2022

Cybersecurity
INSIDERS

CLOUD SECURITY REPORT

FORTINET®

INTRODUCTION

Organizations continue to shift workloads to the cloud at a rapid pace to achieve faster time to market, increased responsiveness, and cost reductions. With the majority of organizations expected to have more than half their workloads in the cloud within the next 12-18 months, it is no surprise that cloud security continues to remain a top concern.

This 2022 Cloud Security Report, based on a comprehensive global survey of cybersecurity professionals, reveals these security challenges and offers fresh insights on the state of the cloud and cloud security today. The study reviews organizations' choices and responses as they try to gain more confidence in securing their cloud environments.

The following survey results highlight the insights uncovered in this report:

- Most organizations continue to pursue a hybrid (39%, up from 36% last year) or multi-cloud strategy (33%) to integrate multiple services, for scalability, or for business continuity reasons. Seventy-six percent are utilizing two or more cloud providers.
- Organizations continue to shift workloads to the cloud at a rapid pace. Today, 39% of respondents have more than half of their workloads in the cloud, while 58% plan to get to this level in the next 12-18 months.
- Cloud users confirm that the cloud is delivering on the promise of flexible capacity and scalability (53%), increased agility (50%), and improved availability and business continuity (45%).
- Security professionals highlight lack of visibility (49%), high cost (43%), lack of control (42%), and lack of security (22%) as the biggest unforeseen factors to slow or stop cloud adoption.
- Cloud security continues to be a significant concern for cybersecurity professionals. With an increase of two percentage points from last year, 95% of organizations are moderately to extremely concerned about their security posture in a public cloud environment.
- Over three-quarters (78%) of respondents consider it very to extremely helpful to have a single cloud security platform with a single dashboard to protect data consistently and comprehensively across their cloud footprint.

We would like to thank Fortinet for supporting this important industry research project. We hope you'll find this report informative and helpful as you continue your efforts in securing your organization's cloud journey against evolving threats.

Thank you,

Holger Schulze

Holger Schulze
CEO and Founder
Cybersecurity Insiders

Cybersecurity
INSIDERS

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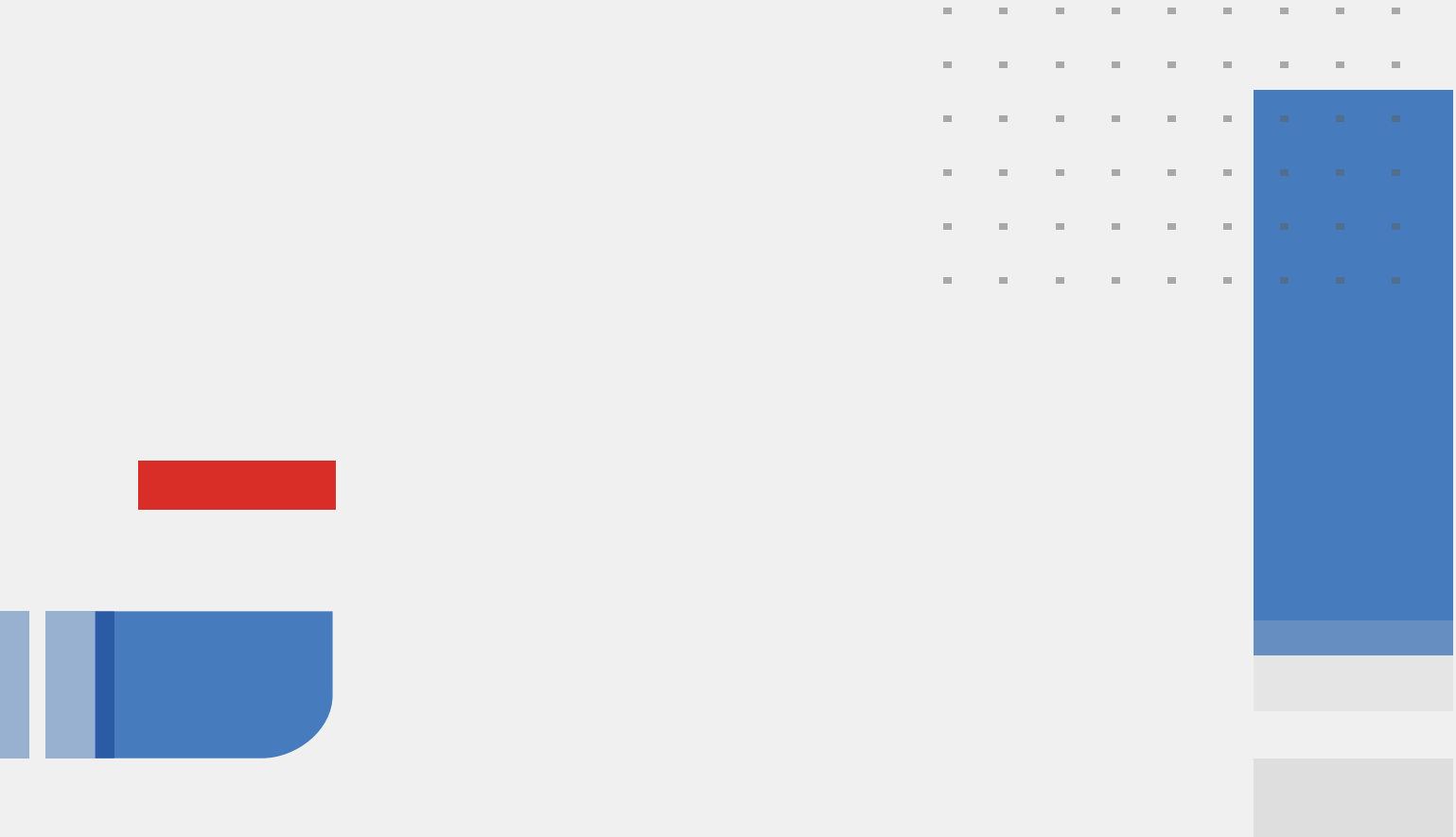
Current State of Cloud Adoption

