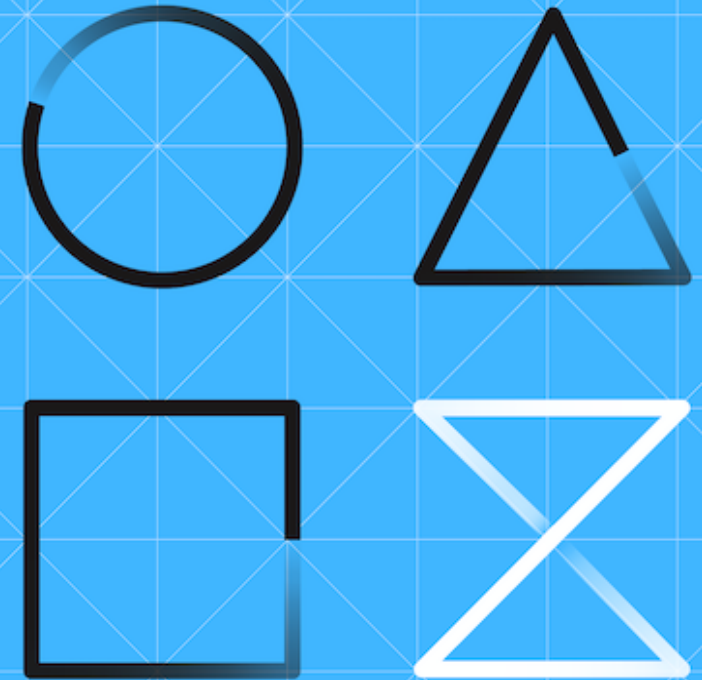


VSC1

Installing and Configuring Visual Studio

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VSC1 - GET YOURSELF CONNECTED

The Challenge

We'll be connecting through Zowe Explorer plugin for VS Code. To get there, you'll need your very own userid and password, plus a few pieces of supporting software. Fortunately, it's all very simple and shouldn't take much time at all. You can also use these instructions to help you get connected again if you have to switch computers or start all over again for any reason.

Before You Begin

Since this is the first technical challenge, all you need is about 45 minutes to get everything downloaded, installed, and ready to go

Investment

Steps	Duration
12	45 minutes

1 LOAD UP ON DOWNLOADS

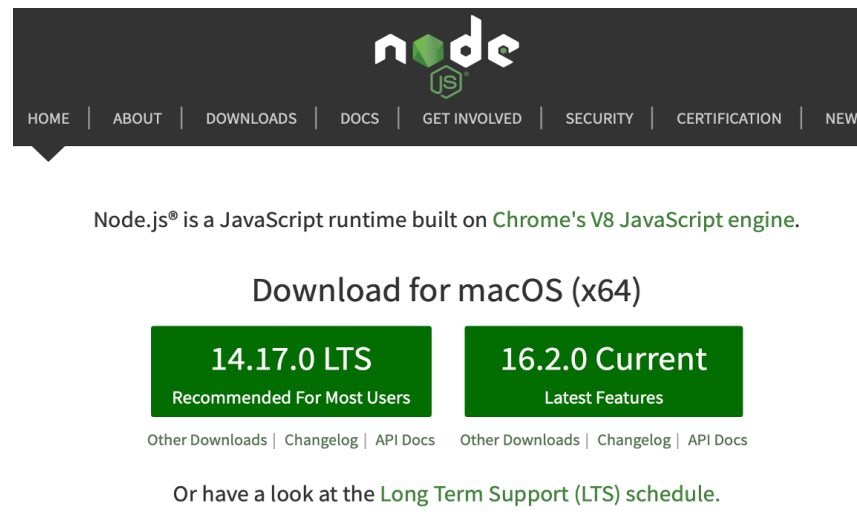
Download VS Code and other required software packages.

For all downloads, you will probably be automatically directed to the correct version that you should get.

NODE

<https://nodejs.org/en/>

For Node.js, select the LTS (Long Term Support) version, as it is more likely to remain stable and consistent throughout the time you're working on the challenges in IBM Z Xplore.



Note that the available versions change over time - pick the most recent LTS version available to you when installing

JAVA

You will also need to have a Java environment available - most operating systems have a version of java installed which you can test by opening a command terminal (CMD or PowerShell on Windows, Terminal on Mac and linux) and entering java; if the response is something similar to "command not found", then you will need to install a java "runtime".

