AI Enablement and Built-in Security Are Must-have Features in Modern Storage Environments

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Research Objectives

In the digital era of business, storage infrastructure provides the data foundation for everything from empowering new innovation, to driving internal operations, to enabling customer engagement. As business transitions into an age defined by AI, organizations are turning to their IT leaders to modernize their storage infrastructure to serve the future of application demands.

To gain insight into how these storage environments must evolve to empower a new, likely AI-based, application era, as well as into how strategies related to the deployment and migration of applications are affected, TechTarget's Enterprise Strategy Group surveyed 350 IT professionals from small and medium-sized organizations (SMBs; 50-750 employees) worldwide who are knowledgeable about their organization's purchase process for storage, servers, and client technology solutions.
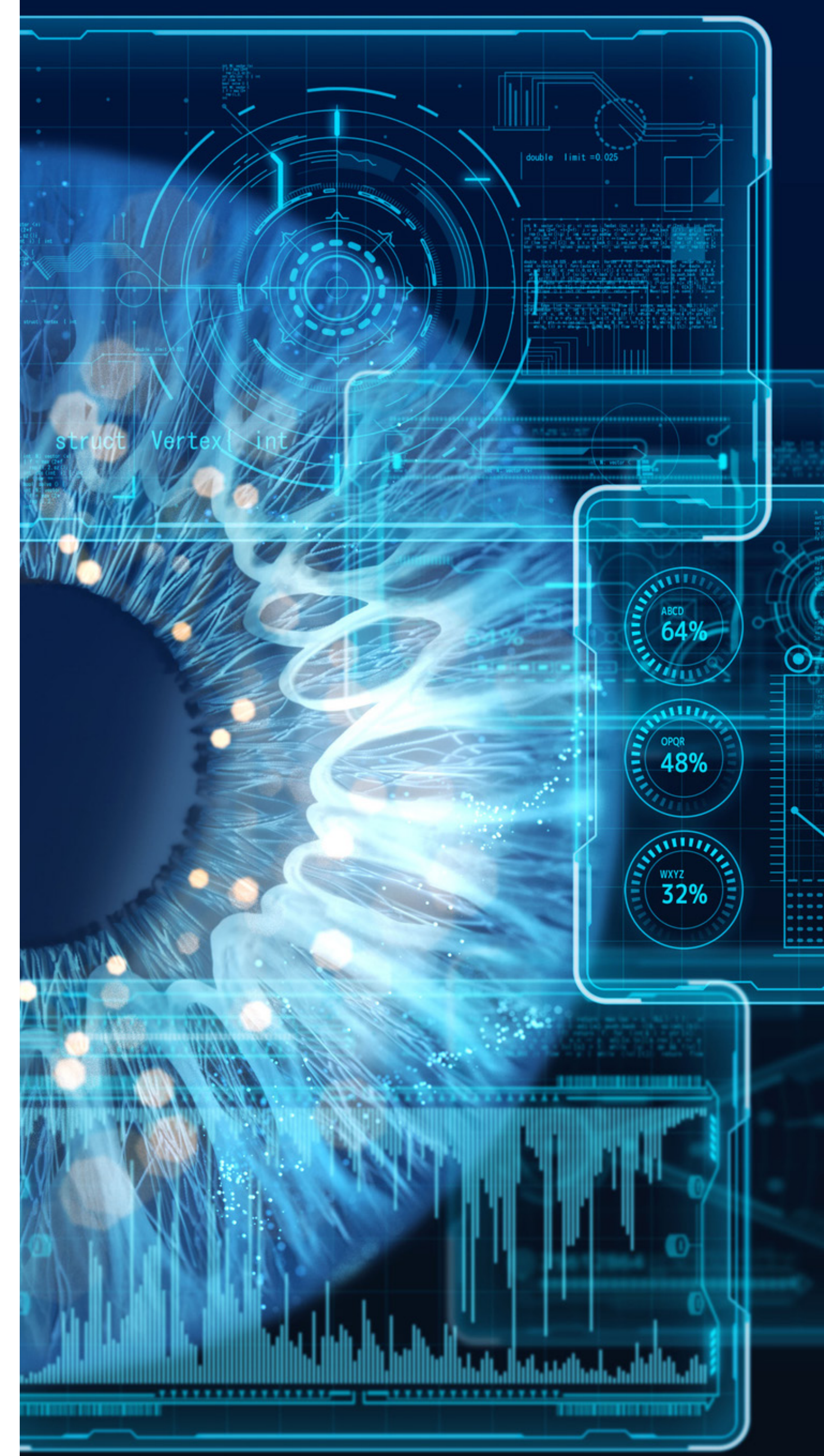
THIS STUDY SOUGHT TO:

Measure the needs of modern storage environments for SMBs worldwide.

Examine how AI is affecting the key requirements for storage environments in the cloud and on premises.

Predict the direction of future storage infrastructure investments and the impact of AI, security, and hybrid cloud technologies on application environments.

