

# z/OS Introduction and Workshop

Zowe and VSCode Extensions



# Unit objectives

After completing this unit, you should be able to:

- Describe Zowe
- List 3 Major Zowe Components
- Locate resources to learn more about Zowe
- Locate resources how to use Zowe



OPEN **MAINFRAME** PROJECT

**Zowe**



## Announcements

Zowe 1.13.0 is now available. You can download the installers and PTFs (U001948 and U001949) for this release from the [Download](#) page. To learn what's new in this release, see the [Release notes](#).

## What is Zowe?

Zowe is an open source project created to host technologies that benefit the Z platform from all members of the Z community (Integrated Software Vendors, System Integrators and z/OS consumers). Zowe, like Mac OS or Windows, comes with a set of APIs and OS capabilities that applications build on and also includes some applications out of the box.

Zowe offers modern interfaces to interact with z/OS and allows you to work with z/OS in a way that is similar to what you experience on cloud platforms today. You can use these interfaces as delivered or through plug-ins and extensions that are created by clients or third-party vendors.

Zowe consists of the following main components.

**Zowe Application Framework:** A web user interface (UI) that provides a virtual desktop containing a number of apps allowing access to z/OS function. Base Zowe includes apps for traditional access such as a 3270 terminal and a VT Terminal, as well as an editor and explorers for working with JES, MVS Data Sets and Unix System Services.

**API Mediation Layer:** Provides a gateway that acts as a reverse proxy for z/OS services, together with a catalog of REST APIs and a dynamic discovery capability. Base Zowe provides core services for working with MVS Data Sets, JES, as well as working with z/OSMF REST APIs. The API Mediation Layer also provides a framework for Single Sign On (SSO).

**Zowe CLI:** Provides a command-line interface that lets you interact with the mainframe remotely and use common tools such as Integrated Development Environments (IDEs), shell commands, bash scripts, and build tools for mainframe development. It provides a set of utilities and services for application developers that want to become efficient in supporting and building z/OS applications quickly. The CLI provides a core set of commands for working with data sets, USS, JES, as well as issuing TSO and console commands.

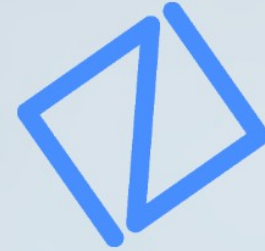


[Download Zowe](#)

# Zowe

- Application Framework  
Browser based Desktop
- API Mediation Layer
- Application CLI (z/OSMF dependency)  
VSCode with Zowe plugins

<http://ibm.biz/zoweWebUI>



# Zowe

Open. Simple. Familiar.

