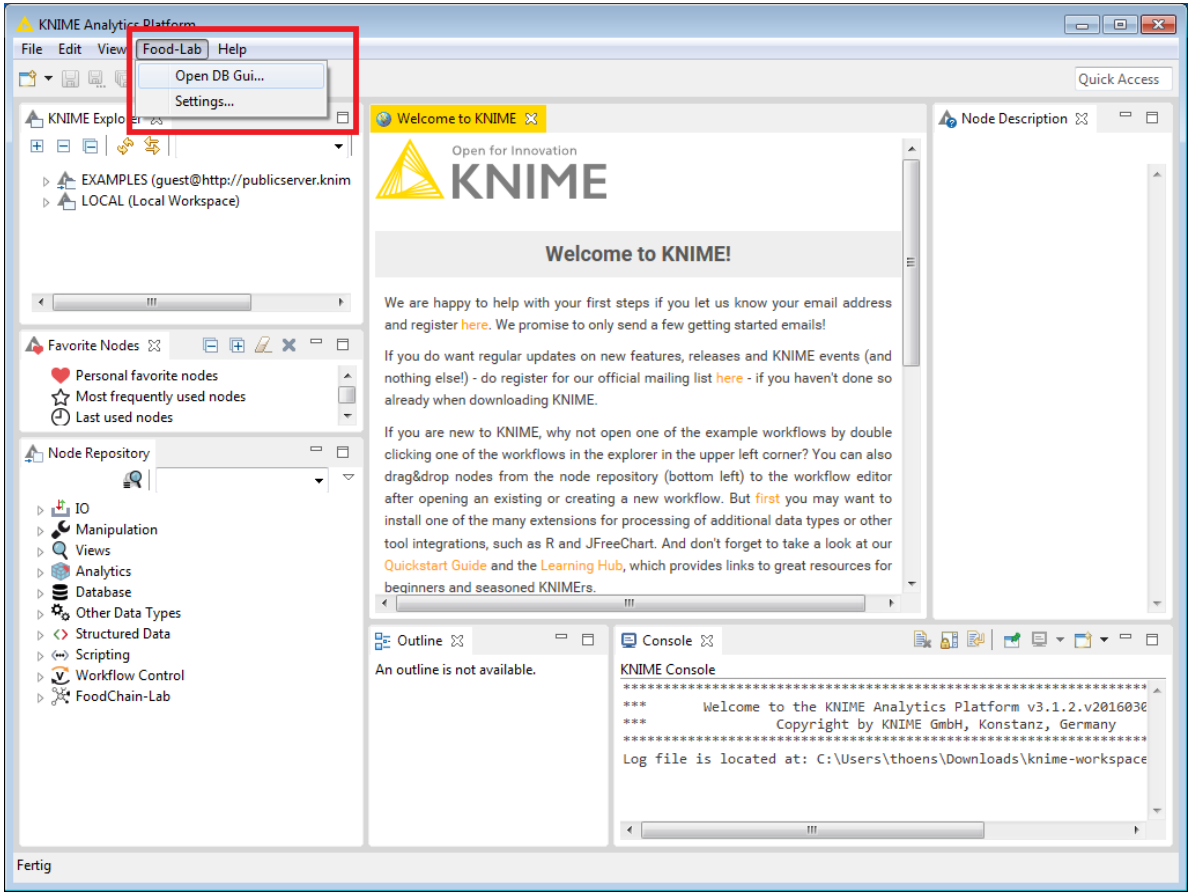
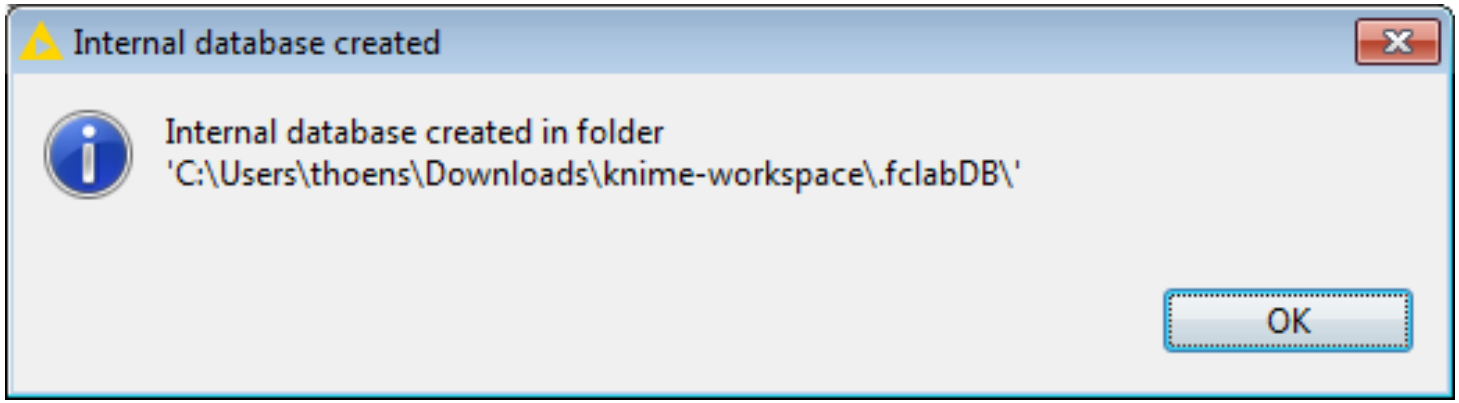
Create a FoodChain-Lab Workflow

Learn

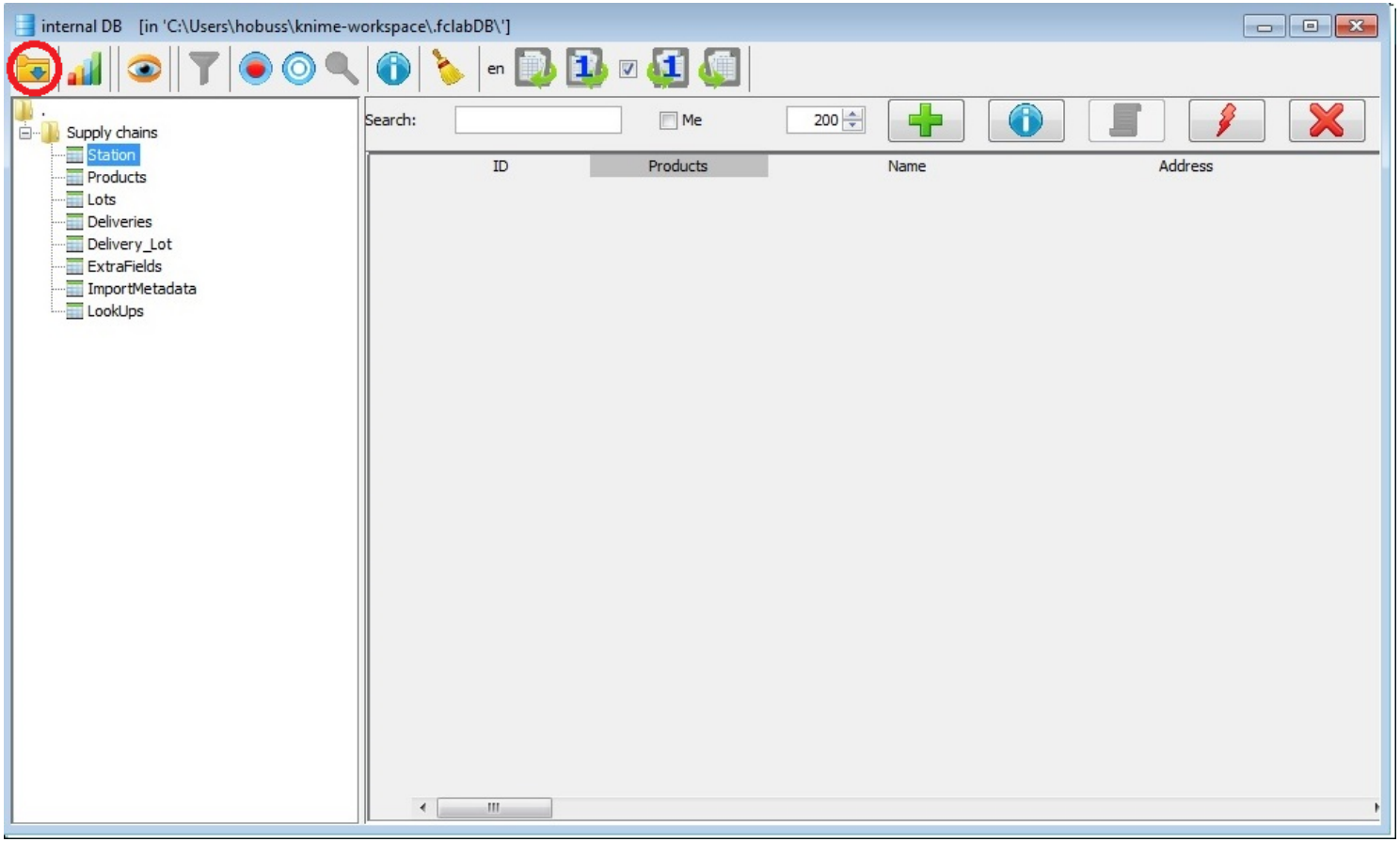
- to import a FoodChain-Lab template.
- to display and configure the delivery network.
- to visualize the backward and forward trace for a station.



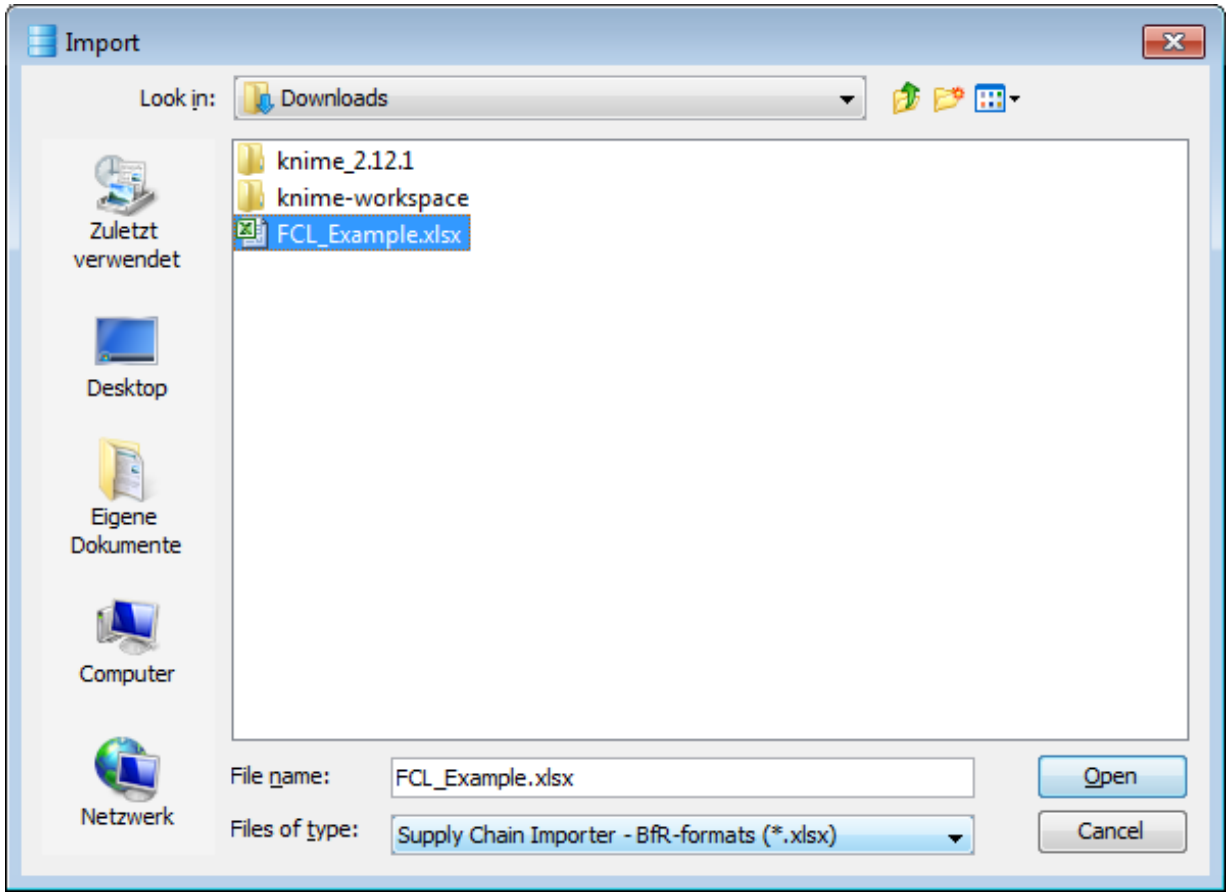
- Select **Food-Lab** and **Open DB Gui...** in the menu bar to open the database interface.



