



RabbitMQ and **OpenStack**: what's new!

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Gabriele Santomaggio @gsantomaggio

SUSE became the largest independent company in the open source market

About me..

- Senior software developer @SUSE
- Part of Oslo-Messaging core team
 - issues/features for RabbitMQ
- RabbitMQ Member/Supporter
- Co-Author of RabbitMQ cookbook
- RabbitMQ on Kubernetes

Agenda

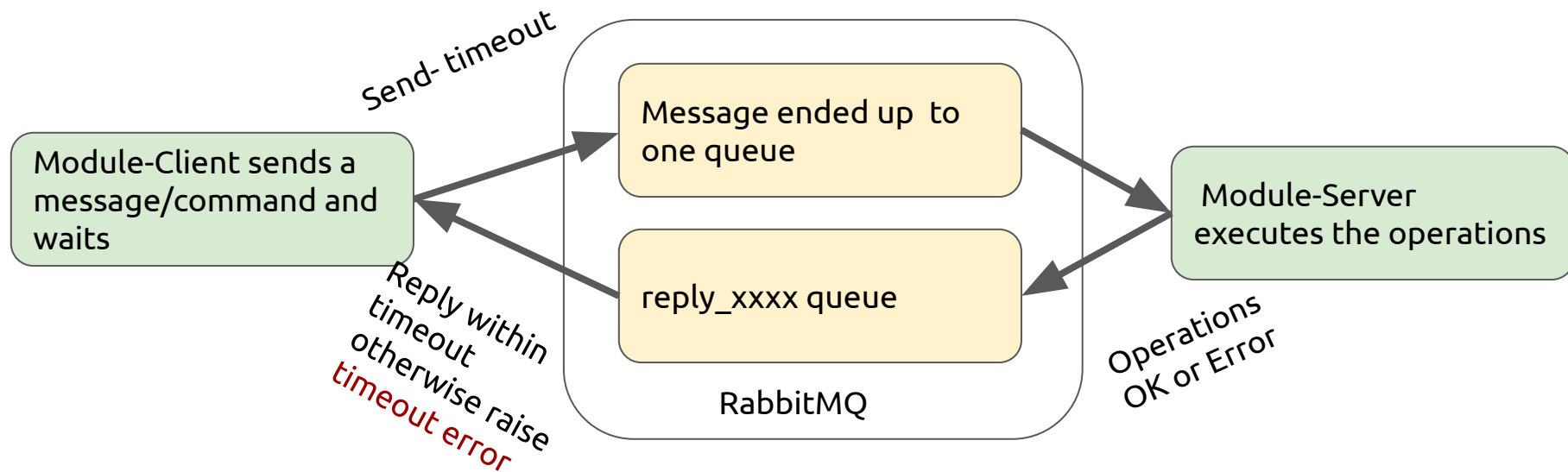
- Quick introduction
- What's new in OpenStack - Oslo Messaging
- Demo
- What's new in RabbitMQ 3.8
- Live view

OpenStack - Messaging systems

OpenStack can use different messaging system,
RabbitMQ is one of the most used.

Core component

OpenStack and DRP calls

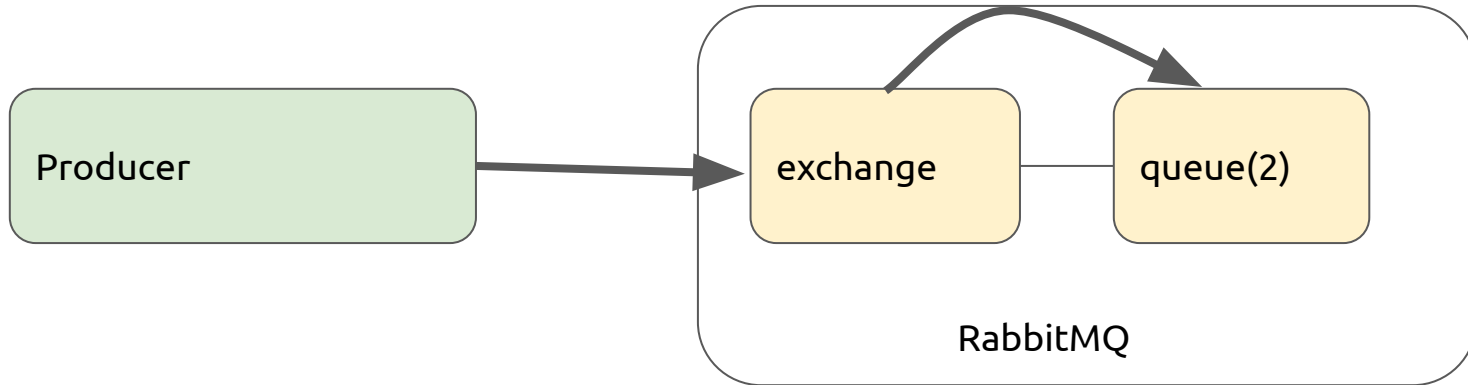


Messaging Library

The OpenStack messaging library is Oslo-Messaging[1]

1-<https://github.com/openstack/oslo.messaging>

RabbitMQ and Messages without destinations...



