IDC PERSPECTIVE

# The Cost of Downtime in Datacenter Environments: The Cause and Effective Measures to Alleviate

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## EXECUTIVE SNAPSHOT

### FIGURE 1

**Executive Snapshot: Downtime and the Importance of Support Contracts**

Enterprises are under constant pressure to reduce the cost of IT operations while increasing agility and uptime. Frequently, the amount of money being spent on external support services comes under close scrutiny. IDC believes that enterprises should closely assess these expenses; however, focusing only on reducing this spend can actually lead to an overall increase in the costs associated with IT operations, the largest of which is downtime.

**Key Takeaways**

- View some IT support services spending as an investment in preserving the business value expected from critical systems and time gained from relying on the vendor to keep systems running optimally.
- For all IT assets, support services should be viewed not as an insurance policy against failures but as a means to run systems with higher SLAs and performance KPIs.
- IDC's survey work shows enterprises saving 634 hours of downtime by having support contracts on their servers, storage, and network devices.
- Across servers, storage, networks, security, and facilities, customers save approximately 201 hours due to the use of proactive and preventative tools.

**Recommended Actions**

- Determine the importance of each workload and the total cost of planned and unplanned downtime.
- Compare the costs associated with supporting the environment internally versus using an external provider.
- Evaluate all the support offerings that constantly look at the health of the system and provide proper patching schedules.

Source: IDC, 2020

June 2020, IDC #US46505517

## SITUATION OVERVIEW

As more enterprises rely on complex hybrid IT infrastructures to achieve strategic business objectives, the availability of that infrastructure is a critical IT operational requirement. While most IT organizations monitor a wide variety of metrics, downtime remains a key measure of performance for CIOs and IT managers. Managing planned downtime to improve system health and performance is a key IT capability and can also help reduce unplanned downtime. In addition, prioritizing the IT systems supporting critical business processes and improving IT service delivery is imperative. While an enterprise cannot operate when key systems are down, downtime for other systems may have a negligible impact on the business. To manage these complex and disparate IT environments, IT organizations spend a considerable amount of time and money supporting these assets.

Complicating the situation, the hours and instances of planned and unplanned downtime can fluctuate depending on various attributes and characteristics. In addition, the cost of downtime per hour can vary widely by a multitude of the same factors, including the following:

- Workload type
- Vertical industry
- System type
- Degree of automation/autonomous operations
- On-premises or public cloud infrastructure

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. In addition, for these cases, enterprises need to carefully evaluate the vendor they select to provide the support services.

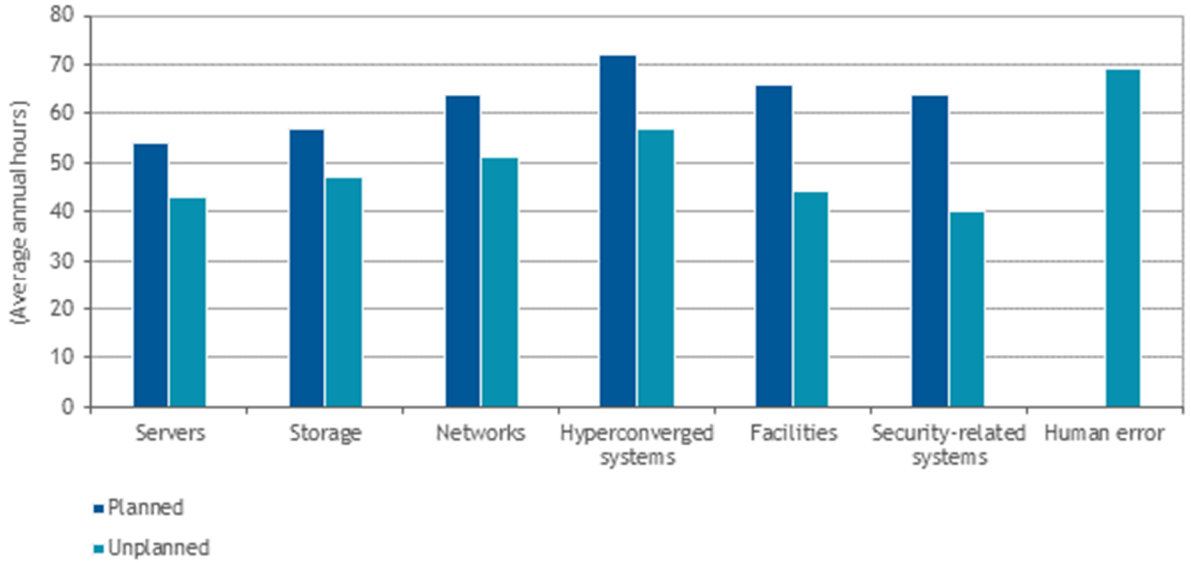
### Current State of Downtime in the Enterprise

