

DATA REPORT

Operators face wider range of resiliency challenges

Key findings from the Uptime Institute Data Center Resiliency Survey (Q2 2023)

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The data center industry faces many of the same resiliency challenges in 2023 as in previous years – but operators are also preparing for new regulations while they continue to adjust to changing technology and market conditions. Strategies for assessing and preventing risks vary widely, but even the most robust resiliency frameworks cannot prevent all disruptions.

As a result, outage concerns are rising, and more senior managers are insuring against IT and data center failures. The Uptime Institute Data Center Resiliency Survey 2023 explores how operators assess operational risks and highlights opportunities for strengthening mitigation strategies.

The Uptime Institute Resiliency Survey 2023, conducted online in January 2023, had more than 750 respondents. This report highlights some of the findings. For more detailed coverage of the topic, see Uptime Intelligence's *Annual outage analysis 2023*.

KEY POINTS

- Most organizations conduct their own risk assessments. However, new regulations may encourage more use of resiliency testing by third parties.
- Networking issues resulting from configuration and change management failures were the most common causes of outages from 2021 to 2023 — but few resulted in major disruption.
- The proportion of organizations that insure against data center or IT failures is increasing. This is likely because of the growing costs of major outages.
- Issues caused by third-party service providers accounted for a greater proportion of outages than in 2022, but this increase is marginal relative to the growing use of third-party IT services, such as public cloud.

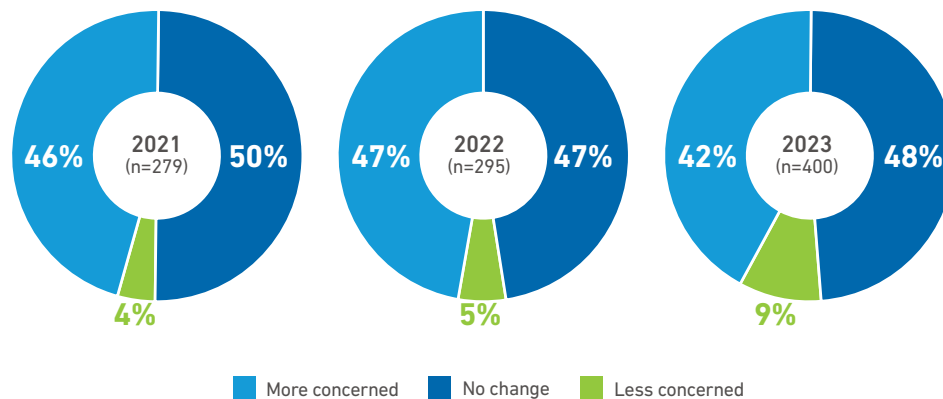
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Executives growing more worried about outages

More than 40% of respondents say senior managers are more concerned about outages than they were a year ago (**Figure 1**) — most likely because of rising costs, negative publicity and their impact on customers. This percentage has declined slightly since 2021 and 2022 and has coincided with a small drop in outage frequency in the past 12 months (according to Uptime Intelligence data sources).

Figure 1

How concerned is senior management about IT service outages compared with 12 months ago? Would you say senior management is more concerned or less concerned about IT service outages — or is their level of concern the same as it was 12 months ago?



(Responses for "Don't know" are not included.)

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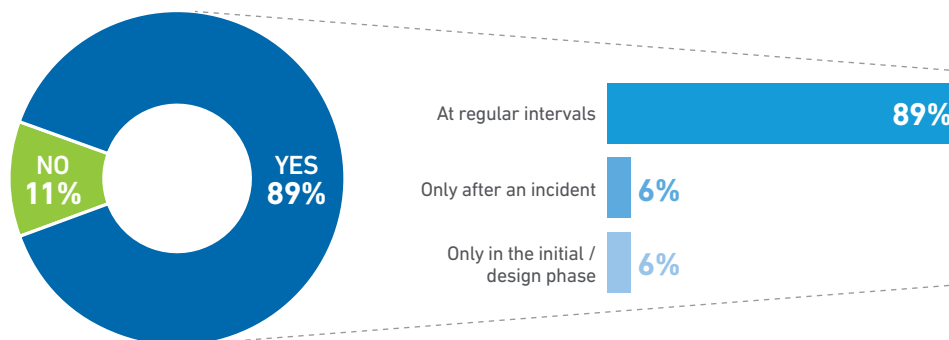
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Most organizations conduct their own risk assessments

Most organizations regularly conduct their own resiliency assessments (**Figure 2**), rather than using third parties. However, this is likely to change as regulatory requirements become more standardized and widespread. To ensure they meet these requirements, many operators will outsource resiliency testing to third-party services that specialize in regulatory compliance. This is especially true for operators subject to legislation that imposes heavy fines for noncompliance, such as the EU's Digital Operational Resilience Act (see *Financial resiliency: How Europe will regulate third-party IT*). In some cases, third-party reviews of existing risk assessment procedures are obligatory.

Figure 2

Does your organization conduct its own risk assessments for its digital infrastructure? (n=207)
If so, when does your organization conduct its own risk assessments? (n=179)



(Responses for "Don't know" are not included.)

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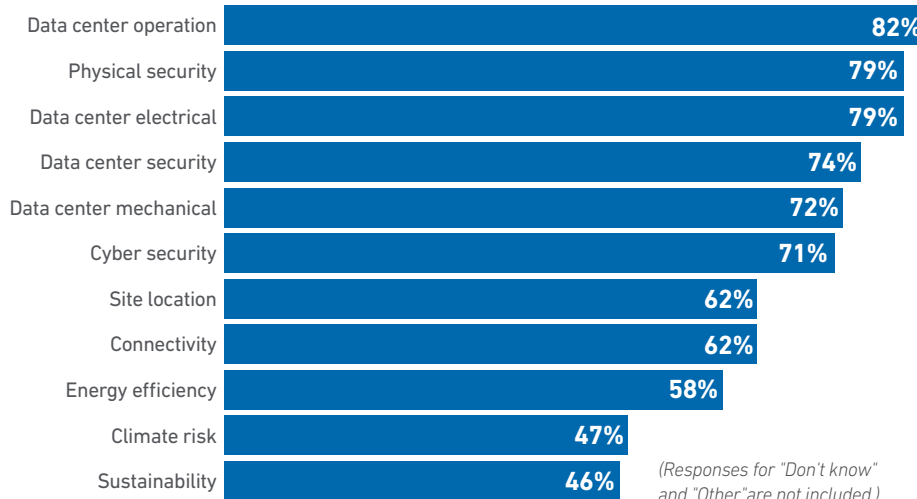
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Few include sustainability in resiliency assessments

Sustainability and climate risks, such as extreme weather events, are the least covered areas in resiliency assessments (**Figure 3**). However, many operators may review these risks elsewhere. The Uptime Intelligence Sustainability and Climate Change Survey 2022 found that 70% of organizations conduct climate change and weather-related resiliency assessments — but these are often viewed as separate from other risks (see *Approaches to sustainability vary widely*). This distinction may change in the coming years as environmental threats affect operations more directly. For example, increasingly stressed water resources are influencing site selection and cooling strategies.

Figure 3

Which of these areas are covered by your risk assessments? Choose all that apply. (n=182)



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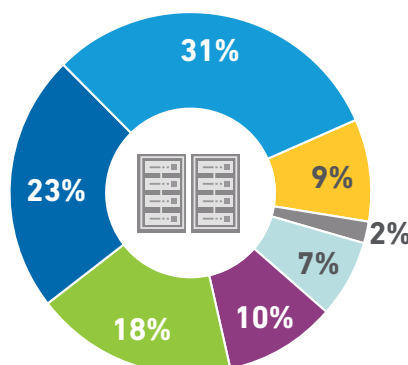
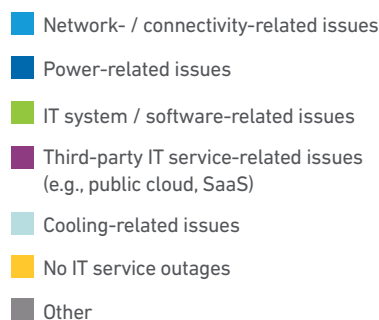
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Networking issues are the most common cause of outages

Although networking issues are the most common cause of outages in the past three years (**Figure 4**), these outages are typically less severe than those caused by power and IT systems failures (see *Annual outage analysis 2023*). This is likely driven by the dynamic complexity of modern software-defined networking systems, which enable constant reconfigurations for optimization. These cause frequent interconnectivity changes with a facility's wider infrastructure, which can create sequences of failures. This possibility is supported by configuration / change management failures being the top response category for major network-related outages by operators (n=174, 45%).

Figure 4

Which of the following issues has been the most common cause of an IT outage that may have affected your organization over the past three years? (n=406)



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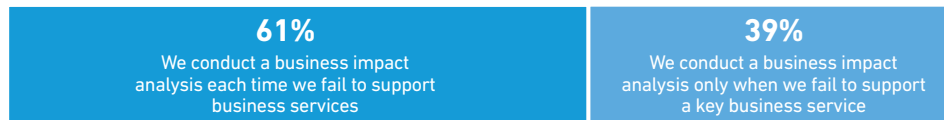
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Many only analyze business impacts for key service failures

Nearly 40% of organizations only conduct a full business impact analysis (BIA) for failures that affect key business services (**Figure 5**). Furthermore, 44% of respondents have not conducted a BIA for the loss of a data center. This means that many revenue losses and failures are underestimated or unaccounted for. Performing BIAs can be expensive and need to be adapted in response to operational changes, but they highlight which areas present the greatest financial threats. Once identified, these data will likely spark more investment in reducing risks and recovery times for critical operations.

Figure 5

If and when your digital infrastructure fails to support specific services, does your organization conduct a business impact analysis (BIA) to forecast revenue losses? (n=90)



Have you ever conducted a BIA for the loss of a data center? (n=131)



(Responses for "Don't know" and "Other" are not included.)

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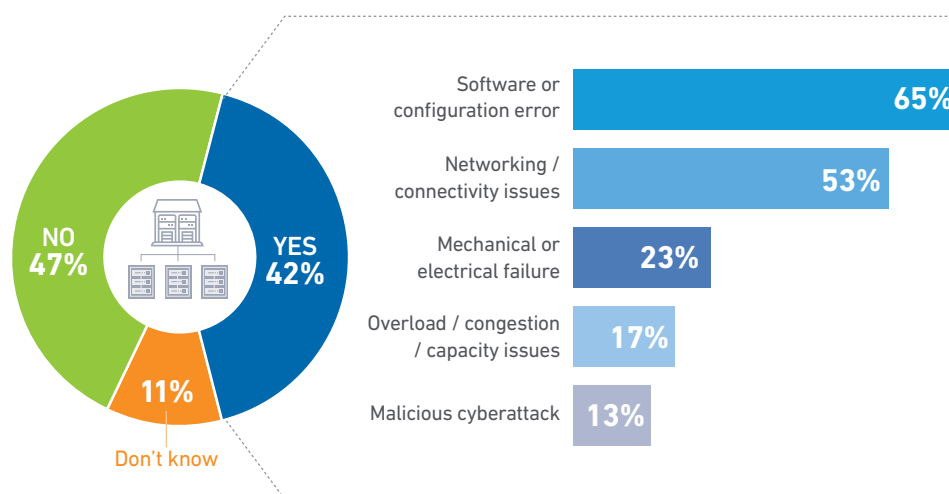
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Third-party partner outages are a growing worry for operators

Third-party issues created major outages for 42% of respondents in the past three years, with software or configuration errors being the most common cause (**Figure 6**). This represents a marginal uptick from the Uptime Institute Resiliency Survey 2022 (39%, n=134) — but does not necessarily indicate that outages are becoming more common. Instead, it is more likely to be a function of the rapid growth of public cloud use in recent years, in which a single outage affects more users.

Figure 6

Has your organization experienced a major outage(s) caused by a problem with a third-party IT provider over the past three years (n=186)? If so, what are their most common causes? Choose no more than three (n=78)



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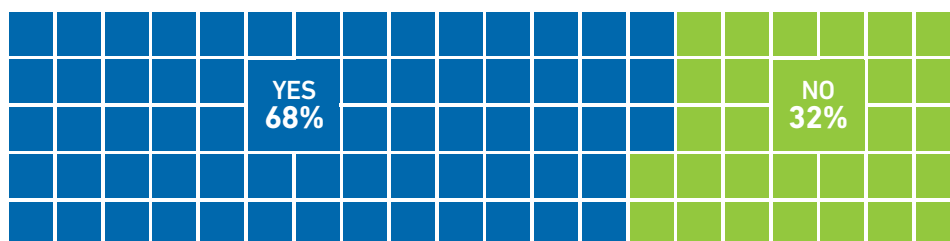
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Cloud concentration risk attracts scrutiny and raises concerns

Most respondents say concentration risk is a major issue for public cloud providers (**Figure 7**). This is likely because nearly two-thirds of the public cloud market globally is controlled by only three companies (Amazon, Microsoft and Google) and a single disruption can affect multiple industries. This liability has generated greater scrutiny from governments — particularly because of the growing reliance on cloud services by critical infrastructure entities. As a result, cloud providers need to manage an expanding portfolio of risks and regulatory requirements.

Figure 7

The term "concentration risk" often refers to the risk of institutions depending on only one cloud provider rather than multiple providers for key services. Do you consider concentration risk to be a major issue for public cloud vendors (e.g., AWS, Microsoft Azure, Google Cloud)? (n=163)



(Responses for "Don't know" are not included.)

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More organizations are insuring against outages

Alongside efforts to increase resiliency, nearly half (48%) of organizations also insure against IT or data center failures — a nine percentage point increase compared with 2022 (**Table 1**). This uptick is partially explained by the industry adjusting to new risks from technology and market changes. Examples of this include greater lithium-ion battery adoption, leading to more fire risks from thermal runaway, and skilled staff shortages driving higher likelihoods of human error. Operators know that threats will always be present, and consequently, many opt for extra coverage — especially if their service level agreements expose them to greater liability.

Table 1

Some companies insure against losses caused by IT or data center failures. Does your organization do this? Choose all that apply.

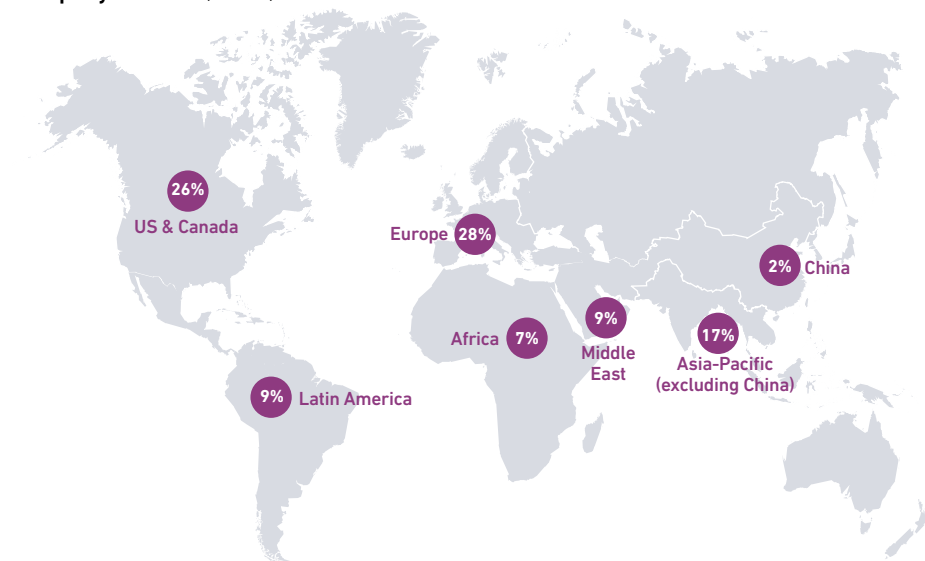
	2022 (n=548)	2023 (n=644)	Change score
Yes, for cyber-security failures and denial of service	21%	26%	5%
Yes, for outages by cloud providers	10%	13%	3%
Yes, for other incidents	8%	9%	1%
No, but we are considering this	22%	19%	-3%
No	50%	45%	-5%

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Uptime Institute Data Center Resiliency Survey 2023: end-user demographics

Company location (n=759)



Verticals (n=760)

Enterprise data center owner / operator



Data center design or engineering firm

Vendor / product supplier

Consultant / advisory firm

Colocation provider

Cloud / hosting provider

Other

Job function (n=679)

21%

Senior executive
(VP or C-level)

19%

Consultant

17%

Design engineer

14%

Critical facilities manager

10%

IT manager

4%

Critical facilities
operations staff

3%

IT operations staff

12%

Other

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All general queries

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About Uptime Institute

Uptime Institute is the Global Digital Infrastructure Authority. Its Tier Standard is the IT industry's most trusted and adopted global standard for the proper design, construction, and operation of data centers – the backbone of the digital economy. For over 25 years, the company has served as the standard for data center reliability, sustainability, and efficiency, providing customers assurance that their digital infrastructure can perform at a level that is consistent with their business needs across a wide array of operating conditions.

With its data center Tier Standard & Certifications, Management & Operations reviews, broad range of related risk and performance assessments, and accredited educational curriculum completed by over 10,000 data center professionals, Uptime Institute has helped thousands of companies, in over 100 countries to optimize critical IT assets while managing costs, resources, and efficiency.

Uptime Institute is headquartered in New York, NY, with offices in Seattle, London, Sao Paulo, Dubai, Singapore and Taipei.

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