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HOW TO: CONRAD Installation for DMIP

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

Installation of CONRAD

First, you need to check-out the open-source repository from <https://github.com/akmaier/CONRAD>

To successfully do this, you will require these:

- A **Git Installation** <https://git-scm.com/downloads>
- A **Git Client**, for this tutorial we use **TortoiseGit**
<https://code.google.com/p/tortoisegit/>
- Your own **Github Account**, Username `<GitHubAccountName>`, on
<https://github.com/>

If you already did this in the CIP and just want to do a second installation on your private PC, you DO NOT need to create a second Github Account, use your existing one.

In the top right on <https://github.com/akmaier/CONRAD> 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> .

Using TortoiseGit on Windows:

Now, we 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/**“. 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.

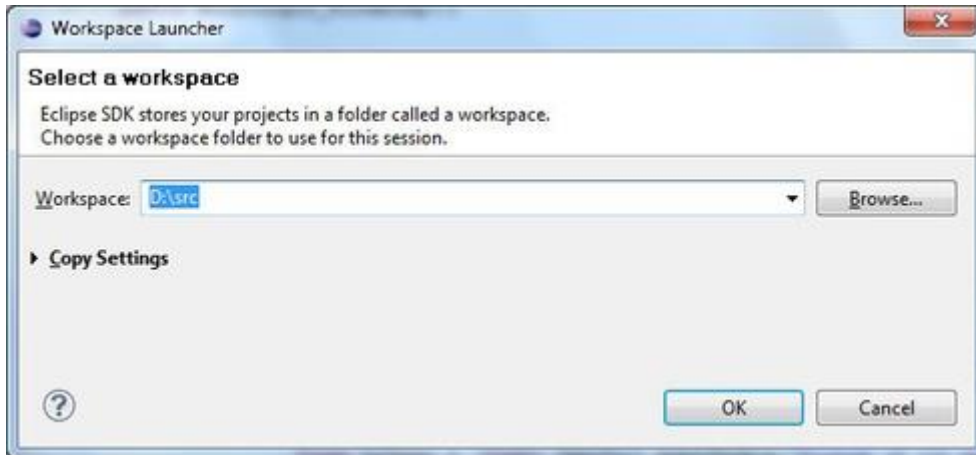
Installing CONRAD:

Now, you should be able to start CONRAD as an Eclipse project. The following is a shortened description from <http://www5.cs.fau.de/conrad/tutorials/user-guide/installation/>. If you wish to further use CONRAD and GPU capabilities please check the full tutorials on the website.

In order to setup a CONRAD installation, a computer is required that is able to run [eclipse](#) and a current [Java](#) installation (Version > Java 1.7.0). If this is available and you already cloned your personal Git Fork, simply start eclipse and choose the CONRAD directory as your workspace during the startup of eclipse.

Workspace Selection

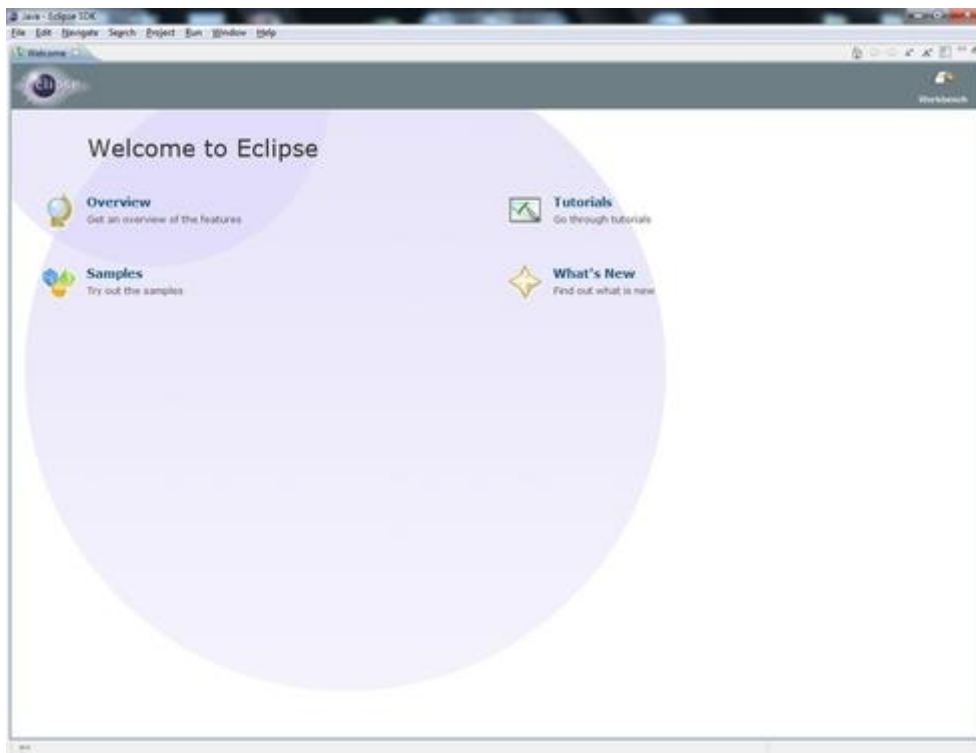
Select the workspace where CONRAD is located.



