



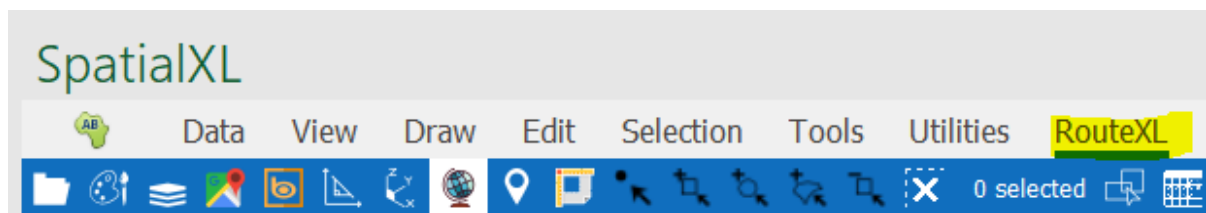
Set to Set Routing in RouteXL

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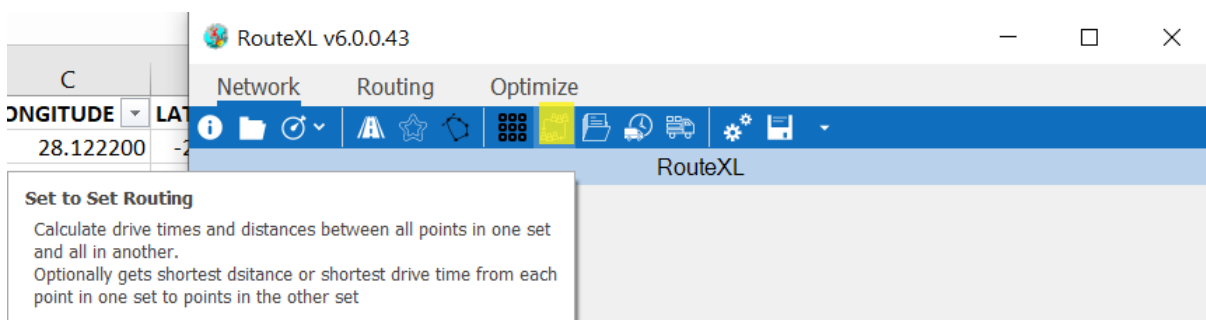
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RouteXL

