



Private Cloud Provider Boosts Applications Performance at a Lower Cost of Ownership



To manage its rapidly-expanding infrastructure and to future-proof its SMB (Small Medium Business) private cloud offering, **Edgenet** needed a fast and flexible network. The company turned to Mellanox for a stronger, more scalable interconnect technology to boost the performance of its data center.

The result was an InfiniBand and Ethernet solution that achieved significant performance improvements, reduced live migration time and lowered cost per operation.

The Situation

Edgenet's product data services, guided selling and product showcase solutions are used by top retailers, distributors, media sites and suppliers around the world. Edgenet prides itself on its ability to rapidly collect, organize and optimize product data in a virtualized private cloud environment, helping customers accelerate their business over competitors. But with a heavily-trafficked and rapidly-growing industry comes the need for a simple and cost-effective method to manage all that data in a lightning-fast way.

Edgenet's legacy Fibre Channel was running out of ports and nearly prevented them from adding servers to its environment – something that could have been catastrophic. To compound the issue, the 8Gb Fibre Channel was creating serious throughput issues – each host has multiple 8Gb connections, each SAN has 48Gb of connectivity per Storage Processor – so Edgenet needed to ensure its SMB solution was able to have at least that much capacity to eliminate bottlenecks.

Edgenet recognized that server virtualization answered their biggest goals: reduce the complexity of configurations while lowering the cost of hardware and management. The technology company had 300 physical servers, and Edgenet's experts could get as many as four servers online in a day. The same technicians could set up four virtual servers in around an hour.

After implementation, virtualization offered continuing benefits. In a physical environment, updates of processor or memory demanded time offline while components were physically replaced. A virtual server could be upgraded without the physical interaction and time offline. "We needed to expand – and fast – but without adding expensive hardware, scaling and overhead costs," says Michael Steineke, vice president of IT at Edgenet. "We were on the hunt for a solution that would deliver the growth and performance capabilities without breaking our bank."

The Solution

Edgenet needed a fast network that supported RDMA (Remote Direct Memory Access) and had a lot of throughput on a per-port basis. Nearly two years ago, Steineke and his team began working with Mellanox to determine which interconnect options were available – and soon realized that InfiniBand was the obvious choice.

Building a private cloud with Windows Server 2012, R2 needs to be flexible and efficient – an area where InfiniBand excels. Just as important to Steineke was a solution that offered a low cost per GByte while bridging existing Ethernet with the new InfiniBand without too many complications. Mike and his team had chosen wisely.

"When we decided to upgrade to Windows Server 2012 R2, we were surprised to see that we didn't need to rebuild the architecture from the ground up," said Steineke. "The Mellanox InfiniBand hardware provided us with the flexibility to upgrade without changing hardware – something nearly impossible to find."

Edgenet chose InfiniBand for the storage fabric, meaning they have enough capacity to support any workload. By taking advantage of the features in 2012 R2 Hyper-V for storage and live migration, Mike’s team leveraged RDMA to free up host resources – ensuring Edgenet can move workloads much faster from server to server. The Mellanox hardware was immediately put into production upon arrival.

Products and features included:

- Dual Port Mellanox ConnectX-3 VPI (Virtual Protocol Interconnect) adapter cards
 - 2 cards per server
 - 1 port 10Gb Ethernet
 - 1 port 56Gb InfiniBand
- Mellanox SX6036 36-port 56Gb/s InfiniBand/VPI Switch Systems
- Mellanox LinkX™ Cables and Transceivers

Results & Benefits

Since deployment, Edgenet has seen vast improvement in the performance, flexibility, and lifespan of its data center – and valuable reductions in critical areas.

“We have seen a reduction in power consumption and cost, while dramatically improving the speed of our systems,” said Steineke. “For our customers in the home goods, automotive and sporting goods industries, real-time product information and updates are everything. The bottom line is that Mellanox solution has enabled Edgenet to better serve its current and growing client base with better data services.”

Great Performance With Even Greater Future Capabilities

Without pushing InfiniBand to its fullest capabilities, Edgenet is still seeing improvements in all aspects of the deployment, including the extension of the life of its current Fibre Channel infrastructure. As server updates continue to be released, Edgenet hopes to be able to increase these positive results.

10x Acceleration Across The IB Network

The addition of RDMA has accelerated Edgenet’s workload migrations by 10x, allowing more operation efficiency, reduction in latency and the best CPU utilization on the end point.

Versatile Hardware For Smaller Footprint In The Data Center

Mellanox’s end-to-end VPI solution allows Edgenet to run its InfiniBand and Ethernet traffic over the same adapter cards, switches and cables. This implementation also allowed for a

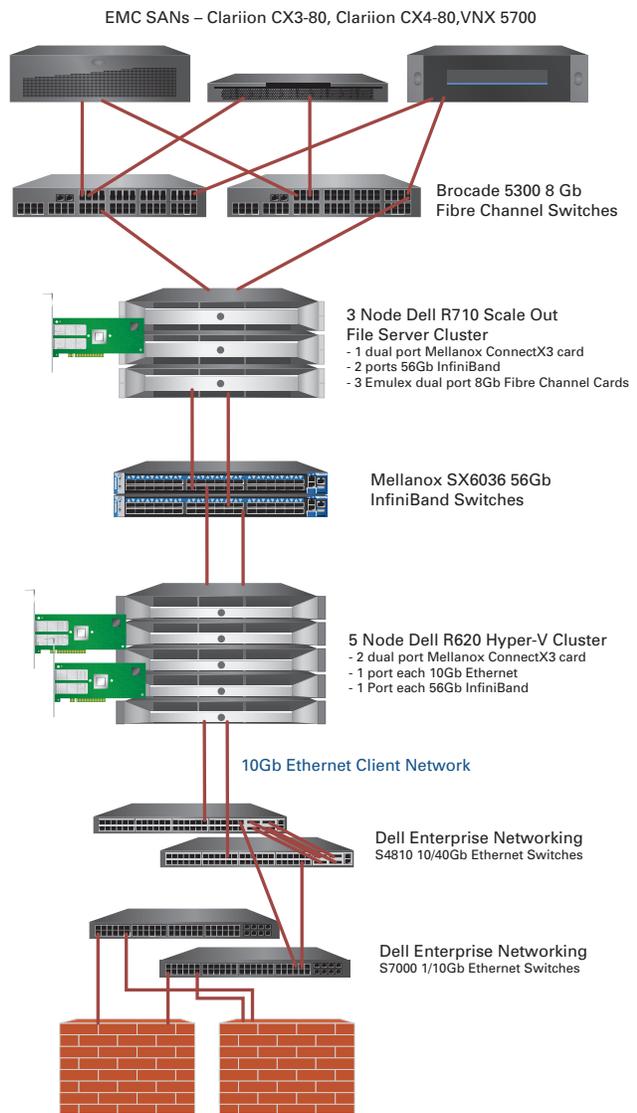
reduction in PCI slots and cost of I/O cards, reducing power consumption, rack utilization and hosting cost.

Simple Configuration For Cleaner Cabling

Mellanox VPI solution supports storage and compute together for simple configuration on the servers. Cabling is cleaner in the racks, driver maintenance and support are reduced by having only one type of card.

Hardware Upgrade Leads To Direct Customer Benefits

Performance improvements allow Edgenet to offer more aggressive pricing, lower cost, further capitalize on ROI, all while reducing cost of ownership. Overall, Edgenet’s business of software as a service can operate better and more efficiently.



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