



Matrix Routing in RouteXL

Contents

Matrix Routing in RouteXL..... 1

RouteXL 1

Matrix Routing2

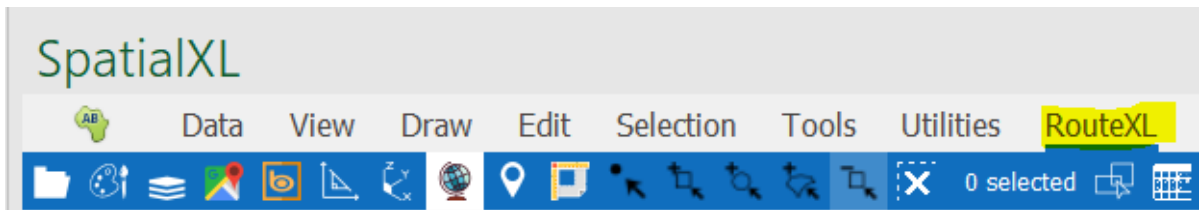
How to set up your data2

Inputting your data3

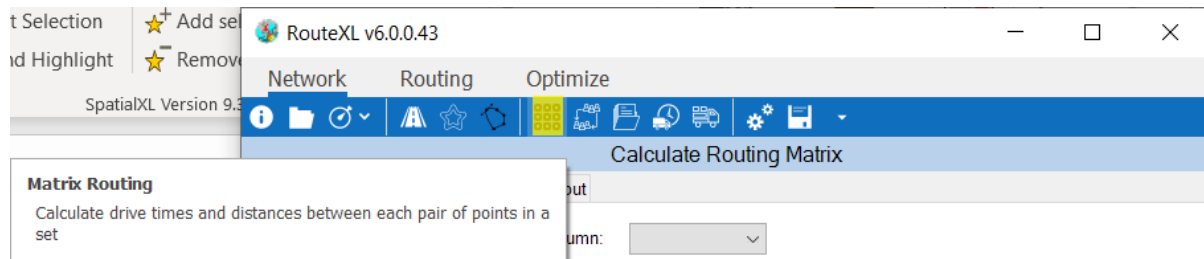
Understanding your data6

RouteXL

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

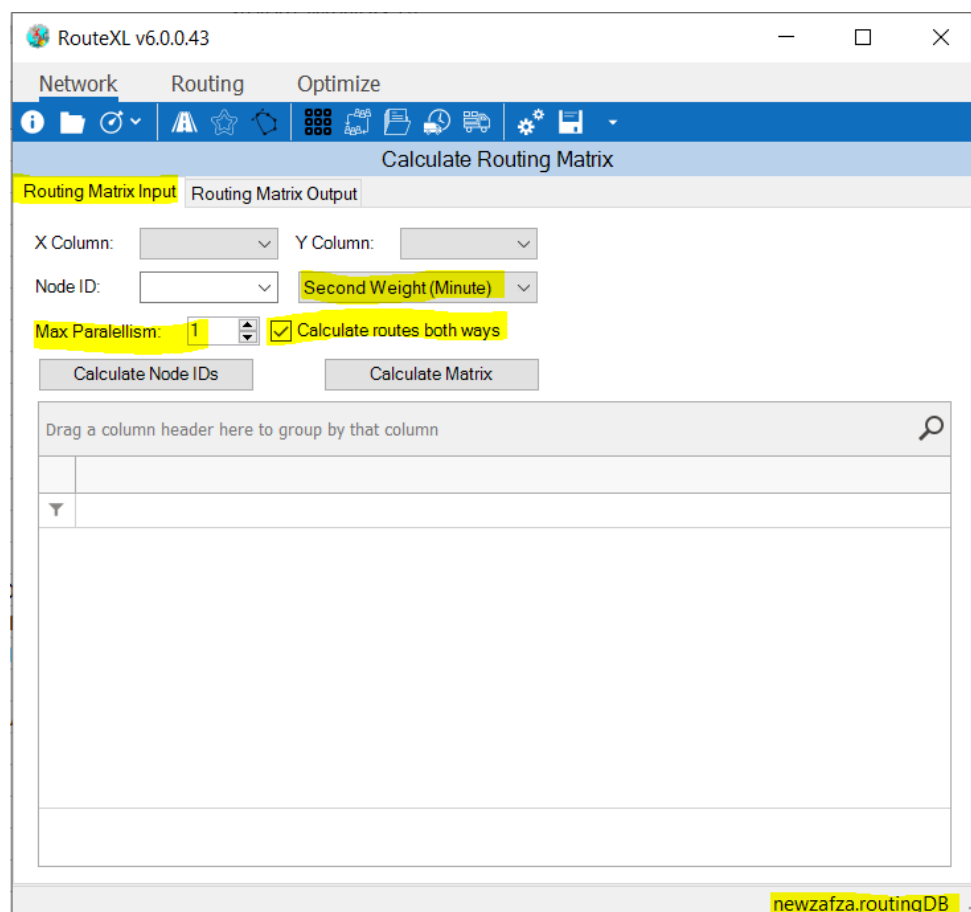


Matrix Routing



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 choose to optimize by **First Weight (Meter)** or **Second Weight (Minute)**. I have chosen the latter in this example.

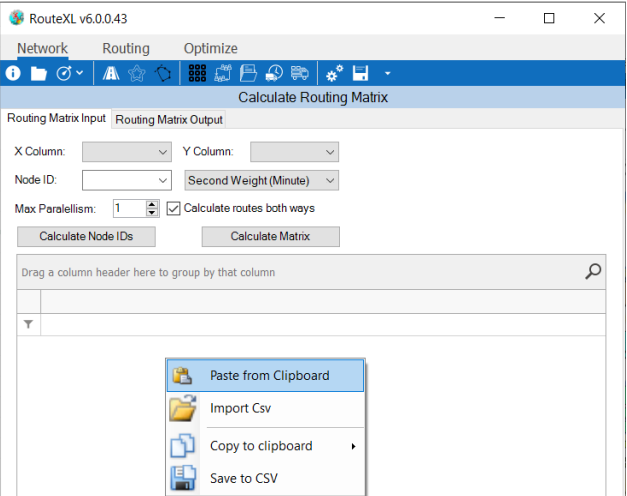
If you want to calculate the matrix both ways tick on **Calculate routes both ways**.

