

Conrad installation

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This tutorial describes how to install the open-source package of CONRAD.

To install and use Conrad on your computer, you will need the following:

- A Git Installation <https://git-scm.com/downloads>
- Your own GitHub Account on <https://github.com/> (Username <GitHubAccountName>)
- A computer able to run [Eclipse](#) and a current [Java](#) installation (Version > Java 1.7.0)

Go to <https://github.com/akmaier/CONRAD>, in the top right you should see a button labeled „Fork“. Click this button to generate your own personal copy of the repository. Afterwards you will find your repository at <https://github.com/<GitHubAccountName>/CONRAD>.

To check-out the repository on your computer, there are two options: If you are working on a Windows PC, you can use a Git Client (for this tutorial we use [TortoiseGit](https://code.google.com/p/tortoisegit/) <https://code.google.com/p/tortoisegit/>). Otherwise, you will have to use the Git commands in a Shell/Terminal.

Git Client

Create a new folder on the disk that will be used as a workspace for [Eclipse](#). You may call this folder e.g. „[C:/Reconstruction/](#)“. In the following, we will use this directory, if you chose to use another one, replace „[C:/Reconstruction](#)“ by your chosen directory.

Right-click on this folder and select „[Git Clone](#)“, an option that becomes available by installing [TortoiseGit](#).

In the „[Git Clone](#)“ window we set the URL to <https://github.com/<GitHubAccountName>/CONRAD>, and the folder should automatically switch to „[C:/Reconstruction/CONRAD/](#)“. Click „[OK](#)“ to download the repository.

After cloning the repository, you should find the open-source code in the folder „[C:/Reconstruction/CONRAD](#)“. Now you are able to start CONRAD as an Eclipse project.

Terminal

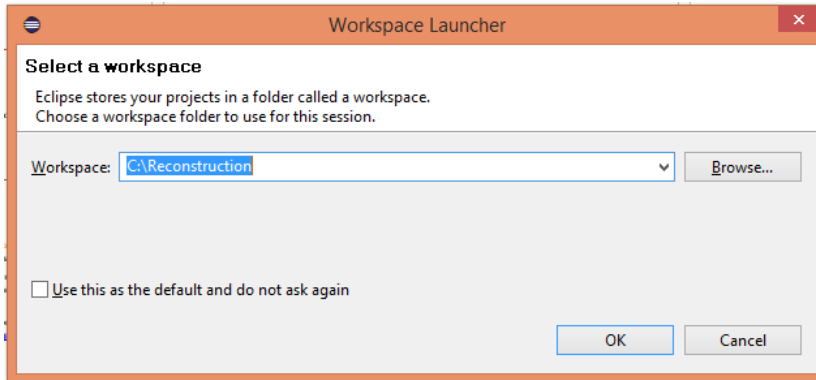
Create a new folder on the disk that will be used as a workspace for [Eclipse](#). You may call this folder e.g. „[C:/Reconstruction/](#)“. In the following, we will use this directory, if you chose to use another one, replace „[C:/Reconstruction](#)“ by your chosen directory. In the terminal, go to this folder (“[cd](#)” command).

Clone the repository using the command “[git clone https://github.com/<GitHubAccountName>/CONRAD](#)”
.[git C:/Reconstruction/CONRAD](#)“

CONRAD eclipse project

Workspace Selection

Start eclipse and in the appearing dialogue select the workspace where CONRAD is located. If you followed the instructions above, this should be the folder “C:/Reconstruction”.



