

# Zowe projects in China

— A New Opportunity for Young Mainframers

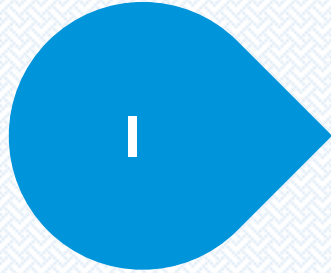


## IBM GCG Academic Initiative and Ecosystem Development [tiantcdl@cn.ibm.com](mailto:tiantcdl@cn.ibm.com)

- Z universities partnership and technical enablement
- Z Clients metrics program
- Z campus activities (faculty training/bootcamp/IT Career Day)
- Joint Projects for talent cultivation and innovation partnership
- CDUG (China z Systems User Group) for ecosystem development

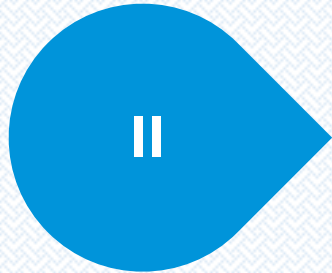
- **2004/09—2007/04** State Key Lab of Networking and Switching Beijing University of Post and Telecommunications  
**Research On:** Networking and Switching  
**Degree:** Master
- **2000/09—2004/07** Beijing University of Post and Telecommunications  
**Major:** Computer Science and Technology  
**Degree:** Bachelor





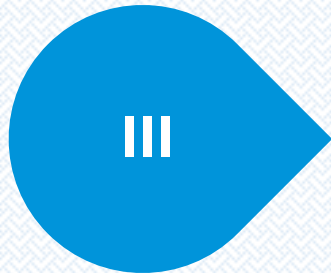
## Background

China Z academic overall status and challenge for young mainframers. Zowe Introduction and open mainframe project.



## Zowe Project with DLUT

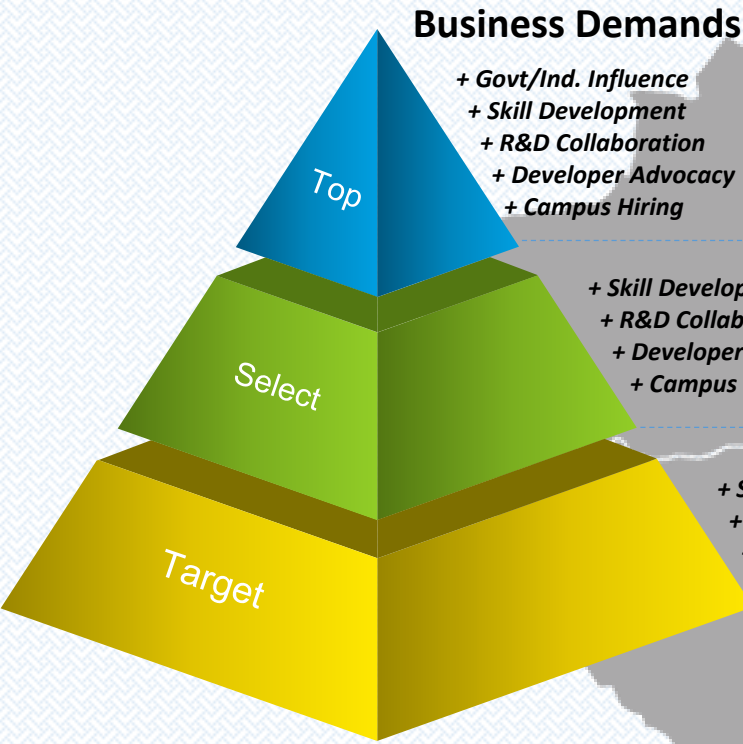
DLUT (Dalian University of Technology) is a key Z university partner, we start the project which focus on integrating the CICS tool (performance monitoring) with Zowe



