HOW TO AVOID THE 7 SINS OF STORAGE

Leveraging Flash Memory and
Breakthrough Architecture
to Accelerate Performance,
Simplify Management,
and Protect Your Data

nimblestorage

Some storage and backup mistakes could be called "sins" because they lead to expensive IT problems – and even risk to the enterprise. But luckily for today's overworked storage and IT managers, Nimble Storage has developed innovative approaches to addressing the seven biggest storage sins:

Sin #1:

Spending too much on storage, and getting too little in return.

Common primary enterprise applications (such as email, databases, collaboration solutions, and file servers) typically generate high random traffic – and therefore demand high-performance storage. Consequently, many organizations are spending big percentages of their IT budgets on storage solutions based on expensive, high-RPM drives.

Unfortunately, a large part of this expensive capacity is wasted because only a small subset of application data is actually accessed by these applications on a regular basis, typically only 5-15% per day. Some solutions try to address this by "auto-tiering" the colder, less frequently accessed data to lower cost storage devices. But these solutions are typically slow to respond, often taking days to identify and move cold data to a lower tier. As a result, they can only really help for very static data sets. But most real-world applications are dynamic in nature, where the "hot" and "cold" sections of the data may change from day to day or even within a single day, making most existing tiering solutions ineffective for these kinds of applications.

The Nimble Approach:

Nimble's breakthrough CASL architecture combines flash memory with low-cost, high-density drives, eliminating the need for expensive, high-RPM drives for primary storage and a separate disk-based backup solution. By converging storage, backup, and disaster recovery into one solution, enterprises can now replace multiple traditional storage devices to significantly cut infrastructure and management costs.
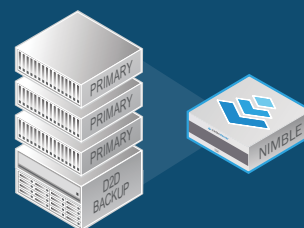
Sin #2:

Refusing to address the shortcomings of traditional backup technology.

Although thousands of enterprises have already made the switch to disk-based backup, for many of them this solution has only addressed their most pressing pain point – the unreliability of tape backups. A large percentage of these organizations continue to deal with the remaining shortcomings of traditional back-up, including long backup windows (in some cases extending through the entire weekend and well into Monday), long restore times (stretching into hours or even days), and poor recovery points – causing significant loss of data when operations must be restored from a backup.

All of these shortcomings arise from the fundamental limitations of traditional backup technologies – including the need to copy very large data sets from the primary server on to a backup device. This process places an extremely heavy load on application servers, the network and the backup device, lengthens backup windows, and increases IT admin overhead with the need to manage a separate backup device.

The Nimble Approach:

Nimble Storage provides an innovative new approach to storage, by converging primary and backup storage into a single array, dramatically cutting costs and complexity. By converging primary and backup storage onto just one device, there's no need to move data to tape or other backup media. Backups and restores can be performed in just seconds, not hours or days like existing solutions. The Nimble approach eliminates the heavy load on both the application servers and backup devices, and decreases IT admin overhead by eliminating the need to manage a separate backup device.

Sin #3:

## Not implementing an adequate disaster recovery plan.

For many organizations, an effective disaster recovery plan remains just below the threshold of IT budgets year after year. For medium-sized organizations, the cost, complexity, and WAN bandwidth requirements of a state-of-the-art disaster recovery solution are hard to justify when weighed against the perceived low probability of a site failure or a disaster.

As a result, many mid-sized enterprises still rely on outdated disaster recovery solutions, such as off-site tape shipment, which have very slow restore capabilities. Other organizations have implemented a disk backup based replication technology as a compromise solution, because this model offers slightly better recovery times without imposing the huge bandwidth requirements of primary replication. However, this type of environment still results in high costs and slow recovery times.

The Nimble Approach:

Nimble's CASL architecture provides highly efficient off-site replication capabilities for moving data to a remote Nimble Storage array. CASL only transfers highly compressed incremental block-level changes, requiring low bandwidth to move data across the WAN. Remote replicas are primary data copies that can be quickly accessed in the event of a disaster by simply failing over clients or applications to the remote array without the intermediate step of having to restore the primary system from a backup solution.

Nimble's disaster recovery solution is enabled by highly WAN-efficient replication to the offsite Nimble array, making it up to 20x faster than leading SAN replication technologies. By placing a second Nimble array at a remote location, enterprises of all sizes can now get a complete, cost-effective disaster recovery solution.

Primary Storage   **Offsite DR**
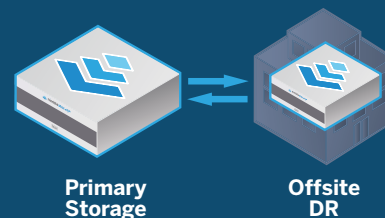
Sin #4:

Allocating too many IT resources to storage administration instead of driving critical business initiatives.

