LTU take to HyperTape

A storage solution for a travel company

The current trend in which companies are installing ever more complex and heterogeneous data processing facilities is driven by the rapidly increasing number of tasks which can be accomplished using information technology. Such environments, however, are often associated with disadvantages when attempting to implement a consistent and affordable backup strategy, which at the same time fulfils all of the security, capacity and performance requirements of a large business. The travel organiser, LTU, uses BridgeHead Software's HyperTape Enterprise Backup solution to accomplish this task.

With more than 5000 employees and a 2 billion Euro turnover, the LTU group is one of the largest companies in Germany's tourism sector.

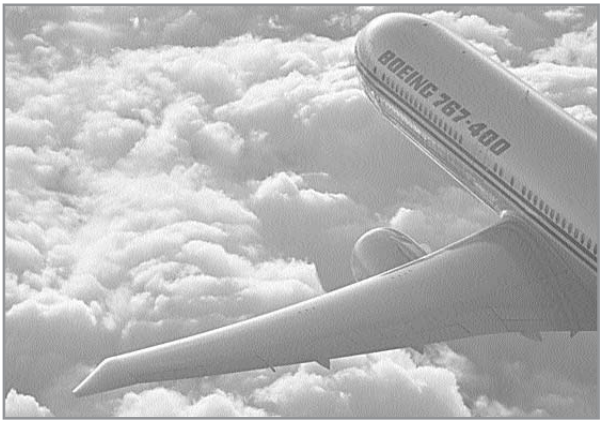
LTU is a major airline flying nearly eight million people a year from native German airports and from Austria and Switzerland. Destinations range from Anchorage to Bangkok, from Mombasa to Istanbul. Their fleet features the European Airbus and Boeing 757s and 767s.

LTU relies on an extensive array of data processing systems and applications for co-ordinating the many parts of its business, including such disparate disciplines as reservations, stock control and flight operations. A highly complex and heterogeneous systems environment has evolved in which, for example, the in-house reservations system runs on an OpenVMS Cluster, material management is processed on a Compaq 8200/5-625 Tru64 UNIX Cluster running Oracle, accounting and back office run on an HP/N-4000 Cluster under HP-UX SAP R/3 and Flight Operation products on an HP/K580 Cluster.

Nearly a terabyte of data is being generated on a daily basis and these levels are rapidly rising, perhaps doubling each year. With LTU's introduction of UNIX in 1992 and the increasing expenditure required to safeguard such vast amounts of information there were compelling arguments for developing a comprehensive backup strategy. LTU's vision was one of a single data backup solution which would integrate the various hardware platforms and their software environments - OpenVMS, UNIX, Windows NT, Novell and Tandem NonStop-Kernel. While providing a uniform procedure for backing up data from all platforms, it was also imperative that the information could be restored quickly in the case of handling errors or hardware faults.

A further objective was to reduce administrative overheads without in any way impeding the day-to-day business operations. This meant that backups had to run to completion between seven in the evening and seven in the morning. LTU also required a solution which offered affordable mechanisms for archiving data with high levels of security.

