High Availability & Disaster Recovery

Globalization, vigorous competition, and an unprecedented growth in regulation have all contributed to the increased importance of using a proven, trusted database to keep data online. Unfortunately, DBAs report that server failure is still a huge problem, acting as the source of downtime 45% of the time. This can cost organizations enormous amounts of money, and damage their reputation. Enterprises need assurance that they can keep their information continuously safeguarded and available on a hardened data platform with uncompromised data resiliency.

Reduce Downtime With Enterprise HA/DR

MarkLogic® has enterprise-class high availability and disaster recovery (HA/DR) so that you can have confidence that your data is always available and scheduled downtime is minimized, reducing risk and avoiding interruptions. MarkLogic achieves HA/DR using a shared-nothing architecture that provides redundancy for failover and high-performance scaling.

- Shared-nothing architecture has no master-slave relationships, eliminating any single point of failure
- MarkLogic has point-in-time recovery and ACID transactions to ensure full redundancy and consistency
- Changes do not require a server restart (re-indexing, adding nodes, or changing configurations)
- Database replication between sites is secured with SSL out-of-the-box
- Incremental backups consume less storage and can be completed quickly

Automated Failover for High Availability

High availability entails continuity within a cluster, protecting against component failure with computers, networking equipment, and power supplies. MarkLogic clusters are protected against these sorts of failures by providing fault tolerance in both evaluator nodes (E-nodes) and data nodes (D-nodes). If either an E-node or D-node fails, other nodes automatically pick up the workload so that the data stored in forests is always available. High availability works with either local disk failover on DAS or SSD, or shared disk storage such as SAN, Amazon S3, or HDFS.
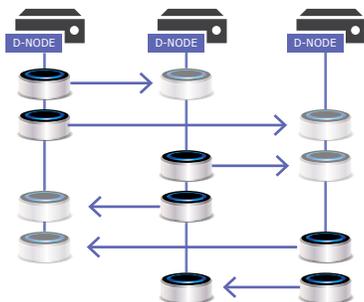
Local Disk Failover
Synchronous replication of forests across local hosts using journal frames


SAN, NAS, AMAZON S3, HDFS
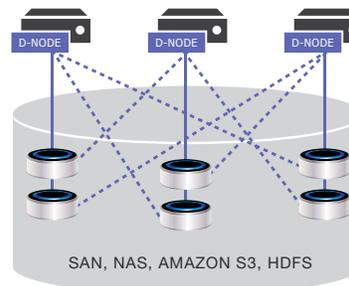
Shared Disk Failover
Synchronous replication of forests across shared disk space such as SAN, Amazon S3, or HDFS

Database Replication for Disaster Recovery

Disaster recovery protects against failures of an entire data center (power outages, natural disasters, etc.). With disaster recovery, you can backup selected components or the entire database—using SSL out-of-the-box. You can also do incremental backups, coupled with journal archiving, in order to restore the database to a point-in-time that minimizes the recovery point objective (RPO) and uses less storage.
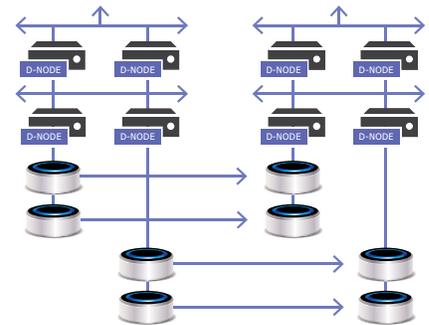
Avoid Scheduled Downtime

Avoiding scheduled downtime is important to ensure a highly available system, which is why MarkLogic is designed so that administrators can keep systems online and operational while performing changes and maintenance:

- **Online Database Backup Operations** – Full and consistent database backup operations run while the system is up, avoiding downtime to backup data
- **Hot Configuration Changes** – Most configuration changes, including adding nodes, do not require a server restart
- **Automatic Index Optimization** – On-disk data structures are designed for fast indexing without shutting down the system, and queries can even be continued while re-indexing

Flexible Replication

Flexible replication allows you to replicate a specific subset of your database to support information distribution. You can select specific portions of documents, or even perform data transformations during delivery to remote sites.

This asynchronous, document-level replication is ideal when replicating data to thousands of edge nodes in remote areas of the world where Internet access is poor, and mobility and security are at a premium.
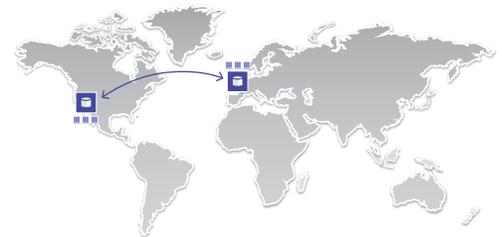
About MarkLogic

MarkLogic is the world's best database for integrating data from silos, providing an operational and transactional Enterprise NoSQL database platform that integrates data better, faster, with less cost. Visit www.marklogic.com for more information.