Username

Password



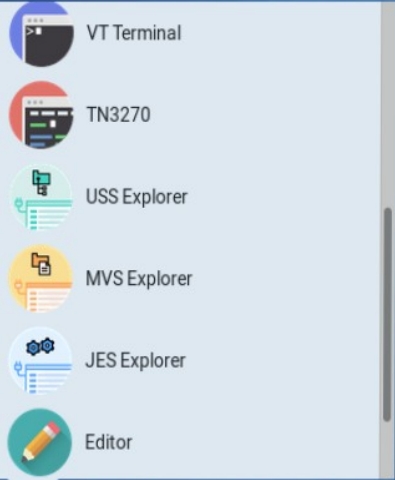
Log in

v. 1.9.0+20200226

# Zowe Application Framework Desktop using browser

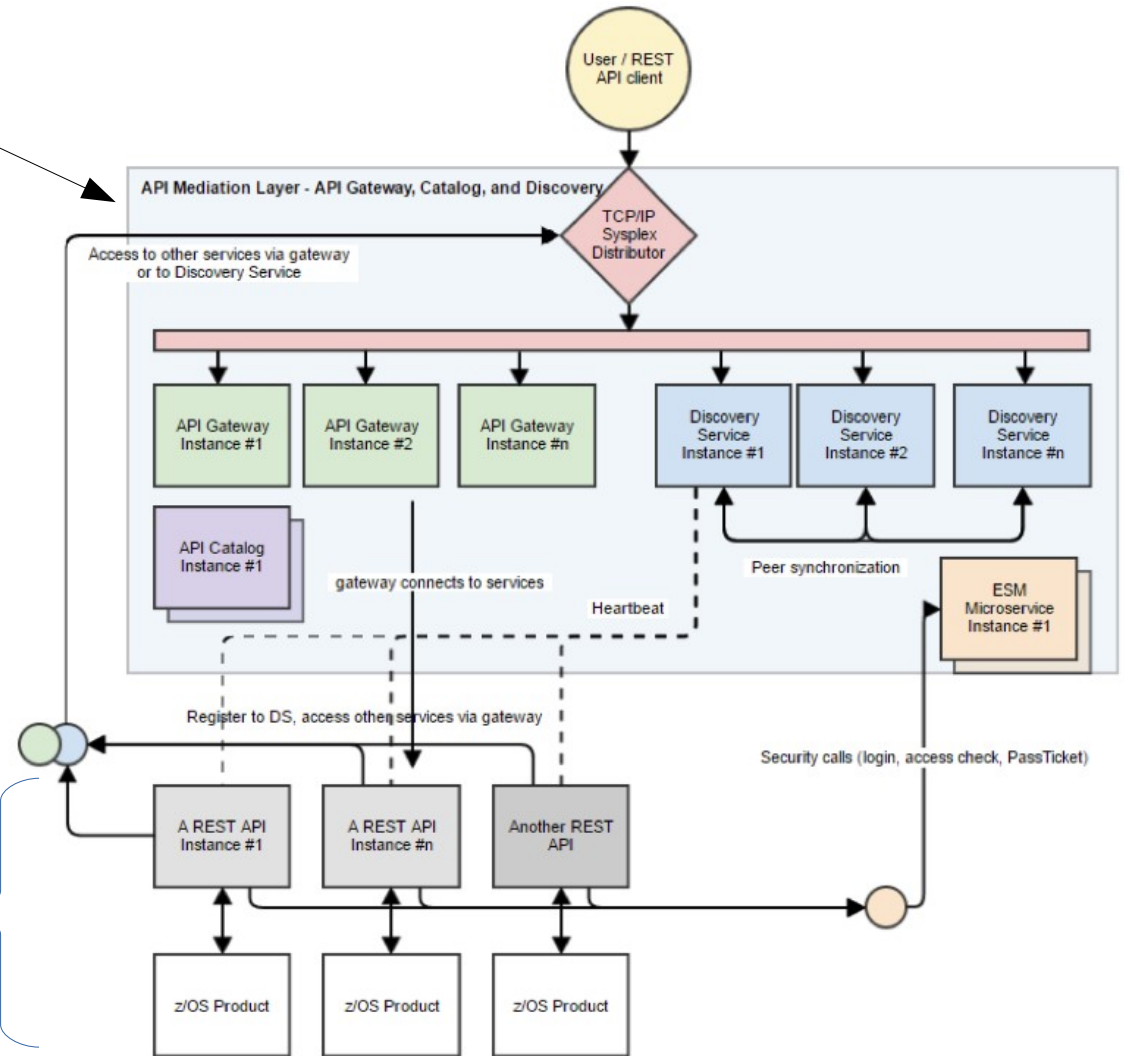
<http://ibm.biz/zoweWebUI>

*Requires z/OS Installation of:*  
*Java*  
*Node.js*  
*Zowe Application Framework*

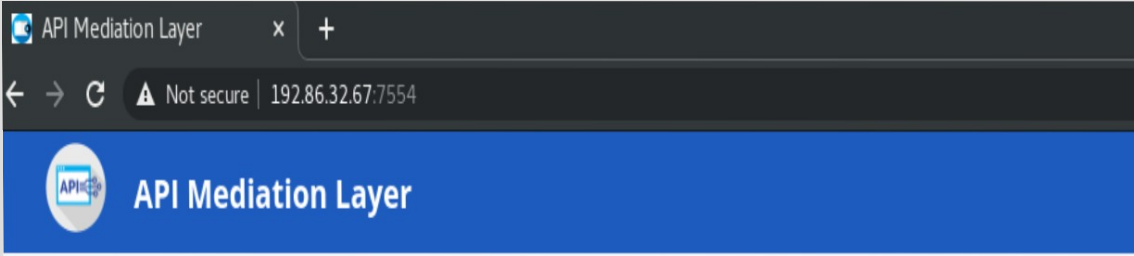


11:07 AM  
7/19/20

# API Mediation Layer

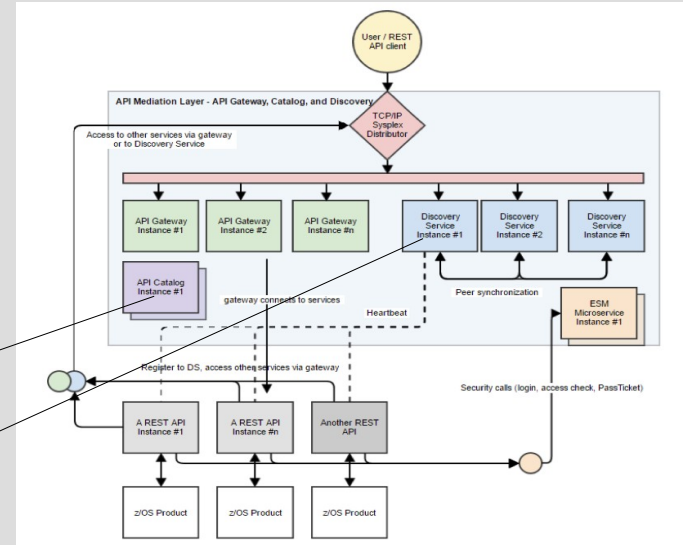


Enabled by  
Zowe CLI



# API Mediation Layer

- ✓ The API Catalog is running
- ✓ The Discovery Service is running
- ✓ The Authentication service is running