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



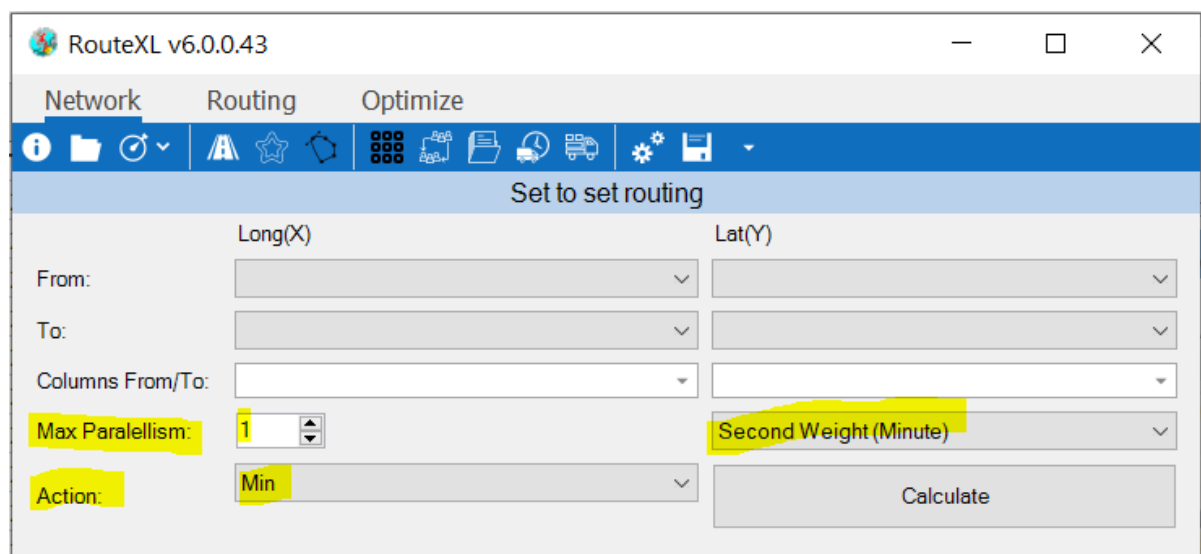
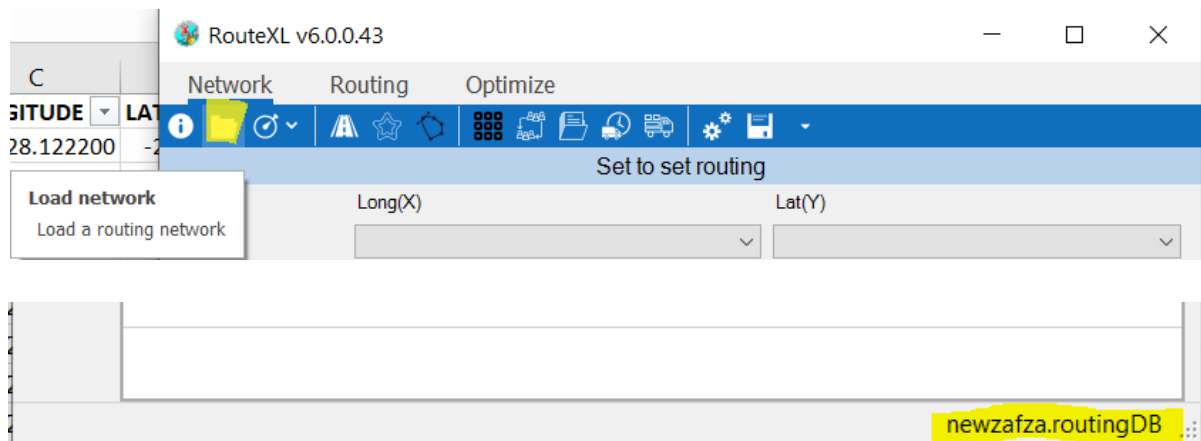
Set to Set Routing



There is a sample Excel file available to download from our website that you can use and follow along with in the steps below: [RouteXL-Sample-Workbook.zip](#)

How to set up your data

Load your Routing Network by browsing to your .routingDB file. Your Routing Network will be displayed in the bottom right corner of your RouteXL window. I loaded **newzafza.routingDB** which is the South African Routing Network.

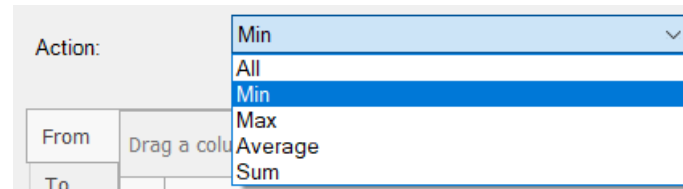


You can either optimize your routing by **First Weight (Meter)** or **Second Weight (Minute)**. I have chosen to optimize by **Second Weight (Minute)** in this example.

Max Parallelism is set at **1** as a default. This is the basic setting for processing your data.

Action is set at **Min** which will calculate the minimum time between the sets of points.

You can dropdown and select other options depending on what output you are looking for.



The screenshot shows a web interface for 'Set to Set Routing'. On the left, there is a table with columns 'From' and 'To'. Above the table is a label 'Action:'. To the right of the table, there is a dropdown menu that is currently open, displaying a list of options: 'Min' (which is highlighted in blue), 'All', 'Min', 'Max', 'Average', and 'Sum'. The text 'Drag a column' is visible between the table and the dropdown menu.

An explanation of what each of the Actions will do follows:

All: This will give times and distances between all the points in the one set and all the points in the other set.

Min: This will *assign* points in one set to points in another set based on the point being the minimum distance or time away from the point in the other set.

