FORRESTER®

Modern Storage Buyers' Guide

A FORRESTER CONSULTING BUYER'S GUIDE COMMISSIONED BY PURE STORAGE, SEPTEMBER 2022

Modern Storage Buyers' Guide

As companies shift their strategies to accommodate a changing data protection and storage landscape, they have updated their expectations on what a data storage solution should provide for them. While buyers can choose to prioritize myriad capabilities, the final decision begins and ends with performance.

For Tier 1 use cases, buyers are increasingly choosing all flash storage, followed by a hybrid option that incorporates high speed caching tiers in front of flash, SSD, and traditional HDD storage technologies. Backup or archival use cases are still primarily using a combination of SSD for fast ingest and HDD for longer term storage before tiering to cloud or archival media. However, backups are expected to adopt a more hybrid storage architecture over the next two years to accommodate the need for improved performance, built-in security, and a suite of evolving capabilities that address data management concerns of modern enterprises. According to Forrester's Business Technographics® Infrastructure Survey, 2021, 64% of respondents have adopted flash-based storage, and that number is growing with 14% planning to adopt in the next 12 months.[1]

In August 2022, Pure Storage commissioned Forrester Consulting to conduct an online survey of 257 global IT professionals to evaluate evolving data storage strategies at enterprise companies.[2] We found that they expect high marks in the following categories to adopt a storage platform: reliable performance, the ability to scale, resiliency, data security, management, integration, automation, and the purchasing model.

This research is intended to develop a checklist of essential features to consider when organizations modernize their storage infrastructure. It is designed to uncover essential capabilities businesses need from modern storage systems, with a focus on how organizations address features in the above categories. This guide provides guidance into what capabilities to look for within each of these categories, and it offers questions that business and technical leaders should consider as they evaluate their companies' specific needs regarding data solutions.

Sustainable Performance: The Capability That Underpins All Others

Over half of respondents (52%) indicated that they factor in overall performance when considering adoption of new storage platforms, and 56% factor in capacity to process large workloads. Performance is the second most likely benefit from adopting a flash-based storage, with 51% of respondents indicating an expected improvement in performance. Over a third (36%) of respondents also expect improved performance when it comes to processing large workloads via flash storage. Even if you have the fastest storage available, your data is useless if the storage system is unavailable. Slow or halting access to your data, due to poor performance can cause severe harm to your company's business success or organizational mission. A storage solution with inconsistent or limited performance can mean dealing with the lack of application availability, increased maintenance time, and either the loss of revenue or an increase in operational costs. Companies need a storage solution that provides the performance and reliability required, whether it is hosting virtual machines (VMs) or being used as backend storage for high transaction databases.

Figure 1

36% of respondents expect improved performance when it comes to processing large workloads via flash-based storage.

51% of respondents expect improvement in performance when adopting flash-based storage.

Base: 257 global IT professionals with insights into data storage solutions.
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022.

Organizational And Operational Considerations

- Is our storage system limiting the performance of key databases or applications during periods of peak demand?
- Does poor database or application performance cause customers to abandon transactions, potentially affecting revenue?
- Do reliability or performance issues of our storage system end up affecting employee productivity or cause frustration for staff?

Technical And Functional Considerations

- Does my current system provide the levels of performance needed for highly transactional databases, VMs, and read/write intensive applications?
- Does my current storage system suffer from issues with reliability, disks going offline, or connectivity issues?
- Does my current storage system encounter performance degradation when using snapshots or performing other underlying storage tasks?

OTHER CONSIDERATIONS

In addition to reliability, survey respondents reported increased amounts of data to process and then store in their primary storage systems. This trend is driving the need for a storage solution that can ingest data fast and scale to meet enterprise needs.

