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QueueMetrics 19.04 WebRTC Softphone Tutorial



Introduction

Since QueueMetrics 19.04, QueueMetrics offers a stable WebRTC softphone based on the JsSIP library. This softphone can be used by agents, through the QueueMetrics Realtime Agent Page, or by supervisors and administrators through the Wallboard Page.

This new feature allows agents to work without the need for a physical phone, while supervisors can monitor calls in realtime without leaving the wallboard page.

In this tutorial we will go through all the steps needed to set up and start using the softphone.

NOTE: This tutorial is intended for QueueMetrics 19.04. If you have an older version of QueueMetrics, please consider updating to the current release.

QueueMetrics

QueueMetrics is a highly scalable monitoring and reporting suite that addresses the needs of thousands of contact centers worldwide and offers a broad range of integrated benefits like agent productivity monitoring, target measurement, conversion rates tracking, realtime campaign statistics analysis and an easy to use interface. It's available on premise or as a cloud hosted solution service.

Setting up QueueMetrics WebRTC Softphone

1. QueueMetrics TLS Setup

The WebRTC technology requires both QueueMetrics and Asterisk to work with HTTPS to guarantee the appropriate level of security.

For this reason we need to make sure that QueueMetrics is running in HTTPS.

For detailed instructions on how to setup QueueMetrics in HTTPS, you can refer to the [following section of our advanced configuration manual](#).

NOTE: If you are using FreePBX, chances are that port 80 and port 443 are already in use. In that case just substitute port 80 and 443 in the manual with 81 and 444.

2. FreePBX Extension Setup

NOTE: For the sake of this tutorial, we will use FreePBX 14.0.3.1. Any later version should work fine, as well as previous releases, as long as they have WebRTC support and TLS enabled.

What we need to do now, is to create an extension for one of our agents. This will allow the agent to register to the PBX using its own QueueMetrics Softphone, by using this extension.

To create an extension, access FreePBX Administrator page and head to Applications => Extensions=> Add extension =>Add new Chan_SIP extension.

Here we will enter the data for our extension and linked user.

Click on Submit and then Apply Config to finalize the extension creation.

The screenshot shows the 'Add SIP Extension' form in the FreePBX Administrator interface. The form is titled 'Add SIP Extension 800' and includes the following fields and options:

- User Extension:** 800
- Display Name:** 800
- Outbound CID:** 800
- Secret:** ab800800 (Really Weak)
- Language Code:** Default
- Select User Directory:** PBX Internal Directory
- Link to a Default User:** Create New User
- Username:** (empty field, with 'Use Custom Username' checkbox)
- Password For New User:** ab800800
- Groups:** All Users

At the bottom right of the form, there are 'Submit' and 'Reset' buttons.



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We then need to enable WebRTC for this extension so we click on the edit symbol under Actions and we go to the Advanced tab.

Here we need to set the following options:

Transport must be set to All - WSS Primary

Enable AVPF must be set to Yes

Force AVP must be set to Yes

Enable ICE Support must be set to Yes

Enable rtcp Mux must be set to Yes

Enable Encryption must be set to Yes (SRTP only)

Click On Submit then on Apply Config

Now we need to go to Admin => User Management to enable WebRTC for this user.

Click on the Edit Symbol under Action then go to the UCP tab.

From there we go to the Phone tab.

NOTE: at this point if this is a fresh FreePBX Installation, a message will appear saying the following:

You have no default certificates setup in Certificate Manager

Admin Applications Connectivity Dashboard Reports Settings UCP

Edit User

Login Details User Details Advanced FreePBX Administration GUI Contact Manager iSymphony Fax Rest API VPN UCP Chat

What is UCP

General Miscellaneous Call History Call Event Logging Endpoint Manager FindmeFollow Presence State System Admin Voicemail Phone Zulu

You have no default certificates setup in Certificate Manager

> Submit Reset Delete Submit & Send Email to User



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This means that the extension cannot be allowed to be used through WebRTC, because it needs an SSL certificate to ensure an HTTPS connection for the extension.

