Loway

# QueueMetrics

call center suite

# What’s new in QueueMetrics and WombatDialer

Loway SA

Version 26.10, 2026/10/15

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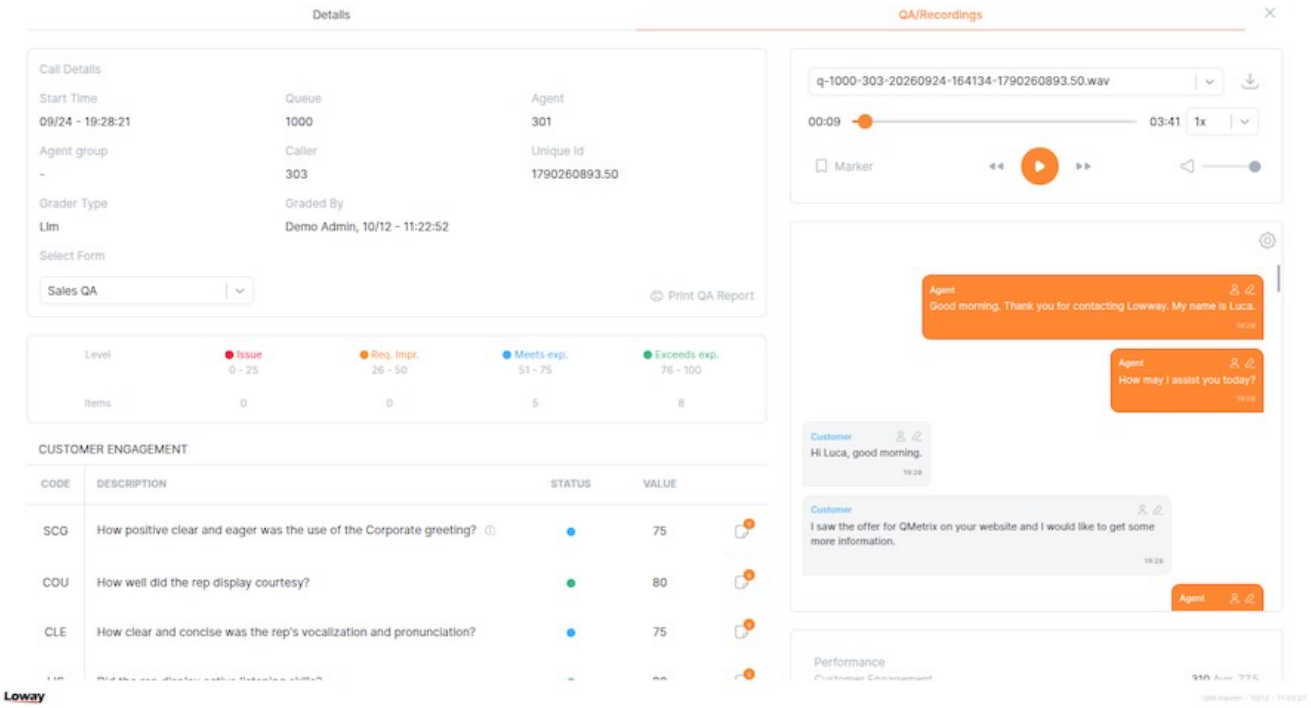
This document contains a description of the most important changes for a release of QueueMetrics and WombatDialer.

# QueueMetrics 26.10

This release brings AI into QueueMetrics in a practical, controlled way: calls can be transcribed, transcriptions can be browsed and corrected as chats, and Quality Assurance forms can be graded automatically by a Large Language Model. At the same time, we have rebuilt the way QueueMetrics is installed and run, tightened security throughout, and removed the old Icon Agent Page for good.




There are also a number of other highlights, as detailed below:

- Standalone installation: a single file, a few commands, and QueueMetrics is running
- Automatic check for outdated versions
- Audio transcriptions, displayed as chats you can search, edit and jump through
- Chat and WhatsApp integration
- Automated QA, with AI-assisted grading
- Ephemeral data, for short-lived values coming from external systems
- Native Wombat preview dialing directly integrated into the Agent Page.
- Restricted user administrators
- Security hardening across the whole application
- The Icon Agent Page has been removed

QueueMetrics 26.10 can be readily accessed through various means: a standalone package or a Docker image available on DockerHub. We do not distribute native packages anymore, as the new standalone package just works on RedHat/CentOS/Rocky Linux, Debian and Ubuntu, Fedora, openSUSE and Gentoo.

If you are not confident in updating on your own, we suggest purchasing a Remote Support Pack so

that our own support team can do it for you. Users of our QueueMetrics Live service will have their instance updated automatically.

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## A word on security

Every piece of software that sits on a network is a target, and a call center system is a particularly interesting one: it holds phone numbers, call recordings, and now also transcriptions of what was said. It also talks to your PBX. Most real-world incidents are not caused by clever attacks, but by old software, default passwords, and services exposed to the Internet that nobody remembered to close.

In this release we have done a thorough security pass on QueueMetrics itself:

- A comprehensive audit was carried out to prevent cross-site scripting and CSRF
- The AMI and SMTP testers, which by design can connect to any host, are now rate-limited (5 runs in 5 minutes per user) and every run is written to the audit log. The SMTP tester no longer reuses the stored SMTP password.
- The system configuration hides secrets, and parameter fields are sanitized.
- Single Sign-On re-entry has been checked and fixed.
- User administrator roles can now be restricted (see below).

> Our best advice remains the simple one: keep QueueMetrics up to date, do not expose it directly to the Internet if you don't need to, and use strong passwords. QueueMetrics will now notify you if it is running an outdated version.

## Install from scratch in minutes

Project "Burrito" is now a reality: QueueMetrics can run as a single standalone JAR file that embeds its own web server. There is no application server to install and configure; you only need Java and a database.

The standalone package includes:

- an installer script and a systemd unit, so that QueueMetrics starts at boot and can be managed like any other service;
- a command-line tool, `queuemetrics-cli`, to start, stop, inspect the running system and see the logs;
- a `version` command that shows the QueueMetrics, Tomcat and Java versions, and clearly reports in the log when the database connection is not working;

Installation or upgrades are now just one line: `curl -sL get.queuemetrics.com | bash`.

QueueMetrics now requires Java 25, the new long-term-support release, with the dependencies modernized accordingly.

### Are you running an old version?

QueueMetrics now checks whether a newer release is available and, if yours is out of date, shows a notification in the home page. The check is cached, so it does not slow down the system, and it simply stays silent when there is nothing to report.

This is a small feature, but an important one: the most common cause of problems that we see in support is a system that has not been updated in years.

## Audio transcriptions

QueueMetrics can now transcribe call recordings through external speech-to-text services. We offer compatibility both with the most common SaaS offerings (DeepGram, OpenAI…) and local servers (WhisperX, Kroko-AI). Transcriptions are handled by a pool of "AI Workers", configured from a dedicated editor:

- you can define several servers, with different priorities, and tag them depending on what they do;
- calls are assigned to the first available worker, and a failed transcription can be retried;
- a live view shows what each worker is doing, including the cost of the transcription expressed in input and output tokens;

Transcriptions are tracked directly against the call they belong to, so they can be found easily from reports and from the QA pages. A set of web services lets external systems write and read transcriptions too.

In order to run transcriptions, you need Uniloader 26.10, released jointly.

### And what about chats and WhatsApp?

It is now possible to upload chats to QueueMetrics, streaming them in real-time as they happen. The API is publicly documented, so you could easily integrate your own.

We are teaming with a WhatsApp service to offer an all-in-one multi-channel solution.

## Chats

Transcriptions are displayed as chats, in the same way as WhatsApp-style conversations. Chats are shown next to the call in the report and in the QA page, and they are fully interactive:

- multiple speakers are shown with different colors, and each segment has its start time;
- clicking on a timestamp jumps to that point in the call recording;
- speakers can be renamed and segments can be re-assigned to a different speaker, to fix the mistakes of the automatic diarization;

# Automated QA

QA forms can now be graded automatically, out of transcribed calls or chats/WhatsApp. In the QA form editor, a new "Automated QA" section holds the AI prompt used to grade that form, and each item can have an explanation that is passed to the model along with the question.

- The Grader page has a new AI-assisted mode that grades a whole set of calls for you; the classic manual grader is still there.
- A "Test AI dialog" button in the form editor shows exactly what is sent to the model and what comes back, so you can fine-tune a prompt without grading real calls.
- Both OpenAI-compatible and Anthropic servers are supported; for Anthropic, prompt caching is supported to reduce costs.
- The transcription is shown in the QA report popup, and the QA form is displayed next to the AI grading results.

The grading is meant to assist supervisors, not to replace them: all results can be reviewed and changed by a human.

# The Icon Agent Page is gone

As announced, the old Icon Agent Page has been removed from the product, together with its documentation. The Agent Page has been the recommended choice since 2023, and a migration guide for your agents is available here: https://www.queuemetrics.com/blog/2026/01/16/migration-to-the-new-agent-page/

All agents on the system are automatically switched to the new agent page.

# Ephemeral data

Some information is only meaningful for a short time: the temperature of a room, whether a customer is waiting on a web page, or the remaining calls for an outbound campaign run on a WombatDialer server. QueueMetrics can now display these values on its wallboards. They are stored in a table of ephemeral values, each one identified by an attribute name, a queue and an agent, and expiring on its own.

- External systems write and read values through two simple web services, with new dedicated security keys.
- An inspector page shows the current values.
- Two new Wallboard widgets can show these values live, together with WombatDialer data.

# WombatDialer integration

Agents can now run preview dialing campaigns directly from the Agent Page, thanks to a native integration with WombatDialer that replaces the need for an external `iframe`. A WombatDialer icon in the navigation menu shows a badge with the number of reservable calls across the agent's active

queues, read from the ephemeral data table.

From the panel, agents can reserve a contact, review its details and call history, then dial or skip it, choosing a reason from a configurable list. The contact's input attributes are shown to the agent, and any of them can be turned into a link to a CRM or other external system.

When the call is connected, agents set the outcome, using either a custom list or the standard QueueMetrics call outcomes, and can add custom output fields such as comments or reason codes, as free text or dropdowns.

# Misc

- **Docs in reports**: every data block now has its own documentation, available from the report editor and in the report itself. Just click on it! The same descriptions are also returned by the JSON API.
- **Pauses triggered during a call**: an agent could be put in pause, or logged off, while on a call, and the action would create a small anomaly: the session would finish while the agent was still on a call. These actions are now automatically deferred until the call ends. This means you can pause an agent with an active call, and the pause will make sure that they will receive no more calls until unpaused, and presence time will be correct.
- **Restricted admins**: a new `USRADMIN_RESTRICTED` key limits what a user administrator can do. They can only create, clone and delete users in the classes listed in a default set, and can never touch custom keys, the master key, or classes. Handy when a team leader needs to manage their own agents but nothing else.
- **Protection against multiple instances**: QueueMetrics detects when it is already open in another browser tab and warns the user, avoiding the confusing effects of two sessions working on the same data.
- **Slow WebRTC**: the establishment of a WebRTC session over a VPN could take a long time. New properties and quick-config options let you tune the ICE negotiation and avoid the delay.
- **Covering index and database updates**: a new covering index speeds up the most common queries on the `queue_log` table, and two unneeded indexes were dropped. New systems are installed with the new table schema, but we don't do it automatically for existing systems as it might require hours to run. An update script is available.
- Sub-queue mode has been removed, as well as the old Autoconfig verb and the `qa gradecall` page.
- Data block tables can be sorted by time on all data blocks, and outcome filters now search by substring.
- Several improvements to the Agent Page, including WombatDialer preview dialing, pending recalls and per-user control of the queue join policy.

# Improvements to Uniloader

Uniloader gained a new `uniloader transcribe` service: it transcribes call recordings and uploads the results to QueueMetrics. It supports several drivers (OpenAI, OpenAI-compatible, Deepgram and

Kroko-AI) and can split stereo recordings by channel, so each side of the call is labelled as agent or customer. It processes the backlog newest-first, can sample only a share of the recordings, reports transcription fees and logs HTTP traffic for troubleshooting. It also ships with a systemd unit.

Smaller improvements: - A new `test ws` command for websockets. - SQLite3 support in dbtest. - Tracking who made changes: `cfgfile put --signed-as`. - A single uniloader User-Agent on all HTTP clients.

# Detailed change list

**API**

- #7001: JSON report API doesn't show caller number if known number is set
- #7695: New QA services
- #7700: Transcription leaderboard
- #7813: IndexOutOfBoundsException in DOFactory.DOasReportItem
- #7841: Track transcription costs
- #7844: Back-end: edit chat
- #7845: Renaming "leaderboard" to "transcription_servers"
- #7903: API returning block descriptions
- #7966: Fail reservation if chat already present

**Agent Page**

- #7632: Better WombatDialer integration
- #7655: Case "null" cannot be written
- #7656: Error saving Case
- #7671: Show more queue name characters in QAP queue list
- #7722: Per-user control of queue join policy
- #7726: Display pending recalls
- #7727: Agent page: WD preview dialling
- #7734: Performing actions on WD preview page
- #7832: Wombat Reserve button should be disabled if agent on pause or no available call to reserve
- #7835: Re-activate assertExtensionNotInUse
- #7849: Wombat Ext status dropdown should use qm call outcome if agent.wombatAttr.extStatus is empty
- #7850: QAP: agent with an assigned server cannot delete it from configuration
- #7968: Preselect default outbound Queue when at least one is available

**Chats**

- #7716: Svc for tracking transcriptions
- #7736: MIME types supported by Kewbot
- #7781: Accept absolute time for chat segments
- #7905: Natively track call-id on transcriptions
- #7941: Chats Edit accepts the same name for different speakers
- #7943: Chat: Chat Delete (Backend)
- #7958: The user will be able to retry the transcription if the previous attempt failed.

**Configuration**

- #6655: Convert key and properties editor from Json to Java
- #6993: Explore system parameters: properties sidebar sometimes doesn't work correctly while scrolling
- #7340: Not possible to upload the AMO CSV list when using the ESP language
- #7623: System configuration leaking secrets
- #7646: Passwords cannot be longer than 30 characters, but the input validation is currently missing from the user configuration.
- #7664: callListen.listeners.MirtaPbxListener does not have a timeout
- #7696: Hide "insert license" if running standalone
- #7717: Configure transcription services
- #7718: Display transcription leaderboard
- #7724: Webservice and table ephemeral_ext_data
- #7733: Inspector page for current_ext_data
- #7735: New security keys in User editor
- #7740: Ephemeral data attribute name limit
- #7836: AI Workers editor
- #7855: Display transcription costs
- #7897: Add description field to QA items
- #7916: Display sample LLM dialog
- #7959: The parameter fields need to be sanitized.
- #7967: DBInspector refreshes non-stop if you write a letter in the refresh time
- #7974: Dump presentialist status
- #7983: Transcription Tags TD/TR/QA are not clear
- #8023: Install new license as web and webservice
- #8031: Restricted user admins

**DB**

- #7569: Error *unique_row_count* doesn't have a default value
- #7770: Security bypass in dbtest pages
- #7891: ERROR 1071 (42000) at line 2294: Specified key was too long; max key length is 767 bytes

**Docs**

- #7692: Documenting IVR best practices
- #7742: Remove queuemetrics-espresso
- #8022: Remove Icon Agent Page Docs

**Engine**

- #6800: Session is not serializable for CachedDbRewriter$Cache
- #7397: Pause sessions can be triggered within a call and Agent session terminating when on call
- #7653: ConcurrentModification solving variables
- #7666: Call Filter in NOT mode doesn't work
- #7821: Ignore specific agents: default.skipAgentChannels
- #7828: java.lang.IllegalStateException: Error starting child
- #7876: [Exception] LicenseException
- #7878: Turn verbs string constants into an enum
- #7885: Remove sub-queues
- #8016: Engine handles decimal time durations

**Graphics**

- #6873: Detect if QM is already open in a different tab
- #7605: Feedback when entering free text with the feature code.
- #7875: Improve the error message displayed on the Agent Page when the license limit is exceeded.
- #7913: Improve layout of QA forms editor
- #7936: Page transcription.jsp is hard to read in Dark mode
- #7961: Add the "Go to Live View" button to the Transcription Server page as well.
- #7965: A button for quick access to Transcription Server configuration from Live View Transcription

**Home Page**

- #7889: Notify outdated systems when a new release is present
- #8026: Repeated string "malformed version string"

**Icon Agent Page**

- #7553: Remove Icon Agent Page

**Packaging**

- #7547: QM won't start for a long time
- #7556: Move /includes to /WEB-INF/jspf
- #7557: Product name in error notification
- #7654: Do not forward UserException errors
- #7658: Name of QueueMetrics for error reporting
- #7668: Add covering index for queries
- #7690: Results not logged for some verbs
- #7691: Project Burrito: run QM as a single Uberjar
- #7697: Systemd unit for Standalone
- #7714: Setup custom Tomcat
- #7737: Standalone: 3rd-party license files and dupes
- #7741: Create Docker image based on standalone
- #7743: Install from get.queuemetrics.com
- #7746: Library versions in THIRD-PARTY
- #7747: Show Tomcat version
- #7748: License page - database version shows incorrectly
- #7750: Standalone: version numbers + whether DB is present
- #7780: Use picocli for CLI
- #7787: Java 25: Compile and test Java
- #7788: Java 25: Create JS clients and themes
- #7789: Java 25: Create uberjar
- #7790: Java 25: Modernize deps
- #7792: Java 25: Modernize H2
- #7793: Java 25: Fix deprecations
- #7794: Java 25: check different builds
- #7796: Java 25: Check all tests are included
- #7797: Reactivate QA commit
- #7799: Java 25: CLI improvements
- #7802: Java 25: Check all Gradle tasks are retained
- #7803: Java 25: Using Hebrew
- #7804: Java 25: Slow shutdown
- #7805: Java 25: all log goes to STDOUT

- #7806: Java 25: Integration tasks
- #7857: Build QueueMetrics with the new parameter PRODUCT_VERSION
- #7870: Check escaping for error page
- #7872: Security hardening
- #7895: Cannot mount webapp as root folder
- #7906: Chanspy/Whisper/Barge in French translations
- #7918: Set custom UserAgent for QM
- #7927: Command queuemetrics-cli is missing from package
- #7929: New settings for QA in default db
- #7948: Most subcommands of queuemetrics-cli are broken

**QA**

- #7608: MiRTA PBX Listener doesn't use MediaProxy
- #7702: There is a problem when trying to use the Queue visibility in the QA form
- #7816: Improve QA layout
- #7831: Auto-QA – QA form database schema and queue editor changes
- #7890: AI-assisted Grader's Page
- #7896: Improve layout for Graders page
- #7898: Display description of QA item
- #7915: Grading page: new property qa.minPrcAllCalls
- #7919: Manual QA grader checks for AI prompt
- #7925: Position of red dot, missing graded By
- #7926: Layout of QA editors
- #7930: QM Https Client should use SNI
- #7938: Support Claude's cache control
- #7951: Support Kroko-AI
- #8004: Transcription doesn't show up in QA report popup
- #8010: Display QA form on Automated QA grading page
- #8013: Optimize the view when checking the QA Summary.
- #8032: Trying to reopen a deleted QA from a QA report gives TechException

**Reports**

- #6592: OptiLock Report save issue
- #6923: Call results, by outcomes (OU02) grouping not showing calls
- #7218: The default queue selected when you create a new report is "00 All." If you disable this queue, it is still shown in report

- #7676: Report Date field fails to parse *MM* and *MMM* month formats
- #7685: Displaying audio transcriptions
- #7837: Chats: find audio transcriptions
- #7838: Chat: Jump-to-offset in recordings
- #7839: Chat: multiple speakers
- #7840: Chat: display start time
- #7843: Chat: Editing
- #7847: Chat: Close/Open multiple calls results in merging multiple chats
- #7904: Display docs for each data block
- #7942: Chat: Chat Delete (FrontEnd)
- #7953: Outcome filters search by substring and not by exact match
- #7998: Many chat tabs with long name, make the chat right side too big
- #8012: Enable chat speaker re-assignment
- #8027: DataBlock time sort column doesn’t work on all data blocks

**Security and technical debt**

- #7874: Security audits: avoid XSS injections
- #7879: Quote field names in QlogTwoLevelcache
- #7880: Use enum constants for verbs
- #7950: Avoid XSS risks in Decorators
- #8008: Vulnerability: Possible server scan or creds exfiltration using testers
- #8020: Check SSO re-entry
- #8024: Remove Autoconfig verb and associated pages
- #8025: Remove qa gradecall

**Softphone**

- #7633: Slow WebRTC session establishment on a VPN

**Wallboards**

- #7665: [Wallboard] Add disconnection cause filter
- #7687: Wallboard quick agent actions don’t work with mirtaPBX
- #7725: New WD and ext_data widgets
- #7744: New WD and ext_data widget backend
- #7833: Wombat widget with required queue shouldn’t have "All Queues" as first item
- #7920: Agent page inside agent page inside agent page inside agent page inside
- #7975: Live Agents, filtered by queue doesn’t show correct members of queue

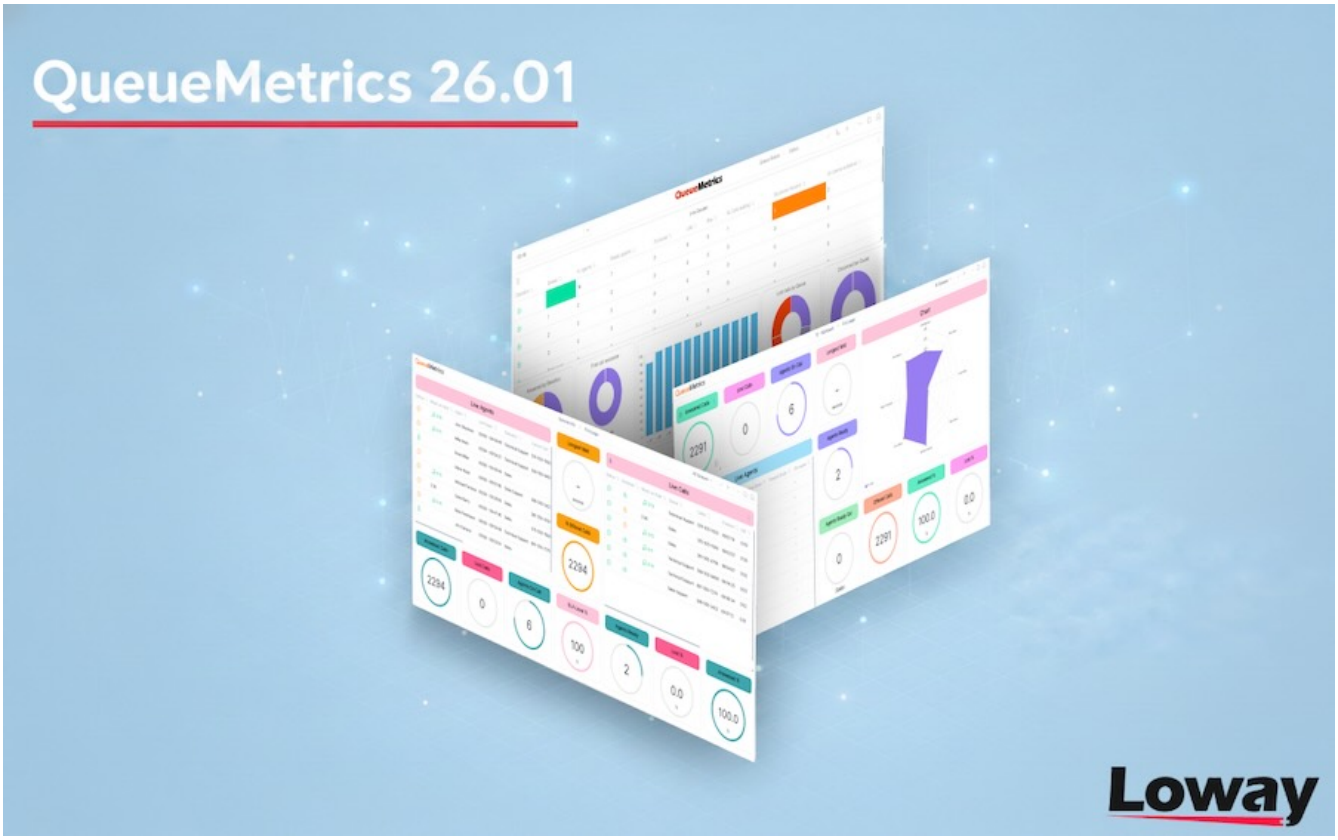
- #7978: Wallboard: Status is not correct if agent description has spaces
- #7999: Creating a new wallboard should prompt to add a widget instead of defaulting to a time widget

**Uniloader**

- #6368: Support dbtest with SQLite3
- #6780: Unitracker system file uses incorrect parameters
- #7017: cfgfile put: new --signed-as option
- #7281: Test audiovault: honor --cacert option
- #7570: Add-user: --locked - make it unchanged
- #7699: Command "uniloader transcribe" and related improvements
- #7709: Dedupe: fix column count mismatch and improve zone logging
- #7753: Transcribe: process backlog newest-first by mtime
- #7754: Transcribe: stereo channel splitting via --stereo-agent L|R
- #7755: Transcribe: split OpenAI and OpenAI-compatible drivers
- #7756: Transcribe: --http-log file for full HTTP request/response trace
- #7759: Transcribe: replace empty speaker label with "UNKNOWN" on upload
- #7822: Transcribe: fix OpenAI diarized_json format and stuck driver
- #7823: Transcribe: add Deepgram driver
- #7854: Transcribe: report transcription fees
- #7922: Transcribe: Kroko-AI driver and audio format per driver
- #7931: Systemd unit for uniloader-transcribe
- #7940: Convert Gradle tasks used to run Sonar to Gradle 9.7 / Java 25
- #7957: Transcribe: use uniloader UserAgent for QM, OpenAI and Deepgram HTTP calls
- #7962: Log final transcription errors
- #7963: When reserving, check if chat exists
- #7964: Always use uniloader UserAgent in all HTTP clients
- #7970: Transcribe: accept flat segments from whisper-1
- #7971: Error with TR will not cause unreserve
- #7973: Transcribe: segment order in stereo merge
- #7980: Use raw stereo files created by Asterisk
- #7981: Display allowed tags for driver
- 7982: Uniloader test ws # QueueMetrics 26.01

The focus of this release is on the Wallboard, now the beating heart of QueueMetrics. With powerful new filtering capabilities at every level and intuitive supervisor actions, the Wallboard can finally replace all use cases of the legacy Real-Time page. We have also expanded PBX support

significantly and continued our modernization efforts to keep QueueMetrics future-proof.




There are also a number of other highlights, as detailed below:

- Dynamic filters at Wallboard, Page, and Widget levels
- Easier export jobs and session-based filters for reports
- Expanded PBX support for FusionPBX, FS PBX, MiRTA PBX, and Microsoft Teams
- Agent Page enhancements including device selection and automatic log-off
- Rocky Linux 10 support and official InnoDB database format
- Last-call deprecation notice for the Icon Agent Page

QueueMetrics 26.01 can now be readily accessed through various means: an RPM package for CentOS 7, Rocky 8, Rocky 9, and Rocky 10 based distributions; an ebuild for Gentoo; a Docker image available on DockerHub; and a TGZ file designed for manual installation on any operating system running the Java platform. Notably, QueueMetrics supports 25 distinct languages/locales, with the recent addition of Thai and Amharic.

If you are not confident in updating on your own, we suggest purchasing a Remote Support Pack so that our own support team can do it for you. Users of our QueueMetrics Live service will have their instance updated automatically.

## Wallboard

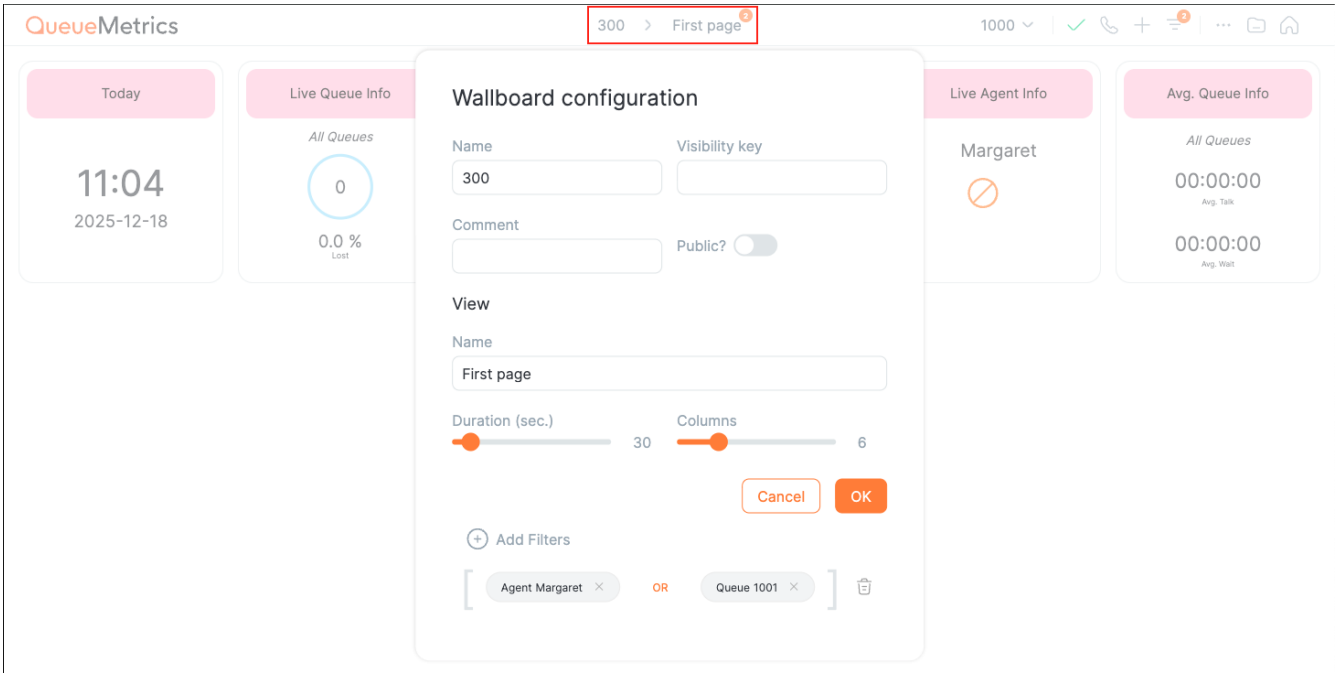
The Wallboard has become the beating heart of QueueMetrics. Its extensive customization

capabilities are highly appreciated for delivering real-time views through dedicated wallboards, serving as a monitoring center for supervisors, or being embedded within the Agent Page for at-a-glance awareness. Thanks to its flexibility, this single tool seamlessly fulfills all three roles.

## Filters

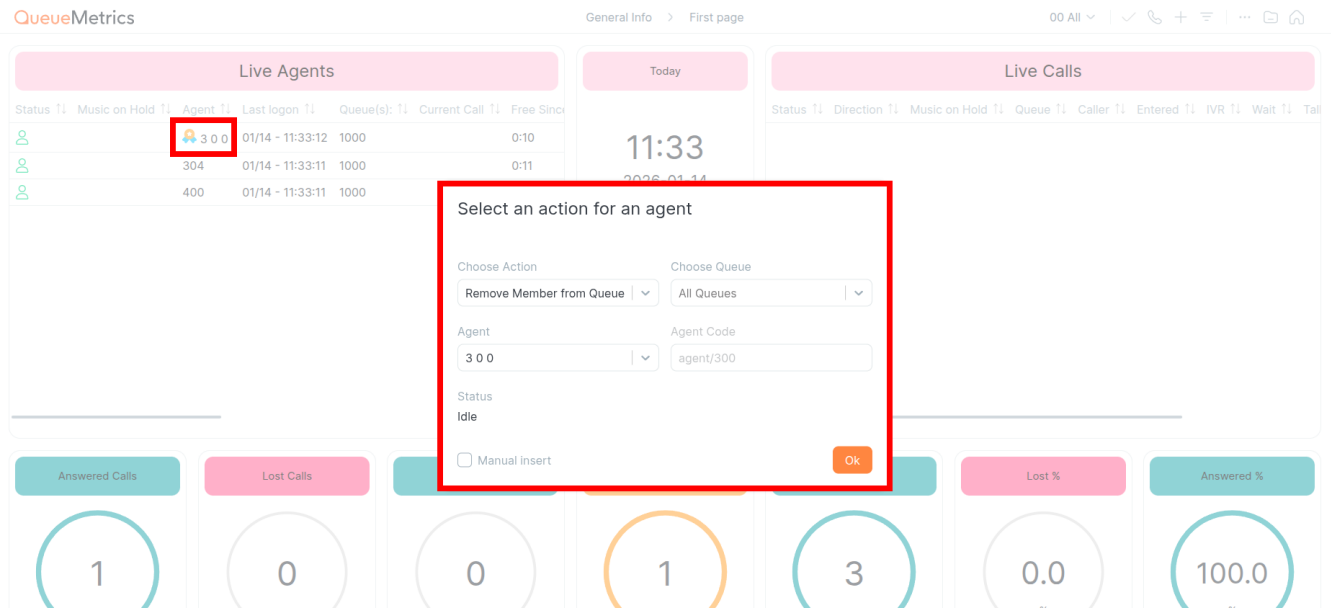
The most requested feature for the Wallboard was the ability to filter data dynamically. Just like reports, applying specific filters allows you to identify a particular set of users or specific calls. Since a Wallboard is composed of multiple pages, and each page contains multiple widgets, version 26.01 introduces filtering at three distinct levels: Wallboard, Page, and Widget. Each level applies an additional filter on top of the previous one.

For example, you can create a single Wallboard that rotates through daily statistics for all queues, then have individual pages for each queue, and within the same page, break down statistics by agent group. The possibilities are truly endless.




## Agent Actions

The Wallboard now offers a much more intuitive way for supervisors to perform actions: simply click on an agent without needing to remember their code. The same applies to calls in progress, making supervision faster and more natural.



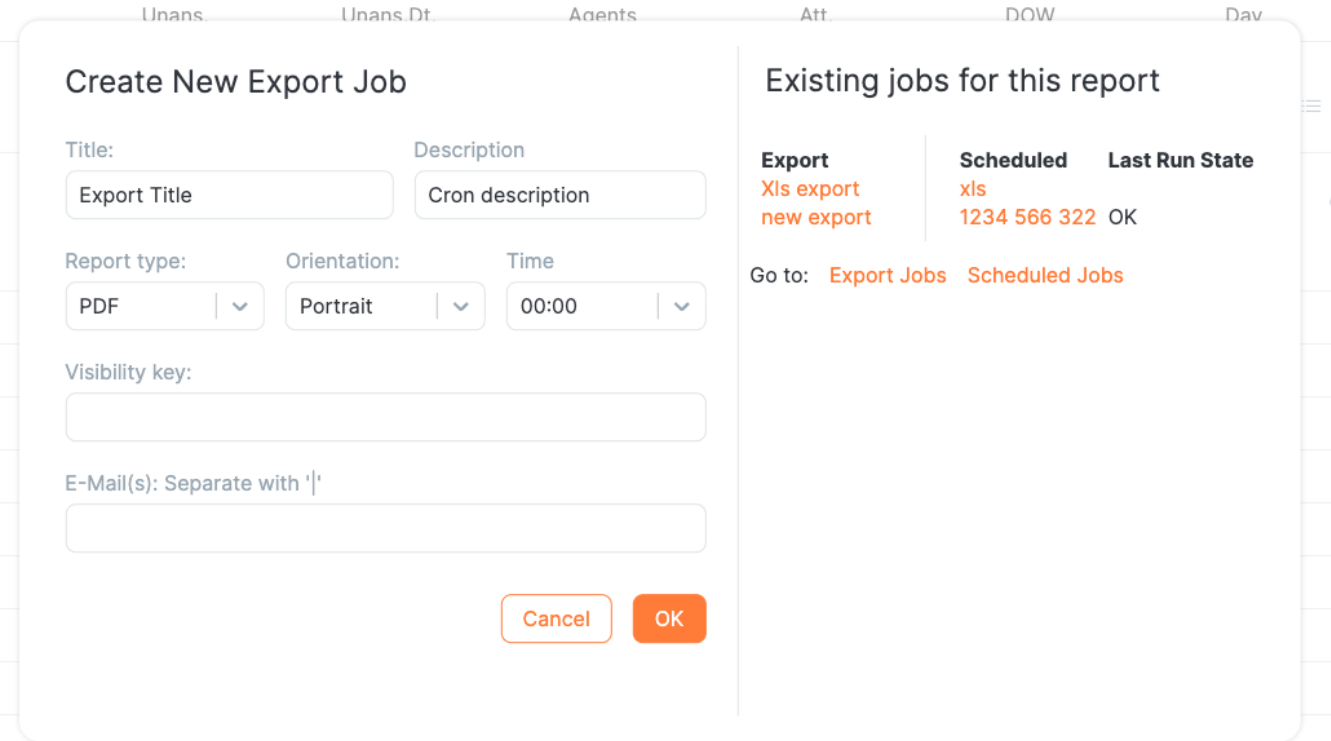

As a result of these changes, the Wallboard now has sufficient functionality and ergonomics to replace all use cases of the legacy Real-Time page. The Real-Time page remains available, but it no longer appears on the home screen of new installations. For those who prefer it, simply add it back from the home page. Nothing changes for existing installations being upgraded.

# Reports

Several changes to reports make them easier to use on a daily basis.

## Export Jobs

Previously, setting up automated periodic email delivery of reports required creating the report, then creating an export job, and finally creating a scheduled operation to send it. Now this entire workflow can be done directly from within the report interface without opening additional pages. You can also view all export jobs involving the same report in one place.



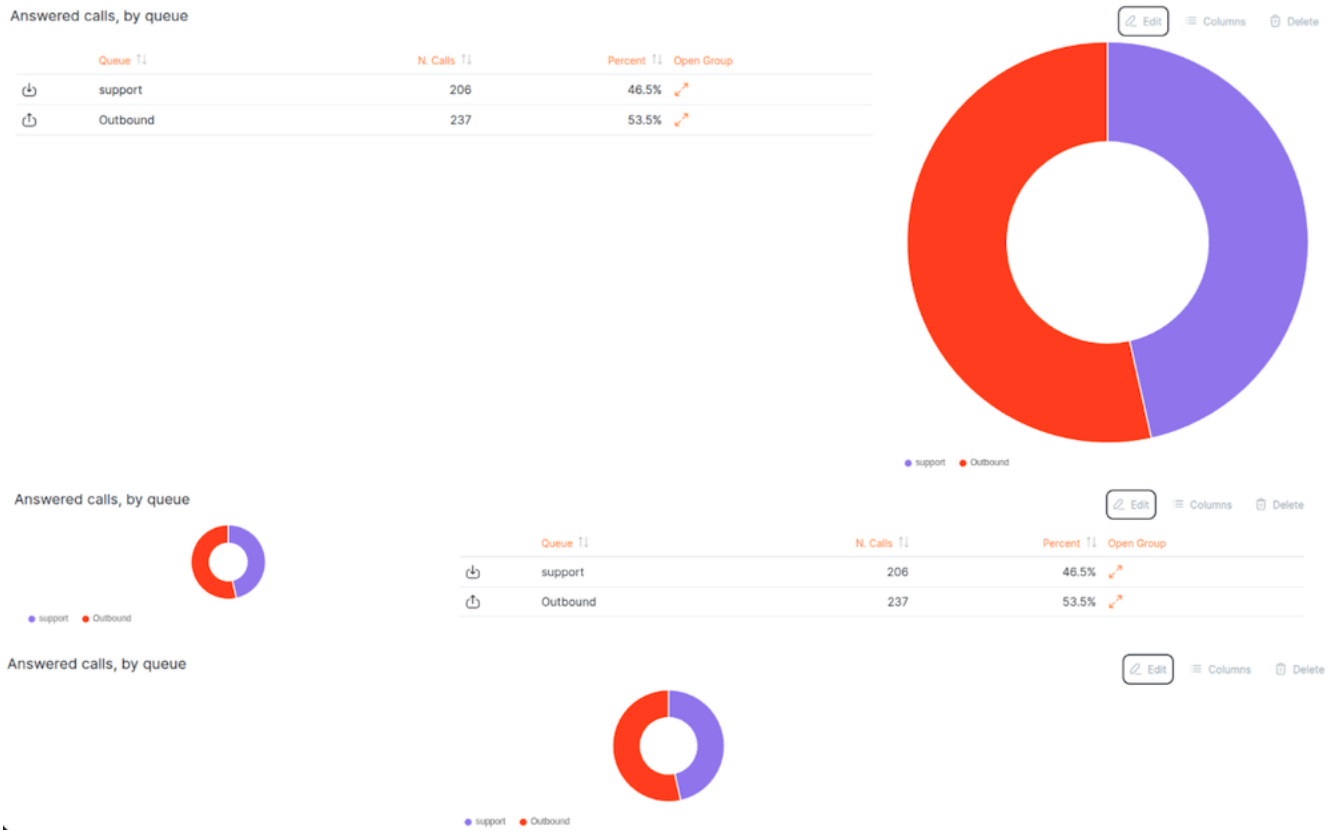

## Session-Based Filters

A significant addition is the introduction of filters based on agent sessions. Until now, all filters in QueueMetrics were tied to specific calls; when an agent had no calls left after filtering, they were removed from the report. With this release, you can filter by specific sessions instead: when a session is excluded, all calls belonging to it are automatically excluded as well. This makes it possible, for example, to search for all calls belonging to very short or very long sessions.

The new session filters include minimum and maximum session duration, minimum and maximum total pause duration, minimum and maximum number of pauses, and hotdesking extension.

## Charts

You can now decide the positioning and size of charts to optimize visual space and create more readable, effective report layouts.




### No more empty rows in hourly reports

For systems that are not working on a 24h shift, hourly data blocks used to have a set of empty rows before and after the day's work - usually no calls arrived and no calls were processed between - say - midnight and 7 am. This could be mildly annoying. You can now decide if you want to show or hide them by setting a toggle in the report's own settings.

## PBX Support

We have expanded support for different PBX systems, as we see significant interest in these platforms.

### FusionPBX

FusionPBX is a powerful multi-tenant PBX platform built on FreeSWITCH. It can be used as a highly available single or domain-based multi-tenant PBX, carrier-grade switch, call center server, and more. While QueueMetrics has supported FusionPBX for several years, this release includes substantial work to achieve feature parity with Asterisk-based systems.

We now support inbound and outbound traffic, automatic outbound call tracking, manual outbound traffic including calls made through the AMO dialer, call listening, and recordings. All these features can be enabled on a per-tenant basis and require no modifications to the configuration or dial plan. Given the importance of this integration, we have created a series of videos explaining all features in detail. The great news is that from the user's perspective, there is no configuration required to start using these capabilities.

The same integration is also available for FS PBX. FS PBX empowers VoIP providers to build and

manage their own hosted voice business. It combines the raw power of FreeSWITCH with a user-friendly management platform, allowing you to deliver carrier-grade business phone service to customers anywhere, instantly.

**See also**

- QueueMetrics Now Fully Integrated with FusionPBX - video tutorials: https://www.queuemetrics.com/blog/2025/10/14/fusionpbx_integration/
- FusionPBX https://www.fusionpbx.com/
- FS PBX https://www.fspbx.com/

### MiRTA PBX

MiRTA PBX is a database-driven, multi-tenant management layer for Asterisk designed for hosting providers, integrators, and enterprises. It supports single-node or clustered deployments with high availability patterns. For MiRTA PBX, we have also achieved feature parity, including inbound and outbound traffic support, both automatic and manual, as well as through the dialer (AMO).

**See also**

- MiRTA PBX https://www.mirtapbx.com/

### Microsoft Teams Telephony

We have added six new data blocks specifically for Microsoft Teams. These blocks help track calling domains for Teams-to-Teams calls, which is becoming increasingly important as we are starting to see scams where fraudsters impersonate other users or organizations. This security-focused feature displays incoming and outgoing domains, whether calls are external or internal, and traffic duration. Per-user statistics show answered and missed calls, providing supervisors with the visibility they need to identify suspicious patterns.

> While these data blocks are present in all QueueMetrics versions, they are only meaningful for QueueMetrics for Teams deployments.

## Agent Page

The QueueMetrics Agent Page receives several enhancements in this release.

The softphone now allows selection of input and output audio devices, making it easier for agents to use their preferred headsets. Agents can also answer incoming calls by pressing the headset button.

A new button allows assigning the current call to a customer and/or case using the built-in Cases and Customers system, streamlining after-call work.

The set of queues an agent is currently working on is always visible through the top bar, so you don’t have to navigate to the queues page.

For organizations that prefer it, automatic queue log-off is now available when an agent disconnects from QueueMetrics. This optional feature can be enabled in settings for agents who should not remain logged into queues when not actively using the system.

### Say Goodbye to the old Icon Agent Page

Among our modernization efforts, the Icon Agent Page is still present in the system but will be removed in the next release. It was originally scheduled for removal in this release, but we decided to allow more time for an orderly migration. The current Agent Page has all the features to replace and surpass it.

In version 26.01, access to the Icon page is preceded by a brief reminder to migrate. We have created a migration guide dedicated to agents, showing the old way versus the new way for common tasks. It's available here: https://www.queuemetrics.com/blog/2026/01/16/migration-to-the-new-agent-page/

> The Icon Agent Page was created in June 2014 and was designed to incorporate other pages within it. Unfortunately, most modern web pages no longer allow being embedded in `iframe` tags, going against the logic with which it was designed. The new Agent Page was released in September 2023 and has been sufficiently battle-tested to fully replace it while improving the user experience.

## Future-proofing

This release includes significant modernization work that will continue in future versions.

### Rocky Linux 10 Support

We now support systems based on Rocky 10 through a documented procedure. We also support Rocky Linux 8 and 9 and continue to offer limited support for CentOS 7-based systems. You can upgrade these older systems, but since they are no longer supported upstream, we recommend migrating to a newer platform. Our support services are available to help you organize the migration.

**See also**

- Installing QM 26 on CentOS 10: https://www.queuemetrics.com/faq.jsp?uid=faq-128-install-QueueMetrics-CentOs-10

### CentOS 7 Deprecation

While CentOS 7 systems can still be upgraded, official support from the CentOS project has ended. We strongly encourage planning a migration to Rocky Linux 9 or 10 for continued security updates and long-term stability.

### InnoDB Database Format

Starting with this version, we officially support the InnoDB format for the database. Older systems

based on MyISAM continue to work without requiring conversion, but the new format offers significant administrative advantages: reduced disk space usage, point-in-time backups even on extremely large databases, and most importantly, better resilience in case of crashes. Additionally, InnoDB databases can be easily replicated using ready-made solutions like Galera, allowing you to create highly available systems with minimal effort.

### Default Dial Plan

We have modified the default Asterisk dial plan to make it compatible with more recent versions, removing `app_macro()` and using `PJSIP` channels by default. Note that dial plan integration is now necessary only in a small minority of cases.

## What's Next

In the next release, we will permanently remove the Icon Agent Page and undertake a revision to make QueueMetrics compatible with modern versions of Java, targeting Java 21 and the upcoming Java 25 LTS. Simply upgrading the Java virtual machines should bring significant performance improvements while making the system future-proof.

## Misc

- Reports are now expected to have unique names to avoid misunderstandings. The date picker in reports now follows your preferred locale rules, and the delete button has been moved to a more intuitive location. Data tables feature reduced whitespace for more focused reading.
- Configuration pages now display the object ID for all objects, which is particularly useful when setting the default queue for wallboards.
- The database inspector page has been rewritten for a smoother experience; it includes a transaction inspector for InnoDB tables, and the AMI tester has been improved.
- Free text in call tags, if present, can now be shown in the call list and is displayed in the call details window.
- Added localizations: Thai and Amharic (Ethiopia).

## Detailed change list

**Icon agent page**

- #7103: Agent pause unavailable with hotdesk mode enable on GWT page
- #7263: Some function in Tools.java used from gwt icon page, access singleton agent
- #7511: Deprecation Page should be shown when accessing Gwt Icon page

**Agent Page**

- #7427: WombatDialer callback panel too vertically narrow
- #6400: Client and Case forms should have an "Assign current call" button

- #6960: Variables not expanded properly in QAP
- #7002: Case form crashes
- #7003: QAP Outcome Panel updates for no reason
- #7047: QAP - When Agent create a new memo assigned to its self, notification panel open wrong memo
- #7229: Memo recall doesn't set number on dialout panel
- #7392: QAP: Chang Button position
- #7393: QAP: Add logged queue in agent status on top bar
- #7403: Error occurs when entering free text without selecting any features.
- #7440: From the agent page, any server request error, invalidates the session.
- #7449: Log agent off queues when clicking logoff
- #7476: QAP: Clicking in the white space near the logout button redirect to a white page
- #7477: End work button, log off agent only from assigned queue
- #7490: Agent page misses error message

**Configuration**

- #7078: Users editor ignorin minimum password level
- #6968: Queue - Agent association not saving correctly
- #6971: User keys checkboxes are not appearing
- #6989: Explore system parameters properties locked
- #7007: Handle keys popup delete saved keys
- #6964: Ignored properties dateformat
- #6992: SMTP tester does not work
- #7166: Handle requested language "he-IL"
- #7249: Enlarge maximum size for properties
- #7345: DBInspector: remove _rv_P001 as first option
- #6975: The selected item in the navbar is not shown if it is outside the carousel view
- #6981: "Check All" checkbox not selecting multiple elements
- #7038: email is not validated in the user creation
- #7039: username(login) with whitespace should not be allowed
- #7040: Impossible to add key to a class from modal
- #7041: classes should not have the same name
- #7045: ami test starts without any user input
- #7046: dbtest_smtp.do starts without a recipient email address
- #7083: Search function in Show Classes

- #7106: Builds of queuemetrics, without default theme, don't include necessary assets
- #7129: Only users with key "CHPASSWD" can change QM themes
- #7184: External reference cannot be created when are present more than C-9999 cases
- #7195: If property sso.driver, contains a typo, queuemetrics cannot be recovered
- #7202: Update the AMI test outcome from AMI tester
- #7236: Both callfile.agent(add/remove)member.enabled and callfile.agent(login/logoff).enabled are set to true by default
- #7350: It is not possible to remove an icon from an agent group.
- #7465: User Has Key, doesn't consider MasterKey

**DB**

- #6977: Creating database fails if DB user queuemetrics'@*localhost* deleted
- #7014: All default CHARSETs and COLLATE set for utf8mb4 unicode
- #7029: DbUpdater script is too verbose
- #7035: Creation date visible in arch_properties
- #7239: Index qm_tasks.pFamily cannot be converted to utf8mb4
- #6966: testFilters_verySimple test failure
- #7489: Remove Old table from new instances

**Docs**

- #7462: Migration guide from Agent page GWT to QAP
- #7093: Using custom logos for QM 24.11

**Engine**

- #7271: Aliases are broken in cluster mode
- #7431: Improve performance of DeadSessionCallReaper
- #6800: Session is not serializable for CachedDbRewriter$Cache
- #7233: Issues on DOW filter
- #7343: Incorrect number of agents reported on license violation in Teams
- #7455: CODA_F_agenteFiltro and CODA_F_features don't accept regexps
- #7475: Server filter doesn't work with uppercase server's name

**Exports**

- #7300: Wrong URL used for export jobs
- #7042: exports: edit icon shows *edit queue* instead of *edit*
- #7043: report created without a valid email address
- #7163: When you try to export a larger report, a generic error occurs.

- #7203: When you run an export, the subject of the email cannot support characters outside the ASCII-US character set
- #7216: When you create multiple cron jobs and try to edit two of them, after editing the first one and opening the second, the report name changes to match the first one.
- #7283: The difference between the scheduled jobs is not clear (Cyclic and Once a Day)

**Graphics**

- #6984: Table layout fixed should only be applied in QM editors
- #7105: Customer custom logo is too small in the topbar
- #7172: delete button on the report page and the settings button in the wallboard
- #7175: If an agent assigned to a queue is not know, the agents layout in queue details is wrong
- #7402: When you log in with the wrong credentials, sometimes during a reload the page does not load correctly.
- #7443: Better readability for text in reports
- #7453: When you click Print on the report page, it also includes unnecessary fields.
- #7478: When you edit some properties and click outside the modal starting from inside, the modal will close.
- #6952: Editor Agents Groups new loway icons
- #6978: Editor Tables width too large on smaller devices
- #6979: Editors: apply custom scrollbar on all tables' cells
- #6986: Props Editor - History details panel grid text not showing correctly
- #7177: Wrong alignment for SSO buttons

**Home Page**

- #6974: infobox sidebar shows double checkbox
- #6965: In the login page, pressing ENTER while changing the language doesn’t change it.
- #6973: Language in the Login page should be ordered by name
- #7370: Homepage: Realtime Card Removed by Default
- #7466: Show notification if user has masterKey

**Packaging**

- #7446: DB dump not compatible with Maria 5.6
- #7299: Compatibility with CentOS/Rocky/Alma 10
- #6963: Missing CBR from JS/CSS
- #6572: Remove app_macro() from default dialplan and use PJSIP
- #7246: Add queue q-outbound to default config
- #7267: Move database to InnoDB

- #7481: Quicker inspector page
- #7415: If you add the editing key to a report and user, but the user does not also have the USR_REPORTS key, they will not be able to edit the report.
- #7474: Customer logo not shown on first install

**Platform**

- #7401: MiRTA: supporting outbound calls
- #7405: Audio recordings in Enswitch: use shorter time-out
- #7437: PAUSE actions very slow on MirtaPBX
- #7192: New driver for FusionPBX
- #7364: Check compatibility with Centos 10
- #7436: MiRTA: tracked outbound
- #7139: Audiovault doesn't work if char / is not added to the end of the properties
- #7231: Pause/Unpause doesn't work on mirtaPBX
- #7232: Mirtapbx verbose mode doesn't work
- #7501: Call won't work when proxied via MediaProxy

**QA**

- #7461: Recordings broken with JsonListener on 24.11.11
- #7264: Mirta PBX recodings in QA show API url with key
- #7441: If an error occurs while updating the QA form, the server respond ok, resulting in a client error white page
- #7463: If a user tries to access the call details but does not have the required QA key, they will receive a 412 error.

**Realtime**

- #7165: Multiple users of the RT page may cause conflicting data to be shown when aliases are changed

**Reports**

- #7022: Incorrect recordings when Unique ID uses letters
- #7426: Misalignment of column title vs data
- #6994: Report allows incorrect dates
- #7226: Anomalous limits not respected on QUEUESTART
- #7424: New datablocks to track external users in Teams
- #6522: Time range reports should remove empty rows
- #6856: OUxx Datablocks calculating incorrectly the percentage

- #6858: Export jobs ignore visibility key
- #6930: Formatting DATE_TIME_SHORT
- #7000: Date picker inside report doesn’t follow local dateformat
- #7073: If the date report’s date has an invalid format, it is impossible to open the report again
- #7173: When you clone a report, the save button does not appear
- #7176: Report names are not checked, and you can save multiple reports with the same name
- #7210: Wbt recordings not shown
- #7213: Report page not handling exception 504 correctly
- #7215: When you create a new report and add one or more data blocks, sometimes the data blocks are duplicated with the same name after saving.
- #7247: When you use the outcomes and try to generate a report, the outcomes group will not be populated.
- #7250: The datablocks also list the grouping of the summary
- #7251: The datablock that will show the grouping does not filter the call into the correct group
- #7255: IVR interaction details open wrong call details
- #7262: Crm urls doesn’t handle correctly Url encoded variable
- #7275: Gr01, doesn’t use queue default url but use always default.crmapp
- #7344: Bad alignment of buttons and bad dates
- #7346: New data block: teams callers
- #7362: Separate display for attempts with length=0 and length>0
- #7369: Event "ongoing" not decoded
- #7380: Report page: Enable scheduling of export jobs from report
- #7381: Report page: Adjust button position for better UX.
- #7388: Report page: Adjust graph dimensions and position.
- #7389: Reports: adjust used space
- #7404: The free text is missing from the call details.
- #7419: If audio recordings service fails, client won’t display errors
- #7428: Warning and errors in reports and QA page
- #7429: Use regexp for agent filter selector
- #7430: New filters by session
- #7434: Grouping that contains encoded value doesn’t shown correct value
- #7435: Report Filters are not encoded correctly in the database
- #7442: Adding descriptions to DataBlocks
- #7468: If all data fits on one page, the page size defaults to 15 even if a different value is saved
- #7471: Hourly Slot settings changed by circular are not saved and are reset to the system default

(default.hourly_slot).

- #7482: Old verbs were already used and need to be disabled

**Softphone**

- #6980: Softphone: Autoanswer not working
- #6985: Softphone default audio not working
- #7221: Selecting input/output devices
- #6990: Softphone random not appearing on wallboard
- #7005: Softphone settings overwritten by Wallboard when using QAP
- #7222: Agent cannot dial-out manually from the softphone
- #7398: During a multi-session call, if you take the second call, it’s impossible to take the first one.
- #7496: Softphone doesn’t support multiple IceServer

**Synchronizer**

- #7048: Synchronizer: Chunking of queues/agents the synchronizer doesn’t work
- #6084: Cannot import "pbx" entry from JSON
- #7037: synchronizer: Impossible to select checkboxes "Protected from Deletion" and "Protected From Updating", inside creation modal of agents and queues
- #7059: The agent code must be at least two characters long
- #7060: synchronizer does not import agents if there are users with the same name

**Tasks**

- #6969: Memo table does not update on memo status change.
- #7023: Memo pagination non working in daily view
- #7013: Memo manager, Id filter error not handled
- #7036: Memo notifications don’t redirect correctly

**Wallboards**

- #6736: Agent actions are hard to use
- #7420: Wallboard: Icon present in datablock are not displayed
- #6961: Timezone offset doesn’t work in wallboard
- #6970: Wallboard Clock not showing correct time when server timezone is different.
- #7399: Realtime Datablock cannot be filtered by FilterExpression
- #4455: On the Wallboard, when login an Agent on or off a queue, you can select them from a dropdown menu.
- #6630: View-only wallboards
- #7006: Changing queue in a new wallboard just delete it, deleting also all new changes if not

saved

- #7009: N Answered Calls and Lost Calls circular widget show full circle even if not at max value
- #7050: Music on Hold not updating correctly on the wallboard
- #7142: Wallboard performance with large data sets
- #7168: Datablock fetch of Live queues and others datablock are not paginated
- #7190: Easier supervisor's agent login through the wallboard
- #7206: Wallboard and RealTime queue filter use default queue even if disabled in frontpage, while client show another queue
- #7234: Wallboard actions do not consider platform availability
- #7371: Wallboard: Add Filter
- #7372: Wallboard: Add General Filter Selection Logic
- #7373: Wallboard: Add General Filter Selection Panel
- #7374: Wallboard: Add General Filter Carousel
- #7375: Wallboard: Add Widget Filters Selection Panel
- #7376: Wallboard: Backend Filter Selection
- #7377: Wallboard: Add id to poller and reservoir datablock
- #7378: Wallboard: StatusBadge in table cellRender in the wallboard is take to much space
- #7379: Report and Wallboard: fix pagination
- #7408: Explanation page on wrong access to wallboard
- #7433: Wallboard: Realtime Agent and outcome status icon doesn't reflect real agent status
- #7494: The Live Agent Counter widget does not work if the agent description contains leading or trailing spaces.
- #7504: Wallboard import and export with filters
- #7421: The agent group icon is not present on wallboard datablock

# WombatDialer 25.02

This new major release of WombatDialer addresses an important security issue and has a number of small changes meant to make your life easier.

WombatDialer 25.02 can now be readily accessed through various means: an **RPM package** for CentOS 8, Rocky 8, and Rocky 9 based distributions; a Docker image available on DockerHub; and a TGZ file designed for manual installation on any operating system running the Java platform.

## Important security update

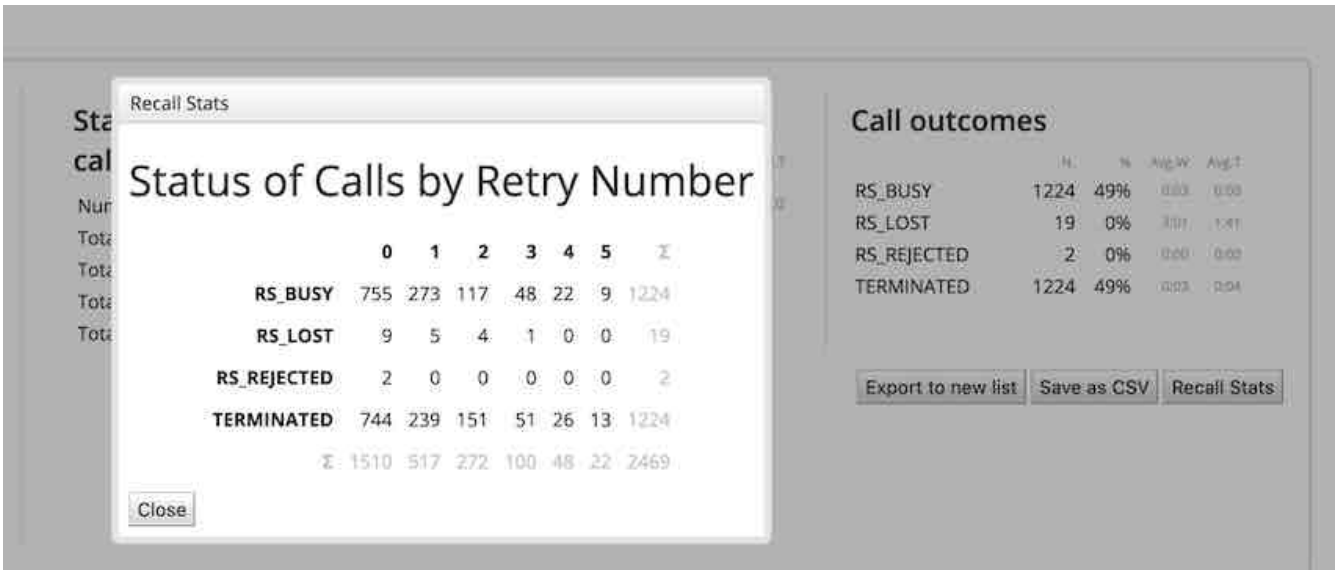
This version fixes a major issue with session handling that could theoretically allow a user to bypass security checks on the configuration interface.

The CVE for this will be published soon.

> While we have no suggestion that this vulnerability was ever exploited in the wild, as it was found in a security audit, **we suggest updating immediately** to avoid any possible risk before the vulnerability is publicly disclosed.

## Improvements to call reporting

From the Reports page in WombatDialer, under the Call Outcomes panel, it is possible to see a breakdown of those call outcomes grouped by the number of recall it happened to. This way you can see, e.g., how many calls were completed the first time they were placed, how many on the first recall, how many on the second, and so on.




This feature, sometimes known as "Called Counts", can be very effective in deciding how "deep" you recall policy must be set to optimally reach your targets.

Also, on the Realtime page, the panel "Active Lists on Run" was sometimes hard to use because buttons would appear on the very bottom of the panel. Now that's fixed.

# A clarification on AUTO lists

We added a new section to the User Manual called "Automatic Lists" because we felt that a number of customers would not get what `AUTO` lists are for by reading the current documentation. And - worse - they would end up using them incorrectly. Automatic lists are very handy, but their expected behavior can sometimes be misleading.

If you use `AUTO` lists, make sure you check it out at https://docs.loway.ch/WombatDialer/020_WD_Concepts.html#AUTOLISTS

# API improvements

It is not possible anymore to add numbers to a campaign that has no active run - this makes no sense. Previously these numbers would be added to the `AUTO` list for the campaign, but not actually dialled. Now this triggers an error.

The CPS parameter for a trunk could not be set - it is not meant to, as it is a derived parameter based on `rlMaxMsg` and `rlMsgEvery` settings, but you had to remove it from the JSON description of a trunk to change it. Now it is fixed.

# Easier installation and upgrades

Now WombatDialer supports MySQL 8.0.36 out of the box when installing with `yum`; previously you had to change its password policy to allow WD to use it. MariaDB is always supported and is in general easier to work with - but you choose.

To access the WombatDialer web-app, you now have a fixed symlink `/usr/local/queuemetrics/wd-current` that will always point to the correct one.

The DbTest transaction used on first installs and upgrades was made a bit easier on the eye and external links were fixed.

# Deprecations and security

- Changes to the lists associated to a run are now written on the system log.
- Current RPMs do not support CentOS 6 and may not work on CentOS 7 systems. Those systems are obsolete and you really need to upgrade them.