RabbitMQ does not raise any callback/error (unless the Mandatory Flag is set)

RabbitMQ and Messages without destinations...

How does OpenStack handle this case?

It does not!

Until now..

Transport Options (10.2.0) [1]

- Add custom parameters to the drivers[1]
- Currently used only in RabbitMQ driver
 - Mandatory Flag (for unroutable messages)
- Add new error (**MessageUndeliverable**)

1-<https://blueprints.launchpad.net/oslo.messaging/+spec/transport-options>

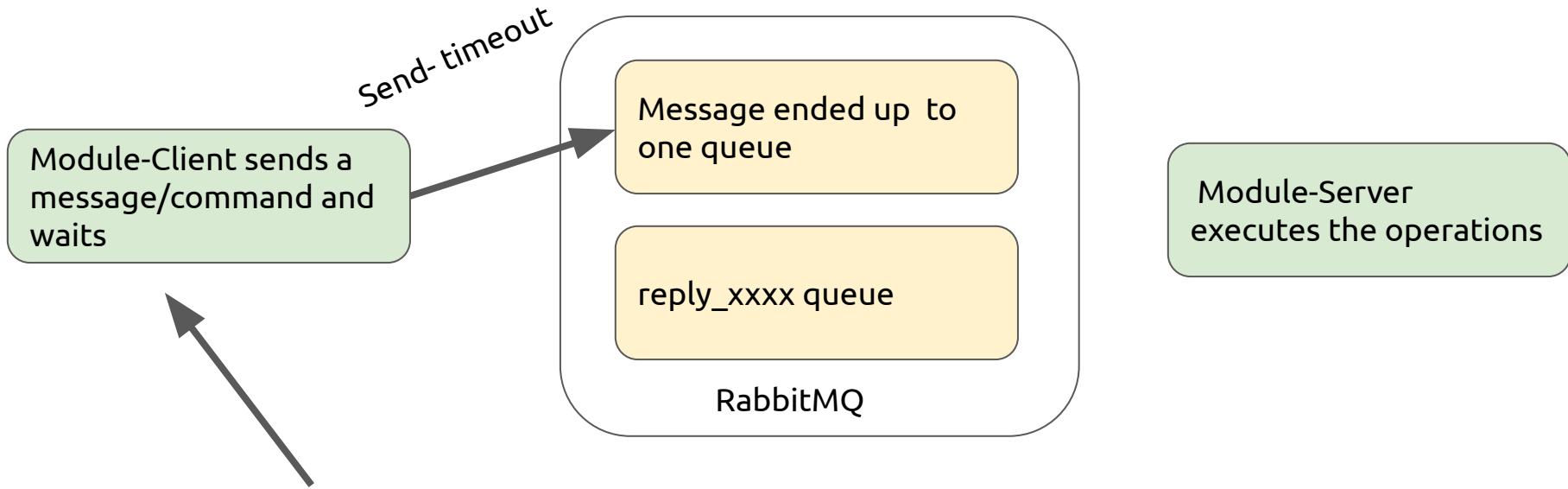
The code

```
options = oslo_messaging.TransportOptions(at_least_once=True)
```

```
client = oslo_messaging.RPCClient(transport, target,  
transport_options=options)
```

```
// at_least_once will be translated in Mandatory Flag in RabbitMQ
```

Demo



Message ID of the message is not waiting for a reply to message ID

RPC TimeOut

```
"/usr/local/lib/python2.7/dist-packages/oslo_messaging/_drivers/amqpdriver.py", line 318, in wait message = self.waiters.get(msg_id, timeout=timeout) File  
"/usr/local/lib/python2.7/dist-packages/oslo_messaging/_drivers/amqpdriver.py", line 223, in get 'to message ID %s' % msg_id)
```

MessagingTimeout: Timed out waiting for a reply to message ID

Application Error, nothing to do with RabbitMQ

Problem Heartbeat

`“Too many heartbeats missed”`

Heartbeat improvement

- Run heartbeat in a native thread[1]
- “Too many heartbeats missed”
- Still experimental

1-https://github.com/openstack/oslo.messaging/blob/master/oslo_messaging/_drivers/impl_rabbit.py#L475

Fixed bug in SSL module [1] (9.5.0)

- Too many heartbeats missed
- MessagingTimeout: Timed out waiting for a reply to message ID
- Modules crash - memory allocation
- Credit to SUSE :)

1-[+bug/1800957](#)

Second part

- **What's new in RabbitMQ**

RabbitMQ 3.8

- **Quorum Queues**
- **Observability**
- Single Active Consumer
- Feature Flags

Quorum Queues [1]

- Implement RAFT protocol (consensus algorithm)
- No ring topology, parallel replication
- More stable in case of failures

1-<https://www.rabbitmq.com/quorum-queues.html>

Observability

- New metrics for Erlang
- Unroutable messages
- Built-in Prometheus support (Grafana templates)

Native prometheus plugin

- <https://github.com/rabbitmq/rabbitmq-prometheus>
- Easy to deploy in K8s
- Easy to integrate prometheus

Live View

[RabbitMQ Grafana Overview](#)

[RabbitMQ Grafana Erlang](#)

[RabbitMQ Grafana RAFT](#)



@gsantomaggio