Federal Cloud Infrastructure Survey Report

May 2021

Underwritten by: **rackspace** technology. **aws**

vmware® **carahsoft**.

Advanced Technology Academic Research Center
designed by government • led by government • attended by government

Purpose and Methodology

The Advanced Technology Academic Research Center (ATARC) is a 501(c)(3) non-profit organization that provides a collaborative forum for Federal government, academia and industry to identify, discuss and resolve emerging technology challenges.
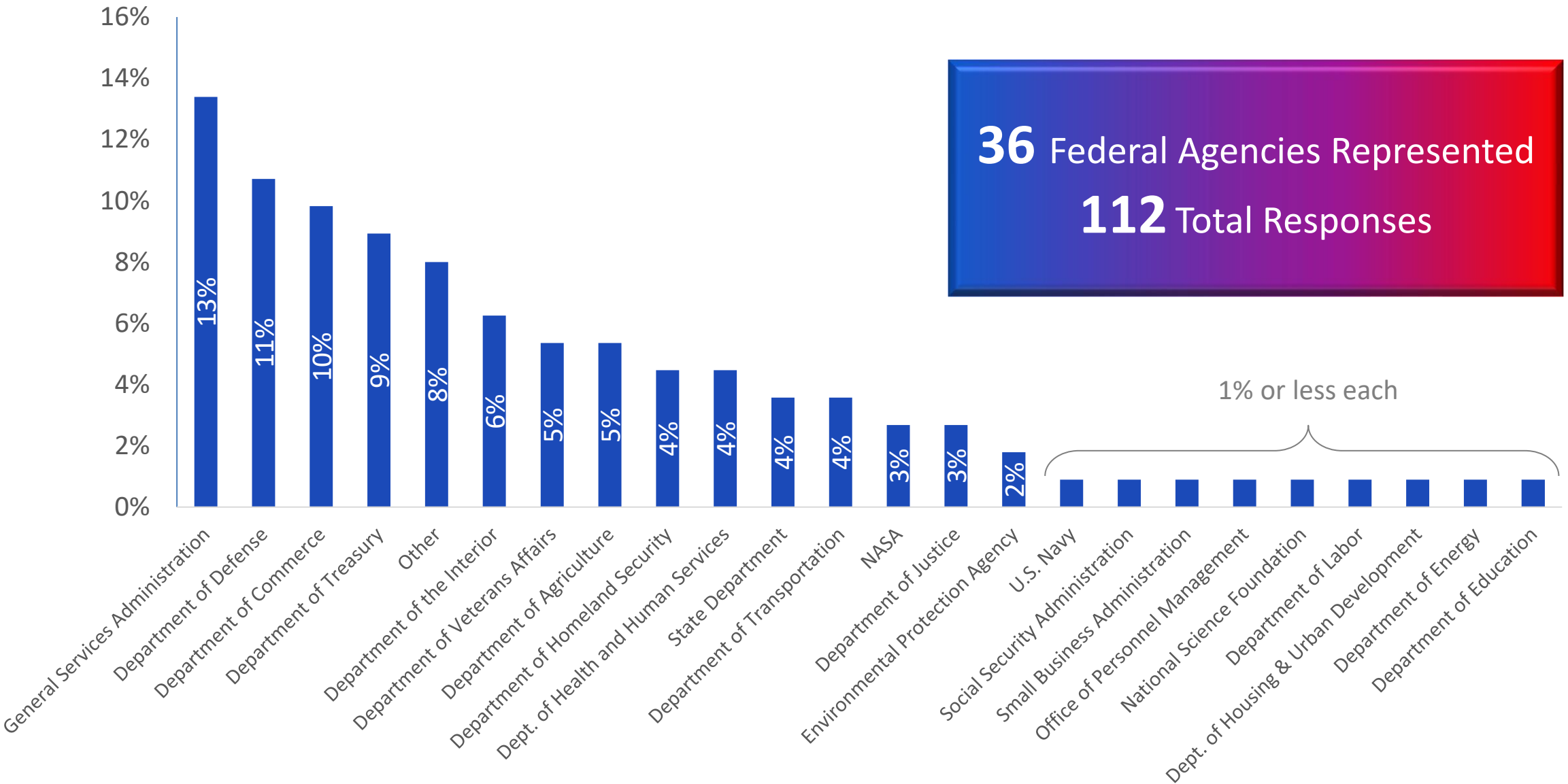
Rackspace Technology, a company of Multicloud solutions experts, take a technology-stack-centric view to their cloud adoption, migration, and optimization solutions.

Together, ATARC and Rackspace conducted a research study with the purpose to identify the current status, challenges, successes in the implementation and utilization of Multicloud services and solutions in the Federal space.

