



Microsoft® SQL Server™ 2008

Always On Technologies

Microsoft® SQL Server™ 2008 Always On Technologies provides a full range of options to minimize downtime and maintain appropriate levels of application availability.

TOP NEW FEATURES

- Recover corrupt data pages from a mirror server with enhanced Database Mirroring features
- Take advantages of Failover Clustering enhancements in Microsoft SQL Server 2008 and Microsoft Windows Server® 2008
- Add new nodes to a peer-to-peer replication solution without taking replication offline
- Improve restore times and reduce backup volumes with new support for backup compression
- Improve concurrency with locking enhancements
- Reduce downtime for hardware maintenance with hot-add CPU capabilities
- Use Resource Governor to proactively control workload prioritization

Increased Availability

Minimize downtime, speed recovery, and achieve the appropriate level of availability defined by service level agreements.

Database Mirroring

Increase availability by providing complete or nearly complete redundancy in the event of a disaster or planned upgrade. Automatically transfer transaction log records from one server to another for quick failover to the standby server. Provide a high availability solution that does not require proprietary hardware, is easy to set up and manage, and provides automatic client redirection. Protect against page corruption by using SQL Server 2008 Enterprise Edition to fetch the mirror version of a corrupt page from a partner server automatically.

Log Shipping

Use Log Shipping to provide database-level redundancy with two or more instances of SQL Server by automatically backing up, copying, and restoring transaction logs on standby servers. Increase availability by providing multiple failover sites. Apply a time delay for applying transaction logs on the standby server to provide protection

against user errors. Reduce the load on the primary server by using a secondary server for read-only query processing.

Failover Clustering

Provide server-level redundancy on a certified Microsoft Cluster Services configuration. Enable seamless failover capabilities in the event of a CPU, memory or other non-storage hardware failure by sharing disk access between nodes and restarting SQL Server on a working node in the event of a failure. Expand clustering abilities with SQL Server 2008, which no longer requires one drive letter for each clustered instance.

Geographically Dispersed Failover Clustering

Provide server-level redundancy and remove the single point of failure in a typical failover cluster by using a certified Microsoft Geographically Dispersed Cluster Services configuration with one or more storage arrays at each site.

Peer-to-Peer Replication

Replicate changes at close to real time while all databases also handle their primary responsibilities. Increase scalability, availability, and processing capacity by configuring

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applications to use different peers and failover to another peer in the event of a peer failure. Protect against accidental conflicts with SQL Server 2008 conflict detection. Increase availability by dynamically adding a new node to an existing topology. Easily visualize and manage your topology with the Topology Viewer in SQL Server 2008.

Enhanced Backup and Restore

Use mirrored backup sets to perform a concurrent backup of a database to multiple backup devices and increase protection in the event of backup media failure. Create checksums on backup media to verify subsequent restore operations.

Checksum on Data Pages

Detect damaged database pages quickly, regardless of how the damage occurred, by using Checksum on Data Pages. Detect pages that were written incompletely, or from outside of SQL Server, and use Online Page-level Restore to replace the faulty page.

Decreased Downtime

Recover quickly from unplanned downtime and minimize downtime from system maintenance and operational procedures that are necessary for smooth operation of mission critical applications.

Online Index Operations

Increase the performance and availability of mission critical applications by creating, dropping, and rebuilding indexes while they are still online and available to applications.

Backup and Restore

Use Backup Compression to improve restore times and reduce backup volumes. Restore read-only database filegroups without applying transaction logs. Use piecemeal restores to restore a database in stages and make critical data available sooner. Reduce downtime caused by file corruption by restoring individual data pages. Use Online Restore to keep a database online and available during database file, page, or piecemeal restore operations.

Fast Database Recovery

Benefit from fast recovery that makes databases accessible earlier in the post-crash or failover recovery process and enables partial availability during restore and database page checksum operations.

Partial Database Availability

Provide access to undamaged database files if secondary non-primary data files are unavailable due to isolated hardware or disk failures.

Locking

Prevent writers from blocking readers and readers from blocking writers by using Snapshot Isolation. Increase concurrency on partitioned tables with the enhanced locking escalation of SQL Server 2008.

Dynamic Configuration

Add memory and processing power to supported systems without having to restart SQL Server by using Hot-Add Memory and Hot-Add CPU.

Improved Manageability

Investigate, monitor, and recover damaged data across your

enterprise by using powerful, productive management tools that simplify recovery.

Database Snapshots

Provide point-in-time snapshots of databases. Investigate and repair user errors by comparing the current values against snapshot data. Use the snapshot as a source for reports to provide point-in-time reporting capabilities. Reduce the data storage requirements of a full copy of the database because Database Snapshots only contain data that has changed, not the entire database. Provide read-only access to database mirrors.

Table and Index Partitioning

Limit the impact of I/O-intensive activities such as data load, backup and restore, index rebuild, and index defragmentation, by breaking large tables and indexes into smaller partitions.

Dedicated Administrator Connection

Connect to a server that appears to be unavailable by using the high priority Dedicated Administrator Connection (DAC).

Resource Governor

Control resource utilization to prioritize key workloads with Resource Governor. Ensure mission critical database workloads are not adversely affected by other database activity.

Additional Information

For more information about Microsoft SQL Server 2008, visit <http://www.microsoft.com/sql>