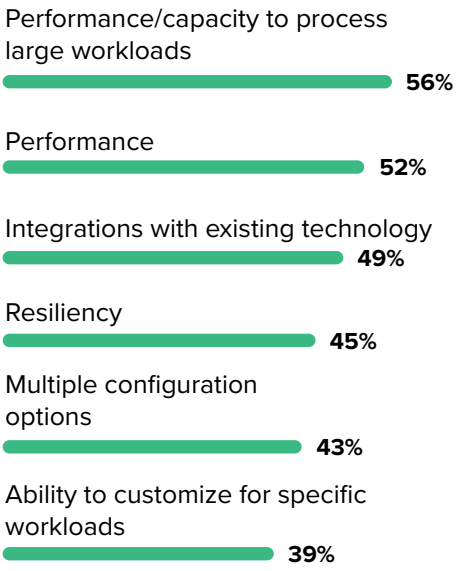
Scalability: Growing Infrastructure Along With The Business

When taking technical drivers into consideration, data storage professionals are now requiring more flexible solutions to meet their diverse storage needs. Storage platforms must scale with the business, while providing expected levels of performance. However, those same storage systems must also be flexible to allow businesses to innovate and use their data in new ways.

Sixty-six percent of respondents in Forrester's Business Technographics Priorities And Journey COVID-19 Recontact Survey, 2020, indicated that improving their ability to innovate was a top business priority for the next 12 months.[3] Another 65% said accelerating their response to changes in the business or market was also a key priority. But currently, over a third (33%) of respondents are hitting a wall with current storage solutions due to their inability to scale to meet fluctuating demand.

Figure 2

"What key technical drivers does your company consider when selecting a storage platform?"



Base: 257 global IT professionals with insights into data storage solutions
Note: Showing 6 of 12 answer options
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

Organizational And Operational Considerations

- In what ways will our company be growing in the coming year?
- Does our company's growth change how data is used in the business?
- What compliance regulations will be introduced in response to that growth?
- Does our storage team currently have the expertise to scale the storage environment at the speed of the business?

Technical And Functional Considerations

- Does our current storage solution have the ability to scale both in performance and capacity with our company's evolving needs?
- Can our business' existing storage address new ways that business units are requesting and using data?
- Does our current solution provide a level of agility that can remain concurrent with our scaling efforts?

OTHER CONSIDERATIONS

In our study, 67% of respondents ranked flexibility/ability to scale as their number one business consideration. This consideration was followed by drivers relating to cost, internal alignment, and implementation. When taking technical capabilities into consideration, nearly half of respondents (43%) look for multiple configuration options, and 40% look for the ability to customize for specific workloads.

Respondents expect the ability to customize their solution to fit their unique business needs. This could come in the form of flash-based storage, with respondents listing increased flexibility/ability to scale as their number one expected business benefit of adopting flash-based storage. While companies tend to look for platforms that provide scalability, they also focus on smaller footprints with higher storage density. Ultimately, scaling storage must maintain or improve the system's performance.

Intelligent Management: Self-Managing Operations With AIOps

The number one challenge respondents face with their current storage solution is difficulty maintaining their system over time (49%). Respondents also face hurdles when it comes to managing their full fleet of devices (34%), leaving many wishing they could manage more storage with fewer full-time employees. Not only is maintenance over time difficult, but it can be costly. Forty-six percent of respondents are challenged with increased costs in relation to storage, and another 45% deal with large support and maintenance costs over time.

Figure 3

49% of respondents have trouble maintaining their system over time.

34% are challenged by IT/ fleet management.

Base: 257 global IT professionals with insights into data storage solutions
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

Organizational And Operational Considerations

- What storage system capabilities could allow our organization to reduce the number of full-time employees that are hired for storage management?
- Would a subscription licensing model help make ongoing storage management costs more predictable with regards to avoiding storage maintenance costs for systems that reach end-of-life?

Technical And Functional Considerations

- How could a self-managing environment that includes predictive analytics for issue detection and recommendations ease the stress of managing our storage?
- How could an API-friendly storage system reduce storage administration needs?
- How would a simple management dashboard for all deployed storage systems reduce maintenance and management costs?
- Would the business benefit from non-disruptive upgrades for storage hardware and system software?

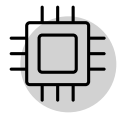
OTHER CONSIDERATIONS

No one wants to pay more for a solution that is difficult to use or manage. Technology buyers should focus on pairing a solution that has the required performance and ease with a licensing and payment plan that makes sense for their usage. Performance, reliability, and scalability are key, but leaning into the right payment plan can afford companies the means to adopt the right technology at the right price, while improving the management experience with tools and capabilities that help them do more with less.