From April 5-23, 2021, a Cloud Infrastructure Survey was distributed to Information Technology leadership, cloud infrastructure practitioners, experts and evangelists in all major U.S. Federal Agencies for their views, perceptions and assessment on their Agency cloud implementation experience. All responses were anonymous.
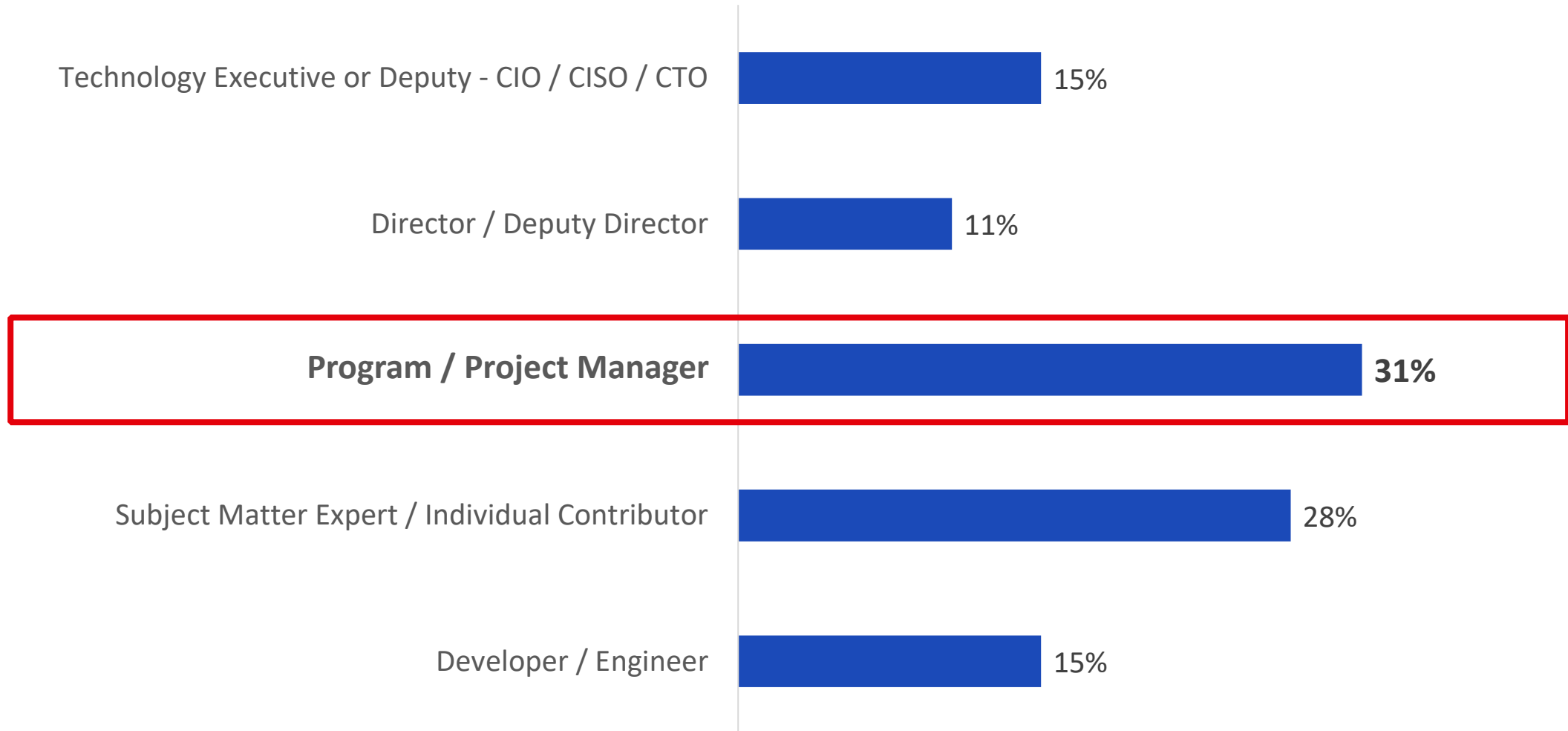
This report represents the summary and analysis of the survey responses.
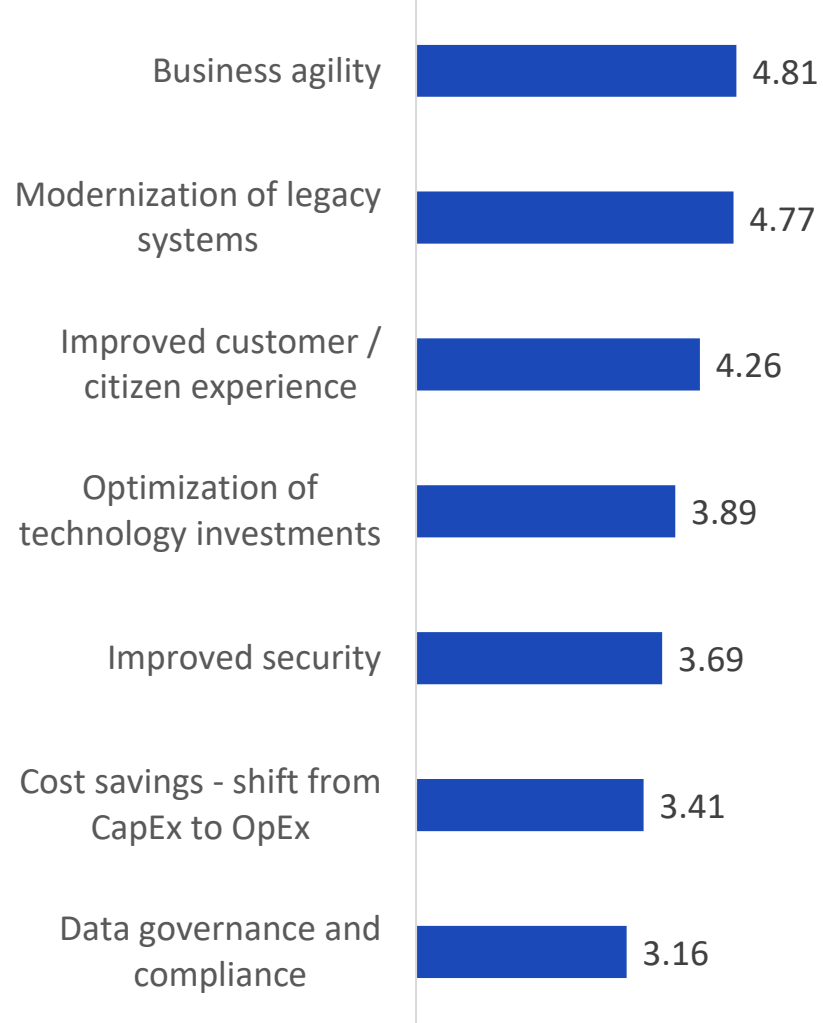
Respondent Profile: Most Represented Agencies