Max: This will *assign* points in one set to points in another set based on the point being the maximum distance or time away from the point in the other set.

Average: This will give you the average time and distance between each point in one set and each point in the other set. For example, store “AFRICA SUPER-MARKET” distance to “Depot1” is 93KM and distance to “Depot2” is 56KM, with this option, the average of these distances will populate for this store as 74.8KM.

Sum: This will give you the sum of the time and distance between each point in one set and each point in the other set. For example, store “AFRICA SUPER-MARKET” distance to “Depot1” is 93KM and distance to “Depot2” is 56KM, with this option, the sum of these distances will populate for this store as 149.7KM.

Inputting your data

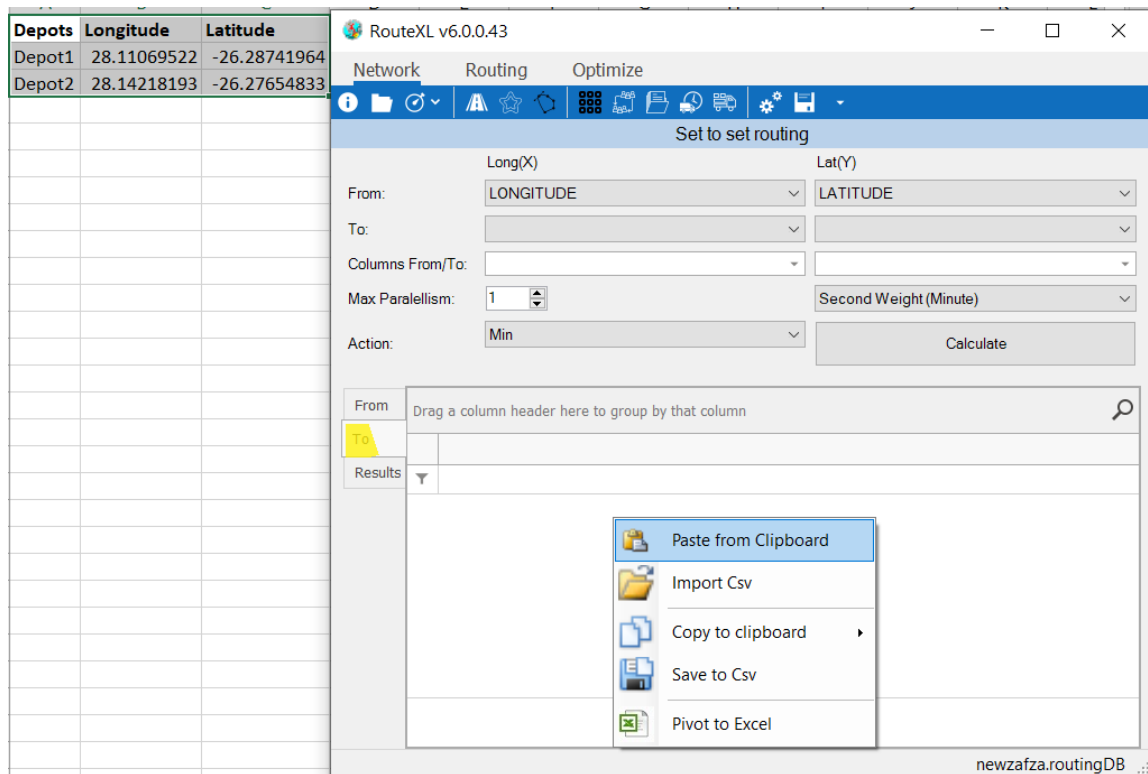
ID	NAME	LONGITUDE	LATITUDE
136	ALBERTON HYPER LIQUOR	28.122200	-26.272800
138	ALBERTON WHOLESALERS	28.122167	-26.270050
139	BP~GROBLER SERVICE STATION	28.122770	-26.276130
140	BP EXPRESS~RANDHART	28.194684	-26.337667
141	BRACKENDOWNS LIQUOR STORE	28.194684	-26.337667
142	CALTEX~HENNICCO SERVICE STATION	28.124850	-26.260540
143	CALTEX~FLORENTIA MOTORS	28.135400	-26.263000
144	CALTEX STARMART~STAR SERVICES	28.112600	-26.340280
145	NUNOS CONVENIENCE STORE	28.115820	-26.264900
146	CHECKERS~ALBERTON CITY	28.112800	-26.254500
148	CALTEX~COYS SERVICE STATION	28.126640	-26.263104
149	DAILY CONVENIENT STORE	28.127100	-26.261400
150	ENGEN QUICK SHOP~BRACKENTEN MOTORS	28.086900	-26.321800
152	ENGEN QUICK SHOP~JACQUELINE SERVICE STATION	28.115767	-26.296617
153	ENGEN QUICK SHOP~KRITZINGER SERVICE STATION	28.147534	-26.264817
154	ENGEN QUICK SHOP~NEW MARKET SERVICE STATION	28.122300	-26.272000
155	ENGEN QUICK SHOP~NEW REDRUTH	28.127140	-26.272440
156	ENGEN QUICK SHOP~VERWOERDPARK SERVICE STATION	28.144480	-26.273980
157	ENGEN QUICK SHOP~VILLAGE MOTORS	28.106320	-26.309980
158	SASOL DELIGHT~MEYERSDAL	28.091434	-26.289217
159	FRIENDLY SUPERMARKET~RETSOS	28.117450	-26.296867
160	HELENS CAFÉ	28.122300	-26.272800
161	HOT SPOT LIQUOR	28.128100	-26.259200
163	KWIKSPAR~MAYBERRY PARK	28.121930	-26.319390
164	LIQUOR CITY BRACKENDOWNS	28.095660	-26.339550
165	LIQUOR VILLAGE	28.120150	-26.268784
166	LOCO LIQUORS	28.107620	-26.309380
167	LIQUOR...	28.120800	-26.265200