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

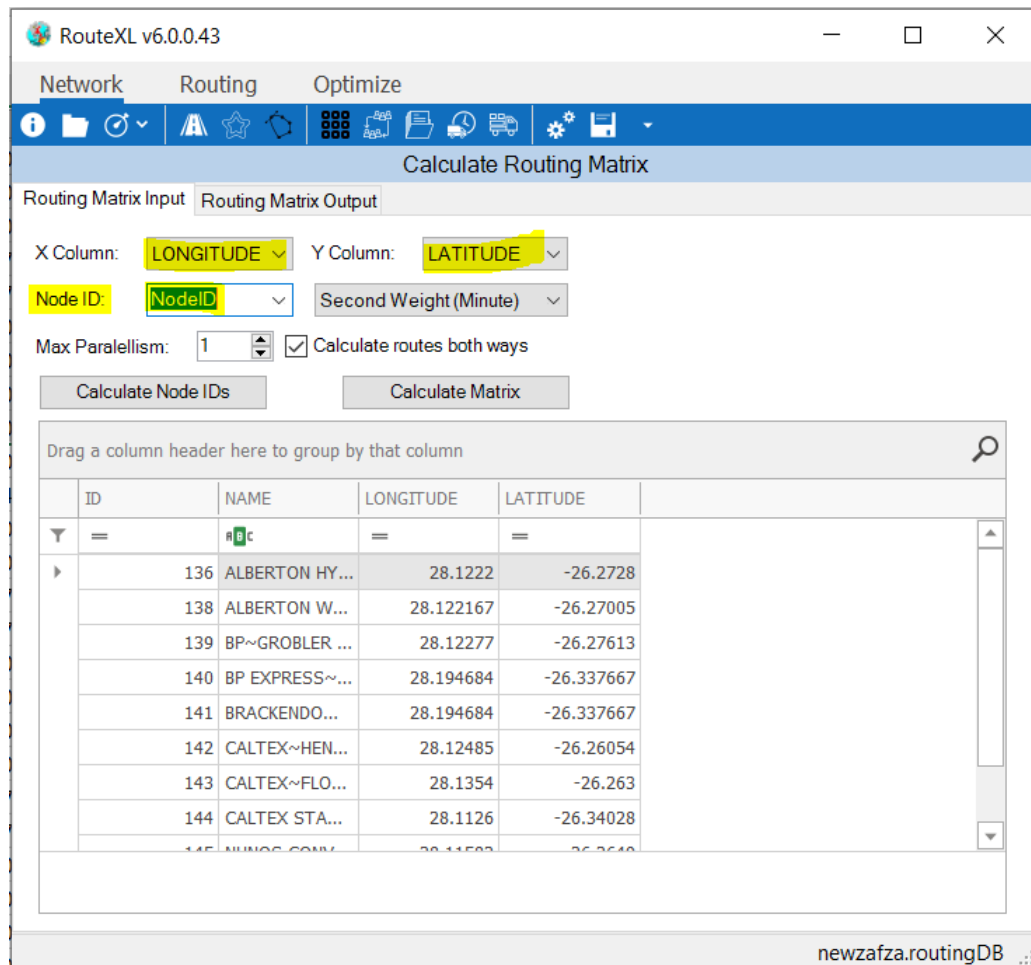
Inputting your data

Copy your data from your Excel spreadsheet and paste it into your RouteXL window. Right click in your RouteXL window and select **Paste from Clipboard**.

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~HENNICO 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



Matrix Routing User Guide



RouteXL v6.0.0.43

Network Routing Optimize

Calculate Routing Matrix

Routing Matrix Input Routing Matrix Output

X Column: LONGITUDE Y Column: LATITUDE

