Using Qosium Probe

Qosium Probe is not directly operated as such since Qosium measurements are controlled fully by a measurement controller. However, there are certain operative functionalities, like license activation and launching, that are discussed in this section.

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1. License and Activation

Qosium Probe needs a license to run. The license information is locally stored in a license file located in Probe's installation folder. The license can be pre-activated, like, for example, in the academic license. In this case, Qosium usage can be started right after the installation.

In installation-limited licenses, each Qosium Probe needs to be activated online. The activation is carried out simply by using Kaitotek's License server as follows:

- Launch the Probe if not already running
- Verify that the device where Qosium Probe is installed has Internet access
- Open a measurement controller, like Qosium Scope, and connect Qosium Probe
- Qosium Probe will now activate itself at Kaitotek's License server.

A successful activation is typically fast. There appears some information of the successful activation while the controller just connects the Probe as usual. If something goes wrong, error information is delivered via the controller. An activated Qosium Probe will be fixed to the device. However, the installation can also be moved to another device.

If your license requires online activation, but it is impossible to organize an Internet connection to the device, contact Kaitotek's support. There are also other alternatives for the activation.

2. Launching Probe

Once Qosium Probe has been parameterized, it is time to launch it. Typically, Qosium Probe is set to run as a system service. In this way, it always starts with the platform, being ready for measurements. This also has the advantage that running Qosium measurements does not require administrative rights in the platform.

Qosium Probe can also be run as a normal application. This can be useful in some special cases since Probe's log window will be visible. Administrative rights, however, are needed when launching the Qosium Probe application.

The way of launching Qosium Probe is dependent on the platform. These are discussed in the following subsections:

- Windows based systems
- Linux based systems
- Android based systems

Only a single Probe is required per measurement point.

Did you try to launch Qosium Probe as an application, but it failed because of a reserved port? If so, check that is Qosium Probe already running as a system service.

3. Installation Transfer

If you have an installation-limited license, it is possible to transfer an activated Qosium Probe to another device. In practice, Qosium Probes can always be installed without limits, but in installation-limited license

models, only a certain number of them can be in use. Thus, transferring Qosium Probe from one device to another is, in practice, transferring the license.

License transfer is carried out as follows:

- Verify that both of the devices have an Internet connection
- Go to the device from where the Qosium Probe is to be removed
- Open command line (with administrative rights in Windows)
- Start Qosium Probe with a special argument:
  - Windows: `QosiumProbe licunreg`
  - Linux: `sudo <path>/QosiumProbe licunreg`
- The given command will try to release the activated license. Check the printed log that did it succeed. If so, the license has been disactivated and the installation-right returned to the Kaitotek's License server.
- Now go the device where the installation will be transferred to
- Install Qosium Probe there, if not already installed.
- Activate the Qosium Probe installation as explained earlier

4. Log

Qosium Probe writes a high-level log to standard output when it is running. Typically, there is no need to observe this log. In some rare cases, e.g., when troubleshooting license issues, you may need to check the log. When you launch Qosium Probe directly as an application from the command line, the log will be printed there to be observed directly. If Qosium Probe runs as a system service, you need to access the system log.

For example, if you are running Qosium Probe as a system service in Ubuntu, and you wish to see the last 50 lines of Qosium Probe's log, it is done in terminal as follows:

```
sudo systemctl status -n 50 QosiumProbe
```

5. Launching Probe in Windows

Qosium Probe is typically run as a Windows service. However, it can also be run as a normal desktop application. This section describes how to run Probe on Windows, and what options are available.

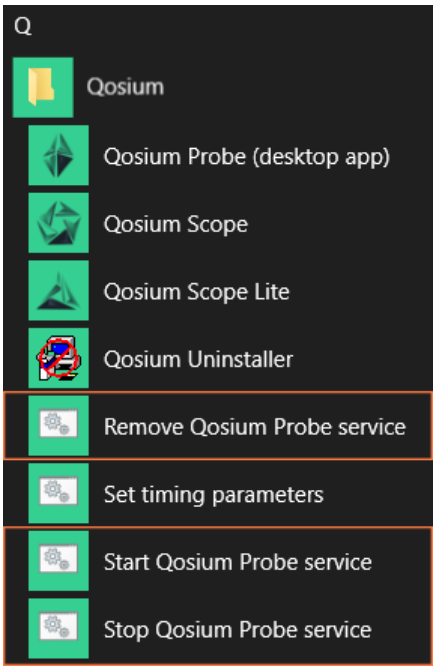
5.1. Introduction

Qosium Probe can be launched either as an application or service in Windows. Using shortcuts created by Qosium installer is the most convenient choice. Nonetheless, Probe can be also launched directly from the installation folder.

