

The Loway Keyring

Loway

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- 1.0: First revision. Oct 15, 2011.
- 1.1: Update for Keyring 0.3.0. Jun 07, 2013.

Chapter 1. Introducing the Loway Keyring

The Loway Keyring is a simple dashboard application that allows you to administer multiple instances of QueueMetrics that are deployed on a private cloud.

These can be provisioned, scaled up and down and even closed using a web GUI that keeps track of which licenses are installed on each system and that lets you change them as needed.

This model is best suited for deploying a large number of parallel QueueMetrics instances - for example, as a complement of an existing Asterisk cloud offer - without taking the financial risk of purchasing many long-term licenses.

In this way:

- You can generate a key as soon as your clients ask for it (no delays due to bank payments, different time zones, etc.)
- If your business model is hosting remote call centers with QueueMetrics, you can purchase QM licenses that last as long as your client has paid you for; if they pay you monthly, you do not have to commit to a four-year license in advance.
- When each key short-lived expires, the Keyring will silently install a different one - you invoice your client for actual usage only.

1.1. Terminology used

A **pre-purchased key (PPK)** is an activation key that you purchase from Loway and specifies an activation period for a given license of QueueMetrics - for example, a PPK that looks like this:

```
XQI-LOWAY-74KKMREX6TOH1:QM-50/1/90
```

will eventually convert into a 90-day QueueMetrics key for 50-agents and 1 Asterisk server, counting from the day you convert it.

A **license key** is the actual key that will be installed in QueueMetrics in order to activate it. It can be installed manually within the *web.xml* file or in QM itself, on the License page. It contains a fixed expiration date that cannot be changed once it's generated.

Chapter 2. Installation

The Loway Keyring is a web application written in Java. It requires the same infrastructure as QueueMetrics (Java 6, a MySQL database). In addition, it requires a *cron* entry to update licenses automatically when needed.

The Keyring can be installed alongside an existing QueueMetrics installation or on a different, dedicated server. The box that the keyring is installed on must be able to reach all the required QM instances - either on a private network or through VPN tunnels. It must also be able to connect to the Internet for key generation.



The Keyring cannot control an instance of QueueMetrics that is installed on the same machine, as during the update process the whole servlet container is restarted.

2.1. Installing using RPM

If your Linux distribution uses RPM, installing the Loway Keyring is very easy:

```
wget -P /etc/yum.repos.d http://yum.loway.ch/loway.repo
yum install LowayKeyring
```

Once the installation is complete, you will be prompted to execute a script to install the initial database.

```
cd /usr/local/queuemetrics/webapps/LowayKeyring-0.1.15
cd WEB-INF/README
./installDB.sh
```

You will be prompted to enter your MySQL root password and the default database will be loaded.

In order to access it, point your browser to: <http://yourserver:8080/LowayKeyring>

Once you see the welcome page, do not forget to set up a cron job as described below.

2.2. Setting up a cron job

In order to set up a cron job, run the following command:

```
crontab -e
```

When the editor appears, add a line that looks like:

```
0 23 * * * /usr/bin/wget -O- "http://127.0.0.1:8080/
LowayKeyring/LKKeyBatch.jsp?user=demoadmin&pass=demo"
```

(it must be all on one single line).

Make sure that you change the default login and password once you set up the Keyring. Running the cron job daily should usually be enough, though there is no harm in running it hourly.



We strongly suggest using a single time-source throughout all your deployment - so that cross-machine logs make sense and are readable. You can easily achieve this by running *ntp* periodically to make sure that the clock is aligned on all your servers.

Chapter 3. Setting Up QueueMetrics for use with the Keyring

In order for a QueueMetrics instance to be controlled by the Keyring, you should install it as you normally do:

```
wget -P /etc/yum.repos.d http://yum.loway.ch/loway.repo
yum install queuemetrics
```

and follow the standard installation procedure.

When the QM instance is active, you should log in to it as an administrator and perform the steps described below.

3.1. Activating the *keyupdater* profile

The *keyupdater* user (the one used for scriptable remote key updates) ships with QueueMetrics but is disabled by default, as a security measure.

