



Collaboration and Growth of Open Source Enterprise Computing with Open Mainframe Project

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Not this mainframe...

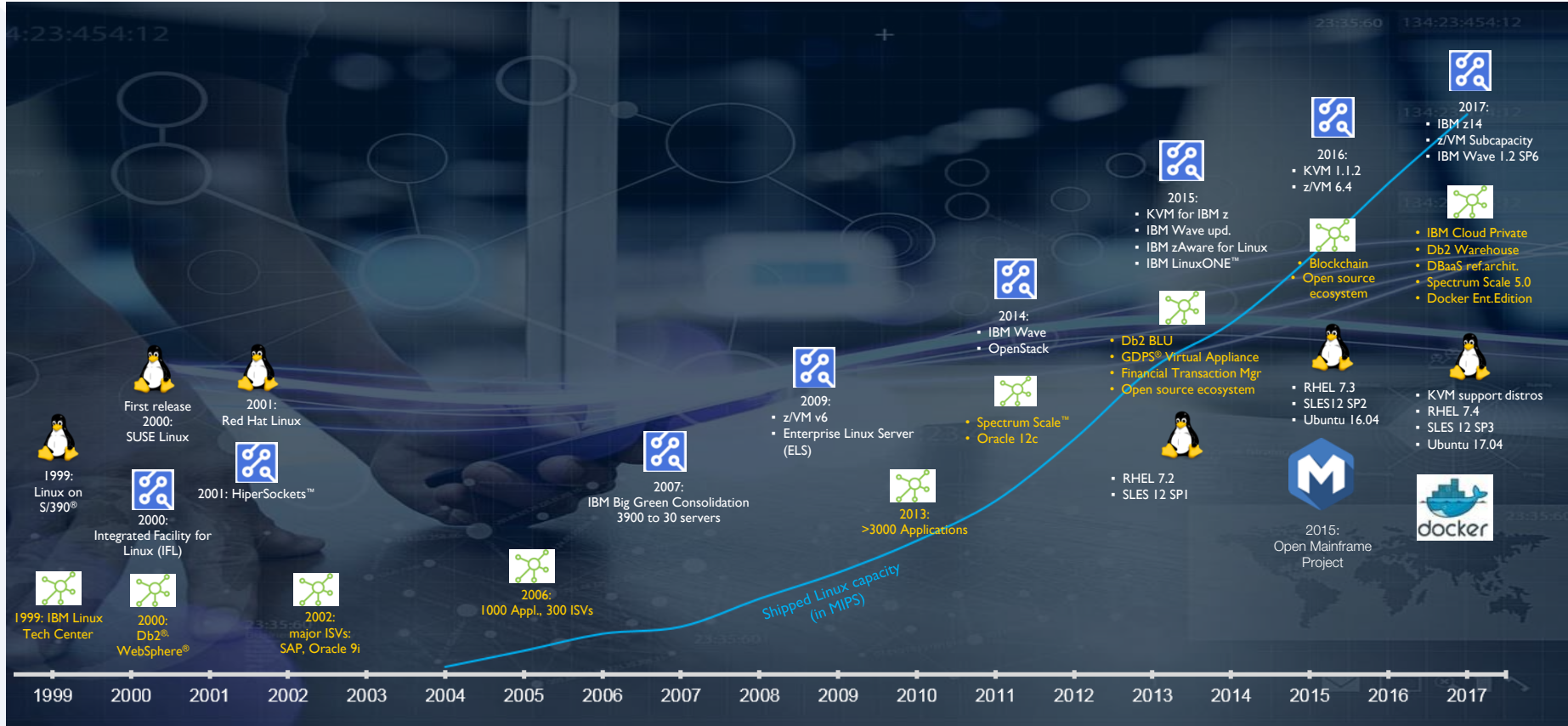


The modern mainframe (IBM z14)

