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OpenStack vs Amazon

PERCCOM Seminar

By: Dagnachew A. Temesgene

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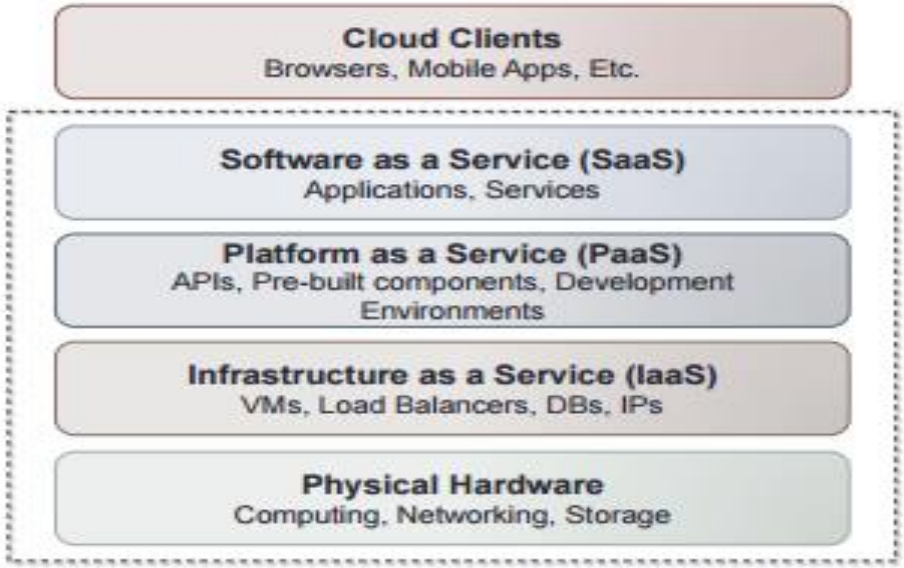
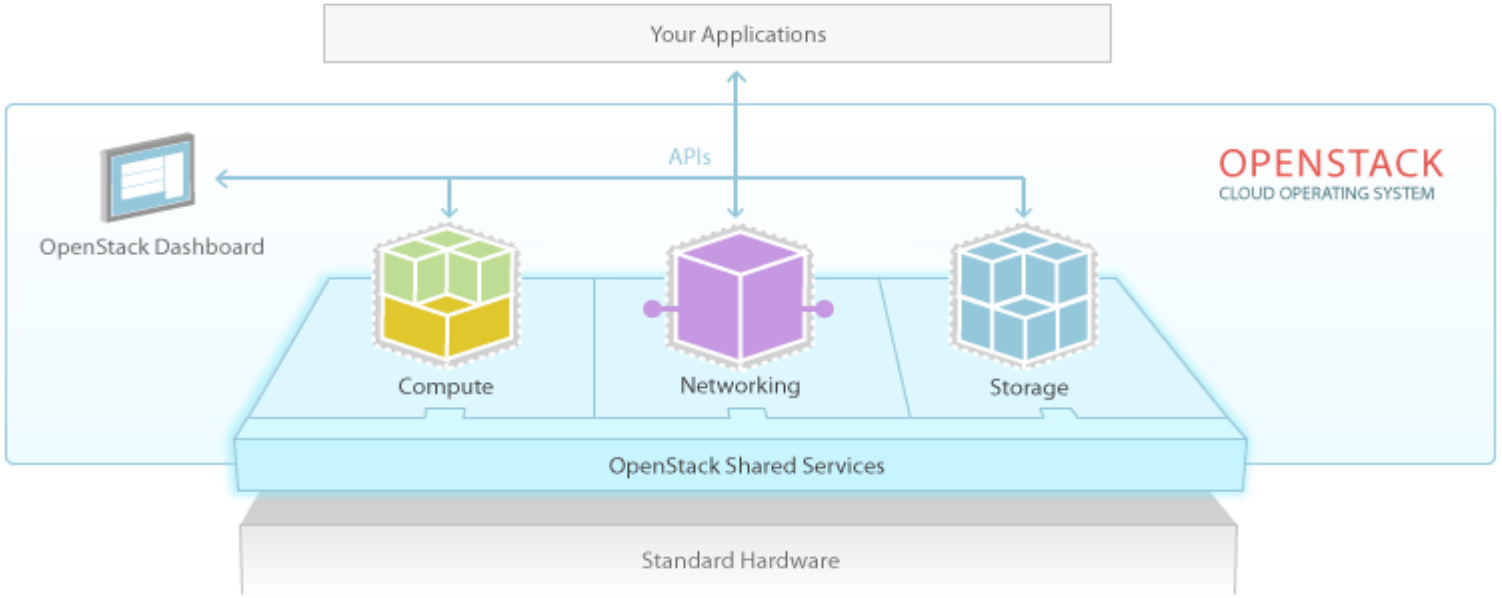
Introduction

- Cloud computing - modern computing paradigm that delivers computing resources as services over the Internet in a remotely accessible fashion.



