Agenda

• Introducing Zowe
• Quick Facts about Zowe
• Why Zowe?
• Zowe Vision Statement
• What’s in Zowe?
  ▪ Zowe REST Services
  ▪ Zowe Web Desktop
  ▪ Zowe CLI
  ▪ Zowe API Mediation Layer
• Getting Started with Zowe
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Introducing Zowe

• An extensible framework for connecting applications and tools to mainframe data and applications.

• Aims to make the mainframe an integrated and agile platform within the changing IT architectural landscape.

• First open source project on z/OS. All code is licensed under the Eclipse Public License version 2.0
Zowe 1.0.0 Announce at THINK SF 2019
• 100% Open Source (EPL 2.0)
• Defined extensions points
• Framework ready for commercial exploitation

Pronounced as “Zoe” – [zoh-ee] in English
• Not an acronym – just a simple, fun, and easy name
• Using the spelling “Zowe” allowed us to trademark

An open source project under the Open Mainframe Project (OMP), a collaborative project within the Linux Foundation

IBM, Rocket Software, and CA Technologies are founding members

Generally Available on Feb 8th, 2019
Why Zowe?

Information Technology is undergoing a revolution of changing architectures.

Co-Existence With Other Cloud Models

Protecting Current and Future Investments

Simple and Familiar
Zowe Vision Statement

• Attract new people
  ✓ Demystify the Z platform
  ✓ Enhance integration and consumability
  ✓ Promote open community of practice

• Reduce learning curve
  ✓ Improve productivity
  ✓ Modern, platform-neutral interfaces
  ✓ Cloud-like experience

• Simplify architecture
  ✓ Reduce operational overhead
  ✓ Improve co-existence
  ✓ Enable rich ecosystem of free and commercial solutions
What’s in Zowe?

- **Browser-based Web Desktop**
- **Swagger-defined z/OS REST APIs**
- **API Mediation Layer** (Gateway, Discovery Service, Catalog)
- **Node.js-based CLI**
REST Services – API economy for deep integration

- Industry standard REST interfaces to z/OS resources that are language and platform neutral, stateless and scalable
- Foundational building blocks for system services

  - **Dataset APIs**
    - Create, read, update, delete, and list data sets
  - **JES APIs**
    - View the information and files of jobs, and submit and cancel job
  - **USS APIs**
    - Create, read, update, and delete USS files
  - **System APIs**
    - View information about PARMLIB, SYSPLEX, and USER

https://ibm.biz/BdYXHX
Zowe Web Desktop – An app container in a browser

- **Mainframe Virtual Desktop**
  - A web-based window manager that provides full screen interactive experience

- **Zowe Node Server**
  - Runs zLUX; uses Express.js as web service framework for communication between applications and z/OS services and components, pre-reqs Node.js for z/OS

- **ZSS Server**
  - Provides secured REST API services

- **Application plug-in**
  - Dataservices, Configuration dataservice, URI broker, app-to-app communication, Error reporting UI, Logging utility

- **Explorers**
  - JES, MVS, USS explorers
  - Basic editing support for REXX and JCL
Zowe CLI – Enables cloud-like access to mainframe

• Enables app developers and DevOps engineers to interact with the mainframe easily through a CLI from any terminal on Windows, MacOS, Linux
• Easily integrates with IDEs, shell commands, bash scripts, and build tools; installs using NPM

• **Interact with mainframe files**
  Create, edit, download, and upload mainframe files (data sets) directly

• **Submit jobs**
  Submit JCL from data sets or local storage, monitor status, view and download output automatically

• **Issue TSO and z/OS console commands**
  Issue TSO and console commands to the mainframe directly

• **Integrate z/OS actions into scripts**
  Build local scripts that accomplish both mainframe and local tasks

• **Produce responses as JSON documents**
  Return data in JSON format on request for consumption in other programming languages

• **CLI Plug-Ins**
  Access to CICS and Db2
API Mediation Layer – Gateway to mainframe APIs

- **API Catalog**
  UI Catalog of available APIs with their Swagger doc and service status

- **Gateway**
  Single secure point of entry to an ecosystem of API services. Hides complexity. Highly available. Based on Netflix Zuul.