- Go to *Edit users and classes*, look at the *keyupdater* user and edit it.
- Set it as *Enabled: yes* and change its default password

3.2. Turning off the key expiration message

When the expiration date of a QueueMetrics license is very close, QueueMetrics will display a warning message. As Keyring licenses are usually quite short (a few days or one month), your users will otherwise often see this message.

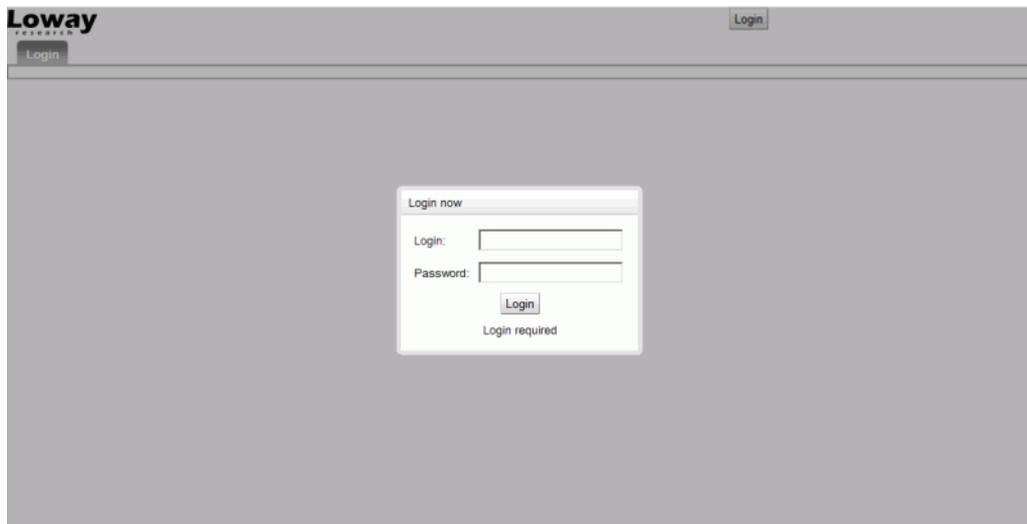
In order to turn it off, set:

```
default.noLicenseWarning=true
```

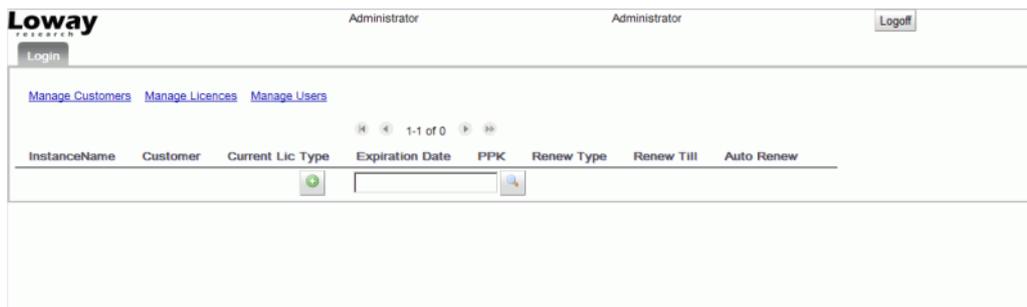
within the *configuration.properties* file of each QueueMetrics instance.

Chapter 4. Using the Keyring

If you point your browser to `http://yourserver:8080/LowayKeyring` you should see the initial login screen.



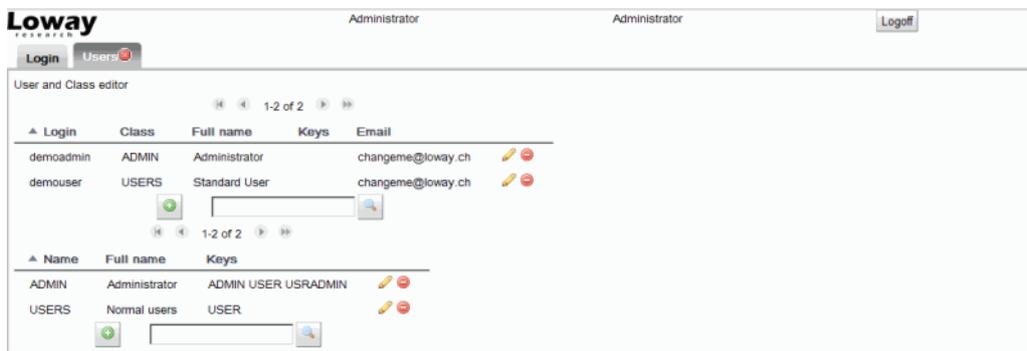
You can login as "demoadmin", password "demo" for the first access.



