How to Setup for Predix

Background

This page spells out how to setup your local environment for Predix 2.0. This is an alternative to using the Predix DevBox and is recommended for program developers.

The demo projects use Java-based Spring Boot microservices to handle the logic of the applications. This requires having the necessary Java JDK, Spring, and Maven installed. It is also highly-recommended to use an Eclipse IDE, preferably Spring Tool Suite (STS). This guide walks you through the steps to download and install everything needed to start developing for Predix.

Prerequisites

There are many prerequisites that must be satisfied before proceeding the Predix development locally. Please ensure you have **all prerequisites** finished before starting development.

For the Predix training, you will need to complete the following requirements:

- Java
- Spring Tool Suite
- Git
- Node.js
- Bower
- Gulp
- Grunt

- Grunt CLI
- Maven
- Cloud Foundry CLI
- UAAC (Optional)
- Postgres (Optional)
- Postman (Optional)

Java

About Java

Java is an object-oriented development language with its own runtime environment that works on most operating systems, including Windows, OSX, and Linux distributions. There are many communities for support and the language is very stable. Java is the underlying language for the Spring Framework, which will be used by many Predix developers.

Setup Java

Please ensure you have eighth Java Runtime Environment **(JRE 1.8)** and Java Development Kit **(JDK 8)**.

1. Download and install JRE 1.8
2. Download and install JDK 8
3. Set the **JAVA_HOME** variable to point to the JDK installation folder. For help, please follow instructions here - http://docs.oracle.com/cd/E19182-01/820-7851/inst_cli_jdk_javahome_t/index.html

Spring Tool Suite

About Spring Tool Suite

The Spring Tool Suite is an Eclipse IDE. It comes prepackaged with the necessary libraries that make developing a Spring application very easy.

Setup Spring Tool Suite

Navigate to the Spring Tool Suite (STS) website and follow the download instructions.

Git

About Git

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is easy to learn and has a tiny footprint with lightning fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.

Setup Git

1. Download Git here - http://git-scm.com/downloads
2. Follow the instructions in the installer.

Node.js

About Node.js

Node.js (Node) is a platform built on Chrome's JavaScript runtime for easily building fast, scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Developers familiar with client-side JavaScript development will find it easier to use Node than a more traditional language like Java.

Setup Node.js

1. Download Node.js here - https://nodejs.org/en/download/
2. Follow the instructions in the installer.
3. After installing, set the PATH variable include the path to the Node.js directory (e.g. C:\Program Files\nodejs\)
4. Verify installations by checking their versions in command prompt/terminal. **Note** that a new terminal will need to be reopened if it was running during the installation

```
5. > node -v
6. v6.9.5
7. > npm -v
   3.10.10
```

Bower

About Bower

Web sites are made of lots of things — frameworks, libraries, assets, utilities, and rainbows. Bower manages all these things for you.

Bower works by fetching and installing packages from all over, taking care of hunting, finding, downloading, and saving the stuff you're looking for. Bower keeps track of these packages in a manifest file, bower.json. How you use packages is up to you. Bower provides hooks to facilitate using packages in your tools and workflows.

Bower is optimized for the front-end. Bower uses a flat dependency tree, requiring only one version for each package, reducing page load to a minimum.

Setup Bower

1. Open the command prompt
2. Run the following command: ***npm install -g bower***

Gulp

About Gulp

Gulp is a toolkit that helps you automate painful or time-consuming tasks in your development workflow.

Setup Gulp

1. Open the command prompt
2. Run the following command: ***npm install -g gulp***

Grunt

About Grunt

Grunt is a task runner that can dramatically improve your front-end development workflow. With the use of a number of grunt plugins you can automate tasks such as compiling Sass and CoffeeScript, optimizing images and validating your JavaScript code with JSHint.

Setup Grunt

1. Open the command prompt
2. Run the following command: ***npm install -g grunt***

Grunt CLI

About Grunt CLI

The job of the Grunt command line interface (CLI) is simple: run the version of Grunt which has been installed next to a Gruntfile. This allows multiple versions of Grunt to be installed on the same machine simultaneously.

Setup Grunt CLI

1. Open the command prompt

2. Run the following command: ***npm install -g grunt-cli***

Maven

About Maven

Maven is a build automation tool used primarily for Java projects.] Maven addresses two aspects of building software: First, it describes how software is built, and second, it describes its dependencies.

Setup Maven

1. Download Maven here - https://maven.apache.org/download.cgi
2. Extract the contents to a known directory
3. After installing, set the PATH variable to point to the Maven directory (e.g. C:\apache-maven-3.3.1\bin) - instructions http://www.computerhope.com/issues/ch000549.htm
4. Verify the installation by opening a new command prompt or terminal and run the **mvn -v** command

Cloud Foundry CLI

About Cloud Foundry CLI

The Cloud Foundry CLI is a command line interface to enable management of a Cloud Foundry instance, like Predix. Through this CLI, you can manage apps, services, and service instances.

Setup Cloud Foundry CLI

Windows

To download the Cloud Foundry CLI, please download and install from this zip.

32 bit releases and information about all our releases can be found here.

Mac OS X

Follow these commands in the terminal to install via binaries.

```
$ curl -L "https://cli.run.pivotal.io/stable?release=macosx64-binary&source=github" |
tar -zx
```

You can also use Homebrew via the cloudfoundry tap.

```
$ brew tap cloudfoundry/tap
$ brew install cf-cli
```

Postgres

About Postgres

PostgreSQL is an open source object-relational database that's available in the Predix cloud.

Setup Postgres

If you intend to use the Postgres service, you should install and use a local instance for local development, as you won't be able to connect to your Predix Postgres service from your local machine. You will need to duplicate your instances (local and Predix) for testing purposes.

1. Install Postgres locally: http://www.postgresql.org/download/
2. Install a UI to visualize the database: https://www.pgadmin.org/download/

Postman

About Postman

Create and send any HTTP request using the awesome Postman request builder. Write your own test cases to validate response data, response times, and more.

Setup Postman

Postman is a Chrome extension. You can learn more about setup here
- https://www.getpostman.com/

Visual Text Editor

About Visual Text Editors

Visual text editors help highlight keywords in various programming languages. It improves a developer's ability read code.

You may use your visual text editor of choice, but we recommend Visual Studio Code.