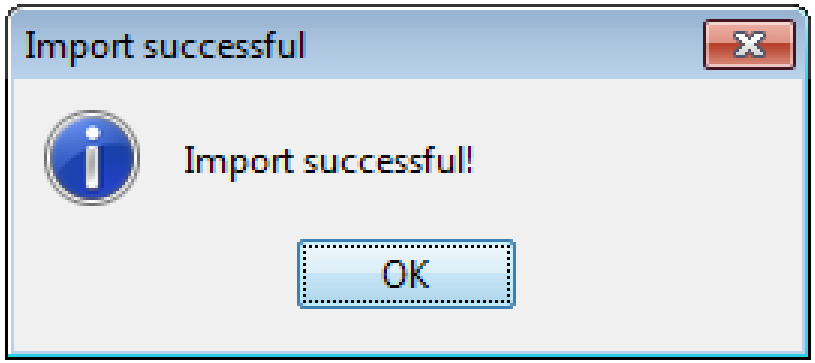
- If you get a message saying the internal database has been created, click **OK**. If not, the database has obviously been created before.



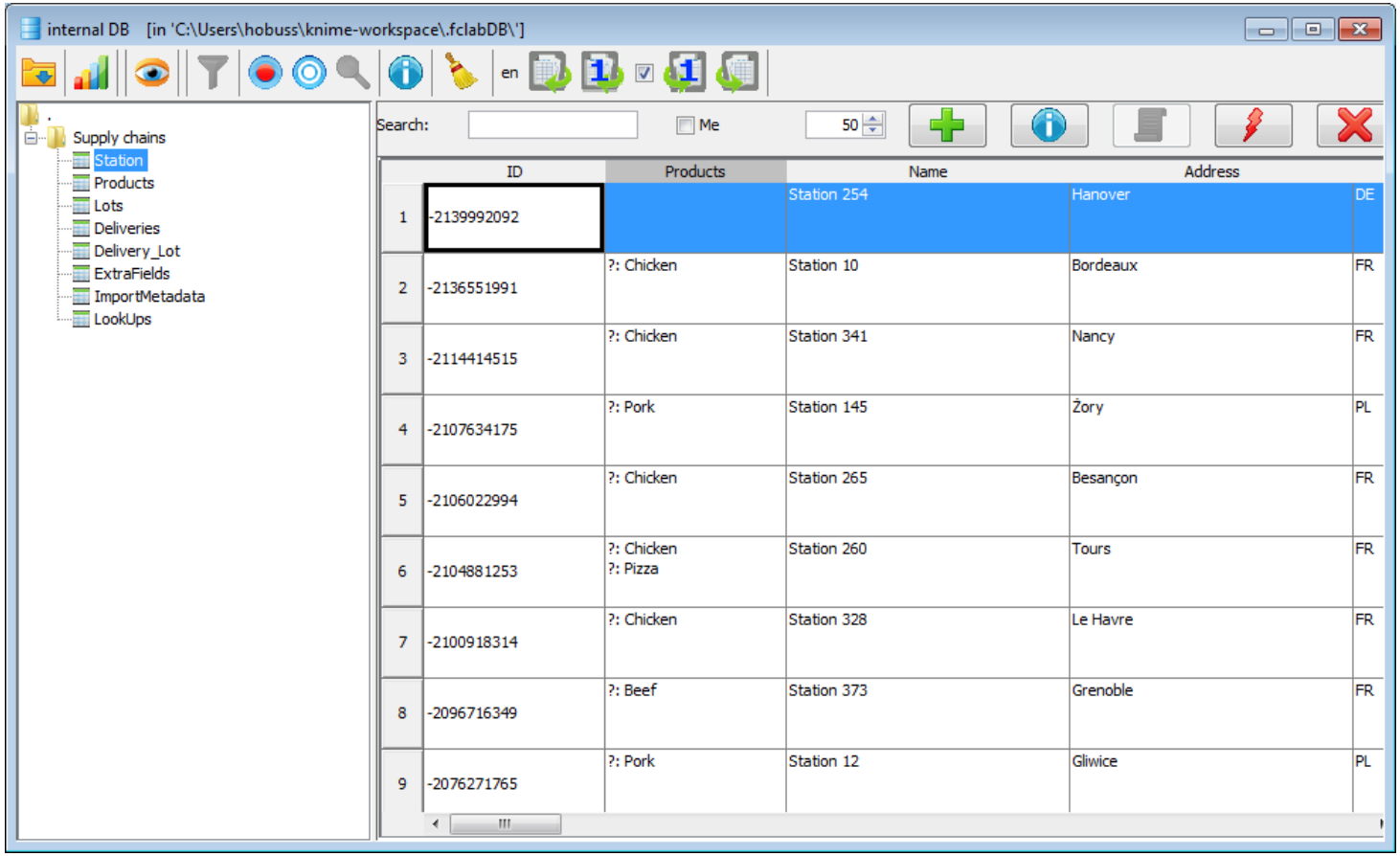
- Download the example file from "FCL_Examples.xlsx".
- In the database interface click the **Table import** button in the upper left corner.



- Now, a file dialog will pop up. FoodChain-Lab data templates (*.xlsx files) can be selected here.
- Navigate to the folder with the file “FCL_Examples.xlsx” which you have downloaded. Select the file in the dialog and press **Open**.

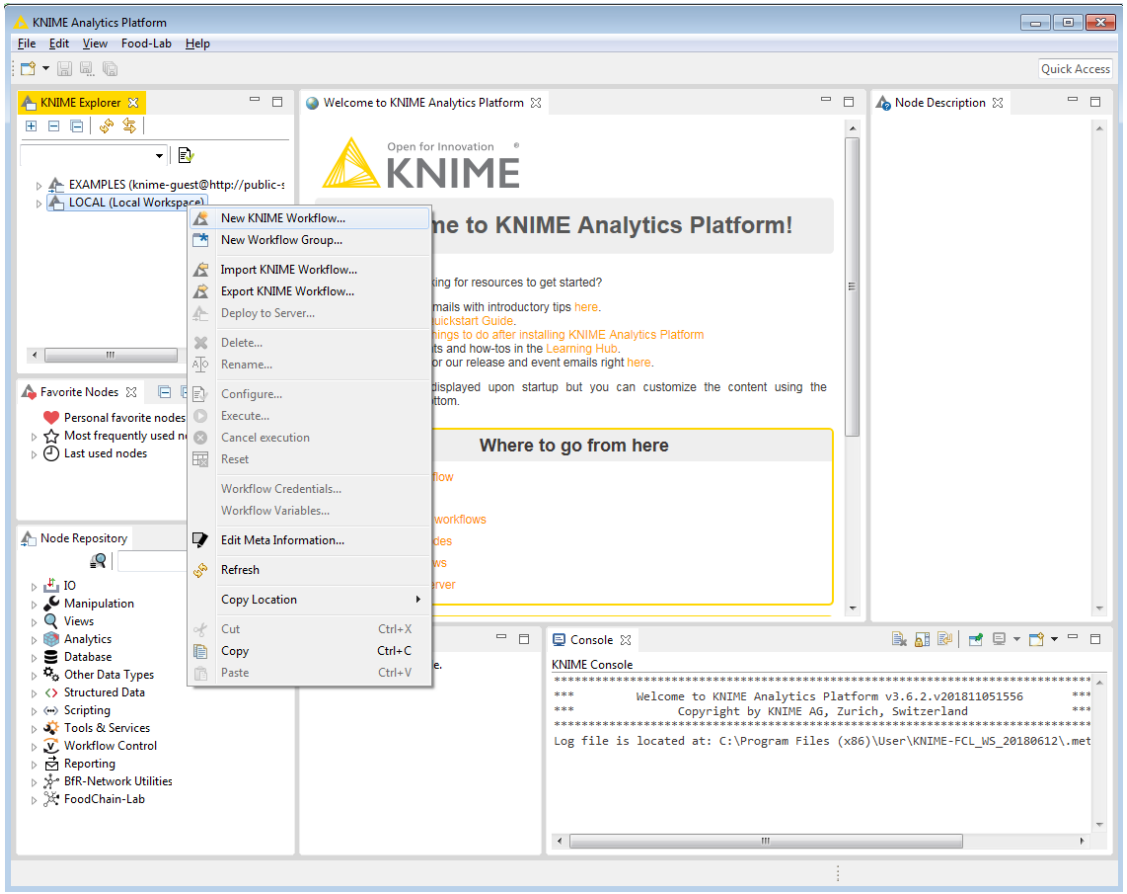


- If errors or warnings occurred during the import process you would see a dialog after the import is finished.
- As no errors ocurred, there is no such dialog and you can click **OK**.