Select the **From** tab. Then copy your data from your Excel spreadsheet and **Paste from Clipboard** by right clicking in the white area.

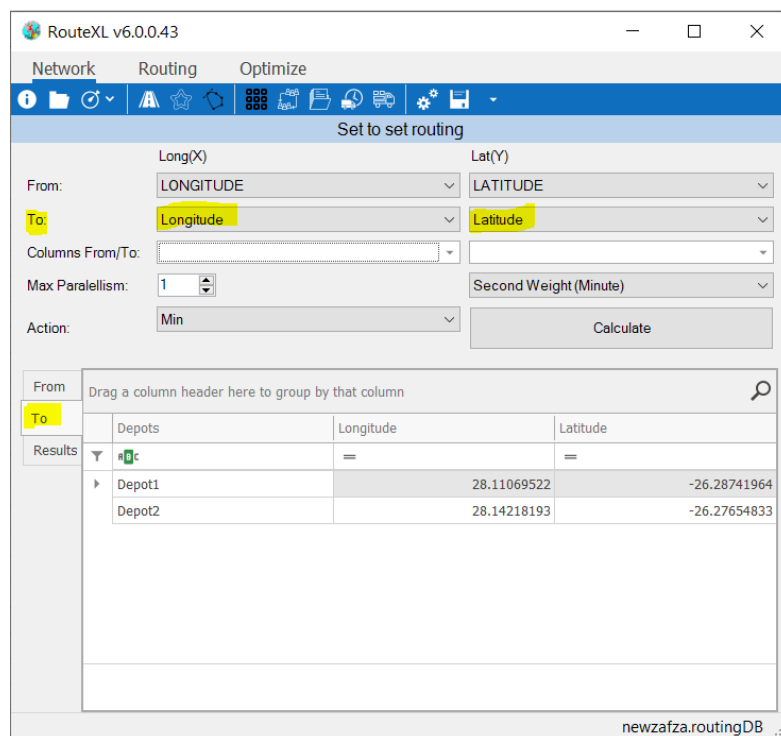
ID	NAME	LONGITUDE	LATITUDE
136	ALBERTON HYPER LIQ...	28.1222	-26.2728
138	ALBERTON WHOESAL...	28.122167	-26.27005
139	BP~GROBLER SERVICE...	28.12277	-26.27613
140	BP EXPRESS~RANDHA...	28.194684	-26.337667
141	BRACKENDOWNS LIQU...	28.194684	-26.337667
142	CALTEX~HENNICCO SE...	28.12485	-26.26054
143	CALTEX~FLORENTIA ...	28.1354	-26.263

From will now be populated with the **Longitude** and **Latitude** from your Excel spreadsheet.

