

# What's new in QueueMetrics

Loway

---

## What's new in QueueMetrics

Loway

---

# Table of Contents

1. Contents .....	1
2. Release 12.01 .....	2
2.1. Agent times by hour .....	2
2.2. Call tagging .....	2
2.3. Paginated call display .....	4
2.4. Realtime on Asterisk 1.8 .....	5
2.5. Non-contiguous reports .....	5
2.6. Friendly names handling .....	6
2.7. Encrypted files playback .....	7
2.8. Persistent user properties .....	8
2.9. QA from Agent page .....	8
3. Release 12.02 .....	11
3.1. Tracking Music on Hold .....	11
4. Release 12.05 .....	12
4.1. AGAW Quick Installation .....	12
4.2. AGAW Chrome compatibility .....	12
4.3. RT page menus .....	13
4.4. QA Extra Score .....	13
4.5. QM database creation .....	14
4.6. QM Home page layout .....	14
4.7. Agent channel names with - .....	15
5. Release 12.10 .....	16
5.1. Performance optimizations .....	16
5.2. Administrative Tools access .....	16
5.3. Agent page reports .....	17
5.4. URL Substitutions .....	18
6. Release 13.04 .....	19
6.1. Manual and automated reports as PDF/XLS documents .....	19
6.2. Non-scoring questions and other changes related to QA .....	19
6.3. Fully-automated screen pops on the Agent's page: Active Polling .....	20
6.4. Analyzing IVR tree traversal .....	21
6.5. Detailed tracking of call events .....	21
6.6. QueueMetrics in the cloud: using different QM instances on the same PBX .....	21
7. Release 13.12 .....	23
7.1. Externally-generated report pages .....	23
7.2. Improved QA features .....	23
7.3. Easier integration to external CRMs .....	23
7.4. Ready for Asterisk 12 and easier to deploy .....	23
7.5. Misc changes .....	24
8. Release 14.03 .....	25
8.1. General usability improvements .....	25
8.2. Misc changes .....	25

---

# Chapter 1. Contents

This document contains a graphical description of the most important changes for a QueueMetrics release.

# Chapter 2. Release 12.01

This release of QueueMetrics includes a variety of functional improvements, which we have subdivided into major and minor changes. We are providing this brief overview of the main changes in order to have a quick and readable guide that allows our customers to be aware of what the major changes are, why they were implemented and how it improves the user-experience.

The new major changes are as follows:

- Agent times by hour [#1364]
- Call tagging [#1369]
- Paginated call display [#1383]
- Realtime on Asterisk 1.8 [#1385]
- Non-contiguous reports [#1405]
- Friendly names handling [#1470]
- Encrypted files playback [#1492]
- Persistent user properties [#1511]
- QA from Agent page [#1519]

## 2.1. Agent times by hour

This new reporting feature addresses the need to know the total presence time of each agent over a specific 24h period of time. So we developed this feature to show data subdivided into the following three sets of metrics:

Agent Session Time by Hour								
Agent	16	17	18	19	20	21	22	Total
 John Doe (101)	34:22	1:00:00	1:00:00	1:00:00	1:00:00	1:00:00	11:00	5:45:22
▶ Export as...   								

Agent Payable Time by Hour								
Agent	16	17	18	19	20	21	22	Total
 John Doe (101)	34:22	1:00:00	1:00:00	1:00:00	1:00:00	1:00:00	11:00	5:45:22
▶ Export as...   								

Agent Billable Time by Hour								
Agent	16	17	18	19	20	21	22	Total
 John Doe (101)	34:22	1:00:00	1:00:00	1:00:00	1:00:00	1:00:00	11:00	5:45:22
▶ Export as...   								

This allows an administrator to have information for each agent, by showing the agent's decoded name, level and current group (if defined, expressed as an icon like elsewhere in QM), various columns containing the total session time for each hourly timeframe and the total time of all the hourly sessions, from start to end.

See also:

- QueueMetrics User Manual: chapter 6.10.10 (Agent session time by hour)

## 2.2. Call tagging

For each call it is possible to add Tags which can be created (by using the security key: CALLMONITOR\_ADDTAGS) and deleted (with: CALLMONITOR\_DELTAGS), as required, in order to keep a note regarding that specific call.

## Call detail

Close

Track QA

Asterisk Call ID:	1322735452.294
Date and time:	12/01 - 11:31:03
Queue:	Outbound 301 [q-301]
Caller ID:	201
Handled by:	John Doe (101)
Duration:	0 sec.
Waiting time:	8 sec.
Original position	-
Disconnection cause:	Caller disconnected
Transferred to:	
Attempts:	1
Last Failed Attempt:	-
Bridged Channel:	
Stints:	1
URL:	
Status code:	sale: Sale
Srv	
DNIS	
IVR selection	
- Q-q-301-1322735452.294.WAV	

## Tags

## Insert a new tag



Recording file: Q-q-301-1322735452.294.V

Time (sec): 11:31:05

Duration (sec):

Notes: Sales pitch

Set Tag Color: Red: 37%  
Green: 100%  
Blue: 37%



Ok

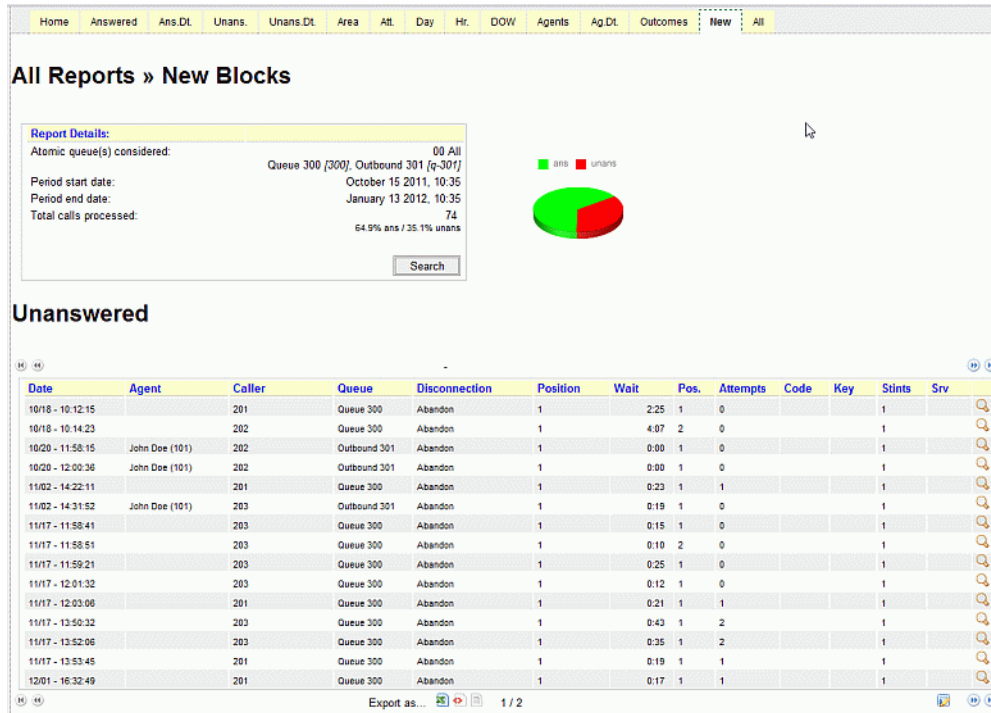
Cancel

See also:

- QueueMetrics User Manual: chapter 11.3.3 (QA - The input form)

## 2.3. Paginated call display

It is now possible to view details of calls (answered, unanswered) in a paginated order, rather than as a long list of data on a single page, allowing better readability than previous straightforward listings when running a large result set. If we run a Report we will see that the calls are showing in pages, rather than as a listing (note the buttons to go forward/back and that the page is 1 of 2 pages)



By selecting the icon at the bottom right of the paginated listing, it is possible to add columns, as required, and when exporting data you can select just the columns that you want to export.