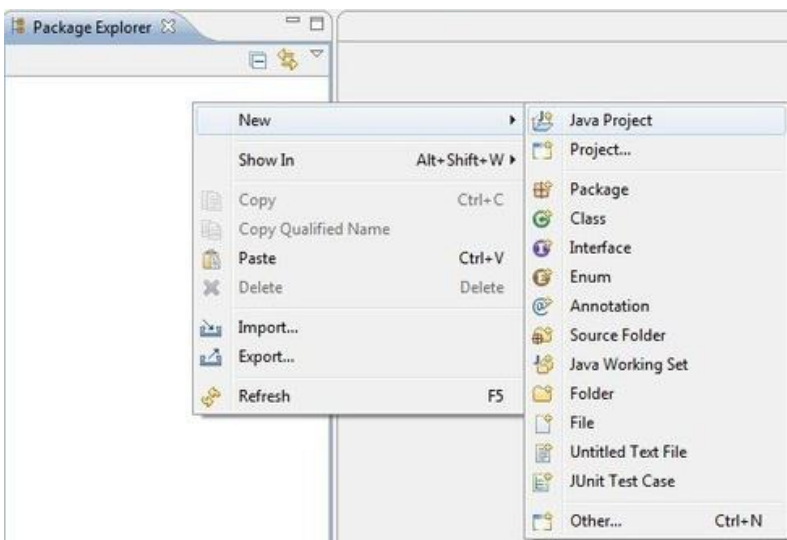
New Workspace

In case you switched your workspace to “C:/Reconstruction” or in case you have a new installation of eclipse, the following screen will appear. Please close the welcome screen.



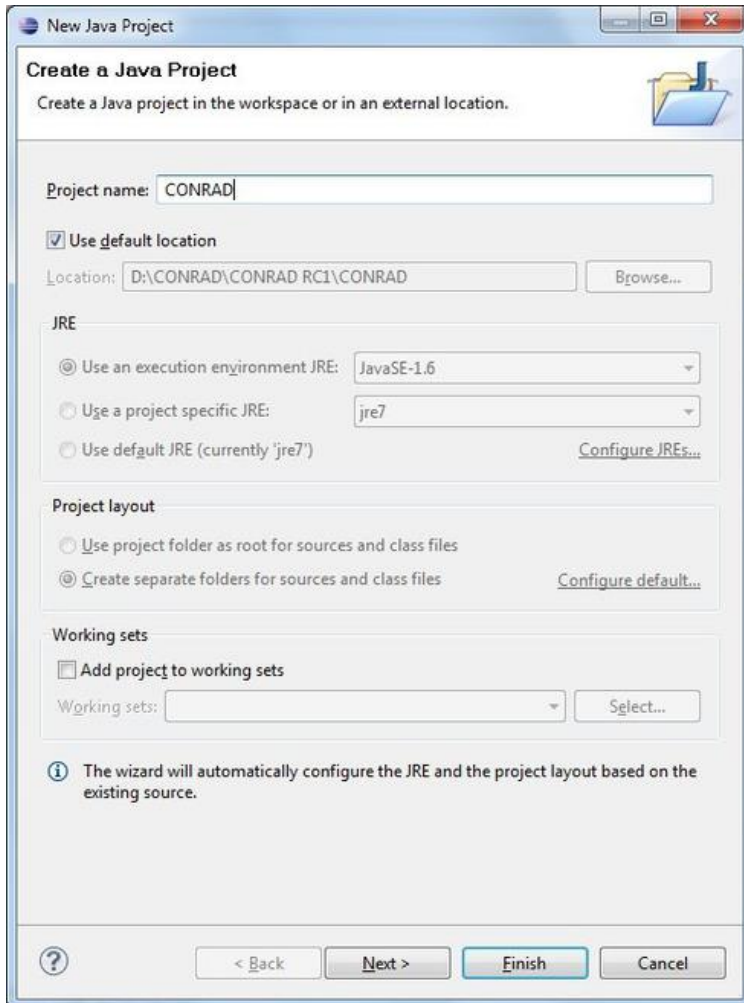
New Java Project

Once the normal layout of eclipse was loaded, the CONRAD project needs to be created. In a new workspace, the package explorer will show up empty. Right click the package explorer and create a new Java Project as shown below.



