



Cloud Data Management for Mainframe

2022 Survey Report

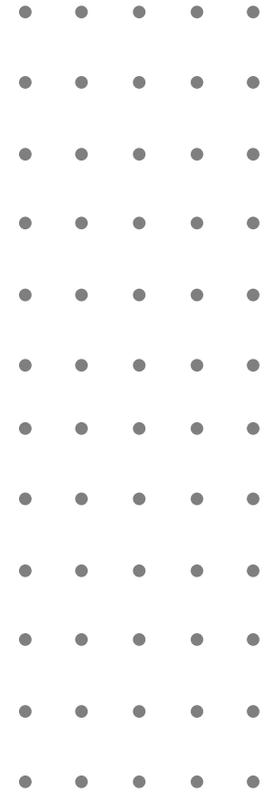
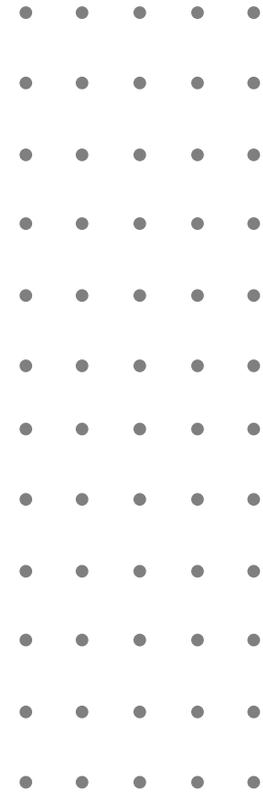


Table of Contents

Introduction and Key Findings	3
Computing Environment	7
Percentage of Core Business Applications and Data Hosted on Mainframes	8
Importance of the Mainframe to the Business Operations	9
Top IT Objectives on the 2022 Roadmap	10
IT Objectives in 2022 by Job Role & Data Stored on Mainframe	11
Top Ransomware/Cybersecurity Resilience Protection Strategy	12
Mainframe Backup & DR	13
Mainframe Backup Challenges	14
Mainframe Backups Routine and Length of Full Volume Dump	15
Meeting RTO and Value of Reducing the Backup Windows	16
Mainframe and Cloud Strategy	17
Utilization of Cloud for Delivering IT Solutions	18
Top Benefits of a Cloud Strategy	19
Factors in IT Operating Strategy Regarding Hybrid Cloud Storage Use	20
Mainframe Modernization Approaches Currently Being Implemented	21
Demographics	22
About Model9	24

Introduction and Key Findings



Introduction & Methodology

At Model9, we have always championed the hybrid model for companies who are looking toward mainframe modernization. Eliminating the mainframe entirely, or making changes to mainframe applications, results in painful, costly, and uncertain projects. A data-first approach to mainframe modernization—finding a way to move mainframe data into the cloud without touching legacy applications — is increasingly replacing the old method.

Mainframe data is extremely valuable when made available to cloud applications. In a world where making data-driven decisions is everything, adding that data to data lakes delivers new opportunities for analytics to provide even more insight, whether that is in customer behavior and buying patterns, or in process improvement.

Hybrid cloud architectures that break the silo around mainframe data is the clear preference of today's business leaders. With new, software-based cloud data management options coming onto the market, we sought to understand the exact nature of hybrid cloud initiatives and get a better understanding of where businesses are, and where they are heading, in their mainframe modernization efforts over the coming years.

The result is this survey. The data it contains gets you inside the mind of technology and business leaders at medium to large sized enterprise companies. It's an important resource for leaders to understand how their peers are thinking about the challenges posed by building hybrid mainframe cloud architectures, which solutions they are exploring, and what they are prioritizing as they build strategies and budgets to get more out of their mainframe data in the coming years.

Methodology

Our survey was completed by Global Surveyz, an independent survey company, and took place during Q4 2021. We recruited respondents from the US through a global B2B research panel and invited them via email to complete the survey. Altogether, we spoke to 100 companies of 1,500 employees or more who use mainframe computing, with the roles surveyed ranging between Director and C-level, specifically in IT departments that work with the mainframe. The answers to the majority of the non-numerical questions were randomized, in order to prevent order bias in the answers.

Key Findings & Recommendations

1 **91% of respondents see mainframe as critical to business operations**

The overwhelming response is that the mainframe holds the most critical applications for the business. In fact, 62% report having more than half of their core business applications on mainframes. Inside these applications is a whole lot of data, with 51% storing more than 50% of their data off the cloud. Unlocking the potential of this data needs to be a priority for today's businesses, otherwise it remains locked in a silo and it cannot be used to drive business value.

2 **There is so much offensive firepower in data, and yet businesses are playing defense**

We found it interesting to see that the top IT objective for 2022 is data protection (89%), followed by cybersecurity and resilience (76%) and cost-optimization (52%), all of which are foundational "getting to zero" style goals. However, when we look at C-level priorities alone, unlocking the value of data was a key objective for 50% of the C-suite, showing that if you move to strategy level – defensive goals slip away and business outcomes start to matter a lot more.

3 **Hybrid cloud is the future of the enterprise computing environment**

Only 4% of respondents are using the public cloud exclusively. 61% use hybrid multi cloud, while 35% use a single cloud to augment their mainframe. While mainframe is often thought of as a legacy technology, the truth is that the complexities of rip and replace and the intricacies of application interactions have made migrating mainframe data impossible for most businesses. Instead, unlocking the value of the data from the siloed mainframe environment by moving it to the cloud is a much smarter solution with quicker time to value. Thus, an ecosystem blending mainframe on-premises with some cloud, which could be considered a hybrid cloud, would deliver the benefits of making mainframe data available without the cost and risk associated with massive retooling to replace the mainframe. The data suggests that most respondents are pursuing a blended environment.

4

Today's most important goal for hybrid? A single point of data management

Moving to a hybrid model is a smart move, *if* according to 71% of respondents, they have a single point of data management. 51% added they need to be able to access data from any location, and 48% included replicating data from on-premises to cloud. This brings us full circle. Almost 2/3 of today's enterprise applications run on the mainframe, and most of the generated data remains housed there. For organizations who don't want to get tied down into lengthy, expensive migration projects, they need a smart solution for unlocking the value of mainframe data on the cloud.

