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ITTRENDSREPORT

Portrait of a Hybrid IT Organisation

UK Public Sector | 2017

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Introduction

Cloud computing's mounting importance and the shift to hybrid IT—migrating some infrastructure services to the cloud, while continuing to maintain some critical services onsite—are evolving norms.

The cloud and hybrid IT are a reality for the majority of organisations today, unlike just a few years ago when they were limited to early adopters. Today, we are in a new era of work—one that is more global, interconnected, and flexible than ever—and organisations of all sizes are implementing cloud computing to better meet the demands of a modernised workforce. At the same time, the benefits of the cloud and hybrid IT introduce greater complexity and technology abstraction, and IT professionals are tasked with devising new and creative methods to monitor and manage this infrastructure in order to deliver the Quality of Service (QoS) end-users expect. All of this means hybrid IT can look drastically different from one organisation to another; however, there are overarching trends worth exploring that paint a portrait of a modern hybrid IT organisation.

This report explores the variety of ways in which hybrid IT is being integrated and delivered in public sector organizations in the United Kingdom, including benefits realised, key considerations of migration and ongoing migration challenges, and the opportunity created by a new ecosystem where successful IT professionals are required to manage infrastructure from their premises to the cloud.

The findings are based on a survey fielded in December 2016 by C White Consulting on behalf of SolarWinds among IT practitioners, managers, and directors at public sector small, mid-size, and enterprise companies in the United Kingdom whose organisations are leveraging cloud-based services for at least some IT infrastructure. All regions studied in 2017, as reported on the SolarWinds IT Trends Index, were North America, Australia, Brazil, Germany, Hong Kong, Singapore, and the United Kingdom, with 868 respondents across all geographies combined.

Key Findings

Today's hybrid IT organisations are:

MOVING APPLICATIONS, STORAGE, AND DATABASES FURTHER INTO THE CLOUD.

- IT professionals surveyed reported that in the past 12 months, their organisations have migrated applications (71%), storage (58%), and databases (41%) to the cloud more than any other area of IT.

- By weighted rank, the top three reasons for prioritising these areas of their IT environments for migration were greatest potential for return on investment (ROI)/cost efficiency, availability, and simplest migration process, respectively.

    - This aligns with the results of analyst firm Gartner's recent cloud adoption survey, in which it reported organisations are saving 14% of their budgets as an outcome of public cloud adoption.

EXPERIENCING THE COST EFFICIENCIES OF THE CLOUD.

- 95% of survey respondents said their organisations have migrated critical applications and IT infrastructure to the cloud over the past year, yet nearly three-fourths (71%) spend less than 40% of their annual IT budgets on cloud technology.

- Over three-fifths (68%) report their organisations have received either most or all expected benefits (such as cost efficiency, availability, or scalability) from cloud technologies.

- Nearly two-fifths (39%) said their organisations spend 70% or more of their annual IT budgets on on-premises (traditional) applications and infrastructure.

    - In 2015, analyst firm IDC predicted that by 2018, at least half of all IT spending would be cloud-based, reaching nearly 60% of all IT infrastructure. The findings of the IT Trends Report 2017 potentially highlight a small lag in the cloud-based spending increase expected.

- However, survey results also demonstrate that cost efficiency is at times not enough to justify migration to the cloud: 30% have migrated applications and infrastructure to the cloud that were ultimately brought back on-premises:

  - The top two areas migrated and eventually brought back on-premises are storage (15%) and applications (12%).

  - The top reason given for bringing applications and infrastructure back on-premises was security and compliance (32%), followed by not enough visibility into cloud services to ensure needs/SLAs are being met (21%) and technical challenges with migration (21%).

BUILDING AND EXPANDING CLOUD ROLES AND SKILLSETS FOR IT PROFESSIONALS.

- Over two-fifths (43%) of IT professionals surveyed indicated that the existence of the cloud and hybrid IT have had at least somewhat of an impact on their careers (requiring them to acquire new skills, but not altering their career path), while 13% say the cloud and hybrid IT have had a tremendous impact on their careers (altering their career path).

- Nearly half (46%) reported their organisations have either hired/reassigned, or plan to hire/reassign in the foreseeable future, IT personnel for the specific purpose of managing cloud/cloud-related technologies.

- The top cloud-related skill IT professionals improved over the past 12 months was application migration, with over one-third (35%) of IT professionals focusing on it, followed by automation skills (30%) and vendor management skills (27%).

- 48% said an IT staff skills gap was one of the five biggest challenges of the cloud and hybrid IT, while 43% said increased workload/responsibilities was one of the five biggest challenges.

- Nearly half (45%) do not believe that IT professionals entering the workforce now possess the skills necessary to manage hybrid IT environments.

SOLARWINDS IT TRENDS REPORT 2017: PORTRAIT OF A HYBRID IT ORGANISATION

**INCREASING IN COMPLEXITY AND LACKING VISIBILITY ACROSS THE
ENTIRE HYBRID IT INFRASTRUCTURE.**

- Seven out of 10 IT professionals (71%) said their organisations currently use up to three cloud provider environments, with the largest percentage using two to three; however, 5% use 10 or more.

  - IDC recently forecast that more than 85% of enterprise IT organisations will commit to multi-cloud architectures by 2018. The results of the IT Trends Report 2017 potentially confirm this prediction.

- The largest percentage of organisations (42%) report hosting between 1-9% of their infrastructure entirely in the cloud, while 0% of respondents say all of their infrastructure is hosted in the cloud.

- 12% said none of their infrastructure is hosted entirely in the cloud.

- By weighted rank, the number one challenge created by hybrid IT is lack of control/visibility into the performance of cloud-based applications and infrastructure, followed by IT staff skills gap.

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Recommendations

As illustrated in the study's key findings, IT professionals need to arm themselves with a new set of skills, products, and resources to succeed as the hybrid IT era continues to evolve. They should consider the following recommendations:

ENSURE CENTRAL VISIBILITY ACROSS ON-PREMISES AND CLOUD ENVIRONMENTS.
Workloads are becoming increasingly distributed not only between on-premises and cloud, but between cloud service providers themselves. In the face of enterprise technology's exponential rate of change, a management and monitoring toolset that surfaces a single point of truth across those platforms is essential. The ability to consolidate and correlate data to deliver more breadth, depth, and visibility across the data center will allow IT professionals to more proactively identify problem areas and reduce the mean time-to-resolution.

CONSIDER MORE THAN JUST COST EFFICIENCY.
Despite being the main impetus for cloud migration over the last several years, the findings of this year's report indicate that the cloud's ability to increase ROI is less important to today's IT professionals. Instead, as illustrated by IT professionals who eventually moved workloads back on-premises, security, compliance, and performance in the cloud are now top of mind. In today's on-demand environments, availability, durability, and an acceptable response time from the end-user perspective are expected no matter where an application service is hosted or from where it's delivered. As a result, IT professionals need to factor in the security and performance requirements of each application prior to migration to cloud services to ensure that QoS is still met.

CLOUD-PROOF YOUR JOB.
As traditional, siloed IT roles—network administrators, storage administrators, systems administrators, database administrators, etc.—continue to converge, IT professionals must focus on improving and cultivating fundamental skillsets that will carry them into the cloud. Over the past 12 months, IT professionals ranked hybrid monitoring/management tools and metrics, application migration, automation, and data analytics as the most important skills and knowledge needed to successfully manage hybrid IT environments. IT professionals should look to leverage their peer community to better understand and more quickly put into practice various technology adaptations and abstractions like software-defined constructs, containers, microservices, and serverless architecture. They should also establish monitoring as a foundational IT function, also known as monitoring as a discipline, to drive a more proactive, efficient, and effective IT management strategy.