IBM provides a free Java runtime at <https://developer.ibm.com/languages/java/semeru-runtimes/downloads/> - as with Node.js, look for the LTS version.

Other Java options are available - [Installing the IBM Z Open Editor VS Code extension](#)

VSCODE

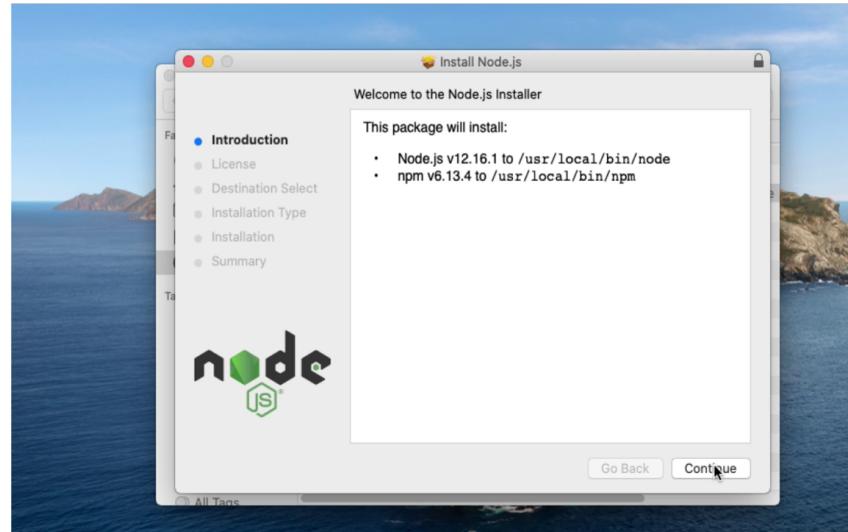
<https://code.visualstudio.com/download>

The screenshot shows the Visual Studio Code download page. At the top, there is a navigation bar with links: Visual Studio Code, Docs, Updates, Blog, API, Extensions, FAQ, Learn, and a Download button. Below the navigation bar, the text reads: "Free and built on open source. Integrated Git, debugging and extensions." The main content area is divided into three sections: Windows, Linux, and Mac. Each section has a download button and a list of available installers and their supported architectures.

Platform	Installer	Architectures
Windows (Windows 10, 11)	User Installer	x64, x86, Arm64
	System Installer	x64, x86, Arm64
	.zip	x64, x86, Arm64
	CLI	x64, x86, Arm64
Linux (Debian, Ubuntu, Red Hat, Fedora, SUSE)	.deb	x64, Arm32, Arm64
	.rpm	x64, Arm32, Arm64
	.tar.gz	x64, Arm32, Arm64
	Snap	Snap Store
	CLI	x64, Arm32, Arm64
Mac (macOS 10.11+)	.zip	Intel chip, Apple silicon, Universal
	CLI	Intel chip, Apple silicon

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2 INSTALL NODE.JS

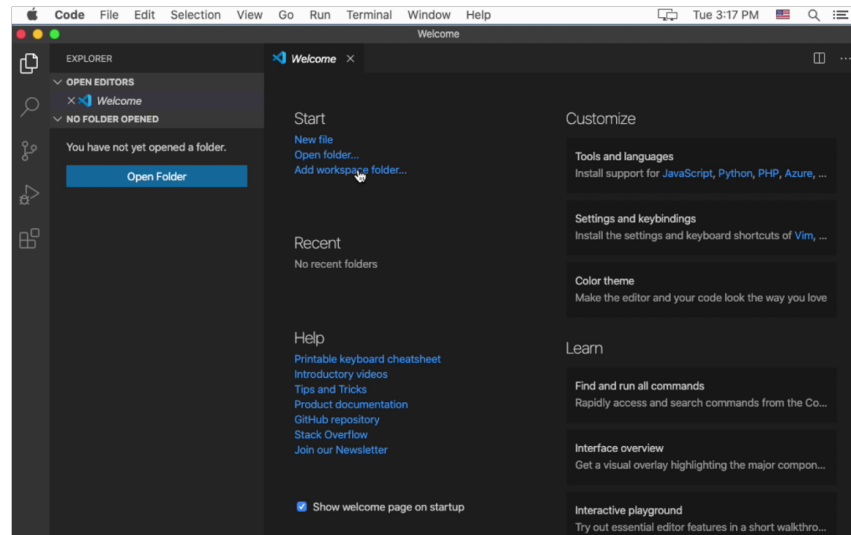


Node.js is a flexible code framework for javascript, used on many popular websites and apps. Zowe Explorer uses it to represent Z resources in a series of menus.

