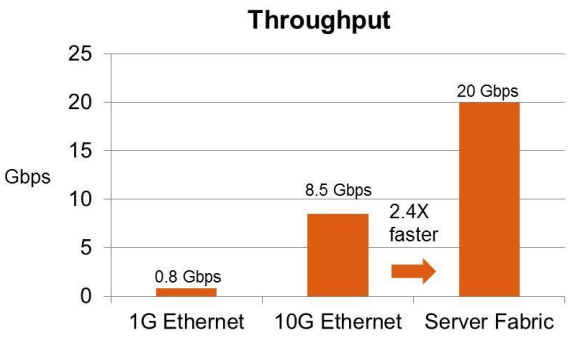
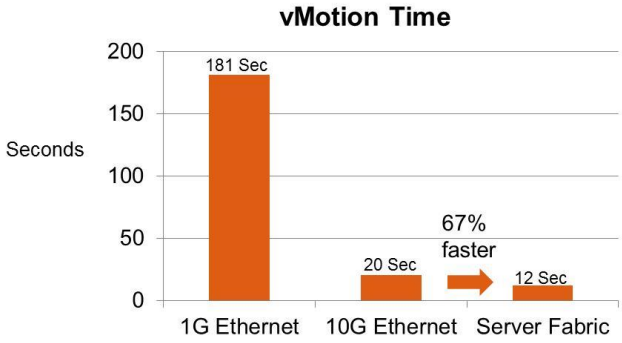
Xsigo Server Fabric Performance
Benchmark Report

Executive Summary

In performance benchmark testing, the Xsigo Server Fabric demonstrated significantly higher network device throughput as compared to 1G Ethernet and 10G Ethernet server connections. In this testing, the Xsigo Server Fabric was shown to deliver:

- 2.4X the Ethernet traffic of a 10G Ethernet connection (throughput to a single virtual machine)
- 20Gbps throughput measured to a single NIC on a single virtual machine
- 15X faster vMotion than1G Ethernet
- 67% faster vMotion than 10G Ethernet





Test Bed Overview

The performance test bed environment consisted of the following:

- 2 Xsigo VP-780 QDR I/O Directors
- 2 Dual Port ConnectX-2 QDR Infiniband PCI Cards
- 4 Fujitsu Primergy RX200-S6 Servers
  - 8 Cores 3.6Ghz Intel Xeon X5687 CPUs [2-Quad Core CPUs]
  - 48GB of RAM
- EMC Clariion Shared FC Storage [VMFS3]

- Typical VM Configuration: Redhat Enterprise Linux 5
  - 64 Bit OS
  - vmxnet3 drivers [paravirtualized]

Tests Performed

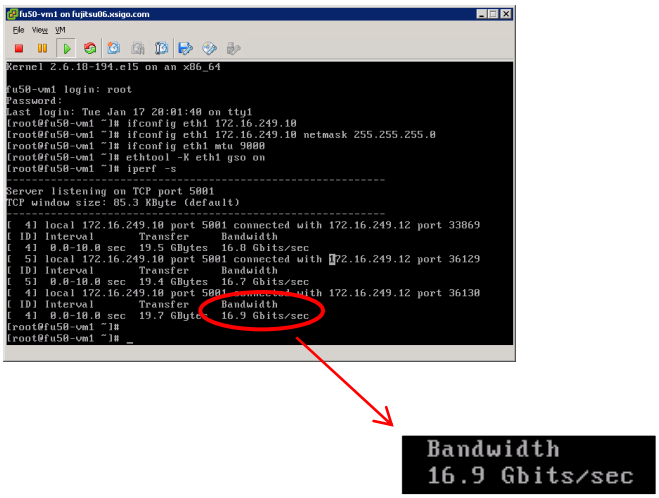
Three scenarios were tested.

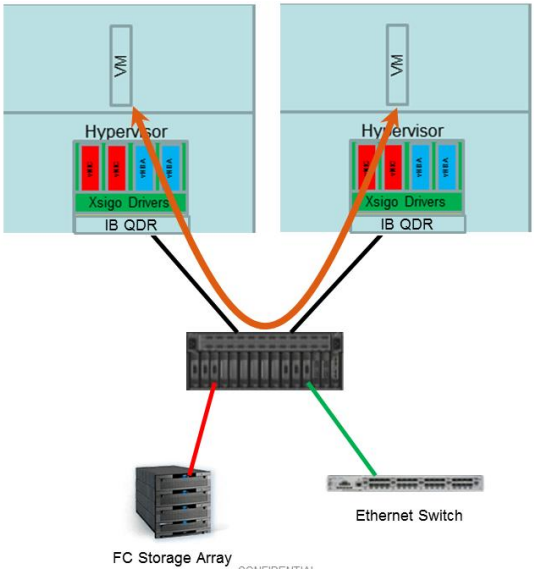
Test #1

Measure the speed between two Redhat Linux VMs on ESXi-5.0 servers.

