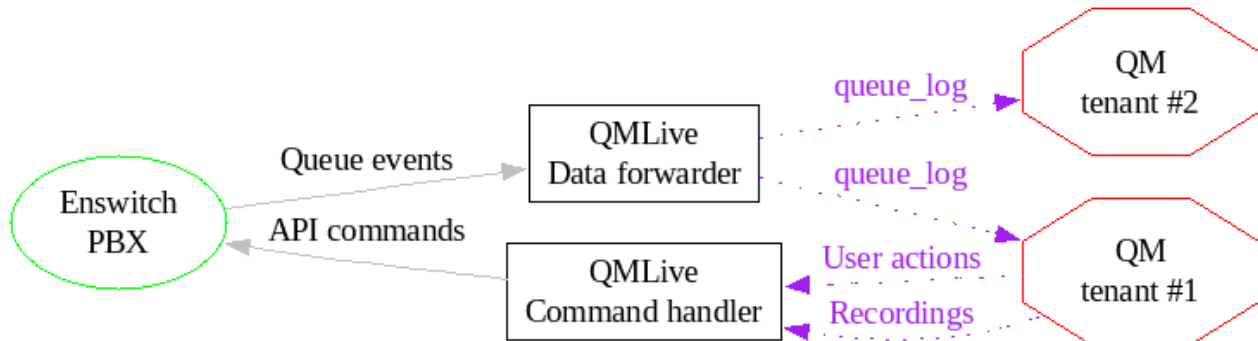


== Introduction

QueueMetrics Live works well with Enswitch PBXs; they are both meant for multi-tenant service.



The idea is quite simple:

- You create a set of QueueMetrics Live instances to match the tenants you want to have QueueMetrics Live for
- Loway pulls data periodically out of each tenant and pushes it into each QMLive instance
- You can enable agent actions so that agent management and chanspy functions can be used through the QM interface. This is optional.
- You can enable Enswitch recordings so that call recordings can be seen (and accessed) through QueueMetrics; this lets you - for example - access the Quality Assessment tracking modules.

=== Terminology

- **QueueMetrics Live** is the SaaS offering for QueueMetrics. It runs multiple separate **instances**, one for each tenant.
- A **QueueMetrics Live Instance** is a-..
- **Enswitch** is
- An **API KEY** is used if you want to generate and manage QueueMetrics Live instances without contacting Loway.

=== Prerequisites

- A working Enswitch system, version 3.15+ set up with multiple tenants.
- A custom domain name to host your QueueMetrics Live, here stats.pbx.my
- A QueueMetrics Live API key (optional)

== Enswitch configuration

=== Queue data upload

Queue log generation must be enabled for the queues, by setting the events field to 1 on the **queues** table of the Enswitch database.



how? ask AC

Query Favorites		Query History	
customer	name	description	events
67	9002	[REDACTED]	1
67	9004	[REDACTED]	1
67	9005	[REDACTED]	1
67	9003	[REDACTED]	1
67	9000	[REDACTED]	1
67	9006	[REDACTED]	0
67	9106	[REDACTED]	0

For example, in the picture above the last two queues will NOT generate events.

=== API credentials

It is considered best practice to create an API user that only has visibility to a single tenant.

For each tenant we require:

- an Enswitch URL, e.g. <https://myenswitch.pbx.my> - will likely be the same for all your tenants.
- a user (and password, alphanumeric characters only) that can access the tenant's data and perform actions
- the tenant's numeric ID is optional and only needed if you give us grants that can access multiple tenants

Actions required:



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=== Queues

Queues must be configured in Enswitch first.

- the **name** field matches the contents of the queue_log. We suggest a name that is short and as no spaces or special characters in it.
- agents must be added in the **destination** field, as "Features → Telephone lines" and not just Numbers.

The way this works in QueueMetrics is that it will:

- search all the queues where the extension that appears in the Agent code is a known phone
- apply changes to those queues only

Therefore **if the agent's phone does not exist on a queue, it cannot be logged on and off.** For example, say that you ask QM to log **Agent/1234** to queues **A** and **B**. QM will find all the queues where phone **1234** is a known member, say queues **A** and **C**. Therefore it will apply the required changes only to queue **A**, as it is the only one where the change is "doable", and log a warning message that queue **B** cannot be used.

Open and Closed log-on modes

The default integration mode for Enswitch, explained above, uses a "closed" log-on mode; this means that QueueMetrics cannot log an arbitrary agent on to Enswitch, but will basically toggle the pause status of an existing agent, albeit logging the event "as if" it was a real log-on/log-off or a pause/unpause event.

Weird as this sounds, this means that an administrator can configure with certainty which agents are supposed to work on a queue, and end-users cannot change them - they can just toggle them on and off.

If you set **platform.enswitch.openLogons=true**, a log-in will instead mean that an extension with the same agent code and **dtype=phone** will be added to the queue, with a priority as defined on the QM queue definition. A log-off will remove such extension from a queue.

== QueueMetrics Live configuration

=== Available configurations

==== Automatic queue and agent configuration

This configuration will be done by Loway when setting up the system; you will find properties like:

```
#Autoconfiguration
synchronizer.url_source=https://my.queuemetrics-
live.com/svc/inst/autoconfig/generic/?instance=....&apikey=.....
default.synchronizer_reader=SOURCETYPE_URL
default.synchronizer_mode=CR_UPD_USR
```

When you log on the first time, or when you make any changes in Enswitch, you will have to:

- Log in to QM-Live as an admin
- Click on "Configuration synchronizer"
- Click on "Import configuration" (the cloud with an up-arrow) and then click OK.
- When the configuration is loaded from Enswitch, all new queues and agents will be created. You can review that it's okay and then click on the "Save" icon (the golden floppy disk) to apply.

