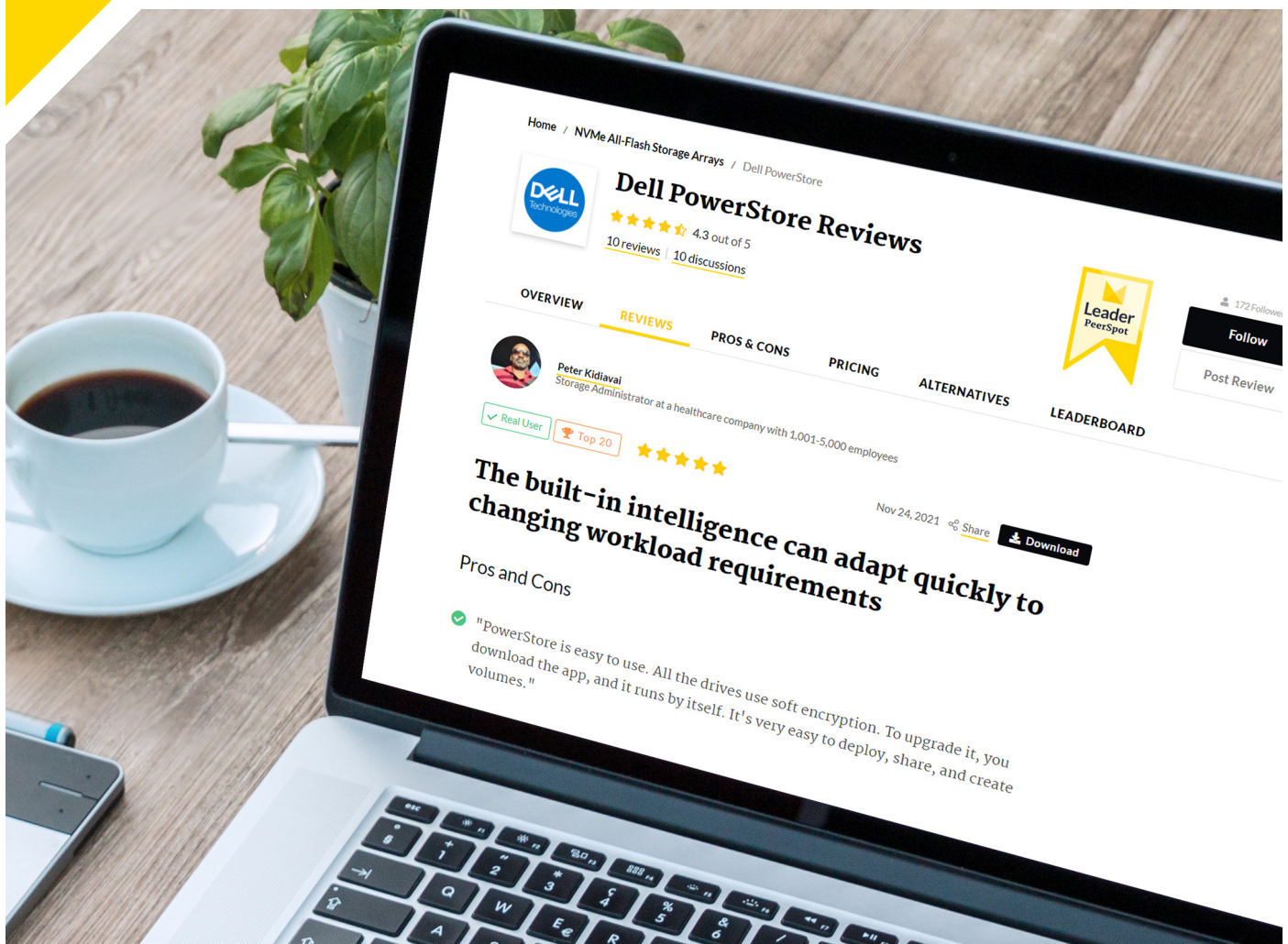


PeerPaper™ Report 2022

Based on real user reviews of Dell PowerStore

Storage Success Criteria for Thriving in an Unpredictable Future



Contents

Page 1. **Introduction**

Page 2. **Overview of the Forces Affecting Storage Today**

Page 3. **What It Takes to Thrive in an Unpredictable Future**

Page 5. **Data-Centric**
Performance-Optimized
Scale Up and Scale Out
Efficient

Page 10. **Adaptive**
Flexible Architecture
Flexible Deployment

Page 12. **Intelligent**
Simplifying Infrastructure
Built-In Machine Learning

Page 15. **Conclusion**

Introduction

The future is impossible to predict, except when it comes to storage. In IT, it's a foregone conclusion that storage requirements will change over time. What those changes will be, however, are unknowns. The future of storage is thus predictably unpredictable, which complicates the storage acquisition process. As IT managers well know, modifying last year's storage solution for next year's needs can be a huge project. This paper offers a way for IT departments to sort out this challenging environment. It is based on real user experiences with Dell PowerStore, as described on PeerSpot. In their view, the success criteria for thriving in an unpredictable future include selecting a storage solution that is data-centric, adaptive and intelligent.

Overview of the Forces Affecting Storage Today

IT managers are under pressure to handle unprecedented changes occurring across the business and technology landscape. The amount, variety and distribution of data continues to grow. Application data is captured and stored in a variety of places. It exists in diverse formats inside and outside the core data center. These forces are not new, but they are accelerating. The future of storage is harder to predict than ever before. And, traditional storage platforms are no longer suited to this disruptive environment.

What It Takes to Thrive in an Unpredictable Future

Storage that can handle an unpredictable technology future must be data-centric, highly adaptable and intelligent. Data-centric storage can run any workload. It's efficient and performance-optimized, able to scale up and scale out. The storage architecture must be easy to adapt, enabling flexible deployment—as enabled by Artificial Intelligence (AI) and related technologies that simplify the infrastructure. Flexibility in upgrading, which is available with PowerStore's Anytime Upgrade program, is another critical factor in preparing for the unknowns of tomorrow.

If a storage solution can meet these criteria, it is possible to modernize in place. An IT department can change storage nodes quickly, without having to experience disruption. They will always be able to run their workloads on the newest and best platform—while preserving and extending existing investments. The CTO at Italy's University of Pisa, which has over 1,000 employees and was one of PowerStore's first customers, addressed this point when he said, "The [PowerStore] solution's [Anytime Upgrade](#) program is a key factor so that we can keep the storage upgraded without any downtime. We have experienced some software upgrades on the system over the last year, and everything has run quite smoothly and we are very happy about that."

