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ClickStream analytics

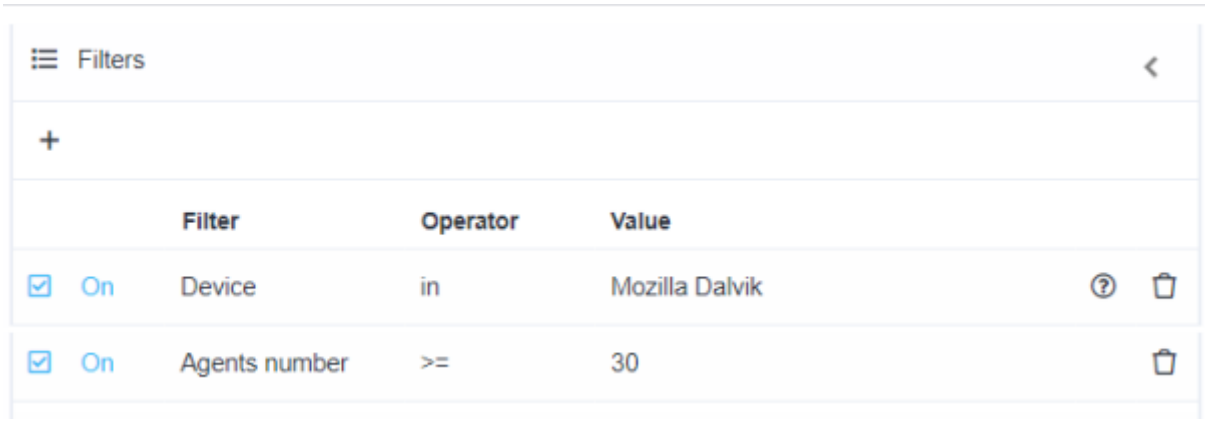
DPI exports information about all subscriber web requests using IPFIX (NetFlow v10) format.

1 Search for reselling internet services

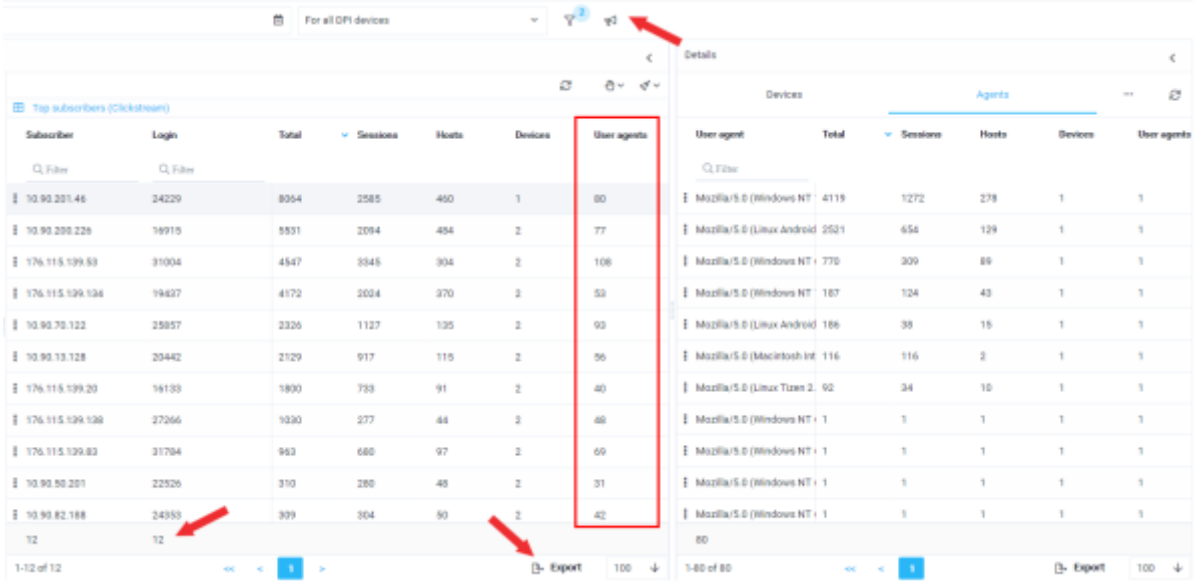
DPI exports the unique UserAgent that is sent withing the HTTP request. The QoE module aggregates information for each IP (or login, if used). Every phone and PC behind the subscriber NAT is recorded in the statistics. Up to 30 unique UserAgents are typically identified per household, all exceeding this value indicates that other apartments can be connected to the Internet through the main router.
Steps to follow:

1. switch to the QoE Analytics - > Subscribers - > Clickstream section
2. create filter (use Shift+Enter to add entries), where

- Mozilla is PC identifier
- Dalvik is phone identifier



Interpretation of gathered statistics:

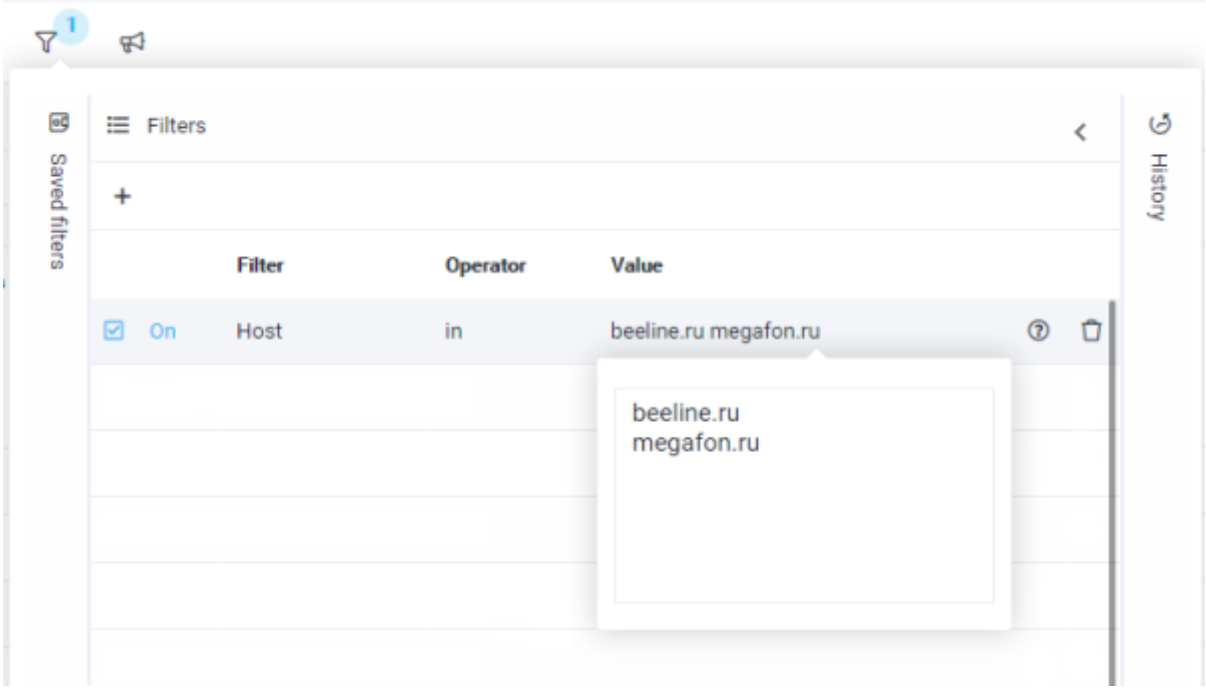


- The result of the filter applied is 12 subscribers who might resell services.
- More details about the devices they are associated to can be found in the **"Details"** window.
- Using a voice-tube pictogram, you can drag-and-drop them to marketing campaign and notify them using browser.
- You can export a report in a convenient format.

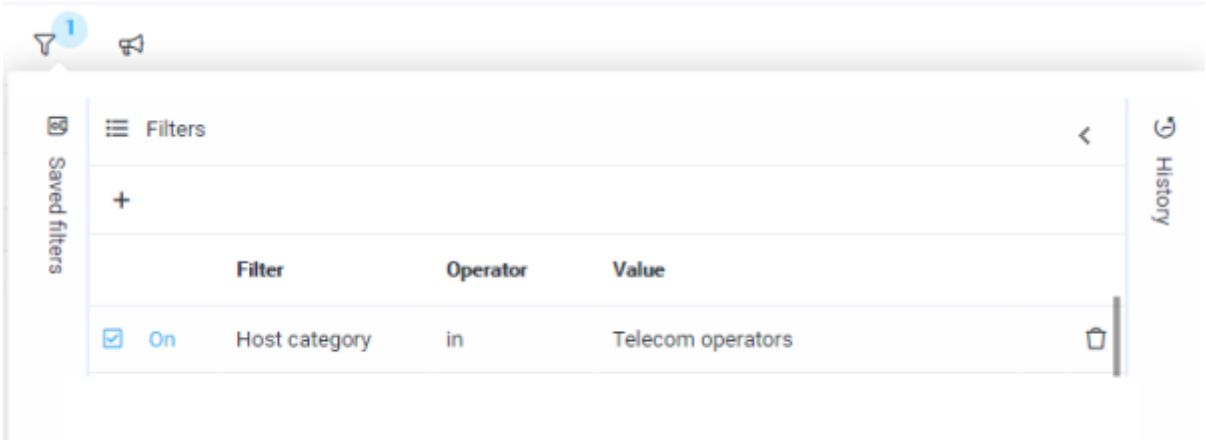
2 Controlling customer attrition (search for interest in competitors)