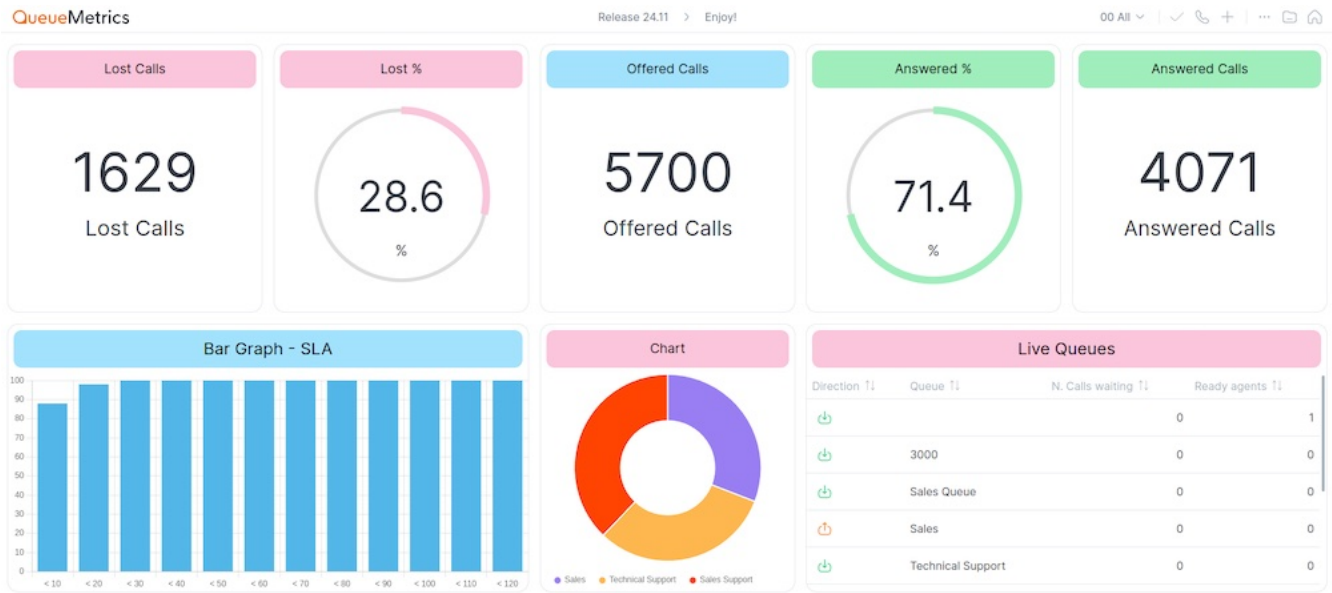
# Bug Fixes

- #6937: CVE: Bypass Cookie Session
- #6444: Statuses by recalls
- #6999: "Active Lists on Run" panel is not very readable.
- #6997: Numbers added to a campaign that has no existing run
- #6851: Cannot change CPS on a trunk via API

- #6996: Syslog: logs changes to lists on a run
- #6998: Better explanation on why AUTO lists must be used carefully
- #7030: Create symlink "wd-current" in RPM install
- #7004: DbTest: wrong links and dates
- #6821: Wombat won’t install on MySQL 8.0.36
- #6003: Weird events "Channel: OutgoingSpoolFailed" fixed

# Release 24.11

The focus of this release is on improving your quality of life; one large architectural change you won't see much flanked by a supporting cast of smaller features that make QueueMetrics quicker, smoother, easier on your eyes and in general easier to work with. And wallboards finally made it to the new Agent's page.




There are also a number of other highlights, as detailed below:

- Database-backed configuration
- New Overview data blocks
- A fresh look
- Changes to reports and wallboards
- Changes to the Agent page… including embedded wallboards!

QueueMetrics 24.11 can now be readily accessed through various means: an **RPM package** for CentOS 7, CentOS 8, Rocky 8, and Rocky 9 based distributions; an ebuild for Gentoo; a Docker image available on DockerHub; and a TGZ file designed for manual installation on any operating system running the Java platform. Notably, QueueMetrics supports 23 distinct languages/locales.

If you are not confident in updating on your own, we suggest purchasing a Remote Support Pack so that our own support team can do it for you. Users of our QueueMetrics Live service will have their instance updated automatically.

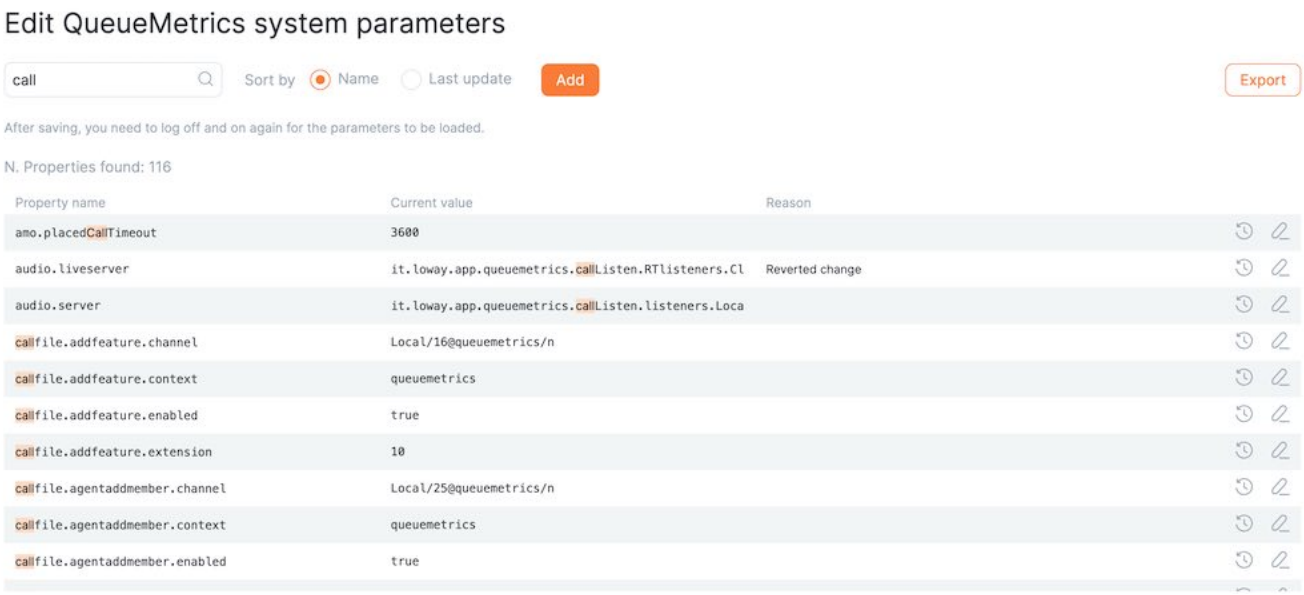
## Database-backed configuration

One of the most significant enhancements in this release is the centralization of system configuration within the database. By moving property settings from the file `configuration.properties` to the database, we've gained the ability to:

- *Track changes:* Detailed records of property modifications, including the reasons behind them,

are now maintained.

- *Control access:* Specific properties can be hidden from local administrators, enhancing security.
- *Simplify backups:* The database backup now encompasses all system configuration, streamlining the backup process.
- *Better suited for high-availability:* Properties are synchronized and replicated alongside the database, facilitating both active-active and active-standby QM configurations for enhanced reliability and capacity.




Existing systems will continue to function as before, as the current property settings will be automatically migrated to the database. A new editor is available to view and edit system properties.

For those who require external modifications to system properties, the updated Uniloader tool can now directly interact with the database, providing a more efficient and integrated solution.

# Overview Data Blocks

We've introduced two new data blocks to provide a concise overview of agent and queue activity.

- *Agent Activity:* This block displays key metrics such as calls answered, missed, abandoned, speed of answer, and SLA contribution.
- *Queue Performance:* This block provides insights into queue performance, including calls answered, missed, abandoned, average handle time, average wait time, SLA adherence, and percentage of active calls.

These blocks, when used together, offer a quick snapshot of your contact center's performance and are ideal for email reporting. For new systems, we've created a pre-configured report called "Today at a glance" where you can experience the new data blocks in action. Existing users can manually add these blocks to their reports using codes `OK16` and `OK17`.

# A fresh look

We've given QM a fresh look to make it easier to use. While there are lots of little tweaks throughout the product, we've focused on improving the wallboards and configuration editors.

## Wallboard

- *New Color Scheme:* We designed a new color palette for the wallboard widgets. It is easier to distinguish between each widget.
- *Readability:* Titles are bigger and there's more contrast between the background and the text.
- *Queue Selection:* You can select a queue from the header menu in your wallboard.
- *Enhanced Configuration Editors:* All panels have been updated to a more user-friendly experience.
- *Simplified Widget Addition:* Easily add new widgets to your wallboard from a categorized list. You can also search for specific widgets.

## Configuration Editors

- Improved Layout: QueueMetrics editors now feature a more intuitive layout with new, more readable icons and easier-to-read tables.
- Enhanced Mobile Experience: A scrollable menu has been added for smaller devices, providing easy navigation.

## We've made QueueMetrics even more accessible.

Beyond the visual refresh designed to enhance the user experience, we've also focused on improving overall accessibility:

- *Extensive Keyboard Navigation:* Most actions can now be performed directly from your keyboard, reducing reliance on the mouse. This makes QueueMetrics more accessible and allows power users to work more efficiently.
- *New Font for Dark Theme:* We've introduced the Atkinson Hyperlegible font to our dark theme for improved readability. This font is specifically designed to reduce eye strain during extended viewing sessions.

What does this mean for you?

- *More Flexibility:* You can choose the interaction style that suits you best, whether it's using a mouse or keyboard.
- *Reduced Eye Strain:* The new font makes reading data more comfortable, especially in low-light environments.
- *A More Inclusive User Experience:* We've made QueueMetrics more accessible to a wider audience, regardless of individual preferences or needs.

# Reports Page and Wallboards

We've made numerous small improvements to the reports page for a more user-friendly experience. Notably, for properties show in the found in the report configuration menu (e.g. the data source to use, or the length of hourly slots), reports can now decide to use the system-wide settings or override them with specific values. This makes it easier to create reports that can be moved between systems.

Wallboards have been refined for a more consistent look and feel, as described above.

- Widgets based on taken or lost calls (e.g. "N Lost Calls") now allow you to view a list of the latest answered or missed calls that contribute to their results.
- A new widget called "Last attempts" was added to display real-time missed call data, broken down by queue and agent. This enables supervisors to quickly address any issues as they are happening.

# Embedded wallboards on the Agent page

We've made a highly requested change to the QAP agent page: agents can now access wallboards! These are displayed as tabs within the QAP page content.

Additionally, we've implemented a quick action to create cases and clients directly for the current call, and improved integration with WombatDialer.

# Security and deprecations

This version addresses several CVEs that were fixed in the version 24.05.5, released in September 2024. Therefore, if you run an earlier version, we strongly recommend updating your system just to be on the safe side.

We have removed all AGAW features, which have become obsolete now that wallboards are available on the agent page.

# Misc

- A small optimization on the number normalizer - used to fetch Known numbers from the database - made all reporting less CPU-heavy;
- Date periods on Reports now show the exact time range that is meant;
- You can now upload tens of thousands of agents through the Synchronizer;
- QA forms are at last printable;
- A sleek new logo;
- And, last but not least, you don't need to click on the "Login" button, but you can just press Enter!

# Detailed change list

### Agent Page (QAP)

- #6903: Integrate Wallboard in QAP
- #6899: Pause button not working in DirectAMI mode in Agent status menu
- #6840: QAP Memo - Create Memo
- #6814: Make QAP Case, Clients dependent on a security key
- #6708: outcomes and AMO calls don’t always work.
- #6697: Wombat Preview URL should be empty by default
- #6696: default.rememberLastExtension not working correctly in QAP
- #6694: Using security token for WombatDialer
- #6673: QAP - Control, Interactions, QA, Cases
- #6672: QAP Memo - Info Details
- #6671: QAP Memo - Manager
- #6670: QAP Memo - Weekly
- #6669: QAP Memo - Daily
- #6476: QueueMetrics Agent Page (QAP) icons not scaling correctly.
- #6400: Client and Case forms should have an "Assign current call" button
- #6391: Keyboard shortcuts don’t work on Mac
- #6960: Variables not expanded properly in QAP

### Old Icon Agent page

- #6917: Numbers not hidden on Icon page
- #6882: QueueMetrics softphone not working on Icon agent page

### Soft-phone

- #6709: Settings should not be editable from agent page
- #6703: Auto-answer not working correctly for agents softphone

### Configuration

- #6946: Check that usernames and e-mails are unique for Users
- #6914: Downloading dialplan from QM fails on FreePBX 17
- #6906: Improve layout of cfg editors
- #6889: Remove parameters from new Edit system parameters
- #6883: New "last update" fields
- #6868: Explore parameters wizard with DB backend

- #6863: Configuration: outdated values
- #6830: Cloning user "demoadmin" leads to admin lock-out
- #6818: Increase the default MaxOngoing parameters time
- #6788: Writing agents multiple times when they have very long names
- #6772: Max size of agent code
- #6749: Licence page: version of language pack not visibile
- #6737: License information now visibile in spite of property Private VERI Lorenzo Emilitri
- #6717: Slow access to queues editor with lots of agents per queue
- #6379: Properties can be locked
- #5192: LProperties on database

**Graphics**

- #6895: Braille Text Font on Dark Theme
- #6941: Update QueueMetrics Logo
- #6933: Fix Post UiKit Removal
- #6928: "Your logo" on click linked to homepage
- #6915: Error loading layout preferences
- #6908: Audio Player not displayed correctly in dark mode
- #6897: User key wizard not readable in dark mode
- #6896: License pop-up in dark theme not readable
- #6891: License popup placement
- #6890: New Edit system parameters popup formatting
- #6880: Remove AGAW references
- #6879: Editors: change style of "created by" and "last update"
- #6867: Edit QM system parameters
- #6843: Remove Uikit from QM
- #6836: infoBox Colors Default Theme
- #6826: Better date selectors in reports
- #6825: Theme Checker page
- #6824: Header Hamburger Menu not working properly
- #6809: Edit CSS Homepage, Wallboard
- #6799: Icon Colors do not work with rgba variables
- #6797: Documentazione Colors Variables
- #6794: Memo Page Grafica
- #6759: Top-left logo not clickable to go back to home page

- #6713: Infobox "+" icon not visible
- #4851: Hide everything on Licensing pge

**Real-time**

- #6892: Run report from Realtime view
- #6958: Realtime actions icon not visible
- #6953: Realtime Sidebar Animation
- #6949: XLSX file generated from the Realtime page contains raw HTML tags

**Reports**

- #6786: Reports always override properties
- #6271: Report settings should be optional
- #6925: Data blocks ignoring text alignment and recap row
- #6924: Error when printing: lowayDateFmt is not defined
- #6921: Variable filter not working
- #6911: Data Block: Agent recap
- #6888: Data block view selector panel should scroll to top on page change
- #6861: Datablock OU06 uses the same name for two columns
- #6852: ag22 does not decode agents
- #6841: Datablock Download Menu should be hidden when download options are not available
- #6819: Datablock OU06 doesn’t export the outcome names
- #6811: Reports Filters Sidebar needs implementation of LWeekInput
- #6806: Outcomes per agent description field has wrong name and is not exported.
- #6787: Reduce useless translations
- #6785: Saving and exporting to JSON current datablock paging
- #6784: Month selector too small
- #6783: Icons resize too much
- #6782: Icons too similar
- #6778: Error when saving: Null key for a Map not allowed in JSON
- #6777: Add "range" to LDatepicker
- #6764: Paging in Grouping window not working
- #6763: Report clone feature not working
- #6760: Sessions with no calls remain in report when running group/location filters
- #6758: Agent timeline: merge multiple variables
- #6757: Agent timeline: decode new variables for Teams

- #6712: Double-insert of same data block
- #6707: Pie graph not showing
- #6685: Duplicated datablocks after saving report
- #6678: Default report RT won't show on home page
- #6535: External resources with audio player
- #6441: Line graph not displaying numbers with commas
- #6435: React-hotkeys not working correctly. New way to handle shortcuts is needed.
- #6242: Reports page sets non-existent column index
- #6222: PDF export: unreadable cells
- #6116: QueueMetrics should use the server time for the data picker
- #5862: Exporting a report while it is being saved, gives an error message

**Login / Home page**

- #6878: Login and Password fields auto-complete when not needed
- #6842: Configuration Infobox in administration menu shouldn't be scrollable
- #6815: Hits number is not incrementing in the Known Numbers page
- #6834: Login: URL retrieval
- #6833: Login: Cookie injection
- #6832: Login: X-forward header override
- #6831: Login: Redirect after login to any URL

**Packaging**

- #6918: Remove manifest.json, hash in bundles and fix hot reload of css
- #6905: Login start when typing Enter
- #6894: "Enter activation key" is broken
- #6893: Display version of the database on license page
- #6864: QM RPM won't install on Rocky 9.4
- #6781: JS Color variables do not follow theme
- #6735: Cleanup of JS warnings
- #6722: Remove AGAW
- #6721: Using ESBUILD instead of Webpack
- #6657: Webpack warning: No more changes should happen to Compilation.assets
- #6212: When the webapp is set a ROOT, the home button does not work correctly

**Platforms**

- #6869: SSO Url incorrect in 24.05.5

**Performance**

- #6957: Quicker NumberNormalizer

**QA**

- #6817: Group Name not updating correctly in the QA form
- #6529: Print QA form and reports

**Synchronizer**

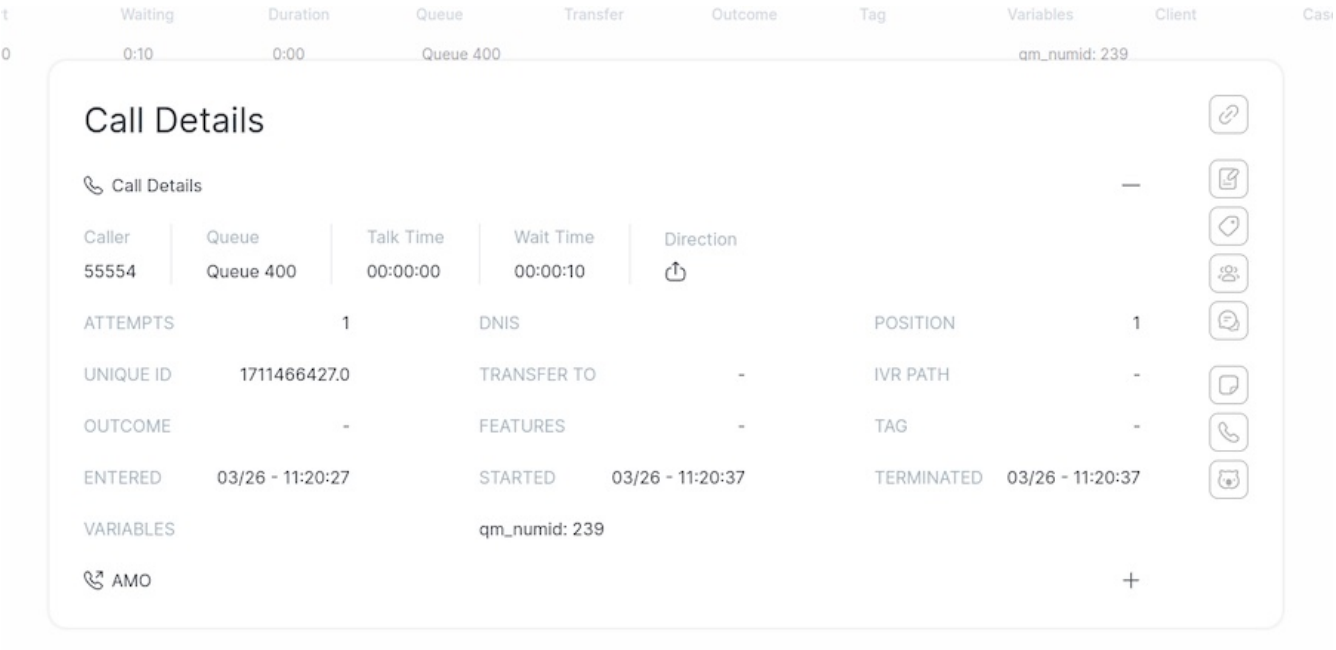
- #6731: Data upload is small batches with progress bar
- #6839: QM Realtime/Synchronizer - Ritorni
- #6767: Synchronizer "swallows" exceptions

**Wallboard**

- #6944: Quick reports from Wallboard widgets
- #6912: Wallboard agent actions should check extension and agent regexp
- #6904: Limits for wallboard in QAP
- #6813: Audit log events for wallboard actions
- #6714: Missing confirmation button localization for Wallboard configuration
- #6711: Wallboard breaks when saving custom datablock
- #6695: Add Searchbar to Widget Panel
- #6618: Item Widgets Full Background
- #6512: Font settings on wallboard
- #5733: WB: Displaying of Last Attempts
- #5588: Incorrect sorting in Widget tables
- #5170: Wallboard sorting does not persist.
- #6961: Timezone offset doesn’t work in wallboard
- #6944: Quick reports from Wallboard widgets should not be draggable when modal open

# Release 24.05

The focus of this release is mostly on improving the QAP agent page introduced in 23.09, especially in the area of outbound calling.




There are also a number of other highlights, as detailed below:

- Improved outbound, including the brand-new AMO dialing mode and Recall Memos
- A more reliable WebRTC soft-phone
- Improvements to reports and filters
- Import and export of reports and wallboards
- A new installer for Uniloader

QueueMetrics 24.05 can now be readily accessed through various means: an **RPM package** for CentOS 7, CentOS 8, Rocky 8, and Rocky 9 based distributions; an ebuild for Gentoo; a Docker image available on DockerHub; and a TGZ file designed for manual installation on any operating system running the Java platform. Notably, QueueMetrics supports 23 distinct languages/locales.

# Improved Outbound dialing

QueueMetrics now includes different outbound tools meant to accommodate different scenarios and different kinds of users.

If you are going to run **large outbound campaigns**, the best choice is always using our WombatDialer. That's a piece of software that will run outbound campaigns for you, covering all common scenarios (from manual to fully predictive dialing, from agent based to fully automated). See https://www.wombatdialer.com

This version of QueueMetrics there are three things that would be useful to improve outbound dialing:

- **native integration with WombatDialer** straight from the new QAP agent page, as you could do with the Icon page..
- a way to use **memos to schedule appointments and recalls**. This can be done manually by each agent in order to keep track of their current and future activity. Think about it as a kind of agenda.
- a new dialing mode, **Assisted Manual Outbound (AMO)** that is kind of manual dialer that does not rely on an external dialer.

### AMO - Assisted Manual Outbound

An AMO campaign is an outbound queue, where instead of having agents dial a number at the time by copying and pasting it from some other document or list, the number to dial comes from a list that is not tied to a specific agent. Each agent that belongs to that campaign, when logged on to that queue, can just say “give me the next number” and get the correct number to dial - with preview information showing immediately, and automatic dialing.

When they do, they’re expected to set a status code for the call. Based on the status code, the system decides whether a recall is needed (and when is supposed to be done) or whether the life-cycle for that call is complete. Agents just click a button to place a new call.

A campaign is built out of a number of lists, and the supervisor can decide how often to sample from each list in order to run the campaign. A simple to use API let you add numbers to lists, pause and unpause, the, and control the "weight" of each list.

In order to start working with AMO on an existing system, make sure your admins have the key `USR_AMO` to access the new admin pages.

### Recall Memos

Memos are a revamp of the tasks that have been in QueueMetrics for a long while. An agent can manager their own memos, and a recall memo can represent a call to be made at a specific time. By clicking on it, the call starts automatically without the agent having to copy and paste the number into the phone.

### Improvements to the WebRTC soft-phone

The soft-phone that comes with QueueMetrics has been improved, in order to be more reliable, as it is meant to be the workhorse of agent activity. It has been tied into the operation of memos and AMO, in order to make it smoother to use for agents and let them perform their tasks with less fatigue.

## Improvements to the reporting core

A number of improvements have been added to the reporting core. We have improved the reporting on transfers, and we now support `RINGCANCELED` events if your PBX supports them.

We have a new report to see the agent timeline for all agents at once into single data block. We also have new filters in reports so that you can go look for failed attempts for specific agents.

## Showing and hiding caller ID

If a number is known to QueueMetrics, as defined into VIP/blacklist editor, the name you set there now appears in reports, on the real time page, and on the agent page. This is something that has long been on many people's wish-list.

It is also possible to **hide incoming numbers** on a user by user basis, by setting a security key. Multiple hiding policies are available so that you can completely hide the number, or just the last few digits, or replace it with a unique hash. This way, for example, you can have some agents not seeing the phone number they are working with, but at the same time their supervisors being able to run reports with full details.

## Import and export of reports and wallboards

It is possible to export and import, both reports and wallboards that contain custom data blocks – this means that you can create complex reports with custom graphs and column sets, and then save them as complete entities.

On the default database for this new version, we included some new reports in addition to the "classic" ones that have been with us for a long time. Those are meant to showcase specific uses you can make of QueueMetrics – of course you're free to modify them and adapt them to your needs.

We also have a centralized repository where it is possible to share the report you built with other QueueMetrics users and download a number of prebuilt ones to be added to your system.

## Improvements to Uniloader - new installer

Though we still supply an RPM package for installing Uniloader on CentOS/Rocky systems, the preferred way to install and update Uniloader from now on is a setup script that works on all common distributions running Systemd - that is, all the major ones (RHEL, Rocky, Debian and derivatives). The script also includes and automated environment test to make sure that QM is reachable, that AMI/ESL credentials are correct, and that the AudioVault is reachable. The way we envision installing QM on different environments is explained in this article: https://www.queuemetrics.com/blog/2024/03/26/os-support-for-loway-products/

The Uniloader also prints the server time when testing over HTTP in order to detect clock drifts.

## Misc Changes

You may like to know that…

- We have made the **database inspector** more readable, and the inspector for the command queue will always keep the most recent events so that they are not deleted when time goes by.
- We made a lot of changes to the overall graphics and layout in order to make it more usable and easier to understand.
- We improved the **performance of wallboards** so that more calls can be shown on very busy systems even if the browser runs on a not-too-powerful computer. If you use it interactively, you

notice that is definitely snappier even if you have hundreds of agents online.

- On new systems, we switched off the annoying sound played on alarms. You can always enable it again if that's useful to you.
- The QAP Agent Page now supports Freeswitch and FusionPBX correctly.
- This version of QueueMetrics is localized into more than 20 languages. Loway is building a new localization platform so that it is easier for you to contribute corrections and improvements to languages you're using. See https://github.com/Loway/QueueMetrics_Translations
- The AGAW subsystem is deprecated and should not be installed on new systems.

## Detailed change list

### Agent Page

- #6448 - clirt.nocache.js should not be cached
- #6681 - Start Work is disabled on non hotdesking mode
- #6663 - Non hotdesking manual outbound issue
- #6637 - Close AMO Attribute panel for softphone
- #6632 - QAP - the agent can pause if not logged on the queue
- #6631 - Outcome visible only on the assigned queues
- #6627 - AMO: Stepping fixed / linear / exp
- #6602 - Memo Notifications
- #6542 - WombatDialer based recalls
- #6541 - WombatDialer-based preview dialing
- #6503 - Start Work button not working correctly in "non hotdesking" scenario
- #6476 - QueueMetrics Agent Page (QAP) icons not scaling correctly.
- #6467 - Join all queues when using FreeSwitch
- #6459 - Penalty not considered when logging on queue, from new agent page
- #6452 - Play sound to avoid softphone inactivity
- #6425 - Lost outbound calls not displayed in the call list
- #6412 - Softphone configuration incorrect in cluster mode
- #6409 - QAP Should show timer for idle and session time for agent
- #6406 - Agent appears logged on but queue is not matched
- #6404 - Dialout panel not working with hotdesking turned off
- #6403 - Call outcome timer uses local browser time, instead of server
- #6399 - Case details and comments should always be visible in call details
- #6392 - Softphone should send pure extension number without technology when dialling out.
- #6391 - Keyboard shortcuts don't work on Mac

- #6389 - Agent page sends ADD/REMOVEMEMBER su no queue

**Configuration**

- #6610 - AMO: services for PtEditors
- #6676 - Assigned queues login issue
- #6638 - Missing AMO keys in User wizard
- #6575 - Add new security keys and properties to editors
- #6537 - AMO: Basic implementation
- #6531 - Button order in Edit system parameters and Explore system parameters
- #6509 - Timeout for email sending

**Misc**

- #6636 - Improve readability of inspector
- #6565 - Remove "optimize agaw" from setup wizard
- #6564 Documentation for actions 26xx
- #6539 JSON manual: list of QA data blocks
- #6418 - Missing "license almost expired" message
- #6657 - Webpack warning: No more changes should happen to Compilation.assets
- #6533 - Turn off audio alarms
- #6532 - Add simple reports to factory QM
- #6411 - Audio files in theme bundle
- #6677 - Disable Pause button on Agent page issue
- #6473 - Strip Uniloader prefix when searching for audio and performing actions
- #6468 - AMI Queue tester, keep the latest AMI command queue entries
- #6463 - Enswitch: missing recordings on manual outbound calls
- #6136 - Disable available platform actions
- #6405 - Queue invisible on RT if queue id is uppercased

**Reports**

- #6588 - RINGCANCELED event should be considered.
- #6518 - Using known numbers for reports/realtime/wallboards
- #6495 - Performance: formatAgentName()
- #6494 - Performance: callInfo()
- #6492 - Attended transfer with double transfer record
- #6481 - NullPointer on ATXFER
- #6462 - Presentialist: returns open session with no queues

- #6461 - ATTENDEDTRANSFER happening on wrong channel
- #6447 - Presentialist: Agent count to be applied after filtering by queue
- #6424 - Remove temporary files on errors
- #6419 - Wrong count for lost calls
- #6660 - Reports Page Sidebar Add Datablocks Icon and LSelectInput Tags
- #6608 - Tag email report
- #6534 - Audio Recordings may fail with wrong call start
- #6510 - Wrong time-zone used in reports
- #4510 - Hiding numbers for specific users

**Graphics**

- #6675 - Modals UIKit sizes and buttons
- #6674 - Remove useless theme variable
- #6656 - Check Buttons
- #6635 - HTML entities - character issues
- #6586 - Update Default Theme Color Palette
- #6578 - "Play/Stop" button not visible on Wallboard.
- #6488 - Dark Theme form fields have incorrect appearance
- #6487 - Red outline and missing notification in form fields

**Reports**

- #6679 - Report Peak Hour Analysis is broken
- #6666 - New datablock AG22 for Agent Timeline
- #6664 - Optilock triggered after deletion
- #6634 - Accessing the call logs for individual calls in the report, requires permission
- #6629 - Add Datablock page buttons to change page, at the bottom of the page
- #6626 - Call detail pop-up: wrong transfer-to
- #6545 - Improve readability of agent timeline with dark theme
- #6543 - New filter: failed attempt
- #6540 - Call timeline: incorrect destination for ATXFER
- #6536 - "Transfer" not decoded in timeline
- #6526 - Layout improvements for reports
- #6524 - Export custom datablocks with reports
- #6521 - Filters look like they are disabled
- #6520 - Filters: No Outcome / No Tag...

- #6517 - Change report name in scheduled job
- #6516 - Larger paging intervals
- #6515 - New data block: Detail of Pause Types (AG23)
- #6436 - Weirdness in setting name without saving.
- #6435 - Agent timeline: Using ESC to exit
- #6434 - Agent timeline: Multiple queue names
- #6413 - OK03 shows html code in the agent description
- #6325 - Groupings: which tab am I in?
- #6324 - Groupings are loaded twice

**WebRTC Soft-phone**

- #6485 - Softphone pagination issue when number too long
- #6484 - Auto-answer persists after outbound call on queue
- #6455 - Softphone becomes undefined after ten minutes in an inactive tab
- #6430 - Softphone stops displaying incoming calls
- #6414 - Ringtone for the Icon softphone not producing sound

**Wallboards**

- #6593 - Synchronizer, select all checkbox issue.
- #6651 - Wallboard Modals Redesign
- #6650 - Datablock widget not allowing the Wallboard to save
- #6648 - "Items" Widgets not displaying correctly the selected queues
- #6647 - Wallboard Agent actions not working with FreeSwitch-Live platform
- #6633 - Call Actions not visible if there are many calls
- #6579 - Call Actions on Wallboard inaccessible with high call volume
- #6577 - Wallboard not updating correctly with QAP
- #6576 - Wallboard: Live Agents widget, performance issue.
- #6525 - Export custom datablocks with wallboards
- #6513 - A long list of queues in widget gets too small
- #6504 - "Shortcalls" parameter not reflected on Wallboard
- #5450 - Lost Calls widget not updating.

# WombatDialer 23.12

This new major release of WombatDialer improves the flexibility of lists handling, fixes a number of bugs, and supports more modern OS and Java versions.

WombatDialer 23.12 can now be readily accessed through various means: an **RPM package** for CentOS 7, CentOS 8, Rocky 8, and Rocky 9 based distributions; a Docker image available on DockerHub; and a TGZ file designed for manual installation on any operating system running the Java platform.

## Better blacklists

The main feature that everybody kept asking for, is finally here - that is, the ability to **cancel a number from blacklists**. We used to offer a number of workarounds that would handle the majority of real-life cases, but by having a separate black-list cancellation action the dialer is decidedly more flexible. As with most things Wombat, a cancellation does not mean a deletion of a record - no information is vert o be lost! - but an update where the reason for cancelling is kept for further analysis.

## Better integration

We made sure that both HTTP notifications and the Asterisk dial-plan receive all relevant attributes for your call - the current WombatID, the name of the list, the main number vs the current number, and the current recall. This will make it easier to integrate Wombat in complex scenarios where data travels between multiple different systems.

## Better documentation

When reworking blacklists, we took a deep dive and came out with a complete new section of the User Manual - "Understanding blacklists" - that shows you the interactions between lists, blacklists, multinumbers and API calls, with some real-life examples. We felt that the existing documentation was a bit scattered and there was a need of a general tutorial of such an important feature.

We also created a set of examples that complement the API section of the User Manual, and show a complete example of how campaigns and call lists can be created and edited from scratch, only by using the Configuration APIs. This is available on GitHub at https://github.com/Loway/OpenWombatDialerAddOns - and if you have examples or corrections to share, feel free to send us a PR.

## A modern environment

Now that CentOS 7 is recahing its end-of-life, we wanted to make sure that our WombatDialer package is easy to install on CentOS 8/9 and Rocky Linux 8/9 . Additionally, it is expected to work effortlessly on a wide range of distributions that are derived from RHEL.

And if you don’t like RHEL derivatives, and don’t want to run the Docker version, we reworked the

Debian installtiion tutorial on the User Manual to make sure it would work flawlessly on a current system.

We made sure that modern versions of both MySQL and MariaDB are fully supported, so you have a choice. And while our automated installs still ship with Java 8, Java 11 is fully supported - it offers marginally better performance for very busy systems, and future-proofs your software investment.

## Some other notable changes

- It is possible to control the amount of pause between muliple database commit cycles, to avoid database synchronization issues. This should not be an issue for 99% of the systems.
- CSV downloads work fine with authentication turned on.
- The trunk/EP tester now uses the correct Asterisk port, if your PBX is set on a non-standard AMI port.
- Like we do for QueueMetrics, there is a script that lets you check whether the licensing servers are reachable, possibly with different proxy configurations.

## Deprecations and security

- Current RPMs do not support CentOS 6 - it reached EOL on June 2020, so if you still use it, it's seriously time to move on.

## Bug Fixes

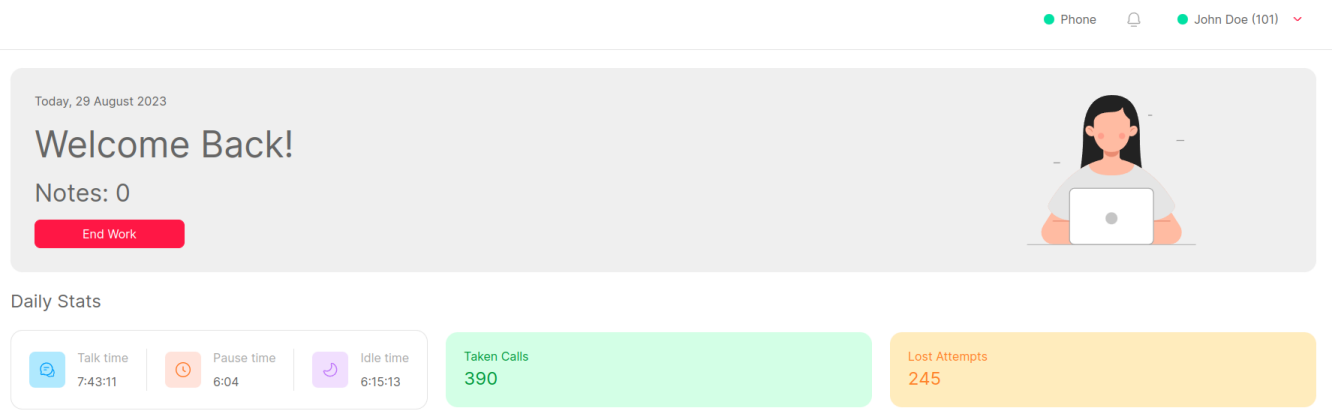
- 6466 New attributes sent on campaign notification
- 6465 Object shadowing parent field
- 6451 No attributes notified over HTTP for RS_BUSY events
- 6443 Control pause between dialer cycles
- 6442 Support Rocky8 and Rocky9
- 6415 Cancelling numbers from black-lists
- 6408 CSV list can't be downloaded with Optional authentication enabled
- 6362 Check Hibernate 3 compatibility with Java11
- 6354 Create new database wth Maria10 on Ubuntu 22.04
- 6349 Auth not required for addToList
- 6346 Call-list created twice
- 5785 Trunk tester ignores Asterisk Port
- 5628 Grants to craete database
- 5626 Hibernate timing crash: bagId cannot be null
- 5567 Multinums not checked for black-lists
- 5566 Live View breaks if null key in campaigns.securityKey

- 5548 Tracking attempt # on the dial-plan
- 5519 WD: Testing license connectivity
- 5496 Start/Stop dialer
- 5392 ADDBLACKLIST not working with idle campaign
- 3411 Docs: how to create a campaign from scratch through the API.

# QueueMetrics 23.09

The most important new feature you will find in QueueMetrics 23.09 is a new Agent Page.

This page has been crafted right from the foundation to ensure user-friendliness, high intuitiveness, and scalability as it evolves over time. We've named it "QAP", in contrast to the previous agent page known as "Icon."




There are also a number of other highlights, as detailed below:

- A new real-time reporting engine
- A more streamlined look-and-feel that covers Reports, Wallboard and the newly introduced QAP
- Better accounting of scheduled emails, report limits and database size
- An improved JSON API interface
- Many, many small fixes to the wallboard and to reports
- A native Uniloader for Windows and Mac OS.

QueueMetrics 23.09 can now be readily accessed through various means: an **RPM package** for CentOS 7, CentOS 8, Rocky 8, and Rocky 9 based distributions; an ebuild for Gentoo; a Docker image available on DockerHub; and a TGZ file designed for manual installation on any operating system running the Java platform. Notably, QueueMetrics supports 23 distinct languages/locales.

## Introducing QAP - a new Agent Page

The agent page that you have been accustomed to - Icon - has been a part of QueueMetrics since June 2014. It was originally conceptualized with the idea of integrating complete CRM applications within it, although this approach is now less common due to the limited support of embedding from hosted CRM applications. Another pioneering concept - at that time - was the incorporation of a WebRTC soft phone directly on the page, eliminating the need for agents to rely on an external phone.

We capitalized on these almost 10 years of user feedback to create an agent page that:

- **Empowerment through Situational Insights:** Our new agent page presents agents with their current status, going beyond mere presence information. Agents can now gauge the number of

calls handled, the duration of their online presence, and the count of missed calls.

- **Anticipation of Agent Needs:** While your agents retain full control, they can start and stop working at the click of a button, streamlining their workflow.
- **Keyboard Navigation for Desktop Efficiency:** Designed for power users, the agent page is fully navigable through keyboard inputs, providing rapid access to essential functions.
- **Mobile and Tablet Compatibility:** We've ensured seamless usability on mobile devices and tablets, extending the convenience of the agent page beyond desktops.
- **Unified Functionality with Soft-phone Integration:** Our integrated soft-phone is not an isolated feature. Instead, it seamlessly blends into existing usage patterns. For instance, when initiating an outbound call, the system automatically handles the call answer process. This minimizes clicks, reduces strain, and allows agents to focus on core tasks.
- **Comprehensive Debugging Capabilities:** Discreetly tucked away are extensive debugging tools that offer insights into operational glitches.
- **Introduction of Cases and Clients:** For those not utilizing an external CRM system, we've introduced the concepts of "cases" and "clients" within QueueMetrics. This feature enables you to track such elements directly within the QueueMetrics interface, and report on them.
- **Continuation of Extensive Configuration Options:** The new agent page supports the same extensive configuration flags that were available in Icon, maintaining the flexibility you're accustomed to.
- **Opt-In Flexibility:** Importantly, the transition is opt-in. When updating an existing system, the old interface remains unchanged until explicitly enabled. You have the flexibility to decide which agents continue using the old Icon page and which ones adopt the new QAP by managing the `NEWAGENTPAGE` key.

This culmination of user-driven refinements marks a significant step forward in improving your agents' experience with QueueMetrics.

QAP is built upon a novel real-time reporting engine that brings about performance enhancements specifically catered to high-traffic systems. This engine serves as the driving force behind the agent page, the real-time page, and your wallboards, unifying these components into a cohesive entity.

QAP was built for extensibility. While the current release emphasizes achieving feature parity with the Icon page, our future plans involve the incorporation of additional functionalities. These advancements will be facilitated through the integration of Memos/Tasks and interactive control over the PBX. This will build upon the foundation of the now more cost-effective real-time analysis,

enhancing QAP's capabilities.

**Note:** if you still use the Asterisk dial-plan, it must be updated to support tagging Cases and Clients.

# Improved visibility

As an administrator, you now have the means to establish the maximum reporting time frame, and this configuration can be targeted at specific users. Consequently, you can identify users who initiate extensive jobs that adversely impact system performance, and you have the capability to restrict them from running such reports. Notably, the Audit log already records instances of sluggish report generation and displays violations related to licensing.

Furthermore, the Audit log has been expanded to encompass e-mail transmission tracking. This enhancement allows for the implementation of e-mail quotas on both individual user levels and system-wide. This serves to prevent scenarios where a runaway task leads to an excessive number of emails being sent, potentially resulting in a suspended mailbox - or more severe issues.

You can now see the exact AMI commands that are generated right from the AMi queue page, so you can immediately see how changes in your settings impact the commands that are to be applied on the PBX - and n cases of failure, provides insight into the causes.

You can also see how large the QueueMetrics database is. This includes the estimation of the size of a complete backup, allowing you to anticipate resource requirements. Additionally, you can identify tables that might be experiencing issues and necessitate recovery actions.

# Improved JSON interface

All web-services returning JSON results - that, incidentally, debuted in 2014 together with Icon - have been enhanced to offer an alternative format: a list of JSON objects. This modification simplifies data parsing, as the columns in a table are now presented as keys for each respective row. This capability is governed by an additional parameter, ensuring that your current consumption of JSON services remains unaffected and doesn't necessitate any changes.

# Uniloader for Windows?

Uniloader now ships with a Windows and a MacOS binary as well. Uniloader serves as more than just a data loader; it holds the potential to streamline and validate various tasks associated with managing QueueMetrics and your PBX. By making Uniloader accessible on the computer you regularly employ, we aim to enhance your convenience and workflow efficiency.

See e.g. https://www.queuemetrics.com/blog/2023/07/25/10-tasks-you-can-do-uniloader/

# Some other notable changes

- The *RINGNOANSWER* record can now initiate an agent session even if the corresponding agent does not appear within the current analysis window. This change aligns with the existing behavior for answered calls. The record's presence, confirming the delivery of a call, is in itself conclusive evidence of the agent's queue login status.

- We have better exports to Excel - finally sporting the right amount of decimal digits - and PDF.
- The version of the Time Zone database being used is now shown on the license page (useful when you wonder why the Dailight Saving Time was not applied correctly for your country)
- All configuration defaults to `PJSIP` (it was high time!)
- In light of the ongoing developments surrounding the future of CentOS, our RPM packages have been adjusted for compatibility with CentOS 7 and 8, as well as Rocky Linux 8 and 9. These packages are designed to seamlessly function with either MariaDB or MySQL. Additionally, they are expected to work effortlessly on a wide range of distributions that are derived from RHEL.

# Deprecations and security

- The Icon agent page is now deprecated
- Current RPMs do not support CentOS 6 - it reached EOL on June 2020, so if you still use it, it's time to move on
- The "Live call center monitoring" page is deprecated
- The old agent page was removed

For an up-to-date list of features that are currently deprecated, see the User Manual.

# Bug Fixes

Overall, this release incorporates approximately 250 updates. The most important changes are highlighted here. For those following the resolution of specific existing issues, you can refer to the list below.

## Agent QAP

- #6100: New Agent Page
- #6195: Cases ptEditor
- #6194: Client ptEditor

(over 100 bugs implemented)

## Icon and old agent page

- #6127: Agent page panel resizing not working for call list
- #6240: Remove old deprecated agent page
- #6359: QueueMetrics "Live call center monitoring" page deprecation

## JSON API

- #6334: Easier-to-parse *simple* JSON API
- #6221: Json services for ptClients and ptCases

## Configuration

- #6370: Specific User Keys do not grant access to the settings.
- #6326: Pause Code Required not working correctly.
- #6314: Add Notes to cases
- #6312: Using ExternalID for cases and clients
- #6189: Display stats for Presentialist
- #6170: Email sending limits
- #6169: Tracking outbound email on Syslog

## Database set-up

- #6337: DB setup and license acceptance broken in Chrome
- #6294: Remove QM_relationships table
- #6252: Display database usage
- #6193: Display version of TZData on license page
- #5933: Upgrader for partial key url in qm_cbts

## Reporting Engine

- #6293: Read Clients and Cases from queue_log + DB
- #6279: Implicit queue login is incorrect
- #6266: Database access in Presentialist: cases/customers
- #6265: Using clusters with Presentialist
- #6188: Finding last call when filtering by queue
- #4463: "RINGNOANSWER" now considered a valid event to show which agents are active on the queue.

## Data exports

- #6364: Wrong number of digits in exported Excel file
- #6351: Parameter "default.decimalDigits" not behaving correctly.
- #6350: Cronjobs thread not starting
- #6309: Track export failures

## Graphics

- #6295: Fix Charts Graphics in Reports and Wallboards
- #6059: Same Footer Across QueueMetrics
- #6033: Whitelabel "No Logo"

- #6008: Footer hides bottom of screen
- #6007: Improve layout in page "Tasks"
- #6005: Logo gets cut off
- #6002: Combo fields on the Users detail page
- #5954: Chart colours by theme
- #5784: Pending Expiry message CSS fix
- #5383: chart.js security update
- #6234: Remove Google ID

## Packaging

- #6343: Set property defaults to PJSIP
- #6036: Add RPM deps to queuemetrics-tomcat
- #5936: Failing test: unclean setting
- #5935: Failing test:custom_blocks
- #5934: Failing test:GroupingsDOTest
- #5923: RPM install on Rocky 8 (and possibly 9)
- #5395: Update nodejs

## Platforms

- #6333: Display generated AMI commands on AMI Queue tester page
- #6307: Improve logging for platform searches
- #6299: Add new SetVar method for all platforms
- #6298: Support new method SetVar for DirectAMI
- #6247: Listen to outbound calls on Enswitch
- #6246: Reduce memory consumption when streaming Enswitch audio
- #6097: Outbound from Agent page on Enswitch
- #6001: SSO: Error with duplicate agent

## QA

- #6361: Embedded QA form - remove headers
- #6357: QA pop-up form
- #6332: Agent tasks not created when QA saved
- #5977: QA Notes don’t work in Cluster mode
- #5975: QA N/A checkbox doesn’t trigger the appropriate validation.
- #5959: Undefined error on empty recording list

- #5928: Form "Send CBT" in wrong place

## Reports

- #6374: "Original position" in the "DetailsDO.CallsKO" datablock not showing data.
- #6373: "Position" column in "DetailsDO.CallsKO" uses incorrect data.
- #6365: On lost calls, the call status is unredable
- #6345: Decode cases and clients on page load
- #6340: Limit maximum reporting period
- #6330: Bad filter selectors for Hours and DOW
- #6302: Display customer and case number on the call detail
- #6301: Filters for Clients and Cases on reports - client
- #6300: Filters for Clients and Cases on reports - server side
- #6292: Cases and Clients filters in reports
- #6290: Datablocks for Clients and Cases
- #6276: Columns in a report block are ignored for export
- #6238: QA call not found for "Form Filling" settings in QA Reports
- #6192: Call Tag and Outcome filters not accepting some characters
- #6128: Error IndexOutOfBounds exporting report
- #6109: PDFJet queues should be formatted correctly
- #6103: Ensure that report and widget names are localized in default db
- #6091: DataBlockView search debounce should also consider if there are pending calls
- #6069: Export of PDF with overflowing data
- #6047: Graph legend inconsistent
- #6034: Rename "AsteriskID" to "UniqueID" in localizations
- #6020: Recap table for call events
- #6019: Call variables are too hard to extract
- #6018: Teams: incorrect call display
- #6015: Audio playback does not stop when pop-up closes
- #6014: Custom DataBlocks don’t sort as instructed
- #6013: Custom DataBlocks Line and Radar Charts not working correctly
- #6009: Call detail popup won’t render until audio searched
- #5995: Printing reports so that they are readable
- #5979: Agent Timeline does not reset correctly upon switching agent
- #5964: Payroll Report not exporting correctly in Excel
- #5956: Adding a visibility key to all QA forms hides Call Details.

## WebRTC Soft phone

- #6297: Allow user to enable JsSip debugging
- #6220: QAPSoftPhone - text field clears when call arrives
- #6218: QAPSoftPhone - keyboard shortcuts
- #6217: QAPSoftPhone - call shouldn't ring if agent is on another call (notification only)
- #6012: QAPSoftPhone - Softphone needs a hold timer
- #5996: QAPSoftPhone - not popping up on Agent page
- #5354: QAPSoftPhone - Change Softphone ringtone with property
- #5325: QAPSoftPhone - Ice Gathering states should be displayed on the SoftPhone GUI
- #5318: Attended transfer button needs further testing

## Synchronizer

- #6076: Synchronizer does a case-sensitive check on queues and agent codes
- #6070: Loading Teams data from SQL Table
- #6058: Synchronizer actions ignoring Editing protection
- #6057: Synchronizer drag and drop window has the wrong shape
- #6056: Synchronizer not giving feedback when applying a configuration
- #6021: Synchronizer General Actions, no agents issue
- #5991: Synchronizer missing scrollbar in editing page
- #5990: Synchronizer uses wrong configuration title
- #5989: Synchronizer not saving changes to queue direction
- #5988: Synchronizer not saving changes
- #5987: Synchronizer wrong error message
- #5986: Synchronizer not adding the configuration URL automatically

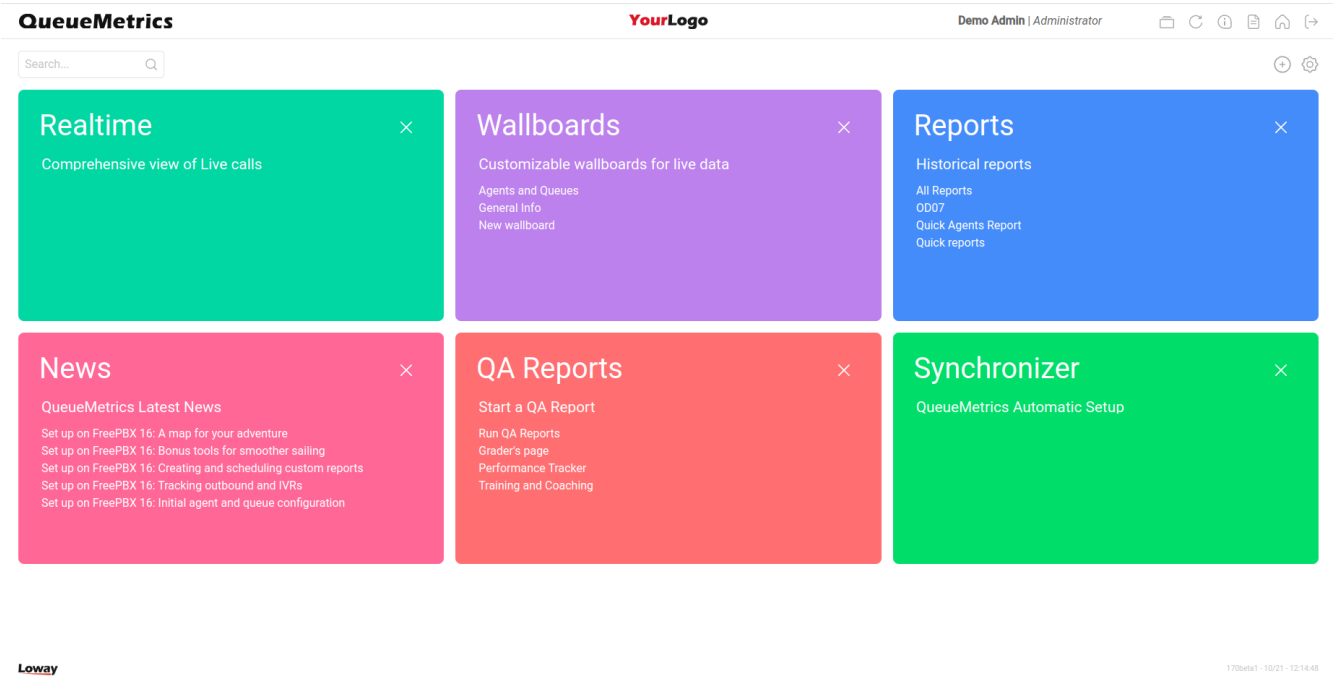
## Wallboard

- #6317: Agent and Outcome widget not displaying correctly when sorting columns
- #6316: Live Calls widget not displaying data if only 1 queue is available
- #6268: Insulate failing components
- #6267: Error: MissingChart is not defined
- #6235: Live Agents widget not displaying correctly the agent if a filter is applied.
- #6211: Wrong display of MOH
- #6110: Live Calls headers not localized correctly
- #6107: Wallboard performance issues
- #6087: Table Widget issues

- #6081: Padding in widget title is too large
- #6073: Widget Alarms are not deletable
- #6062: Clicking on Wallboards Infobox should create a new wallboard
- #6061: Wallboard crashes when including custom datablock
- #6046: Active timer on Wallboard
- #6045: Legacy data for table widgets
- #6027: Live Agents status is incorrect if agent is in a group
- #6022: Pause since not correct in live agents table
- #5985: Agents ready widget not updating when selecting a global queue
- #5980: Custom DataBlocks show all columns in the wallboard, regardless of source
- #5978: AT03 no data in wallboard
- #5973: Null pointer exception when trying to monitor a call
- #5972: SLA Widget not updating settings correctly
- #5971: Live Agent Info Widget not working correctly
- #5970: Wallboard timers should update every second
- #5969: Wallboard Tables are hard to read
- #5965: Live Agent Info Widget not updating status
- #5958: Agents Ready widget shows zero if no queues are set
- #5955: Padding in wallboard panels
- #5921: Missing icons on Wallboard
- #5897: Horizontal scrolling on table widgets not visible
- #5896: The first row of the table widgets, is not locked
- #5883: Wrong error on lost server
- #5733: WB: Displaying of Last Attempts
- #5632: Live Queues table showing incorrect amount of ready agents
- #5450: Lost Calls widget not updating.

# QueueMetrics 22.11

The biggest change in QueueMetrics 22.11 is definitely the use of a single, uniform toolkit to render the GUI across all of QueueMetrics. The look-and-feel has been improved across all modules and screens - you will find them familiar, but also easier on the eyes.




Both the report and the wallboard clients were rebuilt on top of a shared architecture that will help keeping them consistent in the long run.

There are also a number of highlights, as detailed below:

- Reports: better looks and Agent Timeline
- New QA editor
- Fully custom data blocks
- Wallboard improvements
- Saving and loading reports and wallboards as templates
- New Recalls data blocks (and wallboard)

QueueMetrics 22.11 is immediately available for all CentOS 7/Rocky 8 based distros as an **RPM package**, for Gentoo as **ebuild**, for **Docker** as image on DockerHub and as a TGZ file for manual installation on any OS running the Java platform. QueueMetrics supports 23 distinct languages/locales.

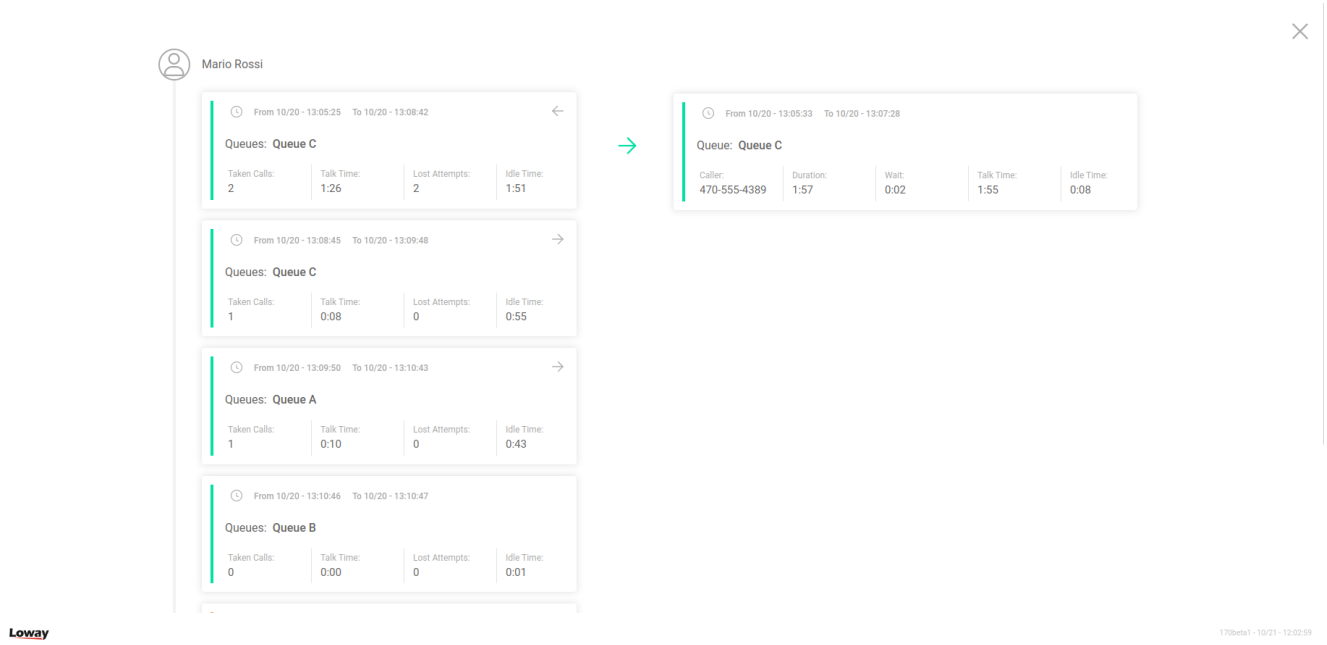
We suggest upgrading as this version includes some security fixes.

**Uniloader** was also updated to support the latest features.

# Reports

The look of reports has been streamlined. Fewer icons are visible, but everything is where you'd expect it to be. Filter editors have been improved by allowing **NOT clauses** and **in-place editing**, and - in general - the product feels smoother and more intuitive.

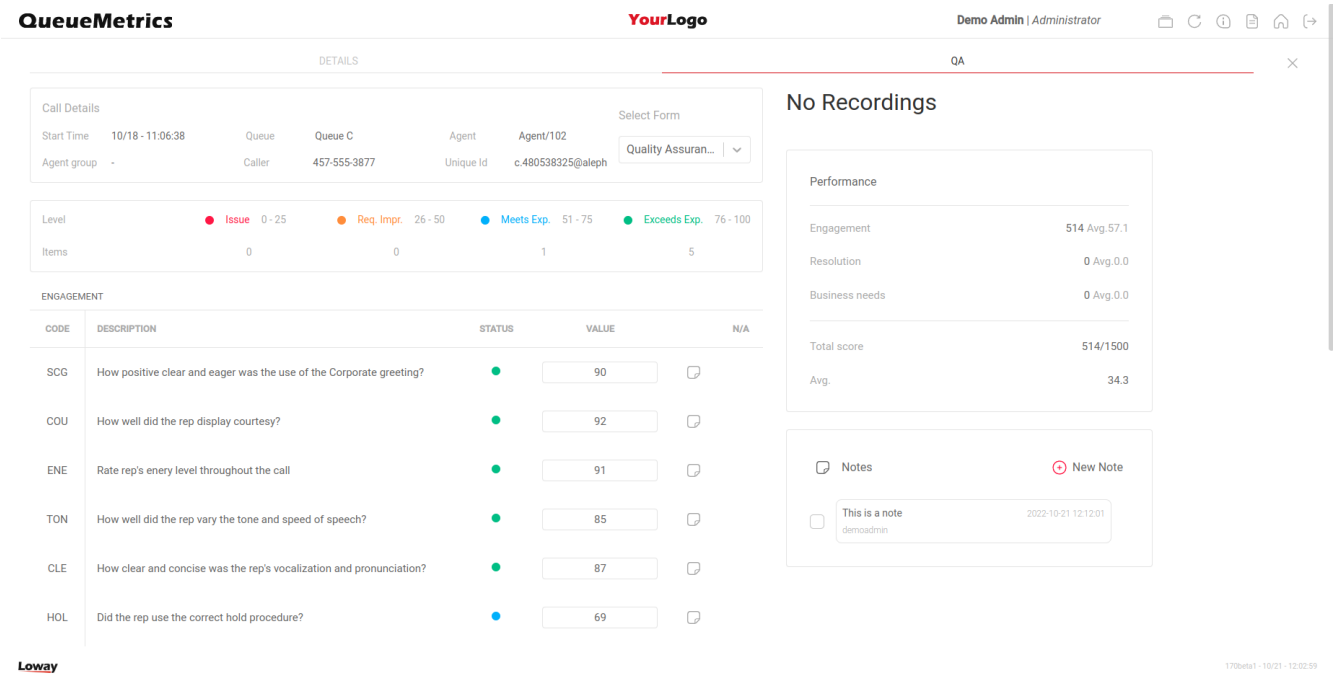
An important development was the addition of the **Agent Timeline** to complement the Call Timeline released with 22.02: a single unified view that shows all activities that an agent was involved across time. You can see calls, pauses, logins and log-offs, on a single unified time-line.




The same data is also available as a JSON service for integration.

# New QA editor

The **Quality Assessment (QA) form editor** is the last part of the original GUI to be rebuilt. While being familiar to existing users, the new QA form interface is straightforward, snappier, and generally more pleasant to use.




The new interface is available from all the places from where the old form was accessible, but from the realtime page where it was never used much.