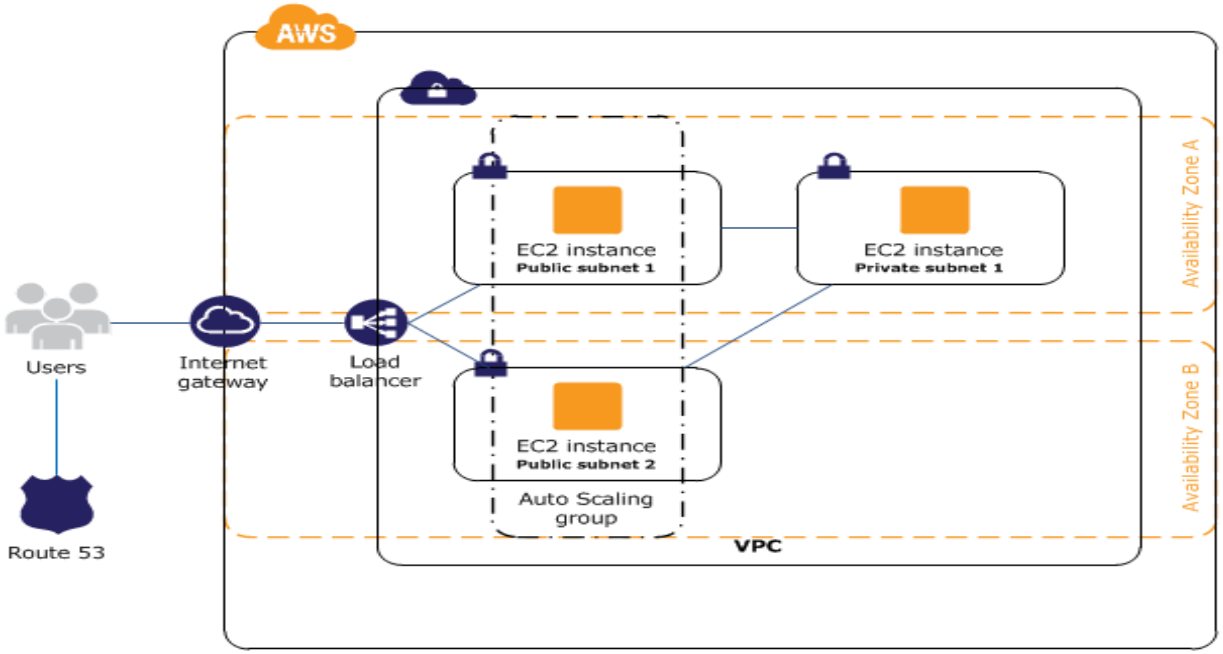
OpenStack

- OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources.
- OpenStack provides an (IaaS) solution through a set of interrelated services.