Validate the role of IT in driving business goals as well as the value of and preferences for on-premises and cloud storage solutions and services to assist in meeting application goals.
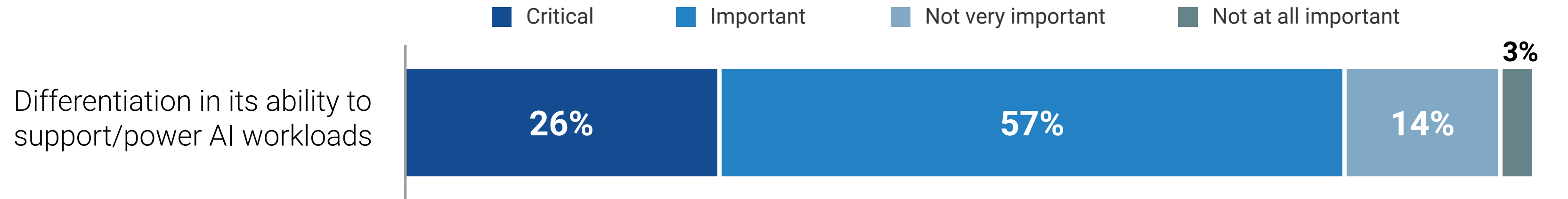
AI Is Defining a New Era of Storage Investment

