

NexentaStor MetroHA Stretch Cluster

PROTECT BUSINESS FROM SYSTEM OUTAGES

Disaster Avoidance

Disaster Avoidance involves proactive behavior to circumvent an impending storage outage. Even if a partial site failure occurs, disasters tend to affect an entire site. Disaster avoidance technologies allow for configuration of a host, cluster or site in a fashion that keeps systems running with minimal interruption. There may be a brief outage at one location followed by a restart at the recovery site, but a minimum outage sustained under controlled circumstances is considered to be an acceptable alternative to an extended one.

Downtime Avoidance

Downtime Avoidance is similar to Disaster Avoidance. The main difference is that with Downtime Avoidance, virtualization technologies can move virtual machines or virtual storage with no interruption to service.

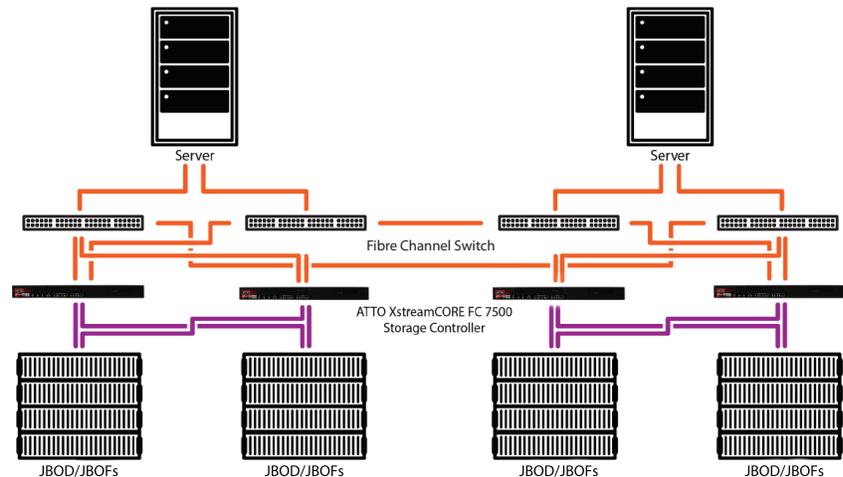
Disaster Recovery

Disaster Recovery helps to rapidly restore services when there is an unexpected outage and the recovery time is unknown. In these environments, the goal is to rapidly return to full operation, usually in a different data center.

High Availability and Fault Recovery

High availability technology reduces the length of an outage sustained by a failure and allows for rapid recovery of system services. High availability clusters provide automated fault recovery in a reactive fashion, with virtual machines restarted as required to recover from unplanned outages.

A Stretch Cluster is a cluster configured with host systems located at multiple sites. These may be on different floors of a data center, different buildings on a campus or at multiple metropolitan sites located hundreds of kilometers apart. The high availability and data mobility that stretch clusters provide make them one of the most reliable and flexible solutions that IT administrators can implement to shuttle data between multiple sites. Other benefits of stretch clusters include disaster recovery and downtime avoidance.



Zero Data Center Downtime Across Metropolitan Areas or Across Campus

Eliminating downtime and protecting and maintaining access to data are key benefits of a stretch cluster however another benefit is load balancing between sites. Load balancing helps to maintain access to data at consistent performance levels while distributing access between sites when one site is overloaded with user requests. Additionally, if a failure occurs at one site, there is continued workload availability and disaster recovery can be carried out from the second site. This type of implementation is key for medical or college campuses, financial institutions or live production or manufacturing sites that are spread out over a smaller geographical area.

Software Synchronicity: NexentaStor MetroHA

NexentaStor MetroHA provides a synchronous storage solution with the ability to store data on two disparate sites. NexentaStor MetroHA combines a synchronous storage solution with ZFS end-to-end data integrity. This provides a solution with the best possible uptime but also ensures data integrity when transferred over the WAN. Depending on implementation topology, Nexenta can simplify the design, deployment, and maintenance of data center, campus or metropolitan-wide high availability solutions.

About ATTO Technology, Inc.