## API Catalog

Username

Password

Sign in



API Catalog x +

Not secure | 192.86.32.67:7554/ui/v1/apicatalog/#/dashboard

Search for APIs

## Available API services

### 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 feature...

- All services are running

### z/OS Datasets and Unix Files services

IBM z/OS Datasets and Unix Files REST services

- All services are running

### z/OS Jobs services

IBM z/OS Jobs REST services

- All services are running

### z/OSMF services


IBM z/OS Management Facility REST services

- All services are running

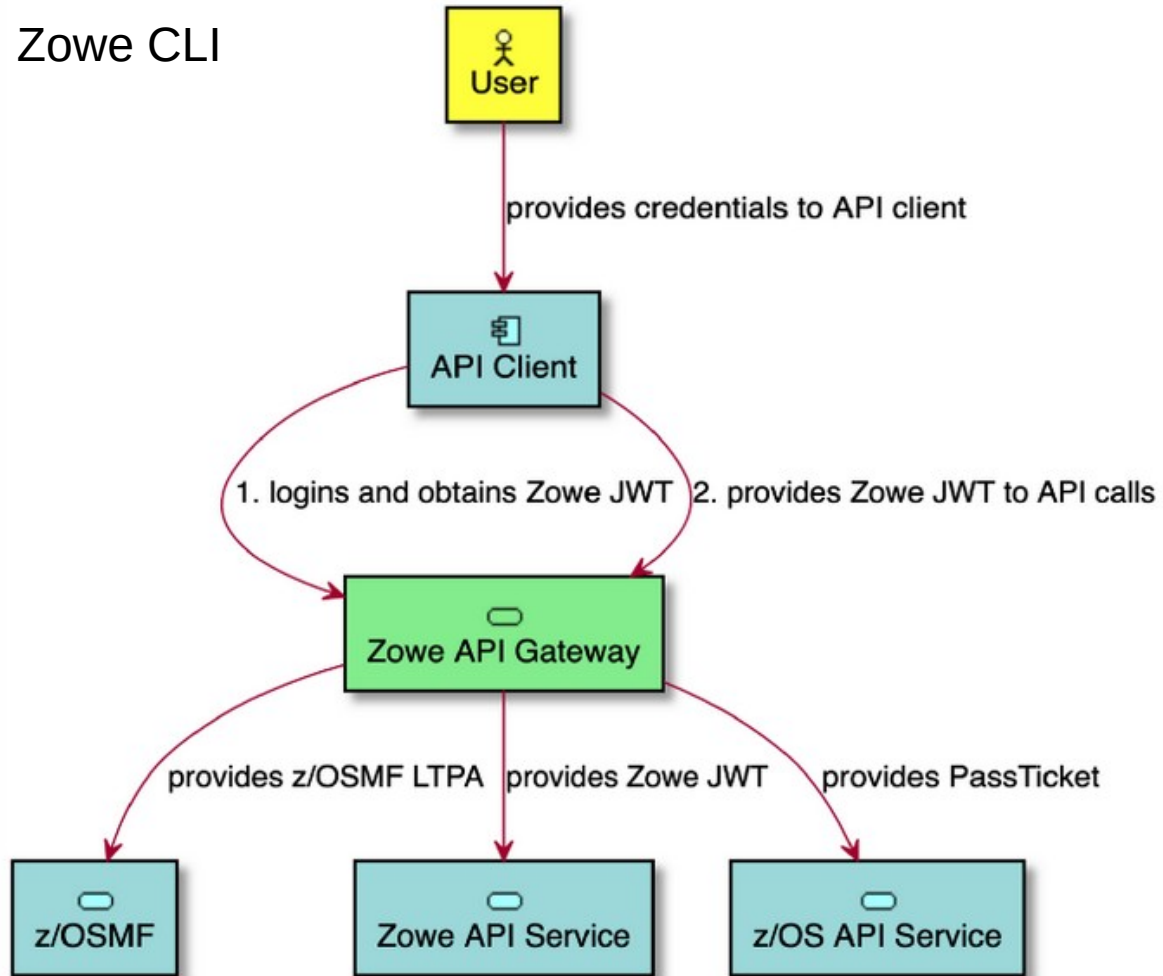
### Zowe Application Server

The Proxy Server is an HTTP, HTTPS, and Websocket server built upon NodeJS and ExpressJS. This serves static content via "Plugins", and is extensible by REST and Websocket "Data..."

- All services are running



# Zowe CLI



Zowe is an open-source framework for both APIs and JavaScript application, and it's designed to leverage z/OSMF services.

Gary Puchkoff // senior technical staff member

**ASK  
THE  
EXPERT**



**Q: How do Zowe and z/OSMF relate to one another?**

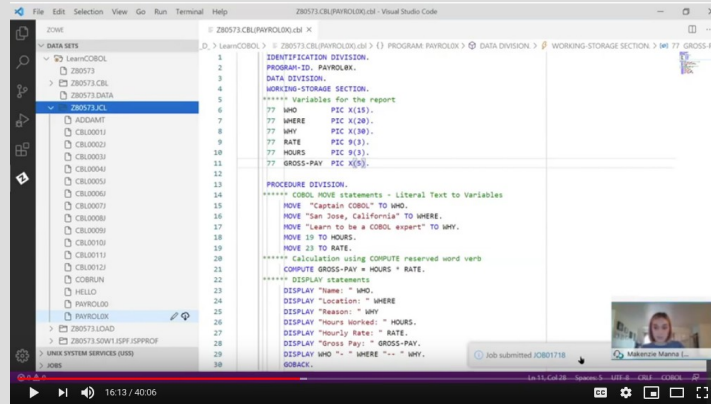
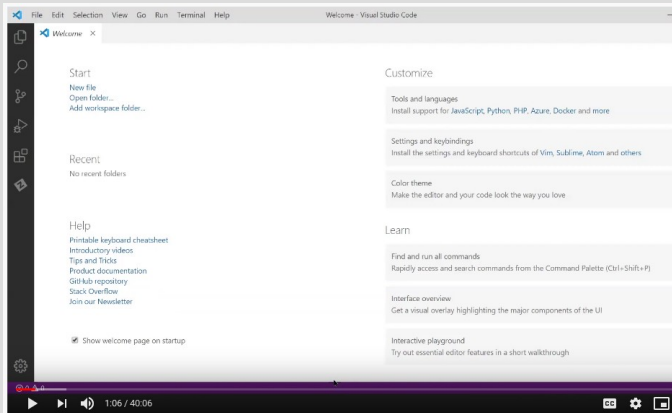
# Prerequisite Workstation Software (Download and Install)

- VSCode
- Java SDK
- Node.js

## VSCode plugin extensions

- Zowe Explorer
- Z Open Editor
- Many others and growing rapidly

<https://developer.ibm.com/technologies/cobol/videos/get-hands-on-run-a-cobol-program>



# Download and install VSCode

EXPLORER

NO FOLDER OPENED

You have not yet opened a folder.

Open Folder

You can clone a repository locally.

Clone Repository

To learn more about how to use git and source control in VS Code [read our docs](#).

Welcome

# Visual Studio Code

## Editing evolved

### Start

[New file](#)  
[Open folder...](#) or [clone repository...](#)

### Recent

No recent folders

### Help

[Printable keyboard cheatsheet](#)  
[Introductory videos](#)  
[Tips and Tricks](#)  
[Product documentation](#)  
[GitHub repository](#)  
[Stack Overflow](#)  
[Join our Newsletter](#)

### Customize

Tools and languages  
Install support for [JavaScript](#), [Python](#), [Java](#), [PHP](#), [Az...](#)

Settings and keybindings  
Install the settings and keyboard shortcuts of [Vim](#), ...

Color theme  
Make the editor and your code look the way you love

### Learn

Find and run all commands  
Rapidly access and search commands from the Co...

Interface overview  
Get a visual overlay highlighting the major compon...

Interactive playground  
Try out essential editor features in a short walkthro...