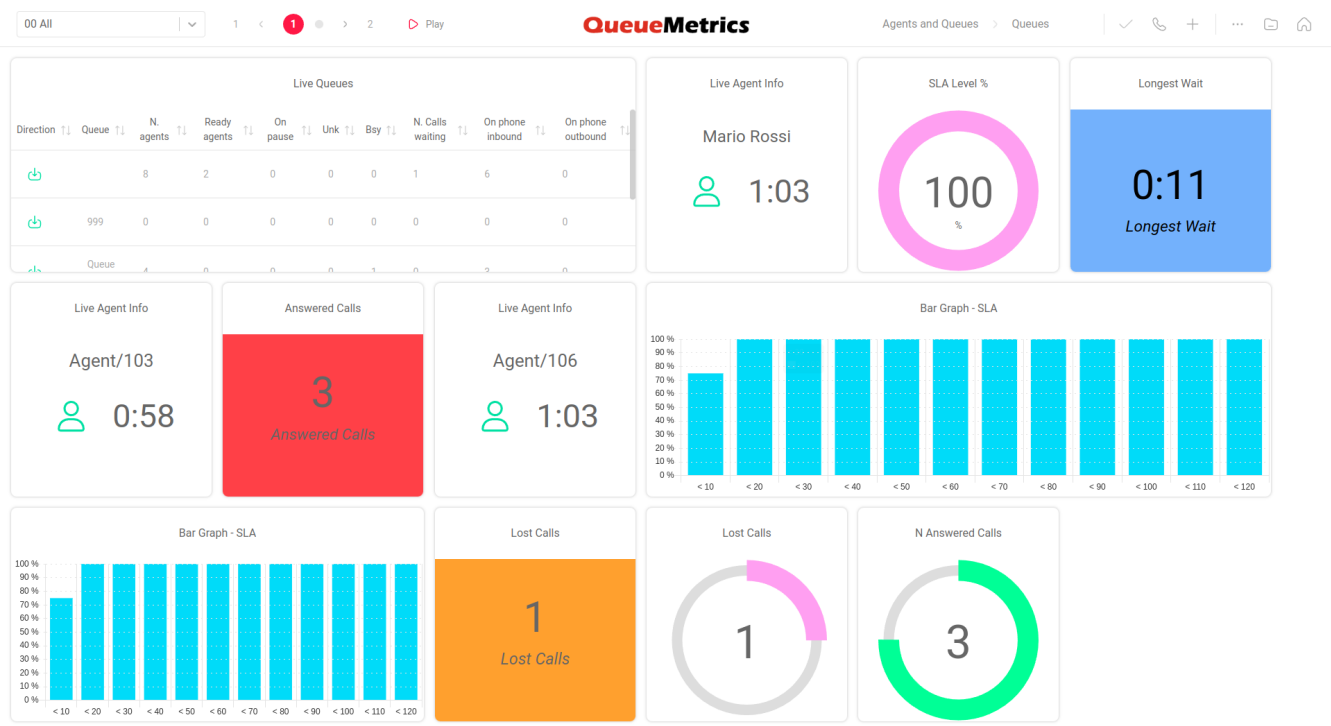
# Custom data blocks

As a technical preview, we introduce **custom data blocks**. Those are data blocks that can be derived, using an SQL-like syntax, out of an existing data block, where you can change the columns displayed and (optionally) add a custom graph out of any columns.

At the moment such blocks are interesting because they allow creating new graphs out of existing data blocks.

# Wallboard changes

The graphing abilities of custom data blocks (explained above) are useful because the wallboards are now able to display any existing data block (report or real-time), and/or its graph. This means that **anything you can see in a report can now be seen in your wallboard, where it is updated in real time**.




This is a major feature that many users were waiting for, because it opens huge opportunities for situational awareness out of the 200+ data blocks that QueueMetrics currently provides.

# Saving and loading reports and wallboards as templates

Another important feature is the ability to **save and reload existing reports and wallboards**, so that they can be moved between different systems and can also be shared online.

We plan to create a public repository with some examples that are useful for specific industries, and we welcome user contributions at https://github.com/Loway/Templates

# New data blocks for recalls

A new set of data blocks was created in order to display a list of **unanswered numbers that have to be recalled**, or were just recalled. This feature is very handy for smaller contact centres where you want to make sure that no contacts are left unhandled.

Today at a glance

Recalls

Current situation

| Recall state | N. Calls |
|---|---|
| Not yet recalled | 2 |
| Recalled | 3 |
| Needs further recall | 0 |

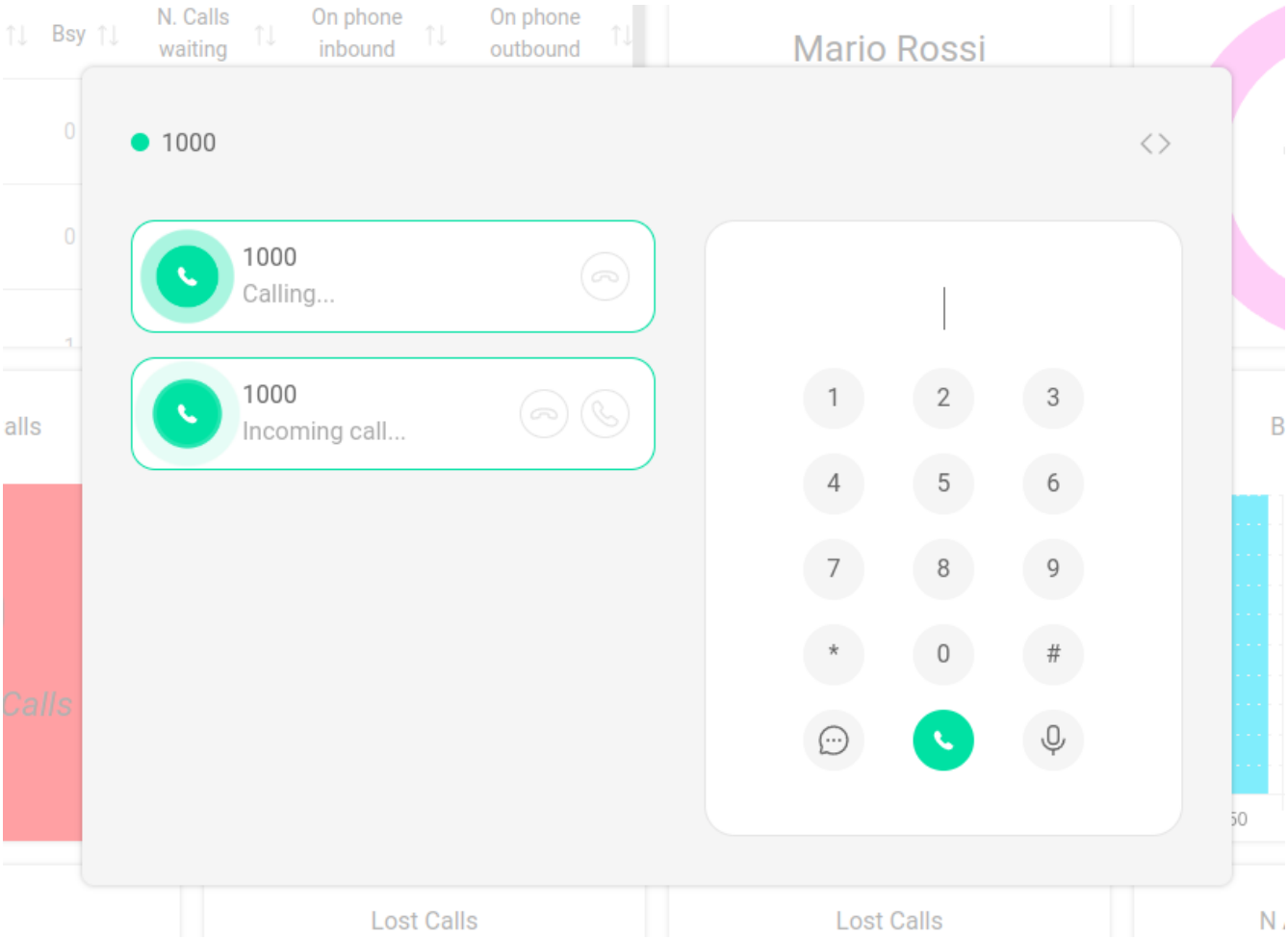
Already Recalled

| Caller | Successful | Succ.Last | Succ.Q. | Agent | N Short | N Lost |
|---|---|---|---|---|---|---|
| 555-3457 | 1 | 10/11 - 11:40:50 | 300 | agent/103 | 0 | 1 |
| 555-1234 | 1 | 10/11 - 11:40:46 | 300 | agent/102 | 0 | 2 |
| 555-3456 | 1 | 10/11 - 11:40:40 | 300 | agent/101 | 0 | 1 |

This feature works very well with wallboards so that it is possible to have a live view of numbers that tried to contact you unsuccessfully and need to be recalled. And you can download such a wallboard from or repository and add it to existing QueueMetrics systems - when updating, for a start, try installing the wallboard `Recalls.json` on your new system!

# Misc changes

Last but not least, the WebRTC soft phone was completely rebuilt so that it looks better and it works better, with complete multi-line integration.



# Deprecations and security

No new features were deprecated.

For an up-to-date list of features that are currently deprecated, see the User Manual.

# Bug Fixes

In total, about 180 changes went into this release. The most important ones are documented here:

## Agent page

- 5926: QA page does not start from the agent's page
- 5925: Broken icons on Agent Panel
- 5737: FSW: storing LOGOFF as REMOVEMEMBER
- 5622: [Docs] - Placeholders in background pages
- 5310: [SoftPhone] UI breaks if new calls arrive during transfer operations

## JSON Api

- 5831: Custom-defined Blocks: Expose via editor APIs
- 5551: Autoconfig: User must hold key *USR_AGENT* in order to run this editor.
- 5501: cronJob:cannot edit via API

## Configuration pages

- 5931: A custom block's title is always lowercased
- 5876: Custom blk editor: field name
- 5834: Custom-defined Blocks: wrong codes
- 5824: Custom-defined Blocks: editor LIST page
- 5823: Custom-defined Blocks: EDIT page issues
- 5693: Using regexp in queue expansions
- 5390: Assigning an Agent to the queue while sorting clears out all associations

## Engine

- 5664: Track Agent Queue Sessions in parser
- 5556: Skip non-agents for Teams
- 5387: New Area Code Filter

## Graphics/layout

- 5916: Bar Chart Colors
- 5891: Performance tracker details fix graphics
- 5889: Return key closes modal without saving
- 5882: Teamsmetrics whitelabel
- 5867: Column selector hard to use
- 5864: Missing tab menu in editors
- 5829: Error page: error notification DIV
- 5828: Better footer
- 5827: Home page not usable if viewport very narrow
- 5784: Pending Expiry message CSS fix
- 5743: Home page menu bar does not scroll
- 5742: Add the "Ringing" (Agent) and "Music on Hold" columns to the Wallboard
- 5671: New theme QMONO
- 5669: New theme Dark
- 5631: Update QueueMetrics with new Loway-js-gui
- 5461: Icons should be uniformed across the whole software
- 5423: Issues with the Audit Log page

## Packaging

- 5822: Custom-defined Blocks: add key and a sample + new wallboards sample
- 5471: Resolve Java11 warnings

## Quality Assessment

- 5927: QA opens in a different page
- 5875: Training and coaching – form shape
- 5874: Graders page – filling multiple forms
- 5873: Crash accessing QA
- 5856: QA: saving a form with invalid values
- 5855: QA Notes: focus
- 5853: QA Notes: when saving, the form is blanked out
- 5852: Add marker - set Time and Duration
- 5846: QA form - view notes
- 5845: Saving a QA form on a lost call
- 5844: Undecoded agent group / agent name

- 5821: Performance Tracker: missing Agent timeline
- 5819: Grader’s page: wrong block order
- 5818: Input form for Graders page and Perf TRacker
- 5817: Block titles on QA reports page are unreadable
- 5667: New QA Module - Client
- 5637: New React-based QA client

## Real-time page

- 5866: New page colors
- 5816: QA Access Points
- 5799: RT does not display properly Skills
- 5692: Incorrect indication "00-all" as last queue for call

## Reports

- 3659: New Report: list of unanswered numbers
- 5913: Section separator for filters doesn’t disappear, when searching by keyword
- 5910: Info message in report doesn’t disappear
- 5909: OD07 datablock missing localization
- 5908: Hide page and block icons behind dots
- 5904: Unique ID filter does not allow "." in the search.
- 5898: "Add DataBlocks" option always visible
- 5888: Links to agent sessions from bvlock selector
- 5887: Wrong graph colors when sorting
- 5881: Report page crashes if sort order has invalid column indexes
- 5880: Answered and Unanswered, report call counter, not updating correctly
- 5877: Custom blocks not rendering
- 5872: Audio recordings are not played
- 5871: Full Report export after datablock export
- 5863: Queues with a special character ("_", "-", "+" ...) in front of the queue name, cannot be used as a report filter
- 5862: Exporting a report while it is being saved, gives an error message
- 5858: The footer of the exported report, in PDF and Excel, for the whitelabel version of QueueMetrics, is incorrect
- 5857: Magnifier glass in report AG13 / AG 14 / AG16 / AG17
- 5851: You should not be able to select "Agent" in Agennt filters
- 5850: err_sup_noagents crashes page

- 5849: Too many database accesses when computing a report
- 5835: Remove filters icon
- 5833: Date pickers are overlapping
- 5832: Auto-Save button generates multiple copies of the same new report
- 5830: Home Page: blocks with different width
- 5826: Report breaks after saving
- 5825: Custom-defined Blocks: find them by name or description
- 5815: Make sure that all icons have a meaningful description.
- 5814: Enter new title just once
- 5813: Graphics: Icon colors and Apply/Save
- 5812: Blocks disappear while re-sorted
- 5811: Display DO name and short code
- 5810: Data blocks and graph alignment
- 5809: Empty pie graphs display a vertical line
- 5808: Rename column nbsp
- 5807: Report filters show their inner name
- 5806: Call detail: remove dash from Complete Caller
- 5802: Non Latin characters in the Report name, exports the report with the incorrect name
- 5798: Display correctly SKILLS events in call detail
- 5791: Export logs ignores partitions
- 5767: Incorrect call grouping for DNIS Used
- 5765: Settings: aggressive reloading
- 5752: Report creation, editing and delete events are not visible in the Audit log
- 5744: Homepage sidebar doesn’t scroll on firefox
- 5741: "Download debug info" button adding "|" symbol in front of the logs
- 5740: "Ring no answer" events before "Enter Queue" event on the Call timeline
- 5739: Database tables for custom data blocks
- 5722: Call Grouping shows wrong group
- 5713: Paged data block in report does not handle shorter number of pages
- 5675: Incorrect audio recording for unanswered calls
- 5668: New QA Module - Form
- 5666: New Agent Timeline - DataBlocks
- 5665: New Agent Timeline - Client
- 5663: New Agent Timeline
- 5641: Custom-defined report blocks

- 5640: Mount/unmount reports as JSON
- 5638: Editing filters in-place
- 5635: Implementing NOR filter
- 5629: Multiple reloads when editing reports dates
- 5583: Support MsTeams Group Calls in timeline
- 5582: Missing VAR events
- 5581: No agent name in call outbound details
- 5580: Wrong event sequence
- 5579: Data blocks still use old pop-ups for call groupings
- 5575: Add Download button to Media Player
- 5574: Media player should be disabled for unsupported formats.
- 5573: Changing time period of a cloned report causes report to endlessly load
- 5568: Disconnection Cause Decoding does not work in some cases
- 5564: Timeline issues with IVR events
- 5561: Changing Reports causes loading loop
- 5431: Add "not" as a filter-operator in the Reports

## WebRTC Softphone

- 5943: Softphone displays incorrectly on Firefox
- 5940: Softphone icons overlaps other windows
- 5939: Softphone Auto-answer not working correctly
- 5938: Agent page softphone text field not displayed correctly
- 5917: New SoftPhone Graphics
- 5354: [SoftPhone] Change Softphone ringtone.
- 5299: Softphone does not change settings correctly

## Synchronizer

- 5942: Synchronizer agent assign not working
- 5941: Synchronizer vertical scrolling not working
- 5599: No feedback from *apply configuration*
- 5319: Enswitch: Synchronizer, agent configuration issue
- 4614: [Docs] - Synchronizer

## Wallboards

- 5921: Missing icons on Wallboard

- 5911: DataBlock widget: page results
- 5906: Editor fields with empty value should not display green check
- 5905: Editors cannot delete the contents of a form field
- 5903: Wallboards just created cannot be exported
- 5900: Updating old wallboards should maintain all settings
- 5899: JSON displayed when exiting wallboard
- 5895: Wallboard, Call actions, not working correctly
- 5894: Editing Wallboard Widget, not loading previous values
- 5893: Wallboard, Actions, not working correctly
- 5886: Title importing wallboard
- 5885: Handing HTML in custom cells
- 5884: Cannot sort custom blocks
- 5883: Wrong error on lost server
- 5870: Wallbord widgets have transparent background
- 5869: Kiosk mode
- 5868: Data block widget should reset columns on block change
- 5865: Wallboard: crashes with GraphProvider
- 5859: JSON error in wallboard widgets when configuration is absent
- 5843: Invisible custom alarms
- 5842: JSON export: useless fields
- 5841: Image for "unconfigured" widgets
- 5840: Hide "pin" and "dots" icons
- 5837: New table widgets should replace old tables
- 5836: RealtimeDO datablocks won’t sort on wallboard
- 5796: New table system, column filtering and alarms
- 5757: Amend function from Wallboard
- 5639: Mount/unmount wallboards as JSON
- 5608: Wallboards can display any data block
- 5607: Wallboard - custom external HTML Widget
- 5549: SLA Graph won’t resize correctly on MacOS
- 5407: Wallboard sorting failes if column is filtered
- 5323: MOH column missing from live calls in wallboard

# QueueMetrics 22.02

This new version of QueueMetrics has a large number of improvements to the Reports page; they make it snappier to use and make it clearer to see the history of a specific call. It is also easier to understand which calls ended up in a specific result, and in general to understand which users did what and why, thanks to a vastly improved logging system. We also added support for Single sign-on and improved the integrated WebRTC soft-phone.

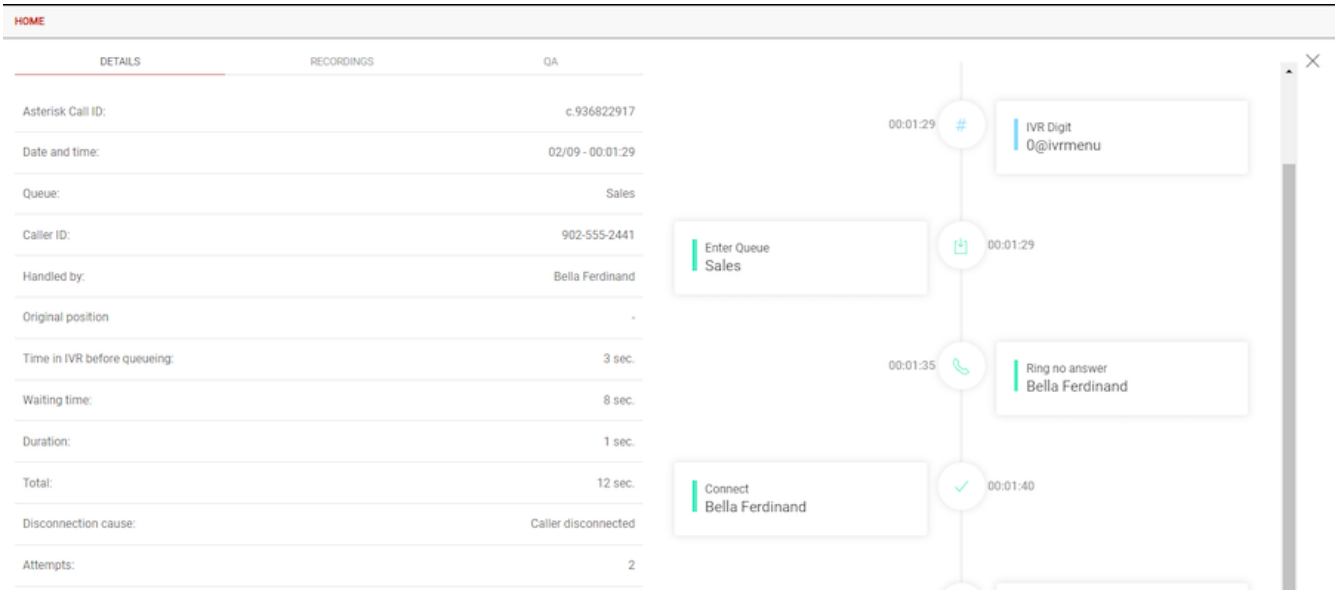
QueueMetrics 22.02 is immediately available for all CentOS 7+ based distros as an **RPM package**, for Gentoo as **ebuild**, for **Docker** as image on DockerHub and as a TGZ file for manual installation on any OS running the Java platform. QueueMetrics now supports 23 distinct languages/locales.

We suggest upgrading as this version includes some security fixes.

**Uniloader** was also updated to support the latest features.

## The Timeline view

Continuing the large series of changes to reports that were started in 2019, we have redesigned the call details pop-up. This is your go-to destination to know more about a specific call and to access any related media, and has been rebuilt around the concept of **Call Timeline**. As the name implies, it is a timeline of every single event that has happened on the call. The events are displayed in chronological order and give the user an immediate representation of the call's event flow, and - in multi-stint mode - of each queue traversed.

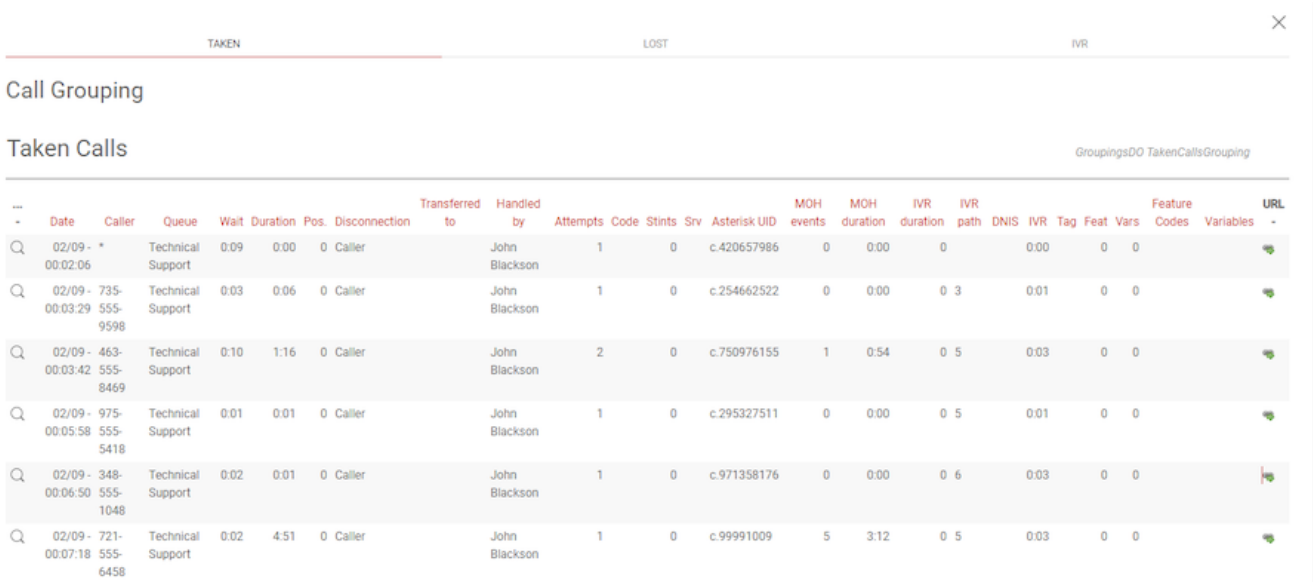



The Timeline Page takes the place of the former Call Details popup, and still displays the same information as before, in addition to the timeline. It also allows for users to listen to any call recording linked to the call in question, offering the possibility to specify and save markers on each recording.

# Call groupings

When you see a result that counts a set of calls - for example, you see that there were 23 calls on queue A and 17 on queue B - have you ever wondered **which** calls they are? Of course you can run a new report to find them, but don't you have the feeling that it would be a bit ...overkill?

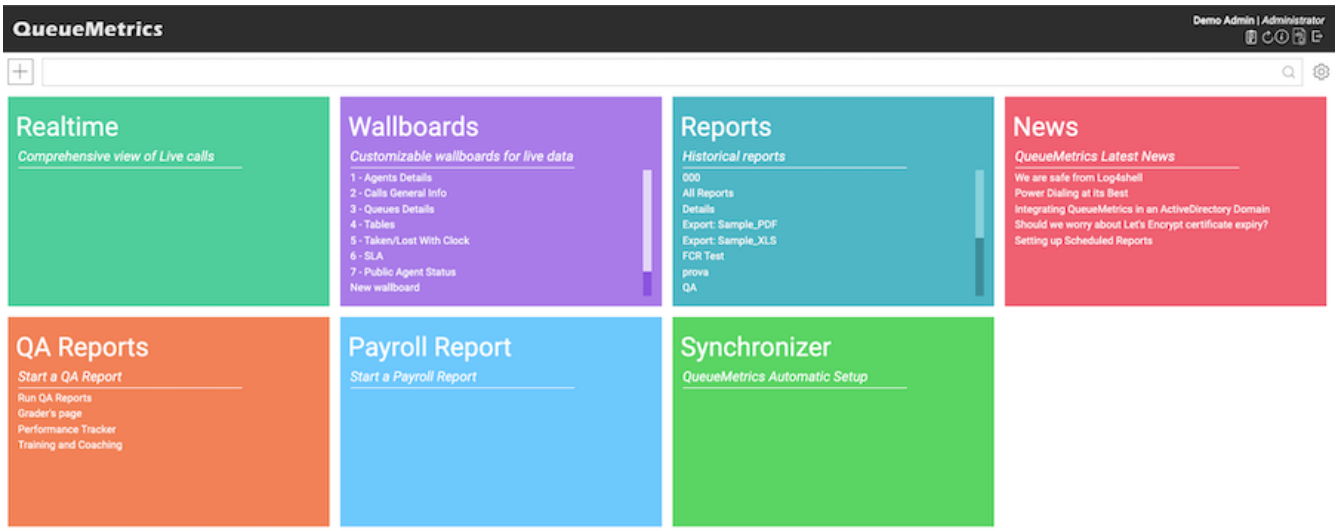
QueueMetrics 22.02 introduces the concept of **Call Groupings**. Every DataBlock that shows information regarding one or more group of calls all sharing the same characteristic will display an extra column with a Grouping Icon. By clicking on the Grouping Icon, the user navigates to a series of tables detailing exactly which calls make up the aforementioned group, effectively "exploding" the DataBlock Metric.



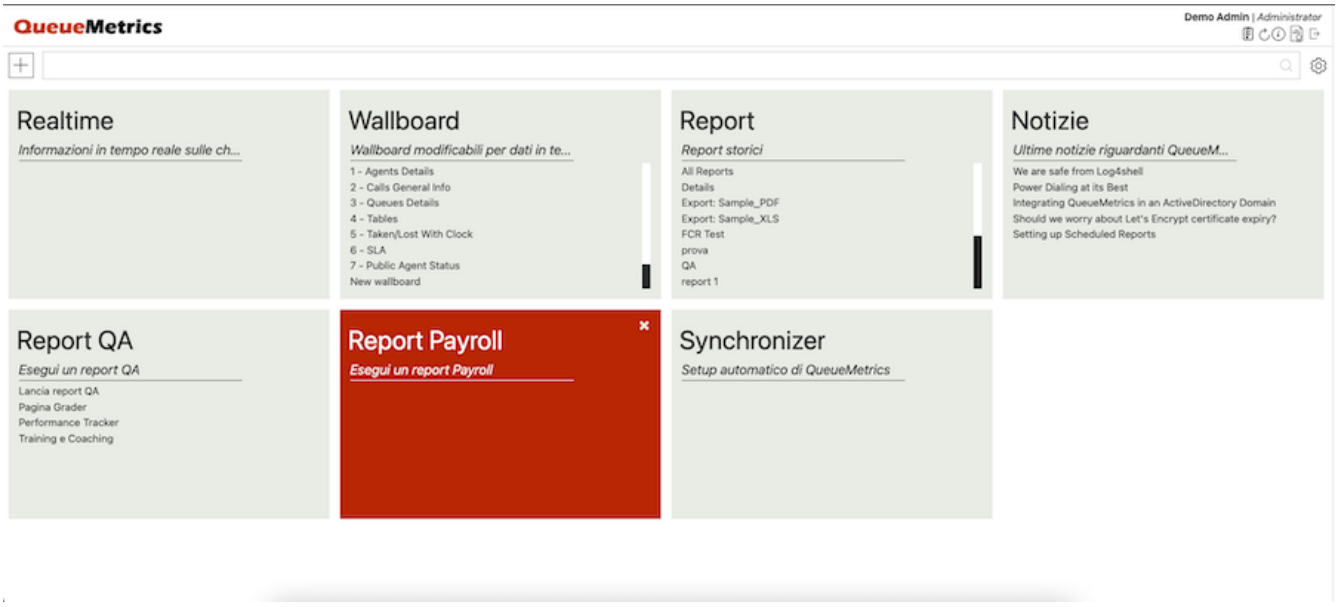

| ... - | Date | Caller | Queue | Wait | Duration | Pos. | Disconnection | Transferred to | Handled by | Attempts | Code | Stints | Srv | Asterisk UID | MOH events | MOH duration | IVR duration | IVR path | DNIS | IVR | Tag | Feat | Vars | Feature Codes | Variables | URL - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 02/09 - 00:02:06 | * | Technical Support | 0:09 | 0:00 | 0 | Caller | | John Blackson | 1 | | 0 | | c.420657986 | 0 | 0:00 | 0 | | | 0:00 | | 0 | 0 | | | |
| | 02/09 - 00:03:29 | 735-555-9598 | Technical Support | 0:03 | 0:06 | 0 | Caller | | John Blackson | 1 | | 0 | | c.254662522 | 0 | 0:00 | 0 | 3 | | 0:01 | | 0 | 0 | | | |
| | 02/09 - 00:03:42 | 463-555-8469 | Technical Support | 0:10 | 1:16 | 0 | Caller | | John Blackson | 2 | | 0 | | c.750976155 | 1 | 0:54 | 0 | 5 | | 0:03 | | 0 | 0 | | | |
| | 02/09 - 00:05:58 | 975-555-5418 | Technical Support | 0:01 | 0:01 | 0 | Caller | | John Blackson | 1 | | 0 | | c.295327511 | 0 | 0:00 | 0 | 5 | | 0:01 | | 0 | 0 | | | |
| | 02/09 - 00:06:50 | 348-555-1048 | Technical Support | 0:02 | 0:01 | 0 | Caller | | John Blackson | 1 | | 0 | | c.971358176 | 0 | 0:00 | 0 | 6 | | 0:03 | | 0 | 0 | | | |
| | 02/09 - 00:07:18 | 721-555-6458 | Technical Support | 0:02 | 4:51 | 0 | Caller | | John Blackson | 1 | | 0 | | c.99991009 | 5 | 3:12 | 0 | 5 | | 0:03 | | 0 | 0 | | | |

# Improved looks and functions

We had a lot of comments on themes - some users found the default "light" theme too harsh, so we had its colors adjusted to be prettier and easier on the eye, without being radically different.




We also added a new theme named `Mono` that is also light but not as colourful.




In any case, if none of the defined themes match your tastes or your company's branding, did you know you can have a custom white-labelled version of QueueMetrics made-to-order to your exact needs?

We also introduced **RTL support for Hebrew and Arabic**, making our reports, wallboards and exports easier for native speakers to read in RTL languages, and added an option to have user-defined date and time formats, for cases where e.g. you want to see QueueMetrics in English but you want dates formatted according to your local customs.

# Improved performance

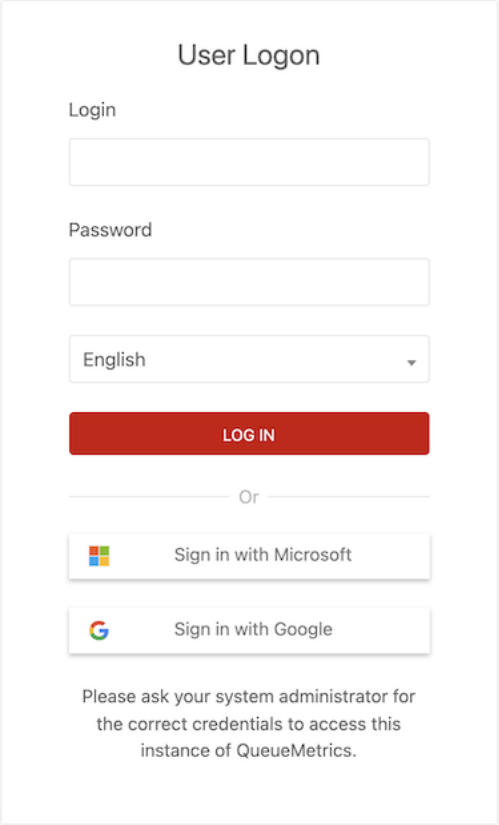
We had a performance review of reports, both within the engine and within the browser, to make the user experience more responsive and to be able to address some very large systems with 10,000+ agents across 1000+ queues.

And even if your systems has but 10 agents across two queues, we are sure you will appreciate the scalability and a snappier user interface.

# Support for Single Sign-On

In the last few years we are seeing a lot of organizations move towards centrally-managed user accounts. We introduced LDAP support in 21.04, targetting mostly Active Directory domains, and we now introduce full Single Sign-On via OAuth.

If your company uses **Google or Microsoft**, you can benefit from a SSO experience where users won't need a separate set of credentials to access QueueMetrics, and won't even need to enter their log-in if they are currently signed in into the service.




We also **improved LDAP/S support** to allow any field to be used as the log-in, thus allowing users with the format `Agent/123` to access QueueMetrics even if their LDAP login is different.

# Pervasive logging

The Audit log has been made way more powerful, tracking a large number of additional events that let you have a clearer picture of what happened and why.

- You can now tell QueueMetrics to **trace reports** that were over a certain threshold of calls fetched, or that took too much time running. So you can know who run them and why. By setting these limits low, you can also have each and every report logged.
- Any report causing an Out Of Memory error or a license violation will be logged
- Any time someone views the details of a **configuration** (e.g. a queue or an agent), makes a change or creates a new entity, this is logged. This happens even when is done through an API call.
- Any time someone issues a **command to the PBX** (e.g. log an agent on, hang up a call, start a chanspy session, you name it…), this is logged. Again, this happens even when this happens through an API call.
- **SSO events** are all logged.

# Improved WebRTC soft-phone

The integrated **WebRTC soft-phone** is a central part of QueueMetrics; still, trying to make sense of what happens when it does not work or it is very slow is a challenging proposition.

We improved the logging of common errors and their causes, of ICE gathering states, and made it easier to see when something is not working as expected. Also, on the QueueMetrics User Manual, there is a **complete guide** to finding and fixing issues.

We also made it possible to use **authentication** for private TURN/STUN servers.

# Misc notable changes

We added agent pause and unpause support for the **Enswitch platform**, so that now both log-ins and pauses are possible from the Agent page (for agents) and from the RT/Wallboard for their supervisors.

We also added a script to detect **connectivity issues** for QueueMetrics instances deployed behind a firewall, and to make it easy to find the right set of proxy parameters to allow a smooth experience.

# Deprecations and security

We removed the XML-RPC API interface and deprecated **Oreka video playback**, because it still happened using an old Java applet.

We fixed a couple of potential issues within the JSON interface that could lead to a security bypass in the configuration, so we suggest updating at your earliest convenience.

For an up-to-date list of features that are currently deprecated, see the User Manual.

# Bug Fixes

A large number of bugs (130+) were fixed in the release. The most important ones are documented here:

## AGENT PAGE

- #5304: Icon may flood server with requests
- #5246: Agent Web Background not refreshing in background mode
- #5365: Pause codes security keys do not work
- #5259: CRM Fullscreen mode should be removed
- #5144: Softphone cannot answer second call if used through VPN
- #5296: Icon: autocopy number from Call list.
- #5504: Turn server authentication

## APIs

- #5500: *robot* profile privilege escalation
- #5497: Editors do not log correctly actions through the JSON API
- #5478: Remove XML-RPC adaptor

## CONFIGURATION

- #5499: Password change from (i) does not work
- #5353: Typos in configuration.properties.
- #5422: Logging of all configuration changes to SysLog
- #5329: LDAP: use different login
- #5297: News panel system key non working.
- #5494: PtEditor crashing with invalid query
- #5443: Add logo link in Explore system parameters
- #5244: SMTP does not work with starttls
- #5263: Remove old Report Editors
- #5481: Missing item in selector from Syslog page
- #5442: Cleanup configuration.properties
- #5378: Logging large reports
- #5271: Database Upgraders fail when using ReportsStorage
- #5380: Upgrade MariaDB client
- #4500: Better "Install database" experience
- #5322: Missing queues in Synchronizer reading from Qlog table

## ENGINE

- #5473: Performance By Agent Group is slow when processing a lot of agents
- #5364: Retracting logs

## GRAPHICS

- #5348: Dark Theme "Edit Tabs Order" overlay issue.
- #5530: New log-in page too dark on dark theme
- #5311: Secure mode not working on home page
- #5525: New Login Page for OAuth
- #5458: Wallboard Widgets wrong colors
- #5267: Tema Mono
- #5424: Stints field is not aligned correctly
- #5456: "Bar Graph - SLA" widget not scaling correctly
- #5413: "Composite Items" Widgets font hard to read in Dark mode.

## PACKAGING

- #5035: Display commit-id on builds

- #5430: Dev Env: Compile under Java11
- #5467: Dev Env: Move checker to build task
- #5376: Add ErrorProne to JavaCompile task
- #5466: Dev Env: Console not at INFO in apprun
- #5529: Remove obsolete code
- #5465: Dev Env: Remove Calcite
- #5524: Correct orientation for languages
- #5470: Dev Env: Build only one theme in dev mode
- #5469: Dev Env: Noisy logging for themes
- #5518: Testing license connectivity

## PLATFORMS

- #5520: User-defined date-time format
- #5447: Enswitch pause/unpause support
- #5446: Logging all platform actions
- #5386: Deprecate Oreka video player

## QA

- #5410: Graphical issue QA report with Dark theme.

## REPORTS

- #5276: Agent and Outcome view shows incorrect login and call stats
- #5050: Incorrect Realtime viewing of the server, in a cluster configuration
- #5235: RT page: missing labels for actions
- #5409: OAuth user authentication
- #5251: Undecoded labels in some tables
- #5432: Block OK03 disappears sorting by "N Calls"
- #5352: Align right for Hebrew and Arabic language.
- #5429: General slowness with huge data sets / lots of agents
- #5341: Changing report time should trigger save icon
- #5253: Incorrect call computation in DH10
- #5274: Incorrect validation of variables filter
- #5340: If a report has no pages the UI raises an exception
- #5051: DetailsDO Executive Summary not paged correctly
- #5479: Bundles loaded twice on the Home Page

- #5360: Report page crashes if no queues are available for the user
- #5291: Unsaved Reports can be created even without permissions
- #5411: PDF export, for languages with special characters, issue.
- #5222: Widget colors matching one-to-one
- #5331: Reports Layout: Humanized
- #5384: OptiLock errors
- #5061: Private Reports option is ignored.
- #5290: Reports should always allow users to change reports and time period
- #5221: Wallboard colors of the icons is too dark
- #5489: Queue_log export should be in ascending order
- #5256: Improve datablock search with a category filter
- #5475: Security and session checks for reports
- #5008: Individual datablocks not exportable
- #5231: Reports should show the report creator and date of creation
- #5270: Detail summary by hour (DH10) issue with table rows
- #5418: Timeline Debug Button
- #5369: AG07 is missing level column
- #5245: Limit PDF exporting rows
- #5289: Permissions are not updated correctly when switching between reports
- #5220: colors of the link in the tables of the new report section has no contrast when mouse over
- #5351: Hungarian language not displaying correctly.
- #4974: Datablock OkDO.ServiceLevelAgreement - OK04 is not sortable
- #5226: Default report creator user is not demoadmin
- #5269: Converted Export jobs time periods are not supported client side
- #5288: Cloning a report does not change the creator user correctly
- #5408: Tags not showing on some calls
- #5219: The Text is too dark in datablock sort tool
- #5252: Incorrect DO.name block names
- #5266: Filter by DO Group in DataBlockViewPreview
- #5350: With Korean language selected, Reports won’t open.
- #5492: Duplicated code in Report Groupings
- #5225: Auto Save does not pick up all events
- #5286: Reports with lots of data give no feedback when loading takes too long
- #5333: Reports Layout: Executive summary

- #5349: Fix Hebrew and Dutch language files.
- #5223: Will the colours be matched one to one?
- #5313: Call Groupings and Timeline Pages
- #5433: Wrong columns in report OD05
- #5277: Charts are not displayed correctly in some locales
- #5332: Reports Layout: Number formatting
- #5385: Handling optilock exceptions
- #5449: Block selector is invisible
- #5272: Area Code datablock are empty
- #5545: HTML in UD05 and OK03 charts

## EXPORTS

- #5316: End of the month scheduled report exporting
- #5412: Audit Log, Recording events issue.

## WALLBOARD

- #5275: Incorrect conversion for German numbers
- #5054: Realtime view and Wallboarda not usable after deleting the monitored queue.
- #5295: Browser notification for softphone.
- #5233: Call Actions table is not localized
- #5344: Softphone should warn you if QM not in https
- #5294: Wallboard softphone works in the background
- #5330: Realtime start hour filter not showing up correctly
- #5326: Ice Gathering states should be displayed on the SoftPhone GUI
- #5053: Agent and Call actions, on the Wallboard, kicks you back to the Homepage.
- #5459: Wallboard tables should be bigger when added to the page
- #5324: Time_zero reference timestamp is not correct in all timezones
- #5439: New Wallboard, queue issue
- #5451: Missing Avg.Talk in Widget
- #5292: Wallboard phone user preferences give error message when they shouldn’t
- #5249: New tables do not persist sort options in wallboard
- #5542: Wallboard crashes with "key" property error
- #5546: Status column not filterable in live calls table

# WombatDialer 21.06

Loway is proud to announce the release of WombatDialer 21.06; this release is mostly centered around the API side of WombatDialer and makes its integration with external systems easier and safer to run.

WombatDialer boosts agents productivity and improves your contact center's outbound flow. You can easily implement automatic dialing, Text-to-Speech integration and call-back options on unanswered calls. You can configure your outbound campaigns with different dialing modes including direct, reverse, preview, manual and predictive.

## What are the main improvements for this release?

- Improved API security
- Backpressure on number uploads
- AUTO calls start from attempt 0
- Externally-fed API Queue end-points
- GUI Improvements

On top of this, about **25 bugs and minor issues** were fixed.

It is immediately available as an RPM archive, a TGZ archive or a Docker image.

## Improved API security

When WombatDialer was created about almost 10 years ago, it was meant to be deployed on a local network. Things have changed quite a bit, and now we see a lot of deployments that go straight to the cloud.

As it was meant to be run internally, and to be easy to interact with out of the Asterisk dial plan that is rather limited in its API interactions, while human users enjoyed full security access control, APIs were simpler and we suggested using an external HTTP server as a chokepoint whenever it was appropriate.

Now, as an evolution, we offer **token-based authentication** so that you can enforce a token to be present on all API calls. You can have multiple tokens enabled at once.

This option must be enabled manually, but should allow for a safer deployment on networked systems.

**See: The WombatDialer User manual, section: 8.3.1**

## Back-pressure on number uploads

If you have implemented a busy WombatDialer system, most likely you are aware of the fact that you can upload numbers one by one and have them added to a list that is running by calling a very

simple HTTP API. This happens very fast, because Wombat will only make sure that the number is queued for being consumed before replying that it's okay.

This process was designed to upload numbers - for example for recalling customers who are finding a long busy queue - so you have just a few per second as the worst case,and we didn't want to block the PBX for a longer time than strictly necessary.

This works fine if you drip numbers in a small lots, but if you upload thousands of numbers at once, they end up being too many to be processed and Wombat may stall trying to process them all at once.

In this version of Wombat we added **back pressure control** to the call upload API, so that the call will not return unless the number has been added correctly to the campaign. This makes it way slower, but it also make sure that adding numbers will blend in correctly with a busy Wombat system. This behavior can be overridden by adding the parameter `fireforget`, that effectively restores the old behavior.

We also fixed a possible issue with starvation that could happen if too many numbers were being added at the same time when campaigns were running. Now, any running campaigns have a higher priority and may delay numbers being added, but not the other way around.

**See: The WombatDialer User manual, section: 8.3.2**

# AUTO calls start from attempt 0

This is again a change in behavior: on earlier Wombat versions, when you add a number to an AUTO list, it is considered a reschedule and not a "cold" number. You would notice it because its attempt number was 1 and not zero, and was not much of an issue in itself.

The problem happens when you use this feature together with multi-numbers, because it being attempt #1 it will first attempt the second number and not the main one.

This was confusing, and is now fixed.

**See: The WombatDialer User manual, section: 8.3.2**

# Experimental feature: Externally-fed API Queue end-points

WombatDialer was designed to work as a controller of one or more clustered PBX systems, so it's expected that all the information about the state of agents it may be interested in will be immediately available from the PBX's own update mechanisms when Wombat needs it to make a decision.

Still, we are seeing a number of people interested in **tracking the state of an external queue**, one that is not available on the PBX that Wombat is monitoring, and one that may be for example on a third-party's premises, e.g. when you do call pre-qualification and have multiple clusters stacked hierarchically.

To handle this, we thought that we could turn the problem on its head. Instead of being Wombat that goes out and tries to understand the state of a queue, and an external system will notify one but when something of interest happens, typically when one of the target agents changes its state. This happens through an API call.

This feature is at the moment **experimental**, because it's still new and we want to understand how it could work in real life in a way that is simple enough to be used by the majority of our customers. Still like you can testify and benefit from it. Just remember that state updates it must be timely, otherwise Wombat cannot make the correct decisions.

**See: The WombatDialer User manual, section: 3.4.2. API-driven queue end-points**

# GUI Improvements

We've had a number of smaller changes that were meant to make the GUI easier to work with.

- Buttons and end-point selectors on the Live page look better and are little easier to use.
- The endpoint configuration used to display an outdated message.
- The agent reverse dialing page was totally redesigned, so that so that it looks a bit better. That page was meant to be just an example of how to implement a reverse dialing page, but most people ended up using it as it is, and so we made sure it is cleaner.

# QueueMetrics 21.04

The release 21.04 of QueueMetrics includes a large number of fixes that build on the new report pages that were relased in 20.11 and make working with them easier and smoother.

- "Throw-away" reports and links from the Real-time page
- Improved exports to PDF and XLS
- Improved accessibility
- Improved wallboard
- Improved Synchronizer
- Improved WebRTC soft-phone
- Cache-aware web data upload
- User auth over JSON and LDAP
- Bonus: Introducing AudioVault - Recordings for cloud systems

QueueMetrics 20.11 is immediately available for all CentOS based distros as an RPM package, for Gentoo as **ebuild**, for Docker as image on DockerHub and as a TGZ file for manual installation for any OS.

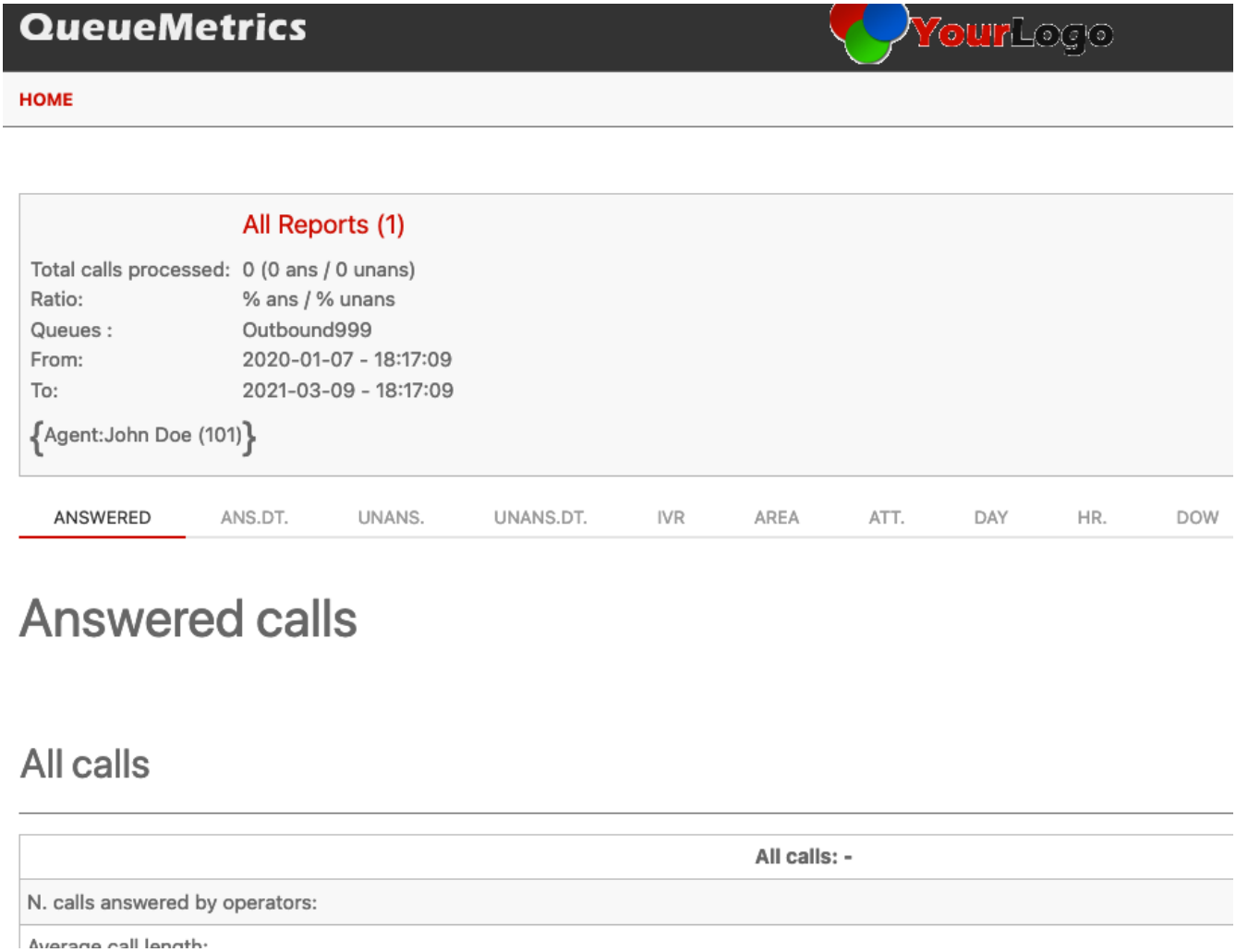
Uniloader was also updated to support the latest features.

It supports 23 distinct languages/locales, including the recent addition of Turkish.

## "Throw-away" reports and links from the Real-time page

When the new reports page was released, every report had to be saved in order to exist. This led to the creation of too many reports on busy systems, most of which are used just once.

Now this is not true anymore - reports will start their lives in an unsaved state (as shown in the report title, that will have a different color when the report is not saved) and you are free to explore them and only save them when you find it useful. The same thing happens when you clone an existing report - you can edit the clone, and then save it if you need it.




Of course, if you try exiting without saving, QueueMetrics will ask for an explicit confirmation of what you want to do.

Direct links from the Real-time page are active again - you will be sent to a special report called RT that you can modify as you see fit, to have a different view of the same data you are seeing on the Real-time page.

# Improved exports to PDF and XLS

When you export your reports to Excel, reports are now formatted in a way similar to the one that appears on screen, but number cells are now actually usable - you can sum, average, divide them, as a part of any calculation you need to perform.

PDF exports also keep your formatting style and look like they do on the screen. They now support Arabic ligatures, so Arabic users will be able to read them more easily.

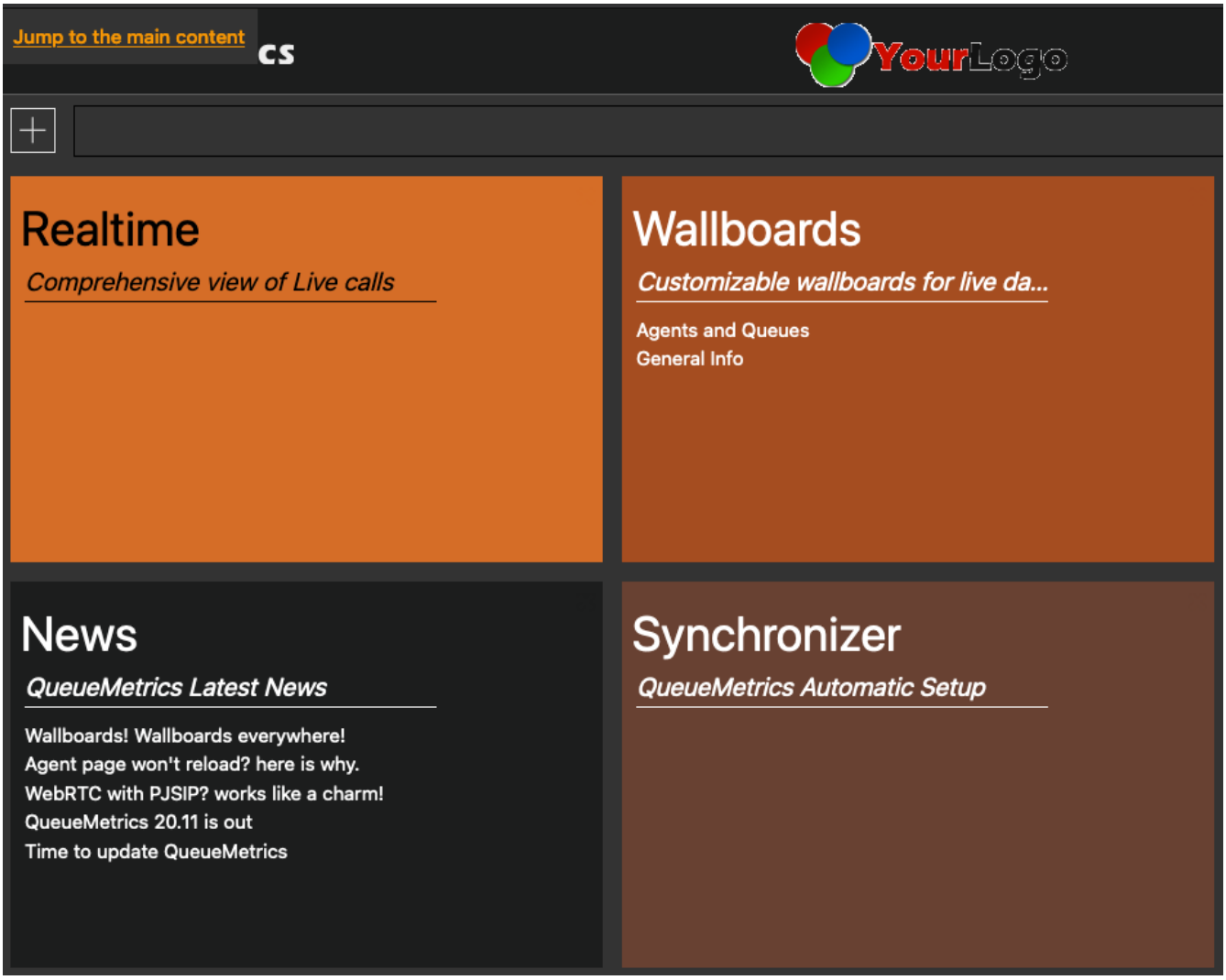
The amount of memory used in exporting data was significantly reduced, and a number of small but annoying issues with data exports have been fixed.

# Improved accessibility

The new Reports Page and Home Page are now more accessible - this benefits everyone, not just users running assistive devices. For example, power users who love their keyboard will be able to

zip through menus and choices by pressing the Tab and Return keys to navigate very quickly.

Just try pressing Tab in the Home Page and see what happens!




Also, download bundles have been significantly reduced to make the experience snappier on all devices, especially if you are connected to QueueMetrics over an unreliable/slow link.

## Improved wallboard

The wallboard had some significant technical changes to uniform tables to the ones that are used in reports. This leads to a smoother experience (things work the same way) and significantly reduced the number of components QueueMetrics uses.

A lot of small changes were made on the wallboard to make it easier to use and fix many small annoyances.

## Improved Synchronizer

The layout of the Synchronizer page was made more uniform, making it more usable and immediately offering the option to sync to an external system (that's what you want to do in there, don't you?)

A number of bugs were fixed to make remote synchronization rock-solid - you can now import the configuration automatically from FreePBX, FusionPBX, MiRTA and Enswitch, and you can save and restore existing configuration.

# Improved WebRTC soft-phone

## Auto Answer

The WebRTC Softphone is now able to automatically answer incoming calls. This option can be set for each agent individually, and can only be enabled/disabled by users that hold the appropriate security key. If the softphone is set up to allow multiple sessions at the same time, the Auto Answer feature will only activate if there are no active sessions, to avoid automatically answering a second call while already on the phone.

This is an important feature to allow agents to instantly pick up any incoming calls, and cut down on waiting time for callers on your queues.

## Pause Change/Amend

Up to now, QueueMetrics allowed agents to amend their pause code in case of mistakes or changes in the nature of their break. This however has the effect of retroactively changing the pause code in the history of the agent session, which is not always the best solution for Call Center Supervisors.

Now administrators can decide if agents can retroactively change their current pause code or not, by substituting that ability with the "Change" button, that instead will end the current pause and start a new break automatically with the newly selected pause code.

## Better PJSIP Support

Our WebRTC SoftPhone has been tested against the PJSIP protocol, to ensure that it can work perfectly with modern Call Centers. The world of WebRTC development is ever changing, so make sure to keep an eye out for our latest configuration tutorials.

If your run FreePBX, the latest is at https://www.queuemetrics.com/blog/2021/01/13/WebRTC-FreePBX-setup/

# Cache-aware web data upload

When receiving data from the web interface, QueueMetrics is now able to understand when data is already present - and skip it - or whether it is out of order, and process it correctly. This means that it is now possible to change the past on a running system, and QueueMetrics will always offer a "correct" picture.

This makes it possibe to handle multiple back-end PBXs (or other data sources) even when their clocks are incorrectly aligned, or when the data upload from one of the sources stalls for some reason.

Please note that we recommend that all existing systems use HTTP data upload, instead of direct

database access or deprecated flat file storage.

## User auth over JSON and LDAP

QueueMetrics can rely on an external authentication source. By using a simple JSON/XML-RPC/LDAP interface, it is possible to write third party scripts that are able to authenticate against your chosen identity system (e.g. Kerberos, a Microsoft domain server, etc).

When an user logs into QueueMetrics, QM checks to see if there is an auth source defined. QueueMetrics will execute a query to that third-party server passing along the user-id and the password given for authentication, plus a given service-id that will be defined in the configuration file.

The JSON format is especially handy, because it is very easy to write an auth source that QueueMetrics can use - so you can implement and enforce your own policies.

See https://docs.loway.ch/QueueMetrics/080_QueueMetricsUsers.html#EXT_AUTH_SRC

## Bonus: Introducing AudioVault - Recordings for cloud systems

QueueMetrics has always searched for recordings on local file systems - this sometimes made the deployment of recordings quite annoying, especially if said recordings were on a remote system that needed to be mounted as a local volume. With QueueMetrics Live, it was also impossible to access the recordings that were on your own local PBX.

With AudioVault, you can now run an Uniloder instance to give QueueMetrics - or QueueMetrics Live - access to your recordings, and you can do it in a secure way. You need no new license and no third-party service either.

See https://docs.loway.ch/QueueMetrics_Advanced/1_nginx_audiovault.html

## Deprecations

No new features were deprecated.

For an up-to-date list of features that are currently deprecated, see https://docs.loway.ch/QueueMetrics/260_H_Deprecated.html#_deprecated_features

## Bug Fixes

A large number of bugs (180+) were fixed in the release. The most important ones are documented here:

### AGENT PAGE

- 5089: Agent page won't update agent presence

- 4955: Softphone Auto Answer
- 5115: Switching off pause amends
- 5065: Agent page not updating correctly

## API

- 4979: Query too long for HWM breaks Uniloader web
- 4917: "Custom Dial" API call not working correctly with Hotdesking mode.
- 5041: ptUsers JSON editor not working as intended
- 5195: JSON, XML-RPC and LDAP auth drivers
- 4932: API Dial out with hot-desking agents

## SYNCHRONIZER

- 4942: Synchronizer: Usability review
- 4605: Synchronizer accepts broken JSON ation
- 4686: Synchronizer won’t update agent levels
- 4091: User classes should appear with the name instead of the number in the Synchronizer CFG files
- 5143: Synchronizer: small graphics improvements
- 5128: Export Reports play button should not appear for export jobs that refer to deleted reports
- 4374: Synchronizer is unable to rename agents correctly
- 4981: Wrong security key needed to edit QM objects
- 5068: Reminder on server-side logging
- 4273: NullPointerException in Synchronizer, is PBX array is null

## ENGINE

- 5101: Multi-stint mode ignores intermediate calls
- 5100: Cache-aware web data upload
- 5091: Alias ending in space not being recognized

## GRAPHICS / WHITELABELING

- 4947: Whitelabeling: remove URLS if non-Loway
- 4633: Import basic graphical components from shared library Loway-js-gui
- 4812: Themes: load just once
- 5155: Whitelabel: remove Queuemetrics from the login page
- 5033: Screen reader support for Home Page
- 4759: Color.js uses wrong method of importing colors

- 5011: Resizee the Reports and Wallboards infoboxes.
- 4295: Screen-reader support
- 4851: Hide everything on Licensing pge

## PACKAGING / SETUP

- 5035: Display commit-id on builds
- 5175: Export JSON stack traces
- 5132: Remove System.out.println() calls
- 4931: Improve bundling / reduce sizes
- 4966: MySql 8 treats privileges grant as a syntax error
- 4956: DB JSON field for wallboard definition should be larger

## PBX PLATFORMS

- 4984: Finding correct spy extension for Enswitch with switchboard
- 5193: Enswitch: find calls on queue even if queue is dtype not stype
- 5137: AMI tester error message not very clear

## QA

- 5203: QA Form is not working properly
- 5020: Grader’s page: cannot open QA pop-up
- 5099: Cannot click on Pencil item in QA

## REAL-TIME

- 4951: Quick Agent Report from Realtime view not working after update 20.11
- 4669: Cannot delete saved real-time query from home-pag
- 5043: Default queue for realtime page ignores visibility keys
- 5079: Cell for queue "00 All" is broken in RT
- 5173: Exports from Realtime View not available.