Result:

The iperf test measured a sustained a 16.9 Gbit/sec data rate (shown by the orange path).



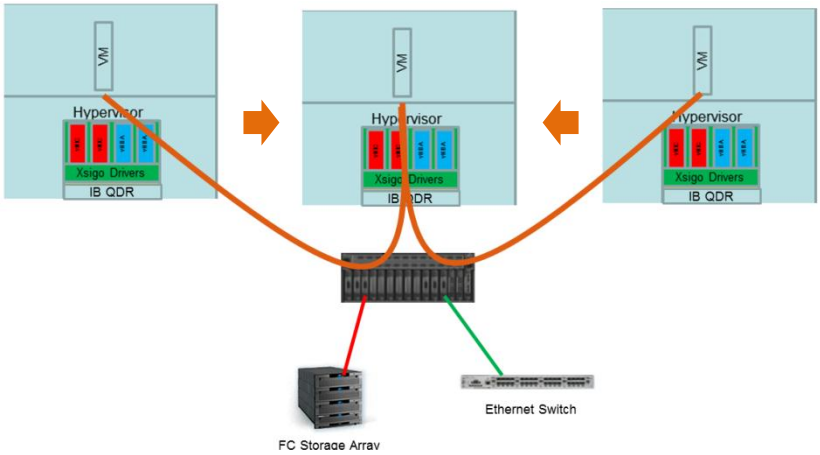


Test #2

Measure the performance of 2 VMs inputting traffic to a single application server.

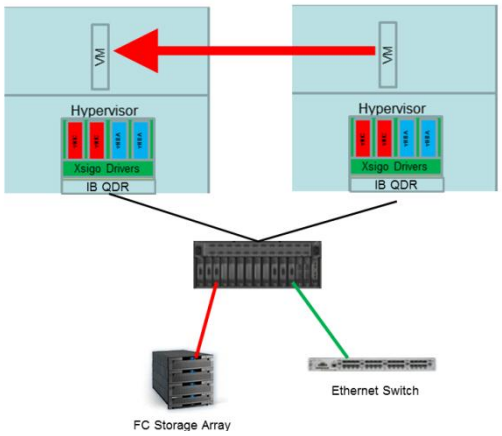
Result

The application VM was able to receive traffic at over 20Gbits/sec.



Test #3

Measure the speed of vMotion over the Xsigo Server Fabric vs. 10G and 1G Ethernet, using a 20GB VM with shared FC storage.