36 Federal Agencies Represented
112 Total Responses

1% or less each

Bar chart values by agency:
- General Services Administration — 13%
- Department of Defense — 11%
- Department of Commerce — 10%
- Department of Treasury — 9%
- Other — 8%
- Department of the Interior — 6%
- Department of Veterans Affairs — 5%
- Department of Agriculture — 5%
- Department of Homeland Security — 4%
- Dept. of Health and Human Services — 4%
- State Department — 4%
- Department of Transportation — 4%
- NASA — 3%
- Department of Justice — 3%
- Environmental Protection Agency — 2%
- U.S. Navy
- Social Security Administration
- Small Business Administration
- Office of Personnel Management
- National Science Foundation
- Department of Labor
- Dept. of Housing & Urban Development
- Department of Energy
- Department of Education

Respondent Profile: Organizational Role

Technology Executive or Deputy - CIO / CISO / CTO — 15%

Director / Deputy Director — 11%

Program / Project Manager — 31%

Subject Matter Expert / Individual Contributor — 28%
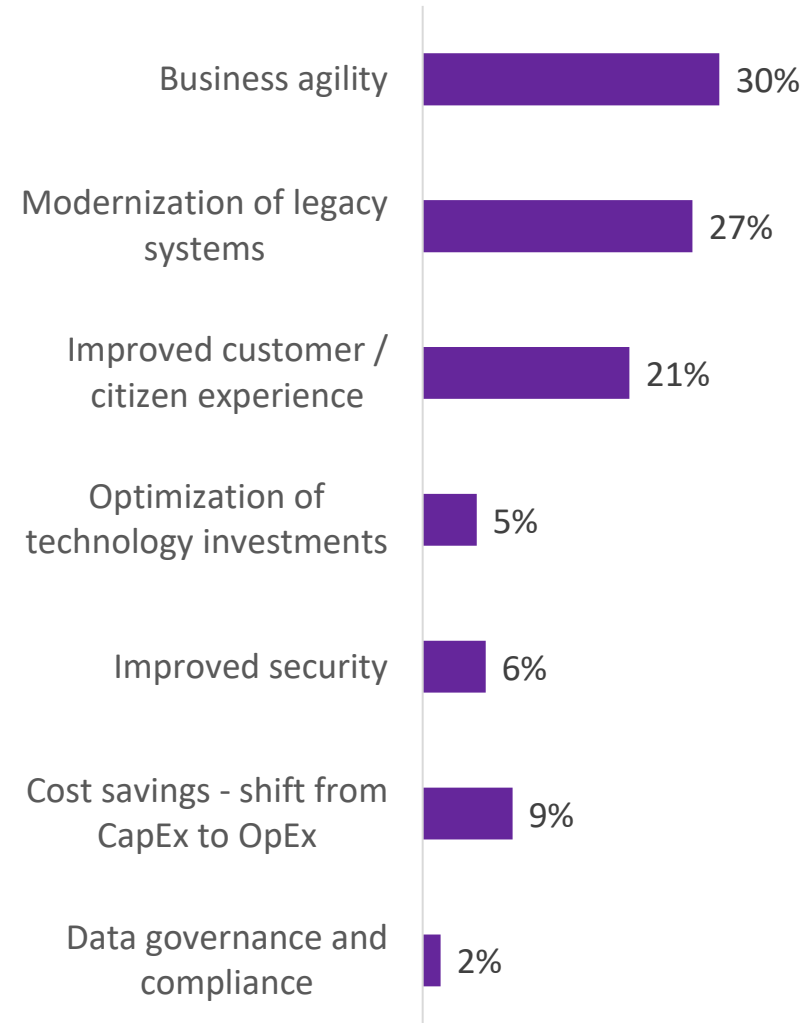
Developer / Engineer — 15%

Importance of Benefits Expected to Achieve from Cloud Adoption

Expected benefits ranked from most important to least important
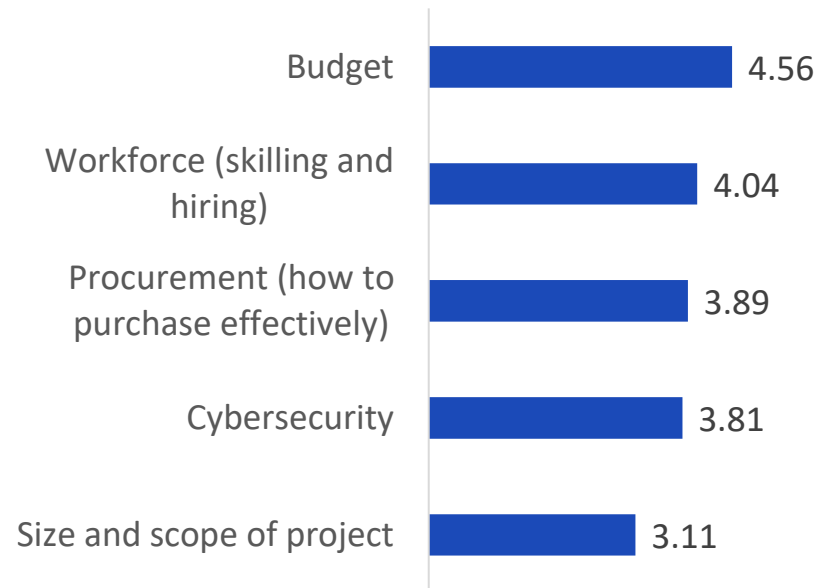*(Mean of all responses)*

Benefit	Value
Business agility	4.81
Modernization of legacy systems	4.77
Improved customer / citizen experience	4.26
Optimization of technology investments	3.89
Improved security	3.69
Cost savings - shift from CapEx to OpEx	3.41
Data governance and compliance	3.16

Expected benefit ranked as Most Important
(Percentage of responses in #1 ranking)

Benefit	Value
Business agility	30%
Modernization of legacy systems	27%
Improved customer / citizen experience	21%
Optimization of technology investments	5%
Improved security	6%
Cost savings - shift from CapEx to OpEx	9%
Data governance and compliance	2%

