

# SIMPLE, EFFICIENT STORAGE FOR MICROSOFT SQL SERVER DATABASES

Reduce storage acquisition costs by over 30 percent, lower power costs by 45 percent, and significantly cut management time—all while maintaining database performance

## ESSENTIALS

- EMC unified storage is ideal for running Microsoft SQL databases and significantly lowers costs while maintaining performance
- FAST enables you to automate storage tiering, thus saving 80 percent of the time for comparable performance tuning

One of the most difficult and time-consuming tasks for a database administrator is maintaining performance for service-level agreements (SLAs). At the same time, the IT management team wants to keep infrastructure costs as low as possible. Therefore, reducing costs, while maintaining performance, is a top concern for companies that rely on critical Microsoft SQL Server-based applications to run their businesses.

In the past, maintaining performance was done through manual storage tiering: storing the heaviest workloads—like SQL logs and tempDB—on high-performance drives, and at the same time, storing higher capacity items—like SQL database files—on larger, more cost-effective drives. The problem with this manual approach is that it is not dynamic. As time goes on, database sizes increase and database access patterns change. Therefore, the storage configuration needs to be analyzed, redesigned, implemented, and then managed.

EMC® Fully Automated Storage Tiering (FAST) can completely automate all of this workload balancing and rebalancing, by automatically redistributing hot, warm, and cold workloads onto Flash, Fibre Channel, and SATA drives, respectively. Once it is set up, FAST will continually monitor the environment and make changes based upon specific criteria. Not only can automated tiering lower costs, but the technology also saves a significant amount of time. In a recent EMC Proven™ Solutions test, it was estimated that a typical SQL troubleshooting session took about 16 hours compared to a three-hour setup and deployment of FAST. This eliminates approximately 80 percent of the time it used to take to troubleshoot database issues. In addition, from then on, the rebalancing happens automatically, saving significantly more hours of troubleshooting time.

	Without FAST	With FAST
	Manual, ongoing process	Automated performance optimization
Analyze	4 hours	Automated
Design	4 hours	1 hour
Implement	4 hours	2 hours
Manage	4 hours	Automated
<b>Totals</b>	<b>16 hours</b>	<b>3 hours</b>

## EMC PROVEN SOLUTIONS FOR MICROSOFT SQL SERVER 2008

EMC Proven Solutions help customers identify and overcome their business challenges while reducing risk and time-to-value of their information infrastructure implementations. EMC Proven Solutions also combine best-in-class products and services with key third-party offerings. EMC has documented results and best practices on how to integrate this solution into a customer environment. Please see the results of our solutions work at [www.EMC.com/sql](http://www.EMC.com/sql).

## EMC UNIFIED STORAGE: SIMPLE, EFFICIENT, AND POWERFUL

EMC unified storage systems are so simple and efficient that EMC will guarantee our storage is 20 percent more efficient than competitors. With EMC unified storage, you can create Virtual Pools of storage across applications to increase utilization; add capacity “just-in-time” without over-purchasing storage; and automate performance tuning and reduce cost via automated storage tiering—resulting in significant TCO savings.

Recent testing performed in a Microsoft SQL Server 2008 R2 environment demonstrated that EMC unified storage can save over 30 percent of the acquisition cost and over 40 percent of power and cooling costs, leveraging Flash drives and EMC FAST technology. Moreover, EMC unified storage is powerful, and can support all of your Microsoft applications’ needs including such demanding workloads as large SQL OLTP environments.

The following chart demonstrates the results of recent testing done with EMC unified storage utilizing a simulated Microsoft SQL Server 2008 workload and supporting 75,000 users. The baseline testing was done in a single-tier configuration, using only Fibre Channel disks. When FAST was later deployed for automated tiering, and the configuration was changed to a multi-tier utilizing a few Flash drives and a much smaller number of FC drives, EMC demonstrated how it both significantly reduced costs for its customers, and at the same time, slightly improved performance.

Configuration	All Fibre Channel	Tiered Flash/FC
Disks	90 FC	30 FC/4 Flash
Tested TPS	Baseline	2.4% Improvement
Tested IOPS	Baseline	4.2% Improvement
Acquisition Cost	Baseline	38% Less Cost
Power/Cooling	Baseline	45.6% Less Cost
Management	Baseline	80% Less Time

This table shows a comparison between the two configurations tested, demonstrating improvements in all areas including reduced management time and acquisition and power/cooling costs.

## SUMMARY

Companies looking to reduce costs for their Microsoft mission-critical applications, while still maintaining the same level of performance, can leverage EMC unified storage together with EMC Fully Automated Storage Tiering to achieve this goal.

The results of an EMC Proven Solution for a demanding Microsoft SQL Server OLTP workload demonstrate how you can reduce storage acquisition costs by over 30 percent and lower power costs by 45 percent—all while slightly increasing database performance.

Furthermore, administrators can easily configure FAST on a per-LUN basis and schedule data movement to occur automatically, as frequently or infrequently as needed—thus saving significant time and human resources.

## 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](http://www.EMC.com).

EMC<sup>2</sup>, EMC, EMC Proven, the EMC logo, and where information lives are registered trademarks or trademarks of EMC Corporation in the United States and other countries. All other trademarks used herein are the property of their respective owners. © Copyright 2010 EMC Corporation. All rights reserved. Published in the USA. 11/10 Solution Overview H7484