An IBM Document from

IBM Z DevOps Acceleration Program

May, 2023 – Release 1.1.2

Setup your Groovy Development Environment in IDZ v15 to develop IBM Dependency Based Build groovy scripts

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Abstract

A step-by-step guide to setup your IDE to leverage DBBs JavaDoc

Table of Contents

1 Introduction

While IBM Developer for z/OS (IDZ) Version 15 is built upon the IBM Aqua platform 3.2 which is based on Eclipse 4.8, you can extend your installation with the Groovy Development Tools[1] to increase your comfort in developing and maintaining your IBM Dependency Based Build groovy script.

One aspect is to have the JavaDoc next to your code instead of accessing it just via the browser at IBMs knowledge center.[2]

The purpose of this document is to outline the steps to configure your IDE to leverage the standard Eclipse features like Code completion, syntax highlighting and JavaDoc.

The prerequisites to enable IDZ to support groovy are:

- IBM Developer for z/OS version 15.0.x
- IBM Dependency Based Build 1.0.8 or later, which ships the JavaDoc as part of the DBB toolkit installation

If you are developing / maintaining groovy scripts in your company, this is what you are looking for.

Please note: Groovy Development Tools cannot be installed in **IDZ 16**, because the open-source Groovy Development Environment project decided to switch to a different installation procedure using a JDT patch method, that relies on the exact match of the Eclipse IDE build. The way to get it to work, requires to rebuild the GDE.

An alternative way is described in the Appendix of this document!

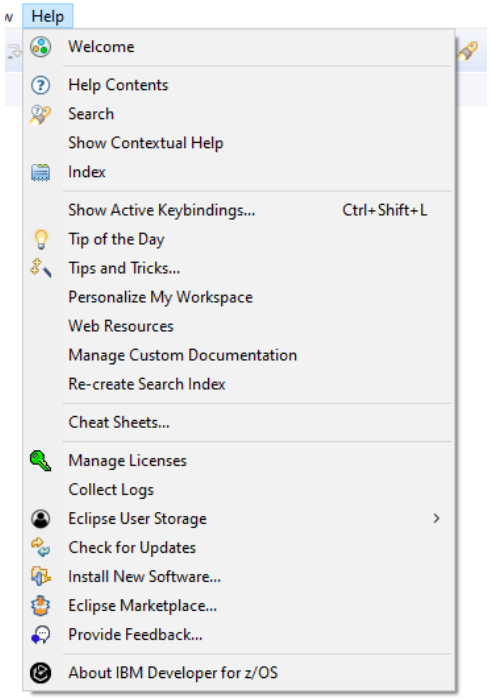
[1] https://marketplace.eclipse.org/content/groovy-development-tools
[2] https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.9/pr_intro.html

2 Installation / Preparation

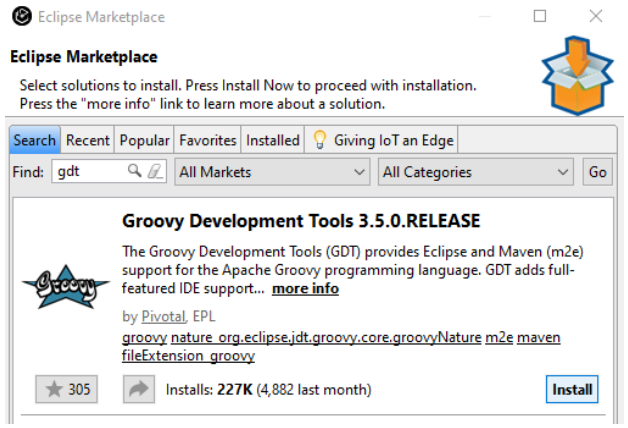
This section walks you through the steps to install the necessary software parts as well how to obtain the Dependency Based Build JavaDoc and toolkit API.

2.1 Install Groovy Development Tools

- Open the Eclipse Marketplace



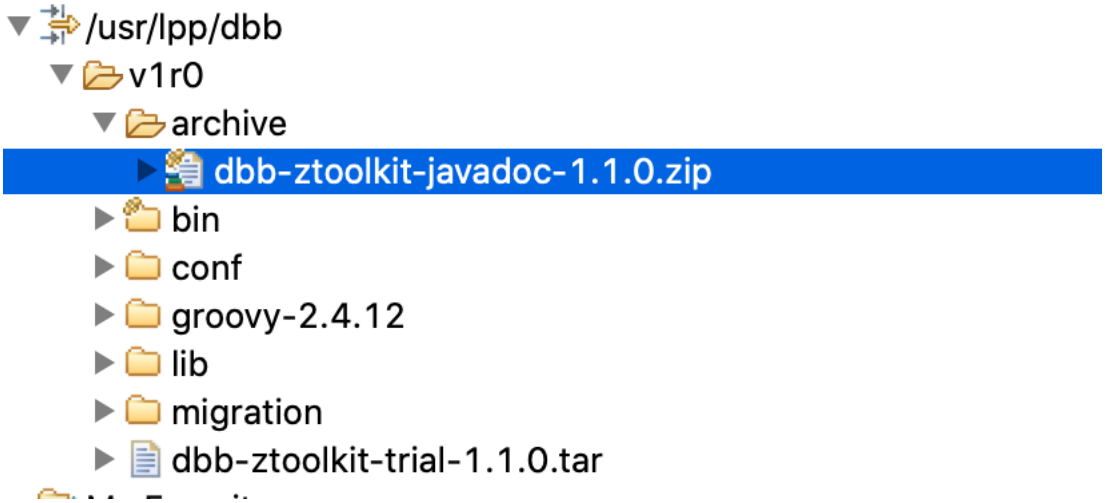
- Find the Groovy Development Tools, by searching for 'GDT'