Set to Set Routing User Guide



Select the **To** tab. Then copy your data from your Excel spreadsheet and **Paste from Clipboard** by right clicking in the white area.



To will now be populated with the **Longitude** and **Latitude** from your Excel spreadsheet.

	Long(X)	Lat(Y)
From:	LONGITUDE	LATITUDE
To:	Longitude	Latitude
Columns From/To:	ID	Depots
Max Parallelism:	1	Second Weight (Minute)
Action:	Min	Calculate

Columns From/To are the Unique IDs you choose to do the **Set to Set Routing** exercise. I have selected **ID** from my **From** tab and **Depots** from my **To** tab.

	Long(X)	Lat(Y)
From:	LONGITUDE	LATITUDE
To:	Longitude	Latitude
Columns From/To:	ID	Depots
Max Parallelism:	1	Second Weight (Minute)
Action:	Min	Calculate

Click on **Calculate**.

RouteXL v6.0.0.43

Network Routing Optimize

Set to set routing

	Long(X)	Lat(Y)
From:	LONGITUDE	LATITUDE
To:	Longitude	Latitude
Columns From/To:	ID	Depots
Max Parallelism:	1	Second Weight (Minute)
Action:	Min	Calculate

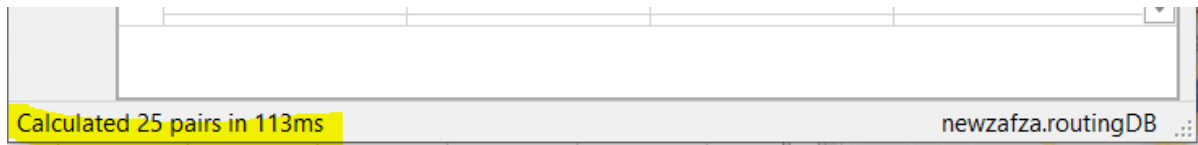
From	Drag a column header here to group by that column			
To	ID	Depots	First Weight	Second Weight
Results	=	Depots	=	=
	136	Depot1	2749.8896484375	3.33400011062622
	138	Depot1	3159.71997070313	3.83200001716614
	139	Depot1	2723.69970703125	3.3050000667572
	140	Depot2	12585.3193359375	12.028000831604
	141	Depot2	12585.3193359375	12.028000831604
	142	Depot2	2968.13940429688	4.89200019836426
	143	Depot2	2048.71997070313	3.35399961471558

Calculated 25 pairs in 113ms

newzafza.routingDB

Your **Results** tab will now be populated.

