

## Create a FoodChain-Lab Workflow

Topics

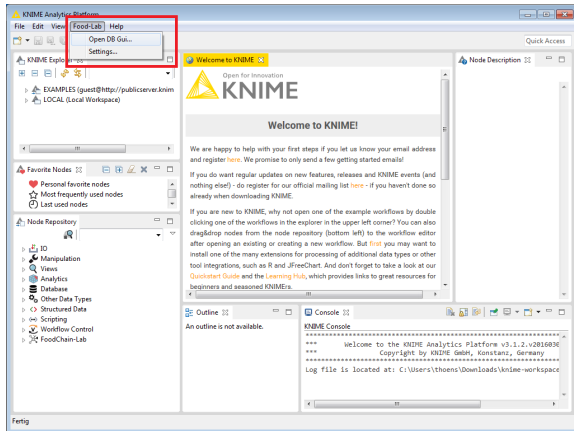
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## Learn

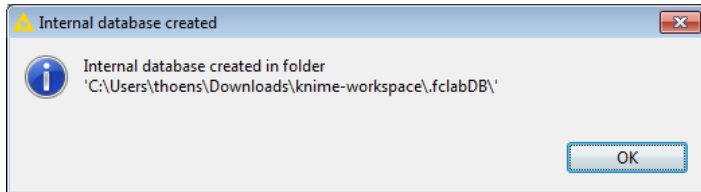
- to import a FoodChain-Lab template.
- to display and configure the delivery network.
- to visualize the backward and forward trace for a station.

Topics

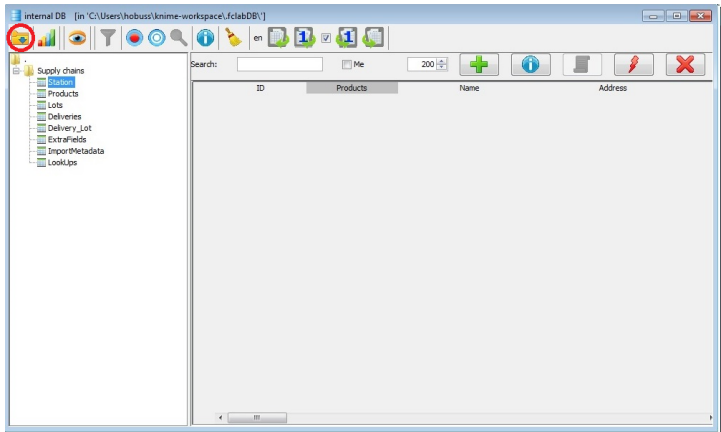
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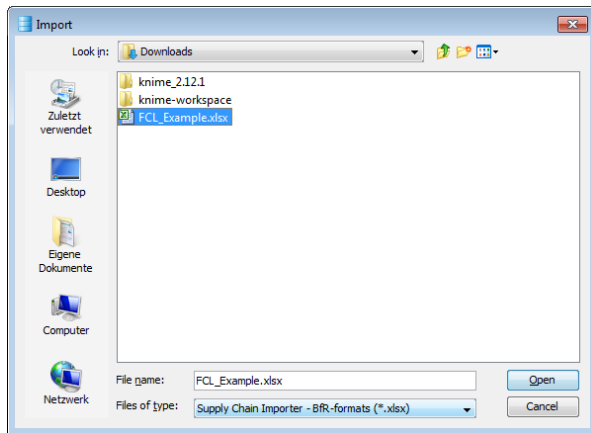
- Select **Food-Lab** and **Open DB Gui...** in the menu bar to open the database interface.



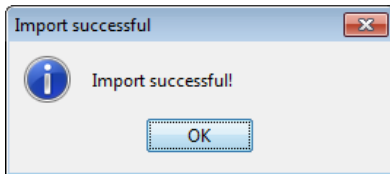
- If you get a message saying the internal database has been created, click **OK**. If not, the database has obviously been created before.



- 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 occurred, there is no such dialog and you can click **OK**.