## Details of answered calls

Date	Caller	Queue	Wait
11/28 - 11:31:27	203	Queue 300	0:04
11/28 - 11:31:47	203	Queue 300	0:04
11/30 - 16:33:08	201	Queue 300	0:04
11/30 - 16:35:40	201	Queue 300	0:04
12/01 - 11:25:33	201	Queue 300	0:04
12/01 - 11:31:03	201	Outbound 301	0:04
12/01 - 11:33:31	201	Queue 300	0:14
12/01 - 16:26:01	201	Queue 300	0:03
12/01 - 16:30:19	201	Outbound 301	0:03
12/07 - 17:27:00	201	Queue 300	0:03
12/14 - 17:12:56	201	Queue 300	0:09
12/14 - 17:14:16	201	Queue 300	0:05
12/15 - 15:34:48	201	Queue 300	0:09
12/15 - 15:37:44	201	Queue 300	0:03
12/15 - 15:39:58	201	Queue 300	0:26

### Available data columns

- ☒ Date
- ☒ Caller
- ☒ Queue
- ☒ Wait
- ☒ Duration
- ☒ Pos.
- ☒ Disconnection
- ☒ Handled by
- ☒ Attempts
- ☒ Code
- ☒ Stints
- ☐ Srv
- ☒ Asterisk UID

Ok

Date	Caller	Queue	Wait	Duration	Pos.	Disconnection	Handled by	Attempts	Code	Stints	Srv	Asterisk UID
11/28 - 11:31:27	203	Queue 300	0:04									
11/28 - 11:31:47	203	Queue 300	0:04									
11/30 - 16:33:08	201	Queue 300	0:04									
11/30 - 16:35:40	201	Queue 300	0:04									
12/01 - 11:25:33	201	Queue 300	0:04									
12/01 - 11:31:03	201	Outbound 301	0:04									
12/01 - 11:33:31	201	Queue 300	0:14									
12/01 - 16:26:01	201	Queue 300	0:03	0:20	1		Caller					John Do
12/01 - 16:30:19	201	Outbound 301	0:03	0:05	0		Caller					John Do
12/07 - 17:27:00	201	Queue 300	0:03	0:20	1		Caller					John Do
12/14 - 17:12:56	201	Queue 300	0:09	0:07	1		Caller					John Do
12/14 - 17:14:16	201	Queue 300	0:05	0:32	1		Caller					John Do
12/15 - 15:34:48	201	Queue 300	0:09	0:35	1		Agent					sip/203
12/15 - 15:37:44	201	Queue 300	0:03	0:28	1		Caller					sip/203
12/15 - 15:39:58	201	Queue 300	0:26	0:28	1		Agent					sip/203

Export as... Current page: 1 / 4

See also:

- QueueMetrics User Manual: chapter 20.12 (Configuring paginated calls)

## 2.4. Realtime on Asterisk 1.8

With Asterisk 1.8 the format of the Asterisk realtime table was changed, so we have had to update QueueMetrics to support the new format. This means that it is now possible to delegate the queue logging to the Asterisk Realtime subsystem. With this option the QueueMetrics MySQL database log will be replaced by the MySQL database populated by Asterisk, so the qloader process is no longer needed.

See also:

- QueueMetrics User Manual: chapter 23.17 (Running Asterisk 1.8 with QueueMetrics)

## 2.5. Non-contiguous reports

Non-contiguous reports allow to choose specific day(s) of the week and time periods that you may want to include in a report query.



### Custom report analysis

Report Details:

Call filtering criteria

Agent:  -

Location:  -

Agent Group:  -

Outcome:  -

Asterisk call-id:

Caller:

Wait duration: Between  and  s.

Call duration: Between  and  s.

Disconnection cause:  -

Enter position: Between  and

Number of attempts: Between  and

DNIS:

IVR choice:

Server:  -

Time zone offset:  No offset

Join multi-stint calls:  No

Non-contiguous time: SUN MON TUE WED THU FRI SAT  
☐ ☐ ☐ ☐ ☐ ☐ ☐  
Between  and  (hh:mm)  
Between  and  (hh:mm)

Preferences

This resolves the issue of having to obtain the same statistic manually and then having to integrate them into a single report, based on chosen days and/or times.

See also:

- QueueMetrics User Manual: chapter 4.3.1 (Custom Reports - Call search criteria)

## 2.6. Friendly names handling

Since FreePBX (2.8 and newer) changed the queue\_log entries such that they were written using the *friendly name*, we have had to adapt QueueMetrics to recognize Asterisk aliases, known as *friendly names* for reporting purposes. In QueueMetrics you can now assign multiple *friendly names* to an agent. This solution allows to monitor and report on an agent that is present under different codes within the queue\_log.

[Home](#)[Cfg Users](#)[Cfg Queues](#)[Cfg Agents](#)[Cfg Agent Groups](#)[Cfg Locations](#)[Cfg Outcomes](#)[Cfg](#)

## Agent Detail

Asterisk agent code: <small>E.g.: Agent/101</small>	Agent/102
Agent description:	Mike Boo (102)
Asterisk aliases: <small>Separate multiple aliases with a " " symbol</small>	Mike Boo
Agent location:	Other
Agent group:	-
VNC monitoring URL:	http://mike.boo.workstation/vnc
Current terminal:	12
Instant messenger address:	
Supervisor:	-
Agent keys:	
Payroll Code:	
Created by:	demoadmin, 18/06/2007, 22:29
Last update:	demoadmin, 04/12/2008, 14:59

[Save](#)[Back](#)[New](#)[Clone](#)[Delete](#)

### Agent is a known member of the following queues:

Queue name	Direction	Level
00 All	inbound	Main
Inbound	inbound	Main
Q DPS	inbound	Main
Q Test	inbound	Main

The Agent/Queue association can be edited from the Queue editor

See also:

- QueueMetrics User Manual: chapter 20.4 (Configuring agents)

## 2.7. Encrypted files playback

QueueMetrics now offers the option to listen to recordings that are stored in an encrypted format and it can adapt to almost any encryption technology. QueueMetrics ships world-wide and some States require high security levels within a call centre, amongst which, the requirement to keep call recordings in a protected/encrypted format so that they can't be easily accessed and listened to.

