



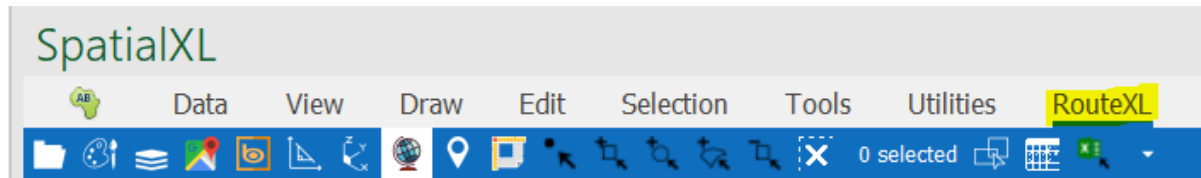
Round Robin in RouteXL

Contents

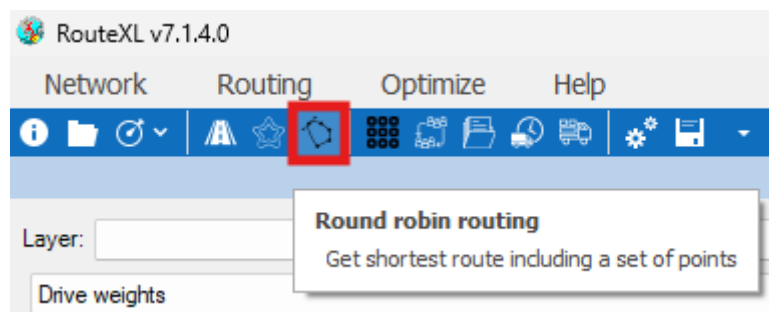
Round Robin in RouteXL	0
RouteXL	1
Round Robin Routing	1
Step 1 – Add points to your map.....	1
Step 2 – Open RouteXL & load the Routing Network File.....	2
Step 3 – Select the points you want to route	2
Step 4 – Setup Route	3
Step 5 – Calculate Weights	4
Step 6 – Optimize Routes.....	5
Step 7 – Working with your Route	6
Step 8 – Creating Additional Routes	7
Step 9 – Saving your Routes	8

RouteXL

RouteXL is an add-in to SpatialXL that allows optimised routing, transportation scheduling and high-speed bulk routing operations.



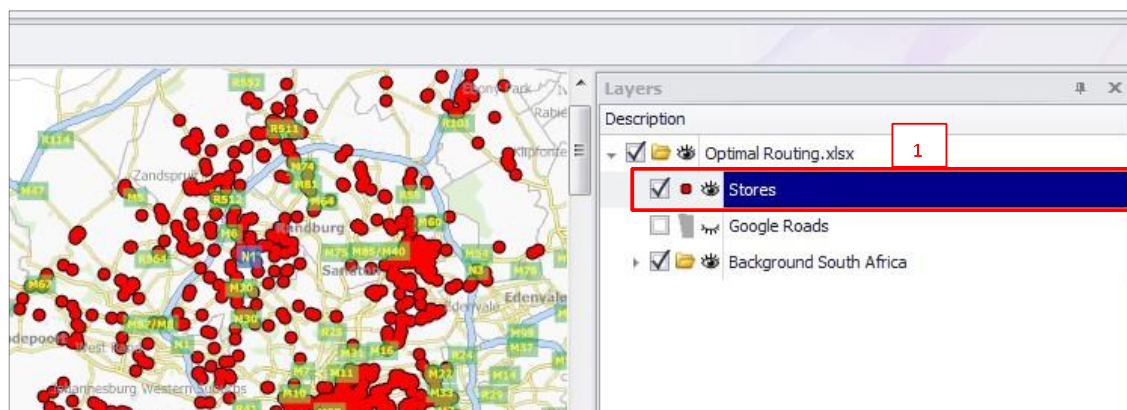
Round Robin Routing



The Round Robin tool will get the best sequence to visit a set of points in, going around and returning back to the original start point. In the following example I will generate an optimized route based on drive time between multiple points.

