

# APTARE StorageConsole Backup Manager

Return on Investment



## Introduction

APTARE StorageConsole<sup>®</sup> provides Data Protection Management (DPM) services to enterprise backup and recovery environments. APTARE StorageConsole offers reporting, monitoring, alerting, and capacity management for VERITAS NetBackup and IBM Tivoli Storage Manager (TSM) enterprise backup & recovery systems.

The purpose of this document is to provide the quantifiable benefit of deploying APTARE StorageConsole in a NetBackup or TSM environment. The return on investment for the deployment of APTARE StorageConsole can be categorized into the following five key areas:

- Improved management and operations effectiveness
- Improved utilization of backup infrastructure
- Identification of data protection exposure and unprotected datasets
- Performance tuning and optimization of existing data protection resources
- Accountability and reporting for regulatory compliance and audits

## 1. Improved Management and Operations Effectiveness

APTARE StorageConsole provides a web-based consolidated and centralized management interface for reporting on and managing your backup and recovery environment. Administrators, end-users, and IT personnel can have at their fingertips an enormous amount of detail regarding the overall data protection health and effectiveness of their production environments. In the past, this information would require weeks or months of custom scripting just to be able to answer the following simple data protection questions:

- Which of my backups that ran last night failed?
- Were any of my backups restarted and if so, were the restarted backups successful?
- What is the last known successful full backup for any client?
- What mount points or directives are being backed up?

IT personnel would need to be proficient at Perl or shell scripting to extract the data from the underlying backup systems and then aggregate it into a relational database for data mining and analysis. Add to this the on-going maintenance and support of these scripts due to changes in the interfaces of the underlying backup products; the scripts would often break or not accurately reflect what had really happened in the customer's backup and recovery environment.

The amount of time spent in developing, maintaining, and supporting additional management requirements for enterprise resource planning (ERP) or managing the day-to-day backup operations is a factor of many variables, such as the number of backup clients, the pure volume of backup data, the complexity of the backup infrastructure (for example, SAN-based backups), etc.

APTARE has analyzed dozens of enterprise customer environments, resulting in the following metric, which presents a good average reflection of the amount of time spent maintaining custom scripting:

- Annual cost savings = # of master servers \* 15% \* 1 FTE cost

For example, if an environment contains four (4) VERITAS NetBackup master servers and the annual FTE cost is \$130k, the cost of maintaining your own custom scripts would be:

$$\text{Annualized savings} = 4 * 15\% * 130,000 = \$72,000$$

In addition to savings from not having to write and maintain your own data protection scripts, APTARE StorageConsole provides a more effective and functional interface to manage and operate the backup & recovery systems of an enterprise. Administrators and operators typically use the native administration interface of the underlying backup product. It is extremely difficult to get a “big picture” view of what is happening across the global enterprise. A significant amount of time is wasted by operators chasing the status of jobs that may have failed, then restarted, and were subsequently successful. In NetBackup, multi-streaming backups from a single client schedule appear as potentially dozens of independent jobs, each with their own retries and status making it extremely difficult for operators to determine if a client backup was successful.

APTARE StorageConsole provides specialized business functional dashboards to its users. Administrators and operators very quickly can identify hot-spots in their backup and recovery environment and resolve problem areas before they impact the storage utility’s ability to recover data. APTARE StorageConsole offers detailed data analytics to validate the integrity of backup information and to illuminate “false positives” or clients that may have accidentally been removed from policies.

It is difficult to put a quantitative and non-subjective measure on the specific savings that a customer would experience in using APTARE StorageConsole to manage and operate their storage utility. That said, we have compiled data from dozens of customers and the following metric is reflective of the expected savings in pure administrative and operations time in managing the day-to-day task of a backup & recovery system administrator/operator:

- Annual cost savings = Virtual number of FTE’s managing the day-to-day backup operations \* 40% \* 1 FTE cost

For example, if an enterprise has six people in their IT organization and 0.75 people (i.e., three-quarters of one person’s time) dedicated to managing their backup and recovery systems, the annualized cost savings would be:

- Annualized savings =  $0.75 * 40\% * \$120,000 = \$36,000$

## 2. Improved Utilization of Backup Infrastructure

Backup operations and storage administrators are constantly in a fire-fighting mode. With storage growing exponentially at the rate of 40-60% per year and with centralized management of backup and recovery operations, enterprises are looking to achieve optimal utilization from their existing backup infrastructure resources.

Two of the most expensive resources in any enterprise backup and recovery environment are the tape libraries and their associated tape drives, and the tape or disk media that is the final landing place for enterprise data.

Modern high-density tape drives are extremely expensive and with a great deal of moving parts, they are prone to failure. Backup administrators are constantly fighting an uphill battle of load-balancing their backup jobs over the pool of tape drives and tape libraries, with no visibility into the average utilization of each drive.

APTARE StorageConsole provides dashboards and views into the effective utilization of tape drives and tape libraries. Operators can see on a single pane-of-glass which drives are being over/under-utilized and which drives are being “slammed” with a lot of mount-dismount requests that eventually result in mechanical failure. Administrators and operators can use APTARE StorageConsole to balance their backup jobs over their “backup window” and still meet their storage SLA’s. The net result is the requirement for fewer tape drives and tape libraries. In a recent study conducted with several customers, the following

efficiency metrics were used to determine the return on investment related to tape library and tape drive utilization:

- Identification of 25-35% of underutilized tape libraries and tape drives

Assuming, on average, that an LTO2 tape drive costs \$5000 and an LTO3 tape drive costs \$6500, the capital savings for more effective and efficient utilization of LTO generation tape drives would be approximately \$1725 per tape drive. Stated differently, with the deployment of APTARE StorageConsole, customers have experienced on average savings of 25-35% on their tape drive purchases.