"we can keep the storage upgraded without any downtime."

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“I expect the Anytime Upgrade program will save us money and it saves time, for sure”

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He then added, “I expect the Anytime Upgrade program will save us money and it saves time, for sure. If you take into account the fact that the upgrade is almost automatic, almost without people intervening, that is the reason we save time. You can schedule an upgrade, so you know when you are upgrading, but you don’t need people looking into it. We save the amount of time people would typically have to devote to an upgrade.”

PeerSpot members discussed the alternatives they reviewed in the marketplace. The Chief Information Officer at a software company with more than 5,000 employees, for example, shared, “We’ve looked at several other solution environments, including Pure, HPE, as well as Violin and a couple of the other vendors that rate high in industry reviews. For us, with our large dependence on VMware, if we can get a cost-competitive solution from Dell EMC, with their ability to support VMware, we end up with a whole lot less finger-pointing in the mix.”

Data-Centric

Data-centric storage can handle any workload. As a Technical Support Manager at a software company with over 1,000 employees put it, “We use it [Dell PowerStore] to host all the VMware workloads in production. It has all the types of workloads that any data center would have, from AD [Active Directory] to file servers as well as SQL, Exchange, and BI [Business Intelligence]. It holds all our high-tier VMs.”

The software company Chief Information Officer shared that his team was able to add more workloads to the environment than the business case allowed. “And we are still migrating more,” he said, “so our cost per IOP and our cost per gigabyte have been substantially lower than our business case. We exceeded the business case of the device that we had.”

This user then commented, “We’ve been very excited by the capabilities of the appliance, to the point that the person who runs the infrastructure for me is now looking for a proposal to consolidate all of our non-VMAX work on PowerStore. The performance and the administration of the machine have been great and we’re looking at how we can get additional returns on this targeted workload.”

**“our cost per IOP
and our cost per
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Performance-Optimized

IT managers want to have performance where and when they need it. The specific workloads that require high performance may change over time, so flexibility is important. In this context, the software company CIO replaced an older high-performance storage device. He said, “With PowerStore, we were able to achieve the IOPS, and we were also able to get a data compression rate significantly above what we had expected. We were able to retire that older, very expensive piece of storage by bringing in the PowerStore. It’s been faster and cheaper than we had expected, per terabyte.”