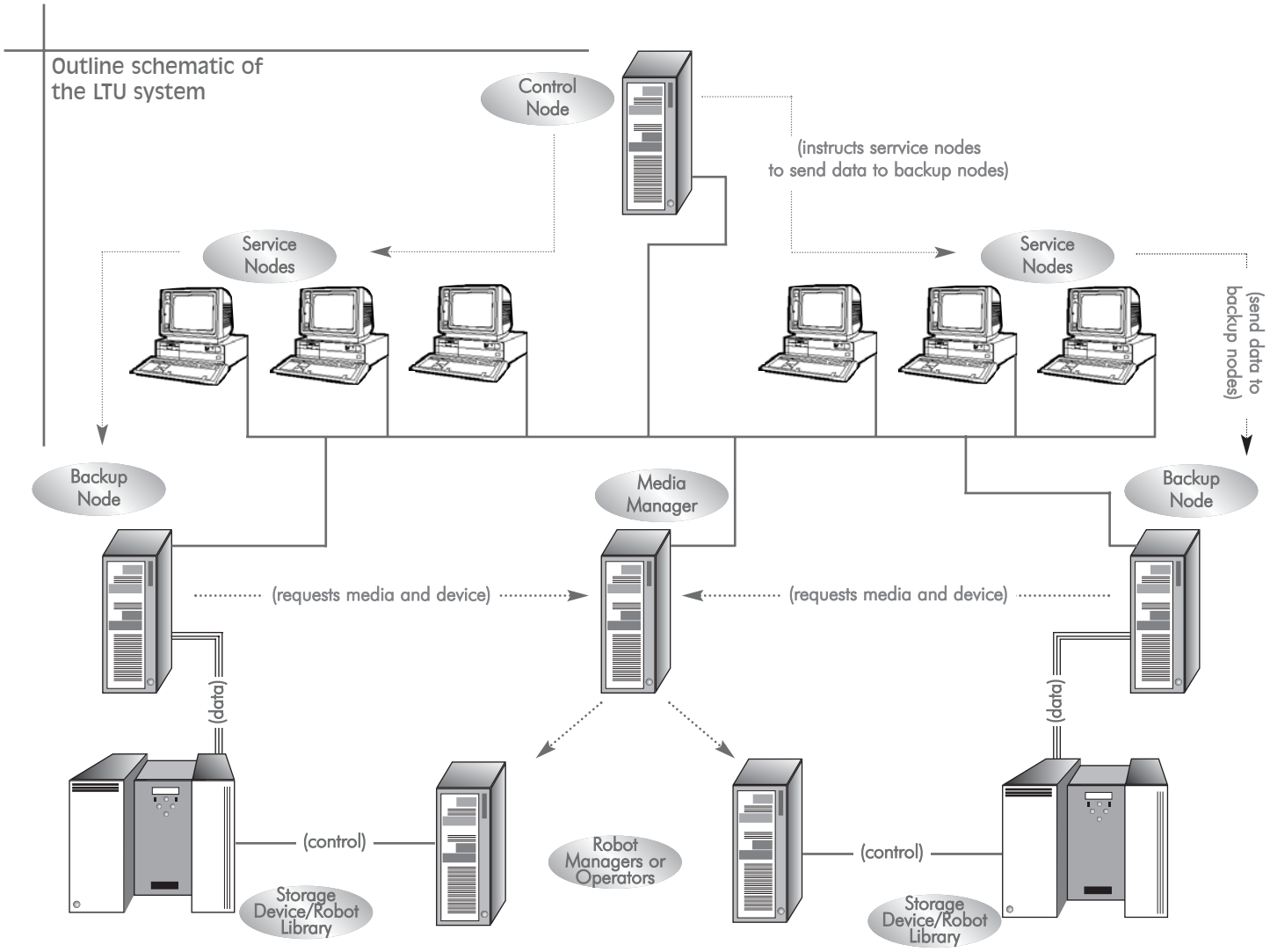
The bandwidths required for these data volumes are achieved using a fault-tolerant GIGASwitch/FDDI high speed network. The backup servers are four Compaq AlphaServers running Tru64 UNIX (one installed at Düsseldorf airport and three in the LTU data processing centre), two with three Compaq TL810 tape robots and four DLT2000 magnetic tape drives. With the addition of a further two TL826 robots, each with six DLT4000 magnetic tape drives, and one TL896 with four DLT 7000 drives, the total storage capacity currently stands at 22 terabytes.



The selection of an appropriate backup software suite turned out to be the most intricate task. In addition to the OpenVMS backup which included RDB, supporting the Tandem environment, in which Provit (LTU's crucial tour operator reservation system) ran until 1998, was particularly complex. The software was expected to support the Tandem backup - including backup and restoration of the file system - the NonStop SQL database dump and the audit trail backup initiated by the Tandem system running under Guardian D20 and D30. The software also had to support Novell, SAP's backup tools, UNIX Oracle, HP-UX, and Tru64 UNIX.

The only solution which met all of these requirements was HyperTape Enterprise Backup Software. HyperTape's scaleable client/server-based software solution is designed specifically for backing up and restoring crucial organisational data in the high capacity networks of medium-sized and large companies. Its innovative design enables the implementation of uniform and consistent backup strategies in heterogeneous environments.

HyperTape, currently supporting more than 30 different platforms, is compatible with all the common UNIX dialects. HyperTape can be operated with magnetic tape drives, automated tape libraries, or in conjunction with Hierarchical Storage Managers.



HyperTape Enterprise Backup

HyperTape uses a five-layer model. The first three layers relate to the backup operation:

· The Control Node is the central point from which HyperTape manages backup operations

· The Service Nodes are individual systems that hold live data

· The Backup Nodes are the systems that migrate backups to secondary storage

Then there are two optional layers:

· Media management

· Robotic storage management

HyperTape nodes

The Control Node initiates unattended backups of data on the Service Nodes. It accesses its central Object Database to find out what to back up, when to do it and where to store the data. The Control Node performs all the management functions related to backup and recovery operations.

The Service Node performs the actual backup operation, using a standard backup utility where available. It moves the backup saveset to the designated Backup Node using standard File Transfer Protocol (FTP) or its own Saveset Transfer Utility (STU), which is based on FTP enhanced to include media management and direct to tape storage.

The Backup Node carries out any tape management functions necessary to save the data to secondary storage, usually with the help of a media manager.

Once the backup operation is completed, the Service Node notifies the Control Node of the completion status, so that it can update its databases as appropriate.

An important advantage of HyperTape is the ability to segregate control and management functions in a separate server. The Control Node uses the control path between itself and its Service Nodes to initiate backup operations. A separate data path transfers the backup between the Service Node and Backup Node, and on to the attached storage device.

LTU has been using HyperTape since 1995 during which time the media management has been upgarded to OpenMedia making the solution SAN-ready. In spite of being a highly complex, and in many ways diverse system LTU professes total satisfaction with HyperTape's ability to deliver on its promises.

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