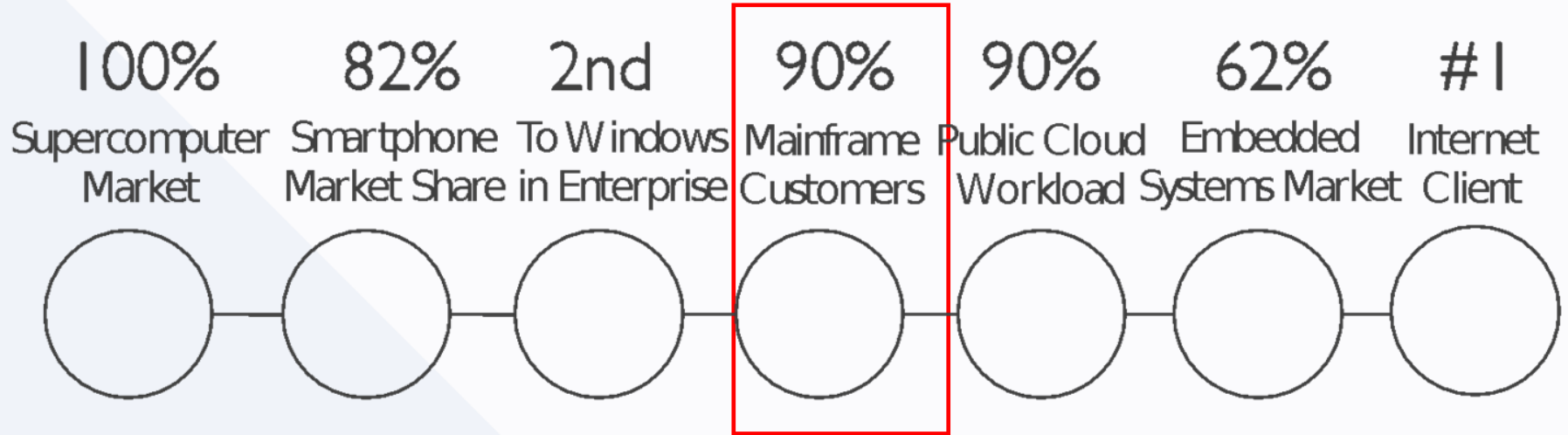


- Up to 170, 10 core 5.2ghz processors (read more at https://en.wikipedia.org/wiki/IBM_z14_microprocessor)
- Up to 32TB of RAIM (random array of independent memory)
- Heavy optimization for i/o bound workloads
- Hardware based encryption
- Fault tolerant, native hot swapping of hardware components (z stands for zero downtime)
- And....runs Linux and Open Source!

Open Source on the Mainframe - A Journey of Innovation and Technology



Mainframe is key part of Open Source success



Every market Linux has entered it eventually dominates

How does mainframe impact me?



Banking



Insurance



Healthcare



Government



Transportation



Retail





- Pays 1 in 6 U.S. workers
- Pays 1 in 4 Canadian workers
- Processed nearly 53 million W-2's in 2014

...all thanks to mainframe!



A more human resource.SM



- Largest municipal police force in the US – 35,000+ officers
- Crime rates have reduced YoY, officers better equipped to identify and process suspects in the field
- Reduced costs and improved service

...all thanks to mainframe!