For 30 years, ATTO Technology, Inc. has been a global leader across the IT and media & entertainment markets, specializing in storage and network connectivity and infrastructure solutions for the most data-intensive computing environments. ATTO works with partners to deliver end-to-end solutions to better store, manage and deliver data. Working as an extension of customer's design teams, ATTO manufactures host and RAID adapters, network adapters, storage controllers, Thunderbolt™ adapters, and software. ATTO solutions provide a high level of connectivity to all storage interfaces, including Fibre Channel, SAS/SATA, iSCSI, Ethernet, NVMe, NVMe over Fabrics and Thunderbolt. ATTO is the Power Behind the Storage.

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About Nexenta

Nexenta is the global leader in Software-Defined Storage. Nexenta uniquely integrates software-only "Open Source" collaboration with commodity hardware-centric "Software-Defined Everything" innovation via its industry-leading OpenSDx vision. Nexenta solutions are 100% software-based and 100% hardware-, protocol-, and app-agnostic. Nexenta provides organizations with the "true" benefits of Software-Defined Data Center-centric Cloud Computing. Nexenta enables everyday apps from rich media-driven Social Living to Mobility; from the Internet of Things to Big Data; from OpenStack and CloudStack to Do-It-Yourself Cloud deployments; from Private to Public to Hybrid Clouds. Founded around an "Open Source" platform and industry-disrupting vision, Nexenta delivers its award- and patent-winning software-only unified storage management solutions with a global partner network.

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High Performance for SSD Flash Integration: ATTO XstreamCORE™

Today's demanding data center environments are adapting to take full advantage of the benefits of flash memory. With flash solid-state drive (SSD) devices becoming more mainstream due to rising capacity and lower prices, system architects need to make sure that the systems they are putting together can take advantage of flash SSD performance capabilities. ATTO XstreamCORE™ storage controllers feature xCORE Data Acceleration technology with multiple parallel I/O acceleration engines, hardware buffer allocation and real-time performance analytics. XstreamCORE™ enables MetroHA to take advantage of up to 1.47M 4K IOPS per controller pair to provide performance for the most demanding applications. MetroHA also supports ATTO FibreBridge® products for cost-effective Fibre Channel connectivity for environments that require connectivity over performance.

Lower TCO and Decreased Latency

The NexentaStor MetroHA solution provides a low total cost of ownership by creating enterprise class storage services on industry standard server and storage hardware. This solution provides 24 x 7 uptime with business continuity for real-time mission critical applications enabling organizations to virtualize these applications and maintain high availability access. Utilizing Fibre Channel to create a high performance SAN makes sure data is always synchronized between data center sites. It is important to have reliable, predictable, low latency links between sites in a stretch cluster; the ATTO XstreamCORE and FibreBridge storage controllers are building blocks that add Enterprise Fibre Channel connectivity to up to 10 shelves of low cost SAS/SATA drives while introducing up to only four microseconds of latency. When paired with standard JBOD or JBOF enclosures, ATTO storage controllers represent a foundational data center component—one that companies can use to architect stretch cluster solutions that enable active site balancing, downtime avoidance and disaster recovery with more flexibility and a lower TCO than native Fibre Channel storage.

Building out a Stretch Cluster

The requirements for building out a stretch cluster will depend on an organization's needs when it comes to reliability, capacity and performance. For a high availability solution, Software Defined Storage (SDS) software can identify multiple controllers and communicate between multiple sites. For situations where availability is not the top priority, a single controller will suffice—as long as a second controller is used for redundancy at the remote site.



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While performance at the remote location will be dictated by the link connecting the sites, the local site can benefit from a high performance storage controller like the ATTO XstreamCORE FC 7500. ATTO storage controllers provide options for all performance and price needs: a pair of 7500s can deliver up to 1.47M 4K IOPS, while a pair of FibreBridge 6500 controllers can achieve about 120K 4K IOPS. Scalability is another asset of the 6500 and 7500, with both supporting up to 240 disk drives while adding Enterprise Fibre Channel to SAS JBOD storage.

Solution Components

- Controllers: ATTO XstreamCORE FC 7500 or FibreBridge 6500 storage controller
- HBAs: ATTO Celerity™ 32 and 16Gb Gen 6 Fibre Channel HBAs
- Software: Nexenta NexentaStor with MetroHA plugin
- Server: Various models from DellEMC and Supermicro
- Storage: Various models from DellEMC and Supermicro

