

# Enabling Cost Control and Operational Efficiency with EMC Data Protection Advisor

*Applied Technology*

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## **Abstract**

EMC® Data Protection Advisor provides a comprehensive set of features to maximize the return on investment of existing hardware, software, and personnel. In these times of flat IT and staff budgets it is essential that existing resources are fully utilized and new purchases are required, timely, and effective. This white paper outlines how Data Protection Advisor enables the cost control and operational efficiency required to achieve these goals.

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## Table of Contents

<b>Executive summary .....</b>	<b>4</b>
<b>Introduction .....</b>	<b>4</b>
Audience .....	4
<b>Samples of cost control and operational efficiency .....</b>	<b>4</b>
Maximizing use of existing resources .....	5
Increasing efficiency of existing resources .....	5
Reusing available media.....	6
Targeting upgrades to maximize purchase.....	7
Reducing manual processes.....	8
<b>Conclusion .....</b>	<b>9</b>
<b>References .....</b>	<b>9</b>

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## **Executive summary**

EMC® Data Protection Advisor provides a comprehensive set of features to maximize the return on investment of existing hardware, software, and personnel, as well as ensure that new purchases are required, timely, and effective. Data Protection Advisor has proven itself in driving cost out of these areas in real customer environments and is an integral part of many enterprises' IT organizations.

## **Introduction**

Storage technology currently consumes a large percentage of many technology budgets. Between purchase of new hardware and software, maintenance on existing products, and staff to manage the purchases, the costs are very high. With IT budgets remaining flat or being reduced, IT managers are being asked to do even more with the same or less. How can you maintain the same service levels or even grow? This white paper explains some of the common areas where resources are wasted and shows how Data Protection Advisor can help to reduce them.

## ***Audience***

This white paper is aimed at mid- and high-level management responsible for storage technology costs.

## **Samples of cost control and operational efficiency**

Data Protection Advisor contains a large number of features designed to maximize use of existing resources and to allow planning for purchases of new resources. Individually they are powerful but together they create a compelling case for using Data Protection Advisor within your storage infrastructure. Some of these features are outlined next, detailing cost savings with real-life examples.

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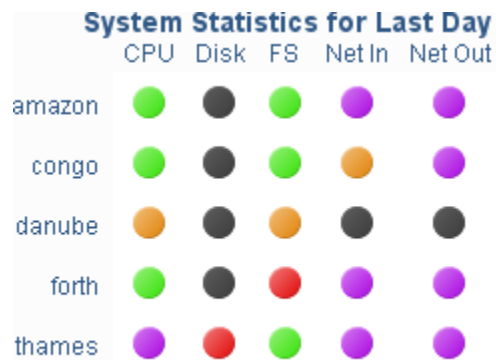
## Maximizing use of existing resources

Many servers, both physical and virtual, are sized incorrectly and waste resources that could be used more productively elsewhere. Some common causes of incorrect specifications are:

- Servers were sized assuming growth that did not, or has not yet, occurred.
- Servers were commissioned for one purpose and then used for another without changing their specifications appropriately.
- Servers were wrongly sized due to the forced use of a standard configuration.

The result of this is that resources are going to waste, with a direct impact on both capital and operational budgets.

Data Protection Advisor examines all aspects of a server, including network throughput, CPU and memory usage, and disk and tape transfer rates. By looking at each of these values over time it can spot resources that are underutilized and highlight where new applications could be deployed in tandem with existing applications, or where servers would be prime candidates for consolidation through virtualization. Figure 1 shows an example report that highlights both over- and underutilization.



**Figure 1. With Data Protection Advisor, it is easy to see where resources are overutilized (red) and underutilized (purple), highlighting areas for upgrade or additional loading**

By ensuring that this information is easily available in a concise format it removes much of the guesswork that takes place in server provisioning and upgrades, resulting in significant cost savings. And all of the detail used to create these charts remains available for further analysis.