DPI exports CickStream, i.e all the HTTP/HTTPS subscriber requests on the Internet. The QoE module aggregates information for each IP (login, if used). The statistics include URL for the HTTP and domain name for the HTTPS. Steps to follow:

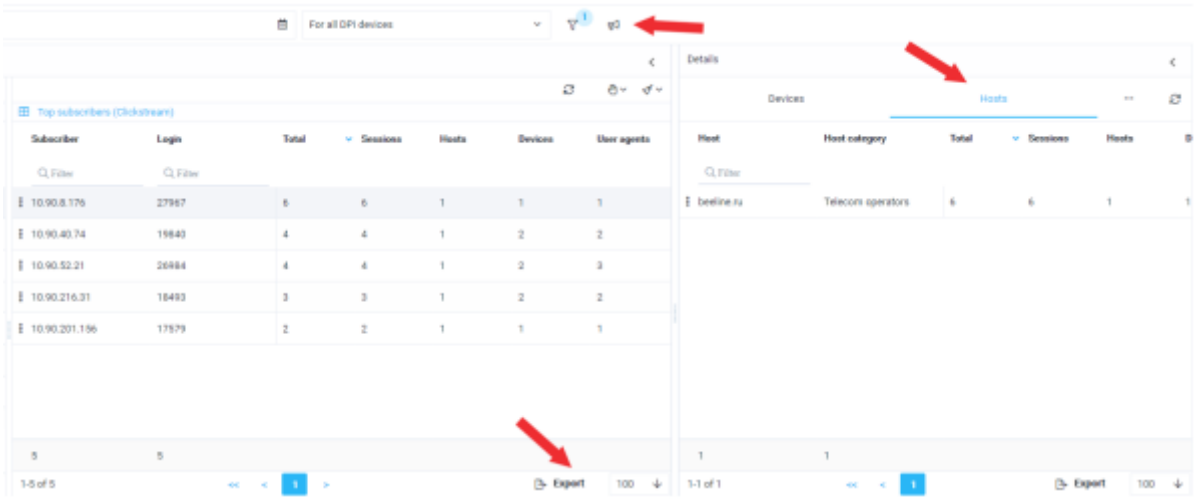
1. switch to the QoE Analytics - > Subscribers - > Clickstream section
2. create a filter including the sites of competing operators in the region



3. or use the Telecom operators category



Interpretation of gathered statistics:



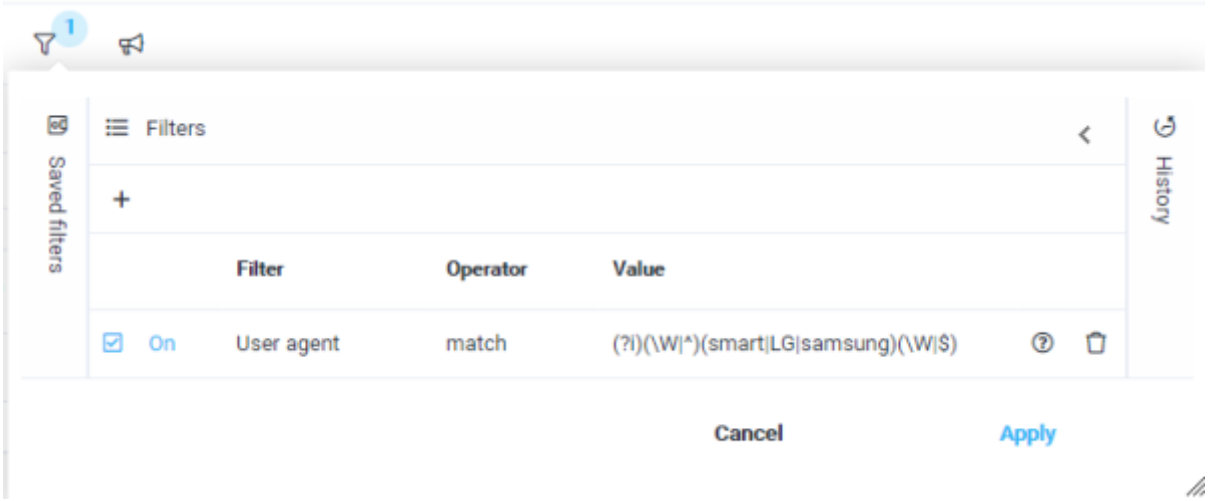
- The result of the filter applied is 5 potential subscribers who might be interested in competitors.
- More statistics can be found in the **"Details"** window.
- Using a voice-tube pictogram, you can drag-and-drop them to marketing campaign and notify them or conduct a survey on satisfaction with services using browser.
- You can export a report in a convenient format.

