between Oracle database instances and server hardware unlocks several vital enhancements to improve the effectiveness of DBAs and storage administrators in Oracle environments. Combining VMware® with EMC® storage hardware and software enables faster provisioning of Oracle instances, scaling and protecting Oracle without application impact, and higher utilization at reduced cost. Today, EMC and VMware can deliver these virtualization benefits while also dramatically increasing performance and improving Oracle licensing return on investment (ROI).

1. UP TO 3X MORE PERFORMANCE AND 80% FASTER TUNING FOR DBAS

The nature of Oracle OLTP environments is that application workloads will change over time, often requiring Oracle users to constantly monitor and tune the database to maintain SLAs. EMC developed FAST™ VP technology as a means to deliver more efficient storage management.

EMC FAST VP identifies highly-active Oracle data and moves it to high-performing Enterprise flash Drives (EFDs), while inactive or less active data is moved to a storage tier more suited to its performance requirements. EMC FAST VP uses EMC Virtual Provisioning™ thin pools to provision storage. These virtual pools allow tiering of Oracle database workloads at a sub-LUN level, allowing a finer granularity of storage tiering for significantly more efficient storage provisioning in virtualized environments.
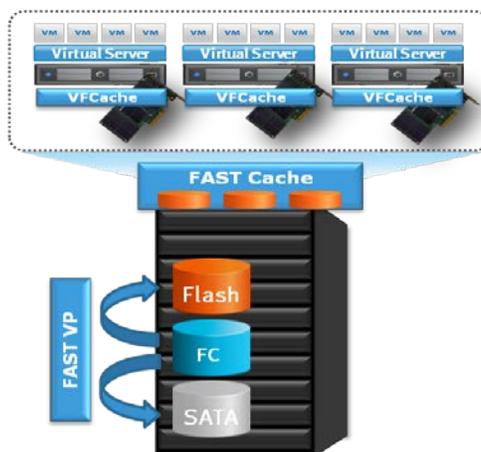
These features enable the underlying storage resources to automatically adapt to new database polices set by the Oracle DBA in 80% less time than traditional storage architecture, alleviating the DBA's management burden and maintaining maximized performance as workloads changeover time. The development of flash technology has revolutionized performance for Oracle infrastructure. EMC has expanded the use of FAST VP to take advantage of targeted use of flash at different layers of the Oracle I/O path for maximized performance and reduced response times.

EMC FAST Cache can be leveraged to enable a layer of flash drive performance between the database or application server processors and underlying storage arrays. FAST Cache automatically moves "hot" Oracle I/O in and out of flash to prioritize use of flash when it is needed. This not only increases performance but can reduce the amount of back-end storage disk up to 40% as more I/O is served directly from flash. EMC Testing with VMware has shown adding FAST Cache can nearly triple Oracle IOPs in a virtualized database environment.
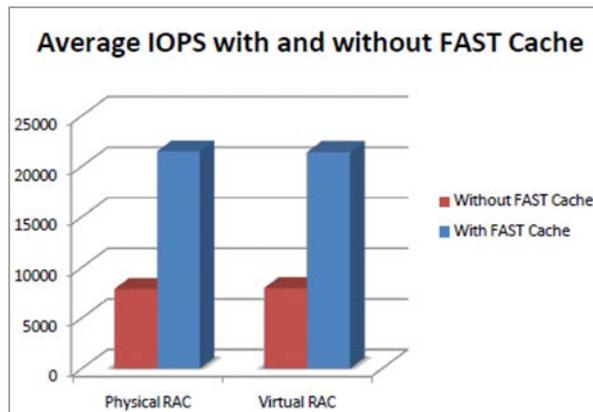
EMC VFCache can be leveraged to extend flash technology closer to the Oracle database itself, using PCIe Flash technology embedded in virtualized servers to reduce latency and increase throughput. Through using Server Flash we can shorten the distance application I/O needs to travel allowing the hottest data to be accessed on the PCIe card in the server decreasing latency which increases performance. EMC testing with VMware has shown adding VFCache can nearly double Oracle transactions per minute (TPM) and reduce I/O latency by 60%.