Node ID: NodeID Second Weight (Minute)

Max Parallelism: 1 ☒ Calculate routes both ways

Calculate Node IDs Calculate Matrix

Drag a column header here to group by that column

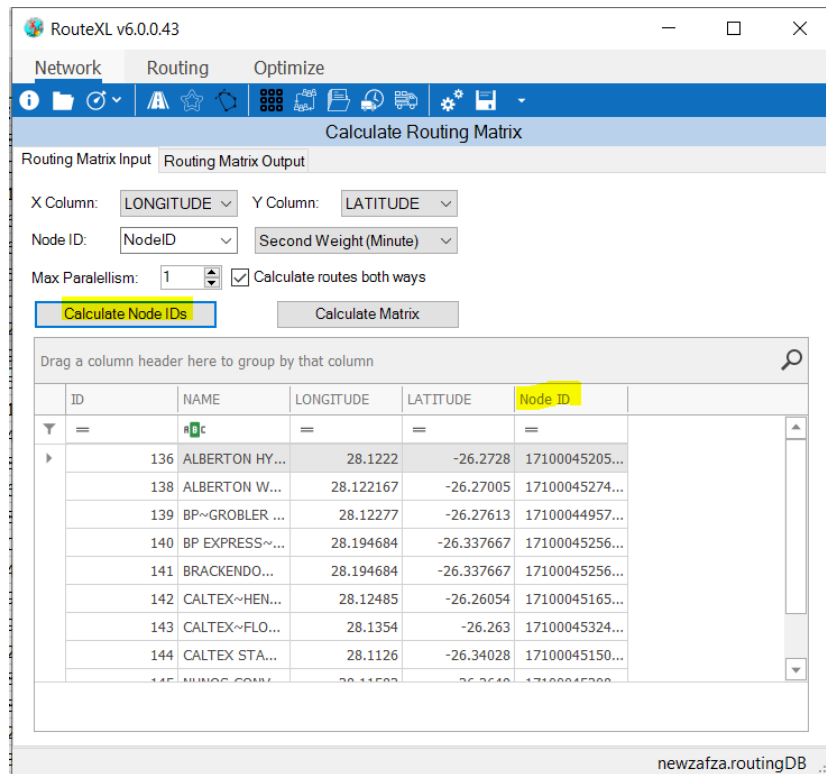
ID	NAME	LONGITUDE	LATITUDE
136	ALBERTON HY...	28.1222	-26.2728
138	ALBERTON W...	28.122167	-26.27005
139	BP~GROBLER ...	28.12277	-26.27613
140	BP EXPRESS~...	28.194684	-26.337667
141	BRACKENDO...	28.194684	-26.337667
142	CALTEX~HEN...	28.12485	-26.26054
143	CALTEX~FLO...	28.1354	-26.263
144	CALTEX STA...	28.1126	-26.34028