**It runs
by itself**

The Founder and CEO at DesktopToWork, a small tech services company, remarked, “In the few months that we have used it, the performance has been great.” In his case, the fact that PowerStore is completely NVMe-based means “performance is great, thanks to the technical architecture.” He further related, “In the backend, PowerStore does all kinds of smart things. The result is that with less physical storage being used, we are able to host more data.”

“We are very impressed by the power of the system”

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Other notable comments about performance included:

- “We are very impressed by the power of the system. We have gained performance for all our virtual machines and our system is running very fast. For access from virtual machines, iSCSI, and NFS, it is very good. It helps increase performance.” - IT Administrator at a construction company with more than 200 employees
- “This new technology does perform. It’s a great performance machine.” - Chief Information Officer at a software company with more than 5,000 employees
- “I like the performance of the PowerStore. When you talk about PowerStore, it’s mainly about flash systems and high-end IOPS. The high IOPS support our needs. It is very performant.”- Technical Support Manager at a software company with over 1,000 employees
- “It gives us the capacity and the performance we need. We have multiple servers connected to SAN switches and those switches are connected to the storage. For sure, the performance of the system is sky-high. In terms of IOPS we are fully satisfied by the PowerStore.” - Technical Support Manager at a software company with over 1,000 employees

“The most valuable features of PowerStore are its scale up and scale out”

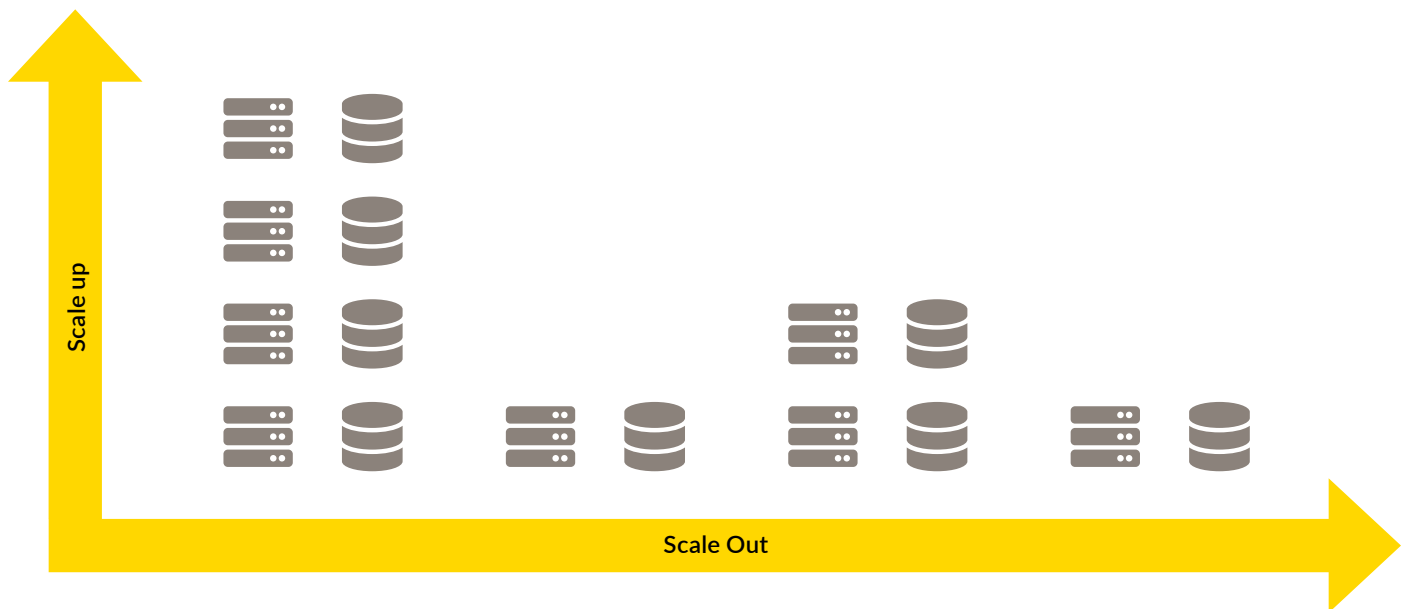
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Scale Up and Scale Out

Data management requirements shift over time, often with little warning. A storage solution will work best under these conditions if it allows for scaling up or scaling out. According to DesktopToWork’s CEO, “The most valuable features of PowerStore are its scale up and scale out. We are able to scale up if we need more space or more power in the current PowerStore setup, but we can also scale out if we want to put in an extra one beside it or in another data center.” Figure 1 contrasts storage scale up with scale out.