FORECAST FUTURE MIGRATION, BUT REMAIN FLEXIBLE.

As illustrated by the results of this year's report, hybrid IT deployments take different shapes and forms from one organisation to another. Every organisation's environment is unique and the velocity, variety, and volume of new services are giving ample opportunity to realise innovation. It is incumbent on IT organisations to tailor their services to meet business needs through continuous integration and continuous delivery. To that end, IT professionals must be open to and agile in adopting the best-of-breed elements of cloud computing and hybrid IT. The best thing for any IT department to do in the year ahead is to build a roadmap for future proof-of-concepts and migration that will help illustrate ROI, or the lack thereof, for business management. This includes an understanding of how to get visibility of the entire stack with hybrid IT monitoring tools, building processes for migration and quality/reliability testing of applications, and learning economic and capacity planning models.

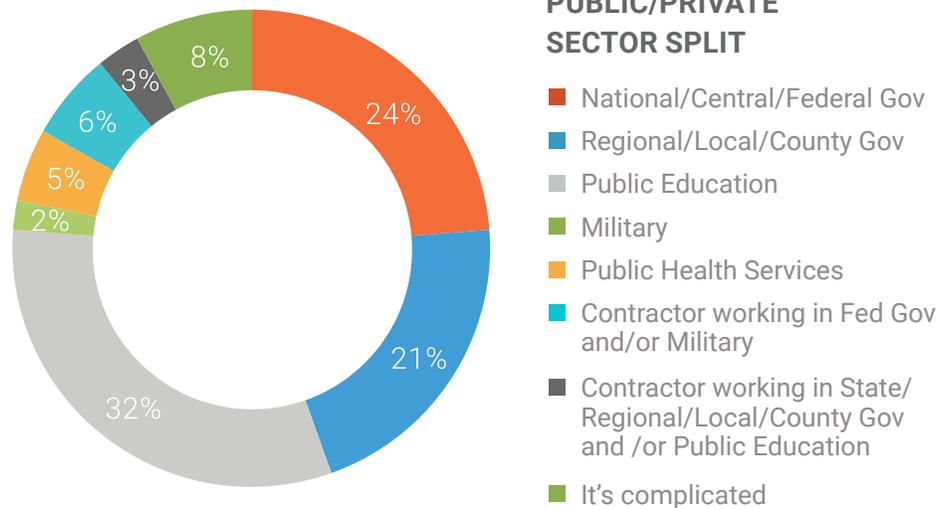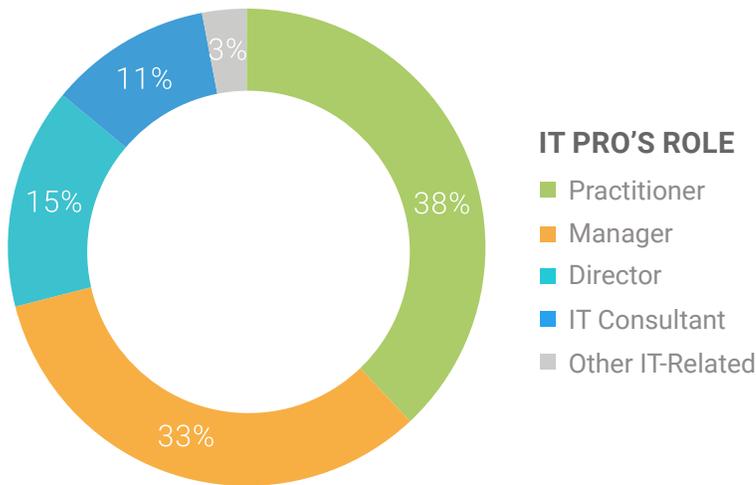**BUILD TRUST WITH CLOUD SERVICE PROVIDERS THROUGH IT COMPETENCY.**

"Trust but verify" should be the IT professional's mantra in the year ahead, as organisations work to identify how best to maintain an element of control and visibility into workloads and applications that are hosted in the cloud. It will be critical to leverage comprehensive hybrid IT monitoring, beyond what is typically offered by cloud service providers, to ensure they have enough data and visibility to truly understand how workloads are performing in the cloud and the reasons for that performance. Competent organisations architect multi-region or multiple cloud strategies to avoid catastrophic downtime in the cloud due to a single point of failure, regardless of a regional failure or a provider failure. Organisations need to implement distributed systems best practices by spreading across a variety of regions and managing a highly durable, distributed workload. Similar to traditional on-premises strategies, availability and durability are key trust tenets in hybrid IT.

Learn more about how SolarWinds can help IT professionals better monitor and manage their infrastructure from on-premises to the cloud here.

Demographics

UK PUBLIC SECTOR RESULTS

66 IT practitioners, managers, and directors in the United Kingdom from public-sector small, mid-size, and enterprise companies whose organisations are leveraging cloud-based services for at least some IT infrastructure (including applications) participated in a December 2016 online survey.

COMPANY SIZE

- 25-49 FTEs
- 50-99 FTEs
- 100-249 FTEs
- 250-499 FTEs
- 500-999 FTEs
- 1000-1499 FTEs
- 1500-4999 FTEs
- 5000+ FTEs

(Chart values: 5%, 14%, 8%, 6%, 9%, 29%, 30%)

IT PRO'S ROLE

- Practitioner
- Manager
- Director
- IT Consultant
- Other IT-Related

(Chart values: 38%, 33%, 15%, 11%, 3%)

PUBLIC/PRIVATE SECTOR SPLIT

- National/Central/Federal Gov
- Regional/Local/County Gov
- Public Education
- Military
- Public Health Services
- Contractor working in Fed Gov and/or Military
- Contractor working in State/Regional/Local/County Gov and /or Public Education
- It's complicated

(Chart values: 24%, 21%, 32%, 2%, 5%, 6%, 3%, 8%)

FULL SURVEY RESULTS

Inside Hybrid IT Orgs: Infrastructure Migration

Which area(s) of your organisation's IT infrastructure have been migrated (in part or in whole) to the cloud over the past 12 months?

Database(s)	41%
Application(s)	71%
Security (TaaS)	11%
Storage	58%
Other	3%
Nothing migrated in past 12 months	5%