newzafza.routingDB

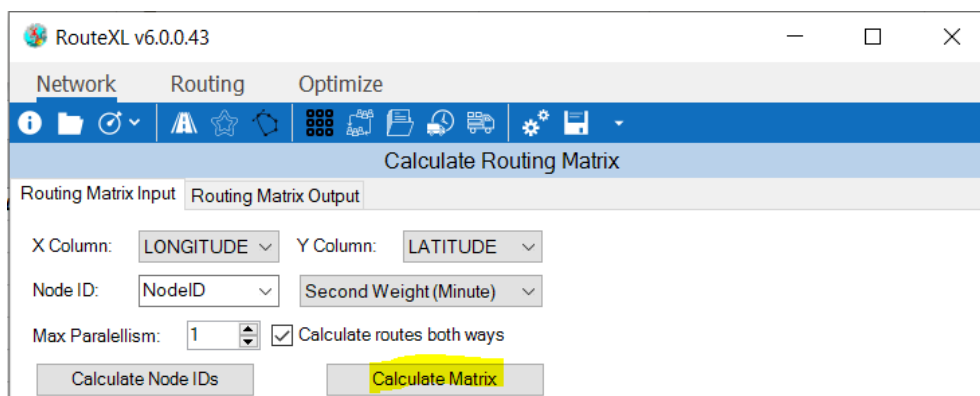
The **X** and **Y Columns** will automatically populate with your **Longitude** and **Latitude** from your Excel spreadsheet.

Node ID is automatically populated with a field called **NodeID**.

Matrix Routing User Guide

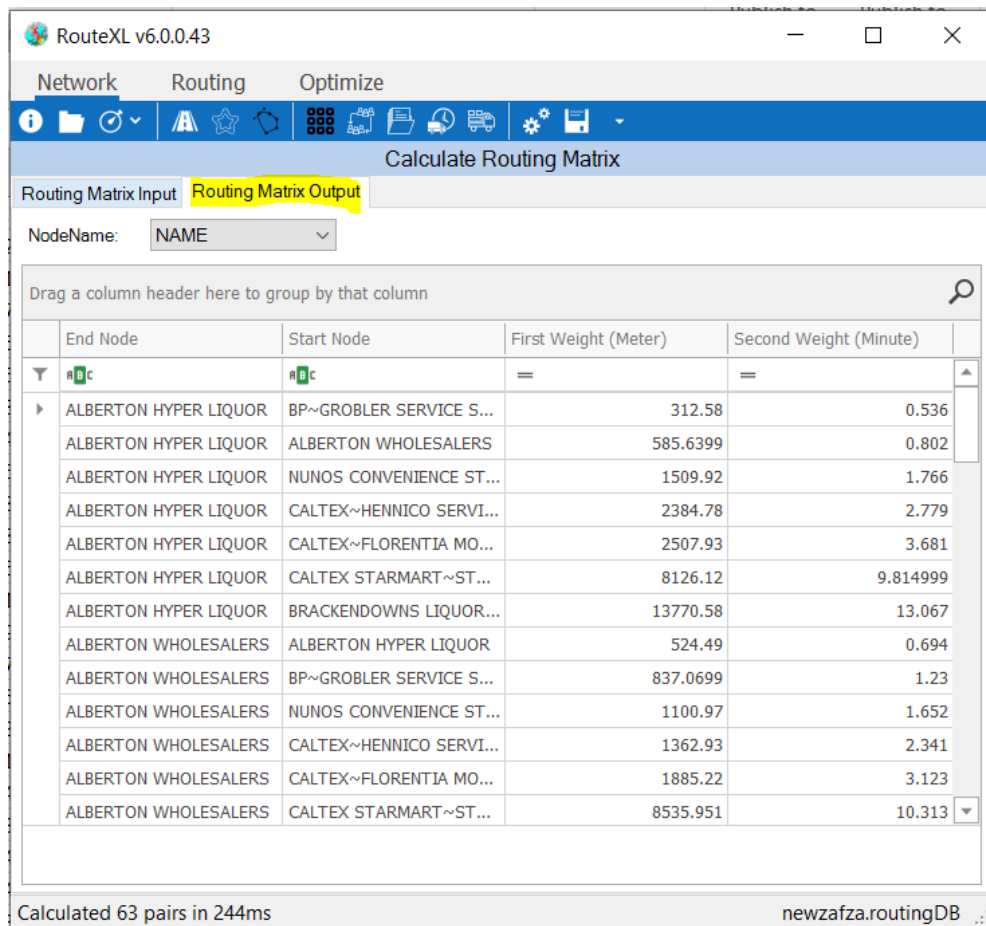


Click on **Calculate Node IDs**. A column **Node ID** is now populated.



Click on **Calculate Matrix**.