Start eclipse. If used for the first time, it will ask for a workspace location as shown in the figure on the right. Please select **C:/Reconstruction/** in this dialogue. If you already have an eclipse workspace set up, you either need to change the present workspace to **C:/Reconstruction/** or you need to move the CONRAD folder to your present workspace.

New Workspace

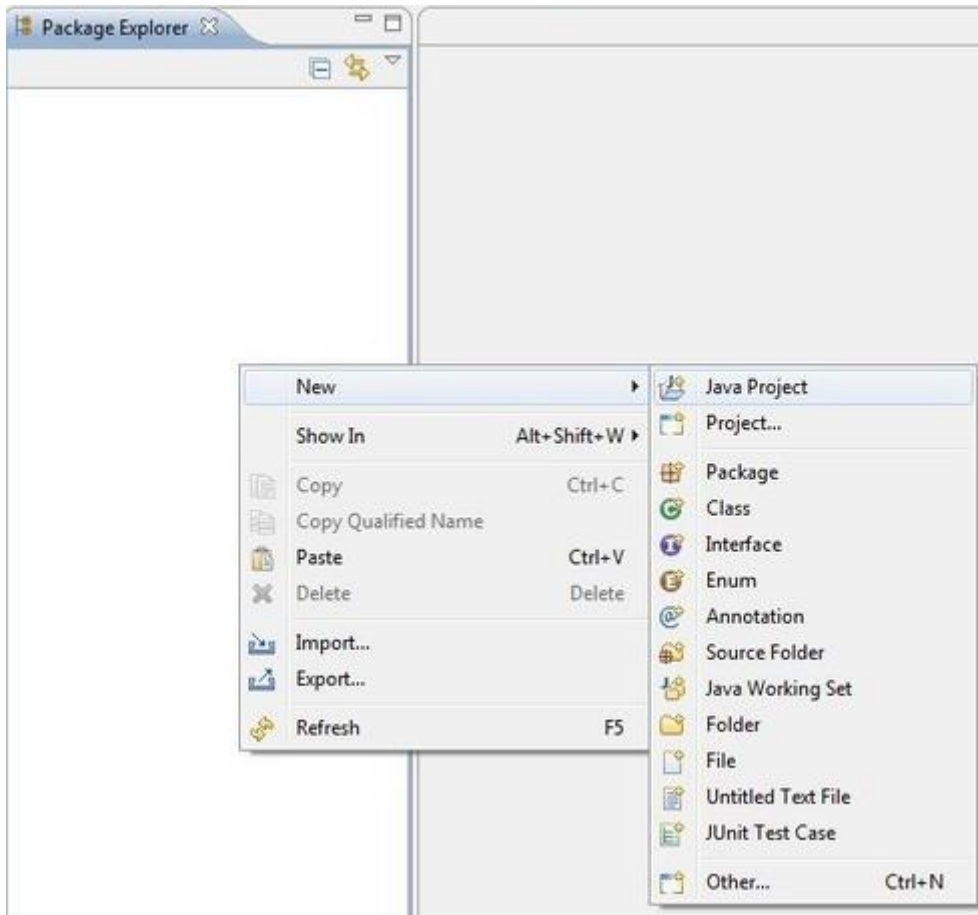
Close the welcome screen when opening eclipse for the first time.