This will:

- Copy all queues

- Copy all extensions and create an agent with that extension code. QueueMetrics does not count extensions for its licensing model unless they are actually used on queues, so having even unused ones in the configuration is harmless.



ATM users are not created, so you need to create them manually when needed.

==== Enabling Enswitch agent actions

Each QM-Live system must be set like:

```
platform.pbx=Enswitch
default.hotdesking=0
platform.enswitch.http.baseurl=https://myenswitch.pbx.my
platform.enswitch.http.login=___TENANT_USER___
platform.enswitch.http.password=___TENANT_PASSWORD___
platform.enswitch.guiaddmember=true
platform.enswitch.verbose=true
```



The fields **TENANT_USER** and **TENANT-PASSWORD** refer to the Enswitch API user.

Settings are usually defined centrally and applied to all instances.

The following features are supported:

- CALLOUTCOME: Set call outcome
- ADDFEATURECODE: Set feature code
- REMOVEFEATURECODE: Remove feature code
- SOFTHANGUP: Hangup call from RT
- TRANSFER: Transfer call from RT
- SPY_INBOUND: Spy call
- ADDMEMBER: Agent starts working
- REMOVEMEMBER: Agent stops working
- PAUSE: Agent pauses (on all queues), with an optional pause code
- UNPAUSE: Agent resumes working

Please note that in the default "closed log-on mode", ADDMEMBER and REMOVEMEMBER do not allow cherry-picking a queue - logging on to a queue will log on to any queue, and vice-versa. With "open log-on" agents (and their supervisors) can decide dynamically who is going to work where.



Open log-on mode has to be set manually in the instance.

==== Manually creating queues and agents



The process below is explained for reference, but it is more effective to use automatic configuration - see [Automatic configuration](#).

Agents

First create a User:

- Login: **Agent/5525646**
- Password: (whatever)
- Real name: **John Doe**
- Enabled: **Yes**
- E-mail: **johndoe@company.co**
- Class: **AGENTS**
- Masterkey: **No**

Then its Agent:

- Asterisk agent code: **agent/5525646**
- Agent description: **John Doe**
- Asterisk Aliases: **SIP/5525646@enswitch** (note: not "enswitch-local"!)



The agent can log in with either their user name or their e-mail address, the latter usually being easier to remember than the long codes used in Enswitch.

Queues:

You have to manually create queues using:

- Queue alias: a description for the user
- Queue(s): the queue **name** as it appears in Enswitch

=== Accessing audio recordings

Should already work if setting:

```
audio.server=it.loway.app.queuemetrics.calllisten.listeners.EnswitchPlatformListener
```

together with the "Agent actions" settings above.

To enable recordings:

- Create a Recording Group in Enswitch
- Select Telephone Lines, find the number you want and set its recording group to an existing one

=== Automatically creating new instances using the QM Live API

If you create QML instances using the API, you can set the accounts to be used for data pulling from your Enswitch system, so that everything just works.

- kNumber: `esw/ENSWITCH_URL TENANT_USER TENANT_PASSWORD TENANT_ID` - e.g. "esw/https://myenswitch.pbx.my myuser p@ssw0rd 27", each value separated by a space.
- kApiKey: `YOUR_API_KEY` - you can set it to any random string, and it must be the same as



At the moment, data pullers downloading data from Enswitch and forwarding it to your QM Live instance are started manually, so if you have a tight time-frame, make sure you contact Loway so they are started immediately once the instance is created.

=== Complete configuration example

This is a complete configuration example, to be appended manually.

```
platform.pbx=Enswitch
default.hotdesking=0
platform.enswitch.http.baseurl=__ENSWITCH_URL__
platform.enswitch.http.login=__TENANT_USER__
platform.enswitch.http.password=__TENANT_PASSWORD__
platform.enswitch.guiaddmember=true
platform.enswitch.verbose=true

audio.server=it.loway.app.queuemetrics.calllisten.listeners.EnswitchPlatformListener

#Autoconfiguration
synchronizer.url_source=https://my.queuemetrics-
live.com/svc/inst/autoconfig/generic/?instance=__INSTANCE_NAME__&apikey=__YOUR_
API_KEY__
default.synchronizer_reader=SOURCETYPE_URL
default.synchronizer_mode=CR_UPD_USR
```

== FAQs

=== I can see no data in QM Live

Most likely, queue events are not enabled on Enswitch.

=== Calls appear with an incorrect duration in real-time

If calls appear with an incorrect duration on the real-time screen, i.e. start at some positive time or with a negative duration (!) this means that your Enswitch system has a wrong clock, or some parts of it have. Make sure all machines are synchronized over NTP.

=== My agent is not able to log in to some queues

Most likely, the agent's phone is not member of said queues.

=== I do not seem to be able to set call outcomes

Outcomes rely on an additional API end-point `local/calltag/api/set/` that is not a part of the standard Enswitch package. Please ask Integratics on how to get that installed on your own system.

=== ADDMEMBER/REMOVEDMEMBER entries are sometimes not generated

Enswitch does not natively generate `ADDMEMBER` and `REMOVEDMEMBER` events. To work around this, the QueueMetrics integration injects these entries directly into the `queue_log` table on Enswitch, which QueueMetrics then reads from.

For this to work, agents must be logged on and off exclusively through QueueMetrics — either from the agent's own page or via the Realtime/Wallboard view. Using Enswitch feature codes to log in or out will bypass this mechanism entirely, meaning the events will not be generated.