

**Loway**  
r e s e a r c h

**QueueMetrics**  
call center monitor

Tracing outbound calls through QueueMetrics  
On TrixBot

*Version 1.0*

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## Document contents

This document is a step-by-step guide on how to place outgoing calls that are to be traced in QueueMetrics on a TrixBox system.

### *Revision history*

- May 22, 2007: First draft

## Enabling QueueMetrics outbound on TrixBox

In order to make outgoing calls visible in QueueMetrics, we must set up a special procedure to do the logging. Luckily the hard part has already been written, so it is only a matter of integrating existing pieces into TrixBox.

The first thing that we have to consider is that just like we have both direct incoming calls not going through the ACD (and not seen by QueueMetrics) and inbound ACD calls (that are seen by QueueMetrics) we will have two kinds of outgoing calls: ordinary calls and calls that will be tracked. It is up to you to instruct your agents on which calls must be made for each case.

Just like incoming ACD calls are organized by queue, outgoing calls are flagged as being part of an outgoing campaign, so that later in QueueMetrics you can report on them knowing why they were made. As the outgoing campaign is a convention we rely upon, it needs not be defined anywhere in Asterisk and will be input in QueueMetrics as if it were a queue name.

So in order to place an outgoing call belonging to a campaign, our agent will have to key in:

- A special extension code that means the call is being made on an outgoing campaign (we will use the extension 8 for this example)
- A three digit code for the campaign (you can define them freely, just write down what it means), e.g. campaign 100: recalls, campaign 101: sales meetings, etc. We suggest you use a three digits code for the campaign so that they can be easily input using a numeric keyboard of a standard phone
- The other party's number that the agent is to call.

## Enabling outgoing calls in TrixBox

First of all you edit the file `/etc/asterisk/extension_custom.conf` and append the following piece of dial plan:

```
[queuedial]
exten => _XXX.,1,SetVar(MY_QUE=${EXTEN:0:3})
exten => _XXX.,2,SetVar(MY_NUM=${EXTEN:3})
exten => _XXX.,3,SetVar(MY_AGENT=${CALLERIDNUM})
exten => _XXX.,4,NoOp,Ag: ${MY_AGENT} N: ${MY_NUM} Q: ${MY_QUE}
exten => _XXX.,5,MixMonitor(Q-${MY_QUE}-${UNIQUEID}.wav|b|)
exten =>
_XXX.,6,DeadAGI(queueDial.agi|${MY_NUM}|Zap/g0/${MY_NUM}|q-
${MY_QUE}|Agent/${MY_AGENT})
exten => _XXX.,7,Congestion
```

This basically says that when an outgoing call is placed, the first three digits will be stripped and used as the Campaign number, the other digits are composed on "Zap/g0/" (modify this if needed) and all activity is logged using Agent/XXX where XXX is the caller's extension number.

The calls are also all recorded in a format that QueueMetrics is able to retrieve - if you do not want all calls to be recorded, just add "NoOp," before the MixMonitor command on line 5.