## REPORTS

- 5081: Agent levels not working properly
- 4535: Quick Agent report from the Realtime view uses the incorrect "Period end date"
- 4333: Datablock "OU08 – Call results by feature code" not working as intended
- 4321: PDF exported reports not paged correctly
- 4395: Timezone offset filter not working in custom reports
- 4994: Synchronizer: won’t fail on invalid input

- 4362: CRM URL not showing in Call Details
- 4336: Skills description not showing in reports.
- 5073: Audio recordings don't play in Safari
- 4688: Unable to delete or edit Saved real-time queries
- 4976: Inconsistent sort in Datablocks
- 5023: NPE on agent sessions
- 5080: Wallboard does not obey realtime.members_only=true
- 5022: Error with Skill filter
- 4958: Filter breaks client
- 5009: Hidden datablocks columns are exported when exporting a report.
- 5107: Max. Attempt filter does not accept 0 as a value
- 5005: Expored reports might have different DataBlock Order
- 5088: DetailsDO Executive Summary not exporting correctly
- 5141: Throw-away reports: names
- 5027: Wrong sorting in data blocks
- 5123: Report exporting fails on formatted numbers or times longer than 24 hours
- 4946: Finding columns issues in reports
- 5148: Large memory allocation in exporting XLS reports
- 5039: New Feature: Temporary Reports
- 5191: Button (+) loses all changes without asking
- 5097: Code issues on ExportColumn
- 4953: Re-activate direct links into reports from RT
- 5094: No pie chart if there is only one item
- 4864: Replace editors with ReportsStorage
- 5086: SLA Report not showing correctly, for the Spanish and other languages
- 5124: HomePage: display news text as a hovering tooltip
- 5066: Report Exports show HTML
- 5190: Filter editor: min and max filter should be close to each other
- 5199: SSAR Reports not being saved correctly
- 5114: Report page does not process query when deleting a report
- 4960: Client should be able to handle filters written in Server Side Format
- 5000: Shape Arabic letters for PDF export
- 5117: Autosave toggle should be placed in settings menu
- 5171: Max row check for excel export
- 4943: XLS: Workbook already contains a sheet of this name

- 5145: OOM exporting data: creates regexps
- 4975: When export name is too long, XLS exporting does not work
- 5189: Block appears in Edit Mode within the selection bar
- 4983: Charts are broken if datapoints are formatted strings
- 5197: Add note panel of QA Forms is not aligned correctly
- 4934: Wallboard crashes if call is present on Live_Calls table
- 4967: XLS report exporter is skipping column headers
- 5206: Variable filters takes 2 parameters
- 4992: new report does not create new page in firefox
- 5116: Autosave should be deactivated even for autosaving reports clone
- 5042: Report Exports should support typgraphy, alignment, hidden columns and column sort order
- 5168: Show in frontpage does not affect queue menu in report page
- 4809: Filters should be addable with ENTER key
- 5084: Disconnection cause not localized in the Reports
- 4941: Wand icon in realtime page does not appear
- 4973: Missing localization for default All Reports tabs on mouse-over
- 5121: Localize missing strings
- 5064: Too many styles in excel export
- 5188: Wrong DayOfWeek
- 4898: Invite text in block editor
- 5142: Auto-save toggles
- 5078: Export fails if blocks have two columns with same name
- 5196: Broken Histograms in QA Report
- 4933: Redux code cleanup and documentation
- 5205: Missing Filter CODA_F_shortcall_attempt
- 5028: Improve coolness of the sort image in report tables.
- 5164: Report default title should be already populated
- 5202: Call markers don't work
- 5136: DetailsDO.AgentSessions not exported correctly in excel
- 4972: Column sorting and editing in the datablocks unusable if there are not enough calls.
- 5120: Some Icons are not aligned
- 5182: Reports don't work when report with no queue is loaded
- 4896: XLS export: strings too long
- 5019: Missing Grader's Page, PerfTracker and Coaching links

- 5204: Report share link does not set report id parameter correctly
- 4988: Missing localization labels clok_% / clok_chart
- 5163: Auto Save small issues
- 5201: incorrect records in table pager
- 4971: Magnifying glass icon missing from the "Detail of unanswered calls" datablock
- 5003: Error on export key-protected items
- 5119: Report title should indicate report status
- 5059: Reports add a new empty page when cloned
- 4871: Extract tests from Filters
- 5087: Days of the week showing with the # symbol
- 4978: Export of call detail dates
- 5067: Report Exports do not format new data types
- 5098: Private reports work as though they were public
- 5024: Export to Excel with too many rows
- 5162: Report Settings Toggles formatting issues
- 5200: SSAR Reports not being listed correctly
- 4961: New page does not load when created
- 5134: Previous Week time-frame not calculated correctly
- 5002: Disconnection reason for lost call is decoded incorrectly
- 5118: Report title should be first in report recap panel
- 5046: Most numbers are left-aligned
- 4944: If empty report, no graph
- 5093: Swap axes on SLA reports
- 4987: React warning: Cannot update a component
- 4954: Display block ID for JSON access of AG09/AG18
- 4945: Missing localization for DOW

## WALLBOARD

- 5129: Supervisors cannot change queues in Wallboard
- 5085: Pause description not showing on the Wallboard
- 5152: Call Action on the Wallboard not behaving as expected.
- 4950: "Avg. Queue Info" and "Live Agent Counters" not updating properly after 20.11 update.
- 5082: Wallaboard not sortable
- 4963: Wallboards cannot be deleted
- 5147: Cannot change queues in wallboard if in read only mode (not kiosk)

- 5017: Wallboard not updating if agent is part of a group
- 5153: Wallboard Hotkeys need a modifier
- 4969: Wallboards are not deletable in QM 20.11
- 5010: Wallboard not updating when changing queue for the Supervisor.
- 4913: WebRTC softphone with FreePBX15 support PJSIP
- 4549: "Agents Ready" widget displaying a copy of the queue, when only one queue is selected as a filter
- 5113: Transpose method fails in JsTable
- 5151: Missing arrow icons from wallboard widget sorting.
- 4990: Wallboard: missing oDec?
- 5083: Remove "W:INSPECTOR" debug widget.
- 5126: Agents Ready widget won’t count agents on ALL queue
- 4361: Wallboard page keeps polling with server error if too many agents
- 5063: Wallboard not decoding agents and queues in tables in wallboard
- 4962: Missing Icons in Softphone
- 4741: Remove Tabulator component
- 5135: Wallboard queue selection not allowed for users without the Wallboard edit key.
- 5018: Counters on the wallboard go to zero after 1000
- 5150: First row of the wallboard Widgets not sticky

# QueueMetrics 20.11

The release 20.11 of QueueMetrics focuses on the all-new Home and Report pages, making it easier, more effective and even more pleasant to analyze data from any device you want to use - from desktop to mobile, empowering remote workers.

- A new Home Page
- A new Reports page with related Exports
- Themes and white-labelling
- Improved WebRTC soft phone
- New JSON APIs
- Security improvements
- PBX support: Squashed clusters, Mirta PBX and Enswitch
- Security improvements
- Remove wrongly-logged double closing records

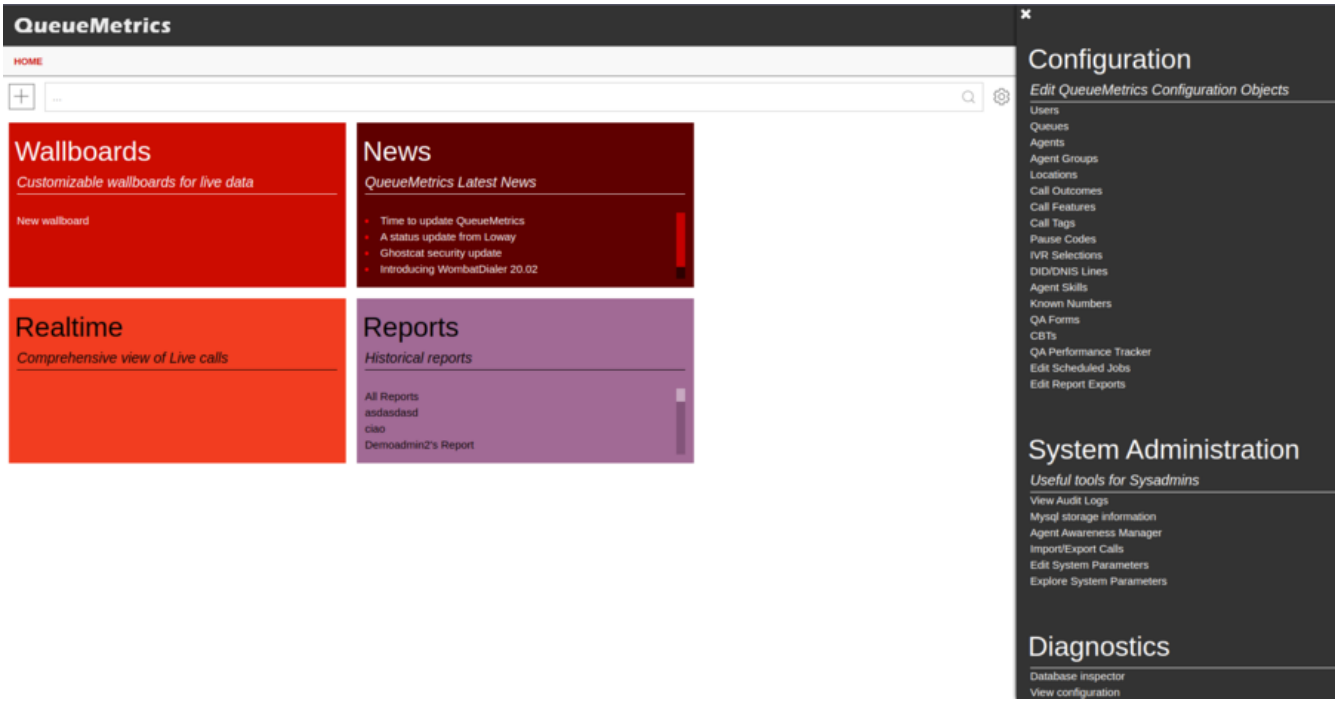
QueueMetrics 20.11 is our **largest update ever**; in total, it took about one year of work to our developer team, with about 250 bugs/CRs filed and ~1000 code commits.

QueueMetrics 20.11 is immediately available for all CentOS based distros as an RPM package, for Gentoo as **ebuild**, for Docker as image on DockerHub and as a TGZ file for manual installation for any OS.

It supports 23 distinct languages/locales, including the recent addition of Turkish.

## New Home Page

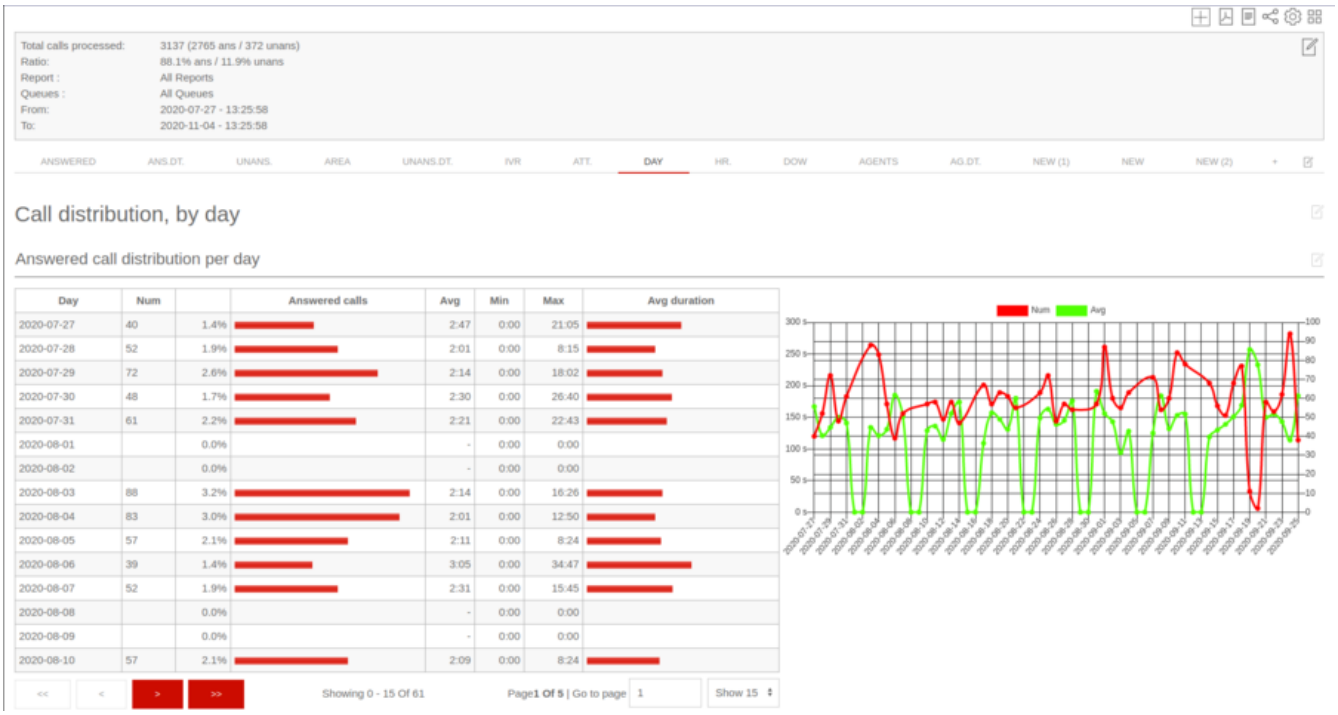
The new home page is clearer and easier to navigate, as it groups all items into **Information Boxes** (InfoBoxes). Each user can decide what they want to see, and can arrange boxes to best fit their workflow. All boxes are **searchable**, so whether you are looking for a specific function or for that report you just created, you can just type a part of its name in the search bar on top and it will be immediately found.




The new Home Page - actually, all of QueueMetrics - is now responsive and works on devices of all sizes, so you can use it just as easily from the browser in your PC, from your tablet or your mobile when you are on the go - or just working from home.

# New Reports and Exports

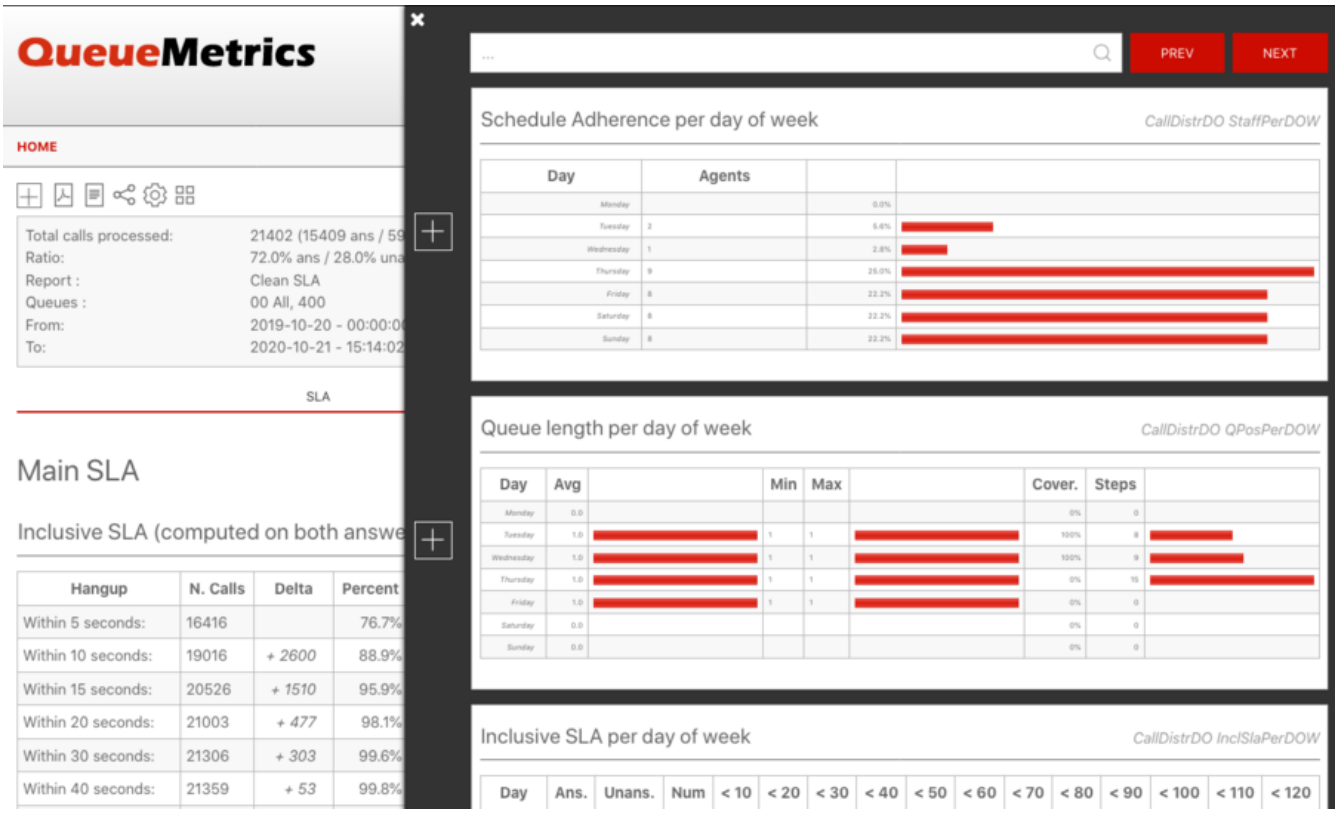
The new reports are much more flexible that what old reports used to be. They are fully interactive, so you can change any condition - time period, queues, filters, settings... - and what is on the screen will be updated in real-time. There is no distinction between editing a report and running it - you can change anything at any time, and you can create your own reports as you see fit.




**Filters** have become way more powerful; you have more of them, they are easier to use, and you can nest them to form complex queries. They are saved within the report itself. Time periods are

more flexible, so you can use a large number of presets or create your own.

But the best part of the new reports are **data blocks**: you can explore all possible data blocks out of a canvas on the right side of the screen, where you can see them as a preview but with real, live data, and then pull them into your report when and where you need them.




At any point you are free to **export** your report as an Excel or PDF file, or you can have it run as a scheduled job to be sent by e-mail - correctly applying all their settings and filters.

# Themes and white-labelling

QueueMetrics now supports **themes**; you can chose between a "classic" look and a new dark theme that is easier on the eyes. Theme and graph colors have been selected to be effective even for users with reduced color vision.

The new themes also make it possible to have a custom OEM version of QueueMetrics for resellers who need it.

# Improved WebRTC SoftPhone

The WebRTC softphone was significantly improved to offer multiple concurrent lines, attended or blind transfer and a mute button, as well as better ergonomics for all-day usage.

# New JSON APIs

QueueMetrics 20.11 allows the searching of arbitrary audio storage systems, by exposing a simple JSON interface that your audio storage can implement. This means that if you have a special audio

recordings server, or use an external provider, it is very easy to make its contents (audio, but also video, transcriptions, chats....) available to your QM users.

QueueMetrics can also be set up to "stay in the middle" between client and audio storage back-end, so that the latter is not exposed to the client. As a bonus feature, QM will log on its audit logs all accesses to audio recordings and the actual data that was downloaded by the client.

## Security improvements

QueueMetrics has had a number of security improvements, both in terms of security fixes and by implementing a new "secure mode" that disables a number of potential avenues for external attackers to do reconnaissance and to attack QM servers. The new secure mode is controlled by an optional property, and is recommended for critical or publicly-exposed systems.

## New platforms

QueueMetrics 20.11 supports directly both the Enswitch platform, now without a need for a separate activation module, and Mirta PBX. It also supports "squashed clusters", that is possibly large clusters of Asterisk boxes processing the same queues on multiple parallel systems at once.

All those changes are targetted at mid-scale telephony providers, where our QueueMetrics Live service allows a hassle-free experience with out-of-the-box integration.

## Parser improvements

One major change only: QueueMetrics now recognises cases where the PBX wrote a double logging of call closure records for the same call, and will silently skip the extra record - those that caused those so annoying "*" calls.

It is also possible to originate calls manually through the API, sending along a set of variables together with the number to be dialled, so that they are set on the outbound call and visibile in reports and to agents.

## Deprecations

- **Direct access** to the queue_log file is deprecated. You should upload data using Uniloader to a SQL partition instead - or, even better, upload through the web-service.
- The old **agent page** (non-Icon) is deprecated. It should not be used any longer.
- The **XML-RPC** interface for webservices is deprecated. The JSON services implement all the functionality and more, and are easier to consume from modern development environments.
- The paged data blocks `UD02`, `OD03` and `OD04` are automatically replaced in 20.11 with their non-paged equivalents, as paging is now handled by the new reports page.
- The data blocks `OD01`, `XS01` and `AC01` were removed in 20.11, because their functionality is not needed with the new reports page.
- The CallCabinet driver was removed in 20.11.

- The Qloader script was superceded by Uniloader, that is flexible and stable. It was removed in 20.11.
- The Visitor's page was removed in 20.11.

# Bug Fixes

A large number of bugs were fixed in the release. The most important ones are documented here:

## Agent Page

- 4664: Remove disabled items from Icon menu
- 4480: Occasionally the Alias is not sent correctly to the Agent page.
- 4351: Wrong queue login/logout buttons in QueueMetrics Agent Page when dynamicLoginQueues=assigned
- 4651: The call outcome appears even if platform-disabled
- 4628: New softphone should not appear in agent page if not configured
- 4799: Agent page font css import not working
- 4575: Softphone: Mute and Second line

## APIs

- 4391: Search audio via JSON
- 4233: Uniloader users with grants to upload to different partitions
- 4588: Missing FTR code in JSON request
- 4512: Force token for specific Uniloader web user
- 4520: Remove CallCabinet module
- 4428: Proxy to stream audio calls
- 4307: Using TPF's JMX reader

## Configuration

- 4611: Possible SQL Injection - cfg2_queues_agents
- 4301: Synchronizer does not read pjsip and sip agents from queue_log file or db
- 4365: Synchronizer does not read queue_log data
- 4613: Synchronizer: users not created
- 4534: Explore system parameters showing wrong default configuration for the platform.
- 4385: Synchronizer page crashes while importing configurations in Firefox
- 4476: Dbtest/Inspector could be clearer
- 4638: Security pack
- 4642: Security: De-brand login page

- 3824: Clone a Known Number
- 4860: Broken icons on Export Report page
- 4641: Security: Mitigation of verbose error messages
- 4312: Synchronizer General Actions Panel
- 4760: Header of the tables is broken in admin section
- 4585: Connection pool issue on DbTest
- 4310: Protecting items from deletion in Synchronizer
- 4639: Security: Mitigation to User enumeration
- 4671: Platform published on the AMI queue inspector may be incorrect
- 4308: Add a way to protect Agents and Queues from Configuration Synchronizer
- 4640: Security: Mitigation to Insecure session-id storage
- 3261: Add default.callStatusTimeout to the documentation
- 4573: Automatic DB setup does not work
- 4302: Default admin account in DB Sample should include whisper and barge security keys
- 3583: sql_mode issues with Mysql >=5.7.5

## Engine

- 4532: Parser tracks session incorrectly when call is answered on removemember
- 4604: Encode queue names
- 4654: Remove wrongly-logged double closing records
- 4890: Normalize PJSIP channels

## Graphics

- 4410: UiKit very slow when rendering tables
- 4364: The left-bar menu for configuration is broken
- 4522: Hard-to-read titles in QA
- 4368: Cannot Send CBT, javascript error
- 4367: Broken storybook
- 4617: Add "noindex" to skip search engines
- 4781: QM won’t start without the default theme
- 4749: Theme detection should happen in start, not in start2
- 4748: Themes should be sorted by code - Change default code to "classic"
- 4792: Mis-aligned HTML tables
- 4692: Create layout for infobox DIAGNOSTICS
- 4421: Css Hotswap for dynamic themes

- 4782: Custom Image should have an alpha channel to match better the dark theme
- 4813: Links to whitelabel under /dbtest
- 4430: Newsfeed Cookie raises a warning
- 4478: DbTest: improve graph layout
- 4409: licence.jsp: remove link to third party
- 4851: Hide everything on Licensing page
- 4524: sysup.jsp: no lingering HTTP session

## Packaging

- 4406: Security issue with Jackson-databind 2.9
- 4331: Gradle/webpack build for different themes
- 4349: RPM issue with CentOS 7.7?
- 4661: New license terms for deactivation
- 4157: Reduce attacker risk surface
- 4744: Replace product names in build and languages
- 4690: Linting of JSON and XML files
- 4739: Fix all TPF compiler warnings

## Platforms

- 4683: Cannot pause agent with hotdesking and DirectAMI
- 4627: Enswitch: events returned in the wrong order
- 4508: Tracking / proxying of all recordings
- 4531: Squashed cluster
- 4701: Dialplan to track VAR attributes on outbound calls
- 4290: Support MiRTA PBX
- 4448: DirectAMI mode using the same "MemberName", "Interface" and "StateInterface" extension when login an Agent on the queue.
- 4380: Unknown ACM Asterisk 16.7.0 Asterisk Call Manager/5.0.1

## QA - Quality Assessment

- 4291: QA Form not working on radio choices
- 4323: QA form not displaying correctly when running a QA report

## Real-time

- 2976: Call list fields: missing TRANSFERRED TO item
- 4111: Quick agent report, filters the realtime view as well without a notice.

## Reports

- 4499: Broken report displays only chevron sign
- 4485: Customization: Outbound stats
- 4300: Call Overview report is broken when direction data is not available for the queue
- 4612: Possible SQL Injection - Exports
- 4479: Huge memory allocation on real-time with incorrect data
- 4465: Removed deprecated "TimeZoneOffset" filter for the Custom Reports.
- 3074: Idea: direct link to specific reports, as a unique link.
- 4501: UN17 sorting table incorrectly
- 3906: Export Jobs cannot be filtered by agent
- 4637: Move items off the DBTEST page into home
- 2088: Month name in XLS/PDF exports

## Wallboard

- 4264: Incorrect XSS detection on wallboard alarms
- 4600: Wrong label "Pause code" for Spanish
- 4547: Widget configuration queue scroll issue
- 4298: Live Agents table Status field is broken
- 4847: Queue selector too big

## Languages

- 4392: Turkish language

## Documentation

- 4684: Set up QM behind proxy
- 4670: Docs: add a "deprecation" section
- 4526: Uniloader example on the manual

# WombatDialer 20.02

Loway is proud to announce the release of WombatDialer 20.02; it was designed to make the life of administrators easier, with many small fixes that improve the overall experience of running the dialer for both small and very large systems.

## What are the main improvements for this release?

- Improved handling of black lists
- Tracking of attended and unattended transfers from queues
- Improved GUI
- Improvements to the API, with full visibility of JMX internals

On top of this, about **40 bugs and minor issues** were fixed.

## Improved black-lists

You asked and we listened: this is an apparently simple change that has deep implications. WombatDialer has **powerful black-list** where numbers can be added at any time and for any specified duration of time - one minute to a month or more. As you can imagine, black-lists are central to compliance with local regulation in many parts of the world.

So far, black-lists were checked only when starting a new call, so if the call was allowed and it needed multiple attempts to go through, all of them would be made even if the number had been black-listed in the mean time.

With WombatDialer 20.02, black-lists are checked on each and every attempt, so as soon as a number is black-listed, all subsequent attempts to dial it will be caught. This means you can use black-lists in a way that is more natural, and create new scenarios: for example, to cancel further scheduled outbound calls when a caller happens to call in first.

### See: The WombatDialer User manual, section: 3.6.6. Black lists

## Tracking of attended and unattended transfers

It is quite a common scenario for outbound contact centres to have agents contact and qualify a prospect, and then **transfer** them to the appropriate department. When this happens, the original agent will be free again to take another call.

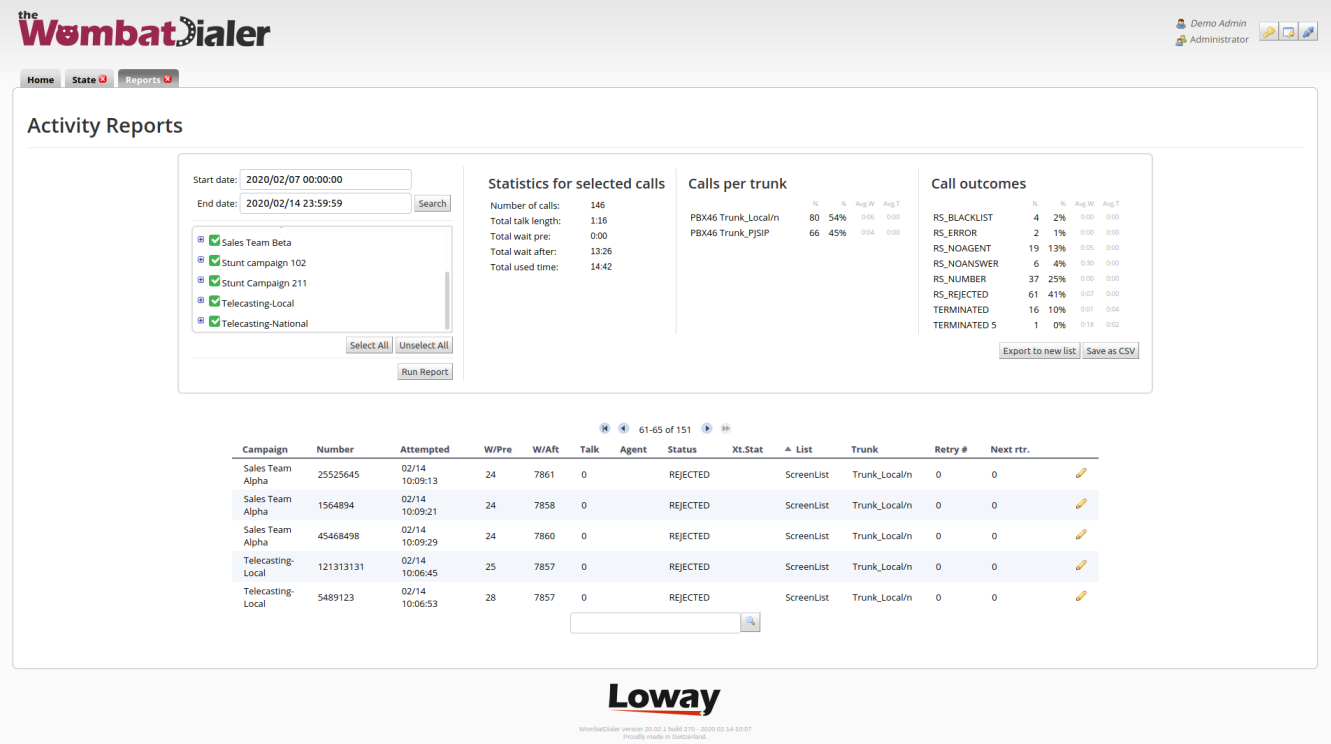
Historically, call transfer support on queues with Asterisk was not that good, and only unattended transfers were supported. Luckily, this has improved significantly since Asterisk 13, and WombatDialer now supports it fully for both **attended** and **unattended** transfers, making the agent ready to take a new call as soon as a previous one is transferred.

You can use both attended and unattended transfers, and it works in direct and reverse dialing mode, with or without predictive over-dialling.

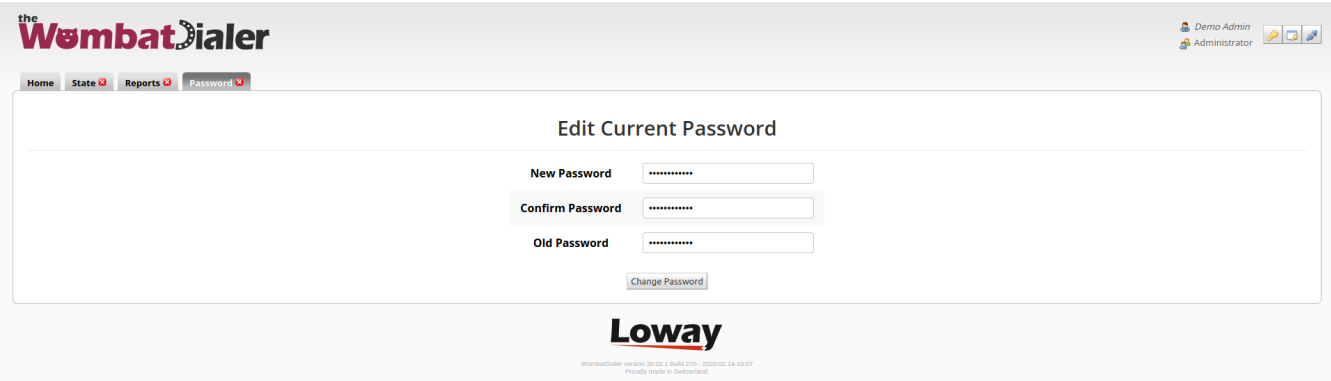
### See: The WombatDialer User manual, section: 3.8.3. Call transfers

# Improved GUI

Selecting **multiple runs** for inspection on the Reports page is easier, with a select all/unselect all checkbox for each campaign.

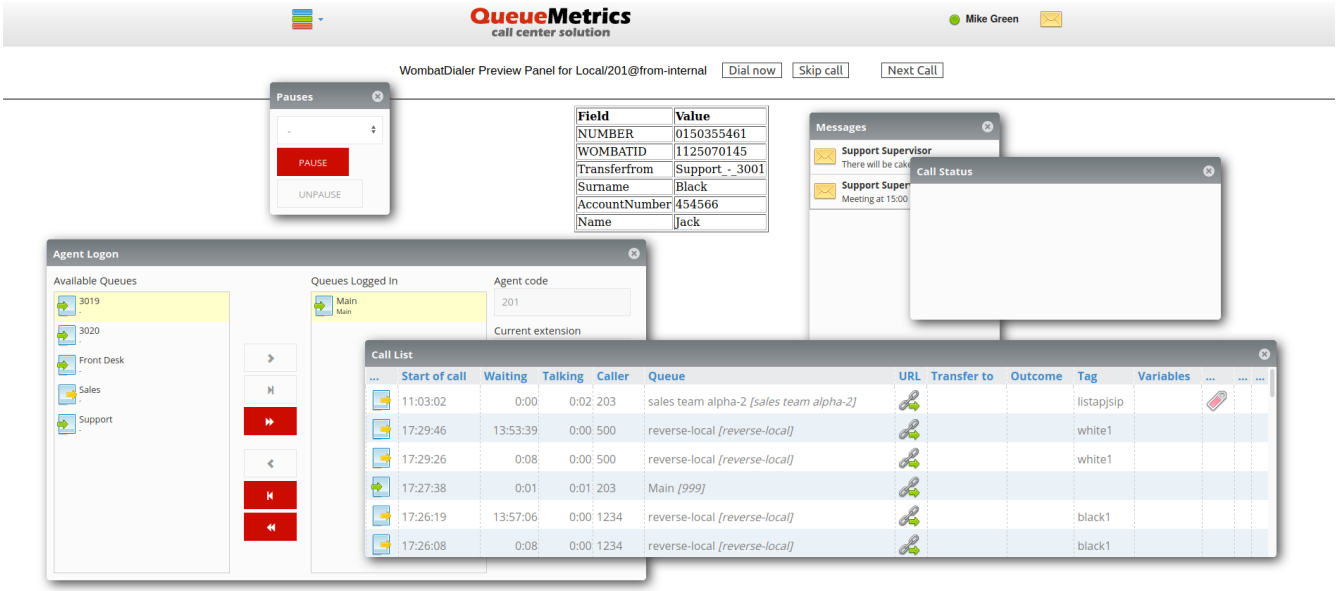



Users can now **change their own password** right from the GUI, through a new integrated password change panel:

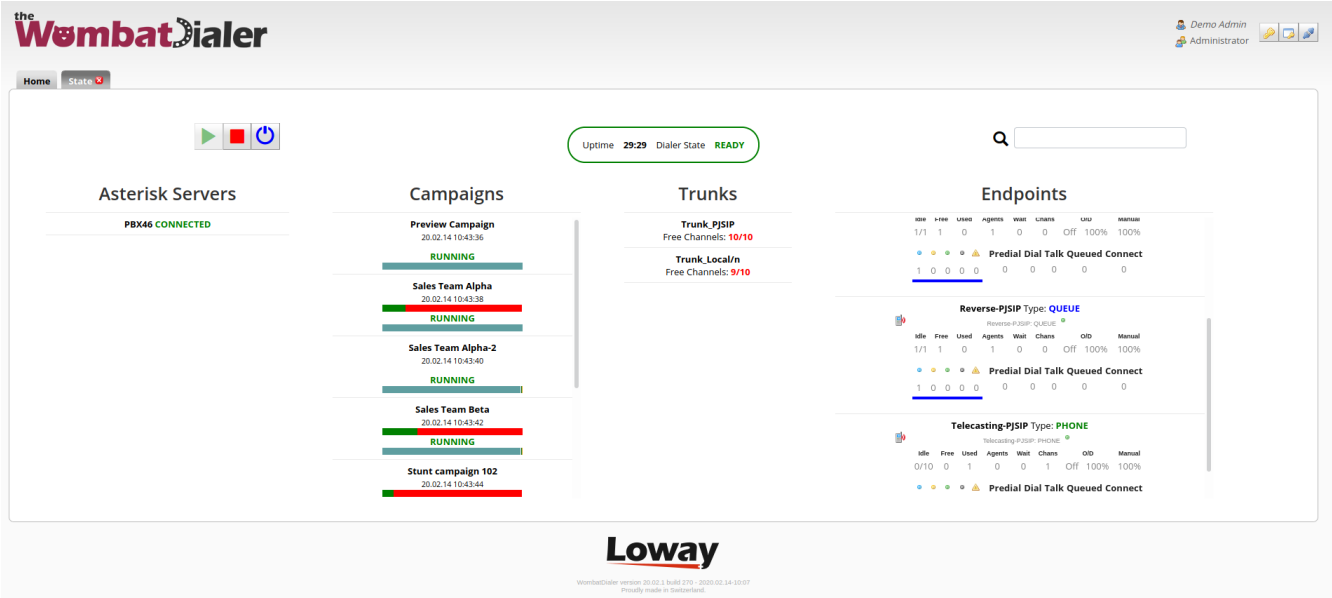



The **Copy Campaign feature** requires a new, separate security key called `COPY`. On upgrade of an existing system, you will see that the option is disabled until the new key is granted.

The **Reverse Step-wise dialer panel** had a face-lift to make integration with QueueMetrics more natural and working with it more pleasant.




The **Dialer State page** now features a different icon for stop-and-restart, as it looked too similar to the one used to refresh current state on the home page.




# Improvements to the API

The elephant in the room here is **JMX counters**: these are the standard mechanism a Java program uses to publish performance counters. They expose a wealth of information on what WombatDialer is doing internally - memory and CPU usage, number of operations, delays on queues, fine performance of many separate operations, number and delay of messages exchanged with the PBX, for a total of over 140 counters.

Now, WombatDialer exposes all of them as a simple JSON service, without the hassle and the complexity of setting up a JMX client. So it is very easy to push them to a graphing or monitoring back-end in order to observe and monitor performance over time.

The API now returns the correct campaign-list association as soon as it is created, saving you a second round-trip to fetch this information on campaign creation.

**See: The WombatDialer User manual, section: 8.3.7. JMX statistics**

# Misc items

- Full compatibility with Asterisk 15 and 16 (current LTS)
- Extensive testing of PJSIP channel support
- Fixed issue with local logging where data would not persisted to the database on some restarts
- Addressed an auth bypass bug on campaign creation
- Addressed security bypass on end-points through the GUI
- Compact and easier-to-read representation of AMI blocks in debug logs
- Pause events would not be tracked correctly on Asterisk 13+
- Improved set-up wizard
- Upgraded GWT version and collapsed obsolete browser versions into single build.
- Clean-up of various deprecated methods
- Manual preview mode enforces Reverse Dialling in the editor

# QueueMetrics 19.10

Release 19.10 focuses on a major improvement in the UI: it was thoroughly rebuilt with a modern toolkit, as to have an up-to-date look and support mobile browsers. The result is meant to be very familiar to existing QueueMetrics users, but is easier on the eye and has a unified look across the product.

- New UI
- New "synchronizer" module
- Agents actions can be performed through a generic JSON API
- Improved security and efficiency
- Deprecations and possible issues with older versions
- Support for the Korean language
- Bug Fixes

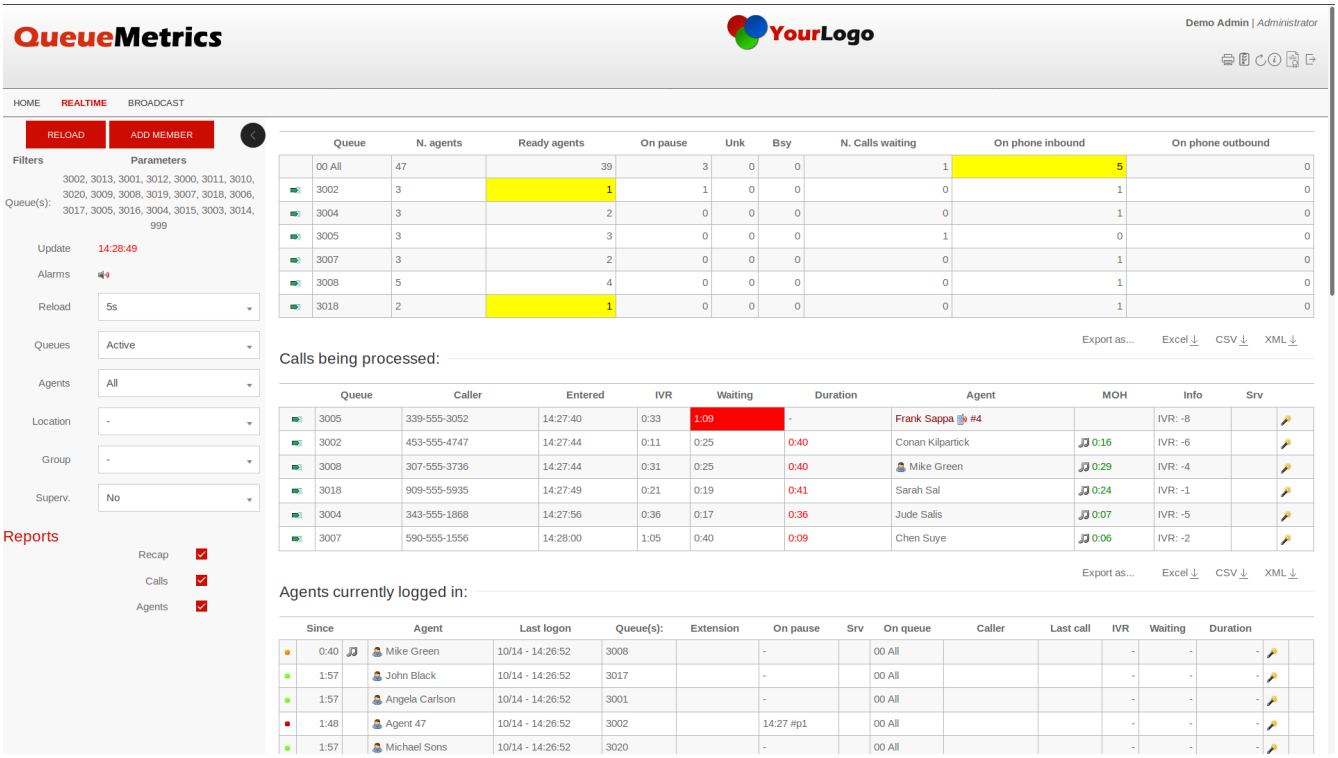
QueueMetrics 19.10 is immediately available for all RedHat/CentOS based distros as an RPM package, for Gentoo as ebuild, for Docker as image on DockerHub and as a TGZ file for manual installation for any OS. It supports 22 distinct languages/locales.

## New UI

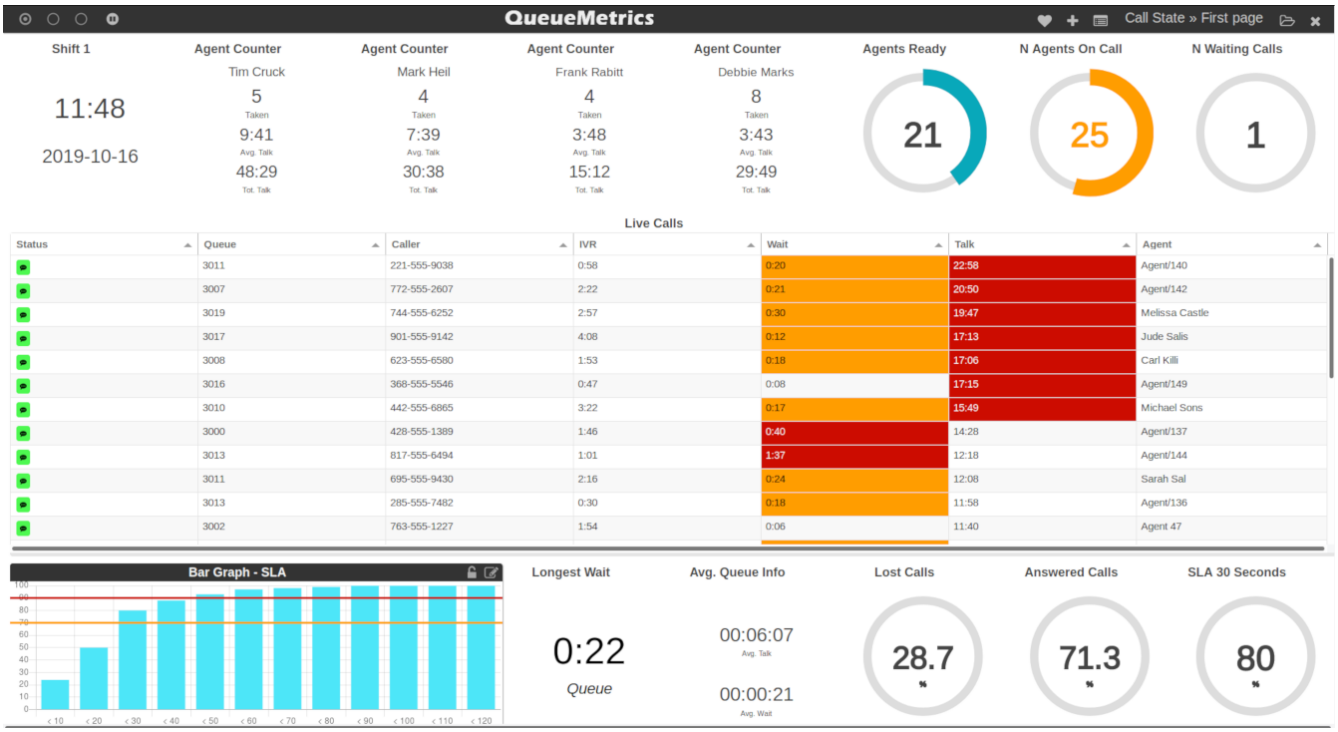
The new UI offers a better look, better readability and works reliably on the smaller screens of mobile devices. It is more maintainable, uses modern JavaScript libraries and offers better readability on high-DPI devices.

The initial approach was to avoid any surprises to our users, so the way the product works will still be very familiar to our existing QueueMetrics customers - as always, QueueMetrics tries to adhere to the principle of least surprise.

The real-time page looks very similar, though somehow lighter on the eye, especially with icons.




The wallboard looks similar as well, though colors have been altered slightly to play well with the rest of the product.

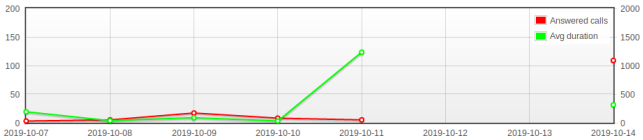



Reports have a lighter look, but are readable on very small or very large screens.

## Answered call distribution per day

| Day | Num | | Answered calls | Avg | Min | Max | Avg duration |
|---|---|---|---|---|---|---|---|
| 2019-10-07 | 3 | 2.0% | | 3:11 | 0:09 | 8:57 | |
| 2019-10-08 | 5 | 3.4% | | 0:36 | 0:04 | 2:10 | |
| 2019-10-09 | 17 | 11.6% | | 1:27 | 0:03 | 7:15 | |
| 2019-10-10 | 8 | 5.4% | | 0:29 | 0:02 | 2:01 | |
| 2019-10-11 | 5 | 3.4% | | 20:33 | 2:38 | 1:15:39 | |
| 2019-10-12 | | 0.0% | | - | 0:00 | 0:00 | |
| 2019-10-13 | | 0.0% | | - | 0:00 | 0:00 | |
| 2019-10-14 | 109 | 74.1% | | 5:12 | 0:01 | 27:49 | |

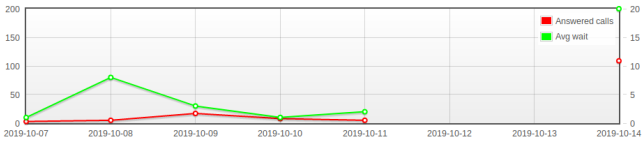
Export as... Excel CSV XML




## Answered call wait time per day

| Day | Num | | Answered calls | Avg | Min | Max | Avg wait |
|---|---|---|---|---|---|---|---|
| 2019-10-07 | 3 | 2.0% | | 0:01 | 0:01 | 0:02 | |
| 2019-10-08 | 5 | 3.4% | | 0:08 | 0:02 | 0:23 | |
| 2019-10-09 | 17 | 11.6% | | 0:03 | 0:01 | 0:13 | |
| 2019-10-10 | 8 | 5.4% | | 0:01 | 0:01 | 0:03 | |
| 2019-10-11 | 5 | 3.4% | | 0:02 | 0:01 | 0:05 | |
| 2019-10-12 | | 0.0% | | - | 0:00 | 0:00 | |
| 2019-10-13 | | 0.0% | | - | 0:00 | 0:00 | |
| 2019-10-14 | 109 | 74.1% | | 0:20 | 0:01 | 1:01 | |

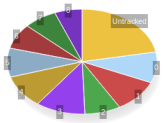
Export as... Excel CSV XML




## IVR Selection

| IVR | N. Calls | | ... | Total Duration | Average Duration | Min Duration | Max Duration |
|---|---|---|---|---|---|---|---|
| Untracked | 37 | 22.0% | | | | | |
| 0 | 16 | 9.5% | | | | | |
| 1 | 17 | 10.1% | | | | | |
| 2 | 13 | 7.7% | | | | | |
| 3 | 18 | 10.7% | | | | | |
| 4 | 17 | 10.1% | | | | | |
| 5 | 15 | 8.9% | | | | | |
| 6 | 13 | 7.7% | | | | | |
| 7 | 12 | 7.1% | | | | | |
| 8 | 10 | 6.0% | | | | | |

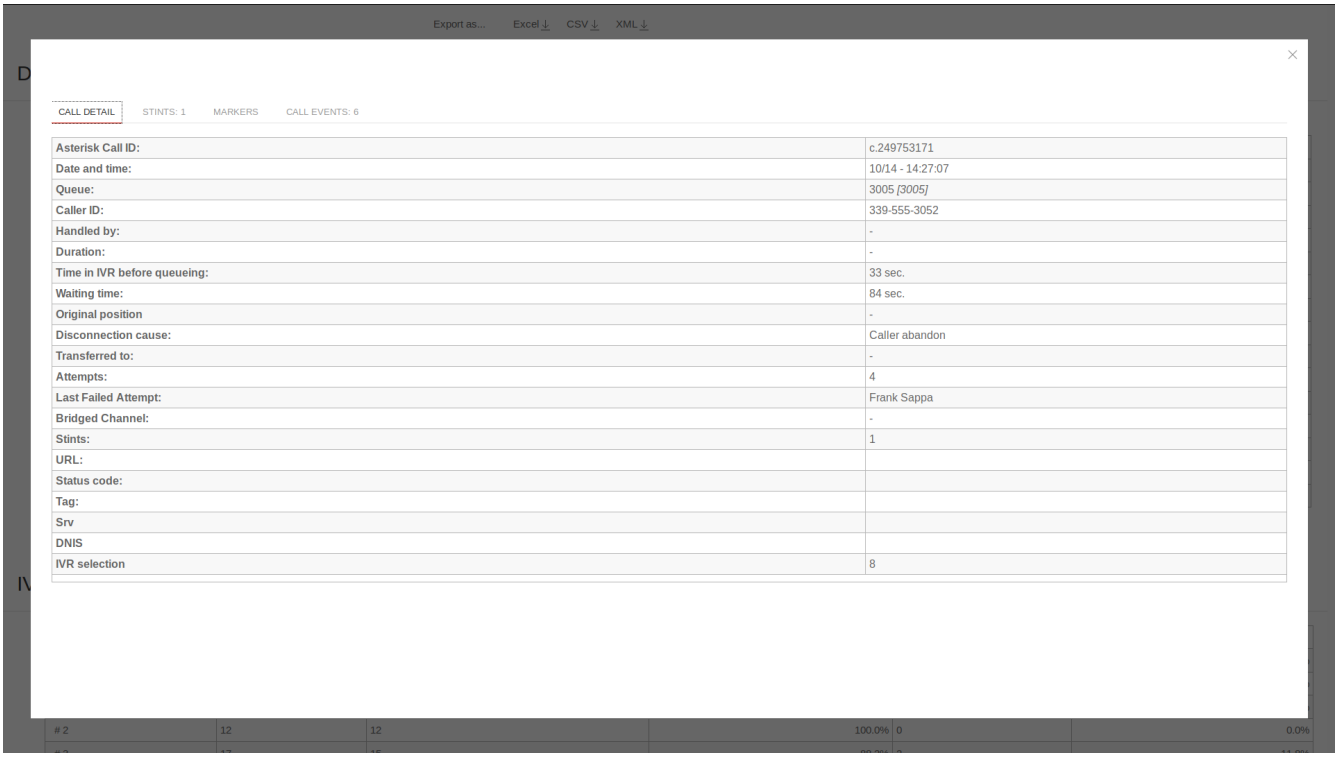
Export as... Excel CSV XML




## Queue Details

| Date | Caller | Queue | IVR | Wait | Duration | Pos. | Disconnection | Handled by | Attempts | Code | Stints | Srv | Feature Codes | Variables | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/14 - 14:26:57 | 756-555-9631 | 3005 | 3:13 | 0:12 | 0:08 | 0 | Caller | Frank Rabitt | 1 | | | | | | |
| 10/14 - 14:27:17 | 500-555-1179 | 3010 | 3:05 | 0:29 | 0:23 | 0 | Caller | Tim Cruck | 1 | | | | | | |
| 10/14 - 14:27:33 | 969-555-5308 | 3015 | 2:56 | 0:42 | 0:04 | 0 | Caller | Jacob Jules | 2 | | | | | | |
| 10/14 - 14:27:18 | 799-555-9892 | 3004 | 3:04 | 0:26 | 0:29 | 0 | Caller | Debbie Marks | 1 | | | | | | |
| 10/14 - 14:27:35 | 353-555-4925 | 3014 | 3:28 | 0:22 | 0:20 | 0 | Caller | Gill Whiseman | 1 | | | | | | |
| 10/14 - 14:27:19 | 862-555-7835 | 3008 | 3:47 | 0:45 | 0:07 | 0 | Caller | Agent/139 | 2 | | | | | | |
| 10/14 - 14:31:06 | 950-555-2686 | 3006 | 0:24 | 0:18 | 0:19 | 0 | Caller | Greg Gregson | 1 | | | | | | |
| 10/14 - 14:27:20 | 255-555-4944 | 3018 | 4:03 | 0:21 | 0:24 | 0 | Caller | Mark Heil | 1 | | | | | | |
| 10/14 - 14:31:12 | 900-555-7206 | 3012 | 0:11 | 0:22 | 0:25 | 0 | Caller | Agent/149 | 1 | | | | | | |
| 10/14 - 14:27:36 | 904-555-5900 | 3017 | 3:20 | 1:01 | 0:19 | 0 | Caller | Agent/137 | 5 | | | | | | |
| 10/14 - 14:30:24 | 635-555-6317 | 3005 | 1:51 | 0:20 | 0:01 | 0 | Caller | Frank Sappa | 1 | | | | | | |

Call details now appear as a modal dialog, with a lighter tab selector.




Developing the new UI was a major effort, as we had to basically rebuild everything, including parts of the presentation layer that were rather old. As a side effect, the new UI also opens the door to the complete white-labeling of the product, that will be available by Q1 2020.

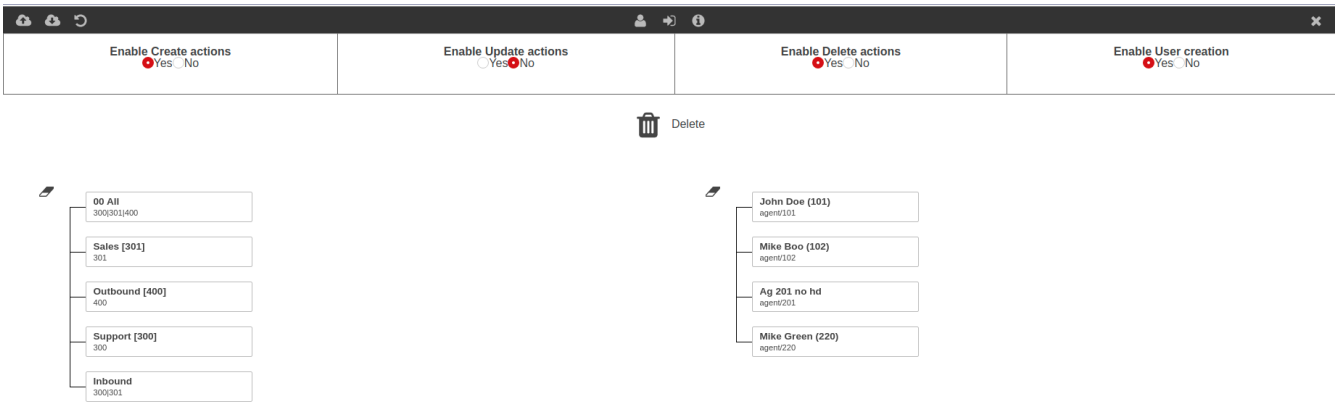
# The new Synchronizer module

The data Synchronizer was rewritten in order to be easier to use;

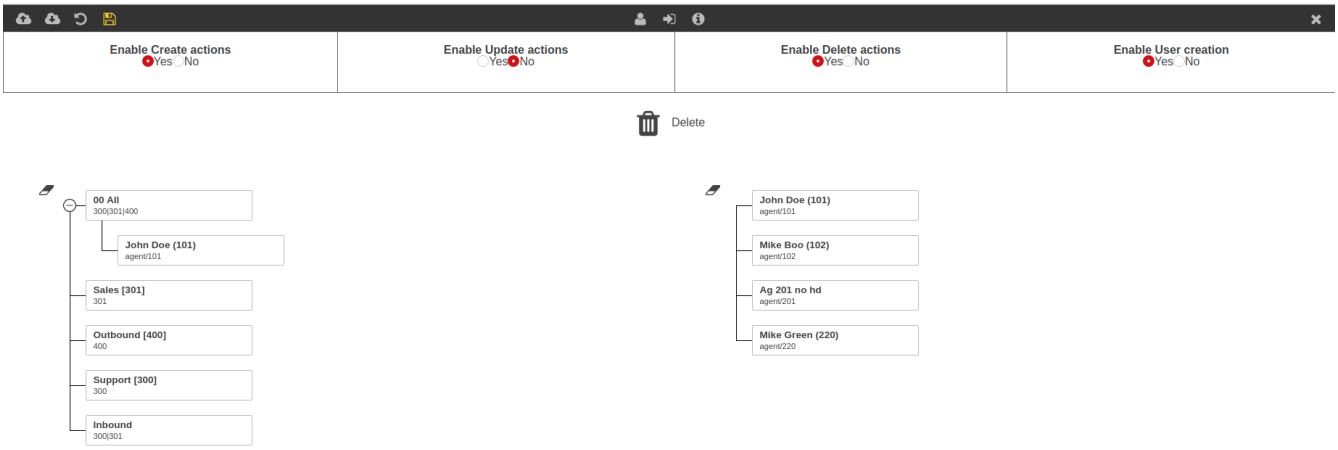
The Configuration Synchronizer module can be used to quickly configure QueueMetrics' queues and agents.

What the module does is the following:

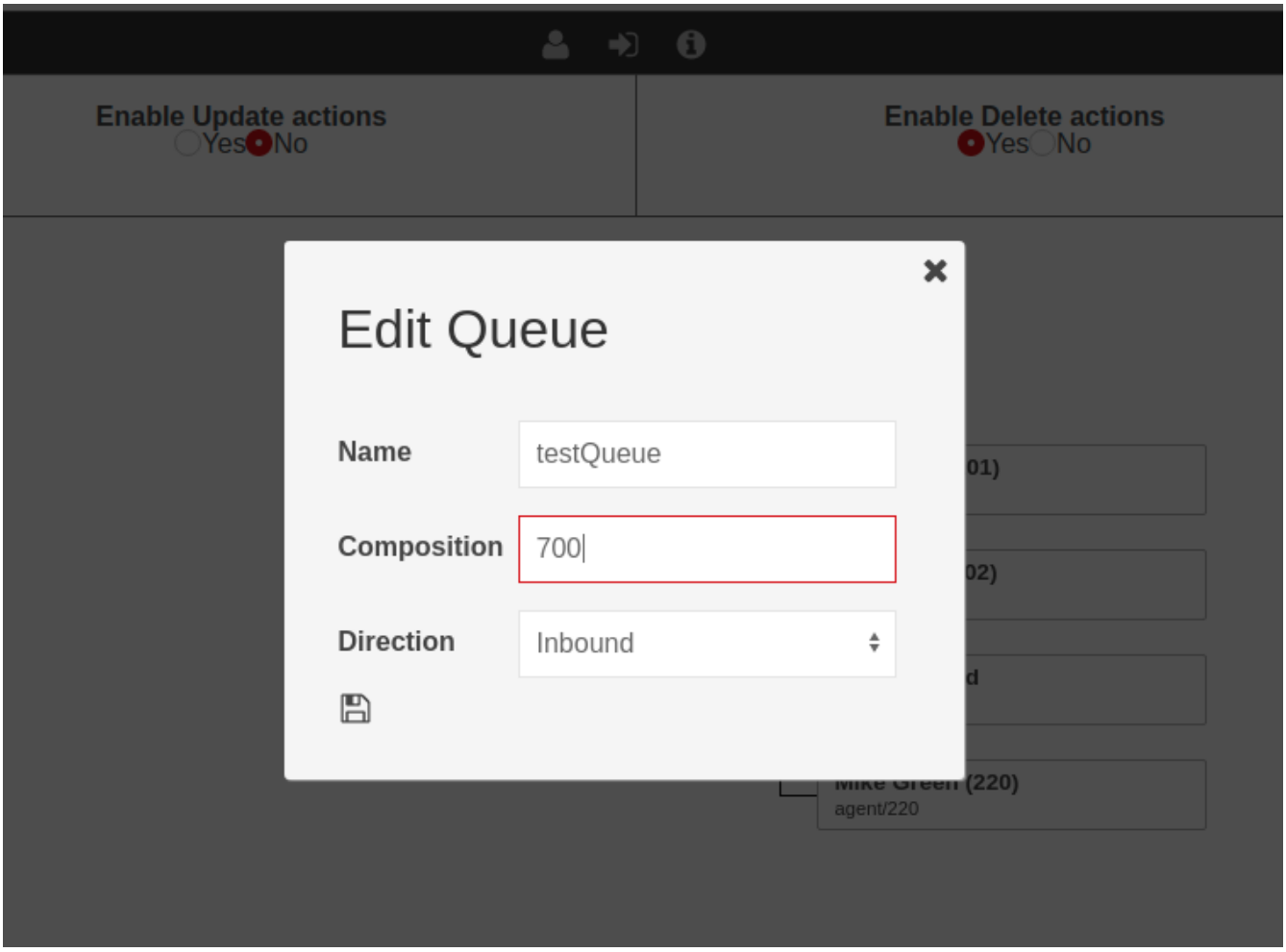
- Shows the current QueueMetrics configuration, in terms of agents and queues.



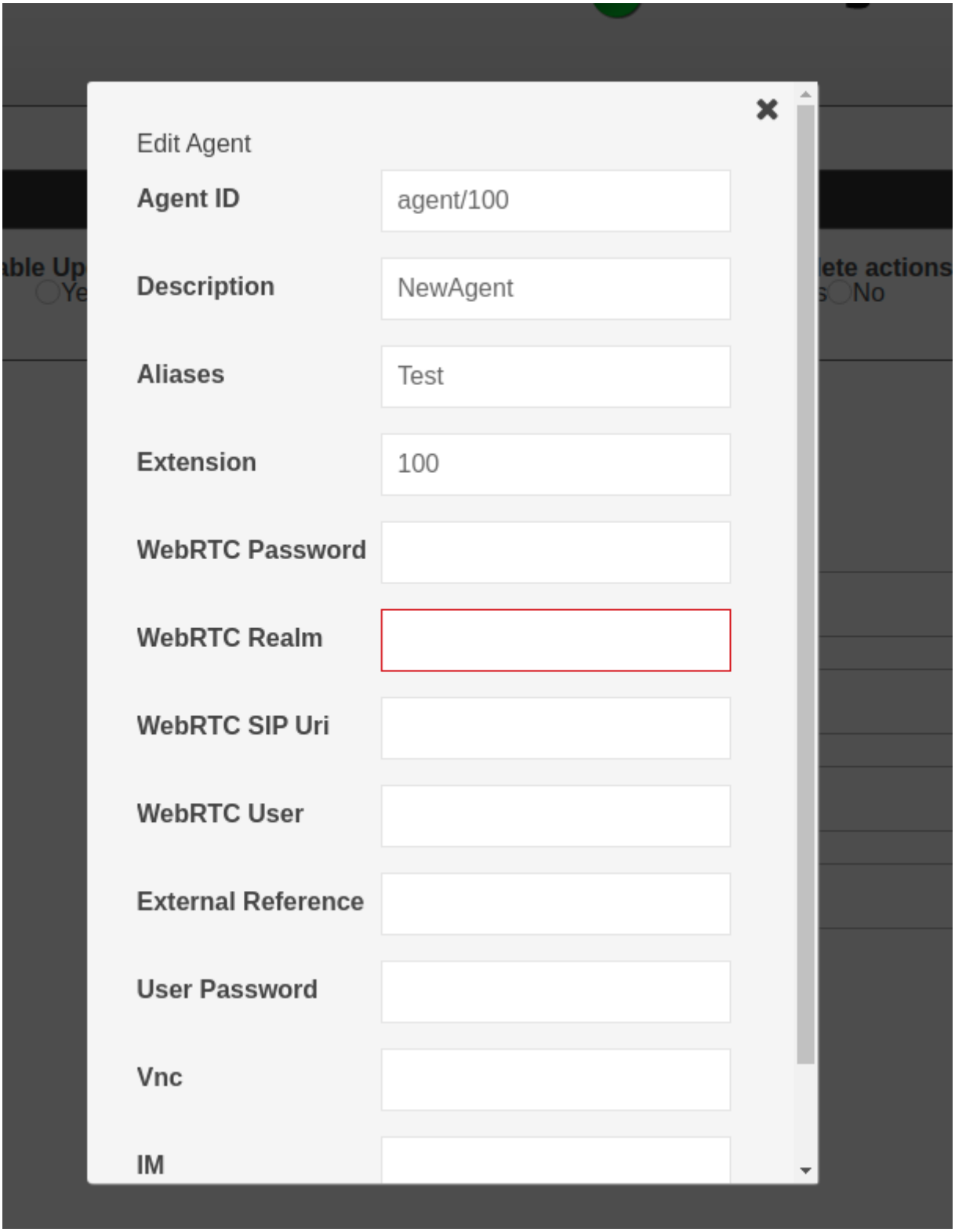

- Allows the user to edit agents, queues, and the association between agents and queues, by dragging the agents on the relevant queue.