In a recent survey, IDC asked enterprises in North America for details on their experiences with downtime across their on-premises systems. Despite the advanced technologies and improved operations in most enterprise IT environments, enterprises continue to see unplanned downtime across their systems (see Figure 2, human error only counts in unplanned downtime).

## FIGURE 2

### Planned and Unplanned Downtime

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

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Source: IDC's *Cost of Downtime and the Value of Support Contracts Survey*, 2020

IT organizations reported more planned than unplanned downtime across all systems, a good sign of IT operations working to maintain system availability. In addition, it was not surprising to see that the highest amount of planned downtime was for hyperconverged systems. These complex IT systems require more frequent patching and maintenance to ensure the overall health and performance of the system.

Independent of downtime for these specific systems, organizations also indicated an average of 69 hours per year of unplanned downtime across these systems due to human error. It is interesting to note that the downtime for hyperconverged systems alone is higher than the hours of unplanned downtime reported for any of the other systems in the survey. This is a key driver for expanding automation in IT operations, a trend IDC has seen accelerating in recent years.

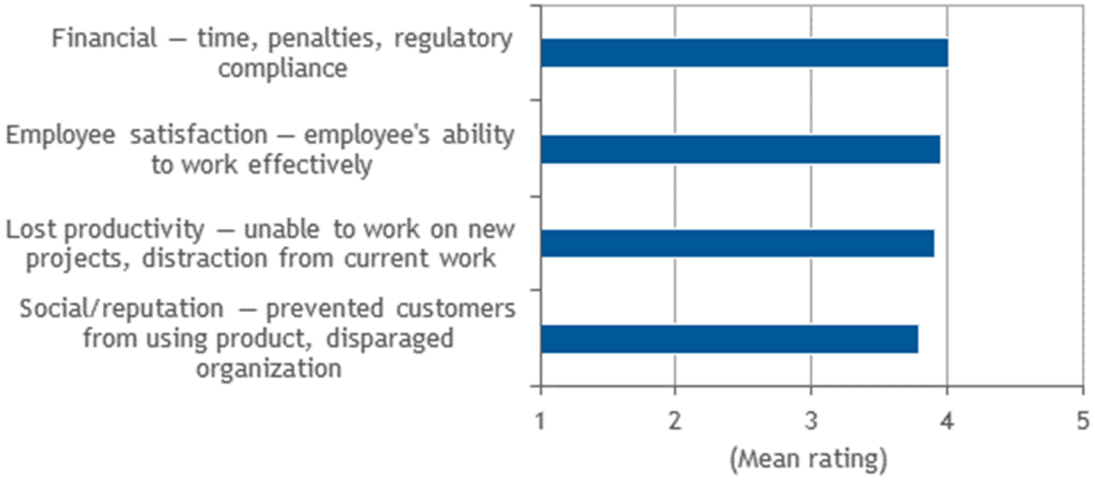
For each type of system in the survey, respondents also indicated that the majority of these downtime events were the result of configuration errors made during deployment. For servers, 70% of the downtime events reported were due to configuration errors – and 62% of those deployments were completed 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.

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.*

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Note: Rating is based on a scale of 1-5, where 1 = not significant and 5 = significant.

