



MySQL and RabbitMQ

Or: OpenStack's core support softwares

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MySQL's role inside OpenStack

MySQL database assumes a core role in the set of support softwares inside OpenStack and is mainly used:

- for storing the state of the OpenStack cluster (VMs, users, volumes, tokens, etc),
- in the workflow of handling the various service requests (e.g. starting a new instance, creating a volume).

Alternative of MySQL inside OpenStack is MariaDB.

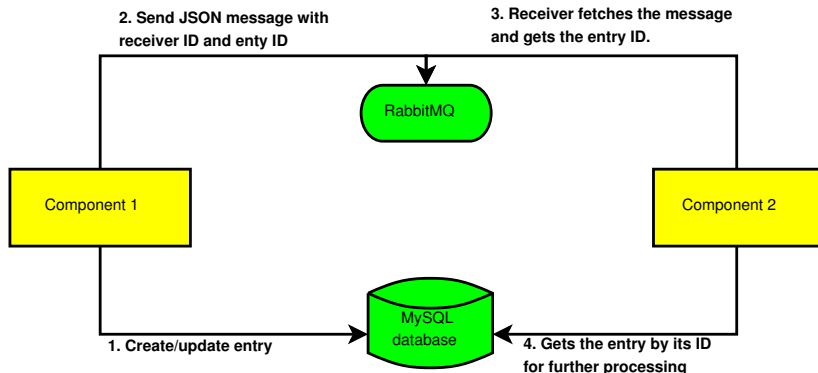
RabbitMQ's role inside OpenStack

The *RabbitMQ* messaging system is the second core support software inside OpenStack and is mainly used:

- to provide a communication layer between the different stack components,
- as a consequence to enable the collaboration between the components.

Alternatives of RabbitMQ inside OpenStack are Qpid and ZeroMQ.

MySQL & RabbitMQ interaction 1/2



MySQL & RabbitMQ interaction 2/2

Example: provisioning of a new instance

- a client sends a POST request to nova-api for a VM provisioning,
- nova-api writes an entry in the database,
- nova-api posts then a JSON message in RabbitMQ queue (the message is for nova-scheduler),
- nova-scheduler reads the JSON message from the queue,
- it examines the overall cluster situation,
- nova-scheduler then decides which compute should start the VM and posts JSON message in its RabbitMQ queue,
- nova-compute gathers then the request information (from the RabbitMQ and DB) and proceeds with the VM provisioning.

MySQL High Availabilitiy

MySQL is one of the most critical components in the OpenStack installation because it contains the state of the whole Stack.

Having MySQL in HA becomes almost a requirement. OpenStack's recommended way to do it is by using DRBD and Pacemaker. An alternative is using a Galera cluster which should become the state-of-the-art in the near future.

[This](#) link provides more information.

RabbitMQ High Availabilitiy

RabbitMQ can be configured in HA to prevent communication failure between the OpenStack components.

This can be achieved again, like in the case with MySQL, by using DRBD and Pacemaker. An alternative method, by using two active-active mirrored servers is also becoming important.

[This](#) link provides detailed information.

Notes and Remarks

- Installation of MySQL and RabbitMQ is really straight forward and requires limited intervention.
- Configuration of RabbitMQ is limited to changing the default passwd and the bind address.
 - Conf. file is `/etc/rabbitmq/rabbitmq-env.conf`
 - Logs directory is: `/var/log/rabbitmq`
- Configuration of MySQL requires a little bit more than RabbitMQ.
 - Conf. file is: `/etc/mysql/my.cnf`
 - Logs directory is: `/var/log/mysql`
- We will see everything in more detail during the tutorial.