Matrix Routing User Guide



RouteXL v6.0.0.43

Network Routing Optimize

Calculate Routing Matrix

Routing Matrix Input Routing Matrix Output

NodeName: NAME

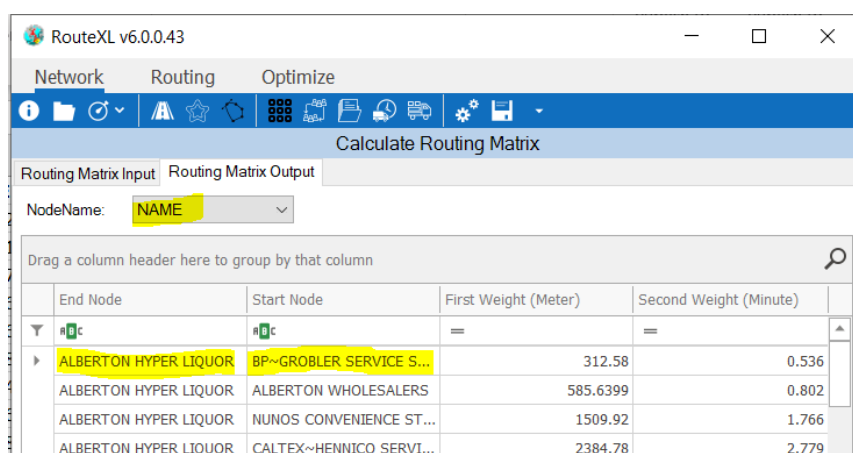
Drag a column header here to group by that column

	End Node	Start Node	First Weight (Meter)	Second Weight (Minute)
▼	BP	BP	=	=
▶	ALBERTON HYPER LIQUOR	BP~GROBLER SERVICE S...	312.58	0.536
	ALBERTON HYPER LIQUOR	ALBERTON WHOLESALERS	585.6399	0.802
	ALBERTON HYPER LIQUOR	NUNOS CONVENIENCE ST...	1509.92	1.766
	ALBERTON HYPER LIQUOR	CALTEX~HENNICO SERVI...	2384.78	2.779
	ALBERTON HYPER LIQUOR	CALTEX~FLORENTIA MO...	2507.93	3.681
	ALBERTON HYPER LIQUOR	CALTEX STARMART~ST...	8126.12	9.814999
	ALBERTON HYPER LIQUOR	BRACKENDOWNS LIQUOR...	13770.58	13.067
	ALBERTON WHOLESALERS	ALBERTON HYPER LIQUOR	524.49	0.694
	ALBERTON WHOLESALERS	BP~GROBLER SERVICE S...	837.0699	1.23
	ALBERTON WHOLESALERS	NUNOS CONVENIENCE ST...	1100.97	1.652
	ALBERTON WHOLESALERS	CALTEX~HENNICO SERVI...	1362.93	2.341
	ALBERTON WHOLESALERS	CALTEX~FLORENTIA MO...	1885.22	3.123
	ALBERTON WHOLESALERS	CALTEX STARMART~ST...	8535.951	10.313

Calculated 63 pairs in 244ms newzafza.routingDB

Your **Routing Matrix Output** tab is automatically navigated to and populated with your results.

