WHITE PAPER

February 2014

Turn Your Cloud into a Mega-Cloud

Introduction

Today's computing business environment is one in which everyone is always looking for "more": more compute, more storage, more data transfers, more bandwidth. To remain static is to fall behind. It is crucial that companies take advantage of the latest advances in technology to maintain their market supremacy or to gain on their competition.

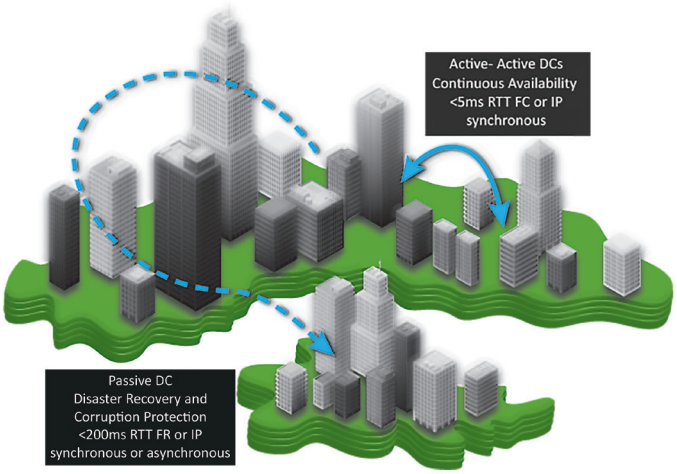
One area in which "more" is now easily achievable is the cloud. Cloud computing was developed specifically to overcome issues of localization and limitations of power and physical space. According to one recent report, 36% of data center facilities were in danger of running out of power, cooling, or physical space in 2012, and 60% of companies in the survey claimed they would need to build new data centers and perform upgrades over the following three years.[1]

Mellanox offers an alternative and cost-efficient solution. Mellanox's new MetroX® long-haul switch system makes it possible to move from the paradigm of multiple, disconnected, localized data centers to a single multi-point meshed mega-cloud. In other words, remote data center sites can now be localized through long-haul connectivity, providing benefits such as faster compute, higher volume data transfer, and improved business continuity. Thus, MetroX provides the ability for more research, more development, and more applications, while supporting more cloud users. This leads to faster product development and remote storage for fast backup and disaster recovery.

Disaster Recovery

For example, with MetroX it is possible to build a dynamic mega-cloud that provides superior disaster recovery protection by utilizing remote sites. Synchronous disaster recovery data centers are usually located approximately 30-50 kilometers from the primary site. These sites seek to achieve the lowest possible RPO (Recovery Point Objective), enabling zero data loss when the primary site is down by designating a secondary site as master. MetroX, using its big 40Gb/s pipes, low system latency (200ns), and simple out-of-the-box fabric-based high-availability management (InfiniBand Subnet Manager) is a perfect solution for achieving the RPO goal.

[1] "Annual Data Center Survey," Uptime Institute, May, 2011

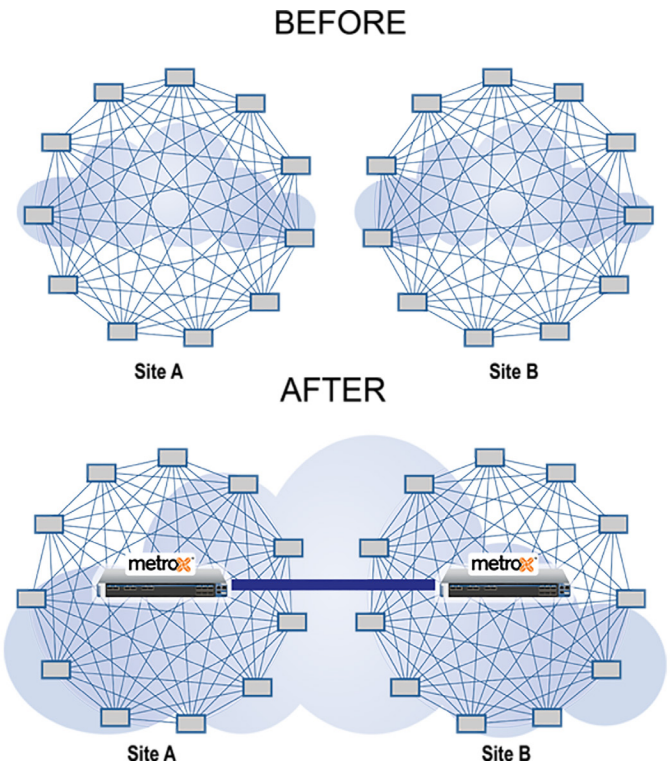


Scale Your Cloud and Save

The more physical data centers you join using MetroX, the more you scale your company's cloud into a mega-cloud. The possibilities are limitless. Whether you are bringing together two data centers that are only a kilometer apart or half a dozen data centers separated by tens of kilometers, MetroX provides the wide pipes to merge them into a mega-cloud that performs as if the individual parts were co-located.

Furthermore, you can continue to scale your cloud by adding data centers at opportune moments and places, where real estate is inexpensive and power is at its lowest rates, without concern for distance from existing data centers. Using MetroX, you seamlessly add new data centers to the growing mega-cloud with no concern that there will be a degradation of performance.

Moreover, you can take multiple distinct clouds, whether private or public, and use MetroX to combine them into a single mega-cloud. This enables you to scale your cloud offering without adding significant infrastructure, and it enables your cloud users to access more applications and to conduct more wide-ranging research while maintaining the same level of performance.



Storage

It is also possible to use MetroX to achieve the performance levels of local storage with the flexibility of central storage. In an ideal setup, multiple clusters, database machines, and data analytics machines that are all located in various data centers, are all connected to a centralized cloud storage. However, without exceptionally high speed interconnect, real-time processing is impossible. MetroX, when combined with Mellanox's 40Gb/s or 56 Gb/s interconnect technology, enables high speed computing within a mega-cloud as if centralized storage were local, with none of the associated performance penalties.

Summary

The advantages of using MetroX are significant. You can easily combine, control, and manage distant sites up to 80 kilometers apart, extending the reach of your InfiniBand and Ethernet RDMA interconnect. With Mellanox products you get a low-cost, low-power solution for long-haul interconnect, as well as the benefit of the fastest interconnect over 40Gb/s InfiniBand or Ethernet links. Only MetroX can offer 40 and 56Gb/s downlink speed, native RDMA, and latency as low as 200ns.

MetroX allows you to build a more efficient and more powerful network by connecting your remote facilities, transforming your remote and disconnected data centers into a single efficient mega-cloud.

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15-3557WP
Rev 1.0