Unfunded Request for IP Storage Area Network (IP SAN)
April XX, 200X

XYZ organization wishes to implement an IP based Storage Area Network (IP SAN) for use in its current computing environment. The purpose of this Unfunded Request (UFR) is to:

- Outline project goals in anticipation of future funding
- Establish the minimum set of requirements
- Make a vendor recommendation based on those requirements

Project Goals

- Establish a solid data storage platform with no single point of failure thus virtually eliminating data loss from equipment failure
- Reduce the impact of human or external force (viral) data loss
- Position our IT infrastructure for additional cost reductions by implementing Virtual Server techniques in the future
- Improve End-User customer service with increased performance and uptime of applications

Business Requirements

The IP SAN manufacturer must have a solid presence in the Data Storage industry and be recognized as a viable, long-term supplier by reputable industry analyst firms (Gartner, etc.)

The IP SAN manufacturer must have a sufficient support organization to provide 24/7 service.

Annual support/maintenance costs must be projected for a period of at least five (5) years. We do not want to be surprised by rising support costs in the future nor do we want to over burden future administrations with escalating costs.

Operational Requirements

The IP SAN must be easy to install by a typical Network/System Administrator. There should be no special skills or additional services required to install the system.

The system should be capable of being operational within thirty (30) minutes from the time it is unpacked and connected. Proof of ease of installation may be required via demonstration.

The IP SAN must provide integrated and automatic functions for volume management, virtualization, backup and recovery and data replication.

The IP SAN must provide full redundancy with no single point of failure. This means multiple network connections, controllers, cache, disks and power supplies at a minimum.

The IP SAN must be easily upgraded with little or no downtime needed to upgrade firmware or replace Field Replaceable Units (FRUs).

The IP SAN must work seamlessly in a variety of OS environments including Windows, VMWare, UNIX, Linux and Netware.

The IP SAN must be presented as a single architecture that can grow on demand without interruption. If we add an additional IP SAN disk tray unit, it must be able to "join" the original and become seamlessly available. We do not want to manage two (or more) IP SAN units as separate devices (regardless of the existence of a single console).

The IP SAN must allow multiple generations of hardware procured over time to work on the same volumes at the same time. We do not want to be forced into a "forklift" upgrade to replace older equipment that is in good working order simply to take advantage of newer technology that may be available in the future (higher capacity drives, etc.).

IP SAN performance must increase as additional full disk trays are added. We do not want to negatively impact our application performance as we add capacity.

The IP SAN must have a shared architecture that provides load balancing across multiple disks, controllers and caches on the same volume at the same time. We do not want a system that creates "hot spots" of high activity on some disks while others are underutilized.

We have current and future projects that may require any or all of the following features: Volume Management, Volume Snapshot, Volume Cloning, Storage Virtualization, Auto-Replication, Auto-Load Balancing and Multi-Path I/O. We require the following for **each** function:

> The function must be included with the base package at no additional cost.

> The function must not require any host-side software.

> Any future functions must be included with a firmware upgrade at no cost.

Operating System Compatibility

We anticipate changing requirements in the future and flexibility is of utmost importance. We do not necessarily use all of the following features but do require that the IP SAN can support them currently (as of the date of this UFR).

The IP SAN must have achieved Microsoft's Simple SAN designation.

The IP SAN must be fully certified as compatible with Microsoft VDS, VSS, MPIO, DPM (see each feature below). All of these integration points must be included with the base packages at no charge.

The IP SAN must be fully integrated with Microsoft Volume Shadow Service (VSS).

The IP SAN must be fully integrated with Microsoft Virtual Disk Service (VDS).

The IP SAN must be fully integrated with Microsoft Multi-Path I/O (MPIO).

The IP SAN must be fully integrated with Microsoft Data Protection Manager (DPM).

The IP SAN should work seamlessly with VMWare ESX or MS Virtual Server.

Summary

Our internal applications and data management requirements have grown incrementally over time and continue to evolve and change. We are at a point where our data assets are critical to our mission and must be protected and managed. A simple, fully-redundant IP SAN solution that includes all of the required data protection and management software will ensure our data assets are safe.

We are also facing ever shrinking budgets. New technology is now available that makes enterprise class, centralized storage affordable. The right centralized storage solution brings centralized benefits, especially storage "virtualization". With our storage no longer tied directly to physical servers we will be able to explore the possibility of implementing "Virtual Machines" running on a smaller number of physical servers. This will save us even more money in the future.

Future flexibility is also an important part of this decision. We never know how future policy changes will affect our need for managing data. Can we easily deploy a new application quickly? Will we be required to keep an off-site copy of data that is no longer than 4 hours old? Any solution we choose must handle both current and future requirements.

Recommendation

After researching the data storage vendor market we have chosen Equallogic as the solution of choice. First, it meets or exceeds all of our hard requirements currently but more importantly it is flexible for the future.

- Equallogic is a world-class supplier with over 2000+ customers
- We do not need to overbuy capacity today; it grows easily and seamlessly
- All features are included with the base system giving us flexibility in the future
- The solution does not require special skills or expensive installation services
- It is easily purchased via Federal Appliance and their GSA Schedule