Sample Project Plan for an iSCSI SAN

This document is a starting point for customers wanting to implement an iSCSI Storage Area Network (SAN) device. It consists of a wish list of customer requirements accumulated from various SAN customers.

Please use or delete any features or requirements you wish; this is only a template for generating ideas about requirements.

XYZ Corporation

iSCSI Storage Area Network (SAN) Project

Prepared by
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Top 20 SAN Features for a SAN

Overview

XYZ organization wishes to implement a Storage Area Network (SAN) for use in its current computing environment. The purpose of this document is to establish a key set of requirements that will be used to reach a decision. This document does not necessarily weight or rank the importance of each feature, it simply lists potential criteria that we will use to measure a vendors' offer. Responding to and completing this document does not constitute any commitment on our part to purchase a SAN in the future.

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

- Reduce data management expenses

- Improve End-User customer service with increased uptime of applications

Business Features

The SAN manufacturer must have a solid presence in the Storage Networking industry and be recognized as a viable, long-term supplier.

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

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

All pricing proposals should include five years of support/maintenance.

The SAN must be considered 99.999% reliable with no single point of failure.

Technical Features

The 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. If additional equipment is needed, please explain.

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

The SAN performance must scale as additional disks are added. We do not want to be restricted by the controllers and network connections as we add capacity.

The SAN must work seamlessly in a variety of OS environments including UNIX, Linux, Netware, Macintosh and Windows with no OS modifications.

The SAN must support IP jumbo frames to optimize performance (applicable to IP solution only).

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

The 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.).

The SAN must have a shared architecture that provides load balancing across multiple controllers and caches on the same volume at the same time.

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. Please answer the following for <u>each</u> function:

- Is the function included with the base hardware unit?

- Is the function priced based on the capacity of the base hardware unit?

- Is there any host-side software required for the function? If so, how is it priced?

If multiple SAN units are logically joined then the units must have the ability to automatically stripe/load balance for maximum performance.

The SAN should have the ability to clone a snapshot volume.

The SAN should have the ability to do an instant restore from a snapshot.

The SAN should ensure that snapshots are protected from controller failure.

The SAN components should be able to "pool" resources such as disks, controllers, cache and network cards for efficiency.

The SAN should allow multiple controllers to work on the same volume for performance.

Microsoft Features

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

The SAN must be fully certified as compatible with Microsoft VDS, VSS, MPIO, DPM (see each feature below).

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

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

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

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

VMWare Features

The SAN should be certified to work with VMWare ESX.

Request For Information (RFI) for SAN

Overview

XYZ organization is researching Storage Area Network (SAN) for a possible future project. The purpose of this document is to understand a potential SAN vendor's market position and product offering. Responding to this document is voluntary and does not obligate our organization in any way.

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

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- Improve End-User customer service with increased uptime of applications

Business Issues

Describe your company and its relative position in the Data Storage industry.

Describe your company's infrastructure as it relates to 24/7 support.

Describe how your product integrates volume management, virtualization, backup and recovery and data replication.

Include pricing for the equipment and support for the first five years of ownership.

Describe how your product achieves 99.999% reliability with no single point of failure.

Technical Issues

Describe how your product achieves full redundancy with no single point of failure. If additional equipment is needed, please explain.

Describe how product components are upgraded in the field and describe for each type whether it requires downtime or affects access to the device.

Describe how your device performance scales as the capacity of the unit increases.

Describe which operating systems (UNIX, Linux, Netware, Macintosh and Windows) your product supports and whether or not your device is supported natively.

Describe how your product takes advantage of IP jumbo frames.

Describe how your system "grows" with the addition of more units. Are the combined units presented as a single architecture or as separate units that are managed with a single console? Can a new unit "join" an existing unit without interruption? Explain exactly how that is accomplished.

Describe how newer versions of your product work with older, installed products. Is there a seamless way to join older devices such that existing volumes are undisturbed and span both old and new devices? Explain exactly how that is accomplished.

Describe how your product provides load balancing across controllers, cache and disks.

Explain whether or not your device supports the following software features (identity each feature as yes/no): Volume Management, Volume Snapshot, Volume Cloning, Storage Virtualization, Auto-Replication, Auto-Load Balancing and Multi-Path I/O. Describe the following for <u>each</u> feature

- Is the function included with the base hardware unit?

- Is the function priced based on the capacity of the base hardware unit?

- Is there any host-side software required for the function? If so, how is it priced?

In a multi-unit environment, describe how your devices automatically stripe/load balance.

Describe how your device can automatically clone (copy) a snapshot.

Describe how you perform an instant restore from a snapshot.

Describe how snapshots are protected from controller failure.

Describe how your product "pools" resources such as disks, controllers, cache and network cards to improve efficiency.

Describe how your product improves throughput performance.

Describe how your product pools resources such as disks, controllers, cache and network cards for efficiency.

In the case where your solution uses 2 or more controllers, describe how multiple controllers work together on the same volume for improved performance.

Microsoft Features

Describe whether your product(s) have achieved Microsoft's Simple SAN designation.

Describe your products' compatibility with Microsoft VDS, VSS, MPIO and DPM.

Describe how your product works with Microsoft Volume Shadow Service (VSS).

Describe how your product works with Microsoft Virtual Disk Service (VDS).

Describe how your product works with Microsoft Multi-Path I/O (MPIO).

Describe how your product works with Microsoft Data Protection Manager (DPM).

VMWare Features

Describe how your product integrates with VMWare ESX.