A Storage Administrator at a healthcare company with over 1,000 employees similarly commented, “You can scale PowerStore.” The software company CIO simply stated, “It scales both horizontally and vertically.”

| Figure 1 - Scale up or scale out.



Efficient

Storage efficiency is an enduring “must have” in any solution. PeerSpot members certainly feel this way, with a Solutions Architect/Consultant at IVT, a small tech services company, sharing, “In terms of efficiency, this solution is the best choice for us. Overall, we’re quite happy with the product because we can move the data that is stored on more than 10 of our current storage devices to a single PowerStore.”

He added, “We also plan to replace some of our other storage devices with PowerStore because we need to improve the overall efficiency.” In his case, he found the solution offered efficient, good performance for deduplication and compression. An Engineer at a financial services firm with over 1,000 employees found the benefit of PowerStore to be in its efficiency in monitoring their storage activities.

Adaptive

Adaptability is essential for storage that meets unforeseeable future requirements. Storage managers must be able to modify storage in both physical and operational terms if they want to accommodate change. A solution that starts small must be able to add capacity or performance independently. A flexible architecture and flexible, diverse deployment models help in this regard, as does self-configuration capabilities.

Flexible Architecture

PeerSpot members who use PowerStore praised its flexible architecture. “It’s very easy to deploy, share, and create volumes,” said the healthcare Storage Administrator. He added, “It’s active/active, so you have two nodes on one appliance. If Node A goes down, you still get node B at the bottom running. I haven’t had any issues with it since we’ve installed it. PowerStore is easy to adapt, and it’s straightforward to use.” Regarding self-configuration, this user noted, “To upgrade it, you download the app, and it runs by itself.”



**It’s been faster
and cheaper than
we had expected**

Flexible Deployment

The CTO at the University of Pisa spoke to the importance of flexibility, saying, “We were looking for a solution that was easy to install in our VMware environment, that was flexible. It enables us to add compute or capacity independently.” For his team, the ability to add compute or capacity independently is great because it adds more flexibility to the environment. As he put it, “You are not adding only storage, but you’re adding some not-so-big computing capability. You have the possibility of adding some virtual machines, running NVMe storage, and that is a real plus for this solution.”

The financial services company Engineer also appreciated PowerStore’s ability to add compute and capacity independently. He said it gave his team flexibility in responding to business changes. He also liked the solution’s flexible consumption, which offered choice, predictability and investment protection with pay-per-use solutions and data-in-place upgrades.”

For him, “It is also important that you can add compute and capacity independently. We have sized the solution based on our current needs, but in the future we can choose to increase capacity if we grow our activity in the market. And if we have more business in our monetary system, we can increase compute. The ability to choose what we increase is a good feature.”

Intelligent

For a complex storage solution to function optimally, it needs its own onboard intelligence. Storage with AI and machine learning can perform tasks like data reduction, load balancing and resiliency better than is possible with a human storage manager. The architecture can be self-optimizing. PeerSpot members discussed the potential of intelligence in storage in their reviews of PowerStore.

Simplifying Infrastructure

Intelligent storage enables storage managers to simplify their infrastructure. As the CTO at the University of Pisa observed, “PowerStore’s built-in intelligence for helping to simplify IT operations is incredible.” DesktopToWork’s CEO likewise noted, “The biggest benefit is that we have an enterprise storage solution we can rely on. It does simplify storage operations. It’s easy to manage.”

This user then shared, “The solution’s machine learning and automation work well when it comes to optimizing resources. It can do all kinds of optimization in the system itself and that works very well. It does inline deduplication which means that the net the amount of storage you have available is bigger.” The software company CIO echoed this sentiment, saying, “The administration tools take advantage of machine learning and make recommendations to the admins, and that makes the administration easier.”

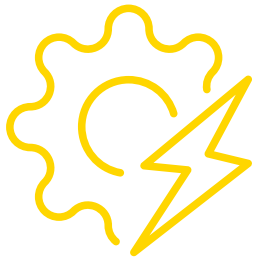
“The biggest benefit is that we have an enterprise storage solution we can rely on.”