- Accept the license agreements and Install the plugin into your IDZ environment.

2.2 Retrieve JavaDoc and dbb-core toolkit

- Please use IDZ to connect to your mainframe environment and navigate to the location of the dbb toolkit in z/OS UNIX System Services. Within the folder archive, you will find the java doc in dbb-ztoolkit-javadoc-<version>.zip



- Use the Remote Systems view to copy the **dbb-ztoolkit-javadoc-1.1.0.zip** as well as the **lib/dbb-core_x.x.x.jar** to your local drive.

  Let's use C:/Users/ibmuser/dbb/groovy-development-environment/ as the target directory for it.

- Extract the **dbb-ztoolkit-javadoc-1.1.0.zip** using your preferred archive manager

3 Use groovy tooling

We are assuming, that you have already cloned the git project with the build scripts.

3.1 Configure your zAppBuild project

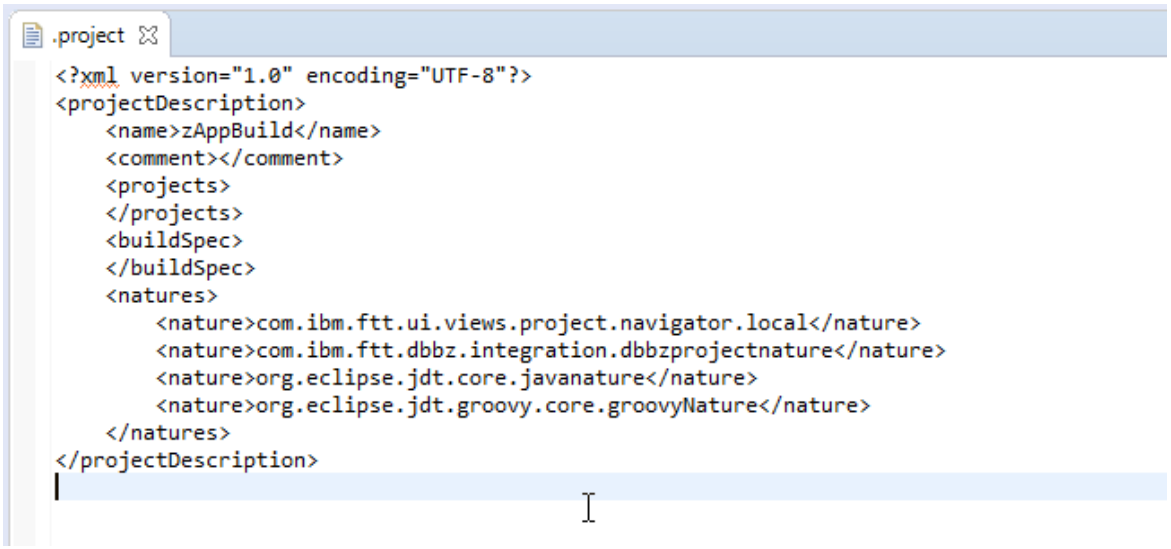
This section can also be applied for your own dbb build implementation project.

3.1.1 Set Eclipse project nature in .project

- Locate the **.project** file of zAppBuild and add the following two new *project natures* to it.

```
<nature>org.eclipse.jdt.core.javanature</nature>
<nature>org.eclipse.jdt.groovy.core.groovyNature</nature>
```

