

# DATABASE STATISTICS TABLE WITH QUALNET

QualNet uses SQLite and Maria DB (5.5 or later) to generate the statistics database.

In this document SQLite manager is used to obtain the data from the database.

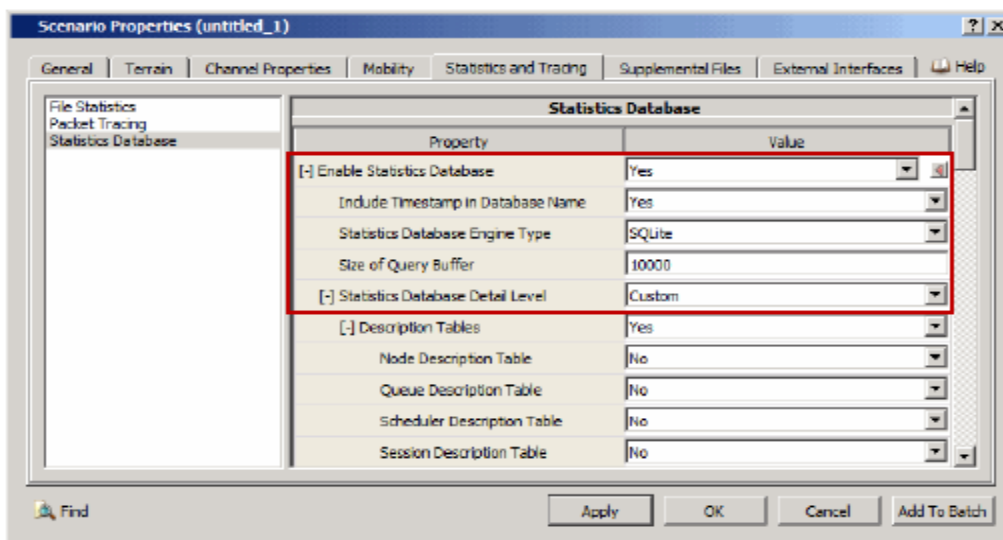


## ***Configuring Statistics Tables***

Configuring statistics can be done by both command line interface and GUI.

To configure the general parameters for the statistics database in the GUI, do the following:

1. Go to ***Scenario Properties Editor > Statistics and Tracing > Statistics Database***.
2. To enable the statistics database, set ***Enable Statistics Database*** to *Yes* and set the dependent parameters listed in