To fix this, we have two different ways:

- Create a Self-Signed SSL Certificate*
- Purchase a valid SSL Certificate

Creating Self-Signed SSL Certificate

Creating your own Self-Signed Certificate, is a valid solution if you are only connecting to your extension from inside your own network. A self signed certificate is essentially a “homemade” certificate, not guaranteed by a Certificate authority.

To create a self signed certificate, we need to go to Admin => Certificate Management.

Here we can click on New Certificate => Generate Self-Signed Certificate, and input the following information:

- Host name: The ip address of our FreePBX
- Description: A description of the certificate
- Organization name: Your company name

Admin Applications Connectivity Dashboard Reports Settings UCP

Add New Certificate

Host Name

Description

Organization Name

Generate Certificate Reset


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We click on Generate Certificate to generate the certificate.

This will bring us back to the Certificate Management page, where we need to do one last thing.

If we do not have other certificates set on the system, we need to move our mouse to the empty cell beneath the Default column in the table.

This will show a grey Check symbol in the cell, basically allowing you to set this certificate as the default SSL Certificate for your extensions.

We need to click on the empty cell to set this certificate as the default certificate.

Certificate	Description	Type	Default	Action
10.10.5.162	My FreePBX	Self Signed	✓	 

Now that we set this certificate as the default for our system, we can head back to the Phone tab in user 800's settings.

We should now see that there is an option to Enable Phone, that we have to set to yes.

and set Enable WebRTC Phone to yes, we click on Submit then Apply Config.

Then we need to go back to the extension settings in Applications => Extensions => Edit Extension(pencil icon on the right) => Advanced, and set

- Enable DTLS to yes

We click on Submit then Apply Config, and move on to the next section.

NOTE: If you need to import a valid certificate instead of creating a self signed one, you just need to click on the Upload Certificate option, under New Certificate in Certificate Management, and follow the instructions there. Remember to set the certificate as the default certificate after you are done.

Configuring QueueMetrics

To Create and agent, linked to the Asterisk Extension we created earlier, go to Edit Agents -> Create New.

We call the agent Agent/800 and fill in the Agent Description field as we please. We then fill the following fields:

- WebPhone Username with the username we previously set (in this case 800).
- WebPhone Password with the password we previously set (in this case ab800800).
- WebPhone Realm with the address of our FreePBX machine. (in this case 10.10.5.162).

Agent Detail

Asterisk agent code: <small>E.g.: Agent/101</small>	<input type="text" value="Agent/800"/>
Agent description:	<input type="text" value="WebRTC 800"/>
Asterisk aliases: <small>Separate multiple aliases with a " " symbol</small>	<input type="text"/>
Server	<input type="text" value="-"/>
Agent location:	<input type="text" value="-"/>
Agent group:	<input type="text" value="-"/>
VNC monitoring URL:	<input type="text"/> <input type="button" value="Test"/>
Current terminal:	<input type="text"/>
Instant messenger address:	<input type="text"/> <input type="button" value="Test"/>
WebPhone Username:	<input type="text" value="800"/>
WebPhone Password:	<input type="text" value="ab800800"/>
WebPhone Realm:	<input type="text" value="10.10.5.162"/>
WebPhone SIP Uri:	<input type="text"/>
Supervisor:	<input type="text" value="-"/>
Agent Keys:	<input type="text"/>
Payroll Code:	<input type="text"/>
External Reference ID:	<input type="text"/>
Created By	<input type="text"/>
Last Update	<input type="text"/>

We click on Save then go back to the Homepage.

Now we need to create a User for Agent/800, so we go to Edit Users -> Create New.

We set the Login field to 800, the Password to 800 and we set the Class field to AGENTS.