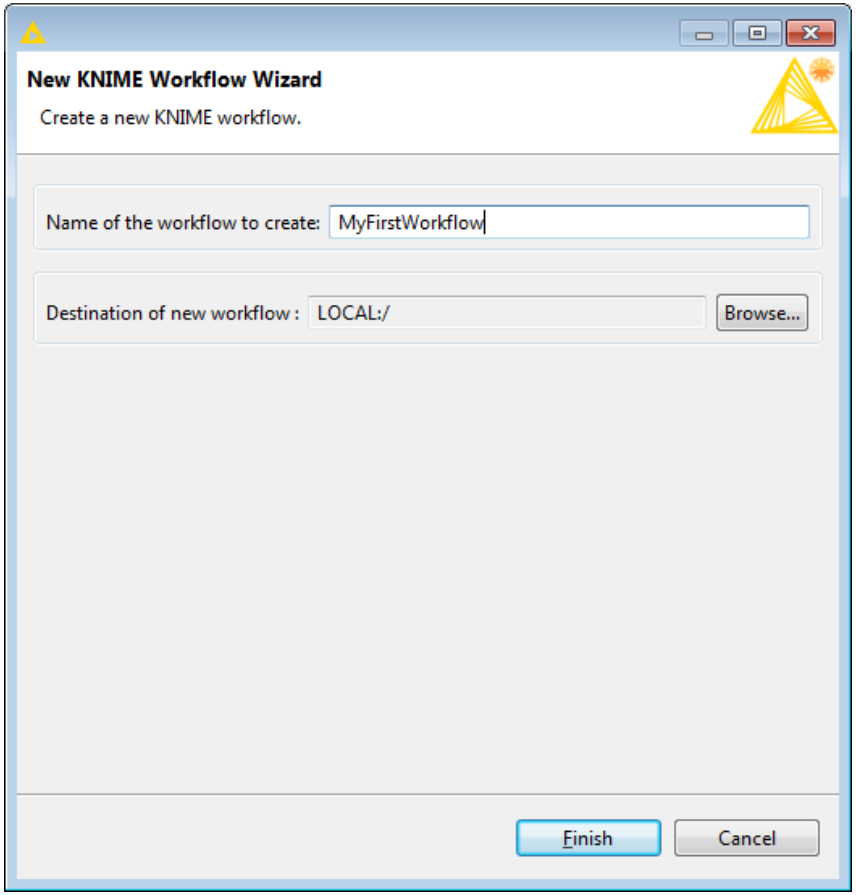


	ID	Products	Name	Address	
1	-2139992092		Station 254	Hanover	DE
2	-2136551991	?: Chicken	Station 10	Bordeaux	FR
3	-2114414515	?: Chicken	Station 341	Nancy	FR
4	-2107634175	?: Pork	Station 145	Żory	PL
5	-2106022994	?: Chicken	Station 265	Besançon	FR
6	-2104881253	?: Chicken ?: Pizza	Station 260	Tours	FR
7	-2100918314	?: Chicken	Station 328	Le Havre	FR
8	-2096716349	?: Beef	Station 373	Grenoble	FR
9	-2076271765	?: Pork	Station 12	Gliwice	PL

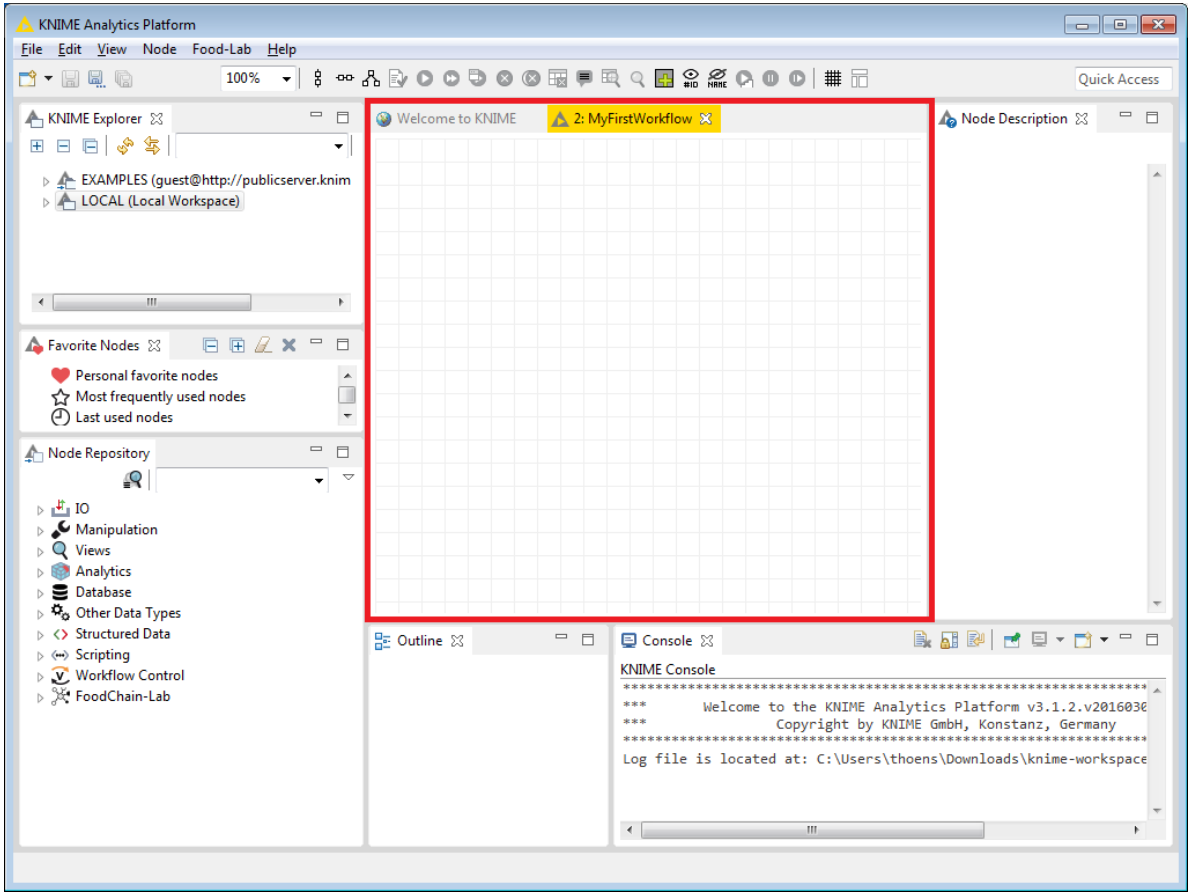
- In the database interface, you can now have a look at the data you have imported.
- Close the dialog.



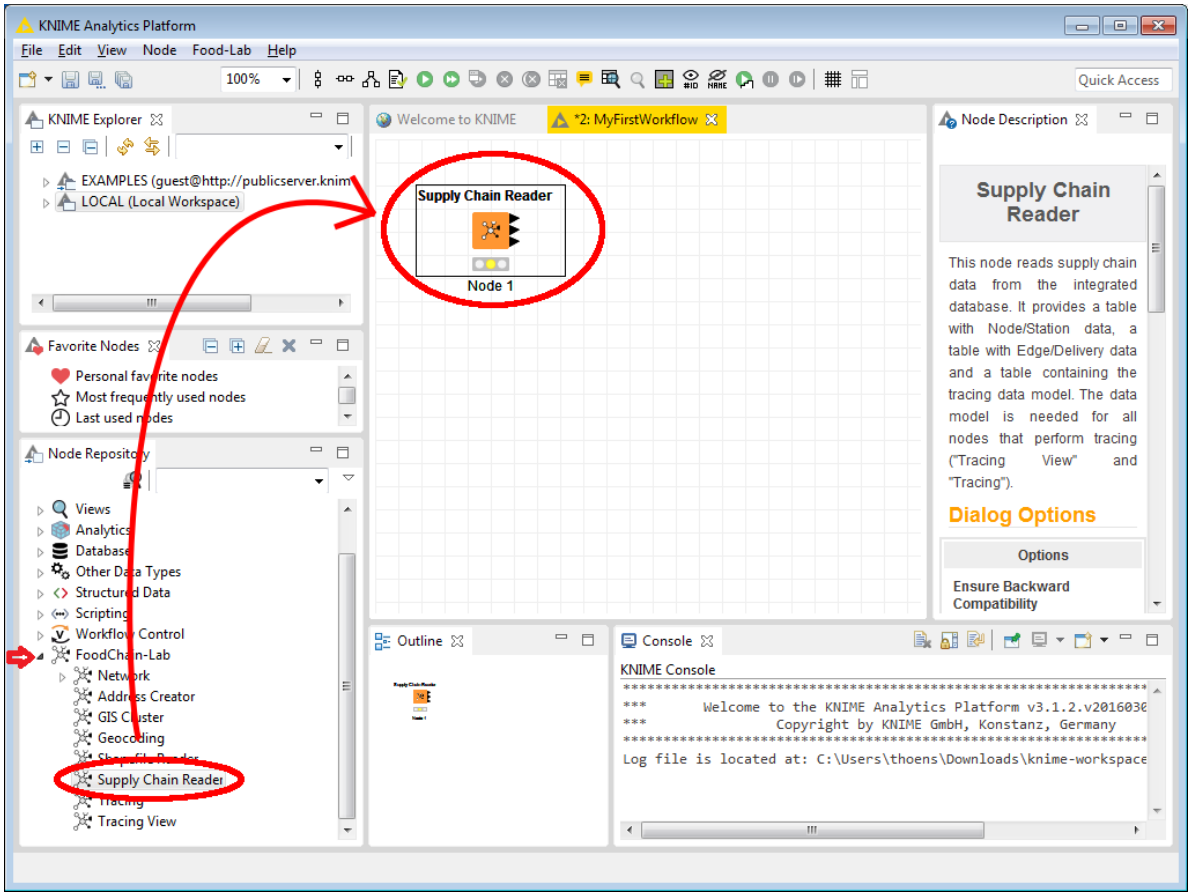
- Now we want to create a workflow, that uses the imported data.
- Right click on **LOCAL** in the **KNIME Explorer** and select **New KNIME Workflow...**



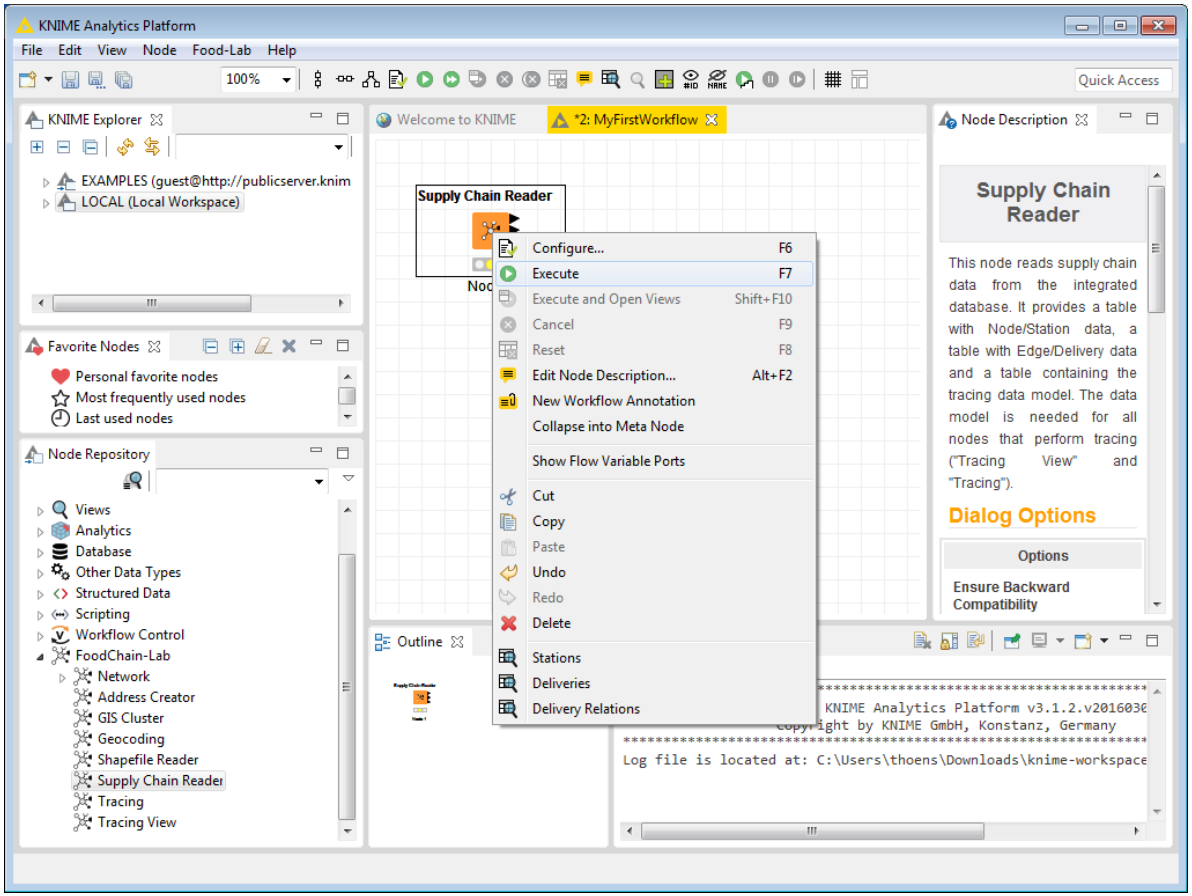
- In the dialog you need to give the workflow a name. How about “MyFirstWorkflow”?
- Click **Finish**.