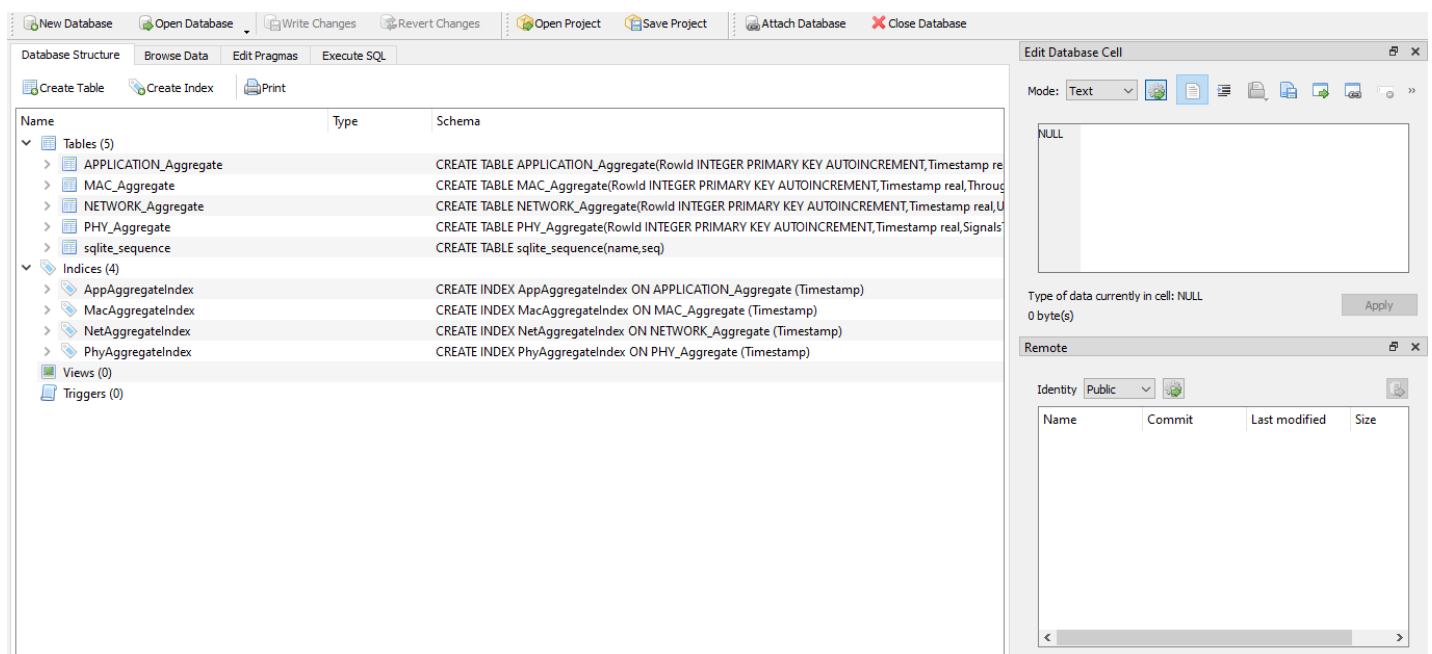


## ***Configuring Database Detail Level***

The user can specify the level of detail of the generated database. One of three levels can be specified: High, Medium, or Low, each corresponding to a pre-defined set of statistics tables. And also layer by layer tables can be enabled such as application aggregate table can be specified including with the parameters such as multicast delay column, unicast delay etc. Here application, network, mac, physical aggregate table is enabled.

Properties	Mobility	Cyber	Cellular	Host Model	Statistics and Tracing	Supplemental F	Help
Multicast Status Table	No						
Queue Status Table	No						
[-] Aggregate Tables	Yes						
Update Aggregate Tables at End of ...	Yes						
Aggregate Update Interval	600				seconds		
[-] Application Aggregate Table	Yes						
Average Unicast Delay Column	Yes						
Average Multicast Delay Column	Yes						
Average Delay Column	Yes						
Interval-based Average Delay Column	Yes						
Average Unicast Jitter Column	Yes						
Average Multicast Jitter Column	Yes						
Average Jitter Column	Yes						
Average Unicast Hop Count Column	Yes						
Average Multicast Hop Count Column	Yes						
Average Throughput Column	Yes						
Average Offered Load Column	Yes						
Application Aggregate Table Index	Yes						
Transport Aggregate Table	No						
[-] Network Aggregate Table	Yes						
Unicast Packets Dropped for No ...	Yes						

Once the database GUI is opened, open the SQLite file which will be saved in QualNet scenario folder (By running the scenario, database file will be generated) whatever aggregate tables is enabled that will be displayed as tables in SQLite GUI as shown.

