



What Does Today's Buyer Think about Mainframe? Study Results from the Open Mainframe Project

Len Santalucia

Chairperson

LSantalucia@vicominfinity.com

Perception of Mainframe



Anecdotal mainframe comments



- “They still make mainframes?”
- “Mainframes are old, clunky machines running old text based applications people can’t get rid of”
- “Spending more money on mainframes is a waste”
- “Modern distributed architectures are the way forward”
- ”Enterprises are moving to the public cloud”

and so on...

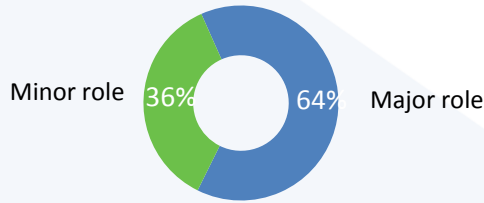
Research Methodology

- The study was conducted online from August 11 to October 31, 2017.
- The survey was fielded among mainframe professionals through a mix of channels obtained from the OMP research team.
- Respondents were deemed qualified to respond if they play a “major” or “minor” role in the operation of or decisions about mainframe computing within their organization (self-reported).
- A total of **145** individuals participated in the study; a partial listing of the companies represented is included in the Appendix. NOTE: there is some limited duplication of respondents across companies, but since company information was not required, the full extent of duplication is unknown. As a result, consider results a reflection of the individuals, not firms.
- Linux Open Mainframe Project was identified as the research sponsor. Respondents were not offered a financial incentive, but were given an opportunity to receive report highlights upon completion of the study.
- The research and analysis was conducted by Research Collaborative, an independent third party research provider.

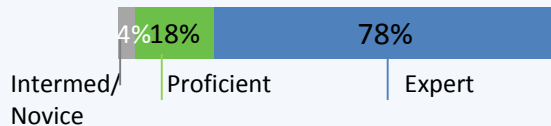
Respondent Profile

- The typical respondent is an older male who is long-tenured in a Systems or IT role, and is an expert in mainframes with key decision making power.
 - The majority of respondents are concentrated in Financial Services, Info/Technology or Government industries.

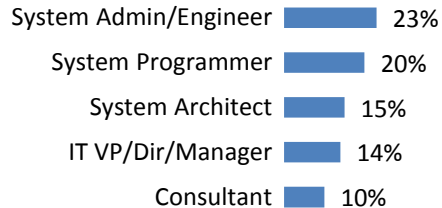
Role in Mainframe Decisions



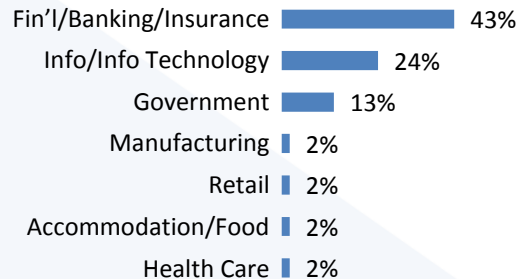
Experience With Mainframe Computing



Job Title (Top Mentions)



Industry (Top Mentions)