As SMBs seek to modernize their storage environments, 83% deem a differentiated ability to support and power AI workloads as either critical or important.
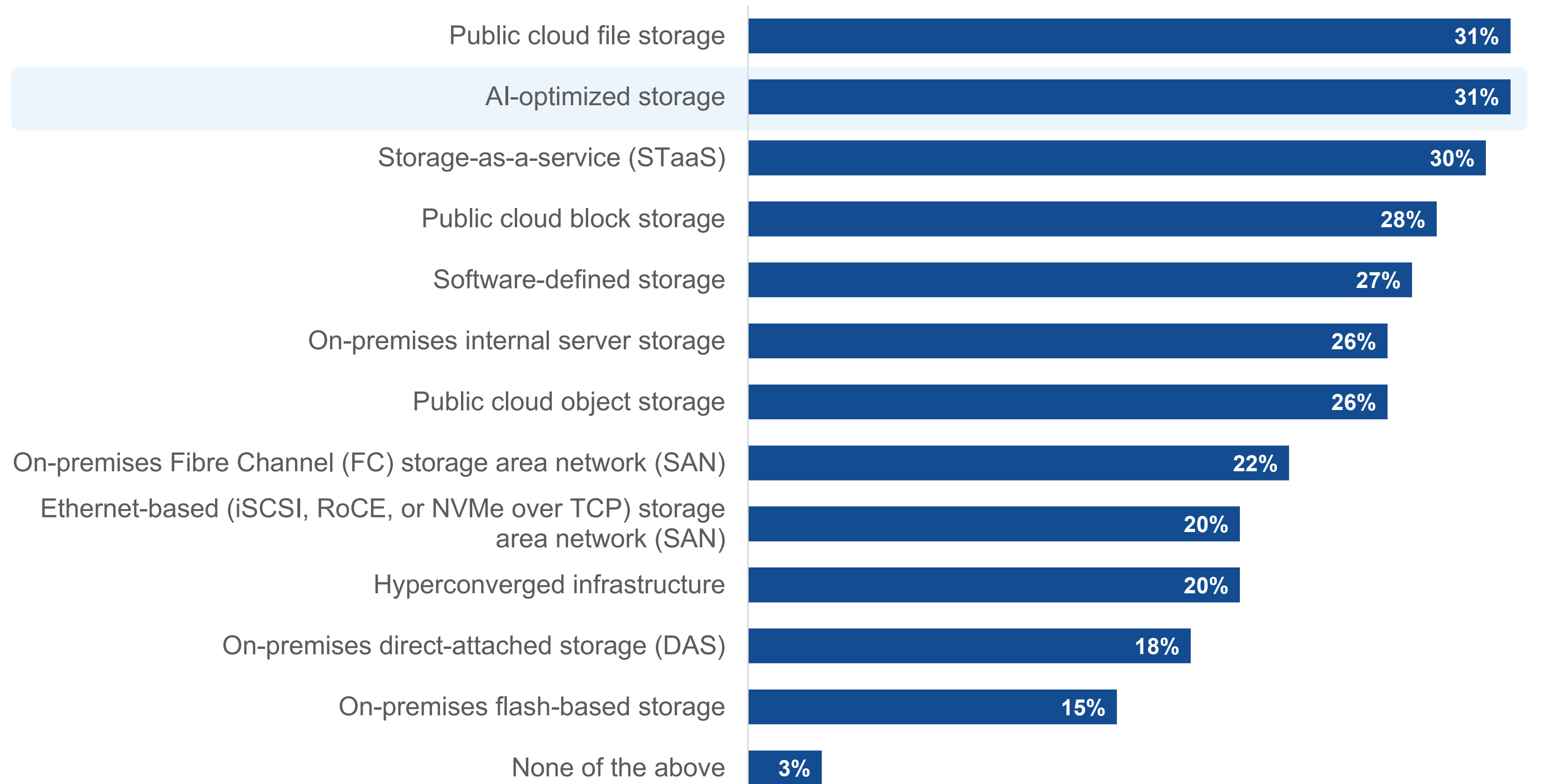
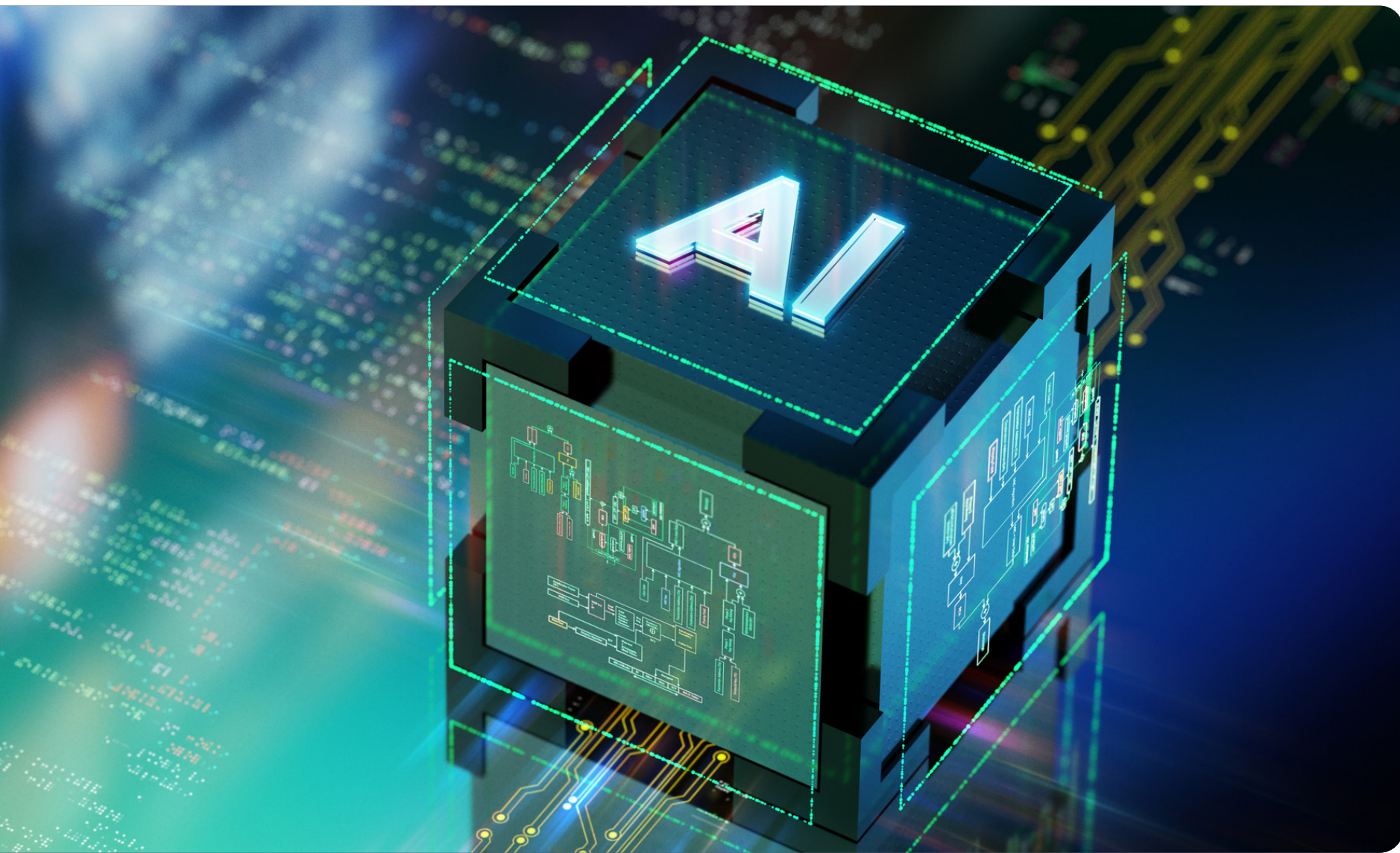Additionally, AI-optimized storage is a top investment area for SMBs.