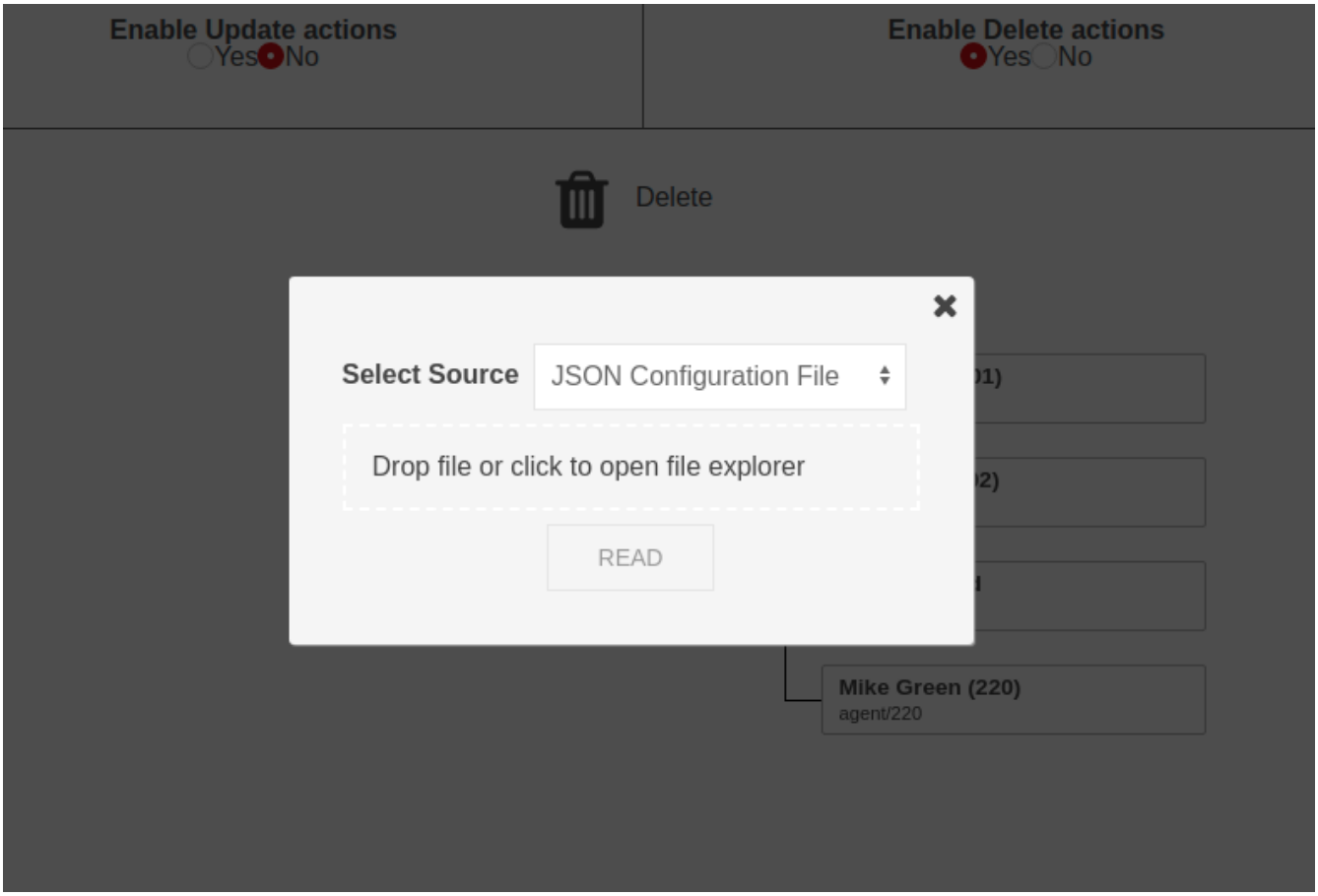

- Allows the user to create a queue.



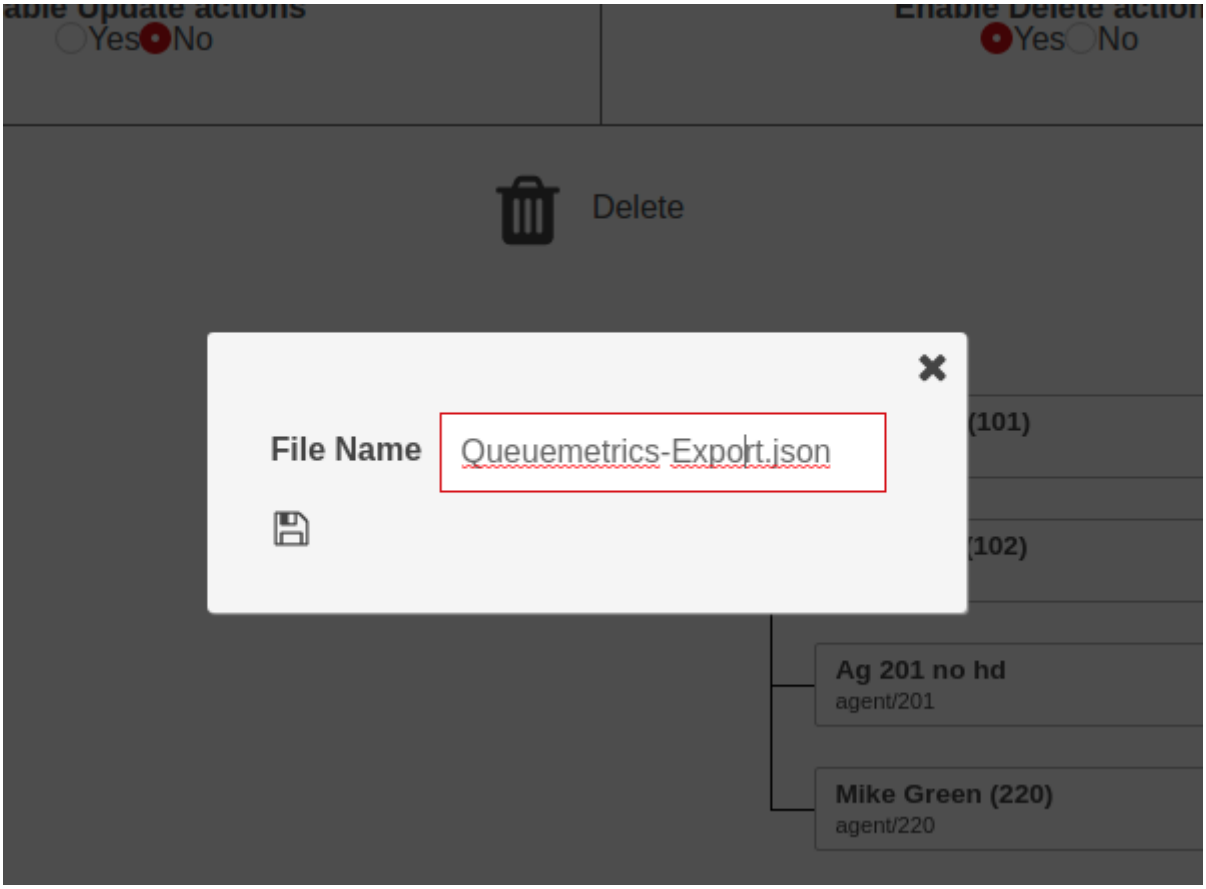

- Allows the user to create an agent.




- Allows the user to import a configuration from an external source.




- Allows the user to export a configuration for backup purposes, or to copy on another machine.




- Allows the user to save the new configuration, applying it to the system.

*See also:*

- QueueMetrics User Manual: Chapter 9. Editing QueueMetrics Settings

# Generic JSON API as an integrated platform

It is now possible to expose any PBX through a generic platform called `JSONAPI`.

This means that QueueMetrics is able to call a set of pre-defined JSON services and tell them **what** it wants done, so that they will implement the action in a way that is sensible for your PBX.

This platform lets you drive an arbitrary external system that implements a very simple declarative JSON API. This way, QM can control any PBX system, and it is often used to interact with cloud providers that "abstract away" the specific PBX API.

You can decide which features are enabled on your PBX back-end, so you do not have to implement all interaction features at once - for example, you could initially offer only agent login and log off, and add pauses or outbound as a second phase. Features that you did non explicitly turn on will be disabled.

- See also: QueueMetrics User Manual, "JSON API Actions"

# Improvements

## Security

An in depth third-party security assessment of the application has found a few security vulnerabilities, mostly theoretical, but this version includes significant work on data sanitization and improves the overall security of the product, especially when deployed on the public Internet.

> It is in any case advisable to deploy QueueMetrics behind a security proxy if you want to deploy it on the internet, or just use our QueueMetrics Live service.

## Performance

Based on large scale performance metrics gathered on our QueueMetrics Live service, we have improved the general performance characteristics of QueueMetrics by looking at the underlying architecture, and improving caching and run-time efficiency across all calls.

This has a significant impact especially for JSON services, leading to better execution times and improved latency.

# Misc notable changes

## Improved FreeSwitch/FusionPBX support

Support for the FreeSwitch platform now allows pausing with a pause code. Platforms have been re-factored to improve performance and offer better support for debugging, including a tester page

to display actions as they are executed.

### Testing SMTP delivery

A new page under DbTest lets you test the SMTP settings of your QueueMetrics instance. Setting up SMTP delivery for scheduled reports used to be rather annoying, as you had to log in and log off every time to test new settings. Now you can just try parameters in a page that will send a sample email message and will report on the full SMTP dialog with the server.

- See also: QueueMetrics User Manual, "Testing email delivery"

### New QA filters

QA reports can be run searching by caller-id and the call's unique id, either as fixed patterns or regular expressions.

- See also: QueueMetrics User Manual, "Quality Assessment in QueueMetrics"

### Support for Korean language

QueueMetrics 19.10 supports the Korean language, following a trend of a growing market based in Asia.

## Deprecations

- Sub-queues are officially deprecated and will be removed during 2020. If you still use sub-queues to handle different logical queues on a shared agent pool (e.g. for reservations of multiple hotels, events or movies, where you have different numbers for each item but have one large agent queue), you should migrate to call tags or DNIS.
- The AGAW client for Firefox is not supported anymore.
- As QueueMetrics versions prior to 19.04 might have issues displaying the real-time page by the beginning of year 2020, depending on the actual settings being used, we strongly suggest upgrading the system to avoid any risk.

## Bug Fixes

A large number of bugs were fixed in the release:

### Agent Page

- 4133 - Wrong agent status with All queues
- 4217 - Agent Page Softphone non answering call
- 4239 - extension field and actual extension are not aligned
- 4131 - "Default queue URL: " in the Queue configuration is not working.

## API JSON

- 4191 - New TPF architecture - compile warnings
- 4185 - JSON Services: auth run twice
- 4196 - Including new high-performance JSON services
- 4165 - Remove classes for "vloader"

## Real-time

- 4221 - Short calls filters not working on real-time
- 4231 - Licensed agents Alert missing the number of agents found
- 4236 - Busy number not updating
- 4113 - Extension non showing on realtime view in DirectAMI and hotdesking mode

## Platforms

- 4272 - FreeSwitch platform in webqloader mode cannot send more than one action
- 4154 - Dump AMi stanzas if directami.verbose with uniloader
- 4268 - FreeSwitch: sending pause code
- 4153 - DirectAMI: misleading num variable for optimizedagentchannel
- 4155 - Platform interface over JSON API
- 4285 - Issue with lost call in outbound dialplan

## Reports

- 4152 - All Scheduled Jobs failing
- 4175 - Running a custom report the "Agent Group:" does not work correctly
- 4259 - Duplicated tab check in the Report Creation not working correctly - XLS export fails
- 4212 - Non-contiguous time filter, in custom reports, not working.
- 4143 - Call Outcome Description not showing in reports.
- 4163 - ArrayIndexOutOfBounds on popupOk
- 4097 - Issue with Skills filter
- 4238 - dynamic tables js function for sorting is inconsistent for some columns
- 4136 - Scheduled jobs fail with non-Ascii characters
- 4213 - Dynamic report exception on page reload
- 4181 - Hiding Agent Level column from reports
- 4226 - Using cached LProperties

## Wallboard

- 4224 - Memory leaks crash wallboard
- 4102 - Agents Ready Widget shows the incorrect number of agents.
- 4098 - Live agents table does not filter for more than one queue
- 4251 - Wallboard keeps pinging server now that too many agents error has changed
- 4124 - Live Calls sorting by agent sorts by agent code and not by agent name
- 4245 - Circular Panel bar not showing for CallsWaiting circular panel
- 4123 - call actions call table does not appear if call list is not on the wallboard
- 4115 - If cluster list is populated in conf.properties but cluster mode is off, call actions don't work
- 4182 - Widget not displaying correctly the alert
- 4256 - Softphone events should possess dedicated Humanized Messages
- 4125 - Agent Actions OK button does not work if not in hotdesking mode

## Configuration

- 4112 - "default.alwaysLogonUnpaused" parameter issue.
- 4091 - User classes should appear with the name instead of the number in the Synchronizer configuration
- 4249 - Synchronizer v2 React Graphical Interface and new services
- 4273 - NullPointerException in Synchronizer, is PBX array is null
- 4248 - Testing SMTP delivery

## QA Module

- 4161 - Additional QA filters

# QueueMetrics 19.04

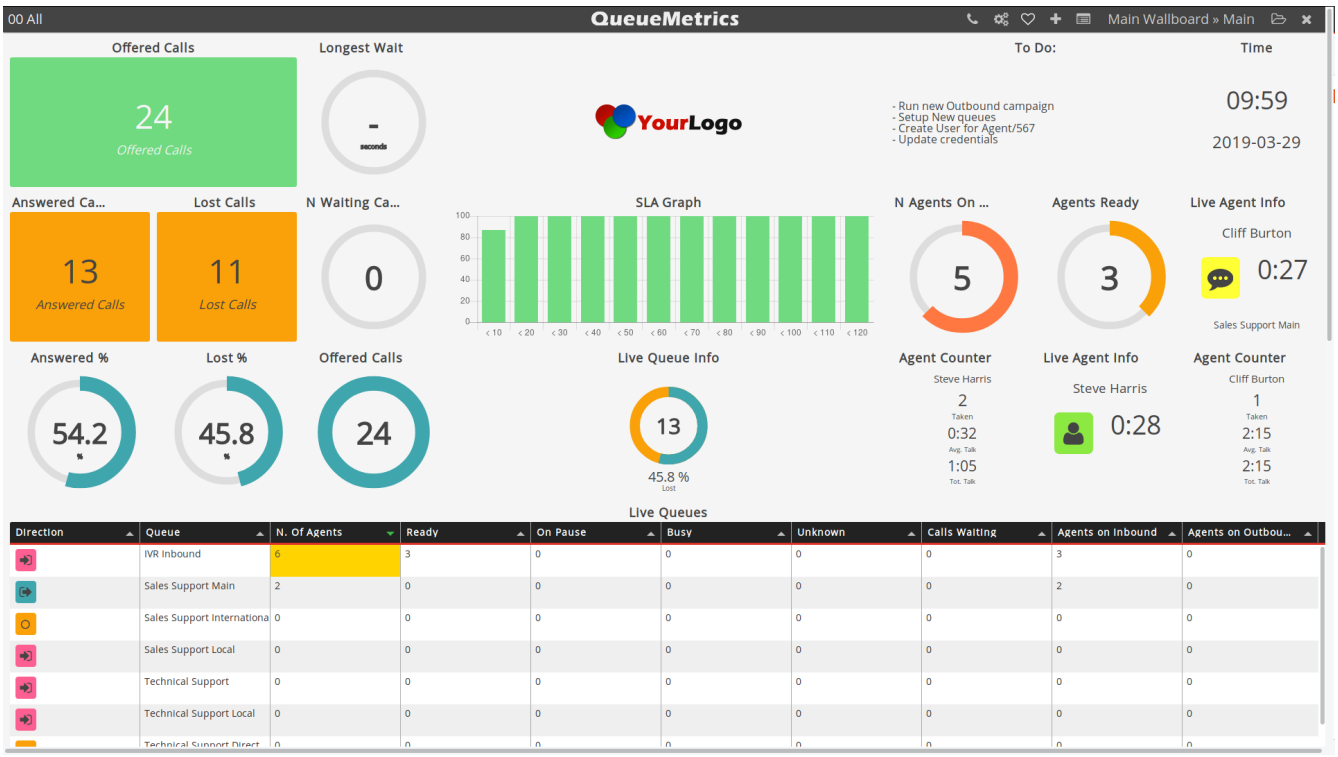
Release 19.04 introduces a series of new features that make it easier to use and run it "your way". Let’s take a look at the most important additions:

- New wallboard features
- Spy, Whisper and Barge
- Improved reporting: Lost calls, Short calls and Variable filters
- Better WebRTC support and experimental support for Freeswitch
- Explicit support for proxies
- New reporting engine under the hood
- Deprecations and possible issues with older versions
- Bug Fixes

QueueMetrics 19.04 is immediately available as an RPM package, a TGZ file or a Docker image on DockerHub.

## New wallboard features

The wallboard was greatly improved and expanded to reach feature parity with the Real-Time page. Now, whatever you used to do with the Real-Time page is doable with a wallboard - and completely configurable. You can have different wallboards for different use cases (e.g. interactive monitoring) and they can be composed your way to display only information that is relevant to you.



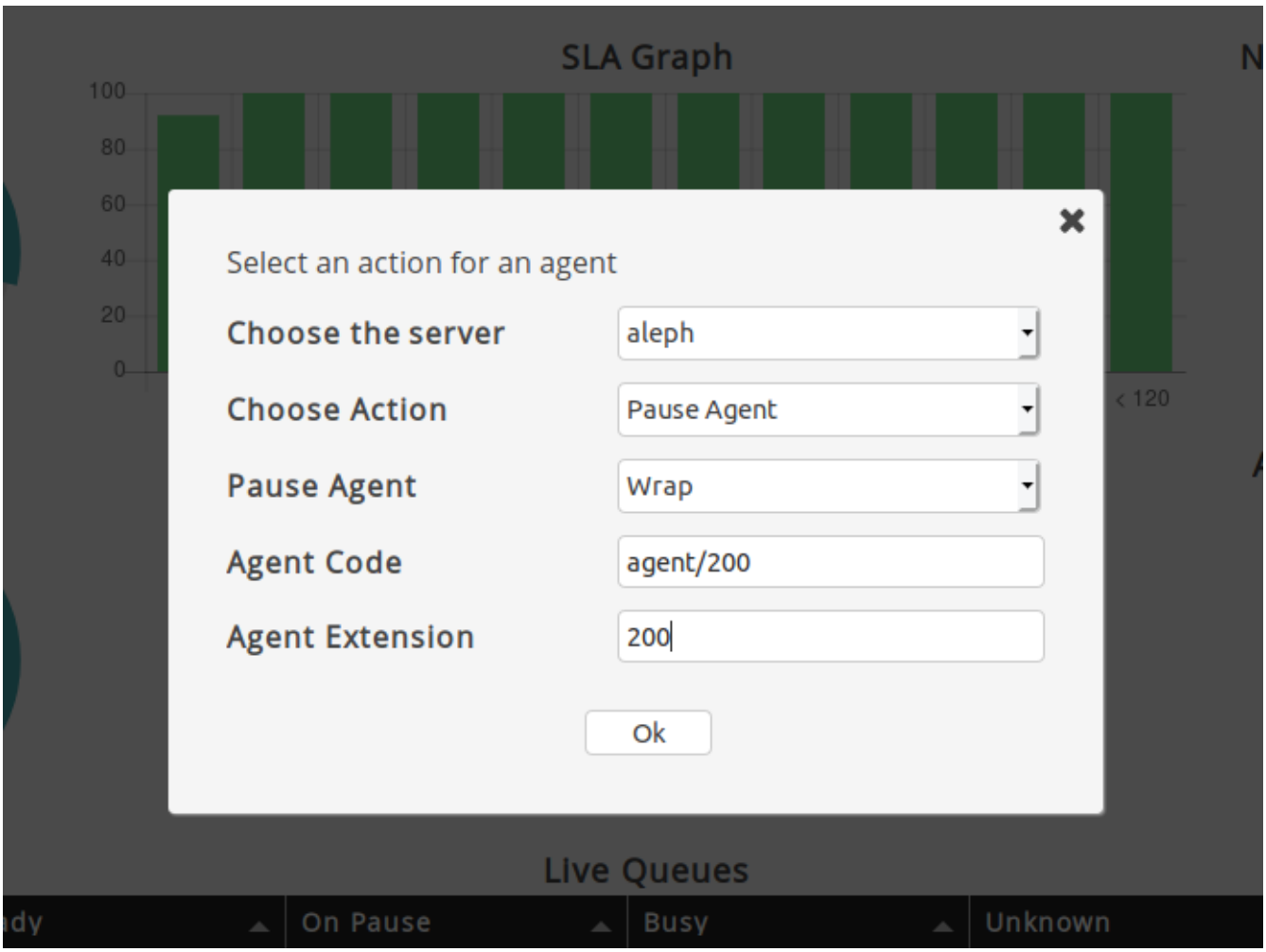

- All data blocks shown on the Real-Time page are available on the wallboard
- For all tabular blocks, you can now filter, sort and decide which columns are relevant to you

| Status | Agent | Extension | Queue | On Pause | Code | Current Call | Conversation | Free Since |
|---|---|---|---|---|---|---|---|---|
| | Steve Harris | | IVR Inbound | | | | | 11:42:17 |
| | Cliff Burton | | IVR Inbound | | | 269-555-1067 | 3:27 | |
| | Test RPM2 | | Front Desk nome coda molto lu | | | 498-555-9181 | 3:37 | |
| | Carol Kaye | | Front Desk nome coda molto lu | | | 378-555-8804 | 0:07 | |
| | Peter Hook | | Front Desk nome coda molto lu | | | 370-555-8853 | 0:13 | |

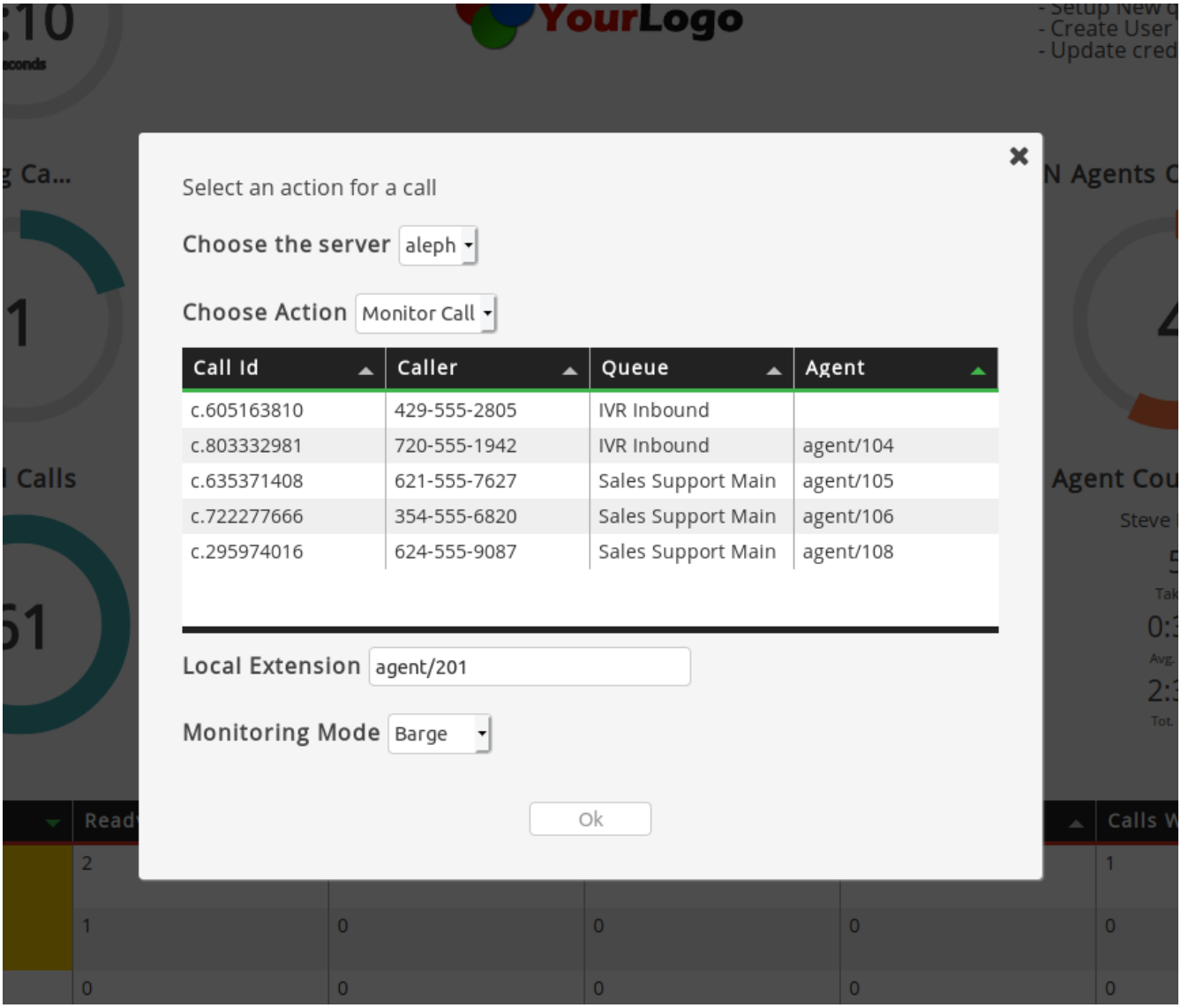
Live Calls

| Status | Queue | Caller | IVR | Wait | Talk | Agent |
|---|---|---|---|---|---|---|
| | IVR Inbound | 394-555-6534 | 0:02 | 0:18 | | |
| | Front Desk nome coda molto lungo per | 370-555-8853 | 0:01 | 0:10 | 0:13 | Peter Hook |
| | IVR Inbound | 269-555-1067 | 0:01 | 0:03 | 3:27 | Cliff Burton |
| | Front Desk nome coda molto lungo per | 498-555-9181 | 0:03 | 0:01 | 3:37 | Test RPM2 |
| | Sales Support Main | 342-555-1841 | 0:03 | 0:01 | 1:03 | Justin Chancellor |
| | Front Desk nome coda molto lungo per | 378-555-8804 | 0:02 | 0:01 | 0:07 | Carol Kaye |

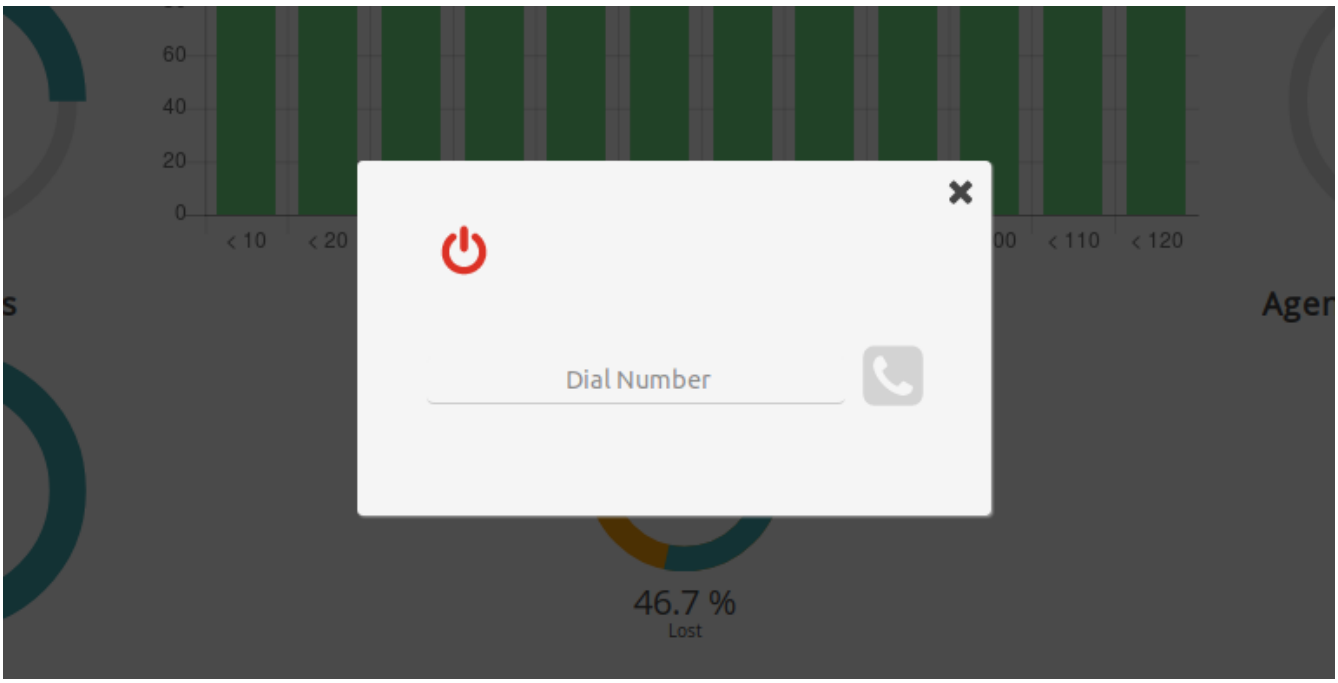
- You can log agents on and off, and pause them



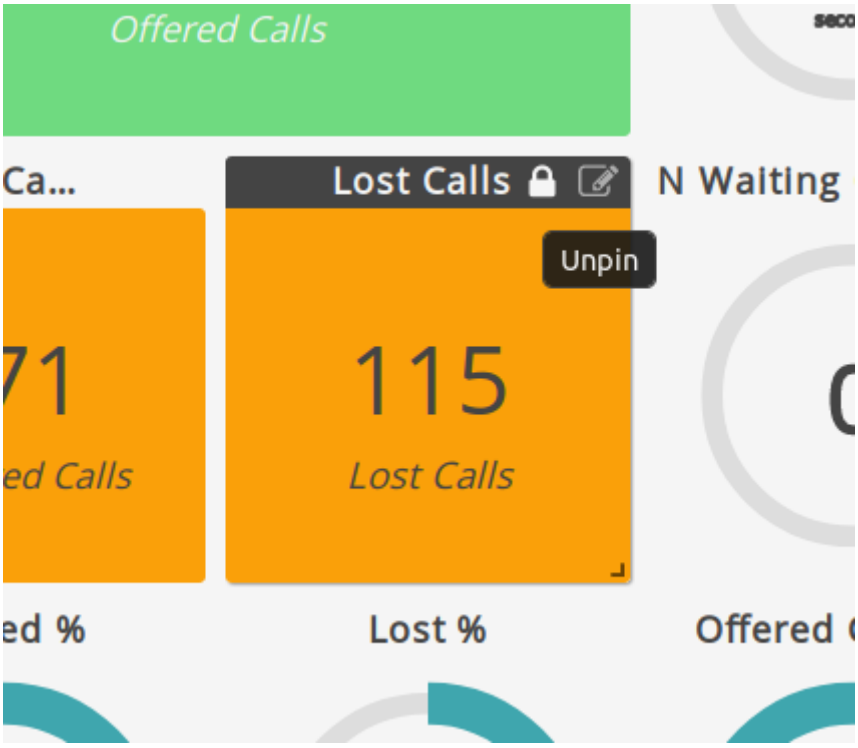

- You can manage calls (transfer, hangup) and do spying right from the wallboard



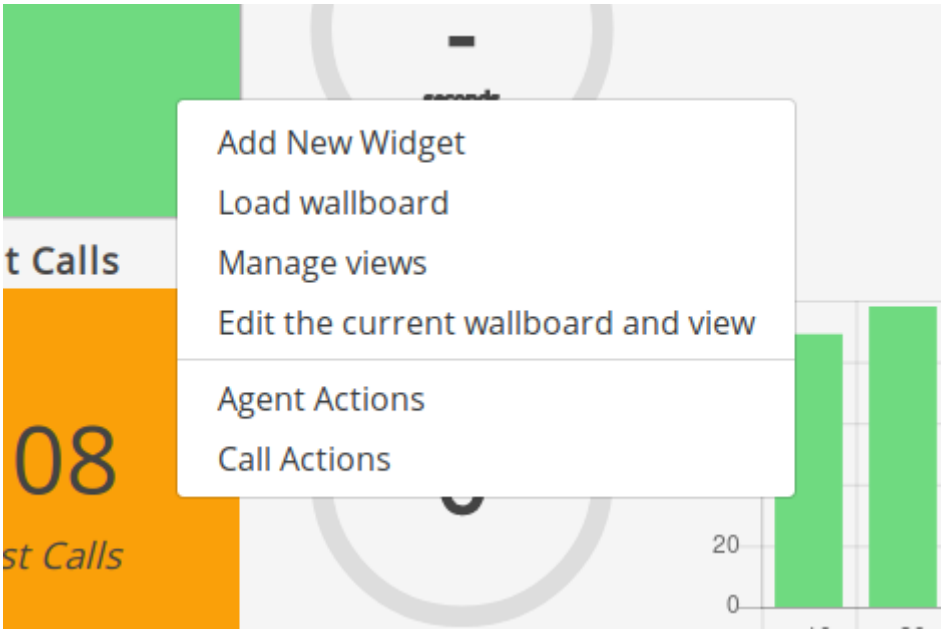

- The wallboard includes a WebRTC soft-phone, so you can do spying right within the browser



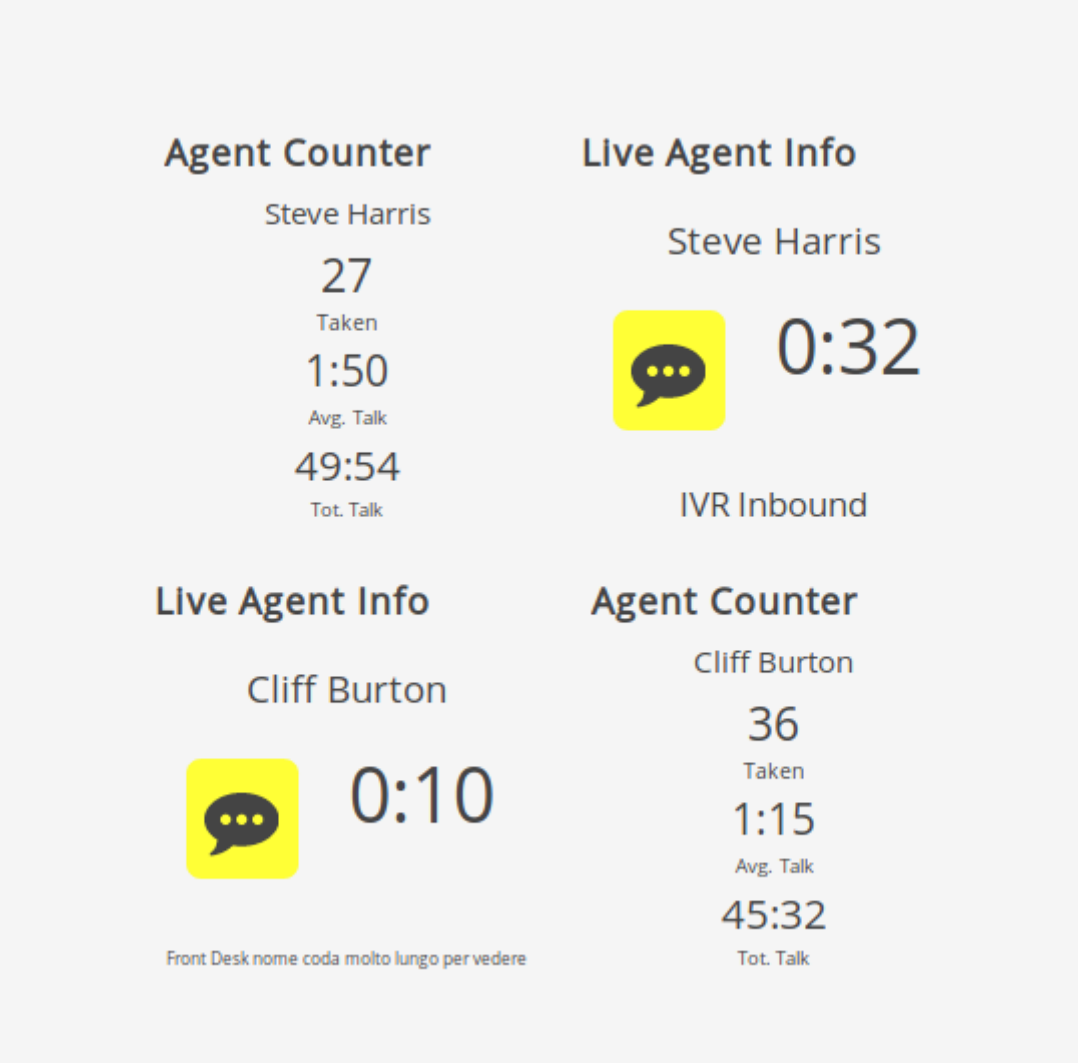

- Widgets can be "pinned" so they remain in place if you need to copy-and-paste




- All actions can be started by right-clicking on the wallboard




- New widgets display per-agent counters



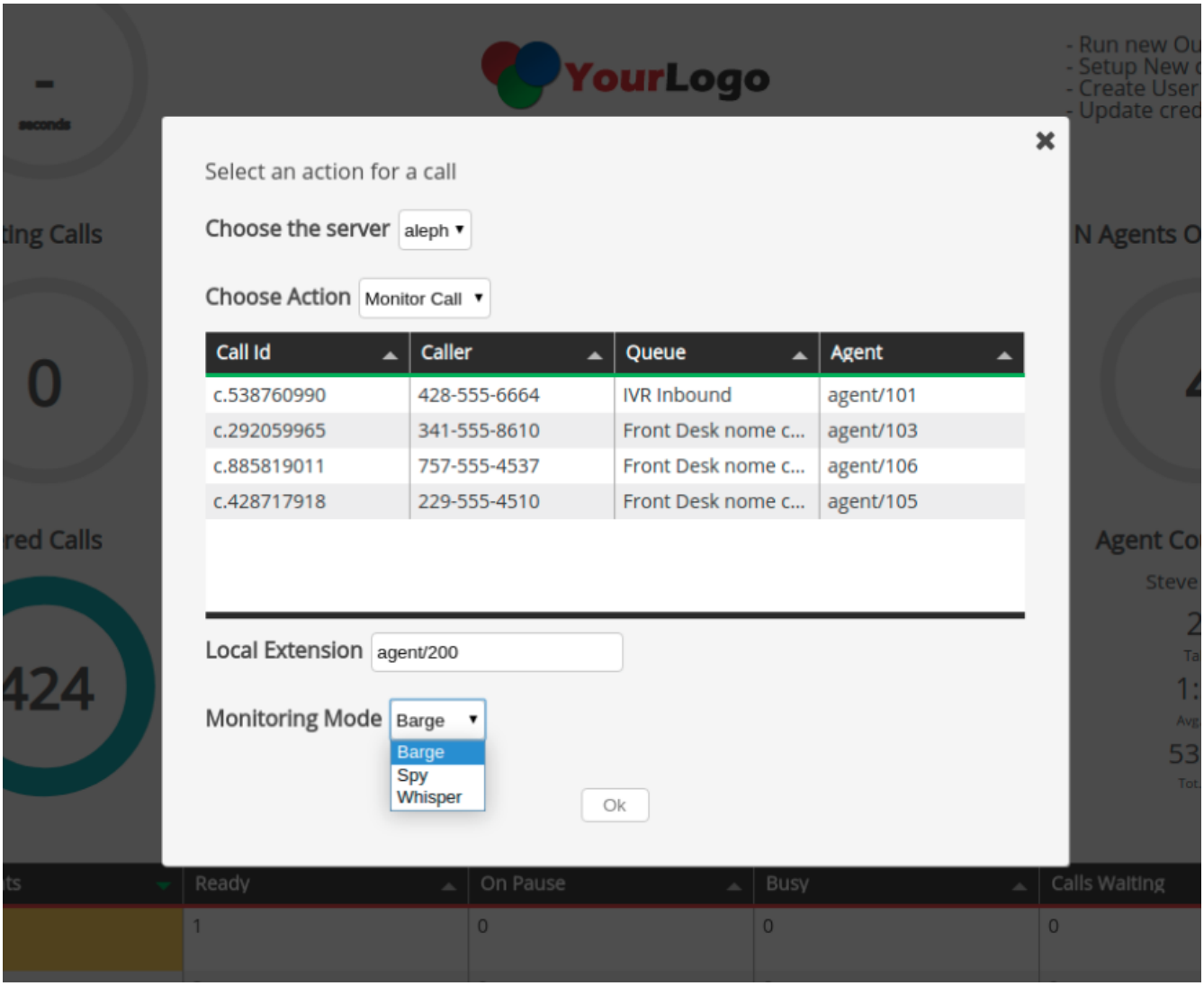

- You can now have as many columns as you need for very large screens

*See also:*

- QueueMetrics User Manual: Chapter 8. The Wallboard

## Spy, Whisper and Barge

QueueMetrics used to have only one "spy" option to listen to ongoing calls. Now you have three - you can spy, or whisper (you can talk to the agent only) or full barge-in into the call.




These features are controlled by security keys, so you can easily assign them only to relevant personnel.

*See also:*

- QueueMetrics User Manual: Appendix A. Security keys

# Improved reporting

## Lost attempts

Performance metrics on the Real-time page now include "lost attempts", to see immediately which agents and which queues are not answering to calls. These metrics are available on the wallboard too.

**Agent and outcome view:**

| Agent | Status | Offered | Answered | Lost Att. |
|---|---|---|---|---|
| | Lost Calls | 139 | 0 | 0 |
| Test RPM2 | Logged on - 14:23 | 42 | 42 | 28 |
| Stanley Clarke | Logged on - 0:30 | 42 | 42 | 33 |
| Carol Kaye | Logged on - 27:57 | 39 | 39 | 24 |
| Steve Harris | Logged on - 17:33<br>Paused - 0:01<br>(p2) | 30 | 30 | 22 |
| Cliff Burton | Logged on - 10:06 | 42 | 42 | 21 |
| Lemmy Kilmister | Logged on - 2:27 | 40 | 40 | 23 |
| Peter Hook | Logged on - 20:43 | 40 | 40 | 13 |
| Justin Chancellor | Logged on - 27:08 | 37 | 37 | 29 |

*See also:*

- QueueMetrics User Manual: Chapter 7. The real-time status panel

## Short calls

QueueMetrics is now able to filter out "short calls", where the agent picked up the call but the caller hung up within a few seconds. The same can happen to calls where the caller hung up as soon as they were queued and call attempts where the phone rang too shortly for an agent to pick up the call.

*See also:*

- QueueMetrics User Manual: Chapter 4.3. Custom reports

### Filtering by variables

You can now search for calls that have specific variables set, or specific variables set with specific values. You can search for multiple variables at once.

*See also:*

- QueueMetrics User Manual: Chapter 4.3. Custom reports

## Better WebRTC support

QueueMetrics uses an updated soft-phone to improve compatibility with recent versions of Asterisk; we expect it to offer a smoother experience and be usable in real-life with all major modern desktop browsers.

## Experimental support for Freeswitch

QueueMetrics now supports events from Freeswitch's `mod_callcenter` and agents can use their Agent's page to log on and off, pause themselves, see calls and launch CRM application.

The Freeswitch platform is considered experimental at the moment.

*See also:*

- QueueMetrics User Manual: Chapter 12.5.5. Freeswitch actions (and 12.5.6. Freeswitch Live actions)
- Uniloader User Manual: Chapter 7. FreeSwitch / FusionPBX support

## Explicit support for proxies

It is now common (almost mandatory) to run QueueMetrics as an HTTPS service, both for security and for running WebRTC phones. While this is possible by configuring the Tomcat container, we strongly suggest to put a proxy in front instead. This makes it possible to consolidate QueueMetrics as a part of a shared front-end that in turns proxies different services you run.

We created a guide that explains how to set up an HTTPS proxy using NGINX and explains which headers QueueMetrics needs in order to run successfully, and how to debug it.

*See also:*

- QueueMetrics Advanced Configuration Manual: Chapter 30. Serving QueueMetrics through a NGINX proxy

## New engine

QueueMetrics includes a new reporting engine that is more efficient than the previous one, can work on complex query filters and is able to pull data from different data sources at once. This bears no user-visible changes in this version, but was a major project to grow QueueMetrics

towards more integrations in the future.

# Deprecations

- Subqueues are officially deprecated and will be removed in the next release.
- It is possible that QueueMetrics version prior to 19.04 might have issues displaying the real-time page by the beginning of year 2020. This depends on the actual settings being used, but we strongly suggest upgrading the system to avoid any risk.

# Bug Fixes

Here is the list of bugs that were fixed in the new release.

## Agent Page

- 4060: Running Icon on large (or small) screens
- 3957: If HotDesking agent's alias is set as sip/xxx some functions don't work in Icon
- 4069: Old RT report runs on agent log-in to queue
- 3844: JavaScript encoding error with persistent parameters
- 3911: New WebRTC softphone with JsSIP
- 4034: Support for Login/Logoff actions
- 4044: GWT: packing IE together
- 3830: Integrated WebRTC phone becomes unreachable after a short period and doesn't work as intended
- 3861: If the feature code on the agent page is long the window doesn't stretch

## Parser

- 4076: Cluster mode appears to include all possible cluster.* entries
- 3823: Parser is not setting end timestamp for rejected outbound calls
- 3951: New one-shot engine logic

## PBX Platforms

- 4032: Chanspy does not work with DirectAMI
- 4011: Platform PBX: Freeswitch
- 4062: "platform.directami.spyoptions" unused in ChanSpy.
- 4009: Platform - New features: Join and Whisper
- 3966: Add a queue wildcard for extension configuration
- 4008: Transport of DirectAMI over Uniloader
- 3829: Possible Problem with QM_AGENT_LOGEXT during pause

- 4004: DirectAMI: \$\{num:1\} syntax
- 4038: Freeswitch platform does not work if webloaderpbx=true

## Real-time page

- 3809: Include lost attempts on Real-time Offered calls
- 3808: Adding columns "Since" to see how long an agent was in current state
- 3894: A user without the key granting access to reports can access them via the Realtime page clicking the "Run a Report" icon.
- 3855: Call waits in the queue but doesn't show up on the wallboard until it gets answered

## Reports

- 3888: Merge short calls
- 3931: "Detail Summary by day" is displaying the wrong Lost Calls number.
- 3944: Add delay to cron jobs
- 3788: Display `Since` on the RT page
- 3810: Total Wait and Free, new columns in AG13
- 3943: Support for Galera clusters
- 3958: Agent group filter from realtime page carries over to reports
- 4041: Displaying nested filters
- 3984: QM should be totally usable through a web proxy
- 3821: Using MultiListener in a cluster
- 3912: Unable to filter for variables inside the custom reports
- 3820: New Short Calls module
- 3842: ShortCalls: unify parameters
- 4061: Error exporting PDF reports

## Wallboard

- 3876: Wallboard new features
- 4035: Add RT Functionalities to the Wallboard Page
- 4010: Whisper and Join on the Wallboard page
- 4058: Bottom RT tables available on wallboard
- 4054: "Live Queue info" circular panel data not consistent
- 4020: Wallboard messages can stack and take too long to disappear
- 4053: "Live agents table" column typo
- 3879: Edit SLA levels from the wallboard

- 4052: In the Widget configuration, the title has a character limit that is not very clear
- 3877: Composite queue filtering for Wallboard widgets
- 4005: Change Wallboard Tables to customizable Tabulator tables
- 3883: New Widget with agent information
- 4051: "N Answered Calls" Circular Panel not displaying correctly
- 3882: Make wallboard filters selectable from inside the wallboard
- 3940: Right clicking on the Wallboard feature
- 4050: Column filter for tables does not work immediately, but requires a page reload
- 3980: Live Agent Info widget shows Incorrect Idle time if agent has not taken any calls
- 4023: Firefox issues with the WallBoard.
- 3881: Raise wallboard possible columns number
- 4049: List Wallboard panel does not open since passing to React16
- 4021: Scrolling in the wallboard tables does not work
- 3880: Widget setting graphics improvements

## QA

- 3854: QmQaFormSummary does not filter for agent (?)
- 3860: QA Grading mistakenly searches for recordings with wrong asterisk ID (Uses bridged channel instead)
- 3926: Call Notes on recordings inside the QA reports are incorrect.
- 3893: Extracting QA reports using the API, unanswered questions return "0" instead of ""

## JSON API

- 4064: Calls appear not closing - wrong rowId when inserting new rows same second
- 3917: Creating a user using jsonEditorApi.do you get a java.lang.NullPointerException error, even tough the user is created.
- 4012: Return a flag to uploadAll to notify of pending actions
- 3803: API Call User creation throws NullPointerException
- 3995: Service insertRow does not work

## Configuration

- 3909: Scheduled jobs cannot be cloned
- 4059: Custom ICE/STUN server support
- 4030: External References for Agents and Queues
- 3990: Adding link to manual on reports editors
- 3915: Wrong name for cronjobs.localwebapp in cfg explorer

## Misc

- 3813: Scheduled reports not working: jdbc_uri empty on startup
- 3849: In Configuration Synchronizer the Users are not being created for the agents.
- 3895: Scheduled jobs not running on schedule under Java TZ offset
- 3941: Duplicate batches inserted on Live
- 3986: Display HTTP headers in config
- 3985: Displaying pending AMI actions queue
- 3969: User info, from the License information page does not reset the number of logins for new instances
- 3913: OrekaBase still uses Mysql driver instead of Mariadb
- 3890: Synchronizer does not show user creation actions
- 3956: Missing property name in Explore system parameters

# WombatDialer 18.08

## Introducing WombatDialer 18.08

Loway is proud to announce the release of WombatDialer 18.08; a focus on visibility, future-proofing and integration makes it the intelligent dialer of choice for your modern call-centre.

## What are the main improvements for this release?

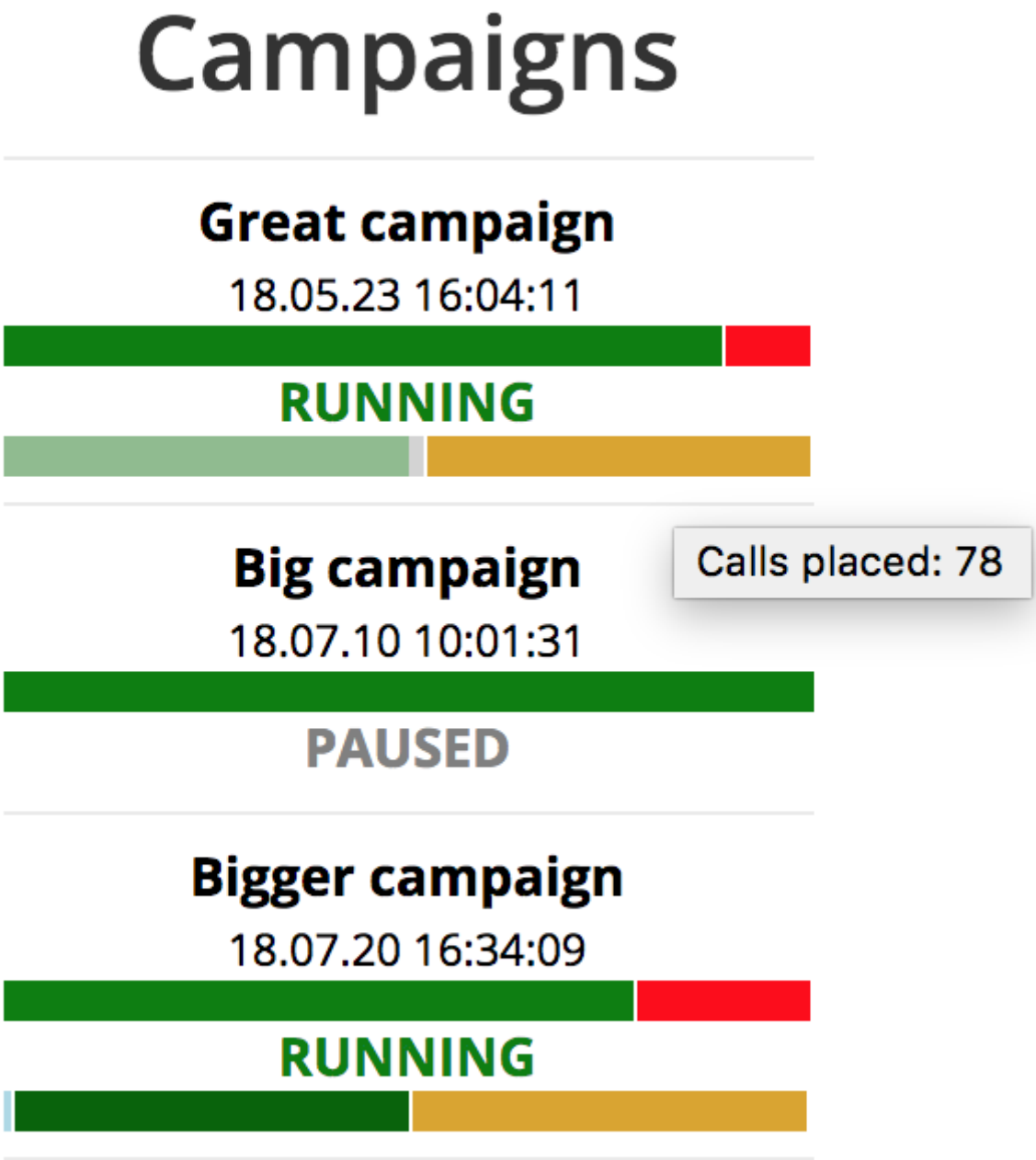
- Improved visibility into the dialer
- Support for different kinds of servers
- Dialing and Rate limiting
- QueueMetric integration
- Database maintenance
- Infrastructure

On top of this, about 7**0 bugs and minor issues** were fixed.

## Improved visibility into the dialer

We wanted to make it easier to understand what WombatDialer is doing. Why is the dialer calling so slowly? why is it making just so many calls? should I use a larger batch size when reading calls?

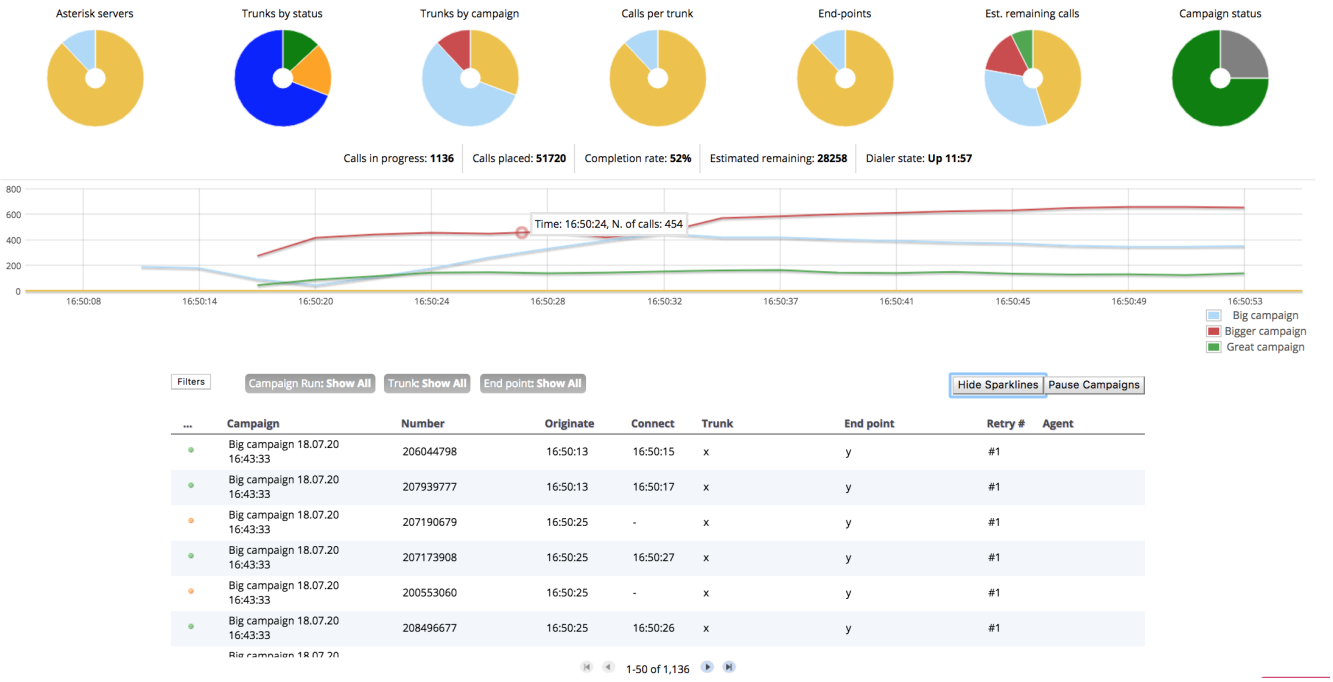
It is now possible to get insight into **the decisions WombatDialer is taking** when running a campaign - so you can see if the dialing is limited by not having more channels, or by a slow database access, or because you forgot to define and end-point for that campaign, so it will not dial at all!




We have also added a way to **run connection tests** to servers, trunks and end-points. Often an incorrect dial string, or the wrong password, or a mis-spelled queue name, would leave you wondering what was wrong. No more! Just click a button, and a test will be run to assess that the component is working as expected.

We have added **hints and tips** to some GUI editors, so that expected formats of variables and itens are displayed exactly where you need them.

We have also improved the **sparkline graphs** that display in real-time how many calls are being dialed, so it is easier to see how multple runs interact with each other and whether you are dialing at full speed or not.




The real-time page is now snappier in displaying **updated information** coming from the dialer, making the interaction more pleasant and easier to use.

# Support for different kinds of servers

WombatDialer 18.08 allows you **select the kind of server** it connects to. At the moment, it's either a normal AMI connection to Asterisk or a *Fake server* that will simulate a PBX receiving traffic - quite useful for load tests, without having to manually create the PBXs for your infrastructure.

In the future, this gives us the opportunity to better support different PBXs - e.g. different ways to connect to Asterisk, or support for specific models / makes.

# Dialing and Rate limiting

If you have run Wombat in high-load scenarios, you know that sometimes Wombat has a problem - **it dials too fast!** Depending on the kind of agreement you have with them, some upstream providers may not like receiving too many calls at once and may black-list you for a while if you do. To solve this problem, it is now possible to **enforce a specific CPS (Calls Per Second) rate for each trunk**, so that you do not risk flooding your provider when you launch a new campaign.

We also improved the **campaign scheduler** in order to have a fairer attribution of calls to different campaigns when running multiple campaigns in parallel with the same importance.

# QueueMetric integration

WombatDialer improved its QueueMetrics integration by **reporting variables and attributes** to the "queue" side of the call - so they wil appear automatically on the Agent's page in QueueMetrics, and integrations with CRM's and intranet applications will "just happen" as for any other inbound call in QueueMetrics.

This means that that information is immediately available on the QueueMetrics Icon page, so the agent can see and you can also use it to control automated CRM screen-pops.

# Infrastructure

WombatDialer was updated to run on a **modern Java 8/Tomcat 8** infrastructure. JDBC drivers were updated to the new high-performace MariaDB drivers. Existing systems doing a migration should look on the User Manual for specific tips. Starting from this version, we do not support CentOS 5 systems anymore (but they are obsolete and insecure - if you still run them, it's time to move on).

We now allow for **HTTPS interactions** in all service calls that can be defined in WombatDialer.

WombatDialer also supports **secure password storage**, to better protect your user accounts.

# Database maintenance

WombatDialer 18 now has an integrated script that is used to **clean the database of obsolete and unused data**. While this is not required but on the biggest systems, it will make your life easier when maintaining and backing-up the system.

# Misc items

- Agents are tracked correctly even they set Music on Hold
- Campaigns are now cloned in their entirety
- AMI load is significantly reduced if you run hundeds of queues
- Synthetic logs are easier to parse and events maintain their ordering
- Reschedule rules can be set as not to increment reschedule count
- Shorter error traces are stored on the system log
- Completed lists are hidden from Active lists

# QueueMetrics 18.04

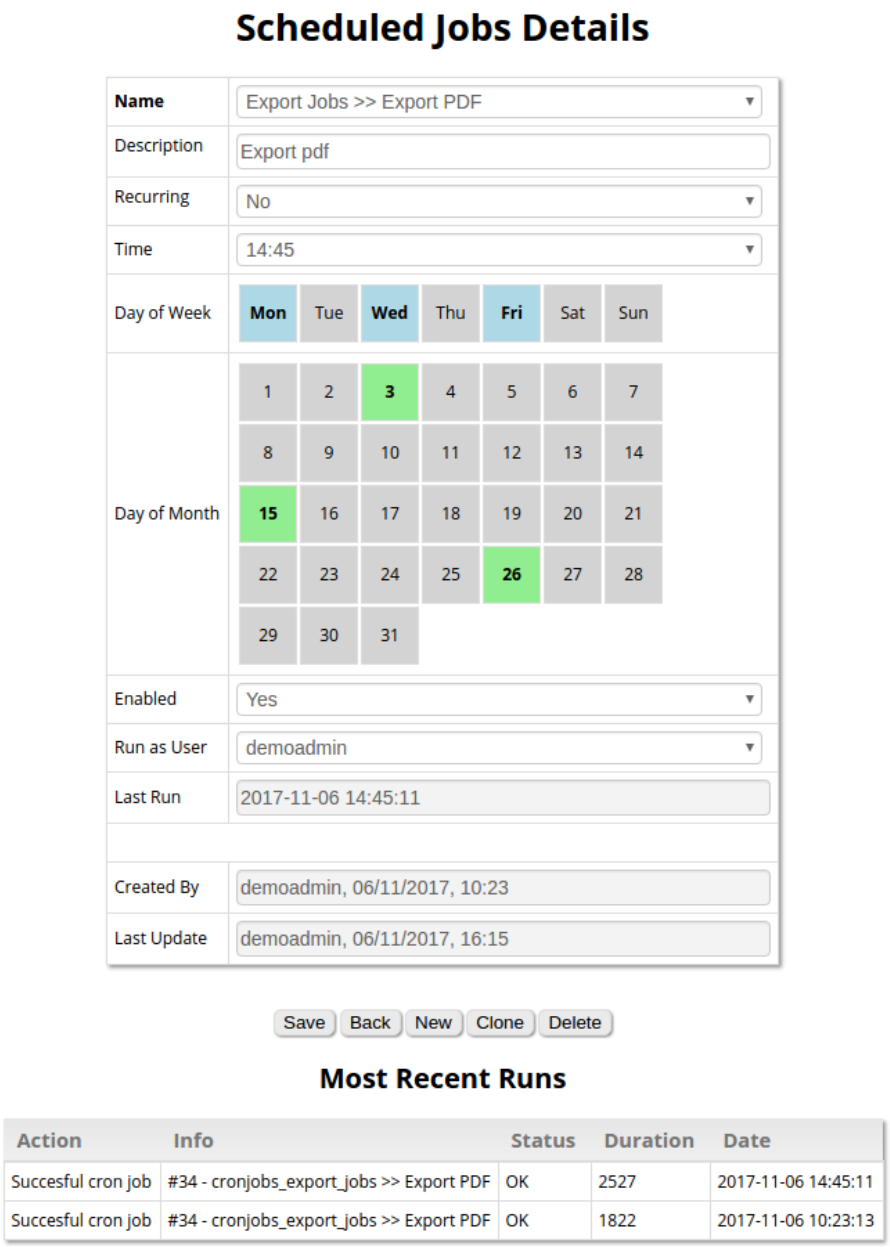
Release 18.04 introduces a series of new features to improve user's security and ease of use. Let's take a look at the most important additions:

- Scheduled Jobs
- Wallboard Queue Filtering
- QueueMetrics and CallCabinet Integration
- Configuration Synchronizer Upgrade
- Password Encryption
- Agent Page - Call Variables
- New Reports
- Old Agent Page is officially deprecated
- Qloader is officially deprecated
- Bug Fixes

## Scheduled Jobs

Now QueueMetrics comes with a new feature, Scheduled Jobs, that allows the user to specify a certain task to be executed at an appointed time, or repeatedly at a fixed interval.