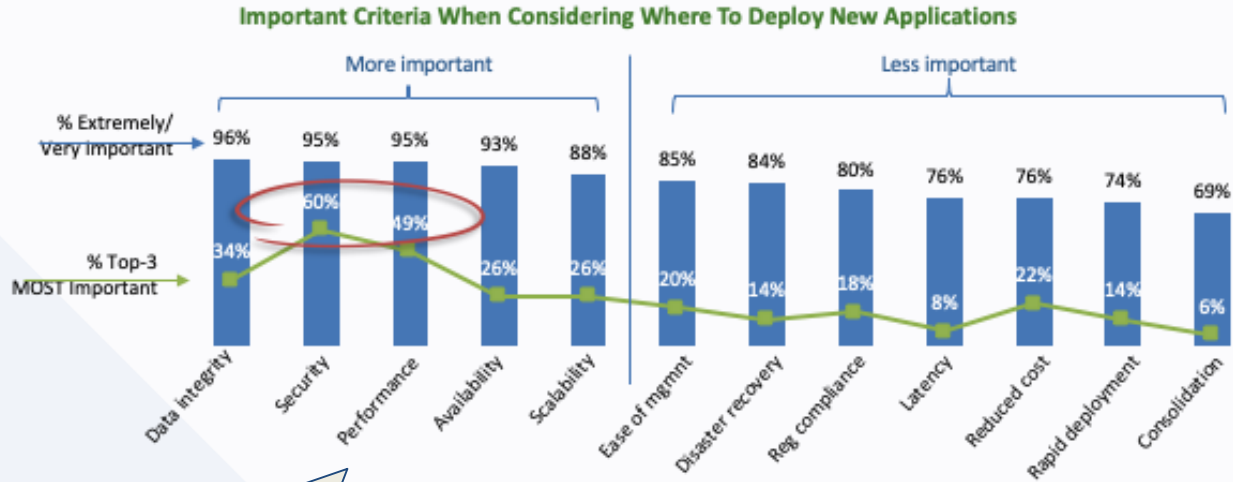
plasticbank.org

- Global organization focused on reducing ocean plastic by enabling recycling of plastic in impoverished regions.
- Connecting developing countries with world markets at scale

...all thanks to mainframe!

(see more at <https://youtu.be/p0WH-EJ8FTA>)

Mainframes are here today and will be tomorrow



Mainframe's strengths align with enterprise needs of today



Why a Foundation?

Open Source on Mainframe challenges



Disconnected, independent efforts;
no shared
“hub” of innovation

Community events are
industry specific, not vendor
agnostic

Open source on the
mainframe lacks a
neutral home for
growth

No place for students
and academic
institutions to engage

Enterprise level
engagement with
upstream projects limited

Why a Foundation? Open Ecosystems are Critical to Us All



“It’s one thing to create a great piece of software. It’s quite another to have it make a mark on the entire industry. These are the companies and organizations whose work has had a significant impact on what others build, how they build it, and ultimately, who uses it.”

SD Times Influencers: Apple, Facebook, Google, IBM, Intel, Microsoft, GitHub, Netflix, Red Hat, Slack, *The Linux Foundation*





Look to The Linux Foundation



Thankfully, that's where The Linux Foundation® comes in. For nearly two decades, The Linux Foundation has provided unparalleled support for open source communities through financial and intellectual resources, governance structure, IT infrastructure, services, events, and training.

Dedicated to building sustainable ecosystems around open source projects, The Linux Foundation is working with the global technology community to solve the world's hardest problems through open source and **creating the largest shared technology investment in history.**