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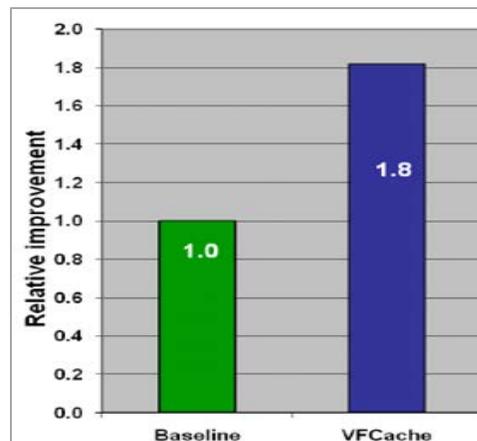
Through the latest release of VMware virtualization software and EMC virtual infrastructure, Oracle customers can now achieve maximum performance for virtualized database environments and dramatically reduce the tuning steps required by Oracle DBAs.

2. DEPLOY NEW ORACLE SERVERS AND STORAGE IN MINUTES

Once deployed, every Oracle environment requires the constant setup and deployment of additional servers and storage, whether for scaling production database and application servers, or setup of test and development and maintenance environments. In a physical model, individual servers and underlying storage resources can take days to provision, with setup and configuration steps repeated for each new physical server deployed. VMware and EMC virtual infrastructure enable server and storage resources to be shared across multiple database instances. Once shared, server virtual machine templates and storage replication allow for Oracle database files and O/S configuration data to be quickly and easily cloned and provisioned to new virtual server and storage resources in minutes, while Oracle databases and the applications they support remain 100% online and available.


EMC and VMware have developed a solution that can deploy new Oracle instances in a matter of minutes, as opposed to days that would be required to acquire and set up an additional application server. By combining VMware virtual machine templates with EMC replication and Oracle Clonedb™ technology, DBAs can deploy up to 10 virtual machines in 10 minutes, recreating a full Oracle database, middleware, and applications environment for either production or test and development.

3. CONTINUOUS APPLICATION AVAILABILITY AND COMPLETE RECOVERY

As more applications and databases are consolidated onto virtual infrastructure, keeping that infrastructure available continuously becomes even more critical to avoid business disruption. Traditional Oracle High availability has involved active-active Oracle Real Application Clusters (RAC) over limited distance locally and the use of active-passive standby database resources. EMC has revolutionized availability for Oracle environments in both areas through the use of EMC VPLEX and EMC RecoverPoint with VMware.
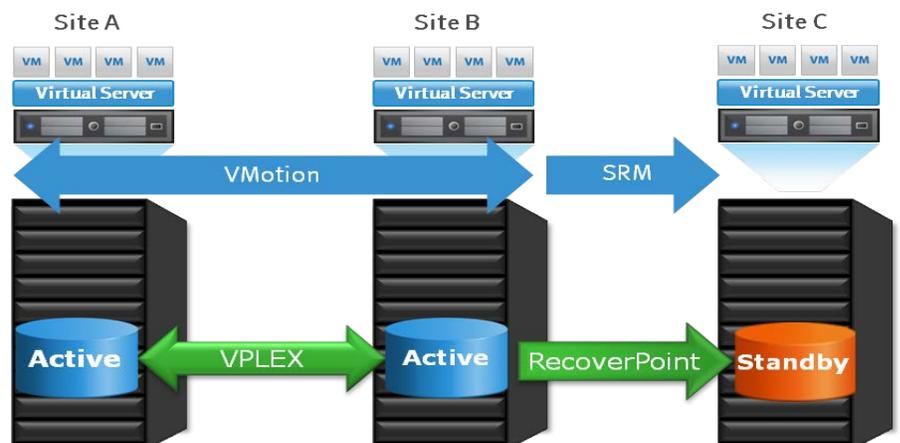
Once Oracle servers are virtualized, VMware's VMotion technology can be utilized to transparently migrate virtual machines within or across servers. During a VMotion, the active memory and precise execution state of a virtual machine is rapidly transmitted over a high speed network from one physical server to another and access to the virtual machines disk storage is instantly switched to the new physical host. This keeps server resources continuously available for Oracle databases and greatly speeds recovery during hardware failures.