Understanding your data



RouteXL v6.0.0.43

Network Routing Optimize

Calculate Routing Matrix

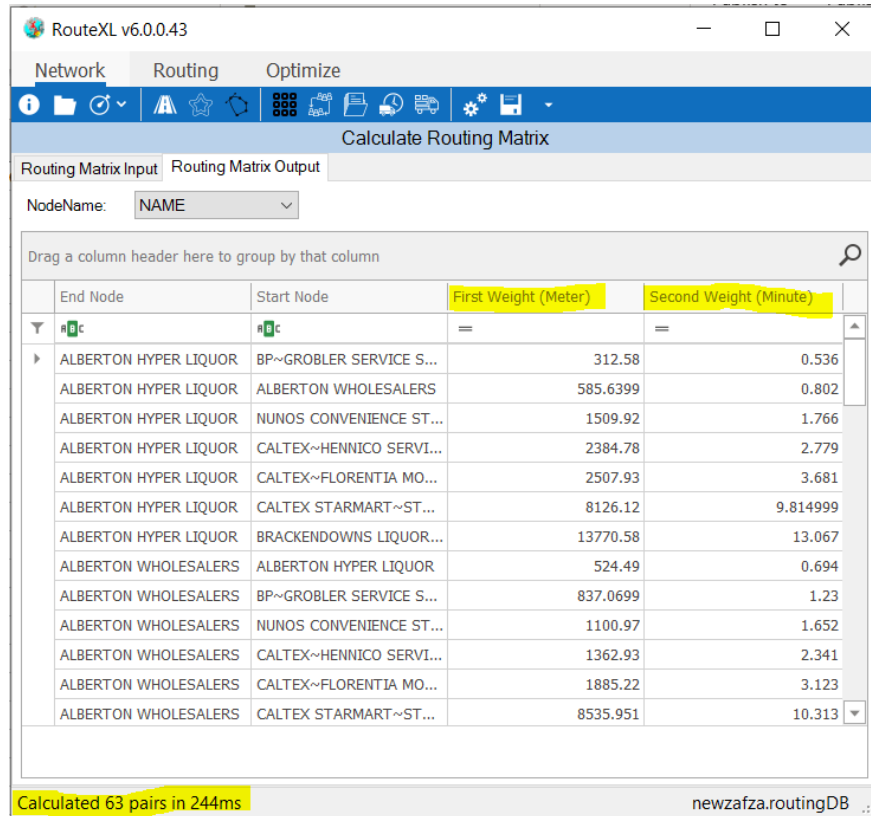
Routing Matrix Input Routing Matrix Output

NodeName: NAME

Drag a column header here to group by that column

	End Node	Start Node	First Weight (Meter)	Second Weight (Minute)
▼	BP	BP	=	=
▶	ALBERTON HYPER LIQUOR	BP~GROBLER SERVICE S...	312.58	0.536
	ALBERTON HYPER LIQUOR	ALBERTON WHOLESALERS	585.6399	0.802
	ALBERTON HYPER LIQUOR	NUNOS CONVENIENCE ST...	1509.92	1.766
	ALBERTON HYPER LIQUOR	CALTEX~HENNICO SERVI...	2384.78	2.779

NodeName here is automatically populated with the **Name** column from your Excel spreadsheet. If you rather want **ID** etc from your Excel spreadsheet to be populated in **Start Node** and **End Node**, then just dropdown and select **ID** etc.



RouteXL v6.0.0.43

Network Routing Optimize

Calculate Routing Matrix

Routing Matrix Input Routing Matrix Output

NodeName: NAME

Drag a column header here to group by that column

	End Node	Start Node	First Weight (Meter)	Second Weight (Minute)
▼	ALBERTON HYPER LIQUOR	BP~GROBLER SERVICE S...	312.58	0.536
	ALBERTON HYPER LIQUOR	ALBERTON WHOLESALERS	585.6399	0.802
	ALBERTON HYPER LIQUOR	NUNOS CONVENIENCE ST...	1509.92	1.766
	ALBERTON HYPER LIQUOR	CALTEX~HENNICO SERVI...	2384.78	2.779
	ALBERTON HYPER LIQUOR	CALTEX~FLORENTIA MO...	2507.93	3.681
	ALBERTON HYPER LIQUOR	CALTEX STARMART~ST...	8126.12	9.814999
	ALBERTON HYPER LIQUOR	BRACKENDOWNS LIQUOR...	13770.58	13.067
	ALBERTON WHOLESALERS	ALBERTON HYPER LIQUOR	524.49	0.694
	ALBERTON WHOLESALERS	BP~GROBLER SERVICE S...	837.0699	1.23
	ALBERTON WHOLESALERS	NUNOS CONVENIENCE ST...	1100.97	1.652
	ALBERTON WHOLESALERS	CALTEX~HENNICO SERVI...	1362.93	2.341
	ALBERTON WHOLESALERS	CALTEX~FLORENTIA MO...	1885.22	3.123
	ALBERTON WHOLESALERS	CALTEX STARMART~ST...	8535.951	10.313

