SAN technology and implementation options

This research report (130622 SAN technology and implementation options (1.0).odt):

- Compares SAN and NAS.
- Describes SAN technologies.
- Examines several SAN implementation options including prices of some Linux-based solutions in India.
- Includes a technical appendix providing detail to support the implementation options.

This report can help choose between NAS and SAN. If SAN is chosen, this report can help choose an implementation option.

The options in this report are all designed to minimise cost. Each includes an initial 9 TB of raw storage. They range from INR 2.5 lakh (including international shipping and import tax; EUR ~3,000, USD ~4,200) for a fully redundant system to INR 30,000 (EUR ~380, USD ~500) for a truly minimal solution based on expanding an existing server.

The conclusion is that price of entry into SAN can be progressively reduced as features of a tier one solution are dropped:

- Foregoing indicators identifying problem HDDs, at the cost of some operational inconvenience. This reduces the price by ~50%.
- Redundant hardware can be removed, at the cost of lower availability. If all the redundant hardware is removed, this reduces the price by a little more than 50%.
- Using commodity desktop case(s) instead of specialised rack-mount cases, at the cost of increased space usage and less expandability. This reduces the price of the servers by ~50%.
- Using commodity components instead of data-centre grade, for example CPUs, PSUs motherboards. This reduces the price of these components by more than 50% and eases the supply of replacement parts.

Each price reduction comes with a performance reduction but one that may be acceptable in context.

An associated spreadsheet (130622 SAN implementation options costings (1.0).ods) has price breakdown for each implementation option.