



MG NETWORK SOLUTIONS

Proposal for IT Infrastructure Upgrade

July 25, 2024

For

Calgary Widget Resellers

MG Network Solutions
44th Ave, Calgary, AB T2F 5G7
403-367-2682

vipsales@mgsolutions.com

Garry Slater – Project Lead
Mitchell Peters – Technical Lead

TABLE OF CONTENTS

STRATEGIC OVERVIEW 3

PROJECT OVERVIEW 4

NETWORK TOPOLOGY 5

DEPLOYMENT SCHEDULE 6

PROJECT COSTS..... 7

CONCLUSION 8

Strategic Overview

At MG Network Solutions, based in Calgary, we are dedicated to delivering innovative IT solutions tailored to our clients' needs. We understand that Calgary Widget Resellers is currently facing significant challenges with an aging server infrastructure that is struggling to keep up with increasing demands for performance, capacity, and reliability.



Following a detailed consultation of your infrastructure, we have determined that the existing systems — Exchange Server, SharePoint, Active Directory, SQL server, Linux application servers, and a file server — are out of warranty and unable to keep up with growing performance and capacity requirements. The existing systems are experiencing performance issues due to insufficient RAM and storage, resulting in slower operations and potential disruptions. The file server is nearing its storage limits, threatening its ability to support the company's expanding data needs. Furthermore, the current setup lacks scalability, which hampers the ability to efficiently adapt to future growth and may lead to operational bottlenecks.

To ensure that Calgary Widget Resellers remains competitive and operates smoothly, it's essential to upgrade the server environment. Modernizing the infrastructure will not only address the current performance issues, but also provide the scalability needed for future growth. This upgrade will involve transitioning to a virtualized environment with advanced features such as fault tolerance, which will enhance reliability and reduce downtime.

Why Virtualize?

Virtualization is proposed as a solution to reduce infrastructure costs, improve resource utilization, and provide advanced features such as fault tolerance. By consolidating the existing eight physical servers into just three physical hosts, the company can optimize hardware usage, reduce power and cooling costs, and simplify management. VMware virtualization technology will be employed to achieve these goals, with an emphasis on fault tolerance to ensure high availability.



VMware
vSphere®

Project Overview

Recommended Solution:

In place of the previous 8 device server configuration, we propose moving down to 3 devices, 2 being physically identical Lenovo ThinkSystem SR640 V3 racks to control ESXi hosts managing a virtualized version of the previous network environment. These hosts will be controlled by a self-managed vCenter Virtual Machine.

The second ESXi host in this configuration will host the secondary Linux Application Server, the secondary Active Directory Server, and provide a fallback environment for the fault tolerance configuration within this network. These servers both contain 28 Core Intel Xeon CPU's, alongside 6x36GB worth of RAM totaling 192GB of memory. These specifications will provide ample power to support the requested server specifications.

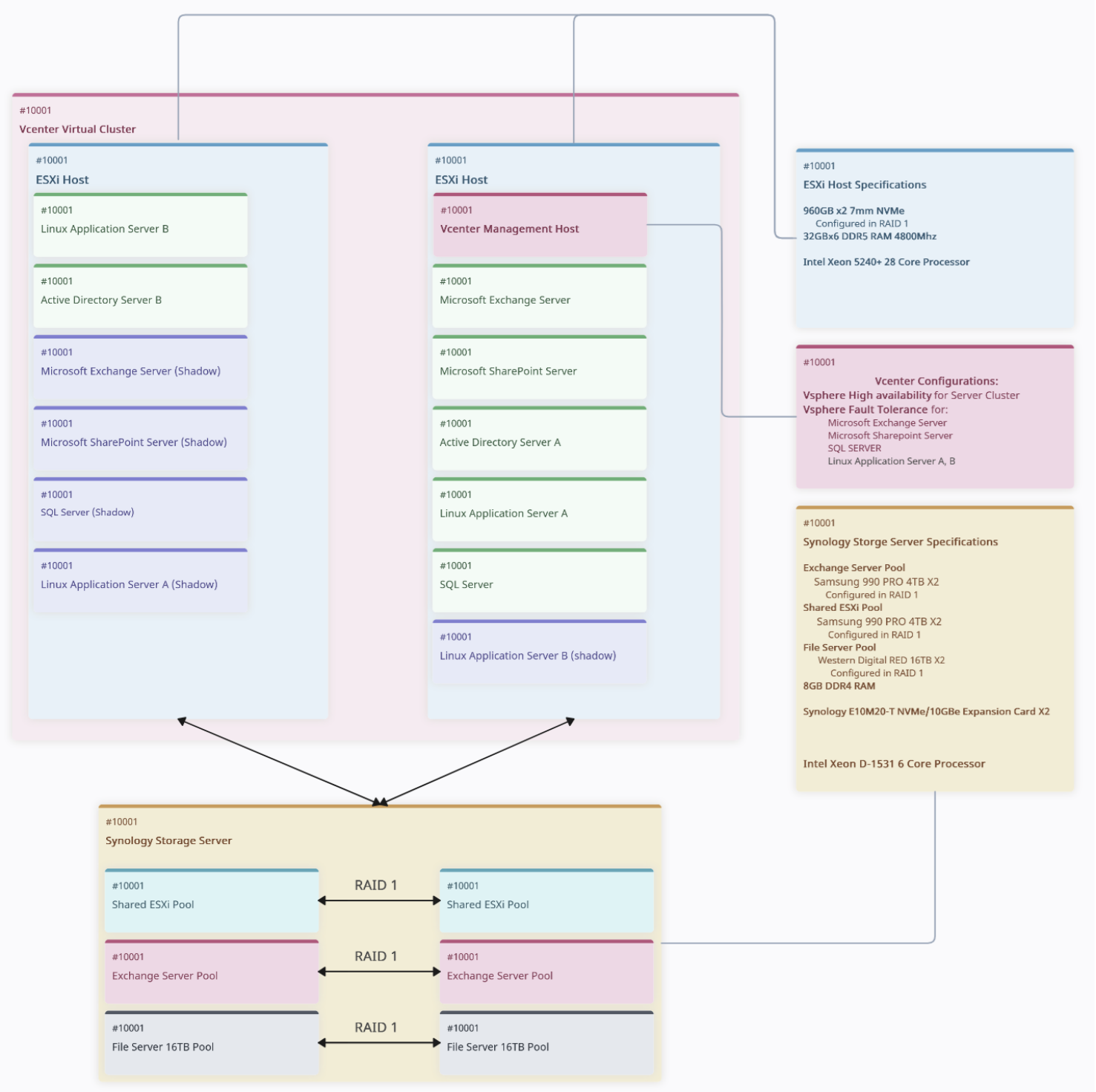
Supporting the storage requirements of those servers, and containing the 16TB File Server, a Synology 3621xs+ NAS will be configured. The NAS will contain 3 data pools:

- A Shared ESXi Pool containing the storage for the SharePoint Server, both Active Directory Servers, the Linux Application Servers, and the SQL Server. This will be hosted on a 4TB NVMe drive.
- A data pool exclusively containing the Microsoft Exchange Server. This will also be hosted on a 4TB NVMe drive.
- Finally, a 16TB pool on a dedicated Hard Drive for the File Server itself.

All 3 of these pools are configured in RAID 1 with identical backup drives. This NAS is also configured with an additional 10 drive bays if Widget Resellers needs to scale up their storage/virtual environment further.

Once configured, all these devices will be manageable through a web console, which we can configure for remote access if required. This will provide your team with an easily accessible virtualized environment which can be moderated and reconfigured whenever necessary.

Network Topology



Deployment Schedule:

Week 1: Hardware Procurement and Initial Setup

-Our Specialists will acquire the hardware you need and perform the initial installation of the devices in your preferred location. We will perform the service of routing any connections that are required to keep the process hassle free.

Week 2: Installation of VMware ESXi Hosts and Network Configuration

-We will go through the process of configuring the initial setup of the hosts required to manage and support your virtual environment.

Week 3: VM Deployment and Configuration

-Once the Virtual Machine hosts are all set up, we will perform the installation and configuration of your chosen Virtual Devices. After your Virtual Environment is implemented, our technicians will employ and test a Fault Tolerance configuration using the secondary Lenovo host.

Week 5: Data Migration and Final Testing

-Our team of specialists will migrate all your data over the new environment and configure it to match your previous user experience 1-to-1.

Week 6: User Training and Project Handover

-Once the full installation of the virtualized network is complete, we will go through the process of educating and training your team on how to operate, manage, and maintain the network.



Hardware Costs

Item	Cost Per Unit	Quantity	Total Cost
Lenovo ThinkSystem SR640 V3	\$22,390.74	x2	\$44,781.48
Synology Rackstation RS3621xs+	\$6999.99	x1	\$6999.99
Synology E10M20-T	\$385.28	X2	\$770.56
Samsung 99 PRO 4TB NVMe	\$519.99	x4	\$2079.96
Western Digital RED Pro 16TB NAS HDD	\$459.99	x2	\$919.98
Total Cost for Hardware	\$55,581		

Software Licensing Costs

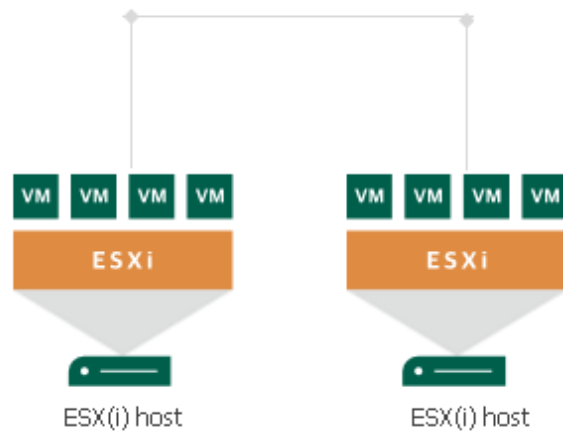
Item	Cost	Count	Total Cost
vCenter Server Standard	\$6,000 (One Time)	1x	\$6,000
vSphere Enterprise Plus	\$3,495 (One Time)	2x (One per CPU)	\$6,990
Annual SnS for vSphere Enterprise Plus	\$874 (Annual)	2x (Oner per CPU)	\$1748
Total Initial Cost	\$12,990		
Annual Costs	\$1748		

Additional Costs

Item	Cost
Installation	\$12,500
Training	\$4,500
Project Development	\$13,000
Total Cost	\$30,000

Total Cost: \$98,571

\$1,748/year licensing



Conclusion

Transitioning to a virtualized environment represents a strategic upgrade for Calgary Widget Resellers, effectively addressing the critical issues of the current aging server infrastructure. By consolidating from eight physical servers to just three and utilizing VMware virtualization technology, the company will experience reduced infrastructure costs, optimized resource utilization, and improved system reliability.

The implementation of fault tolerance will enhance high availability, minimizing downtime and ensuring uninterrupted operations. Additionally, integrating cloud backup will offer an extra layer of data protection, safeguarding essential information and ensuring business continuity in the face of unforeseen events.

At MG Network Solutions, we are dedicated to delivering a robust, efficient, and secure IT environment tailored to your specific needs. We look forward to partnering with you on this upgrade, providing the necessary support and expertise to ensure a smooth and successful transition.

