

Development

Joshua uses Apache Maven to build, and many of its developers use Eclipse. This page describes how to set up your development environment and contribute code.

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Projects

If you are interested in working on Joshua, and are looking for project ideas, a good place to start is by looking [at the roadmap for the next release](#). You can also see [the complete list of issues](#).

Installing Joshua and Dependencies

See the [Getting Started](#) page for information on getting Joshua set up.

Eclipse

Many Joshua developers use Eclipse. It is easy to get setup in Eclipse due to its knowledge of Maven projects and Joshua's TestNG test suite.

1. Make sure you have [set up Joshua](#), including downloading and installing KenLM, if you want to use that.
2. In Eclipse, go to File Import Maven Existing Maven Project. Click Next, then navigate to the root of your cloned Joshua repo. Click OK. Joshua's pom.xml should be selected. Add it to your working set and capitalize it, if you prefer. Click Finish.
3. Next, you need to install the TestNG plugin. Go to Help Eclipse Marketplace. Search for "testng", choose "TestNG for Eclipse", and click Install. Go through the installation procedure, which is straightforward.

Please make sure that you import the Eclipse style formatter.

1. Right click on the project name -> Properties -> Java Code Style -> Formatter.
2. Activate project specific settings.
3. Click on Import, select "eclipse-codeformat.xml" in the root repository of the git directory, and activate it.

Testing

We strive to ensure that the code we release on this project works as expected. When making a contribution to the project be sure to run the test suites for the relevant components before submitting your contribution. If you are working with Joshua from source, you should have [Apache Maven installed which can be used to run the unit tests](#).

Example of running OCW toolkit tests

```
cd $JOSHUA
mvn test
```

Creating a Pull Request on Github

Pull Requests via Github are the primary means through which contributions are made to the codebase. We maintain an identical workflow for contributors and committers alike.

Apache Joshua Project on Github: <https://github.com/apache/incubator-joshua>

Apache Joshua JIRA issue tracker: <https://issues.apache.org/jira/browse/JOSHUA/>

Prerequisites to Contributing

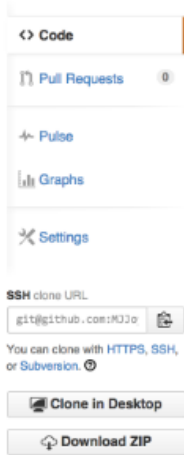
You will need to fork the project on Github and clone it to your local machine. You will need an account of Github in order to fork the project.

Fork the project

Click the "Fork" button on the top-right side of the [project page on Github](#).

Clone the project

Find the SSH/HTTPS clone URL on the right side of the page on your forked version of the codebase (www.github.com/<your username here>/incubator-joshua)



Run the following command using the above URL in your terminal.

```
git clone <ssh/https clone url>
```

Step-By-Step Directions

1. Create/locate an issue on JIRA and save the Issue Number for later use (i.e. JOSHUA-123).
2. Create a Branch and name it using the JIRA Issue Number from Step 1

```
git checkout -b JOSHUA-123
```

3. Do your work on the branch and commit your changes. Your code should be compliant with the [CodingConventions](#). Please follow a [reasonable set of guidelines](#) when forming your commit message. The short first line summary should include the issue number from JIRA. Please be as consistent as possible with existing commit messages. For instance, we favor using a hyphen as a bullet point in our commit messages. Additionally, please write the messages in the imperative. It is recommended that you setup your editor of choice to handle this formatting for you.

```
JOSHUA-381 - Remove Incubator references in build.xml  
  
- Remove '-incubating' postfix from version number.  
- Remove '.incubating' from project URL.  
- Update author email to point to dev@joshua.apache.org
```

4. Push your branch to your repo on Github

```
git push origin JOSHUA-381
```

5. Log into Github and Create Pull Request via:
<https://help.github.com/articles/creating-a-pull-request>
Be sure to include the ticket number in the title. Ex: "JOSHUA-381 - My PR Title Here" to ensure that everything mirrors correctly to JIRA.

Submitting a Patch

While not the preferred means of receiving contributions (see above), the project also accepts patches posted on a relevant ticket. The first 3 steps from above are the same here. From the branch where you made your commits you can generate a patch with the following:

```
git format-patch master --stdout > JOSHUA-###-<your name/username>.patch
```

Post that output file onto the relevant ticket.

Committing to the Master

If you have commit karma on the project be sure to clone the ASF repo found here:

```
$ git clone https://git-wip-us.apache.org/repos/asf/incubator-joshua.git
```

Add the project's Github mirror as an additional remote.

```
$ git remote add github https://github.com/apache/incubator-joshua.git
```

When a pull request comes in a notification will be posted on the related JIRA ticket (assuming the user followed the above directions). This notification will tell you the pull request number. Fetch the pull request with:

```
$ git fetch github refs/pull/<pull request number here>/head:JOSHUA-<ticket number here>
```

Checkout the branch and validate the request (tests work, etc). Checkout **master** and merge in the changes with:

```
$ git merge --no-ff JOSHUA-<ticket number here>
```

When adding the merge commit message be sure reference the pull request number so it is closed properly. For instance, "close #<pull request number here>". Checkout [Github's help pages](#) for message formatting help. Publish the changes to the ASF repo with:

```
$ git push origin master
```

[Click here to see all open JIRA tickets.](#)

If you have any issues with the above workflow, please contact us on dev@joshua.apache.org.