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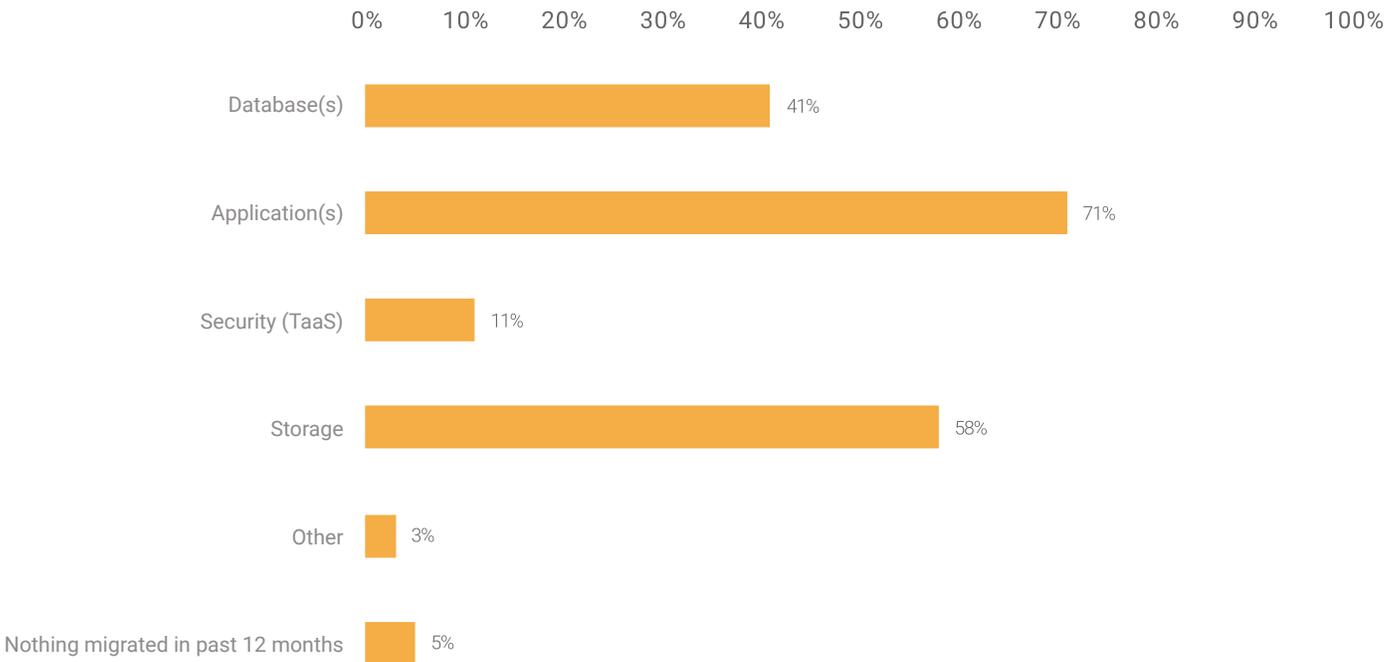
Inside Hybrid IT Orgs: On-Premises vs. Cloud Budgets

How much of your organisation's annual IT budget is spent on each of the following areas? (On-premises/traditional infrastructure or cloud/cloud-related technology)

ON-PREMISES/TRADITIONAL
INFRASTRUCTURE (OVERALL)
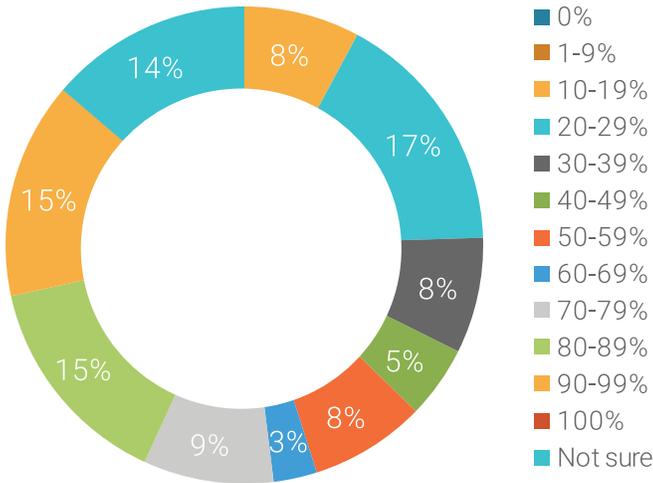
CLOUD/CLOUD-RELATED TECHNOLOGY
SPEND (OVERALL)

Legend (both charts):
- 0%
- 1-9%
- 10-19%
- 20-29%
- 30-39%
- 40-49%
- 50-59%
- 60-69%
- 70-79%
- 80-89%
- 90-99%
- 100%
- Not sure
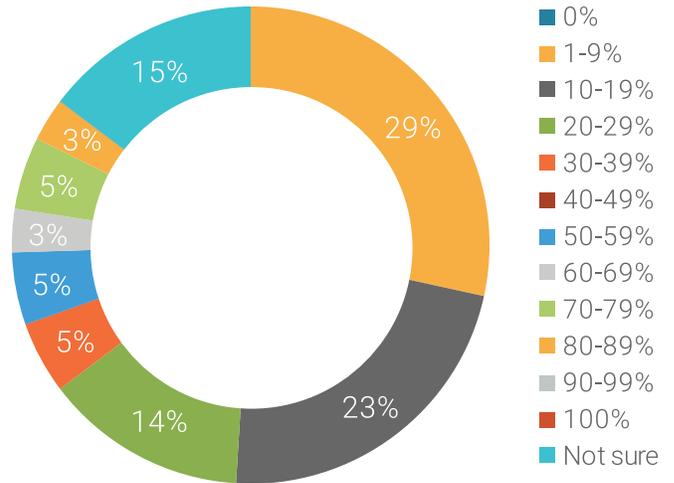
Inside Hybrid IT Orgs: Cloud Environments

How many cloud provider environments is your organisation currently using?

1	27%
2 to 3	44%
4 to 5	17%
6 to 7	2%
8 to 9	2%
10 or more	5%
Not sure	5%
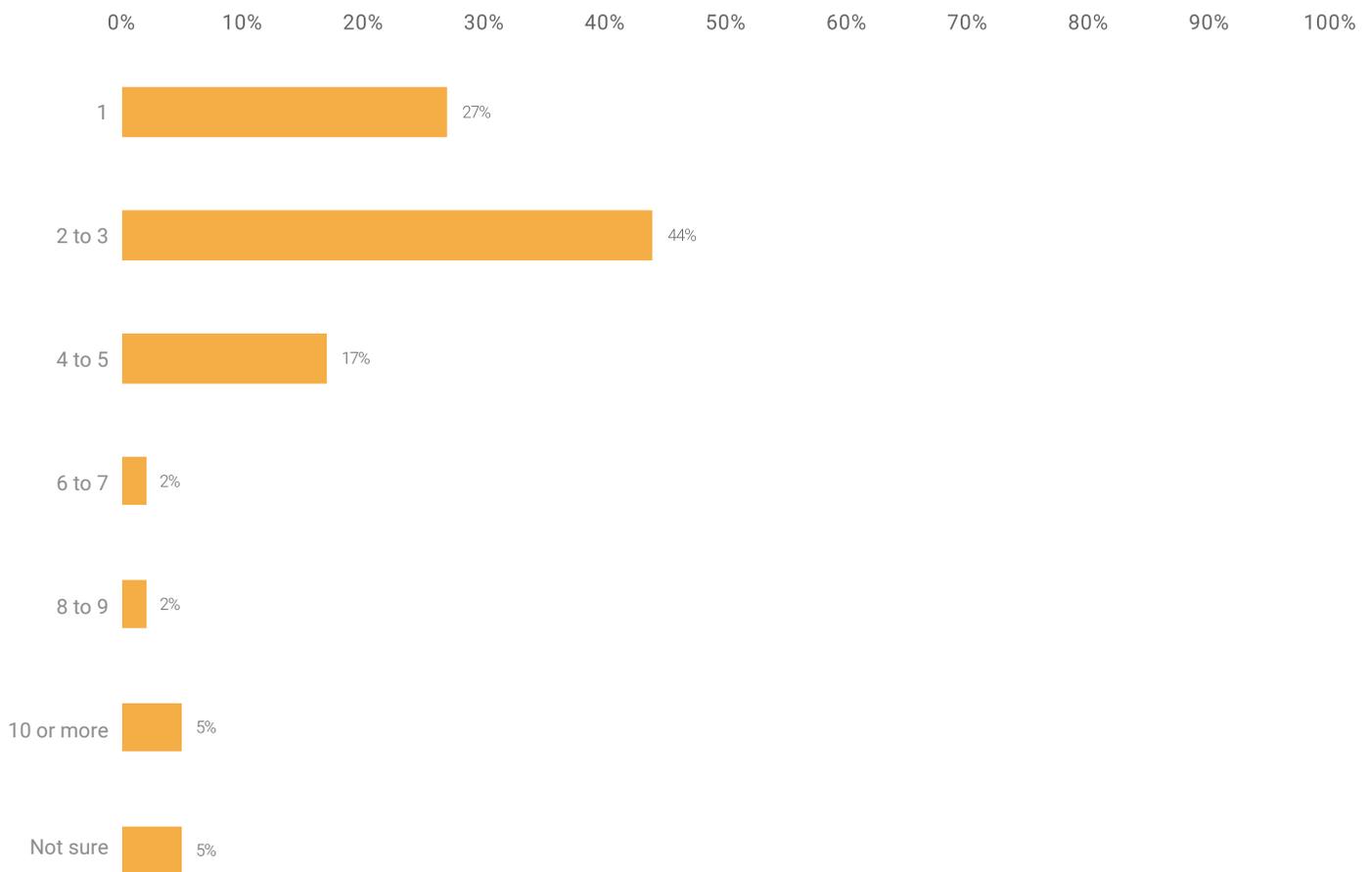
■ UK Public Sector

Inside Hybrid IT Orgs: Cloud to On-Premises

Which (if any) of the following area(s) of your IT infrastructure has your organisation migrated/attempted to migrate to the cloud, but then ultimately brought back/left on-premises?

