**NetApp®**
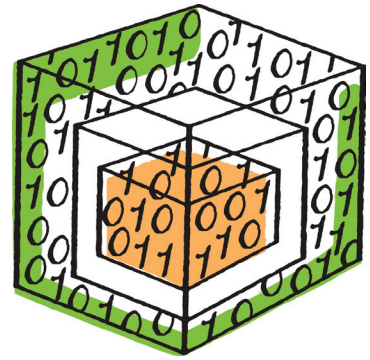
*Datasheet*

# NetApp SnapManager for Microsoft SQL Server

## Streamline data management, reduce costs, and increase availability

**Microsoft** Partner
Gold Independent Software Vendor (ISV)
Gold Messaging
Gold Portals and Collaboration
Gold Content Management
Gold Data Platform
Gold Business Intelligence
Gold Server Platform
Gold Communications
Silver Virtualization

## The Challenge
### Increase data availability while reducing management costs

Microsoft® SQL Server 2012 is the database of choice for many enterprise applications. Typically, numerous SQL Server applications are deployed to serve multiple business units in an enterprise. This often leads to complex deployment scenarios because applications tend to have different availability and data protection requirements. As the number of Windows Server® instances storing SQL Server databases increases, so does the complexity. Backing up databases stored on multiple devices and, as needed, restoring full backups and multiple incremental backups are time-consuming processes. Copying and managing copies of databases for application development and testing are additional time-consuming activities that typically require significant additional amounts of storage. Lack of an agile data management solution to address growing demand can result in decreased SQL Server availability that can:

- Increase both opex and capex
- Reduce administrator and end-user productivity
- Affect the ability to make quick and effective business decisions

The key to solving this issue is to upgrade your SQL Server environment to a flexible, enterprise-class storage solution that serves your data efficiently and reliably while reducing management costs and leveraging as much of your current infrastructure as possible.

## The Solution
### Deploy NetApp SnapManager for Microsoft SQL Server

The scope, scale, and complexity of today's data-driven world create new demands for agility in the data center. NetApp® SnapManager® for Microsoft SQL Server is tightly integrated with Microsoft technology to help you streamline database storage management while simplifying storage layout planning, backup, and restore operations. Our agile storage infrastructure can save you time, help you consolidate storage, and simplify management across a SQL Server environment. With SnapManager, you can dramatically reduce SQL Server data recovery times from hours to minutes. You can also use SnapManager to automate critical processes such as data backup, restore, and cloning, thus freeing your IT staff to focus on other value-added activities. With SnapManager, you get an industry-leading combination of high availability and seamless scalability for SQL Server environments.

"We are a database company at heart. We cannot have corruption, downtime, loss of data, or loss of availability... For us to meet those SLAs, we need a storage environment that we can count on. With NetApp, we have that."

**Matthew Leed**
Vice President of Operations, Gracenote

**Maximize data availability**

SnapManager for SQL Server takes full advantage of the NetApp clustered Data ONTAP® storage operating system, which helps you meet stringent service-level agreements by significantly reducing planned and unplanned downtime. With this powerful combination, you can nondisruptively meet the needs of SQL Server data growth and changing SQL Server application workloads. One aspect of this is the ability to support multi-tenancy environments, where a storage cluster can be securely partitioned to isolate individual tenants—for instance, in a service provider environment—or individual applications, workgroups, business units, and so on. In addition, clustered Data ONTAP also provides storage quality of service (QoS) workload management, which allows you to reactively or proactively control the resources that can be consumed by each SQL Server workload. The combination of multi-tenancy and QoS makes sure that SQL Server performance is not affected by other application workloads, resulting in improved performance consistency and increased customer satisfaction.

When there is a need to quickly recover lost or deleted production data, a space-efficient clone can be created from a backup without having to restore the entire production database. In addition, SnapManager supports both up-to-the-minute recovery as well as point-in-time recovery options through the automated replaying of transaction logs. By reducing restore times to minutes, you can further minimize downtime and enhance application availability. Additionally, with built-in support for AlwaysOn Availability Groups (AGs) in SQL Server 2012 combined with the latest release of SnapManager for Microsoft SQL Server, you can accelerate AG setup, rapidly back up and restore all databases in AGs, create space-efficient clones of databases in AGs, and quickly resynchronize databases within the AG. In addition, AGs can be mirrored to remote locations using NetApp SnapMirror® technology.