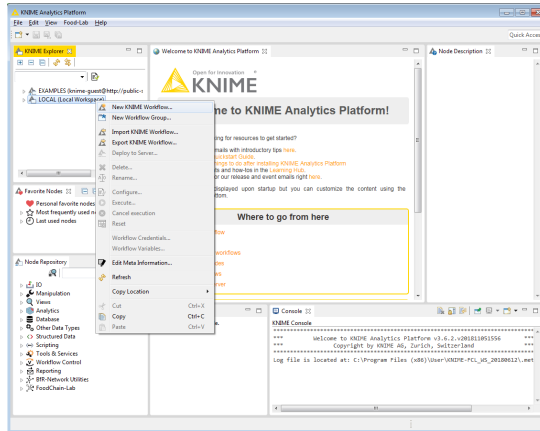
internal DB [in 'C:\Users\hobuss\kname-workspace\fcLabDB\']

Search:  Me 50

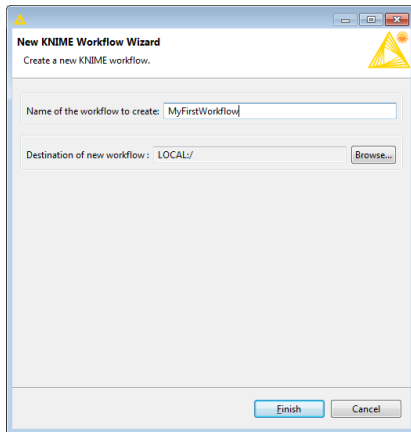
ID	Products	Name	Address	DE
1 -2139992092		Station 254	Hanover	DE
2 -2136551991	? Chicken	Station 10	Bordeaux	FR
3 -2114414515	? Chicken	Station 341	Nancy	FR
4 -2107634175	? Pork	Station 145	Zory	PL
5 -2106022994	? Chicken	Station 265	Besancon	FR
6 -2104881253	? Chicken ? Pizza	Station 260	Tours	FR
7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

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

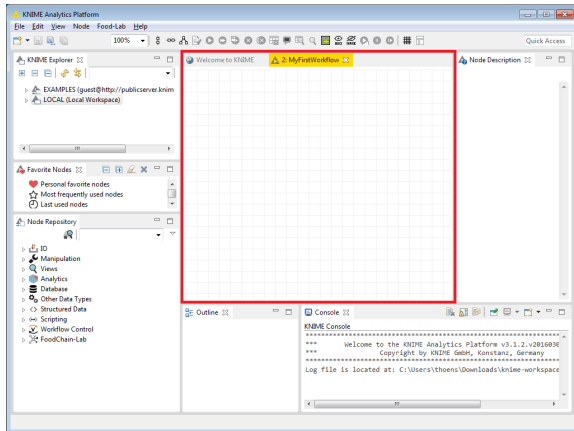




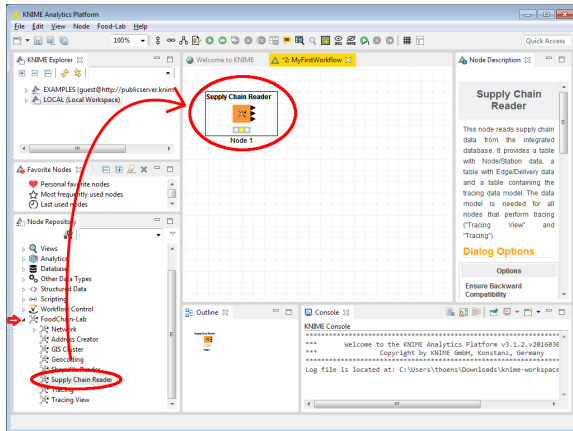
- Now we want to create a workflow, that uses the imported data.
- Right click on **LOCAL** in the **KNIME Explorer** and select **New KNIME Workflow...**



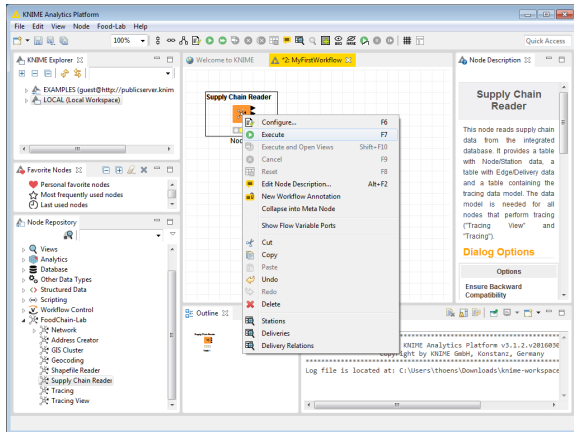
- In the dialog you need to give the workflow a name. How about “MyFirstWorkflow”?
- Click **Finish**.



