

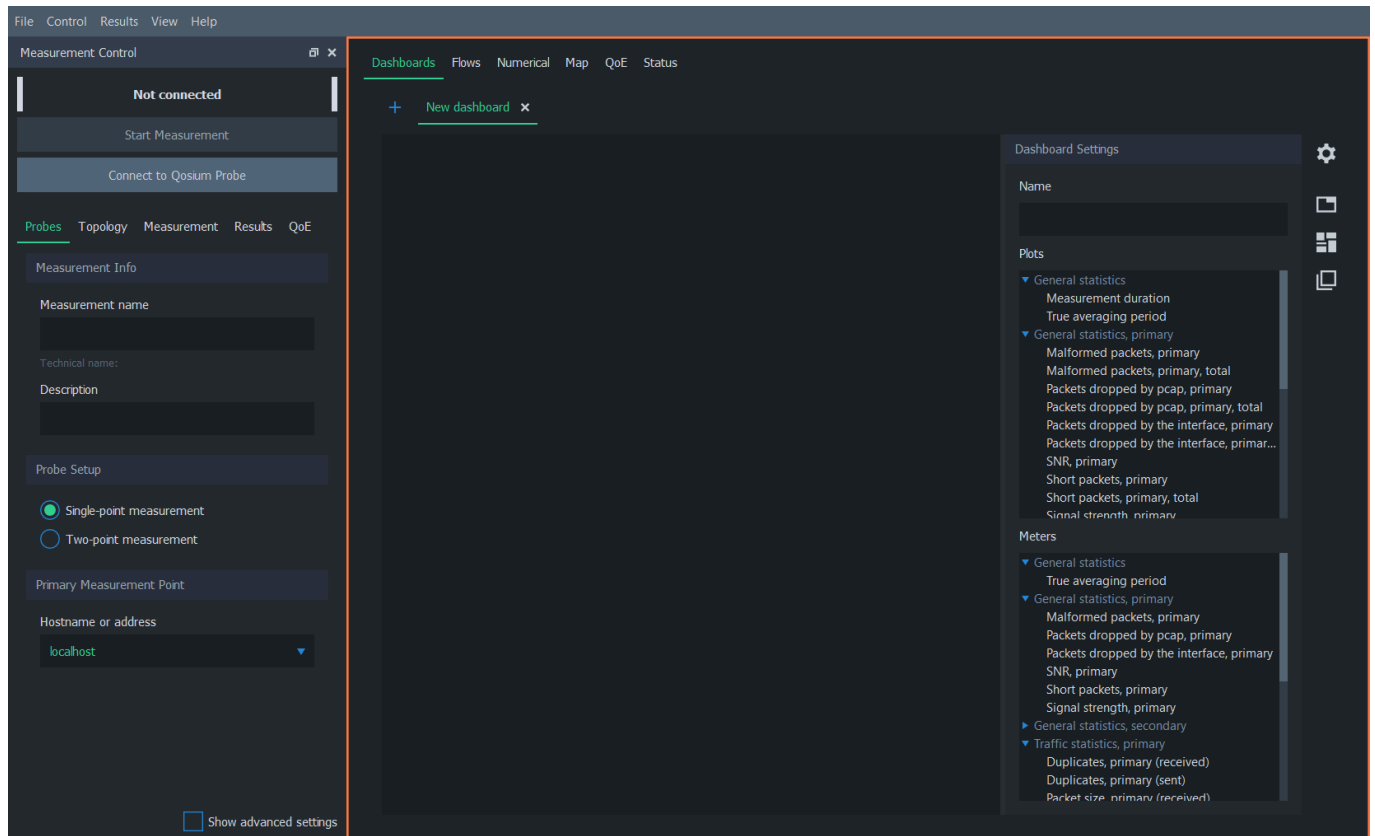
Workspace Area

The workspace area in Scope hosts the result visualization views. In this area, measurement results can be configured, viewed, and analyzed.

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The workspace area is on the right side of the window:



The workspace area is divided into six main tabs, which offer various methods to view and analyze measurement results. See the subsections below for more information on each tab.

1. Dashboards Tab

Visualizing average results in charts is the most common way to analyze measurement results in Qosium Scope. This can be done in the dashboards tab.

1.1. Overview

The dashboards tab contains, as the name implies, dashboards. Dashboards visualize *average results* with plots and charts. Each dashboard has its own tab, and you can freely create, remove, and switch between tabs, even during an ongoing measurement.

Dashboards tab has four main elements. These elements are further explained in the following sections.

1. **Dashboard Tabs** - List of created dashboards
2. **Charts Area** - Active plots and meters in the current dashboard
3. **Settings** - Settings for the current dashboard
4. **Toolbar** - Quick actions for the current dashboard

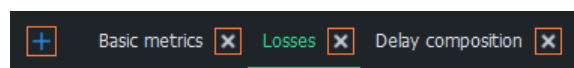


1.2. Dashboard Tabs

The dashboard tabs panel is used to organize and browse dashboards. In a typical, simple measurement, a single dashboard is sufficient. However, when viewing many various statistics, organizing the charts in multiple dashboards helps keep the interface neat and tidy.

Dashboards can be freely added and removed to allow better organization of measurement results. For example, you can add plots in one dashboard and meters in another. Also, arranging different statistics in their own dashboards is a good option.

- To add a new empty dashboard, click the *blue plus-sign* on the left side of the tab panel
- To remove an existing dashboard, click the *white x* next to the dashboard name in the tab panel



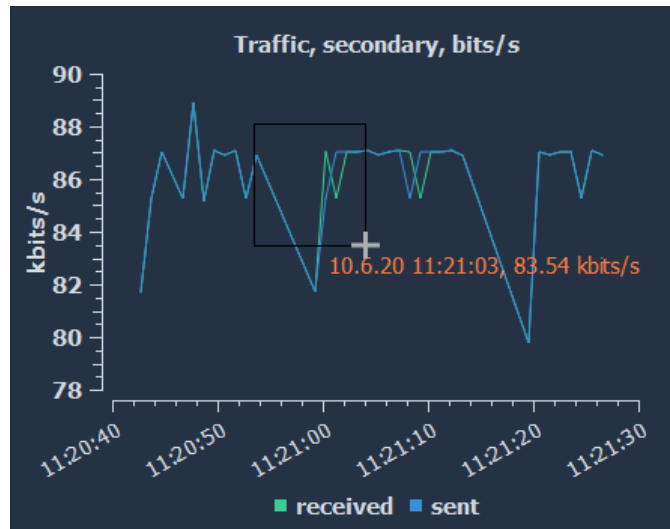
Removing dashboards does not remove any measurement results

1.3. Chart Area

This region of the dashboard shows the opened charts. Each chart represents a single statistic in average results. Some plots have the combined *sent* and *received* directions of the same metric.