This process takes place transparently and if we deploy QueueMetrics in a secure HTTPS environment the audio recordings will be encrypted on disk and will also be encrypted on the network.

See also:

- QueueMetrics User Manual: chapter 23.20 (Listening to encrypted recordings)

## 2.8. Persistent user properties

Per-user persistence settings allow user search configuration to be stored and kept even after log off and can be changed and re-stored at any stage

Home

CR

Custom report analysis

Report Details:

Call filtering criteria

Preferences

Hourly slot (minutes)

15

SLA: initial period

20

SLA: initial interval

5

SLA: max period

120

SLA: interval

10

Run custom report

Start realtime monitoring

List Calls

Custom Reports maintain the latest query parameters entered, even when a user logs off and logs back in, in order to facilitate the work-flow of a user requiring the same reports on a daily basis.

The Refresh button allows to clear the input query parameters at any stage.

See also:

- QueueMetrics User Manual: chapter 4.3.2 (Persistent user properties)

## 2.9. QA from Agent page

It is now possible for agents to access the Quality Assessment form, in order to allow them to add QA information to the call while speaking to a customer. This feature is accessible via a QA form icon on the agent page that is enabled via a special security key (QA\_TRACK) that can be added for any specific agent, to allow them to make use of this feature. The agent can only access specified QA forms thanks to the powerful security system used by QueueMetrics.

# Active calls for agent

Agent/101: Agent is currently logged on queue

[Reload now](#)
[Log on](#)
[Log off](#)
[Add Member](#)
[Remove](#)

Entering at	Waiting	Talking	Caller ID	Queue
02/27 - 16:03:45	0:03	0:08	201	Queue 300

In order to maintain session information, this page



**Loway**  
research  
Loway Research



QA Grading - Mozilla Firefox



10.10.5.25:8080/queuemetrics/qa/popup\_qa\_grade\_ajax.jsp

## Overall Performance

Engagement (Avg)	0.0
Resolution (Avg)	0.0
Business needs (Avg)	0.0
Total score:	0/1300
Avg.	0.0

Start time: F  
Queue: C  
Agent: J  
Agent Group: -  
Caller: 2  
AstClid: 1

[Audio record](#)

## Code Description

### Engagement

SCG	How positive clear and eager was the use of the Corporate greeting?
COU	How well did the rep display courtesy?
ENE	Rate rep's energy level throughout the call
TOM	How well did the rep use the tone and speed of speech?

This feature was developed as some of our customers required being able to allow agents to interview callers on the perceived quality of their services. It is, however a feature that is applicable in a variety of other scenarios, according to business needs.

*See also:*

- QueueMetrics User Manual: chapter 8 (The real-time agent page)

# Chapter 3. Release 12.02

This release of QueueMetrics includes a main functional improvement, which is related to the Music on Hold (MOH) feature. This brief release overview allows to understand the new feature, why it was implemented and how it can be applied.

The new major change is as follows:

- Tracking Music on Hold [#1525]

## 3.1. Tracking Music on Hold

Many QueueMetrics customers expressed the need to be able to monitor the amount of time a customer was put on hold, given that this is not currently measureable via Asterisk. To use the MOH feature it is necessary to install a custom patch which allows to track these events.

When this feature is enabled, if we look at the QueueMetrics Realtime page, we see an "MOH" field that shows the amount of time a customer is on Hold with music, during a call. If multiple Hold instances took place during the call, this field will show the total "on hold" duration.

Calls being processed:

Queue	Caller	Entered	Waiting	Duration	Agent	MOH	Srv
Inbound	201	10:09:58	0:09	3:37	John Doe (101)	3:33	

Export as...

See also:

- QueueMetrics User Manual: chapter 7.2 (Calls being processed)

QueueMetrics offers the option to have a list of calls displayed in a paginated format. If we look at the bottom right of this list, we can see a small icon which allows us to add or remove columns within the listing. We now have the option of adding the "MOH events" and "MOH duration" columns, which report on the number of events where a caller was put on Hold and the total duration of such events.

Date	Caller	Queue	Wait	Duration	Pos.	Disconnection	Handled by	Attempts	Code	Slits	Srv
12/14 - 17:12:55	201	Queue 202	0:09	0:07	1	Caller	exp2002	1		1	
12/14 - 17:14:15	201	Queue 202	0:05	0:32	1	Caller	exp2002	1		1	
12/15 - 15:34:42	201	Queue 202	0:09	0:35	1	Agent	exp2002	1		1	
12/15 - 15:37:44	201	Queue 202	0:03	0:23	1	Caller	exp2002	1		1	
12/15 - 15:39:55	201	Queue 202	0:26	0:23	1	Agent	exp2002	2		1	
12/15 - 15:41:23	201	Queue 202	0:03	0:14	1	Agent	John Doe (101)	1		1	
12/15 - 15:45:42	201	Outbound 201	0:05	0:25	0	Caller	John Doe (101)	1		1	
12/15 - 16:33:29	201	Queue 202	0:05	1:02	1	Caller	John Doe (101)	1	na	1	
12/15 - 16:37:45	201	Outbound 201	0:03	0:27	0	Caller	John Doe (101)	1	na	1	
12/15 - 16:43:25	201	Queue 202	0:02	0:26	1	Caller	John Doe (101)	1		1	
12/22 - 09:30:15	201	Queue 202	0:04	0:14	1	Caller	John Doe (101)	1		1	
12/22 - 09:41:29	201	Outbound 201	0:05	0:07	0	Caller	John Doe (101)	1		1	
12/22 - 10:45:55	201	Queue 202	0:04	0:26	1	Caller	John Doe (101)	1	na	1	
12/22 - 10:49:16	201	Queue 202	0:03	0:43	1	Agent	John Doe (101)	1		1	
12/22 - 10:51:57	201	Outbound 201	0:05	0:43	0	Agent	John Doe (101)	1		1	

Export as... Current page: 1 / 4

Available data columns

- ☒ Date
- ☒ Caller
- ☒ Queue
- ☒ Wait
- ☒ Duration
- ☒ Pos.
- ☒ Disconnection
- ☒ Handled by
- ☒ Attempts
- ☒ Code
- ☒ Slits
- ☒ Srv
- ☐ Asterisk UID
- ☐ MOH events
- ☐ MOH duration
- ☐ IVR duration
- ☐ IVR path
- ☐ DNIS

#See also:#

- QueueMetrics User Manual: chapter 20.12 (Configuring paginated calls)

The new feature also allows to see the total number of Music on Hold (MOH) events per agent, how many MOH instances took place throughout a call, the average and total duration of the MOH events.

## Music-on-Hold by Agent

Agent	Total Events	Events per Call	Total Duration	Average Duration
John Doe (101)	4	2.0	0:53	0:13
Bob Smith (102)	2	2.0	0:25	0:12

Export as...

See also:

- QueueMetrics User Manual: chapter 6.1.13 (Music on Hold by agent)

# Chapter 4. Release 12.05

Release 12.05 offers additional improvements to the QueueMetrics package, that address the introduction of features that offer broader compatibility and simplify the user-experience. Amongst the main features, the new release sees a new page layout for the QueueMetrics Home page, the introduction of the Agent Awareness client for Chrome, new drop-down user-friendly menus for quick agent control, a database creation wizard and QA further scoring.