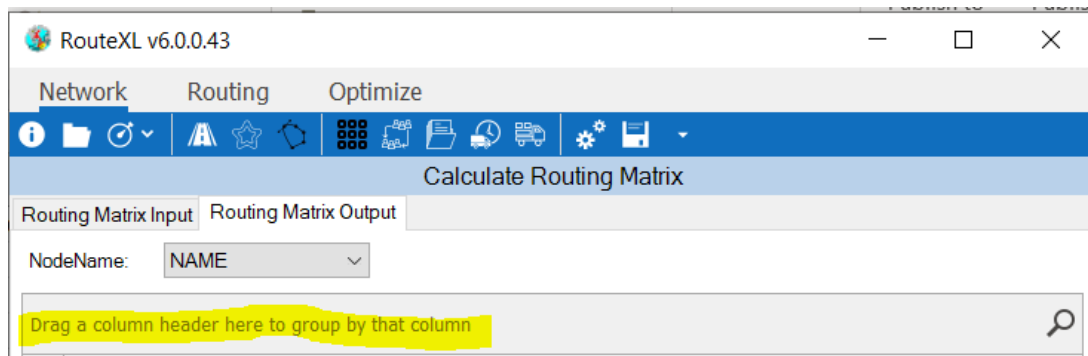
Calculated 63 pairs in 244ms

newzafza.routingDB

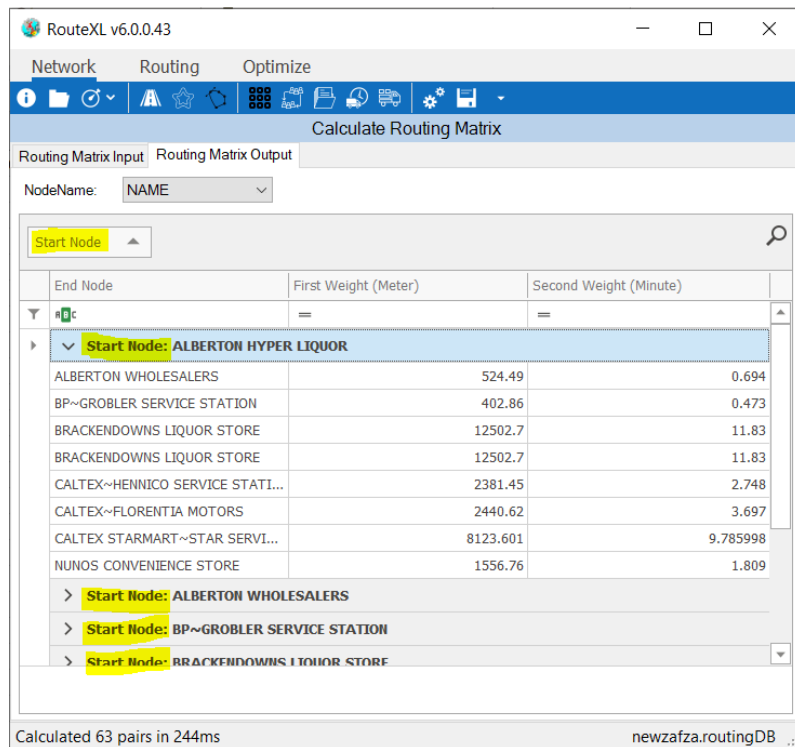
Calculated 63 pairs in 244ms means it took 244 milliseconds to calculate the **Routing Matrix** for 9 rows of points that I copied and pasted from my Excel spreadsheet. (**Note:** The more rows/data copied, the more exponential the calculation is and the longer the processing time.)

First Weight (Meter) and **Second Weight (Minute)** are populated as well for your **Routing Matrix**.

Matrix Routing User Guide



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



Matrix Routing User Guide

RouteXL v6.0.0.43

Network Routing Optimize

Calculate Routing Matrix

Routing Matrix Input Routing Matrix Output

NodeName: NAME

Drag a column header here to group by that column

Start Node	End Node	First Weight (Meter)	Second Weight (Minute)
BP~GROBLER SERVICE S...	ALBERTON HYPER LIQUOR	312.58	0.536
ALBERTON WHOLESALERS	ALBERTON HYPER LIQUOR	585.6399	0.802
NUNOS CONVENIENCE ST...	ALBERTON HYPER LIQUOR	1509.92	1.766
CALTEX~HENNICO SERVI...	ALBERTON HYPER LIQUOR	2384.78	2.779
CALTEX~FLORENTIA MO...	ALBERTON HYPER LIQUOR	2507.93	3.681
CALTEX STARMART~ST...	ALBERTON HYPER LIQUOR	8126.12	9.814999
BRACKENDOWNS LIQUOR...	ALBERTON HYPER LIQUOR	13770.58	13.067
ALBERTON HYPER LIQUOR	ALBERTON WHOLESALERS	524.49	0.694
BP~GROBLER SERVICE S...	ALBERTON WHOLESALERS	837.0699	1.23
NUNOS CONVENIENCE ST...	ALBERTON WHOLESALERS	1100.97	1.652
CALTEX~HENNICO SERVI...	ALBERTON WHOLESALERS	1362.93	2.341
CALTEX~FLORENTIA MO...	ALBERTON WHOLESALERS	1885.22	3.123
CALTEX STARMART~ST...	ALBERTON WHOLESALERS	8535.951	10.313