The message is clear: SMBs are looking to their storage environment to help unlock AI insights.

Importance of AI Workload Support to On-premises Storage Infrastructure Investment

Legend: ■ Critical ■ Important ■ Not very important ■ Not at all important

	Critical	Important	Not very important	Not at all important
Differentiation in its ability to support/power AI workloads	26%	57%	14%	3%

Top Storage Technology Investment Priorities Over the Next Year

Priority	Percentage
Public cloud file storage	31%
AI-optimized storage	31%
Storage-as-a-service (STaaS)	30%
Public cloud block storage	28%
Software-defined storage	27%
On-premises internal server storage	26%
Public cloud object storage	26%
On-premises Fibre Channel (FC) storage area network (SAN)	22%
Ethernet-based (iSCSI, RoCE, or NVMe over TCP) storage area network (SAN)	20%
Hyperconverged infrastructure	20%
On-premises direct-attached storage (DAS)	18%
On-premises flash-based storage	15%
None of the above	3%

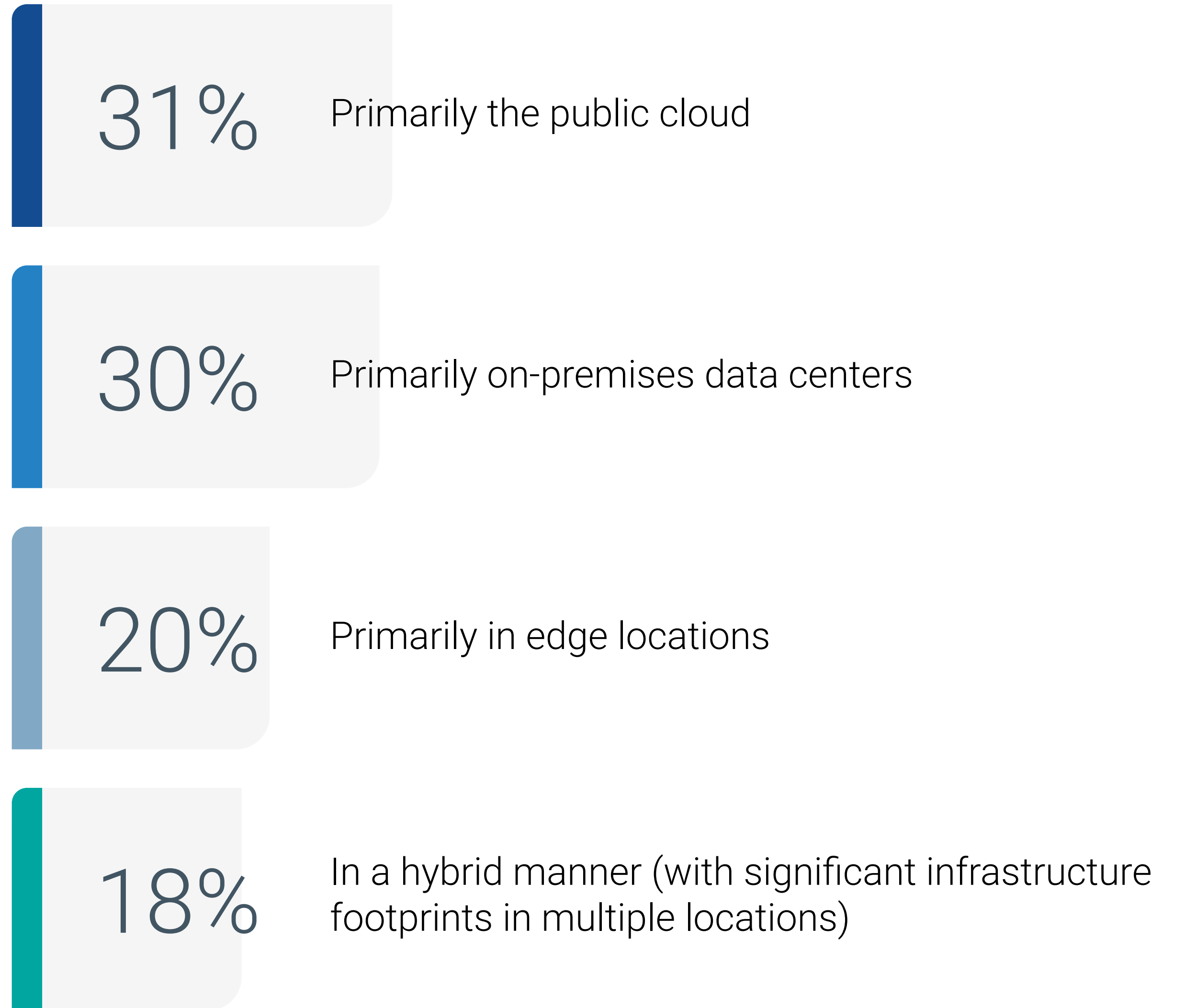**Where Organizations Plan to Run Infrastructure Supporting Custom GenAI Solutions**

On-premises Infrastructure, Including Storage, Will Factor Prominently in Custom GenAI Solutions

More than two-thirds (68%) expect their custom GenAI applications to run primarily on on-premises infrastructure or in a hybrid manner.

On-premises storage is set to play a key role in helping orgs unlock the value of data for AI.

31% Primarily the public cloud

30% Primarily on-premises data centers

20% Primarily in edge locations

18% In a hybrid manner (with significant infrastructure footprints in multiple locations)

Security and Cloud Integration Are Critical in Modern Storage Environments

Cloud Adoption Has Driven Both Security and Manageability Challenges

SMB use of cloud has made securing and managing the overall environment both more complex and more challenging.
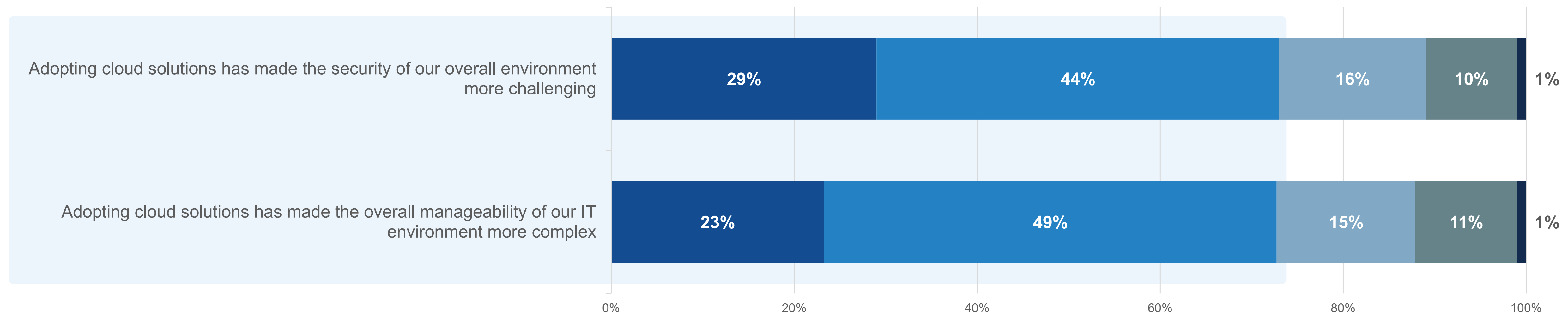
Level of Agreement With the Following Statements

More than 7 out of 10
organizations report cloud adoption has exacerbated each challenge area.

