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Would You Innovate on Your Outdated Server Infrastructure?

Get Ahead of Your Technical Debt

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IDC Opinion

Faced with a fast-changing technology and business environment, it is vital that organizations' compute infrastructure is capable of fully addressing rapidly evolving workload demands. This is essential for ensuring customer satisfaction and enabling organizations to remain competitive in a changing market. Companies must consider various factors when embarking on a server refresh/upgrade, including potentially shortening the refresh cycle from the average three to five years. Key considerations include the performance and cost of specific server platforms; the extent to which they meet the latest security, compliance, and sustainability requirements; and the degree to which server platforms can keep pace with innovation and adapt to changing conditions. In addition to making important decisions about when and how to refresh/upgrade their server portfolio, organizations must determine the best model for consuming their server infrastructure and when to consider potential new vendor partnerships.

Situation Overview

Forty-four percent of organizations refresh their server/compute infrastructure every three years or less, according to IDC research (see **Figure 1,** next page). Meanwhile, over 40% of organizations say they refresh or upgrade their server equipment more frequently since the COVID-19 pandemic, which is largely a reflection of the speed of innovation and technological change in the last five years. These shorter refresh/upgrade cycles for a growing number of organizations dovetail with an overall increase in compute spending: About 60% of organizations say they expect their overall compute spending to be up to 20% higher in 2025 compared with 2024. Nearly 27% of organizations identify significant data growth as one of the reasons for higher spending, while a further 22% say the need for higher-performance computing is a spending increase driver. What these figures demonstrate is that a growing number of organizations recognize the importance of having server infrastructure that can help them innovate in a fast-changing technology and business environment.

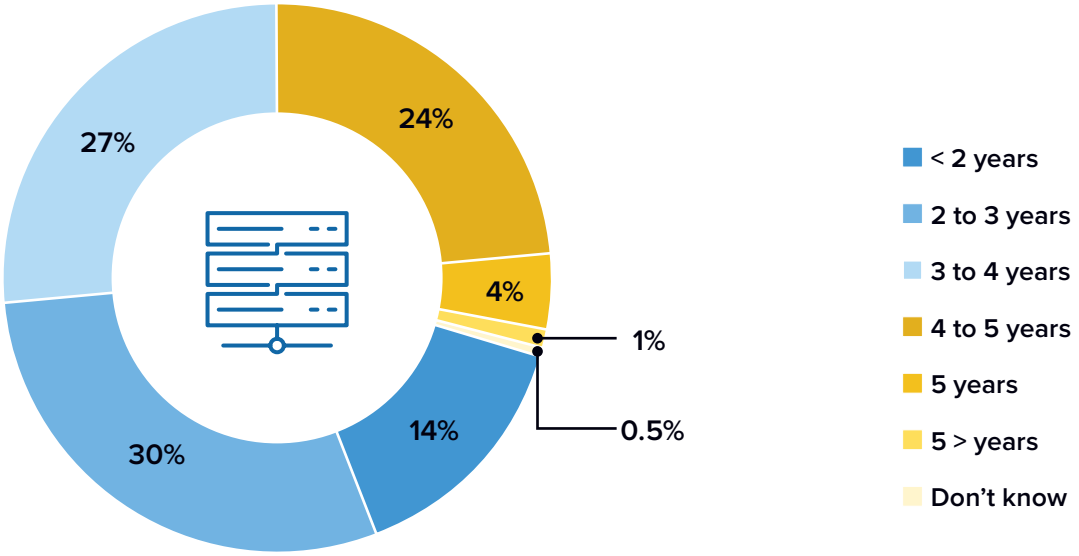
Rapid technological change affects IT hardware and software applications, and organizations must consider whether existing approaches to refreshing and upgrading their server infrastructure are sufficient to help them keep pace with far-reaching technology and business transformations. Many organizations only refresh or upgrade their compute infrastructure every three years or more. These organizations risk falling behind in the race to stay on top of the innovation curve. Increasingly, aging server infrastructure can quickly become a source of technical debt rather than a platform that supports technological transformation and increased competitiveness.

FIGURE 1

Forty-Four Percent of Organizations Refresh Their Server Infrastructure Every 3 Years or Less

How frequently does your organization typically refresh/upgrade its on-premises server platforms?

For an accessible version of the data in this figure, see Figure 1 Supplemental Data in the Appendix.



n = 199; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

Organizations consider various factors and requirements when deciding when and how to refresh or upgrade their on-premises server infrastructure. However, successful organizations do so because they recognize the importance of having compute capabilities that can help them innovate now while also enabling them to prepare for the next wave of technological change.

Considerations for a successful refresh/upgrade plan include:

- End-of-life (EOL) and end-of-support-life (EOSL) considerations
- Assessments of the performance of servers relative to their cost to the business
- Evaluations regarding the extent to which its server infrastructure supports an organization's evolving strategic objectives

The last consideration includes whether server platforms can support an organization's AI road map strategy and digital transformation goals. Indeed, 34% of surveyed organizations said they are assessing the ways AI will influence the future selection, procurement, and deployment of new server infrastructure, with a further 27% saying they currently work with an external partner to assess how AI will influence these processes.

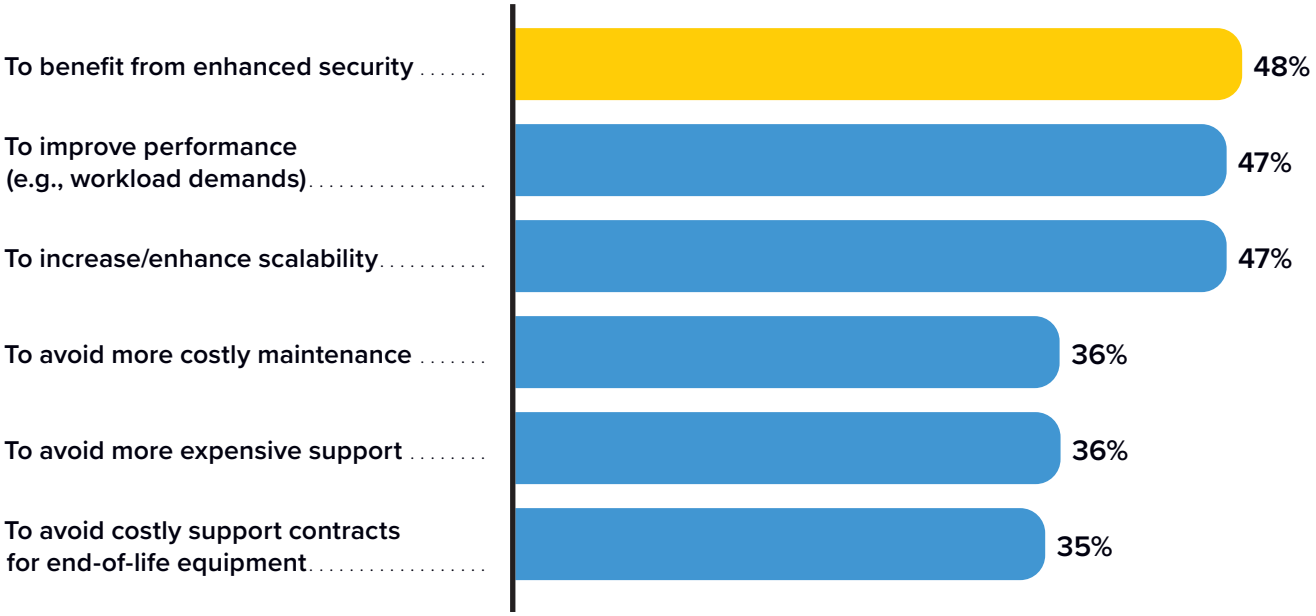
Organizations need to make decisions about the need to refresh and upgrade their server infrastructure, how to manage refresh/upgrades, and who to work with as part of this process — including whether to continue partnering with their existing server vendors or consider new potential partnerships. Organizations also need to choose the best model for consuming their server infrastructure. For some organizations, this will involve a Capex investment to own and manage the equipment themselves. For others, an Opex model may be more suitable, whereby they rent/lease the equipment and pay only for the capacity they use.

Refresh and Upgrade Decision-Making Criteria

Organizations consider a wide range of requirements and other factors when deciding when and how to refresh or upgrade their on-premises server infrastructure. These include assessments about whether server infrastructure supports an organization's evolving strategic objectives; evaluations about the performance, scalability, and the security-specific server platforms offer relative to their overall cost to the business; and the consideration of EOL and EOSL factors — including the need to avoid more expensive maintenance and support. Some organizations must also respond to unplanned events and developments that strengthen the case for refreshing and upgrading their server platforms outside planned refresh/upgrade schedules.

FIGURE 2

The Most Common Reasons for Refreshing/Upgrading On-Premises Server Platforms



n = 199; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

Business strategy evaluations:
Strategic considerations, most notably an organization's progress toward achieving its digital transformation objectives, strongly influence server infrastructure refresh and upgrade decisions. These include moves to ensure that server platforms can support the demands of new workloads and efforts to achieve greater levels of efficiency and sustainability.

Performance, security, and datacenter constraints are all important factors that shape refresh and upgrade decisions. Platform upgrades are often necessary to address growing workload demands, ensuring systems can handle increased data volumes, processing requirements, and latency-sensitive applications, while the latest security features are essential to ensuring protection against emerging threats, maintaining compliance, and safeguarding critical data.

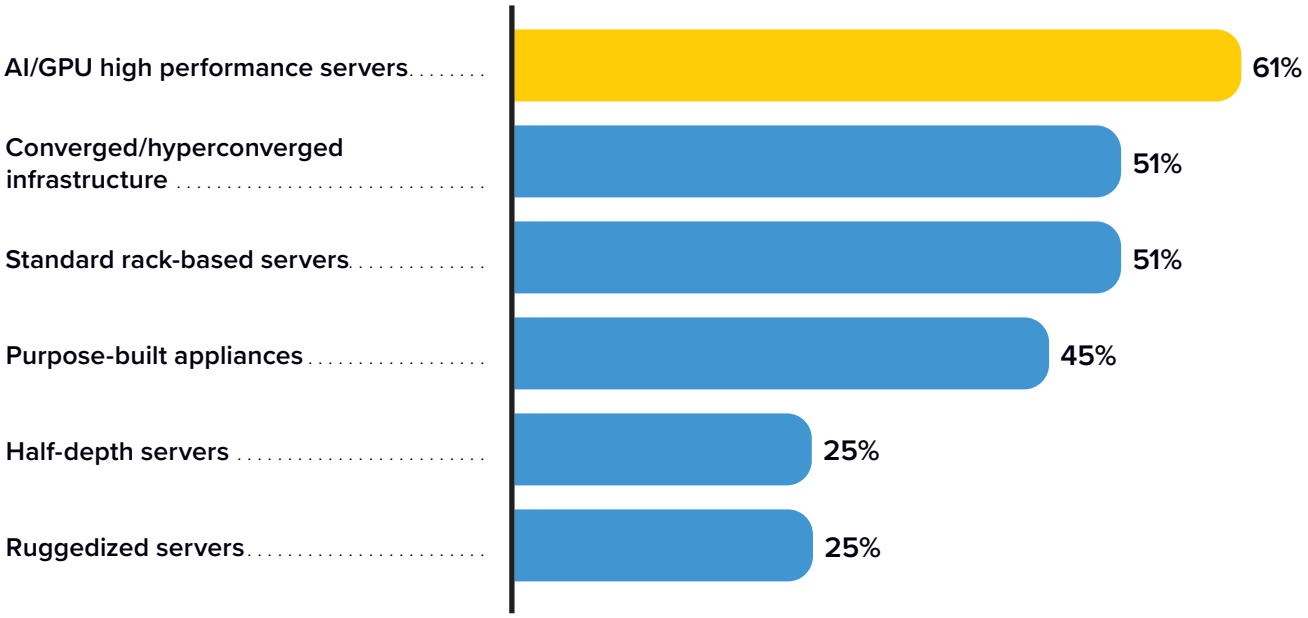
Many organizations also assess overall business impacts, including how their server portfolios align with strategic goals, enhance user experiences, and support revenue-generating activities. Twenty-one percent of organizations expect their support for AI workloads to grow by more than 20% over the next 12 months,

with an additional 45% anticipating a 10–20% increase in their AI workload use. These trends require a critical reassessment of the capabilities of existing server platforms.

These reassessments must also extend to edge environments, which have become an important part of many organizations' strategic focus. Seventy-five percent of organizations say they currently operate servers at IT locations they categorize as edge computing environments, including edge datacenters, branch offices, and server deployments in manufacturing, retail, and other sites. These locations require a strong commitment to ensuring that new server infrastructure can support the AI workload requirements. Sixty-one percent of organizations say they will operate high-performance AI/GPU edge servers in 2025, a commitment that other IDC research, most notably IDC's *Edge View, supports.*

FIGURE 3

Types of Servers Organizations Will Operate at Edge Environments in 2025



n = 150; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

> **Our company is committed to sustainability as a core element of its operations. This commitment extends to how we evaluate and engage with server infrastructure providers."**
>
> Large U.S. software and IT services company

> **We try to refresh all of our equipment every 4–5 years. We are very conscious of tech debt, so we get a lot of support to keep these projects moving forward."**
>
> Large U.S. process manufacturing firm

Meanwhile, although organizations' obligations and commitments to sustainability objectives vary significantly, sustainability initiatives also influence refresh and upgrade strategies. For many organizations, the cost of server infrastructure remains the primary consideration when refreshing and upgrading. However, for other organizations, sustainability is an important consideration, and many are deeply engaged with their suppliers on a range of sustainability criteria. Commitments to having more energy-efficient hardware can be an important factor influencing refresh and upgrade decisions.

Cost/performance assessments:
Organizations assess the ROI on existing server deployments using a range of criteria.

These include:

- An assessment of performance metrics such as system uptime and workload efficiency
- An evaluation of a server platform's cost to the business, based on the consideration of factors such as maintenance expenses, software subscription costs, energy costs, and unplanned downtime

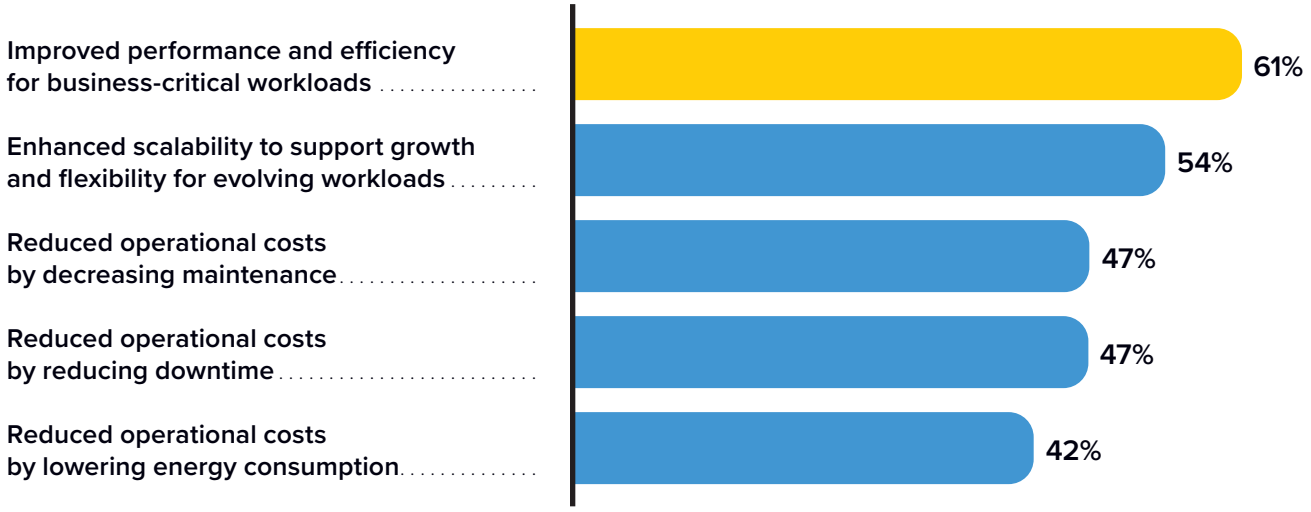
As it ages, IT infrastructure can become a source of considerable technical debt that ends up being costly for organizations to maintain while also proving insufficient to effectively support changing workload demands. Therefore, organizations must consider whether their existing server infrastructure is holding them back from making decisions crucial to their future success.

When assessing the ROI of their server investments, organizations are generally looking to achieve several goals, including:

- Improved performance and efficiency for business-critical workloads
- Enhanced scalability to support growth
- Flexibility for evolving workloads
- Lower operational costs due to reduced downtime

FIGURE 4

ROI Priorities for Server Investments



n = 200; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

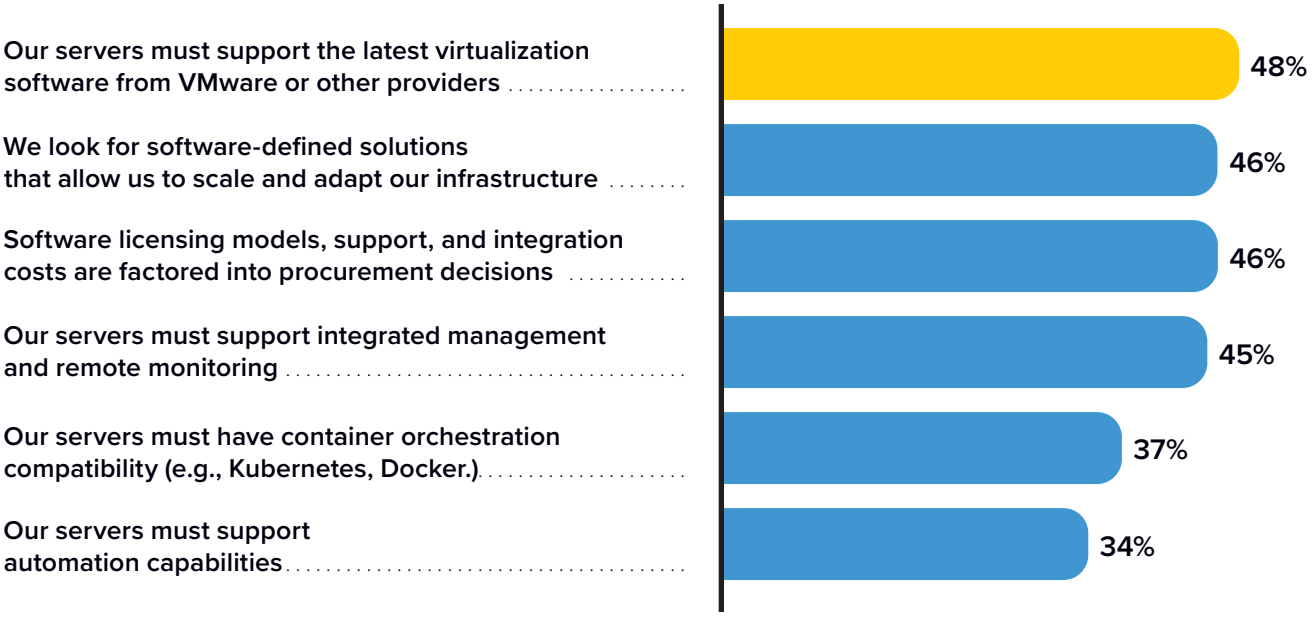
Software considerations and EOL/EOSL pressures:
For many organizations, software plays a critical role in the selection and procurement of server infrastructure, with software requirements fundamentally dictating hardware specifications. They need to consider a wide range of software applications and capabilities, including virtualization and containerization software, automation and observability software, and management and monitoring software. In the case of older server systems, not being able to upgrade the underlying software can pose a challenge when it comes to refreshing those systems.

Many organizations consider support for the latest virtualization software from VMware or other providers essential, while others say their servers must have container orchestration compatibility (e.g., Kubernetes, Docker). Some organizations also look for software-defined solutions that allow them to scale and adapt their infrastructure according to changing demands, while others factor software licensing models, support, and integration costs into procurement decisions to ensure long-term cost-effectiveness. For many organizations, the cost of virtualization software is an important factor that influences decisions regarding new server procurement and/or workload migration. VMware and some other virtualization vendors offer per-core licensing for their solutions, a feature that makes assessments about performance per core even more important from an

ROI perspective.

FIGURE 5

How Organizations Factor Software into Server Selection and Procurement Processes



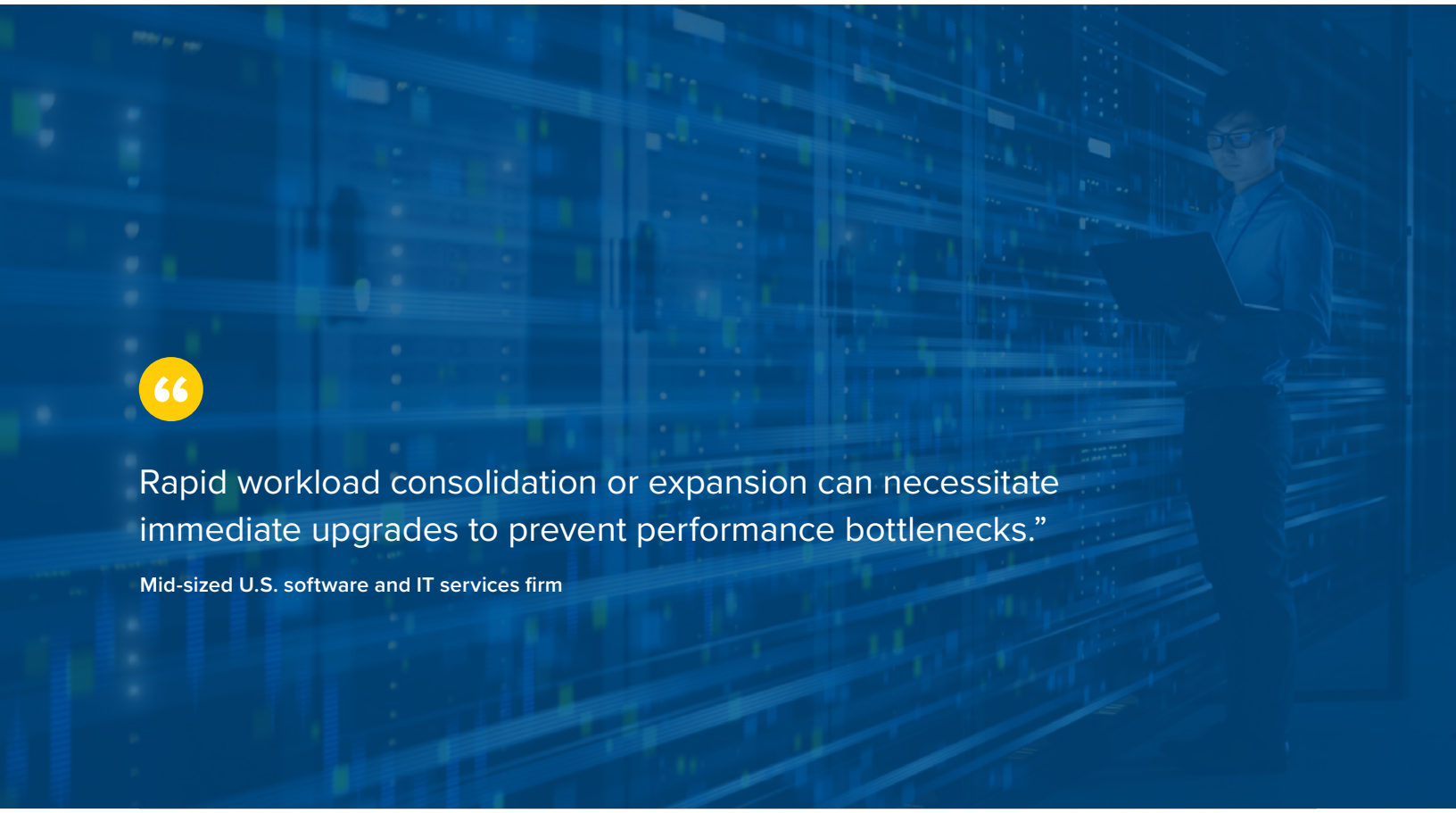
n =150; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

Regarding systems management and automation software, it is notable that over 70% of organizations already have automation and observability software capabilities, with a further 21% planning to introduce those capabilities in the next 12 months. Key benefits of server automation include enhanced security, improved energy efficiency and energy cost savings, and improved infrastructure resiliency.

> "EOL/EOSL is a huge driver not only for performance and support but also as an audit; we need to ensure servers are secure and up to date from a vulnerability perspective."
>
> Large Canadian financial services institution

Finally, hardware and software EOL/EOSL play a significant role in organizations' decisions about when to refresh and upgrade their server infrastructure. Ensuring system support, security, and compatibility are key considerations that shape commitments toward timely upgrades, ultimately helping organizations avoid the risks associated with unsupported infrastructure.

Factors that can accelerate refresh decisions:
Organizations identify various factors that make server refresh/upgrade cycles more urgent and result in implementations occurring ahead of schedule. These include the rapid consolidation or expansion of existing workloads, which can strain existing infrastructure and accelerate the urgency to upgrade. They also include the introduction of new applications or services with higher computational demands — especially workloads that leverage AI or GenAI capabilities — and the discovery of critical security flaws in existing hardware that cannot be adequately patched. In addition, organizations can face changes related to their datacenter infrastructure environments, including cooling systems that can no longer handle the heat output of existing servers and rising energy costs. The latter often coincide with an organization's push for greener operations, making it urgent to replace older, less efficient servers with newer models.



> "Rapid workload consolidation or expansion can necessitate immediate upgrades to prevent performance bottlenecks."
>
> **Mid-sized U.S. software and IT services firm**

FIGURE 6

Factors That Can Increase the Urgency of Refresh and Upgrade Cycles

Workload consolidation/expansion:
If workloads grow faster than anticipated, or if there's a consolidation effort to improve efficiency, it can stress existing infrastructure.

Energy and power efficiency:
Rising energy costs or a push for greener operations can make it urgent to replace older, less efficient servers with newer models.

Cooling technologies:
Cooling systems can no longer handle the heat output of current servers or if there's an opportunity to leverage new, more efficient cooling technologies.

Datacenter rack architectures and design:
A move to denser architectures, might necessitate upgrading servers sooner than planned to align with those changes.

Security vulnerabilities:
This includes the discovery of critical security flaws in existing hardware that can't be adequately patched and increased cyberthreats targeting specific hardware vulnerabilities.

New performance requirements:
This include the introduction of new applications or services with higher computational demands.

Source: IDC, 2025

“If my organization is working with existing server providers, we consider the quality of service and product performance in the process of deploying or refreshing servers. For new server providers, we consider compatibility with the current IT environment, level of support, and scalability.”

Mid-sized U.S. government institution

“You find a vendor that works well, and they will always be in the mix. As usual though, we always competitively bid. You never know when the new kid on the block is going to come in and shine.”

Large U.S. retail firm

Choosing the Right Partner and Partnership Model for Your Modern Datacenter

Once it has determined the need to refresh or upgrade its existing server portfolio, an organization must decide how to go about it and with whom to work as part of this process. Key considerations include whether to refresh or upgrade with an existing server vendor or shop for a new provider. They also include whether and how to work with global systems integrators (GSIs) and/or independent software vendors (ISVs). Organizations must also consider how they will manage a refresh/upgrade process, including data and workload protection during the upgrade/refresh. Finally, organizations should determine whether to upgrade or replace all of their on-premises compute infrastructure or leverage a hybrid model that also includes using cloud-based services.

Vendor selection criteria:
When embarking on a server refresh or upgrade project, organizations must decide whether to work with an existing server vendor or if they need to shop around for a new provider. When making this decision, organizations typically consider a wide range of criteria that span the performance, reliability, scalability, and flexibility of a specific solution, as well as cost, security, and compliance issues. Other important considerations include whether or not server platforms support key processor and accelerator characteristics, including core count/density for compute performance, memory capacity for workloads requiring large data sets or real-time processing, and high-capacity NVMe storage for workloads requiring low latency and high throughput.

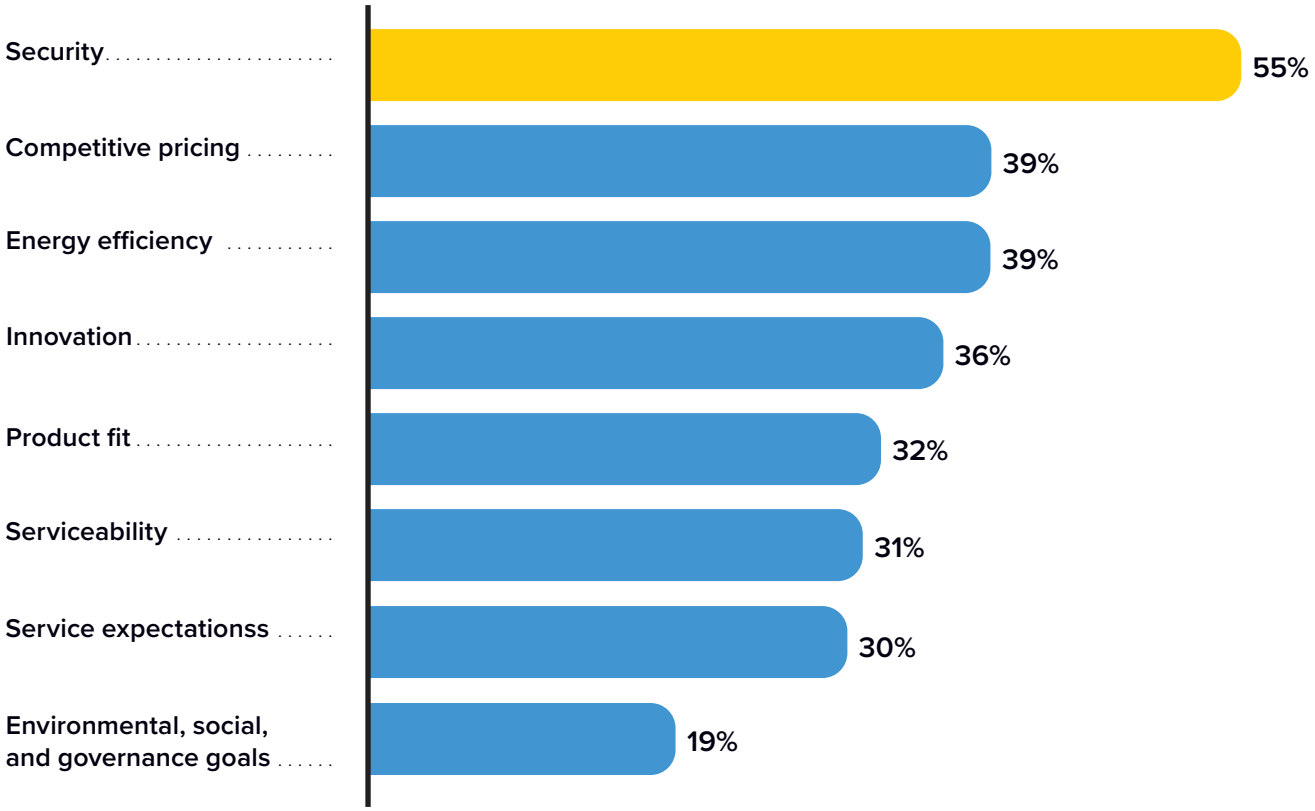
Although some organizations prioritize accelerators from specific vendors, most OEMs support the full range of accelerator options. This means that hardware availability is less of a consideration, while topics such as service and equipment compatibility are of greater importance.

Although more than 48% of organizations suggest they will most likely procure their new servers from their existing vendor over the next two years, 33% say they will consider or procure new servers from an alternative vendor. Seventeen percent say they will likely procure new servers from their existing server vendor and an alternative vendor.

Key considerations when deciding to change or add new server providers include security, cost, energy efficiency, product fit, and serviceability.