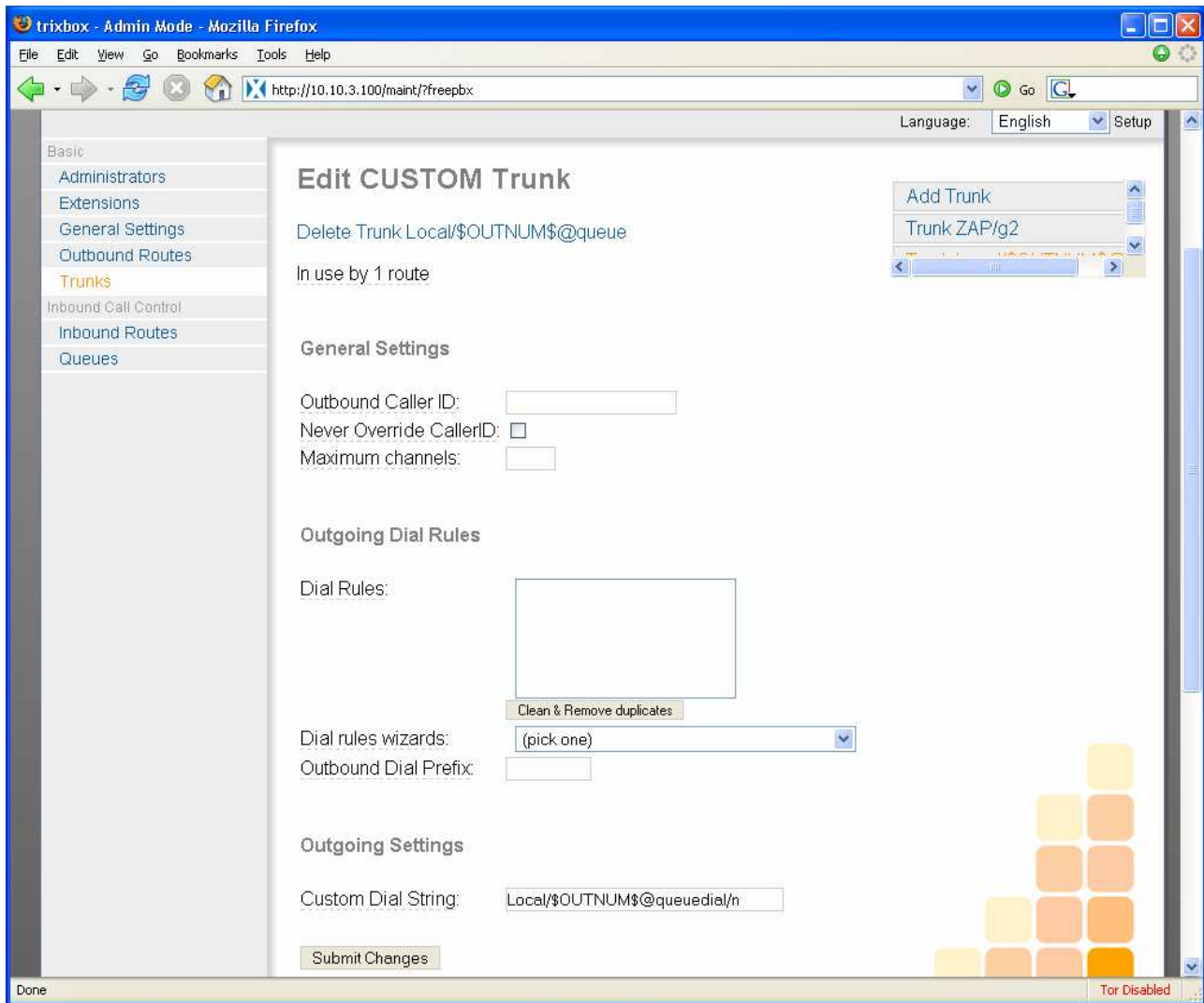
Then we will have to add the AGI script QueueDial that places the call and logs its outcomes on the queue\_log, from where QueueMetrics will find it. Log on as root and run the following commands:

```
[root@asterisk1 asterisk]# cd /var/lib/asterisk/agi-bin
[root@asterisk1 agi-bin]# cp
/usr/local/queuemetrics/webapps/queuemetrics-1.3.5/WEB-INF/mysql-
utils/queueDial.agi .
[root@asterisk1 agi-bin]# dos2unix queueDial.agi
dos2unix: converting file queueDial.agi to UNIX format ...
[root@asterisk1 agi-bin]# chmod a+x queueDial.agi
```

You must change the path on the "cp" command to match the current version of QueueMetrics that is installed on your system.

Then we will have to create a trunk in FreePBX to send the calls to our custom code above.

Click on Trunks, select "Add Custom Trunk", then leave everything blank but the field "Custom dial string" where you will enter "Local/\$OUTNUM\$@queuedial/n". See the screen below for reference.