5

Everyone sees significant value in reducing backup windows and improving RTO

With backup processes being completed daily by 45% of respondents, and almost half reporting this takes between 3-6 hours, it's clear to see why 100% of executives believe they could see value from reducing their efforts. If we remember that 91% of respondents see the mainframe as critical to business operations and business resilience initiatives, it's clearly about finding technology that reduces the cost and complexity of backups, rather than looking to move from the mainframe entirely.

Computing Environment



Percentage of Core Business Applications and Data Hosted on Mainframes

62% of survey respondents reported that more than half of their core business apps are hosted on mainframes (figure 1). Most applications are on the mainframe, and it's clear that after decades of effort, organizations have had only limited success modernizing their environments by moving applications off the mainframe.

Respondents are split almost equally between those storing up to 50% of their data off mainframes (49%), and those storing over 50% of their data on mainframes (51%). Large percentages of critical data are being held in the mainframes, but as legacy technology, it's hard for enterprises to get value from this data at scale or speed. At the moment, data is siloed in different systems, while a single data lake or repository would allow enterprises to do so much more with what they have.

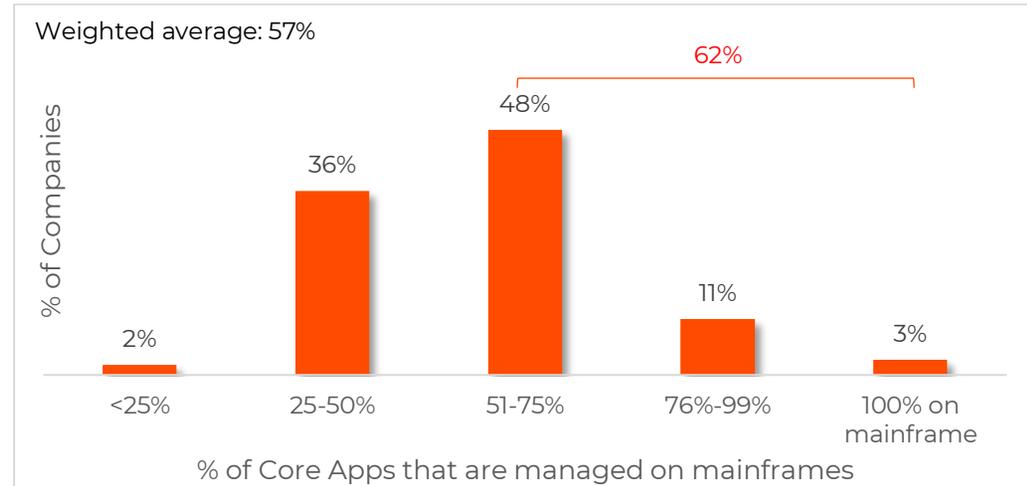


Figure 1 Percentage of Core Business Apps Hosted on Mainframe

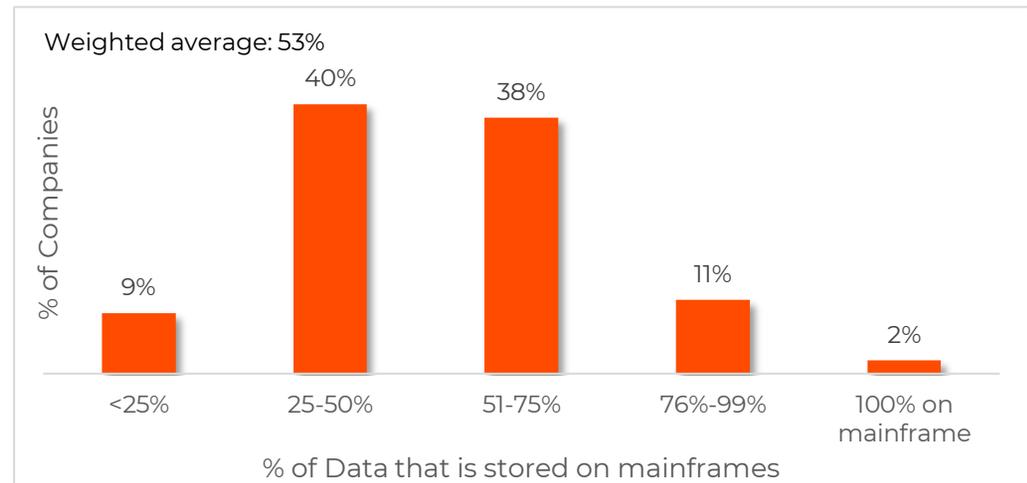


Figure 2 Percentage of Data Stored and Managed on Mainframe

Importance of the Mainframe to the Business Operations

91% of respondents see the importance of mainframe data as critical to business operations.

When this data is so critical, businesses need to ask themselves why they would settle for having essential data locked into the mainframe rather than moving it to the cloud to unlock value.