Barriers ranked from biggest to smallest
(Mean of all responses)

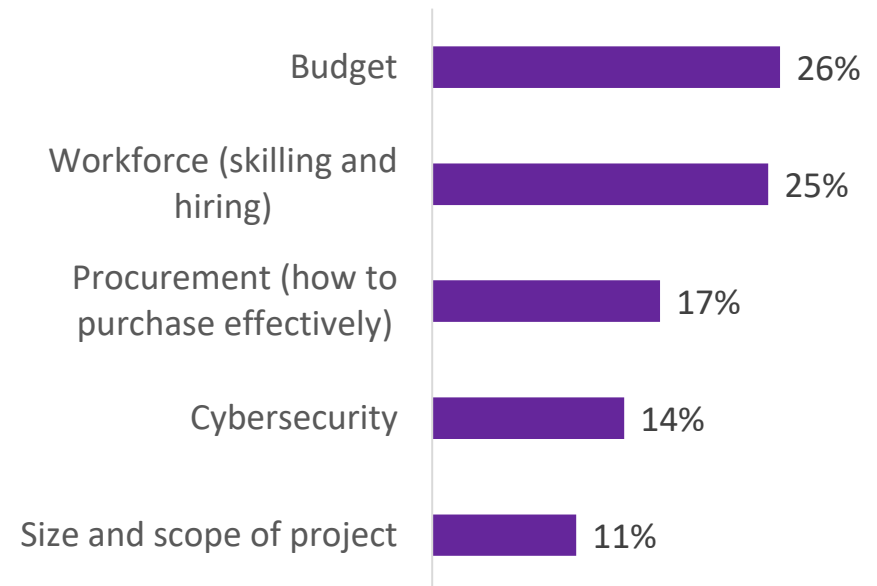| Barrier	Value
Budget	4.56
Workforce (skilling and hiring)	4.04
Procurement (how to purchase effectively)	3.89
Cybersecurity	3.81
Size and scope of project	3.11

Other Barriers Listed:

- Culture shift among peers and management
- FedRAMP and compliance related hurdles
- Integration with legacy systems
- Interdependencies with participating government and industry stakeholders' systems

Budget is reported as the biggest barrier in shifting to vendor provided cloud solutions, ranked as **#1 by 26%** of responders.

Barriers ranked as Biggest Barrier
(Percentage of responses in #1 ranking)

Barrier	Percentage
Budget	26%
Workforce (skilling and hiring)	25%
Procurement (how to purchase effectively)	17%
Cybersecurity	14%
Size and scope of project	11%

Responders Assess Their Agency's Progress in Cloud Smart Strategy

A promising **37%** of respondents report their Agency to be using **multiple cloud solutions** and vendors, while another **60%** have at least **started on a cloud strategy journey**.

37%
We are currently using multiple cloud solutions and vendors to help us optimize migration, security and compliance

36%
We have begun migrating some systems but are still working on how to optimize migration, security and compliance

14%
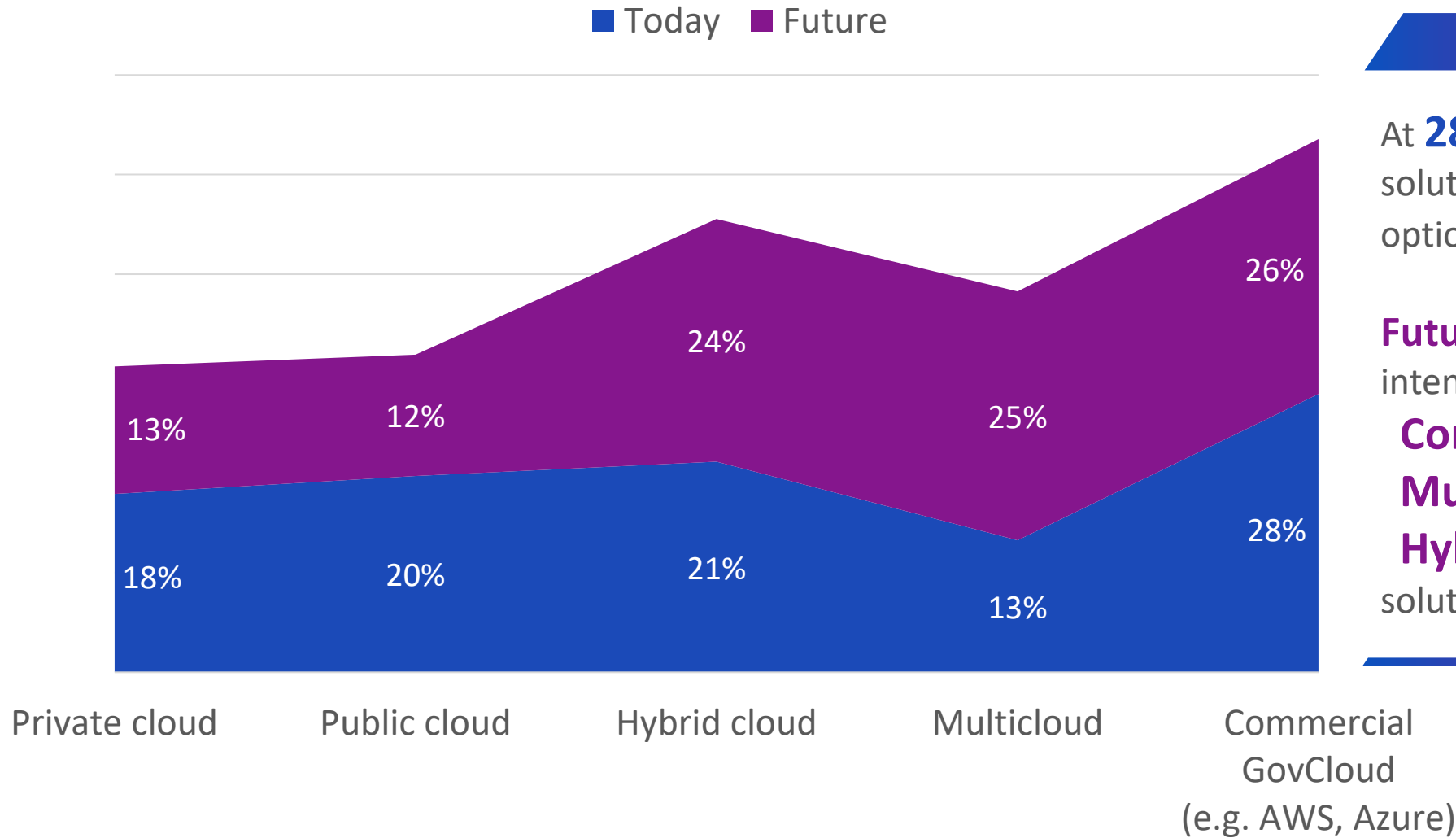We are in the process of evaluating cloud migration paths and options