Many organizations have invested in high-end networked storage solutions, only to find that the solutions are quite complex and require significant training and ongoing management to fully leverage their capabilities. In addition, the management of the backup processes for these solutions can cause a significant drain on IT resources, with the need to keep weekly backups on track and within backup windows, and to support ongoing restore requirements.

Sin #5:

Not empowering users to restore their own data.

For many IT organizations, a large proportion of data restore requests are driven by end users due to accidentally deleted emails, files, or folders – leading to an avoidable drain on the IT team's time, as well as unnecessary delays and frustration for end users. To address these issues, many email and file solutions have over the years improved their handling of deleted item retention. For example, Microsoft Exchange Server 2010 retains deleted emails or folders for 14 days by default, in a way that lets end users restore their own accidentally deleted items. Similarly, Microsoft SharePoint Server 2010 has a deleted item folder that also retains items for two weeks to facilitate end user restores.

Enterprises can leverage these powerful built-in capabilities by extending the retention periods from the standard two weeks to 30 or even 60 days. Even though this could largely offload end user restore requests from overburdened IT teams, very few organizations have fully implemented extended retention periods due to concerns about over consumption of expensive primary storage capacity and the potential performance impacts that could result from maintaining larger amounts of older, deleted items for longer periods of time.

The Nimble Approach:

Designed for the IT generalist, Nimble's intuitive user interface eliminates the complexity of managing separate storage, backup, and DR devices. Using predefined application and data protection policies, new volumes can be created in just three steps. What's more, Nimble Protection Manager simplifies management of application-consistent backups and replicas for Microsoft and VMware environments.

The Nimble Approach:

Nimble Storage arrays enable cost-effective 30-60 day retention of deleted files or emails, allowing end-user driven restores through capabilities such as "Previous Versions" in MS Windows, or the "Deleted Item Restore" in MS Exchange, thus reducing the reliance on administrator-driven restores.

Sin #6:

Assuming capacity optimization (or deduplication) only applies to backup data.

While the concept of backup capacity optimization (or deduplication) is widely understood by most IT teams today, fewer organizations are aware that simple, effective options exist to significantly reduce their primary storage footprint as well. Several vendors claim to offer primary capacity optimization solutions that are either built in to their storage arrays or available as add-on solutions. But many of these solutions come with significant caveats, such as only optimizing capacity for low performance file storage, with limited effectiveness for high performance primary applications like email and databases.

The Nimble Approach:

Nimble's CASL architecture provides in-line compression on all data. Existing primary storage architectures cannot effectively support in-line compression because they store data as fixed-size blocks. In contrast, CASL was designed to support variable-sized blocks inherent in compressed storage. With Nimble, stored data is typically compressed 2-4x.

Sin #7:

Thinking that a full-featured enterprise SAN is out of reach.

The dramatic growth of iSCSI-based SANs has delivered a wide range of options to mid-sized organizations looking to implement cost-effective storage solutions. In some cases, however, budget-constrained organizations find themselves only considering low-end solutions that offer the barest minimum level of SAN functionality, because of the premium pricing charged by the larger vendors for such capabilities. Unfortunately, much of the potential of networked storage is lost when deploying a SAN without built-in capabilities such as thin provisioning, cloning, replication, snapshots, capacity optimization, and application integration.

The Nimble Approach:

By eliminating high-RPM drives and separate disk-based backup devices, Nimble Storage slashes infrastructure costs, reduces energy consumption, and minimizes rack space requirements. With the Nimble CS-Series arrays, enterprises can save more than 60% off the cost of multiple-component solutions from existing storage vendors.

About Nimble Storage

Nimble Storage has developed the world's first converged storage, backup, and disaster recovery solution, fundamentally changing the economics of storage for the midsize enterprise. Nimble's breakthrough CASL™ architecture enables users to reduce capex by 60% versus existing technologies, save 90 days of snapshots, and reduce backups and restores from days to seconds. Nimble Storage does not require a separate restore from secondary storage to primary storage and is easily integrated into virtualized server environments. What's more, Nimble Storage provides a simple, cost-effective disaster recovery solution that delivers business continuity and long-term data protection.

About Response Data Communications

Established in 1995 Response Data Communications (RDC) have successfully delivered leading edge, secure, high performance, strategic enterprise IT and communication solutions in partnership with their award-winning portfolio of vendors. Working on a focused set of world class complementary technologies including; business IP telephone systems, hosted VoIP, unified communications, mobility, contact centre, WAN optimisation, storage and scale-out technologies, cloud networking, network analysis, wireless security, ethernet encryption and data centre networking. Response Data Communications have the knowledge and experience to ensure successful integration with existing environments, while maximising effectiveness, efficiency and profitability.

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