- ■ Strongly agree
- ■ Agree
- ■ Neutral
- ■ Disagree
- ■ Strongly disagree

Adopting cloud solutions has made the security of our overall environment more challenging: Strongly agree 29%, Agree 44%, Neutral 16%, Disagree 10%, Strongly disagree 1%

Adopting cloud solutions has made the overall manageability of our IT environment more complex: Strongly agree 23%, Agree 49%, Neutral 15%, Disagree 11%, Strongly disagree 1%

Organizations Bring Workloads Back to the Data Center and Seek to Optimize Their Application Environment
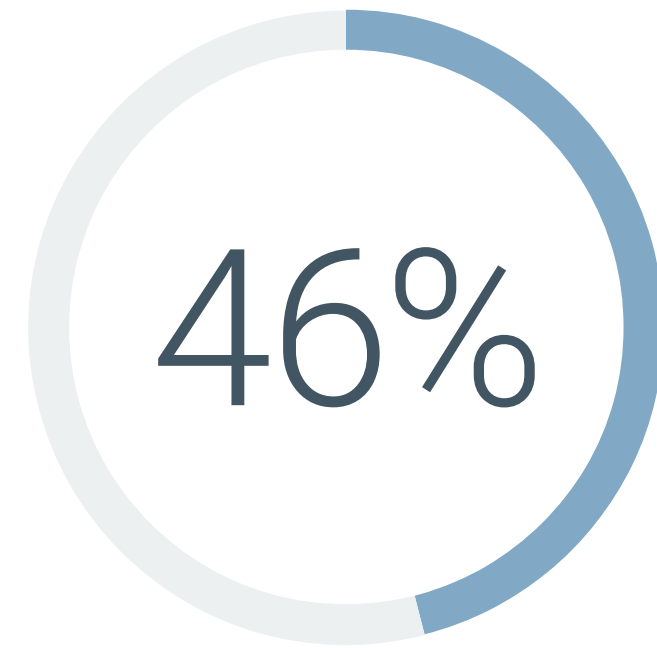
These challenges are leading SMBs to repatriate workloads from the cloud to their on-premises data centers. More than one-third of organizations will repatriate IaaS-hosted workloads this year. Of those repatriating workloads, it is an almost ubiquitous expectation that multiple workloads will be repatriated.

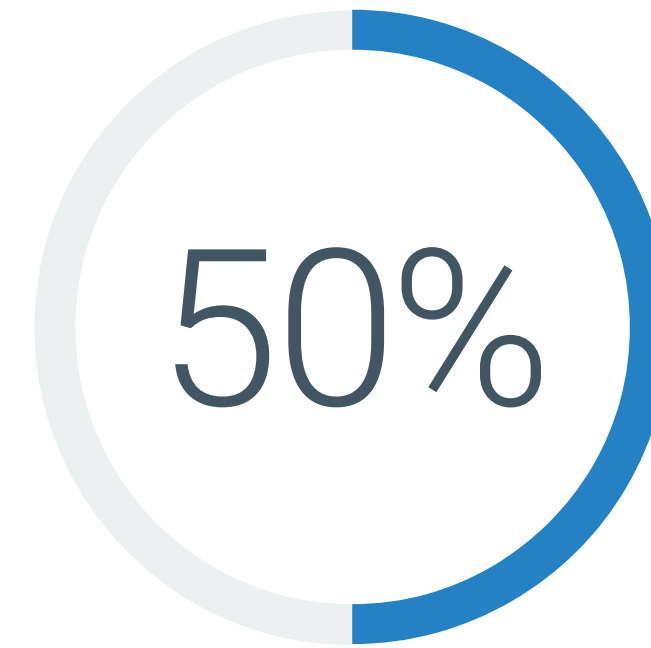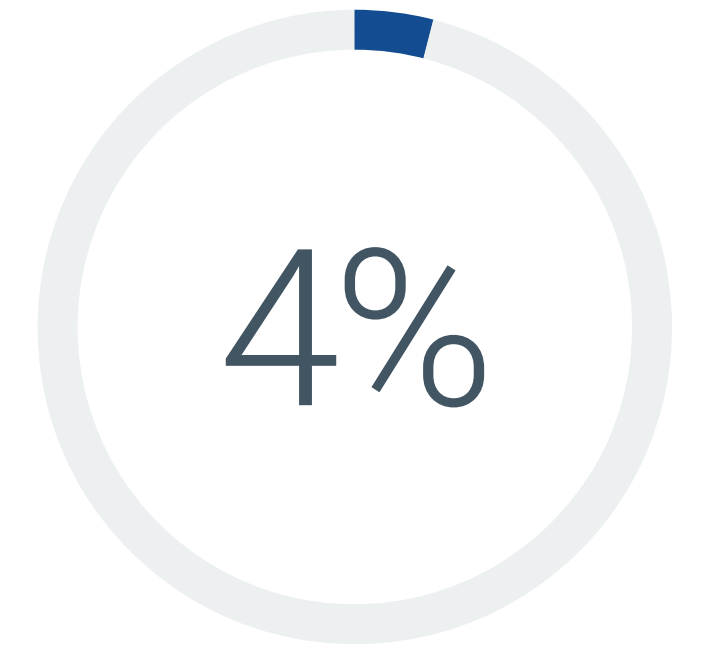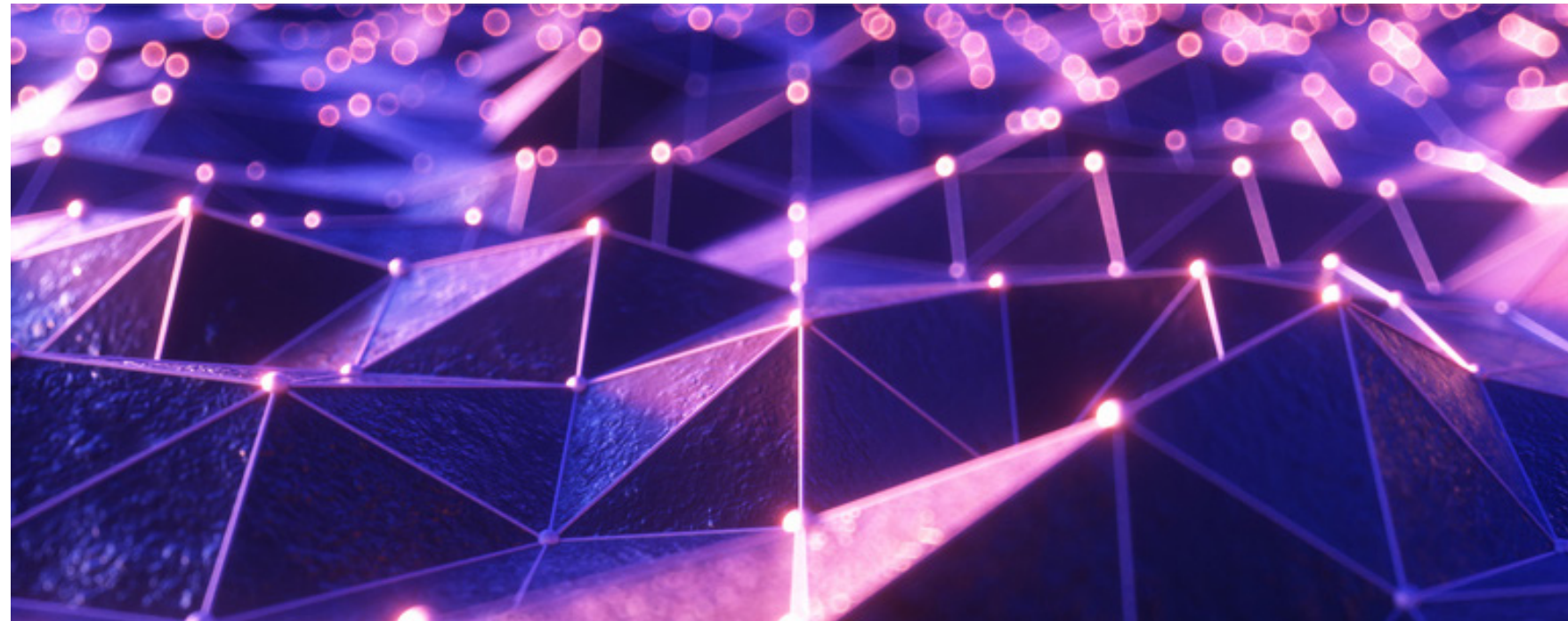**Cloud-resident Workload Repatriation Plans Over the Next Year**