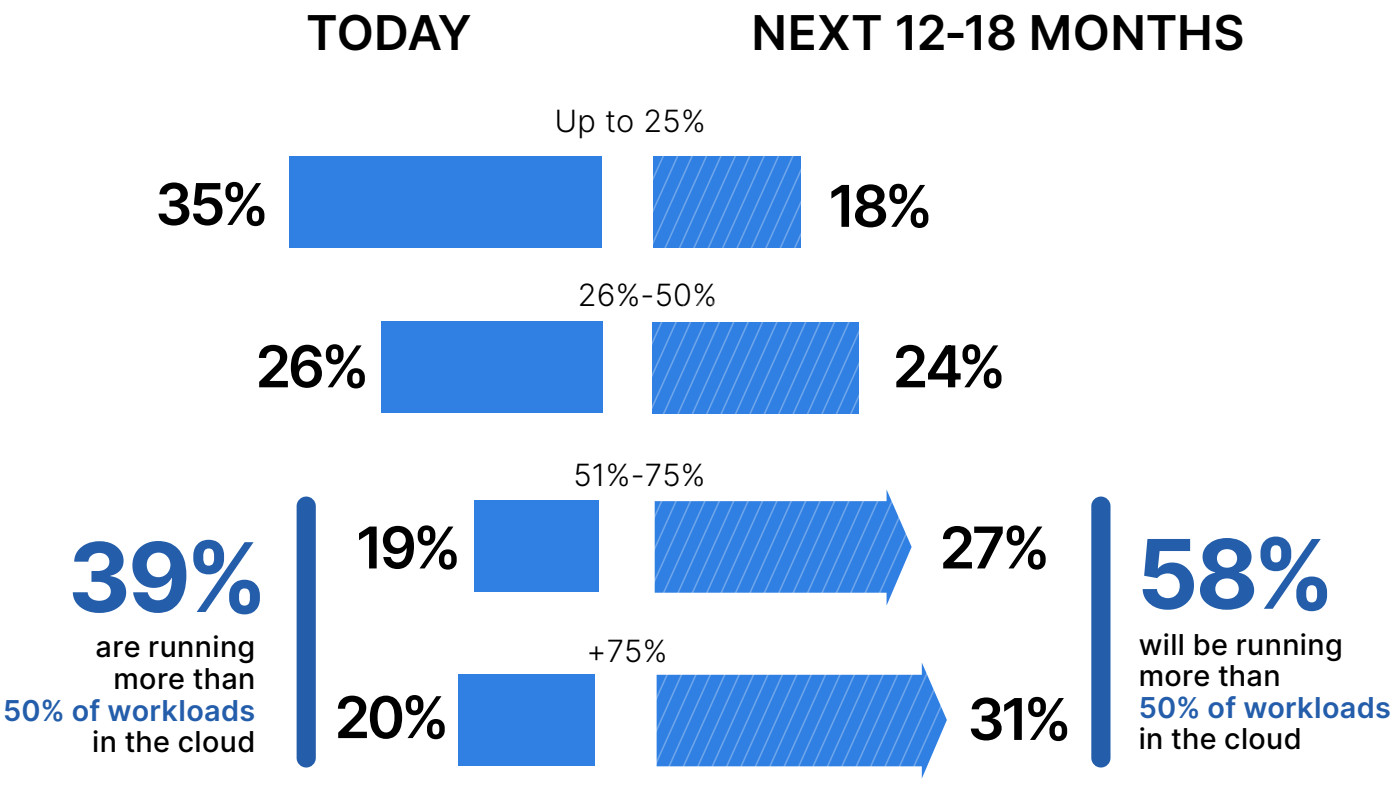


WORKLOADS IN THE CLOUD

Organizations continue to shift workloads to the cloud at a rapid pace. Today, 39% of respondents have more than half of their workloads in the cloud, while 58% plan to get to this level in the next 12-18 months.

What percentage of your workloads are in the cloud today?

What percentage of your workloads will be in the cloud in the next 12-18 months?



Share of workloads in the cloud

CLOUD SERVICES DEPLOYED

We asked cybersecurity professionals what services and workloads their organizations are most frequently deploying in the cloud. Security services top the list (58%), followed by compute (56%), storage (55%), and virtualization (53%).

What services and workloads is your organization deploying in the cloud?

58%

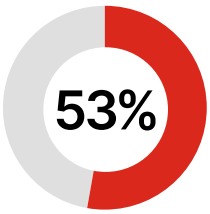
Security
(identity management, access control, data protection, etc.)

56%

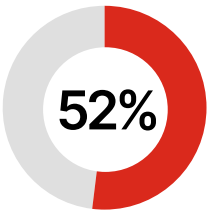
Compute
(servers, containers, etc.)

55%

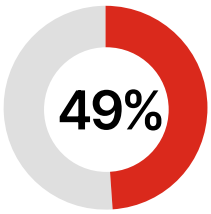
Storage
(object storage, archive, backup, etc.)



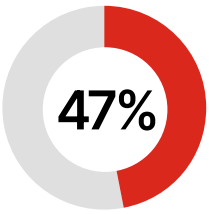
Virtualization



Business applications (CRM, marketing automation, ERP, BI, project management, etc.)



Database (relational, NoSQL, caching, etc.)



Productivity applications (email, collaboration, instant messaging, etc.)

Developer/testing applications 43% | IT operations applications (administration, backup, provisioning, monitoring, etc.) 42% | Networking & content delivery (virtual private cloud, DNS, etc.) 42% | Operating system 37% | Middleware 27% | Desktop and application streaming 24% | Runtime 16% | Don't know/other 6%

CLOUD DEPLOYMENT STRATEGIES

Most organizations continue to pursue a hybrid (39%, up from 36% last year) or multi-cloud strategy (33%, down from 35% last year) for integration of multiple services, scalability, or business continuity reasons. Seventy-six percent are utilizing two or more cloud providers.

What is your primary cloud deployment strategy?

39%

Hybrid
(e.g., integration between private and public clouds)

33%

Multi-cloud
(e.g., multiple providers without integration)

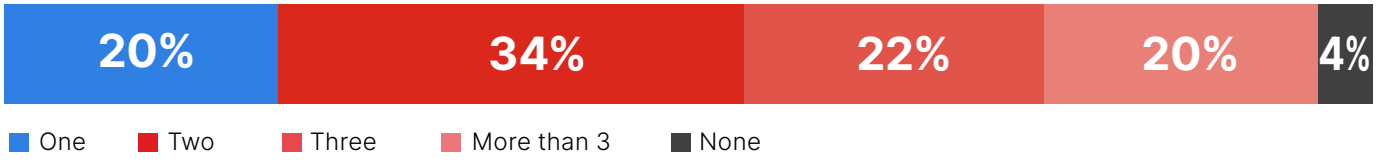
27%

Single cloud

Other 1%

How many cloud providers does your organization currently use?