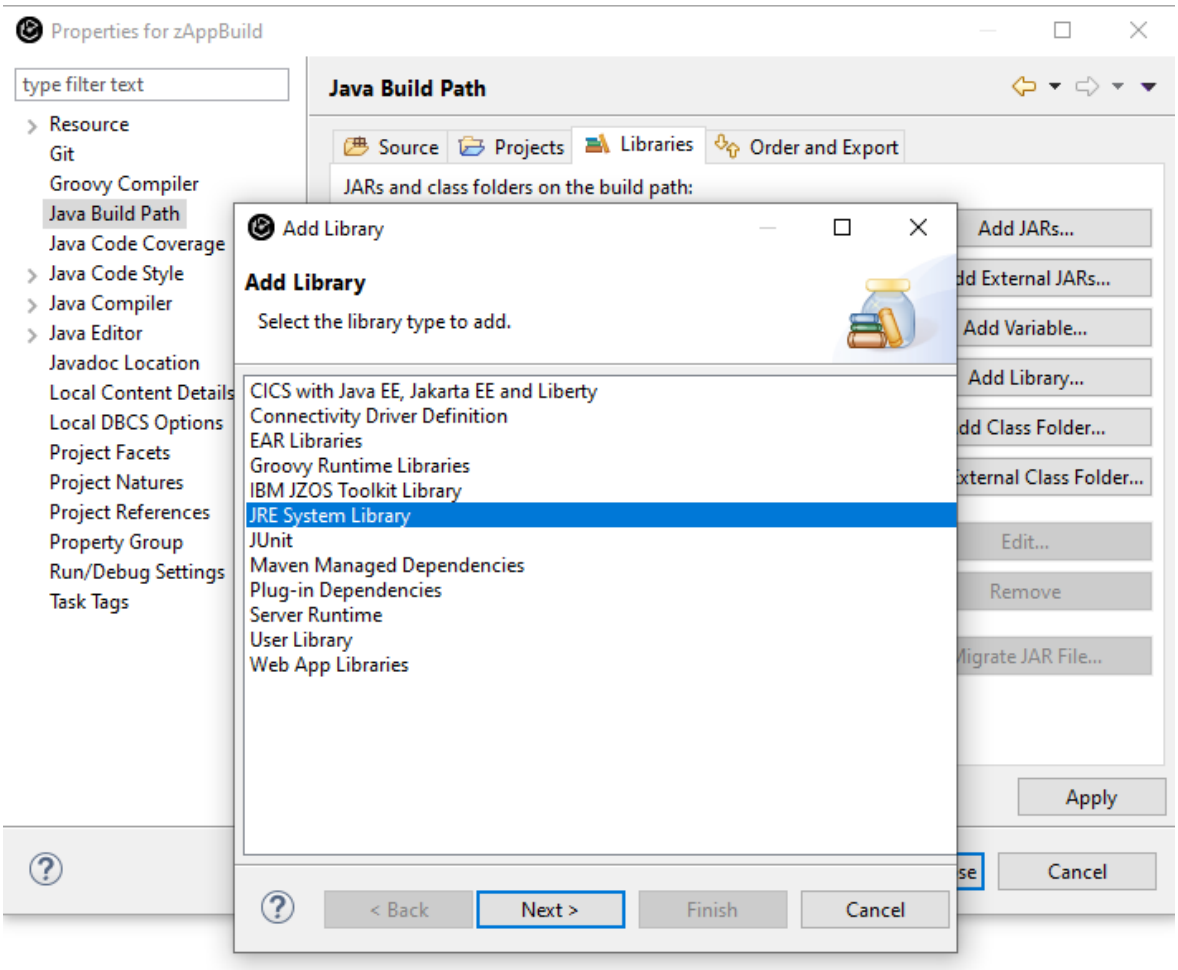
It should look similar to:



3.1.2 Configure JavaBuild path

- From the Project Explorer, open the properties for the zAppBuild project and select “Java Build Options” from the left-hand pane. In the right-hand pane, select the “*Libraries*” tab and click the **Add Library** button.