Years In Role

More than 15 yrs	36%
10-15 yrs*	36%
< 10 yrs	28%
Median Yrs	13

Age

60+	29%
50-59	44%
49 or younger	27%
Median age	55

Gender

Male	99%
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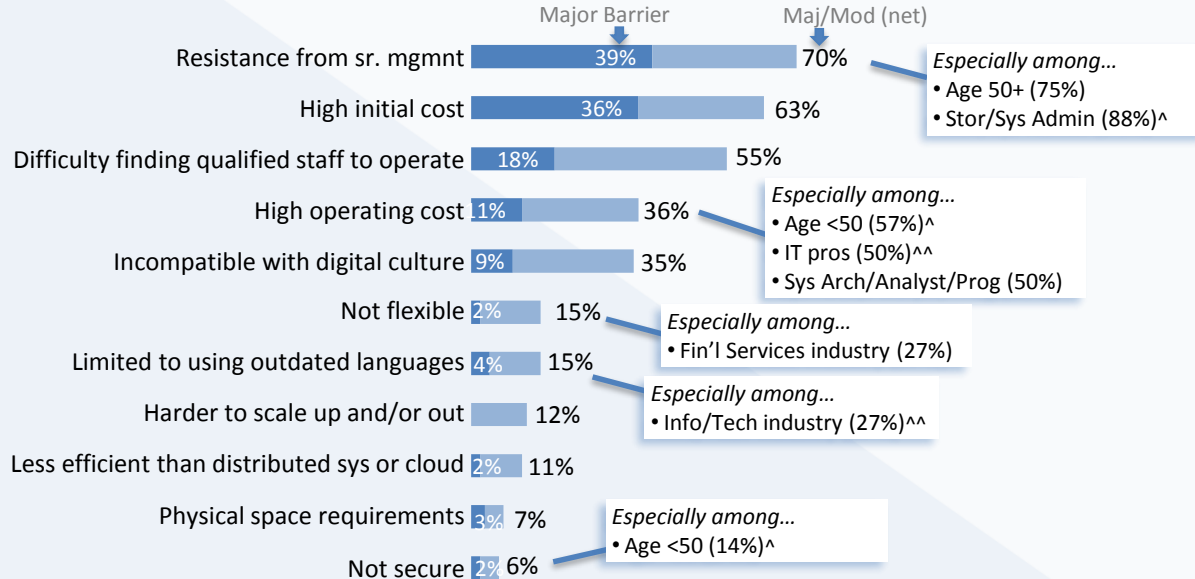
Mainframe Barriers and Biases

Perceived Barriers of LoZ



- Resistance from Senior Management and high initial costs are the main barriers to penetration of LoZ within organizations – for both users and non-users.
 - Staffing is another notable, though less pressing, concern.

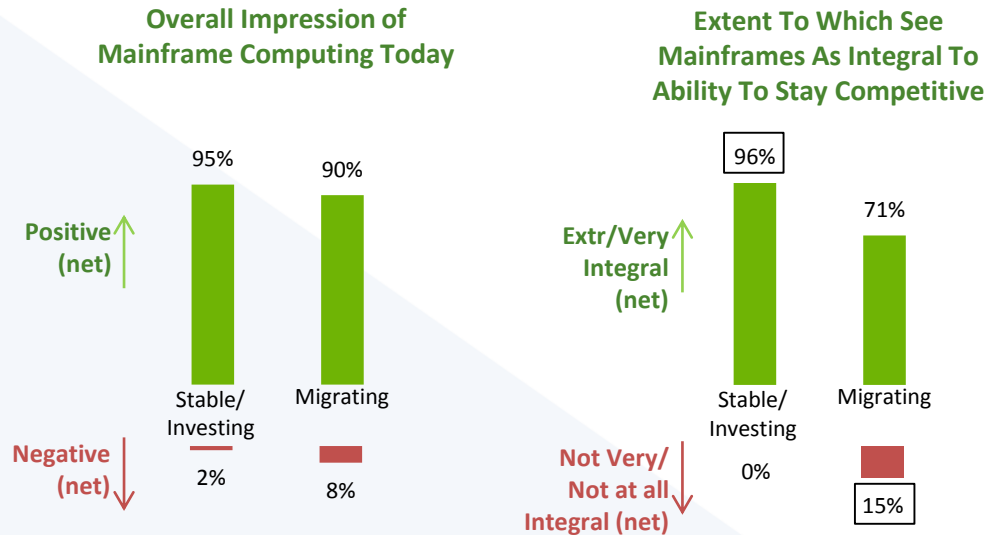
Perceived Barriers To Using Linux On Mainframe



There are **no sig differences** in barriers by whether use LoZ

Perceptions of Mainframe Computing

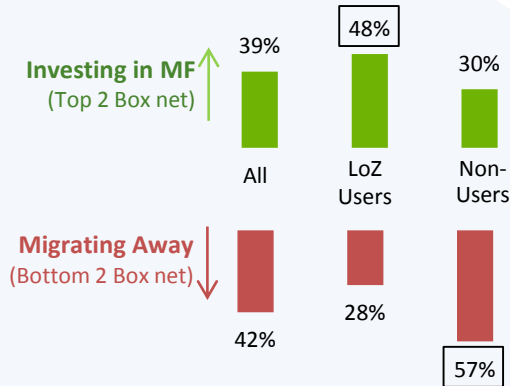
- More than 9 in 10 respondents have a positive impression of mainframe computing overall.
- Migrators are less likely than others to see mainframes as integral to their business, but they are nonetheless still very positive about the technology overall.