## Zowe Project with BUPT

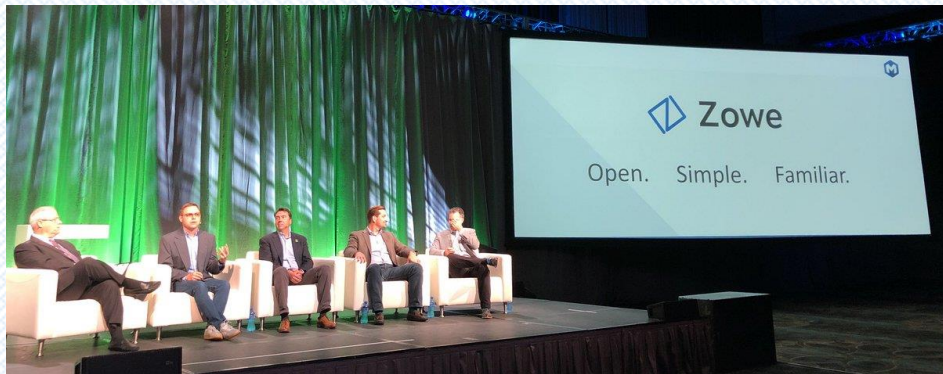
BUPT (Beijing University of Post and Telecommunications) is a new university partners. This project aims to develop one native Zowe application plugin with configurable page and widgets to view data provided by IBM Z

# Z Active Universities in China





# Zowe Introduction



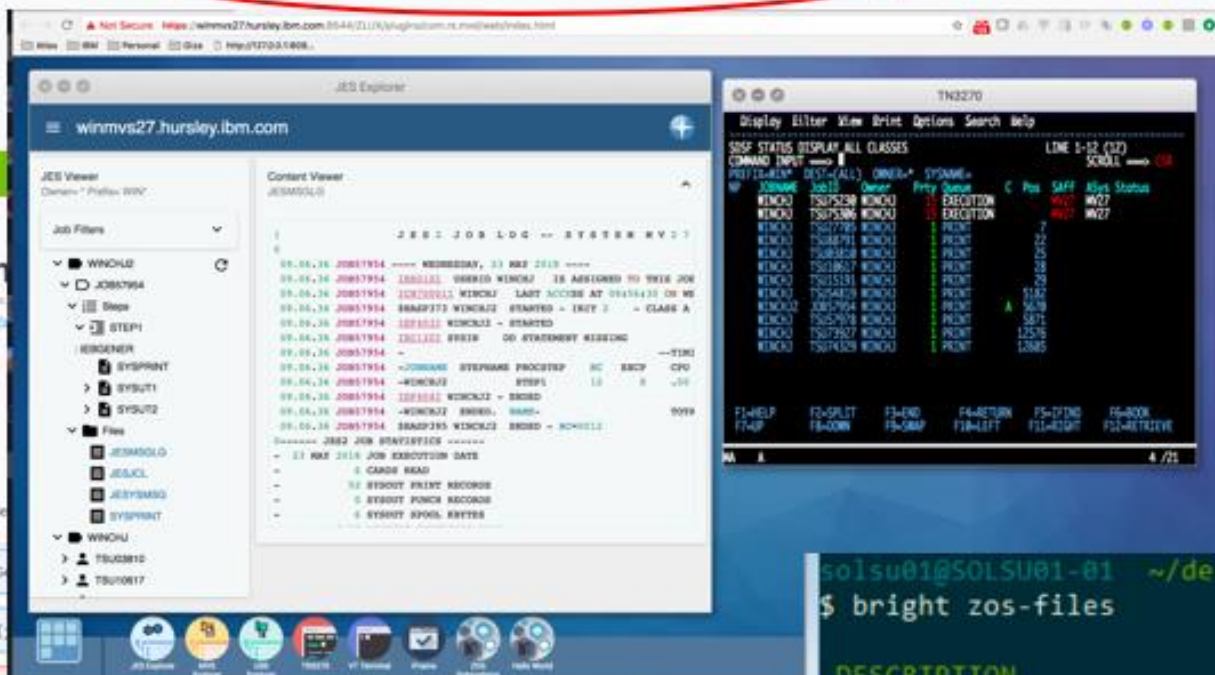
- Pronounced as “Zoe” – [zoh-ee] in English  
Not an acronym – just a simple, fun and easy name  
Using the spelling “Zowe” allowed us to trademark
- An open source project under the Open Mainframe Project (OMP), a collaborative project within the Linux Foundation
- IBM, Rocket Software and CA Technologies are founding members
- 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



# What's in Zowe?



## Browser-based Web Desktop



## API Mediation Layer (Gateway, Discovery Service, Catalog)

### API Mediation Layer API

The API Mediation Layer for z/OS internal API services. The API Mediation Layer provides a single point of access to mainframe REST APIs and offers enterprise cloud-like features such as high-availability, scalability, dynamic API discovery, and documentation.

apicatalog

### API Catalog

[API Homepage](#)

API Catalog service to display service details and API documentation for discovered API services.