The implemented major changes are as follows:

- AGAW Quick Installation [#1600]
- AGAW Chrome compatibility [#1615]
- RT page menus [#1624\_733]
- QA Extra Score [#1599]
- QM database creation [#1283]
- QM Home page layout [#1611]
- Agent channel names with - [#1614]

## 4.1. AGAW Quick Installation

The installation of the Agent Awareness (AGAW) extension has been made easier and quicker as when you install QueueMetrics via *rpm* the AGAW runner is automatically installed, even if not immediately activated.

The screenshot displays the 'Agent Awareness: System status' page. At the top right, it says 'Demo Admin | Administrator' and 'QueueMetrics call center monitor'. The main section is titled 'Agent Awareness: System status' and includes an 'Update now' button. Below this is a table with columns: Status, Queue, Start, End, Loader, Query ms, Insert ms, and Calls. The table shows two rows of data. Below the table is a 'System status' section with a pie chart and a table of entries. The pie chart shows 'Obs.' and 'Comp.' categories. The table of entries shows various phases and their counts. At the bottom, there are buttons for 'Manual table maintenance', 'Install new key', and 'Restart AGAW runner'. An 'AGAW license' dialog box is open, prompting the user to 'Copy and paste your new activation code here:' with a 'Run >' button.

Status	Queue	Start	End	Loader	Query ms	Insert ms	Calls
Current	Inbound	05/09 - 15:09:42	05/09 - 15:09:42	0	223	17	0
Current	outbound 331	05/09 - 15:09:42	05/09 - 15:09:42	0	75	5	0

Entries	
Runs currently in Querying phase:	0
Runs currently in Inserting phase:	0
Runs currently in Complete phase:	2
Runs currently in Obsolete phase:	50222
Total number of entries in the agent details:	100445
Total number of log entries:	176612

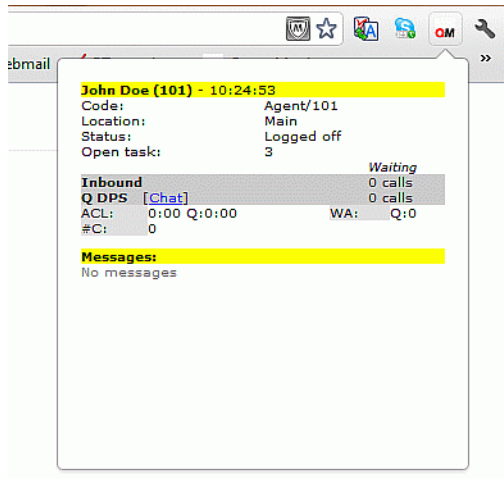
Once you request a demo licence, it can be installed directly from the AGAW page and you can start the AGAW runner process straight away.

See also:

- QueueMetrics User Manual: chapter 10.2 (Installing the AGAW licence)

## 4.2. AGAW Chrome compatibility

Chrome has become the most widely-used browser, followed by Firefox and other browsers. This release sees the implementation of the new user-friendly AGAW installation for Chrome users.



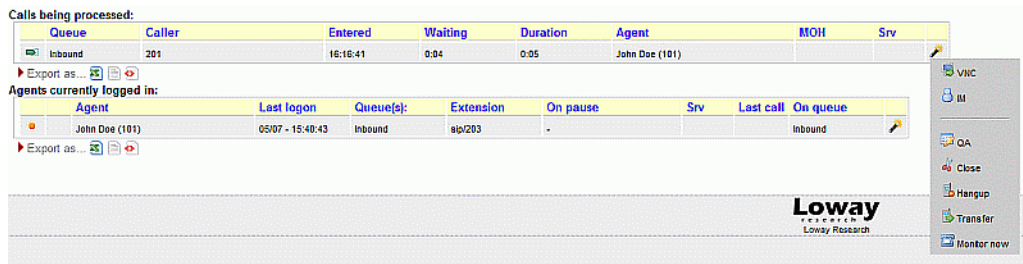
It allows to install the AGAW client within about 2 minutes and embeds into the top banner of the web page as an icon that offers an at-a-glance AGAW panel, with all the relevant data for any agent.

See also:

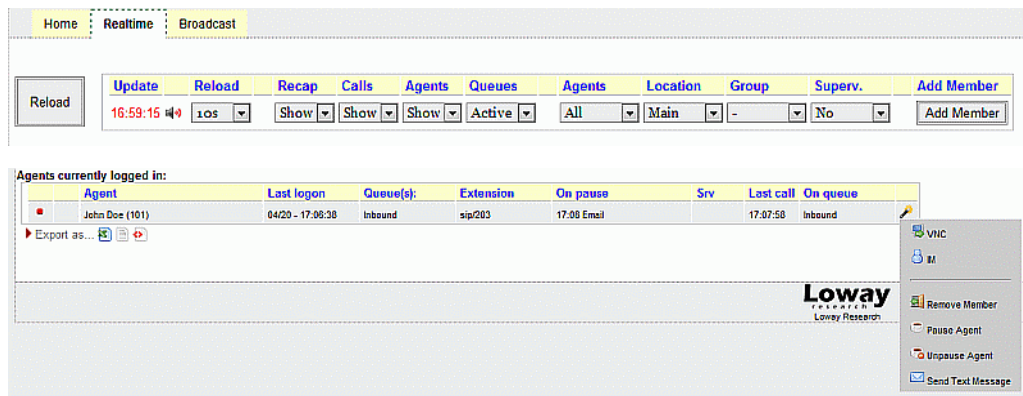
- QueueMetrics User Manual: chapter 10.5 (Installing with Chrome)

## 4.3. RT page menus

Call Centre administrators and supervisors can now perform a variety of agent-related tasks directly from the Realtime web interface in QueueMetrics, without any need to browse to other pages. We have introduced a new *wand* icon at the end of the *Calls being processed* panel which will give administrators the freedom and time-saving control of being able to directly access the QA form, close, hang up, transfer and listen to any listed call.



We have also added an *Add Member* button to the top control table and a tidy drop-down menu within the *Agents currently logged in* section that allows to log off, pause and un-pause agents and send SMS messages (Asterisk v.10+ required for this feature).



See also:

- QueueMetrics User Manual: chapter 7.2 (Calls being processed)
- QueueMetrics User Manual: chapter 7.3 (Agents currently logged in)

## 4.4. QA Extra Score

Assigning scores to a QA Form has always ranged between zero and hundred. Occasionally a call centre may choose to allocate higher values to an agent, given that he/she performed outstandingly well in their job. It is now possible to add extra scoring to particular questions within the QA Form.