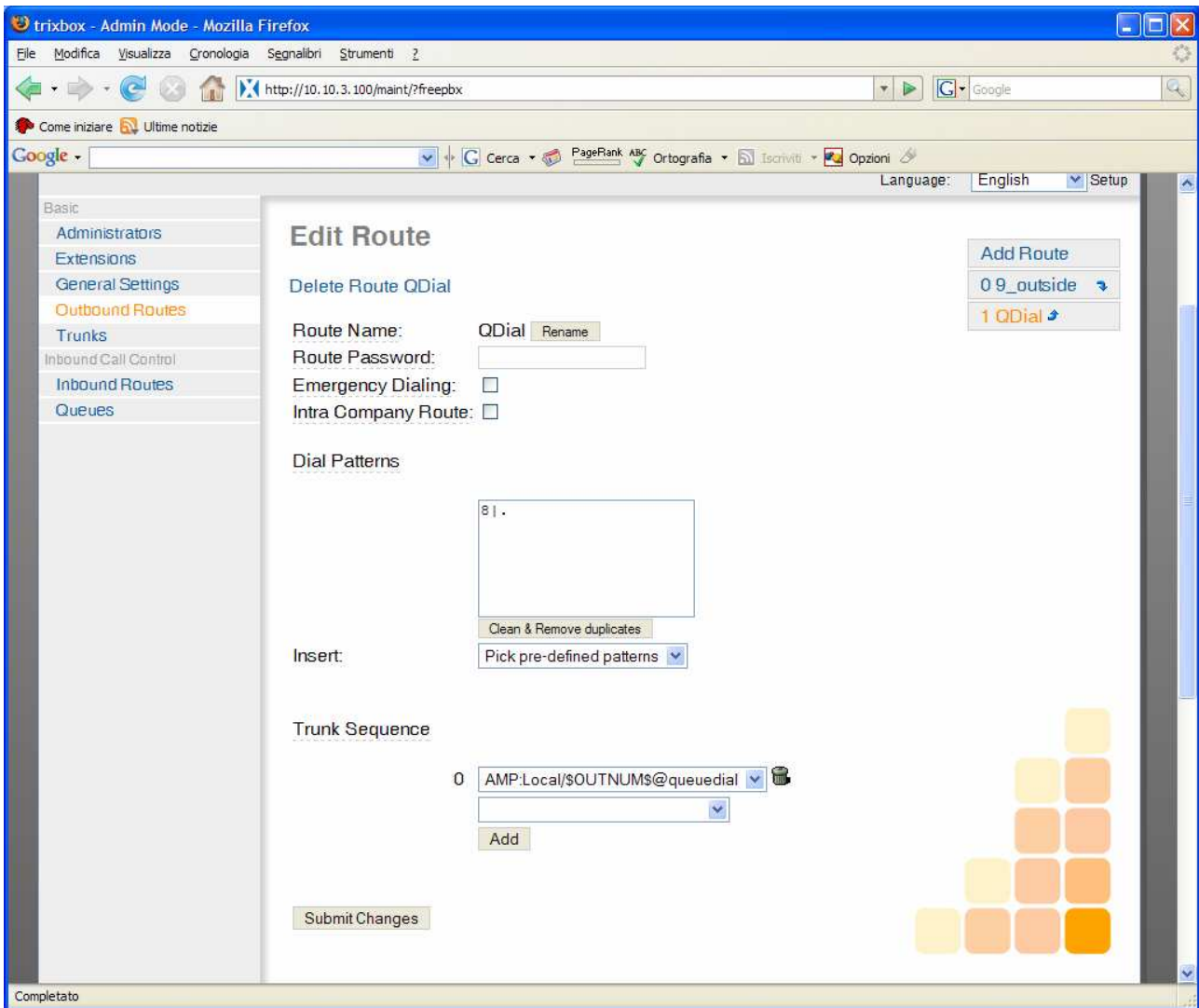


Now we will have to use that trunk as an outgoing route; to do this, click on "Outbound routes", then enter a new route like the following:

- Route name: QDial
- Dial patterns: 8|.
- Trunk sequence: select "AMP: Local/\$OUTNUM\$@queuedial/n"

This basically means that when your agents enter a number that starts with 8, the call is passed to the trunk we just defined, that in turn calls our AGI script.