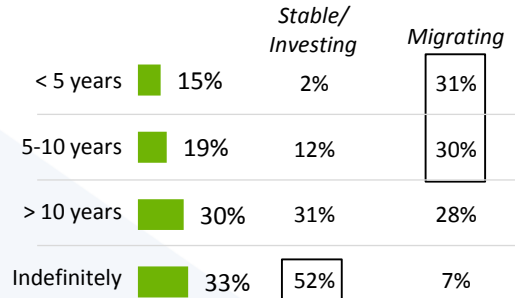
Direction of Mainframe Within Organization

- Overall, respondents see their organizations migrating away from, rather than investing in, mainframe computing – although there are notable differences based on Linux on Z usage.
 - Migrators are going primarily to distributed architecture (whether alone or with cloud solutions), and expect to phase out over the next 10 years.

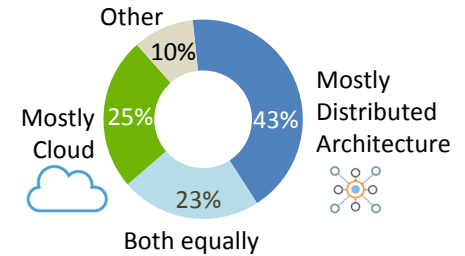
Where See Own Organization With Respect To Mainframe Computing*



Years Expect to Use Mainframe*
(All Respondents)



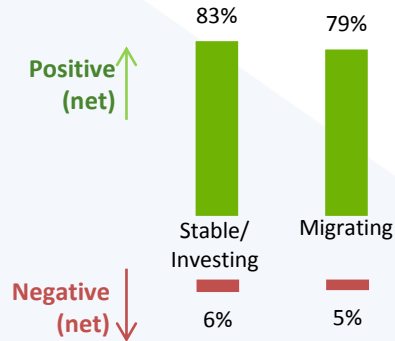
Where Migrating To*
(Among Those Who Expect To Migrate)



Perceptions of LoZ

- Migrators have a positive impression about LoZ overall, although they question the level of support and maturity.
 - Resistance from senior management is almost universally seen by Migrators as at least a moderate barrier for Migrators; Costs are also a major barrier, which fits with their overall cost-consciousness.

Overall Impression Of Linux On Mainframe



Selected Perceptions

	Stable/ Investing	Migrating
% Agree		
Linux on Mainframe is not as mature as X86	13%	31%
Linux on Mainframe cannot support the same applications other Linux platforms run	32%	51%
% Maj/Mod Barrier to Using LoZ (top 3 in each seg)		
Resistance from Sr. Management	54%	92% ¹
High initial cost	57% ¹	72%
Difficulty finding qualified staff	52%	60%

There is **no difference** in perceived benefits of LoZ by migration status

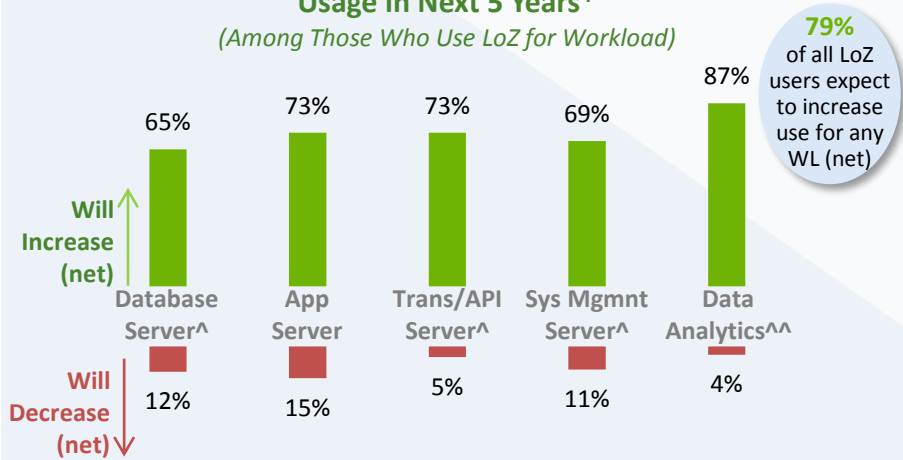
Future Deployment of LoZ



- Most LoZ users plan to increase their use of Linux on Z in the next 5 years, particularly for data analytics.
 - But adoption among non-users seems unlikely: only about 1 in 5 non-users are likely to consider LoZ for any workload in the next 3 years.

