Today’s Presenters

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Agenda

- Open Mainframe Project Introduction
- Introduction to Zowe
- Zowe 1.0
- VIVA
- Q&A
- How to get Involved
Mainframe is key part of Open Source success

Every market Linux has entered it eventually dominates
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
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:
Open Mainframe Project community traction

3 years since launch

29 Supporting organizations

6 Hosted Mainframe centric Open Source Projects

100+ Students impacted through internships and academic programs

Members

[Logos of various organizations]

- AMC
- ADP
- Albany State University
- CA technologies
- CII
- docker
- East Carolina University
- EMA
- EPSI
- Goethe University Frankfurt am Main
- Guide
- SHARE Europe
- SE Europe
- GTSoftware
- Hochschule Coburg
- HoGent
- IBM
- Universitat Leipzig
- MARIST
- North Carolina Agricultural and Technical State University
- Rocket
- SHARE
- Sine Nomine Associates
- SUSE
- ubuntu
- University of Bedfordshire
- University of Wolverhampton
- VCU
- WHC M.Infinity
- William Paterson University
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
Sustained mainframe support in the broad open source community through the Supported Projects program

<table>
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<tr>
<th>Infrastructure</th>
<th>Developer support</th>
<th>Market awareness</th>
<th>Governance/IP Home</th>
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Participating Open Source Projects include:

- Debian
- Alpine Linux
- Gentoo Linux
- PostgreSQL
- Fedora
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
Internship and academic engagement programs are putting mainframe in the hands of the next generation.
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

Sponsored Meetup Program
https://www.openmainframeproject.org/meetup-program

Slack Channel
https://slack.openmainframeproject.org

Community Forums
https://community.openmainframeproject.org/
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.

How to participate in Open Mainframe Project
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
Zowe Overview
• 700+
• Community Slack Members Engaged
• 20+
• Apps, plug-ins and extensions

• 50+
• Active committers.

V1.0.0
GA Feb 7th 2019
EPL 2.0 license

1,700+
Open Beta Downloads
Different interfaces and tools for DevOps and infrastructure services

- TSO
- ISPF
- Eclipse
- Rexx
- JCL
- USS

Development and Operations Teams (Internal/IT Facing)
APIs, Web UI, CLI for Development and Operations

Development and Operations Teams (Internal/IT Facing)

Zowe core base function

Vendors can build Zowe extensions
We are building more than just technology, we are building a **community**

![Zowe Logo](image)

**Command Line Interface (CLI)**
Challenge

Add your favorite tool

Michelle

Cloud

AWS CLI, Azure CLI, ...

Mainframe

Add your favorite tool
How do I call mainframe from Jenkins?

In general, there are two ways to automate actions from Jenkins:

1. Install a plugin for Jenkins and use it in steps to automate tasks.
2. Write a script (shell, python, other) and call it from a step to automate tasks.

There are drawbacks / benefits to both approaches. While #1 - the plugin approach - gives you out of the box functionality and does not require you to script, it may be rigid and limited in its abilities. #2 - the scripting approach - requires you to write scripts, as well as maintain them, but may provide much more flexibility and freedom in automating things.

The scripting approach generally uses a lot of CLIs - aws cli, docker cli, etc.

Build IDE extensions!
We are building more than just technology, we are building a **community**

Open. Simple. Familiar.

Web Desktop
UI Challenge

Previous solutions to the problem fall short

• Fat clients installed on end-user machines
  • Adds prereqs to each machine
  • May be windows-only
  • May replicate data already on Z

• Websites
  • Scope limited to targeted category of software
    Extensibility limited by traditional capabilities of HTML/CSS/JS
  • Limited communication with other software/sites for logical workflow
  • Some based on technology becoming unsupported (activex, java plugin)

• Good UIs use your intuition to gain insight and complete high level tasks

• Coexistence with CLI where low level tasks & automation exceed

• z/OS doesn’t provide tech to present a UI on the level of those of consumer devices

• X11 present on USS, but not much software support
UI Solution

Zowe App Framework

- Create an extensible webpage for running multiple web applications simultaneously

Dev freedom to code using different web tech
- Security & Compatibility – isolation of framework inner objects from Apps, isolation between Apps (JS, HTML, CSS)
- Performance – page load speed unaffected – Apps loaded only first opening
- Minimal memory consumption – common libraries are included in base, Apps can use for “deduplication”
- Flexibility – Design by interface allows for changes in layout & technology support

App framework makes it possible to have multiple apps, written by different parties, using different web technologies, to coexist within the same page

UI seen as a so-called “Single Page App” (actions done without navigating browser between pages)
UI Solution

Goal: one intuitive & modern place for all z/OS UIs
• Existing websites can be presented in UI via iframe wrapper, mediation layer for solving CORS
• Terminal (3270 and SSH) present for compatibility
• Modern web libraries rich enough for representing look&feel seen in fat clients

Zero install: Pure HTML, CSS, and JS in a browser
• Chrome, Firefox, Edge, Safari – use it on a chromebook or a desktop
Want’s a web dev to do?