Integrated: Realizing Value Sooner With Database And VM Integrations

When getting approval for a new technology investment, storage decision-makers are looking for a speedy ROI. So when selecting a new storage platform, it is imperative to consider time to value after pulling a solution from the box. Most respondents expect it to take anywhere from two weeks to two months to see value from a newly deployed storage system (72%), which begs the questions: Can you expect value sooner than that, and how? Which solutions can guarantee out-of-the-box value and speedy integrations to VMs and databases?

Figure 4



41% expect integrations with existing technology from adopting flash-based storage.

40% of respondents also expect hybrid integration with commercial cloud storage.

Base: 257 global IT professionals with insights into data storage solutions
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

The third highest expected benefit from adopting a flash-based storage solution is potential integration with existing technology; this is followed by hybrid integration with commercial cloud storage. Flash-based storage can open the pathway to quick integration and a hybrid model of storage that addresses challenges with other storage modes. According to Forrester's 2020 data, the ability to rapidly deploy solutions is the number one most valuable function desired from new technology investments during a time of crisis.[4]

Organizational And Operational Considerations

- How will business needs affect our overall storage strategy, facilitating a need to either invest in or remove storage solutions (via cloud or otherwise)?
- Do we have the headcount to manage a difficult integration for a new storage solution?
- When new business opportunities arise, what kind of time to value is our leadership expecting from new storage investments to support that opportunity?

Technical And Functional Considerations

- What are the storage requirements of our database instances? Do they require a specific type of storage, and if so, why?
- Does our virtualization platform have specific needs and functionality requirements from the storage environment?
- Do we use any cloud-native applications or containers that could benefit from specific types of storage?
- Are there instances where our databases could use a hybrid cloud model of storage?

OTHER CONSIDERATIONS

When selecting a new storage platform or service, nearly half of all respondents are seeking a solution that integrates with their existing technology (49%). For those that are considering flash-based storage, they can expect to have integrations with existing technology (41%) — which includes VMs and database applications — and hybrid integration with commercial cloud storage (40%). They can also plan on shorter time to value, with 42% indicating a reduced time to implement.

Security: The Importance Of Ransomware Protections In Storage

Security — and specifically, the ransomware protection capability — is essential for modern storage. With more employees working in hybrid or remote situations, respondents look to their storage solutions to protect their data from new and growing threats. Seventy-five percent of respondents were impacted by ransomware over the last 12 months, with one-fifth of respondents (21%) saying they had to pay the ransom to retrieve their data. Companies are in need of solutions to help identify and limit the scope of a cyberattack and built-in functionality to help respond to ransomware quickly before it becomes an enterprisewide problem, i.e., immutable, undestroyable snapshots.

Figure 5

84% place a high or critical value on ransomware protection and continuity being built into their storage systems.

69% identified data protection as the number one technical driver that storage buyers consider when selecting a new storage platform.

Base: 257 global IT professionals with insights into data storage solutions
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

Organizational And Operational Considerations

- How is our storage strategy changing to incorporate more lines of defense against ransomware?
- What are the uptime and retention requirements for our current and future applications?
- What risks does our company face with our expanding attack surface? And how can we address that through our storage solution selections?

Technical And Functional Considerations

- How do we currently protect the various types of data we store? How can we improve our approach to security and protection?
- How important is it that ransomware protections be built into our storage solutions?
- How robust are our data backup and disaster recovery methods?
- What new applications does my organization plan to deploy? What data protections will each of those have?

OTHER CONSIDERATIONS

Looking at the high number of respondents who were impacted by ransomware or forced to pay to retrieve their own data, it is no wonder that 84% of respondents now place a high or critical value on ransomware protection and continuity being built into their storage systems. For that level of security to work, it must be backed by a high performance system, as well as a vendor that is keeping up with current malware defense practices. Data protection is the number one technical driver that storage buyers consider when selecting a new storage platform (69%). Protecting data on primary storage systems means reducing the delay of recovery, limiting the attack blast radius, and worrying less about paying a future ransom.