Plots have a few mouse controls available for viewing the results. Hover cursor over plots lines to inspect values. To zoom, draw a rectangle over the area of interest with the left mouse button. Use the right mouse

button to zoom back out.

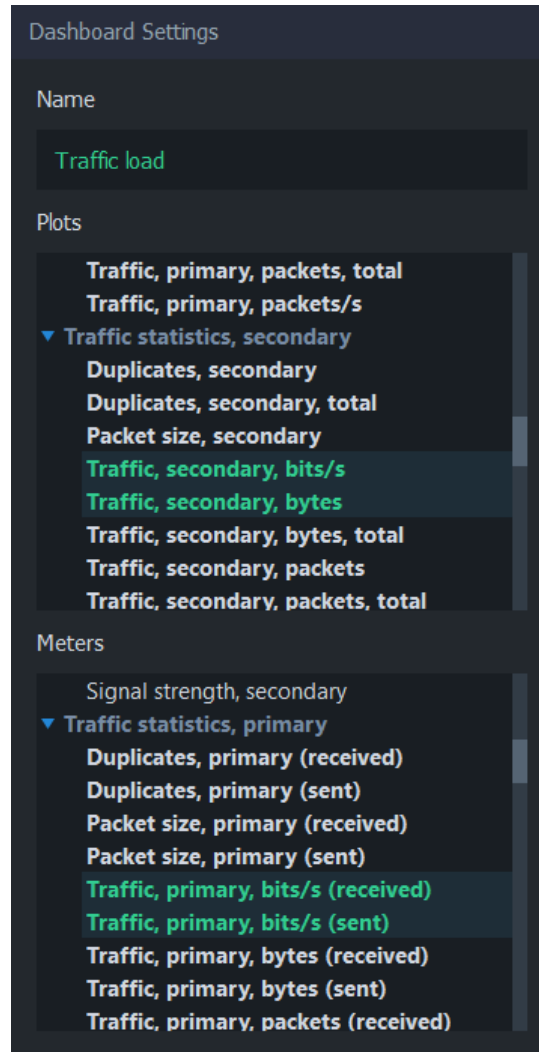


1.4. Settings

Each dashboard has its own settings panel, where you can select the charts from two categories: plots and meters. You can also give the dashboard a name, shown in the dashboard tabs panel, for easy recognition.

Use the *blue triangles* to expand/collapse each statistics group in *Plots* and *Meters* lists. Left-click on any statistics to display them immediately in the charts area. To select multiple statistics, press and drag with the left mouse button over the preferred statistics. Statistics, which have results, are marked with *bold* text. Clicking an active statistic removes the corresponding chart from the chart area.

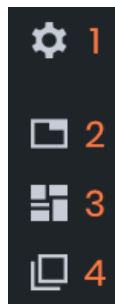
For more information on each statistic in average results, see [Average Results](#).



1.5. Toolbar

The buttons on the right side of each dashboard can be used to control the settings group's visibility and the arrangement of charts.

1. **Dashboard Settings** - Show/hide [Dashboard settings](#)
2. **Arrange in Tabs** - Arrange charts in tabs, where only one chart can be visible at a time
3. **Arrange in Tiles** - Arrange charts in tiles, where charts are stacked in a grid-like format (*default*)
4. **Arrange Freely** - Move and resize charts manually



2. Flows Tab

The Flows tab of Scope contains the flow map, which lists currently active flows and their statistics in a table.

The flow map in Scope is a convenient way of observing the captured traffic overview or verifying that the packet filter is functioning as expected.

Dashboards <u>Flows</u> Numerical Map QoE Status								
	Source	Destination	Protocol	State	Load [b/s] (downlink)	Load [b/s] (uplink)	Age [s]	Inactivity
1	fe80::3efa:43ff:fe45:7ce5	ff02::0016	IPV6	New	0	0	0.1	0
2	00:d8:61:7a:ba:94	18:d6:c7:18:76:0a	ARP	Old	0	0	10.3	10
3	b8:d9:4d:61:85:64	01:80:c2:00:00:0e	GENER	Persistent	0	0	8.2	8
4	b8:d9:4d:61:85:64	01:80:c2:00:00:13	GENER	Persistent	0	0	8.2	8
5	192.168.0.112 : 63229	62.109.214.74 : 443	TCP	Persistent	0	0	25.7	2
6	62.109.214.74 : 443	192.168.0.112 : 63230	TCP	Persistent	4750	57787	25.9	0
7	62.109.232.63 : 443	192.168.0.112 : 63256	TCP	Persistent	0	0	25	1
8	62.109.232.63 : 9000	192.168.0.112 : 59537	UDP	Persistent	751	751	25.9	0
9	62.109.232.63 : 9000	192.168.0.112 : 59540	UDP	Persistent	8046	72479	25.9	0
10	192.168.0.112 : 52987	62.241.198.245 : 53	UDP	Persistent	0	0	1.9	1
11	192.168.0.112 : 63183	62.241.198.245 : 53	UDP	Persistent	0	0	1.9	1
12	80.75.96.37 : 143	192.168.0.112 : 65319	TCP	New	19032	229674	0.6	0
13	192.168.0.112 : 49224	85.23.94.194 : 443	TCP	Persistent	0	0	11.9	6
14	192.168.0.112 : 49225	85.23.94.194 : 443	TCP	Persistent	0	0	11.9	6
15	192.168.0.112 : 49231	85.23.94.194 : 443	TCP	Persistent	0	0	1.9	1
16	192.168.0.112 : 49232	85.23.94.194 : 443	TCP	Persistent	0	0	1.9	1
17	192.168.0.112 : 49217	91.197.85.151 : 443	TCP	Persistent	0	0	21.7	6
18	192.168.0.1 : 1901	239.255.255.250 : 1900	UDP	Persistent	0	0	9	9
19	192.168.0.100 : 123	192.168.0.112 : 123	UDP	Old	0	0	10.7	10
20	192.168.0.112 : 49891	192.168.0.100 : 55999	UDP	Persistent	0	4257742	25.9	0
21	192.168.0.100 : 63002	192.168.0.112 : 55999	UDP	Persistent	0	4225158	25.9	0
22	192.168.0.101 : 1900	239.255.255.250 : 1900	UDP	Persistent	0	0	6.9	6
23	192.168.0.112 : 54915	192.168.0.255 : 54915	UDP	Persistent	0	2439	25.2	0
24	192.168.0.112 : 123	194.100.49.152 : 123	UDP	Persistent	0	0	3.5	3