*Real-life customer example:*

*A customer had a tape library that was continuously active, and backups were exceeding the backup window. In order to resolve the problem they were prepared to purchase two tape libraries at \$90K each. They installed Data Protection Advisor and it showed quickly that the backup server's network interfaces were fully utilized. Instead of purchasing the tape libraries, the customer spent \$6K on upgrading the network cards in their server and resolved the problem.*

*The customer saved \$174K by purchasing the right hardware to fix their issue.*

## Increasing efficiency of existing resources

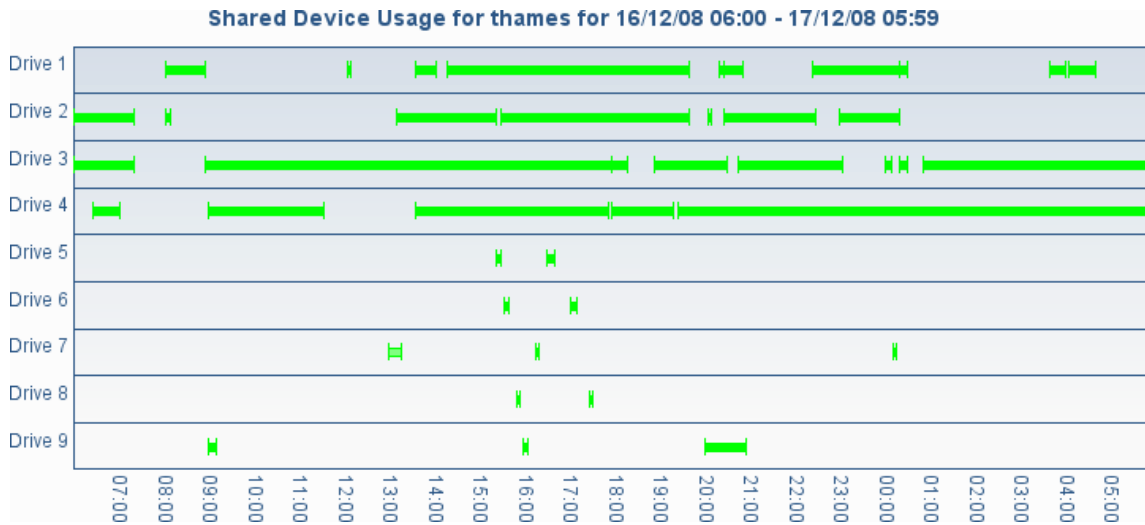
Even when servers appear to have appropriate specifications it is common that the resources are not used efficiently. There are a number of reasons for this, but the most common is that it is too difficult to obtain and analyze the information required to understand where resources are being used inefficiently. Common failures when attempting to track efficiency are:

- The range of hardware and software in the environment makes it difficult to obtain the right statistics.
- There is an inability to manually gather statistics for extended durations and during off-hours.

- There is a lack of or misapplication of information gathered to properly provide a measure of efficiency.

The result of these is that even though a resource may be used very inefficiently it is cheaper for IT staff to buy new resources than to spend time to increase the efficiency of their existing resources.

Data Protection Advisor can provide numerous graphs and charts showing levels of efficiency. Figure 2 shows an example of backup tape device usage over a typical backup cycle.



**Figure 2. Tape backup device usage schedule, showing periods of use and inactivity**

This example is typical, where some tape devices are used more than 80 percent of the time and others are hardly used at all. By providing clear information on existing utilization over time it is possible to ensure much higher utilization without expending personnel to continually gather and maintain the efficiency information. This can result in large reductions in projected IT spend.

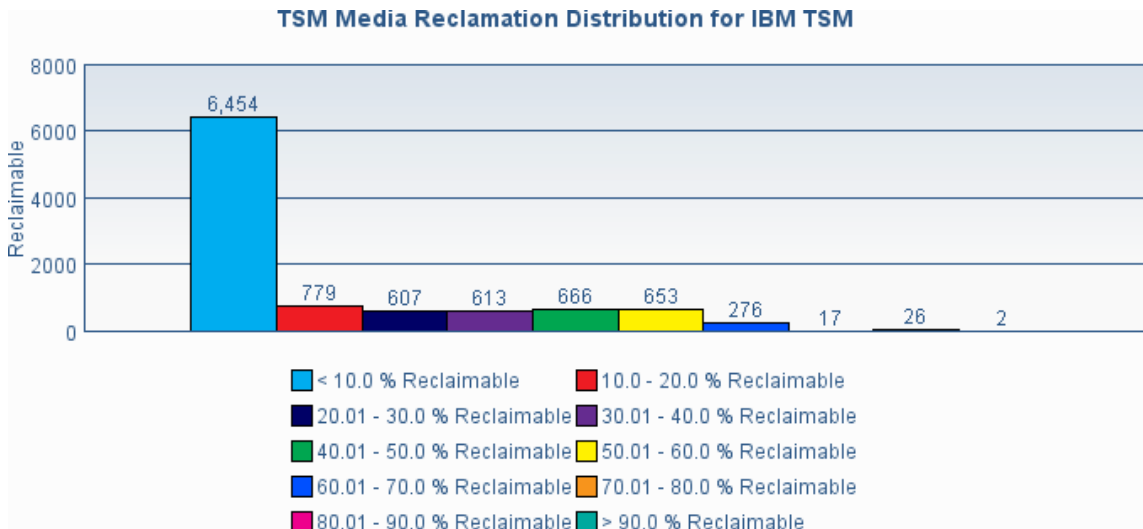
*Real-life customer example:*  
 A global telecommunications company, with over 80 backup servers and hundreds of media servers, was purchasing new tape drives on a weekly basis. They installed Data Protection Advisor and found out that most of their tape drives were used very inefficiently. Over the next 18 months they did not purchase a single additional tape drive, instead using Data Protection Advisor to maximize the efficiency of their existing environment.  
**The customer stopped an existing spend of approximately \$8K a week, saving over \$600K in total.**

