IDC PERSPECTIVE

The Cost of Downtime in Datacenter Environments: Key Drivers and How Support Providers Can Help

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Downtime and the Importance of Support Contracts

CIOs and IT managers are under constant pressure to reduce the cost of IT operations while improving IT system performance and availability. For many enterprises, the amount of money being spent on external support services comes under close scrutiny. IDC believes that while enterprises should carefully examine these expenses, focusing only on reducing support spend can lead to an overall increase in the costs associated with IT operations — the largest of which is downtime.

Key Takeaways

- Enterprises should prioritize IT support services by workload criticality, viewing them as an investment in preserving the business value of these systems by relying on vendors for optimized performance.
- For all IT assets, support services should be viewed not as an insurance policy against failure but as a means to run systems with higher SLAs to meet performance KPIs from demanding end users.
- IDC's recent survey shows enterprises are saving 290 hours of downtime directly because of support contracts on servers, storage, and network devices.
- Survey respondents also reported preventing 79 hours of unplanned downtime across their environment by adopting proactive and preventive support tools.

Recommended Actions

- Determine the importance of each workload and the total cost of unplanned and planned downtime.
- Compare the costs associated with supporting the environment internally versus using an external provider.
- Evaluate all the offerings available from the various services providers to strike the right balance for your organization.
- Make a plan to adopt preventive and predictive support technologies, especially across systems supporting mission-critical workloads.

Source: IDC, 2023

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SITUATION OVERVIEW

As enterprises continue the transition to sustainable digital business models, they rely on their IT organizations for the right mix of agile, scalable technologies to drive competitive advantages in dynamic markets. While CIOs and IT managers monitor a wide variety of operational metrics, downtime and the associated costs remain a key indicator for the availability of critical IT infrastructure. Prioritizing IT systems supporting critical business processes, managing planned downtime to improve system performance through patch management, and improving IT service delivery are key elements to reducing unplanned downtime across the enterprise. To better manage complex multicloud IT environments, IT organizations spend a considerable amount of time and money to keep these systems available for clients and corporate users.

The hours and instances of planned and unplanned downtime can fluctuate depending on various attributes and characteristics. While an enterprise cannot operate when key systems are down, downtime for other systems may have a negligible impact on the business. IDC research shows the cost of downtime per hour can vary widely by a multitude of factors, including the following:

- **Workload type:** Unplanned downtime for the large ERP application is likely to have a greater impact than other applications across the enterprise.
- **Vertical industry:** Financial institutions can face significant financial penalties from government agencies for serious downtime issues, more so than another vertical.
- **System type:** A high-end storage array or large network switch going down may affect more business critical processes than a single server in a highly virtualized environment.
- **Degree of automation/autonomous IT operations:** With human error a significant contributor to downtime, more automation in IT operations often results in less unplanned downtime.
- **On-premises or public cloud infrastructure:** While unplanned downtime occurs across all deployment models, backups and redundancies often effect operations differently.

When considering these factors, IDC believes that it is important for enterprises to balance the need for external support services with the factors that help determine downtime and the associated cost of external support contracts. Going to the extreme of supporting every system as if it were critical to the business will result in exorbitant costs that are not sustainable and will adversely cut into overall profitability. However, for truly critical systems, enterprises should evaluate support offerings by considering not only the cost of support for the systems but the value of those systems to the business. In these cases, the support services need to be viewed as more than just an insurance policy for the business. They should be considered essential operational services, with components and features designed to optimize ongoing IT operations. Under these circumstances, enterprises need to carefully evaluate the vendor they select to provide the support services.