Run the Node.js installer you just downloaded. This will install not only Node.js, but **npm**, the Node Package Manager, which will be needed for some later steps.

If you get a message about being unable to validate the software, right-click on the installer and select Open. This will let you proceed once you verify that it's ok.

3 INSTALL AND RUN VS CODE



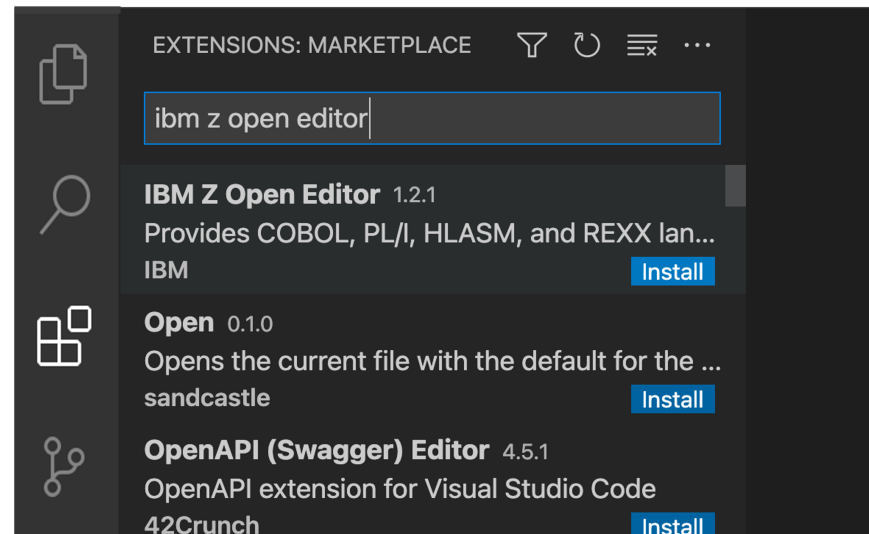
- **Windows:** Run the VS Code installer
- **Mac:** Copy VS Code application into the Applications folder
- **Linux:** Install the rpm/deb file
- **Everybody:** Start VS Code
- **Optional:** Make a shortcut to VS Code in your dock, taskbar, or menu so you don't have to search too far for it next time.

WHY DO I NEED TO SET UP THIS SOFTWARE?

Some people connect to Z systems to write applications. Other people connect to do support and upgrades. Since there are so many different roles in Z, we have many different methods of connecting and storing data. Most recently, Z professionals have started using **VS Code**, an extensible editor, which supports a wide range of plugins, as a way of providing this access.

We will start out just using Zowe, but soon we will begin using the Terminal, then even later on, the DB2 Developer plugin. Being able to focus on just the type of access you need, keeps things fast and lightweight, plus you can use many of the features built right into VS Code without needing to go off and memorize a new set of commands and shortcuts for every different area of the platform.

4 INSTALL Z OPEN EDITOR



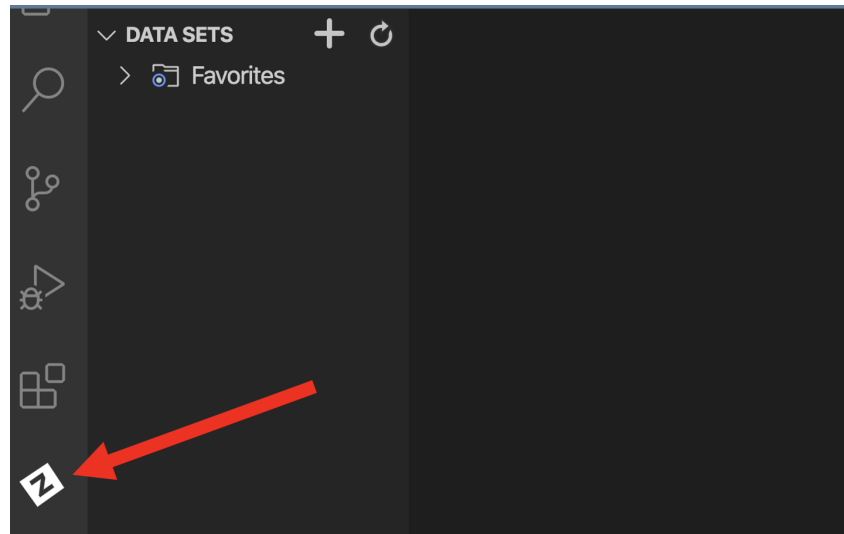
Click on the Extensions launcher in the Activity Bar (looks like a set of four boxes, highlighted in red above) and search for “IBM Z Open Editor”.