**QA: Items for Form: Quality Assurance**

Add new item:

Save

Section	Item	Active If...	Extra Score
Section: Engagement	SCC: How positive clear and eager was the use of the Corporate greeting?		<input type="checkbox"/>
	COU: How well did the rep display courtesy?		<input type="checkbox"/>
	ENE: Rate rep's energy level throughout the call		<input type="checkbox"/>
	TON: How well did the rep vary the tone and speed of speech?		<input type="checkbox"/>
	CLE: How clear and concise was the rep's vocalization and pronunciation?		<input type="checkbox"/>
	HOL: Did the rep use the correct hold procedure?		<input type="checkbox"/>
	DEE: Did the rep avoid dead air?		<input type="checkbox"/>
	LIS: Did the rep display active listening skills?		<input type="checkbox"/>
	CLO: How positive and appropriate was the call closure phase?		<input checked="" type="checkbox"/>
Section: Resolution	ASS: Was assurance given for client's assistance?		<input type="checkbox"/>
	REL: How accurate and relevant was the information provided?		<input type="checkbox"/>
	HEL: Was additional help offered with enthusiasm?		<input type="checkbox"/>
	PRO: Was the problem resolved on first contact?		<input type="checkbox"/>
	TIM: Did the rep manage time effectively?		<input checked="" type="checkbox"/>
Section: Business needs	DBC: Was DBC done?		<input checked="" type="checkbox"/>

Save Edit Form Back to list

Loway  
research  
Loway Research

The total scoring for a specific section will be calculated and displayed within the numerator part and will not affect the averages of the overall QA Form.

See also:

- QueueMetrics User Manual: chapter 20.9 (Configuring QA Forms)

## 4.5. QM database creation

This new feature will be welcomed by many of our customers worldwide as it simplifies the QueueMetrics installation and configuration process. QueueMetrics requires a working JDBC connection to the MySQL database, so the new wizard allows to easily create the database in a few clicks and minimal manual intervention.

**Create QueueMetrics database**

This procedure may delete all data if you already have an existing QueueMetrics database. If you already have a database, do not run this. Parameters that are not editable come from the web.xml file. If you need to change them, go edit the web.xml file.

**MySQL root information**

MySQL database address: localhost

MySQL root user: root

MySQL root password:

**QueueMetrics database information**

QueueMetrics database: queuemetrics

QueueMetrics database user: queuemetrics

QueueMetrics database password: javadude

DbTest

**Diagnostic tools**

- [View configuration](#)
- [AMI tester](#)
- [Live DR inspector](#)

**Note:**  
Access to this page is supposed to be restricted.  
You can turn off access to this page by setting `default.viewTechInfo=false` in the configuration properties file.

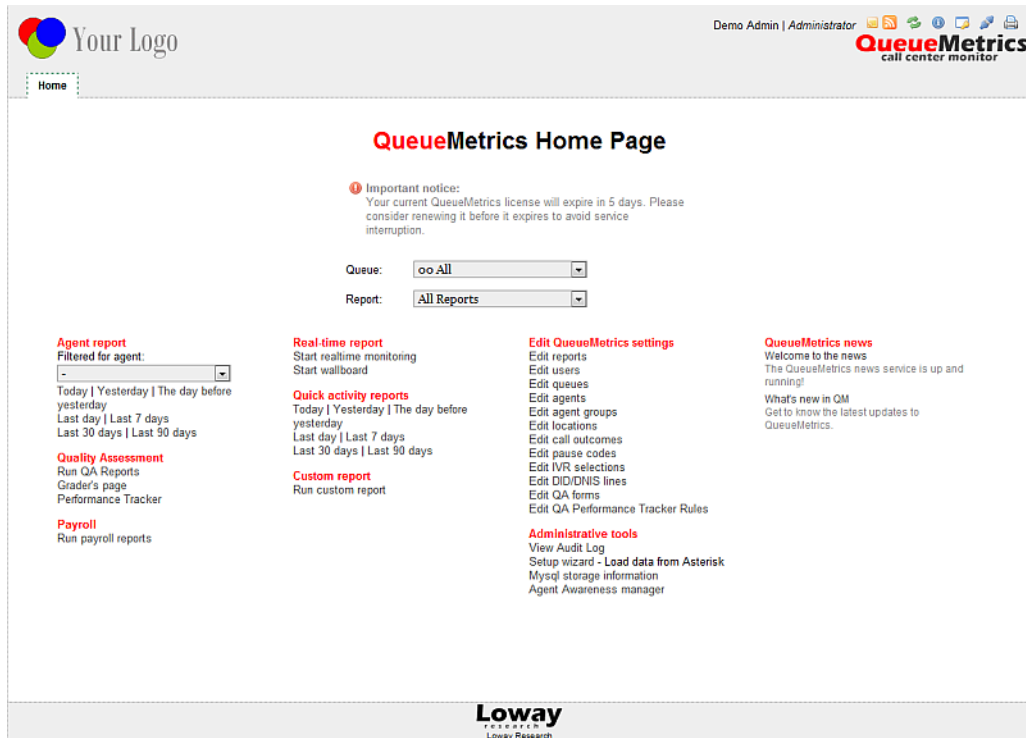
# Step	Status	Description	Time
1	NOT_RUN	Testing JDBC connection as the MySQL admin	0 ms
2	NOT_RUN	Creating database queuemetrics	0 ms
3	NOT_RUN	Creating grants for user 'queuemetrics' on database queuemetrics	0 ms
4	NOT_RUN	Uploading initial schema	0 ms

See also:

- QueueMetrics User Manual: chapter 2.5.2 (Automatic database creation)

## 4.6. QM Home page layout

This release offers a great new look for the QueueMetrics Home page, as the various links have been re-organized to form a new layout that avoids any previously-required page scrolling.



The new format sees the introduction of the *QueueMetrics News* section, a reviewed block layout across multiple columns and the Licence Information page link embedded within the top banner to allow access from any page across the application.

See also:

- QueueMetrics User Manual: chapter 3 (Logging on to QueueMetrics)

## 4.7. Agent channel names with -

We have introduced the option to avoid the stripping of the - (minus sign) in channel names. By setting the default.stripChannelNames property to false, the agent channel name is read as it appears in the queue\_log file. Otherwise anything after the - sign is deleted (ie. SIP/203-abcd is read as SIP/203), if set to true.

See also:

- QueueMetrics User Manual: Appendix D (System Preferences)

---

# Chapter 5. Release 12.10

Release 12.10 sees the introduction of noticeable improvements and optimizations to QueueMetrics, offering broader usability and simplifying internal processes. Amongst the main features, the new release offers improved caching and memory efficiency, additional links to administrative tools from the QueueMetrics Home page, the introduction of the Agent Reports accessible directly from the agent web page and the possibility of defining different URLs for agent calls, according to the call path.

The implemented major changes are as follows:

- Cache RAM monitor [#1636]
- Memory efficiency [#1688]
- System diagnostic tools [#1673]
- Link to dbTest page [# 1692]
- Agent page Reports [#1663]
- URL Substitutions [# 1714]

## 5.1. Performance optimizations

We have been tracing and studying QueueMetrics' performance limitations in a number of production settings. The result of this study has led to a series of changes in QueueMetrics that will benefit everyone, but will of course mostly affect larger contact centers.

