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# **Enterprise Storage, Backup and Disaster Recovery Solution**

**For**

**[The Company]**

September 24, 2004

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[The Company]

Dear Valued Customer:

We would like to thank you for the opportunity to present a data protection solution to [The Company].

We understand the challenges you're facing today and [The Company] is not alone in this challenge. Disaster recover has become a major topic of concern to companies of all sizes, and data backup/recovery is an integral part of that discussion.

The objective of this proposal is to provide [The Company] with the most complete data protection solution with "best in class" technologies.

Careful consideration has been given to leverage your existing infrastructure and to minimize cost. Implementation is proposed in three phases.

- Phase 1 – EMC storage upgrade and Data Mobility
- Phase 2 – Data Protection
- Phase 3 – Disaster Recovery

We value you as a customer and look forward to succeeding together.

Sincerely,

Your xxx Team

## Introduction

[The Company]. supports the North American operations of the parent [The Company] as well as their own unique requirements for systems, data and software. As the business grows there is a need to consolidate storage and upgrade the current storage infrastructure to support short recovery objectives. Additionally, [The Company] desires to improve their dissimilar backup environments between UNIX and NT and provide an effective disaster recovery plan that will meet budget requirements.

[The Company] realizes the importance of an Enterprise storage system for backup, recovery and business continuity of their systems and is working to resolve the current architecture's shortcomings. There are a number of challenges facing [The Company] to provide solid backup and disaster recovery in a high availability computing environment. These challenges include:

1. Replace the existing EMC Symmetrix storage system with an updated storage system to support the existing HP servers in a SAN configuration
2. Have a copy of critical data available for quick restore and to be mounted by other systems such as Test and SandBox for effective in-house testing of applications.
3. Improve overall management of backup, recovery and business continuance.
4. Provide the infrastructure to support a remote disaster recovery site.
5. Create a flexible and scalable environment to address future server and application requirements.

## Analysis of Current Environment

Based upon recent meetings, discussions and review of data gathered by SysView application, we were able to receive some in-depth knowledge of how the systems are configured. From this, we report the following information about the existing server and storage environment:

Host Name	MFG	Model	CPU Speed	RAM (GB)	OS Version	Total Storage (GB)	
						DAS	SAN
yyyy	HP	K460	2x 180MHz	2	HPUX 11.0	175	
yyy	HP	L1000	1x 440MHz	2	HPUX 11.0	193	
yyy	HP	N4000	4x 440MHz	6	HPUX 11.0		189
yyy	HP	L1000	1x 440MHz	2	HPUX 11.0	157	
yyy	HP	K460	4x 180MHz	3	HPUX 11.0	134	
yyy	HP	D380	1x 180MHz	1	HPUX 11.0	165	
yyy	HP	L3000	2x 550MHz	3	HPUX 11.11	70	
yyy	HP	L2000	2x 440MHz	3	HPUX 11.0	35	
yyy	HP	L2000	2x 440MHz	3	HPUX 11.0	35	

The production server “yyy” is directly connected to a Symmetrix 3330 with 189GB of storage. All other servers – Application, QA and Test, Development and SandBox have their own direct-attached storage in the form of JBOD or HP 12H AutoRaid. (See diagram for details). Backup in the environment is achieved two ways: with Fbackup to local DAT drives and using ONTAP for the Informix DB files, directed to DLT tape drives.