3 Search for Smart TV devices

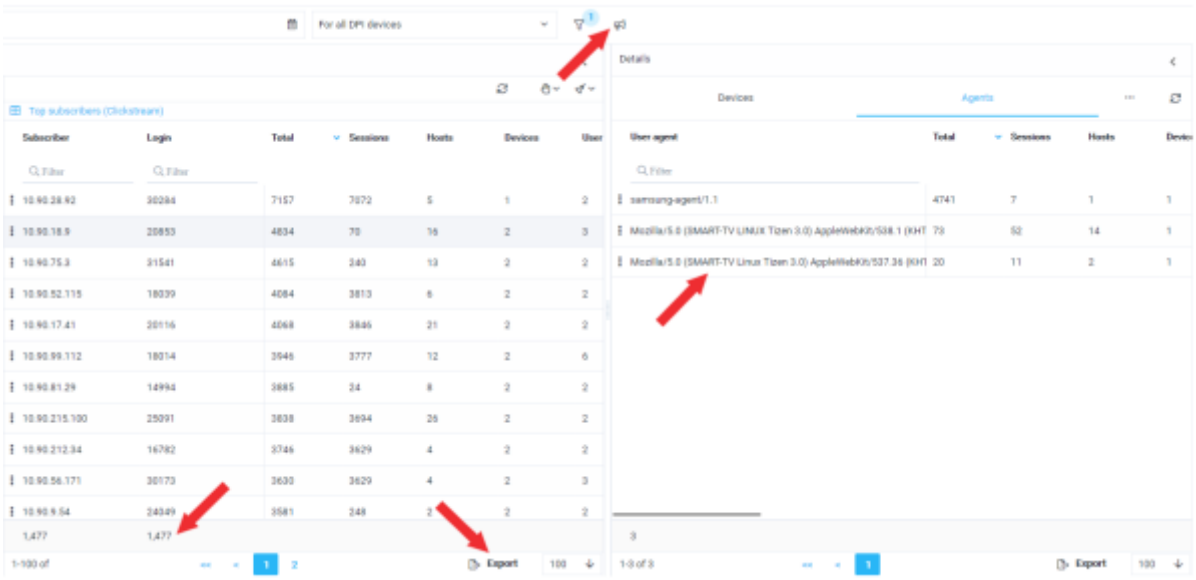
DPI exports unique UserAgent being sent within the HTTP request. The QoE module aggregates information for each IP (login, if used). Statistics uses each Smart TV behind subscriber NAT. Steps to follow:

1. switch to the QoE Analytics - > Subscribers - > Clickstream section
2. create a filter, use match operator to apply a regular expression search: (?i)(\W|^)(smart|LG|samsung)(\W|$) containing the following device list to be searched:

- smart
- LG
- samsung



Interpretation of gathered statistics:



- The result of the filter applied is 1477 subscribers having such devices.
- More statistics can be found in the **"Details"** window.
- Using a voice-tube pictogram, you can drag-and-drop them to marketing campaign and notify them or conduct a survey on satisfaction with services using browser.
- You can export a report in a convenient format.

4 Profiling subscribers by their interests

ClicStream allows you to determine the popular resources and services your subscribers use or identify their interest in sites by certain topics.

QoE Stor provides categorized list including resources divided into 54 categories.

OTT services usage

Steps to follow:

1. switch to the QoE Analytics - > Subscribers - > Clickstream section
2. create a filter **filter by Host**, use match operator to apply a regular expression search: (?i)(\W|^)(smotreshka|ivi|okko|netflix)(\W|$) containing the following OTT resources list to be searched:

- smotreshka
- ivi
- okko
- netflix

Database segmentation example

Steps to follow:

1. switch to the QoE Analytics - > Subscribers - > Clickstream section
2. create a filter **filter by Host Category**, use the category of interest

- Auto
- Websites for children, etc.

Example of searching for subscribers with high traffic consumption

Steps to follow:

1. switch to the QoE Analytics - > Netflow - > Top with high traffic (to the right) - > Top subscribers
2. sort by traffic volume