Mellanox
TECHNOLOGIES
Connect. Accelerate. Outperform.™
Connecting the Clouds

Mellanox Connected Clouds

Mellanox's Ethernet and InfiniBand interconnects enable and enhance world-leading cloud infrastructures around the globe. Utilizing Mellanox's fast server and storage interconnect solutions, these cloud vendors maximized their cloud efficiency and reduced their cost-per-application.

InfiniBand is the key ingredient to build the most scalable and cost-effective cloud environments and to achieve the highest return-on-investment. Microsoft Azure's InfiniBand based cloud, as listed on the world's top performance capable systems (TOP500), demonstrated 33% lower application cost compared to other clouds on the same list.

Mellanox's Ethernet and RoCE (RDMA over Converged Ethernet) solutions deliver world-leading Ethernet based interconnect density, compute and storage. Mellanox's Virtual Protocol Interconnect® (VPI) technology incorporates both InfiniBand and Ethernet into the same solution to provide interconnect flexibility for cloud providers.

We encourage you to try the Mellanox VPI-based cloud infrastructures and see for yourself how your application can run faster!

Mellanox TECHNOLOGIES
Connect. Accelerate. Outperform.™

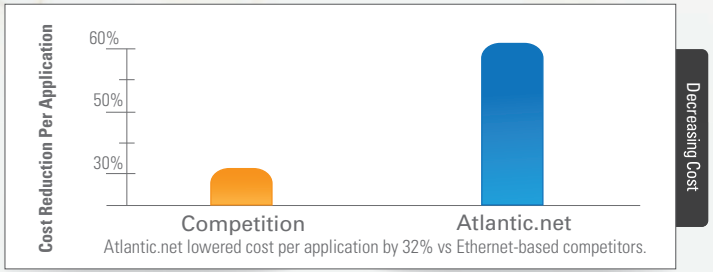
- Higher Performance
  - 56Gb/s per port with RDMA
  - 2us for VM to VM connectivity
  - 3.5x faster VM migration
  - 6x faster storage access
- Cost Effective Storage
  - Higher storage density with RDMA
  - Utilization of existing disk bays
- Higher Infrastructure Efficiency
  - Support more VMs per server
  - Offload hypervisor CPU
  - Unlimited scalability
  - I/O consolidation (one wire)

Overview

Atlantic.Net is a global cloud hosting provider that offers high performance support for customers through their platform. By leveraging Mellanox's InfiniBand solutions, Atlantic.Net can now offer customers more robust cloud hosting services through a reliable, adaptable infra-structure, all at a lower cost in comparison to traditional interconnect solutions.

Why Atlantic.Net Chose Mellanox

- Price and Cost Advantage
  - Expensive hardware, overhead costs while scaling, as well as administrative costs can be avoided with Mellanox's interconnect technologies and thereby reduce costs 32% per application.



Atlantic.net lowered cost per application by 32% vs Ethernet-based competitors.

- Lower Latency and Faster Storage Access:
  - By utilizing the iSCSI RDMA Protocol (iSER) implemented in KVM servers over a single converged InfiniBand interconnect adapter, iSER delivers lower latency and is less complex, resulting in lower costs to the user.

- Consolidate I/O Transparently
  - LAN and SAN connectivity for VMs on KVM and Atlantic.Net's management environment is tightly integrated; allowing Atlantic.Net to transparently consolidate LAN, SAN, live migrations and other traffic.

The Bottom Line

By deploying Mellanox's InfiniBand solution, Atlantic.Net can support high volume and high-performance requirements – on-demand – and offer a service that scales as customers' needs change and grow. Having built a high performance, reliable and redundant storage infrastructure using off-the-shelf commodity hardware, Atlantic.Net was able to avoid purchasing expensive Fibre Channel storage arrays, saving significant capital expenses per storage system.

PROFITBRICKS
The IaaS-Company.