We worked on QueueMetrics' memory usage by limiting the total memory footprint, besides minimizing the creation of a large number of temporary objects. We also created a new string cache that outperforms the native Java implementation used in previous versions of QueueMetrics by two orders of magnitude on large settings. We also worked on database access caching # as of release 12.10, common items like the list of queues on the Home page are aggressively cached by QueueMetrics itself. You may notice this behavior if e.g. you create a new queue, go back to the Home page immediately and you do not see the queue for about 10 seconds. This has strongly reduced the number of queries sent to the database. Furthermore, we now have an even stronger caching system that keeps pre-processed objects in memory and avoids hitting the database for most real-time queries. This is an optional feature that only affects the Real-Time and the Agent's Page when running with SQL or CLUSTER storage, and has to be turned on manually by setting:

```
realtime.useRowCache=true
```

The results obtained through this change have demonstrated a 10x - 20x performance improvement on page generation times.

We have also provided a new monitoring page, which is accessible from the DBTEST page, that allows to query the status of the new caches in real-time and reset them, as required.

The guide to fine-tuning QueueMetrics memory settings in order to get the best performance can be found in the QueueMetrics Advanced Configuration manual and it is a must-read for system administrators.

See also:

- QueueMetrics User Manual: see chapter 20.17.4 - RAM Cache monitor

## 5.2. Administrative Tools access

Given the frequent need to access specific administrative tools, we have simplified how administrators can reach two main areas of QueueMetrics: the *configuration.properties* file and the database Test page.

As of QueueMetrics 12.10 it is possible to view the *configuration.properties* file directly from the Home page. This is achieved by adding the key *EDIT\_CFG* to the admin user, which will enable a link on the Home page, within the *Administrative Tools*, that will allow access to the file.

The database Test page is also accessible directly from the QueueMetrics Home page, under the heading *System diagnostic tools*, within the Administrative tools listing. It does not require a specific key to be enabled.

See also:

- QueueMetrics User Manual: see chapter 3.0 - Logging on to QueueMetrics

## 5.3. Agent page reports

The new functionalities allow agents to run specific reports directly from the agent page. These new features are already enabled for the included sample agents. In order to configure other agents having the same functionalities available, the following steps need to be implemented:

1. Assign a queue (or a set of queues) to the agent
2. Assign a new report to the agent
3. Assign the SSAREPORT key to the agent

Furthermore, the Agent page now includes a new *Home* button that allows an agent to get back to his/her main web page at any stage (no security key or property are required to enable this feature) and various reporting options are selectable by queue, report type and durations. This new block of reporting functions is made visible for agents by enabling the SSAREPORT key within the user configuration/administration page, which can be reached from the main QueueMetrics administrator Home page. An agent can run a report based only on the queues and reports assigned to him/her.

An administrator can also assign the maximum amount of time that an agent can have available, when viewing historical reports from the agent web page. When an agent runs a report, the agent does not have a *Search* button enabled, so s/he is not able to access any kind of Custom Reports.

See also:

- QueueMetrics User Manual: see chapter 8.2 - Self-service agent reporting

## 5.4. URL Substitutions

The new release includes a new agent page URL feature. Each time the call history changes, and if there is a URL associated to the call shown on top of the list, a new window will automatically be opened pointing to the specific URL. This feature could be disabled modifying the value associated to the configuration key *realtime.agent\_autoopenurl*.

The screenshot displays the QueueMetrics interface for agent John Doe. At the top, there's a header with 'Your Logo' and 'John Doe | Individual agents'. Below this, a navigation bar shows 'Home' and 'Live'. The main section is titled 'Active calls for agent John Doe'. It includes a status bar indicating 'Agent101: Agent is currently logged on queues: Inbound [300]'. Below this are several control buttons: 'Reload now', 'Log on', 'Log off', 'Join Q', 'Leave Q', 'Pause', 'Unpause', and 'Dial'. A table lists active calls with columns: 'Entering at', 'Waiting', 'Talking', 'Caller ID', 'Queue', 'URL', 'Status', 'Transfer to', and 'Outcome'. One call is shown: entering at 10/25 - 16:06:35, waiting 0:03, talking 1:23, caller ID 201, queue Inbound, status Terminated, transfer to sale: Sale, and outcome Sale. Below the table, there's a section for 'Queue' and 'AGAW related info' showing ACL and AW values for inbound and outbound 301. A red progress bar indicates automatic reloading. The footer shows 'Loway research' and 'Loway - Switzerland'.

URLs are passed to the Queue() command in Asterisk or, if missing, they can be defined in the QueueMetrics queue configuration as a default. They can include a set of placeholders that are expanded with the details of the call being handled, as in the following table. The available placeholders are:

- A agent's numeric code
- U call's Asterisk uniqueID
- S server ID (cluster mode)
- Q queue name
- T call timestamp
- C caller ID
- D DNIS
- I IVR path
- O outcome code
- P position in queue
- M call attempts

See also:

- QueueMetrics User Manual: see chapter 8.0 - The real-time agent page

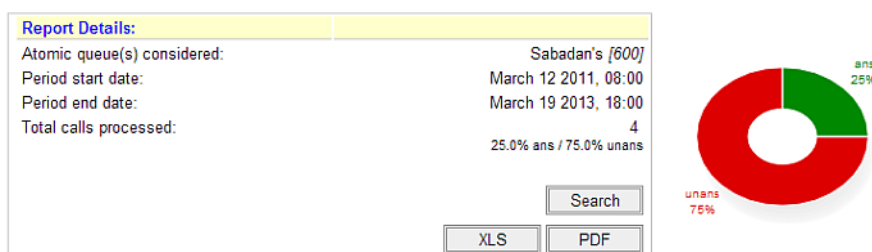
# Chapter 6. Release 13.04

Release 13.04 adds a number of important new improvements that will make using QueueMetrics easier and more productive.

- Manual and automated reports as PDF/XLS documents (and you can have them sent by e-mail!)
- Non-scoring questions and other changes related to QA
- Fully-automated screen pops on the Agent's page: Active Polling
- Analyzing IVR tree traversal
- Detailed tracking of call events
- QueueMetrics in the cloud: using different QM instances on the same PBX

## 6.1. Manual and automated reports as PDF/XLS documents

When you run a report, it is now possible to export it in one go as either a PDF document or a multi-page XLS worksheet:



Even best, you can create pre-defined reports - that is, a set of queues, a report, a time period, an export format - and have QueueMetrics send them by e-mail to a list of recipients. You can run them manually or you can script a cron job that every night (or every week) will trigger the execution for you.

In order to turn on this feature, you must give your users the `USR_REPORTS_EXPORT` keys (so that she can export reports) and your admins should hold the key `USR_REPORTS_EXPORT_EDIT` in order to create the reports to be sent by e-mail.

See also:

- QueueMetrics User Manual: see chapter 18.1 - Generate PDF and XLS reports and send them by e-mail

## 6.2. Non-scoring questions and other changes related to QA

It is now possible to have non-scoring questions, that is, questions asked in QA forms that do not contribute to its averages and targets. This is useful because you can now use QA forms for general-purpose information gathering - e.g. you could have a drop down menu that records whether the caller was male or female, or for which product the call to your support line was. This can be very useful especially when you have agents fill-in QA forms right from the agent's page in order to gather information about the call - and you get detailed reports on all these choices.