Understanding your data

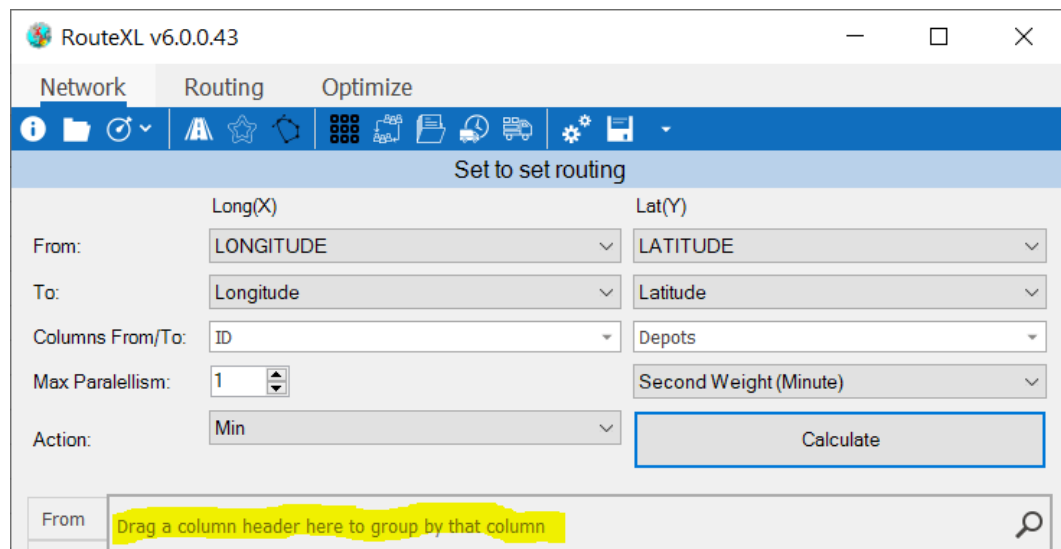


Calculated 25 pairs in 113ms means it matched up 25 points from your Excel spreadsheet (**From** tab) to the appropriate **Depots** in your **To** tab in terms of minimum time. This calculation took 113 milliseconds.

From	Drag a column header here to group by that column				
To					
Results	ID	Depots	First Weight	Second Weight	
	=	A B C	=	=	
	136	Depot1	2749.8896484375	3.33400011062622	
	138	Depot1	3159.71997070313	3.83200001716614	
	139	Depot1	2723.69970703125	3.3050000667572	
	140	Depot2	12585.3193359375	12.028000831604	
	141	Depot2	12585.3193359375	12.028000831604	
	142	Depot2	2968.13940429688	4.89200019836426	
	143	Depot2	2048.71997070313	3.35399961471558	

First Weight and **Second Weight** are also populated here. You can see that your points (**ID**) are matched up with the appropriate **Depots** in terms of minimum time.