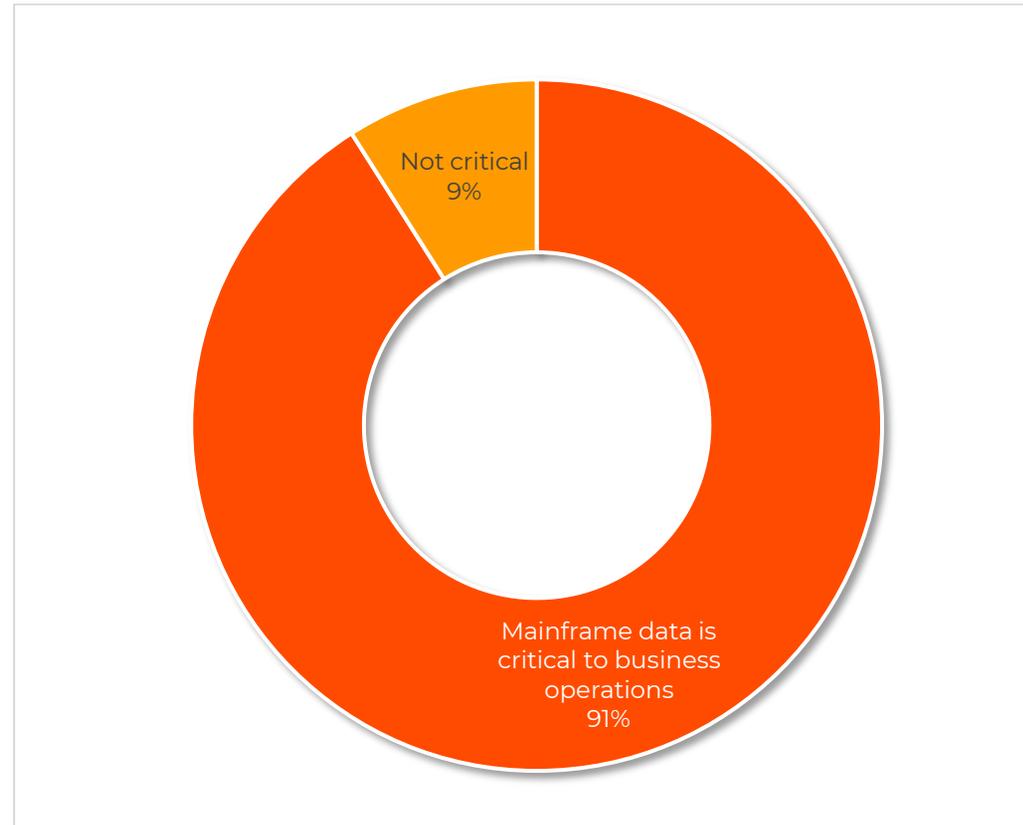


Figure 3 Importance of the Mainframe to the Business Operations

Top IT Objectives on the 2022 Roadmap

The top IT objective on the 2022 roadmap is data protection (89%).

76% of respondents mentioned cybersecurity and resilience as a high priority objective, and 52% mentioned cost optimization.

However, just 42% of respondents said that unlocking the business value of stored data was a top priority. And accelerating internal innovation—an absolute must in today’s fast-moving marketplaces—was only cited by 36% as a top objective.

This data suggests that organizations are aware of how critical data protection and cyber resiliency is today, as they should be. But data and innovation also present huge opportunities for ROI when used proactively as an innovation accelerant and source of business intelligence. Unlocking the value of all available data sources to the fullest extent is a strategic imperative IT and business leaders cannot afford to ignore.

Organizations need to see both goals—protection and innovation—as two sides of the same coin when it comes to strategic use of their data.

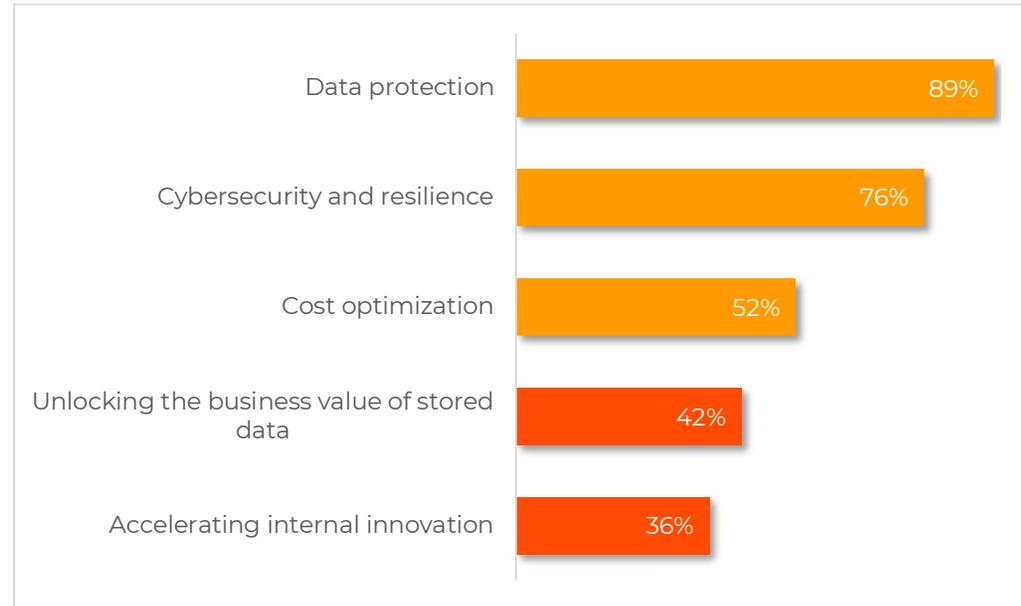


Figure 4 Top IT Objectives in 2022 Roadmap

IT Objectives in 2022 by Job Role & Data Stored on Mainframe

We took a deep dive into the upcoming IT objectives and priorities for 2022 (Page 10) to see how the answers differ based on the amount of stored mainframe data (Figure 5) and also by job role (Figure 6).

The more data stored in the mainframe; the more respondents are concerned about data protection, perhaps because data security has a longer history of focus and importance on the mainframe. Either way, the majority of respondents believe that data protection is a priority, and mainframe data is clearly mission critical data in need of protection.

Unlocking the business value of stored data is important for 50% of C-level employees, in comparison to 40% of Directors and just 38% of VP/Head roles. This suggests with strategic thinking on a high level, it's increasingly important to align business and IT goals into a single view, and to focus on getting value out of data quickly.