You can schedule different types of jobs, such as sending reports by email on a regular basis, or database optimization tasks.

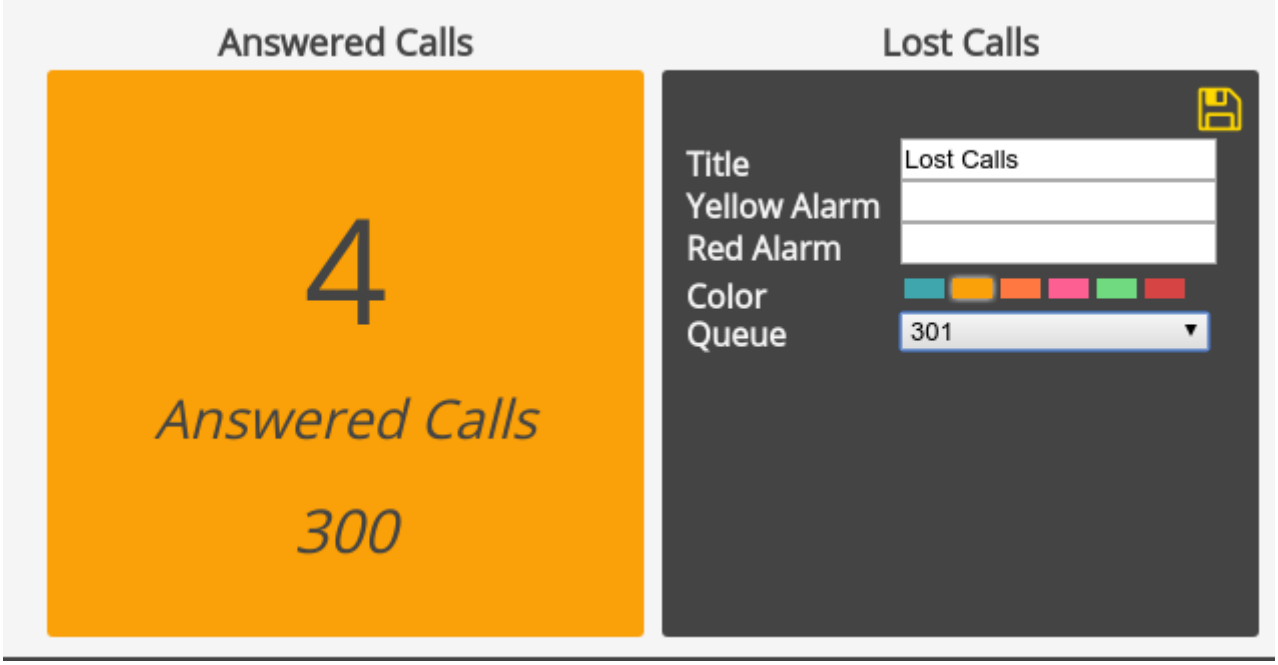



*See also:*

- QueueMetrics User Manual: chapter 11.18 (Scheduled Jobs Configuration page)
- QueueMetrics Tutorials: https://www.queuemetrics.com/blog/2017/12/05/enabling-scheduled-jobs-on-QueueMetrics-Live/?lid=N057 (Enabling Scheduled Jobs)

# Wallboad Queue Filtering

In QueueMetrics' Wallboard, it's now possible to change a widget's setting in such a way that only data from a particular queue is shown. This makes for a highly versatile wallboard, that can show results for an aggregation of queues, while still having widgets dedicated to individual queues.




*See also:*

- QueueMetrics User Manual: Chapter 8. (The Wallboard)
- QueueMetrics Tutorials: https://www.queuemetrics.com/blog/2018/01/17/wallboard-queue-filtering/ (Wallboard Queue Filtering)

## QueueMetrics and CallCabinet Integration

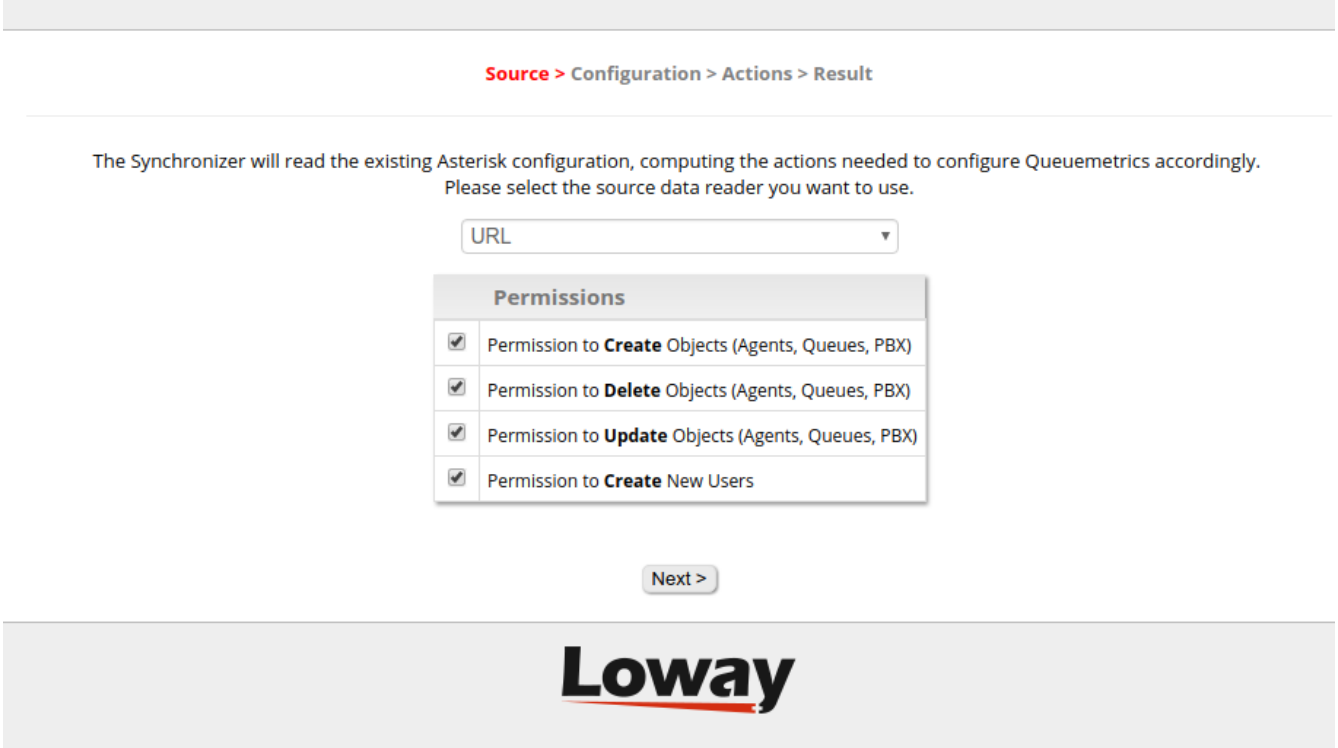
A new pluggable listener module will be included in this release. This module will allow users to listen to recordings that are being stored remotely, using Atmos CallCabinet for QueueMetrics.

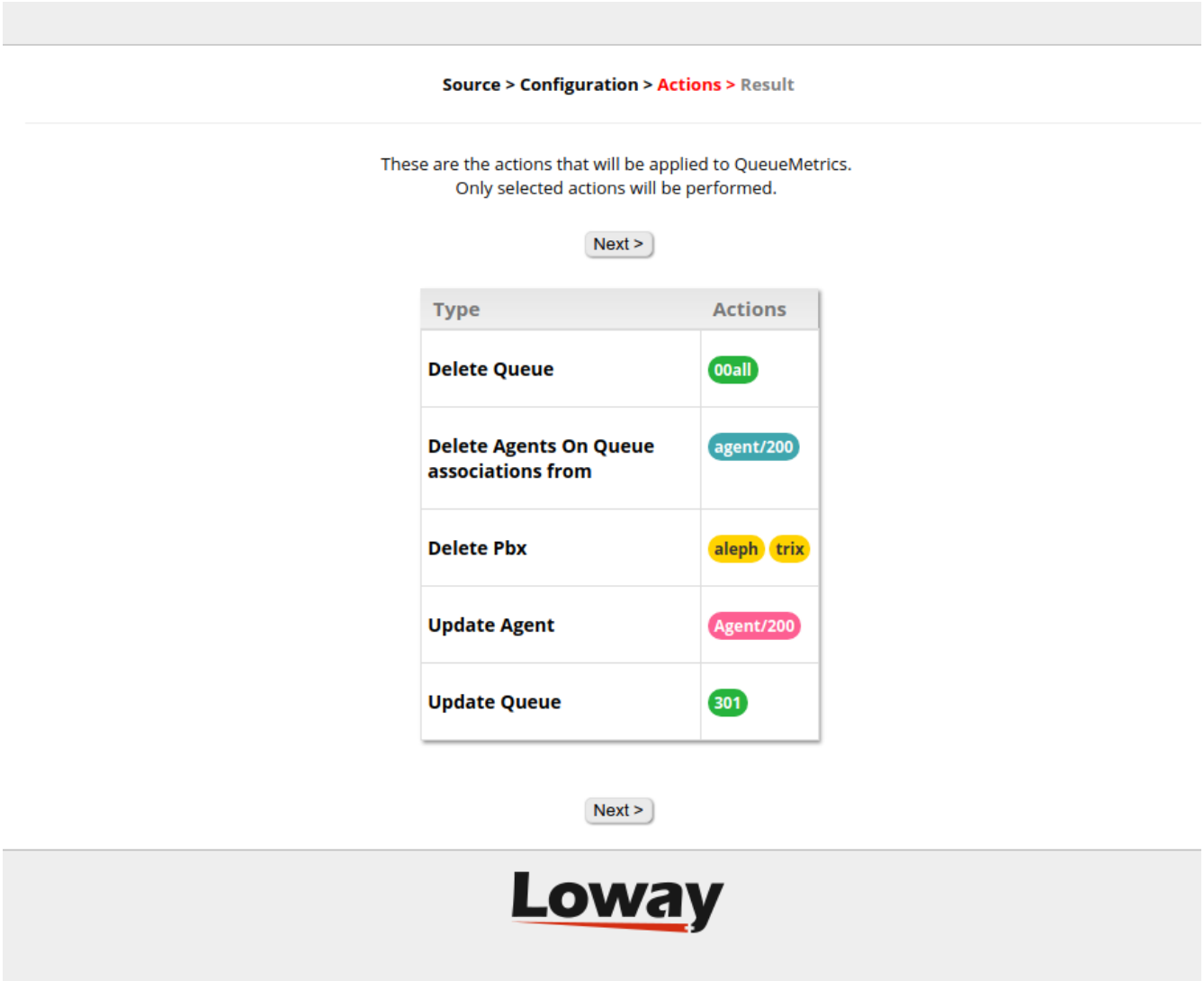
*See also:*

- QueueMetrics User Manual: Chapter 12.7. (Listening to calls using Pluggable_Modules)

## Configuration Synchronizer Upgrade

The Configuration Synchronizer service, that allows for QueueMetrics automatic configuration of agents and queues, has been significantly upgraded. Now it can fetch a configuration from a remote URL as a JSON object, or read the configuration directly from the data that is already loaded into QueueMetrics' database.



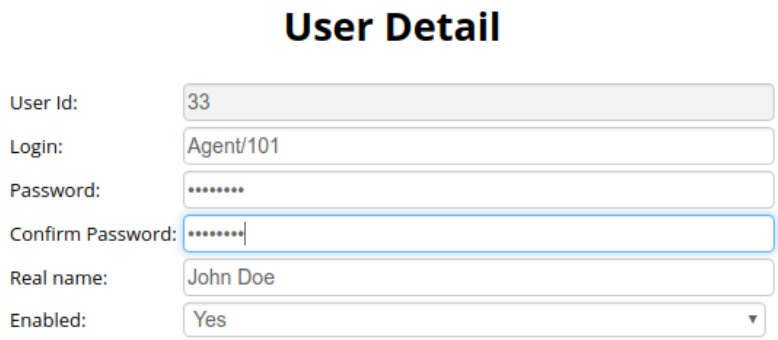

*See also:*

- QueueMetrics User Manual: chapter 11.28 (QueueMetrics configuration Synchronizer)

# Password Encryption

Now QueueMetrics supports User Password Encryption. By setting the appropriate system property, you can make sure that all new user passwords are encrypted, thus enhancing your system's security.

You can also choose to stop users with unsecure passwords from logging into the system.

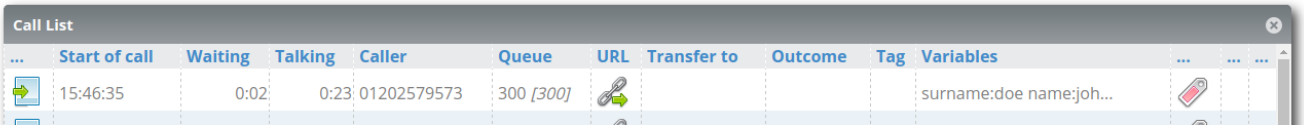



*See also:*

- QueueMetrics User Manual: chapter 11.1 (Configuring Users)

# Agent Page - Call Variables

Now, in the Icon agent page **Call List Panel**, you can see a new column displaying all the variables that are attached to a call. This is very useful to assess multi system integration, and can give your agents more information about the call and the caller.




*See also:*

- QueueMetrics User Manual: chapter 9.1.4 (The call list panel)

# New Reports

The following reports have been added to QueueMetrics, and are now selectable when creating new reports.

- Frequent Area Codes - AC04
  - This report shows detailed information regarding different Area Codes, taking into account the quantity and quality of calls related to different areas.
- Detail Summary (Daily, By Week, By Month) - DD10, DH10, DW10
  - This report comes in three version, that show the number of calls in different time slices. The available period of times are: daily, by week or by month.

- Executive Summary - OD06
  - This report provides a wealth of information regarding the situation in general. With a final focus on lost calls and disconnection reasons.
- Retry Rate and Lost Caller Behaviour - FC10
  - This report shows information about customers retry behaviour.
- Most Frequent calling/called Number - FC11
  - This report shows aggregated data by caller/called number. We can deduce by looking at this report, the most frequent callers and the duration of their calls.

*See also:*

- QueueMetrics User Manual: chapter 6 (Report Details)

# Old Agent Page is Officially deprecated

From now on, the old agent page is officially deprecated. No bug fixes will be released for it, and is heavily recommended that users that are still using it, switch to the new Icon Agent Page. The Old Agent Page will soon be removed from QueueMetrics.

*See also:*

- QueueMetrics User Manual: chapter 9.1 (The new Realtime Agents Page)

# Qloader is Officially deprecated

From now on, the old data loader, known as qloader, is officially deprecated. No bug fixes will be released for it, and is heavily reccomended that users that are still using it, switch to the new data loader "Uniloader".

*See also:*

- UniLoader User Manual: https://docs.loway.ch/Uniloader

# Bug Fixes

Here is the list of bugs that were fixed in the new release.

## Agent Page

- 3759 Agent’s page homepage shows existing wallboards list
- 3725 Extension should always be empty on log-on
- 3723 Icon shouldn’t open any popup when loading page
- 3694 Call URLs don’t expand [X] variable
- 3638 Error on page loading of Icon

- 3637 Icon should detect session issues
- 3635 On session issues, internal services should return code 542
- 3609 Tomcat error 400
- 3601 New window showing a list of all the variables
- 3599 Improve Outcome Code selection
- 3592 Agent Page breaks if cluster servers change names
- 3591 Feature codes selection allows for incorrect feature codes
- 3590 Outcome Panel sometimes refreshes during outcome selection
- 3527 default.pause_dialout is ignored.

## API JSON

- 3646 CronJobs: JSON API

## Configuration

- 3735 Editors: the search box should have a magnifier glass in it
- 3706 Cfg: Switch to control channel rewriting in hotdesking channel record
- 3697 Encrypted passwords in configuration editors
- 3588 Mysql exception if default.queue is blank
- 3547 Everyone can delete a wallboard

## Engine

- 3705 Switch to control channel rewriting in hotdesking channel record
- 3531 Hotdesking not working on Local/x@y/n

## Graphics

- 3758 Job Settings label in front page appears even if user doesn’t hold the correct keys

## Packaging

- 3544 Outbound dialplan S

## Platform

- 3587 DirectAmi: Outbound tracking without dialplan
- 3532 DirectAMI can’t pause Local channels

## Realtime

- 3717 Outmonitor and Inmonitor not working on QM-Live

- 3604 On Queue field doesn’t show the correct queue
- 3603 Free Since miscalculated while in conversation
- 3585 Pause, unpause and removemember do not work from realtime in cluster mode

## Reports

- 3754 Call Recording exports broken link
- 3698 Server-side integration of encrypted passwords
- 3677 Sorting of Skills
- 3663 Exporting Features and Vars
- 3634 UN17 shows total time in decimal format
- 3610 Deprecatiofor old method putS(lbl,int)
- 3596 OK08 is not calculated properly
- 3543 default.hourly_slot is not loaded correctly when starting QueueMetrics
- 3535 NR: Initial version of the engine

## Wallboards

- 3739 Wallboard: all queues
- 3738 Wallboard/RT: queue appears twice
- 3734 Alarms on call duration do not work
- 3682 [realtime v2] "Live calls" table should show the names of the queues (shows numbers)
- 3681 [realtime v2] When in kiosk mode top-right queue name always show default queue’s name
- 3674 Wallboard doesn’t open if empty
- 3667 Wallboard Kiosk Links don’t work for Wallboards with visibility keys.
- 3661 "Live Agents" table widget has incorrect lable
- 3654 property default.includeLostInSlaDistribution alters wallboard lost calls values
- 3636 Wallboard should detect session issues
- 3576 Realtime_v2 doesn’t care about masterkey
- 3551 "Longest Wait" widget not always showing the correct value
- 3550 Improve kiosk mode awareness
- 3549 When in read-only mode, disable text selection from pages
- 3548 Users without WALLBOARD_ADD key can create private "new wallboard"
- 3537 Multi-stint is not take into consideration with "Total Calls" widget

# QueueMetrics 17.06

QueueMetrics 17.06 introduces some major new functionality and is meant to be a major evolution of the way you interact with QueueMetrics on a daily basis.

- **Wallboards** let you create your personalized and customizable wallboards to get a clean overview of the state of your call-center.
- The **DirectAMI** mode makes the interaction with your PBX quicker and snappier, without editing any dial-plan code.
- The **Synchronizer** makes it easier than ever to keep your QueueMetrics instance in sync with your PBX.
- Many **low-level components** (JDK, drivers, the Uniloader) were upgraded to make QueueMetrics future-proof.
- It is now possible to **log in using e-mail** instead of agent codes.
- Configuration **editors** were made richer, easier to use and fully localized.
- New reports were added: **Counting calls by skills** and **Talk time per hour**.

QueueMetrics 17.06 fully supports Asterisk 13 and 14, as well as any previous Asterisk version.

WARNING QueueMetrics 17.06 requires Java SDK 8 and Tomcat 8.5 to run; they will be installed automatically if you upgrade using RPM. If you run on an old CentOS 5 system (e.g. Elastix 2.x) please see notes at https://www.queuemetrics.com/faq.jsp?uid=faq-110-java8-centos5

## Major changes

### Welcome to the wallboards!

Maybe the biggest complain we had over the years in terms of functionality of QM was: how can I create my own wallboard? Wallboards are an unusually "tough" topic, because seeing as a wallboard has very limited space available, everybody wants it different somehow.

We used to offer a set of scripts that would implement custom wallboards on top of QueueMetrics, but they were too complex for most people to run, so this used to be a pain point for many users.

Well, those days are over!

You can now create custom wallboard by dragging and dropping graphical components on a canvas. You can change their color, resize them and add custom color alarms to them.

Wallboards are made up of multiple views that will rotate periodically. You can have multiple wallboards in a system that can be shared between users or run automatically through a single URL to power "kiosks" that run without human interaction.

Wallboards are a very powerful and effective function - if you upgrade an existing system you will find a plain wallboard that functionally replaces the "old" QueueMetrics wallboard, while if you install a new system from scratch you will find a modern wallboard that is waiting for your final touches.

TIP If you upgrade an existing system, do not forget to add the keys *WALLBOARD_ADD* and *WALLBOARD_FORALL* to your administrators so they can edit and save wallboards.

**See also**

- QueueMetrics User Manual, chapter 8: *The Wallboard*

## DirectAMI

QueueMetrics used to need a special piece of dial-plan included in order to perform actions, e.g. logging on and off queues, setting pauses and monitoring calls.

QueueMetrics 17.06 is now able to connect directly to your PBX and perform those actions directly, which means:

- Quicker log-in/log-off when working with tens of queues
- Easier set-up, as you basically have to simply tell the system the general format of your dial-plan instead of manually replacing multiple text occurrences
- All configuration done though the graphical Properties editor

- No need to include external dial-plan, unless you need to manually track outbound calls.

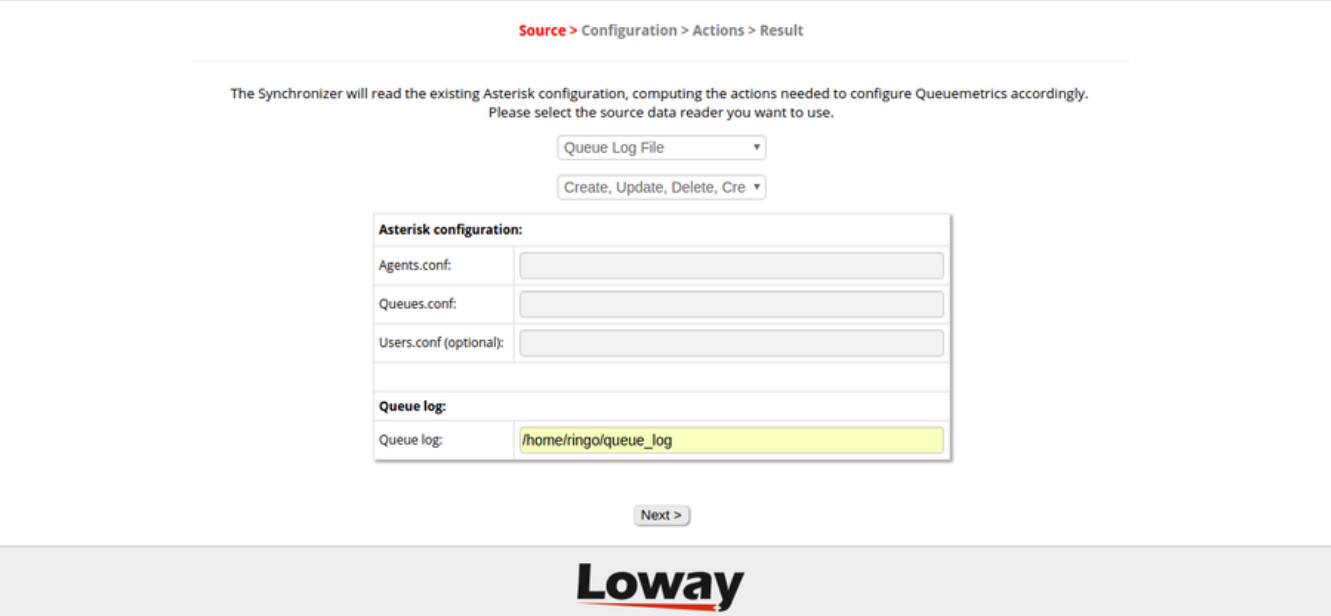
The new DirectAMI mode is enabled by default on new installs, and can be very easily turned on on existing systems. Existing interaction though the dial-plan (so called "classic" mode) can still be used, but we suggest migrating to DirectAMI in most cases.

**See also**

- QueueMetrics User Manual, chapter 12: *The QueueMetrics Platform model* for a general overview of how QueueMetrics integrates with external systems
- QueueMetrics User Manual, chapter 12.5.3: *DirectAMI actions* for a detailed description of how to upgrade to DirectAMI.

## The Synchronizer module

The Synchronizer module is a functionality which goal is to assist the user in configuring QueueMetrics' queues and agents.




What the module does is the following:

- Reads a QueueMetrics defined source (queue_log or Asterisk config files)
- Reads QueueMetrics' current configuration
- Compares the two and generates a list of changes that, if executed, will upgrade the system
- Displays these actions to the user, who can then review them and possibly override them
- Execute all the enabled actions at the end of the review process.

It also allows you to post the required single JSON object, and therefore to synchronize QM in one single step.

**See also**

- QueueMetrics User Manual, chapter 11.28. *QueueMetrics synchronizer*

# Updated dependencies

QueueMetrics used to require at least Java version 6 to run, that is now about ten years old and has reached end of life. While Java 6 has served us well for so many years, the harware we run on has evolved noticeably and Java 8 was created to address many shortcomings that became apparent during the years.

QueueMetrics 17.06 requires **Java 8** and **Tomcat 8.5** to run; those are now a stable and mature platform that will be a stable foundation for many years to come.

We also switched to the highly-efficient **MariaDB database connector**; it works fine with either MySQL or MariaDB, so you can still use MySQL as a back-end server if you prefer.

Another area that we addressed was the data upload from Asterisk to QueueMetrics; for many years we used a script called Qloader that proved to be very stable and efficient; but we now have a better and proven version called **Uniloader** that is just as efficient and resilient, but also allows to:

- send data to multiple QueueMetrics server, using different protocols optimized for data sharing over unreliable WANs
- supports on-premise QueueMetrics as well as QueueMetrics Live
- runs on multiple architectures (i386, x86_64 and ARM)
- tracks Music-on-Hold events, allowing QueueMetrics to produce reports on this very useful but hard-to-get metric

While there is no hurry to migrate from existing Qloader systems, we strongly advise to install Uniloader on new systems that you create.

**See also**

- The Uniloader User Manual - https://docs.loway.ch/Uniloader
- Tracking MoH with Uniloader https://www.queuemetrics.com/blog/2017/03/22/TrackingMOH/
- Upgrading a CentOS 4/5 system to Java 8 https://www.queuemetrics.com/faq.jsp?uid=faq-110-java8-centos5
- Switching to the new MariaDB connector https://www.queuemetrics.com/faq.jsp?uid=faq-109-jdbcdriver
- If you enconter slowness on a manually-installed Tomcat 8 system, see https://www.queuemetrics.com/faq.jsp?uid=faq-111-java8-tomcat8-slow-start

# Minor changes

## Log-in using e-mail

Some users used to complain that using agent codes to log their agents in - e.g. *Agent/12345* - was hard to remember for agents.

QueueMetrics 17.06 allows you to define an agent's email in the User Configuration to use it as an

alternative to the full log-in, making your life easier and giving your agents one less code to remember.

## Improved editors

QueueMetrics configuration editors were changed significantly; they are now fully localizable, allow the deletion of multiple items at once and in general easier and more pleasant to use.

## New reports: Counting calls by skills

A new report is now available to count how many calls were received having a specified skill set required. This lets you see how multiple skill sets interact with each other, and the SLA results.

### Skills per Day

| Day | Ans. | Unans. | Num | Within SLA: 10s. | Product1 english internet technical | Product1 english invoice land | Product1 english invoice mobile | Product1 english land others | Product1 english mobile others | Product1 english mobile technical |
|---|---|---|---|---|---|---|---|---|---|---|
| 2016-12-04 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| 2016-12-05 | 2,505 | 223 | 2,728 | 45.3% | 0 | 2 | 8 | 7 | 4 | 8 |
| 2016-12-06 | 1,737 | 133 | 1,870 | 50.9% | 0 | 0 | 4 | 2 | 4 | 5 |
| 2016-12-07 | 1,656 | 55 | 1,711 | 58.1% | 1 | 0 | 3 | 0 | 4 | 3 |
| 2016-12-08 | 1,488 | 50 | 1,538 | 56.7% | 1 | 2 | 5 | 0 | 2 | 1 |
| 2016-12-09 | 1,745 | 40 | 1,785 | 56.8% | 3 | 0 | 9 | 0 | 6 | 0 |
| 2016-12-10 | 711 | 26 | 737 | 53.9% | 0 | 0 | 0 | 0 | 4 | 0 |

The new report has to be manually added to your reports by selecting it through the Reports editor.

**See also:**

- Data blocks *DD09*, *DW09* and *DH09*

## New reports: Talk time per hour

This block breaks down all the agents' talk times in one-hour long timeslots. This information is grouped by agent, so you can keep track of how many minutes or hours of conversation your agents are having during the course of the day, across a given period of time.

For example, if your agent starts a call at 9:55 AM and ends it at 10:20 AM, the new report will show the agent in conversation for 5 minutes at 9 AM and 20 minutes at 10 AM.

**Agent Talk Time Per Hour**

*Agent Talk Time Per Hour*

| Level | Agent | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Main | 5001 - TestQM1_01 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:08 | 0:00 | 0:00 | 0:00 | 0:09 | 1:27 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 |
| Main | 5002- TestQM1_02 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 0:00 | 17:53 | 23:36 | 11:03 | 0:00 | 0:00 | 30:22 | 54:01 | 43:47 | 1:11:50 | 22:57 | 0:00 | 0:00 | 0:00 | 0:00 |

Export as...

The new report has to be manually added to your reports by selecting it through the Reports editor.

**See Also:**

- Data block AG20 - *Agent Talk Time Per Hour*

# Detailed changelog

There have been over 70 bugs fixed and minor features changed since QM 16.09; here are the main ones.

## Locales

- The Georgian language is official supported

## Agent page

- 3274 - Outcome/Feature list is not coherent
- 2921 - Possibility to lock dialout box when agent is paused
- 3211 - Increased outcome selection dropdown height
- 3451 - Icon page - no going back
- 3416 - Spinner on loading Icon page
- 3471 - Outbound calls from WBT have broken URL with "-"
- 3215 - Feature codes aren’t working well when using special characters
- 3240 - When an agent is logged to a server, the server selection is disabled.
- 3331 - Error 404 when loading Icon
- 3182 - Selecting an outbound campaign is not possible

## Configuration

- 3232 - Error: You can enter an agent group with an empty name
- 3250 - default.hourly_slot is not used
- 3503 - The URI to be checked must consider tpf.properties
- 3333 - Hotdesking: wrong default in configuration editor
- 3241 - Change "Default server" to "Server" in agent’s
- 2501 - New default regexps

- 3332 - Editors are broken when entering first element
- 3259 - Disable AMI tester if working with web loader
- 3486 - Edit users with email
- 3213 - Improving single element deleting
- 3212 - Multiple select delete/clone from editor list
- 3454 - New Feature: Synchronizer
- 3255 - English localization of all config editors

## Engine

- 3498 - User session stays open, but not supposed to
- 2844 - Cleanup: remove Continuations

## Java 8 migration

- 3438 - Java8: broken image links on AgentGroups detail
- 3267 - Java 8 compatibility issues
- 3443 - Uses embedded MariaDB Connector/J
- 3442 - Java8: Gretty as plugin for Tomcat
- 3256 - Defaults: use LocalFilesByDay in cfg.props
- 3277 - Java8: JSPs failing to compile
- 3439 - RPM for Tomcat8
- 3440 - Java8: crash when exporting payroll
- 3402 - AmiFeedback: logs reason for abort and action duration

## Real-time page

- 3515 - RT page: Threads keep piling up
- 3436 - Taking last call into account when computing "Free since"
- 3435 - Displaying current time on pause on RT
- 3433 - Realtime page is broken if line separator is inserted into Json
- 3172 - realtime.startHour not working correctly with fixed hour
- 2975 - *Free Since* should keep pauses into consideration
- 3234 - Issue with forced locations
- 3479 - Direct link to wallboard

## Reports

- 3358 - Improve error logging in export reports

- 3224 - Wrong UTF-8 encoding
- 3408 - New report: Split-time by hour (AG20)
- 3266 - Use UTF8 not ASCII7 encoding in AMI dialog
- 3382 - New reports: Counting calls by skill (DH09 DW09 DD09)

## Misc

- 3379 - API JSON: ClassCastException on RealtimeDO.RtAgentsRaw
- 3235 - Insert visible version number

# QueueMetrics 16.09

*QueueMetrics 16.09* is a release centered around the idea of making the software flexible, intuitive and ever more reliable.

- New concepts: FCR and Programmable data blocks
- Improving the Icon page and suite usability
- Official Docker image
- Introducing Uniloader
- Fixing some major and minor bugs

QueueMetrics 16.09 fully supports Asterisk 13.11, as well as any older Asterisk version.

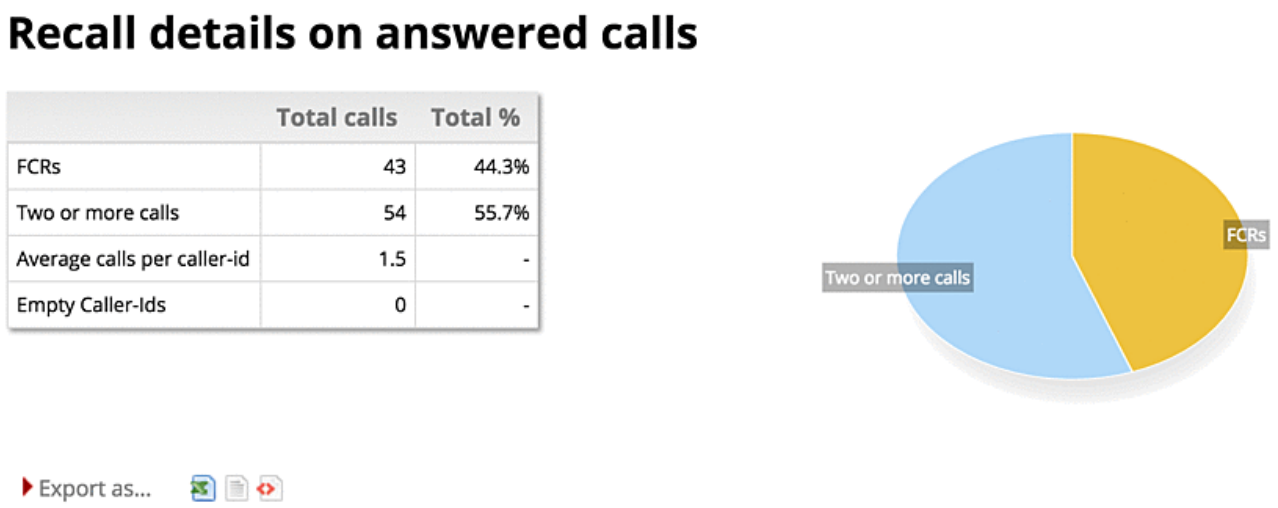
## New concepts: FCR and Programmable data blocks

This release of QueueMetrics introduces the concepts of

- Tracking Call Resolutions
- Programmable agent data blocks

### Tracking Call Resolutions

Have you ever wondered how many of the calls you receive are people calling over and over for the same issue? such calls are often a symptom of something not going well in call handling - everybody wants their problem solved on their first call. Identifying those calls makes it possible to concentrate on repeated calls as a measure of your quality of service.




QueueMetrics 16.09 introduces a new set of statistics to address these problems:

- The *Break-down of recalls* shows how many callers have been calling just once or multiple times, using a graph that looks similar to existing SLA graphs for an immediate visual check
- The *Recall details* shows how many calls are First Call Resolutions and how man are repeated,

the average number of calls per caller and the number of missing caller-ids.

- The *Cluster details* shows the groups of calls by the same caller, when they started and when they ended, and lets you zoom in to any call.

**See also**

- QueueMetrics User Manual, chapter 6.14 - "Historical reports - First Call Resolution (FCRs)"

### Programmable agent data blocks

QueueMetrics now has a fully customizable agent data block that can be used to create custom metrics.

The idea is that, differently from normal data blocks where columns are fixed, this new data block just offers you a list of agents as its first column; all other columns are computed the way you define them to be.

Fo example, if you enter the following definitions:

```
Session [hms]= SESSION
Pause [hms]= PAUSETIME
Tot Avail [hms]= SESSION - (PAUSETIME + (TALKTIME + OOSCALL))
Occupation = TALKTIME / (SESSION - PAUSETIME)
```

Will show one column with total session time, one with total pause time, one with total available time and one with "Occupation" expressed as a percentage. As the embedded data sources are able to count and measure specific pause codes, it becomes very easy to create agent reports that are fully customized to your environment.

**See Also**

- QueueMetrics User Manual, chapter 6.17 - "6.17. User-Programmable Reports"
- QueueMetrics User Manual, chapter 6 - "AG09 - Agent Occupancy Report"
- QueueMetrics User Manual, chapter 6 - "AG18 - Programmable Agent Performance"

## Internationalization

This release offers improved localozation facilities, especially for non-Latin languages (Chinese, Japanese, Russian, Arabic and Hebrew). It is now possible to export PDF's correctly for non-Latin languages, and such laguages appear correctly everywhere in QueueMetrics.

Plus, we added support for Portuguese as spoken in Portugal, as it has some significant differences from Brazilian Portuguese.

# Changes on the Icon Agent's page

With an updated release of the WebRTC soft-phone, the Icon agent page works well with recent versions of Asterisk. We have created a new tutorial to help you get started with WebRTC on Asterisk 13+.

It is now easy to run Icon even with CRM systems that do not allow being embedded in an inner frame. A new configuration property lets you decide whether you want the default embedded mode or you want CRM forms to be opened in a separate window/tab.

If you click on a telephone number in the Icon page, it will be copied to your system clipboard.

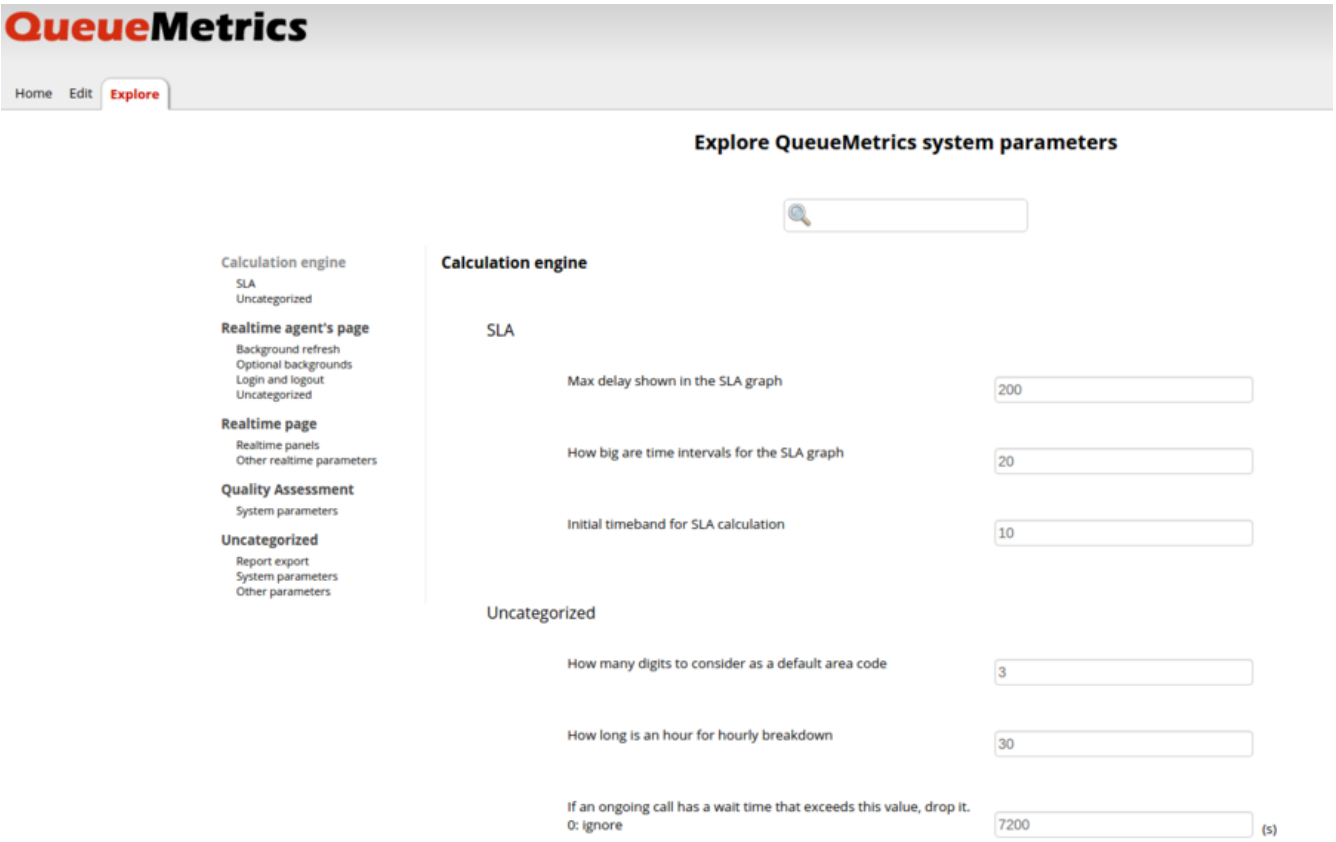
The Icon agent page is now able to detect if the system it is connected to loses session information (e.g., it gets rebooted) so that this information will be shown to the agent and they will be prompted for a new log-in. The page does not reload automatically, because agents need some time to terminate any work they are doing on the embedded CRM's and to hang up any soft-phone call they are attending.

**See also**

- New configuration property agent.openUrlInPopup
- We will shortly be releasing an updated tutorial on how to get started with WebRTC on Asterisk 13.

# Improvements to the Explore System Parameters page

The "Explore System Parameters" page has been improved to be easier to use and to be your go-to place for any common configuration change in QueueMetrics.




The layout has been made easier on the eye, and it is now easier than ever to search for the items you are looking for - be it by property name (as it is usually referenced on our documentation), by content or by title.

# Official QueueMetrics Docker image

QueueMetrics now ships with an "official" Docker image, available as *loway/queuemetrics* on Docker Hub.

The image is meant as a simple way to run QueueMetrics on a Docker cluster; it embeds both the database and the servlet container, exposing only the HTTP port. It supports data volumes and has an embedded health check that will monitor QueueMetrics and restart it, should it become unresponsive.

On a server with Docker installed, you can therefore provision a new QueueMetrics system by running:

```
docker run -p 8080:8080 -P -d loway/queuemetrics
```

And you can configure it fully through the JSON APIs. This makes running multiple QueueMetrics servers - or just the odd instance for testing - very plain and straightforward.

**See also**

- The QueueMetrics page on Docker Hub: https://hub.docker.com/r/loway/queuemetrics/

# Introducing Uniloader

Most QueueMetrics system rely on a small daemon called "qloaderd" to keep them in sync with what is happening on the PBX. While this has proved to be a rock-solid solution over the years, it is sometimes more complex than it should be and it requires an underlying Perl 5 installation.

As we developed QueueMetrics Live, we needed a solution that would be very lightweight (enough to run on very small embedded systems), would have no external dependencies, would run on systems where there is no direct connectivity back to the Asterisk box (e.g. a PBX behind NAT) and could be grown to support both on-premise and cloud-based systems.

The result of this process was the development of Uniloader, a new generation data loader for QueueMetrics:

- it can feed local and remote QueueMetrics systems
- is rock-solid and never loses data, even in case of network errors
- it is able to split data natively into multiple QueueMetrics instances, in order to support cloud-based hosting providers running multiple independent clients on the same Asterisk instance
- it acts as a proxy and can perform agent actions even when there is no direct AMI connection to the PBX
- it is extremely lightweight and has no system dependencies
- compiles natively to Linux x86 32bit, x86 64bit and ARM 5+ architectures

While you can still run "classic" qloaderd, we suggest checking out the new Uniloader to see if it You can install it easily using the supplied *uniloader* RPM package of from the tar.gz archive.

Uniloader works very well with the official QueueMetrics Docker image - do check them out together.

**See also**

- QueueMetrics Live https://queuemetrics-live.com
- The Uniloader manual https://docs.loway.ch/Uniloader

# Detailed changelog

Over 80 bugs have been fixed in this release.

## Real-time page

- 3159 - Messages to agents not working
- 3046 - Problems with "In queue" field in realtime page
- 3047 - Supervisor can pause agents with non allowed pause codes
- 3078 - Paused agents not shown correctly
- 3026 - AMI 2.8.0

## Reports

- 3035 - Agent Efficiency
- 2933 - PDF export does not work with non-latin encodings
- 2984 - Reports: optional column for "Transferred to" on call details
- 1947 - Error: Null pointer in DayOfWeek (session expired?)
- 1948 - Error: Compute Report Header (session expired?)
- 2721 - Recordings not available in cluster mode
- 2951 - New reports: calls by caller
- 3011 - Productivity
- 3036 - PDF export not working with RTL languages
- 3048 - Possible different homepage news URL
- 3051 - Exporting dynamic to XLS/CSV data columns does not work
- 3119 - Bug: Tabella non LtCallsOK when creating IVRs
- 3132 - Avoid method setArrayList()
- 3133 - First Call Resolution: Break down of recalls
- 3134 - First Call Resolution: Caller IDs vs calls
- 3135 - First Call Resolution: Call details
- 3136 - First Call Resolution
- 2743 - ErrProd 15.02: NullPointer GetSessionId
- 2744 - ErrProd 15.02: NUllPointer popup_sessioni_pause.jsp
- 2746 - ErrProd 15.02: IllegalState in session
- 2788 - ErrProd 15.02: NullPOinter QApopupDO
- 2905 - Announcement and wrap-up times are not taken into consideration
- 3030 - Incorrect URL computed from request if proxied
- 3034 - CVS/XLS file download does not work in Jetty.
- 3089 - Self-Service Agent reporting not working for new agents

## QA

- 3028 - QA: 0 as a valid value for drop-downs
- 2980 - QA form unusable in Russian
- 3112 - If I open the call’s details from Tasks markers are not shown correctly
- 2916 - QA Grader: queues expansion with * is not working

## Engine

- 2981 - Calls remain open on ATTENDEDTRANSFER

- 3161 - Long-running threads
- 2982 - Subtype APP BRIDGE LINK from ATTENDEDTRANSFER

## Page Layout

- 3169 - Broken page - missing jQuery UI
- 2936 - Add cache breaker parameter after JS, CSS and favicon inclusion

## Icon Agent Page

- 2971 - Call not closing on Icon for ATTENDEDTRANSFERs
- 3006 - Unreadable text in buttons in Icon when pausing in Russian
- 3128 - Opening non-embedded URLs in Icon
- 3129 - Remove GWT compile warnings
- 3146 - Dialout panel shouldn't be disabled if agent is paused
- 3156 - Copying the number called in Icon
- 2664 - If the agent is already logged in, use the logged extension by default
- 2928 - Property to make outcome setting time customizable
- 3055 - Production errors: expired?
- 3070 - AMI feedback errors on Live instances
- 3125 - realtime.assertExtensionNotInUse doesn't work if agent is not member of the queues
- 3084 - Formatting of Outcomes pop-up
- 3071 - Services should abort if agent logged off
- 3052 - CRMapp is not shown if you didn't set a CRMlabel
- 3063 - Button disappears with realtime.dynamicLoginQueues=registered
- 3068 - If connection is lost (several minutes) page doesn't work again when connection is restored
- 3069 - If server doesn't respond ICON doesn't tell anything to the agent
- 2973 - Expanding agent code in "fixed" URLs in Icon
- 2935 - In hotdesking mode, avoid logging on with empty extension
- 3079 - If agent is wrap or spill queues are shown twice
- 3072 - Softphone sipml5-api update
- 2849 - Logging logon exceptions

## JSON APIs

- 3102 - Impossible to download audio file though API
- 3141 - Uniloader: actions returned in wrong order

- 2974 - API error: ClassCastException in RealtimeDO.RtAgentsRaw
- 2985 - Accepting queue names with spaces

## Configuration

- 3091 - All SLA report parameters are ignored
- 3040 - realtime.assertExtensionNotInUse is true by default
- 3041 - Regexps accept only non-empty extension or agent code by default
- 3073 - Export XLS as UTF-8
- 3123 - Forcing default QueueMetrics language
- 3145 - Improvements to Explore System Parameters
- 3031 - qm-tomcat6: memory used in restarts
- 3142 - Remove -- from "Current Terminal" field in Agent’s configuration

## Packaging

- 3168 - Release Docker
- 3065 - Added new locale: pt_PT
- 3127 - Package clean-up
- 3157 - RPM: add Xerces
- 3093 - Missing Xerces in RPM build
- 2774 - Official Docker image 3150 - Docs: Installling AGAW client in FF 45+

# QueueMetrics 15.10

*QueueMetrics 15.10* is a release centered around the idea of making the suite more flexible and easy to use than ever.

- New concepts: Skills, Tags and Features
- Improving the usability
- Fixing major and minor bugs

QueueMetrics 15.10 fully supports Asterisk 13.5, as well as any older Asterisk version.

## New concepts: Skills, Tags and Features

This release of QueueMetrics introduces the concepts of tags, features and skills, as optional ways to categorize your traffic.

- A **tag** is a specific attribute that splits calls in a queue into mutually-exclusive subgroups. For example, if you were to implement an inbound call-center for booking events, you could add a tag for each event - people call multiple numbers but are queued on the same physical queue. Or if you run an outbound campaign, you can use the tag to track the list from where the number was taken, in order to track its sales results. Tags are meant as a general mechanism to replace existing "sub-queues" that keep a clean distinction between the reason why a call was queued and the queue that was used to process it.
- A **feature** is a secondary outcome. A call can have multiple features; some of them might be valid only if some primary feature was set. For example: when you make a sale, you could have optional features like "Sent sales booklet" to make sure that some procedure was followed. You can optionally have a **goal feature**, that are features agents are scored upon, and that are counted/tracked separately.
- A **skill** is a specific attribute of a call that requires a special ability to be present at a required grade in the answering agent. For example, a call might be routed asking for "English: 50" and "Internet: 70", therefore asking for an agent who is pretty good at supporting Internet issues and that speaks decent English.

Those new concepts are very powerful and make QueueMetrics able to analyze calls at a way finer level.

New data blocks were added to reports, the Real-Time page and configuration in order to track those new elements.

**See:** QueueMetrics User Manual, chapters "21.7 - Feature Codes", "21.8 - Tag Codes", "21.11 - Skills"

### Skill-based routing

QueueMetrics is able to track skills required on calls; it will display them on the Real-time page and will report on them. A call can have multiple skills associated at once; and skills can be used as filtering criteria in the Custom reports page.

### New real-time reports

The real-time reports is made way richer with three new data blocks:

- Aggregated queue view - where you can see the current total time for selected queues; average wait and talk times; and sales / features statistics
- Aggregated tag view - where you can see statistics of incoming traffic by tag
- Agent outcomes - where you can see live presence, number of calls offered and answered, pauses and sales results / features

**Aggregated by queue view**

| Queue | Tot time | Offered | Answered | Avg wait | Avg talk | Sales | SPH | QC | QCPH | Cont. | CPH | Conv. | QConv. | SLA | Goal Ftrs | Feature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 12:15 | 833 | 833 | 0:04 | 1:06 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |
| Customer Queue A | 4:26 | 332 | 332 | 0:04 | 1:00 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |
| Customer Queue B | 3:51 | 283 | 283 | 0:04 | 1:01 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |
| Customer Queue C | 3:57 | 218 | 218 | 0:04 | 1:21 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |

Export as...

**Aggregated by tag view**

| Tag | Tot time | Offered | Answered | Avg wait | Avg talk | Sales | SPH | QC | QCPH | Cont. | CPH | Conv. | QConv. | Goal Ftrs | Feature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12:15 | 833 | 833 | 0:04 | 1:06 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |
| - | 12:15 | 833 | 833 | 0:04 | 1:06 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |

Export as...

**Agent and outcome view:**

| Agent | Status | Offered | Answered | Tot talk | Tot idle | Pause bill. | Pause non bill. | Avg talk | Sales | SPH | QC | QCPH | Cont. | CPH | Conv. | QConv. | Goal Ftrs | Feature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| John Doe (101) | Logged on - 0:16 | 414 | 414 | 7:47:10 | 6:28:46 | 0:00 | 5:52 | 1:07 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |
| Mike Boo (102) | Logged on - 13:30 | 419 | 419 | 7:36:02 | 6:38:33 | 0:00 | 6:23 | 1:05 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |

Plus, the new Real-time page lets you "drill down" immediately; by clicking on the "Report" icon, you can see a reports filtered with the same criteria and for the same time period the Real-time page is showing. This, in a sense, blurs the distinction between the Real-time view and the full reports view.

# New Reports

A number of new reports were added to track Skills, Tags and Features.

**Aggregated by queue view**

| Queue | Tot time | Offered | Answered | Avg wait | Avg talk | Sales | SPH | QC | QCPH | Cont. | CPH | Conv. | QConv. | SLA | Goal Ftrs | Feature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 12:15 | 833 | 833 | 0:04 | 1:06 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |
| Customer Queue A | 4:26 | 332 | 332 | 0:04 | 1:00 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |
| Customer Queue B | 3:51 | 283 | 283 | 0:04 | 1:01 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |
| Customer Queue C | 3:57 | 218 | 218 | 0:04 | 1:21 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0.0% | 0 | 0 |

Export as...

**Aggregated by tag view**

| Tag | Tot time | Offered | Answered | Avg wait | Avg talk | Sales | SPH | QC | QCPH | Cont. | CPH | Conv. | QConv. | Goal Ftrs | Feature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12:15 | 833 | 833 | 0:04 | 1:06 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |
| - | 12:15 | 833 | 833 | 0:04 | 1:06 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |

Export as...

**Agent and outcome view:**

| Agent | Status | Offered | Answered | Tot talk | Tot idle | Pause bill. | Pause non bill. | Avg talk | Sales | SPH | QC | QCPH | Cont. | CPH | Conv. | QConv. | Goal Ftrs | Feature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| John Doe (101) | Logged on - 0:16 | 414 | 414 | 7:47:10 | 6:28:46 | 0:00 | 5:52 | 1:07 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |
| Mike Boo (102) | Logged on - 13:30 | 419 | 419 | 7:36:02 | 6:38:33 | 0:00 | 6:23 | 1:05 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0% | 0.0% | 0 | 0 |

- OU07 - Call results, by tag
- OU08 - Call results, by feature code
- AG13 - Agent Session View

- AG14 - Queue Session View
- AG15 - Agents by Hour
- AG16 - Tag Session View
- AG17 - Cumulated sessions by Queue, Tag
- OK15 - Required Skills for Taken Calls
- UN19 - Required Skills for Lost Calls
- UN20 - Required Skills for All Calls

They are documented on the User Manual and shuld be manually added to existing systems.

### Known numbers

Known numbers are phone numbers that are known to QueueMetrics and can have properties associated to them. They are meant to be used by an API call in the Asterisk dialplan to take routing decisions.

At the moment, QueueMetrics will use known numbers to:

- Earmark specific calls as BLACKLIST or VIP, where at the dialplan level a proper function is implemented to route thise numbers to specific high priority / low priority queues
- Store a known description for the number that can be used to set a caller-id for the number in a format that will make the number "stand out". It coud be the name of a client, or their CRM IDs
- Store a known agent affinity for the number, where at the dialplan level there is an attempt to route the call to a specific agent before queuing the number on a "general purpouse" queue

**See:** QueueMetrics User Manual, chapter "21.12 - Known numbers"

## Tracking of features on Icon

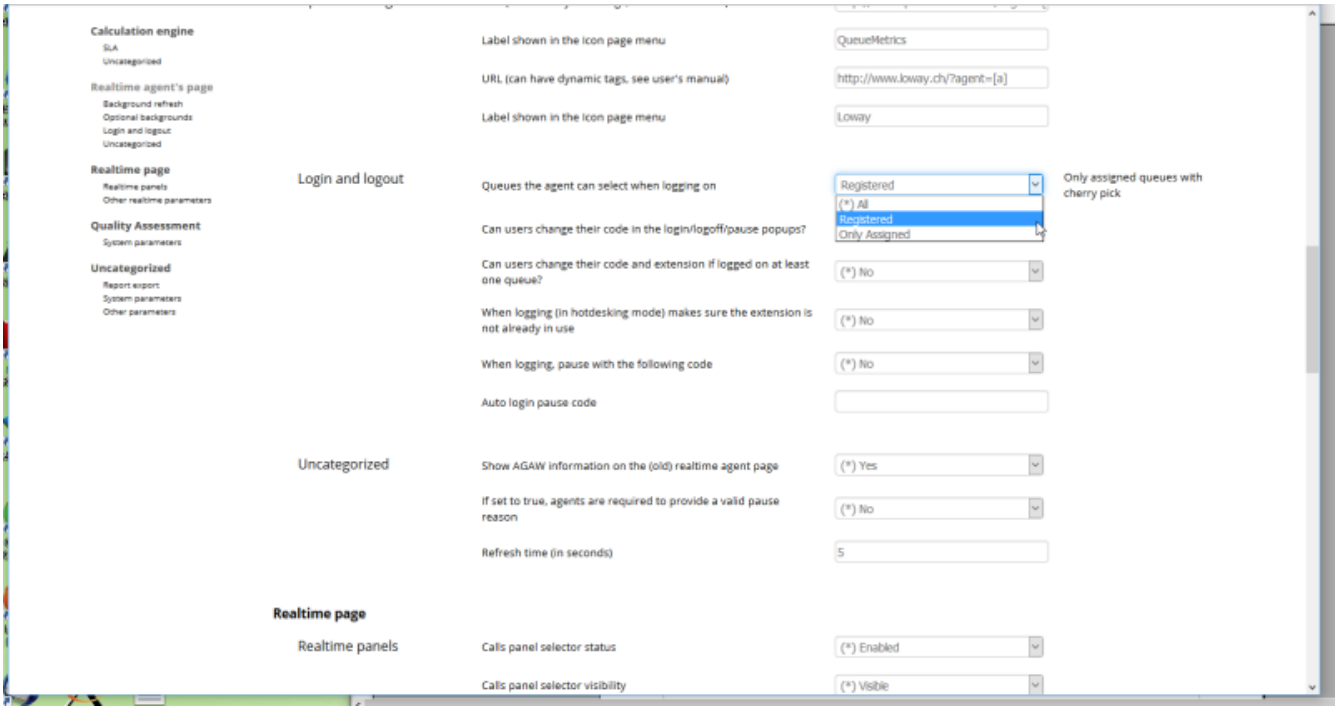
The Icon page was updated to allow input and editing of features as sub-outcomes.

## Usability and layout improvement

### New configuration and security keys editors in QueueMetrics

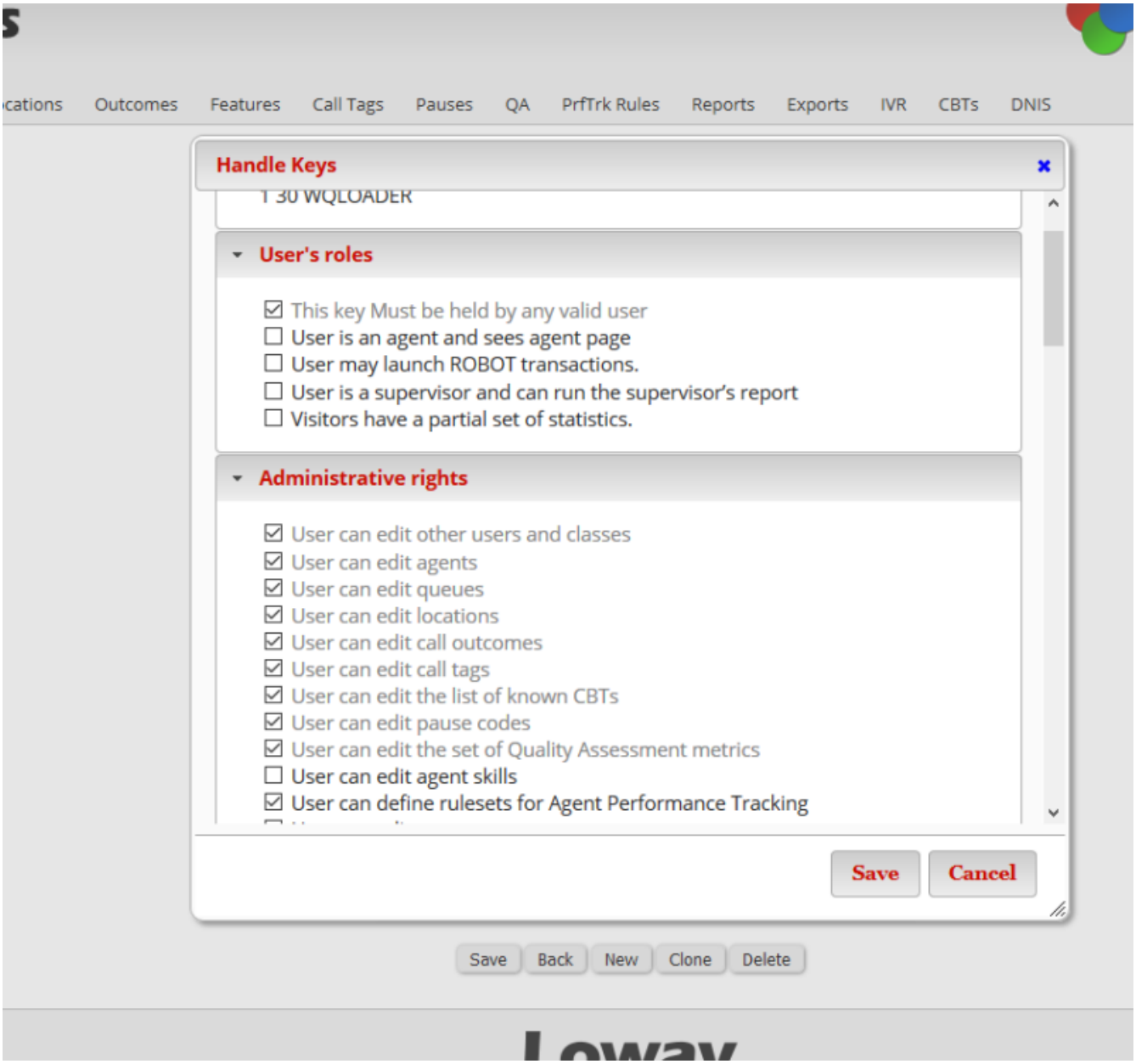
Two brand new editors have been implemented in QueueMetrics version 15.10. They let administrators enable/disable QueueMetrics features globally or per-user.

The new link "Explore system parameters" lets you manage the global features with the administrative tools of the home page. Following the link an administrator is redirected to a new page with the most important QueueMetrics features listed. Properties are grouped together by area of interest.

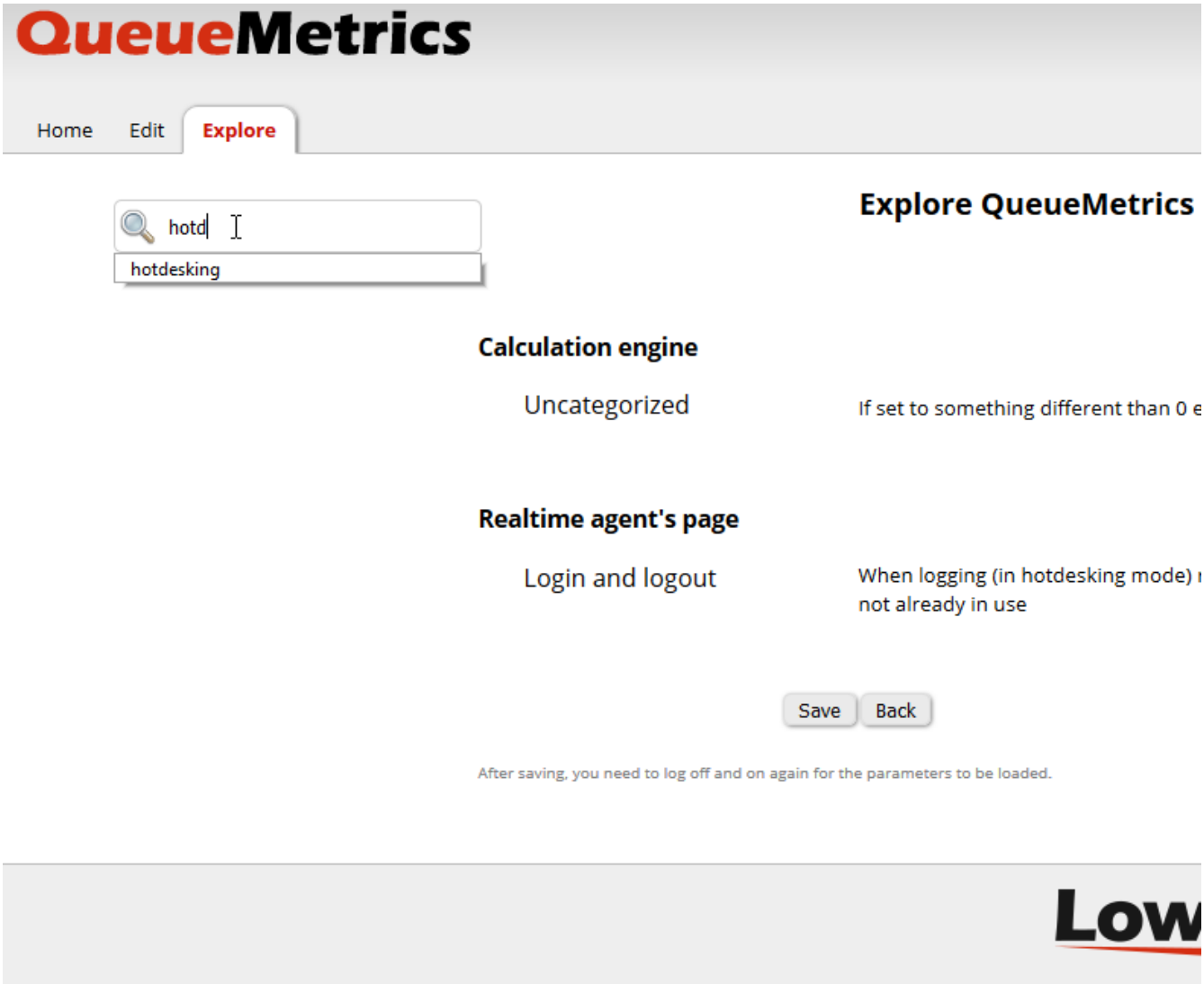



With the new search box you can reduce the number of options displayed when searching for as specific feature.

