xsigo systems

SOLUTION NOTE

XSIGO VIRTUAL I/O SOLUTIONS FOR HA / DR

How Xsigo virtualized I/O supports your high availability and disaster recovery strategy

In today's on-demand world, organizations are under pressure to quickly and cost-effectively bring resources online to satisfy dynamic usage requirements. The Xsigo VP780 I/O Director provides enterprise-level I/O consolidation and virtualization, enabling IT shops to quickly deploy new resources and to nimbly re-deploy idle resources.

Decrease costs while increasing productivity, agility, and reliability

The VP780 I/O Director allows fast recovery from service disruption either within the same datacenter or across the WAN. The Xsigo I/O Director's SAN boot capabilities give disaster recovery managers a powerful tool to decrease costs while increasing productivity, agility, and reliability.

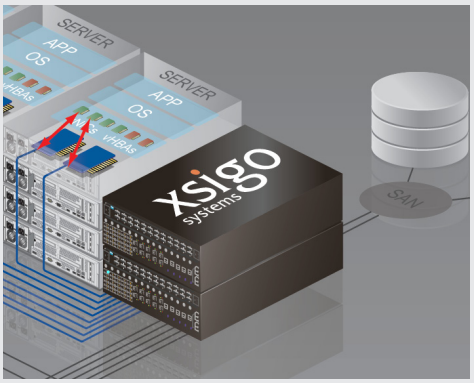
LOCAL FAILOVER

For the application manager, the Xsigo I/O Director's ability to quickly failover to another I/O Director provides for continuous uptime. In an HA configuration the I/O Director continually monitors the connections to the LAN and SAN and will automatically failover to the secondary connection with any service disruption, without disrupting the application or server. Failover can be configured on the same I/O Director or across two different I/O Directors.

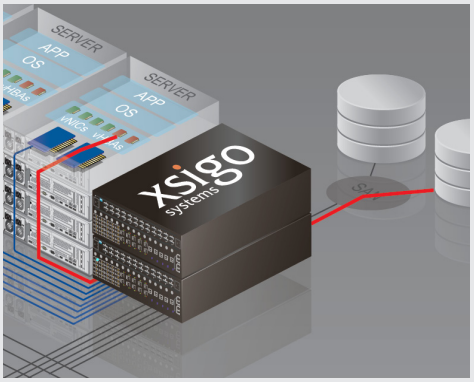
HIGH AVAILABILITY ETHERNET CONNECTIVITY

The Xsigo I/O Director supports a layer-2 HA solution that binds together two vNICs (primary and secondary) through an HA group name and MAC address. The primary vNIC is the active, online vNIC that supports traffic. The secondary vNIC is a live standby which takes over transmitting and receiving traffic if the primary vNIC fails.
The primary application of Xsigo HA is to protect against system level failures by configuring one vNIC on two Xsigo I/O Directors. However, it is also possible to configure HA to protect against other types of failures.

LOCAL FAILOVER



SAN BOOT



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- **Module-level failures:** A single vNIC can be configured on two different modules within the same Xsigo I/O Director chassis. If one module fails, the other will take over and support traffic
- **Port-level failures:** Two vNICs may be configured on the same module. If one connection fails, the other will take over and support traffic.

HIGH AVAILABILITY FIBRE CHANNEL CONNECTIVITY

Xsigo virtual I/O supports multi-pathing software such as PowerPath. For high-availability, two virtual HBAs are deployed in each server. Each server is connected to two I/O Directors. In the case off a server failure, the I/O profile can be migrated to another server with all of the networking and storage attributes in place, including the WWNs and MAC addresses. No changes to the LAN or SAN are required.

AUTOMATED SWITCHOVER

The I/O Director can also be configured for automatic switchover. If one path goes down, traffic fails over to another path. When the first path comes back online, the vNIC reverts back to the first path automatically. Any failure along the path (Ethernet or InfiniBand) of the vNIC will force traffic flow to the other side.

COST-EFFECTIVE WAN FAILOVER SOLUTIONS

Disaster recovery managers are today faced with the dilemma of reducing capital costs while maintaining a 100% recoverable environment that can be tested quarterly for SOX 404 compliance. With the Xsigo I/O Director, these managers have the flexibility to recover to an offsite location and remotely manage the recovery, allowing them to adjust their I/O and application resources to the demands of the specific situation.

The Xsigo I/O Director also allows the machines in the remote location to be utilized for other short term tasks when not needed for recovery. They can then be temporarily redeployed for quarterly DR testing required for SOX 404 compliance.

> VMotion events typically complete 66% more quickly

In the event that a disaster does occur, your business will change as well; people will be using different applications in different ways. With the Xsigo I/O Director, the DR Manager can, from any location, dynamically reassign resources to react to changes in the business requirements, allowing the company to take advantage of a new business opportunity or to better support customer requirements.

FASTER VMOTION

In virtualized server environments, rapid virtual machine migration is an important element of effective HA and DR. With the Xsigo I/O Director, VMotion events typically complete 66% more quickly, without having to change any of the LAN and SAN attributes in your infrastructure or on the server.

In most VMware deployments, VMotion information travels over the same Ethernet switching infrastructure as production traffic. This creates a performance bottleneck -- and a security exposure -- that can be eliminated with virtual I/O. By using the Xsigo high-speed, low-latency fabric as the virtual machine infrastructure, VMotion traffic remains on a network that is both extremely fast and separate from production traffic. With virtual NICs and a dedicated Ethernet I/O module, you can create an internally-switched, high-speed, low-latency network that allows VMotion to transfer data over an isolated network at rates up to 20 Gbps, allowing for much faster and more secure recovery in a VMware environment.

SAN BOOT SOLUTIONS

Booting servers from storage area networks (SANs) can provide significant benefits in complex data center environments. One of the driving forces behind SANs is the need to deliver mission-critical data quickly, at any time, without interruptions or delays. A key determinant in meeting that requirement is the ability to quickly replace a failed server in a SAN environment. The Xsigo VP 780 I/O director gives you the ability to SAN boot or iSCSI boot (via PXE or other common boot tools) to another server and bring up the I/O associated with that server OS and application.

Utilizing the I/O Director and SAN boot, the server administrator or DR Manager can quickly move the I/O profile from the server that has failed or is failing to another physical box and it will boot to the OS and application associated with that SAN boot LUN. This allows for extremely fast recovery both locally and across the WAN.

SAN Boot further enables the capability to utilize the DR compute resources for other purposes when not in a DR mode. In a SAN Boot environment DR boxes can be used for R&D projects then repurposed on the fly for DR when necessary, by simply moving the I/O profile to the DR hardware. No remapping of the SAN or LAN is required.

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