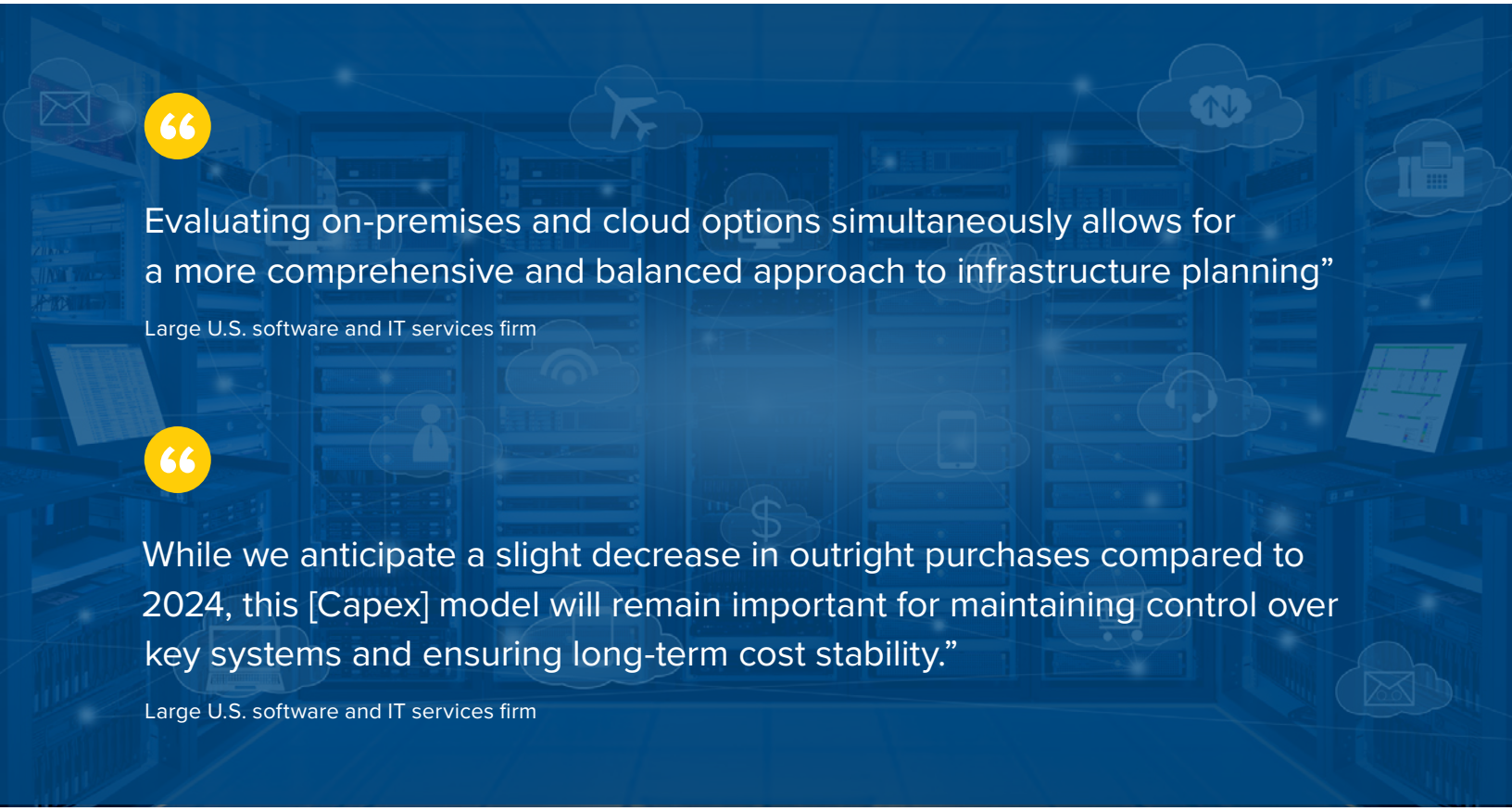
FIGURE 7

Factors That Play into the Decision to Change or Add Server Vendors



n = 77; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

The flexibility of hybrid deployments:
When making decisions about upgrading their on-premises server hardware, many organizations consider new server hardware or updated versions of existing hardware alongside the potential benefits of moving workloads to the cloud. They sometimes decide not to refresh an existing platform in favor of the cloud for reasons such as scalability, cost efficiency, accessibility, and long-term maintenance. However, it is important to also factor in considerations such as data security, regulatory compliance, and manageability/in-house skill sets.



> Evaluating on-premises and cloud options simultaneously allows for a more comprehensive and balanced approach to infrastructure planning"
>
> Large U.S. software and IT services firm

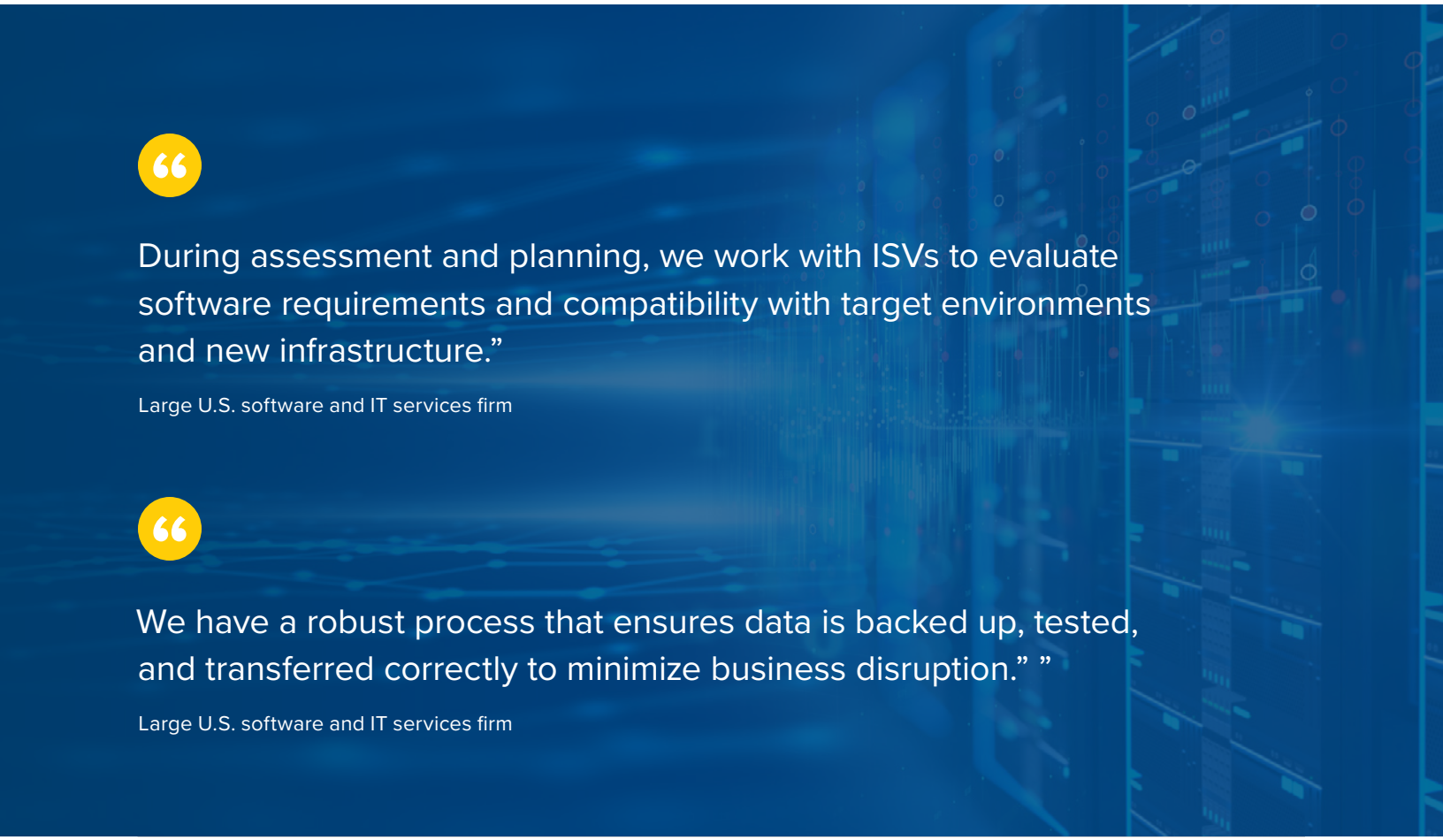
> While we anticipate a slight decrease in outright purchases compared to 2024, this [Capex] model will remain important for maintaining control over key systems and ensuring long-term cost stability."
>
> Large U.S. software and IT services firm

Capex versus Opex:
When organizations decide to refresh/upgrade their on-premises server hardware rather than move to the cloud, they need to consider whether to purchase their server equipment outright (i.e., a Capex-based approach) or to rent their equipment and/or pay only for what they consume (i.e., an Opex-based approach). Many organizations plan to increase their as-a-service-based consumption for their server infrastructure. For others, the shift toward Opex models will only be partial and coincides with a strong ongoing commitment to Capex-based procurement. A Capex-based approach to hardware purchases is particularly important for mission-critical workloads, enabling organizations to retain control over key systems and ensuring long-term cost stability and customization freedom. Meanwhile, the need for greater flexibility and faster refresh cycles drives the increased adoption of Opex models.

Working with GSIs and ISVs:
Many organizations choose to work with global systems integrators and independent software vendors to help them with various stages of the server refresh and upgrade process. During the assessment and planning stages, GSIs help organizations evaluate their existing infrastructure and develop comprehensive upgrade plans. They also provide insights into the latest server technologies. During server procurement, organizations often rely on GSIs'

deep vendor relationships for favorable contract terms while also relying on them for purchasing and logistics. During implementation and deployment, GSIs frequently handle installation and integration, as well as offering support and training. Meanwhile, organizations work with ISVs to understand their software's future road map, and to ensure that software developments are compatible with the underlying server infrastructure.

Protecting workloads during the upgrade process:
Before and during a server refresh/upgrade process, organizations must prioritize protecting any supported data and workloads. Here, they should and do consider several strategies and processes, including the use of redundant systems — especially for high-priority workloads — to ensure minimal disruption and failover systems to maintain operational continuity during transitions. They also include using backups before and during the refresh or upgrade process to ensure that critical data is securely stored and easily recoverable. Other important strategies include extensive testing in controlled environments before deployment to minimize risks and employing real-time monitoring tools to identify and resolve issues during the transition.



> "During assessment and planning, we work with ISVs to evaluate software requirements and compatibility with target environments and new infrastructure."
>
> Large U.S. software and IT services firm

> "We have a robust process that ensures data is backed up, tested, and transferred correctly to minimize business disruption." "
>
> Large U.S. software and IT services firm

Conclusion

Successful organizations innovate to grow revenues, deliver new services to their customers, become more resource-efficient, and remain competitive. Organizations must review their existing server refresh/upgrade approaches to ensure continued growth and innovation potential. Although half of organizations continue to wait three to five years to refresh and upgrade their server platforms, those that refresh/upgrade faster benefit from the latest hardware and software capabilities, enabling them to innovate faster than their competitors.

Organizations face a range of business and technology challenges, such as the increased demands of growing data volumes and highly performant workloads, including AI and GenAI workloads, on their existing compute infrastructure. Faced with the need to address rapidly evolving workload demands, organizations need to assess whether their existing approach to server refresh and upgrades is adequate to prepare them for the next wave of change. Given the speed of technology and business strategy advancements, refreshing/upgrading their servers every three to five years may not be frequent enough to enable some organizations to keep ahead of the innovation curve.

Research suggests that many organizations plan to increase their spending on server infrastructure in 2025, and several may refresh/upgrade their server equipment more frequently since the COVID-19 pandemic. However, for organizations that have yet to change established server refresh/upgrade patterns, now is the time to rethink their current approach. These organizations should consider shortening their current refresh cycle, with benefits that include avoiding the risk of existing platforms becoming obsolete in the face of rapid workload evolution, but more importantly, being able to remain competitive against rival organizations that have already shortened their refresh/upgrade strategies.

Finally, AI and GenAI will increasingly influence the future selection, procurement, and deployment of new server infrastructure, making it imperative that organizations reconsider how frequently they refresh and upgrade their server infrastructure, how they make decisions about managing refreshes/upgrades, and who they work with as part of the process. Many organizations are open to working with new or

additional vendors when procuring new server infrastructure. Opportunities, therefore, exist for server vendors to help organizations navigate some of the choices and decisions they need to make.

When shopping around for new potential suppliers, organizations typically consider a wide range of criteria that span the performance, reliability, scalability, and flexibility of a specific solution, as well as cost, security, and compliance considerations. Important considerations also include whether or not server platforms support key processor and accelerator characteristics. By refreshing/upgrading server portfolios more frequently, organizations will benefit from the latest performance, security, and other capabilities, enabling them to support the latest emerging workloads and boosting their innovation and competitive potential.

Appendix 1: Supplemental Data

This appendix provides an accessible version of the data for the complex figures in this document. Click "Return to original figure" below each table to get back to the original data figure.

FIGURE 1 SUPPLEMENTAL DATA

Forty-Four Percent of Organizations Refresh Their Server Infrastructure Every 3 Years or Less

How frequently does your organization typically refresh/upgrade its on-premises server platforms?

Frequency of On-Premises Server Platforms Refresh/Upgrades	
< 2 years	14 %
2 to 3 years	30%
3 to 4 years	27%
4 to 5 years	24%
5 years	4%
5 > years	1.0%
Don't know	0.5%

n = 199; Source: IDC's *Intel-Dell Server Refresh and Upgrade Survey,* March 2025

Return to original figure

About the IDC Analyst

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Chris Drake is senior research director within IDC's worldwide infrastructure research organization and part of the compute infrastructure and service provider trends practice. As part of the compute infrastructure research, Drake covers key trends in the computing systems, platforms, and technologies markets. This includes high-end, accelerated, in-memory and heterogeneous computing infrastructure systems, platforms, and technologies.

More about Chris Drake

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