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

New Java Project

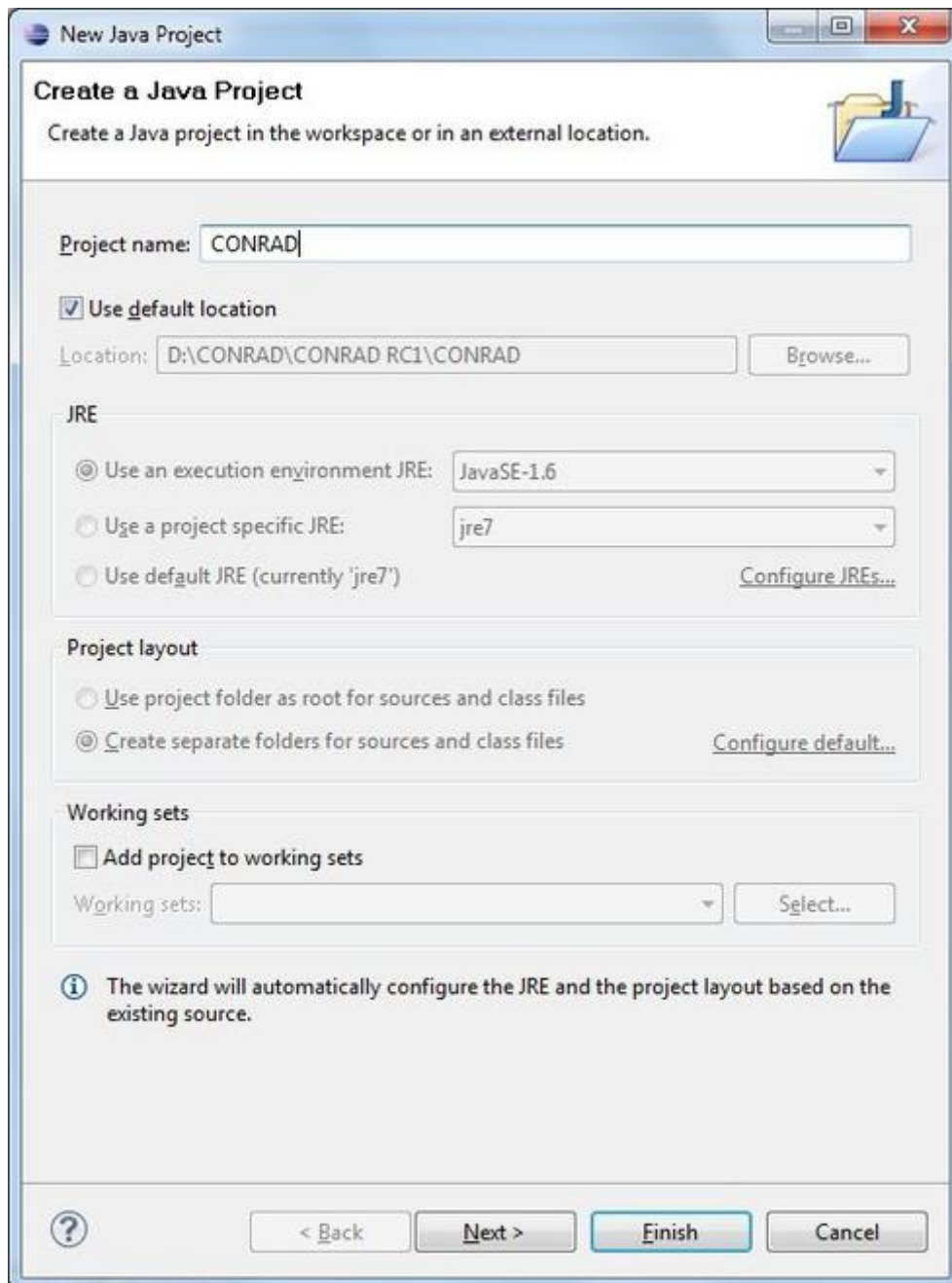
Right click the package explorer to create a new Java project.



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 on the right.