Next, click on the blue “Install” button for it to install the the editor. The install will happen entirely within VS Code, just click on Install and let VS Code handle it from there.

This may take a few minutes depending on the speed of your computer and internet connection. When the process has completed, the “Install” button will disappear, and you’ll notice a new icon at the bottom of the side bar on the left in VSCode.

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5 CHECK OUT ZOWE

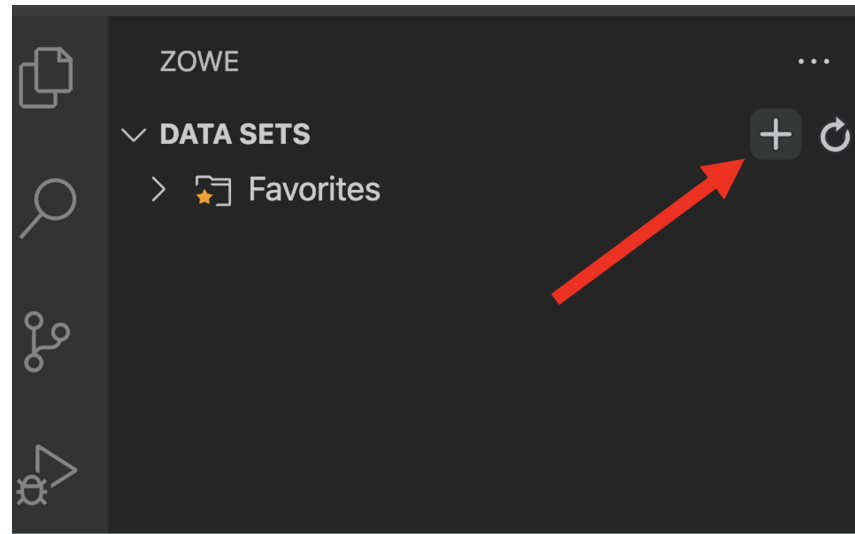


The IBM Z Open Editor is useful for editing files specific to the Z platform, and it uses the Zowe Explorer extension to handle its connections to the Z system.

The new icon you see in your sidebar is how you get to the Zowe Explorer. Get familiar with that icon, you'll be seeing a lot of it throughout these challenges.

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6 CREATE YOUR PROFILE



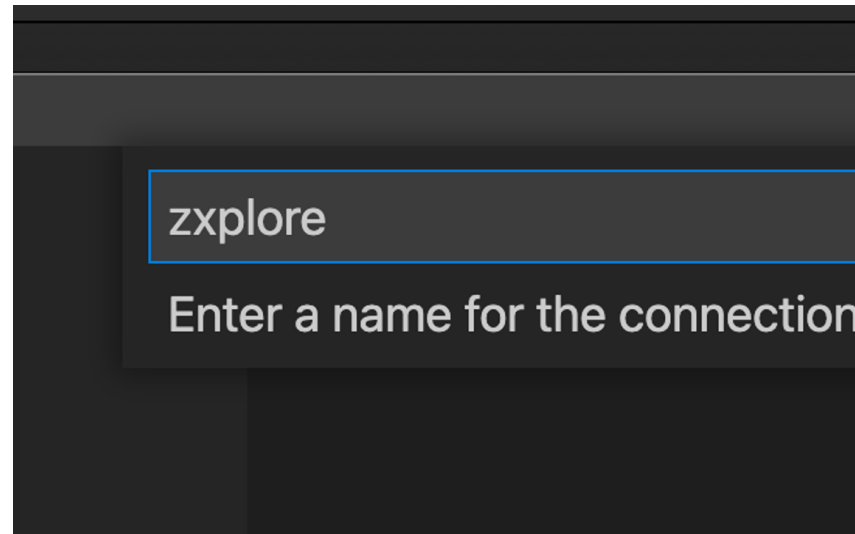
Click on the Zowe icon to launch the Zowe Explorer view. As you can see, there is an editor area to your right, and three sections on the left. We'll explore those more later.