Show welcome page on startup

> OUTLINE

VSCoDe  
Extentions



EXTENSIONS

Search Extensions in Marketplace

INSTALLED 0

POPULAR 25731

- Python** 2021.3.680753044  
Linting, Debugging (multi-threaded, re...  
Microsoft [Install](#)
- C/C++** 1.3.0  
C/C++ IntelliSense, debugging, and co...  
Microsoft [Install](#)
- ESLint** 2.1.20  
Integrates ESLint JavaScript into VS C...  
Dirk Baeumer [Install](#)
- Jupyter** 2021.6.751425733  
Jupyter notebook support, interactive ...  
Microsoft [Install](#)
- Prettier - Code formatter** 6.3.2  
Code formatter using prettier  
Prettier [Install](#)
- Live Server** 5.6.1  
Launch a development local Server wit...  
Ritwick Dey [Install](#)
- C#** 1.23.11  
C# for Visual Studio Code (powered b...  
Microsoft [Install](#)
- Visual Studio IntelliCode** 1.2.12  
AI-assisted development  
Microsoft [Install](#)
- Language Support for Java(...)** 0.77.0  
Java Linting, Intellisense, formatting, r...  
Red Hat [Install](#)
- Chinese (Simplified) Langua...** 1.55.2

RECOMMENDED 0

Welcome x

# Visual Studio Code

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Show welcome page on startup

Search for  
Zowe



EXTENSIONS: MA...

- Zowe Explorer** 1.13.1  
VS Code extension, powered by Zowe ...  
Zowe [Install](#)
- Zowe Explorer Extension for...** 1.13.1  
Adds zFTP support to Zowe Explorer d...  
Zowe [Install](#)
- HLASM Language Support** 0.12.0  
Code completion, highlighting, browsi...  
Broadcom [Install](#)
- IBM Z Open Editor** 1.2.0  
Provides COBOL, PL/I, HLASM, and RE...  
IBM [Install](#)
- Rexx Language Support** 0.0.17  
Autocomplete, highlighting and diagno...  
Broadcom [Install](#)
- COBOL Control Flow** 0.3.3  
Extension for cobol control flow  
Broadcom [Install](#)
- HCL z Tools** 0.0.13  
HCL z Tools Extension for VS Code  
hcl [Install](#)
- JCL Language Support** 1.0.0  
JCL Language Support Visual Studio C...  
Broadcom [Install](#)
- Debugger for Mainframe** 1.5.0  
Provides a modern debugging experie...  
Broadcom [Install](#)
- Code4z** 1.1.7  
Extension pack for Mainframe users w...  
Broadcom [Install](#)
- Data Set Viewer** 0.2.4

Welcome

# Visual Studio Code

## Editing evolved

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Try out essential editor features in a short walkthro...



# Zowe Explorer Install



The screenshot shows the VS Code extension marketplace interface. On the left, a sidebar lists several extensions related to Zowe, including Zowe Explorer, Zowe Explorer Extension for zFTP, HLASM Language Support, IBM Z Open Editor, Rexx Language Support, COBOL Control Flow, HCL z Tools, JCL Language Support, Debugger for Mainframe, Code4z, and Data Set Viewer. The main area displays the details for the 'Zowe Explorer' extension (zowe.vscode-extension-for-zowe), version 1.13.1. It features a blue and purple logo, a star rating of 5 stars, and a download count of 31,388. The extension is described as a VS Code extension powered by Zowe CLI, streamlining interaction with mainframes. Below the description, there are tabs for 'Details', 'Feature Contributions', and 'Changelog'. The 'Details' tab is active, showing the extension's name, version, and download statistics. A list of features is provided, detailing capabilities like creating and modifying data sets, accessing USS files, and using secure credential stores. The interface is dark-themed, and the top of the window shows the 'Extension: Zowe Explorer' title bar.

EXTENSIONS: MA... 🔍 ↺ ☰ ...

Zowe

**Zowe Explorer** 1.13.1  
VS Code extension, powered by Zowe ...  
Zowe [Install](#)

**Zowe Explorer Extension for...** 1.13.1  
Adds zFTP support to Zowe Explorer d...  
Zowe [Install](#)

**HLASM Language Support** 0.12.0  
Code completion, highlighting, browsi...  
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IBM [Install](#)

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**HCL z Tools** 0.0.13  
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**Code4z** 1.1.7  
Extension pack for Mainframe users w...  
Broadcom [Install](#)

**Data Set Viewer** 0.2.4

Extension: Zowe Explorer ✕

**Zowe Explorer** zowe.vscode-extension-for-zowe

Zowe | ↻ 31,388 | ★★★★★ | [Repository](#) | [License](#) | v1.13.1

VS Code extension, powered by Zowe CLI, that streamlines interaction with mainfram...

[Install](#) ⚙️

[Details](#) [Feature Contributions](#) [Changelog](#)

## Zowe Explorer

VS Marketplace **v1.13.1** | downloads **125.08K** | [codecov](#) **92%** | [chat](#) [on Slack](#)

Zowe Explorer is a sub-project of Zowe, focusing on modernizing mainframe experience. Zowe is a project hosted by the [Open Mainframe Project](#), a [Linux Foundation](#) project.

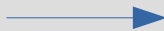
The Zowe Explorer extension modernizes the way developers and system administrators interact with z/OS mainframes by:

- Enabling you to create, modify, rename, copy, and upload data sets directly to a z/OS mainframe.
- Enabling you to create, modify, rename, and upload USS files directly to a z/OS mainframe.
- Providing a more streamlined way to access data sets, USS files, and jobs.
- Letting you create, edit, and delete Zowe CLI `ZOSMF` compatible profiles.
- Letting you use the Secure Credential Store plug-in to store your credentials securely in the settings.
- Letting you leverage the API Mediation Layer token-based authentication to access z/OSMF.

More information:

- For the complete Zowe Explorer documentation, see [Zowe Docs](#).
- Join the [#zowe-explorer](#) channel on [Slack](#) to stay in touch with the Zowe community.

# IBM Z Open Editor Install



**EXTENSIONS: MA...** 🔍 ↻ ☰ ...

**Zowe**

**Zowe Explorer** 1.13.1  
VS Code extension, powered by Zowe ...  
Zowe

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Extension pack for Mainframe users w...  
Broadcom **Install**

**Data Set Viewer** 0.2.4

**Extension: Zowe Explorer** **Extension: IBM Z Open Editor** ✕

## IBM Z Open Editor ibm.zopeneditor

IBM | ↻ 29,132 | ★★★★★ | Repository | License | v1.2.0

Provides COBOL, PL/I, HLASM, and REXX language servers as well as tools for IBM Z ...