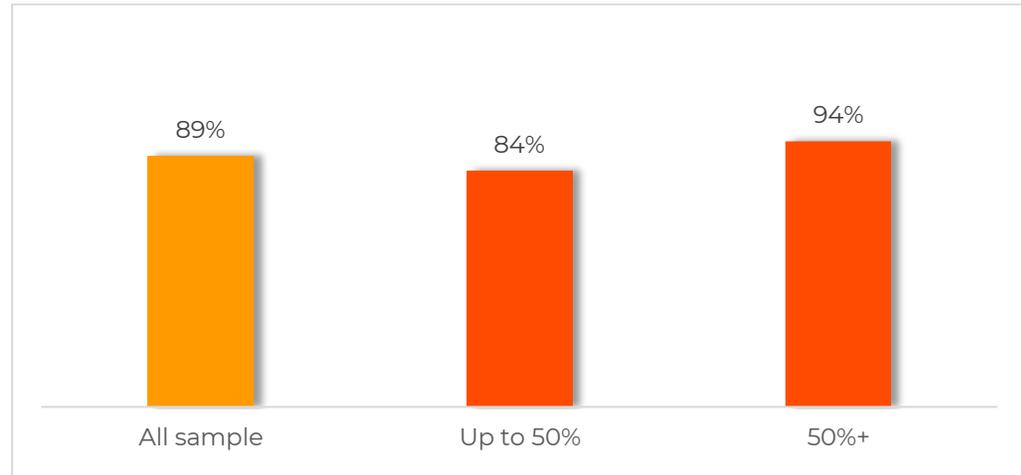


Figure 5 Data Protection by Percentage of Data Stored on Mainframe

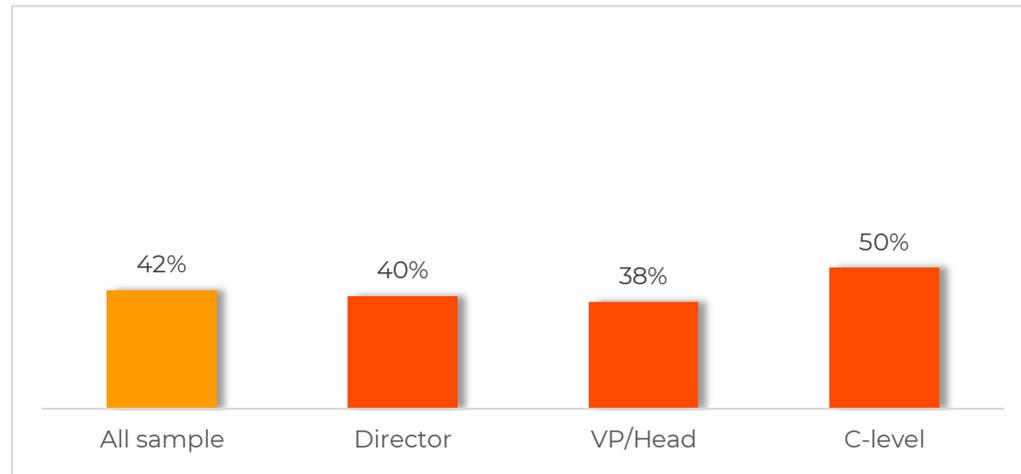


Figure 6 Unlocking the Business Value of Stored Data by Job Role

Top Ransomware/Cybersecurity Resilience Protection Strategy

Only 2% of businesses do not have a ransomware/cybersecurity resilience protection strategy.

The top ransomware/cybersecurity resilience protection strategy is the use of cloud-based immutable copies (60%).

60% of companies have realized that their recoverability is enhanced by having cloud-based copies. This makes their data more easily accessible from different locations.

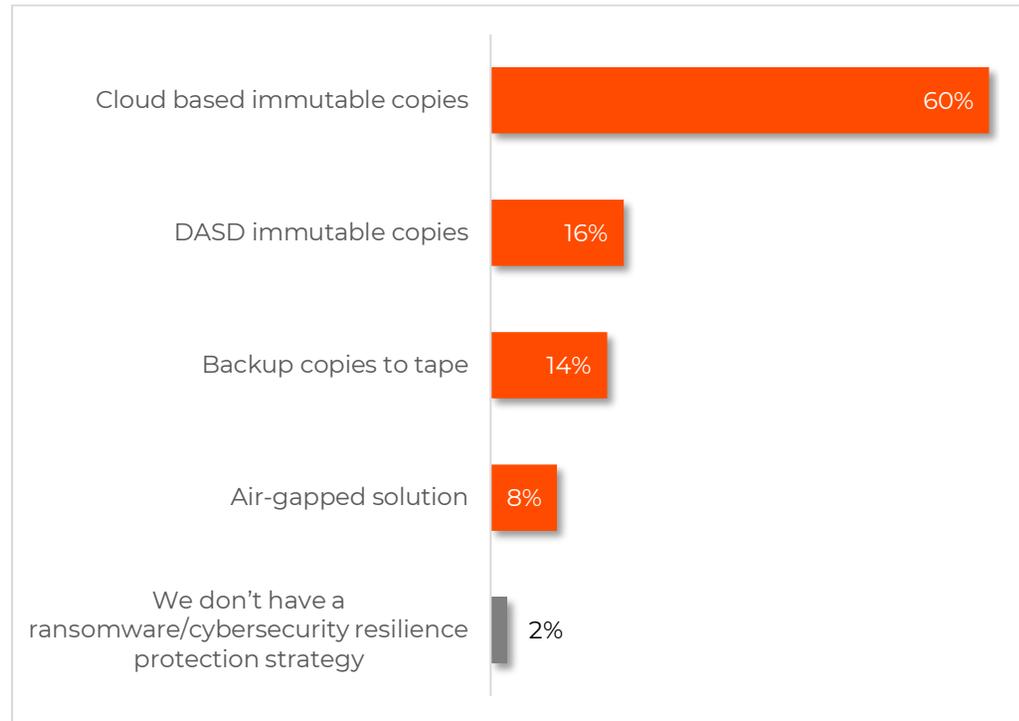


Figure 7 Top Ransomware/Cybersecurity Protection Strategy

Mainframe Backup & DR

Mainframe Backup Challenges

The top mainframe backup challenges are the increasing costs of backup solutions (39%) and complexity of the backup process (38%). The cost could be related to the more you back up the higher the costs, while complexity could be tracking of backup copies.

Half or more of respondents reported that they are in the process of solving the increasing costs of backup solutions (55%), complexity of the backup process (55%), dealing with increasing security risks (50%) and shrinking batch backup windows (50%).

There are solutions in the market that can address these challenges, reducing the cost and complexity of backup solutions.

*These questions allowed more than one answer and as result, percentages will add up to more than 100%