Making an App for Zowe isn’t so different, and you have choices

1. Have a preexisting site?
   • Connect its server to the mediation layer
   • Make an iframe App that references the mediation layer link
What’s a web dev to do?

Making a new program?
Code in React or Angular (Vue, etc possible in future)
Utilize App framework base webpack config, and
typescript config (typescript not required, but very recommended)
   Biggest difference – webpack config clashes with dev tools such as angular cli
Minor zowe accommodations for entry, css isolation (ex css modules), and windowed-awareness (events)
Growing collection of optional-but-recommended framework features
   Notification API, Settings storage API
   URI abstraction API, App2App communication API
   Globalization API
   Logging API, Backend APIs for building REST/WS
We are building more than just technology, we are building a **community**

**Zowe**

Open. Simple. Familiar.

**API Mediation Layer**
Problems

- Multiple Sign On
- Endpoint Configuration
- Heterogeneous certificates
- Cross Origin Request
...
API Gateway

Netflix Zuul/Eureka base
Single Sign On (SSO)
JSON Web Token
Reverse proxy endpoint
Swagger open API Catalog
Single client certificate
Gateway<->Server
Static registration
Dynamic Discovery
Dynamic discovery service based on Netflix Eureka framework.

API servers can be statically defined through .yaml files or else REST API calls to the gateway. API Catalog lists API servers on its “Southbound edge.”

My Server APIs
Wazi -- A Web IDE for Z Open Development powered by Zowe

IBM Db2 DevOps Experience for z/OS
Modernize Db2 applications with speed, agility and quality

Contact Us

Rocket BlueZone Web
Simplify mainframe access to critical data & applications anywhere; anytime
We are building more than just technology, we are building a community.
**Vicom Infinity Voice Assistant**

- **Secure & Enterprise-ready Voice Assistant**
  
  Voice interface gives you a freedom of not touching keyboard for actions – but current consumer solutions only provide an option of storing your conversation/voice data on a public cloud.

  **Solution**
  
  Developed with maximum security in mind, Vicom Infinity Voice Assistant will store your conversation on-prem using IBM Watson, LinuxONE Secure Service Container with Zowe as easy and secure API Gateway for your Enterprise Applications.

- **Business problem**
  
  Hey TJ, what’s the current CPU utilization?

  Hey TJ, how is the outlook for my mainframe software bill for this month?

  Hey TJ, send me the snapshot of CPU reports for this week.

  Hey TJ, what is the software model for the current machine?

  Hey TJ, check the MCL versions on z systems if they are same.

  Hey TJ, how long did my batch job run today?

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for questions or trial requests
We are building more than just technology, we are building a community.
We are building more than just technology, we are building a community.

How to get involved
Getting Involved

- We are building more than just technology, we are building a community

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<td>- Visit the <a href="#">Open Mainframe Project</a></td>
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<td>- <a href="#">Zowe Github</a></td>
<td>- Review the <a href="#">extenders guide</a></td>
<td>- <a href="#">Provide feedback, problems or recommendations to us on Slack or via email list</a></td>
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<td>- Connect with us on <a href="#">Slack</a> or via <a href="#">email list</a></td>
<td>- Review <a href="#">documentation</a></td>
<td>- <a href="#">Zowe Tutorials</a> and <a href="#">Samples</a></td>
<td>- <a href="#">Submit Git</a> Issues</td>
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<td>- <a href="#">Troubleshooting</a></td>
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<td>- Review the community <a href="#">backlog</a> and contribute code</td>
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<td></td>
<td>- Reach out to us on <a href="#">Slack</a> or via <a href="#">email list</a></td>
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<td>- Earn your committer status through <a href="#">meritocracy</a></td>
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Getting Started with …

- Project Community site
  - https://zowe.org
- Access to Beta Download
  - https://zowe.org/download
- Review Zowe squads, missions and activities
  - https://zowe.org/contribute/
- Code Guidelines
  - https://zowe.org/code-guidelines/
- Project Governance
  - https://zowe.org/about-us/
- GitHub
  - https://github.com/zowe
- Project Documentation (includes user and install guides)
  - https://zowe.github.io/docs-site/
- Developer Tutorials
  - https://zowe.github.io/docs-site/guides/intro.html
Get involved in the Zowe community

Join Open Source Community @
https://www.openmainframeproject.org/projects/zowe

Participate in and contribute to the Zowe developer community at zowe.org

Learn how your organization can become a steward and supporter of this project with Open Mainframe Project membership at openmainframeproject.org/about/join