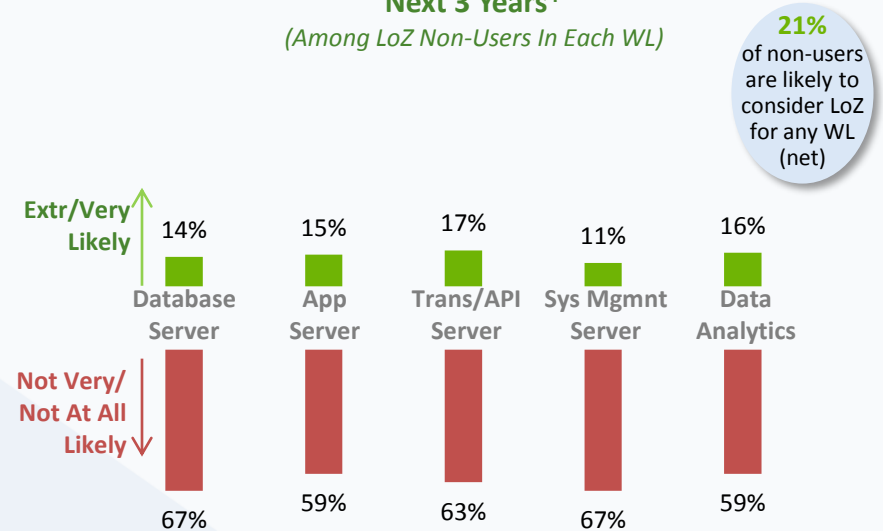
Expected Change In Linux On Mainframe Usage in Next 5 Years*

(Among Those Who Use LoZ for Workload)



Likelihood To Consider Linux On Mainframe In Next 3 Years*

(Among LoZ Non-Users In Each WL)



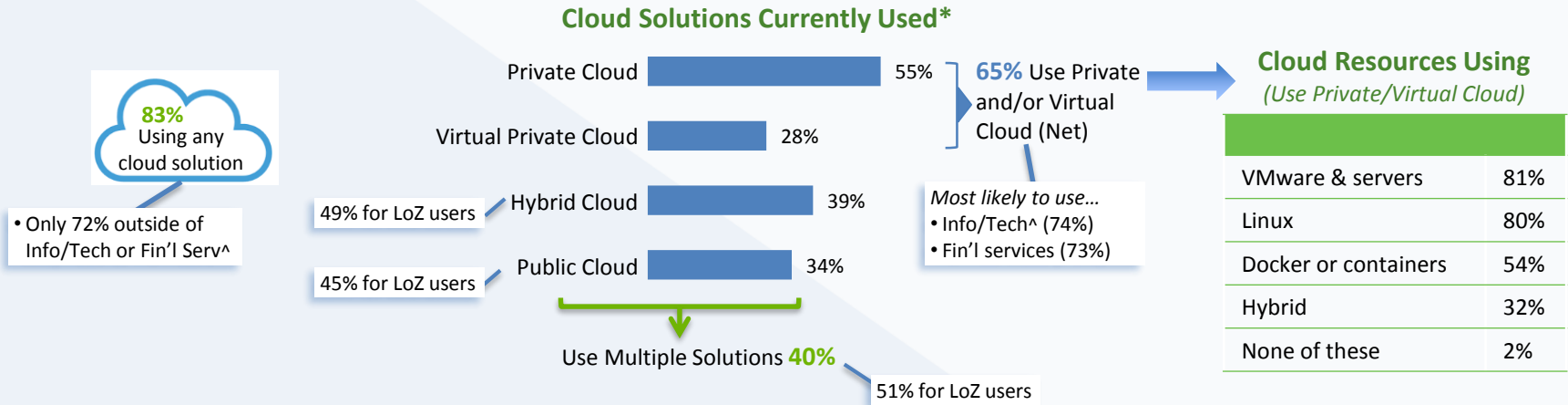
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Mainframe and “the cloud”

Usage of Cloud Solutions



- More than 4 in 5 respondents report that their organizations are using a cloud solution – typically a private or virtual private cloud.
 - LoZ users are particularly likely to use hybrid or public cloud in addition to private solutions.
 - Respondents from Financial Services and Info/Tech industries are more likely than others to use the cloud.
 - Linux and VMWare are most widely used to enable cloud solutions.