Another key benefit of being able to display current utilization and to predict capacity, is to identify when additional tape drive or tape library resources will be required to meet pent-up demand. In the past, administrators and operators would know about this only when backup or recovery jobs started to fail. The real “cost” of trying to recover from inaccessible data could be enormous in any organization.

One of the largest capital costs in any data protection environment is the cost of the backup consumables, including tape media and virtual tape library costs for disk-based backup solutions. For tape media, backup administrators have very little visibility into the aggregate amount of available space on the tapes, while matching this against the backup policies and their nightly or daily capacity requirements. APTARE StorageConsole provides revolutionary technology to accurately predict the amount of “white space” available and the identification of under-utilization of tape and disk volume pools. By analyzing the real-time compression rates and matching this across different media types and backup policies, APTARE StorageConsole can supply just-in-time statistics on what scratch pools and tape volumes are required to meet future client backup needs.

Customers often mask this problem by “guesstimating” the number and policy assignments of scratch tapes. Estimates too low result in failed backups with the systems’ inability to deliver scratch volumes for growing capacity; and, estimates too large result in wasted tapes and often leave scratch tapes vaulted offsite, contributing to added retention and data management costs.

With a focus on “just in time” ordering and by proving the ability to accurately calculate past and future capacity and storage requirements, APTARE StorageConsole can significantly reduce the number of tapes required to meet the data protection Recovery Time Objective (RTO) and Recovery Point Objective (RPO) requirements of an enterprise. In a recent study of several customers, the following average metrics were noted as cost savings across tape media consumption:

- 25-30% savings in the quantity of tapes that are required without any changes to policy retentions or pure data protection volumes

For example, one customer was spending \$12,000 per month on LTO2 tape media. With the deployment of the APTARE StorageConsole software and the immediate identification of under-utilized tape pools and an accurate prediction dashboard to forecast future tape capacity needs, the customer experienced a monthly cost savings of \$3,600 per month.

Another benefit of deploying the APTARE StorageConsole solution is immediate illumination of the magnitude and impact of data protection policy decisions in your enterprise backup and recovery environment. Customers very quickly can understand both the disk and tape capacity that is being utilized by different clients. This “realization” and, in particular, the number of tapes that is being consumed as a result of certain data protection policies, allows administrators and business managers to make more constructive decisions for their overall data protection objectives. One such example is where one of our customers, once presented with the dashboards and real-time statistics reports, quickly realized that their NDMP backups should be changed from nightly Fulls to Incrementals, with a resulting annualized savings of \$500,000 in tape media alone.

### 3. Data Protection Exposure Identification

APTARE StorageConsole offers a unique feature to go beyond the underlying backup and recovery software to identify orphaned clients on a customer's network (i.e., clients that exist on a customer network that are not in any backup policy and may not have any client backup software installed) and unprotected datasets (i.e., file systems and mount points that are not part of a backup policy). The ultimate goal of any data protection environment is 100% data protection. Every IT administrator dreads receiving that call to restore data from a system that they have never heard of, or to recover a mount point that does not exist in any backup policy. APTARE StorageConsole provides comprehensive file-level detail reporting on not only the data that is protected, but also unprotected data.

The true organizational impact cost of the inability to recover digital assets is directly related to the criticality of the underlying data. Ask companies such as Morgan Stanley, which was fined \$1.45 billion dollars for their inability to recover critical email archives (<http://wistechology.com/article.php?id=1929>) or Citigroup, which lost 3.9 million customer data files because of stolen tapes and the inability to identify what was on the backup tapes. ([http://www.theregister.co.uk/2005/06/07/citigroup\\_lost\\_tape/](http://www.theregister.co.uk/2005/06/07/citigroup_lost_tape/))

### 4. Performance Tuning and Optimization of Existing Data Protection Resources

The management of a complex data protection environment tends to involve a cyclical process. Administrators initially focus on managing the day-to-day "fires" and therefore have very little time for process/architecture improvement and capacity planning. With storage growth compounded year-over-year at 40-60%, this creates a vicious circle, leaving organizations unable to proactively manage their storage environments with existing, ineffectual tools.

APTARE StorageConsole, once deployed, allows administrators and operators to quickly stabilize and apply best practices to tune and optimize their backup and recovery environment. Using the storage utilization and capacity management dashboards within APTARE StorageConsole, administrators can quickly identify hot spots across media servers, networks, tape drives, and disk-based backup resources. Administrators are empowered with tools to better load-balance and tune to achieve optimal performance from existing data protection infrastructure resources. Storage administrators finally can predict what additional capacity should be added to their storage utility *before* performance or capacity bottlenecks arise.

Existing tools simply could not provide visibility to capacity and saturation levels across the data protection environment. This lack of information often resulted in large enterprise systems scaling until something broke, which would have repercussions across multiple parts of the storage utility. For example, shared resources such as tape drives often would get tied up backing up the data for slow clients, resulting in failed backups across multiple waiting clients that subsequently missed their backup windows.

APTARE StorageConsole changes the focus for the storage administrator, from operating in a "fire fighting" mode to being more proactive. With time to optimize, refine, and tune their data protection environments, storage administrators can improve service levels without having to add additional capital or FTE resources.

The quantifiable benefit provided by APTARE StorageConsole varies significantly from one customer to the next. It usually depends on the volatility of the data protection environment and the number of FTE resources dedicated to the storage utility. APTARE customers consistently comment on how StorageConsole helps them "manage to the future" in their backup & recovery environments with tools that provide an accurate view of their enterprise data protection service levels and utilization of resources.