**Install**

Details Feature Contributions Changelog Dependencies

## IBM Z<sup>®</sup> Open Editor

IBM Z Open Editor is an extension for Visual Studio Code that provides language support for the IBM<sup>®</sup> Enterprise COBOL, PL/I, HLASM, REXX, and JCL languages.

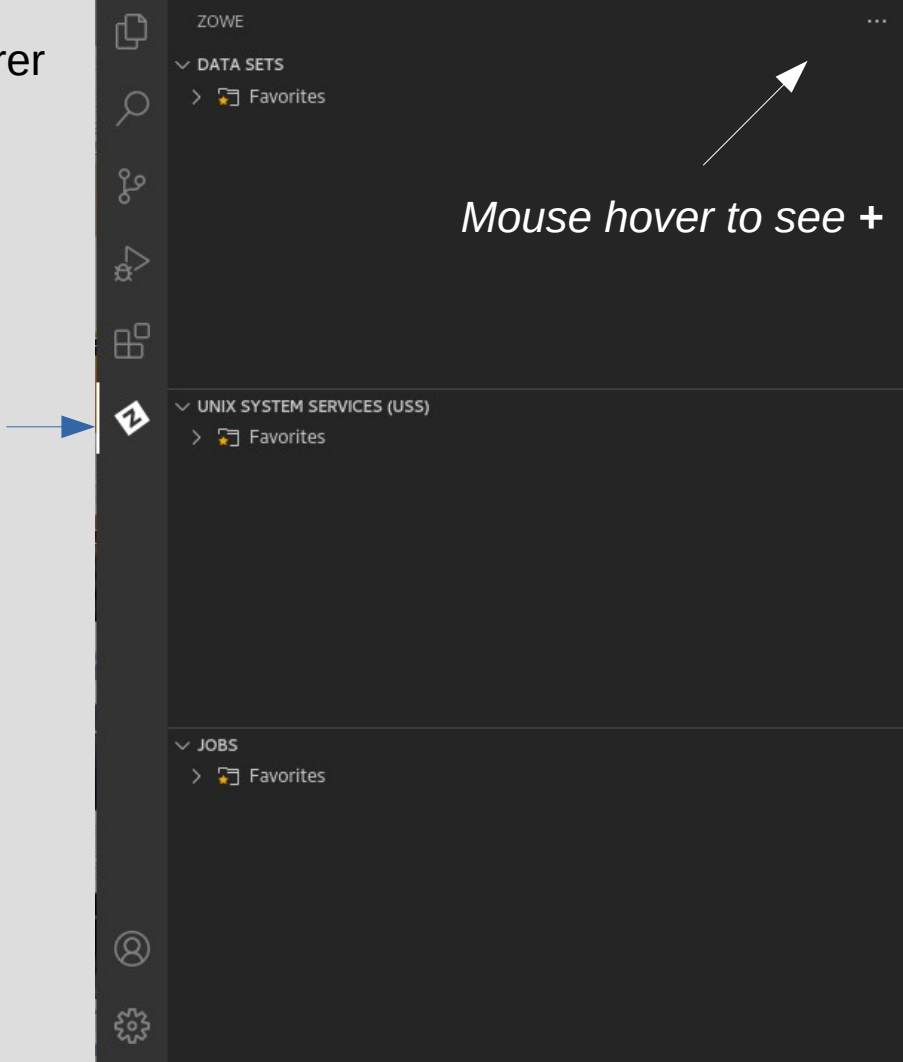
Go here for the full [Documentation](#) online.

This extension provides language support for the IBM Enterprise programming languages for z/OS<sup>®</sup>. It supports COBOL 6.3, PL/I 5.3, and High Level Assembler for z/OS 2.4 and TSO/E REXX. This also includes capabilities for embedded statements in COBOL and PL/I for CICS 5.6, IMS 15.1.0 and SQL DB2 for z/OS 12.1. Earlier versions of any of these components will also work.

IBM Z Open Editor realizes its language support by implementing fully functional [language servers](#) together with additional editor enhancements that enable IBM Z developers to utilize features such as:

- Real-time syntax checking and highlighting while you type
- Problems view with all syntax errors and (in COBOL) unreachable code
- Outline view and outline search
- For both variables and paragraphs:
  - Declaration hovers
  - Peek definition
  - Go to definition

# Zowe Explorer



Extension: Zowe Explorer × | Welcome to Z Open Editor




## Zowe Explorer

zowe.vscodex-  
Zowe | 31,388 | ★★★★★ | R  
VS Code extension, powered by Zowe CLI, t...

**Uninstall** ⌵ ⚙

[Details](#) | [Feature Contributions](#) | [Changelog](#)

## Zowe Explorer

VS Marketplace **v1.13.1** | downloads **125.08K** |  **92%**

[chat](#) [on Slack](#)