Flow map has a set of fixed columns. For more information on the columns and flow results in general, see [Flow Results](#).

Column Header	Description
Source	The source address and port (if port number is available)

Column Header	Description
Destination	The source address and port, (if port number is available)
Protocol	The protocol above the address layer
State	0 = new, 1 = persistent, 2 = old
Load [b/s] (downlink)	The current throughput in the downlink (received direction)
Load [b/s] (uplink)	The current throughput in the uplink (sent direction)
Age [s]	The age of the flow in seconds
Inactivity	The time passed in seconds since the last packet detected in this flow

Each flow has a **state**, which can have one of three values:

- **New** - The flow is new and reported for the first time in the flow map
- **Persistent** - The flow is receiving packets or has been inactive less than the allowed inactivity time
- **Old** - The flow did not receive any more packets during the allowed inactivity period and will be removed the next time flow results arrive

The **inactivity** counts duration from the last received packet. If the flow is active, this number remains at or near zero. When inactivity begins to increase, the flow has either stopped or not receiving any more packets. Once it reaches the [flow timeout](#), the flow is deemed ended and will be removed from the flow map.

No flows

If flows do not appear in the flow map during measurement:

- Check that flow results are selected in the [Results Tab](#)
- Check that [the capture interface](#) is pointing to the correct interface
- If using [manual packet filter](#), make sure that the packet filter is not too strict
 - Test by switching to automatic filtering and see if flows begin to appear in the flow map

3. Numerical Tab

The numerical tab in Scope has two sub-tabs: Average results and Packet results. As the names imply, these two tabs show the corresponding result types in numerical table format.

3.1. Average Results Tab

This tab displays the average results in a table format. The table has a set of columns that can be selected for view. For more information on the columns and average results in general, see [Average Results in Qosium](#).

Dashboards

Flows

Numerical

Map

QoE

Status

Average Results

Packet Results

	Jitter (received)	Jitter (sent)	Traffic, primary, bytes (received)	Traffic, secondary, bytes (received)
10.6.2020 15:08:01.812	956 us	509 us	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:02.813	370 us	1.362 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:03.813	923 us	466 us	888 bytes	1.11 kbytes
10.6.2020 15:08:04.812	379 us	738 us	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:05.811	1.889 ms	1.439 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:06.813	511 us	791 us	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:07.812	1.033 ms	693 us	1.11 kbytes	888 bytes
10.6.2020 15:08:08.812	615 us	819 us	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:09.812	668 us	1.115 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:10.811	3.99 ms	1.096 ms	888 bytes	1.11 kbytes
10.6.2020 15:08:11.813	684 us	1.366 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:12.813	152 us	1.148 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:13.811	7.061 ms	1.752 ms	1.11 kbytes	888 bytes
10.6.2020 15:08:14.813	1.338 ms	3.219 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:15.813	1.519 ms	896 us	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:16.812	1.456 ms	1.153 ms	888 bytes	1.11 kbytes
10.6.2020 15:08:17.813	2.555 ms	902 us	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:18.812	1.042 ms	1.111 ms	1.11 kbytes	1.11 kbytes
10.6.2020 15:08:19.811	830 us	777 us	1.11 kbytes	888 bytes
10.6.2020 15:08:20.811	1.098 ms	636 us	888 bytes	1.11 kbytes

Table Settings

Table columns

Jitter threshold crossings, total (received)

Jitter threshold crossings, total (sent)

Jitter, max (received)

Jitter, max (sent)

Jitter, moving average (received)

Jitter, moving average (sent)

Lost packets (received)

Lost packets (sent)

Lost packets, total (received)

Lost packets, total (sent)

Packet loss (received)

Packet loss (sent)

Packet loss, total average (received)

Packet loss, total average (sent)

QoE-evaluation: GQoSIM (received)

QoE-evaluation: GQoSIM (sent)

QoE-evaluation: PSQA (received)

QoE-evaluation: PSQA (sent)

QoS samples (received)

QoS samples (sent)

Sent info is not found (received)

Sent info is not found (sent)

Sent info is not found, total (received)

Sent info is not found, total (sent)

☐ Freeze table

Auto Column Width (include headers)

Auto Column Width (exclude headers)

Table columns lists all available average results. Use the *blue triangles* to expand/collapse each statistics group. Left-click on any statistics to display it immediately in the table as a column. Left-clicking an active statistic again will remove the column. To select multiple statistics, press and drag with the left mouse button. Statistics, which have results, are shown with bold text.

Freeze table stops automatic update of the table. This is especially helpful if there's a need to study the results in more detail during the measurement.

Auto Column Width (Include Headers) resizes columns according to the widest row. If you want to resize columns without taking the header row's width into account, use **Auto Column Width (Exclude Headers)**.

i

Tip

Double-click a result row to see the corresponding packet results in [Packet Results Tab](#).

3.2. Packet Results Tab

This tab displays the packet results in a table format. The table has a set of fixed columns. For more information on the columns and packet results in general, see [Packet Results in Qosium](#).