Category	Value
Database	9%
Application	12%
Security (TaaS)	3%
Storage	15%
Other	2%
None	70%
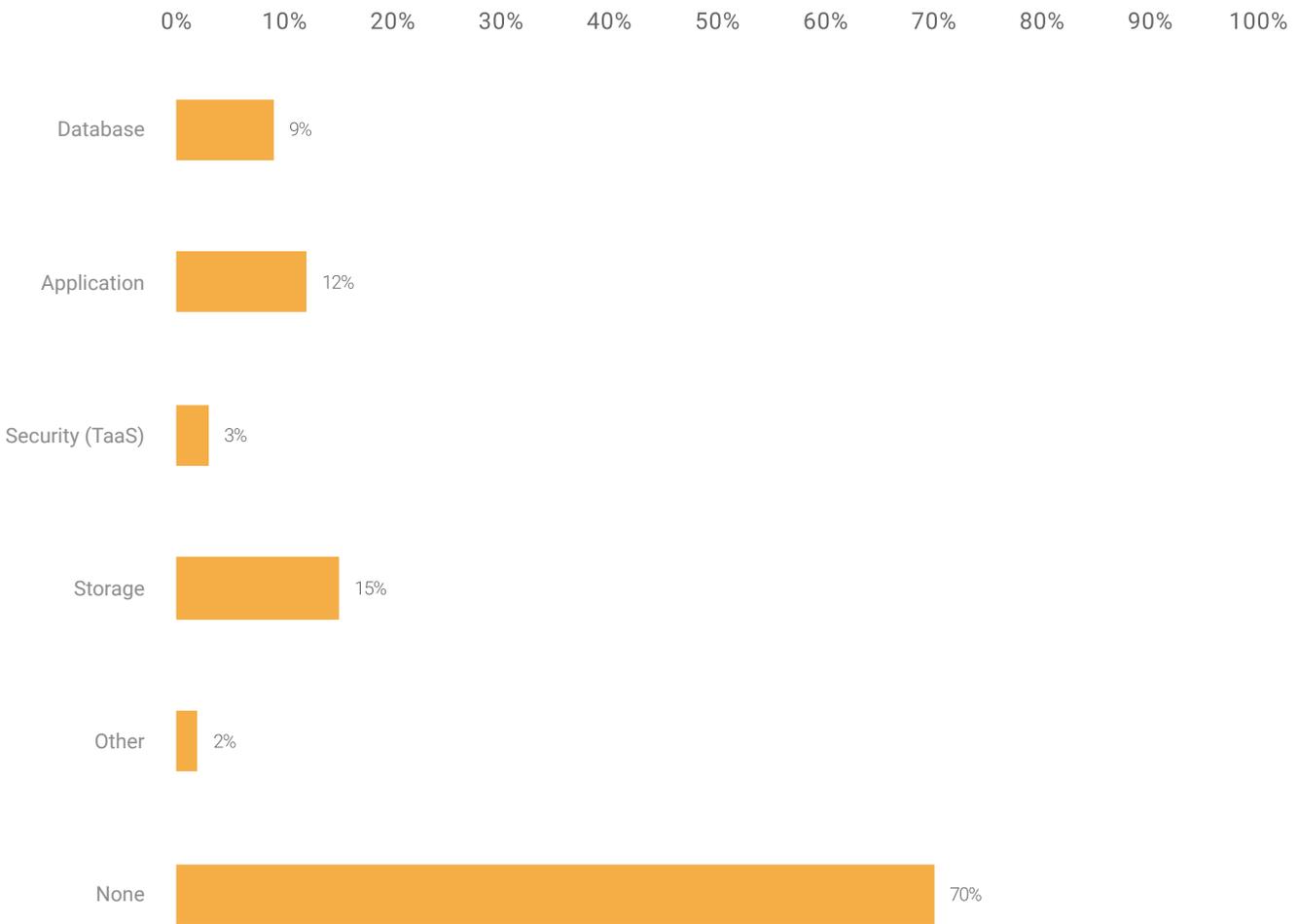
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Inside Hybrid IT Orgs: Reasons for On-Premises

What is the biggest reason your organisation ultimately brought back/left the selected area(s) of IT infrastructure on-premises?

Too expensive	16%
Poor performance	11%
Difficulty working with cloud service provider	0%
Security/compliance concerns	32%
Not enough visibility into cloud services to ensure needs/SLAs being met	21%
Technical challenges with actual migration	21%
Other	0%
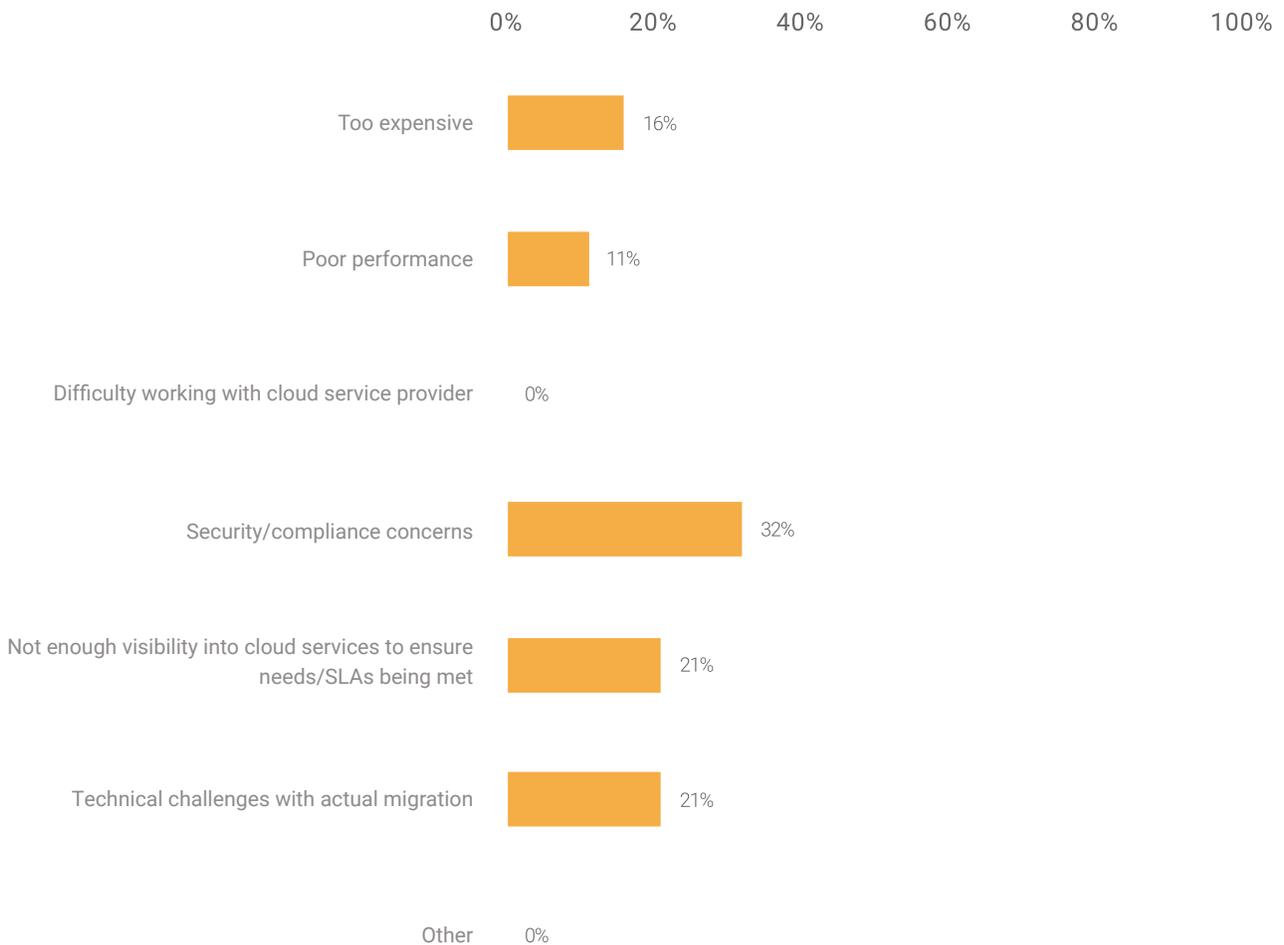
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Inside Hybrid IT Orgs: Reasons for Migration