Set to Set Routing User Guide



RouteXL v6.0.0.43

Network Routing Optimize

Set to set routing

From: Long(X) LONGITUDE Lat(Y) LATITUDE

To: Longitude Latitude

Columns From/To: ID Depots

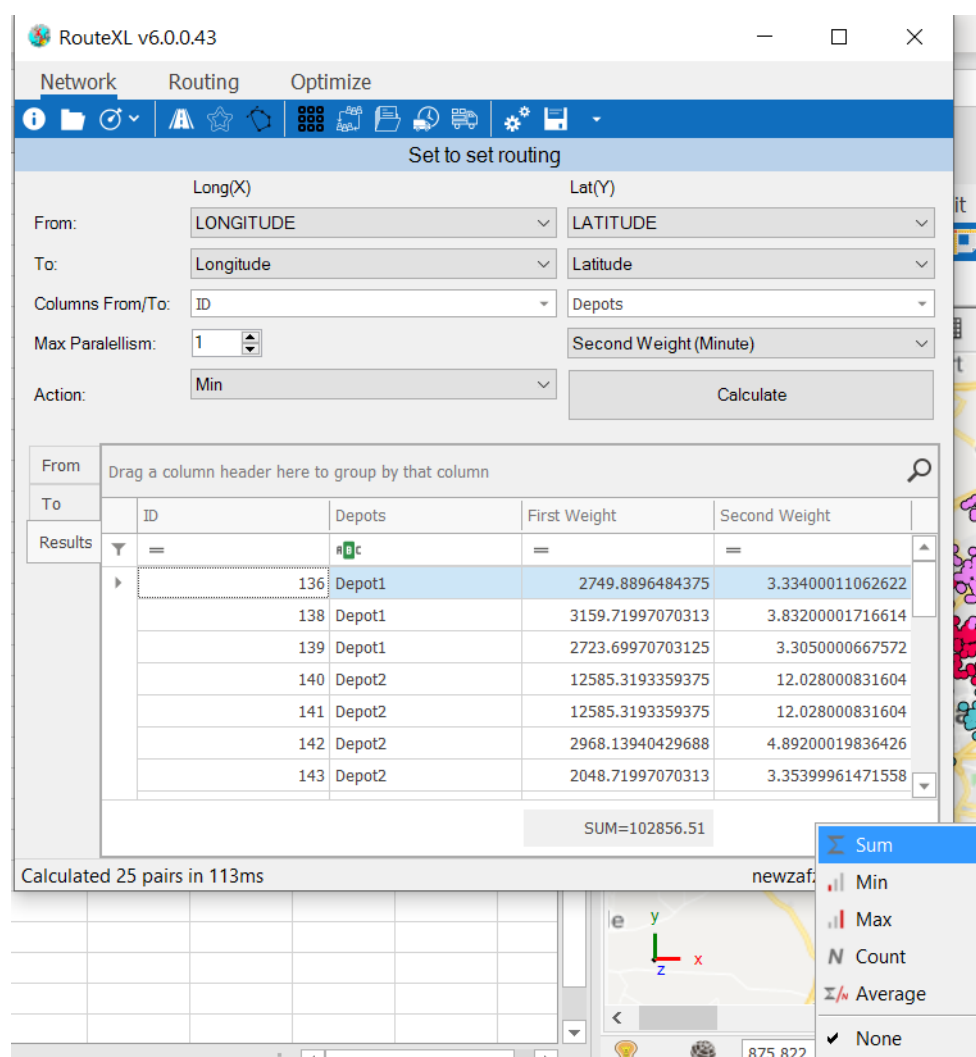
Max Parallelism: 1

Action: Min

Calculate

From: Drag a column header here to group by that column

You can also group your data by column headings by dragging your heading/s as above.



RouteXL v6.0.0.43

Network Routing Optimize

Set to set routing

From: Long(X) LONGITUDE Lat(Y) LATITUDE

To: Longitude Latitude

Columns From/To: ID Depots

Max Parallelism: 1

Action: Min

Calculate

From: Drag a column header here to group by that column

To: ID Depots First Weight Second Weight

Results

	ID	Depots	First Weight	Second Weight
▶	136	Depot1	2749.8896484375	3.33400011062622
	138	Depot1	3159.71997070313	3.83200001716614
	139	Depot1	2723.69970703125	3.3050000667572
	140	Depot2	12585.3193359375	12.028000831604
	141	Depot2	12585.3193359375	12.028000831604
	142	Depot2	2968.13940429688	4.89200019836426
	143	Depot2	2048.71997070313	3.35399961471558