Source: IDC's *Cost of Downtime and the Value of Support Contracts Survey,* 2020

For most organizations, downtime not only impacts financial performance but also adversely affects other aspects of the business. While it is not surprising that the financial impacts were highlighted as the most important, organizations also indicated that employee satisfaction was the second most important area affected by downtime – with almost as many respondents selecting "4" or "5" for employee satisfaction as for financial penalties.

In the same survey, enterprises are still seeing downtime, proving that evaluating the type of services that enterprises should be investing in should be taken into consideration when planning the IT environment.

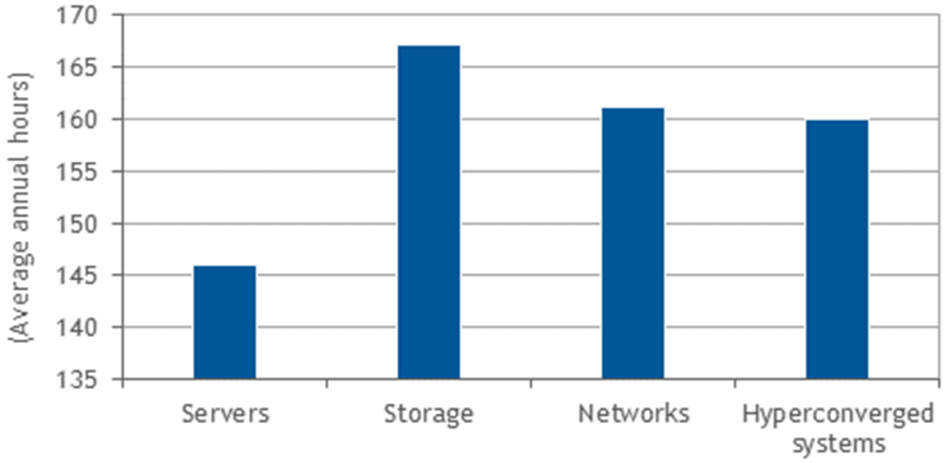
## Can Support Help Reduce Downtime?

The majority of organizations reported purchasing support contracts for the systems in their IT environments, ranging from "bronze" support agreements, which is defined partially as basic reactive support, to highly specific custom support contracts for specific configurations. Respondents credited these support agreements with helping them save significant downtime hours annually, approximately 634, as detailed in Figure 4. 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.

## FIGURE 4

### Average Hours of Downtime Saved by Support Contracts

*Q. By having these support contracts on your system, in a typical year, how many hours of downtime do you think were prevented?*

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Source: IDC's *Cost of Downtime and the Value of Support Contracts Survey,* 2020

In addition, 68% of 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. Notably, organizations that reported using these technologies estimated preventing an average of 201 hours per year of downtime across these systems. Avoiding more than a month 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.

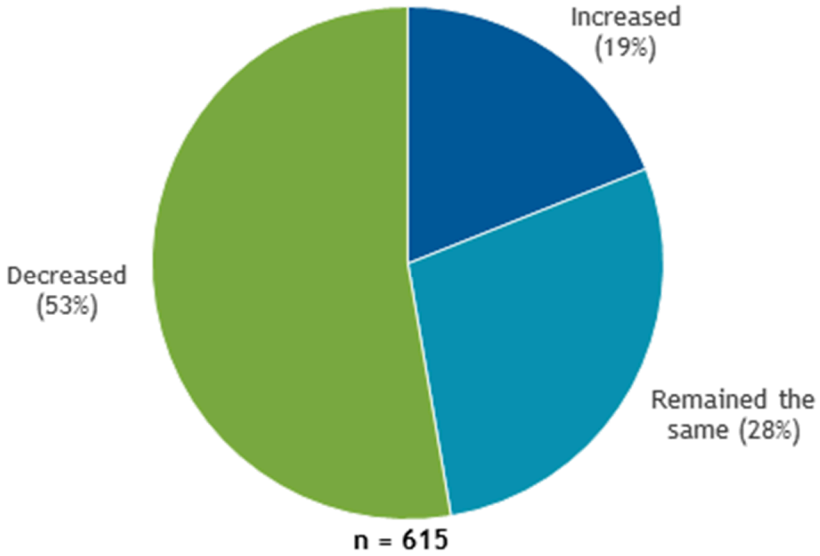
## Best Practices in Reducing Downtime

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 5, most organizations reported either reducing downtime or seeing it remain the same. Less than 20% of organizations reported seeing an increase in downtime over the past two years (see Figure 5).