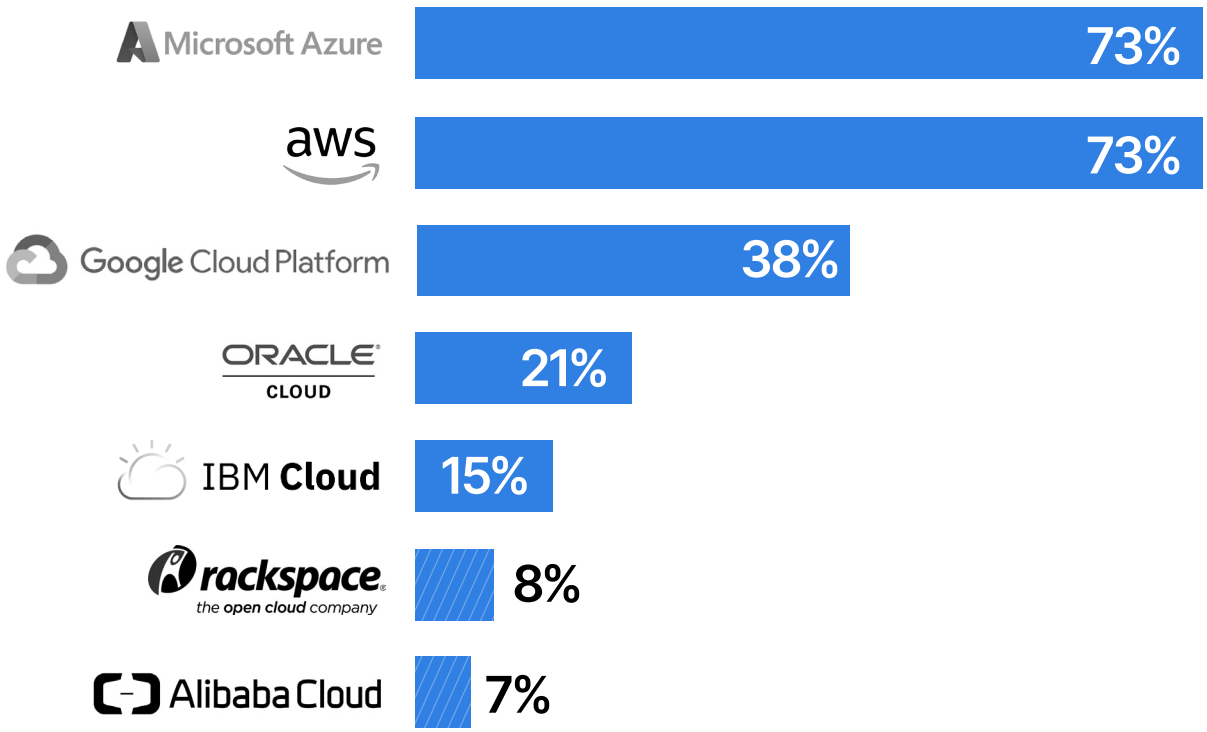
76% use two or more cloud providers



POPULAR CLOUD PROVIDERS

The most popular cloud providers, Microsoft Azure and Amazon Web Services (AWS), are tied (73%), as AWS has gained three percentage points since last year's survey. This is followed by Google Cloud Platform (38%). Year-over-year, Oracle Cloud use increased the most (from 15% to 21%).

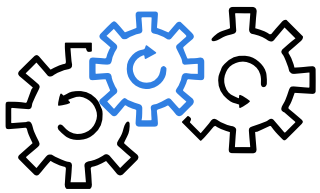
What cloud IaaS provider(s) do you currently use?

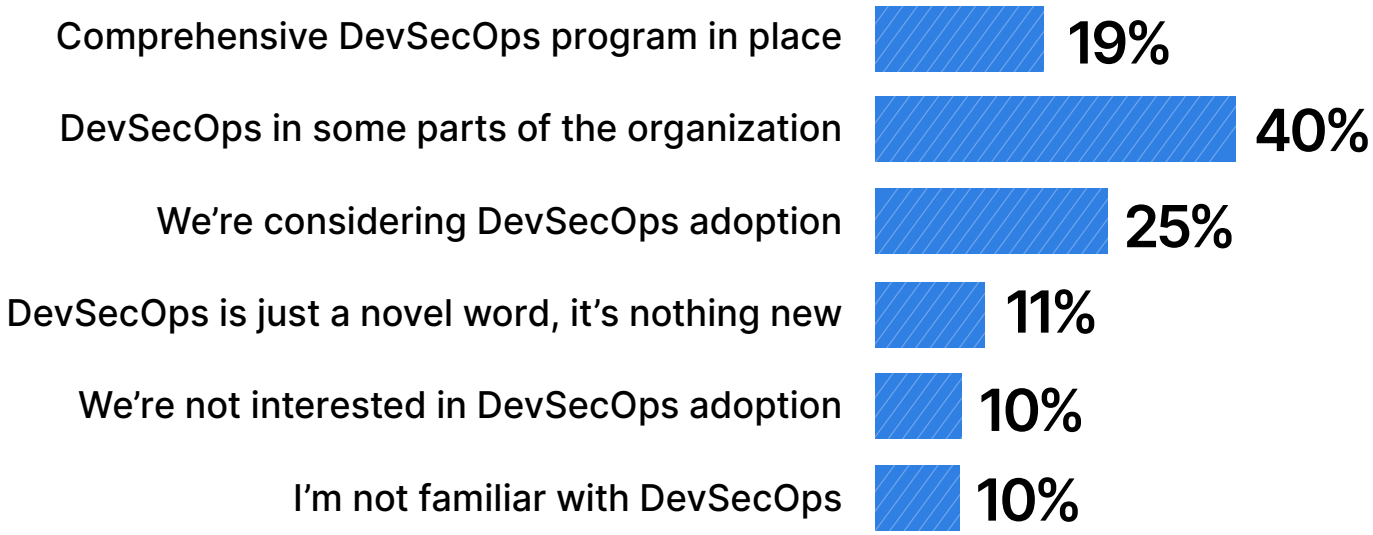


DEVSECOPS ADOPTION

DevSecOps helps ensure that security is addressed as part of DevOps practices by integrating security and compliance throughout the entire software development process. While only 19% of respondents already have comprehensive DevSecOps in place, 40% incorporate some aspects of DevSecOps within the organization.