What were the top three reasons for selecting the areas of your organisation's IT infrastructure that have already been migrated to the cloud?

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

#3 Lowest impact — 29%

#1 Greatest potential for ROI (cost efficiency) — 49%

#4 Simplest migration process — 34%

Mission critical resilience — 23%

Not mission critical — 14%

Inreased performance — 15%

Increased reliability — 29%

#2 Availability — 48%

#5 Elastic scalability — 29%

Flexibility of choices — 15%

Other — 8%

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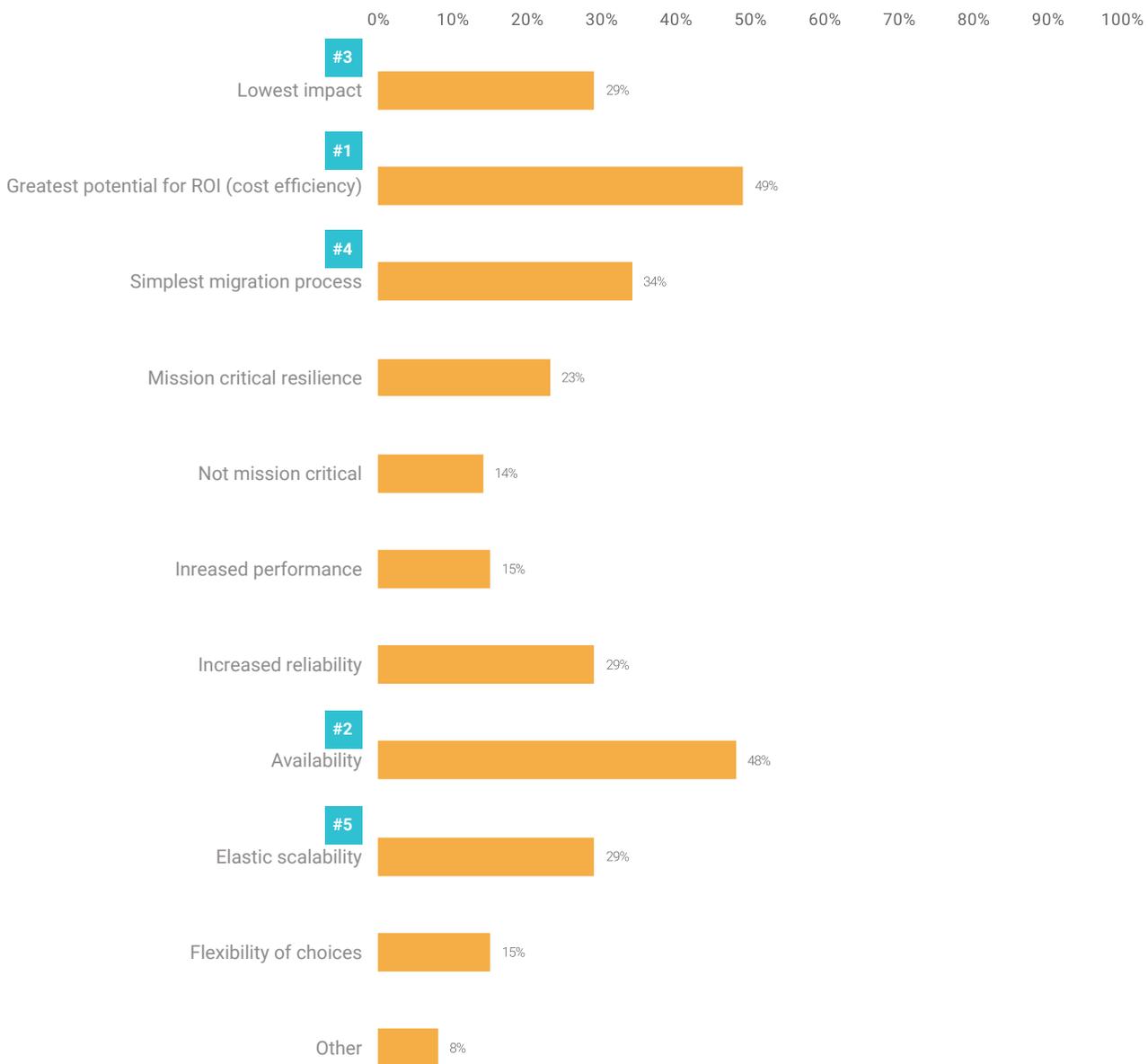
■ Indicates weighted rank

Inside Hybrid IT Orgs: All-Cloud Infrastructure

What percentage of your your organisation's IT infrastructure that was once maintained on-premises is now 100% in the cloud/cloud-related service?

% OF IT INFRASTRUCTURE ONCE MAINTAINED ON-PREMISES NOW 100% IN THE CLOUD/CLOUD-RELATED SERVICE (OVERALL)