Next, click the Plus sign next to Data Sets up top. The Plus sign will not appear until you move your mouse into the Data Sets area.

We'll give you the info you need for the profile in Step 7.

NOTE - VS Code prompt windows disappear when you switch between applications. This may be annoying if you are trying to copy/paste information from one window (a web browser) into it. You may want to line up your windows side-by-side, rather than switching between them.

7 LOGGING IN!



Select the “Create a New Connection to z/OS” option that comes up. Give the connection a name, like “zxplore”.

Select that you’d like a “zosmf” profile type.

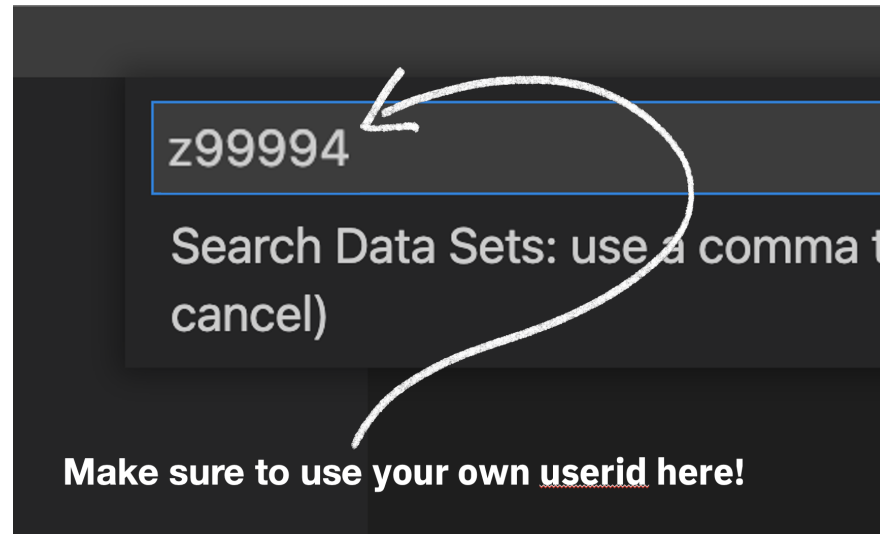
Then, unless otherwise directed, use the following URL: <https://zxp.ibmz.ibm.com:10443>

or <https://204.90.115.200:10443>

Enter your username, then your password.

Make sure to select **False - Accept connections with self-signed certificates** when prompted for self-signed certificates, and select **https** for what protocol you would like to use. All other parameters can be left blank/default.

8 SETTING YOUR FILTER



Mouse-over the new connection you just created under DATA SETS and click the magnifying glass next to it. In the window that pops up, type in your Zuserid. This will set the filter to your user datasets, which is a good way to check connectivity and access. Press the Enter key.

This search may take a couple of seconds before returning a result.

Hint: Your Zuserid is not z99994 or Zxxxxx. Those are just examples used for screenshots. Get used to typing your own ID, you'll be using it a lot throughout these challenges.