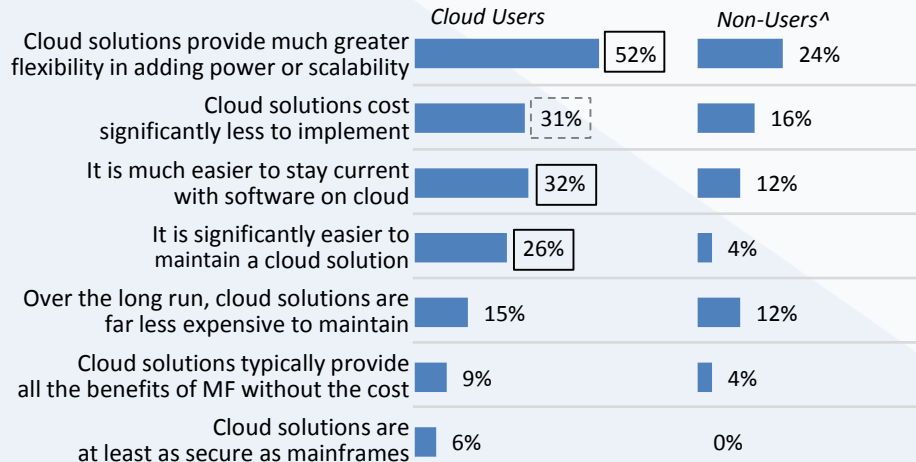


Perceptions of Cloud vs. Mainframe

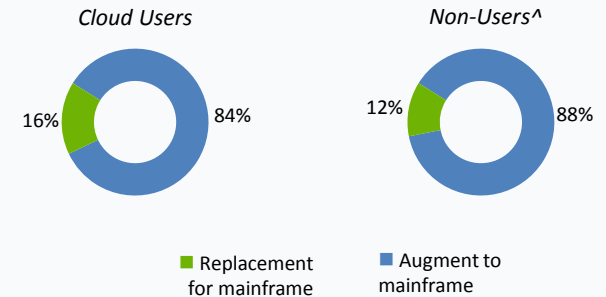


- Not surprisingly, cloud users are much more upbeat about the cloud than non-users – particularly around flexibility, staying current with software, and maintenance.
 - However, they are no more likely to see the cloud as a replacement for mainframe technology.
 - Even cloud users do not widely believe the cloud “provides all the benefits of mainframes without the cost”.

Beliefs About Cloud vs. Mainframe (% Net Agree)

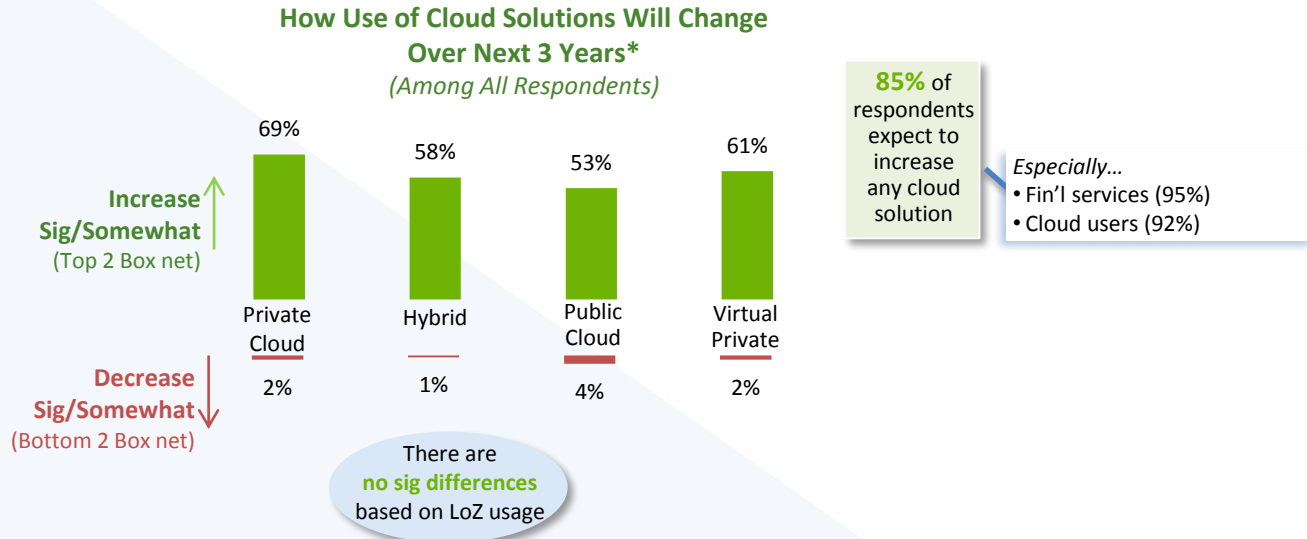


See Cloud Solutions As ...



