

# Workflow Tracker

## Description

The Workflow Tracker adds an entirely new functionality to the Sci2 tool. This new feature runs in the background while the user performs their workflow like usual. While running, the workflow tracker keeps a record of every step and every parameter the user selects. On completion, the user can view the workflow, make changes, save, run, or delete it. This feature will be extremely valuable to any user who needs to run the same workflow multiple times with different data sets, or a user who may be more interested in the results, as opposed to the process. Upon saving, the algorithm produces an XML file with a structure resembling the steps taken. This XML file can be added to any Sci2 build with the workflow plugin, and re-run at will.

## Pros & Cons

- This new functionality opens up a plethora of possibilities for the Sci2 tool now.
- Users can choose to Save and submit to a bank of workflows that anyone with the tool can access.
- The monotony of running a workflow many times with different data is a thing of the past now.
- Users can cross-check workflows with others to see where they went wrong.
- If a user finds a bug with Sci2, they can submit their workflow and data to help us debug the problem much easier.
- One cannot switch between workflow sessions. A skilled user may attempt to modify the XML file though.
- Drag & dropping to the Data Manager is currently unsupported for the Workflow Tracker.

## Implementation Details

The Workflow Tracker was implemented in Java. It depends on the [XStream library](#), which is a library to serialize objects to XML and vice versa. Essentially, when an algorithm or file is registered to Sci2's Scheduler, the Workflow stores it (along with any upfront parameters required), and replicates it in the view with the hierarchy in tact.

## Usage Hints

### Generating a Workflow

- Right click on the whitespace of the Workflow tab.
- Run any algorithms in any sequence you like, as long as they flow with each other.
- Switch back to the view to see your workflow.
- From here, modify the parameters if you wish by right clicking an object and selecting *Change*.
- After you are happy with the result, you may choose to *Save*, *Run*, or *Delete* the workflow.

### Saving a Workflow

- After you generate a Workflow, navigate to the root of the Workflow.
- Change the title (*right click > Change*) if necessary,
- *Right click > Save* on the root of the Workflow.
- Browse your file directory and save the Workflow wherever you like.

### Loading a Workflow

- Right click on the whitespace of the Workflow tab.
- Select *Load*.
- Navigate your file directory to find an XML file of an existing Workflow.

## Links

- [Source Code](#)