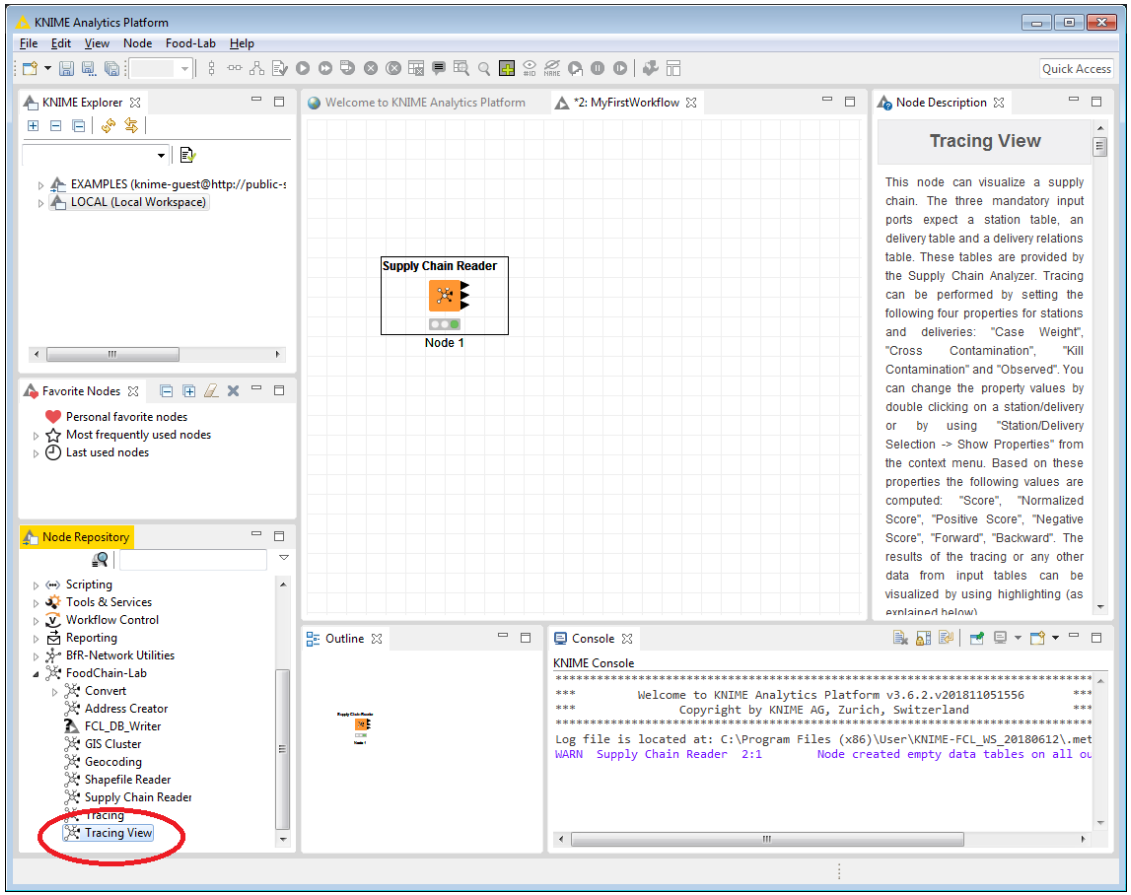
- The created empty workflow will be shown in the editor in the center. Here you can add nodes to build your workflow.



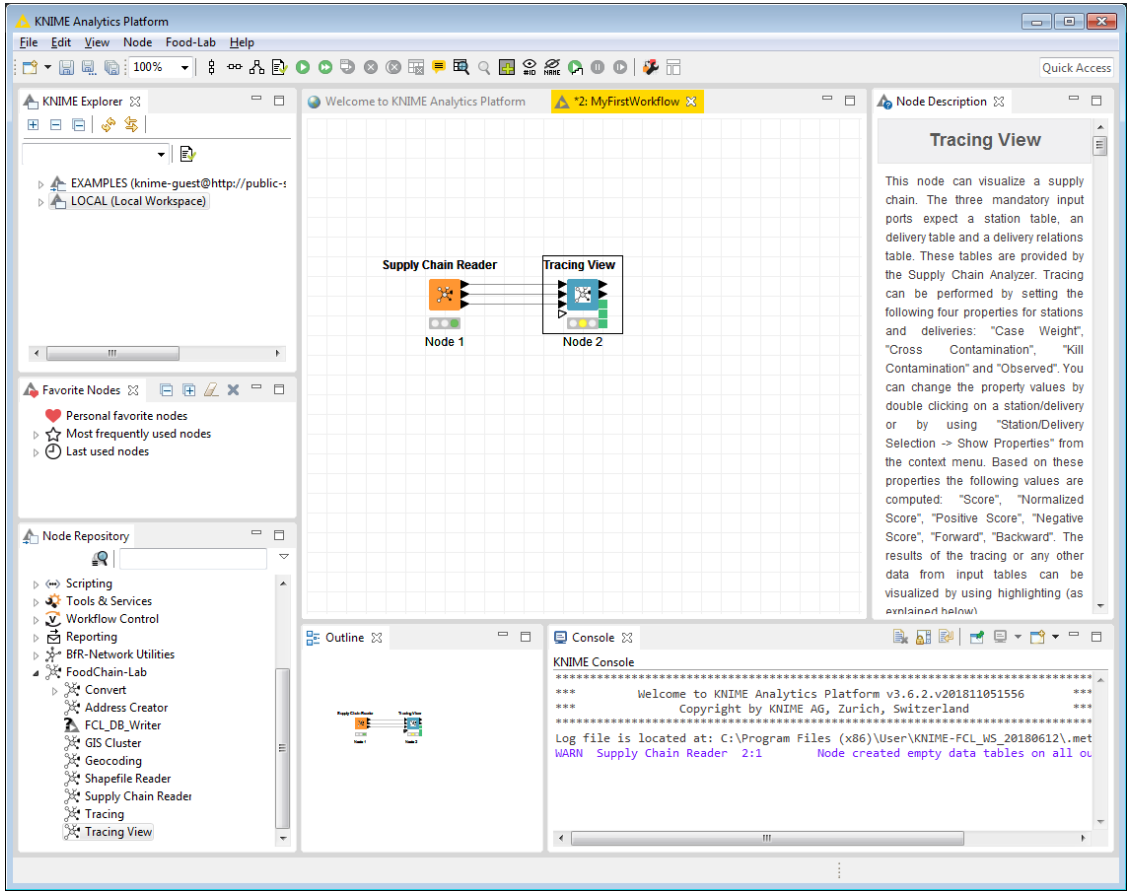
- Now we need FoodChain-Lab nodes. You can find them in the **Node Repository** on the left. Click on the small arrow on the left of “FoodChain-Lab” to show all FoodChain-Lab nodes.
- Drag the **Supply Chain Reader** from the **Node Repository** into your empty workflow.



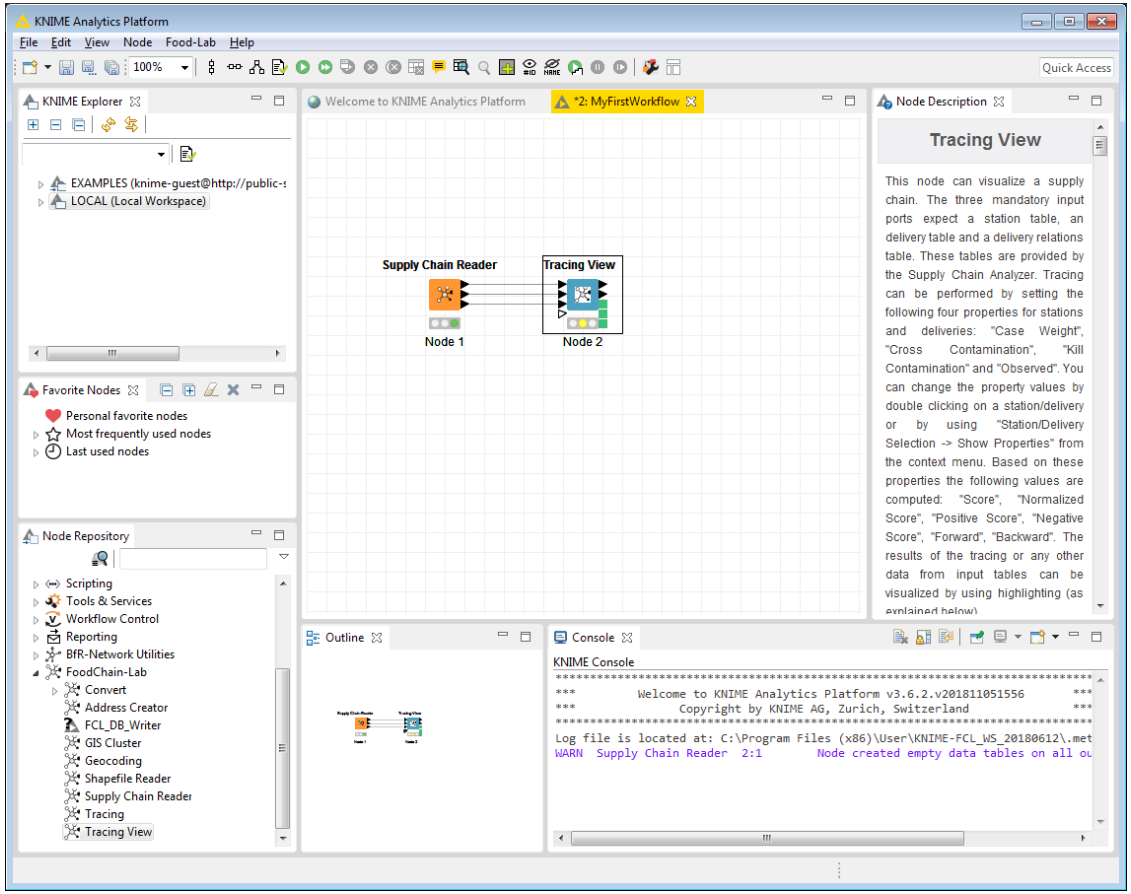
- We do not need to configure the **Supply Chain Reader**.
- Right click on it and select **Execute**.