10%
We have created a comprehensive application rationalization plan and are executing the placement of our systems

4%
We haven't shifted our cloud strategy

Today's Reality and Future Goals for Most Leveraged Cloud Options

Legend: ■ Today ■ Future

At **28% - Commercial GovCloud** solutions are the most leveraged cloud options within the Federal space **today**.

Future goals speak to a near equal intent to utilize
Commercial GovCloud (26%)
Multicloud (25%)
Hybrid Cloud (24%)
solutions.

Chart data:

Category	Today	Future
Private cloud	18%	13%
Public cloud	20%	12%
Hybrid cloud	21%	24%
Multicloud	13%	25%
Commercial GovCloud (e.g. AWS, Azure)	28%	26%

We are struggling with understanding security and compliance requirements
31%

Average understanding of security and compliance requirements
29%

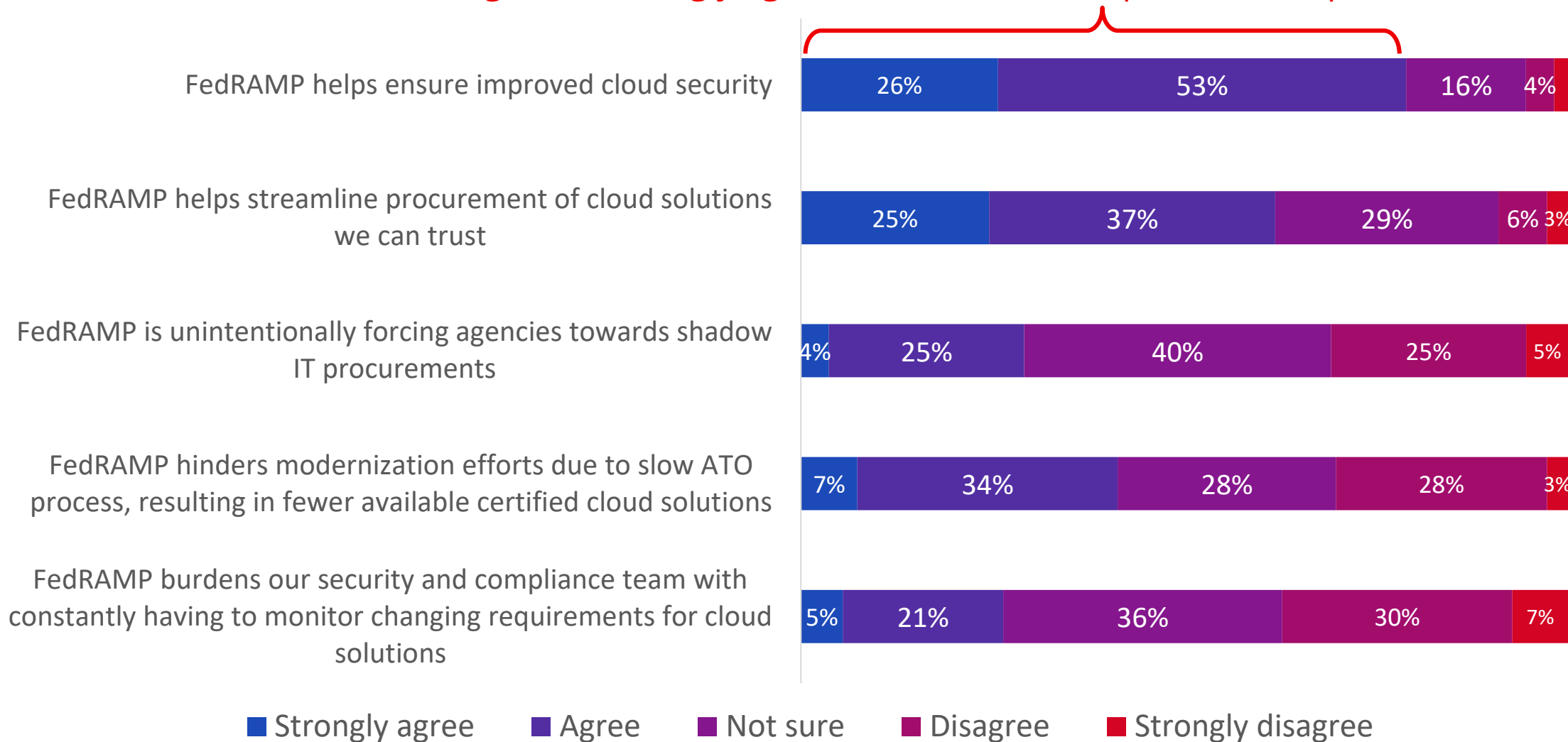Strong understanding of security and compliance requirements
40%