Pre-defined user related security keys are now easily assignable through a new editor. Click on the button "Handle Keys" available on the users and classes administrative pages to run the editor.




Administrators can assign or remove security keys for a specific user or class, by clicking on the related checkbox.




Keys appearing grayed out are inherited from the class that the user belongs to and can be modified through the editor.

Administrators automatically select keys that should (or should not) be checked together in order to properly enable (disable) a specific QueueMetrics feature.

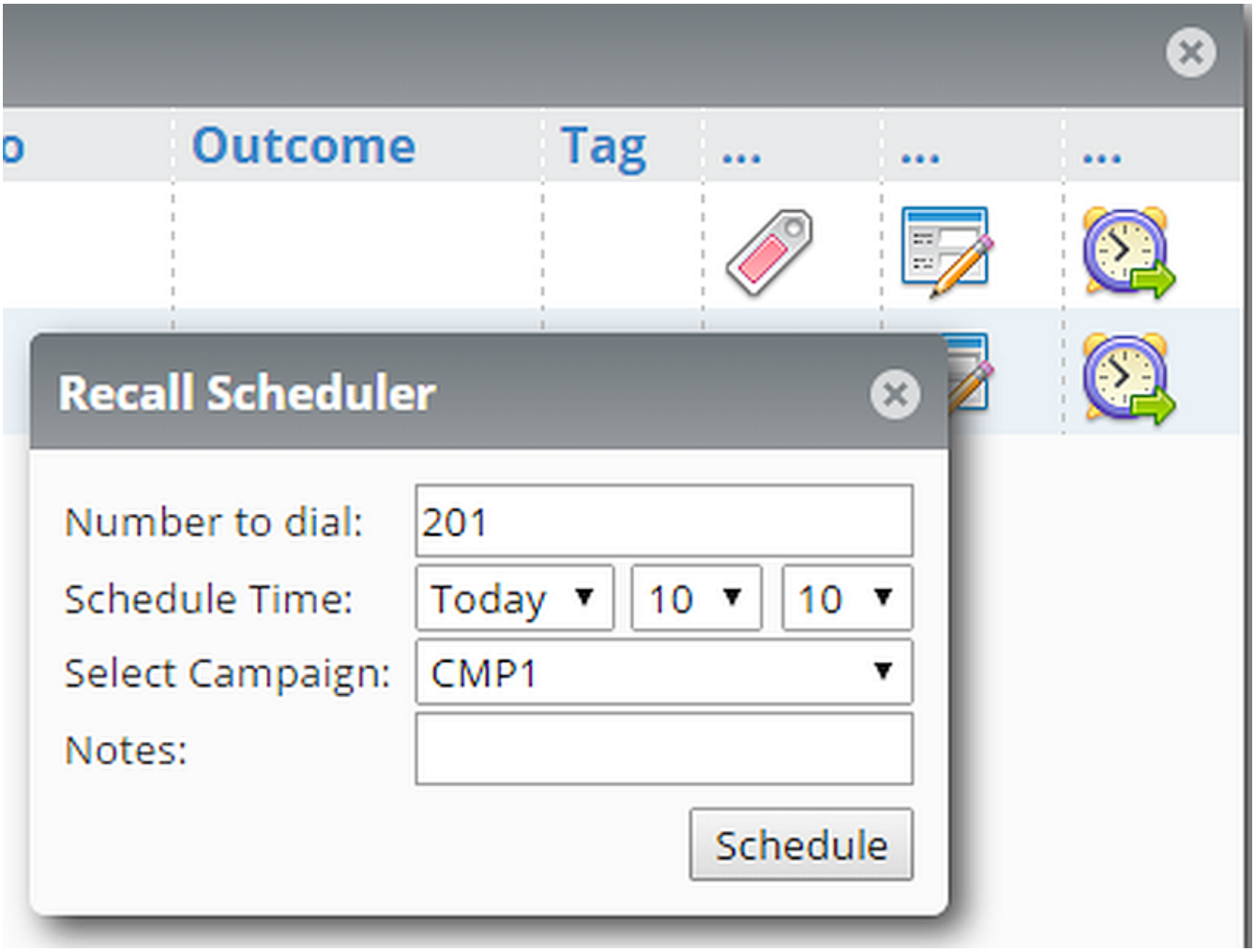
**See:** QueueMetrics User Manual, chapter "21.24. Configuring system preferences"

## WombatDialer integration - Schedule outbound calls from Icon Agent page

WombatDialer campaings can be assigned to queues by mean of the new WombatDialer settings panel, located on the queue definition administrative page.

Several campaings can be assigned to each queue and a maximum recall period can be defined.

As soon as campaigns are defined for a queue, agents will see them in the recall scheduler window in the agent realtime page. Agents can reach recall scheduler panel by clicking on the new icon found in the call list, as reported in the picture below:



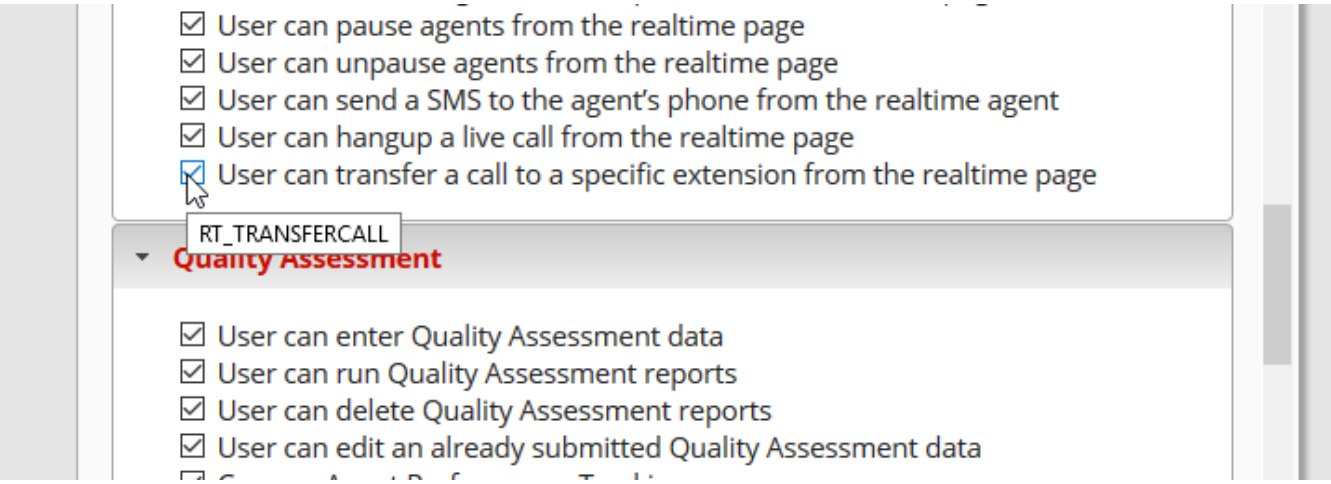

From the Recall Scheduler panel an agent can schedule a call. Scheduled calls will be queued to Wombat for the selected campaign and optional notes. Calls will be evaluated by Wombat at the specified time.

Plus the Call List panel has been improved to track Outcomes and features effectively.

**See:** QueueMetrics User Manual, chapter "8.7.3. The call list panel"

## Improved WebRTC softphone compatibility

The embedded QueueMetrics Icon softphone in 15.10 is compatible with the latest Firefox releases, as well as Chrome.

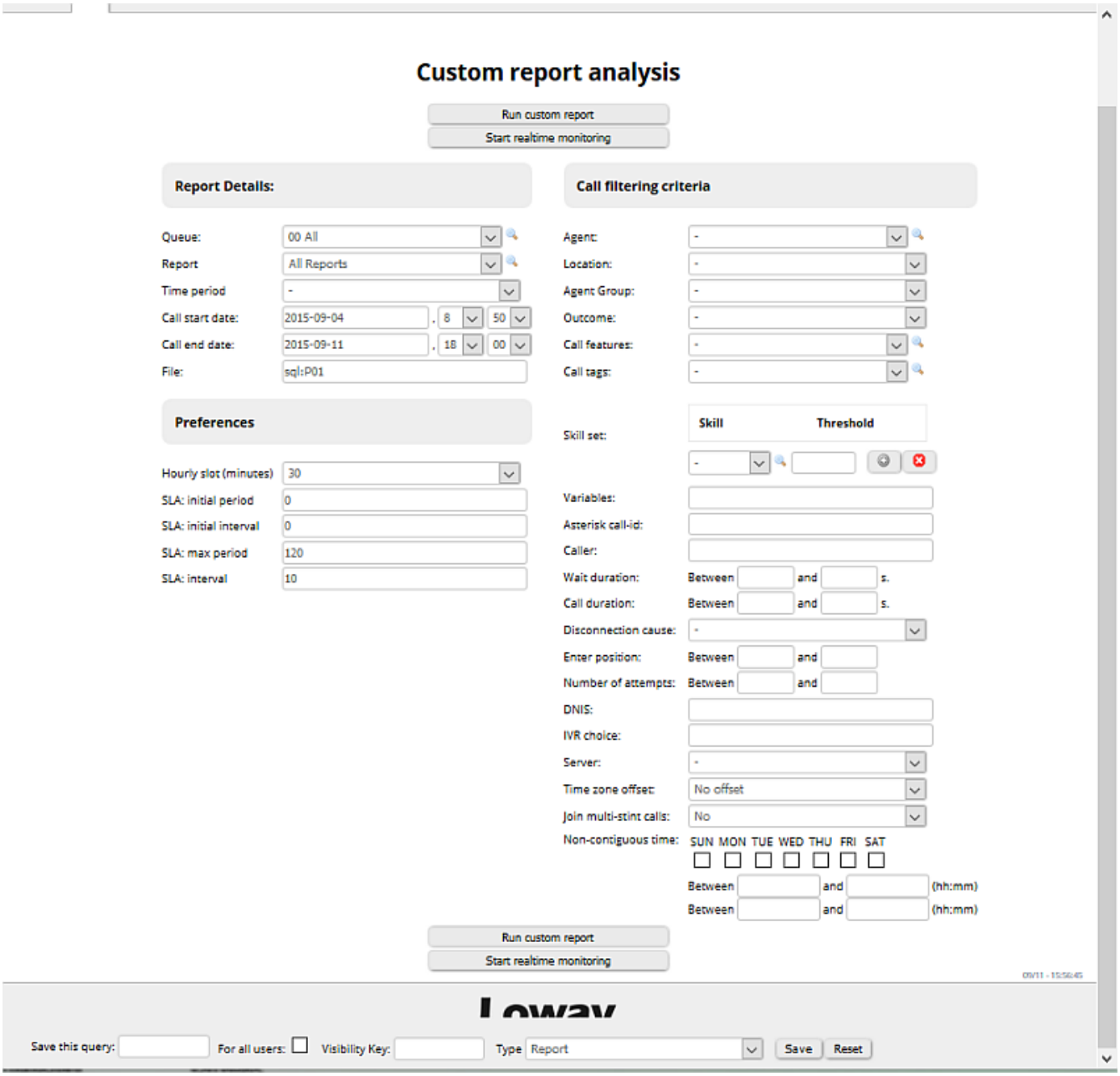



As found in the compatibility matrix (see http://bit.ly/1OUhF68 ) Firefox users can receive calls directly from the WebRTC softphone embedded in QueueMetrics Icon.

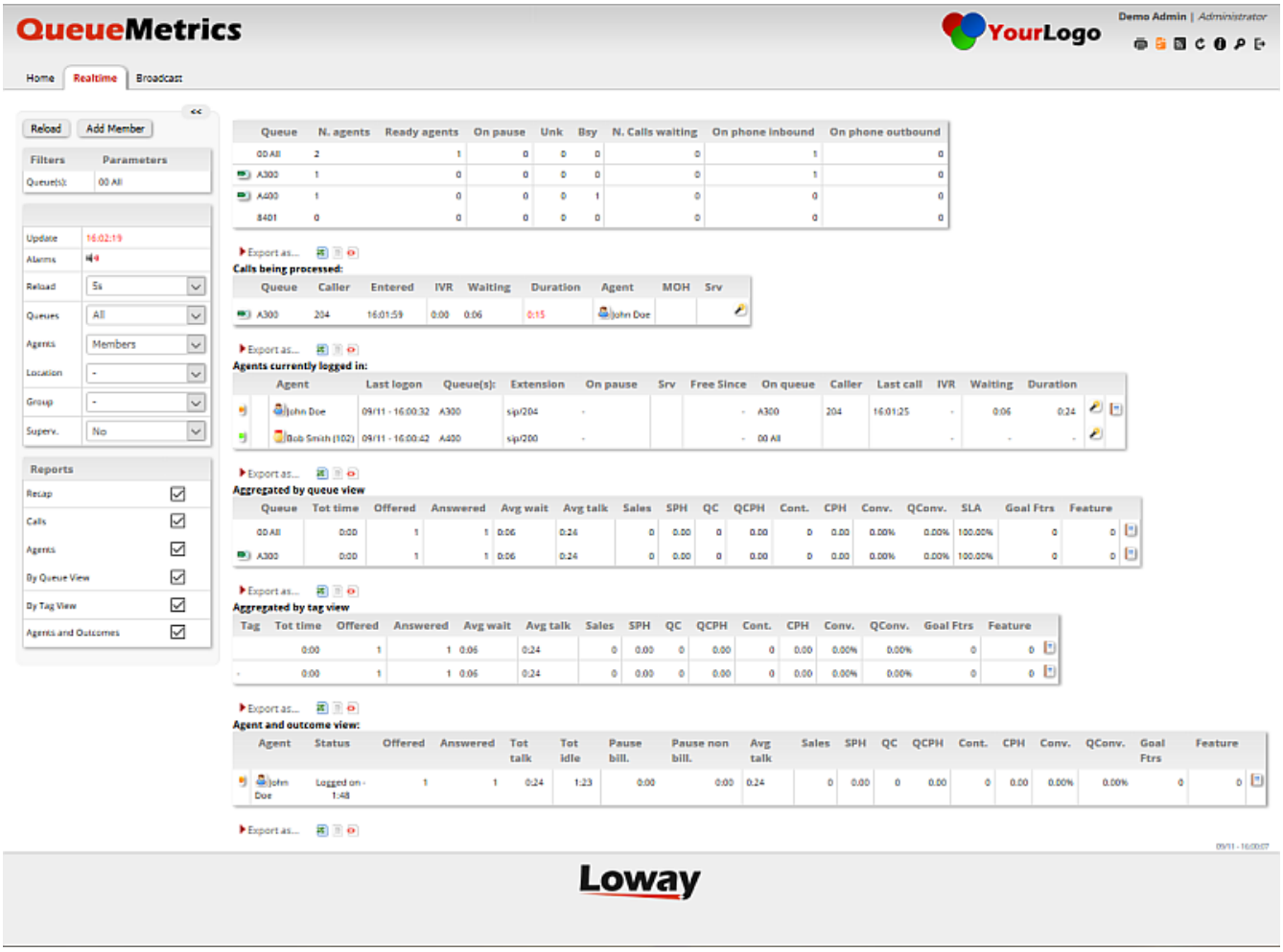
## Updated layouts for Custom Report and Realtime pages

The Custom report and Realtime pages have a new layout.

The accessibility of filters of the Custom report page is increased and the bottom line allows to save custom queries for later usage. Custom queries will be placed on the home page and can jump-start either reports or real-time views.

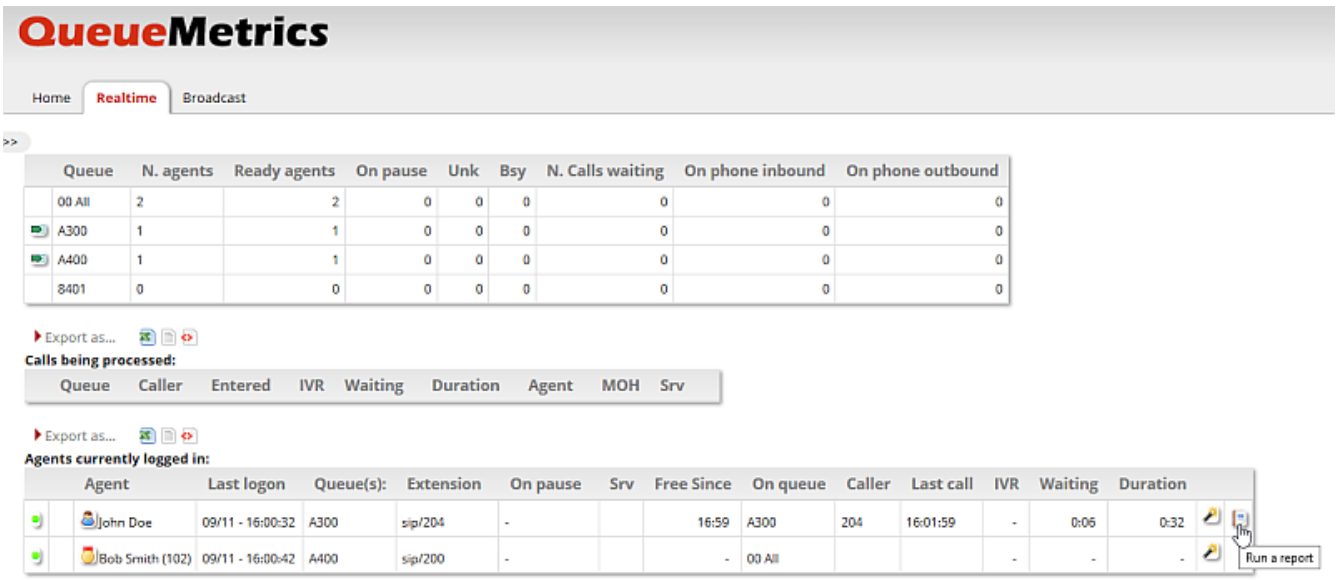



The realtime page presents a new left side menu bar. It contains the relevant analysis filters and can be hidden when not needed.

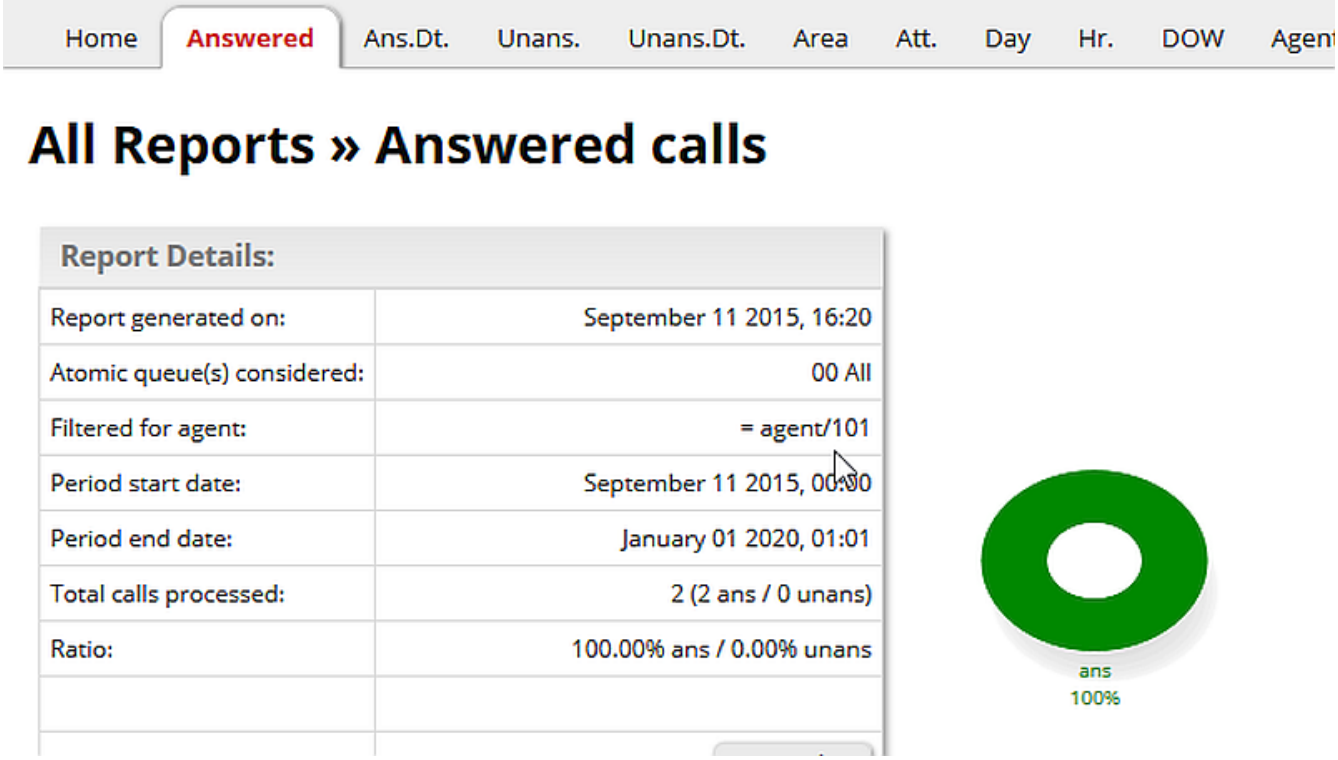



## Click’n go reports from the realtime page

QueueMetrics 15.10 introduces a new click’n go feature to all realtime reports.




With this feature a user can start an historical report with a single click from the realtime page. The query for historical reports is set with same parameters generating the source realtime page report.




## Misc items

- It is now possible to generate direct links to the log-in page of QueueMetrics, so that from an external page you can link to QM and log in at once
- Misc performance improvements that should be noticeable on systems having > 200 agents
- Support for CentOS 7 / MariaDB
- The JSON API now implements the full set of agent actions: you can e.g. log in an agent at the PBX level by caling a QueueMetrics API

## Bug fixes

A number of important bugs were fixed and some miscellaneous minor items were solved as well.

- #2557 - Automatic logon on non-auth direct ink
- #2469 - New centralized CBT tracking
- #2473 - Sorting by columns on the Performance Tracker Page
- #2511 - Multi-stint: if set outcome on non-last call, outcome is ignored
- #2554 - User-selectable timeout for entering post-call information
- #2555 - Expansion of Tag, Features and Variables in URI
- #2570 - Realtime engine caches events for a period longer than required
- #2387 - Conversions are not counted by Performance Tracker
- #2470 - Pushing training to Agents
- #2472 - Adding a note to CBTs and Coaching tasks

- #2475 - Editing QA forms
- #2612 - New index for QA - Mysql 5.6.20
- #2691 - Agents duplicated in Training and Coaching page
- #2713 - Hotdesking not working when running reports
- #2781 - Very slow queue expansion
- #2885 - On RT error, 404 qm_start instead of error page
- #2897 - Performance issues on Calls by Agent
- #2899 - Slow exception on U.cint()
- #2545 - Docs fail2ban
- #2667 - Upload of batches of queue_log rows
- #2670 - Centos7 / Elastix 4
- #2726 - Running multiple TPF requests in parallel easily breaks
- #2737 - Encoding issue on JSON responses API
- #2886 - JSON API: cannot acces single user
- #2888 - Wrong qloader dependency on CentOS7
- #2891 - Direct login links
- #2904 - Error importing from queue_log (configuration wizard)
- #2911 - JSON calls seems not terminates when adding elements API
- #2915 - Error editing agent groups
- #2665 - User preference keys are sometimes duplicated on the DB
- #2666 - Agents are not shown as logged-out in Icon
- #2692 - New smarter drop-down selector in Icon
- #2706 - User-definable go-to URL when clicking on the QM logo
- #2707 - Wombat recalls: server interactions
- #2708 - Performing agent actions through a JSON API
- #2750 - Occupancy can be higher than 100%
- #2779 - Invalid SQL with not numerical call_ids
- #2786 - ErrProd 15.02: DayOfWeekFilter
- #2787 - ErrProd 15.02: initCustomReport
- #2802 - Overlap on SPH and similar
- #2803 - SPH on IMM reports
- #2804 - Wrong SPH in performance tracker
- #2810 - Wrong SPH in AGAW
- #2815 - Integrated softphone uses a plugin that is unsupported.
- #2914 - Impossible to fill a QA form via API

- #2797 - When the session expires, page is not correctly redirected

We hope you'll enjoy your QueueMetrics 15.10 experience! Send us your comments and suggestions.

Thank you for supporting *Loway*.

# QueueMetrics 15.02

*QueueMetrics 15.02* is a release centered around two main themes:

- Improving the usability of QueueMetrics with suggestions and requests that came from our customers and end users, plus a number of changes that make the whole monitoring and management experience richer.
- Fixing major and minor bugs in order to improve the suite efficiency and smoothen the interaction.

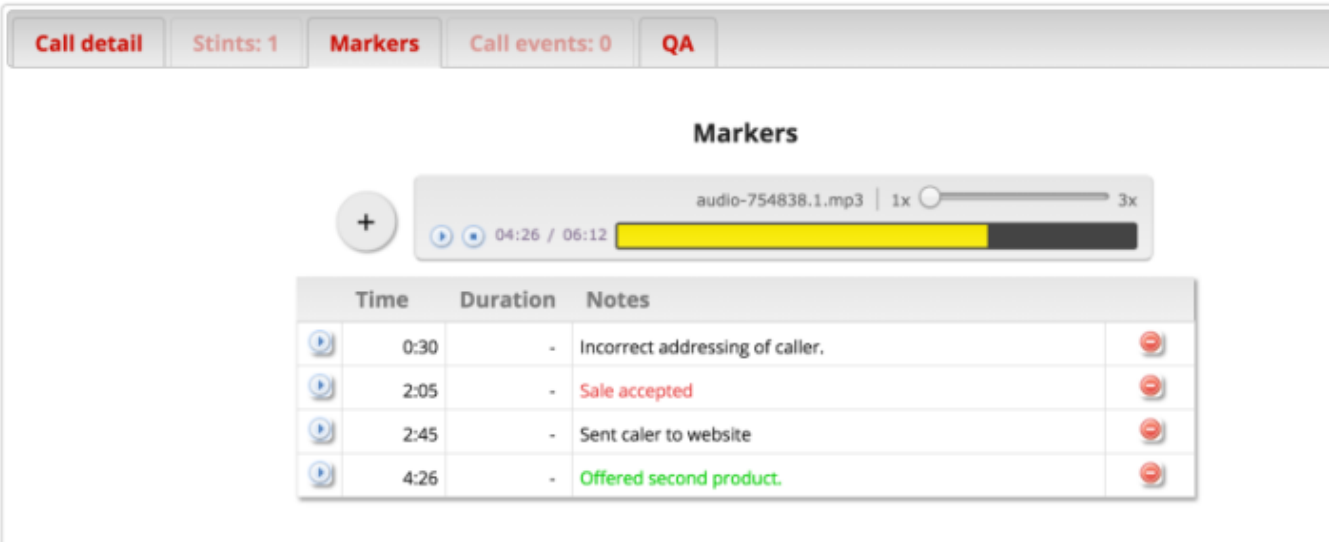
QueueMetrics 15.02 fully supports *Asterisk 13.1*, that will be the current release for 2015, as well as all the older versions.

## Usability and layout improvement

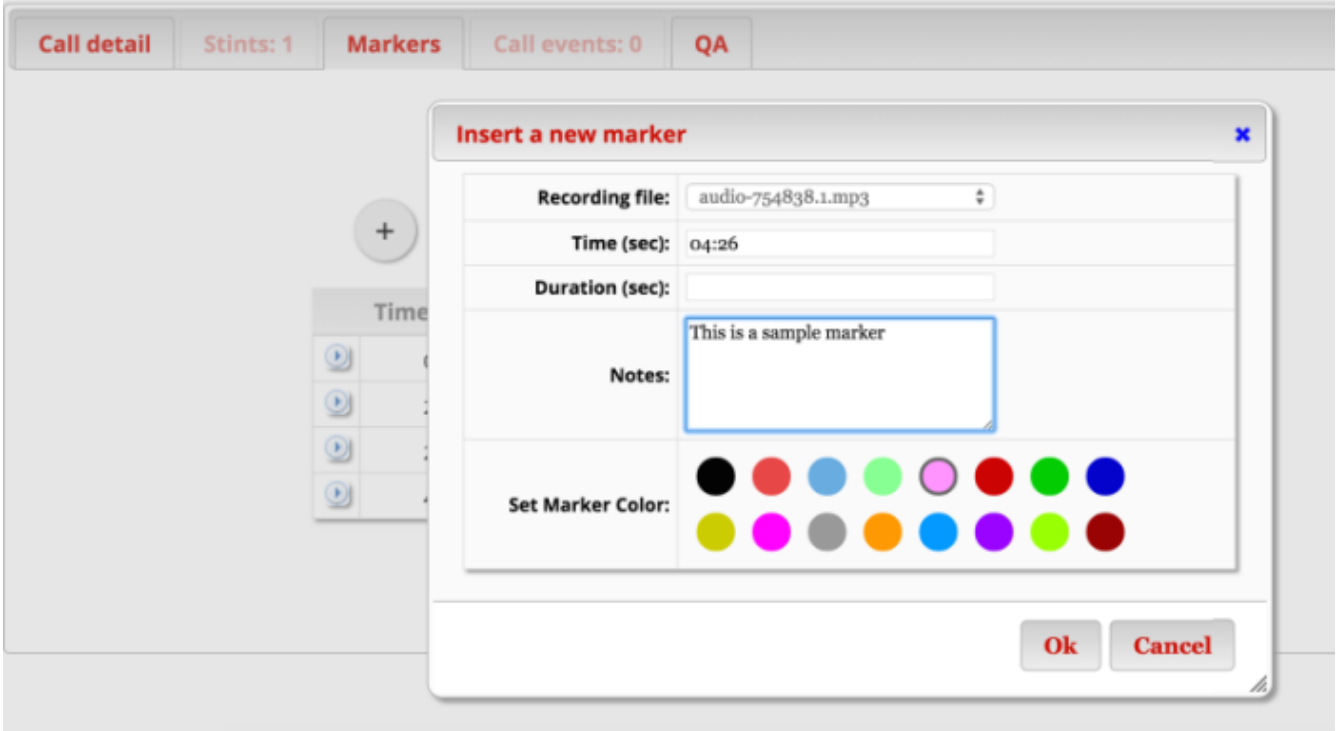
### The new HTML5 audio player - #2509

QueueMetrics always offered facilities to link to recordings and play them through the browser. This used to be made in a separate browser window, so the playback was autonomous from the main QM core and not very flexible.

Now it is possible to play audio in an inner control, making it easy to jump back and forth. It is also possible to speed LP recordings to mark specific points for further inspections or speed up calls to review them faster.




It is also possible to mark visually specific points in a call and jump to them by clicking on the link.




This functionality is available from the Call detail and QA pop-up, clicking on the Play icon next to the file name. You can still listen to calls using the browser and save links locally.

**Prerequisites**: The new functionality requires audio if you want to store in MP3 or plain-WAV format, and a modern browser. In order to turn it on, you need to set the system property *audio.html5player* to true.

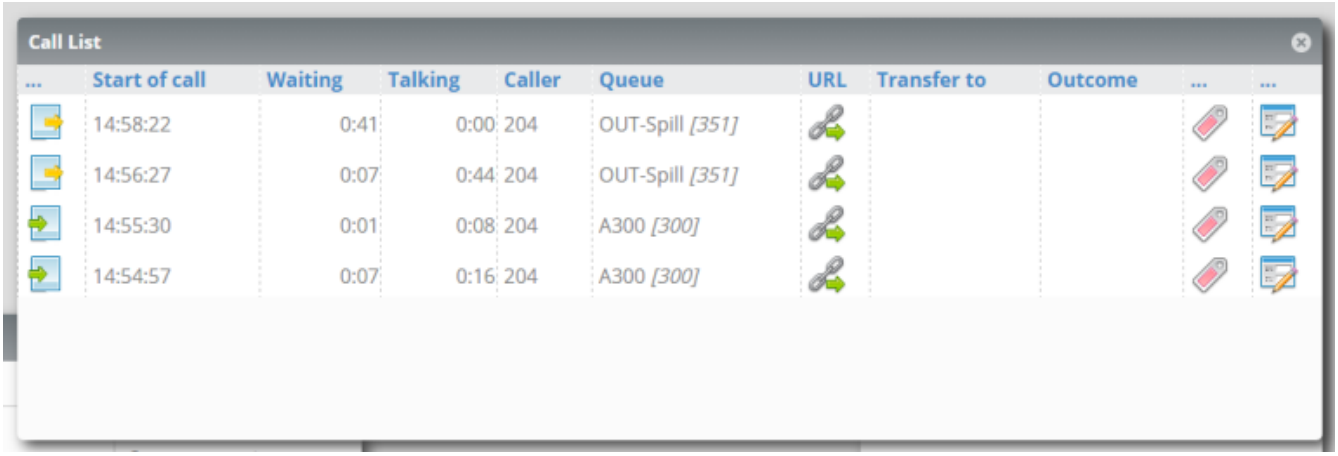
**See:** QueueMetrics User Manual, chapter "5.2.1. The HTML5 Audio Player and Markers"

# Icon Agent Page Improvements

We made a number of changes so that Icon has new key features and extends its usability for inbound/outbound scenarios.

## Lost Calls - #2381

*Lost calls* now appears natively in Icon.




In the Call-list Panel there is a column that shows the list of both inbound and outbound calls with

new icons. The panel also displays any outbound unanswered call.

**See:** QueueMetrics User Manual, chapter "8.7.3. The call list panel"

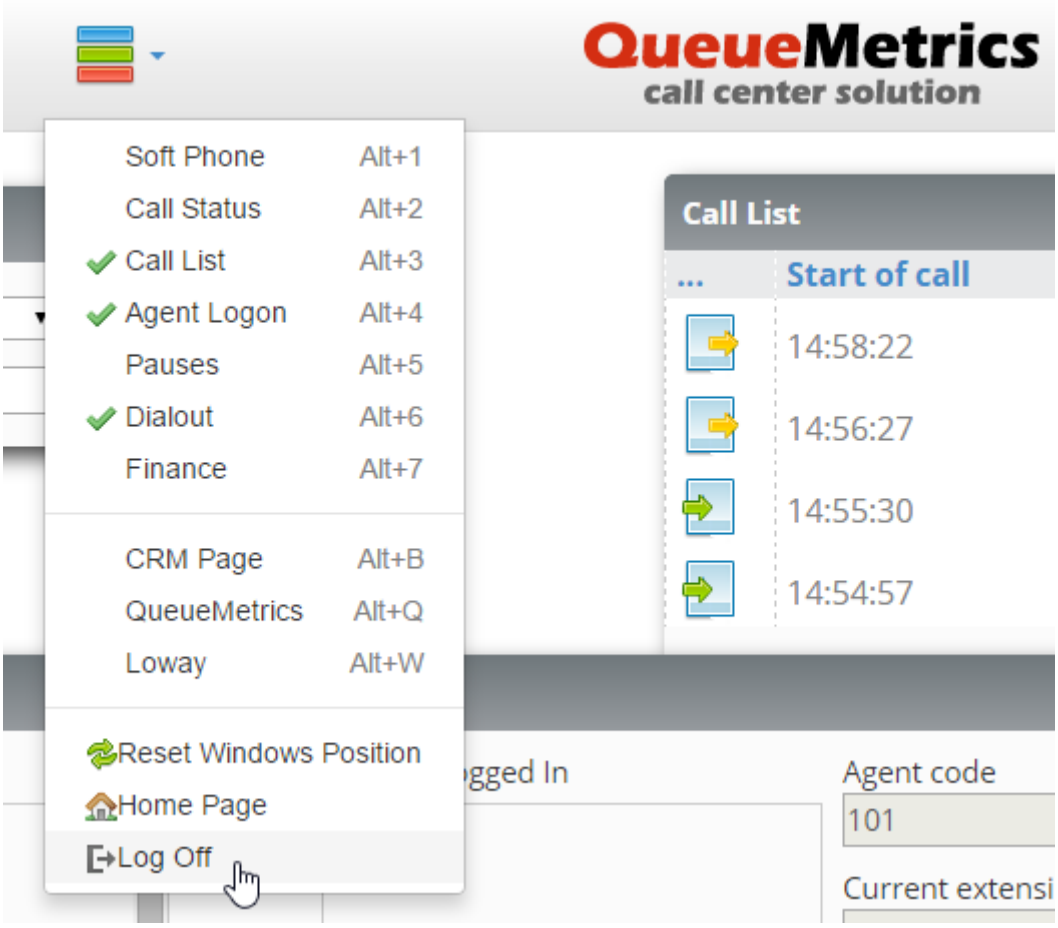
## Softphone Caller ID - #2521

The new real-time agents page integrates a WebRTC softphone. Now the agent can start a call typing the number and clicking on the "Start Call" button. Plus the softphone was restyled for improved usability. It now shows the Caller Id for all incoming calls.

**See:** QueueMetrics User Manual, chapter "8.7.1. The integrated soft phone panel"

## Direct Agent Log-in procedure - #2558

Agents enabled to use to Icon will now be directed straight to their realtime agent page instead of their home page.



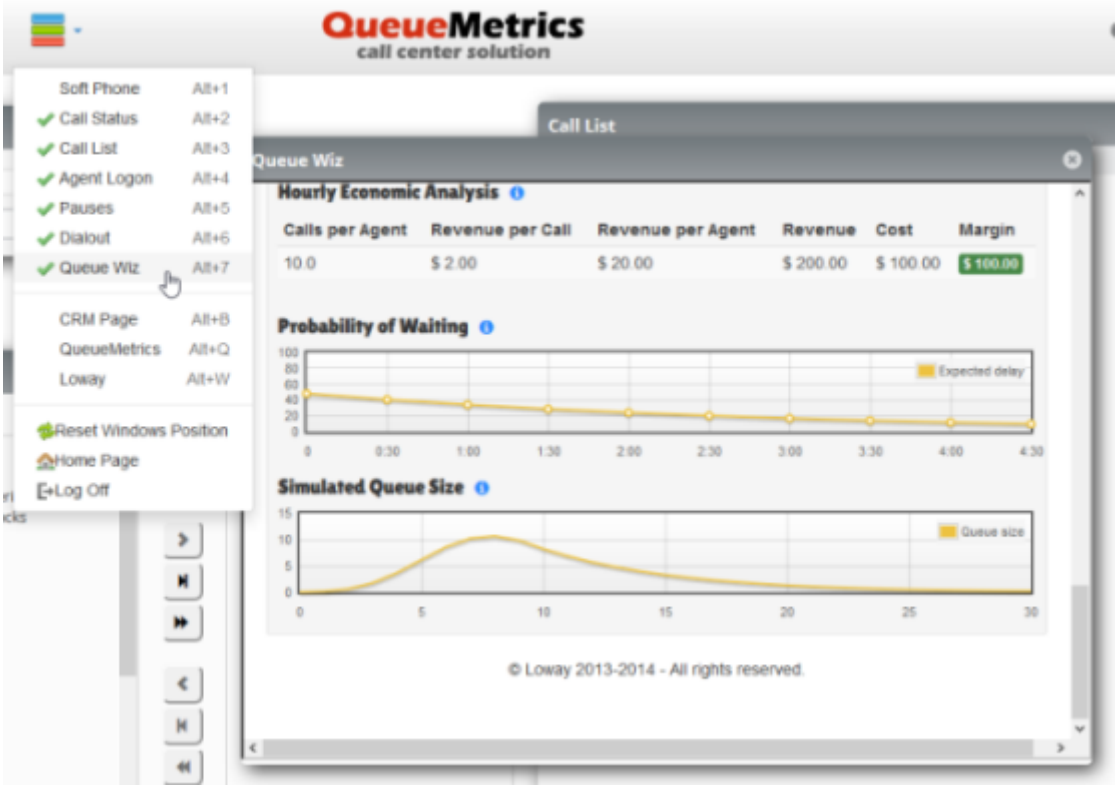

**Prerequisites**: this feature can be disabled with the *default.disable_directlogin_to_agentpage* configuration key set in the *configuration.properties* file.

**See:** QueueMetrics User Manual, chapter "8 The new Realtime Agents Page"

## User Definable Inner Webpage panel - #2579

A new custom web panel is used to embed a user defined external website or custom intranet page. The panel is refreshed each time it is selected and/or moved, so it is possible to use it to display

metric from an existing system.



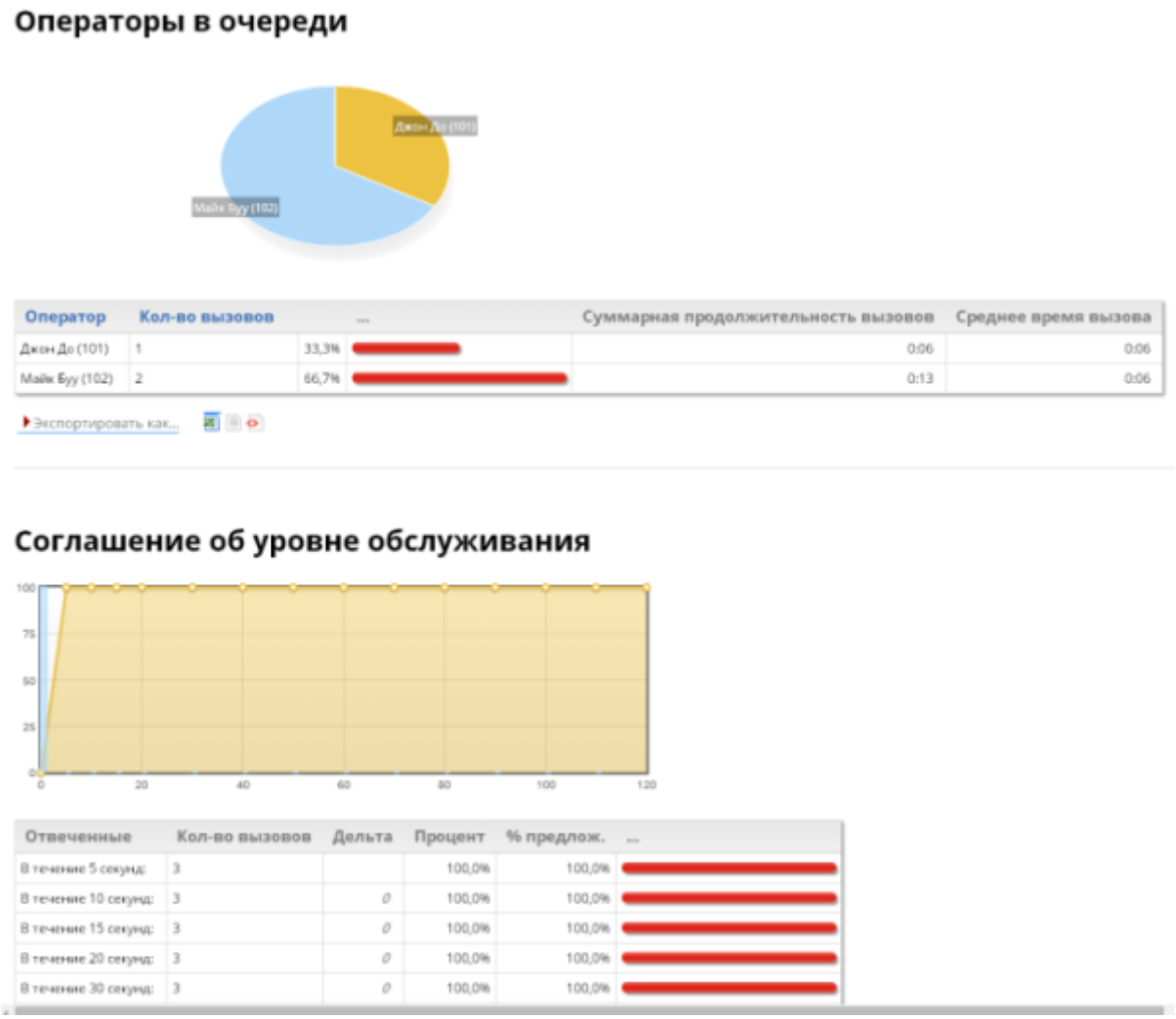

The goal of this panel is to allow integration with custom implemented indicators and/or messages.

**Prerequisites**: The panel is optionally enabled by modifying the configuration keys *realtime.agent_webpanel1_url* and *realtime.agent_webpanel1_label* located in the *configuration.properties* file.

**See:** QueueMetrics User Manual, chapter "8.7.7. Custom Web panel"

## Full UTF-8 support - #2485

QueueMetrics is now fully compliant with UTF-8 charset, meaning that is possible to use any UTF-8 characters when defining agents, QA forms, notes and any item in the report.



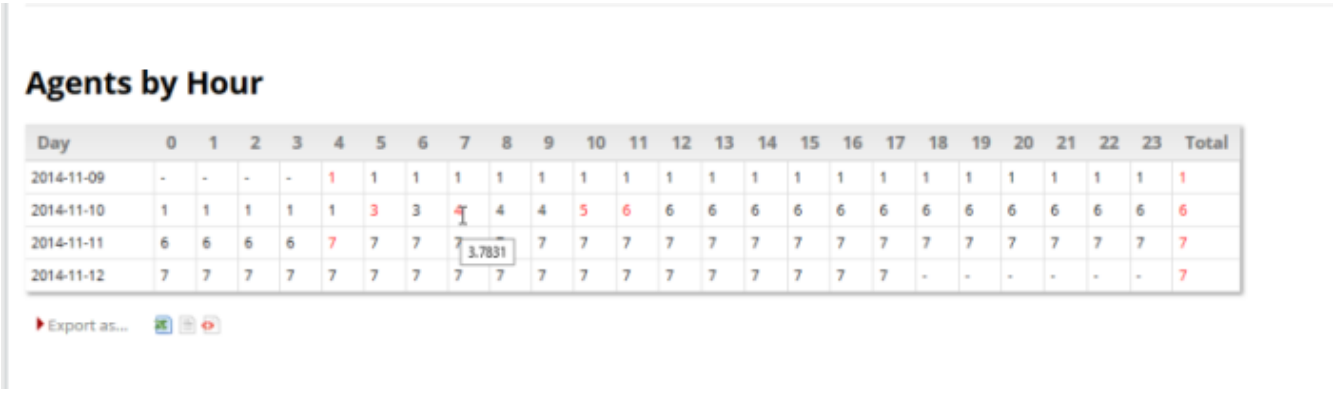

UTF-8 encoding now covers all functionalities, including statistics reporting, operators page and QA facilities, which makes it possible to fully support all international installations.

**Prerequisites**: enabled by default on all the installations. On old installs see FAQ https://www.queuemetrics.com/faq.jsp#faq-065-UTF8

**See:** QueueMetrics User Manual, chapter "5.2.1. The HTML5 Audio Player and Markers"

## New "Agent per hour" report - #2578

This new report details the number of agents available on the selected queues for each hour of each day. The first column reports the date the current line refers to.



The next 24 columns report the number of agents found for at least one second in the associated hour. Numbers are reported in black if the timeband was covered completely by the agents, or shown in red if at least one agent is not present for the whole hour. The last column reports the agents seen, for at least one second, during the day.

**Prerequisites**: enabled by default on new installs. On existing ones you will need to add data block AG15 manually.

**See:** QueueMetrics User Manual, chapter "6.10.13 AG15 - Agents by Hour"

# Bug fixes

A number of important bugs were fixed and some miscellaneous minor items were solved as well.

- #2609 Flot graphs working on Retina Display.
- #2560 All defaults for UTF-8.
- #2431 Json API: decoded variables are not decoded if there is a numeric ID.
- #2577 AMI transaction working with Asterisk 13.1.0
- #2360 Test XML-RPC API.
- #2544 Logging of failed logins for Fail2ban.
- #2438 QueueMetrics permits duplicated fields.
- #2368 Pause and unpause in same second will not work.
- #2556 Json API: wrong hashcode.
- #2606 Agent filter is not working on performance tracker.
- #2378 Call monitor from realtime is not enabled.
- #2559 QA: Cyrillic names don't work in QA.
- #2423 The dbtest page breaks when running a pool: URI.
- #2561 Renaming existing TAGS to MARKERS.
- #2630 Queues defined with lot of atomic queues.
- #2541 Problems reading from realtime DB using useRowCache=true.
- #2437 Less verbose log when streaming audio.
- #2604 Parameters for non contigous reports are not persisted properly.
- #2376 Running a report changes default agent code.

We really hope you will enjoy the new QueueMetrics 15.02! Do not hesitate to send us your comments and suggestions.

Thank you for supporting *Loway* and *QueueMetrics*.

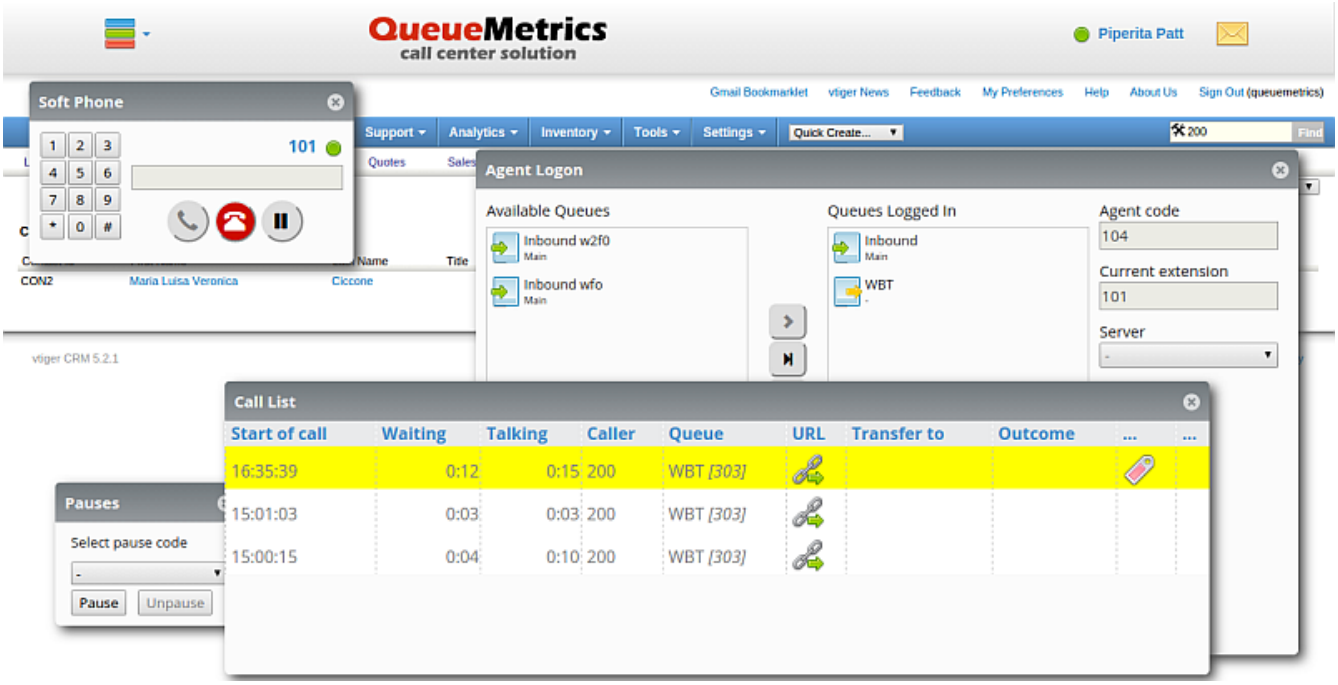
# QueueMetrics 14.10

QueueMetrics 14.10 is a release centered around three main themes:

- Improving the *usability* of QueueMetrics, by implementing a series of suggestions for changes that came as feedback on the Icon page, plus a number of changes that make the experience generally smoother.
- Improving the *deployability* of QueueMetrics, by leveraging and extending the new JSON API, having a command-line updater tool and by having a new, HTTP-only data loader that does not require a direct connection to the QueueMetrics database. This makes deploying large numbers of cloud QueueMetrics instances easier. Plus, a number of configuration defaults were updated and the sample database includes a better sample QA form.
- Fixing a number of *bugs and issues* here and there that would annoy users. The most important ones are that call attempts are now filtered correctly and that listening to audio files having weird characters in them should "just work".

QueueMetrics 14.10 fully supports the upcoming *Asterisk 13*, that will be the core Asterisk LTS release coming in the next months, as well as all other Asterisk versions.

Plus, this release has an initial *Catalan localization*; and more languages are on their way.




Generally speaking, we envisioned QueueMetrics 14.06 as a kind of "wrap-up" that builds and polishes the changes made with Icon and paves the way for improvements and new features to come in 2015.

# Usability and the Icon page

## Improvements to the Icon page

The Icon page now remembers the last extension an agent used (unless there is one defined); the

regular expresions to validate queues and agents are applied live as you type, and the soft-phone is a bit quicker in setting up calls. Plus, it is easier than ever to select the queue(s) you can work on and windows work in a more consistent way.

*Related issues:*

- #2390 - Remembering last entered extension
- #2391 - If queue name is too long, dialout panel does not work
- #2492 - Remembering last used agent extension
- #2500 - Validation RegExp (agent and extension) on event onChange
- #2483 - Softphone slow in setting up
- #2400 - Can’t change pause code without unpause first
- #2445 - "Current extension" and "Agent code" (Logon window) can be greyed out if a queue is already logged in
- #2451 - Extension field should not be locked if a value is present
- #2458 - In "Call out" window, call button remains greyed out after 2-3 calls
- #2459 - Queues with call flow "undefined" (both inbound and outbound) are not shown in "Call out"
- #2484 - Call Status window not showing ongoing call’s time
- #2488 - Call remains ongoing if abandoned by customer (until new refresh)
- #2489 - Wait time for outbound calls displayed as conversation time (until call’s end)
- #2490 - Pause window has hidden buttons in Russian

## General configuration improvements

We made a number of changes so that the settings on a new system are easier to work with. The default memory pool for new installations is now 256M, growing automaltically to 512M when needed, and this should be okay for most users. Pop-up windows were made easier to use without having to resize them, hot-desking is enabled by default, and the Real-Time page now reloads faster.

We also got a couple new FAQs addressing common issues like what to do when an agent status cannot be defined and an example outbound email configuration for Gmail.

*Related issues:*

- #2452: New Tomcat RPM release with sysconfig properties
- #2453: Create a new sample QA form
- #2455: Updated Tomcat RPM
- #2456: Size of pop-up windows
- #2507: Flashing "tasks" icon
- #1991: Cfg: Define "00 All" queue as "*"

- #2379: Cfg: Hotdesking enabled by default
- #2403: QueueMetrics by default runs with 256/512M
- #2414: Cfg: default.alwaysLogonUnpaused true by default
- #2446: Cfg: default.lockedAgentPopupCode true by default
- #2450: Cfg: New defaults for RT page
- #1285: FAQ: Agent status cannot be determined.
- #1981: FAQ: Example GMAIL configuration
- #1587: FAQ: Tomcat file rotation

# Deployability

## The web-based qloader

QueueMetrics now ships with an experimental new-generation qloader that does not require a direct database connection. It is also able to apply "splitting rules" in order to feed the output of one single Asterisk box into multiple QueueMetrics instances, each of which is not aware of the others. It also acts as a remote daemon in order to manage agent actions (logons, pauses, chanspy... you name them) without the need of establishing a direct AMI connection.

While the "classic" qloader served us well for years, and we do not suggest replacing it for existing systems, it was not well suited for handling remote Asterisk instances in cloud-based hosting scenarios.

*Related issues:*

- #2388: HTTP qloader interface
- #2389: New HTTP qloaderd
- #2434: Wqloader does not install on Centos5

*See also:*

- The web qloader user manual: http://manuals.loway.ch/WQLoader-chunked/

## APIs

The JSON APIs were extended by offering a way to read and edit the *configuration.properties* file programmatically. JSON APIs run quicker and a number of corner cases were addressed.

It is also now possible to run the *dbupdater* from the command line, so that during a scripted upgrade you can run it before QueueMetrics is put back online.

*Related issues:*

- #2430: Run dbTester from the command line
- #2435: Efficient logins and sample user

- #2436: JSON api problems loading/deleting
- #2503: API to edit configuration.properties

*See also:*

- The JSON API user manual
- The *updateDb.sh* script that ships with QueueMetrics

# Bug fixes

A number of bugs were fixed: ACD attempts are now computed correctly even if a filter is applied on the call set; a number of encoding issues on file names and XMPP/IM logins were addressed; and a few miscellaneous bugs were fixed as well.

*Related issues:*

- #2442: "ACD attempts by terminal" and "by queue" not filtering
- #2447: IM url is html-encoded
- #2065: Illegal character + in audio filenames
- #2267: Call recordings with some chars are not accessible
- #2369: Encoding of "+" on call listen URLs
- #1626: Audio Listening: audio names including the "+" sign
- #2402: AGAW runner doesn’t work in 14.06 (new API)
- #2359: If queue set as "Any call" (call flow), it is not saved in queue details

# QueueMetrics 14.06

Release 14.06 offers significant improvements to the QueueMetrics package. They are centered around *QueueMetrics Icon*, the new innovative Agent Page.

The major changes we implemented are:

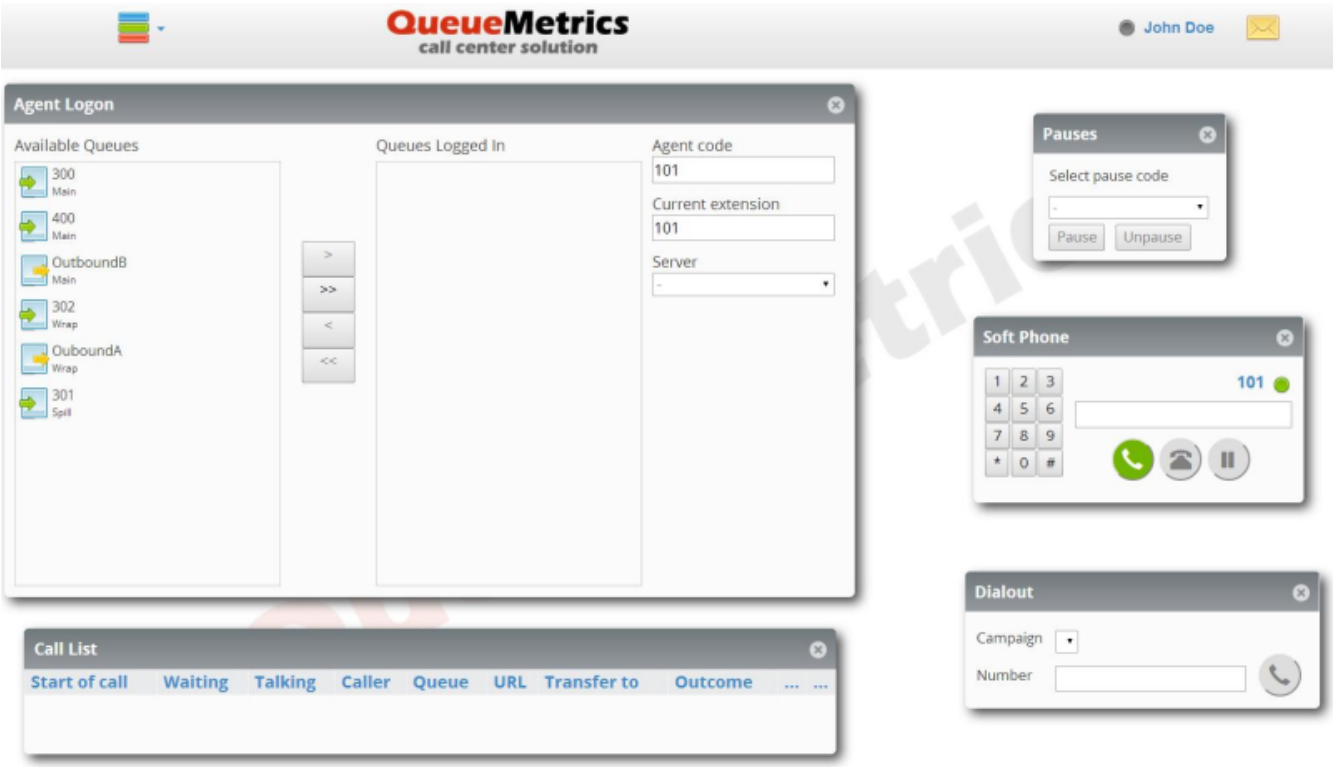
- A complete QueueMetrics layout restyle.
- The new Icon Agent Page.
- The integrated WebRTC Softphone.
- The new JSON APIs for configuration and reporting.
- A new, easier to use IVR tracking mode.

## QueueMetrics layout restyling

We completely restyled QueueMetrics to match the demand for a fresher interface. The layout is now very clean and modern so that users can easily find what they need. A complete overhaul of the visual elements brings sharper windows corners, subtler drop shadows, more solid colors and a stylish font. The new look-and-feel greatly improves usability, facilitates learning and makes using QueueMetrics daily a pleaser experience.

## Icon: The new Agent Page

We designed the new agent interface in order to provide users with the best usability combined with an innovative and minimalistic design that focuses all interactions with only one icon on a completely clean panel layout.



Using Icon, agents can operate all their call-center functions with only one control icon. Several new exciting features were added:

- A workspace with draggable and resizable windows for each main activity.
- Integrated WebRTC soft-phone.
- Native integration with external CRMs and custom web pages.
- Easier, intuitive queue login/logout and pause/unpause procedure.
- Customizable agent display layout with sessions persistence.
- Keyboard shortcuts for all the panels.

Access to the Icon page when upgrading existing systems is controlled on a user or class basis through the security key *NEWAGENTPAGE*. You have full control on when and to whom it will be shown.

*See also:*

- QueueMetrics User Manual: chapter 8.7

### The Integrated WebRTC Softphone

Following the generalized trend towards WebRTC, an innovative embedded soft-phone was integrated in Icon. It allows agents to receive and originate calls without an external SIP phone. This way you can provision new agents with only a modern browser and a pair of earphones - nothing to install on their workstations.

WARNING At the moment, the level of support for WebRTC in different browsers is in flux. Icon's targets were Google Chrome 35+ and Asterisk 12 PBXs. An example of the current configuration needed to get it up and running is available in the Advanced Configuration manual.

## A New JSON API interface

QueueMetrics now benefits from a new JSON API that wraps and extends the old XML-RPC API. This is now the primary access API for QueueMetrics. From the JSON API you can:

- Access and modify all the QueueMetrics configuration (retrieving and creating queues, agents, reports, etc.)
- Run reports on the statistics, the Real Time page, QA and more. All existing XML-RPC methods have an equivalent one-to-one call in JSON.

The new API comes with an extensive JSON API manual.

*See also:*

- The QueueMetrics JSON API manual

# New IVR tracking mode

The new IVR tracking mode lets you define an "area" for each IVR incoming call, so that you can limit the visibility of each call to a subset of queues/areas. For example, if you run a DID for each client, you can assign IVR calls that do not enter any queue to a separate area for each client and they can appear separately in reports.

The new IVR tracking mode is completely compatible with previous IVR-tracking logs.