DashboardsFlowsNumericalMapQoEStatus

Average ResultsPacket Results

Showing results 31 / 32☒ Always show most recent results

Timestamp	Direction	Source Address	Destination Address	Protocol	Packet Size [B]	Delay [us]	Jitter, average [us]	Jitter, absolute [us]	Packet ID	Fragment Number
13:51:06.627	Sent	192.168.1.243 : 6889	192.168.1.236 : 6890	UDP	222	-1684390	829	2566	51590	0
13:51:06.862	Sent	192.168.1.243 : 6889	192.168.1.236 : 6890	UDP	222	-1688544	1037	4154	51591	0
13:51:07.068	Sent	192.168.1.243 : 6889	192.168.1.236 : 6890	UDP	222	-1688117	999	427	51593	0
13:51:07.274	Sent	192.168.1.243 : 6889	192.168.1.236 : 6890	UDP	222	-1688020	943	97	51594	0
13:51:07.480	Sent	192.168.1.243 : 6889	192.168.1.236 : 6890	UDP	222	-1685538	1039	2482	51596	0

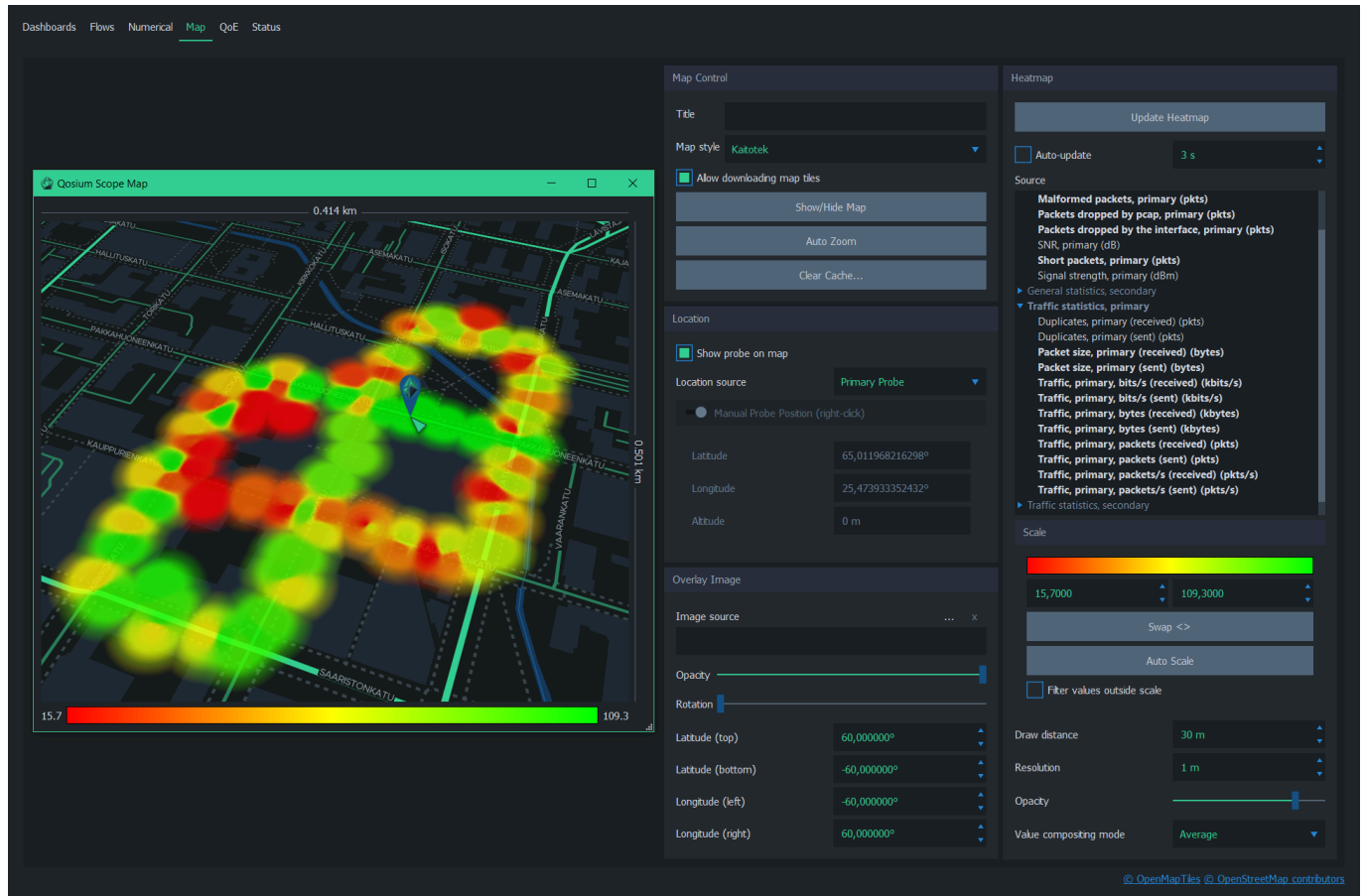
When **Always show most recent results** is checked, Scope will automatically switch to the newest complete result. Unchecking it allows you to select any result index.

4. Map Tab

The map tab in the Scope workspace area is used to draw heatmaps on a geographical map. This type of visualization is beneficial when measuring Quality of Service or Quality of Experience in a real location.

