The State of Software-Defined Storage (SDS)

Market Survey

Date conducted: March, 2014
Executive Summary

For the fourth consecutive year, DataCore Software conducted a survey of 388 global IT professionals to identify current storage challenges that organizations are facing and what forces are driving demand for software-defined storage. This year’s State of Software-Defined Storage report shows that these institutions look for SDS to both simplify management (26%) of their incongruous storage devices and enable them to future proof their infrastructure (21%). The move to SDS is very appealing considering that almost half of respondents identified the difficulty of migrating between different models and generations of storage devices as preventing them from using other manufacturers or models of storage devices that could well reduce their costs.

Business Drivers for Software-defined Storage

- Extend the life of existing storage assets
- Future-proof your infrastructure
- Automate frequent or complex storage operations
- Simplify management of different classes of storage
- Lower hardware costs by shopping among several vendors
- Avoid hardware lock-in from storage manufacturers

Number of Respondents = 388
Survey Demographics

The cross-section of surveyed organizations both in size and vertical industry provides broad insights into the similarity in needs and aspirations for SDS over a wide range of IT environments.

Size of Organization

<table>
<thead>
<tr>
<th>Size of Organization</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Less than 1,000</td>
<td>57%</td>
</tr>
<tr>
<td>Between 1,000 and 5,000</td>
<td>23%</td>
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<tr>
<td>More than 5,000</td>
<td>20%</td>
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Industries Represented in the Survey

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Financial services</td>
<td>22%</td>
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<tr>
<td>Healthcare</td>
<td>13%</td>
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<tr>
<td>Government</td>
<td>16%</td>
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<tr>
<td>Manufacturing</td>
<td>16%</td>
</tr>
<tr>
<td>Education</td>
<td>12%</td>
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<tr>
<td>IT services</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
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</tbody>
</table>
Opportunity to Diversify

The two main factors that impede organizations from considering different models and manufacturers of storage devices were the plethora of tools required to manage them (41%) and the difficulty of migrating between different models and generations (37%). The two key factors actually increased as compared to last year’s survey when 31% said that difficulty migrating between different models and generations of storages devices was preventing them from considering other models/manufacturers, while 38% said that different tools required for managing storage devices was preventing them.

Interestingly, 39% of respondents don’t run into these concerns as independent storage virtualization software allows their organization to pool different devices and models from competing manufacturers and manage them centrally.

What factors prevent you from considering other models or manufacturers of storage devices?

- None; device-independent storage virtualization software allows me to pool devices from competing manufacturers
- Different tools required to manage them
- Difficulty migrating between different models and generations
- Lack backward compatibility
Impact of Flash Storage Technology and Devices

Recognizing that one of the triggers to consider SDS comes with the difficulties of integrating solid state technologies into the data center, we sought to understand how pervasive flash has proven. More than half of the respondents (63%) said that they currently have less than 10% of capacity assigned to flash storage. While there has been a fair amount of conversations, mainly from flash vendors regarding the all-flash data center, there are a few factors that are preventing organizations from making that move – cost and the realization that not all applications benefit from flash devices.

While we don’t anticipate the relative percentage changing significantly in the near future, it should be noted that almost a quarter of respondents (22%) are using flash cache in a shared storage array to support server virtualization projects.
Impact of Storage Location

Some of the difficulties software-defined storage solutions seek to remedy include the many variables currently encountered when managing, protecting and provisioning data spread between servers, SAN and the Cloud. Of course trying to tackle each of these separately with point products can only create further isolation and disjoint practices. Which suggests that the criteria for SDS platforms must encompass virtual (server) SANs, on-premises networked storage and storage resources kept off-premises on public Clouds.
Application Performance

When asked how serious an obstacle performance degradation or the inability to meet performance expectations was when virtualizing server workloads, 23% of respondents ranked it as the most serious obstacle, and 32% viewed it somewhat of an obstacle to virtualization.

Performance slowdowns attributed to storage indirectly accelerate the urgency for software-defined storage, since SDS can enable organizations to non-intrusively introduce faster, solid state technology alongside existing disk farms. The need for speed also explains the increasing demand for infrastructure-wide caching and auto-tiering necessary to arrive at an optimal balance between premium-priced flash and lower cost spinning disks.
Downtime Avoidance

Similar to last year, both the ability to enable storage capacity expansion without disruption and the improvement of disaster recovery and business continuity practices ranked highest for reasons that organizations deployed storage virtualization software. 30% of respondents ranked enabling storage capacity expansion without disruption as the most important reason, while 32% of respondents identified disaster recovery and business continuity improvement.
Downtime mitigation among respondents included a number of well-established techniques. Notable is the growth in clustered storage between data centers for 48% of those sampled, indicating the seriousness with which IT takes the threat of facility outages. Stretch clusters in fact eclipsed redundant SANs in the same center (42%) as the approach taken to prevent storage-related downtime.
Conclusions

One can infer from the cross-section of respondents that Software-defined Storage is expected to address many of the most pressing storage-related challenges faced by IT organizations. Although some industry watchers concentrate on the administrative benefits of SDS, it’s clear that IT also understand the opportunity to improve application performance, resource utilization and data availability through this promising new architecture.