### API Catalog

API Version: 1.0.0

[ See URL: [sabr.ca.com/00018/apl/v0/apicatalog](http://sabr.ca.com/00018/apl/v0/apicatalog) ]

REST API for the API Catalog service which is a component of the API Mediation Layer. Use this API to retrieve information regarding catalog dashboard files, file contents and its status, API documentation and status for the registered services.

## Api Document

Api Documentation

[Terms of service](#)

[Apache 2.0](#)

## JES job APIs

- GET** /api/v1/jobs/{jobName} Get job details for a given job
- DELETE** /api/v1/jobs/{jobName}/{jobID} Launch a job and purge it's associated files
- GET** /api/v1/jobs/{jobName}/{jobID}/files Get a list of output file names for a job
- GET** /api/v1/jobs/{jobName}/{jobID}/files/{fileID}/content Get content from a specific job output file
- GET** /api/v1/jobs/{jobName}/{jobID}/steps Get job steps for a given job
- POST** /api/v1/jobs/dataset Submit a job given a data set

## Swagger-defined z/OS REST APIs

```
solsu01@SOLSU01-01 ~/desktop
$ bright zos-files

DESCRIPTION
-----
Manage z/OS data sets and USS files

USAGE
-----
bright zos-files [action] [object] [options]

ACTIONS
```