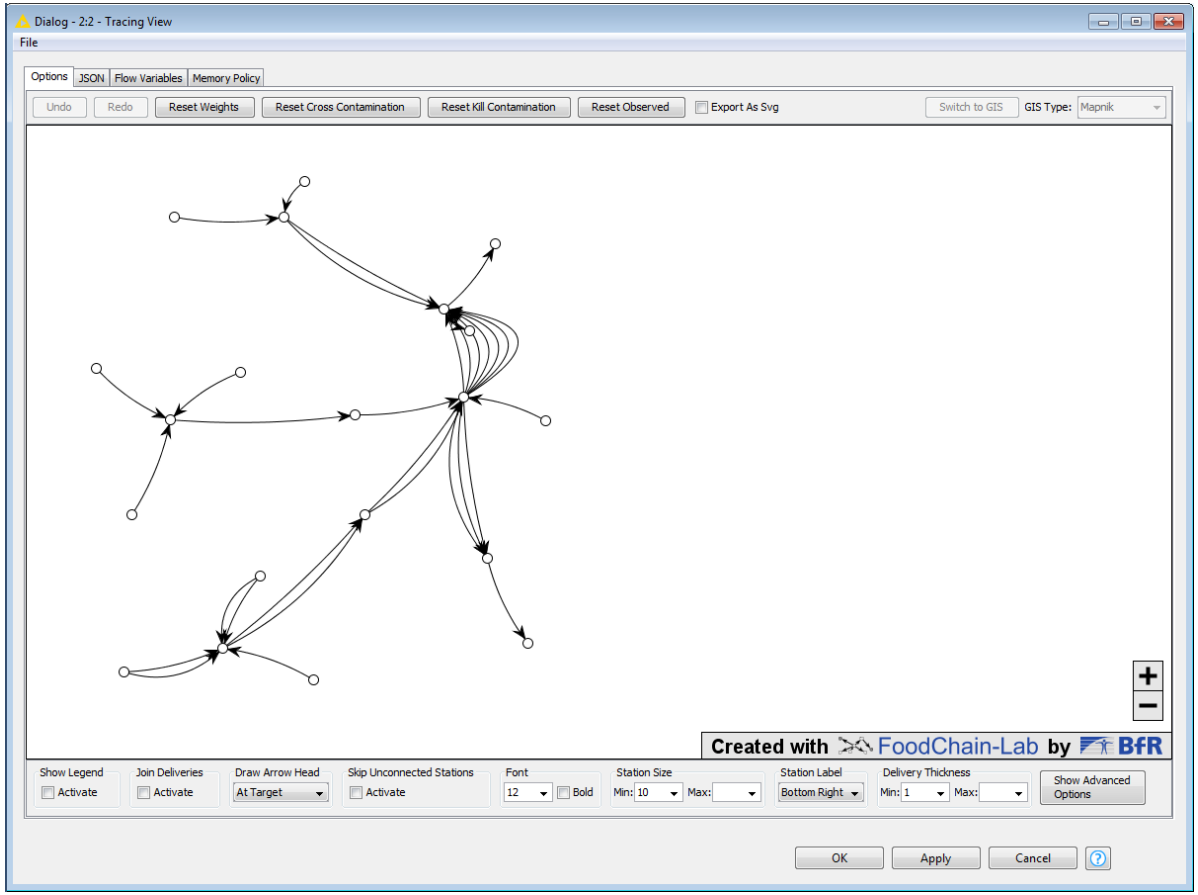
- The **Supply Chain Reader** has now read all data from the internal database.
- Select the **Supply Chain Reader** in the workflow (so that a rectangle is drawn around it), then double click on the **Tracing View** node in the **Node Repository**.



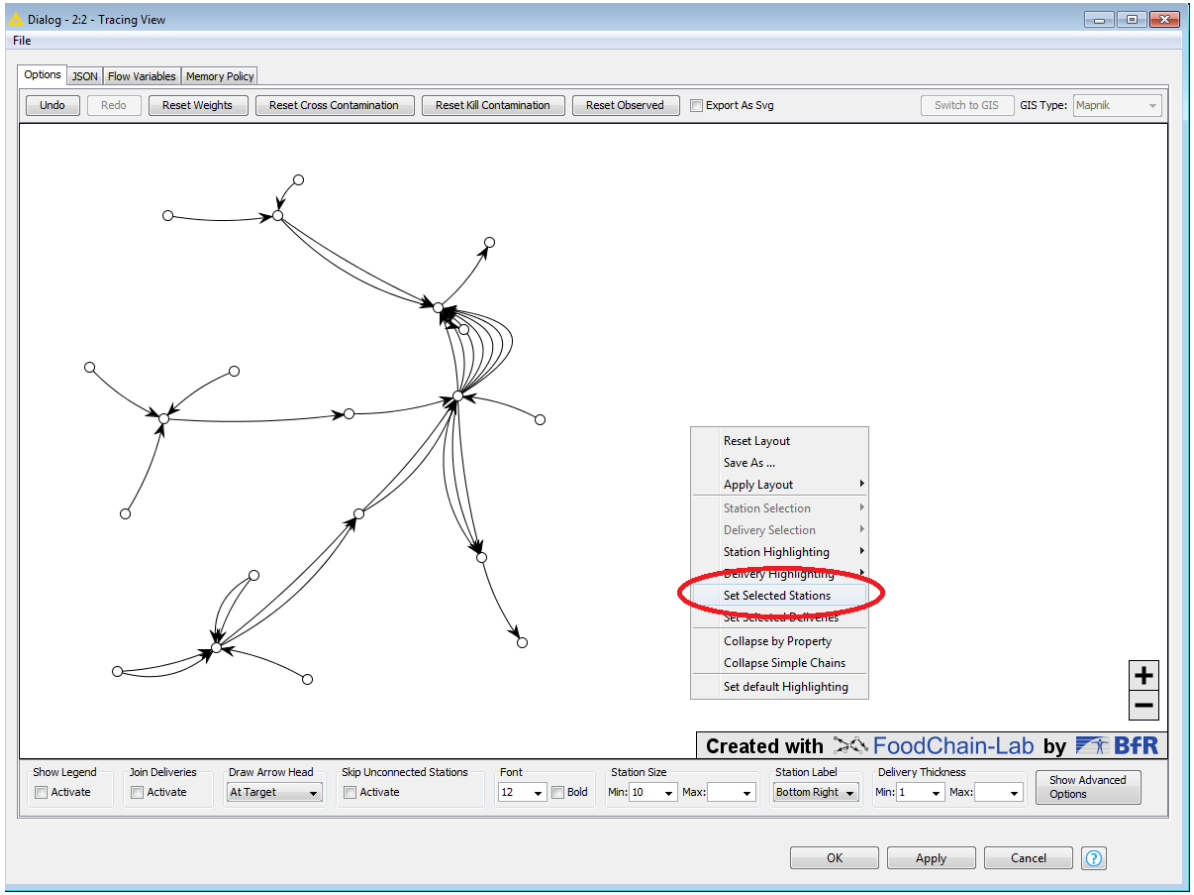
- The **Tracing View** node should show up in the workflow and its three input ports should be automatically connected to the **Supply Chain Reader**. This is the fastes way to attach one node to another.



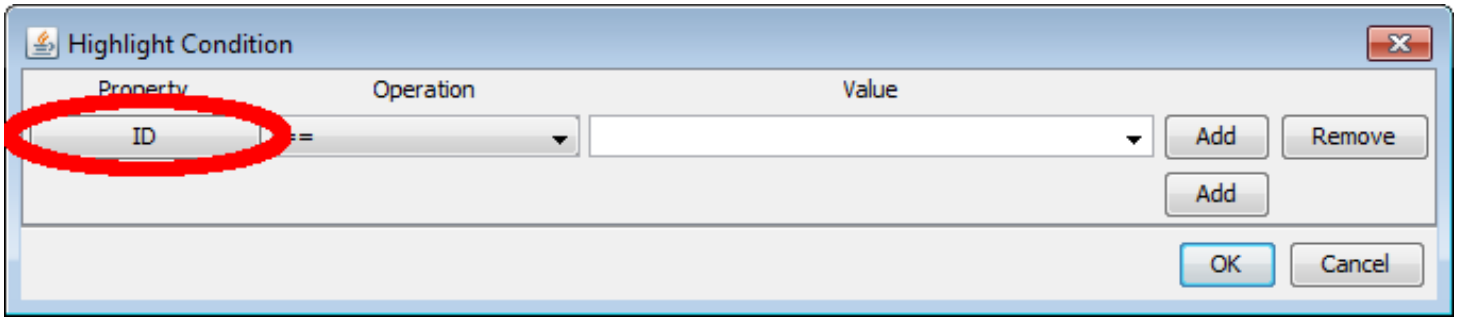
- Another option would be to drag the **Tracing View** node from the **Node Repository** into the editor. Then left click on the upper output port of the **Supply Chain Reader** (black arrow), keep pressing the left mouse button and drag a line to the first input port of the **Tracing View** (black arrow directing at the blue **Tracing View**). Repeat for the second and third connection.



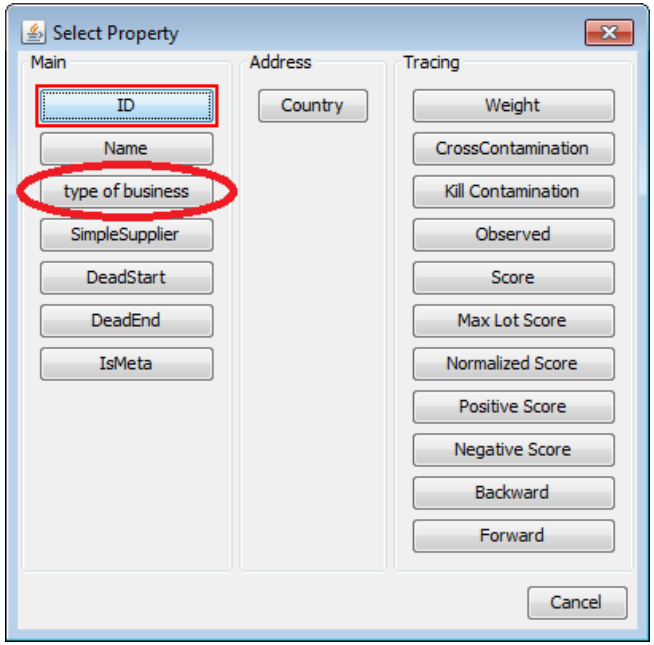
- Double click on the **Tracing View** node to configure it.
- You can see a network of stations (circles) and deliveries (arrows).
- In this network of a fictitious foodborne disease outbeak a contaminated product could be found in three supermarkets. We want to mark them as outbreak stations.