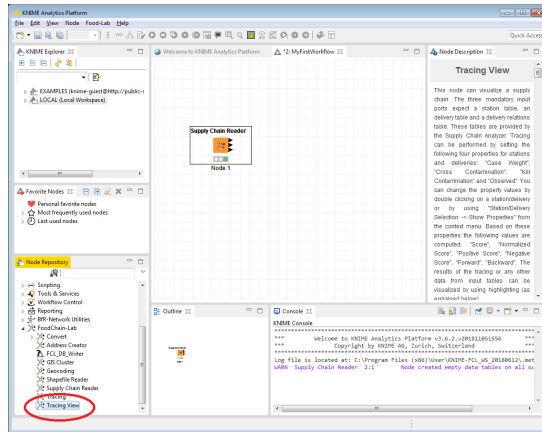
- The created empty workflow will be shown in the editor in the center. Here you can add nodes to build your workflow.



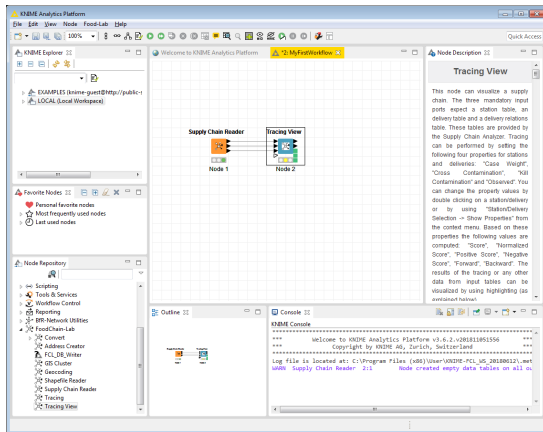
- Now we need FoodChain-Lab nodes. You can find them in the **Node Repository** on the left. Click on the small arrow on the left of “FoodChain-Lab” to show all FoodChain-Lab nodes.
- Drag the **Supply Chain Reader** from the **Node Repository** into your empty workflow.



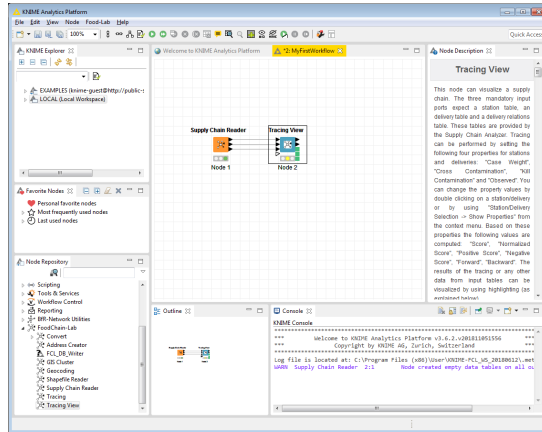
- We do not need to configure the **Supply Chain Reader**.
- Right click on it and select **Execute**.



- 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**.

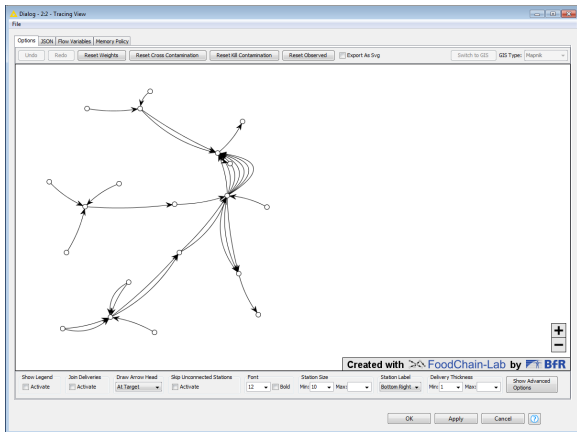


- The **Tracing View** node should show up in the workflow and its three input ports should be automatically connected to the **Supply Chain Reader**. This is the fastest way to attach one node to another.