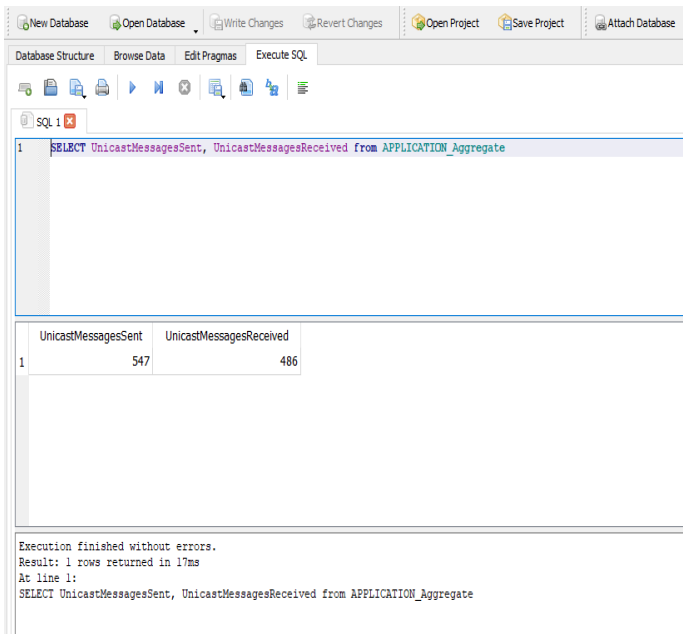


## Running SQL queries

- The required data can be obtain from the tables by running appropriate SQL quires.
- Navigate to Execute SQL in the GUI.
- Once the SQL quires is executed the results will be displayed in rows and columns in the output window.
- Here the below quires is executed to get unicast message sent and received from application aggregate table and unicast delay, unicast jitter from the network aggregate table.

**1. SELECT UnicastMessagesSent, UnicastMessagesReceived from APPLICATION\_Aggregate**

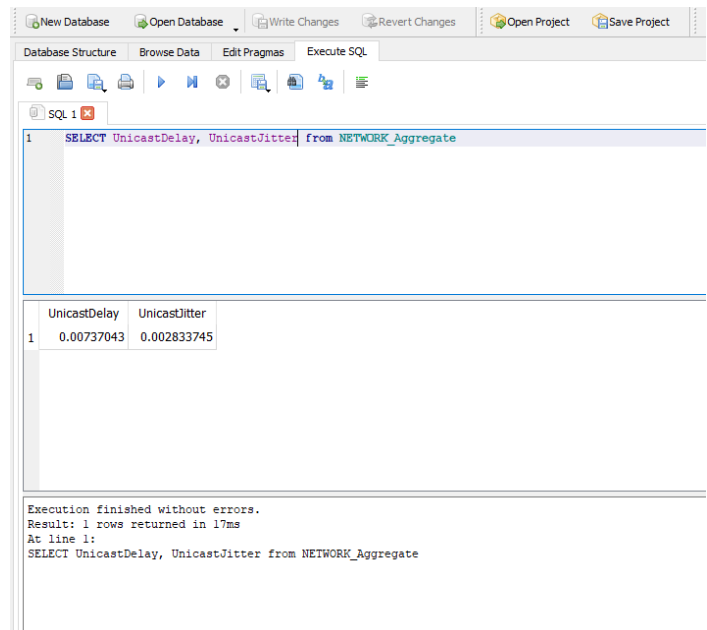
**2. SELECT Unicast Delay, Unicast Jitter from NETWORK\_Aggregate**



The screenshot shows the SQL query execution interface. The query is: `SELECT UnicastMessagesSent, UnicastMessagesReceived from APPLICATION_Aggregate`. The results are displayed in a table with two columns: UnicastMessagesSent and UnicastMessagesReceived. The first row shows values 547 and 486 respectively.

	UnicastMessagesSent	UnicastMessagesReceived
1	547	486

Execution finished without errors.  
Result: 1 rows returned in 17ms  
At line 1:  
SELECT UnicastMessagesSent, UnicastMessagesReceived from APPLICATION\_Aggregate



The screenshot shows the SQL query execution interface. The query is: `SELECT UnicastDelay, UnicastJitter from NETWORK_Aggregate`. The results are displayed in a table with two columns: UnicastDelay and UnicastJitter. The first row shows values 0.00737043 and 0.002833745 respectively.

	UnicastDelay	UnicastJitter
1	0.00737043	0.002833745

Execution finished without errors.  
Result: 1 rows returned in 17ms  
At line 1:  
SELECT UnicastDelay, UnicastJitter from NETWORK\_Aggregate