Get the code
You can download the latest code by simply cloning our git repository to your local disk. However, for contributions we recommend to create a personal fork on Github. This way you can push your changes to your personal fork and they are publicly visible. Here's how to do it:

- Get a Github account and sign in to it.
- Go to https://github.com/xtreemfs/xtreemfs and create a fork
- Clone this repository to your local disk

After downloading the code you can import the projects of the different components in Eclipse.

Caution Windows users: By default, git transforms all Unix line endings to Windows ones. Disable this behavior by running the command "`git config --global core.autocrlf false`" in a git bash shell.

Java servers

- General:
    - To run the servers, you need the three different projects "foundation", "flease" and "servers" which are located in the "java/" directory. Additionally, a fourth project "pbrpcgen" exists which is not required to run the servers.
    - Copy the .project and .classpath file from each "eclipse-project" subdirectory and you can import the projects easily. To automate the copying, you can run the script `init_eclipse_projects_windows.bat` or `init_eclipse_projects_linux.sh` from the "java/" directory.
- File -> Import... -> Existing Projects into Workspace -> Select root directory -> (Browse to the "java" directory of the repository.)
    - (see also screenshot)
    - If you did not copy the .project and .classpath files for the "pbrpcgen" project, please do not forget to untick it.
- Run DIR, MRC and OSD service
    - set working directory to "`${project_loc}/../../`" and the server will use its default configuration file located at <git repository root>/etc/xos/xtreemfs/<service>config.test
    - main classes are:
        - org.xtreemfs.dir.DIR
        - org.xtreemfs.mrc.MRC
        - org.xtreemfs.osd.OSD
- Advanced: set up code templates and code formatter style
    - Code templates are used by Eclipse when new classes are generated.
        - Import the provided code template for each Eclipse project you will contribute to, e.g. xtreemfs_server: Properties -> Java Code Style -> Code Templates -> tick [x] Enable project specific settings -> Import... -> select file "doc/eclipse_code_templates.xml" -> tick [x] Automatically add

comments for new methods and types -> Apply

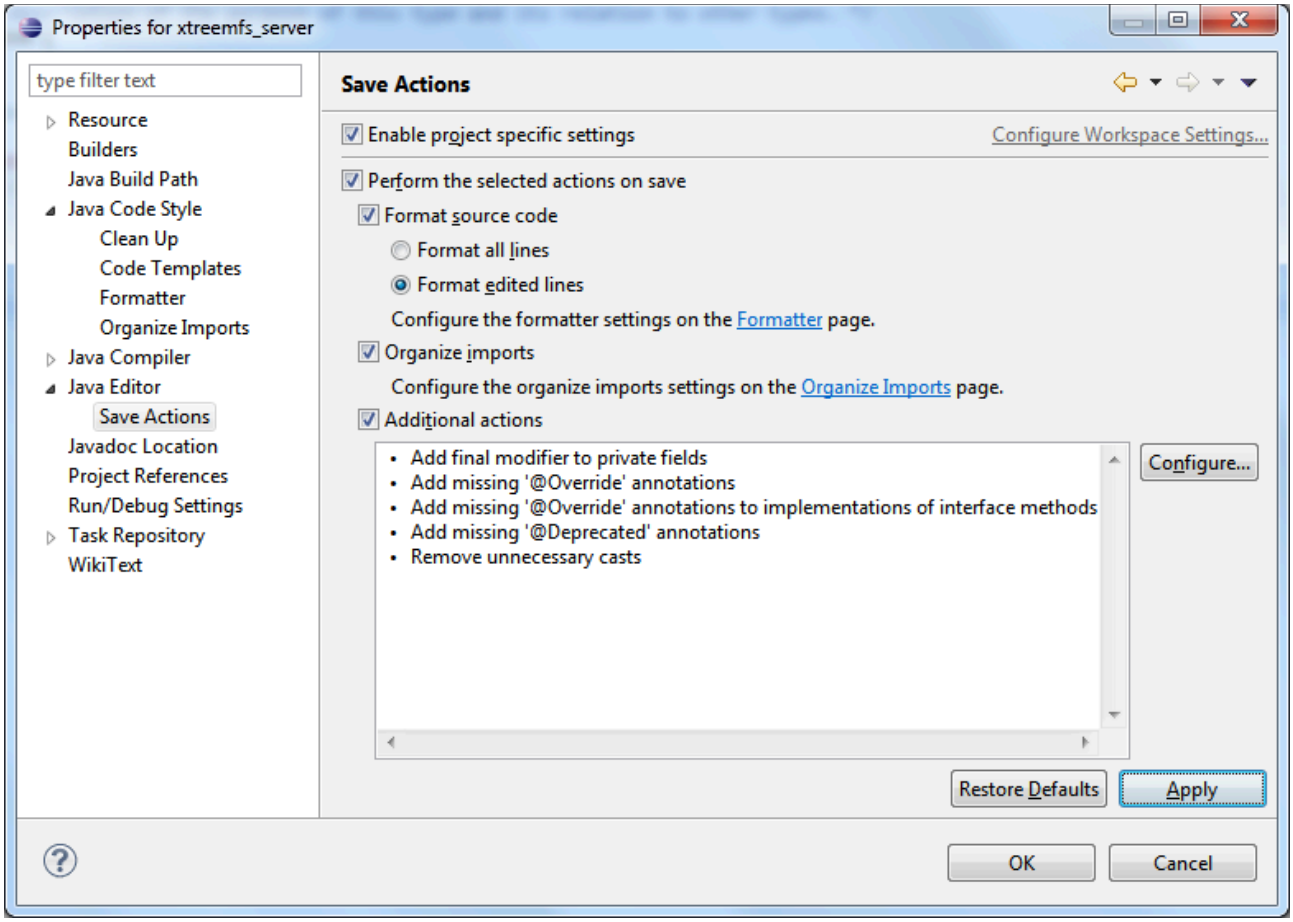
- Edit the header if necessary, e.g. remove “Zuse Institute Berlin” if you’re an external contributor.
- Override the Eclipse ${user} environment variable by adding the following line to your eclipse.ini file:

  -Duser.name=<Name Surname>

  e.g. for me it’s: -Duser.name=Michael Berlin

- Code formatters automatically reformat the code according to our conventions. However, it is important to configure Eclipse to format only new and edited code and leave old code unchanged.
  - Import the provided code template for each Eclipse project you will contribute to, e.g. xtreemfs_server: Properties -> Java Code Style -> Formatter -> tick [x] Enable project specific settings -> Import... -> select file “doc/eclipse_code_formatter_conventions.xml” -> Apply

- Enable the automatic code formatting in the save actions: Properties -> Java Editor -> Save Actions -> tick [x] options as shown in the following screenshot:



C++ client

- Run “make client_debug” in the git repository root.
- Create a new C++ project in Eclipse as follows:
    - File -> New -> Project... -> C/C++ / Makefile Project with Existing Code ->
        - Existing Code Location: Browse here to the “cpp” directory which is located in the git repository.
        - Project Name: e.g. “xtreemfs_cpp”
        - Languages: [x] C [x] C++
        - Toolchain for Indexer Settings: Linux GCC
    - (see also screenshot)