**Reduce storage costs**

Reduce your total cost of ownership by consolidating your SQL Server databases onto NetApp storage systems. By consolidating SQL Server data onto NetApp storage, you have the flexibility of an iSCSI, Fibre Channel, FCoE SAN, or SMB 3.0 (CIFS) infrastructure. You can use flexible volumes to eliminate pools of unused storage and increase storage utilization, simplify data management, and reduce administrative overhead. SnapManager can move online backups to secondary storage and then deduplicate the archived backups to further reduce storage costs. These technologies can also be applied to data archiving. With NetApp FlexClone® software, DBAs can create database clones with virtually no storage footprint. SnapManager also supports virtualized IT environments, including VMware® and Microsoft Hyper-V®.

**Deploy federated backups**

With NetApp integrated data protection, you get quick, space-efficient backups through a graphical user interface as well as a comprehensive set of Windows PowerShell® cmdlets for easy scripting of backup/restore workflows. You can add multiple SQL Server instances and databases to the same federated group and create a Snapshot™ copy to back up all databases in that group at the same time. SnapManager provides the capability to restore to a marker, so you can tie recovery to a business event, which is particularly useful for applications that span multiple databases across multiple SQL Server instances.

**Increase data protection**

You can minimize exposure to data loss by performing frequent backups with our fast, nondisruptive Snapshot technology. SnapManager takes only minutes to perform a full backup with minimized disk space. Because our backups are transactionally consistent,
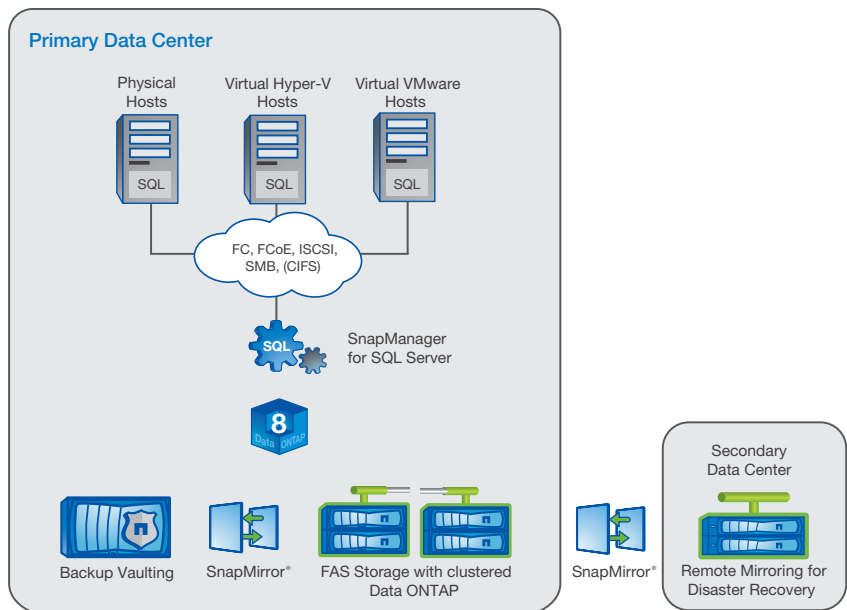
**Figure 1) NetApp SnapManager for Microsoft SQL Server.**

SQL Server recognizes them as full backups. SnapManager helps to make sure that each backup is valid and available for restoration by automating the process of verifying the consistency of database backups. Backup verification needs no additional disk space and is integrated into the backup workflow. As a result, you can make more frequent and complete backups. Up to 255 active Snapshot copies can be kept at any one time with negligible performance impact. SnapManager provides federated backup, which eliminates the need for complex scripting when backing up data across interrelated database groups. Because SnapManager is integrated with NetApp SnapVault® backup software, you can increase your level of data protection by archiving your backups as well as restoring them on lower cost secondary storage.

### Achieve intelligent management
SnapManager provides you with data protection, backup management, and database clone lifecycle management. A rich set of Windows PowerShell 3.0 cmdlets enables DBAs to script repetitive tasks as well as include SnapManager functions in custom data management workflows. In addition, the combination of Data ONTAP and Windows PowerShell scripting enables DBAs to automate management of LUNs and volumes. NetApp storage appears as local storage to

SQL Server, and the management of SAN storage is accomplished through native Windows® environments. Because SnapManager creates backup jobs that are executed through the SQL Server agent, they resemble a normal maintenance plan to which most DBAs are already accustomed; there is no need to open the GUI for normal day-to-day operations. You can proactively monitor your SQL Server environment with automatic e-mail alerts.