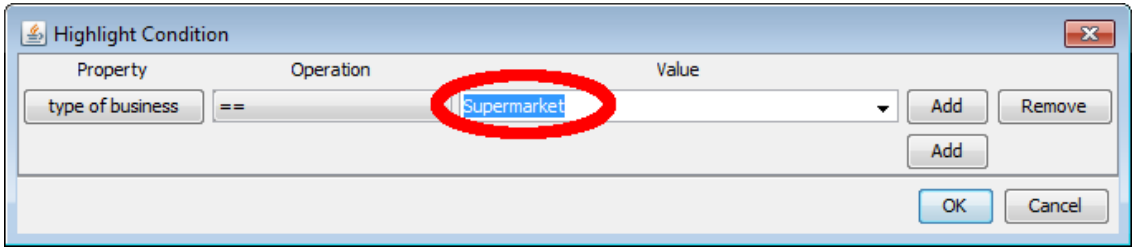
- To do so, right click somewhere into the empty space and choose **Set Selected Stations**.



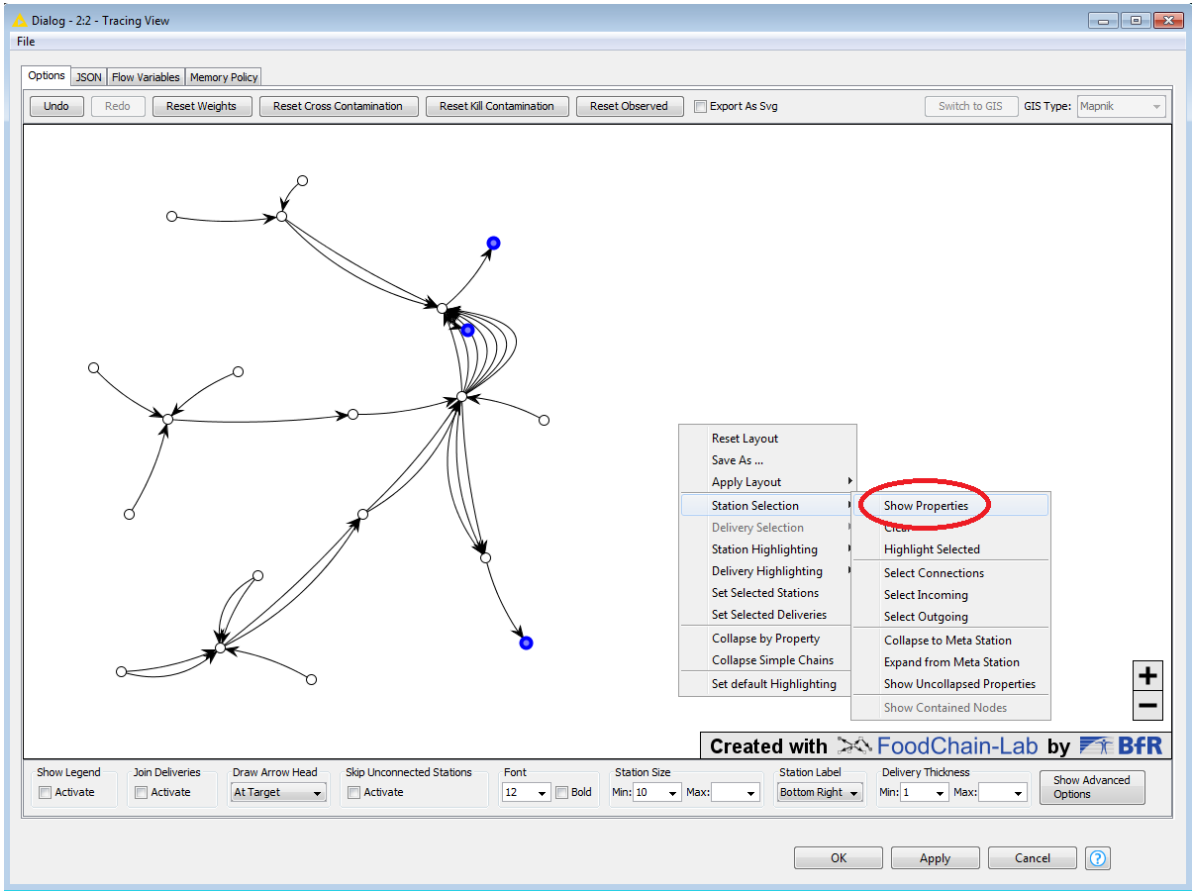
- In this dialog you can specify which stations should be selected.
- Press the button in the red circle to set the **Property**.



- Select “type of business”.
- Typical types of business are “primary producer”, “supplier” and “manufacturer”, for example.

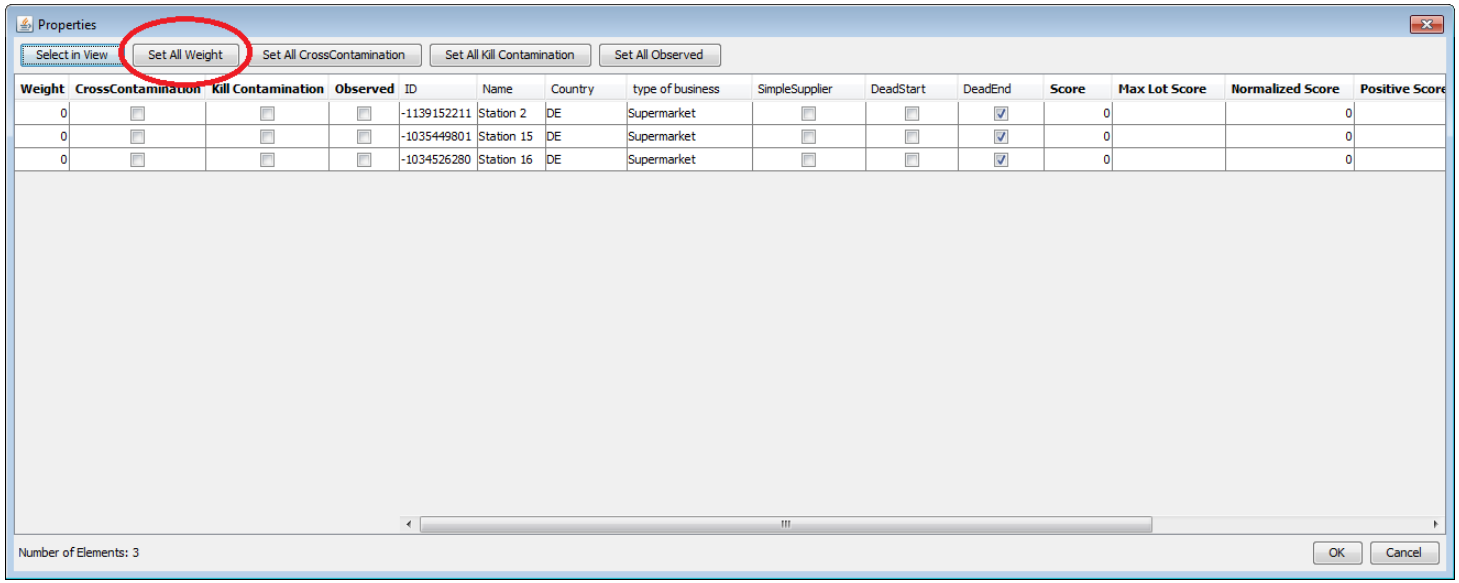


- We only want to select supermarkets, since this is where contaminated products were found.
- Set **Value** to “Supermarket” and press **OK**. You can either click the small dropdown button on the right of the value field and select an entry or you type “Supermarket” into the white value field.
- Click **OK**.

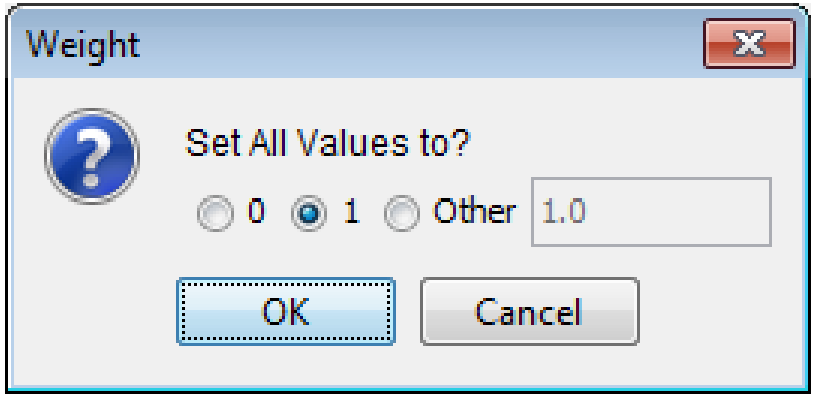


- Now, three stations are selected (blue circles).
- Right click somewhere into the empty space and choose **Station Selection** and **Show Properties**.

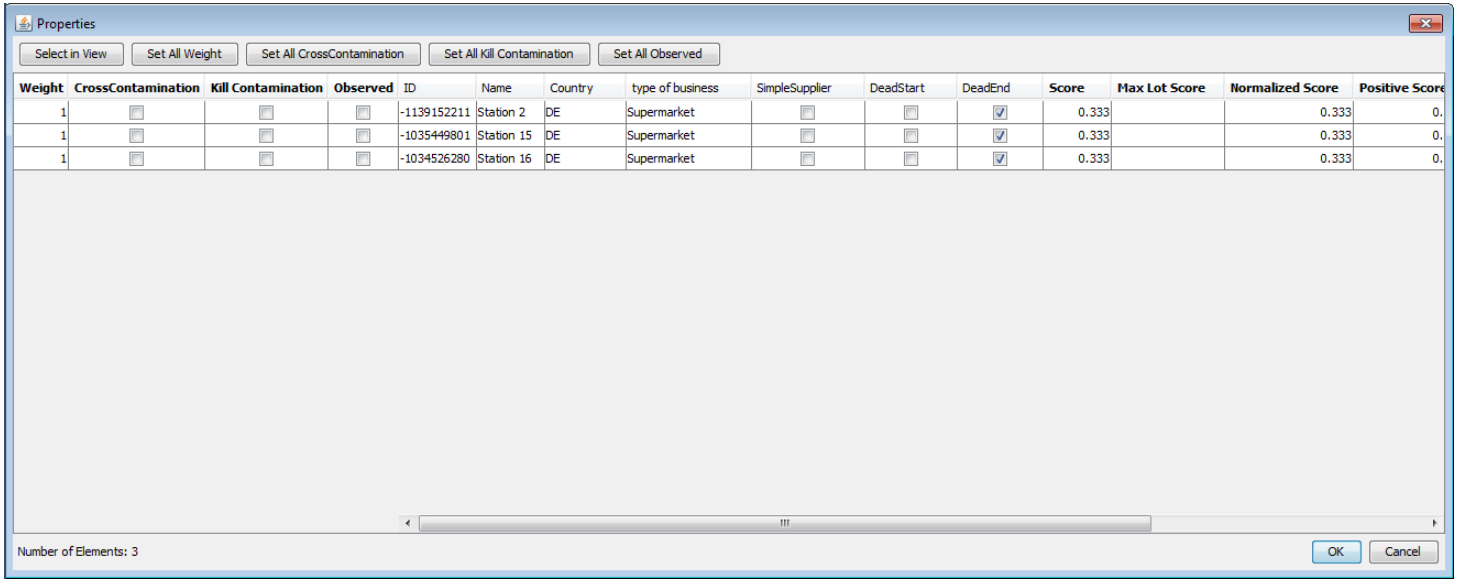
  Note: If you accidentally click with the left mouse button, you deselect all selected stations. Please go one step back to select the three supermarkets again.