Project Import

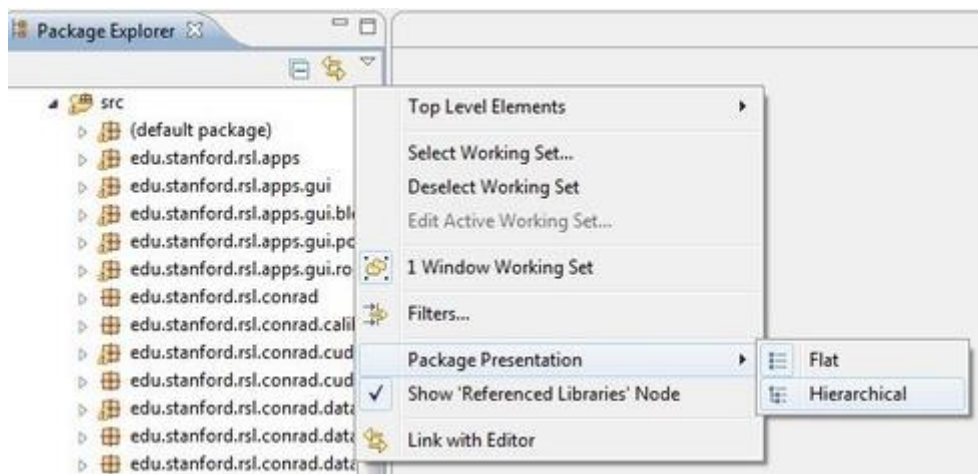
Enter "CONRAD" as project name to import the project from disk.



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

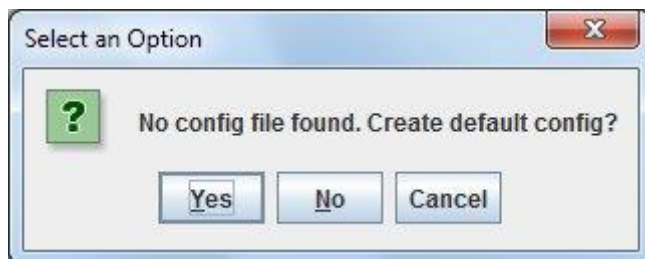
We recommend "Hierarchical" package representation.



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 on the right. Click the small triangle on the top right of the package explorer to do so.

Creation of a Default Config File

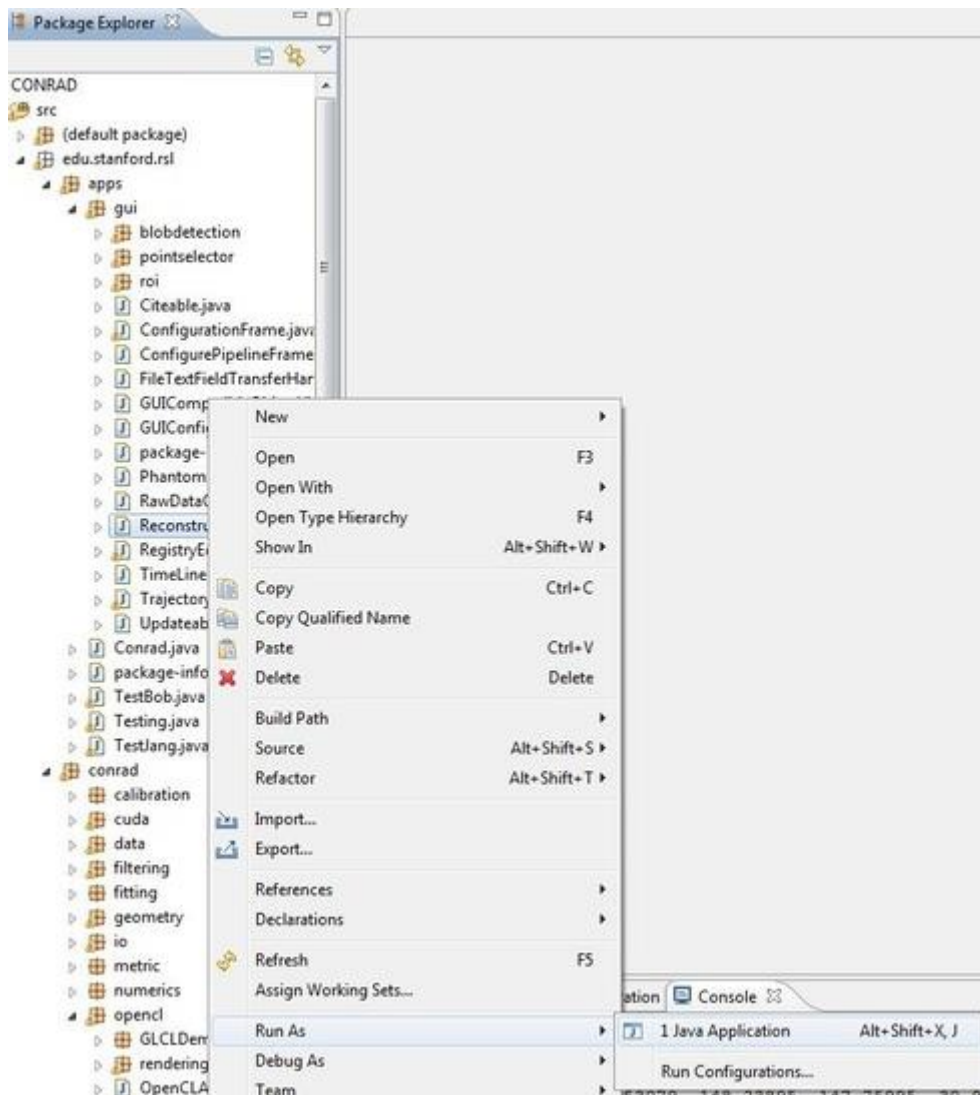
Click "Yes" to create a default config file.