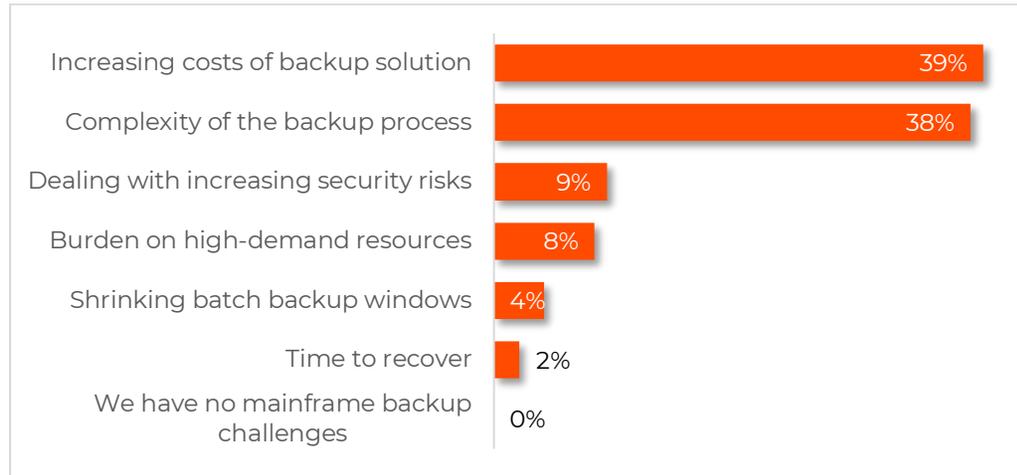


Figure 8 Top Mainframe Backup Challenges

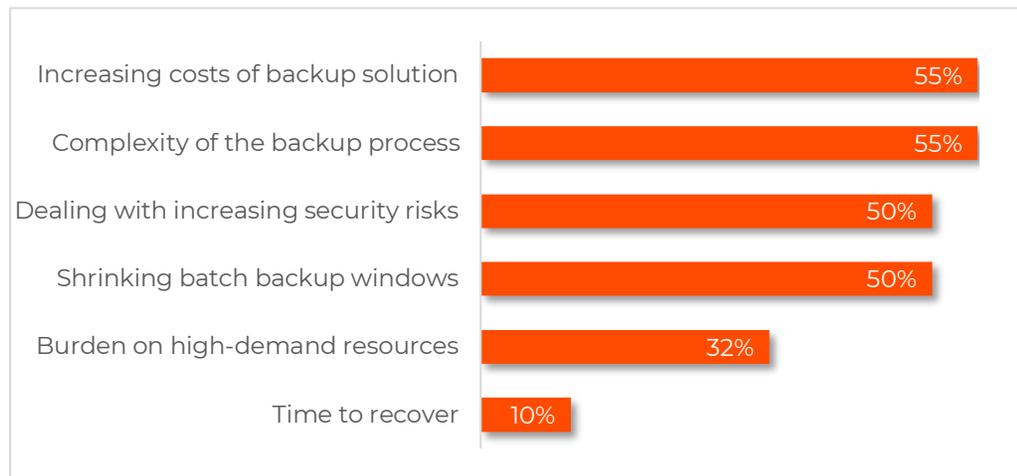


Figure 9 Mainframe Backup Challenges in the Process of Solving

Mainframe Backups Routine and Length of Full Volume Dump

Half of respondents (52%) report executing weekly full volume dumps, with almost half of them (46%) reporting this process takes between 3 to 6 hours.

Almost half of respondents also reported daily full volume dumps (45%) and daily incremental backups (44%).

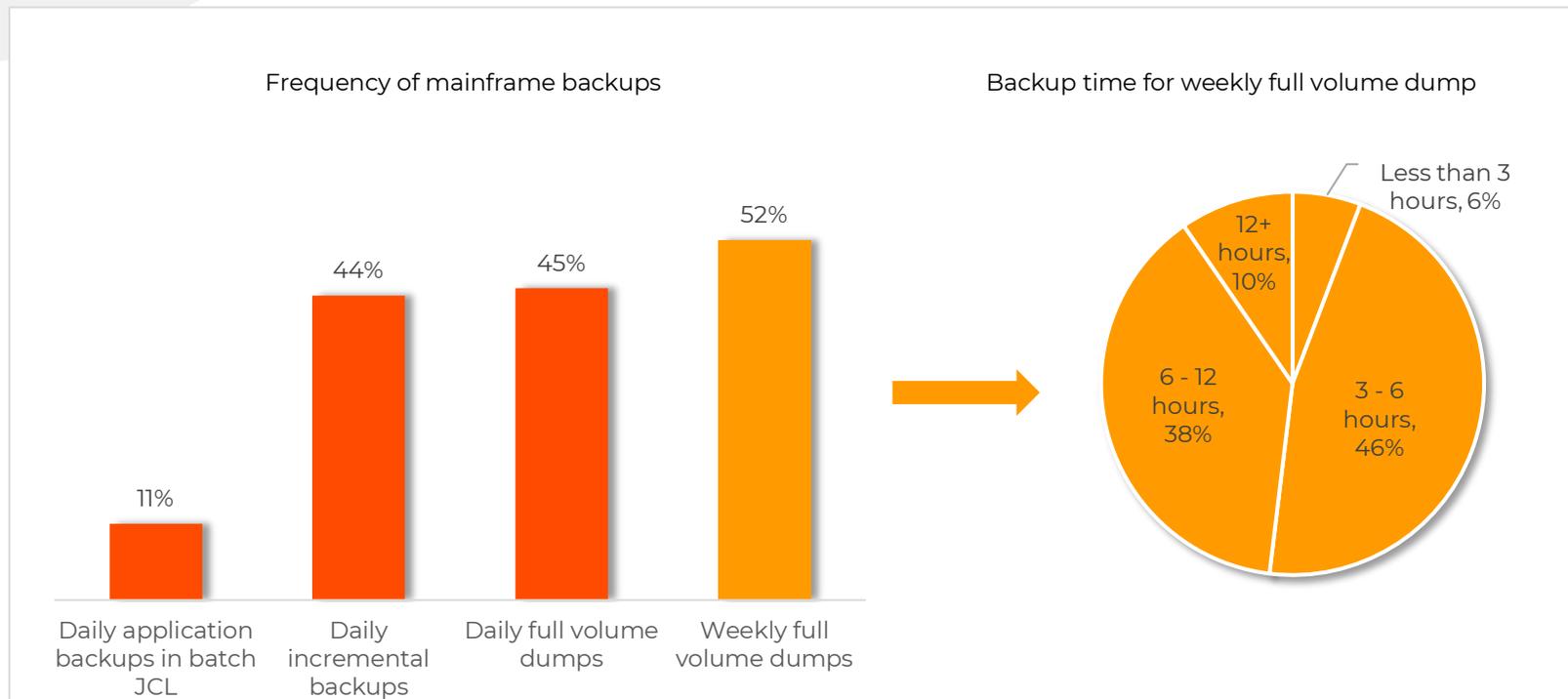


Figure 10 Execution of Mainframe Backups and Weekly Full Volume Dump Length

Meeting RTO and Value of Reducing the Backup Windows

100% of respondents see value in significantly reducing backup windows and Recovery Time Objective (RTO).