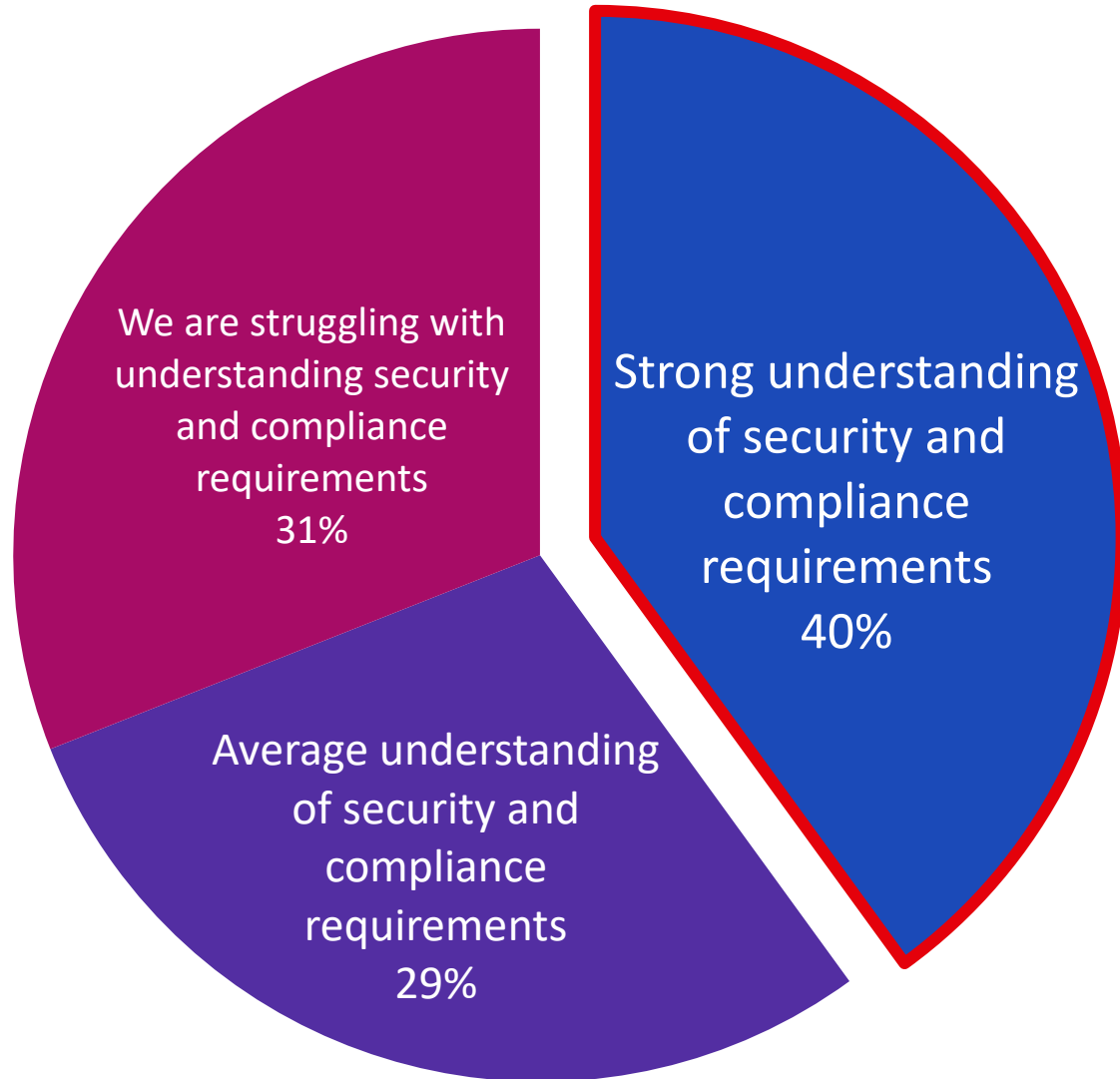
40% of responders give a **STRONG** rating to their Agency's understanding of the annual security and compliance requirements for cloud solutions whether they are procured or developed in house.
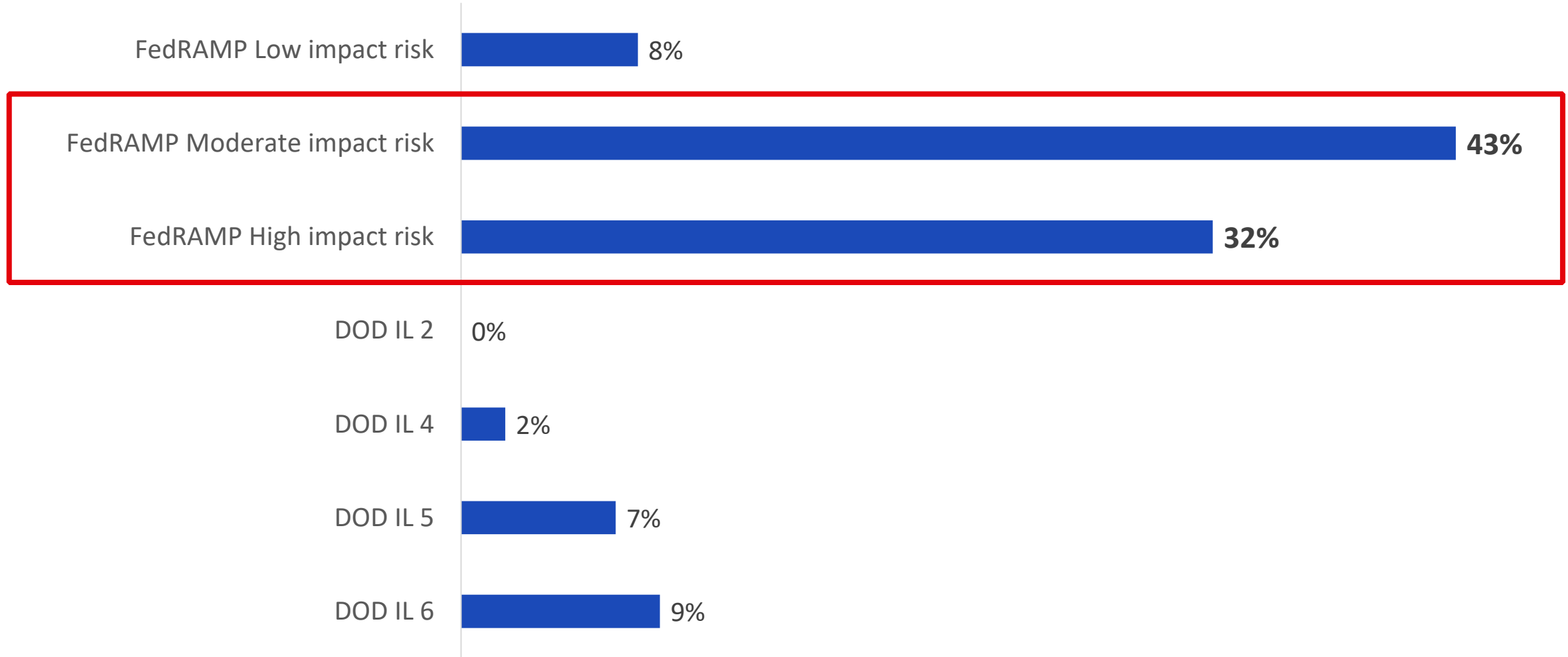
Meanwhile, **31%** of responders report their Agency **STRUGGLES** with understanding the same.
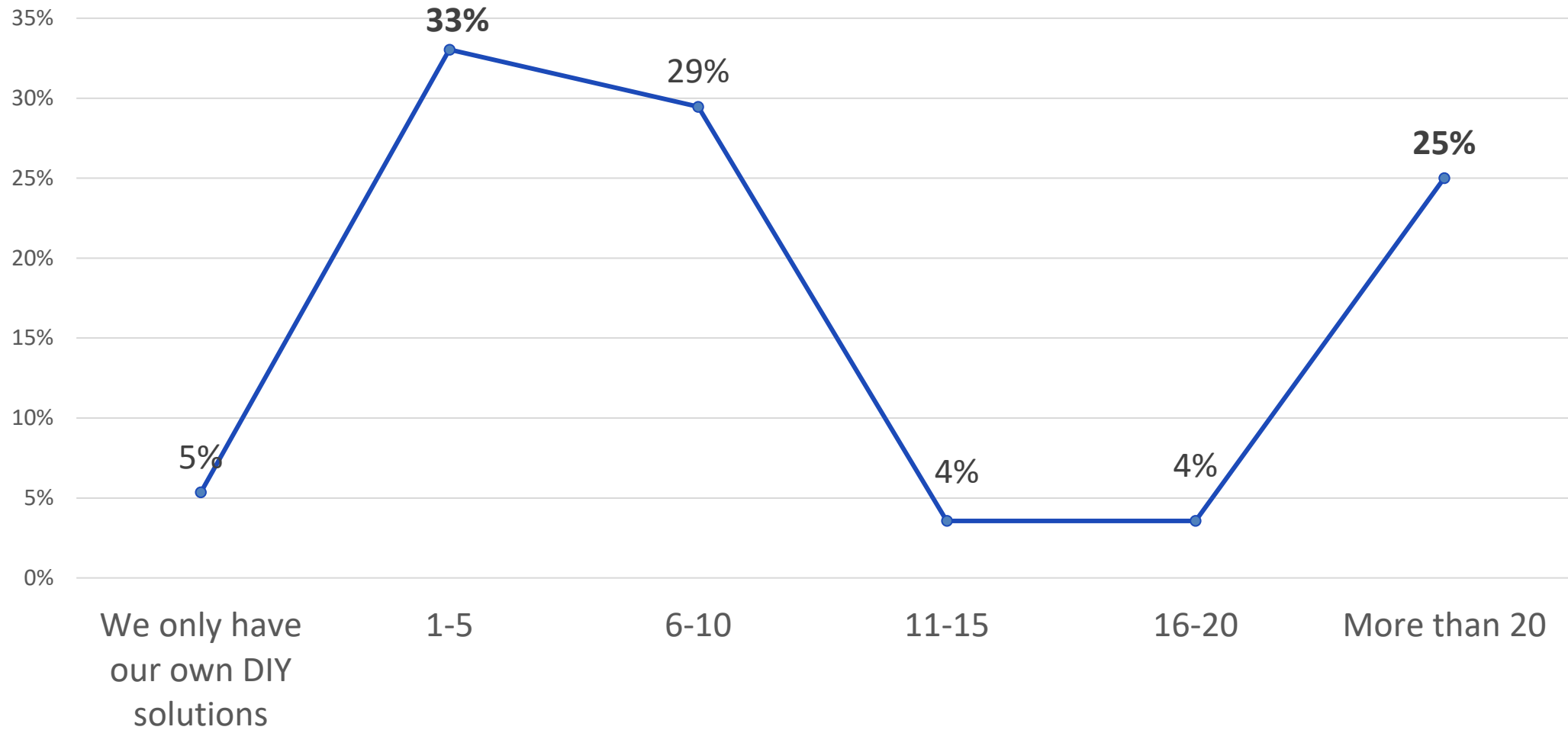
Responders' Views on FedRAMP Requirements