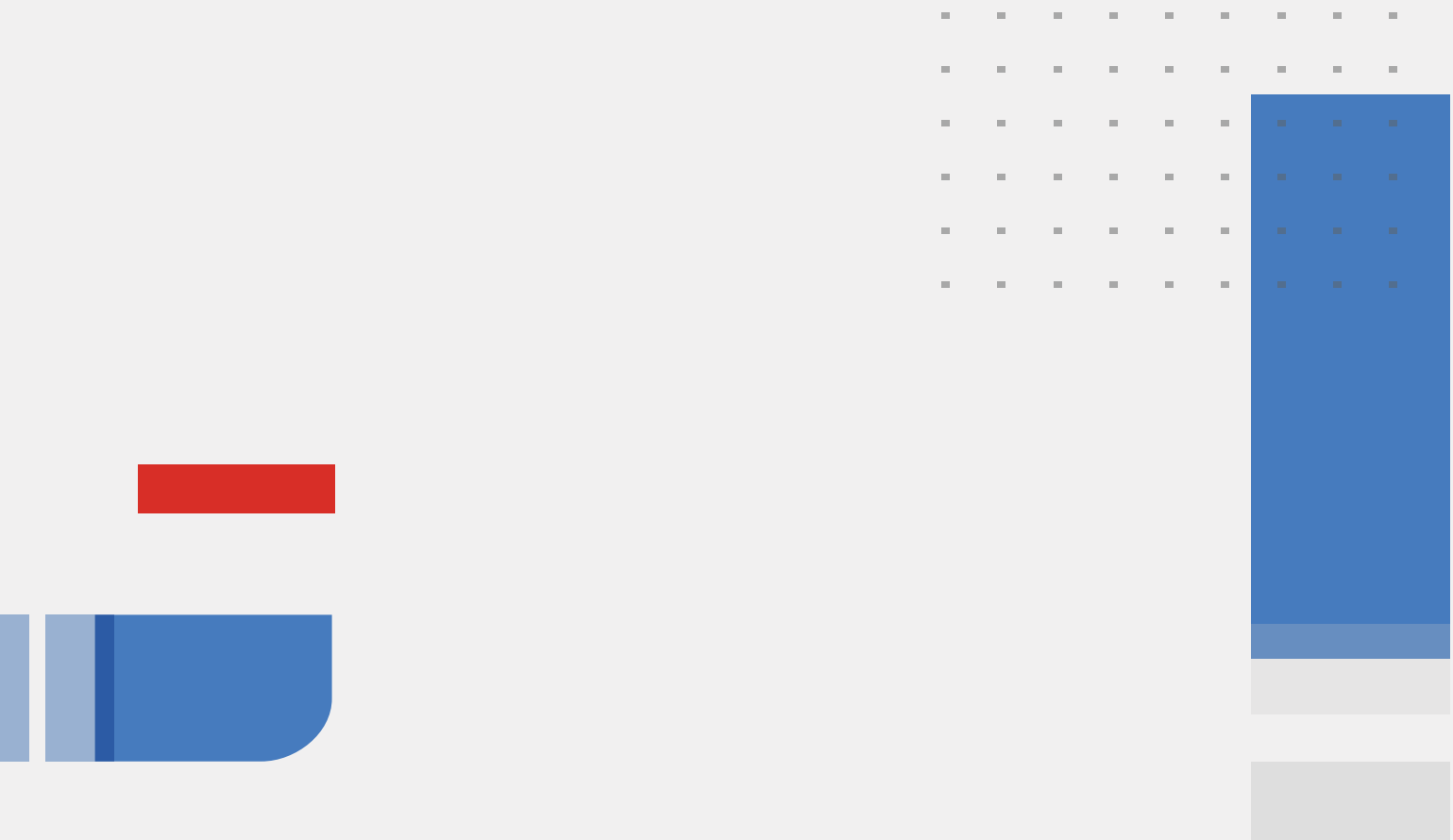
What is your organization's current position on DevSecOps?





Other 3%

Benefits of the Cloud: Best of Both Worlds



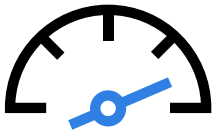
CLOUD DELIVERS BUSINESS RESULTS

The survey confirms that organizations are receiving the promised business outcomes of cloud computing: faster time to market (51%), increased responsiveness (50%), and cost reductions (39%).

What business outcomes have you realized by moving to the cloud?

51%

Accelerated time to market



50%

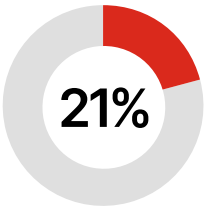
Increased responsiveness to customer needs

39%

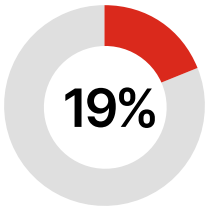
Reduced cost

37%

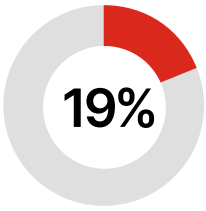
Reduced risk and improved security



Expanded market reach to new markets



Accelerated revenue growth in existing markets



Gained parity with competitors

Other 7%

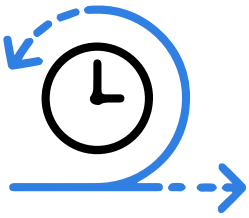
CLOUD BENEFITS

Does cloud computing deliver the expected benefits? Cloud users confirm that the cloud is delivering on the promise of flexible capacity and scalability (53%), increased agility (50%), and improved availability and business continuity (45%).

What overall benefits have you already realized from your cloud deployment?