The Future of Cloud Computing

- Use of the cloud will likely increase over the next 3 years across all types of solutions – particularly for private and virtual private.
 - Financial Services respondents and those who are already using the cloud are most likely to expect to increase usage.



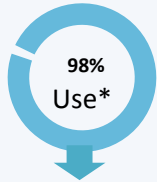
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Dev Ops on mainframe

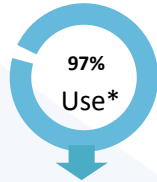
Workload Deployment

- zOS and Linux/X86 are most widely used for all workloads.
 - LoZ is most commonly used on App Servers.
 - Financial Services respondents are less likely to report LoZ usage for Database and Data Analytics workloads.

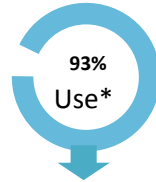
Database Server



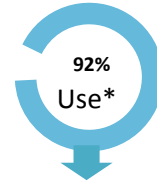
App Server



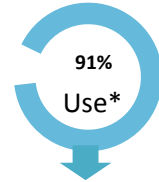
Transaction/API Server



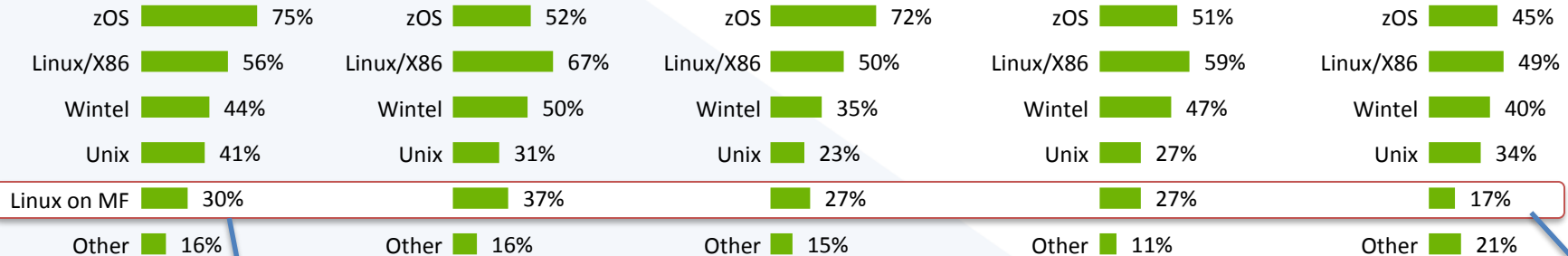
System Mgmt Server



Data Analytics Server



Where Deploying Workload Today* (among those who use workload)



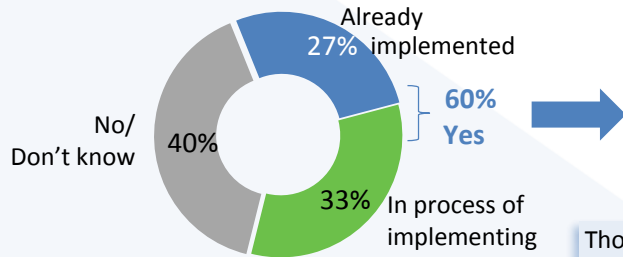
* Only 15% of those in Fin'l Serv

* Only 7% of those in Fin'l Serv

DevOps + LoZ

- DevOps is an untapped opportunity: many respondents say their firm is implementing DevOps but few say they are leveraging Linux on Z for this purpose.
 - LoZ users are more likely than non-users to be leveraging LoZ for DevOps, but at 36%, usage for this purpose is relatively low.

Whether Organization Has Implemented DevOps Environment*

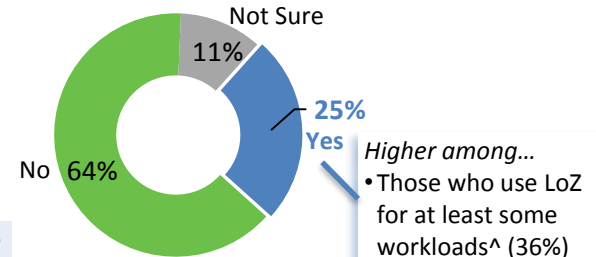


Those using **Virtual/Private Cloud** are

- MORE likely to have implemented DevOps (69% Yes) ...
- but are
- LESS likely to have deployed LoZ to support it (71% No)