- 0%
- 1-9%
- 10-24%
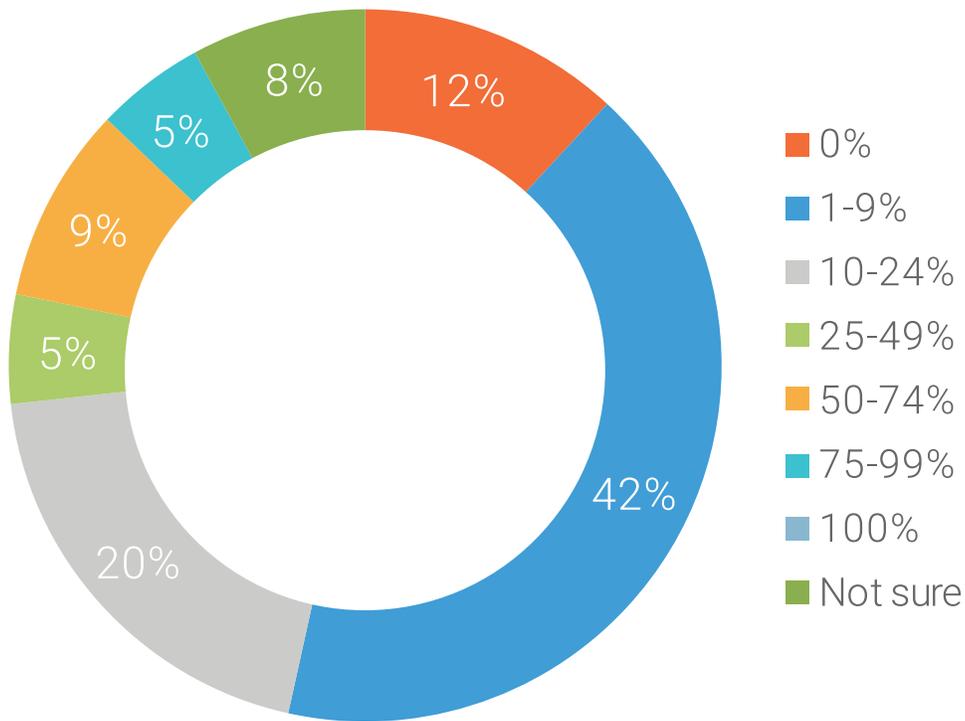- 25-49%
- 50-74%
- 75-99%
- 100%
- Not sure

Inside Hybrid IT Orgs: Benefits Realised

Has your organisation received the benefits you expected from migrating area(s) of your organisation's IT infrastructure to the cloud?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%	
Yes (received all expected benefits)	23%
Almost (received most but not all expected benefits)	45%
Somewhat (received some but not most expected benefits)	20%
No (have not received any expected benefits)	0%
Not sure	12%

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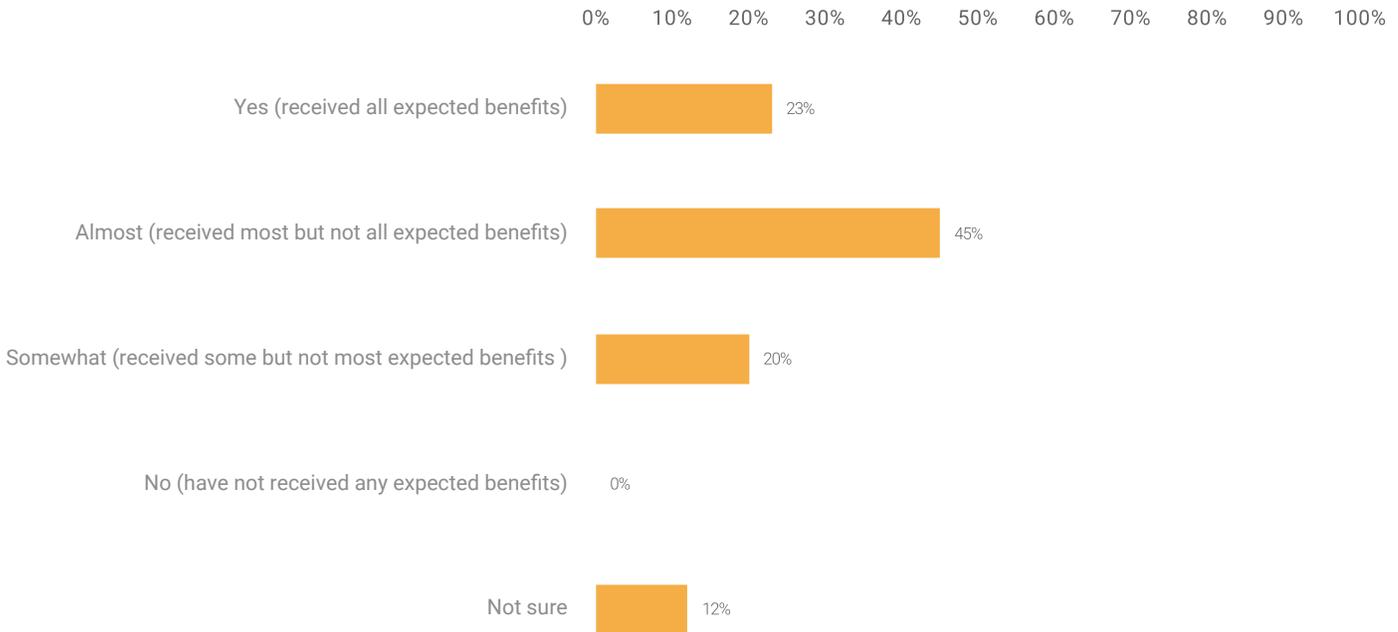
Inside Hybrid IT Orgs: Hybrid IT Strategy

Which of the following are included within your organisation's hybrid IT strategy?

Category	Percentage
Public cloud	31%
Private cloud	34%
Containers	14%
Microservices	3%
Server Virtualisation	45%
Virtual Desktop Infrastructure	25%
Functions-as-a-Service (FaaS)/serverless	8%
Software Defined Networking (SDN)	15%
Software Defined Storage (SDS)	29%
Desktop-as-a-Service (DaaS)	14%
DevOps	17%
Internet of Things (IoT)	11%
Security	29%
Identity and Access Management (IAM)	29%
Compliance/governance	23%
IT outsourcing (i.e. to an MSP)	42%
Other	9%

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Inside Hybrid IT Orgs: Challenges

What are the five biggest challenges that hybrid IT has created for your organisation?

	0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
#5 Budget depletion	38%
#4 Increased workload/responsibilities	43%
Inefficiencies associated with managing cloud providers	30%
#1 Lack of control/visibility into the performance of cloud-based infrastructure (including apps, database, security, storage, etc.)	55%
Lack of control/visibility into the security of cloud-based infrastructure (including apps, database, security, storage, etc.)	40%
#3 Increased infrastructure complexity	48%
Poor technology performance	20%
Disruption to end-users	22%
#2 IT staff skills gap	48%
Regulation/compliance issues	47%
Other security-related issues	5%
Other	7%