0%   100%

35%	58%
Yes	No

46%
We will repatriate several workloads

50%
We will repatriate a few workloads
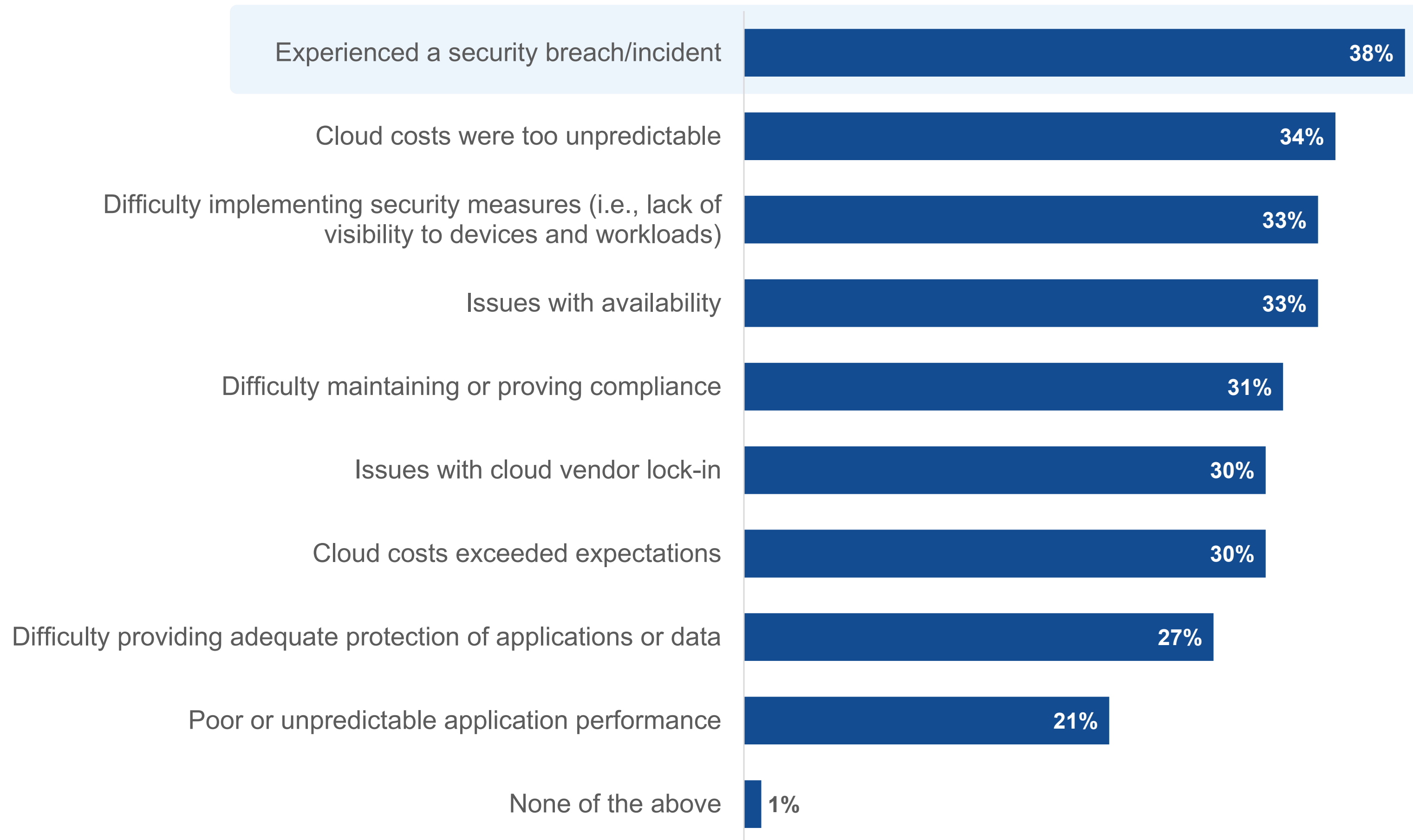
4%
We will repatriate a single workload