Many customers however are seeking to move to active-active availability of their Oracle database environments. EMC VPLEX is a technology deployed in the storage area network (SAN) which enables the same data to exist in two separate geographical locations and accessed and updated in both locations at the same time. Oracle RAC clusters today can be stretched across data centers but distance is limited with Oracle recommendations to keep RAC nodes within 20 miles. EMC VPLEX extends the high availability of Oracle RAC to greater distances.
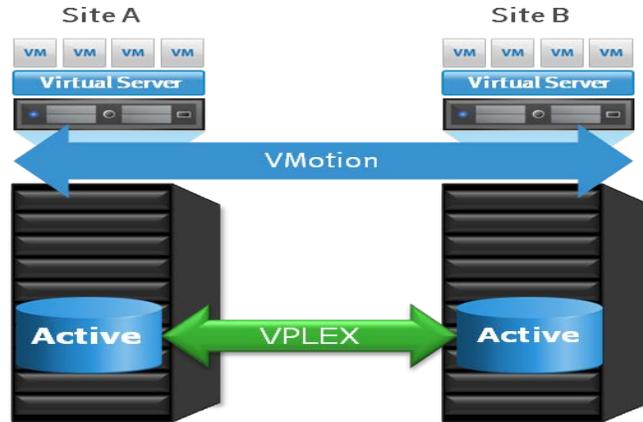
Testing results by EMC and Oracle have resulted in an Oracle qualified solution to deploy Oracle RAC with VPLEX in an active-active configuration up to 100 kilometers distance between sites. This allows 100% availability through an array or site failure, and allows Oracle efficiency of Oracle DBAs. Many customers however will also require disaster recovery over extended distances for their Oracle software stack.

EMC RecoverPoint enables extended distance recovery for virtualized Oracle environments and, unlike traditional Oracle DataGuard configurations, allows Oracle databases, middleware, and applications to be recovered to any point-in-time within minutes. EMC RecoverPoint is a technology that resides in the network allowing all Oracle writes to be tracked in a Recovery Journal before they are written to disk. Oracle data is then compressed and deduplicated before shipping to a remote site, reducing the network bandwidth requirements up to 90%. Should a recovery be necessary, the Recovery Journal can be used to roll back the complete Oracle software stack to any point in time for full recovery.

VMware Site Recovery Manager integrates with EMC RecoverPoint to orchestrate recovery of physical or virtualized Oracle servers during recovery. Furthermore, leveraging VMware virtual machines, DBAs can also quickly and transparently failover production to another set of virtual servers and perform recovery in a secure, separate environment to see what recovery would look like in the event of a disaster.

4. IMPROVED LICENSING ROI WITH FULL ORACLE SUPPORT

Many Oracle customers deploying Oracle on x86 must fully license their servers for Oracle database software use. In this model, being able to deploy as many instances of Oracle as possible on that server is imperative to maximizing ROI on their Oracle software investments.

