WHITE PAPER

Storage Usability a Critical Requirement for IT in Small and Medium-sized Businesses and Remote Offices

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EXECUTIVE SUMMARY

The IT function in small and midsized businesses (SMBs) – as well as departments and remote offices in the enterprise - suffers many of the same dynamics as more classic IT data centers, just on a smaller scale. They evolve from a few dedicated server/application based systems and then add additional systems for business applications, email, file shares, and backup. This server sprawl poses storage systems deployment and management challenges. Growing backup and data protection requirements result in additional management complexity and costs. The individual tagged with managing/supporting all this is typically an IT generalist who is primarily focused on applications, with limited IT knowledge and experience, especially related to storage technologies.

In today's challenging business environment a more highly optimized approach to IT sprawl is required and reducing storage complexity is a major hurdle.

The IT generalist doesn't want to perform mundane storage device provisioning and management tasks, but they do need to set up, protect, and expand storage capacity. Given the proper tools and smart storage solutions, they can set up and use storage pools with a focus on managing information at the application level – without having to be a storage expert.

EMC's new VNXe series storage systems in conjunction with the company's Unisphere storage management are designed to address IT staff's demand for substantially improved "usability" in storage solutions for small and medium businesses. They feature:

☑ Inherently flexible (supporting both block and file-based access)

☑ Embedded advanced storage efficiency capabilities (e.g. thin provisioning, file dedupe, and compression)

☑ Simple, "application-optimized" capacity provisioning and management

☑ Highly visual diagnostic management and support

EMC's VNXe series is a significant step forward in delivering efficient storage solutions optimized for consolidation and virtualization.

ECONOMIC REALITIES: DATA GROWTH, IS TRANSFORMING SMB IT INFRASTRUCTURE

IT decision makers are increasingly careful about IT investment decisions in the context of uncertain business cycles and tighter IT budgets. They want every spending decision to boost asset utilization, enhance responsiveness to business changes, and improve IT operational efficiency. They don't want to tie up scarce capital buying excess IT capacity (servers, storage, switches, etc.) as a hedge against future growth. Instead, they want to procure any and all IT hardware and software as they need/consume them.

Decision makers have also become impatient with the care and feeding of their IT infrastructure. Despite statements that IT is key to future business, too many businesses view it as a necessary evil to support the revenue generation activities of the organization. Preferred is a model that shields users from arcane IT and storage technology vocabulary, domain-specific activities (such as how to set up a Virtual Machine or how to allocate pooled storage to individual users or applications). If any such steps continue to be required, it is best to frame them in the context of the application.

Optimizing IT Assets for Consumption

Virtualization, where resources are pooled and shared as consumed, is playing a critical role in helping IT organizations better address business requirements and current economic realities. Companies leveraging server virtualization (hypervisors) are already apportioning compute resources into logical sub-pools. Today, however, IT organizations want to go beyond using only server virtualization to deal with server sprawl and wasted server compute cycles. Organizations want to deploy and manage a fully virtualized IT Infrastructure. These efforts require much more intelligent and useable storage solutions that compliment and extend the value of other virtualized IT assets.

When the use of physical resources crosses certain high (and low) thresholds due to business growth or changing application needs, users want to be alerted and advised of the need to reallocate IT assets or to grow the size of the storage pool. While this concept is not just for storage (adding compute, bandwidth, or managing power consumption are also required), efficient and painless delivery of information in the storage system pool is the foundation upon which all other layers must build.

This "consumption" centric model for IT helps channel IT costs from relatively inflexible capital expenses (for hardware and software *acquisition*) to more tunable operational expenses (for *usage* of hardware and software).

Storage Growth Gaining Control of Information Assets

All businesses are witnessing unprecedented growth in the need for storage. Whether we are talking about individual consumers, small businesses or the largest enterprises, people throw away little or no digital information. They think, "We might someday need it for a legal inquiry or to generate new revenue streams."

Unstructured data (think MRI results or video surveillance records) is growing quickly and consuming storage space at an alarming rate. Companies in data intensive industries are challenged by storage system floor space and power limitations.

The full virtualization of their storage environments will play a critical role in enabling IT organizations to accommodate data growth without overwhelming their facilities and staff. Capabilities such as thin provisioning make it easier for IT organizations to seamlessly manage and use primary storage (for high reliability and immediate access) as well as secondary (for large volumes and long term retention).

Storage Usability: A Key Step In Boosting IT Efficiency

Product usability in storage products is now a critical factor in an organizations' selection of storage solutions. Customers in small and mid-sized companies, as well as IT teams in larger enterprises, are demanding major improvements in the usability of all IT products, and they are demanding improved usability for storage products, in particular. When IDC speaks with IT executives, questions about a storage solution's "usability", now and over the next three years, is often paramount.

For these companies, "usability" in storage solutions must provide:

☑ Inherent Flexibility: The system seamlessly supports both block-based (e.g., iSCSI) and file-based (e.g. NFS/CIFS) storage network protocols, so IT organizations can use a single system while still using the best option for different applications (e.g. email, database, hypervisors, file/print).

☑ Embedded Data Efficiency: The system includes support for a range of advanced storage virtualization and data management services (e.g., thin provisioning, automated data movement, compression, data deduplication) that ensure maximum effective use of the physical storage capacity actually deployed.

☑ Simple Capacity Provisioning and Data Protection: The system provides common and highly automated provisioning, reallocation, and data replication through a simple and intuitive management interface. This intuitive interface is also "application-aware", so administrators can easily set up storage pools that are optimized for important and widely deployed applications.