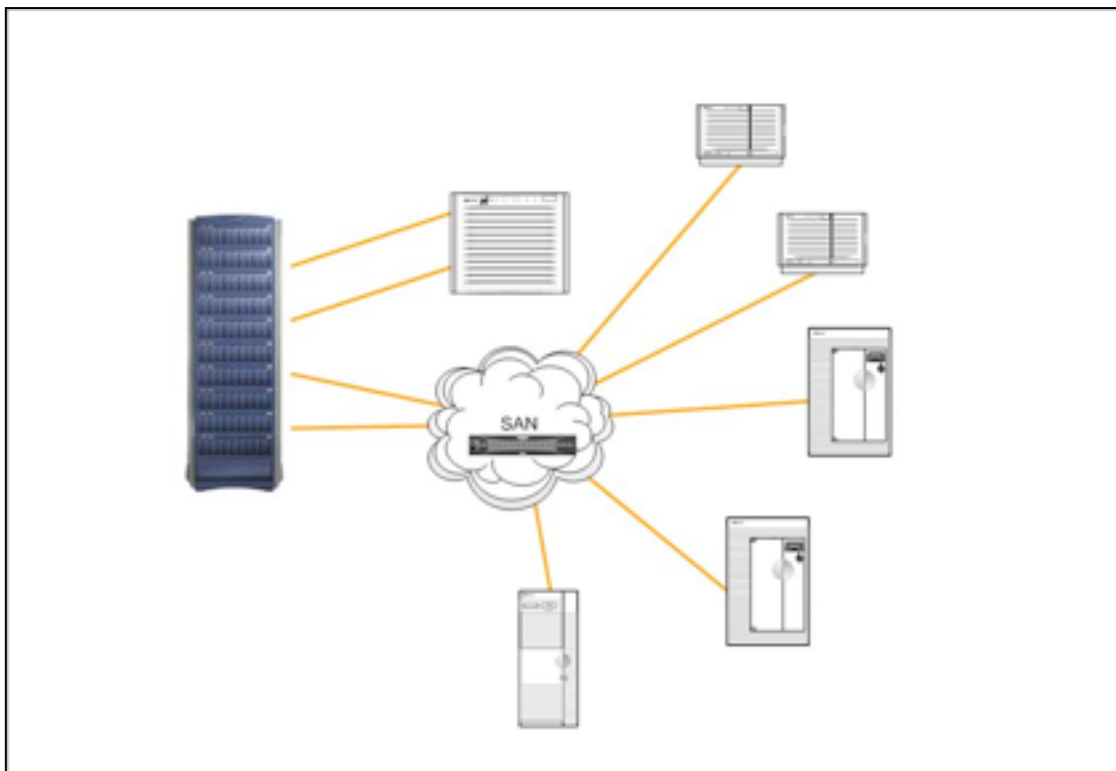
At this site is an associated NT environment, but we were asked not to include this in our proposal. However, with the proposed SAN configuration it would be easy to add NT into this environment at a later date without disruption.



In addition to providing a solution that meets your needs, xxx proposes to:

- Provide an overall solution and design that is flexible and scalable so that it can easily address future storage and server requirements.
- Provide installation, implementation and training for systems administration personnel on all hardware and software installed in this proposal.

## Phase I – Data Mobility



Enterprises require continuous availability of their business-critical data. Not only is data required to be online, it is required to be available for business analysis, backups and other administrative operations. This same data is also required by application developers to test new applications.

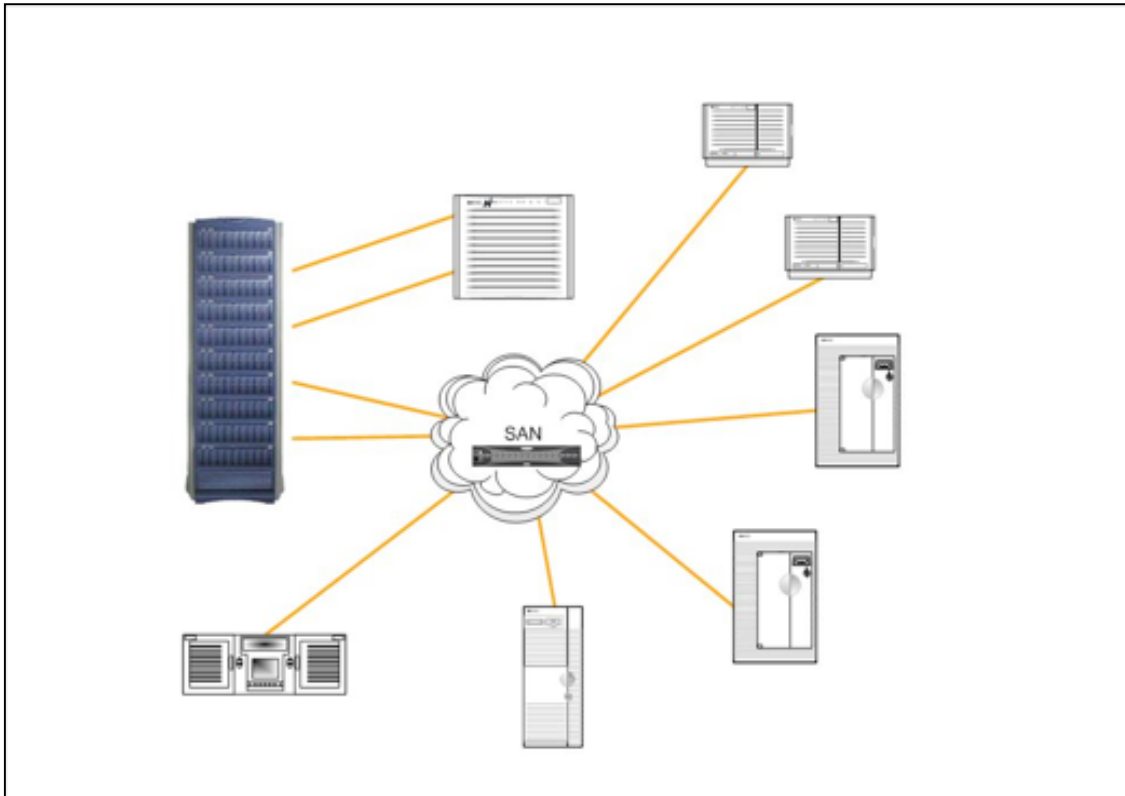
VERITAS FlashSnap™ resolves data availability issues by making point-in-time copies of business-critical data available off-host for backups, application testing, business analysis and other processing needs for business continuity.