Such calls are displayed by distribution in the reports, that is how many calls were tracked for each distinct value.

### Quality Assessment: Form summary

#### Scoring questions

Item code	Question	N Calls	Avg score	Exc. (*)	Meet (*)	Impr (*)	Issue (*)	Shortcuts (*)
	Caller	4	2.00	0.0%	0.0%	0.0%	0.0%	0.0%
	Resolution	4	0.00	0.0%	0.0%	0.0%	0.0%	0.0%

Export as...

(\*) Values counted with current item weights

#### Non scoring questions

Item code	Question	N Calls	Avg score	Values
	Caller	4		
AGE	Age group	4	2.50	2: 60+ 2: 30-60 years
SEX	Caller sex	4	1.75	1: Male 3: Female
	Resolution	4		
SOLV	Issue Solved?	3	66.67	1: No 2: Yes

Export as...

Additionally, you can now have free-text comments linked to a specific QA question - this lets you store both comments by graders on why a specific issue was graded the way it was, and for agents to associate free-text comments through the agent's page. Such comments are displayed in the QA notes section with the indication of which question the comment is about. Additionally, an information icon will be added to the QA form, making it easy to retrieve such items when present.

Level	Range	Items
Issue	0 - 25	0
Req. Impr.	26 - 50	0
Meets exp.	51 - 75	0
Exceeds exp.	76 - 100	0

Overall Performance	
Caller (Avg)	0.0
Resolution (Avg)	0.0
Total score:	0/0
Avg.	0.0

Code	Description	Status	N/A	Value
	Caller			
AGE	Age group			30-60 years
SEX	Caller sex			Female
	Resolution			
SOLV	Issue Solved?			Yes

Date	User	Notes
2013-03-20 16:49:58.0	demoadmin	Nice to see that
2013-03-20 16:49:43.0	demoadmin	Issue fixed on first call

See also:

- QueueMetrics User Manual: see chapter 12 - Quality Assessments in QueueMetrics
- QueueMetrics User Manual: see chapter 8.5 - Gathering call information through agent-side QA forms

## 6.3. Fully-automated screen pops on the Agent's page: Active Polling

Since QueueMetrics 13.04, the agent's page does not need to be manually refreshed when a new call hits the agent. This is a major usability improvement and comes on the heels of the high-performance Row Cache functionality introduced in QueueMetrics 12.10. This way you can have an agent's page that automatically refreshes (and launches a screen pop) only when there is new data to be shown to the agent. Also, the page does not need to reload to maintain session information - all session handling is done behind the scenes.

This is very useful for inbound call processing, and it is superb when used with WombatDialer outbound campaigns - you can get all the benefits of QueueMetrics plus a solid outbound dialing platform.



See the User Manual for the settings you have to enable in order to turn on this feature.

See also:

- QueueMetrics User Manual: see chapter 8.4 - Auto-refreshing the agent's page: Active Polling
- The WombatDialer is available at <http://wombatdialer.com/>

## 6.4. Analyzing IVR tree traversal

It is now possible to track and analyze not only the final IVR selection, but the time it took for each caller to make every selection, the number of goals reached (be it connecting the caller to a queue or reaching an independent goal, e.g. a self-service menu) and the attrition rates for each IVR menu and sequence, that is where the caller hung up instead of reaching a new destination.

This gives you in-deep visibility on what is going on before the call is queued and lets you streamline and optimize your IVR tree, giving you clear, comparable data to base your decisions upon.

### IVR Traversals

IVR path	N. calls	IVR goal report	Success rate	Hangups	Attrition rate
ivr-2	5	0	0.0%	1	20.0%
# 1	5	0	0.0%	1	20.0%
ivr-2 ⇒ ivr-8	4	4	100.0%	0	0.0%
# 1	2	2	100.0%	0	0.0%
# 2	2	2	100.0%	0	0.0%
ivr-9	1	0	0.0%	1	100.0%
# 1	1	0	0.0%	1	100.0%
ivr-X	3	0	0.0%	0	0.0%
# 1	3	0	0.0%	0	0.0%
ivr-X ⇒ ivr-8	3	1	33.3%	2	66.7%
# 2	1	0	0.0%	1	100.0%
# 3	1	0	0.0%	1	100.0%
# 4	1	1	100.0%	0	0.0%

Export as...

It is also possible to view IVR data of calls that did not yet enter a queue, and see the sequence of IVR selections that was made on the call.

Tracking this information requires minor changes to be implemented in your dialplan (in order to track IVR selections and goals), and will be done automatically when installing the QueueMetrics module that ships with FreePBX 2.11.



In order to add these features to an existing QueueMetrics systems, you'll have to add the data blocks called IVR01, IVR02 and IVR03 to your reports. The list of calls can be browser through the OD04 block.

See also:

- QueueMetrics User Manual: see chapter 9 - Tracking IVR data
- The QueueMetrics module in FreePBX - <http://www.freepbx.org/trac/browser/modules/branches/2.11/queuemetrics>

## 6.5. Detailed tracking of call events

The call details pop-up has been reworked in order to offer a comprehensive view of events happening during the lifetime of a call - not just the final IVR selection, the total time spent on MOH or the number of lost ACD attempts.

All events are now displayed in an orderly fashion and can be viewed in the order they happened.

This feature improves granular understanding of what went on during a specific call.

See also:

- QueueMetrics User Manual: see chapter 5.1 - Detail of answered calls

## 6.6. QueueMetrics in the cloud: using different QM instances on the same PBX

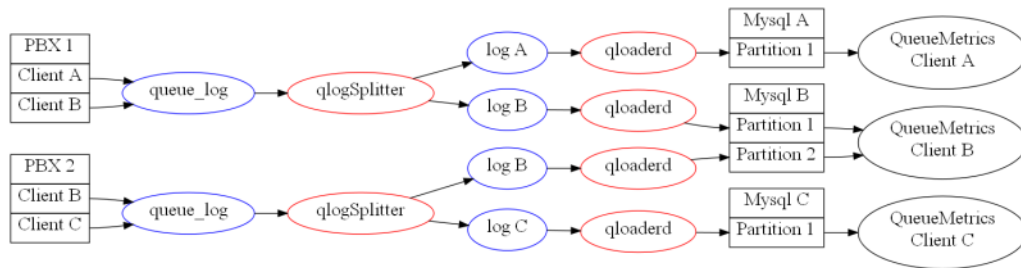
QueueMetrics was originally built to monitor one or more PBXs running a call center. It has strong security features, allowing you to run partitioned systems where multiple clients are completely insulated from other clients.

Still, in the standard QueueMetrics model, one QM instance can only monitor one PBX. This limits the offerings where:

- You have a cloud PBX and would like to give QM to some of your clients
- The QM systems need to be custom-configured for each client
- You want each client to have their own private instance of QM (for e.g. load management or ease of deployment)

The QlogSplitter tool - shipping with qloader 1.29 - lets you partition the `queue_log` of a large multi-tenant PBX into multiple feeds that go each into a separate QM system.