## Node.js- based CLI

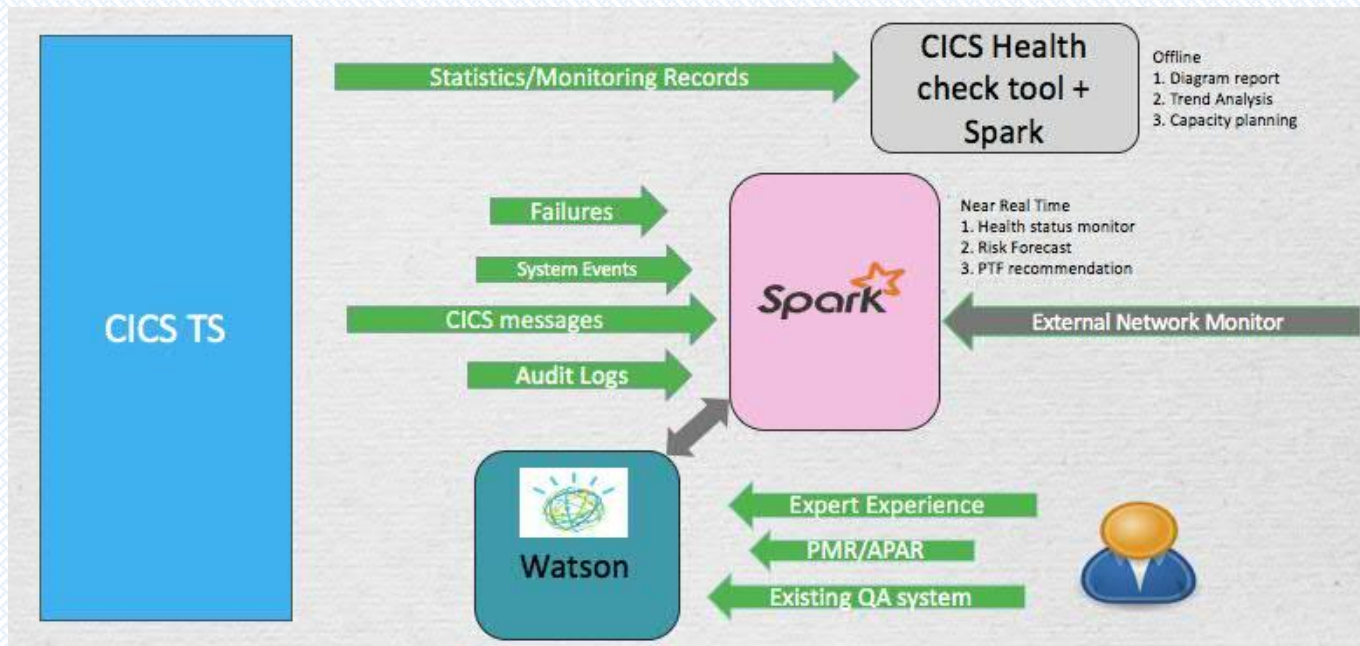


# Zowe Projects with DLUT

## ➤ Project Overview

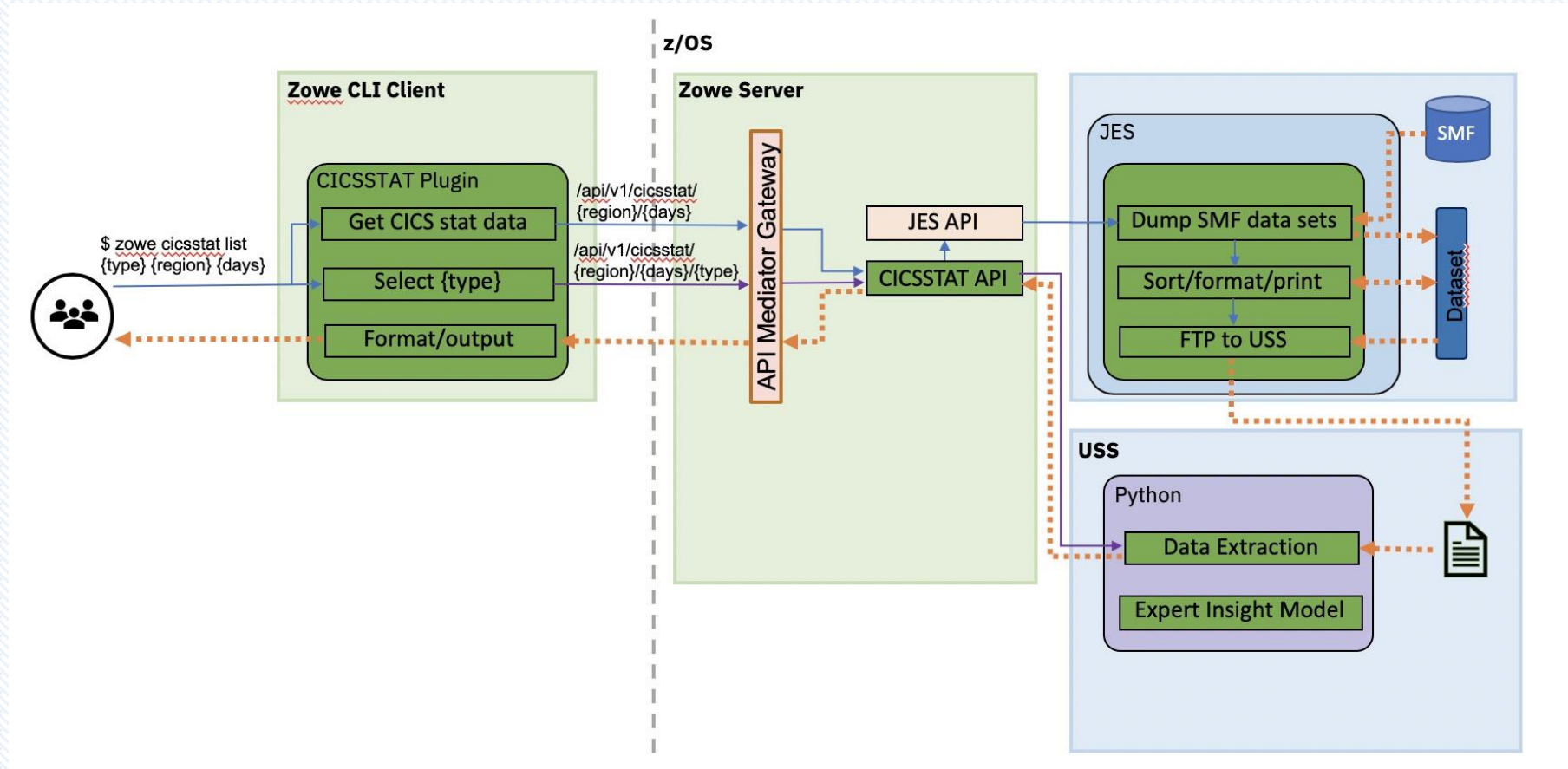
- Goals: Contribute a few CICS tools to Zowe as Zowe plugins to help developers to be more efficient, productive and agile in their daily work with z/OS
  - CICS Statistics Visualizer plugin (CICS Health Check Tool)
  - CICS Liberty Debugging Assistant plugin
  - CICS Application CI/CD plugin

