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Solving the Storage Challenge Across Platforms: Transparent Compression for Windows Operating Systems

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Guidelines for Evaluating and Selecting a Compression Technology

Finding the right data compression solution is a complex task. There are multiple factors that must be taken into consideration, including platform support, application support, and overall value. In the end, choosing a compression solution involves balancing all factors to find the technology that best suits your operation's needs.

Consider the following four guidelines as you evaluate compression solutions for your organization:

- Breadth of platform support
- Balance of capabilities and compression requirements
- Value of transparent compression
- General application evaluation

Organizations may have other criteria they will consider, but these four topics are common to many enterprise compression use cases.

Guideline 1: Breadth of Platform Support

The first thing to consider when choosing a compression solution is the breadth of platforms that require support. This consideration includes everything from servers to laptops and mobile devices. Before purchasing a compression solution, decisions must be made regarding where the compression needs to operate.

Servers are powerful machines that run demanding, data-intensive applications. Naturally, these machines must be supported by your chosen compression solution. To retain system flexibility, the solution should support both virtual and physical servers. Although you may not be using one server type now, a business operation is always better off having the option to capitalize on additional space if need be. Compression can elongate the life span of servers that would otherwise have to be scrapped, migrated, or upgraded. In certain scenarios where upgrades are not possible and server migrations impractical, compression is the lowest cost approach to extending server life spans.

On the user end, comprehensive desktop support is crucial to a high-quality compression solution. End users should be able to take advantage of compression without the need to manage technical aspects of the technology. Here, it is important to consider how easily the solution is deployed on desktops. The best compression solution will reveal no to little change to the end user; that is, besides more disk space.

Laptops, although they should be treated similarly to desktops when looking at different compression solutions, add one particular factor that must be considered: solid-state drives. SSDs provide both high performance and mobility to the user, albeit at a much higher cost than their hard disk counterparts. Compression is particularly important in SSD machines, as it effectively reduces per gigabyte cost.

Tablets have gained popularity in recent years as a business alternative to laptops. The combination of computing power and mobility can provide a meaningful advantage over laptops for many business operations; the main weakness being storage space. Much like the SSD problem, compression effectively increases storage space for mobile devices, such as tablets, increasing the overall value of the machine. Virtually all tablets are non-user serviceable and their storage simply cannot be upgraded past the point of purchase. Compression offers an incalculable benefit in upgrading the storage capacity of these fixed-storage tablets, where a hardware upgrade is physically impossible.

Guideline 2: Balance of Platform Capabilities and Compression Requirements

After deciding on which platforms your operation will implement compression, you must balance these expectations with the compression requirements to find a realistically deployable solution. First, note how well a compression solution supports and performs on the latest hardware and software. This capability includes, but is not limited to, the maximum compression ratio for the latest technology. This consideration is particularly important for cross-platform operating systems (OSs), such as newer versions of Windows.

Similarly, you must consider how well a compression solution performs on and supports older OSs and legacy hardware.

Businesses and other organizations upgrade desktops, laptops, and other hardware on varying schedules. Companies will sometimes have a mix of OSs in production at one time. It is important to look at the balance of platform compatibility and compression performance across multiple hardware and software combinations so that the software is able to run across all possible variations.

Guideline 3: The Value of Transparent Compression

Transparency of compressed data is crucial to a high-quality compression solution. Transparency means not having to explicitly decompress data before having to access it. As previously pointed out, non-transparent compression solutions incur significant drawbacks in training and user-education costs.

For example, transparent OS compression ensures that data is seamlessly compressed as it is written to disk by applications, and seamlessly decompressed as it is read from disk by applications, directly by the OS. Absolutely no user intervention or awareness occurs of any compression or extraction process with transparent OS compression.

Transparent file compression ensures that a document or application that is launched from a compressed archive is automatically decompressed, and when closed, changes made are automatically saved back into the source archive by recompressing the updated data. This operation is handled not by the OS but also by dedicated software meshed with the OS to make the process as seamless as possible. Although no user intervention may occur, user awareness is typically warranted with transparent file compression from the meshing layer.

Guideline 4: General Application Evaluation

Finally, you must do an overall evaluation of how a compression solution will affect your operations. How much will the solution cost? How easily can the solution be deployed? How will life-cycle management affect future operations?

There are two main cost considerations: initial licensing costs and ongoing support costs. Both of these cost factors may be subject to purchase volume discounts. Volume discounts have the potential to save an organization a significant amount of money.

Closely related to cost is deployment effort. The more time IT staff members spend deploying a new technology, the more the product's value is reduced. Look for compression software that can be installed remotely. The ability to deploy new solutions from a remote location is usually the most effective way to save employee time. It is also important to consider how deployment will affect the end user. Although end-disruption may be unavoidable in some instances, the disruption should be minimal.

Life-cycle management is yet another important consideration. Ideally, there will be little need to manage the compression solution after it is deployed. This management includes the impact that upgrading OSs and other software will have on the compression solution. If the compression solution needs to be reinstalled when software is updated, you might be better off finding a better solution. Similarly, new hardware appliances may need to be configured to support the solution, creating yet another delay in business operations.

Compression Is a Powerful Option

Compression can be a powerful tool. Finding the right compression solution takes time and careful consideration. Finding a balance between cost, performance, platform support, and usability is imperative to finding the optimal solution for your organization.