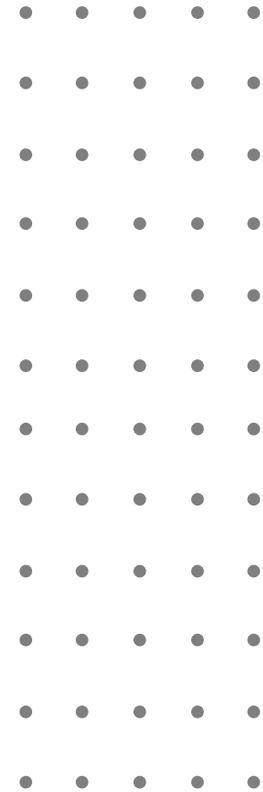
The highest value that organizations feel they would get from significantly reducing backup windows and RTO is related to financial benefits due to reduced outage time (64%), and reduction in MIPS consumption (57%).



Figure 11 Benefits in Reducing Backup Windows and Improving RTO

*Percentages on figure 11 add up to more than 100% as this question allowed more than one answer

Mainframe and Cloud Strategy



Utilization of Cloud for Delivering IT Solutions

96% of the respondents reported using hybrid cloud. Most of them use hybrid multi-cloud as opposed to single cloud-mainframe, highlighting the importance for today's technology solutions to be cloud agnostic, and for businesses to spread the risk of relying on a single cloud vendor.

Only 4% use the public cloud exclusively. Today's companies are aware it's not an either/or between cloud and mainframe. Both have benefits and migrating applications is challenging, so a hybrid cloud-mainframe environment is leveraging the best of both worlds.

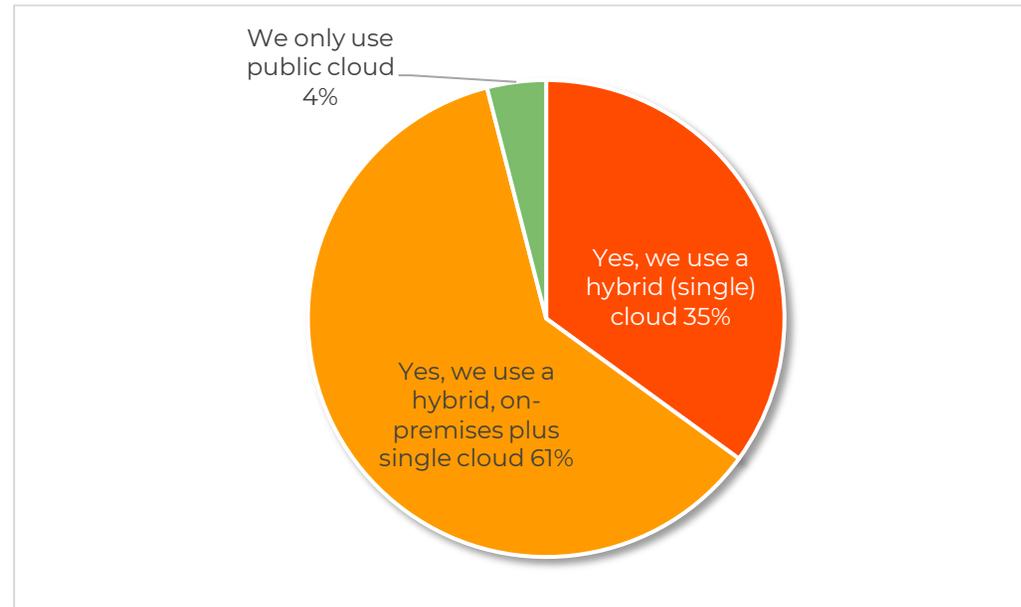


Figure 12 Utilization of Cloud for Delivering IT Solutions

Top Benefits of a Cloud Strategy

The biggest benefit of a cloud strategy is flexibility (42%), followed by resiliency / disaster recovery as an important benefit (28%), especially for C-level employees.

Cloud economics is seen as a more important benefit by Directors (20%), compared to VP/Heads (5%) and C-level management (4%).

More and more companies are adopting a hybrid cloud-mainframe model so that they can leverage cloud for what it has to offer, without needing to rip and replace existing mainframe infrastructure.