**79%** agree or strongly agree that FedRAMP helps ensure improved cloud security

Statement	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
FedRAMP helps ensure improved cloud security	26%	53%	16%	4%	
FedRAMP helps streamline procurement of cloud solutions we can trust	25%	37%	29%	6%	3%
FedRAMP is unintentionally forcing agencies towards shadow IT procurements	4%	25%	40%	25%	5%
FedRAMP hinders modernization efforts due to slow ATO process, resulting in fewer available certified cloud solutions	7%	34%	28%	28%	3%
FedRAMP burdens our security and compliance team with constantly having to monitor changing requirements for cloud solutions	5%	21%	36%	30%	7%

■ Strongly agree ■ Agree ■ Not sure ■ Disagree ■ Strongly disagree

Highest Level of FedRAMP or DOD Impact Level to be Used by Agencies

FedRAMP Low impact risk — 8%

FedRAMP Moderate impact risk — **43%**

FedRAMP High impact risk — **32%**

DOD IL 2 — 0%

DOD IL 4 — 2%

DOD IL 5 — 7%

DOD IL 6 — 9%

Number of Different Cloud PaaS and SaaS Solutions In Use at an Agency

Vendor Cloud Solutions Currently Deployed

Vendor	Percentage
AWS	**34%**
Azure	30%
Google	13%
VMware	9%
Oracle	6%
IBM	5%
milCloud 2.0	3%

13
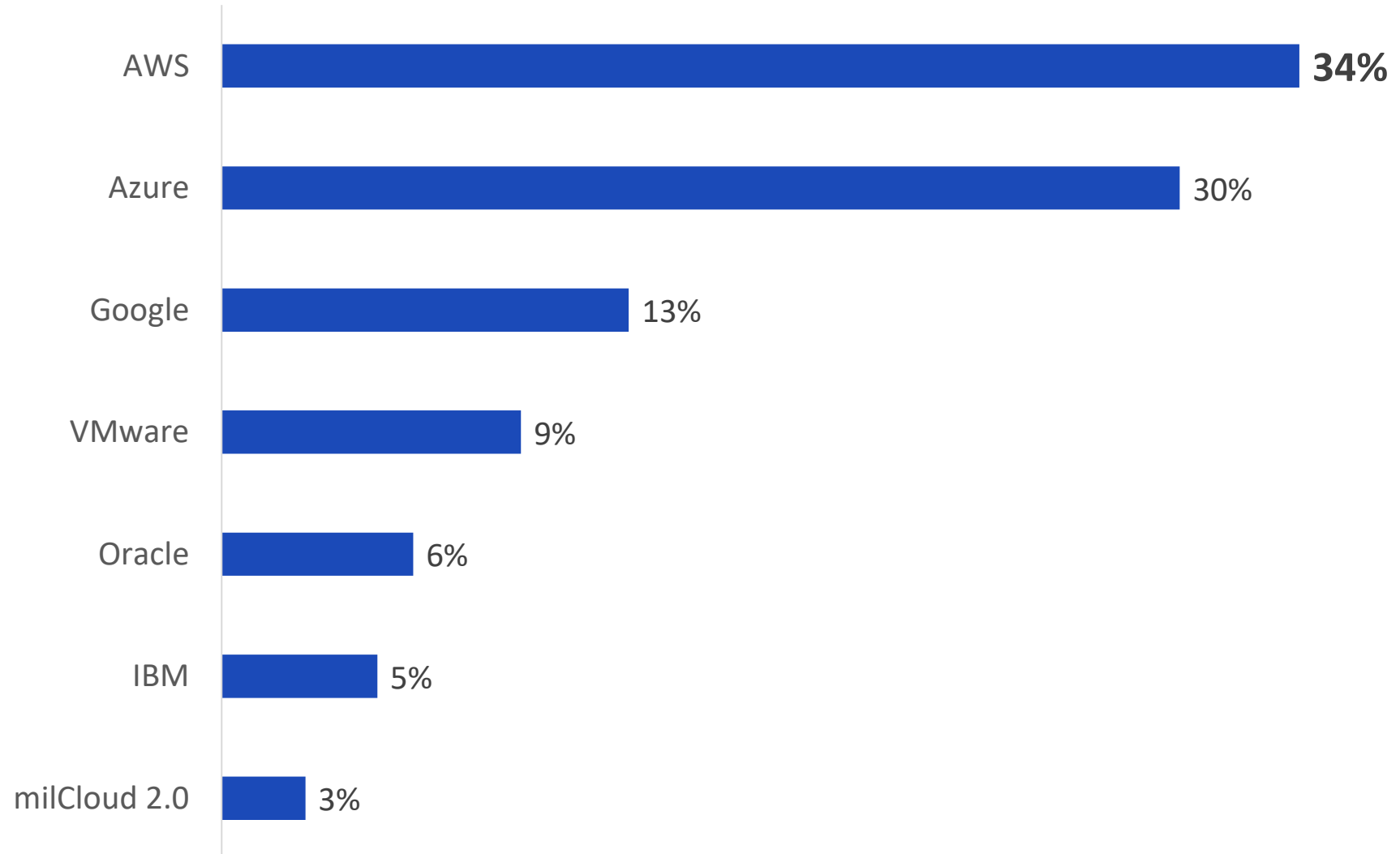
Final Considerations

In summary, the survey response analysis has led to the following conclusions:

We continue to see an increase in percentage of agencies who are embracing Multicloud and are actively on their modernization journey.

With the recent cybersecurity attacks like Solar Winds and with the response indicating security lower on the cloud modernization benefits list, there is an opportunity for greater understanding of the role of security in cloud modernization.

Predictably, the confidence levels in FedRAMP's ability to help ensure cloud security and streamline procurement show to be quite strong. However, there is certainly room for collaboration and alignment between the Government and industry to improve on the FedRAMP ATO process and avoid the un-intended pressure on Agencies to look for alternative or shadow IT procurement.

Cloud modernization is a critical part in Government Agencies lowering their cyber risks, and maximizing the potential in leveraging other emerging technology applications (e.g. AI / ML). This presents a great opportunity for true stigma-free Government-industry partnership to:
- o Work towards a mindset shift that Agencies cannot and should not try to do everything in house
- o Address workforce skillset enhancement with a mission impact focus
- o Collaboration between vendor community and FedRAMP on acceleration programs

Thank You!

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Underwritten by: