BYOD Lab: Your IDE in a Container - Hands on lab

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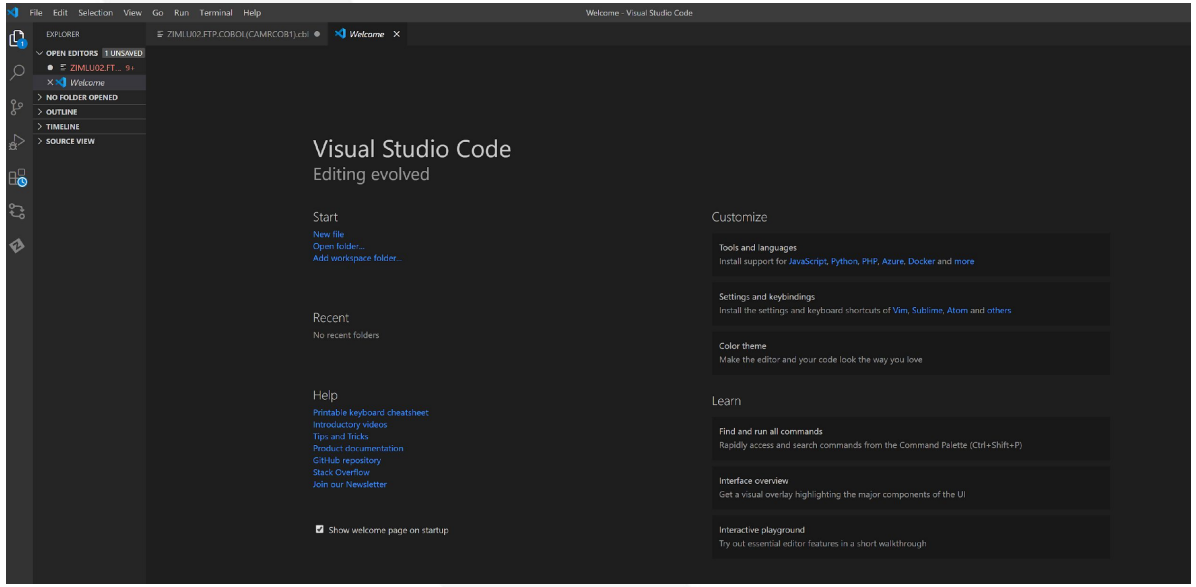
Agenda

- Visual Studio Code
- Code4z
- Zowe Explorer and Zowe CLI
- Containerized environment
- Security
- Workshop Scenario
- Best practices

Visual Studio Code

- **Free Source code IDE from Microsoft**
  - **Windows, macOS, Linux, Cloud**
  - Language Server Protocol and Debug Adapter Protocol Support
  - Extensive editor capabilities
  - Standard integration with Git
  - Most popular and used amongst developers
- **Expandable through Marketplace**
  - Tones of different extensions for everything
- **Lightweight IDE**
  - Fast and reliable
  - Extensible
  - Active support community



https://code.visualstudio.com/download

Code4z

Code with Confidence

Market-leading DevX built on VS Code, the IDE developers know and love

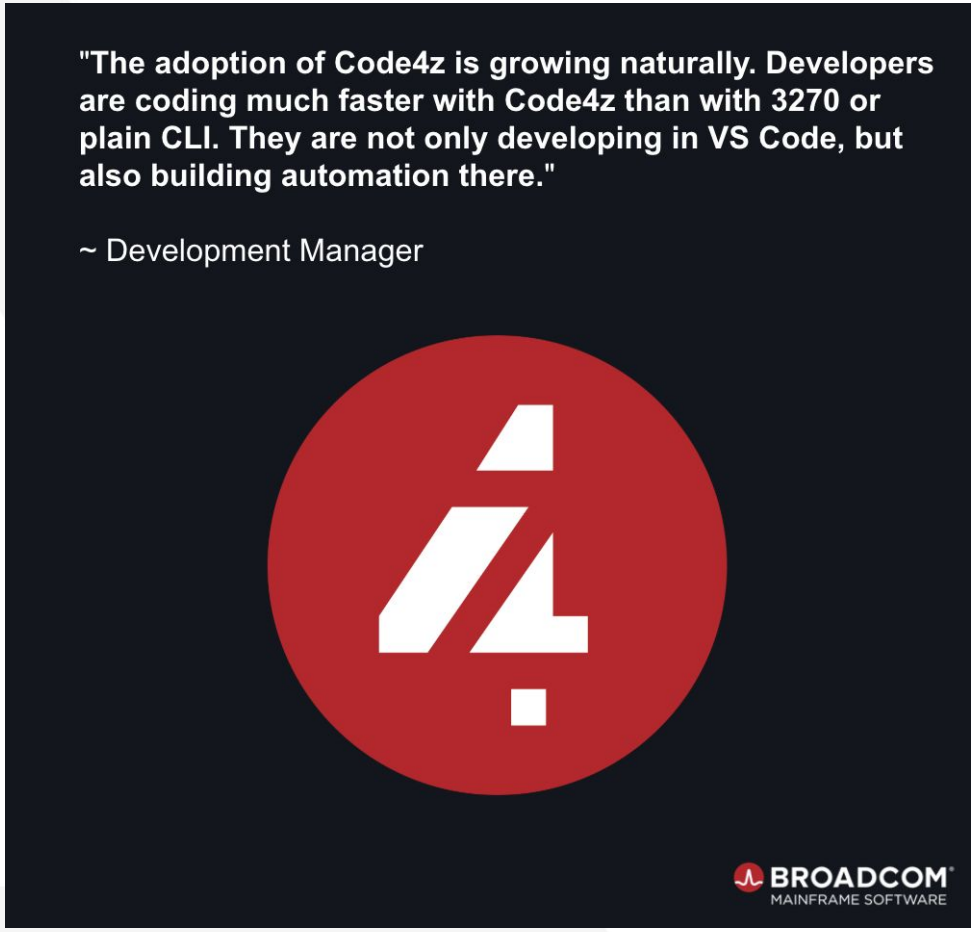
Reduces friction and keeps developers in the flow state, driving velocity, quality and agility

Streamlines critical developer workflows:

- Extensive Z language support with integrations to Endevor and Git
- Improved quality with seamless debugging, testing, and abend analysis
- Rapid development of hybrid integrations to meet business demands

Fosters collaboration across mainframe and distributed teams

Breadth and depth of extensions spanning roles and functions

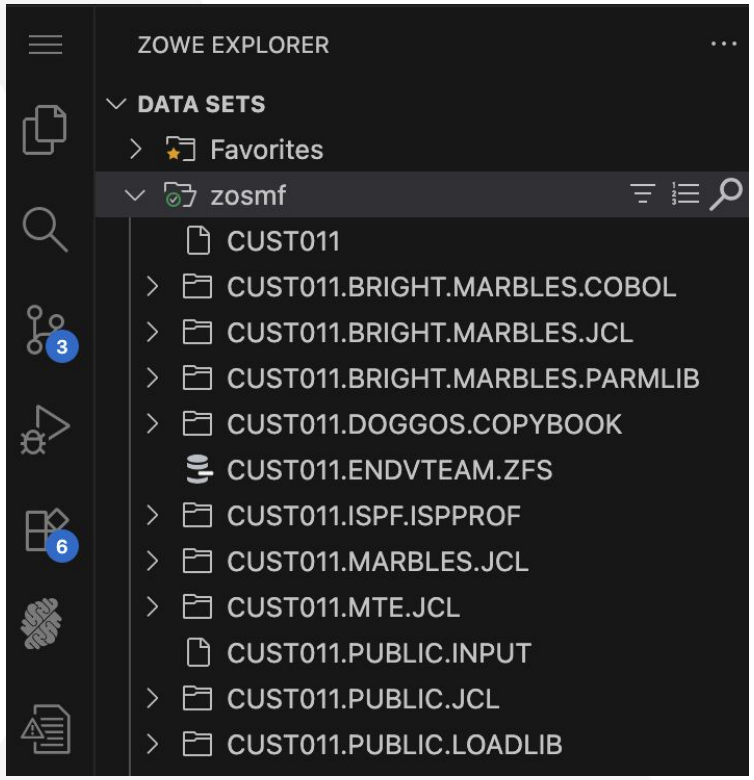


Zowe Explorer and Zowe CLI

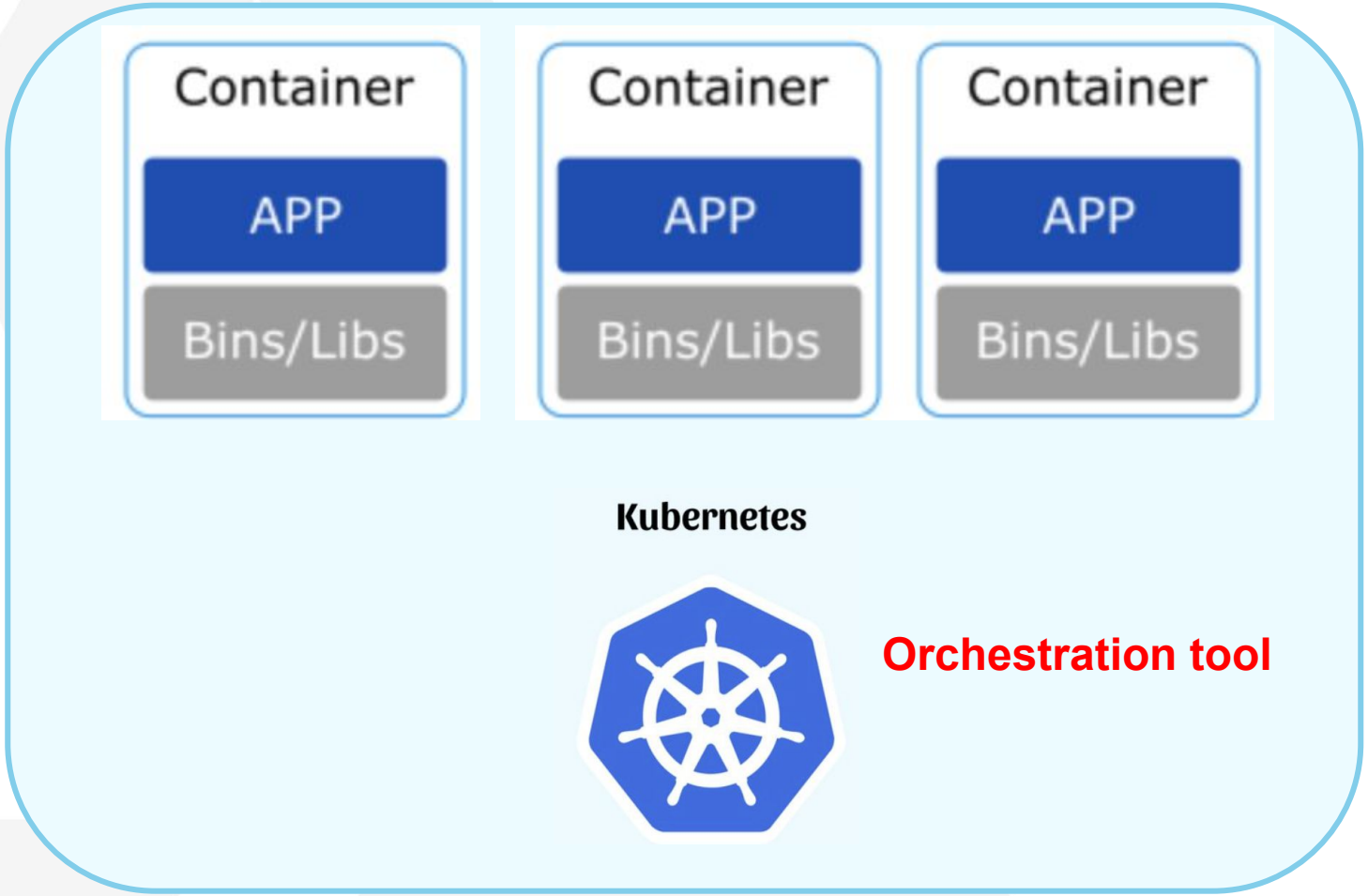
Zowe clients consume APIs that give them access to resources on the mainframe

```
developer@ws-1020986334398587-0:~/devx-native$ zowe zosmf check status
The user cust011 successfully connected to z/OSMF on '172.26.1.2'.
zosmf_port:          10443
zosmf_saf_realm:     SAFRealm
zos_version:         04.28.00
zosmf_full_version: 28.0
api_version:         1

z/OSMF Plug-ins that are installed on '172.26.1.2':
-
  pluginVersion:     HSMA250;PH38968;2021-11-17T02:45:42
  pluginDefaultName: z/OS Operator Consoles
  pluginStatus:      ACTIVE
-
  pluginVersion:     HSMA254;PH44449P;2022-04-01T17:39:47
  pluginDefaultName: Software Deployment
  pluginStatus:      ACTIVE
-
  pluginVersion:     HSMA250;PH41196;2021-12-15T13:52:24
  pluginDefaultName: Variables
  pluginStatus:      ACTIVE
```



Containerized Environments



Security

- Hosted IDEs provide a security layer to access the environment.
- Depending on the platform, security can be local or connected to 3rd party authentication services, including LDAP or single sign on services.
- Each container can be secured to a single person or group of people.
- The container can also be secure from a build perspective, ensuring all the components and plugins are secured, scanned and blessed by corporate security, if need.

Security Inside the Container

Security is always managed using the SAF deployed on the mainframe.

It will determine what you are allowed to do and access on the specific LPAR.

Zowe does not allow you to do anything you can't from a 3270 sessions.

User and password can be derived from:

- Environment Variables
- Profile
- Command line options

They should always be secured. The profile can store the profile information in a secure credential store (Windows Credential Manager, Mac KeyChain, Linux Keystore).

Workshop Scenario - Container IDE and Automation

- Create a Template definition with Zowe Extension and Zowe CLI
- Provision a Workspace from Template definition
- Pause and Start Workspace to show persistence
- Zowe Explorer:
  - Retrieve Data sets. USS Files. Submit jobs
- Zowe CLI:
  - Zowe CLI Commands and Automation

Best Practices

- Treat Platform as Code
  - Version it
- Keep it modular
  - Don’t create massive containers with lots of dependencies
  - Include only the tools needed for that development type
- Understand infrastructure demands
  - Try to right-size the environments
- Use minimal, well maintained base images
- Have internal package hosting, such as Artifactory
  - When relying on external packages, if they become available containers can’t be built
  - Dependencies can also be cached, speeding up deployment times

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