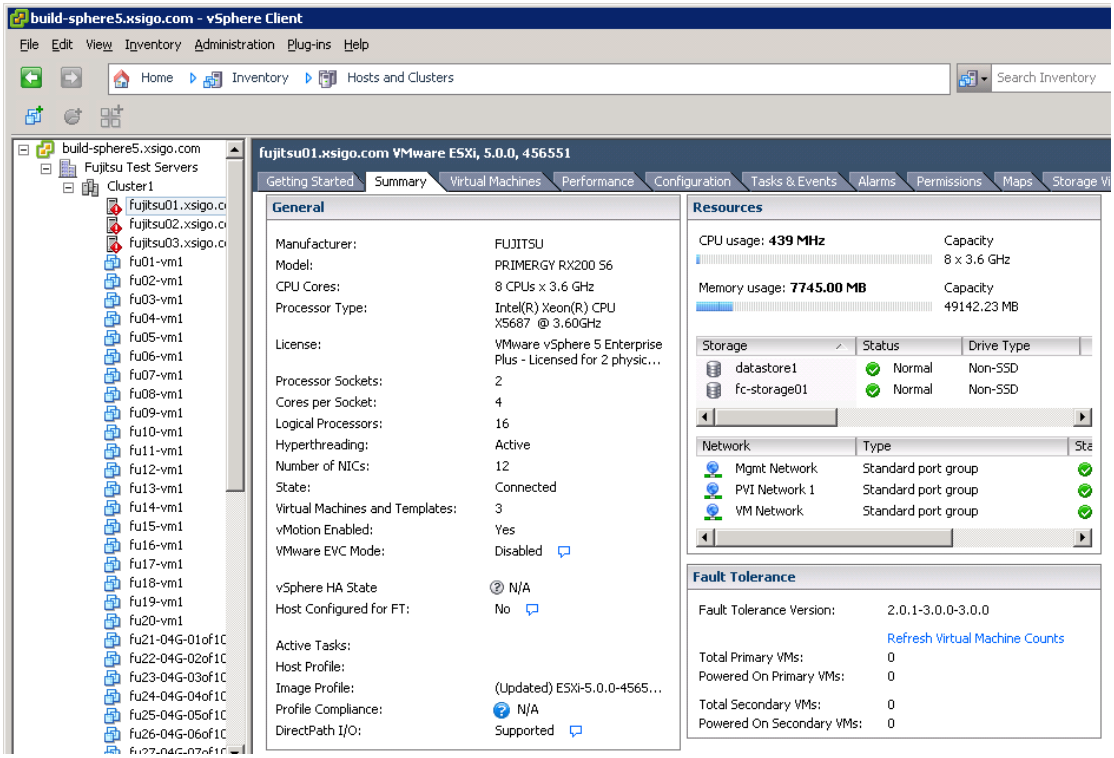


Result

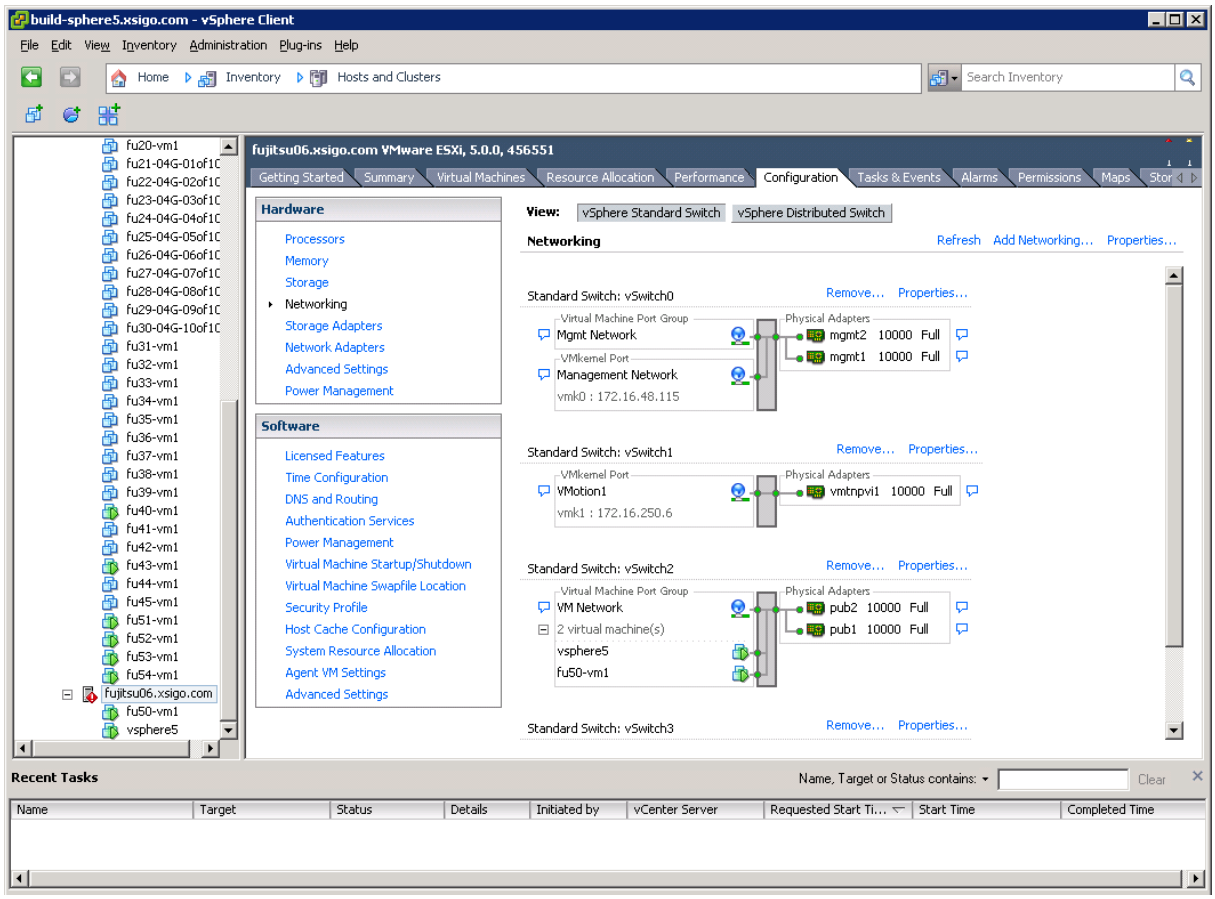
The VM was consistently able to complete vMotion on a loaded ESX server 67% faster than with 10G Ethernet. The single VM vMotion times were:

- Xsigo Server Fabric: 12 seconds
- 10G Ethernet: 20 seconds
- 1G Ethernet: 181 seconds

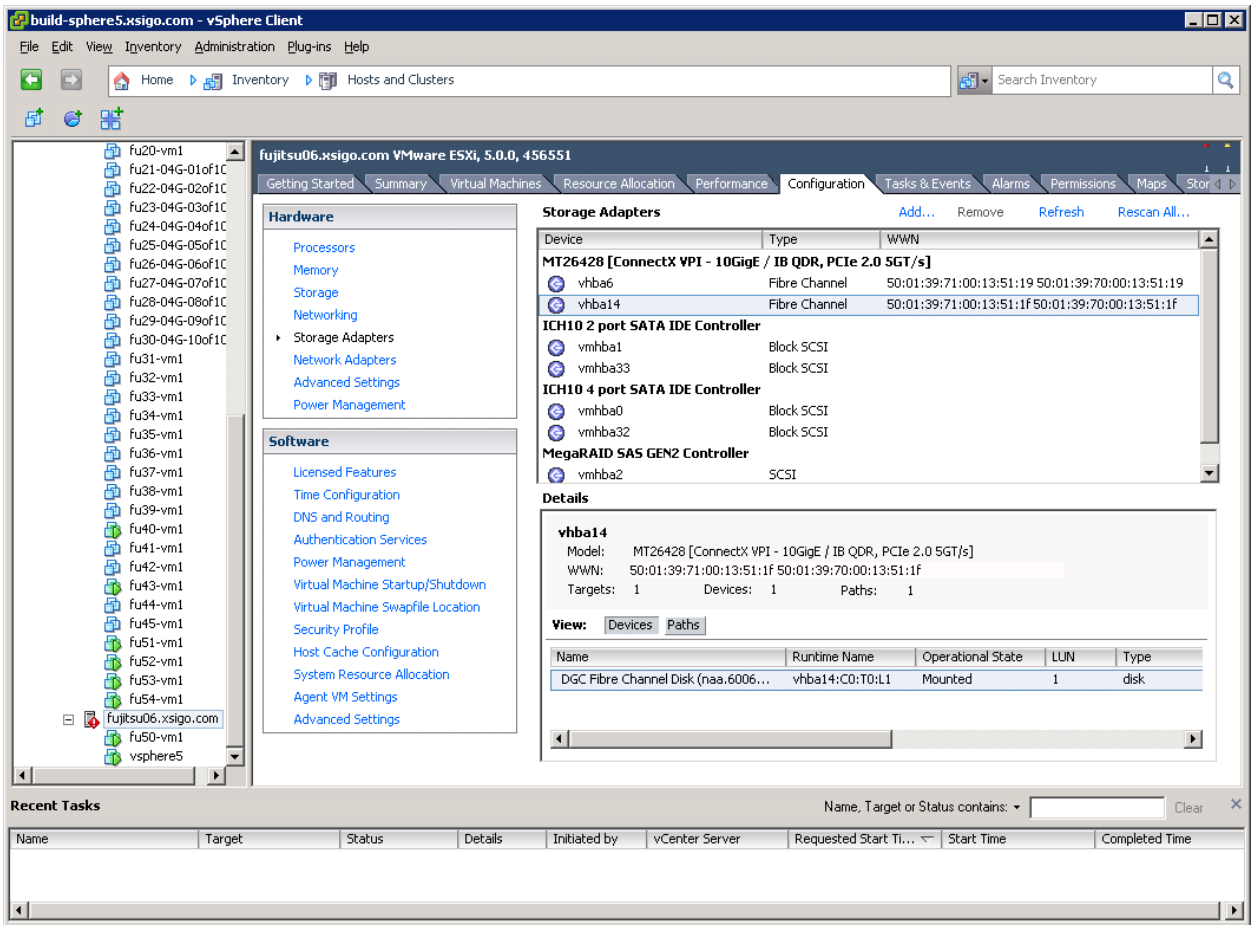
Appendix A: Details and Screencaps of the Setup



Server Summary Details: Fujitsu Primergy Class Server running ESX-5.0 Build 456551 [GA]



ESX Network Summary Details: Basic VMware vSwitch [VSS] with non-redundant uplinks for simplicity



Mid-Teir Shared FC Storage: EMC Clariion Storage.

Typical Virtual Machine Configuration Details: vmxnet3 paravirtualized drivers attached to Private Virtual Network (PVI) Portgroup. That was toggled between networks of XS