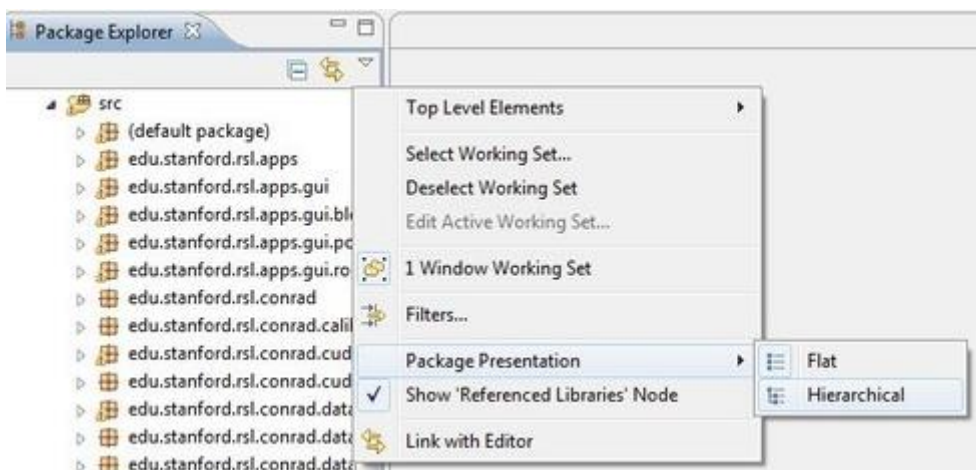
Project Import

A dialogue called “New Java Project” will appear. Enter “CONRAD” as Project name. Next, the message “The wizard will automatically configure the JRE and the project layout based on the existing source.” will appear. Click “Finish” to import the project.



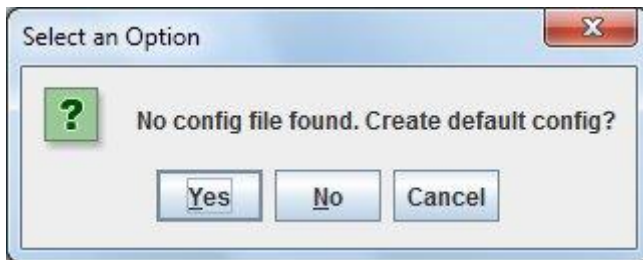
Package Representation

As CONRAD contains a lot of classes and packages, it is difficult to gain an overview for a beginner. Thus, we recommend to switch the package representation to “Hierarchical” as shown below. Click the small triangle on the top right of the package explorer to do so.