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He then noted, “PowerStore enables you to federate or cluster multiple appliances with automated load balancing. In terms of management, it’s helpful that we can do it from a single interface where we’re able to manage multiple PowerStores. When you have multiple PowerStores, it works intelligently by running the workloads based on the needs of the infrastructure.

Built-In Machine Learning

PeerSpot members praised PowerStore’s built-in machine learning. The healthcare company Storage Administrator said, “I would rate PowerStore’s machine learning and AI eight out of 10 because customer automation is very easy. It’s just a click of the button. Dell’s built-in intelligence is the best because it can also calculate how much data is needed for storage beforehand and if you need to add more drives or anything. The built-in intelligence can adapt quickly to changing workload requirements.” Figure 2 shows what this looks like.

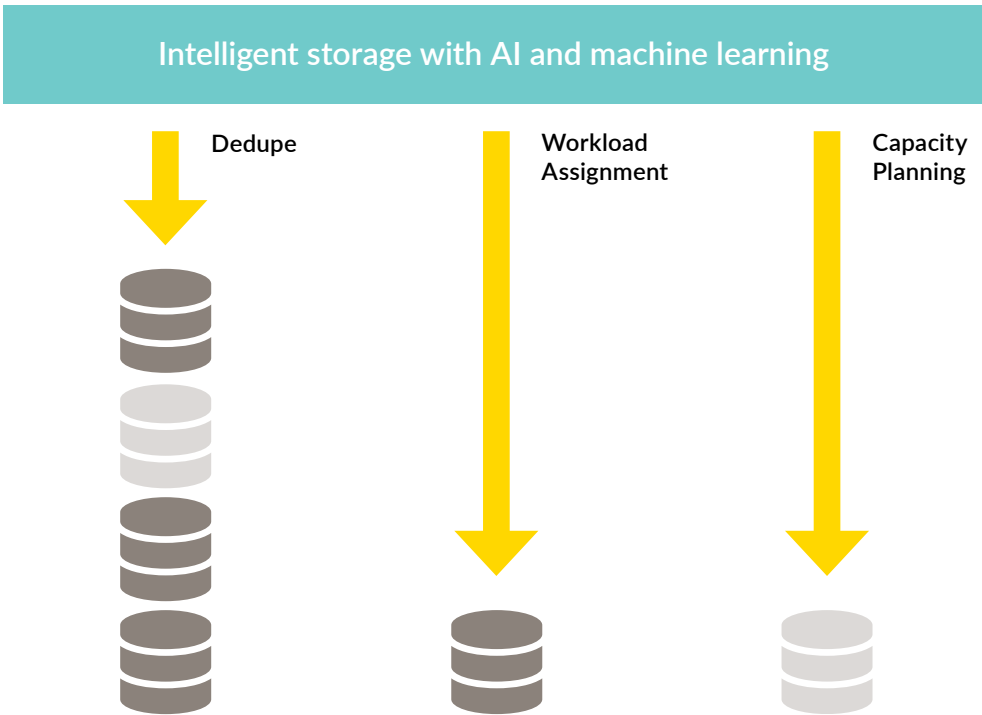


**Very easy to
deploy, share, and
create volumes**

The healthcare company Storage Administrator felt the built-in intelligence enabled the solution to adapt quickly to changing workload requirements. For the software company CIO, storage utilization improved because of a 50% gain in deduping due to the solution's intelligence.

“The built-in intelligence adapts quickly to changing workload requirements,” said DesktopToWork’s CEO. “It works as we expected it to work. Every process has been working perfectly fine.”

Figure 2 – Intelligent storage with AI and machine learning can drive optimal storage outcomes with deduplication, storage workload assignment and capacity planning.



Conclusion

An unpredictable future is coming for today's storage solutions. To meet the demands of tomorrow, a storage solution needs to be data-centric, able to run any workload and scale up or scale out as needed. It must be efficient and performance-optimized. Its architecture should be adaptable, capable of flexible deployment. AI and machine learning are a necessary part of the mix, providing insights into storage optimization. Ideally, the solution will come with the ability to upgrade anytime, automatically and without downtime. When a storage solution combines these elements, as PowerStore users have found, it is able to self-modernize and be continuously ready for inevitable change cycles.

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