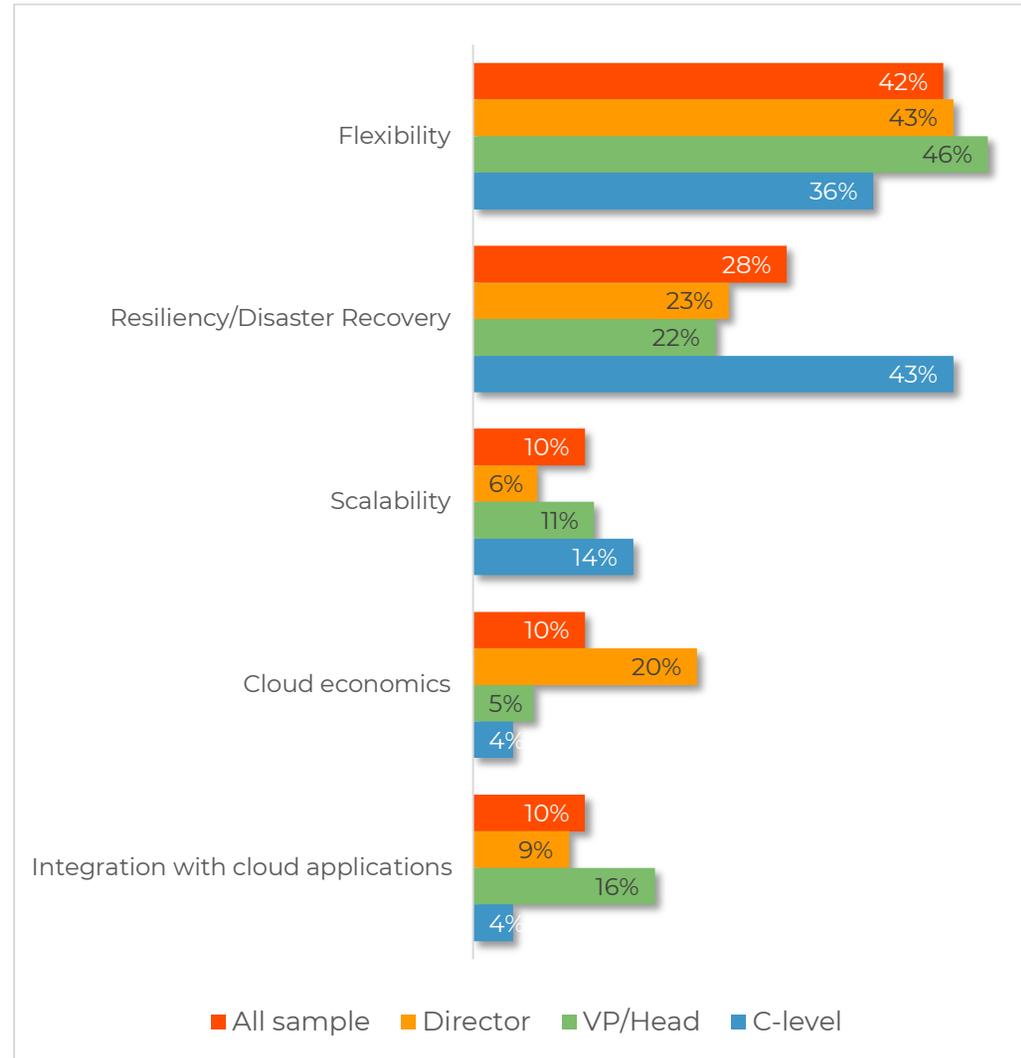


Figure 13 Top Benefits of a Cloud Strategy by Seniority

Factors in IT Operating Strategy Regarding Hybrid Cloud Storage Use

The most important factor in hybrid cloud storage in the current IT operating strategy is using a single point of data management across hybrid environments (71%).

About half of respondents (51%) mentioned the ability to access data from any location and replicating or archiving of data from on-premise storage to public cloud (48%).

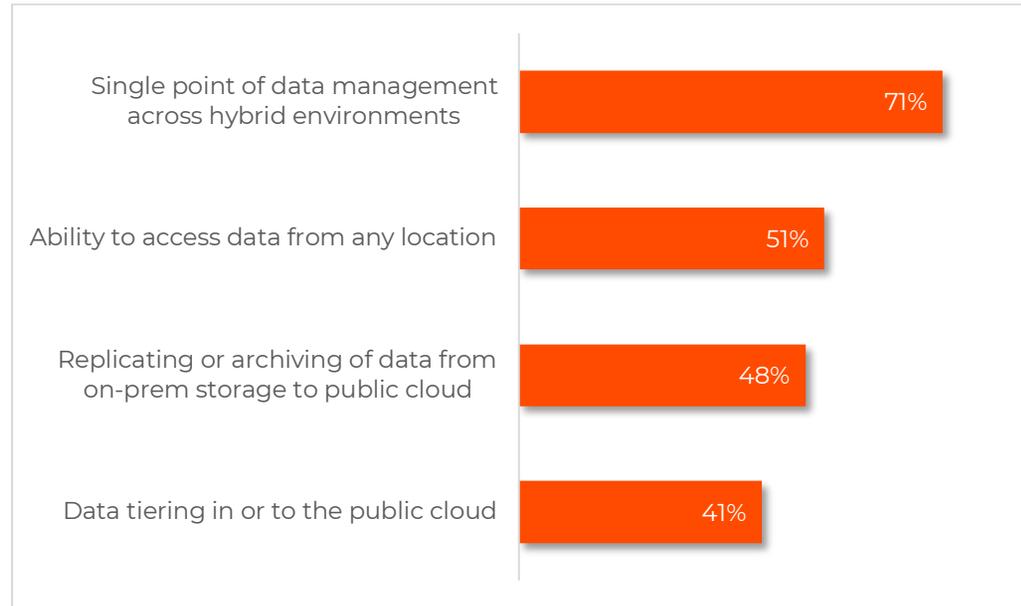


Figure 14 Factors in IT Operating Strategy Regarding Hybrid Cloud Storage Use

*This question allowed more than one answer and as result, percentages will add up to more than 100%

Mainframe Modernization Approaches Currently Being Implemented

100% of respondents are implementing mainframe modernization.

The main approach is Mainframe Infrastructure/DevOps modernization (73%), followed by modernizing mainframe applications (61%) and outsourcing mainframe operations (46%). It's obvious that everyone is hyper-focused on DevOps environment and applications. With recent innovations moving mainframe data to the cloud, a data first cloud approach is low-hanging fruit that can show quick benefits. With C-level focus on unlocking the business value of stored data combined with the immediate benefits available from a data first cloud initiative, companies should re-examine their priorities for 2022.

*This question allowed more than one answer and as result, percentages will add up to more than 100%