- **Discovery Service**
  Discover APIs across many applications. Repository of active API services. Based on Netflix Eureka.

Enables a single point of access to mainframe APIs with high-availability, scalability, dynamic API discovery, consistent security, “one-time” sign-on experience and unified standard API documentation (OpenAPI / Swagger)
API Layer Components*

- **API Catalog**
  UI Catalog of available APIs with their Swagger doc and service status

- **API Gateway**

- **Discovery Service**
  Discover APIs across many applications. Repository of active services. Based on Netflix Eureka.

- **z/OSMF API**
  Authenticate Zowe users with mainframe credentials

*Separate microservices, might be running as separate address spaces*
Zowe High Level Architecture

**Base Components**
- Editor support (REXX/JCL to start)
- CLI
- APIs
- Virtual Desktop – App Container
- VS Code Extension

**Browser/Desktop**
- Web UI
- CLI UI
- REST API
- VSC Ext.

**Web-Based DevOps Services**
- From IBM, Vendors, Community

**Catalog of RESTful API**
- z/OS
  - Web UI, CLI/Node.js
  - Common Services
  - Existing and New Vendor Services
  - Client-Provided Services

**z/OSMF/Tomcat**

**Sample Vendor / Open Source Integration**
- ServiceNow
- JIRA
- Jenkins
- Git
- SonarLint
Where is Zowe Extensible?

- z/OS Native Web UI for applications
- Launch in context (i.e., right-click 3270 to web app)
- App to app communication
- Exploit graphic widgets planned for inclusion
Where is Zowe Extensible?

- REST API enable your products
  - REST API for product controls/admin
  - Sharing of information

- Opt in to API Mediation
- Participate in Single Sign On, High Availability and Status tracking capabilities

Swagger-defined z/OS REST APIs

API Mediation Layer
(API Catalog, Discovery Service, Gateway)
Where is Zowe Extensible?

- **Node.js-based CLI**
- **zos-files DS**
- **zos-files US**
- **zos-jobs**
- **TSO**
- **Console**

Out of box commands

"plug-ins"

Custom Extensions

**z/OSMF**

REST APIs
- TSO, Console
- JES, MVS, USS

Your application, product, tool, ...
Commitment to Core Infrastructure Initiative (CII) & Badge Program

• “CII is a collaborative, pre-emptive program and approach for strengthening cyber security that is widely supported by industry leaders”

• “CII Badge Program is a self-certify, declaration of industry best practices and conformance in driving secure software development and governance”
A foundational principle of this new project is **meritocracy**. The more that somebody contributes, the more responsibility they will earn. A pattern of quality contribution to a project may lead to an invitation to join the project as a committer.

Leadership roles in the Project are also merit-based and earned by peer acclaim. Merit must be demonstrated in publicly-accessible forums. Committers and project leads are added to a project via an election.
Getting Started with ...

- Project Community site
  - [https://zowe.org](https://zowe.org)
- Access to Download
  - [https://zowe.org/download](https://zowe.org/download)
- Review Zowe squads, missions, and activities
  - [https://zowe.org/contribute/](https://zowe.org/contribute/)
- Code Guidelines
  - [https://zowe.org/code-guidelines/](https://zowe.org/code-guidelines/)
- Project Governance
  - [https://zowe.org/about-us/](https://zowe.org/about-us/)
- GitHub
  - [https://github.com/zowe](https://github.com/zowe)
- Project Documentation (includes user and install guides)
  - [https://zowe.github.io/docs-site/](https://zowe.github.io/docs-site/)
- Developer Tutorials
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
Zowe “Demo”

Intro Demo:
https://www.youtube.com/watch?v=NX20ZMRoTtk&feature=share

Visual Studio Code (using command line):
https://www.youtube.com/watch?v=la1_Ss27fn8