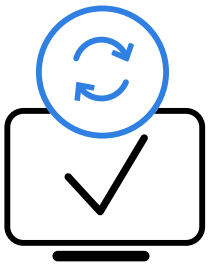
53%

More flexible capacity/scalability



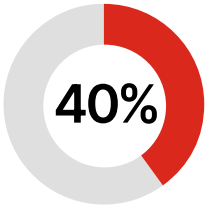
50%

Increased agility

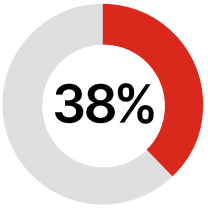


45%

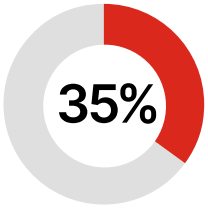
Improved availability and business continuity



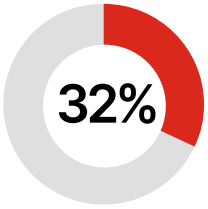
Moved expenses from fixed CAPEX (purchase) to variable OPEX (rental/subscription)



Improved performance



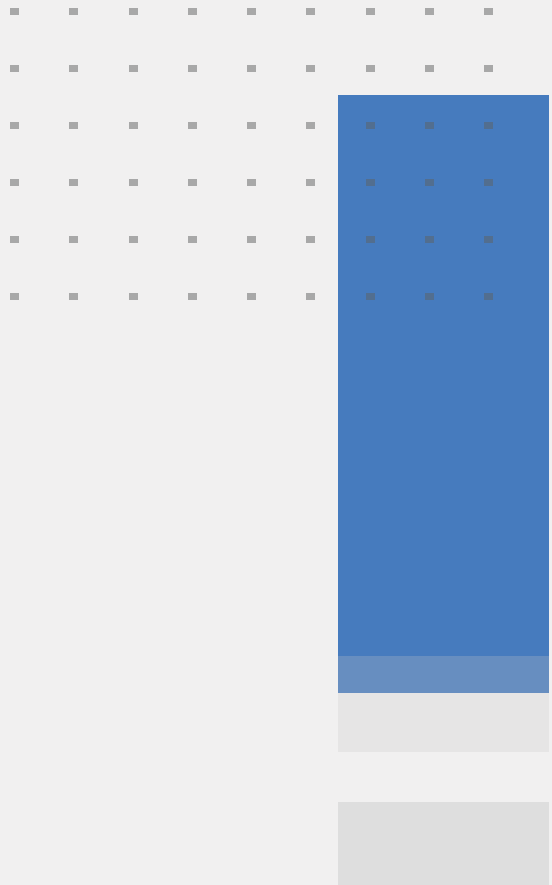
Reduced cost



Accelerated time to market

Improved security 27% | Increased geographic reach 27% | Increased employee productivity 22% | Improved regulatory compliance 21% | Reduced complexity 19% | Not sure/other 12%

Barriers to Adoption



BARRIERS TO CLOUD ADOPTION

Cloud-based solutions offer significant advantages, yet barriers to cloud adoption still exist. The survey reveals that the biggest challenges organizations are facing are not primarily about technology, but people and processes. Lack of qualified staff (40%, up from 37% last year) is the biggest impediment to faster adoption, followed by legal and regulatory compliance (33%), and data security issues (31%).

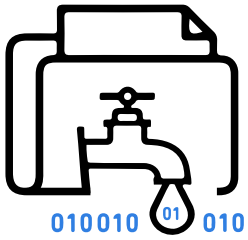
What are the biggest barriers holding back cloud adoption in your organization?

40%

Lack of staff resources or expertise

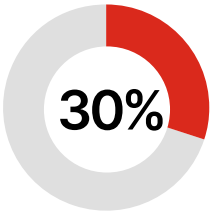
33%

Legal and regulatory compliance

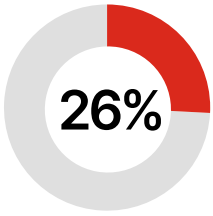


31%

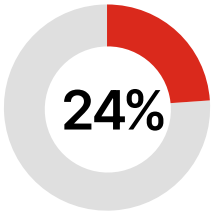
Data security, loss and leakage risks



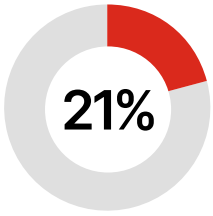
Integration with existing IT environment



Fear of vendor lock-in



General security risks



Loss of control

Internal resistance and inertia 20% | Cost/lack of ROI 18% | Lack of budget 18% | Complexity managing cloud deployment 18% | Lack of transparency and visibility 16% | Lack of maturity of cloud service models 15% | Billing & tracking issues 11% | Lack of management buy-in 11% | Dissatisfaction with cloud service offerings/performance/pricing 10% | Lack of support by cloud provider 9% | Performance of apps in the cloud 9% | Lack of customizability 7% | Availability 6% | Other 6%

CLOUD DEPLOYMENT SURPRISES

When we asked what surprises security professionals uncovered that hinder cloud adoption, we discovered lack of visibility (49%), high cost (43%), lack of control (42%), and lack of security (22%) are the biggest unforeseen factors that slow or stop cloud adoption.

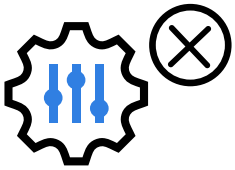
What surprises did you uncover that may slow/stop cloud adoption?