## ➤ CICS Health Check Tool



- CICS Job Log
- JVM profile
- Liberty configuration
- STDERR/STDOUT/JVMTRACE
- Liberty output files like messages.log, trace.log and ffdc from zFS
- MVS dumps (e.g. JAVADUMP, SYSDUMP and CEEDUMP)
  - Leverage Interactive Problem Control System (IPCS) to format dumps

# Zowe Projects with DLUT





# Zowe Projects with DLUT

## ➤ Team Members

- IBM Project Manager
- IBM Technical Advisor
- IBM Designers
- DLUT Professor
- DLUT Students

Design team's engaging will provide:

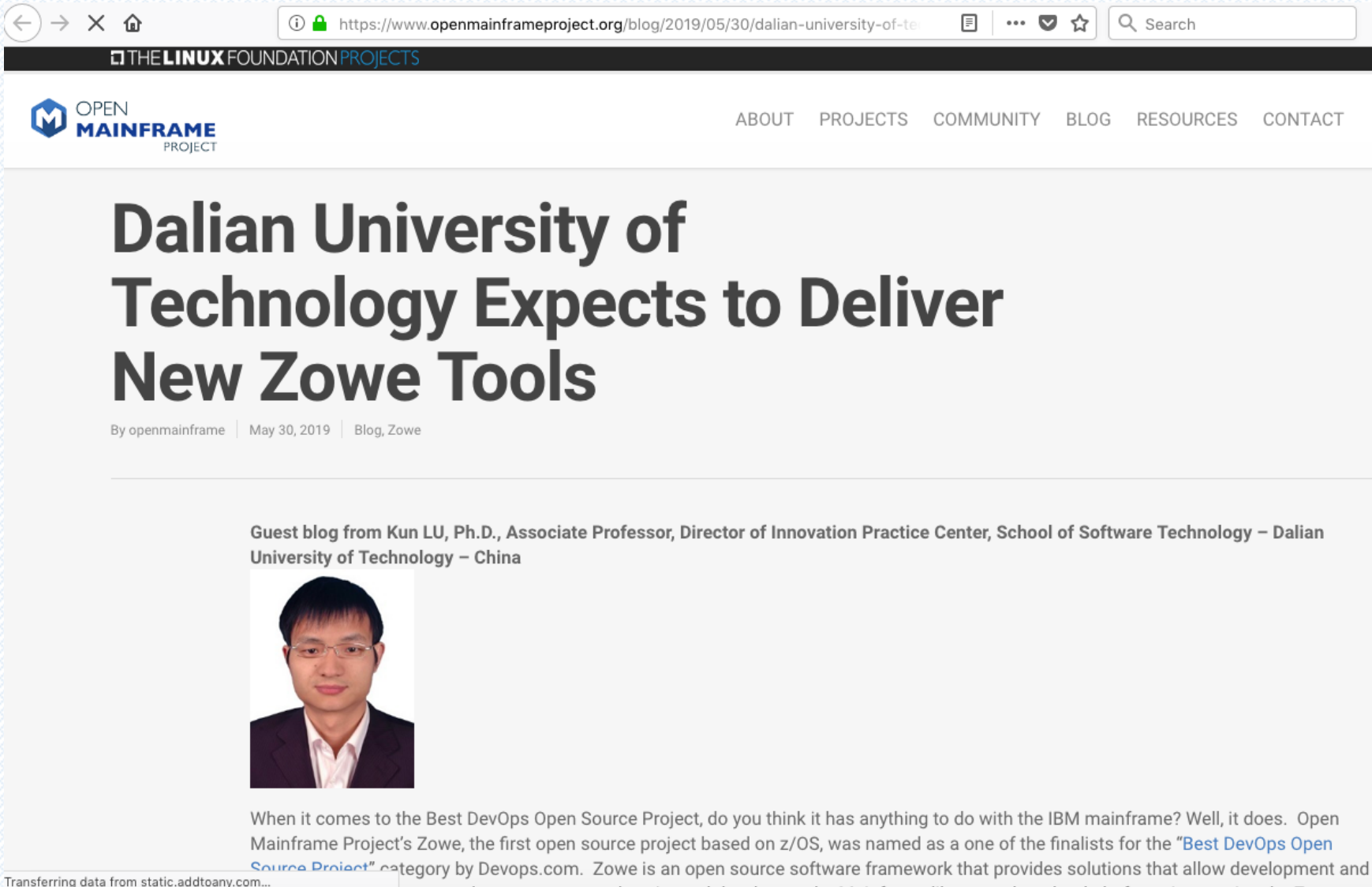
- a user-centric perspective from identifying user pain points to deliver user outcomes
- enterprise design thinking framework to co-create with teams and clients
- expertise in visualize ideas and solutions with storytelling



#	Items	Due Date	Status	Comments
1	Environment setup: z/OS, Zowe, Visualizer tool	2019/5/10	Done	
2	Knowledge ramp up: Zowe, Visualizer tool	2019/5/10	Done	
3	CICS SV plugin: Replace Echarts, Grafana as candidate	2019/5/21	Done	Grafana install in USS could not start
4	CICS SV plugin: Auto statistics data collection from CICS - Option 1: Zowe Rest service to auto dump data from SMF - Option 2: CDP -> ELK	2019/5/31	Done	Option 1 completed in IBM lab
5	CICS SV plugin: Integrate as Zowe plug-in	2019/6/21	Ongoing	
6	CICS SV plugin: testing and bug fixes	2019/6/28		
7	CICS Application CI/CD plugin	2019/7/12		
8	CICS Liberty Debugging Assistant plugin	2019/7/31		

# Zowe Projects with DLUT

<https://www.openmainframeproject.org/blog/2019/05/30/dalian-university-of-technology-expects-to-deliver-new-zowe-tools>



The screenshot shows a web browser window with the URL <https://www.openmainframeproject.org/blog/2019/05/30/dalian-university-of-technology-expects-to-deliver-new-zowe-tools>. The browser's address bar includes navigation icons, a search bar, and a search icon. Below the browser window, the Open Mainframe Project logo is visible on the left, and a navigation menu with links for ABOUT, PROJECTS, COMMUNITY, BLOG, RESOURCES, and CONTACT is on the right. The main content area features a large title: 

# Dalian University of Technology Expects to Deliver New Zowe Tools

. Below the title, the author information reads: 

By openmainframe | May 30, 2019 | Blog, Zowe

Guest blog from Kun LU, Ph.D., Associate Professor, Director of Innovation Practice Center, School of Software Technology – Dalian University of Technology – China



When it comes to the Best DevOps Open Source Project, do you think it has anything to do with the IBM mainframe? Well, it does. Open Mainframe Project's Zowe, the first open source project based on z/OS, was named as a one of the finalists for the "Best DevOps Open Source Project" category by Devops.com. Zowe is an open source software framework that provides solutions that allow development and



# Zowe Projects with BUPT

## ▪ Objective

- Develop one Zowe native plugin and verify the new product architecture for SMU next version.
- Provide one channel for teachers and students from Chinese universities to join Zowe community, study Zowe framework, touch and familiar IBM Z in the end.