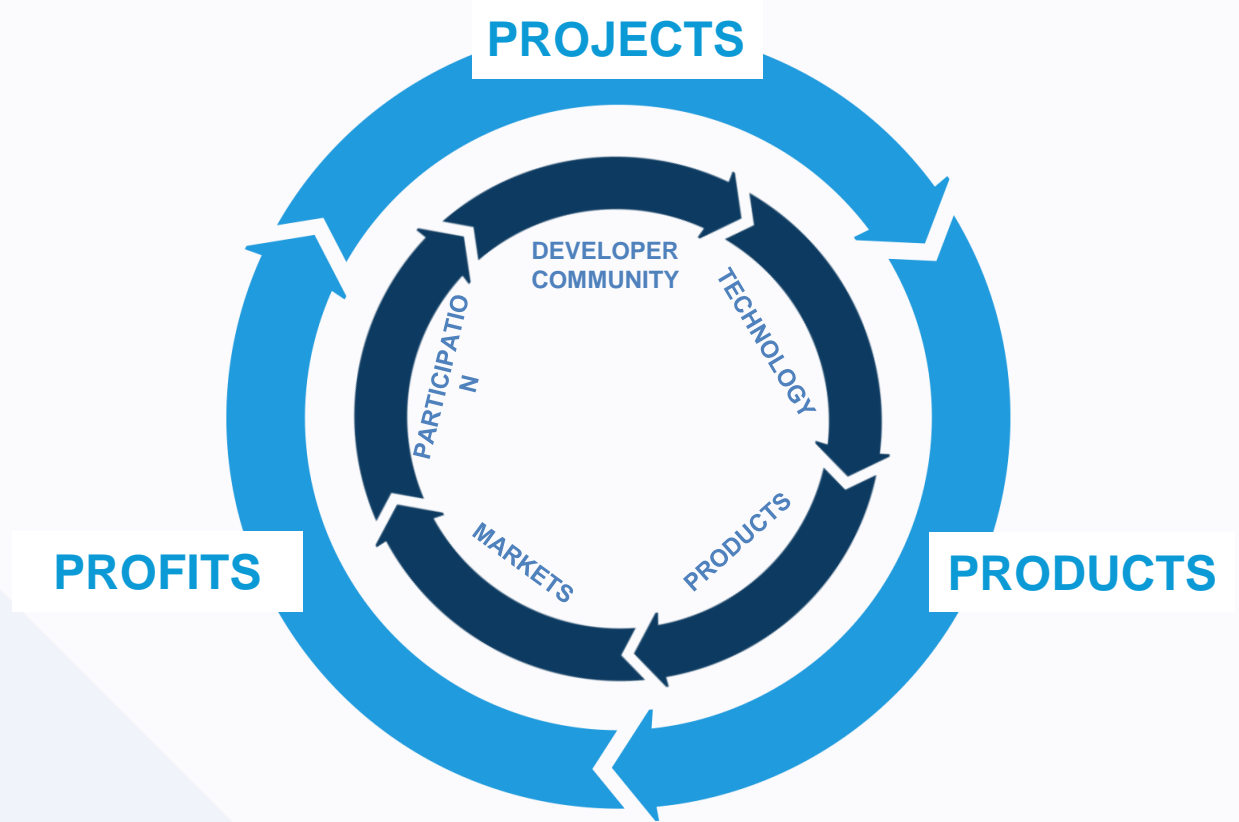
The Linux Foundation is the umbrella organization for **more than 60 open source projects** accelerating open technology development and commercial adoption. Some of the game-changing initiatives hosted by The Linux Foundation include:



The Linux Foundation focuses on creating innovation engines



Successful projects depend on members, developers, standards and infrastructure to develop products that the market will adopt



Foundations enable the gears of innovation to spin faster





One Developer at a Time and
One Industry at a Time



Mission of the Open Mainframe Project:

Build community and adoption of Open Source on the mainframe

- **Eliminating barriers** to Open Source adoption on the mainframe
- **Demonstrating value** of the mainframe on technical and business levels
- **Strengthening collaboration** points and resources for the community to thrive

Eliminating barriers to Open Source adoption on the mainframe



- Engaged as central expert in demonstrating the mainframe as a viable open source platform, with compelling advantage.
- Promotion of modern application and workload examples on the mainframe
- Growing career opportunities and academic community engagement
- Hosting and participating in local programming and promotion of Open Source on the mainframe
- Sponsorship of global initiatives and contests to grow enthusiasm for the platform

Demonstrating value of the mainframe on technical and business levels



- Showcase of technical and business case studies through blogs, white papers, and other media.
- Champion software and hardware solutions with clients

Strengthening collaboration points and resources for the community to thrive



- Engagement through Technical Steering Committee projects and independent projects by members
- Visibility to tools, resources, and community forums to tackle technical challenges
- Career opportunities from internships through retirement



How does the
project do this?