49%

Lack of visibility

43%

High cost



42%

Not enough control

22%

Not secure

Other 13%

Security Concerns in the Cloud

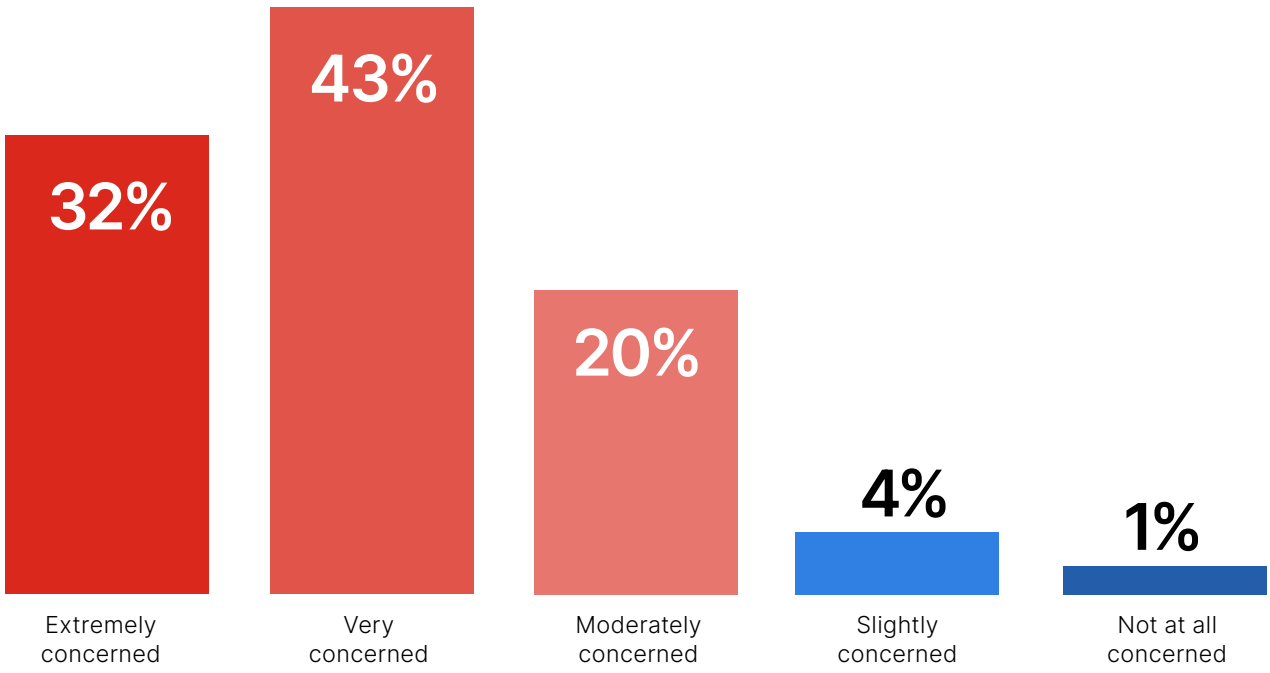
PUBLIC CLOUD SECURITY CONCERNS

Cloud security continues to be a significant concern for cybersecurity professionals. With an increase of two percentage points from last year, 95% of organizations are moderately to extremely concerned about their security posture in a public cloud environment.

How concerned are you about the security of public clouds?

95%

of organizations are moderately to extremely concerned about cloud security



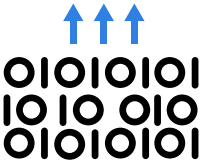
BIGGEST SECURITY THREATS

We asked cybersecurity professionals about the cloud security threats that most concern them. The misconfiguration of the cloud platform remains the biggest cloud security risk, according to 62% of cybersecurity professionals in our survey. This is followed by insecure interfaces/APIs (52%, up from 49% last year), exfiltration of sensitive data (51%), and unauthorized access (50%).

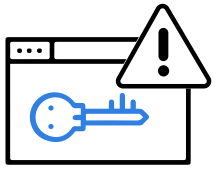
What do you see as the biggest security threats in public clouds?

62% Misconfiguration of the cloud platform/wrong setup

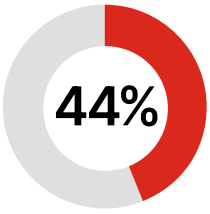
52% Insecure interfaces/APIs



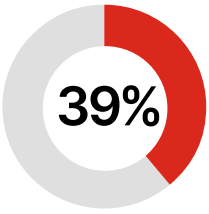
51% Exfiltration of sensitive data



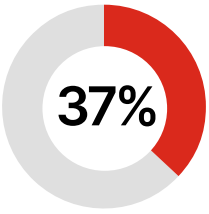
50% Unauthorized access



Hijacking of accounts, services, or traffic



External sharing of data



Foreign state-sponsored cyber attacks

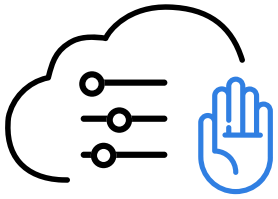
Malware/ransomware 36% | Malicious insiders 34% | Denial of service attacks 33% | Cloud cryptojacking 20% | Theft of service 18% | Lost mobile devices 10% | Don't know/other 8%

Key Priorities for Cloud Security

CLOUD SECURITY PRIORITIES

When asked about their security priorities for the current year, organizations highlighted preventing cloud misconfigurations (20%), reaching regulatory compliance (19%), securing cloud apps (16%), and defending against malware (15%).

What are your cloud security priorities for your company this year?



