EventStoreDB Java Instructions for Running Locally

Overview

Welcome to the Java example of Event Store's **From Scratch** series. This series allows you to quickly overcome the common challenges of setting up and configuring a new development environment, and focus on advancing your EventStoreDB skills.

The **From Scratch** series provides working code examples for basic reads and writes to EventStoreDB, a tested environment to run the code, and instructions that clearly describe the steps required to run the code successfully.

Each **From Scratch** repository provides the following:

- A working Github Codespaces environment
- Instructions on running EventStoreDB locally
- Instructions to set up a similar project on your own

We recommend you progress through the **From Scratch** projects in the following order:

1. Run the code in Codespaces
2. Clone the For Scratch GitHub repo, and follow the instructions to run it locally
3. Build your own project

This document assumes you have successfully run the code in Codespaces. Your next step is downloading or cloning the GitHub repository and running the code on your computer. ***This is the recommended second stage in Event Store's From Scratch .NET series.***

Other clients in the **From Scratch** series include:

- Node
- .Net
- Python

Topics covered

1. Download or clone the Github repository
2. Install an IDE
3. Install a jdk locally
4. Start a Docker container running EventStoreDB
5. Execute the sample Java code

Before you start

To run the code locally, you will need the following:

- A working jdk installation
- An IDE (*optional)
- Docker

1. Download or clone the GitHub repository

On the GitHub repository's home page, select the green “Code” button. Ensure you are in the “Local” tab. Choose one of the following options to download the repo code to a local directory.

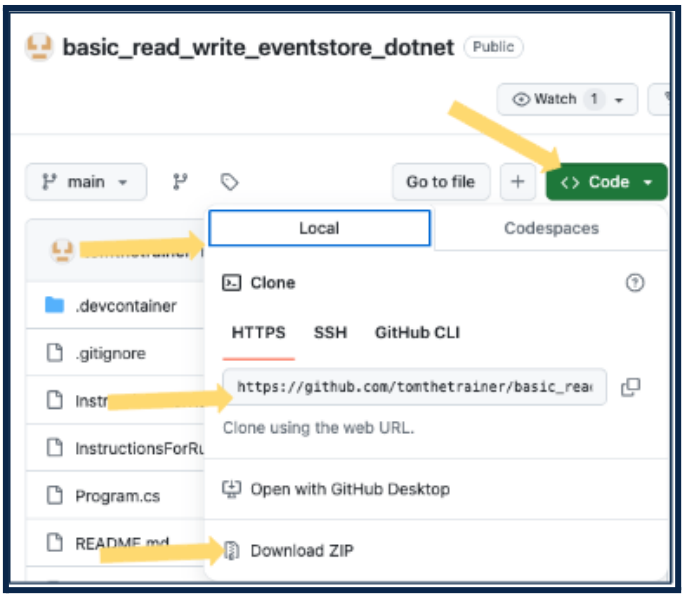
Using Git Clone

1. Copy the URL provided
2. Open a terminal window, and run the following command. (Replace “<repository_url.git>” with the copied URL)

```
git clone <repository_url.git>
```

Download repo to a zip file

1. Select “Download ZIP” located at the bottom of the Local tab



2. Install an IDE

This is an optional step. If you prefer using an IDE, please follow these instructions to download VS Code.

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

If you prefer an alternate IDE, please feel free to use the IDE of your choice.

If you opt not to use an IDE, the code can be run from the command line.

3. Install Maven and a JDK

Maven is a dependency management tool for Java projects. The **From Scratch** Java project uses Maven.

A JDK is a Java Development Kit that allows you to compile Java code. Often you will have a JRE or Java Runtime Environment installed, but not a JDK. The JRE enables the execution of compiled Java code, but not the compilation of Java code.

You will need Maven, and a JDK.

Run the following commands to see if they are already installed.

```
$ mvn –version
$ javac –version
$ java –version
```

How to install Maven..

On a Mac, open a terminal window and run the following command to install Maven. If you need to install homebrew, instructions are here https://brew.sh/

```
brew install maven
```

If you are not using a Mac, or do not use Homebrew, please follow these instructions to install Maven:

https://maven.apache.org/download.cgi

If you need to install a JDK

You can start here.

https://learn.microsoft.com/en-us/java/openjdk/install

You can also use homebrew on a Mac to install a jdk.

```
$ brew install openjdk
```

Regardless of how you install Maven and a JDK, make sure to test for a successful install of each by running the following commands.

```
mvn --version
```

```
javac - version
```

```
java - version
```

4. Start a Docker container running EventStoreDB

If Docker is not installed follow these instructions to install it.
https://docs.docker.com/engine/install/

Download and run the EventStoreDB Docker container using the command line

The following command will start an unsecured single instance EventStoreDB cluster locally.

```
docker run -d --name esdb-node -it -p 2113:2113 -p 1113:1113 \
    eventstore/eventstore:lts --insecure --run-projections=All \
    --enable-external-tcp --enable-atom-pub-over-http
```

You can view the EventStoreDB WebUI by pointing a browser to http://localhost:2113/.