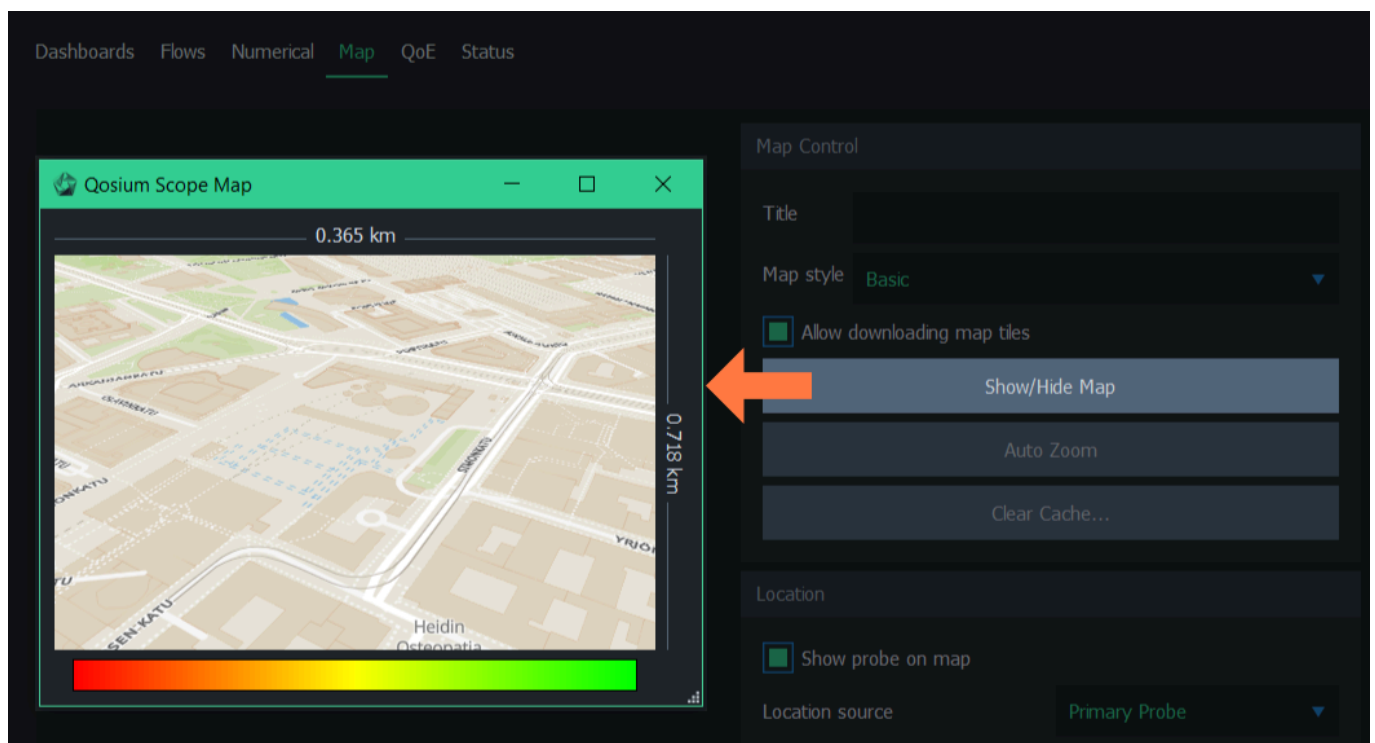
4.1. Overview

The map tab consists of two main elements: *Map Window* and *Settings*. See the following subsections for more information on these elements. For a practical example of using this tab, see [resources/documentation/how-to-guides/qos-heatmaps-with-scope](#).



4.2. Map Window

To open the map window, press **Show/Hide Map** in the *Map Control* settings group.



The window can be moved, scaled, maximized, and minimized normally as any other window. The map can be navigated with a few mouse/keyboard controls:

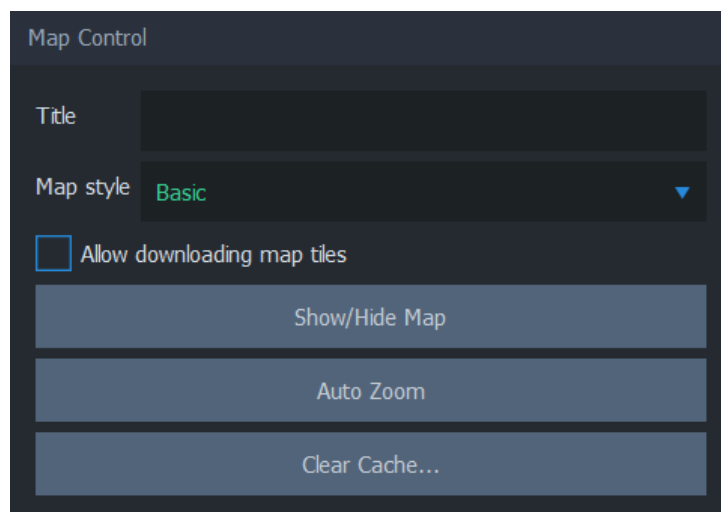
- **Zoom in/out** - Mouse wheel up/down
- **Pan map** - Press and hold the left mouse button and drag
- **Pitch/rotate map** - Press and hold either left or right *Ctrl* button on the keyboard, then simultaneously press and hold the left mouse button and drag

4.3. Settings

The map is configured via settings displayed on the right side of the tab. See the following subsections for more information on each settings group.

4.3.1. Map Control

The map control group has controls for showing/hiding the map window, selecting map theme, and controlling map data download and caching.



When **Allow downloading map tiles** is checked, Scope can download map data from the map cloud service. It is recommended to keep this option checked when preparing a measurement but unchecked during measurement if there's a risk that the traffic between Scope and map cloud service will disrupt measurement results.

Show/Hide Map toggles the visibility of the map window.

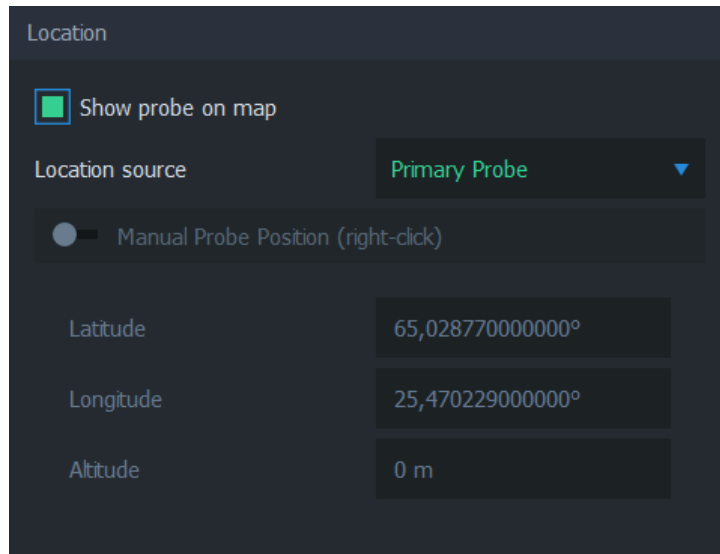
Use **Auto Zoom** to reset pitch and rotation. Auto-zoom also sets location and zoom according to the following priority:

- Focus on the heatmap, if available
- Focus on overlay image, if available
- If neither heatmap nor overlay image is visible, focus on the map cursor

Clear Cache... removes the map cache file from the computer. Use it to release disk space (typically ~10-60MB). Removing the cache file can be helpful when resolving issues related to map data download & rendering. Removing the map cache does not affect heatmap or measurement results.

