Lightsand   Powered by Innovation

Lab Testing of Lightsand with IBM:

A New Standard for Storage Extension Solutions

A major testing session took place at the IBM BCRS Center in Milan, Italy where LightSand's i-8100E and i-8100A products were put to the test.

The goal was to test Lightsand's technology for SAN extension over WAN, interoperability, performance and reliability under stress. This was a big one, and proved Lightsand's solutions in real life.

SAN Extension

Storage Area Networks (SANs) are critical for enterprise data management when extending storage systems across multiple sites. Enterprises need data replication, disaster recovery (DR) and business continuity solutions and LightSand's technology is designed to address these challenges by extending SANs over wide area networks (WANs) with zero latency and lossless.

Key Devices Tested

The testing was focused on Lightsand's i–8100E and i–8100A.

- **i-8100E FC Switching Gateway:**

  A multi-protocol device that bridges FC and IP networks, allowing SAN extension over IP. This device supports FC and Ethernet connectivity so you can extend SANs across long distances without performance degradation.

- **i-8100A Fibre Channel Router:**

  This device is great for SAN-to-SAN isolation and extends SANs while keeping them autonomous. The router has advanced features to manage SANs across different sites.

Test Environment and Scenarios

The test environment was a real life scenario with disk-to-disk and disk-to-tape operations across extended SANs. The testing was done by replicating enterprise storage operations over 1,400 km with different bandwidth and failure scenarios.

- **Disk-to-Disk Operations on BCRS Extended SAN**

  The first test was SAN extension over local Fibre Channel and then WAN extension using Gigabit Ethernet (GbE). The test showed perfect performance with no performance difference between local SAN and extended SAN. The devices achieved maximum transfer rates and handled multiple concurrent operations with up to 7 copy processes.
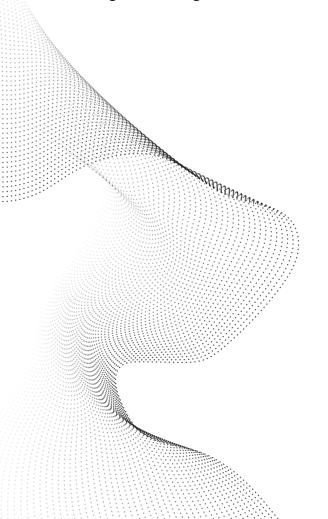
■ **Disk-to-Tape**

Another test was disk-to-tape where Lightsand's products were tested for transferring large datasets from disk to tape over extended SANs. The results were great, even with multiple copy operations the system kept data integrity and high speed.

■ **Open Systems Mirroring and Error Recovery**

To stress test Lightsand's products AIX LVM mirroring was tested with local and extended SAN configuration. The test simulated disk failure to see how the system would recover from it. Amazingly Lightsand's devices kept the processes running even when the primary disk was lost and failed over to the mirrored disk in the extended SAN.

Features: LightSand's Edge
Several features of Lightsand's technology were showcased during the testing:

Dynamic Load Balancing:

Lightsand's devices balanced the data traffic across multiple connections. If one WAN link failed the traffic was automatically rerouted without disruption so data flow and business continuity was uninterrupted.

WAN-Optimized Flow Control:

Lightsand's technology ensures data is transmitted lossless and in order over WAN links with reduced bandwidth, minimizes packet loss and performance across distance.

Error Recovery:

In scenarios where network and disk failures were simulated Lightsand's products showed great error handling. Data traffic was rerouted or resumed when network links were restored, high availability and reliability which is key to disaster recovery.

PPRC Global Mirror Testing

The most impressive result was from the PPRC (Peer-to-Peer Remote Copy) Global Mirror testing which is critical for enterprises with disaster recovery across multiple data centers. In these tests Lightsand's devices kept primary and secondary data centers in sync. Even when both primary and alternate links were disconnected the system recovered and resumed data sync when the network was restored.
The PPRC tests showed that Lightsand's devices kept the Recovery Point Objective (RPO) within industry limits.

IBM & LightSand: Innovation Together

This testing with IBM showcased Lightsand's technology in real life enterprise scenarios. The partnership between IBM and Lightsand resulted to several proven solutions for Fibre Channel extension, SAN interoperability and data security across geographically dispersed networks. These solutions are for industries that require zero downtime like finance, healthcare and telecommunications.

Summary

The testing of Lightsand's i-8100E and i-8100A at the IBM BCRS Center in Milan has set a new bar for SAN extension solutions. The tests proved that Lightsand's technology can handle complex long distance data replication, enterprises have a solution for disaster recovery, data migration and business continuity.

As businesses expand their data infrastructures and move to hybrid cloud Lightsand's SAN extension technology gives them the tools to manage their storage seamlessly with visibility, scalability and reliability. This partnership between Lightsand and IBM is a big step forward in enterprise data management, no matter where your data needs to go it will get there safely and efficiently.

This document merely reports observations from a testing session held from May 5th to May 12th at IBM BCRS Center in Milan, Italy.

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