OpenStack Trove: Evaluation and Interfacing with the CERN Database on Demand Service

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MySQL, PostgreSQL and Oracle are available

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CERN Database on Demand

Create a new DB On Demand resource

Click to show name limitations.

DB Name:

atlas_db

Description:
Please provide a description for your account. DB On Demand administrators will use this information to evaluate your request (max 200 characters).

We would like to use a MySQL database for internal ATLAS data.

Create Resource
CERN Database on Demand

› IP and credentials
› Webinterface

http://indico.cern.ch/event/313869/
CERN Database on Demand

CERNopenlab

http://indico.cern.ch/event/313869/
OpenStack

http://www.solinea.com/blog/openstack-grizzly-architecture-revisited
OpenStack Trove

Compute Node
OpenStack Trove

Compute Node

Virtual Machine 1  Virtual Machine 2  Virtual Machine 3
OpenStack Trove

Virtual Machine 1
MySQL Server

Virtual Machine 2
Redis Server

Virtual Machine 3
MongoDB Server

Compute Node
OpenStack Trove

Compute Node

Virtual Machine 1
- MySQL Server
  - DB 1
    - User A
  - DB 2
    - User A

Virtual Machine 2
- Redis Server
  - DB 5
    - User A

Virtual Machine 3
- MongoDB Server
  - DB 8
    - User A
OpenStack Trove

Compute Node

Virtual Machine 1
- MySQL Server
  - DB 1
  - User A
  - DB 2
  - User A
  - DB 3
  - User B

Virtual Machine 2
- Redis Server
  - DB 4
  - User C
  - DB 5
  - User A

Virtual Machine 3
- MongoDB Server
  - DB 8
  - User A
OpenStack Trove

Compute Node

Virtual Machine 1
- MySQL Server
  - DB 1 User A
  - DB 2 User A
  - DB 3 User B

Virtual Machine 2
- Redis Server
  - DB 4 User C
  - DB 5 User A
  - DB 6 User D

Virtual Machine 3
- MongoDB Server
  - DB 7 User D
  - DB 8 User A
  - DB 9 User E
Ongoing: Evaluate Trove on Scientific Linux using Packstack
Networking in too much detail

This document describes the architecture that results from a particular OpenStack configuration, specifically:

- Quantum (or Neutron) networking using GRE tunnels;
- A dedicated network controller;
- A single instance running on a compute host

Much of the document will be relevant to other configurations, but details will vary based on your choice of layer 2 connectivity, number of running instances, and so forth.

The examples in this document were generated on a system with Quantum networking but will generally match what you see under Neutron as well, if you replace `quantum` by `neutron` in names.

The lay of the land

This is a simplified architecture diagram of network connectivity in a quantum/neutron managed world:

http://openstack.redhat.com/Networking_in_too_much_detail
Trove taskmanager: CRITICAL root [-] 'NoneType' object has no attribute 'rpartition'

I installed OpenStack Icehouse on Scientific Linux 6 using Packstack. Then I followed the OpenStack documentation to setup Trove.

When trying to start Trove taskmanager, it crashes with the error message (I have `verbose` and `debug` set to `True` in `trove-taskmanager.conf`):
function remove_trove {
    set -x

    service openstack-trove-api stop
    service openstack-trove-taskmanager stop
    service openstack-trove-conductor stop
    chkconfig openstack-trove-api off
    chkconfig openstack-trove-taskmanager off
    chkconfig openstack-trove-conductor off

    #yum remove openstack-trove python-troveclient

    keystone user-delete trove
    ENDPOINT_ID=$(get field "endpoint-create-trove" " id " 4)
    keystone endpoint-delete $ENDPOINT_ID
    keystone service-delete trove
    keystone tenant-delete trove

    glance image-delete trove_mysql_ubuntu

    rm -rf /etc/trove/*

    echo "DROP DATABASE trove" | mysql -u root -p$MYSQL_ROOT_PASSWD
    echo "DROP USER trove@'localhost'" | mysql -u root -p$MYSQL_ROOT_PASSWD
    echo "DROP USER trove'%'" | mysql -u root -p$MYSQL_ROOT_PASSWD
}

My Project
Ongoing: Evaluate Trove on Scientific Linux using Packstack

DBoD Instances in OpenStack: Java Interface

Integrate Oracle in Trove
Interim Conclusion

› Trove Pros
  - active development
  - OpenStack

› Trove Cons
  - not yet mature
  - needed improvements: documentation, more database types
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