4.3.2. Location

The location group considers the geographical location of the Probes.



The screenshot shows a 'Location' settings panel with a dark theme. It includes a checkbox labeled 'Show probe on map' which is checked. Below it is a dropdown menu for 'Location source' set to 'Primary Probe'. There is a radio button for 'Manual Probe Position (right-click)' which is currently unselected. At the bottom, there are three input fields: 'Latitude' with the value '65,028770000000°', 'Longitude' with '25,470229000000°', and 'Altitude' with '0 m'.

Show Probe on map toggles the visibility of the selected source Probe icon on the map. The icon appears on the map as follows:



If the Probe icon is not visible on the map even when this option is checked, it may be due to the Probe having no location info yet, or the map hasn't been updated.

Manual Probe Position allows placing the location of the source Probe manually. This is useful functionality when you are performing, e.g., indoor measurements, where it is not possible to enable GNSS or other automatic positioning systems to Probe. During measurement, enable this option, then right-click anywhere on the map. The map cursor appears in this location. Manual positioning is available only when the measurement is running.



4.3.3. Overlay Image

The overlay image can be used to add an image on top of the map. Typically, this feature is used to add a floor plan for an interior measurement or another layout image of a known location whenever the map itself is visually inadequate.

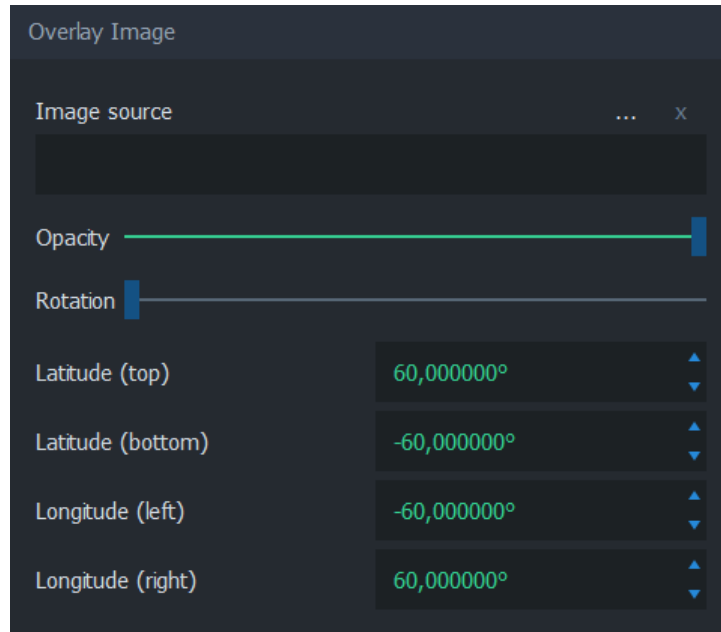


Image source indicates the filename of the current overlay image. Use ... to select the image file or x to remove the current overlay image.

Opacity controls the transparency of the image. By default, the overlay image is fully opaque. Adjust the opacity to allow map visuals to pass through the overlay image partially.

Rotation allows adjusting the overlay image orientation if the source image is not aligning with the map projection.

Latitude (top), **Latitude (bottom)**, **Longitude (left)**, and **Longitude (right)** are used to align the overlay image on top of the map.

4.3.4. Heatmap

The heatmap group contains controls for drawing and displaying the QoS heatmap on the geographical map.

Heatmap

Update Heatmap

☐ Auto-update 10 s

Source

▼ General statistics

True averaging period (s)

▼ General statistics, primary

Malformed packets, primary (pkts)

Packets dropped by pcap, primary (pkts)

Packets dropped by the interface, primary (pkts)

SNR, primary (dB)

Short packets, primary (pkts)

Signal strength, primary (dBm)

► General statistics, secondary

▼ Traffic statistics, primary

Duplicates, primary (received) (pkts)

Duplicates, primary (sent) (pkts)

Packet size, primary (received) (bytes)

Packet size, primary (sent) (bytes)

Traffic, primary, bits/s (received) (kbits/s)

Traffic, primary, bits/s (sent) (kbits/s)

Traffic, primary, bytes (received) (kbytes)

Traffic, primary, bytes (sent) (kbytes)

Traffic, primary, packets (received) (pkts)

Traffic, primary, packets (sent) (pkts)

Traffic, primary, packets/s (received) (pkts/s)

Traffic, primary, packets/s (sent) (pkts/s)

Scale

0,0000 0,0000

Swap <>

Auto Scale

☐ Filter values outside scale

Draw distance 50 m

Resolution 5 m

Opacity

Value compositing mode Average

Update Heatmap, as the name implies, updates the heatmap immediately. The time the update takes

depends on the amount of data and the visualization settings.

Auto-update can be used to update the heatmap in every n th second. Use the spin box to adjust the interval.

Source determines the QoS statistic that the heatmap visualizes. Use the *blue triangles* to expand/collapse each statistics group.

The **Scale** group controls how the sample values are scaled linearly into the displayed gradient. Give the scale limits manually, or use **Auto Scale** to automatically use the current minimum and maximum samples as scale limits. Use **Swap <>** to swap the given scale limits, effectively inverting the heatmap colors. When **Filter values outside scale** are checked, values outside scale limits are not included in the heatmap.

Draw distance indicates the radius of influence of each data point. There's no right or wrong value for draw distance; instead, choose a value that serves the best visual appearance. For an outdoor measurement, values starting from 10 m are usually sensible. For small indoor spaces, values between 1 and 10 meters make more sense.

Resolution determines the draw precision of the heatmap image. Low-resolution values yield more accurate images than higher values. Keep in mind that the heatmap's actual precision depends on the amount and distribution of the measurement samples.

Opacity controls the transparency of the heatmap. By default, the heatmap is fully opaque. Adjust the opacity to allow map visuals to pass through the heatmap partially.

