

SDSC Summer Institute 2015: Workflow Management

Hands-on Exercises 1: Introduction to Kepler

Goal: Open, edit, run, and build simple workflows in Kepler

Step 1: Open and run an existing scientific workflow.

1	Start Kepler.
2	In the <i>Components</i> pane, expand <i>Demos</i> , expand <i>Getting-started</i> , double-click on <i>00StatisticalSummary.xml</i> . This will open the Statistical Summary workflow.
3	Run the workflow through PLAY BUTTON in the toolbar: ▶
4	Run the workflow through RUNTIME WINDOW. Select menu item Workflow ->Runtime Window and run it (go).

Step 2: Edit an existing scientific workflow.

1	In the <i>Components</i> pane, expand <i>Demos</i> , expand <i>Getting-started</i> , double-click on <i>04-HelloWorld.xml</i> . This will open the Hello World workflow.
2	Run the workflow to see its output.
3	Edit input actor value. Double click the first input <i>Constant</i> actor, change its input value to be: “Hello Kepler”, then click Commit.
4	Re-run the workflow to see how its output changes.

Step 3: Create a new scientific workflow

1	Open a new blank workflow canvas from menu: File ->New Workflow->Blank.
2	In the <i>Search Components</i> tab, search for “Constant” and drag the <i>Constant</i> actor onto the Workflow canvas.
3	Drag the <i>Constant</i> actor onto the Workflow canvas again. It will add another

	<i>Constant</i> actor to workflow.
4	Double click the first <i>Constant</i> actor on canvas and change its “value” to be “3”, then click Commit.
5	Double click the second <i>Constant</i> actor on canvas and change its “value” to be “2”, then click Commit.
6	In the <i>Search Components</i> tab, search for “Add” select the Add or Subtract actor found under “Data Operation -> Mathematical Operation -> Arithmetic Operation.”
7	Drag the actor to the Workflow canvas.
8	Connect the output ports of both <i>Constant</i> actors to the “ <i>add</i> ” input port of the <i>Add and Subtract</i> actor (the top port, the bottom one is the “ <i>subtract</i> ” port).
9	In the <i>Search Components</i> tab, search for “ <i>Monitor Value</i> ” and select the <i>Monitor Value</i> actor found under “ <i>Textual Output</i> .”
10	Drag the <i>Monitor Value</i> actor to the Workflow canvas.
11	Connect the output port of the <i>Add and Subtract</i> actor to the input port of the <i>Monitor Value</i> actor.
12	In the <i>Search Components</i> tab, search for “ <i>SDF Director</i> ”. Drag the <i>SDF Director</i> to the top of the Workflow canvas.
13	Save the workflow as “SimpleAddSubtract” by choosing menu item: File ->Save
14	Run the workflow and check the results. To clear the value of the Monitor Value actor, double-click on the actor, clear the value field, and click ‘Commit’. The workflow can now be re-run.