Step 1 – Add points to your map

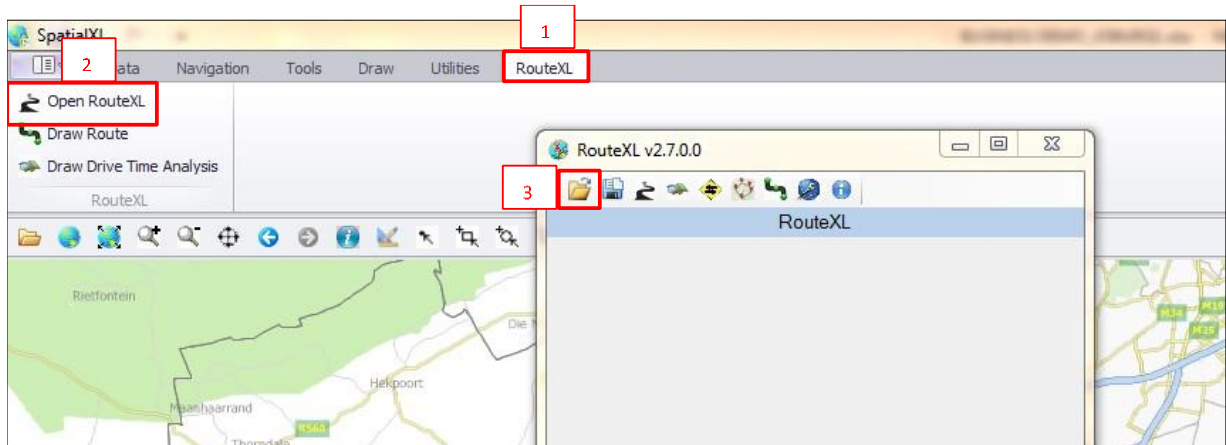
Add the points you want to route to your map. Make sure they are ticked on and displaying on your map (1).



Step 2 – Open RouteXL & load the Routing Network File

Before using RouteXL you have to load the Routing Network file for the country you are working in. To load:

Click the **RouteXL Tab** in your SpatialXL Ribbon (1) and click **‘Open RouteXL’** (2). In the RouteXL Box click the **‘Open’** Button (3).

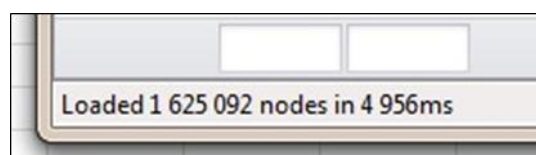


Browse to your RouteXL folder and load your **.routingDB** file:

Example for South Africa:



This will take a few seconds to load. A message will display at the bottom of the box once it has finished loading



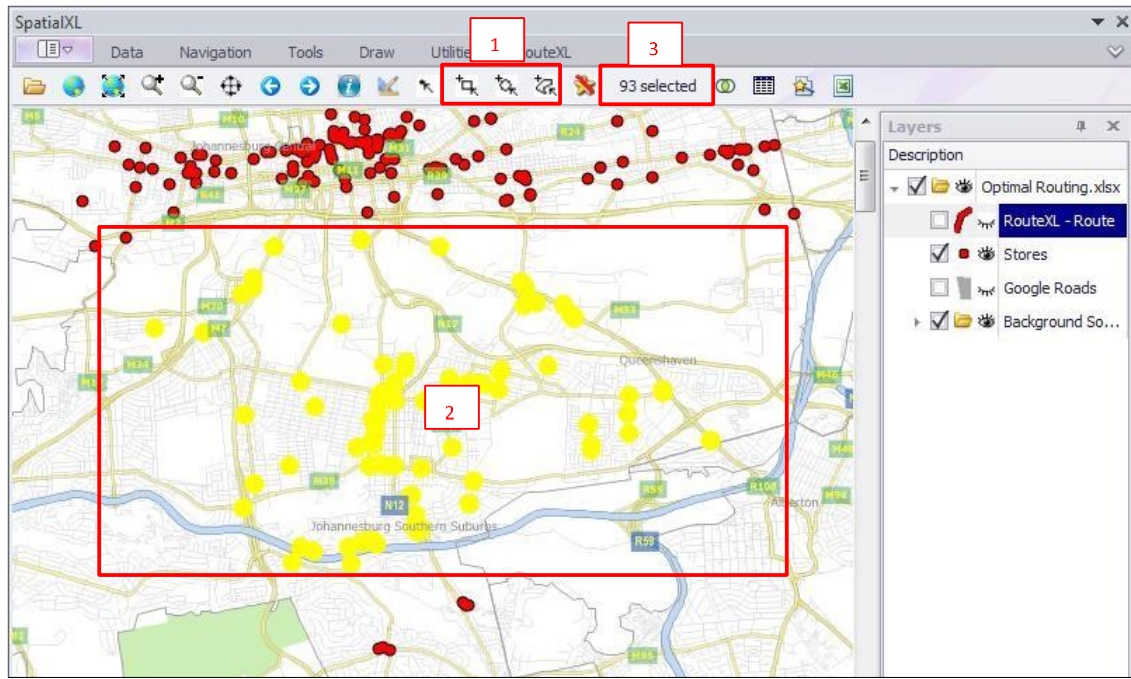
Step 3 – Select the points you want to route