Creating spaces for mainframe community open source collaboration



ADE

z/VM Cloud Connector



Internship

TerseDecompress

z/OSMF Workflows



Zowe

Atom language syntax highlighting for z/VM

Connecting z/OS to enterprise devops with Zowe



- Zowe is an extensible framework for connecting applications and tools to z/OS mainframe data and applications.
- It's aim is to make the 'z/OS mainframe an integrated and agile platform within the changing IT architectural landscape.
- Zowe is the first open source project launched on z/OS. All code is licensed under the Eclipse Public License version 2.0



Zowe

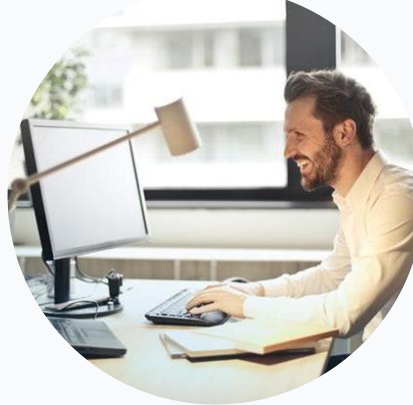
Why Zowe ?



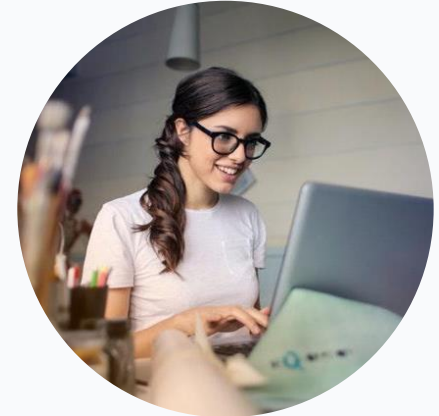
Information Technology is undergoing a revolution of changing architectures



Co-Existence With
Other Cloud Models



Protecting Future
Investments



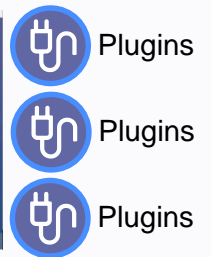
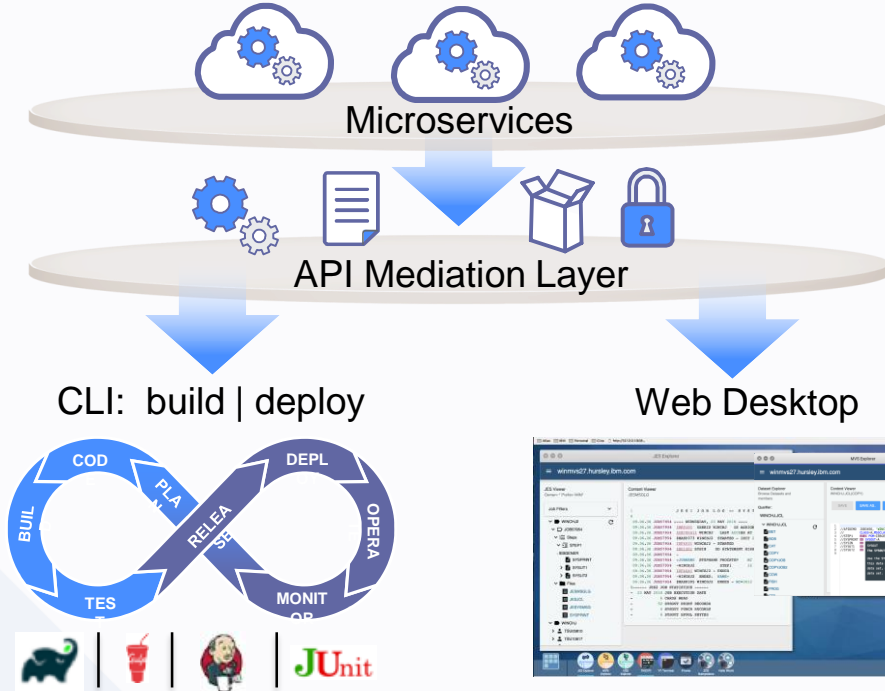
Simple and Familiar

Zowe framework and ecosystem at a glance



Core Zowe includes API Mediation Layer, CLI, and Web Desktop.