This lets you create client offerings where:

- Each client has their own, private instance of QueueMetrics
- You use the Loway Keyring to manage QueueMetrics license keys for each customer

This way, clients can pay for what they use and you can use a large Asterisk instance to feed them all.

See also:

- Qloaderd User Manual: see chapter 4 - Feeding multiple QM instances from a single queue\_log file
- An introduction to the Loway Keyring is available at <http://queuemetrics.com/keyring.jsp>

---

# Chapter 7. Release 13.12

Release 13.12 addresses usability and bug fixes in a number of areas. The main theme of this release is integration - generating reports externally and having them included in QueueMetrics, integrating with popular CRM software packages, integrating with Asterisk 12 and with external process watchdogs.

- Externally-generated report pages
- Improved QA
- Easier integration to external CRMs
- Ready for Asterisk 12
- A long set of little but useful improvements in all areas

In total, over 70 issues were fixed/added in this release.

This release paves the way for major changes to come in 2014, including a new Agent page and WebRTC integration.

## 7.1. Externally-generated report pages

Would you like to integrate external data sources into QueueMetrics? Imagine that you want to run a QueueMetrics report and display a statistic with a graph about the items that were sold by your call-center. QueueMetrics does not handle this kind of information, so previously the only option would have been to generate externally a report that would include QueueMetrics data and data generated from external systems.

Since version 13.12, you can write small HTTP scripts - producing HTML, structured XML or JSON - that can have their output embedded in QueueMetrics pages as if they were native reports. They can be saved, printed and exported to PDF/Excel.

See also:

- XML-RPC User Manual: see chapter 6. Dynamic blocks in QueueMetrics.
- Examples are available under the *mysql-utils/xml-rpc* folder.

## 7.2. Improved QA features

The Quality Assessment (QA) modules in QueueMetrics have been improved by adding a number of features that make working with it smoother and more powerful, especially when tracking down unexpected or incorrect scores.

- Management by exception: you can dynamically filter which items you want to see in a QA form.
- Overall QA summary: it is now possible to see an average for the whole form.
- Queue pull-down box: in QA and elsewhere, combo boxes are now searchable.
- Hi-lighting criteria not at target: in the Performance Tracker page you can highlight elements dynamically.
- Editable names for QA levels: you can have different names or remove a score range altogether from your forms.
- Section-level shortcuts and auto-fails: it is possible to earmark a QA item so that sets the score for the whole section to zero if it fails.

## 7.3. Easier integration to external CRMs

We created a new section in the Advanced Configuration manual that is meant to get you up to speed quickly when integrating QueueMetrics with any external CRM.

We also created example scripts that integrate easily with SugarCRM and VTigerCRM, the most common CRM applications used by our clients.

See also:

- QueueMetrics Advanced Configuration Manual: see chapter 19. CRM Integration with QueueMetrics
- SugarCRM: <https://github.com/Loway/OpenQueueMetricsAddOns/tree/master/sugarcrm-integration>
- VTigerCRM: <https://github.com/Loway/OpenQueueMetricsAddOns/tree/master/vtiger-integration>

## 7.4. Ready for Asterisk 12 and easier to deploy

QueueMetrics 13.12 fully supports Asterisk 12. Asterisk 12 introduces a large set of changes in its architecture and will be the basis for future Asterisk PBXs. One notable feature that Asterisk 12 introduces is - at last - the ability to have attended transfers from queues.

Though Asterisk 12 is still in beta at the moment we're writing, you know that QueueMetrics is ready for when you need to switch over.

QueueMetrics also add a *watchdog* page - that is a page that reports - as a JSON service - the current state of the system, and the current memory allocation. We offer an example script on how to call this periodically and restart the system if the page does not work.

See also:

- QueueMetrics User Manual: The QueueMetrics watchdog page

## 7.5. Misc changes

Agent page:

- Automated refresh on agent events when running in ActivePolling mode
- Correct sort order of calls
- Setting of call statuses
- Improved support for IE
- Correct display of conversation time for live calls

Realtime page:

- The action wand does not disappear anymore
- Correct IVR timing
- A few fixes on how agents were counted in corner cases

Reports:

- Improved generation of XLS and PDF documents
- Percentages of calls taken and lost displayed on top of the page
- A few fixes for IVR measurement
- Improved Oreka integration for audio/video playback

---

# Chapter 8. Release 14.03

Release 14.03 is a bug-fix and performance-improvement release on top of QueueMetrics 13.12. You will surely notice that QueueMetrics is now faster when running actions on the server. This happens for example, when you log on agents to a set of queues. We also included many fixes that correct technical annoyances and make your experience smoother.

Under the hood, we made many changes to prepare the system for the next generation agent page that will debut in the next release.

## 8.1. General usability improvements

### 8.1.1. Interaction with Asterisk through the AML now faster

Depending on the version of Asterisk used, there was a delay in performing actions that could be noticeable on some systems when logging on or off to a large number of queues. This is now way faster (up to 10x) and happens almost immediately.

### 8.1.2. The multi-stint pop-up is now included in the general call detail pop-up

There is no separate pop-up to see call stints; stint information - when present - is now visible in a tab on the Call Detail pop-up.

### 8.1.3. Calls connected to agents after agent was removed do not start a new session

The parser usually starts a new agent session when events for an agent are received but the agent is logged off. Now, if a call is queued while the agent is connected but is routed to the agent soon after the agent disconnects, the previous session length is adjusted and a new session is not started, and the agent does not "linger on" in the real-time view.

### 8.1.4. Added Drill-down methods for the Performance Tracker page

The Performance Tracker page now has drill-down methods to filter calls interactively.

### 8.1.5. Immediate pick-up on configuration changes

QueueMetrics caches database reads in order to avoid hammering the database with the same queries over and over again. Such caches usually have a small duration - no more than 30 seconds - but sometimes if you created a new queue and went back to the main page, the queue might have taken a few reloads to appear. This does not happen anymore - all configuration changes done through the GUI are effective immediately.

### 8.1.6. Compatible with the latest Oreka TR installations

The most recent versions of Oreka TR changed the names of a few components. This is now configurable with a property in order for QueueMetrics to work correctly with all builds of Oreka TR.

### 8.1.7. Additional caching of frequent SQL queries

Some more queries are now cached and should reduce the database load of about 15% if you have a large number of concurrent agents. The change will be noticeable for larger systems (100+ agents live).

## 8.2. Misc changes

A number of bugs present in previous releases were fixed:

- Access to the Realtime page via XML-RPC might fail in QM 12.13
- AGAW runner issue - wrong JAR reference
- Agent page pop-ups abort if extension is missing
- Exception when parsing under non-existent session
- Added cache breaker to pop-ups
- Accessing multi-stint calls from block OD03
- Wrong counts in "Answered calls by custom groups" when reloading the page
- Excessive log at the "Severe" level
- Incorrect content-type in responses for AJAX services
- Saner insert defaults for the queue\_log table

- Possible XSS vulnerability on the Error page
- The Agent's page would time out to */queuemetrics/qm/undefined*
- Calls being originated would appear in the wrong order on the Agents page until connected