4.1. Initial setup

The first thing you have to do is to change the default password for user *demoadmin*.

You can do this by going to the User editor (select *Manage Users* on the homepage):



You should also edit the email address for user *demoadmin*, as reminders for any license generated through the Keyring will be sent from Loway systems to this specific address.



Remember to log out and log in again, before continuing the installation. Also, make sure that the password you just changed is reflected in the *pass* field of the crontab request you previously set up.

4.2. Loading PPKs

If you are just starting out with the Keyring, most likely you will have received a set of demo keys from Loway.

In case a license is generated but the installation fails (e.g. that particular QM instance is down), then the cron job will repeatedly try to install that key, until it succeeds. A detailed activity trace is held on the system log.



If you do not understand what is going on with a given key, the syslog is the first place you should check.

Please note that the new license will be renewed until it covers *at least* the expiry date - not a big issue if your licenses are paid on a weekly basis, but if they are e.g. monthly and the license is renewed the second day of the month, it will however last until the end of that month.

4.4. Advanced functionalities

4.4.1. PPK history

As soon as your business grows, your PPK list will get very large and searching for relationships between PPKs, keys generated and associated instances could be difficult. To help you to identify which PPK was used by a specific QM instance, which key is deployed to a QueueMetrics instance, its validity period and its activation date, a set of filtering options was implemented.

Switching to the *Manage Licences* page the whole list of PPKs is shown, independently by the status each PPK has. For each Generated and/or Activated PPKs the *Start Validity* and *End Validity* columns are populated with their relevant information. Generated and/or Activated keys have an icon in the *More info* column. Click on this icon to have detailed information about a specific PPK; a popup box opens as shown in the picture below.

The screenshot shows the 'Licences' page in the Loway application. The table lists 12 PPKs with columns for ID, Type, Status, PPK, Start Validity, End Validity, and More Info. A popup window is open for the second PPK (ID 2), showing details such as Instance ID (5), Instance Name (Negido), Company (Loway), Customer Name (Numero), and Customer Surname (Negido). The popup also displays the Activation Key and a 'Close' button.

ID	Type	Status	PPK	Start Validity	End Validity	More Info
1	QM 50/1, 30 days	Generated	5E9...	Thursday, 2011 September 01	Saturday, 2011 October 01	🔍
2	QM 100/1, 30 days	Generated	BIS-LOWAY...	Friday, 2011 September 16	Sunday, 2011 October 16	🔍
3	QM 50/1, 30 days	Generated	KV5-L...		Wednesday, 2011	
4	QM 50/1, 30 days	Generated				
14	QM 100/1, 7 days	Generated				
5	QM 50/1, 30 days	Generated				
6	QM 20/1, 30 days	Generated				
7	QM 20/1, 30 days	Generated		Friday, 2011 September 16	Sunday, 2011 October 16	🔍
8	QM 20/1, 30 days	Activated	QY7-LOWAY...	Monday, 2011 October 17	Wednesday, 2011 November 16	🔍
9	QM 20/1, 30 days	Generated	W3D...	Wednesday, 2013 May 22	Friday, 2013 June 21	🔍
10	QM 10/1, 30 days	Generated	LUL...	Monday, 2011 August 29	Wednesday, 2011 August 31	🔍
11	QM 10/1, 30 days	Generated	XU...	Monday, 2011 August 29	Wednesday, 2011 September 28	🔍
12	QM 10/1, 30 days	Generated	ZAV...	Monday, 2011 August 29	Wednesday, 2011 September 28	🔍

Through the two dropdown lists present on the right side of the page is possible to filter the PPK list by licence type and/or licence status. To have the filtered list you should select which licence type and/or status you need to list, then click on the *Filter* button.