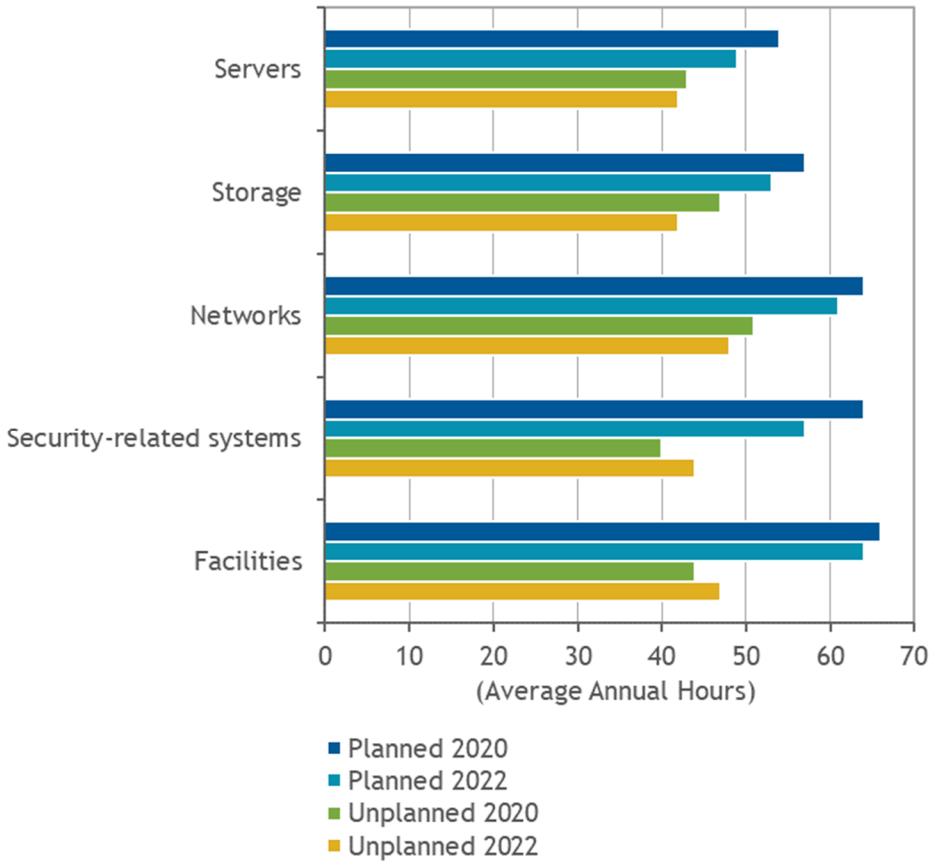
Current State of Downtime in the Enterprise

In a recent survey, IDC asked respondents responsible for calculating the cost of downtime about their experiences with downtime in their organization. The average survey respondent reported managing environments with 104 servers, 14 storage arrays, and 110 routers and switches. Despite the advanced technologies and improved operations in most enterprise IT environments, enterprises continue to see unplanned downtime across their systems (see Figure 2, noting that human error only counts in unplanned downtime).

FIGURE 2

Planned and Unplanned Downtime by Factors, 2020 and 2022

Q. In a typical year, how many hours of planned and unplanned downtime does your organization experience across the following factors?



n = 615 for 2020, n = 610 for 2022

Source: IDC's *Cost of Downtime and Importance of Support Surveys,* May 2020 and November 2022

IT organizations consistently reported more planned than unplanned downtime across all systems, a good sign of IT operations working to maintain system availability. When comparing survey results from 2020 to 2022, it is interesting to note that both planned and unplanned downtime decreased in 2022 – with the exception of unplanned downtime for both security and facilities, which increased in 2022. These complex systems present ongoing issues across the enterprise, even for the most sophisticated IT organizations with advanced operations.

Independent of downtime for these specific systems, IDC also examined planned and unplanned downtime across software and due to human error. Survey respondents indicated an average of 44 hours of planned downtime and 27 hours of unplanned downtime across applications and OSs in a typical year. In addition, organizations indicated an average of 48 hours per year of unplanned downtime due to human error – about 6 business days. That alone is a key driver for autonomous IT, a trend that continues to accelerate to enable sustainable digital business.

Unlike the results from IDC's 2020 *Cost of Downtime Survey,* fewer survey respondents in 2022 indicated that downtime events were the result of configuration errors made during deployment. Surprisingly, the majority of downtime events across facilities (70%) and security (61%) were not caused by configuration errors. For servers, 60% of the downtime events reported were due to configuration errors — and 60% of those deployments were completed by mostly internal IT personnel. These results highlight the potential benefits of considering an external provider for technology deployments, with expertise that can help avoid configuration errors that can lead to downtime.

The majority of respondents also identified disparate IT systems as a key cause of downtime, with 62% reporting that multivendor environments caused more downtime issues than single source. On average, respondents indicated that multivendor environments caused 13% more downtime than single source over the past 12 months. Given the challenge of managing integrated IT systems, it's not surprising that IT organizations see more downtime in these complex environments.

Finally, while most IT organizations have matured to track a wide variety of metrics, downtime (and associated system availability) remains a critical measure of how IT is affecting the business and end users. IT organizations rated the significance of potential effects of downtime, as shown in Figure 3.