## ▪ Deliverables

- Zowe native plugin for SMU
- Comparative analysis and feedback for SMU project architecture

## ▪ Scope

- Study Zowe product and set up Zowe development environment
- Learn Zowe development skill and familiar with Zowe open source community
- Design the application architecture of SMU native Zowe plugin
- Leverage Zowe interface to implement the plugin and able to view automation domain and OMEGAMON data
- Compare with the existing SMU product architecture and provide suggestion & feedback for SMU product architecture of next version

- **Hill 1: Environment preparation**

- As a developer, I need one Zowe environment to develop and testing my code for Zowe native plugin
  - zD&T environment (with SA for z/OS, OMEGAMON, Zowe prereq.)
  - Zowe environment

- **Hill 2: Zowe native plugin development**

- As a developer, I need one boilerplate project to start my development task
- As a SMU Zowe native plugin development group leader, I need to design a good plugin architecture to meet the current user requirement and make future enhancement easier
- As a SMU Zowe native plugin user, I'd like to create new page and edit exiting page via configuration mode
- As a SMU Zowe native plugin user, I'd like to view automation domain data
- As a SMU Zowe native plugin user, I'd like to view performance monitoring data
- As a SMU Zowe native plugin user, I'd like to switch to and show web page in my favorite language

- **Hill 3: Project summary & review**

- As a SMU Zowe native plugin development group leader, I need to draft final project review report.



## Agile Development

Agile is a time boxed, iterative approach to software delivery that builds software incrementally from the start of the project, instead of trying to deliver it all at once near the end.

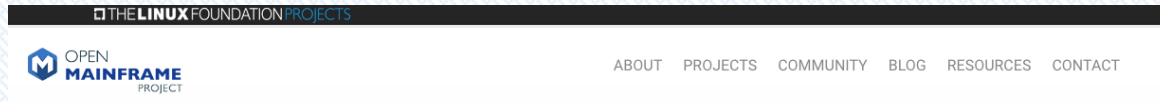


## Sprint

- ★<sup>M0</sup> • **Sprint 0 (04/08 - 04/21)** Basic development knowledge preparation
- **Sprint 1 (04/22 - 05/05)** Development environment & Zowe plugin development skill preparation
- **Sprint 2 (05/06 - 05/19)** SMU Zowe plugin architecture design
- ★<sup>M1</sup> • **Sprint 3 (05/20 - 06/02)** SMU Zowe plugin architecture code and boilerplate plugin project is ready
- **Sprint 4 (06/03 - 06/16)** Create new page and edit exiting page via configuration mode
- **Sprint 5 (06/17 - 06/30)** Switch to and show web page in user favorite language
- **Sprint 6 (07/01 - 07/14)** Display automation Domain data display
- **Sprint 7 (07/15 - 07/28)** Display performance monitoring data display
- ★<sup>M2</sup> • **Code freeze: 07/26**
- **Sprint 8 (07/29 - 08/11)** Integration testing phase 1
- **Sprint 9 (08/12 - 08/25)** Integration testing phase 2
- ★<sup>M3</sup> • **GA: 08/23**
- ★<sup>M4</sup> • **Sprint 10 (08/26 - 08/30)** Development summary & report

# Zowe Projects with BUPT

<https://www.openmainframeproject.org/blog/2019/05/21/bupt-students-join-the-zowe-community-with-a-specific-project-in-mind>



## BUPT Students join the Zowe Community with a specific project in mind

By openmainframe | May 21, 2019 | Blog

*Written by Kuang Jian, Dean of School of Software Engineering, BUPT*

This is a guest blog post by **Kuang Jian**, Dean of School of Software Engineering at the Beijing University of Posts and Telecommunications (BUPT), a university directly under the administration of the Ministry of Education (MoE) and co-built by the Ministry of Industry and Information Technology (MIIT) in China. It is a comprehensive university with information technology as its main feature, engineering and science as its main focus and a combination of engineering, management, humanities and sciences as its main pursuit, which becomes an important base for fostering high-tech talents.



This blog will provide an overview into how BUPT works with the IBM China University Program and how students were introduced to Open Mainframe Project's Zowe, an open source software framework for the mainframe that strengthens integration with modern enterprise applications.



*Dean Kuang, students & IBMers at the IBM China Systems Lab*

BUPT established a partnership with IBM China's University Program in 1996 and has participated in several of the program's initiatives. In fact, the team from the School of Software Engineering in BUPT won the second place award in the ICBC-IBM FIN-Tech Contest in 2018.

Through the FIN-Tech contest experience, we had some basic knowledge of IBM Z and learned the value it brings to the market. Unlike distributed platforms such as Linux, it's not easy for students in a university to have hands-on experience on the mainframe. So when Open Mainframe Project's Zowe was introduced to us, we found it very attractive and wanted to know more.





**Thank You**