One major benefit many customers realize when they deploy VMware in their Oracle environments is allowing DBAs to now leverage more instances of Oracle on the same hardware and deploy virtual machines in a variety of ways depending on the Oracle application use. This directly improves the return on investment in Oracle software licenses, and some customers have reported Oracle licensing ROI benefits of up to 40% through being able to deploy more Oracle on the same hardware making better use of the CPUs within their current server infrastructure.
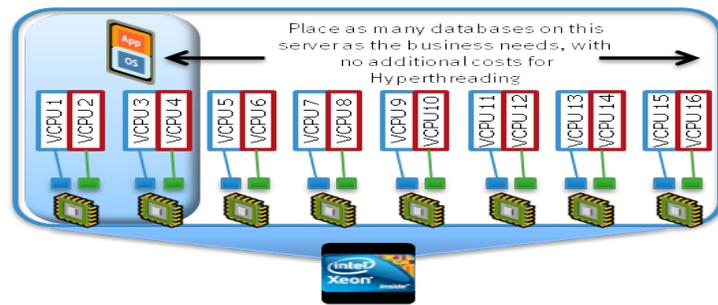
A top customer concern regarding cloud computing is ensuring tight integration and support. Today, Oracle supports the use of VMware in both Oracle RAC and single-instance environments. All Oracle technologies supported for use with VMware are documented on Oracle MetaLink* and EMC.com. In addition, EMC engages regularly with both VMware and Oracle support organizations with defined escalation paths ensuring customers the strongest levels of joint support among the three companies.
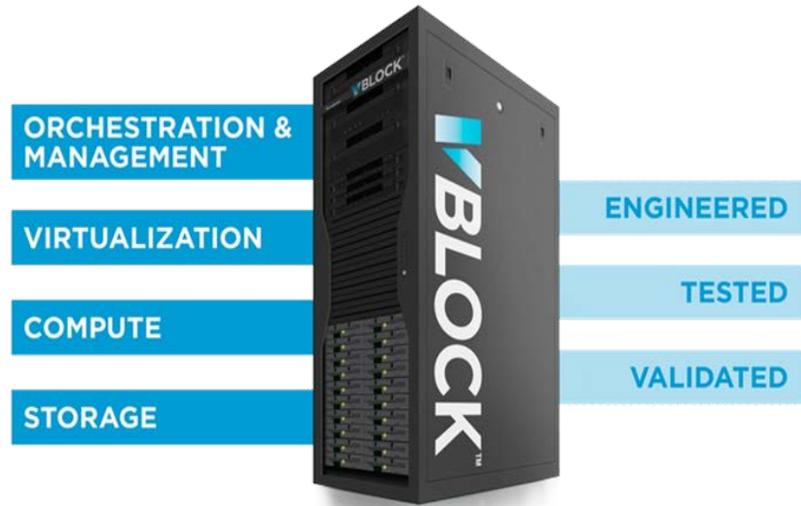
5. STANDARDIZE WITHOUT COMPROMISE

Many Oracle customers are evaluating deployment of integrated hardware appliances to help standardize their IT infrastructure, simplify management, and speed deployment. Before a standardization approach is taken however, Oracle customers should carefully evaluate at what level they should standardize infrastructure given the environment they have in place today.

For example:

- What existing database versions and applications am I running?

- How am I backing up and protecting those applications today?

- Will my applications run unchanged on this new infrastructure?

- Will the DBA process I have in place (ex: cloning, disaster recover) still apply?

Most Oracle customers today have multiple database versions supporting different applications. Each has well established backup, cloning, and disaster recovery procedures leveraging servers and networks. EMC's approach to helping Oracle customers standardize infrastructure is to leverage their existing Oracle software and processes unchanged through incorporating virtualized servers, networks, and storage agnostic to Oracle database version or applications deployed today.

With Vblock® Infrastructure Packages delivered through the VMware, Cisco, and EMC (VCE) Coalition, Oracle customers can get all the benefits of standardization without compromise including:

- Up to 3X more Oracle performance over Sun/Solaris x86 architecture through Cisco UCS server

- 60-80% faster problem identification and resolution through a unified infrastructure management framework.

- 5X faster deployment of new Oracle databases and applications through eliminating hand-offs between database, server, storage and VM administrators

* Refer to Oracle Support Statement Metalink/MyOracleSupport Document ID #249212.1

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit us at www.EMC.com.

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