Whether Leveraging Linux On Z To Support DevOps Environment*

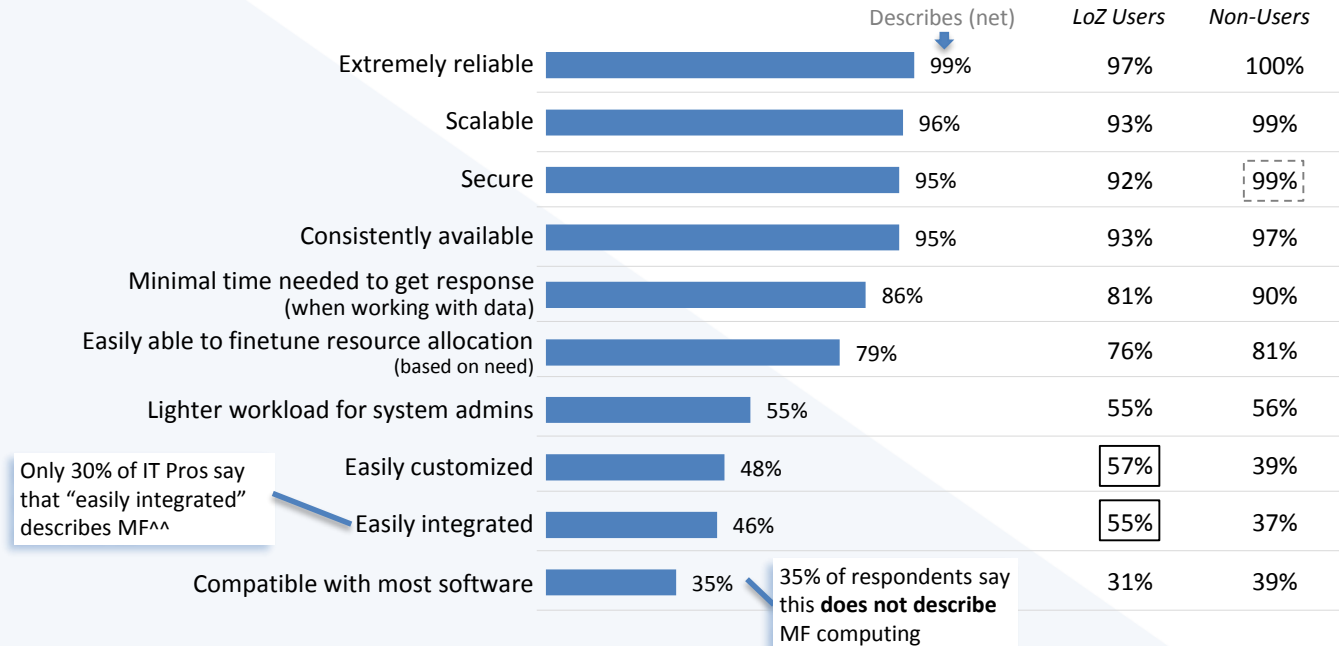
(Among Those Whose Org Has/Is Implementing DevOps)



Perceived Benefits of Mainframes

- Mainframes are widely seen as reliable, scalable, secure and consistently available.
 - There is some question as to whether they are compatible, easily integrated and customized – particularly among LoZ non-users.

Terms Used To Describe Mainframe Computing



Key Takeaways

- Incompatibility between Linux on mainframe and Linux on other architectures is less of a true concern versus biases, costs, and staffing concerns
- Enterprise computing architectures are hybrid, leveraging public cloud and private cloud in corporate data centers as it makes sense for the application
- Cloud is considered to be more costly and harder to implement than mainframe.
- Mainframe using organizations are moving to DevOps, especially if they are using Linux on mainframe.

What is Open Mainframe Project's role?

- Mitigating the staffing gap
 - Bring mainframe into standard Linux/Dev Ops admin's skill set
 - Showcasing the stories of those working with mainframe in their career.
 - Further investments into internship program.
- Closing the gaps for dev ops tooling
 - Focus support on IaaS tools and containerization
 - Showcase stories of hybrid cloud management with mainframe as part of the infrastructure
- Reframe the conversations around mainframe
 - Change “either-or” perception of mainframe in cloud world
 - Showcase ideal workloads for mainframe.
 - Better evangelize mainframe to app developers





Thank you!