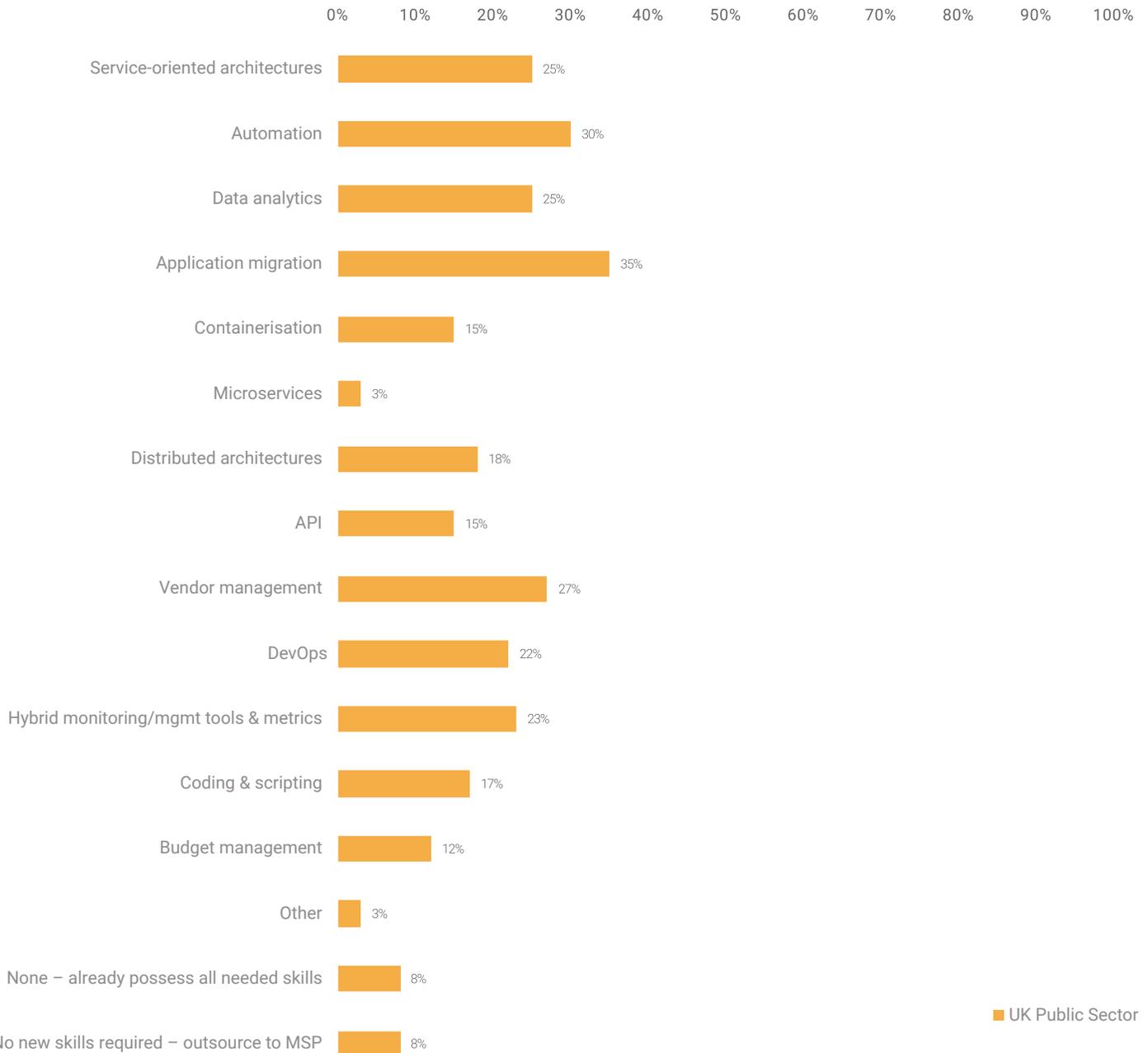■ UK Public Sector

■ Indicates weighted rank

New Ecosystem of IT Pros: New Cloud Roles

Within the past five years, has your organisation's IT department hired or reassigned IT pro(s) for the specific purpose (100% of job description) of managing your organisation's cloud technology or cloud-related technology?

|	
Yes	31%
No, but plans to do so in the forseeable future	15%
No, and no plans to do so in the forseeable future	35%
No, but we have outsourced our cloud technology management to an MSP	14%
Not sure	5%

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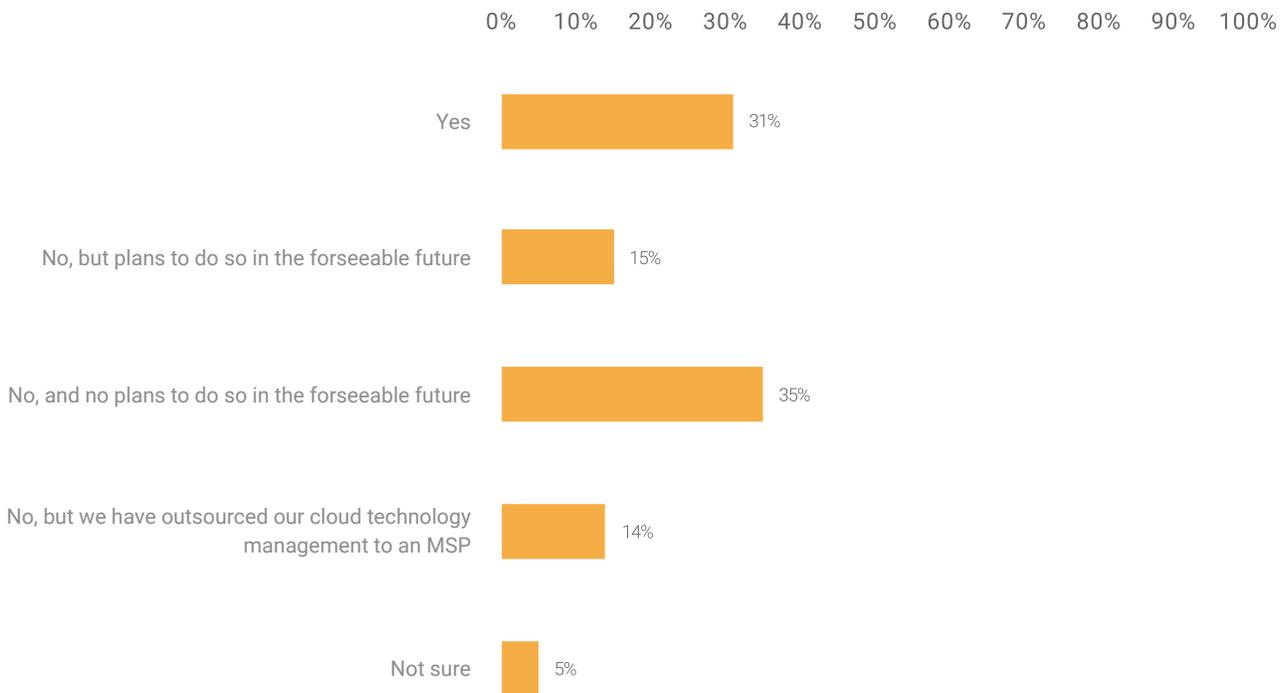
New Ecosystem of IT Pros: Cloud Skills

Which of the following cloud-related skills have you worked to develop/improve over the past 12 months in order to better manage a hybrid IT environment?

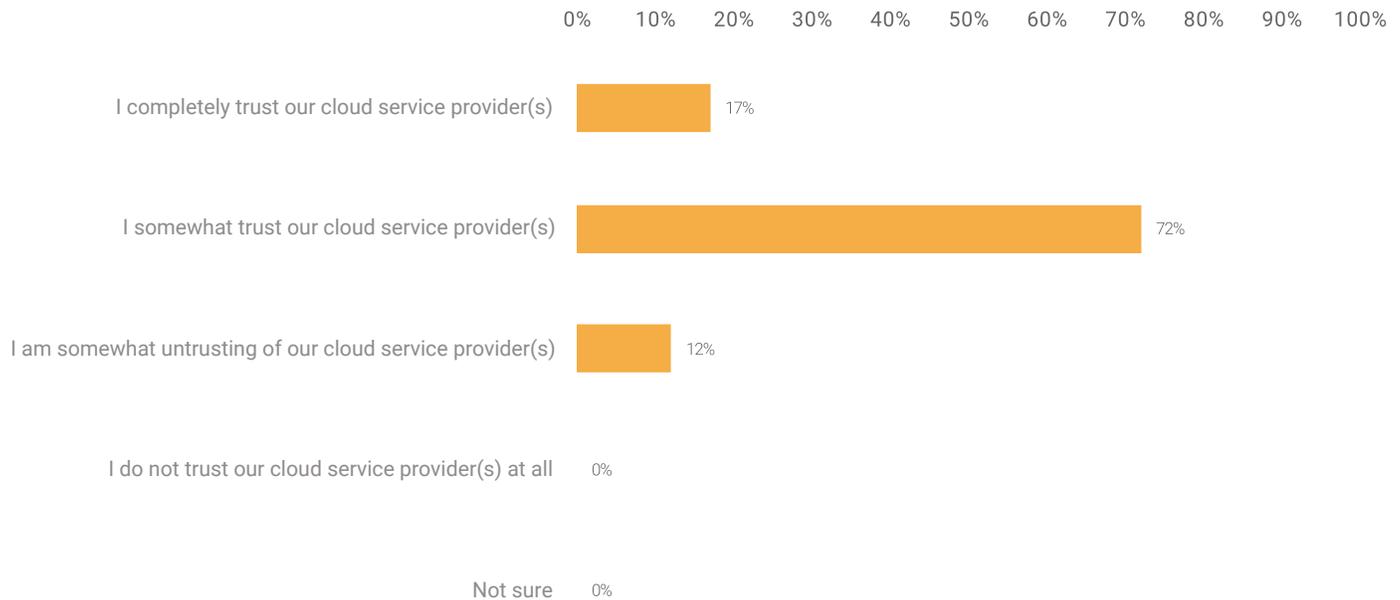| Skill	UK Public Sector
Service-oriented architectures	25%
Automation	30%
Data analytics	25%
Application migration	35%
Containerisation	15%
Microservices	3%
Distributed architectures	18%
API	15%
Vendor management	27%
DevOps	22%
Hybrid monitoring/mgmt tools & metrics	23%
Coding & scripting	17%
Budget management	12%
Other	3%
None – already possess all needed skills	8%
No new skills required – outsource to MSP	8%