Resiliency: Keeping Business Services Available

Resilience is moving toward the forefront of business priorities for enterprise companies. Nearly two-thirds (65%) of respondents in Forrester's 2022 data plan to increase business resilience this year.[5] When addressing concerns over disparate company data needing physical and digital protection, companies require a storage solution that can ensure resiliency through effective replication.

Replication is a critical element of data protection, and it's not something that can be glossed over when evolving a storage strategy. When selecting new storage solutions, respondents have made it clear that data protection is their top ranked capability (69%), and they are not ready to compromise.

Figure 6

45% of respondents identified resiliency as a key driver when selecting a storage platform.

33% expect adopting a flash-based storage solution to provide an increase in resiliency for company data.

Base: 257 global IT professionals with insights into data storage solutions
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

Organizational And Operational Considerations

- How do we keep our replication process from disrupting employee workflows? Do we need an asynchronous solution?
- How could the reduction of downtime, via an advanced replication solution, improve the ROI of our storage investment?

Technical And Functional Considerations

- Do we currently have a one-size-fits-all approach to replication? Or is it tailored to the recovery point objective (RPO) and recovery time objective (RTO) windows of our current applications? What about future applications?
- Are we able to replicate physical and virtual environments? Do we need to have that capability?
- Do we want to be able to replicate at the application level and the data level?

OTHER CONSIDERATIONS

Resiliency is a key business driver when technology buyers are selecting a storage platform (45%). What's more, over a third of respondents (33%) expect adopting a flash-based storage solution to provide an increase in resiliency for company data. Customers expect that high-performance storage solutions include the high availability and resilience features provided by replication and failover technologies.

Automation: Streamlining Provisioning And Operations Through APIs

More and more, companies are becoming focused on using automation to drive faster provisioning. That naturally flows into how organizations desire to use software-defined and API-first (i.e., cloud) approaches when provisioning, using, and managing their storage. Forrester's Business Technographics Infrastructure Survey, 2021, showed that more than 80% of respondents agree that software-defined storage has or will improve products and services, operational efficiencies, customer and employee experience, and manage risk.[6]

Figure 7

35% of respondents expect improved automation from adopting flash-based storage.

Base: 257 global IT professionals with insights into data storage solutions
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

Organizational And Operational Considerations

- How could access to automated provisioning save our employees time/make them more productive?
- Would automation improve our regulatory posture?

Technical And Functional Considerations

- How could our team benefit from time saved via automated provisioning?
- Are we set up to adopt this level of automation?
- Does the storage platform support the automation tools we use?
- Does our company plan to increase automation through storage APIs?

OTHER CONSIDERATIONS

When it comes to the technical capabilities involved in updating a storage solution, 35% of respondents expect improved automation from adopting flash-based storage; this aligns to the 32% of respondents that use automation as a driver when selecting their storage solutions. Additionally, over a quarter (27%) of respondents expect self-service provisioning from adopting flash-based storage. When selecting a new storage solution, companies will continue to trend towards selecting options that enable a cloud-first approach. Businesses will also depend on auditable automation to reduce both operational and regulatory risk.

Purchasing Model: Choosing A Solution With Pricing That Fits Your Needs

The ability to scale services comes with a need for flexible payment plans that offer a way to increase or decrease services as needed; this necessitates moving away from a capex purchasing model, which 39% of respondents say they are stuck in. Consuming storage via an opex model is becoming more available in the market, but it has not reached the level of popularity of capex investments. However, in a future economic environment of inflationary pressure, opex models could become a more attractive option as budgets become tighter and pay-as-you-go plans offer more flexibility.

Figure 4

39% of respondents are challenged by sunk costs of outdated hardware they are stuck with.

Base: 257 global IT professionals with insights into data storage solutions
Source: A commissioned study conducted by Forrester Consulting on behalf of Pure Storage, August 2022

True consumption storage models provide more than just convenient payment options, they are often inclusive of maintenance and upgrades, which ensure that customers get the performance they pay for with perpetual upgrades to the infrastructure as part of the subscription cost. Additionally, the business ends up paying for the cost of the storage that they actually use, as opposed to paying for what they think they might use over the next five to seven years.