VERITAS FlashSnap uses Dynamic Group Split and Join and FastResync technologies of VERITAS Volume Manager™ to create point-in-time copies, or snapshots, of the diskgroups. These copies can then be made available for performing multiple tasks in parallel while the primary diskgroup remains available for regular business processing on the original host. Since VERITAS technologies are storage-vendor-neutral, VERITAS FlashSnap can work on virtually any disk array, whether it is an expensive high-end disk array or inexpensive JBOD.

Phase I updates the EMC hardware and enables data mobility provided by Veritas Foundation Suite with FlashSnap. Veritas Foundation Suite with FlashSnap enables [The Company] to rapidly replicate data on the production server for use by backup, test and development. It is also the foundation of future data protection and disaster recovery solutions.

Data mobility gives [The Company] the ability to make mirror copies of production databases for presentation to development and test servers. It also gives the customer the security of multiple points-in-time that they can roll their production database back to without reverting to tapes. This is a common practice to resolve data corruption issues.

## Phase II – Data Protection



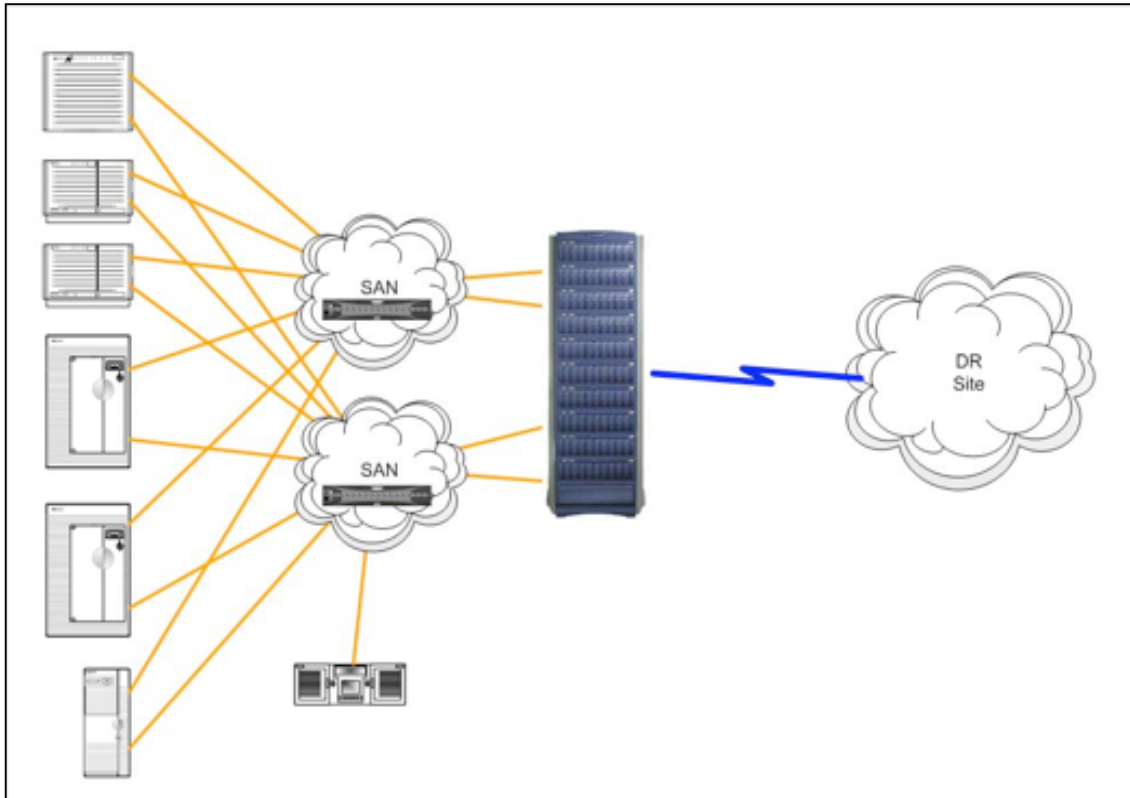
As the recognized leader for enterprise-class backup and recovery, VERITAS NetBackup DataCenter is designed for complete data protection for the largest UNIX, Windows, Linux and NetWare environments. Intuitive graphical user interfaces enable organizations to manage all aspects of backup and recovery and allow consistent backup policies to be set across the enterprise. NetBackup DataCenter provides database- and application-aware backup and recovery solutions for Oracle, SAP R/3, Informix, Sybase, Microsoft SQL Server, Microsoft Exchange Server, DB2 UDB, and Lotus Notes and Domino.