Vendors can build 'Zowe Compliant' plugins that will leverage this framework.



ADE: Bringing mainframe innovation to Open Source



- Anomaly detection Engine for Linux Logs (ADE) project brings innovation that has long been on the mainframe to the larger Linux world
- ADE detects anomalous time slices and messages in Linux logs (either RFC3164 or RFC5424 format) using statistical learning.
- Learn more at <http://openmainframeproject.github.io/ade/>

Anomaly Detection Engine Log Investigation Tool

2015-12-11T19:00:00.000-05:00

Dates: 2015-12-11T19:00:00.000-05:00 -- 2015-12-12T19:00:00.000-05:00

Number of intervals: 144

Interval Size : 10 minutes

System ID	Anomaly scores							
sys1.openmainframe.org								
Score	Meaning							
100	Very rare							
95-100	Quite rare							
80-94	Unusual							
0-79	Normal							
Interval Index	Interval Time	Anomaly Score	Number of Unique Messages	Num of New Msgs	Num of Never Seen Before Msgs	Missing	Reason for Missing	Interval, V2
0	0:00 - 0:10	99.5	32	7	0	false		XML
1	0:10 - 0:20	98.9	26	6	0	false		XML
2	0:20 - 0:30	98.9	28	5	0	false		XML

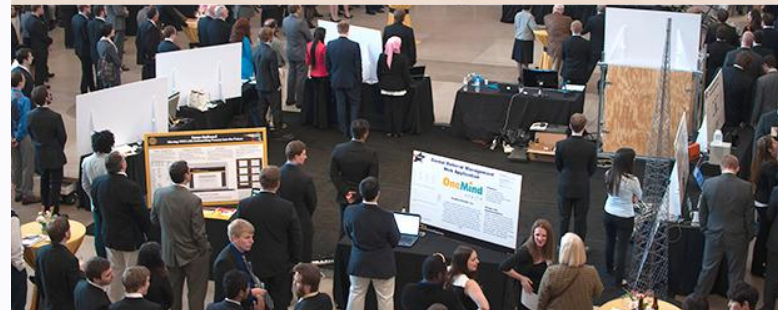
Internship and academic engagement programs are putting mainframe in the hands of the next generation



Summer Internship Program



Blockchain Hackathon for
EPSI University in France



VCU Capstone Partnership

36

Interns
sponsored

14

Supporting
academic
institutions

100+

Students
impacted

Open Mainframe innovation thrives here



- OMP provides a vendor-neutral home for mainframe-centric open source projects
 - Code hosting/infrastructure
 - Governance
 - Legal/Trademark defense
 - Ecosystem development
- LF staff support project communities establishing guidelines and best practices to enable diverse community growth and adoption
- Our philosophy creates natural collaboration opportunities between mainframe-centric open source projects

Project lifecycle, guidance, and proposal process openly defined at <https://github.com/openmainframeproject/tsc/tree/master/process>



Supporting open source
on mainframe beyond
hosted projects

Sustained mainframe support in the broad open source community through the Supported Projects program



Infrastructure



Developer support



Market awareness



Governance/IP Home



Participating Open Source Projects include



Telling the “mainframer” story



- Monthly interview series that highlights both new and old in mainframe
- Goal is to showcase why people have mainframe in their careers and their views of the technology and career field
- Read and listen at <https://www.openmainframeproject.org/category/blog/i-am-a-mainframer>