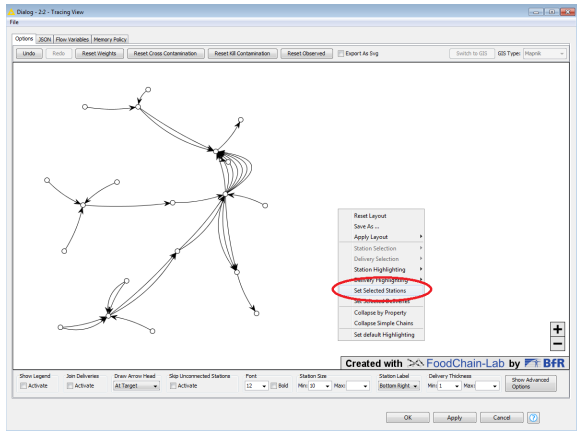


- Another option would be to drag the **Tracing View** node from the **Node Repository** into the editor. Then left click on the upper output port of the **Supply Chain Reader** (black arrow), keep pressing the left mouse button and drag a line to the first input port of the **Tracing View** (black arrow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

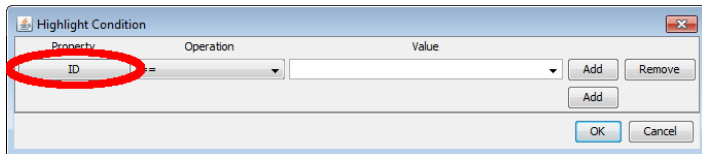




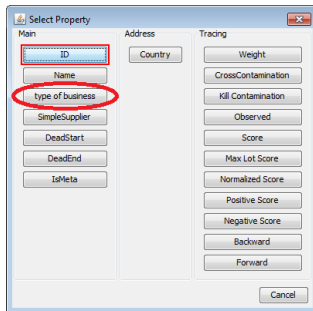
- Double click on the **Tracing View** node to configure it.
- You can see a network of stations (circles) and deliveries (arrows).
- In this network of a fictitious foodborne disease outbreak a contaminated product could be found in three supermarkets. We want to mark them as outbreak stations.



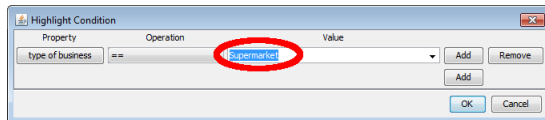
- To do so, right click somewhere into the empty space and choose **Set Selected Stations**.



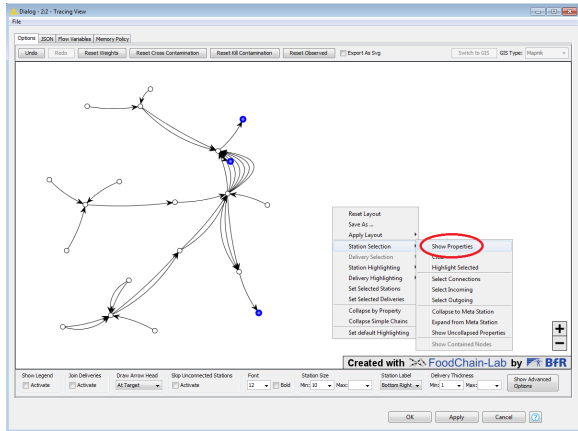
- In this dialog you can specify which stations should be selected.
- Press the button in the red circle to set the **Property**.



- 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**.

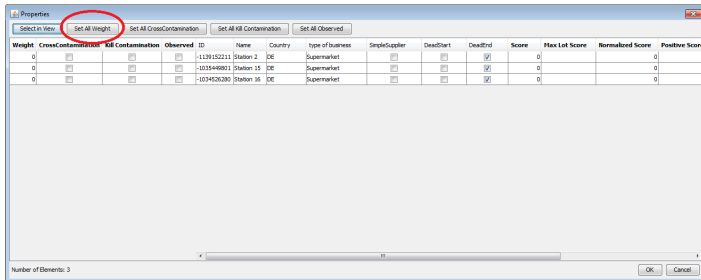


- Now, three stations are selected (blue circles).
- Right click somewhere into the empty space and choose **Station Selection** and **Show Properties**.