Launching Probe requires administrative rights on Windows

5.2. Launching as Windows Service

Qosium Probe is typically run as a Windows service. This is convenient since Probe will then always start with the operating system. Starting and stopping the service is also possible via the shortcuts:



The shortcuts are as follows:

- **Start Qosium Probe service** - Install Qosium Probe as a Windows service and start it
- **Stop Qosium Probe service** - Stop Qosium Probe service (if active)
- **Remove Qosium Probe service** - Uninstall Qosium Probe service

The same can also be configured directly from the command prompt. To do this, start Windows Command Prompt, change directory to Qosium installation folder, and execute **QosiumProbe.exe** with arguments, as demonstrated below.

Install Qosium Probe as a Windows service:

```
QosiumProbe.exe install
```

Start Qosium Probe service:

```
QosiumProbe.exe start
```

Stop Qosium Probe service:

```
QosiumProbe.exe stop
```

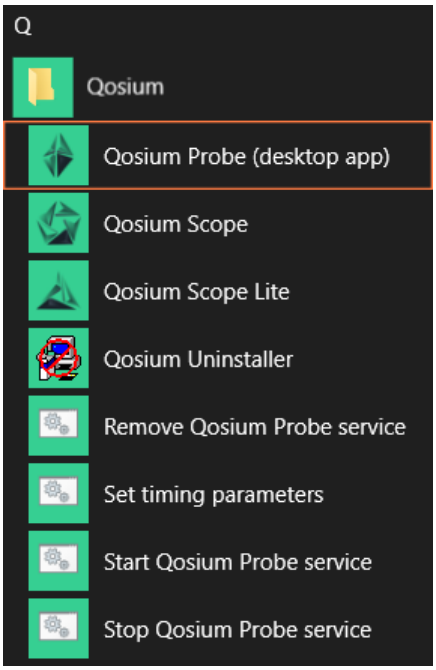
Uninstall Qosium Probe service:

```
QosiumProbe.exe uninstall
```

5.3. Launching as Windows Application

In addition to running as a service, Qosium Probe can be launched the same way as any other Windows application. If an installation package was used to install the software, access Windows start menu and use

the shortcut **Qosium Probe (desktop app)**.



If the shortcut is not available, locate the installation folder and simply execute **QosiumProbe.exe**.

6. Launching Probe on Linux

This section goes through starting of Qosium Probe on Linux based systems. The launching of Qosium Probe depends on whether it is installed as a system service or as to be started manually.

6.1. Manual Launching

In command line (Terminal), run the following command (use *sudo* in front of the command if you are not a *root* user):

```
/opt/QosiumProbe/bin/QosiumProbe
```

Probe can be set in the background by pressing *Ctrl-Z* and typing `bg`.

6.2. Qosium Probe Installed as Service

6.2.1. Systemd Service (Ubuntu, Debian, Raspbian, CentOS, Red Hat, etc.)

On Debian-based and Red Hat based operating systems, Qosium Probe can be installed as a Systemd service. After that, controlling of Qosium Probe happens with *systemctl* commands. Qosium Probe is launched automatically upon installation and device startup. Omit *sudo* from the commands below if you are *root* and sudo is not supported by operating system.

Start:

```
sudo systemctl start QosiumProbe
```

Stop:

```
sudo systemctl stop QosiumProbe
```

Request status:

```
sudo systemctl status QosiumProbe
```

Disable Qosium Probe from starting automatically upon reboot:

```
sudo systemctl disable QosiumProbe
```

Enable Qosium Probe to start automatically upon reboot:

```
sudo systemctl enable QosiumProbe
```

6.2.2. Procd Init Scripts (OpenWRT)

On OpenWRT-based systems, Qosium Probe can be installed to start to background automatically. Qosium Probe is launched automatically upon installation and device startup. Run the following example commands with *root* privileges.

Start:

```
/etc/init.d/qosium_probe start
```

Stop:

```
/etc/init.d/qosium_probe stop
```

Disable Qosium Probe from starting automatically upon reboot:

```
/etc/init.d/qosium_probe disable
```

Enable Qosium Probe to start automatically upon reboot:

```
/etc/init.d/qosium_probe enable
```

7. Launching Probe in Android

Qosium Probe agent is started with the same Qosium Probe Android Launcher that was used to install it.

1. Locate the Qosium Probe application from application menu and start it.
2. Start the Qosium Probe agent by tapping the *Start* button.
3. Optionally, you can view the output of Qosium Probe agent by selecting the *Show Log* option.

An easy way of engineering the connection between Android Qosium Probe and other Qosium components, is to use the Mobile Wi-Fi hotspot feature of Android. After enabling Mobile hotspot, the Qosium measurement controllers can attach to the Wi-Fi exposed by the Android device and connect to the Qosium Probe through it.