Repatriation Drivers Highlight Cloud Risks

Security-related breaches and incidents lead the list of reasons organizations plan on repatriating workloads on premises from the cloud.

In addition to showing the prevalence of security-related concerns, this also highlights how important built-in security throughout the entire IT environment is.

Reasons for Workload Repatriation

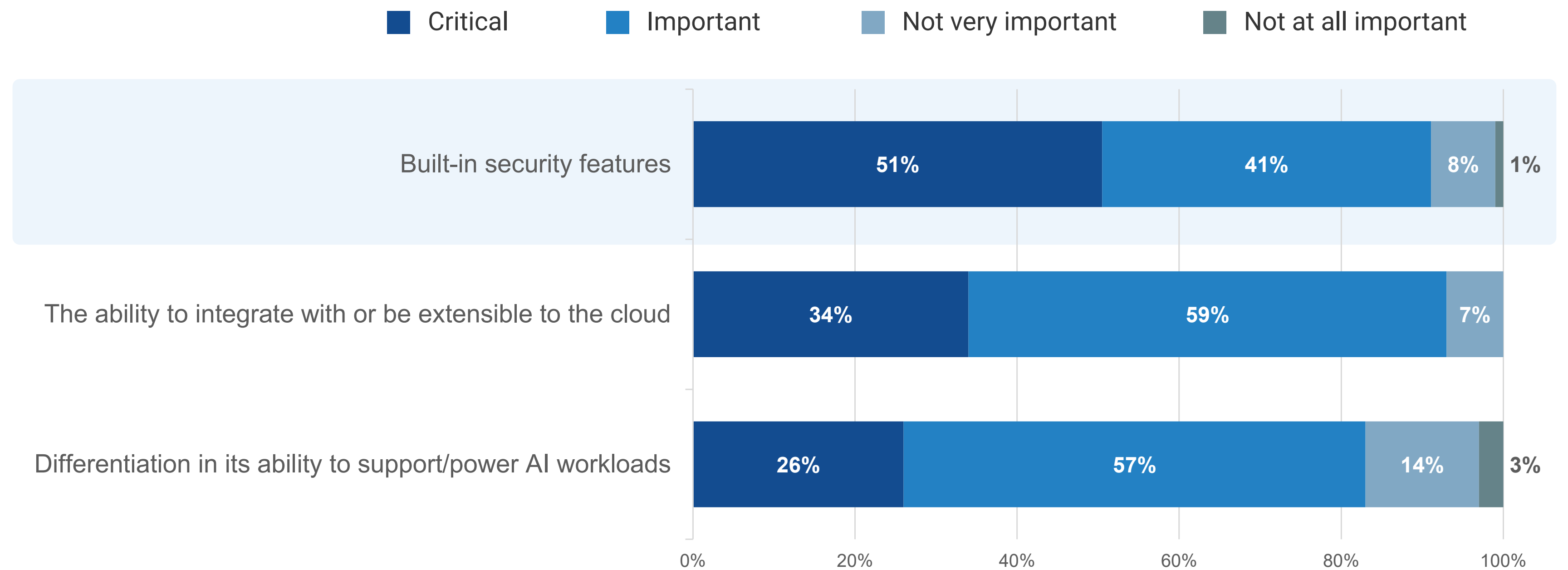| Reason	Percentage
Experienced a security breach/incident	38%
Cloud costs were too unpredictable	34%
Difficulty implementing security measures (i.e., lack of visibility to devices and workloads)	33%
Issues with availability	33%
Difficulty maintaining or proving compliance	31%
Issues with cloud vendor lock-in	30%
Cloud costs exceeded expectations	30%
Difficulty providing adequate protection of applications or data	27%
Poor or unpredictable application performance	21%
None of the above	1%

Built-in Security Is a 'Must Have' for Modern Storage

The distributed (i.e., cloud and on-prem) IT environment has greatly expanded organizations' attack surfaces, elevating security to a board-level concern. In response, IT decision-makers are looking to embed security into all levels of infrastructure.