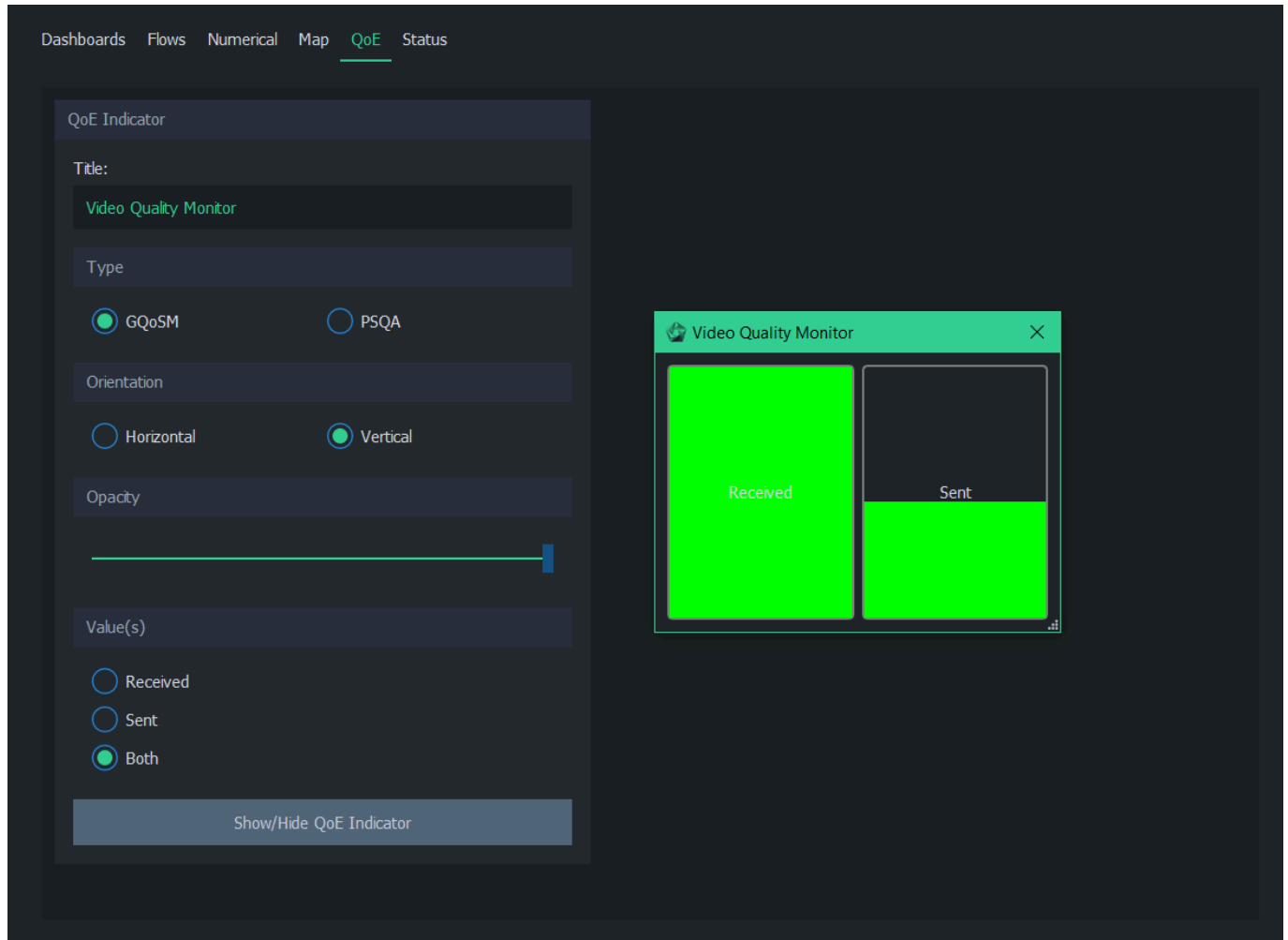
Value compositing mode determines the method of resolving the value of overlapping samples. Overlapping samples occur when two or more measurement samples are taken from the same location. The options are:

- **Average** - Calculate the average of the samples
- **Worst value** - Take the worst value and visualize it
- **Best value** - Take the best value and visualize it

5. QoE Tab

The QoE tab can be used to configure and show a Quality of Experience indicator window. This window visualizes QoE statistics from average results and can be placed, for example, next to an external application window for quality reference.

The *QoE* tab contains one group for configuring and displaying a QoE indicator window. This window can be placed anywhere on the screen visualizing QoE results.



The QoE indicator has the following options:

- **Title** - Type the title of the QoE Indicator Window
- **Type** - Use either *GQoSM* or *PSQA* as the source model
- **Orientation** - Display quality bars either with horizontal or vertical orientation
- **Opacity** - Change the opacity of the indicator window
- **Value(s)** - Show either the *received*, *sent*, or both directions
- **Show/Hide QoE Indicator** - Toggle visibility of the QoE indicator window

No Quality Results

If the quality bars remain colorless during measurement:

- Verify from [numerical average results](#) that quality results are received properly
- If quality results are not received (all values are -):
 - See [No QoS Results](#) in [Troubleshooting](#). If QoS results are missing, then the QoE indicator won't work either
- If quality results are received (values are - or 1):
 - If using GQoSM, try relaxing the model settings in [QoE Tab](#) by disabling QoS parameters used for calculating the results
- If quality results are received properly (values range from 5 to 1):
 - Check that the correct source model is selected in **Type** (GQoSM or PSQA)

Scopemon

Scope is intended for targeted manual measurements. For continuous QoE monitoring needs, see [Qosium Scopemon](#). Scopemon has, in fact, a QoE visualization similar to Scope's, but it has some advanced features, such as automated alerts.

6. Status Tab

The status tab displays information about the current measurement and the operation of Scope.