■ UK Public Sector

New Ecosystem of IT Pros: New Workforce

Do you believe that IT professionals entering the workforce today possess the necessary skills to manage hybrid IT environments?

| | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |

Yes 15%

No 45%

Not sure 40%
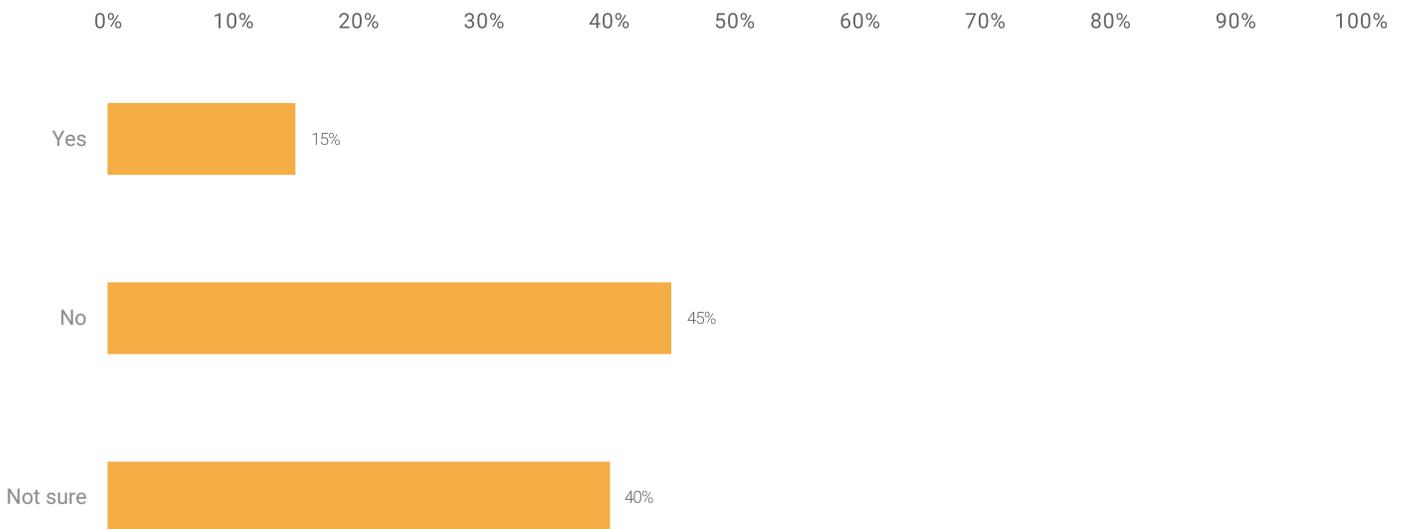
■ UK Public Sector

New Ecosystem of IT Pros: Cloud Service Provider Trust

In general, how would you rate the level of trust you have in your cloud service provider(s)?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%	
I completely trust our cloud service provider(s)	17%
I somewhat trust our cloud service provider(s)	72%
I am somewhat untrusting of our cloud service provider(s)	12%
I do not trust our cloud service provider(s) at all	0%
Not sure	0%

■ UK Public Sector

New Ecosystem of IT Pros: Cloud Impact on IT

To this point, how much of an impact have the existence of the cloud and the hybrid IT environment had on your career?

Tremendous impact (have altered my career path)	13%
Somewhat of an impact (have required me to acquire new skills, but have not altered my career path)	43%
Not much of an impact (have required me to work with related technology or service providers, but have not required me to acquire any new skills or alter my career path)	43%
No impact at all	0%

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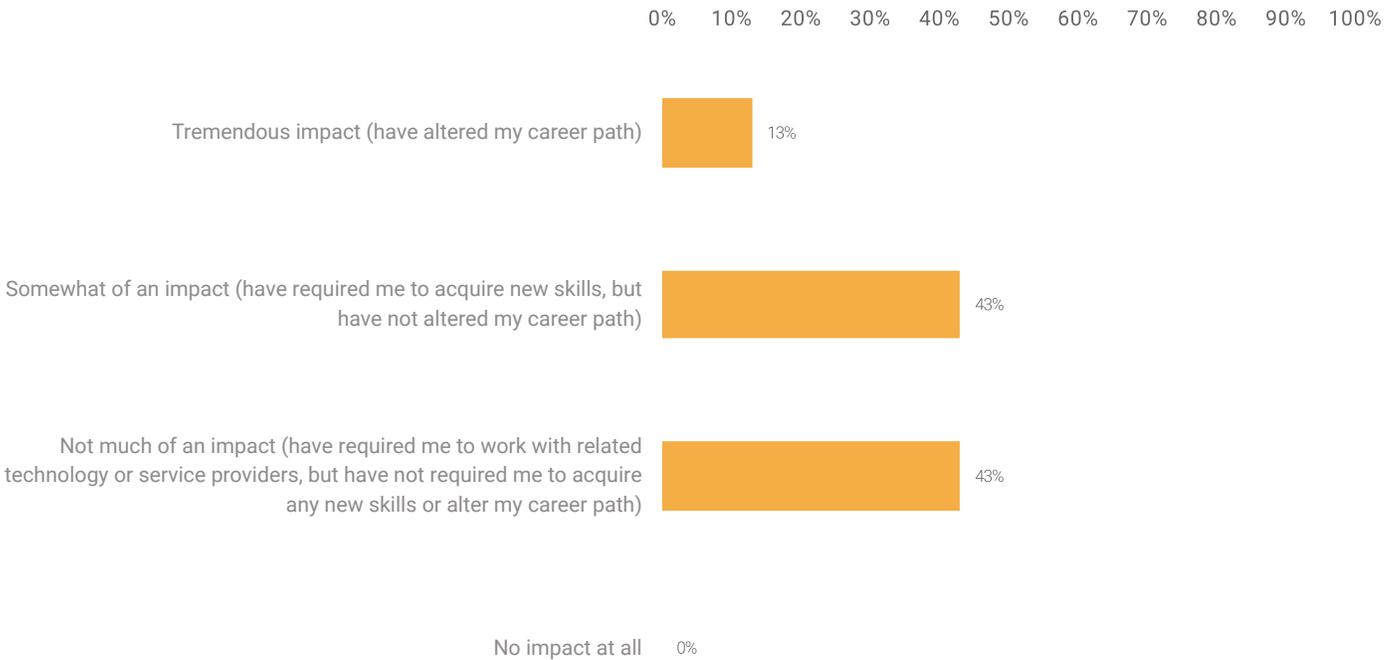
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