If you are only routing some of the points in your layer, make sure to first use one of the map selection tools (1) to select and highlight the required points on the map (2). If you are routing all the points in your layer at once, you do not need to select them.

Note, small errors may creep in if you route more than 100 points at once. Try to keep the number less than 100.

A count of the total number of points you have selected will display in the SpatialXL Shortcut Ribbon (3).

Note, make sure only your points layer has been selected – if there are other layers ticked on a selectable, these will also be selected and counted



Step 4 – Setup Route

Open RouteXL [Open RouteXL](#)

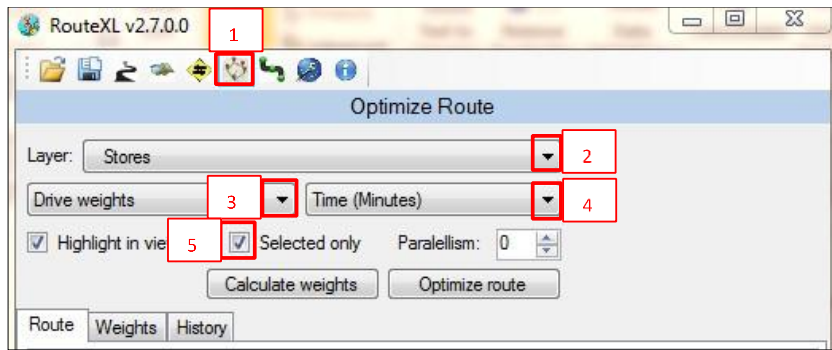
Click the '**Round robin routing**' Button (1) (used to be called '**Optimize Route**').

Select the layer you want to route from the Layer drop down menu (2).

The default weight is set to **Drive Weights** (3). If you want to change to crow fly (straight line) weights, click the dropdown arrow and choose 'Crow's Fly Weights'.

The default route is set to optimize on **Time (Minutes)** (4). If you want to change to optimize on distance, click the dropdown arrow and chose 'Distance (Meters)'.

The selection default is set to **Load Selected Only**. If you are routing all the points in your layer, make sure to tick this off. Otherwise leave it ticked on (5).



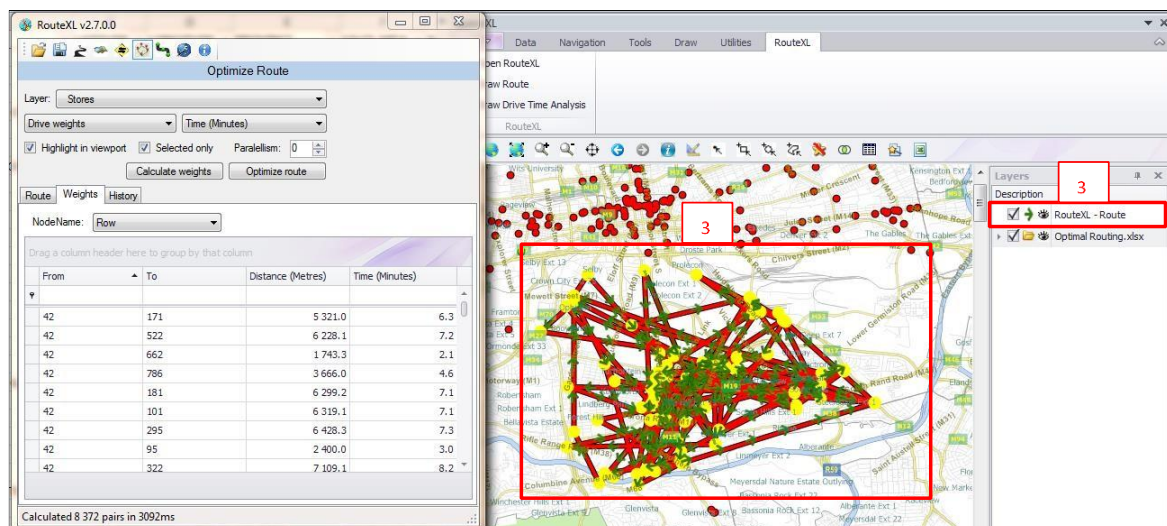
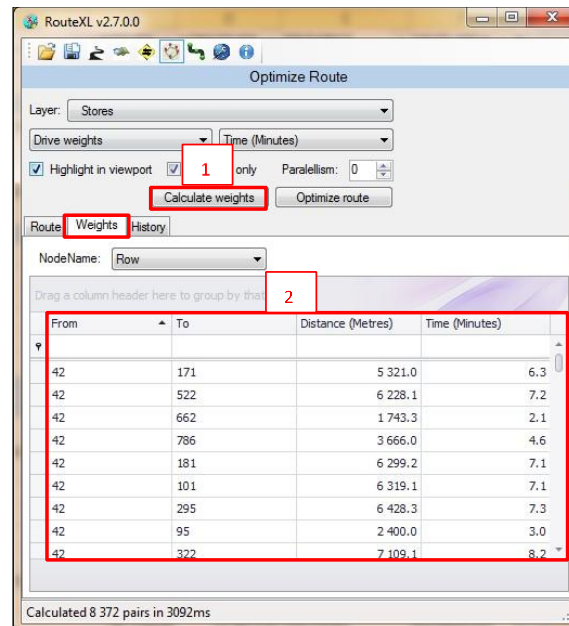
Step 5 – Calculate Weights