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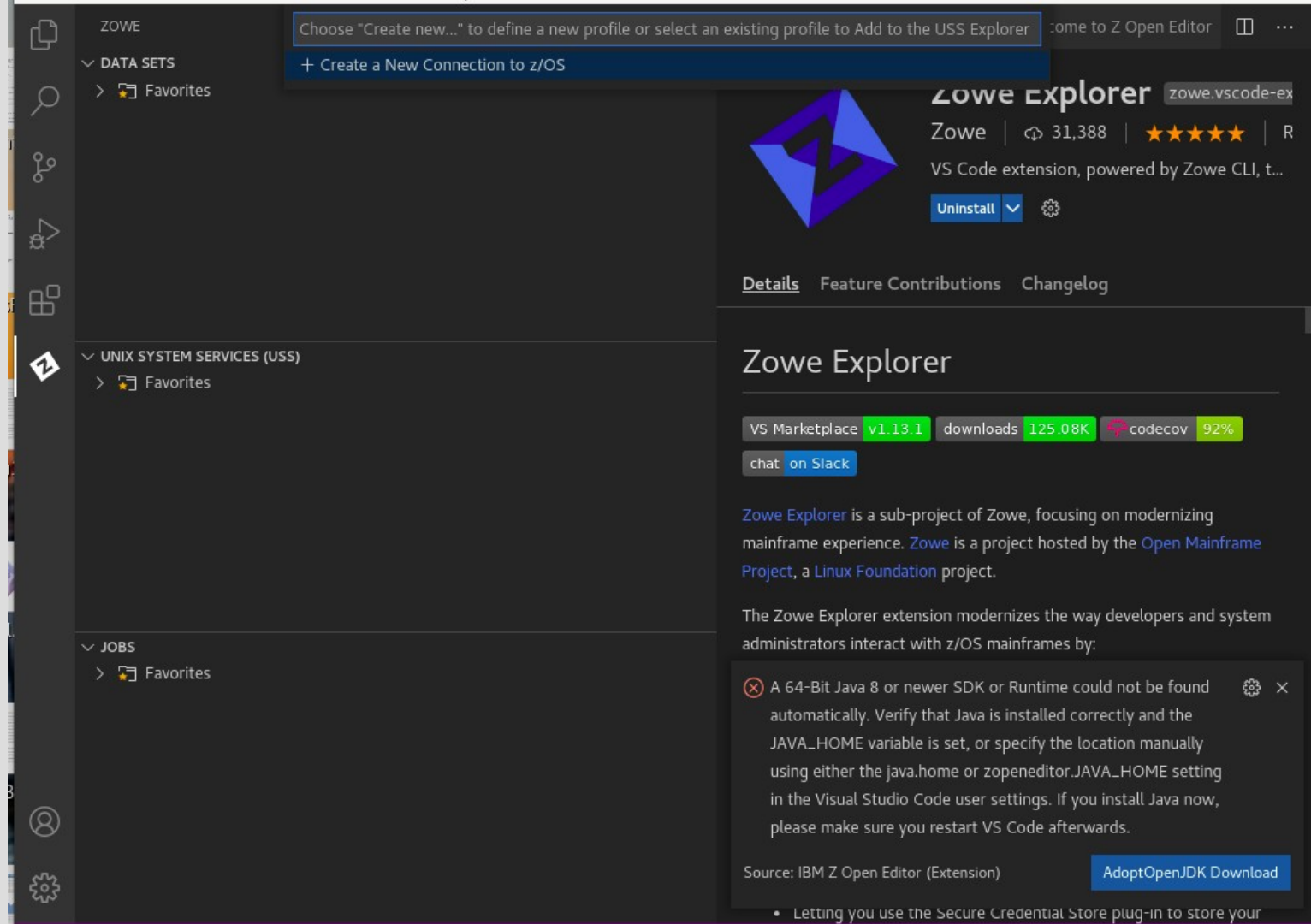
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Source: [IBM Z Open Editor \(Extension\)](#) [AdoptOpenJDK Download](#)

- Letting you use the Secure Credential Store plug-in to store your

Click +  
to create  
a new connection



ZOWE

Choose "Create new..." to define a new profile or select an existing profile to Add to the USS Explorer | Come to Z Open Editor

+ Create a New Connection to z/OS

DATA SETS

> Favorites

UNIX SYSTEM SERVICES (USS)

> Favorites

JOBS

> Favorites

Zowe Explorer | zowe.vscod...  
Zowe | 31,388 | ★★★★★ | R  
VS Code extension, powered by Zowe CLI, t...

Uninstall

Details | Feature Contributions | Changelog

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VS Marketplace v1.13.1 | downloads 125.08K | codecov 92%

chat on Slack

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Source: IBM Z Open Editor (Extension) | [AdoptOpenJDK Download](#)

- Letting you use the Secure Credential Store plug-in to store your

Entered user  
selected name  
class

class

come to Z Open Editor

+ Create a New Connection to z/OS

# zowe explorer

zowe.vscode-ex

Zowe | 31,388 | ★★★★★ | R

VS Code extension, powered by Zowe CLI, t...

Uninstall

[Details](#) [Feature Contributions](#) [Changelog](#)

## Zowe Explorer

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Source: IBM Z Open Editor (Extension) [AdoptOpenJDK Download](#)

- Letting you use the Secure Credential Store plug-in to store your

Next is to enter **zosmf** as the Profile Type

ZOWE

Profile Type

zosmf

rse

come to Z Open Editor

explorer zowe.vscode-ex

Zowe | 31,388 | ★★★★★ | R

VS Code extension, powered by Zowe CLI, t...

Uninstall

Details Feature Contributions Changelog

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Source: IBM Z Open Editor (Extension)

AdoptOpenJDK Download

- Letting you use the Secure Credential Store plug-in to store your



Next is to enter  
Connection URL

https://url:port

come to Z Open Editor

Enter a z/OS URL in the format 'https://url:port'. (Press 'Enter' to confirm or 'Escape' to cancel)

# Zowe Explorer

zowe.vscode-ex

Zowe | 31,388 | ★★★★★ | R

VS Code extension, powered by Zowe CLI, t...

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Source: IBM Z Open Editor (Extension)

AdoptOpenJDK Download

- Letting you use the Secure Credential Store plug-in to store your

Class lab  
IP address  
using zosmf port  
10443

The screenshot shows the Visual Studio Code interface with the Zowe Explorer extension installed. The left sidebar displays the 'ZOWE' workspace with sections for 'DATA SETS', 'UNIX SYSTEM SERVICES (USS)', and 'JOBS', each with a 'Favorites' option. The main editor area shows the extension's details page, including the Zowe logo, version 'v1.13.1', and download statistics. A notification banner at the bottom indicates a missing Java 8 SDK, with a link to 'AdoptOpenJDK Download'.

Address bar: `https://192.86.32.67:10443`

Enter a z/OS URL in the format 'https://url:port'. (Press 'Enter' to confirm or 'Escape' to cancel)

### Zowe Explorer

zowe.vscodex

Zowe | 31,388 | ★★★★★ | R

VS Code extension, powered by Zowe CLI, t...