20%

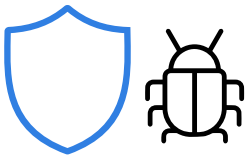
Preventing cloud misconfigurations

19%

Reaching regulatory compliance

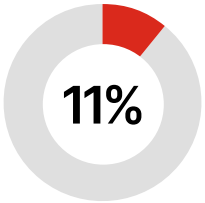
16%

Securing major cloud apps already in use

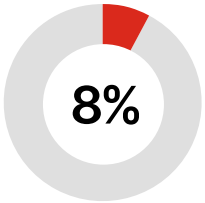


15%

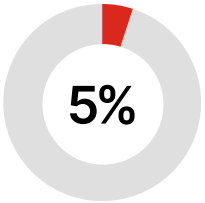
Defending against malware



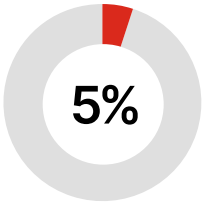
Cloud security training



Securing mobile devices



Discovering unsanctioned cloud apps in use

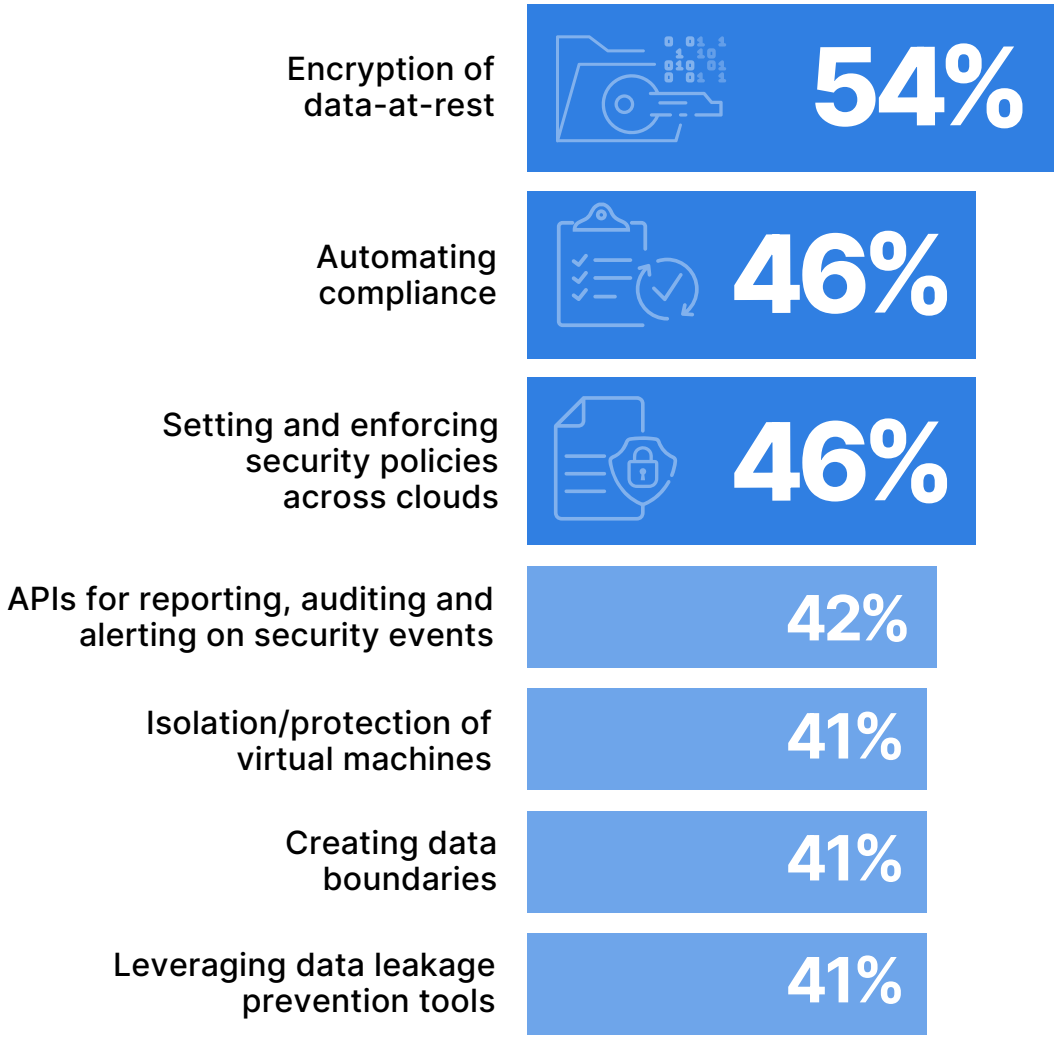


Securing BYOD (bring your own device)

IMPROVING SECURITY CONTROLS

Security professionals are looking for ways to improve the security of public clouds. When asked which controls would increase their confidence in adopting cloud services, three controls top the list: encryption of data-at-rest (54%), automating compliance (46%), and setting and enforcing security policies (46%).

Which of the following security controls would most increase your confidence in adopting public clouds?

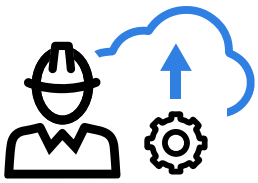


Leveraging threat prevention tools 34% | Limiting unmanaged device access 32% | Protecting workloads 31% | Proxying traffic for real-time security at access 23% | Other 3%

MULTI-CLOUD SECURITY CHALLENGES

Multi-cloud environments continue to add complexity and security challenges. Lack of security skills becomes the top challenge (61%, up from 57% last year), followed by data protection (53%), understanding how different solutions fit together (51%), and loss of visibility and control (47%).

What are your biggest challenges securing multi-cloud environments?

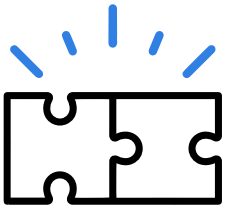


61%

Having the right skills to deploy and manage a complete solution across all cloud environments

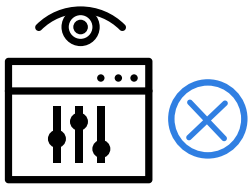
53%

Ensuring data protection and privacy for each environment



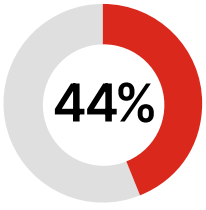
51%

Understanding how different solutions fit together

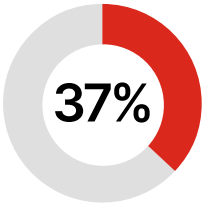


47%

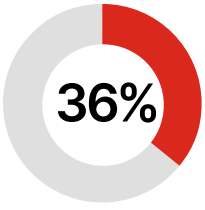
Loss of visibility and control



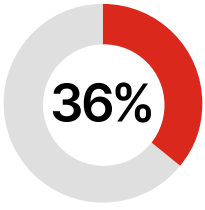
Understanding service integration options



Keeping up with the rate of change



Selecting the right set of services



Managing the costs of different solutions

Providing seamless access to users based on their credentials 34% | Other 3%

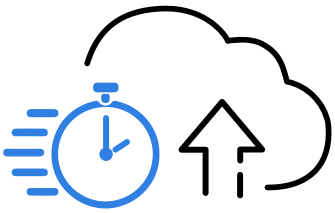
KEY FACTORS FOR CLOUD-BASED SECURITY

Organizations prioritize several critical drivers for considering cloud-based security solutions over legacy platforms. The biggest drivers are better scalability (55%) and faster time to deployment (50%), followed by cost savings (43%) and better visibility into user activity and system behavior (40%).

What are the main drivers for considering cloud-based security solutions?