To calculate an optimal route, you first need to calculate weights between points:

Click **Calculate Weights (1)**.

The software will take a couple of seconds to calculate the weights.

When it has finished the grid will populate with a grid of weights (2) and a RouteXL – Route layer will add to your map (3).

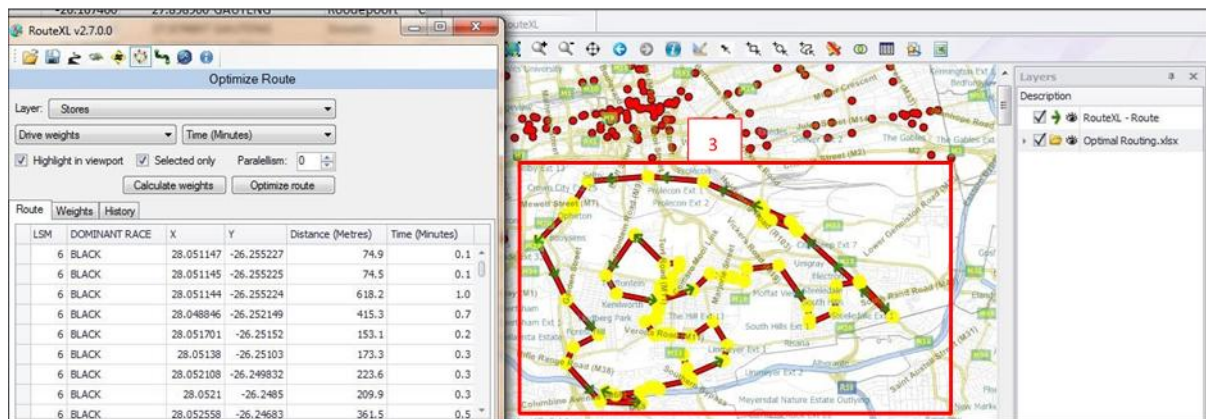
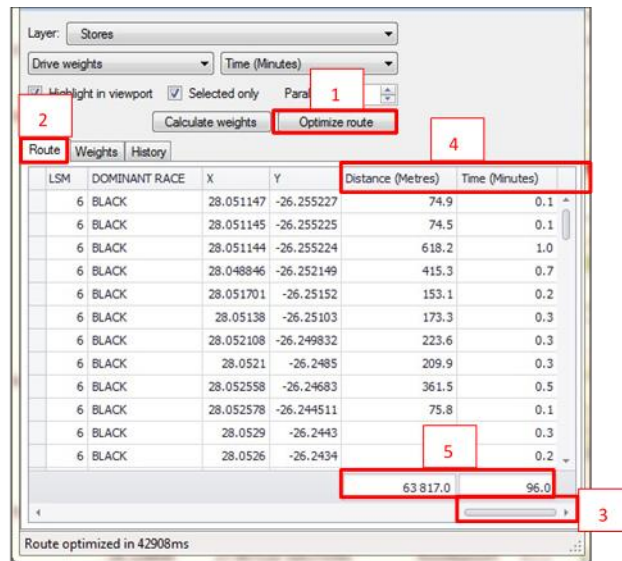


Step 6 – Optimize Routes

You can now create your Optimized Route.