User Detail

User Id:	<input type="text"/>
Login:	<input type="text" value="agent/800"/>
Password:	<input type="password" value="***"/>
Confirm Password:	<input type="password" value="***"/>
Real name:	<input type="text" value="WebRTC 800"/>
Enabled:	<input type="text" value="Yes"/>
E-mail:	<input type="text"/>
Masterkey:	<input type="text" value="No"/>
Class:	<input type="text" value="AGENTS"/>
User keys:	<div style="border: 1px solid #ccc; height: 60px; width: 100%;"></div>
	
Number of logons:	<input type="text"/>
Last logon:	<input type="text"/>
Comment:	<input type="text"/>
Token:	<input type="text"/>
Created By	<input type="text"/>
Last Update	<input type="text"/>

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We click on Save and we go back to the homepage.

The last thing we need to do is to set one parameter in the Explore System Parameters page. Scroll down to the end of the page until you see the following parameter: Web Socket URL for the connection.

We need to set this parameter to:

```
wss://10.10.5.164:8089/ws
```

Using the correct IP address for our FreePBX machine. Then we Save at the bottom.

Agent Page Softphone Settings

Maximum interval in seconds between WebSocket reconnection attempts. Default value is 30.	<input type="text" value="30"/>
Minimum interval in seconds between WebSocket reconnection attempts. Default value is 2.	<input type="text" value="2"/>
Time (in seconds) after which an incoming call is rejected if not answered. Default value is 60.	<input type="text" value="30"/>
List of ICE Servers to use.	<input type="text"/>
Web Socket URL for the connection.	<input type="text" value="wss://10.10.5.162:8089/ws"/>

After saving, you need to log off and on again for the parameters to be loaded.

The last step we need to do, is to add a security exception in our browser for the WebSocket we just configured.

NOTE: this step is necessary only if you are using a Self Signed Certificate.

To do this, log out from QueueMetrics and go to the following url:

<https://10.10.5.162:8089/>

Where 10.10.5.162 must be substituted with your own PBX Address. This will trigger a security warning from your browser (Probably), and you need to acknowledge the warning and add the source as a security exception.



Your connection is not private

Attackers might be trying to steal your information from **10.10.5.162** (for example, passwords, messages, or credit cards). [Learn more](#)

NET::ERR_CERT_AUTHORITY_INVALID

Help improve Safe Browsing by sending some [system information and page content](#) to Google.
[Privacy policy](#)

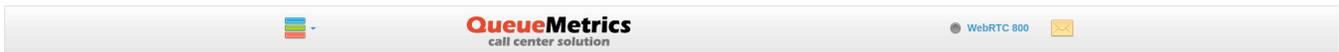
Advanced

Back to safety

Once you do that, you should see a Not Found error. This is normal and it means that the exception was added correctly.

Now we're good to go! We go back to our QueueMetrics login page, and we login as Agent/800.

From the Widget Menu we select Soft Phone and here is our WebRTC client.



QueueMetrics

Wallboard Softphone

Since QueueMetrics 19.04.1, the Wallboard page includes a Softphone panel, with the same features as the one present in the agent page.

After completing the previous configuration process, it is very easy to setup, as we merely need two steps to accomplish this:

- Add the correct security key to the user
- Set the default configuration for the Softphone

Adding the Softphone security key

To do this, we need to head to the User Configuration page, and open the settings for the user to whom we want to assign the ability to use the softphone.

Here we click on the Wizard hat icon, that will open the security key menu. Here we assign the following key to the user:

- User can use the wallboard softphone



Once we do this, we can save and go back to the homepage.

Setting the default softphone configuration

From QueueMetrics' Homepage we go to Edit System Parameters or Explore System Parameters.