The screenshot shows the 'Licences' page after filtering. The table now only displays two PPKs (ID 8 and 13) that are in an 'Activated' status. The filter dropdowns on the right are set to 'Licence Type: -- All --' and 'Licence Status: Activated'. The 'Filter' button is visible.

ID	Type	Status	PPK	Start Validity	End Validity	More Info
8	QM 20/1, 30 days	Activated	QY7-LOWAY...	Monday, 2011 October 17	Wednesday, 2011 November 16	🔍
13	QM 100/1, 7 days	Activated	3UI...	Monday, 2013 June 03	Monday, 2013 June 10	🔍

4.4.2. Activity log

Each time a user edits/inserts a customer or a QM Instance, each time the batch processor runs or a user manually triggers a key generation/activation process, a set of activity events are generated and logged on the keyring database.

These events could be inspected for security reasons or to better understand what happened if something went wrong by clicking on the of the *View Syslog* page. The *View Syslog* link is available only to users holding the key SYSLOG. In order to assign a specific key to the user please refer to Section 4.5.4, "User Accounts and Security"

4.5. How to's

4.5.1. Extending or reducing a QueueMetrics key

In order to extend and/or reduce an existing license, you create a new one and replace the old one with it. It is immediately active. The old one is basically "dumped" and cannot be recycled.

4.5.2. What if I run out of PPKs?

In case you should run out of the PPK required for that client, it will be impossible to generate the key and an error message will be logged. (We plan to add email notifications in the near future).



To help you avoiding this situation, when a license that is set to be renewed does not have a possible PPK on the current database, we display a warning icon.

4.5.3. Help! My QM license expired and remote key deployment does not work!

If a QueueMetrics license key expires, the whole application might become unavailable. This does not usually happen the very day the key expires, but after its expiry date a QM instance may stop working at any moment. When this happens, even the remote key deployment webservice becomes unavailable, and so the Keyring cannot restart that QM instance.

If this happens to you:

- Have a new license key generated manually for that instance (if there isn't one already available). The Keyring will generate a new key and complain that the QM it should be installed on is not working.
- Open the *Manage Licences* page and search the latest key generated for that specific instance. Click on the *More Info* icon to have a popup where the *Activation key* is shown
- Manually copy the generated key (you can find it in) to the *LICENZA_ARCHITETTURA* property of the *WEB-INF/tpf.properties* file you can find in your QueueMetrics instance
- Restart QueueMetrics
- Trigger the updater, so that the Keyring will install the key again and will report the key as currently installed.

4.5.4. User Accounts and Security

Access to the LowayKeyring pages is granted by mean of a pairs of username and password tokens. These should be present in the list of authorized users. Each user is related to a specific class. Classes are a set of containers where security keys are grouped. Each security key is a token that, when hold by a user or a class, allows the holding user to do a specific action or set of actions.

In order to add, edit, delete users, an administrator should click on the *Manage Users* link on the top of the page. Only administrators, or better, only users holding the USRADMIN key are allowed to enter to the user's administration page. From this page is possible to define, edit or delete a set of classes. Each class should have a unique name and a set of security keys that will be applied to each user inheriting that class. From this page is also possible to define, edit or delete a set of users. Each user should have a unique name, a password, and should inherit from a specific class. It's also possible to assign a specific security key to one or more users.

A security key is usually made by a case insensitive text-based token. Some security keys are pre-defined by the LowayKeyring framework. This means that they could be used to activate specific actions for users holding that key. An example is the USRADMIN that enables user definitions page for the user holding that key.

Loway research

Administrator Administrator [Logoff](#)

Main **Users**

User and Class editor

Users

1-2 of 2

▲ Login	Name	E-mail	User Keys	Class
demoadmin	Administrator	info@loway.ch		ADMIN
demouser	Standard user	info@loway.ch		USERS

Classes

1-2 of 2

▲ Name	Description	Keys
ADMIN	Administrator	ADMIN USER USRADMIN SYSLOG
USERS	Normal users	USER

This is a preview build of the LowayKeyring that expires on 2014-01-05