Click **Optimize Route** (1). The software will take a couple of seconds to calculate. When it has finished, the **Route Tab** (2) will populate the points in order and will add distance and time columns.

Scroll to the end of your grid (3) you will see the **Distance (Meters)** and **Time (Minutes)** (4). This gives you the distance and time between each point. A **total Distance (Meters) and Time (Minutes)** is provided at the bottom of the grid (5). **Note**, the map layer will update to show the optimal route as straight lines. However, the distance and time results returned in the grid will be based on the road network, and not straight-line distances.



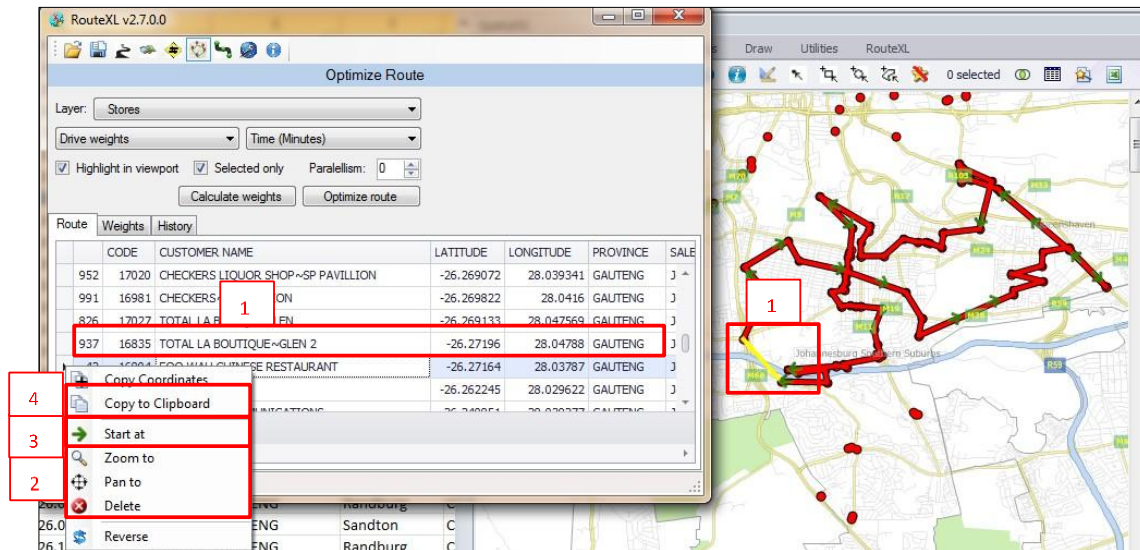
Step 7 – Working with your Route

If you want to highlight any of the route segments on your map, click the row in the grid and the route segment will highlight on the map (1).

You can also right click any row and **Zoom to**, **Pan to** or **Delete** that route segment (2).

You can change the starting point of the route by right clicking the row you want to start the route at, and click **Start At** (3).

To copy your Route to Excel, right click any row in the grid and select **Copy to Clipboard** (4) This will copy all the data in the grid which you can then paste into an excel spreadsheet.



Step 8 – Creating Additional Routes

You can now create other routes as required. Any routes you create will load into the **RouteXL – Route Layer** (1).