## FIGURE 5

### 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 the Value of Support Contracts Survey,* 2020

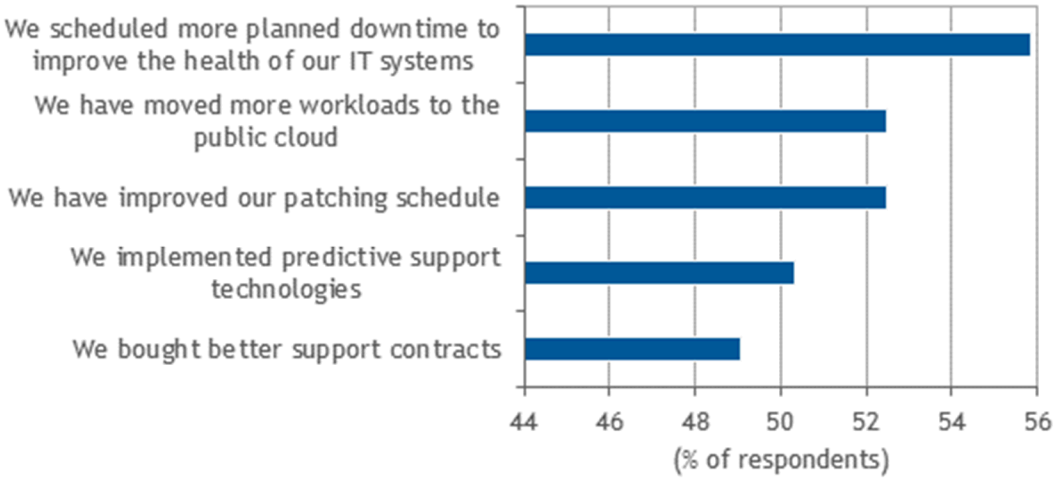
Organizations that reported a decrease in downtime saw an average of 8% reduction, while organizations that reported more downtime hours saw an average of 10% increase. Organizations using preventive support were more likely to see more hours of downtime – or no change to their downtime. However, organizations 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 6.

## FIGURE 6

### 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?*

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Source: IDC's *Cost of Downtime and the Value of Support Contracts Survey,* 2020

Not surprisingly, the primary reason for reducing downtime was scheduling more planned downtime to improve the overall health of the IT environment. This allows more time for patching, health checks, and other system maintenance that can help improve overall IT operations. In addition, respondents noted moving workloads to the public cloud and buying better support contracts as key steps taken to reduce downtime in their organization.

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 need to consider which support options are best for the systems they are responsible for, whether they are more proactive or advanced services or support that is more basic in nature. This evaluation should include investigating the aspects of the system 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 for the enterprise than trying to provide that same level of services internally. According to our recent survey, 47% of enterprises plan to buy more advanced support contracts to help reduce downtime across workloads in their IT environment.

### *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, the enterprise would need to augment its current skill sets with outside resources by hiring additional employees or contractors or finding an organization that can provide the required resources. 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 the vendor or partner offerings.

### *Degree of Customization of the Environment*

Enterprises 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 a more cost-effective solution 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's Forecast Scenario Assumptions for the ICT Markets, April 2020* (IDC #US46208220, April 2020)
- *HPE GreenLake: Everything-as-a-Service "Central" Portal – The Benefits of Consumption Models and Beyond* (IDC #US46025220, February 2020)
- *Trends in IT Leasing and Flexible Consumption: Understanding Customer Motivations and Key Drivers for Adoption* (IDC #US45948018, January 2020)
- *IDC MarketScape: Worldwide Support Services 2019 Vendor Assessment* (IDC #US45595819, October 2019)

## 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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