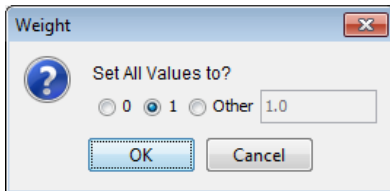
Note: If you accidentally click with the left mouse button, you deselect all selected stations. Please go one step back to select the three supermarkets again.

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- 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**.



Properties

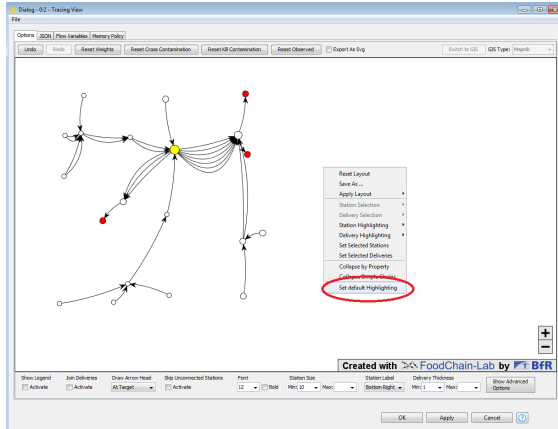
Select in View Set All Weight Set All Cross Contamination Set All Kill Contamination Set All Observed

Weight	Cross Contamination	Kill Contamination	Observed	ID	Name	Country	type of business	Simple Supplier	DeadStart	DeadEnd	Score	Max Lot Score	Normalized Score	Positive Score
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-1139152211	Station 2	DE	Supermarket	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0.333		0.333	0.
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-103546801	Station 15	DE	Supermarket	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0.333		0.333	0.
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-1034526280	Station 16	DE	Supermarket	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0.333		0.333	0.

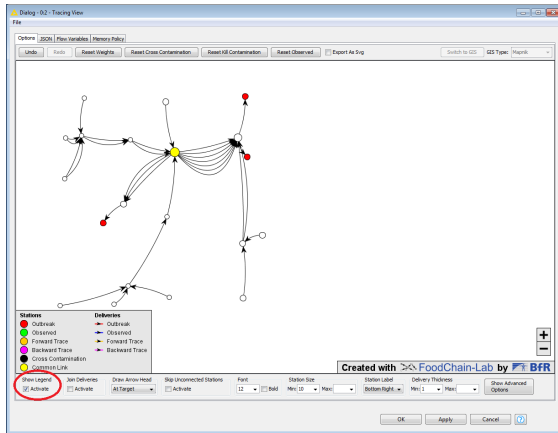
Number of Elements: 3

OK Cancel

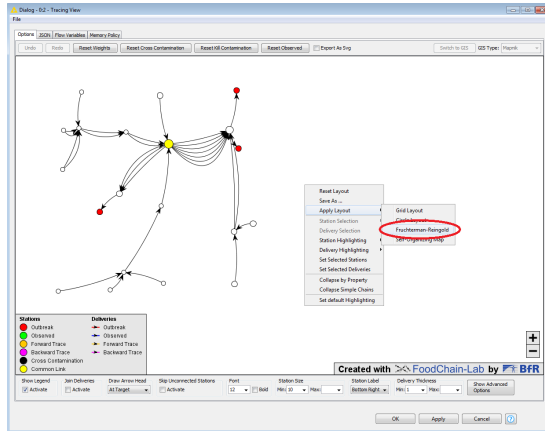
- All three supermarkets have a weight of “1” now.
- Another way to set the weight would be to click directly into one of the cells of the weight column and to type in the weight for each station individually.
- Click **OK**.