The properties that we can set in the Edit System Parameters page are the following (with some example values):

- default.wallboardphone.connection_recovery_max_interval=30
- default.wallboardphone.connection_recovery_min_interval=2
- default.wallboardphone.display_name=200
- default.wallboardphone.no_answer_timeout=60
- default.wallboardphone.password=ab200200

- default.wallboardphone.username=200
- default.wallboardphone.server=10.10.5.181
- default.wallboardphone.iceservers=stun:stun01.sipphone.com stun:stun01.sipphone.com stun:stun.fwdnet.net
- default.wallboardphone.websocketurl=wss://10.10.5.181:8089/ws

NOTE: in the Explore System Parameters page you can search for each parameter in the top search bar, and set it from the resulting input box.

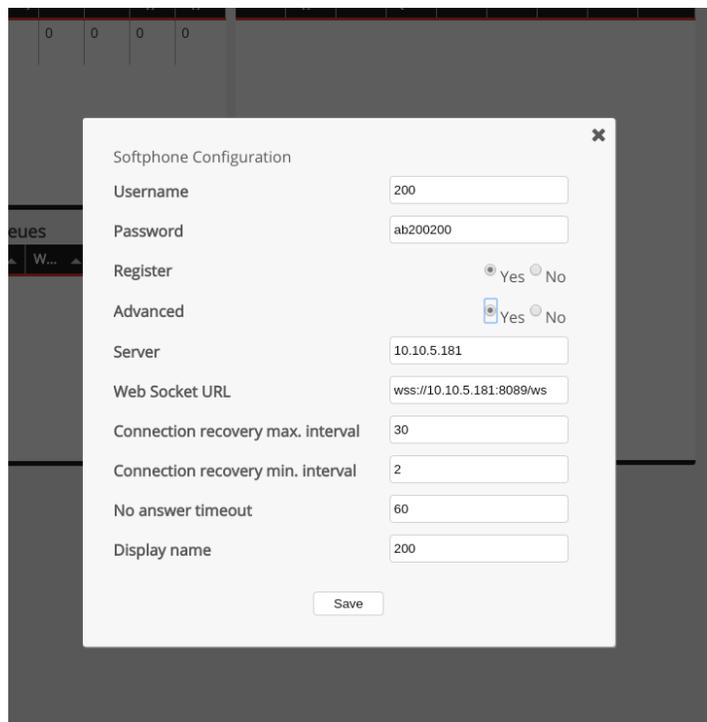
NOTE: these values will be the default for each user that uses the wallboard softphone, if you want to change individual usernames and passwords for each user, this is done by changing the settings directly in the wallboard Softphone Settings panel.

Using the Wallboard Softphone

Once these steps are completed, we can head to the wallboard page, and we should be able to see two new icons on the top bar:

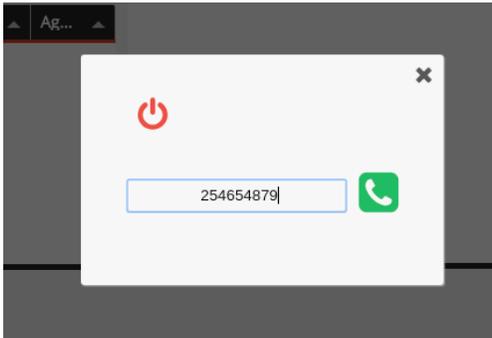


The cogs icon opens the Softphone Settings panel, where the user can change its own settings that will be saved as User preferences for that user, and will persist between sessions.



Softphone Configuration	
Username	200
Password	ab200200
Register	<input checked="" type="radio"/> Yes <input type="radio"/> No
Advanced	<input checked="" type="radio"/> Yes <input type="radio"/> No
Server	10.10.5.181
Web Socket URL	wss://10.10.5.181:8089/ws
Connection recovery max. interval	30
Connection recovery min. interval	2
No answer timeout	60
Display name	200
<input type="button" value="Save"/>	

The phone icon opens the actual Softphone panel, which can be used the same way as the Agent Page Softphone.



QueueMetrics References

For more technical information about QueueMetrics call center solution please refer to the [User Manual](#).

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