6.1. Overview

The status tab contains two groups:

- **Computed Parameters**
- **Log**

DashboardsFlowsNumericalMapQoEStatus

Computed Parameters

Packet filter

ip and (host 169.254.61.171 or host 169.254.155.140 or host 192.168.1.4 or host 192.168.1.243 or host 192.168.17.1 or host 192.168.157.1)

Control packet interval

500 ms

Averaging interval

1000 ms

Log

[08:01:44] [debug] [controller]: psqaEc: 160
[08:01:44] [debug] [controller]: psqaFecConv: 161
[08:01:44] [debug] [controller]: psqaFecList: 216
[08:01:44] [debug] [controller]: psqaMotion: 208
[08:01:44] [debug] [controller]: psqaPi: 120
[08:01:44] [debug] [controller]: psqaResolution: 199
[08:01:44] [debug] [controller]: psqaCmq: 6.9514e-310
[08:01:44] [debug] [controller]: primaryProbeHostname: localhost
[08:01:44] [debug] [controller]: primaryProbePort: 8177
[08:01:44] [debug] [controller]: primaryProbeSendersIpv4Mode: 0
[08:01:44] [debug] [controller]: 2852011435 => 0
[08:01:44] [debug] [controller]: 2852035468 => 0
[08:01:44] [debug] [controller]: 3232235780 => 0
[08:01:44] [debug] [controller]: 3232236019 => 0
[08:01:44] [debug] [controller]: 3232239873 => 0
[08:01:44] [debug] [controller]: 3232275713 => 0
[08:01:44] [debug] [controller]: primaryProbeSendersEthMode: 0
[08:01:44] [debug] [controller]: 00:50:56:c0:00:01 => 00:00:00:00:00:00
[08:01:44] [debug] [controller]: 00:50:56:c0:00:08 => 00:00:00:00:00:00
[08:01:44] [debug] [controller]: 0c:54:15:aa:51:ef => 00:00:00:00:00:00
[08:01:44] [debug] [controller]: 0e:54:15:aa:51:ef => 00:00:00:00:00:00
[08:01:44] [debug] [controller]: 30:9c:23:aa:0c:7a => 00:00:00:00:00:00
[08:01:44] [debug] [controller]: useSecondaryProbe: 0
[08:01:44] [debug] [controller]: Fetching packet filter
[08:01:44] [debug] [controller]: Packet filter fetched: ip and (host 169.254.61.171 or host 169.254.155.140 or host 192.168.1.4 or host 192.168.1.243 or host 192.168.17.1 or host 192.168.157.1)
[08:01:50] [info] [controller]: Measurement stopped

Logging settings

☐ Print debug-level messages

Clear

6.2. Computed Parameters

The computed parameters group displays the values, which are automatically calculated by Qosium when a measurement is started. Depending on the measurement settings, these may be the given manual values, but they may also differ if Qosium can determine values better suited for the measurement scenario.

Computed Parameters

Packet filter

ip and (host 169.254.61.171 or host 169.254.155.140 or host 192.168.1.4 or host 192.168.1.243 or host 192.168.17.1 or host 192.168.157.1)

Control packet interval

500 ms

Averaging interval

1000 ms



Tip

Use the button next to the computed packet filter to copy it to the clipboard. You can then paste it as a template for [a manual packet filter](#).

6.3. Log

The log window contains information on the operation and events of Scope. Error and warning messages are also printed in the log for later review.

This group contains a few settings:

- **Print debug-level messages** - When checked, debug-level messages are also included in the log, which contains more fine-grained information
- **Clear** - Clear the log window

Log

```
[08:01:43] [ debug] [ controller]: Primary Probe interface set successfully
[08:01:43] [ debug] [ controller]: Setting capture filter mode: 240
[08:01:43] [ debug] [ controller]: Setting capture filter: ip
[08:01:43] [ debug] [ controller]: Requesting average results
[08:01:43] [ debug] [ controller]: Requesting average results from primary Probe only
[08:01:43] [ debug] [ controller]: Requesting flow results
[08:01:43] [ debug] [ controller]: Polling results every 100 milliseconds
[08:01:43] [ info] [ controller]: Measurement started
[08:01:43] [ debug] [ controller]: Fetching Probe parameters
[08:01:44] [ debug] [ controller]: Parameters fetched successfully
[08:01:44] [ debug] [ controller]: Printing out Probe parameters:
[08:01:44] [ debug] [ controller]: averaging_intrvl: 1000
[08:01:44] [ debug] [ controller]: loss_timer: 1000
[08:01:44] [ debug] [ controller]: Pk_Id_Mode: 120
[08:01:44] [ debug] [ controller]: meas_ctrl_pk_intrvl: 500
[08:01:44] [ debug] [ controller]: use_promiscuous_mode: 1
[08:01:44] [ debug] [ controller]: qm_conn_mode: 1
[08:01:44] [ debug] [ controller]: max_cbd: 180
[08:01:44] [ debug] [ controller]: flow_timeout: 0
[08:01:44] [ debug] [ controller]: dpi_mode: 0
[08:01:44] [ debug] [ controller]: pk_delay_threshold_us: 4294967295
[08:01:44] [ debug] [ controller]: pk_jitter_threshold_us: 4294967295
[08:01:44] [ debug] [ controller]: enable_qoe_wma: 0
[08:01:44] [ debug] [ controller]: qoe_wma_weight_newest: 0
[08:01:44] [ debug] [ controller]: enable_qoe_swa: 0
[08:01:44] [ debug] [ controller]: qoe_swa_window_size: 0
[08:01:44] [ debug] [ controller]: calculate_gqosm: 0
[08:01:44] [ debug] [ controller]: gqosm_d_bad_delay: -201276
[08:01:44] [ debug] [ controller]: gqosm_f_std_delay: -201276
```

Logging settings

☐ Print debug-level messages

Clear

Accessing the log file

Scope also saves the log to a file. The location of the log file depends on the operating system.

In Windows, the filename is `C:\Users\[username]\AppData\Local\Kaitotek\QosiumScope\debug.log`.

In Linux, the filename is `~/.config/QosiumScope/debug.log` or `/etc/xdg/QosiumScope/debug.log`.

7. Glossary

Uplink / Sent Direction

Refers to a network path direction where traffic is flowing away from the observer towards a remote point.

Downlink / Received Direction

Refers to a network path direction where traffic is flowing from a remote point towards the observer.

Quality of Experience

Indicates the overall performance of a network application, and how user's experience is affected by the network conditions.

For more information, see our article on [Quality of Experience](#).

Generic QoS Measure Algorithm

A parameter based QoS mapping algorithm allowing to map a single quality indicator from several parameters. When tuned with real user tests, GQoSM allows also QoE estimations.

GQoS, however, is meant for evaluating the influence of the network to the quality – not for estimating the absolute quality (e.g., including the defects of codecs, etc.). For more information, see our article on [Quality of Experience](#).

Pseudo-Subjective Quality Assessment

A neural network based model for estimating QoE.

For more information, see our article on [Quality of Experience](#).