5. Run the java code

There are two options for running the java code. Typically as you develop java code you will test the code in an IDE. You can also compile the code and run with a shell command. Both options are discussed here.

Command line instructions.

The **From Scratch** java project has build options defined in the pom.xml file to allow local building of a jar with dependencies. This means all the classes are compiled into the jar file and the resulting jar will be portable.

Run the following command to compile the Java classes and place them in a jar file. This command will create a directory named target with the compiled jar file.

```
$ mvn package
```

View the contents of the jar. With the command below.

```
jar -tvf \
target/eventstoredb-demo-1.0-SNAPSHOT-jar-with-dependencies.jar
```

You should see the SampleWrite and SampleRead classes, and other classes.

Run the SampleWrite class

```
$ java -cp  \
target/eventstoredb-demo-1.0-SNAPSHOT-jar-with-dependencies.jar \
com.eventstoredb_demo.SampleWrite
```

You should see

```
************************
Congratulations, you have written an event,
please visit the webui of
the eventstore instance you have connected
to example: http://localhost:2113
************************
```

Run the SampleRead class.

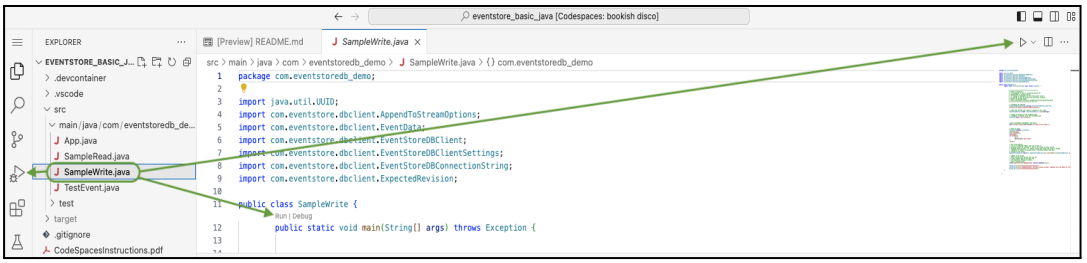
```
$ java -cp \
target/eventstoredb-demo-1.0-SNAPSHOT-jar-with-dependencies.jar \
com.eventstoredb_demo.SampleRead
```

You should see the event written in SampleWrite, printed to the terminal.

IDE instructions

In order to execute code in an IDE,
IDE's will have a 'Run" button to run and or debug the class you are currently editing.

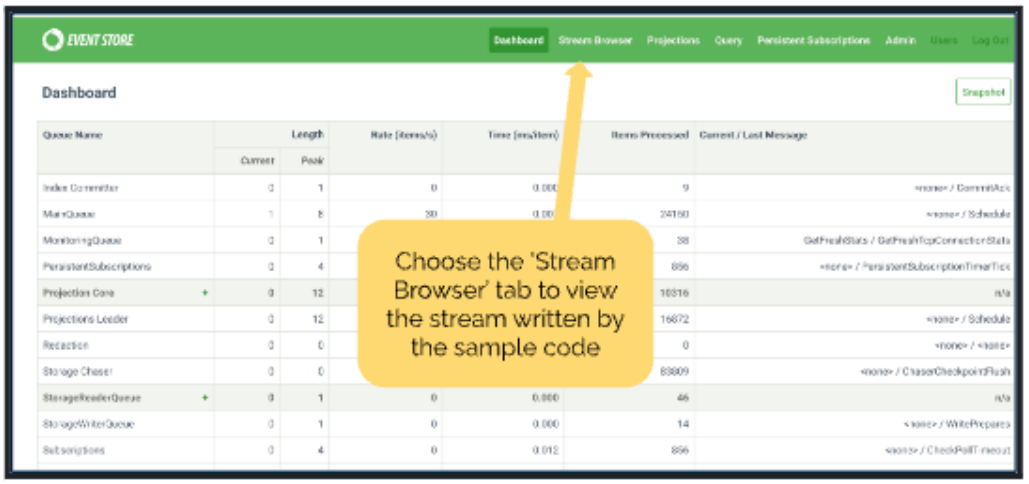
Here is a VS Code screenshot. Top right corner has a 'run' button, if the class is already compiled there will also be a run option directly above the class definition in the editor.



Using the 'Run' options in your IDE, run the SampleWrite class, followed by the SampleRead class.

6. Verify by checking the webui

After executing the code, visit the WebUI to verify the events were written to a stream, by viewing the "stream browser" tab.



Congratulations! After running the sample program.cs you have succeeded in writing and reading events to and from EventstoreDB.

Next Steps

Now that you have successfully written and read events in EventstoreDB locally, we recommend you follow the steps to build a local .NET project environment. Please continue to the **From Scratch** .NET instructions for setting up a local environment to continue your learning.

As you progress with your EventStoreDB skills, you can also find additional examples in the following repo:

https://github.com/EventStore/samples

In particular, we recommend the Quickstart examples here:

https://github.com/EventStore/samples/tree/main/Quickstart