Forrester's 2020 data indicates that respondents' top two features of valuable tech investments during crises are price flexibility (30%) and contract flexibility (24%). Companies are ready to avoid being locked into contracts as they have in the past, with 39% of respondents being challenged by sunk costs of outdated hardware they are stuck with.

Organizational And Operational Considerations

- What capabilities will save our budget in the long run? How do we purchase solutions that will keep us from having to increase our management and implementation FTEs?
- Where can subscription-based storage services fill in gaps in our current strategy?
- As we move into a potential recession, how could moving from a capex payment model to an opex payment model for our storage solutions ease budget tension?
- Do we have a need to align our quarterly and annual storage consumption to business initiatives?

Technical And Functional Considerations

- What capabilities are driving our selection of a storage solution? What are we missing now?
- What storage solution capabilities are not necessary for our purposes?
- Are we focused on reducing planning and management costs? Or are we focused on being able to scale operations on-demand? Would capex or opex better serve our purposes?
- Can we accurately forecast our future storage needs to help inform future storage solution purchases?

OTHER CONSIDERATIONS

The top two factors that buyers consider when facing economic uncertainty are whether or not vendors can deploy quickly and if they can be flexible with pricing and contract needs. Cost implications point to respondents desiring a solution with payment flexibility, perhaps even moving to an opex model, rather than being stuck in capex acquisition, which is how 39% of respondents are operating. Over a quarter of respondents also have/expect to enjoy the opportunity of opex pricing when adopting flash-based storage (26%).

Conclusions

Businesses must deliver on their value proposition at the speed of customer demands, or they lose customers and revenue. With data becoming central to delivering value to customers, a business' storage strategy is critical. Flash-based storage meets the speed requirements for modern business, but how vendors package and expose that storage in a solution matters.

Look for solutions that go beyond performance and address key business needs that are related to reliability, scalability, ease of management, resilience, platform integration, automation, security, and the purchase model. Choosing the right partner for your storage needs sets your business up for long-term success.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 257 global IT professionals with insights into data storage solutions at organizations in North America and EMEA to evaluate evolving data storage strategies at enterprise companies. Survey participants included decision-makers in IT who are focused on data storage and protection. Respondents were offered a small incentive as a thank you for time spent on the survey. The study began in July 2022 and was completed in August 2022.

Project Team:
Madeline Harrell,
Market Impact Consultant

Kate Pesa,
Associate Market Impact Consultant

Contributing Research:
Forrester's Infrastructure & Operations research group

Appendix B: Demographics

GEOGRAPHY	
United States	**39%**
United Kingdom	**19%**
Germany	**16%**
France	**16%**
Canada	**10%**

TOP 5 INDUSTRIES	
Technology and/or tech services	**12%**
Retail	**9%**
Manufacturing and materials	**9%**
Financial services and/or insurance	**7%**
Transportation and logistics	**6%**

NUMBER OF EMPLOYEES	
20,000 or more	**17%**
5,000 to 19,999	**32%**
1,000 to 4,999	**41%**
500 to 999	**11%**

RESPONDENT LEVEL	
C-level executive	**11%**
Vice president	**24%**
Director	**32%**
Manager	**33%**

DEPARTMENT	
IT	**100%**

Appendix D: Endnotes

[1] Source: Forrester Analytics Business Technographics Infrastructure Survey, 2021.
[2] This study's data has been complemented by additional data from Forrester's Business Technographics surveys. Individual data points are specified and clearly detailed throughout the study.
[3] Source: Forrester Analytics Business Technographics Priorities And Journey COVID-19 Recontact Survey, 2020.
[4] Source: Forrester Analytics Business Technographics Priorities and Journey COVID-19 Recontact, 2020.
[5] Source: Forrester's Priorities Survey, 2022.
[6] Source: Forrester Analytics Business Technographics Infrastructure Survey, 2021.