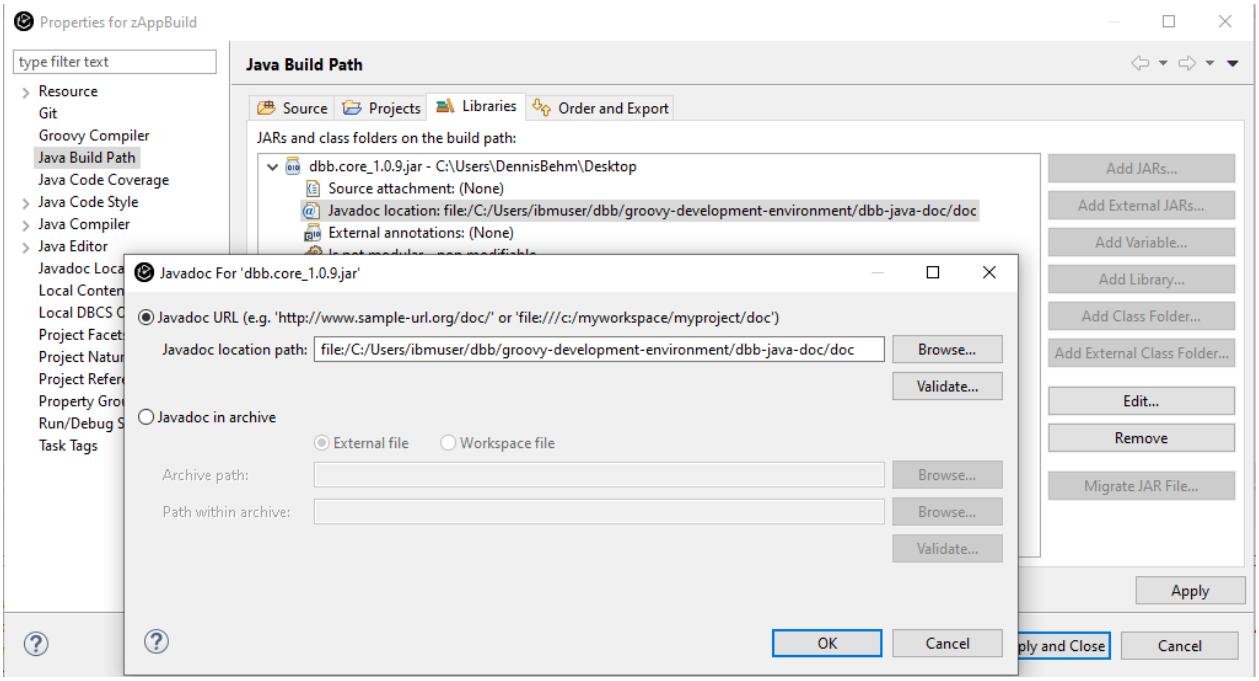
  Add the following libraries to your Java Build Path configuration: **Groovy Runtime Library, IBM JZOS Toolkit Library** and the **JRE System library**. Take the defaults on any dialog boxes.



*__Note –__ You will need to add the libraries individually.

- Additionally, add the dbb-core.x.x.x.jar to the build path via “Add External JARs…”, select the dbb-core package which you have retrieved to the local directory.

- Expand the dbb.core.x.x.x.jar entry that was just added, select the “Javadoc location” entry and click the **Edit** button to set the path for the JavaDoc. Point to the path where you extracted the java doc which you have obtained from the mainframe.