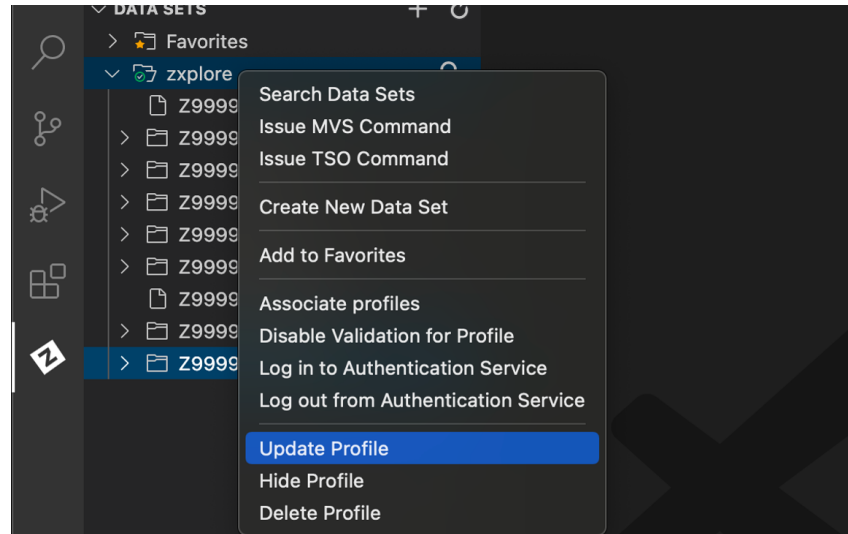
```
⊗ z/OSMF REST API Error: Rest API failure with HTTP(S) ⚙️ ⌵ ✕
status 500 category: 6 rc: 8 reason: 513 message:
fopen() failed details: - EDC5041I An error was
detected at the system level when opening a file.
(errno2=0xC00A0022) - __amrc: __last_op=401
__code=0x00080098 Error: z/OSMF REST API Error:
Rest API failure with HTTP(S) status 500 category: 6
rc: 8 reason: 513 message: fopen() failed details: -
EDC5041I An error was detected at the system level
when opening a file. (errno2=0xC00A0022) - __amrc:
__last_op=401 __code=0x00080098

Source: Zowe Explorer (Extension)
```

NOTE: the first time you use this filter, you will only see one entry in your DATA SETS view - a dataset with the same name as your Zuserid; this is NOT a dataset you can view/edit - if you try to open it, you will receive a 500 error, like the one above, from ZOWE and VSCode. If that happens, just close the error notification, and carry on with the challenge.

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9 FIXING CONNECTION ISSUES



If you get an error about invalid credentials, REST API Error, or see a red circle next to your profile name, it is possible that you typed in your username or password wrong.

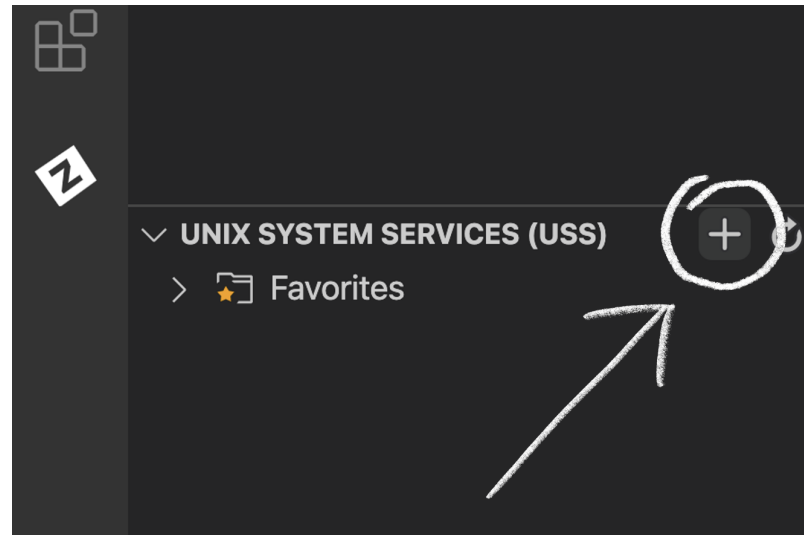
Simply right-click on the profile you created (**zxplore**, for example) and select “Update Profile”. This will let you re-enter all of your connection information, step by step.

If you want to start all over again, simply right-click on it and select “Delete Profile”.

Because of the asynchronous nature of the plugin, sometimes it’s good to quit VS Code before updating, or after deleting a profile, as you may see an error message that is not accurate.

When in doubt, restart VS Code. This clears up a lot of problems.