## Reusing available media

It is common practice to move tape cartridges from the location at which they are written to another site. This practice, known as “vaulting” or “off siting,” ensures that a remote copy of data is available if the primary site is ever lost and forms the basis of many disaster recovery plans. However, the useful data on these cartridges changes over time as new backups are taken and older information is no longer required. However, due to the nature of vaulting it is rare that these cartridges are revisited for a long time, often not until a whole batch is due to be deleted.

This can mean that large numbers of cartridges with usable space are being held offsite, often with a significant cost attached. In the meantime new media is purchased to meet growth requirements.

Data Protection Advisor can provide information on individual cartridges as if the useful data on them has expired and hence if they are suitable to be returned from offsite locations. And where the backup product allows cartridge consolidation, information on the amount of space available on each cartridge is also available. Figure 3 shows an example of a cartridge consolidation report.



**Figure 3. Cartridge reclamation information allows you to return cartridges to the free pool**

This example shows that there are nearly 1,000 tape cartridges with more than 50 percent reclaimable space. If this space were reclaimed it would result in a return of approximately 600 cartridges to the free pool, allowing you to avoid the cost of purchasing new cartridges for data growth.

### ***Targeting upgrades to maximize purchase***

At some stage hardware upgrades will be required in any environment, as without them the operations of the business will suffer. Some common cases where hardware upgrades are required are:

- Servers are undersized for growth that exceeded expectations.
- Additions to software functionality result in more resources required than are available.
- New versions of existing software have higher resource requirements.

The wholesale purchase of new hardware to increase performance is a common solution, but in this situation most of the hardware purchased is not required to increase the performance of the overall environment. Again, this is due to lack of understanding and knowledge of the problems with the existing environment.

Referring back to Figure 1 on page 5, Data Protection Advisor displays a summary of which resources are overutilized and as such where upgrades should be targeted. By ensuring that this information is easily available in a concise format it removes much of the guesswork that takes place in server provisioning and upgrades, resulting in significant cost savings.

***Real-life customer example:***

*EMC IT was having repeated failures of a backup server, causing issues with completing backup activities. After weeks of working to debug the issue, Data Protection Advisor was installed. Within 5 days, Data Protection Advisor produced reports that showed that memory, network, and disk resources were fine but the bottleneck was CPU utilization at 100 percent for long stretches, causing the system to fail. A single targeted upgrade of an additional CPU resolved the issue and avoided the purchase of an entire new backup server.*