*See also:*

- QueueMetrics User Manual: chapter 9.1.2

# Misc changes

A number of bugs present in previous releases are now fixed:

- Agent page uses a lot of memory on Firefox (#2229)
- Logging off agents from queues they do not work on anymore (#2306)
- QueueMetrics 14.03 does not connect to Asterisk 12.1 (#2311)
- Clean Tomcat cache at the end of the installation (#2314)
- Queue names are lowercased when logging off (#2322)
- Page does not work after pressing F5 (#2333)
- The new agent page does not refresh properly (#2290)

# QueueMetrics 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.

## General usability improvements

### Interaction with Asterisk through the AMI 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.

### 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.

### 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 by a logged-off agent. 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, so the agent does not "linger on" in the real-time view.

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

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

### 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 create a new queue and go back to the main page, the new queue may take a few seconds to appear. This does not happen anymore - all configuration changes done through the GUI are effective immediately.

### Compatible with the latest Oreka TR installations

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

TR.

### 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).

## 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
- Possibe 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

# QueueMetrics 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.

## 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.

## 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.

# 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

# 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

# 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 doocuments
- 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

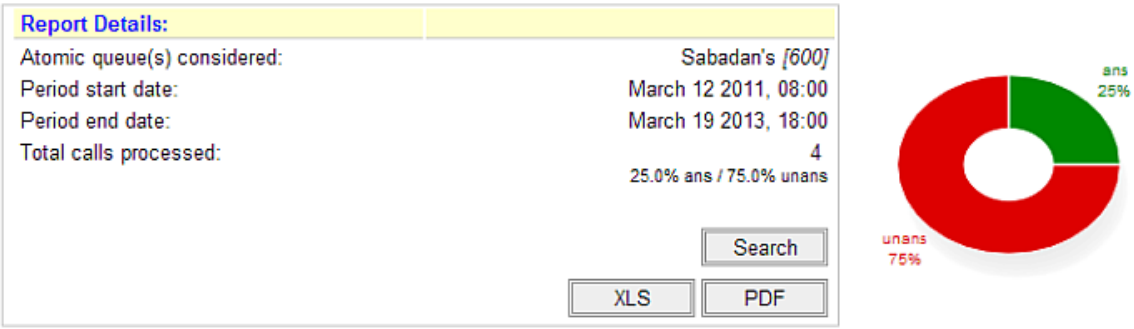
# QueueMetrics 13.04

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

## 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 recipents. 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

## 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...

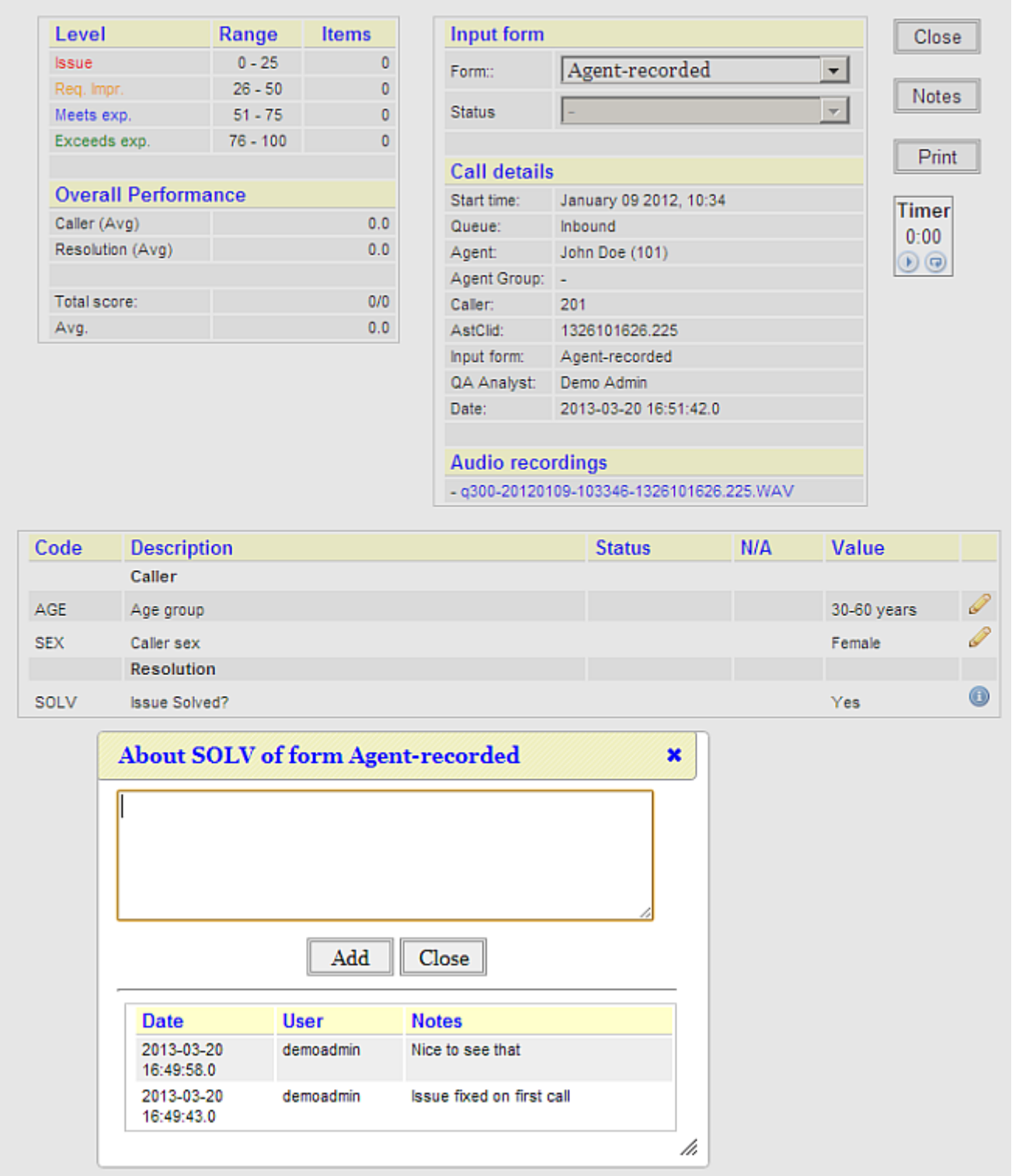
(*) Values counted with current item weights

### 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 |
| | | | | 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.




*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

# 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-performnce 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/

# 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 though 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

# Detailed tracking of call events

The call details pop-up has been reworked in order to offer a comperehsive 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

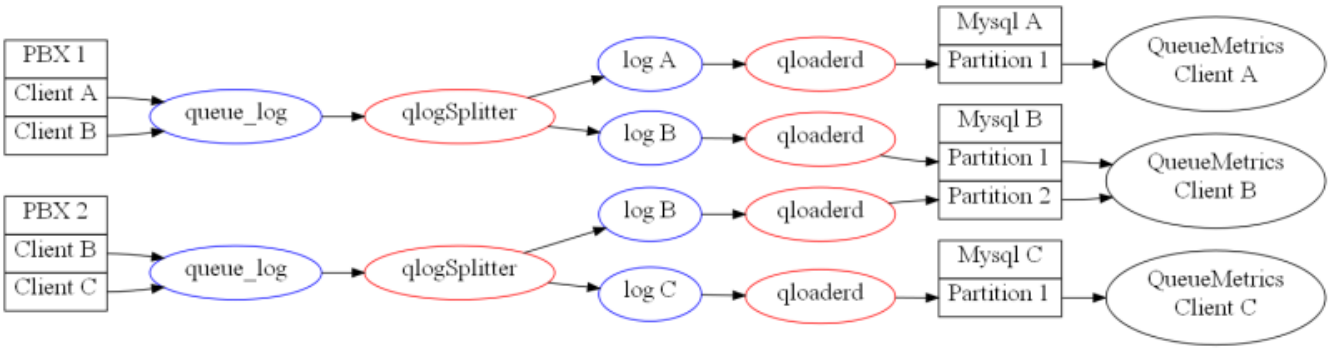
# QueueMetrics in the cloud: using different QM instances on the same PBX

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 https://www.queuemetrics.com/keyring.jsp

# QueueMetrics 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]

## 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.

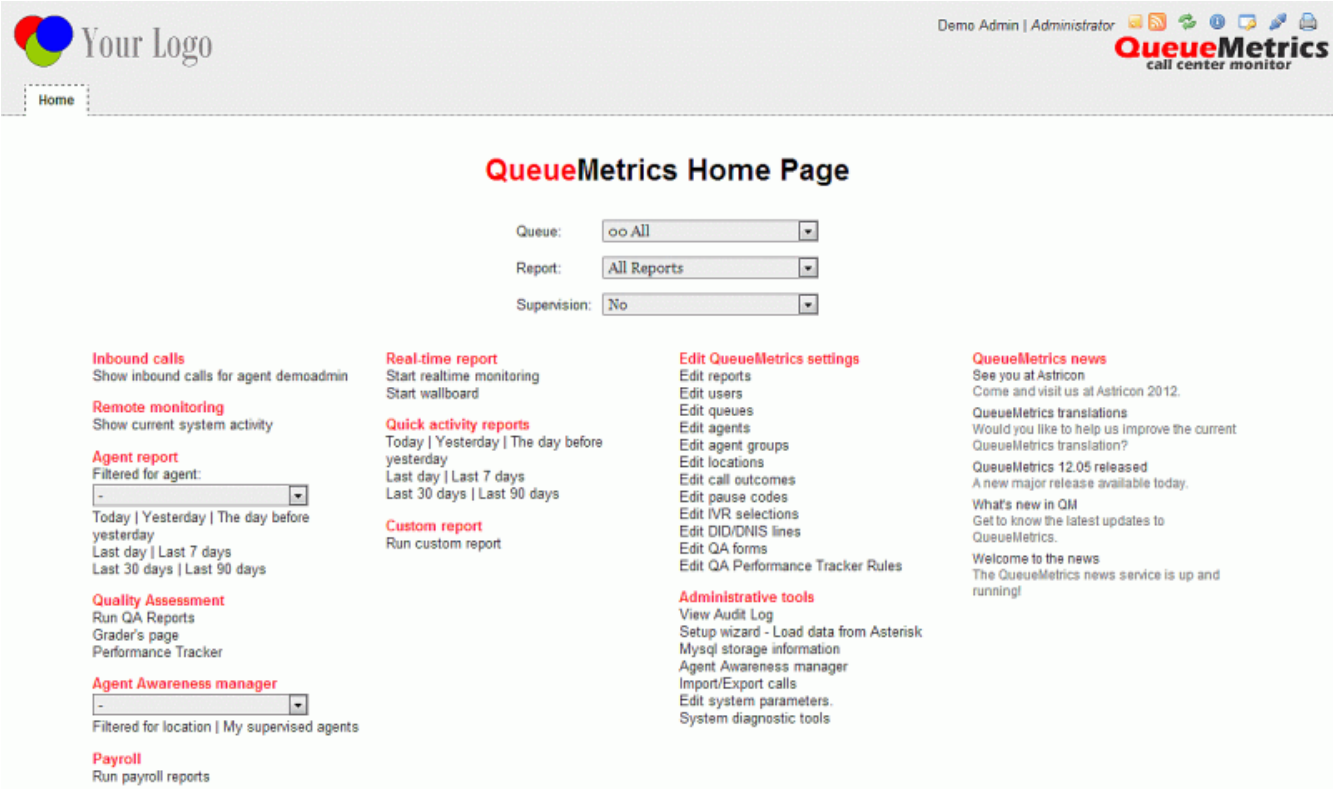
*See also:*

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

# 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

# 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.

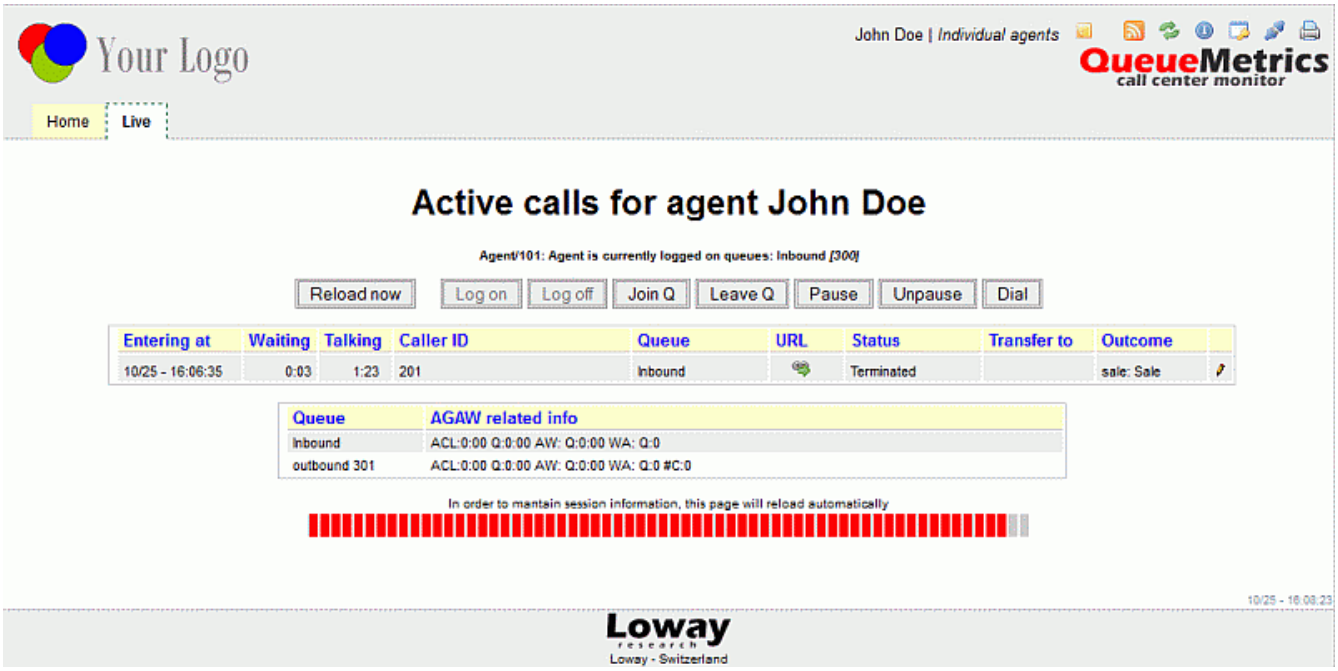
An administrator can also assign the maximum amount of time that an agent can have available, when viewing historical reports from the agent web page. When an agent runs a report, the agent does not have a *Search* button enabled, so s/he is not able to access any kind of Custom Reports.

*See also:*

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

# 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*.




URLs are passed to the Queue() command in Asterisk or, if missing, they can 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

# QueueMetrics 12.05

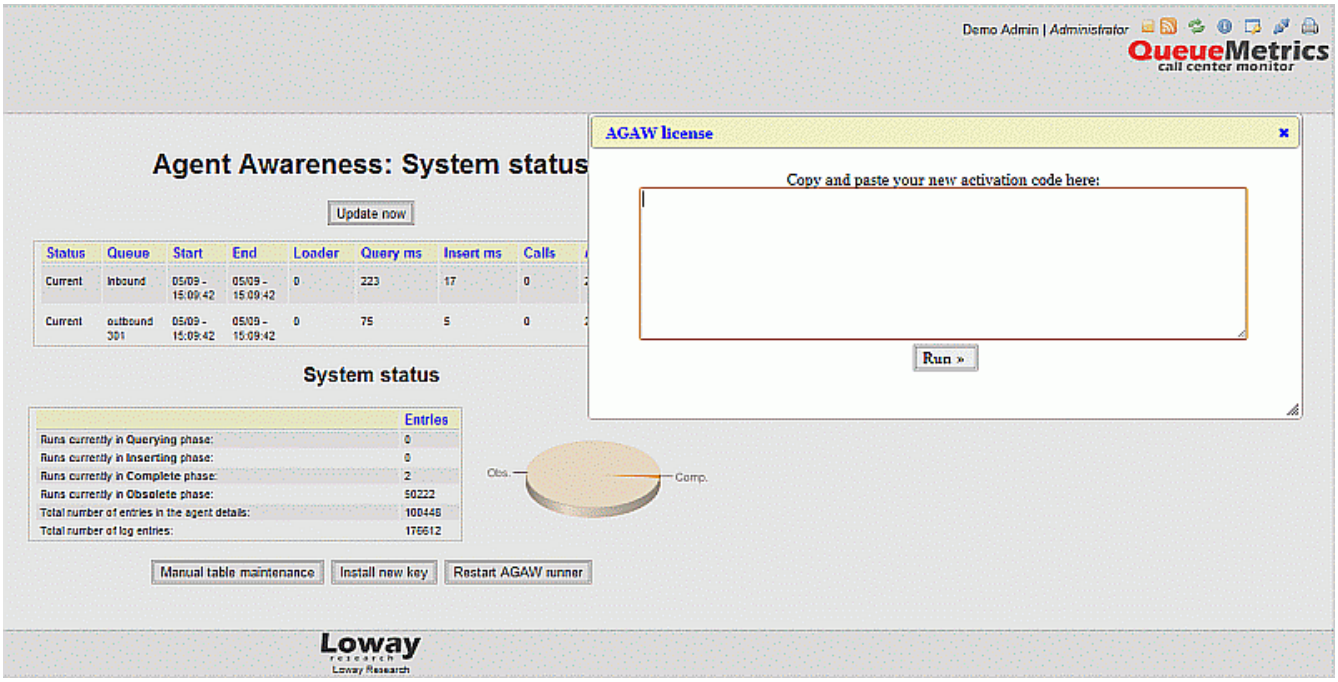
Release 12.05 offers additional improvements to the QueueMetrics package, that address the introduction of features that offer broader compatibility and simplify the user-experience. Amongst the main features, the new release sees a new page layout for the QueueMetrics Home page, the introduction of 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]

## 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.



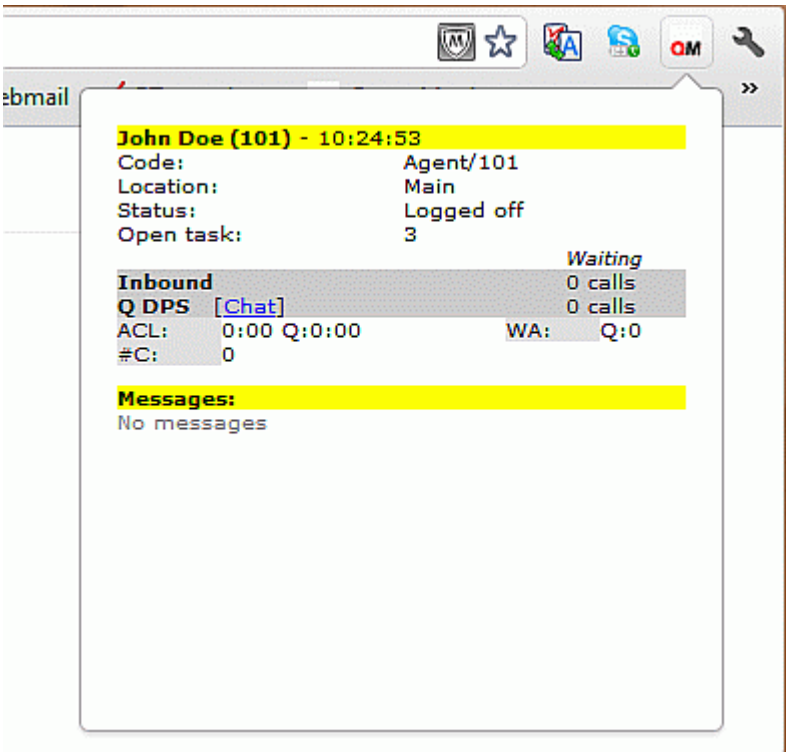

Once you request a demo licence, it can be installed directly from the AGAW page and you can start the AGAW runner process straight away.

*See also:*

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

## 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.



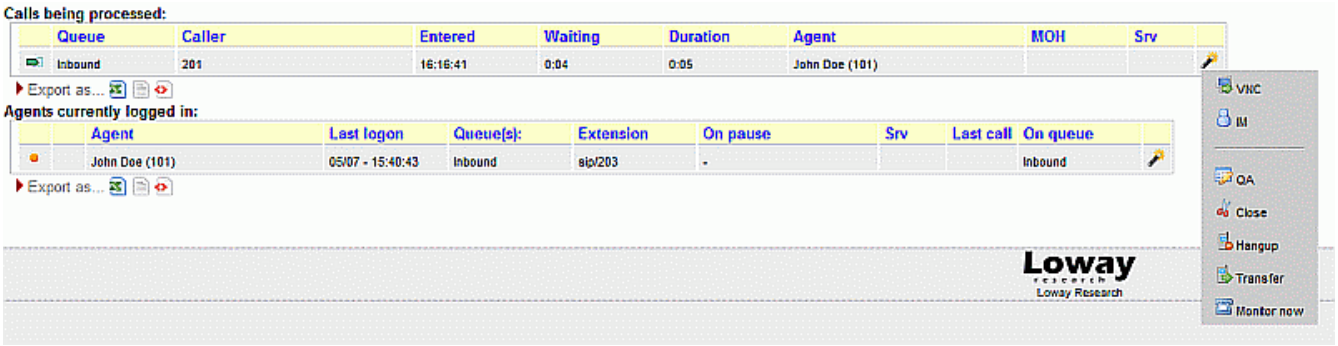

It allows to install the AGAW client within about 2 minutes and embeds into the top banner of the web page as an icon that offers an at-a-glance AGAW panel, with all the relevant data for any agent.

*See also:*

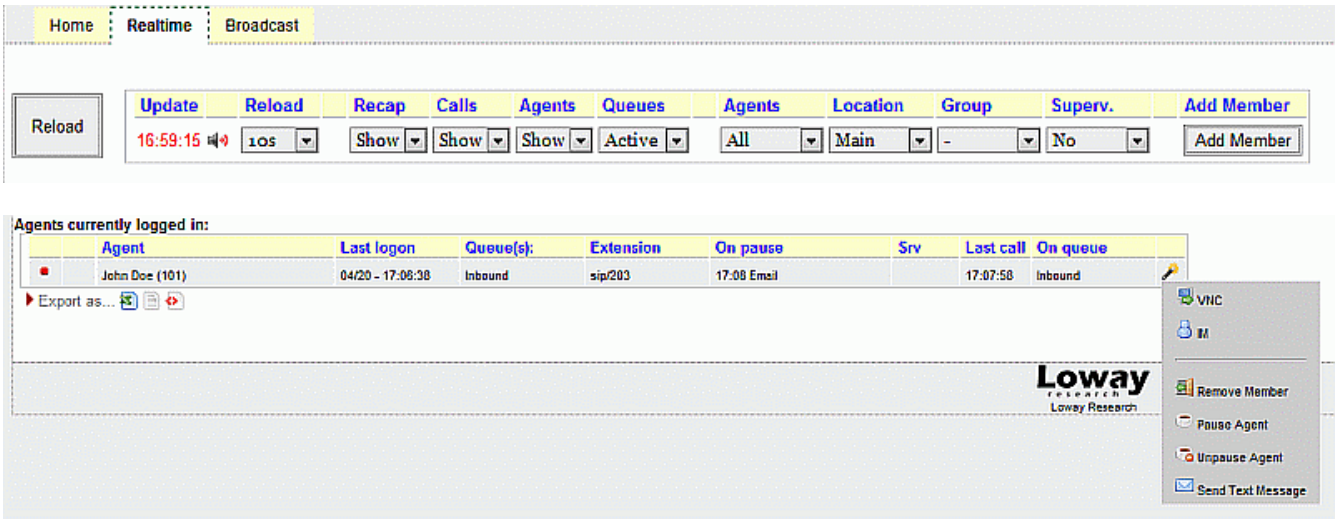
- QueueMetrics User Manual: chapter 10.5 (Installing with Chrome)

## 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).

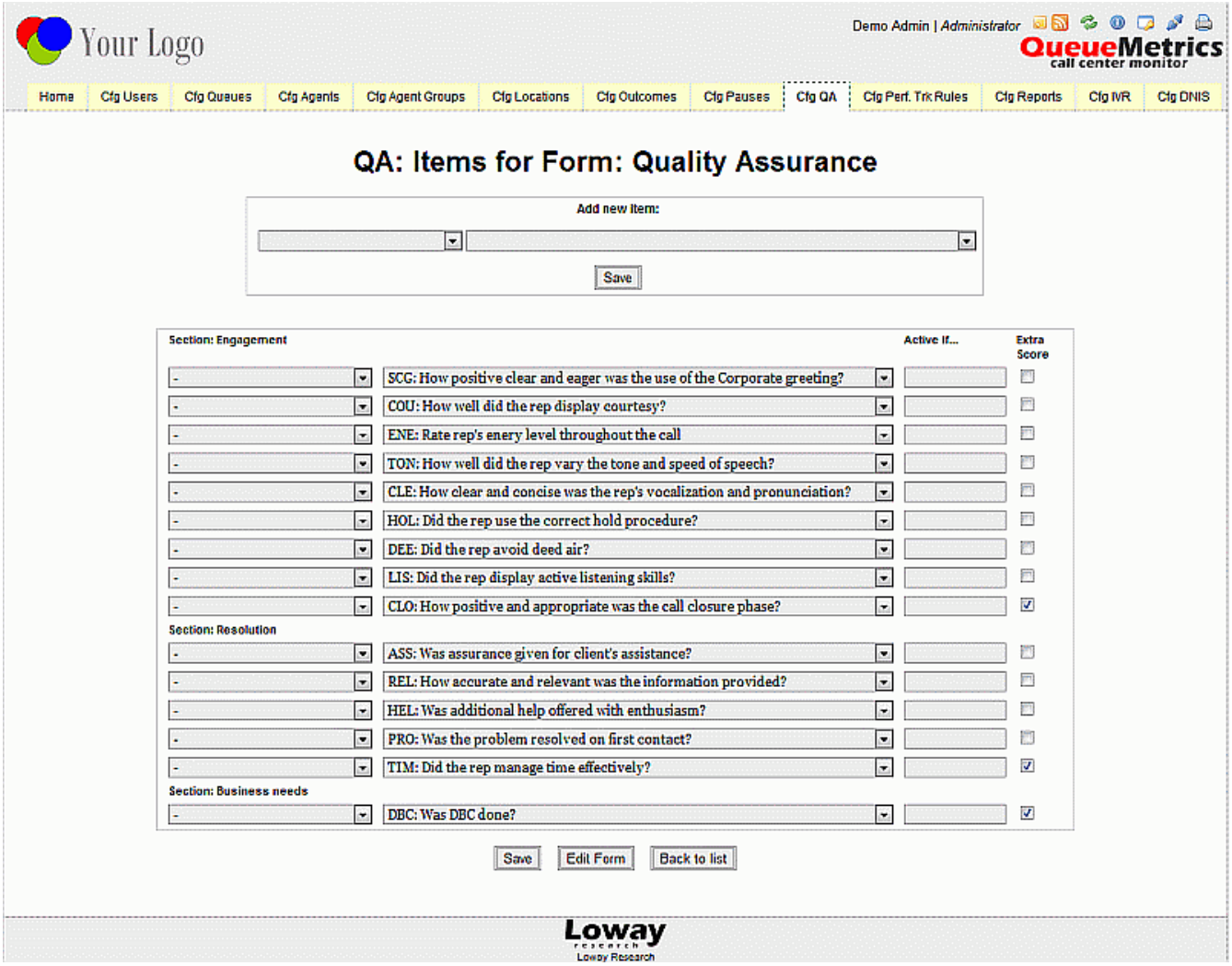



*See also:*

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

# 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.



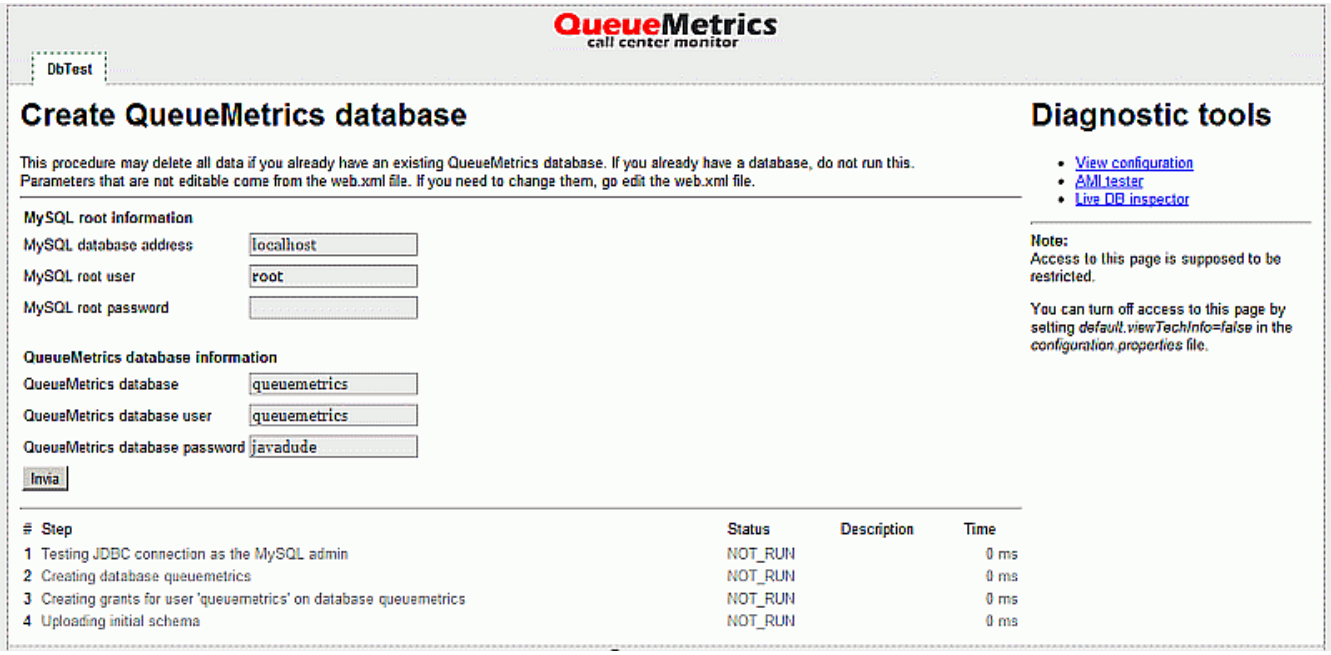

The total scoring for a specific section will be calculated and displayed within the numerator part and will not affect the averages of the overall QA Form.

*See also:*

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

# 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.




*See also:*

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

# 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)

# 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)

# QueueMetrics 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 it can be applied.

The new major change is as follows:

- Tracking Music on Hold [#1525]

## Tracking Music on Hold

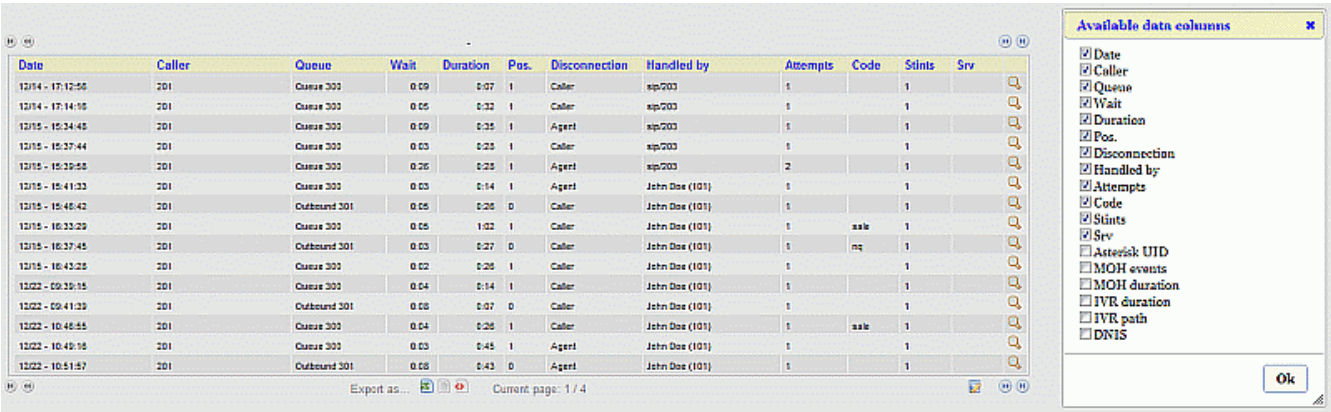
Many QueueMetrics customers expressed the need to be able to monitor the amount of time a customer was put on hold, given that this is not currently measureable via Asterisk. To use the MOH feature it is necessary to install a custom patch which allows to track these events.

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.

*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.

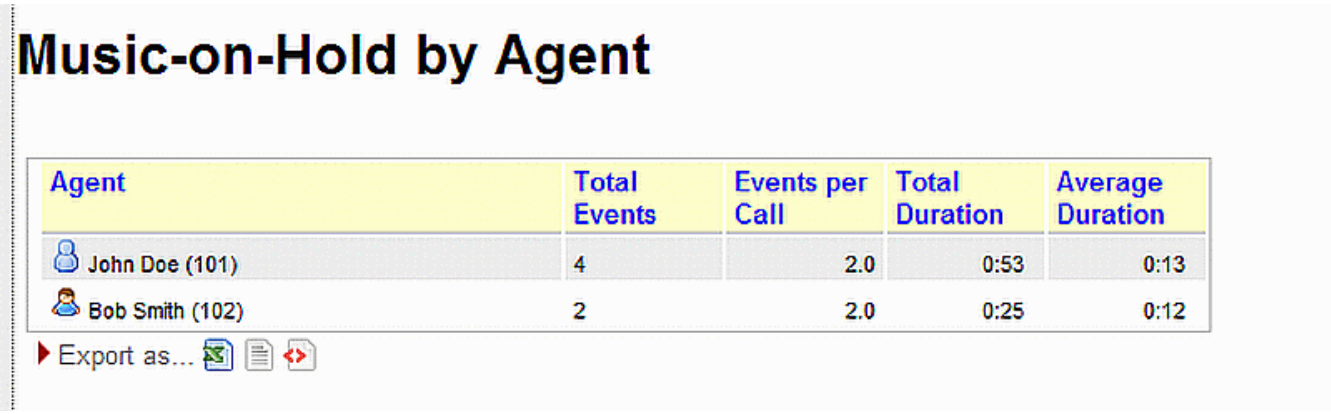



*See also:*

- 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)

# QueueMetrics 12.01

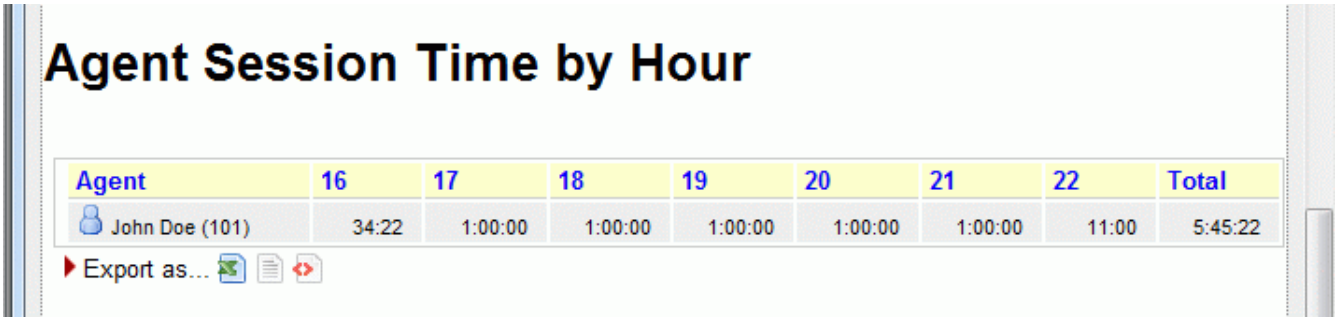
This release of QueueMetrics includes a variety of functional improvements, which we have subdivided into major and minor changes. We are providing this brief overview of the main changes in order to have a quick and readable guide that allows our customers to be aware of what the major changes are,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

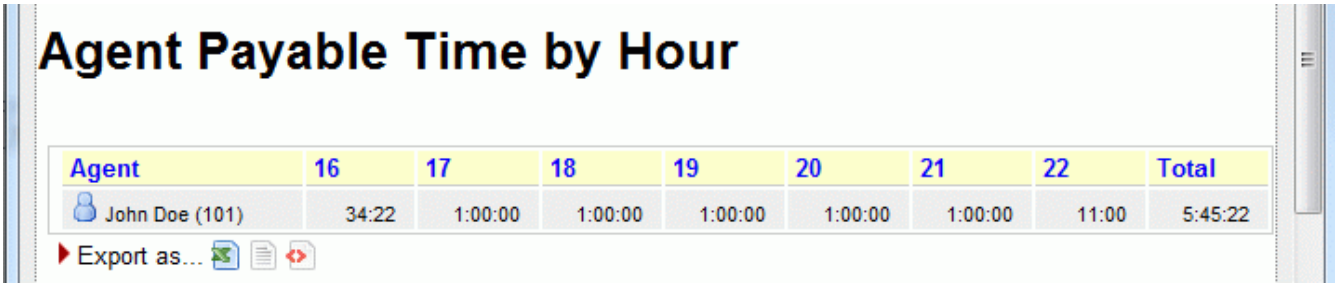
The new major changes are as follows:

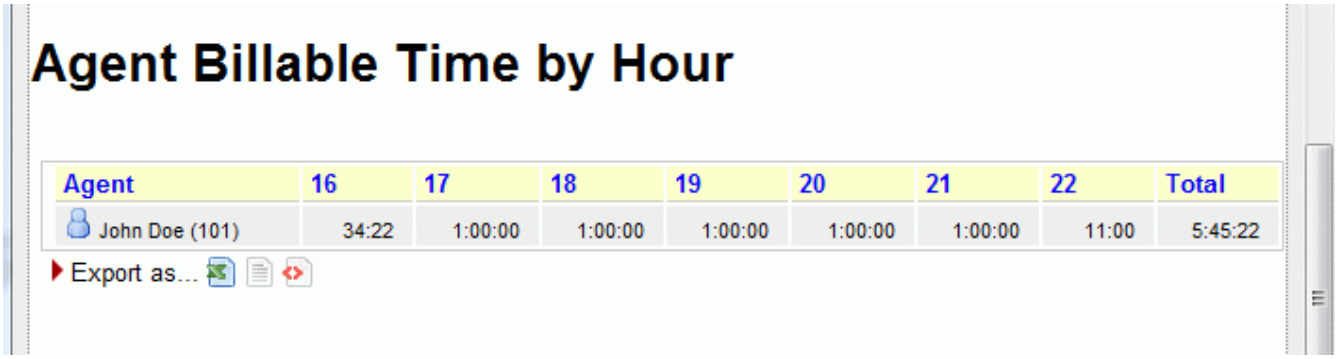
- Agent times by hour [#1364]
- Call tagging [#1369]
- Paginated call display [#1383]
- Realtime on Asterisk 1.8 [#1385]
- Non-contiguous reports [#1405]
- Friendly names handling [#1470]
- Encrypted files playback [#1492]
- Persistent user properties [#1511]
- QA from Agent page [#1519]

## 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:





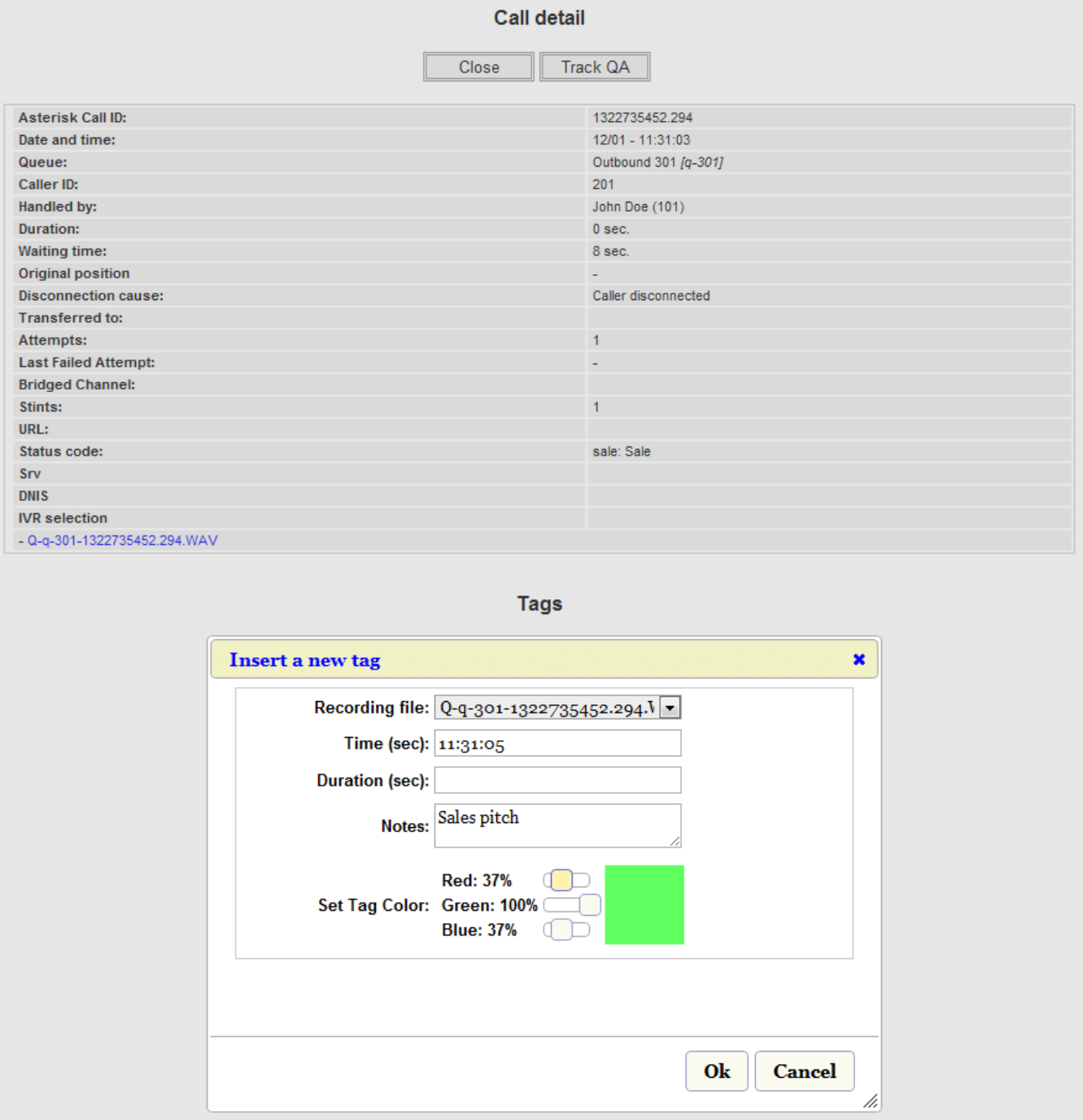

This allows an administrator to have information for each agent, by showing the agent's decoded name, level and current group (if defined, expressed as an icon like elsewhere in QM), various columns containing the total session time for each hourly timeframe and the total time of all the hourly sessions,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

*See also:*

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

# 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.

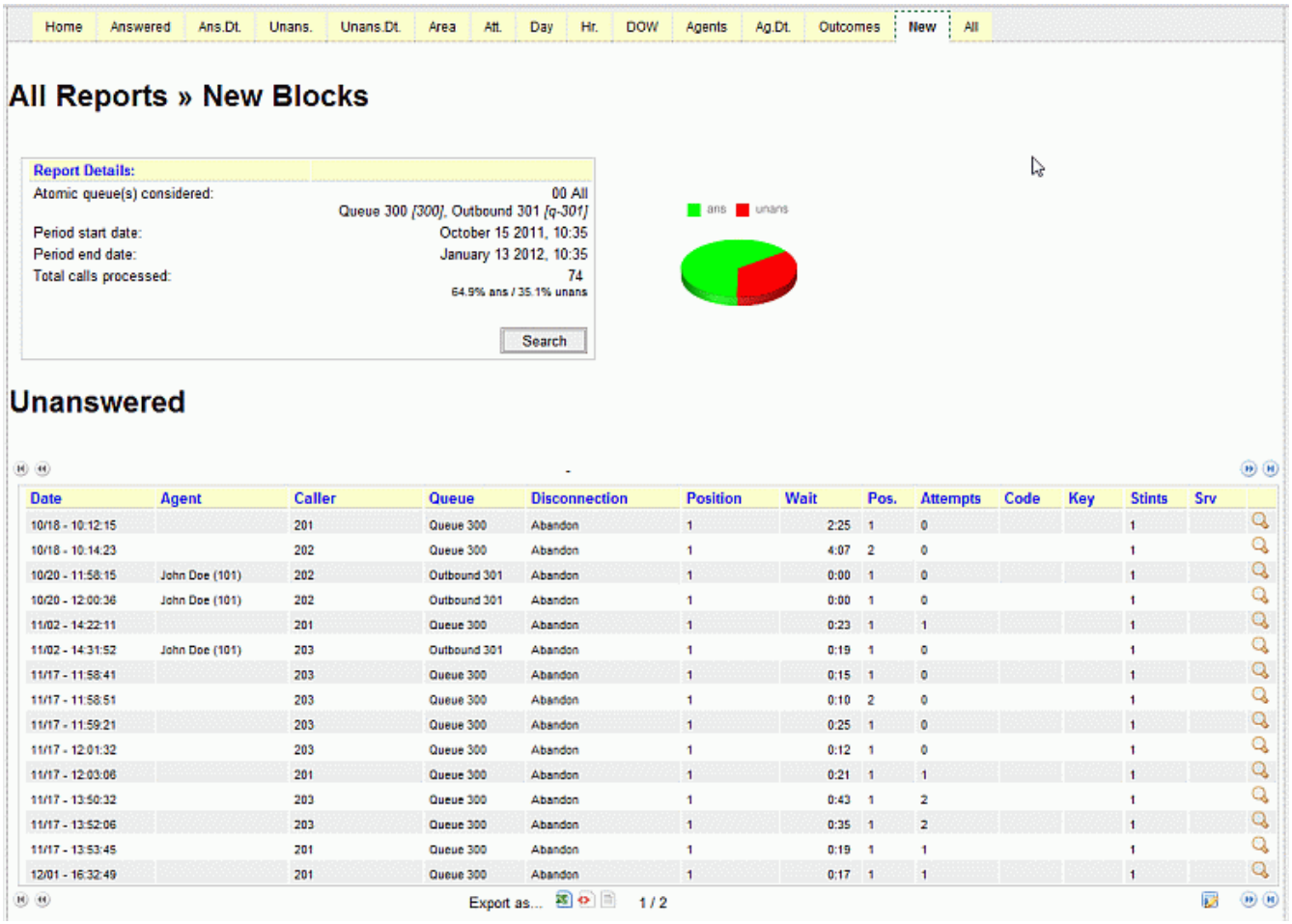



*See also:*

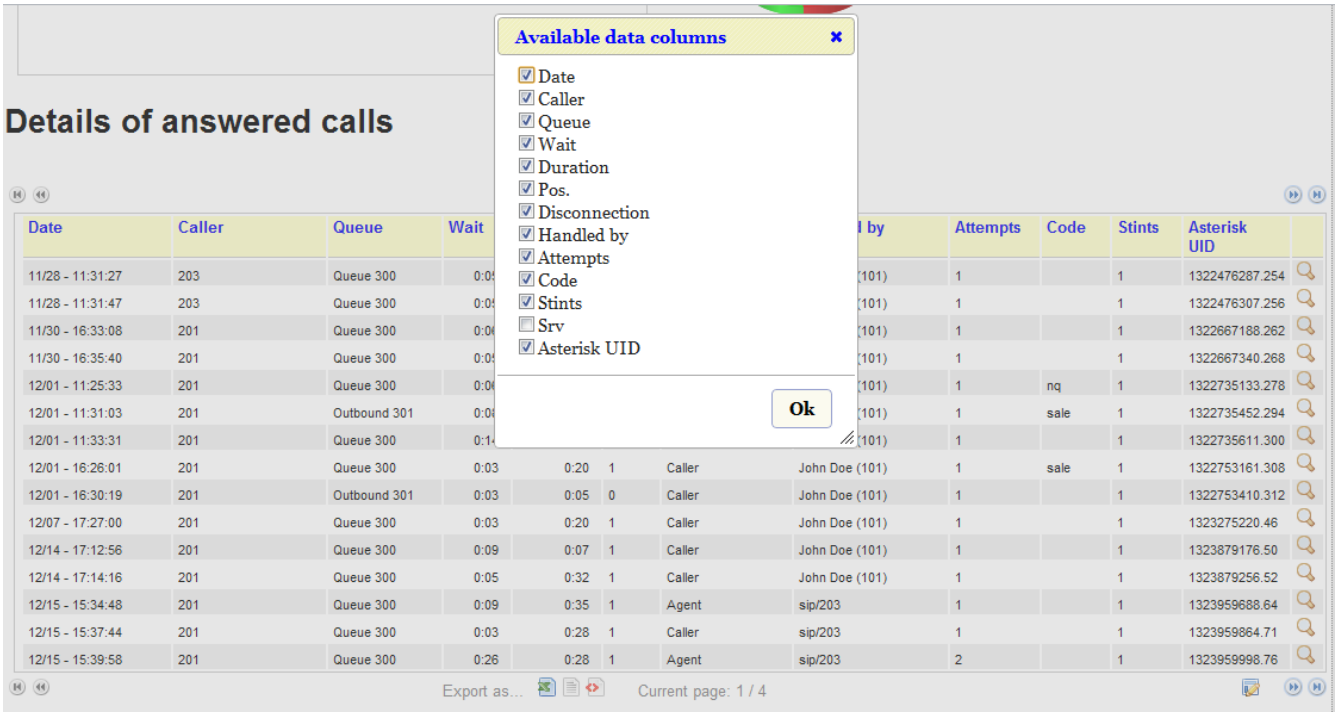
- QueueMetrics User Manual: chapter 11.3.3 (QA - The input form)

# 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.




*See also:*

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

# Realtime on Asterisk 1.8

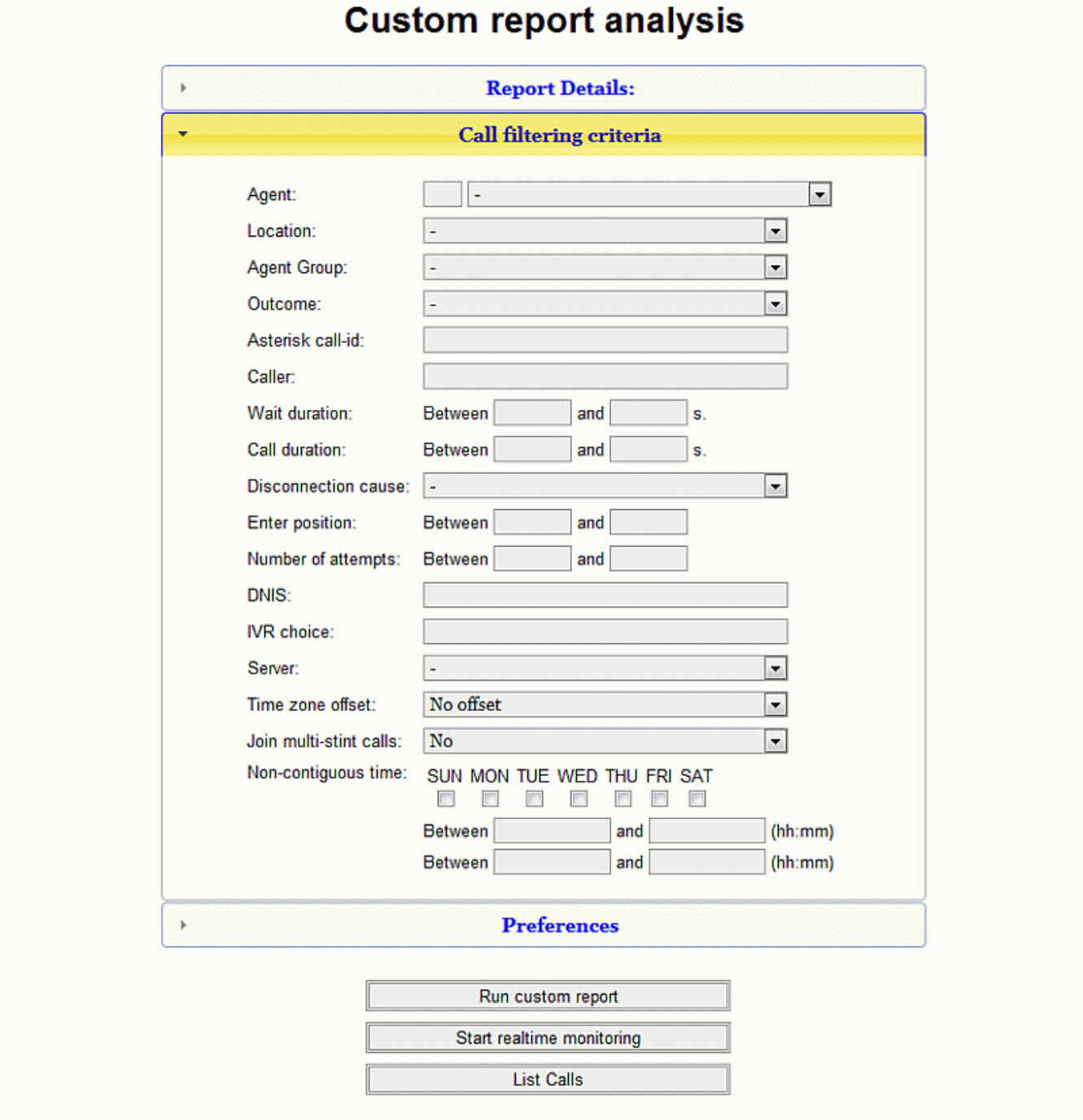
With Asterisk 1.8 the format of the Asterisk realtime table was changed, so we have had to update QueueMetrics to support the new format. This means that it is now possible to delegate the queue logging to the Asterisk Realtime subsystem. With this option the QueueMetrics MySQL database log will be replaced 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)

# 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.



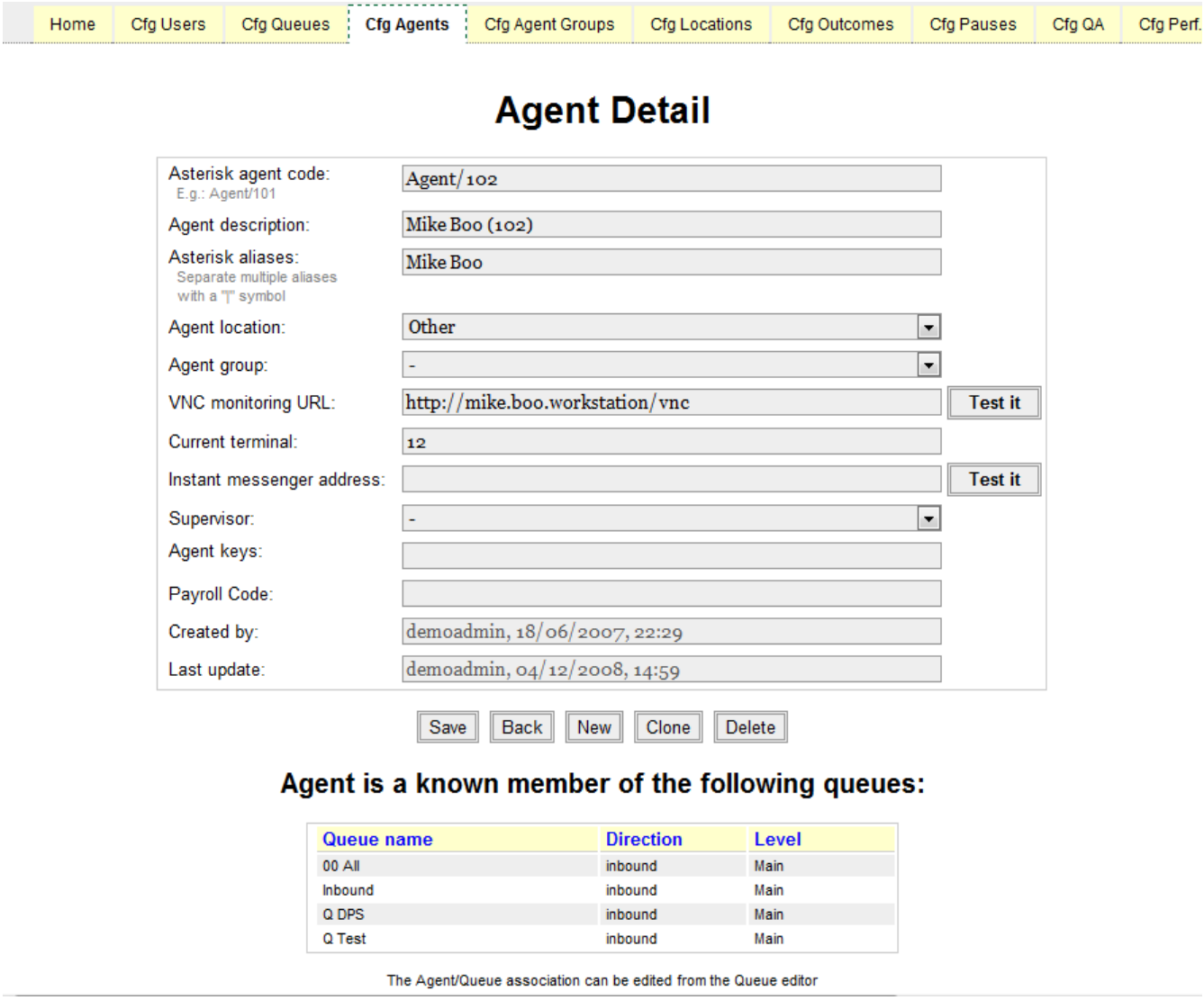

This resolves the issue of having to obtain the same statistic manually and then having to integrate them into a single report, based on chosen days and/or times.

*See also:*

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

# 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.




*See also:*

- QueueMetrics User Manual: chapter 20.4 (Configuring agents)

# 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.

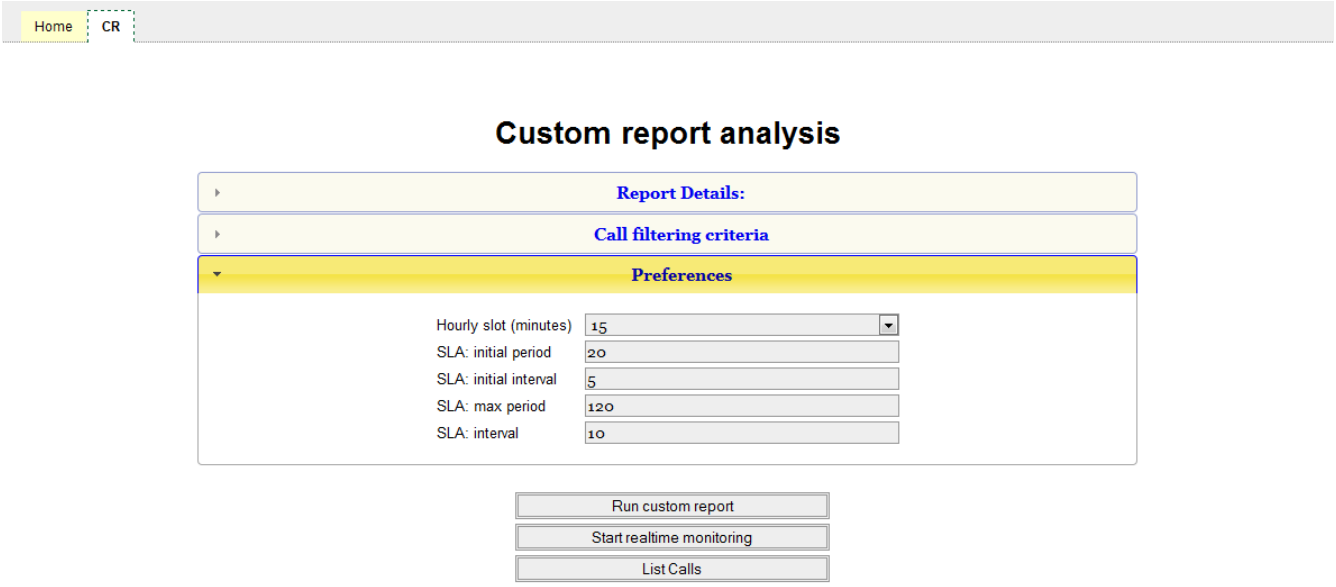
This process takes place transparently and if we deploy QueueMetrics in a secure HTTPS environment the audio recordings will be encrypted on disk and will also be encrypted on the network.

*See also:*

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

# 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




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.

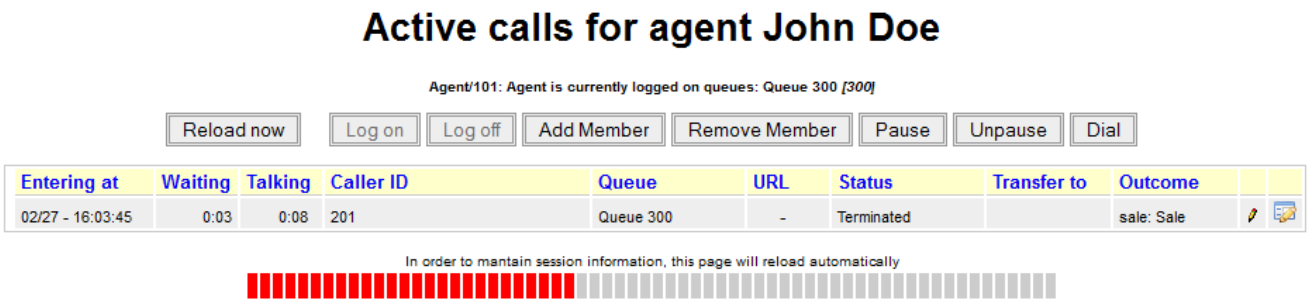
The Refresh button allows to clear the input query parameters at any stage.

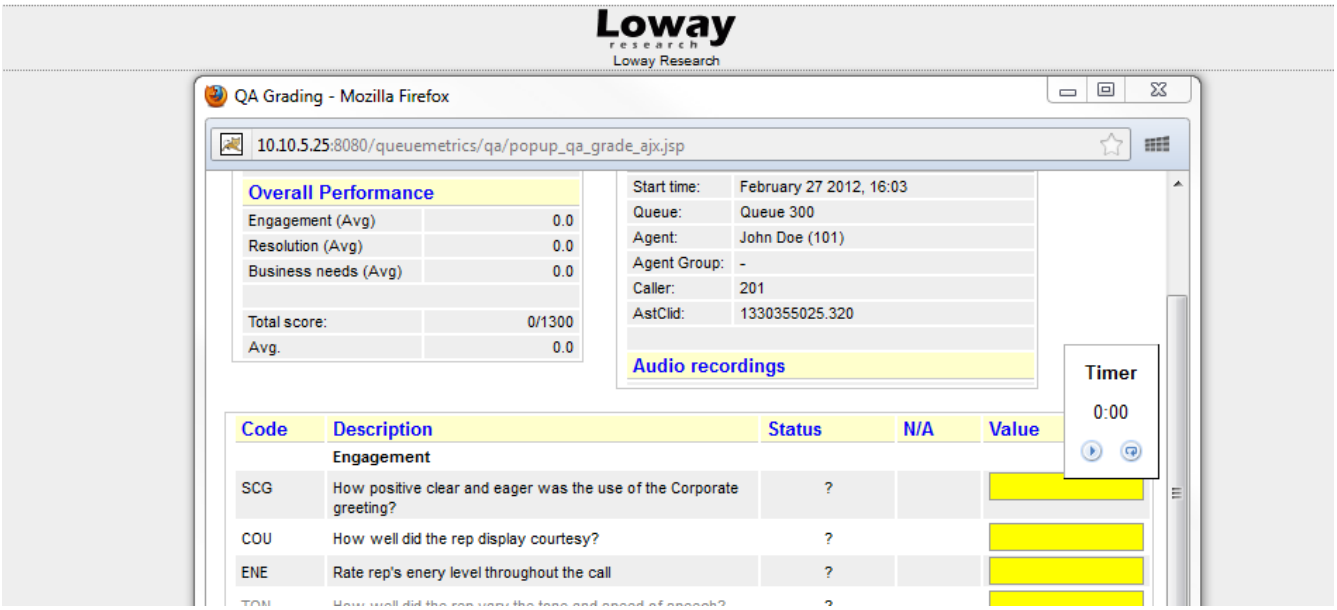
*See also:*

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

# 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.




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)