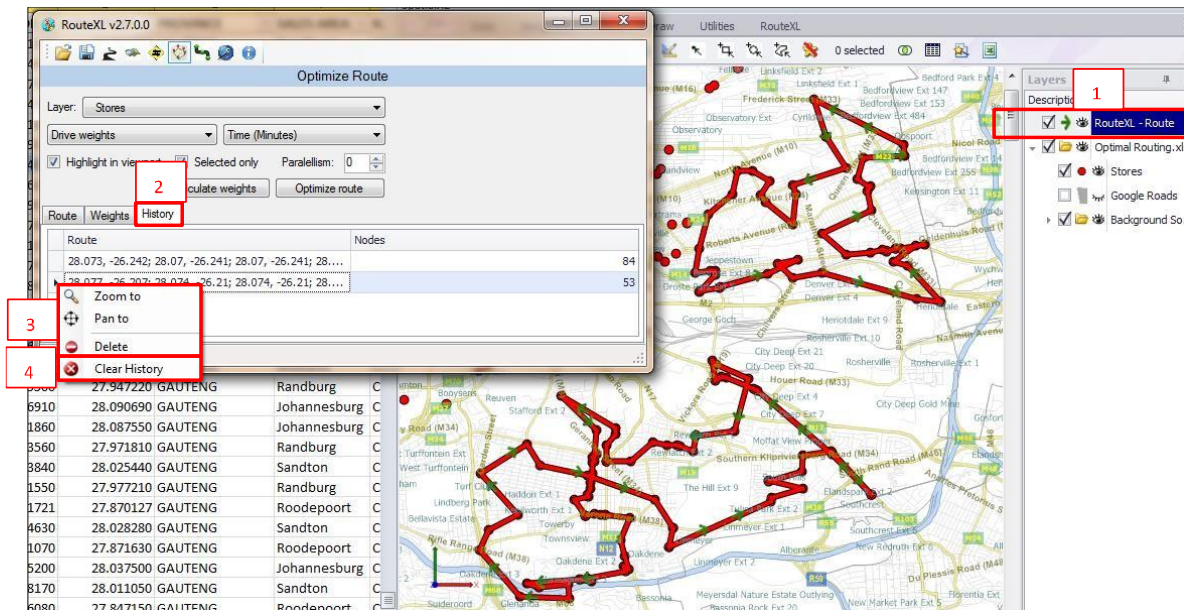
Simply select the new points on your map and repeat Steps 5 & 6. I.e. Click ‘**Calculate Weights**’ and ‘**Optimize Route**’.

The new Route will add to your Grid and your Map layer.

You can manage your Routes under the History Tab (2).

Right click a Route to **Zoom to**, **Pan to** or **Delete** a Route (3).

To remove all Routes, click **Clear History** (4).



Step 9 – Saving your Routes

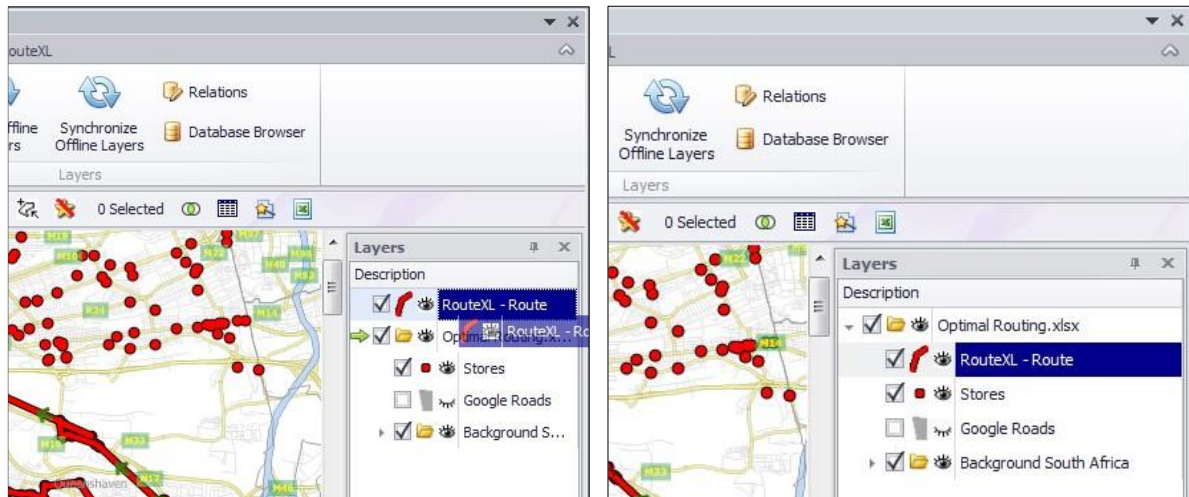
Before closing your workbook, make sure to save the RouteXL – Route Layer **within your workbook**.

To do this, click and hold the left mouse button on your Route Layer in your Layer Description Box, and drag it to the workbook name (yellow folder). Release the left mouse button when you see the green arrow ➡.

This will add your Route layer to your workbook. You can move the layer above or below other layers as required.

Save the table using the normal Excel File>Save. Your Route Layer will save.

To save your Route Layer as a shapefile refer to [“Save to Files”](#) section of the SpatialXL User Guide.



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