Uninstall

Details Feature Contributions Changelog

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Source: IBM Z Open Editor (Extension) [AdoptOpenJDK Download](#)

- Letting you use the Secure Credential Store plug-in to store your



Enter your assigned ID

ZOWE

Z40499

Enter the user name for the connection. Leave blank to not store. (Press 'Enter' to confirm or 'Escape' to cancel)

come to Z Open Editor

plorer zowe.vscode-ex

Zowe | 31,388 | ★★★★★ | R

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Source: IBM Z Open Editor (Extension) [AdoptOpenJDK Download](#)

- Letting you use the Secure Credential Store plug-in to store your

Enter your password

The screenshot shows the Visual Studio Code interface with the Zowe Explorer extension page. On the left, the sidebar shows a tree view with categories: ZOWE, DATA SETS, UNIX SYSTEM SERVICES (USS), and JOBS, each with a 'Favorites' sub-item. The main content area displays the extension's details, including the Zowe logo, version v1.13.1, 125,08K downloads, and a 92% code coverage score. A 'chat on Slack' button is also present. The extension description states it is a sub-project of Zowe, focusing on modernizing the mainframe experience. A notification at the bottom indicates that a 64-bit Java 8 or newer SDK or runtime could not be found, suggesting the user verify Java installation or manually set the JAVA\_HOME variable. A source link for 'IBM Z Open Editor (Extension)' and an 'AdoptOpenJDK Download' button are also visible.

Enter the password for the connection. Leave blank to not store. (Press 'Enter' to confirm or 'Escape' to cancel)

**Zowe Explorer** | zowe.vscode-ex

Zowe | 31,388 | ★★★★★ | R

VS Code extension, powered by Zowe CLI, t...

Uninstall

Details | Feature Contributions | Changelog

**Zowe Explorer**

VS Marketplace **v1.13.1** | downloads **125.08K** | codecov **92%**

chat on Slack

Zowe Explorer is a sub-project of Zowe, focusing on modernizing mainframe experience. Zowe is a project hosted by the [Open Mainframe Project](#), a [Linux Foundation](#) project.

The Zowe Explorer extension modernizes the way developers and system administrators interact with z/OS mainframes by:

⊗ A 64-Bit Java 8 or newer SDK or Runtime could not be found automatically. Verify that Java is installed correctly and the JAVA\_HOME variable is set, or specify the location manually using either the java.home or zopeneditor.JAVA\_HOME setting in the Visual Studio Code user settings. If you install Java now, please make sure you restart VS Code afterwards.

Source: IBM Z Open Editor (Extension) | [AdoptOpenJDK Download](#)

- Letting you use the Secure Credential Store plug-in to store your

Enter  
password

The image shows the Zowe Explorer extension page in the Visual Studio Code marketplace. At the top, a password prompt is visible: "Enter the password for the connection. Leave blank to not store. (Press 'Enter' to confirm or 'Escape' to cancel)". The extension's details are shown, including the name "Zowe Explorer", version "v1.13.1", and a download count of "125.08K". The page also features a "Zowe Explorer" section with a description: "Zowe Explorer is a sub-project of Zowe, focusing on modernizing mainframe experience. Zowe is a project hosted by the Open Mainframe Project, a Linux Foundation project." Below this, there is a message stating: "The Zowe Explorer extension modernizes the way developers and system administrators interact with z/OS mainframes by:". At the bottom, an error message is displayed: "A 64-Bit Java 8 or newer SDK or Runtime could not be found automatically. Verify that Java is installed correctly and the JAVA\_HOME variable is set, or specify the location manually using either the java.home or zopeneditor.JAVA\_HOME setting in the Visual Studio Code user settings. If you install Java now, please make sure you restart VS Code afterwards." The error message includes a "Source: IBM Z Open Editor (Extension)" and a link to "AdoptOpenJDK Download".

ZOWE

DATA SETS

UNIX SYSTEM SERVICES (USS)

JOBS

Enter the password for the connection. Leave blank to not store. (Press 'Enter' to confirm or 'Escape' to cancel)

Zowe Explorer

VS Marketplace v1.13.1 downloads 125.08K codecov 92%

chat on Slack

Zowe Explorer is a sub-project of Zowe, focusing on modernizing mainframe experience. Zowe is a project hosted by the Open Mainframe Project, a Linux Foundation project.

The Zowe Explorer extension modernizes the way developers and system administrators interact with z/OS mainframes by:

A 64-Bit Java 8 or newer SDK or Runtime could not be found automatically. Verify that Java is installed correctly and the JAVA\_HOME variable is set, or specify the location manually using either the java.home or zopeneditor.JAVA\_HOME setting in the Visual Studio Code user settings. If you install Java now, please make sure you restart VS Code afterwards.

Source: IBM Z Open Editor (Extension)

AdoptOpenJDK Download

- Letting you use the Secure Credential Store plug-in to store your

False  
Accept connection  
with self-signed  
certificates

The image shows the Zowe Explorer extension page in the Visual Studio Code marketplace. At the top, a search bar contains the text "Reject Unauthorized Connections". Below it, two configuration options are listed: "True - Reject connections with self-signed certificates" (highlighted in blue) and "False - Accept connections with self-signed certificates". The extension's name "Zowe Explorer" is displayed, along with its version "zowe.vscode-ex", a star rating of 5 stars, and a download count of 31,388. The page includes tabs for "Details", "Feature Contributions", and "Changelog". The main content area features the extension's logo, a description of Zowe Explorer as a sub-project of Zowe, and statistics for the VS Marketplace (version v1.13.1, 125.08K downloads, 92% codecov). A warning message is displayed at the bottom, stating: "A 64-Bit Java 8 or newer SDK or Runtime could not be found automatically. Verify that Java is installed correctly and the JAVA\_HOME variable is set, or specify the location manually using either the java.home or zopeneditor.JAVA\_HOME setting in the Visual Studio Code user settings. If you install Java now, please make sure you restart VS Code afterwards." A button labeled "AdoptOpenJDK Download" is visible next to the warning.

Reject Unauthorized Connections

True - Reject connections with self-signed certificates

False - Accept connections with self-signed certificates

Zowe Explorer

zowe.vscode-ex

Zowe | 31,388 | ★★★★★ | R

VS Code extension, powered by Zowe CLI, t...

Uninstall

Details Feature Contributions Changelog

## Zowe Explorer

VS Marketplace v1.13.1 downloads 125.08K codecov 92%

chat on Slack

Zowe Explorer is a sub-project of Zowe, focusing on modernizing mainframe experience. Zowe is a project hosted by the Open Mainframe Project, a Linux Foundation project.