The remainder of this white paper examines EMC's new VNXe series storage systems and assesses how well these products respond to an organization's demand for improved storage usability.

EMC's VNXe Storage Systems

In January, 2011, EMC, a worldwide leader in the delivery of midrange storage solutions, announced a new family, VNX, of midrange and entry level storage solutions designed to better address the needs of organizations moving to virtualized and content rich data centers.

Central to EMC's announcement are the new VNXe series of storage systems. They address the desires of small businesses (and larger IT organizations that deal with remote locations) for simple, efficient, and affordable storage systems – with many significant usability attributes..

The VNXe series (two models; VNXe3100 and VNXe3300) makes extensive use of Customer Replaceable Units (or CRUs) configured in a high availability architecture. These modules can be removed and replaced without tools and without the need for a service professional on site. If the user can do it, then there is no built in time for scheduling and then waiting for an expert to arrive on site. Usage of CRUs also means that the users often can schedule their repairs to fit the organization's work patterns, if the repair is minor in nature. On-screen visual representations of the VNXe and its CRUs are readily available to guide the user/administrator in all phases of self-support and provide status and all other pertinent information. If the user requires assistance, they can engage in live chat sessions with EMC for support and, even, create mailing labels for return of CRUs to EMC authorized locations. Revision information is kept readily available within the system.

In keeping with IT organizations desire for simpler yet more application-aware storage systems, EMC is enhancing the VNXe by using EMC's Unisphere management software (first announced in August 2010) as the foundation for storage management. Unisphere for VNXe was designed for the IT generalist and is intended to deliver a single, integrated, and simplified user view. It is streamlined to dramatically reduce the number of steps required to accomplish storage specific tasks and leverages a highly visual dashboard concept to better represent complex information (such as alerts and statuses). All interaction with the VNXe is simplified for the IT generalist – no storage expertise required.

Designed for the SMB market and the lower end of the midrange market, Unisphere for VNXe also has a strong "applications" orientation. EMC leverages guidelines drawn from customer support experience and proven best practices provided via VNXe wizards that walk the user through setups and diagnostics for a number of key applications (e.g. email/Exchange), hypervisors (including VMware and Hyper-V), shared folders, and generic iSCSI storage configurations (e.g., for databases).

EMC purpose-built the VNXe for easy consolidation and virtualization support, including support for API integration with VMware's vCenter. It can automatically discover existing datastores, create and configure new datastores on ES, and automatically allocate additional storage to datastores. Similar capabilities have been created for the Microsoft Hyper-V environment.

Server/application administrators can also quickly set up storage capacity for an email application (e.g. Exchange) using one of the best practice embedded wizards that determines the capacity requirements of the system based upon the number of user defined mailboxes required and a pre-designated average mailbox size.

The Value of Usability for SMBs and Remote Offices

While virtually everyone would agree that a simpler solution is a better solution, ease of use and simplicity are particularly important when there are no nearby experts to

lend assistance. Such is the case typically in small and medium businesses and remote/branch offices.

The complex and esoteric elements in many traditional networked storage solutions has made storage one of the areas where ease of use problems is the most challenging. In an era of simplified server deployment - thanks to virtualization - the challenges of storage management are even more apparent. Users need "easy to use" and flexible storage systems. The VNXe series is built to fit into the space constraints of the smaller business, department of an enterprise, or remote office deployments. Power supplies, storage, controllers, etc., fit into a 2U or 3U rack mounted industry-standard enclosure. With such a small footprint, it is well suited for small businesses, department level installations, and branch offices. Despite its small form factor, it comes with advanced storage functions such as snapshots, replication, and sophisticated management that makes it easier to make storage a transparent part of the core server and application administration processes, not an entirely separate activity. And, the VNXe3300 scales to nearly 300 TB.

Addressing this challenge is the ultimate goal of EMC's VNXe series of storage systems. The bundled Unisphere software greatly reduces ongoing configuration and storage management functions. Equally important it includes advanced self-diagnostics to simplify troubleshooting, should something go awry. Failed components are visually represented as diagrams on the screen, while alerts are automatically generated to those with a need to know.

EMC also provides a wide range of ways for IT generalists to find information and get assistance. These include: access to remedial help via a product community where administrators can search for information, see frequently asked questions, and participate in online forums. They can also leverage online training classes or see "how-to" videos. Finally, EMC can be directly engaged with a live support chat linked to a system-created trouble ticket that is tracked on the "My Support" page.

CHALLENGES

The VNXe series products represents a significant step forward in delivering storage solutions optimized for virtualization and data growth to SMBs and remote offices. It is important, however, that EMC continue to enhance the product family in two specific areas.

EMC must continue to refine and expand the application-aware functions within the VNXe Unisphere management software. They need to cover a broader array of business and vertical applications and provide additional layers of granularity within existing supported applications. EMC must also continue to add additional storage efficiency options and more granular automated data movement capabilities.

CONCLUSION

The virtualization of servers, storage, and all IT infrastructure is ramping up very quickly as companies of all sizes seek to dramatically boost IT asset utilization and reduce IT operational complexity. Providing IT teams with storage systems that are

optimized for usability is a critical requirement where EMC and its partners must continue to innovate.

Equally important, however, is the need to ensure that the resellers and business partners which have primary responsibility for recommending and deploying these storage solutions are well qualified. They will play a key role in addressing related challenges in the areas of data security, data protection, and data archiving that companies will face as they move to this new IT model and leverage products like the VNXe.

EMC, and its partners, recognize that delivering products, services, or a combination of the two is only the first step. Effective results only come when implementations, such as VNXe and Unisphere, are also part of the process, not just an afterthought.

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