SUM=102856.51

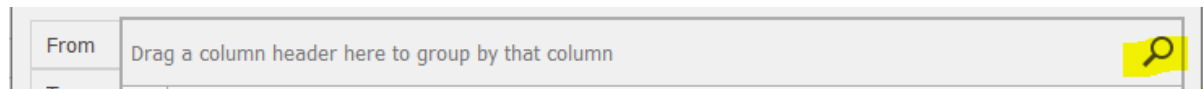
Calculated 25 pairs in 113ms

newzaf

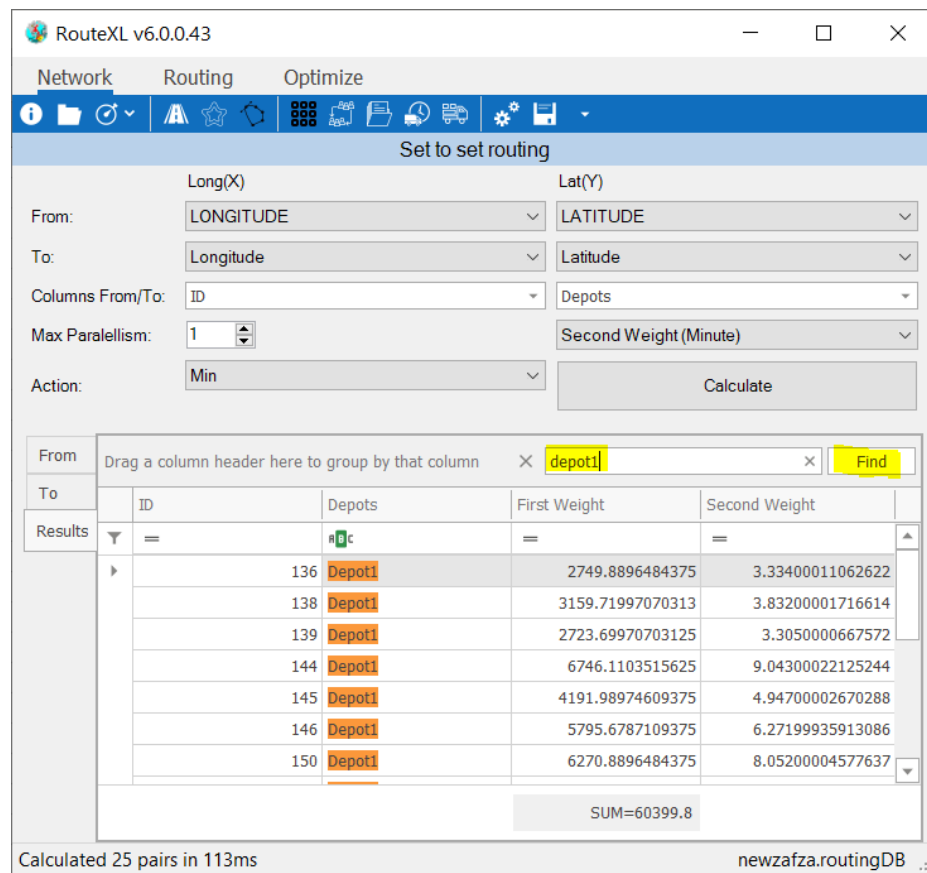
875 822

Sum
Min
Max
Count
Average
None

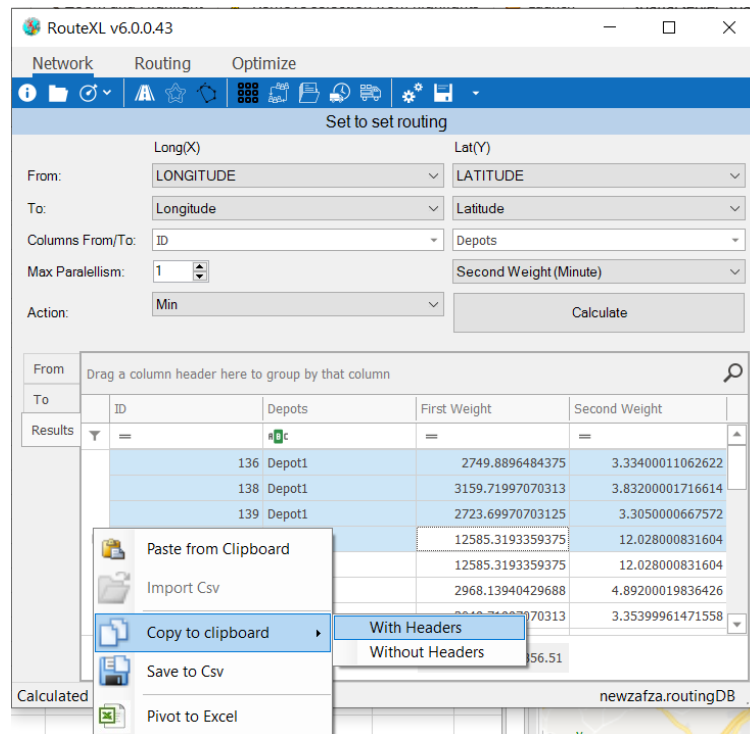
A **Sum** etc. of your columns can be gotten by right clicking the white area and selecting the appropriate option.



Click on the magnifying glass symbol.



If you want to find a specific name etc. in your data, just type it in as above. Click **Find** if necessary – It automatically finds the data just by typing it in but **Find** is an option as well.



Your data can be saved, copied out, and pivoted to Excel for further analysis. Select your data as above then right click and choose the appropriate option.

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