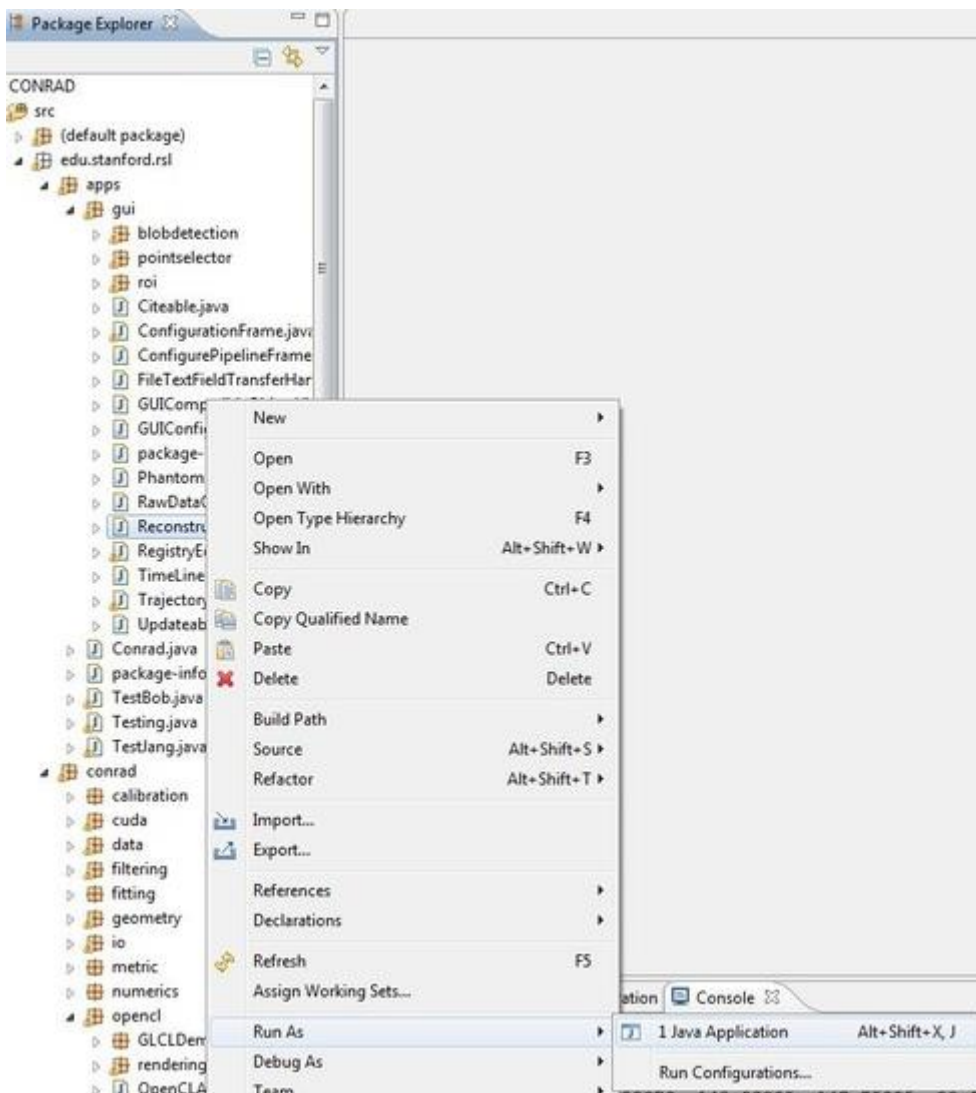
Creation of a Default Config File

CONRAD stores an XML-based configuration file in the user's home directory to save the current configuration. If the file is not found the system will prompt whether the file should be created or not. If this dialogue appears, please select "Yes".



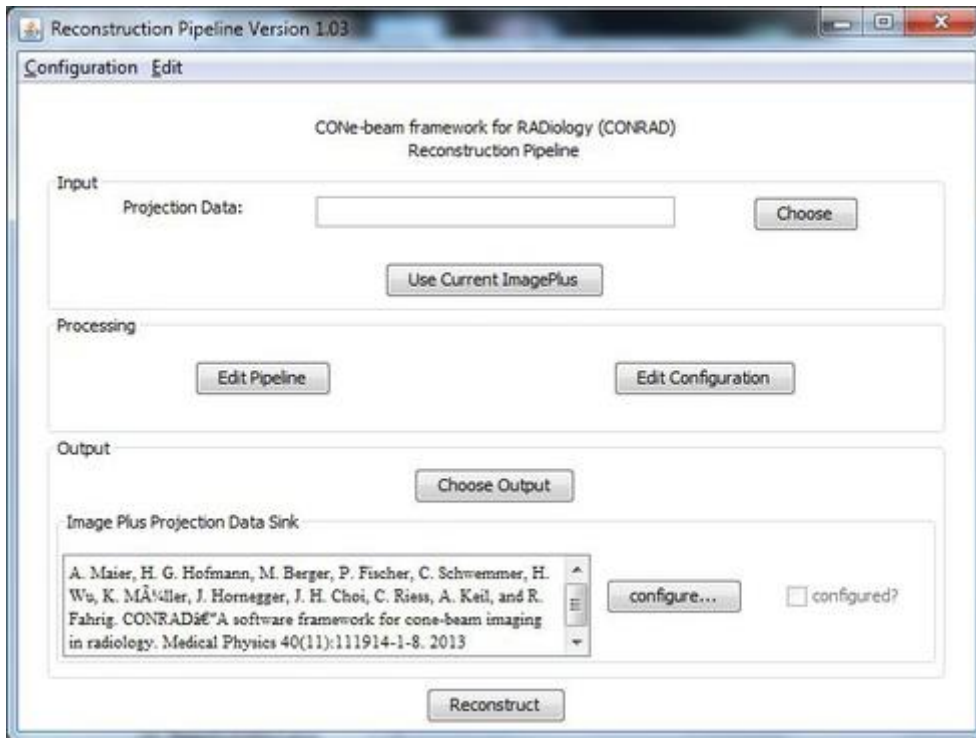
Running the Main GUI

The main GUI of CONRAD is called ReconstructionPipelineFrame. It can be executed from the package explorer as shown below. Browse to the package "edu.stanford.rsl.apps.gui" and select the ReconstructionPipelineFrame.java. Right click it and select "Run As/Java Application".