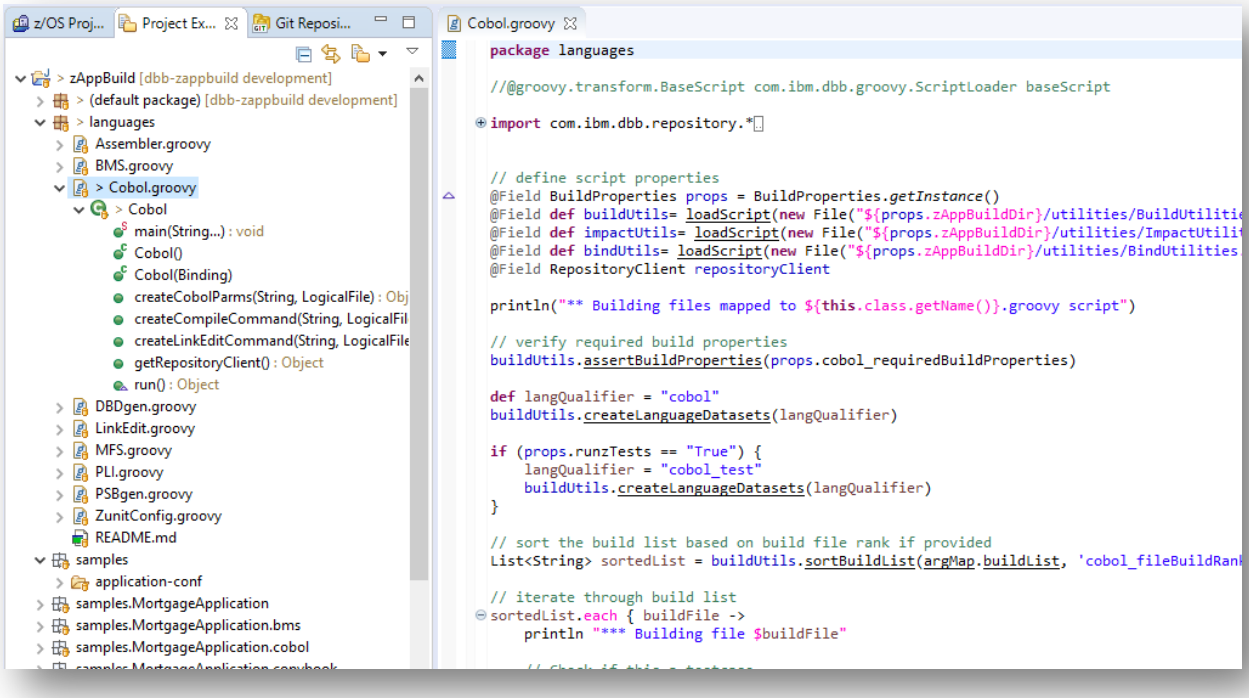


3.2 Leverage the Groovy Tooling

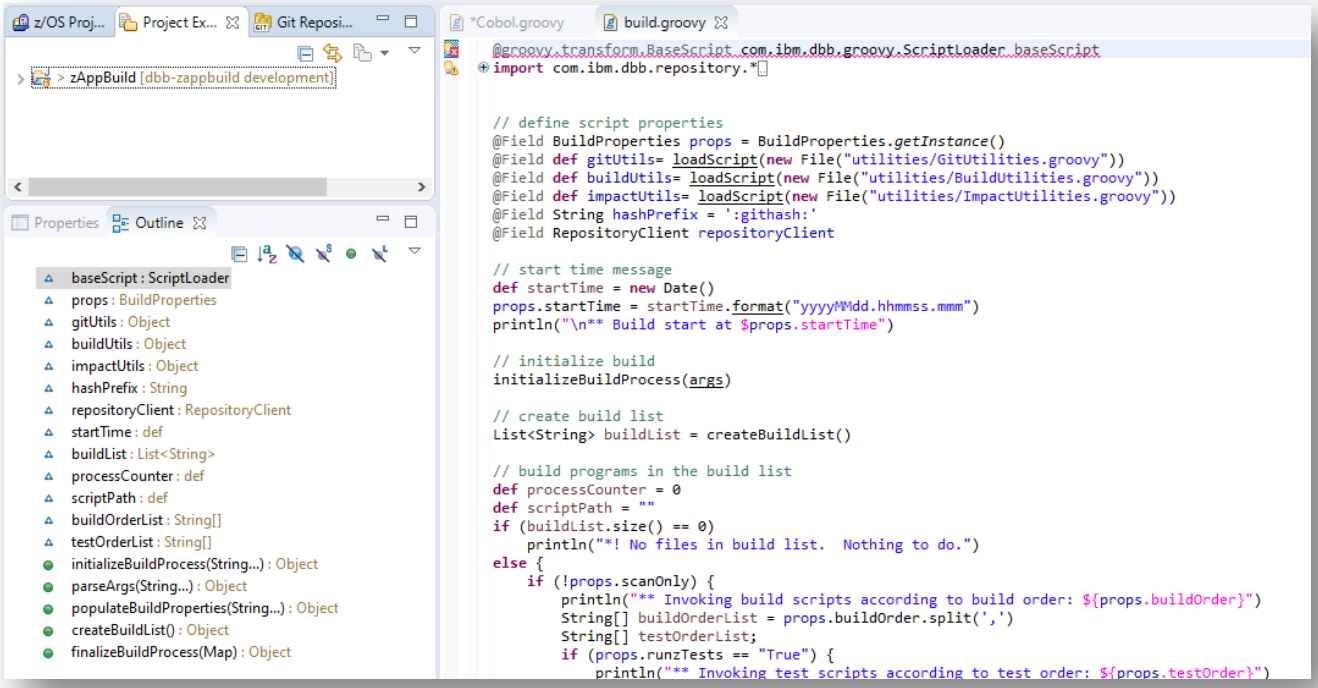
You can now leverage the different views in Eclipse.

3.2.1 Script navigation

Already, with the simple Project Explorer view, you can already see all the methods.

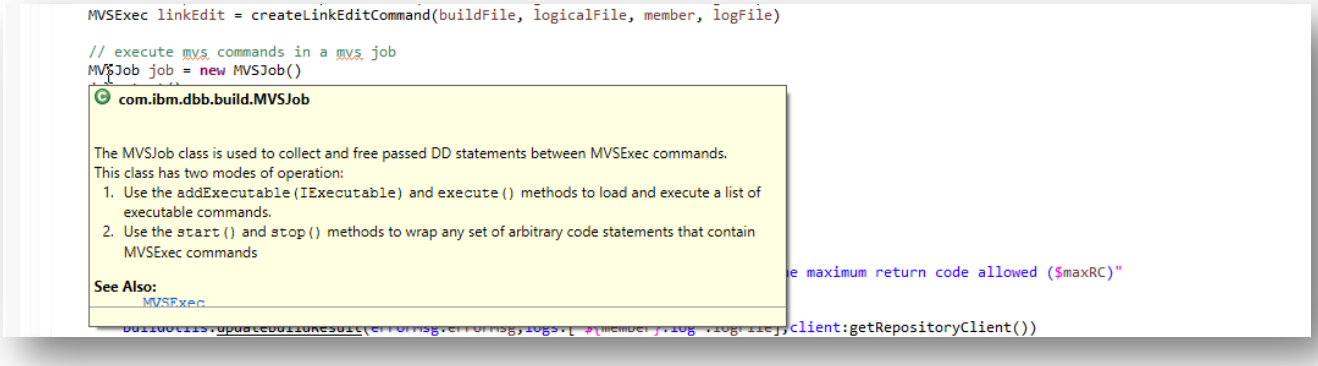


The *Outline View* shows all the defined methods and can be used for navigating within your build script:

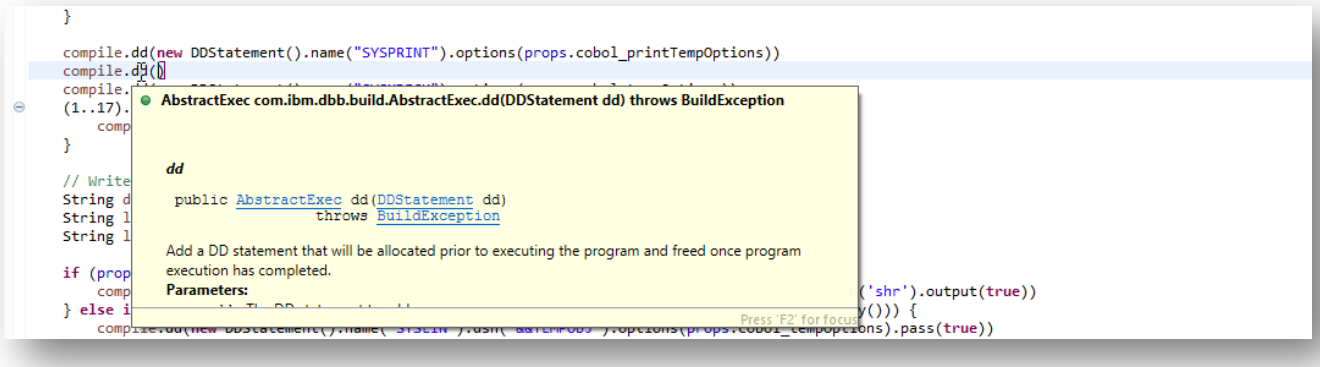


3.2.2 Displaying JavaDoc within the editor

Hovering over a DBB class, you can see the JavaDoc:



It also provides the details on certain methods:



It also helps you to format the code or to identify if you have an issue with quotes.

However, please note that the Groovy editor also has some limitations (also due to the language itself), like identifying methods which don't exist.

4 Summary

Groovy Development Tools help you in understanding, developing and maintaining your build framework written in Groovy which leverages the IBM Dependency Based Build toolkit API.

5 Appendix – Alternative IDE options for Groovy Programming languages

If you are already using IBM Developer for z/OS (IDZ) Version 16.x and want to set up groovy development, we have many popular IDEs and text editors that support Groovy programming language. However, most of them lack standard features such as

- Syntax highlighting
- Code completion
- Refactoring & so on …

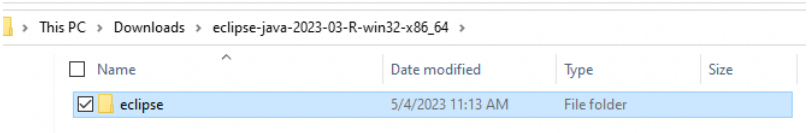
Our recommendation will be to install and configure **Eclipse IDE for Java developers**[2] as it's based on Eclipse and provides a similar interface to IBM Developer for z/OS (IDZ) Version 15.x.

Other alternatives[1] are IntelliJ IDEA and NetBeans.