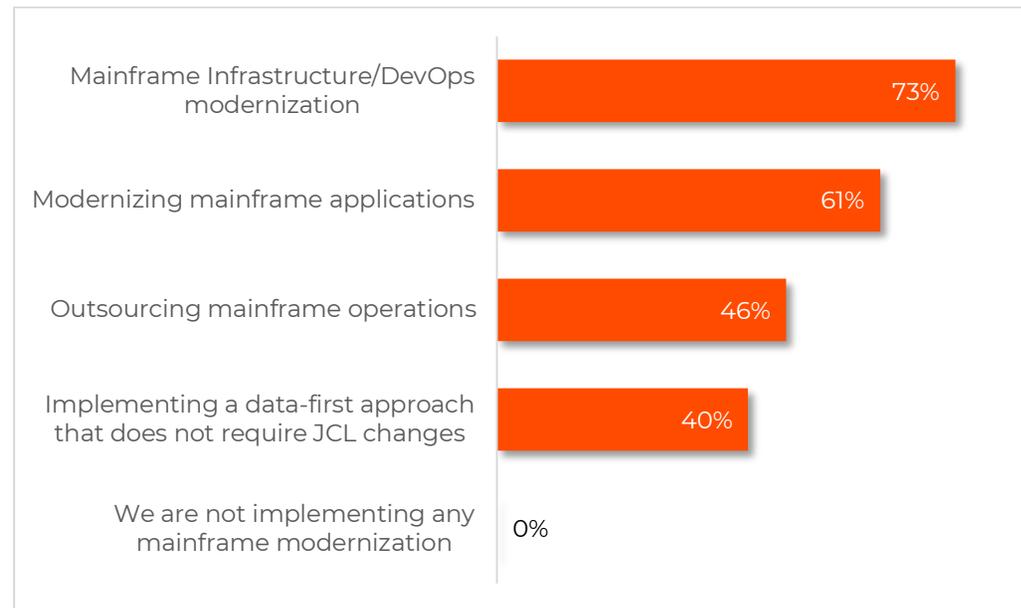


Figure 15 Mainframe Modernization Approaches Currently Being Implemented

Demographics

Computing Environments, Storage Capacity Company Size and Role

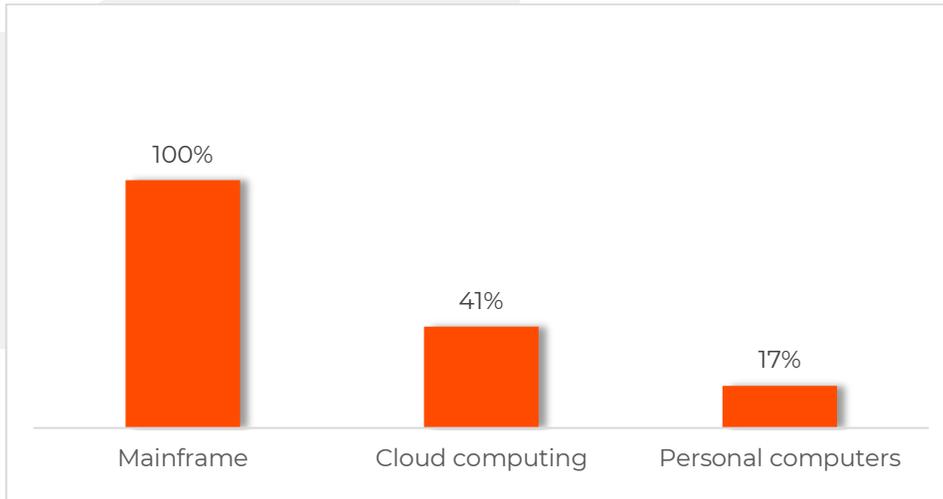


Figure 16 Computing Environments

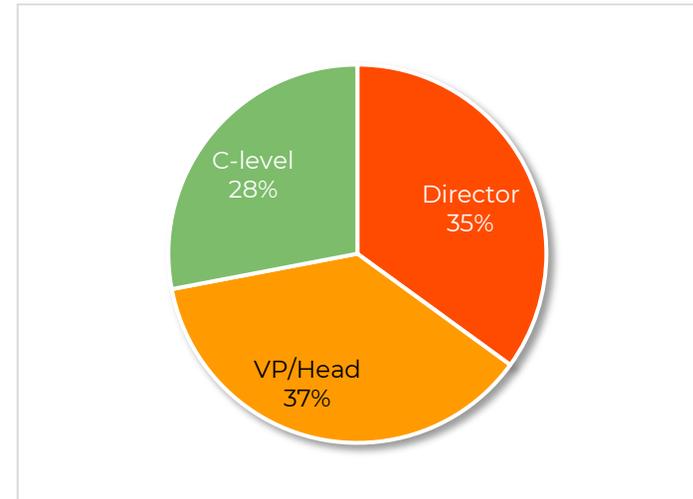


Figure 17 Role

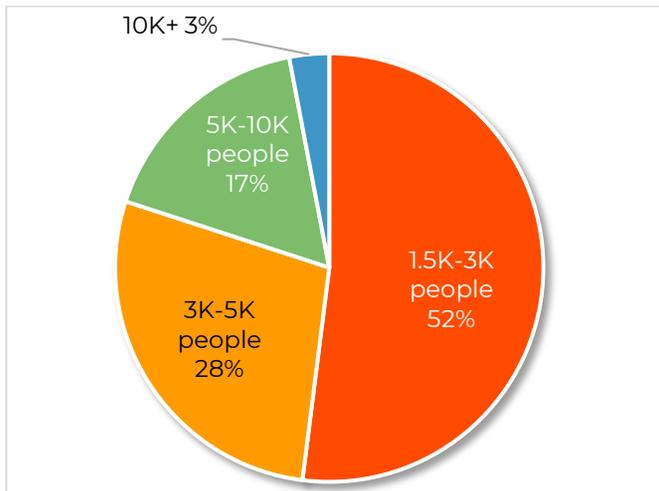


Figure 18 Company Size

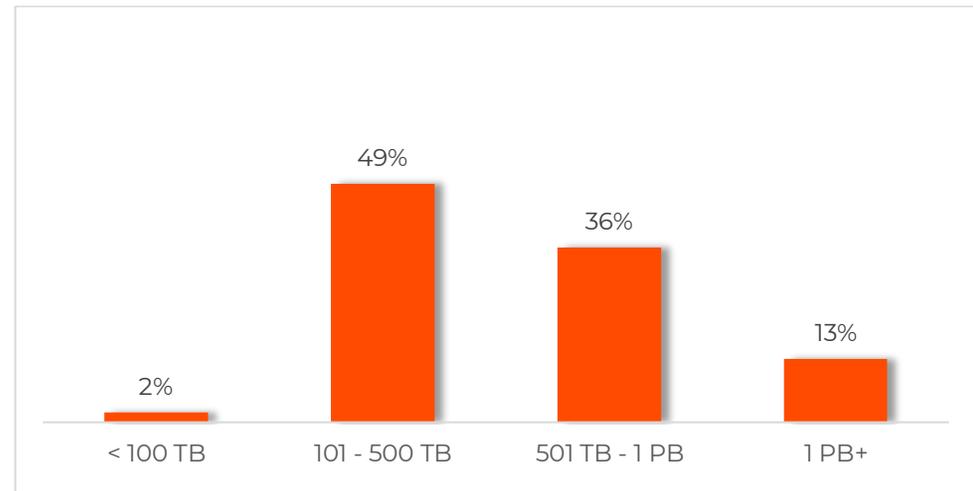


Figure 19 Mainframe Storage Capacity

About Model9

Model9 modernizes mainframe data management and business intelligence in enterprises to help them democratize data and accelerate the adoption of hybrid cloud technologies. Its patented software-only technology securely delivers mainframe data to any cloud data lakehouse, and via standard APIs enables sharing data with advanced AI and analytics platforms. Additional benefits of adopting the Model9 solution is the elimination of costly and complex legacy storage (tapes and VTLs), improved data management performance in the cloud and accelerated cloud adoption without having to perform risky, costly, and large-scale application migration projects.

Model9 is trusted by the world's leading financial institutions, government agencies, and transportation companies. Model9 is an IBM Business Partner, an AWS Technology Partner, and an Azure IP Co-sell partner.

Request a Demo

For more information, please visit us:



Email: contact@model9.com