FIGURE 3

Average Significance of Downtime on the Business

Q. For each of the following areas, please rate how downtime has impacted your business.

n = 610

Source: IDC's *Cost of Downtime and Importance of Support Survey,* November 2022

For most organizations, downtime not only impacts financial performance but also adversely affects other aspects of the business. In fact, survey respondents indicated that end-user satisfaction and customer experience, financial penalties, and employee satisfaction were all very important — with more than 75% of respondents selecting "4" or "5" to indicate significance.

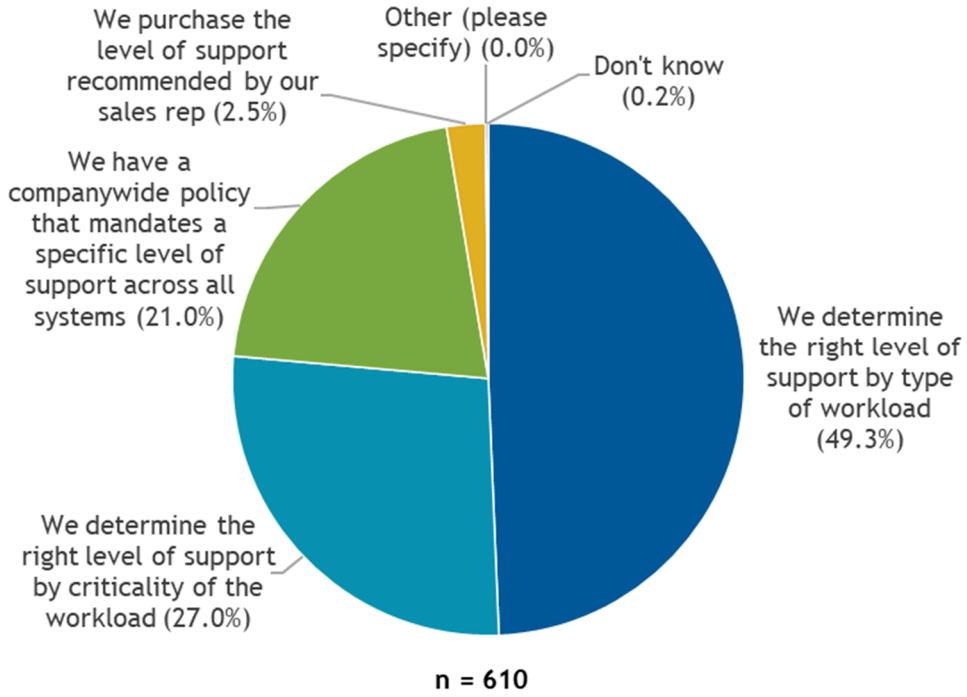
Can Support Help Reduce Downtime?

The majority of organizations reported purchasing support contracts above the base warranty for servers, storage, and network systems in their IT environments. Most respondents indicated purchasing the correct level of support based on the criticality of the workload. IDC was pleased to see this change in 2022, since in the past the level of support was determined by a companywide policy that mandated specific levels of support (see Figure 4).

FIGURE 4

Determination of Level of Support for IT Infrastructure

Q. How does your organization determine the level of support required for your IT infrastructure? Please select the response that best describes your policies.



Source: IDC's *Cost of Downtime and Importance of Support Survey,* November 2022

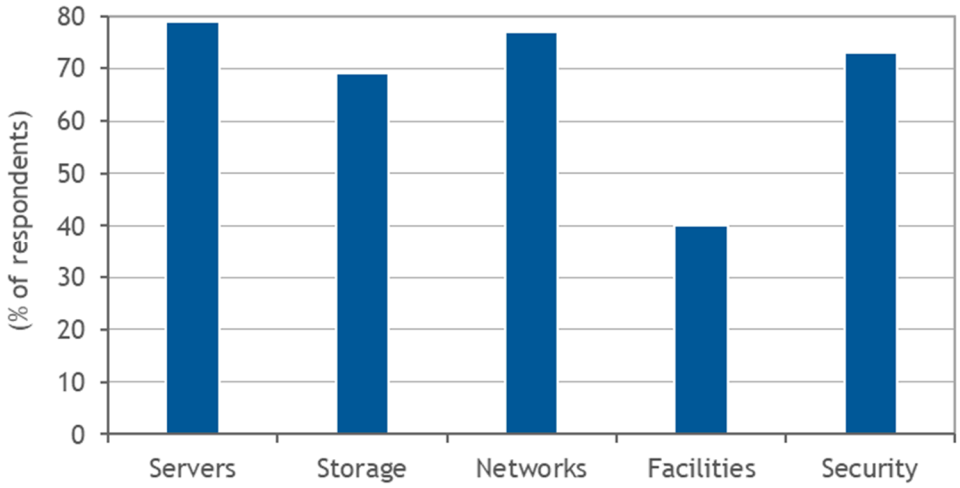
Respondents credited these support agreements with helping them save significant downtime hours annually – 290 hours per year across servers, storage, and networking systems. The unfortunate realization is that systems fail and having support contracts not only help get those systems back online faster, but the new proactive features are helping avoid unplanned downtime all together.