Please pay attention to adding "/"n" at the end of the Local string, otherwise it will not properly work. The following screenshot details how the result is expected to look like:



At this point apply the changes in FreePBX and try dialing 8123456 from one of the extensions; this tries dialing the PSTN number 456 on campaign 123. Even if you get an error (and this is very much likely, as 456 will not be a valid PSTN number) if you look at the end of the file `/var/log/asterisk/queue_log` you will see that a few lines have been appended, e.g.:

```

1179399430 | 1179399430.13 | q-123 | NONE | ENTERQUEUE | - | 456
1179399430 | 1179399430.13 | q-123 | Agent / 100 | CONNECT | 0 |
1179399430 | 1179399430.13 | q-123 | NONE | ABANDON | 1 | 1 | 0

```

This means everything is in place and working. If now you run a successful call through it, the log will look something like:

```
1179822810 | 1179822810.22 | q-123 | NONE | ENTERQUEUE | - | 0332320550
1179822810 | 1179822810.22 | q-123 | Agent /101 | CONNECT | 0 |
1179822813 | 1179822810.22 | q-123 | Agent /101 | CONNECT | 3 |
1179822823 | 1179822810.22 | q-123 | Agent /101 | COMPLETEAGENT | 3 | 10
```

The double line with CONNECT is normal and is used to provide QueueMetrics real-time monitor a "hint" that a call is in progress.



## Configuring QueueMetrics

We now just have to configure QueueMetrics to report on the new campaign "123". Log on to QueueMetrics as an administrator, click on "Edit queues" and create a new queue like the following:

- Alias "Outbound 123"
- Queues: "q-123" (that is, you prepend "q-" to the campaign code)
- Call flow: Outbound calls

Save the queue.

The result should look like the following screenshot:

The screenshot shows the 'Loway QueueMetrics version 1.3.5 - Mozilla Firefox' browser window. The address bar shows the URL 'http://10.10.3.100:8080/queuemetrics/qm\_admin/configura\_code.jsp'. The main content area displays a table of queues and a form to add a new queue.

Alias	Queue(s)	Wrap-up	Ann.	Key			
00 ALL	q1, q2	0 s.	0 s.		Edit	Agents	Delete
DPS	queue-dps	15 s.	0 s.		Edit	Agents	Delete
Queue 1	q1	0 s.	0 s.		Edit	Agents	Delete
Queue 2 OUT	q2	0 s.	0 s.		Edit	Agents	Delete
Sample Queue	sample	0 s.	0 s.		Edit	Agents	Delete

Legend: 📞 : inbound queue - 📞 : outbound queue

### Add new queue

Alias:

Queue(s):

Wrap-up time (sec.):

Announcement (sec.):

Visibility key:

Call flow:

**Attention levels**

	Yellow alarm	Red alarm
Number of calls in queue:	<input type="text"/>	<input type="text"/>
Number of agents on call:	<input type="text"/>	<input type="text"/>
Number of agents waiting:	<input type="text"/>	<input type="text"/>
Number of agents paused:	<input type="text"/>	<input type="text"/>
Call wait duration:	<input type="text"/>	<input type="text"/>
Call talking duration:	<input type="text"/>	<input type="text"/>

Completato

Now if you go back to the home page, select "Outbound 123" from the drop down menu and click on "Today" , you should see at least one lost call - this means everything worked.

From now on, you can treat outbound campaigns as if they were incoming ACD queues in QueueMetrics. The only current limitation is that you will not see wait and call times correctly on the real-time screen, as such data is currently returned by Asterisk only upon call completion.

### ***Usage hints and tricks***

- As the telephone extension does not know that the number we are dialing will be any different from a standard extension, you can use a web interface to do the calling for you; this makes it pretty easy to build an unified, web-based calling interface and requires just a click from your agents
- If you are going to record a big number of calls, you should very likely use wav49 format (that is, Microsoft's GSM) to do the recording and save 75% on disk space used

## For further help

The official QueueMetrics website is located at <http://queuemetrics.com> . On the downloads page, a guide to installing and integrating QueueMetrics for TrixBos systems is available.

You can get help on QueueMetrics user forums, located at <http://forum.queuemetrics.com>

A number of freely available Asterisk PBX recipes, mostly targeted to call centers, can be found on <http://astrecipes.net>