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

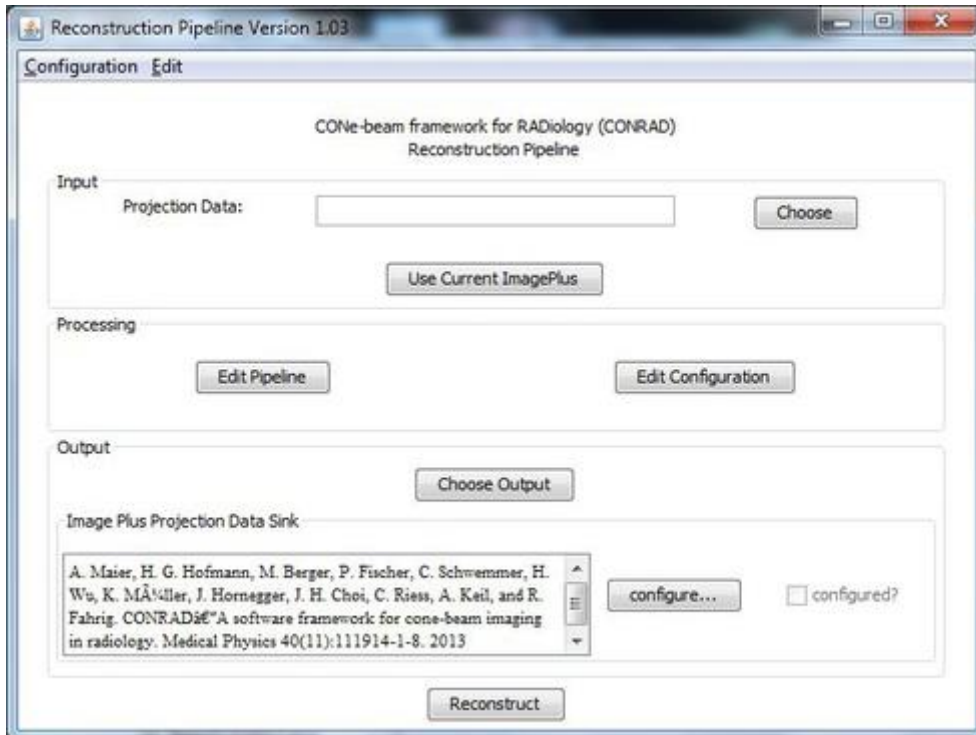
Select the ReconstructionPipelineFrame to run the main GUI



The main GUI of CONRAD is called Reconstruction Pipeline frame. It can be executed from the package explorer as shown on the right. Browse to the package “edu.stanford.rsl.apps.gui” and select the ReconstructionPipelineFrame. Right click it and select “Run As/Java Application”.

Main GUI

The reconstruction pipeline frame.



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

GIT Commands

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, e.g. at home:

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 Synch” 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, chose “Pull” from the drop down menu. Your local version should now be up to date with original one.