Bringing together the open source and mainframe conversation



Meetup

Sponsored Meetup Program

<https://www.openmainframeproject.org/meetup-program>



Slack Channel

<https://slack.openmainframeproject.org>

OPEN MAINFRAME PROJECT COMMUNITY FORUM			
Calling SMAPI from Linux		6	266
What Open Source tools are missing from OS/390 and need to be ported?	Compatibility	13	506
Welcome to the Open Mainframe Project Discourse Forum		8	942
Open Mainframe Academic Committee	General Knowledgebase	0	51
Cloudstack for z/VM Meeting July 21, 2017		1	123
Anyone doing Big Data on z?	Compatibility	9	370
Cloudstack for z/VM Meeting July 14, 2017		1	108
What can Mainframers do to best capture all of its capabilities?	General Knowledgebase	0	63
Cloudstack for z/VM Meeting June 28, 2017		2	136
Blockchain and the Mainframe	General Knowledgebase	1	89
Cloudstack for z/VM Meeting June 16, 2017		5	162
Open Mainframe Project Summer 2017 Interns	Academic Communications	2	116

Community Forums

<https://community.openmainframeproject.org/>

Open Mainframe Project community traction



4

years since launch

29

Supporting organizations

7

Hosted Mainframe centric
Open Source Projects

100+

Students impacted
through internships and
academic programs

Members



HoGent



UNIVERSITÄT
LEIPZIG

MARIST



How to participate in Open Mainframe Project



Open participation for all interested in Mainframe and Open Source

Community discussion and collaboration - both virtually and at regional events.

6 Shared R&D open source projects - or bring your project to be hosted here

Corporate sponsorship for showing stewardship in the community



Learn more about the Open Mainframe Project

- Find out more and subscribe to our newsletter at www.openmainframeproject.org
- Organizational membership opportunities at <https://www.openmainframeproject.org/about/join> or email at membership@openmainframeproject.com
- Talk to me after this talk!



Questions?



Thank you!



Membership

Membership Benefits (I)



Industry Leadership

- Shape the Open Source Mainframe market
- Network with other members of Open Mainframe Project
- Participate in Open Mainframe Project event and speaking opportunities
- Join Open Mainframe Project Projects
- Serve on the the Governing Board to help shape investments of Linux and Open Source on Mainframe (Platinum only)

Marketing Opportunities

- Benefit from and participate in Open Mainframe Project marketing efforts
- Engage with your peers on the marketing committee
- Feature your products and applications that leverage Linux and Open Source on Mainframe at key industry events, website and marketing collateral

Membership Benefits (2)



Technology Leadership

- Contribute to and influence the direction of Open Mainframe Project technical investments
- Drive leadership for future enhancements and extensions that matter for your business
- Ability to guide feature sets in requirements documents and future technology roadmaps
- Support and drive community work by being a voting member of the Technical Steering Committee (Platinum only)

Learning and Engaging

- Engage and collaborate with the membership community to enhance your Open Source/Linux on Mainframe roadmap.
- Work together across company lines and industries.
- Create products & apps secure in the knowledge that they will be interoperable in across enterprise class architectures.

Corporate, Academic, Associate Membership Levels



Level	Annual Fee	Board Seat	TSC Seat	Marketing Committee	Notes
Platinum	\$120,000	Yes	Voting	Yes	Initial 2-year participant commitment
Platinum End-User	\$30,000	Yes	Voting	Yes	Initial 2-year participant commitment
Silver	5,000 employees or more = \$35,000 3,000 < 5,000 employees = \$30,000 1,000 < 3,000 employees = \$25,000 500 < 1,000 employees = \$20,000 100 < 500 employees = \$12,000 < 100 employees = \$7,000	1 per 10	Non Voting	Yes	
Academic	Free	1 per 10	Non Voting	Yes	Restricted to academic institutions
Associate	Free	No	Non Voting	Yes	Non-profits, open source projects

To join Open Mainframe Project, go to <https://www.openmainframeproject.org/about/join> or email at membership@openmainframeproject.com

Listed fees include Linux Foundation Silver membership. If you are already a Linux Foundation Member, reduced pricing is available.