55%

Better scalability

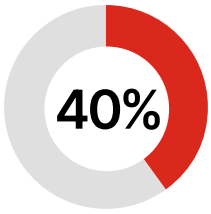


50%

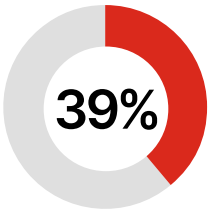
Faster time to deployment

43%

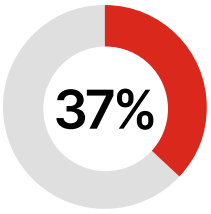
Cost savings



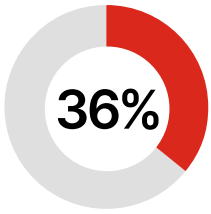
Better visibility into user activity and system behavior



Reduced effort around patches and upgrades of software



Meet cloud compliance expectations



Easier policy management

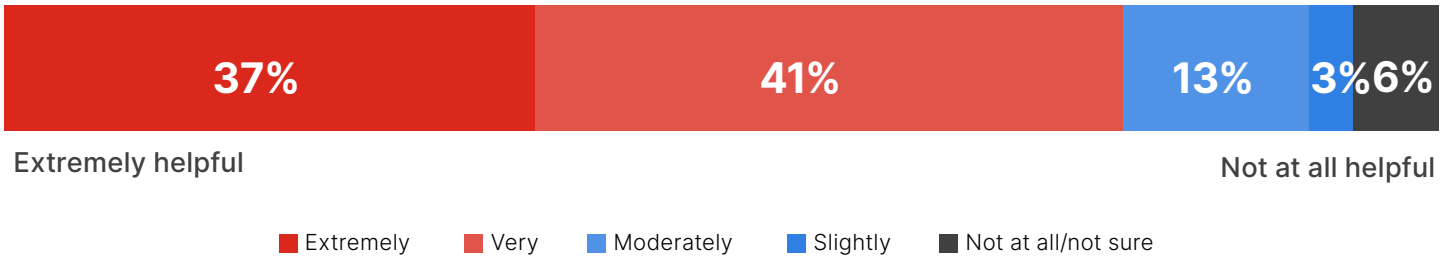
Need for secure app access from any location 35% | Better uptime 34% | Better performance 32% | Our data/workloads reside in the cloud (or are moving to the cloud) 31% | Reduction of appliance footprint in branch offices 29% | Other 3%

SINGLE CLOUD SECURITY PLATFORM

It's no surprise that over three-quarters (78%) of respondents consider it very to extremely helpful to have a single cloud security platform to protect data consistently and comprehensively across their cloud footprint.

How helpful would it be to have a single cloud security platform with a single dashboard where you could configure all of the policies needed to protect data consistently and comprehensively across your cloud footprint?

78% of professionals consider the use of a single cloud security platform with a single dashboard to be very to extremely helpful

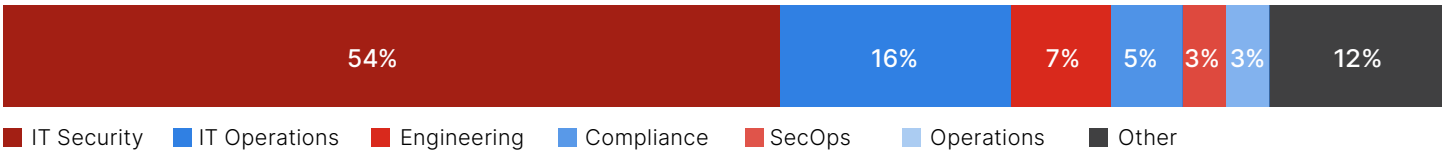


METHODOLOGY & DEMOGRAPHICS

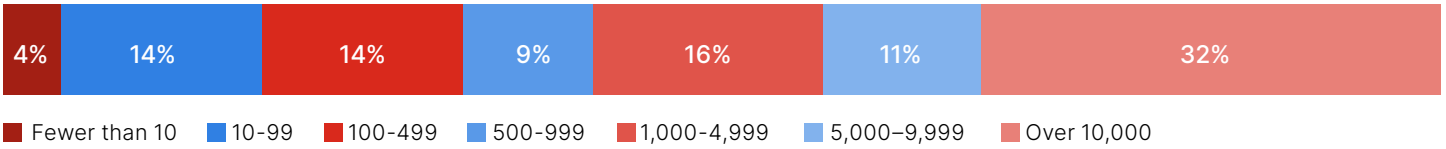
The 2022 Cloud Security Report is based on a comprehensive global survey of 823 cybersecurity professionals conducted in March 2022 to uncover how cloud user organizations are responding to security threats in the cloud, and what training, certifications, and best practices IT cybersecurity leaders are prioritizing in their move to cloud. The respondents range from technical executives to IT security practitioners, representing a balanced cross-section of organizations of varying sizes across multiple industries.

CAREER LEVEL

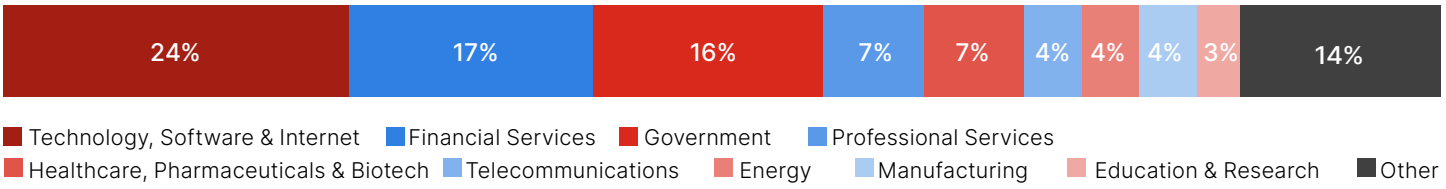
DEPARTMENT



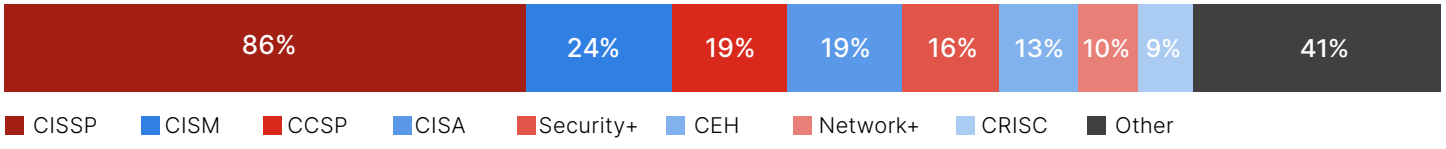
COMPANY SIZE



INDUSTRY



SECURITY CERTIFICATIONS HELD



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