

Openstack Service Analysis

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Outline

Presentation

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Monitoring & Troubleshooting

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Question

Presentation

Open Source Cloud Computing Software

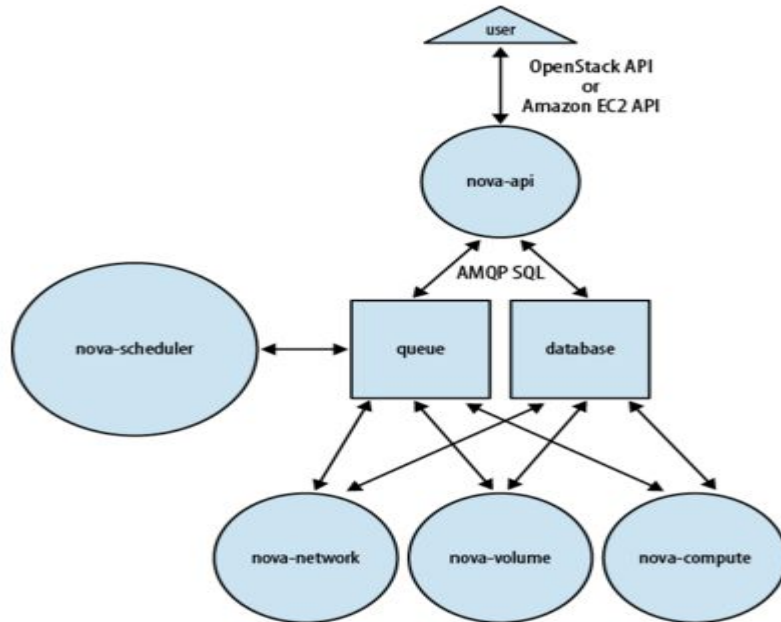
- What are the components of openstack?

Nova, Swift, Cinder, Neutron, Horizon

Nova is the main component used to deploy and manage VMs

Presentation

Nova logical architecture



Communication is made through the Queue (RabbitMQ)

<https://www.safaribooksonline.com/library/view/deploying-openstack/9781449311223/ch04.html>

Context

- Rapid evolution: two releases per year
- Understand execution failures
- libraries redundancy
- incompatibility between libraries
- need debugging and monitoring tools

Monitoring

How data is collected?

- Bus listener: listen to RabbitMQ Queue

Ceilometer, stacktach

- Polling agents

less interesting due to overhead

Troubleshooting

- Log file: rsyslog for log management

collect log from all compute nodes

- Osprofiler: use tracepoint as Lttng

python libraries write for openstack developer

Monitoring & Troubleshooting

Some Weaknesses

high overhead

events are collected periodically by polling

loss of events

Research objectives

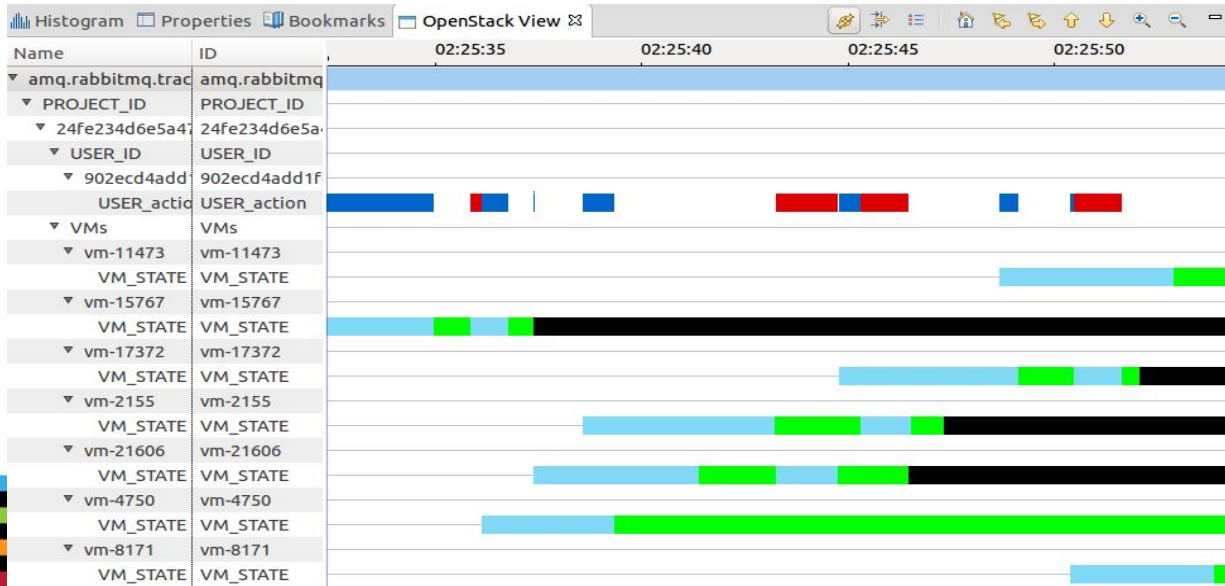
- Provide a way to analyse and debug openstack service
- Detect the failure during execution and show request flow
- Detect libraries incompatibilities between openstack platforms

(when multiple versions of openstack are used)

First Results

Step one:use RabbiMQ

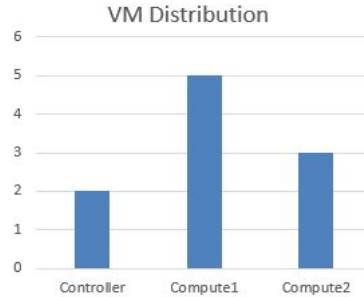
- VMs lifecycle (start, stop, migrate ...)
- User actions
- Host scheduling



First Results

Step two: use Ltng

- Statistics about service execution (error, warning ...)
- VM distribution



Future work

- Usage statistics (VM consumption, metrics ...)
- Request flow analysis (commands, request/response)
- Host scheduling context (why hostA is chosen ?)
- live-migration context (why migration happened at a specific moment)

QUESTIONS ?

References

<https://opensource.com/resources/what-is-openstack>

<https://ltnng.org/docs/#doc-python-application>

<https://www.safaribooksonline.com/library/view/deploying-openstack/9781449311223/ch04.html>

<https://projects.eclipse.org/projects/tools.tracecompass>

<http://docs.openstack.org/developer/ceilometer/events.html>

<https://www.elastic.co/guide/index.html>

<http://stacktach.readthedocs.org/en/latest/>