The storage environment, as a critical data custodian, increasingly requires built-in security as part of an organization's defense-in-depth strategy.

More Than 90% of Organizations Consider Built-in Security Features 'Critical' or 'Important'

■ Critical ■ Important ■ Not very important ■ Not at all important

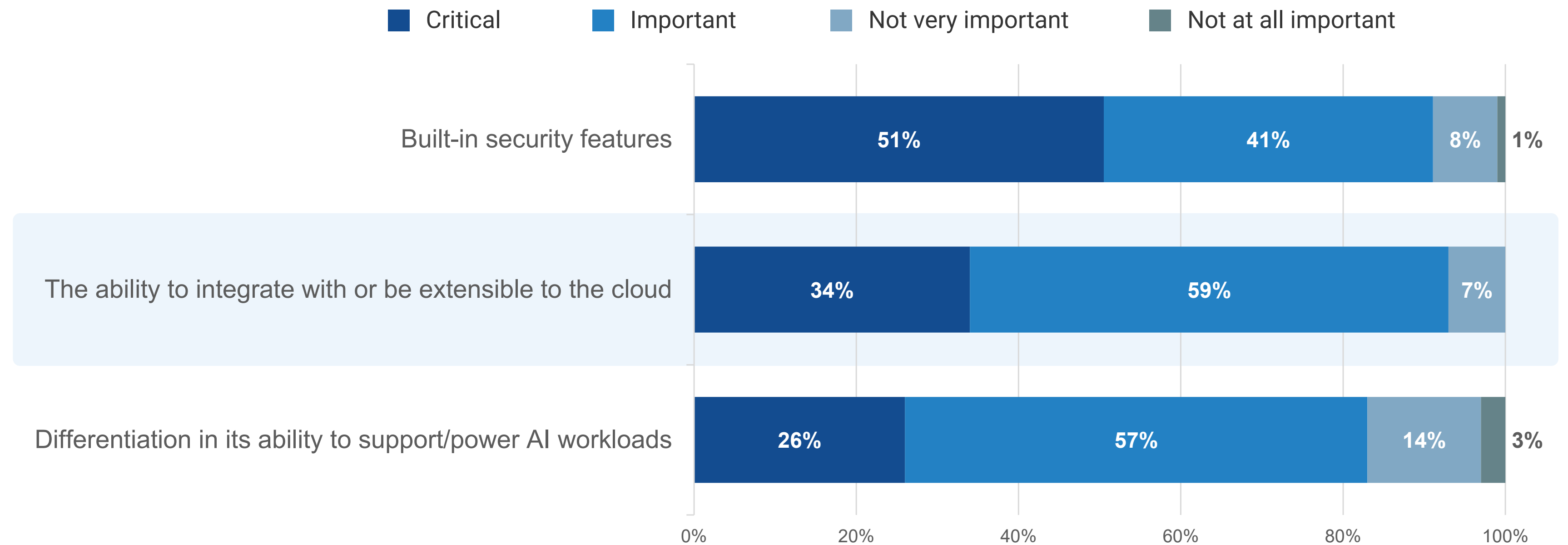|	Critical	Important	Not very important	Not at all important
Built-in security features	51%	41%	8%	1%
The ability to integrate with or be extensible to the cloud	34%	59%	7%	
Differentiation in its ability to support/power AI workloads	26%	57%	14%	3%

Storage-level Integration Enables the Hybrid Cloud

With many organizations adopting hybrid cloud strategies, investment focus shifts toward technologies that enable improved integration and consistent operations across on-premises and public cloud environments.

Integration with the public cloud at the storage level is becoming a critical capability as organizations look to facilitate data movement across the hybrid cloud, particularly for operations such as using the cloud as a data protection and archiving tier, as well as repatriation.

More Than 90% of Organizations Consider Cloud Integration Capabilities 'Critical' or 'Important'

Legend: ■ Critical ■ Important ■ Not very important ■ Not at all important

Category	Critical	Important	Not very important	Not at all important
Built-in security features	51%	41%	8%	1%
The ability to integrate with or be extensible to the cloud	34%	59%	7%	
Differentiation in its ability to support/power AI workloads	26%	57%	14%	3%

0% 20% 40% 60% 80% 100%

Conclusion

The future of many organizations will be driven by insights unearthed by AI, and IT organizations need to deploy data and storage infrastructure capable of unlocking these insights. IT orgs also need to do this across their entire environment securely and with consistent operations. Therefore, they will require comprehensive levels of built-in security and hybrid cloud support. All of these aspects are now must-have features in modern storage environments. As SMBs increasingly rely on IT to be the leader for the business in both growth and customer engagement, storage technology that has built-in functionality to improve security and better support AI is crucial to success.

How Dell Technologies and Intel can help

To effectively harness AI, organizations must modernize their data infrastructure, as most existing data centers fall short of AI demands. Dell Technologies, in partnership with Intel, offers cutting-edge storage solutions that leverage Intel's advanced processors and technologies. This collaboration ensures powerful, optimized infrastructure capable of handling AI workloads, leading to faster insights and better decision-making.

With Intel's advanced technologies embedded in Dell solutions, you can expect world-class performance, optimized workloads, and efficient power usage. Optimized for AI, PowerScale plays a critical role in powering performance-intensive use cases providing a scalable storage platform that meets our customers at their business needs. Intel's innovation in AI and analytics, combined with Dell's storage solutions, enables businesses to process and analyze large volumes of data more quickly and accurately, leading to faster insights and better decision-making.

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