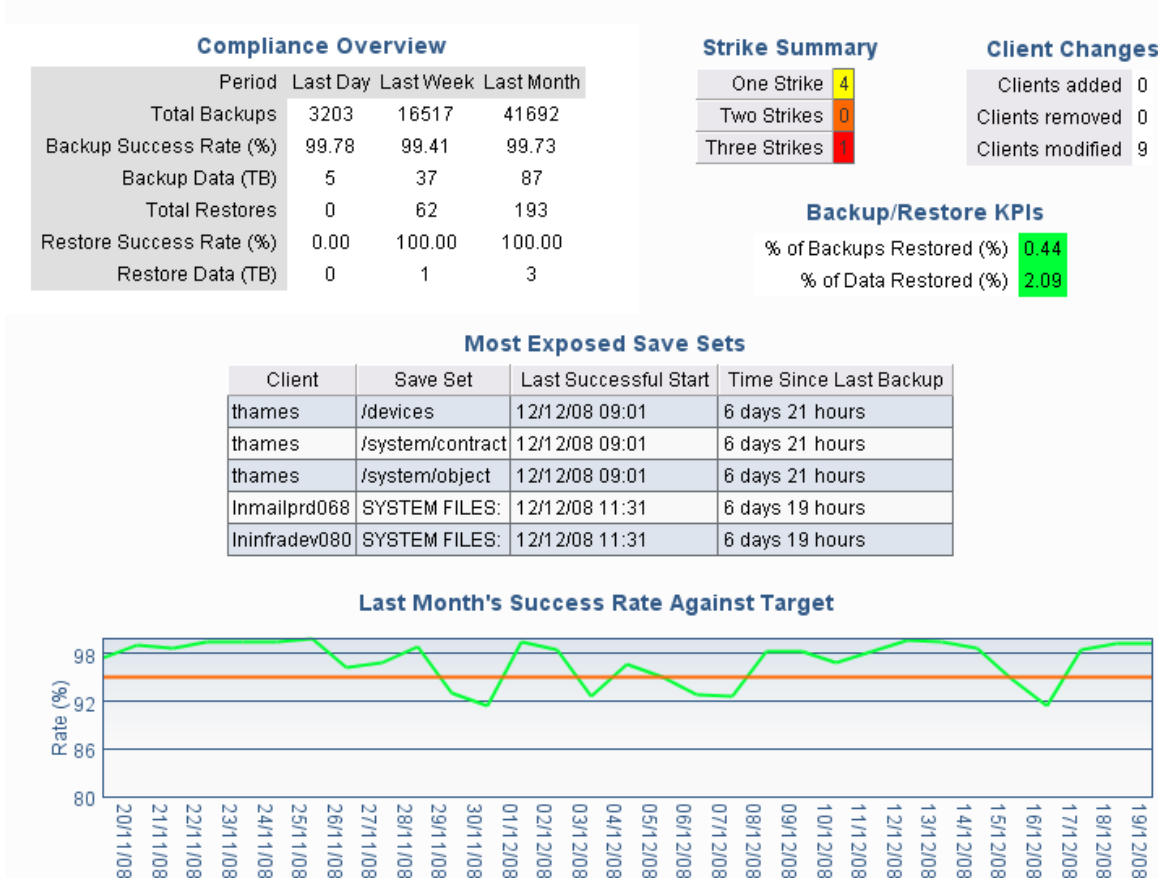
***EMC IT saved nearly \$400K by purchasing a simple component rather than an entire new server.***

## Reducing manual processes

The IT staff of any company spends significant amounts of time on manual processes that require significant effort or ad-hoc requests that disrupt planned workflow. Either way, highly skilled IT professionals often spend large amounts of time carrying out work that, although technical, is a poor return on investment for companies employing them.

Data Protection Advisor automates many tasks, from gathering information through analyzing it for worrying trends or deviations from normal behavior to publishing the information in a way that makes it easily accessible to. Information such as that shown in Figure 4 can be made available whenever required, and is always both up to date and accurate.

### Backup Compliance Overview for EMC NetWorker for Last Week



**Figure 4. Sample compliance reporting dashboard**

By removing much of the low-value work IT staff carries out, it is possible for companies to focus high-cost staff on high-value work, continue to grow their business, and increase employee job satisfaction.

*Real-life customer example:*

*A European service provider gets requests for customer audits on a regular basis. Prior to deploying Data Protection Advisor the audits would take 1 – 2 weeks to complete by wading through logs and gathering the required data to create reports. Once Data Protection Advisor was deployed, audits could be satisfied in 1–2 hours and moved from being a significant IT expense to something that the service provider could offer their customers as a profit-making service.*

***The customer saved 4 – 8 weeks of effort every year and created a new revenue stream.***

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## Conclusion

Data Protection Advisor enables you to maximize the return on investment of existing hardware, software, and personnel, as well as improve the overall operations and protection of your data.

## References

The following can provide additional information and can be found on Powerlink<sup>®</sup>, EMC's password-protected customer- and partner-only extranet. Note that EMC Backup Advisor version 3.1 has been renamed and released as EMC Data Protection Advisor 5.0.

- *EMC Backup Advisor Reference Guide*
- *EMC Backup Advisor Administration Guide*
- *EMC Backup Advisor Installation Guide*
- *EMC Backup Advisor User Guide*
- *EMC Backup Advisor Compatibility Matrix*

For access to Evaluation licenses go to the Data Protection Advisor page on EMC.com:

[www.EMC.com/products/Backup and Recovery/Data Protection Advisor](http://www.EMC.com/products/Backup_and_Recovery/Data_Protection_Advisor)