10 STYLING AND PROFILING

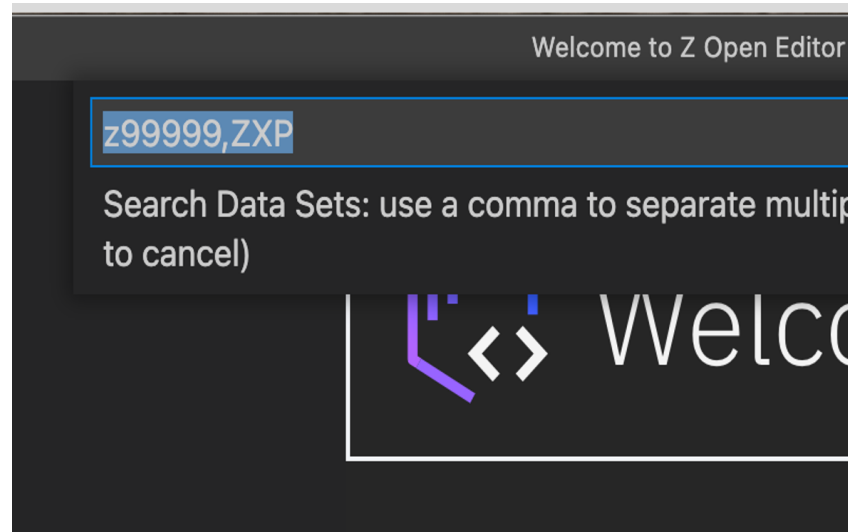


Click the + next to **Unix System Services (USS)** and select the connection profile you created in Step 7. Repeat the step for **JOBS** down at the bottom section.

When done, you should have connection profiles for all three main areas of the Zowe Explorer plugin.

Now that you're in, feel free to explore a little and see what you just unlocked.

11 NAVIGATE TO VSCJCL



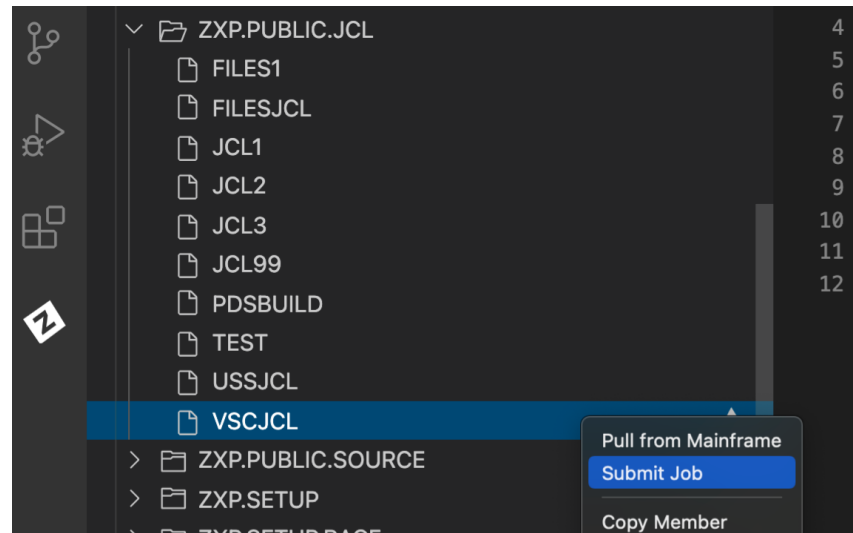
The **Data Sets** section lists all of the data sets and members which are available under your filter. Edit the filter to include ZXP.

Remember, you will not see Z99994, you will see your own userid which you specified in Step 9.

Find the data set labeled **ZXP.PUBLIC.JCL** and open up the twistie (triangle) next to it.

Within there, look for a member called **VSCJCL**

12 SUBMIT VALIDATION JOB



Once you find **VSCJCL**, right-click on it, and select “Submit Job”. After a few moments, when you go back to <https://ibmzxplore.influitive.com>, you should see that the VSC1 challenge has been marked COMPLETE!

If not, make sure to click the button at the end of the instructions:

Challenge Complete, check my JCL submission

Congratulations on making this big first step. It’s time to celebrate, and by celebrate, we mean move on to the next challenge.

Nice job - let's recap	Next up ...
<p>You got connected to a real live Z system with your very own userid and password, then set your Zowe data set filter, navigated through the data sets to find a specific member, and then submitted some JCL.</p> <p>As you might imagine, there's a bigger story about what's actually going on here. For now, just feel proud of a job well done.</p>	<p>It's one thing to follow steps, it's another to understand. In the next two challenges, we'll get to the bottom of exactly what these data sets and members are, plus dive a bit deeper into JCL.</p> <p>You're making great progress, let's keep it all going.</p>