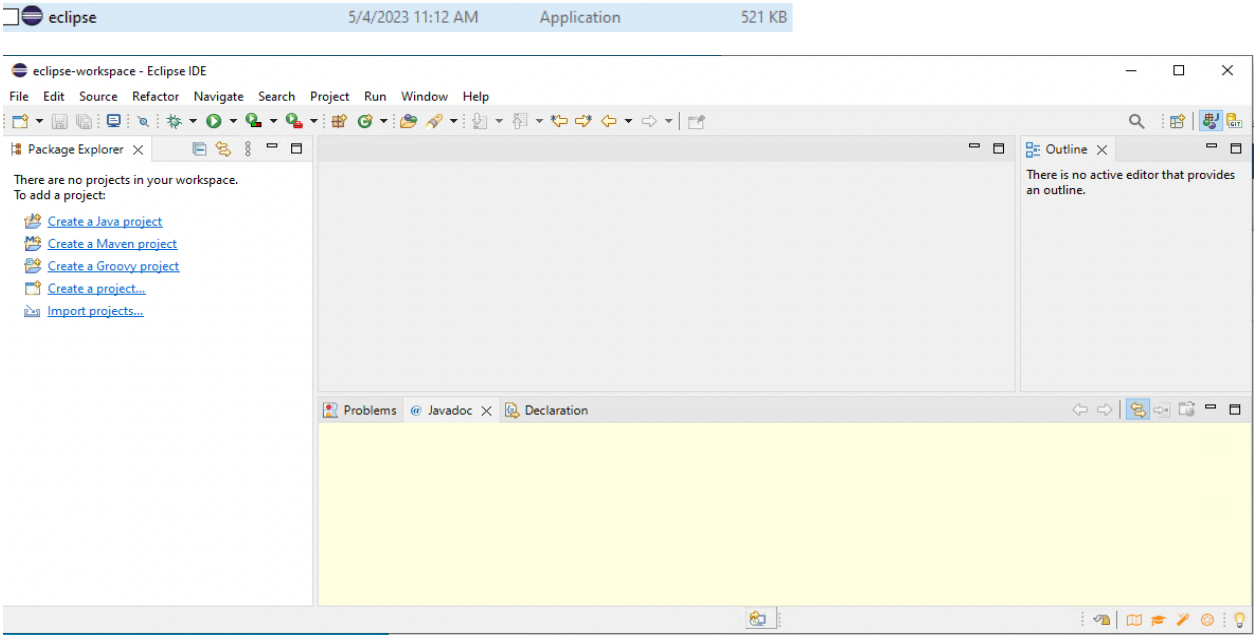
5.1 Eclipse IDE for Java Developers

We can download **Eclipse IDE for Java developers**[2] from their official website based on the version and operating system of the developer's machine. You can download the archive file and unarchive/untar it in a preferred location of your system.

Note: Below demonstration leverages installation on a Windows 10 machine & Eclipse IDE for Java Developers Version: 2023-03 (4.27.0); Build id: 20230309-1520



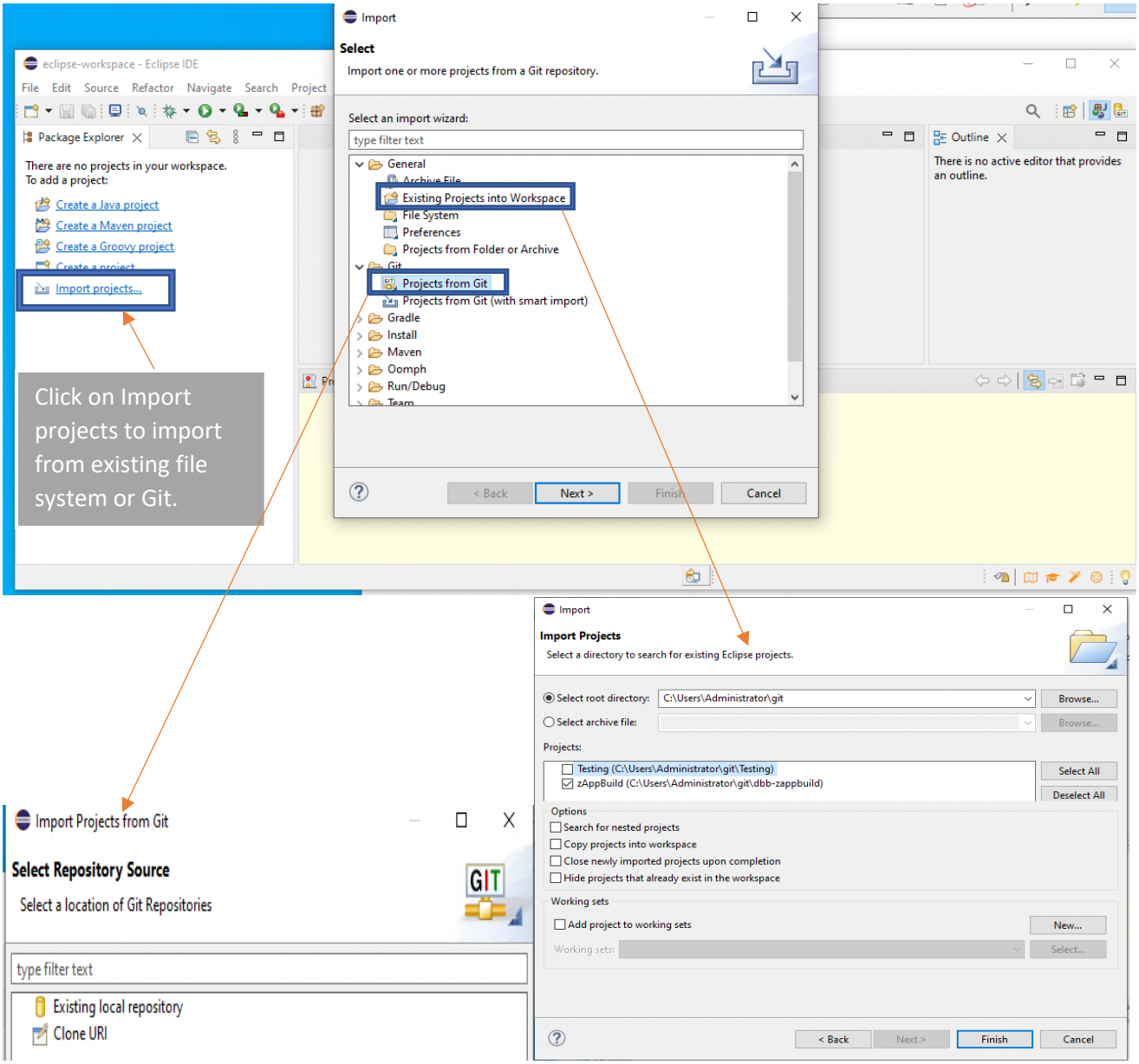
Open the eclipse IDE (Double Click on the eclipse icon). It will open in Java perspective.



