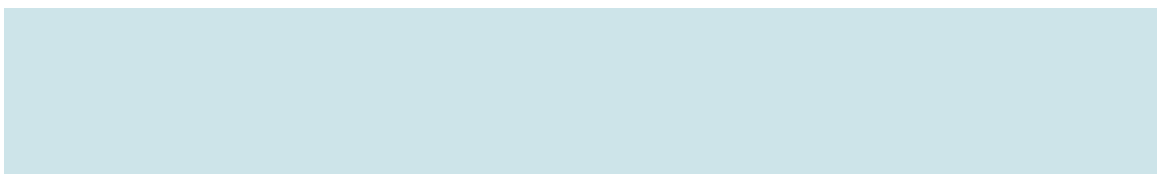




Virtual Tape Library Solutions introduced by Hitachi Data Systems

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Tape and tape automation technologies have been under increasing pressure within enterprise data centres to successfully protect ever-expanding amounts of data and not to compromise application or data availability. Moreover, expanding time-sensitive retrieval requirements associated with compliance, data mining and customer service further challenge tape environments. Disk-based tape emulation (virtualisation) technologies are not new and provide an effective intermediate alternative to tape and automated tape libraries (ATLs) by enabling non-disruptive, faster and more reliable retrievals, back-ups, and restores. In a market that is certainly not short of alternatives, through a global reseller agreement with Diligent Technologies, Hitachi Data Systems is packaging Diligent's VTF Open, VTF Mainframe and ProtecTIER VT software components with high-reliability storage systems and HDS replication product (such as Hitachi Universal Replicator), to create a complete, powerful and unique Virtual Tape Library (VTL) Solutions portfolio.

The Ovum view

Disk-based data protection continues as an enterprise data centre infrastructure imperative augmenting traditional tape-based approaches. Disk solutions enable reduced back-up windows, improved back-up success rates (traditional tape-based approaches achieve less than 80% success), accelerated restore times, improved storage administrator productivity and enhanced overall effectiveness of the data protection environment. Moreover, with data centre-based storage growing in excess of 70% per year, and business and compliance driving for 'always available' data with access times measured in single-digit seconds, cost-effective disk approaches are gaining increased momentum.

Virtual tape or tape emulation products have been around for decades and have allowed for non-disruptive infrastructure enhancements and improved back-up and recovery strategies. While not targeted for a tape replacement, most implementations were in addition to the tape infrastructure, allowing for the optimisation of tape assets while improving the overall back-up and recovery processes. However, as the amount of data grows, so does the tape infrastructure. The HDS Diligent



Technologies ProtecTIER Data Protection Platform extends its 'open' VTL solution with a unique data de-duplication technology that filters out most redundant data while not compromising on scalability or data integrity. Customers report a 25 times or more improvement in the effective capacity of the connected disk storage. With such economics, disk solutions can now be as, or more, cost-effective than automated tape, driving tape technologies further down the storage tier to be relegated to deeper, long-term archival tiers.

Announcement highlights

Traditional VTL solutions

Included within the VTL Solutions portfolio from HDS are traditional software-based virtual tape approaches that emulate tape formats, drives, cartridges, slots and ATLS with disk-based data protection. They can be seamlessly integrated into most environments with minimal impact on existing practices, policies and procedures. The VTF Open solution is a Linux server-based application utilising fibre channel (FC) to attach to the back-up server, switch/directors and disk arrays as the back-up medium. The VTF Open solution also supports clustering for high availability and scalability. The VTF Mainframe solution is a z/OS-based application that transparently redirects tape data to any ESCON/FICON connected disk. The primary benefits associated with this solution are the elimination of tape/ATL issues, expanded parallel tape access and enhanced overall disaster recovery. In addition, the combination of VTF Mainframe with a disk virtualisation system, such as Hitachi's Universal Storage Platform, can allow mainframe systems to store VTL back-up data on low-cost SATA disk drives.

An innovative approach to corralling data protection sprawl

The most compelling part of the HDS VTL Solutions portfolio is, we believe, the ProtecTIER software data protection platform, which runs on a standard enterprise server that FC connects to the target disk array(s). The core technology (HyperFactor) detects recurring data within sets of data. The common data is merged into a single instance store, enabling dramatic disk space savings without data availability issues. The catch is that only new data elements are stored on disk. The technology saves space by taking advantage of the fact that only a small percentage of data actually changes between, for example, two back-ups of the same data record. The amount of space saved is a function of many factors, but mostly of the back-up policies and retention periods, and the variance of data between them – the fuller and more incremental the back-ups, the greater the space savings.



The ProtecTIER platform design is a layered modular architecture that will be extended over time with additional concurrent services leveraging the base single-instance store. The current module, ProtecTIER VT for 'open' systems, emulates tape libraries, but, more importantly, the associated disk-based back-up data leverages the HyperFactor capacity optimisation technology. This technology ensures data integrity since it addresses content on a byte level, and every write to disk is performed only after completing a binary differential against existing data. This ensures that only new data is written with no references to wrong data elements. The algorithm at the core of HyperFactor performs all data matching in memory, minimising system overhead. Single-server performance is reported to exceed a sustained rate of 260MB/sec in real operating environments. In addition, the solution is scalable through normal server upgrade options, including capacity, connectivity and clustering.

ProtectTIER VT dramatically challenges traditional VTL and all ATL solutions, and demonstrates that disk-based approaches, in addition to dramatically increasing the levels of data availability and protection, can now truly compete on a cost basis with the perceived less expensive ATL alternatives. The approach also allows for a reduction in the amount of physical storage (both tape and disk) required in the infrastructure, while increasing storage administrator and operational productivity.



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