NetBackup DataCenter's sophisticated media management features enable organizations to perform all aspects of media management, from tape duplication to library sharing and more. In addition, NetBackup delivers real-time and historical analysis of all backup and recovery operations. These features, along with NetBackup's proven track record in large-scale enterprises such as Oracle Corp., make it the most popular choice for data protection in the Global 1000.

Phase 2 adds enterprise backup software from Veritas and an L20 automated tape library from StorageTek. In combination these two products provide an effective, unattended backup solution and the foundation for off-site vaulting of tape files to a storage facility. The L20 is configured with 2 LTO drives and 10

slots to provide a maximum of 1TB of data cartridge storage and the ability to double that within the same tape library.

### Phase III – Disaster Recovery



Whether motivated by disaster, site failure or a planned site migration, VERITAS Volume Replicator provides the foundation for seamless availability across sites. Based on the de facto industry-standard VERITAS Volume Manager™, VERITAS Volume Replicator reliably, efficiently and consistently replicates data to remote locations over any IP network for maximum business continuity. Volume Replicator provides a robust storage-independent disaster recovery solution when data loss and prolonged downtime cannot be tolerated.

Unlike proprietary, inflexible hardware approaches, the software-based replication of VERITAS Volume Replicator provides a reliable, efficient and cost-effective solution for geographically mirroring data sets. In addition, VERITAS Volume Replicator replicates data between any storage hardware platform, across a standard IP network and over any distance.

The flexibility of VERITAS Volume Replicator allows us to replicate your production data from your EMC CLARiiON FC4700 to dissimilar storage. This opens up a whole world of opportunity and requires more discussion before a clear plan and budget can be presented.

### **Recommendations**

1. We will appoint a Systems Engineer and Project Leader to support the installation and integration of this project, as outlined. A Statement of Work will be drafted and followed during the implementation phase.
2. During installation and integration of the proposed hardware and software we will provide “system” level training and documentation to [The Company] personnel. However, we highly recommend that additional training on Veritas NetBackup – Intermediate and Advanced courses be taken by personnel responsible for the configuration and maintenance of the backup environment. Multi-day courses are provided at Veritas training centers.
3. The NetBackup Master Backup server configuration should have 2 CPUs, 1GB of RAM, 1 FC HBAs and sufficient disk space for the meta database. This data size is approximately 2-3% of the total data backed-up.

## Proposed Investment

In order to provide an effective solution as outlined, there is an investment that [The Company] must consider. The following is a breakdown of this investment on a per phase basis.

### Phase 1

#### Hardware

1	FC4700 - 4 DAEs, 41 (73GB) drives and 1 Hot spare External Modem, Cabinet, Cables	
1	16-port Brocade Switch and Software	\$183,181
4	PCI 2GB FC HBA (N/L class)	\$ 6,720
2	HSC Fibre HBA (K class)	\$ 4,215
1	HSC Fibre HBA (D class)	\$ 2,107
	Total Hardware	<u>\$196,223</u>
	Hardware Installation	\$ 1,417
	Hardware 24x7 Annual Maintenance	\$n/c (2 years)

#### Software

1	Navisphere Mgr. & 6 HP Agents AccessLogix	\$ 18,604
3	Foundation Suite for HP-UX (T1) FlashSnap	\$ 6,840
3	Foundation Suite for HP-UX (T2) FlashSnap	\$ 15,977
	Total Software	<u>\$ 41,421</u>
	Software Maintenance 24x7	\$ 9,526

#### Professional Services

1	AccessLogix and FC Switch Implementation	\$ 23,000
1	Software Installation	\$ 9,659
	(Veritas for Foundation Suite – product deployed on 4 servers with up to 200 total Volumes). Expenses not included.	
1	Data Migration	\$ TBD
	Total PS	<u>\$ 32,659</u>
	Phase 1 Grand Total –	<u>\$ 279,829</u>

## Phase 2

### Hardware

1	L20 LTO Tape Library (10 slots), 2 LTO drives Media, Cabinet, Cables	
	Total Hardware	\$ <u>29,948</u>
	Hardware Installation	\$ n/c
	Hardware 24x7 Annual Maintenance	\$ 4,746

### Software

1	NetBackup DC for HP-UX (T1) AccessLogix	\$ 7,613
5	NetBackup DC Clients (T2)	\$ 3,045
2	NetBackup DC Tape Drive Support	\$ 4,568
	Total Software	\$ <u>15,244</u>
	Software Maintenance 24x7	\$ 3,506

### Professional Services

1	Software Install & Integration (Veritas for DataCenter – deployment of 1 master/media server, 1 Database, 25 clients, 2 tape drives). Expenses not included.	\$ 11,590
	Total PS	\$ <u>11,590</u>
	Phase 2 Grand Total –	\$ <u>65,034</u>