[1] https://groovy-lang.org/ides.html

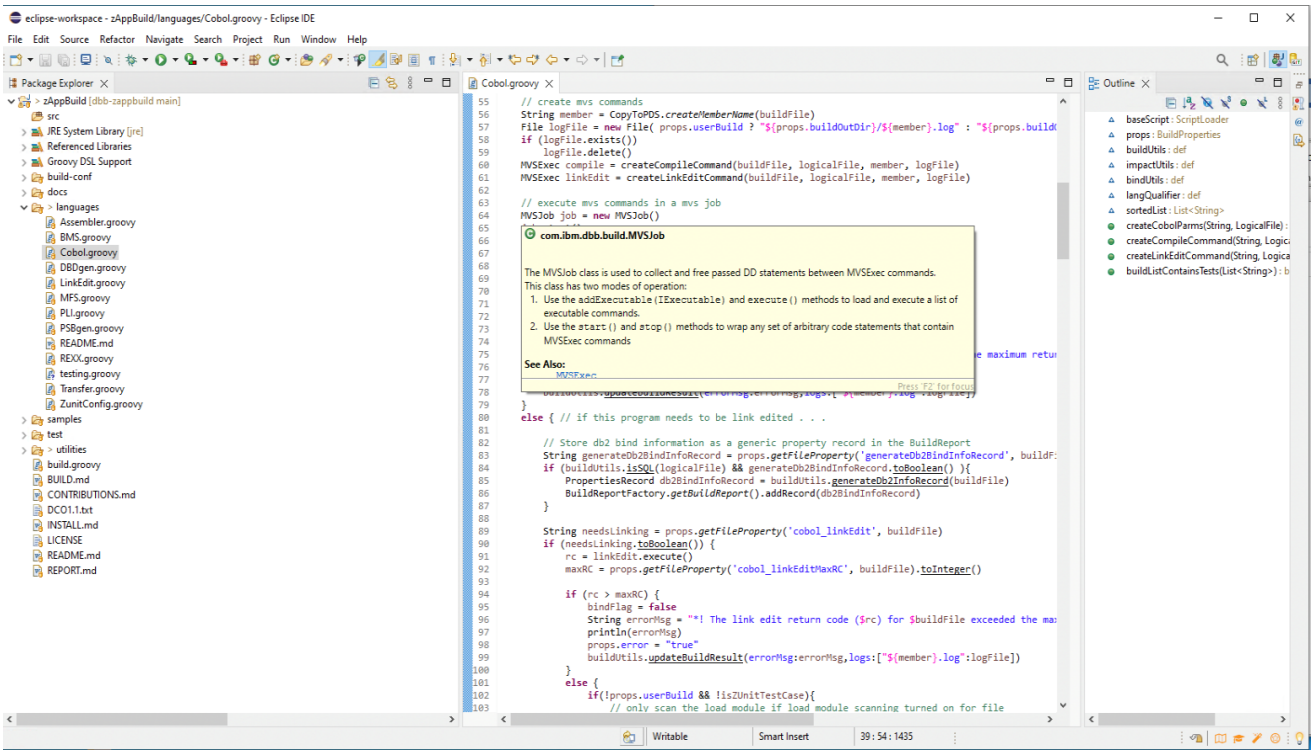
[2] https://www.eclipse.org/downloads/packages/release/kepler/sr1/eclipse-ide-java-developers

Click on **Import projects** which will open a new window to select from various options such as Git (locally, URI) or Existing Projects in the file system.



Please refer to configuration of Groovy Installation / Preparation section for Groovy development plugin installation, java docs and leveraging groovy tooling.

Once set up is completed, you can start maintaining and developing your own groovy code. Below screenshot shows a sample zAppBuild project with Javadoc's displaying contents and an outline view giving additional information.



Title:

Setup your Groovy Development Environment in IDZ to write DBB scripts

Download URL:
https://www.ibm.com/support/pages/node/6366801

Change log:
November 2020 – 1.0 - Initial Version
February 2021 – 1.1 – Update to obtain dbb-ztoolkit-javadoc-<version>.zip from archive subfolder
May 2023 – 1.1.2 – Update to include alternative IDE options