SUM=455107.8

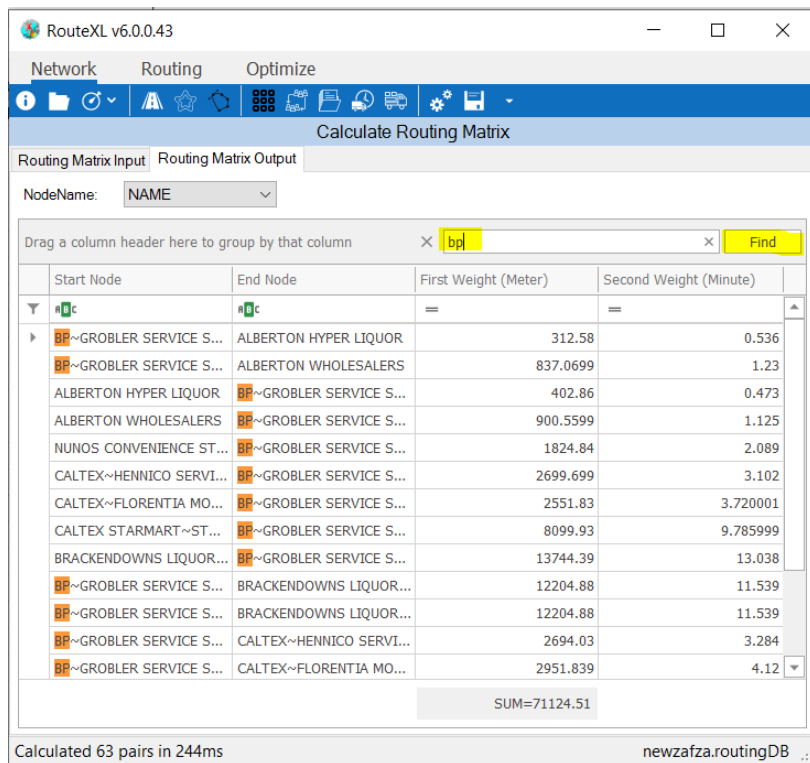
Calculated 63 pairs in 244ms

newz			
28.128100	-26.259200	Depot2	15
28.121930	-26.319390	Depot1	2
28.095660	-26.339550	Depot1	1
28.120150	-26.268784	Depot1	10
28.107620	-26.309380	Depot1	4

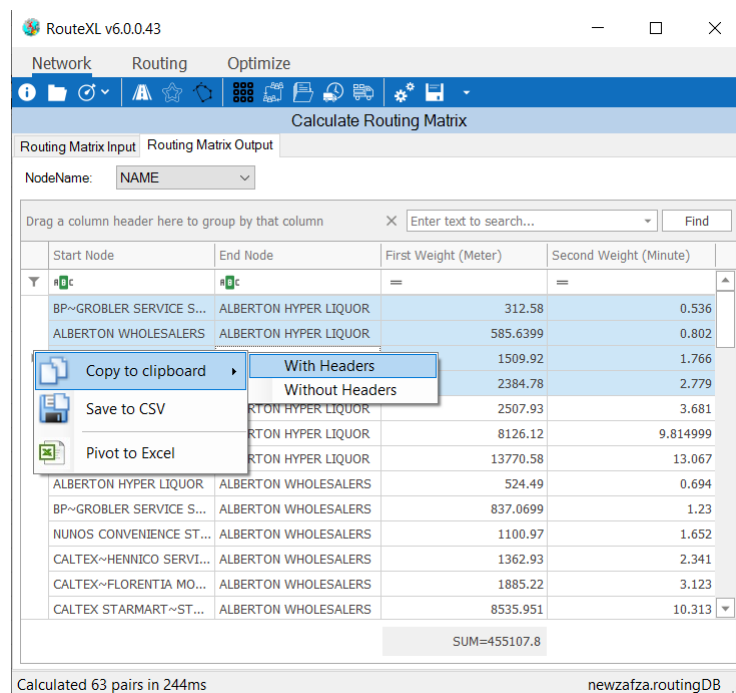
Sum Min Max Count Average None

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

Matrix Routing User Guide



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.

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