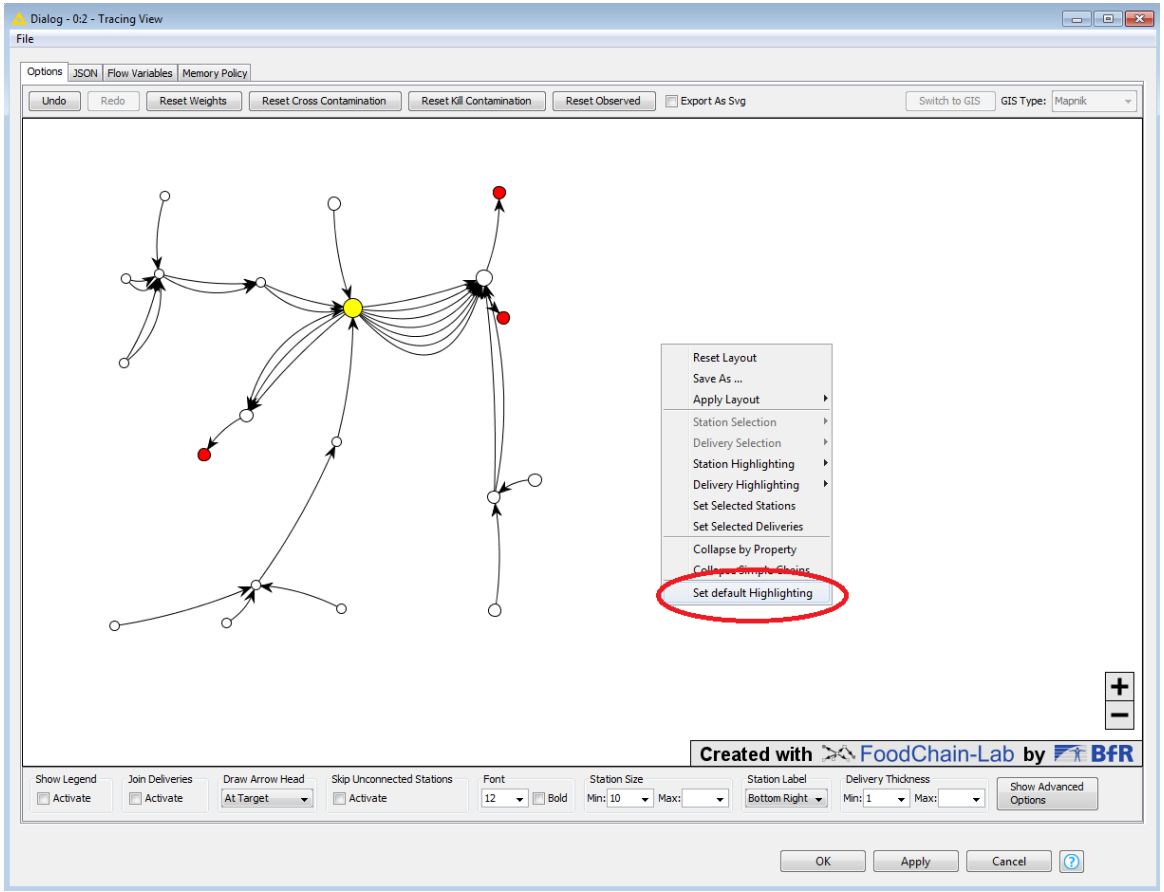
- A window pops up and you see the properties of the three selected supermarkets.
- Click **Set All Weight**.



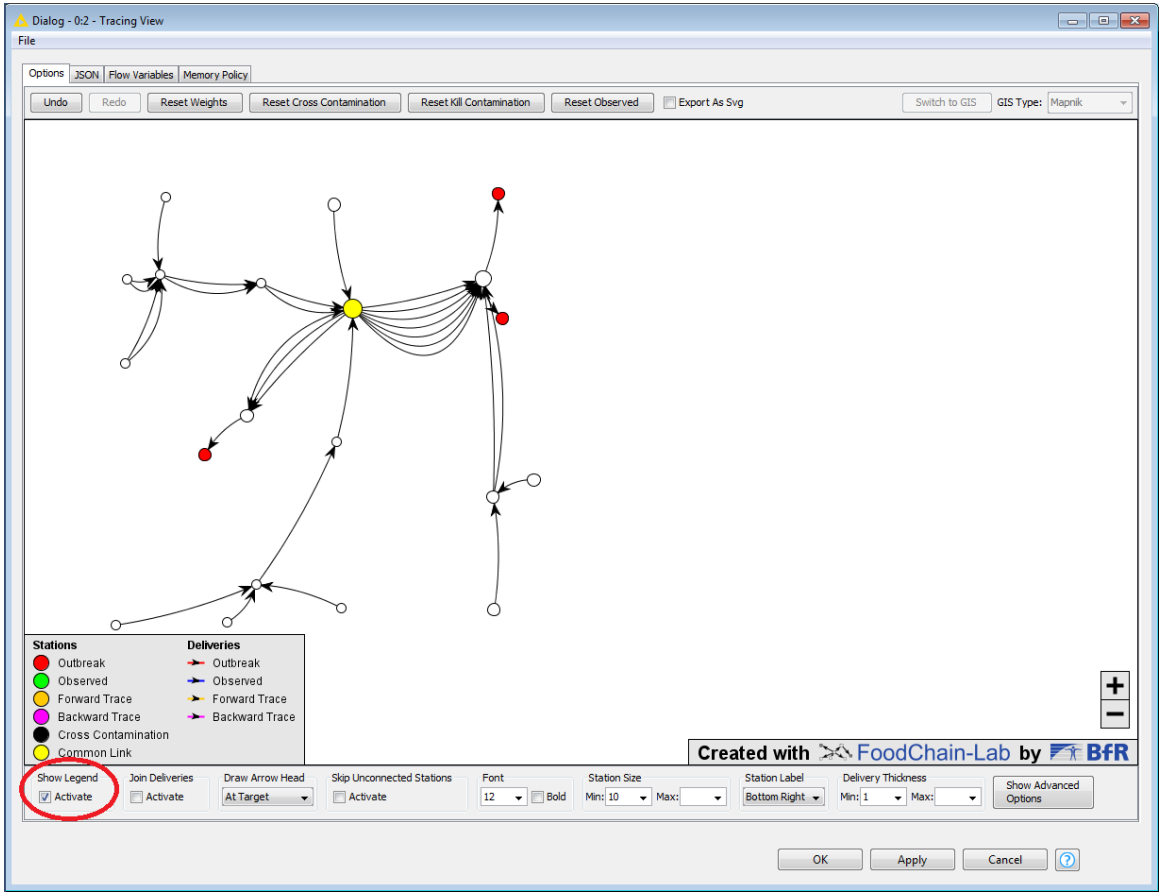
- By setting the weight to “1” you mark all supermarkets as outbreak stations. Here, “1” is already selected and you simply need to click **OK**.



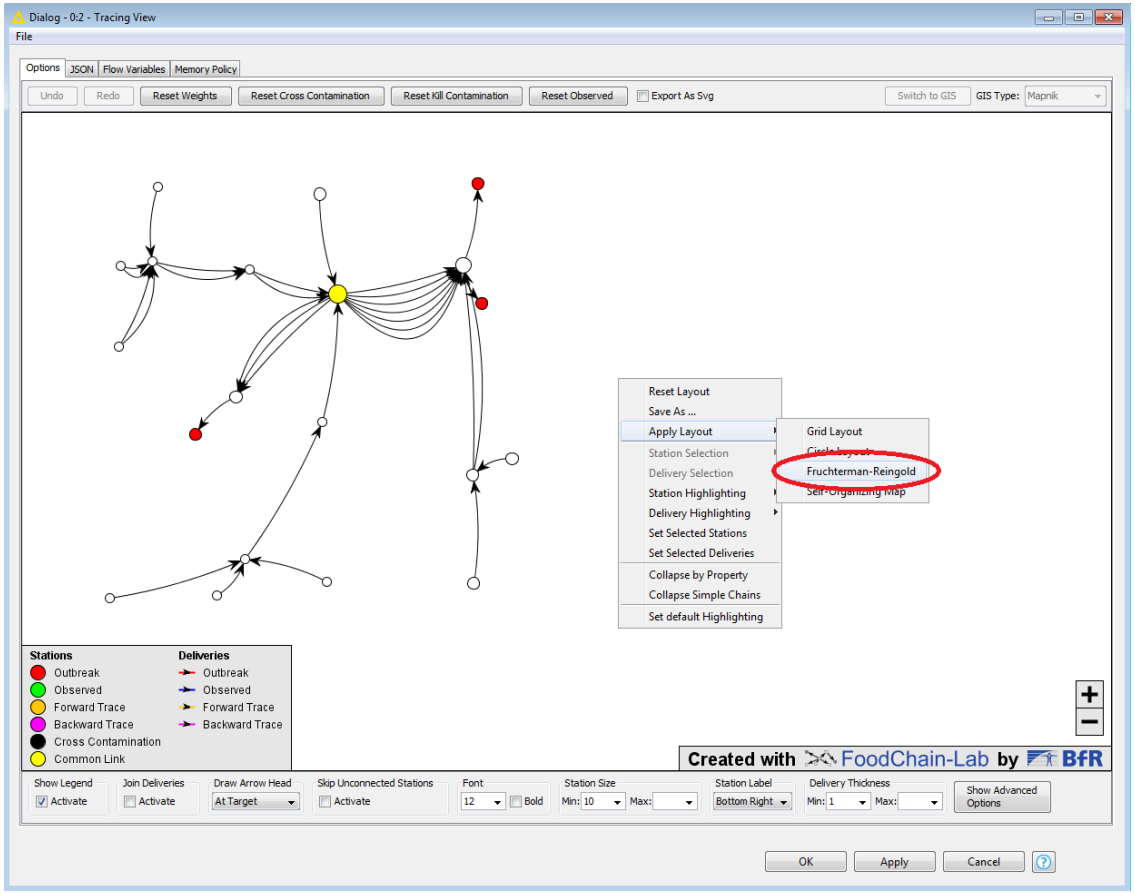
- All three supermarkets have a weight of “1” now.
- Another way to set the weight would be to click directly into one of the cells of the weight column and to type in the weight for each station individually.
- Click **OK**.



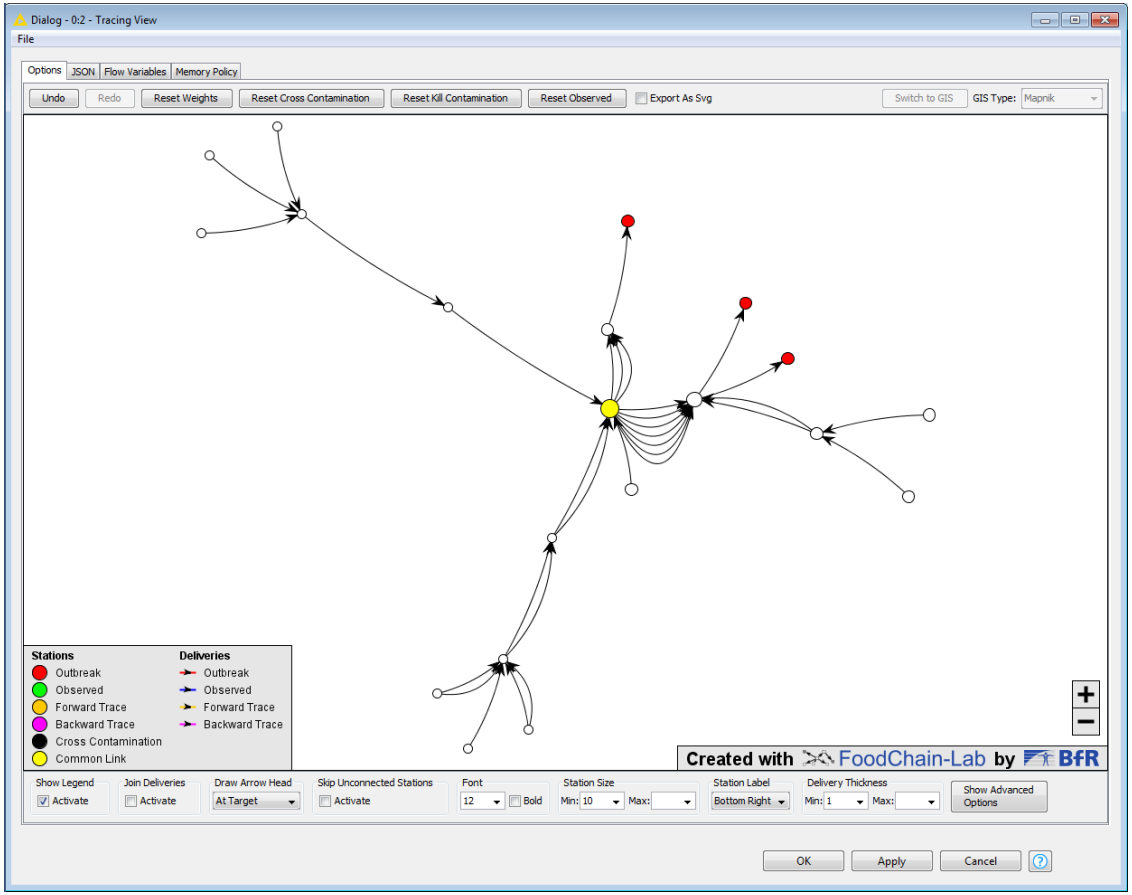
- Left click into the white network area to deselect highlighted stations (and deliveries) and you will see... nothing new.
- To get the image you see above, open the context menu (right click) and click **Set default Highlighting**.



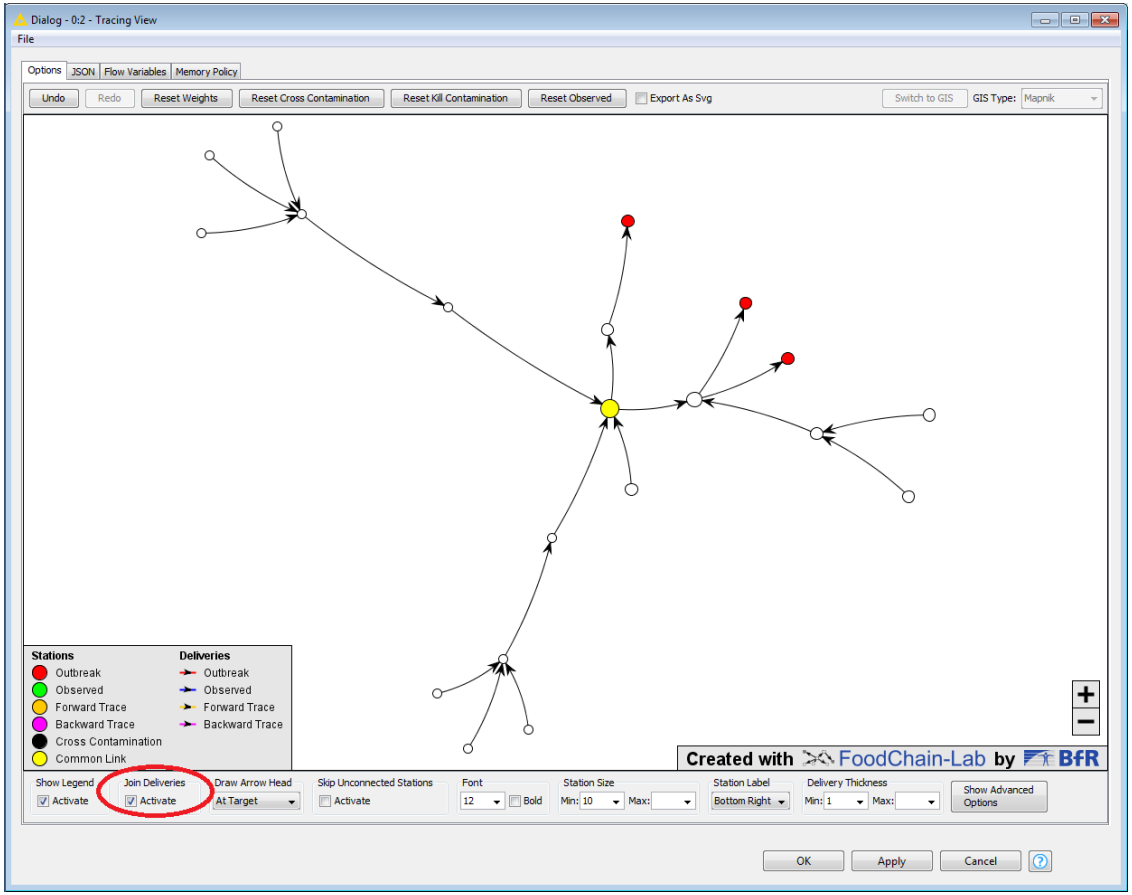
- Tick the box below **Show Legend** to display the legend. Here it is shown what the colours and symbols in the graph mean.
- So, the outbreak stations are red and the common link is yellow. The common link is a station which is connected (via identical ingredient lots or products thereof) with two or more outbreak stations in the same food chain.



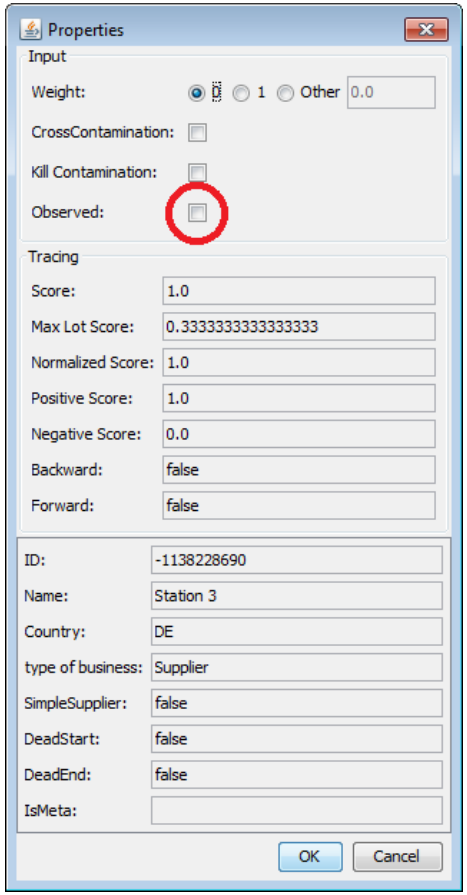
- To arrange the network in a better way right click in the graph and select **Apply Layout** and choose a layout, for example **Fruchterman-Reingold**.



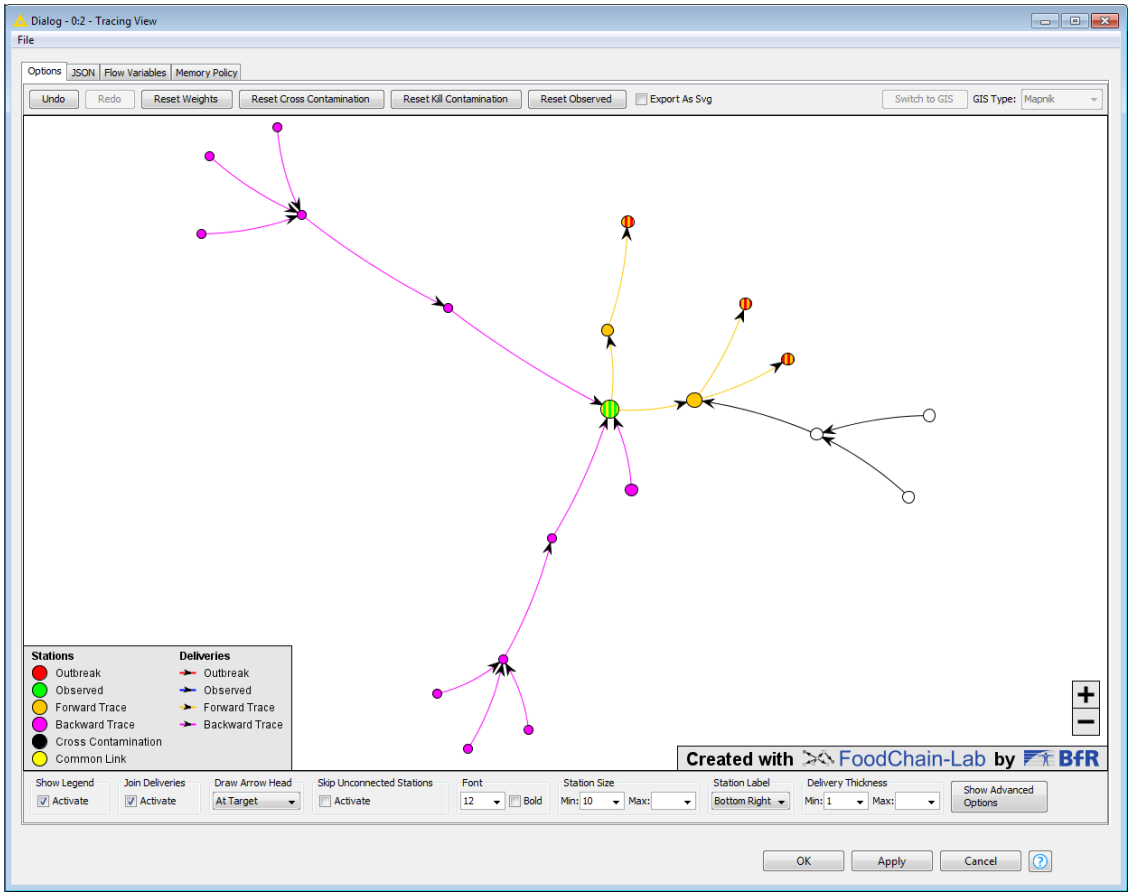
- This layout process is not deterministic. That means you will get a different result each time.
- You can apply the layout again, if you are not satisfied with the current result.
- You can also apply a layout for certain stations only: Therefore you have to select the stations you want to be layouted and apply the layout again.



- You can activate **Join Deliveries** to simplify the graph. Deliveries with the same supplier and recipient are joined now.
- This option is especially useful in networks with many deliveries.



- Double click on the station marked as “common link”.
- The dialog shown above will pop up, showing all attributes of the station.
- Select **Observed** and click **OK**.



- All stations / deliveries of the forward trace are orange-colored and the ones of the backward trace are shown in purple.
- We will go into detail on this in the tutorial “Tracing”.