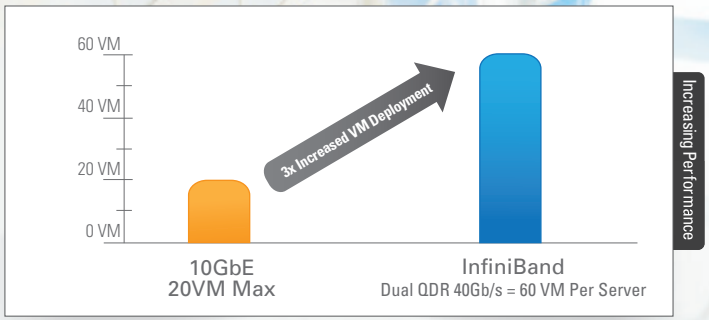
Overview

ProfitBricks is a worldwide cloud computing company, providing computing resources and infrastructure to customers.

Faced with the choices of interconnect technologies, they chose Mellanox's InfiniBand solutions with the desire for higher internal network speeds and throughput. By combining InfiniBand with their organic software, ProfitBricks offers a premier cloud service with unprecedented performance capabilities.

Why ProfitBricks Chose Mellanox

- **3x Increase in VMs per Physical Server**
  - By utilizing InfiniBand, ProfitBricks reached a dual QDR 40Gb/s InfiniBand threshold for internal back-end network connections. ProfitBricks' servers can support over 60 VMs per physical server (at 0.5 Gb per VM rate), which is a 3X increase over a 10GbE based VM deployment (20 VM maximum).



- **Consolidation of Network and Storage I/O**
  - LAN and storage connectivity for VMs on KVM and the ProfitBricks management tool environment is already integrated with Mellanox's multiple vNIC and vHBA interfaces.

- **Accelerated Storage Access**
  - By utilizing SCSI RDMA Protocol (SRP) implemented in a Red Hat KVM server over a single converged InfiniBand interconnect adapter, provided lower latency and is less complex than FC/iSCSI.

The Bottom Line

By deploying Mellanox's end-to-end InfiniBand solution, ProfitBricks can support high-volume and high- performance requirements on-demand. Its customers are also able to take advantage of a low pricing structure that supplements their performance.

SAKURA Internet

Overview

Sakura Internet is a Japanese Infrastructure as a Service (IaaS) cloud provider that offers computing resources to enterprise customers and IT personnel. Sakura hosts a large number of customers who use the cloud services for social gaming. Many of them also utilize Sakura as a Platform as a Service (PaaS_ for their gaming development platform. Sakura Internet chose Mellanox because of the inherent flexibility and scalability in supporting a growing highly-intensive, gaming computing resource, at a much higher access speed.

Why Sakura Internet Chose Mellanox

- Best cost-to-performance ratio
  - Compared to other Ethernet cards, using a single 56Gb/s adapter, with hardware partitioning/isolation instead of a few 10Gb/s Ethernet cards provides much higher performance while reducing total cost of ownership.

- Scalability
  - Social game service providers constantly increase or decrease their computing resources on an hourly basis. A flat network was needed that could simplify the cloud management at scale while ensuring extra compute resources and I/O.

The Bottom Line

Sakura Internet's customers content needs are growing and becoming more complicated. In addition the devices which customers use to access to Sakura Internet's data center has changed to smart phones and tablets, which use the latest communication technologies such as LTE, fueling further access and content demands. By deploying Mellanox's end-to-end InfiniBand solution, Sakura Internet was able to support a scalable interconnect solution to provide the necessary throughput and communication among its servers and storage.

Mellanox TECHNOLOGIES

Connect. Accelerate. Outperform.™

www.mellanox.com

USA
Mellanox Technologies, Inc.
350 Oakmead Parkway, Suite 100
Sunnyvale, CA 94085
Tel: +1 (408) 970-3400

© Copyright 2013. Mellanox Technologies. All rights reserved. Mellanox, Mellanox logo, BridgeX, ConnectX, CORE-Direct, InfiniBridge, InfiniHost, InfiniScale, PhyX, SwitchX, Virtual Protocol Interconnect and Voltaire are registered trademarks of Mellanox Technologies, Ltd. Connect-IB, FabricIT, MetroX, MLNX-OS, ScalableHPC, Unbreakable-Link, UFM and Unified Fabric Manager are trademarks of Mellanox Technologies, Ltd. All other trademarks are property of their respective owners.

4133BR Rev 0.1