### Optimize database performance
NetApp has end-to-end flash options, such as hybrid flash/HDD systems with Flash Cache™ and Flash Pool™, server-based caching with Flash Accel™, and all-flash arrays such as the EF540 for low-latency performance requirements. Our flash-based solutions help you speed overall performance, boost responsiveness of performance-critical scenarios, reduce power costs and overprovisioning, and improve utilization of your data center space.

### Clone lifecycle management
SnapManager for SQL Server leverages FlexClone technology to make zero-storage-footprint clones that can accelerate the release and improve the quality of new applications based on SQL Server. Using an intuitive wizard-based tool, in seconds you can create space-efficient copies of SQL Server data with end-to-end clone lifecycle

management, including policy-based clone deletion and refresh. Empower your enterprise DBAs to offer on-demand, periodic, and customized staging and user-acceptance testing services quickly and without errors to other DBAs and end users (application engineers) using policy-based clone lifecycle management. In addition, you can leverage a rich set of Windows PowerShell 3.0 cmdlets that supports integration of cloning in test automation scripts and decision support system reporting applications. With SnapManager for SQL Server, you can create clones quickly whenever you need them, with minimal impact in terms of space and wasted time.

### Improve data lifecycle management
With SQL Server 2012 your DBAs can place archived data in table partitions that are backed by secondary data files and can be easily moved to secondary storage through the SnapManager database migration wizard. Alternatively, DBAs can back up a database, archive the backup to secondary storage using NetApp SnapVault, and then purge old data from the database. In addition, NetApp deduplication can significantly reduce the storage footprint of the archived backups. SnapVault also allows you to back up databases to secondary storage and restore to an alternate location.

## Provide multi-tenancy and QoS

Customers can utilize functionality that Data ONTAP offers to provide data compartmentalization for all tenants, with each granted access only to its designated storage container. Rich support based on Windows PowerShell for both Data ONTAP and NetApp integrated backup empowers administrators to develop appropriate workflows that support the needs of your multi-tenant environment. In addition, clustered Data ONTAP provides storage QoS workload management using policies that specify a throughput limit, defined in terms of IOPS or MB/sec. This makes sure that SQL Server performance can be optimized consistently without being affected by other application workloads or tenants.

## Partner for success

NetApp Professional Services for Microsoft Applications offer a wide range of services, including SQL Server implementation on the NetApp storage platform, disaster recovery, and high availability, as well as custom services to help customers successfully deploy SQL Server. To meet your interoperability and performance needs, we collaborate closely with Microsoft on key product integration efforts, including performance testing, product validation, and joint development. In fact, NetApp was recently awarded Microsoft Partner of the Year for server solutions. NetApp Global Support and our extensive partner network can provide expert help to assist you in planning and implementing an efficient and reliable storage and data management solution for your SQL Server environment. To see how well an agile data infrastructure from NetApp can support your Microsoft SQL Server environment, visit any Microsoft Technology Center. Contact your NetApp representative for more information.

## System Requirements

NetApp SnapManager for Microsoft SQL Server supports:

- Windows Server 2008 or 2008 R2, 2012, Standard Edition or Enterprise Edition; Windows Server 2008 R2 Datacenter Edition
- Microsoft SQL Server 2005 with SP4 or 2008 with SP3 and 2008 R2 with SP2 or 2012 Standard Edition or Enterprise Edition
- FC, FCoE, iSCSI, or SMB (with Windows 2012 and SQL 2012) protocol NetApp SnapDrive® for Windows v7.0 for 7-Mode and clustered Data ONTAP
- Data ONTAP v8.0.5 (7-Mode only), 8.1.3 (7-Mode and clustered Data ONTAP), and 8.2 (7-Mode and clustered Data ONTAP)
- x86 and x64 platforms
- Windows guest OS on VMware ESX® 5.1 or later, Microsoft Windows Server 2008 R2, or Microsoft Windows Server 2012

For more information about NetApp Microsoft solutions, go to *www.netapp.com/microsoftsolutions*.

Use of the word "partner" or "partnership" does not imply a legal partnership between NetApp and any other company.

## About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at *www.netapp.com*.

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