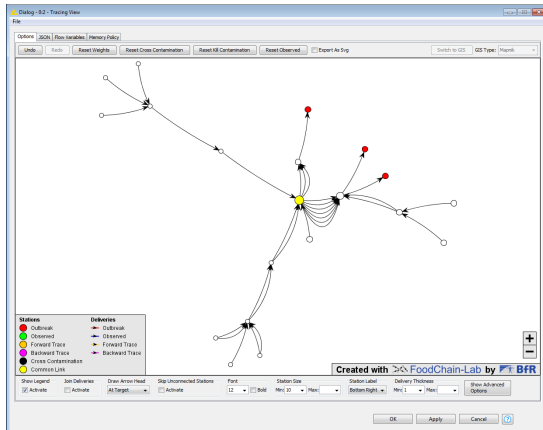
- Left click into the white network area to deselect highlighted stations (and deliveries) and you will see... nothing new.
- To get the image you see above, open the context menu (right click) and click **Set default Highlighting**.



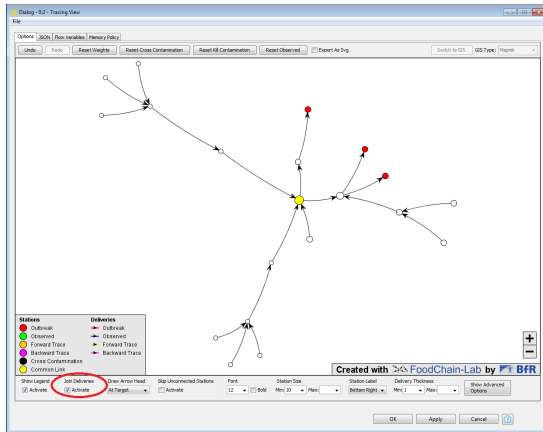
- Tick the box below **Show Legend** to display the legend. Here it is shown what the colours and symbols in the graph mean.
- So, the outbreak stations are red and the common link is yellow. The common link is a station which is connected (via identical ingredient lots or products thereof) with two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

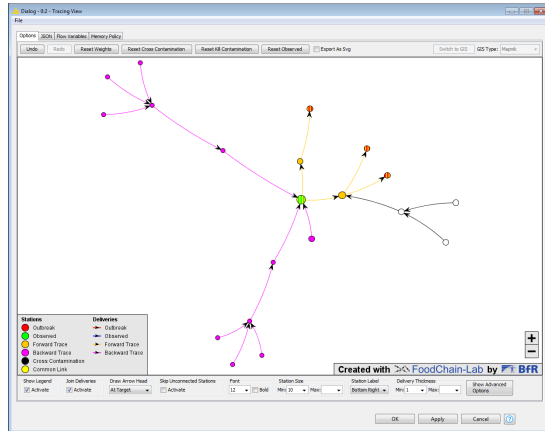


- You can activate **Join Deliveries** to simplify the graph. Deliveries with the same supplier are joined now.
- This option is especially useful in networks with many deliveries.

The image shows a 'Properties' dialog box for a station. It has several sections: 'Input' with radio buttons for '0', '1', and 'Other' (set to 0.0); 'CrossContamination' with an unchecked checkbox; 'Kill Contamination' with an unchecked checkbox; 'Observed' with a checked checkbox (highlighted by a red circle); 'Tracing' with various score fields (Score: 1.0, Max Lot Score: 0.3333333333333333, Normalized Score: 1.0, Positive Score: 1.0, Negative Score: 0.0, Backward: false, Forward: false); and a bottom section with fields for ID, Name, Country, type of business, SimpleSupplier, DeadStart, DeadEnd, and IsMeta. The 'OK' and 'Cancel' buttons are at the bottom right.

Input	Weight: <input checked="" type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> Other 0.0
CrossContamination:	<input type="checkbox"/>
Kill Contamination:	<input type="checkbox"/>
Observed:	<input checked="" type="checkbox"/>
Tracing	
Score:	1.0
Max Lot Score:	0.3333333333333333
Normalized Score:	1.0
Positive Score:	1.0
Negative Score:	0.0
Backward:	false
Forward:	false
ID:	-1138228690
Name:	Station 3
Country:	DE
type of business:	Supplier
SimpleSupplier:	false
DeadStart:	false
DeadEnd:	false
IsMeta:	

- 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”](#).