In fact, the majority of survey respondents indicated their organizations were using proactive, preventive, and/or predictive support technologies to help them identify potential problems before they affected their systems. These support technologies were most commonly in use across servers, storage, network, and security systems (see Figure 5).

FIGURE 5

Current Usage of Proactive and Preventive Technologies

Q. *Please indicate which systems are currently using proactive and preventive technologies and tools for support.*



n = 610

Source: IDC's *Cost of Downtime and Importance of Support Survey,* November 2022

Notably, organizations that reported using these technologies estimated preventing an average of 71 hours of downtime per year across these systems. Avoiding almost a week of work hours' worth of potential downtime is a significant accomplishment, even if it does apply across a number of systems in the IT environment. Reducing downtime by that much can represent a significant cost savings, even for the most sophisticated IT organization.

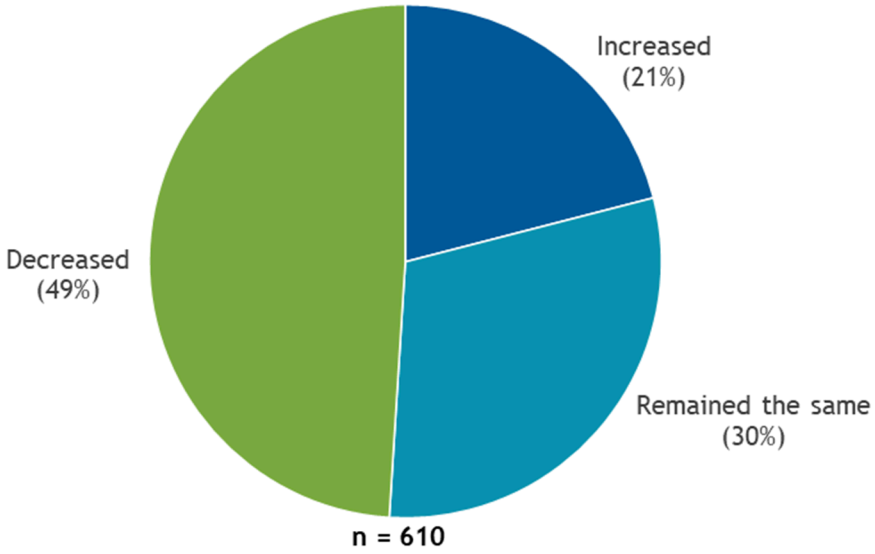
Best Practices in Reducing Downtime

While it was clear that support contracts and predictive/preventive technologies helped reduce downtime, we also asked respondents specifically about the progression of downtime in the past two years. As demonstrated in Figure 6, most organizations reported either reducing downtime or seeing it remain the same. Only 21% of organizations reported seeing an increase in downtime over the past two years (see Figure 6).

FIGURE 6

Progression of Downtime Over the Past Two Years

Q. How has the percentage of downtime for your on-premises IT changed in the past two years?



Source: IDC's *Cost of Downtime and Importance of Support Survey,* November 2022

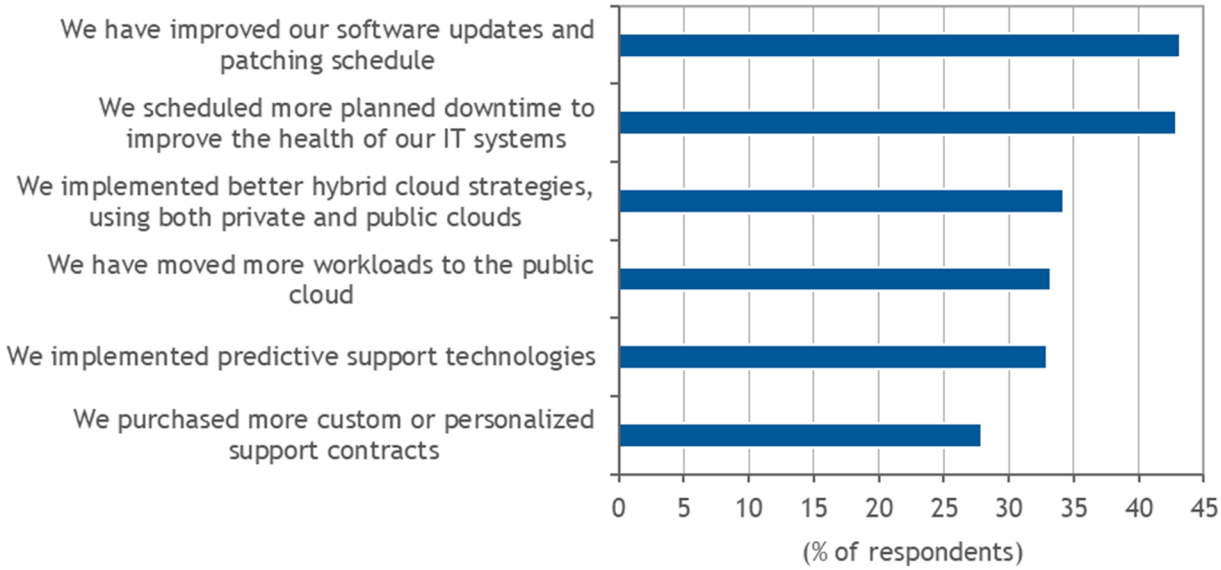
Organizations that reported a decrease in downtime saw an average of 10% reduction, while organizations that reported more downtime hours saw an average of 11% increase. Organizations using preventive support were more likely to see more hours of downtime – or no change to their downtime. However, organizations using preventive support were more likely to report fewer downtime hours.

Respondents also indicated the primary reasons for the decrease in downtime in their environments, as detailed in Figure 7.

FIGURE 7

Primary Reasons for Reducing Downtime

Q. You indicated your company saw a decrease in downtime for on-premises IT. What were the primary steps taken to reduce that downtime in your organization?



n = 610

Source: IDC's *Cost of Downtime and Importance of Support Survey,* November 2022

Not surprisingly, the primary reasons for reducing downtime were improving the software update and patching schedule and scheduling more planned downtime to improve IT system health. These operational changes can greatly improve system stability and performance. Respondents also noted improving their hybrid cloud strategies contributed to reducing downtime, allowing for more flexibility in workload management to optimize IT operations.

When undertaking initiatives to reduce unplanned downtime in the IT environment, CIOs and IT directors should focus on the relationship of IT resources to the business, and the business processes supported by the systems and resources in use. Specifically, IDC recommends the following:

- **Determine the business criticality of each workload, and identify the systems and resources supporting each workload.** Generally, the most important systems are ones supporting the revenue-generating activities of the enterprise. For example, in financial services the trading platform is mission critical because any unplanned downtime has a direct impact on revenue. On the other hand, management consultancies often consider their email servers mission critical because communication between multiple embedded consultants and customers has a direct impact on the completion of projects on time, and thus the level of customer satisfaction. When conducting this analysis, enterprises must realize that they will have systems that they consider to be critical that other companies do not consider to be critical.
- **Determine the cost of planned and unplanned downtime by workload.** This may seem obvious to IT professionals; however, it is still one of the most important steps in determining how the

IT environment should be supported. It is also one of the steps that can be more difficult than it first appears because of highly converged and virtualized systems. To do this evaluation, enterprises must consider all factors that contribute to the total cost of unplanned downtime, not just the potential loss of revenue. The other piece of the equation many enterprises do not factor into their calculations is the amount of planned downtime the solution will require, how that will change over time, and how that evolution will impact the total cost of downtime.

- **Organize the workloads by criticality and cost of downtime.** Again, this step might seem obvious to IT organizations. However, taking the time to create a structured approach to workload management based on criticality and cost of downtime will help streamline the cost of supporting IT assets based on their importance to the enterprise.

These key attributes can then be applied to determine the correct level of support for each workload, as well as best underlying IT infrastructure that can support that workload.

ADVICE FOR THE TECHNOLOGY BUYER

Actions to Consider

IDC believes that enterprises should match IT infrastructure with corresponding business processes to evaluate potential support options, which can help determine the need for basic support versus more proactive or advanced support services. This evaluation should include investigating all aspects of the systems as previously outlined and in the sections that follow. IDC believes that by conducting these evaluations, enterprises will be more successful in balancing the optimization of internal resources, the need for external services, and the cost of those external services.

Cost of Providing Support Internally Versus Externally

Once the company has determined the importance of the system and the level of reliability it needs for that system, it needs to determine the cost of providing support services to achieve that level of reliability. This cost will generally vary depending on the mix of external and internal support services the enterprise chooses. To be cost effective, the enterprise needs to evaluate the total cost of achieving the desired level of reliability, not just the external costs of specific external services. In many cases, having a vendor provide the support services will be more cost effective than trying to provide that same level of services internally. According to our recent survey, 55% of enterprises plan to buy more advanced support contracts to help reduce downtime across workloads in their IT environment.

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Skills Required to Support the Systems

Supporting an IT system usually requires specialized skills. Generally, IT organizations have the required skills to support most applications and infrastructure. However, in some cases, the enterprise does not have all the skills required to support all technologies in the environment. In these cases, augmenting existing skills with outside resources by hiring additional employees or contractors or finding an organization that can provide the required resources can help. It is not only the employee skills but also the tools and automation now found in solutions that allow for faster remediation or proactive capabilities that will resolve issues before they occur; most of these talents and abilities lie within vendor or partner offerings. In addition, given the additional downtime that can occur with highly integrated IT ecosystems, IDC recommends considering support providers with a demonstrated history

of delivering comprehensive support for complex multivendor environments. Relying on a single provider for multivendor installations can help consolidate contracts and operations, as well as reduce the back-and-forth issues when problems occur.

Degree of Customization of the Environment

Enterprises also need to consider the degree of customization of their environment. For environments that are more standardized, having an external vendor provide support services can be more cost effective than trying to support the environment internally. In this case, the vendor generally can leverage its experience in supporting a large number of systems. For applications that have been either custom developed by the customers or highly customized for their businesses, a vendor may not be able to provide support services for the application under a traditional support services agreement. In these cases, the enterprise will need to consider either a managed services agreement or supporting the environment internally.

IT Resources

Generally, CIOs and IT directors have a limited amount of human resources at their disposal. Given this, the IT department needs to determine how to best deploy those resources. In most organizations, IT needs to support a variety of activities, ranging from keeping the environment functioning to developing systems that support revenue-generating activities. One way an enterprise can free up internal resources so that it can be redeployed to focus on these projects is to use external vendors to provide the support services.

Key Considerations When Looking at External Providers

IDC recommends that enterprises carefully consider the external providers they choose to support these critical systems. Enterprises should look for an organization that has the following attributes:

- **Geographic scope:** Enterprises need to investigate the geographic reach of the organization they use to support critical systems. If the organization does not have a presence in the geography, enterprises should ask for details on how they will be supported within that region.
- **Vendor reputation:** For critical systems, enterprises should look for a support organization that has a strong reputation for providing exceptional customer service.
- **Industry knowledge:** The support services provider should understand the challenges that are unique to the customer's industry. This knowledge can prove valuable in case of a downtime incident.
- **Tools and automation:** The right vendor will have the ability to monitor and have advanced proactive capabilities to keep downtime out of your environment, keep those assets running as efficiently as possible, and let you know what assets you have and where they are located.
- **Technical knowledge:** Finally, enterprises need to select a services provider that has a deep technical knowledge of the systems. In this case, if an enterprise selects a third-party maintainer, IDC recommends the enterprise ensure the third party has the deep technical knowledge required to maintain those systems.

LEARN MORE

Related Research

- *IDC FutureScape: Worldwide Future of Digital Infrastructure 2023 Predictions* (IDC #US48376222, October 2022)
- *Market Analysis Perspective: Worldwide IT Service Strategies for Proactive Customer Success, 2022* (IDC #US49690622, September 2022)
- *IDC MarketScape: Worldwide Support Services 2022 Vendor Assessment* (IDC #US48896919, March 2022)

Synopsis

This IDC Perspective discusses the enterprises' need to keep downtime out of a mission-critical environment. Complex mission-critical applications and IT environments as a whole need to be supported differently than they have in the past.

"Mission-critical workloads may reside on infrastructure that runs many different workloads from test/development to mission critical," says Rob Brothers, vice president of IDC's Datacenter and Support Services. "Advanced support services from vendors play a critical role in keeping these systems up and running properly, so evaluating which support services is right for your enterprise needs should be of utmost importance."

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