The Zowe Explorer extension modernizes the way developers and system administrators interact with z/OS mainframes by:

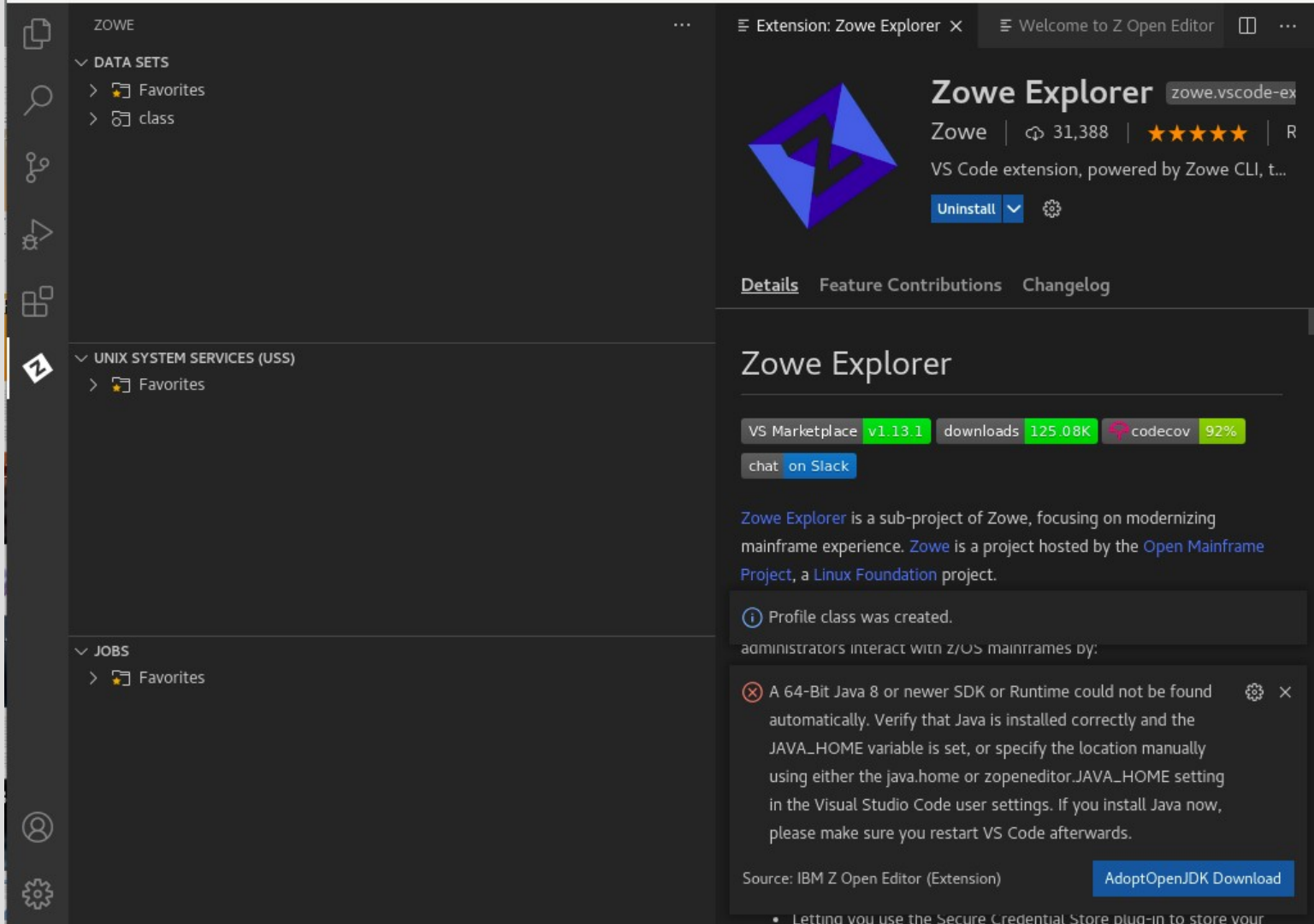
⊗ A 64-Bit Java 8 or newer SDK or Runtime could not be found automatically. Verify that Java is installed correctly and the JAVA\_HOME variable is set, or specify the location manually using either the java.home or zopeneditor.JAVA\_HOME setting in the Visual Studio Code user settings. If you install Java now, please make sure you restart VS Code afterwards.

Source: IBM Z Open Editor (Extension)

AdoptOpenJDK Download

- Letting you use the Secure Credential Store plug-in to store your

Click **class**  
in the  
DATA SETS  
section



The image shows a screenshot of the Visual Studio Code interface. On the left, the Explorer sidebar is visible, showing a tree view with the following structure:

- ZOWE
  - DATA SETS
    - Favorites
    - class
  - UNIX SYSTEM SERVICES (USS)
    - Favorites
  - JOBS
    - Favorites

On the right, the extension marketplace page for Zowe Explorer is displayed. The extension is identified as `zowe.vscode-ex`. It has a rating of 5 stars and 31,388 downloads. The page includes an "Uninstall" button and a settings gear icon. Below the extension name, there are tabs for "Details", "Feature Contributions", and "Changelog".

The "Details" tab is active, showing the extension's name "Zowe Explorer" and a description: "Zowe Explorer is a sub-project of Zowe, focusing on modernizing mainframe experience. Zowe is a project hosted by the Open Mainframe Project, a Linux Foundation project." Below the description, there are statistics for the VS Marketplace: version `v1.13.1`, 125.08K downloads, 92% codecov coverage, and a link to chat on Slack.

At the bottom of the page, there is a notification area with two messages:

- Profile class was created.
- A 64-Bit Java 8 or newer SDK or Runtime could not be found automatically. Verify that Java is installed correctly and the JAVA\_HOME variable is set, or specify the location manually using either the java.home or zopeneditor.JAVA\_HOME setting in the Visual Studio Code user settings. If you install Java now, please make sure you restart VS Code afterwards.

The source of the extension is listed as "IBM Z Open Editor (Extension)", and there is a button to "AdoptOpenJDK Download".

# Unit summary

Having completed this unit, you should be able to:

- Describe Zowe
- List 3 Major Zowe Components
- Locate resources how to learn more about Zowe
- Locate resources how to use Zowe

