Case Study - iSCSI based solutions instead of Expensive SAN

A Major UK brand experience specialist contacted TBS for implementation of SAN. While their organization was growing they needed shared storage to be used by different application and machines.

They contacted some of the big names in industry for providing SAN solution but all those solutions were too costly and time consuming for them. They then contacted TBS and discussed a possibility of using an opensource alternative to achieve the same result.

The client is the retail, promotional and brand experience specialist in United Kingdom. They contacted TBS for SAN implementation in their IT infrastructure.

TBS had previously assisted the Client in some other affordable OpenSource development projects and therefore they consulted us to provide a solution which is affordable and at the same time competent. The storage was to be used for shared files system and as block devices for virtualised guest machines running on hyper-visor. The whole idea was to implement a solution which is less in cost, high in performance and open-source.

TBS provided them with a proposal for a complete SAN solution based on custom-built hardware and open-source software. Both management and the IT team approved the proposal and wanted to go ahead with the solution as soon as possible.

TBS were selected as a supplier of the new solution because of our commitment to the open source community, our in-depth knowledge experience and expertise of the SAN solution and our proven pre-existing solution.

Proprietary SAN Disadvantages

•   **Expensive –** Not every IT organization has enough money to buy a storage area network (SAN) appliance. However, most companies need a SAN, because it's probably the best way to avoid losing critical data when server storage crashes occur.

•   **Security –** An important thing to keep in mind is that within proprietary SAN storage, authentication and encryption are more difficult to implement, as the storage solution has fewer security controls.

•   **Support –** Technical Support for these systems is for limited period and user may have to pay extra costs for yearly maintenance and support.

•   **Customization –** In-case the user wants to make some performance tweaks in the system then this is not possible in case of proprietary systems.

Advantages of iSCSI based SAN

A combination of SCSI, Ethernet and TCP/IP delivers the following key advantages:

•   Builds on stable and familiar standards: Many IT staffs are familiar with the technologies.

•   Creates a SAN with a reduced TCO: Installation and maintenance costs are low since the TCP/IP suite reduces the need for hiring specialized personnel.

•   Ethernet transmissions can travel over the Global IP Network and therefore have no practical distance limitations.

•   Provides a high degree of interoperability: Reduces disparate networks and cabling, and uses regular Ethernet switches instead of special Fibre Channel switches.

•   Scales to 10 Gigabit : Comparable to OC-192 SONET (Synchronous Optical Network) rates in Metropolitan Area Networks (MANs) and Wide Area Networks (WANs).

Implementation Process

Information Gathering – TBS aligned an engineer with the Client IT team to gather information required in order to assess resource requirement. This information gathering includes information related to:

- Total storage needed by the organisation.
- Total number guests machines running.
- Details of disk IOPS demand and BW requirement
- Data-centre details

Information Analysis – In this process all information gathered above is analysed to check the resources, effort and time required in the implementation process.

Hardware Procurement – TBS provided recommendation for server hardware specifications to them and their IT team procured all the hardware as suggested.

Machine Installation – Operating system and package installation required for creating iSCSI based SAN was perfomed by a TBS engineer.

Storage Configuration – Two raid arrays were configured to cater for different purposes. LVM was configured on top of those raid arrays.

IET Installation and Configuration – A TBS engineer installed and configured IET as an enterprise level target server to act as a SAN.

Authentication and Security – Authentication was set-up to access storage and configuration was done to make it secure.

Multipath for high performance and failover – A TBS engineer used multipath technology to make the storage connection high performing and fault tolerant.

Testing – Several tests were done to check performance and reliability. Bonnie was used to measure the performance on file-system provided by the SAN. Tests were carried to check fault tolerance .

Achieved Business Goals

- Total ownership cost
- Updated System
- Completely Open Source Solution

- No need to buy another hardware if you want to upgrade to latest version.
- No need to pay extra licensing fees if user wants to increase resources on the existing system.
- No need to pay extra dollars for security patches.
- No special training/skills needed to manage the technology.

WHO WE ARE

Established in 2004 by the Directors of Technology Blueprint Ltd. - a UK-based software services and infrastructure consultancy company - Techblue Software PVT Ltd (TBS) has a proven track record for delivering quality, innovative and intuitive software, consultancy and support to companies operating throughout the UK, the USA, Europe, the Middle-East, and India. Operating from our premises opposite Cyber City, Gurgaon, India, we specialize in open source technologies, Linux, MySQL, Java, Asterisk/VOIP, Cordova, Liferay, eCommerce and web development. We deliver significant value to our customers by providing cutting edge technology solutions, project management expertise, analysis of projects at business & commercial level and above all a strong code of ethics & an unwavering commitment towards customer excellence.

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