Main GUI

If everything was set up correctly, you should now be able to run the main GUI shown below. It is the main application to use most of CONRAD's functionality.



Git Commands

To work in and with your Git repository, here are some commands to help you keep your work up to date. Again, this can be done using the Git Client (e.g. [TortoiseGit](#)) or the terminal. Make sure to be in the CONRAD folder when you execute the following commands.

Git Client

Check current status:

Right click the CONRAD directory and press “[Tortoise Git/Check for modifications](#)”

Add a new file to the index:

Right click the CONRAD directory and press “[Tortoise Git/Add...](#)”. To actually save your work, you need to commit and push it afterwards (see below).

Save work locally on disk:

Right click the CONRAD directory and press “[Git commit](#)”

Save work to your GitHub fork:

Do a commit first (see above), then right click the CONRAD directory and press “[TortoiseGit/Git push](#)”, enter your account details and press “ok”. This updates your personal fork on GitHub.

Updating locally in case your fork changed from somewhere else:

Right click the CONRAD directory and press “[Git pull](#)”

Syncing with the original CONRAD repository:

In order to sync your own repository with „[akmaier/CONRAD](#)“, right click on „[C:/Reconstruction/CONRAD/](#)“ and choose „[Git Sync](#)“. Now, choose „[Manage](#)“.

If you do this for the first time you need to tell your git where the original CONRAD is. Under „Remote“, you can add a name for the original Repository (e.g. „[akmaierConrad](#)“) and under „URL“, you should put the repository URL <https://github.com/akmaier/CONRAD>. Finish by clicking on „[Add New/Save](#)“.

Then, in the “[Git Sync](#)” window change the “Remote URL” to the original repository “[akmaierConrad](#)”. Subsequently, chose “[Pull](#)” in the drop down menu on the bottom right of the [GitSync](#)-Interface. This updates your personal repository with the changes made to the original repository. Now you have to merge these changes into your local version. In order to do so, change the “Remote URL” to “[origin](#)” and again, choose “[Pull](#)” from the drop down menu. Your local version should now be up to date with original one.

Terminal

Check current status:

Execute “[git status](#)” to show the status of your repository.

Add a new file to the index:

To add a new file to the index, execute “[git add <filename>](#)”. To actually save your work, you need to commit and push it afterwards (see below).

Save work locally on disk:

Execute “[git commit -a -m <your message>](#)”, and enter a meaningful commit message

Save work to your GitHub fork:

Do a commit first (see above) then execute “[git push](#)”, enter your account details. This updates your personal fork on GitHub.

Updating locally in case your fork changed from somewhere else:

Execute “[git pull](#)” before you start working

Syncing with the original CONRAD repository:

In order to sync your own repository with „[akmaier/CONRAD](#)“, you need to do the following steps:

If you do this for the first time you need to tell your git where the original CONRAD is. Therefore, set a new remote repository: “[git remote add akmaierConrad https://github.com/akmaier/CONRAD.git](#)”

To perform the syncing, simply apply the next three commands:

1. Fetch the branches from the remote:
“[git fetch akmaierConrad](#)”
2. Checkout your forks master branch:
“[git checkout master](#)”
3. Merge the changes:
“[git merge akmaierConrad/master](#)”

Commit to Conrad

If you want to commit to the repository, please keep the following order:

1. Update repository:
See Git Commands (page 6) or <https://help.github.com/articles/syncing-a-fork/>
2. Sanity check of the code you want to submit
Does everything compile? Does the "ReconstructionPipelineFrame.java" run without error?
3. Commit:
Go to <https://github.com/akmaier/CONRAD> and click on "New pull request"