Amazon

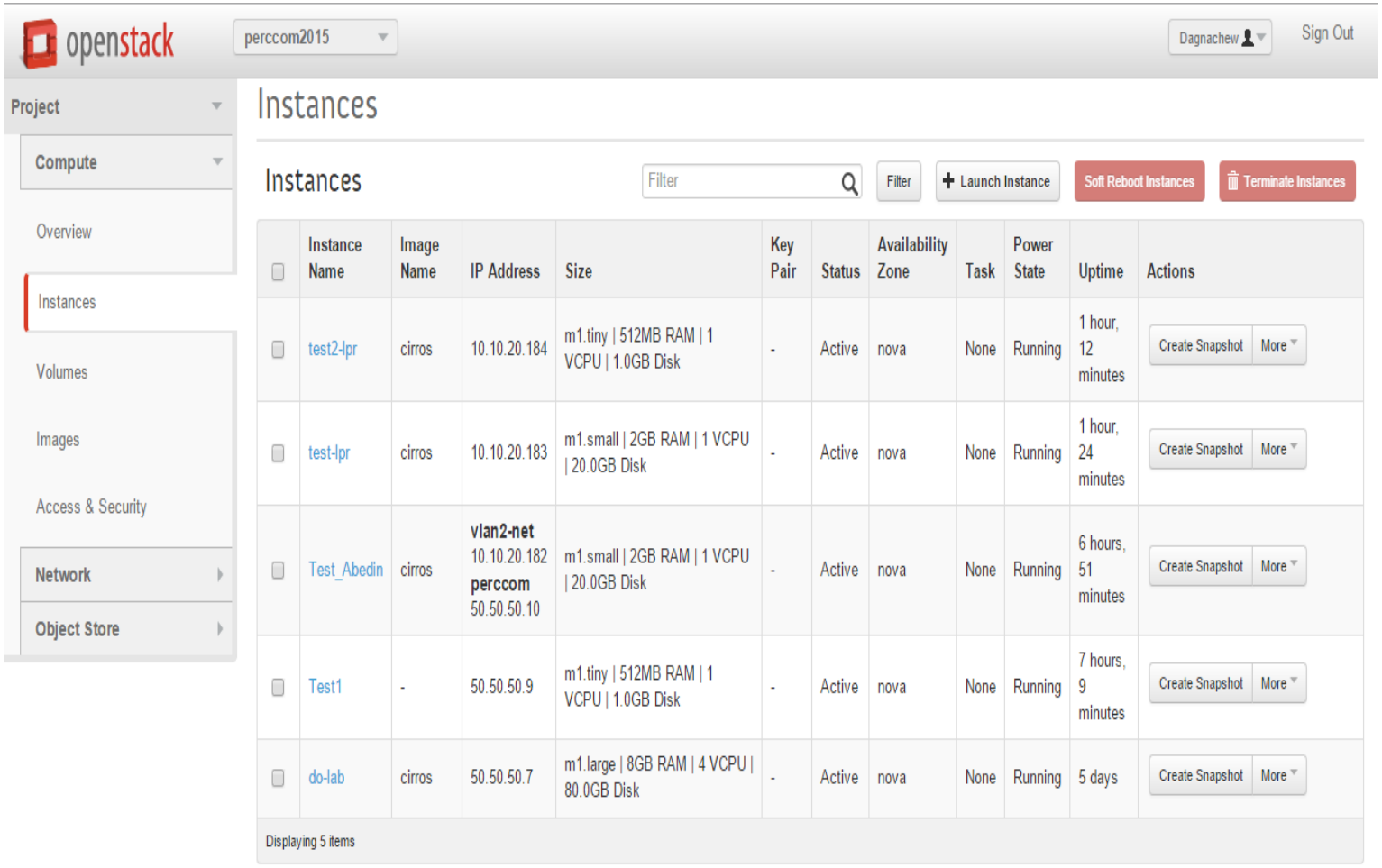
- AWS provides on-demand computing resources and services in the cloud, with pay-as-you-go pricing



Comparison: Amazon vs OpenStack

- Compute: It is virtual machine(VM)/instance with memory, processor and storage

compute	OpenStack	AWS
Name	Instance	VM
Guest Operating System	Certified by the OpenStack vendor	Certified by AWS


openstack
perccom2015
Dagnachew
Sign Out
Project
Compute
Overview
Instances
Volumes
Images
Access & Security
Network
Object Store
Instances
Instances
Filter
Filter
+ Launch Instance
Soft Reboot Instances
Terminate Instances
Instance Name
Image Name
IP Address
Size
Key Pair
Status
Availability Zone
Task
Power State
Uptime
Actions
test2-lpr
cirros
10.10.20.184
m1.tiny | 512MB RAM | 1 VCPU | 1.0GB Disk
-
Active
nova
None
Running
1 hour, 12 minutes
Create Snapshot
More
test-lpr
cirros
10.10.20.183
m1.small | 2GB RAM | 1 VCPU | 20.0GB Disk
-
Active
nova
None
Running
1 hour, 24 minutes
Create Snapshot
More
Test_Abedin
cirros
vlan2-net
10.10.20.182
perccom
50.50.50.10
m1.small | 2GB RAM | 1 VCPU | 20.0GB Disk
-
Active
nova
None
Running
6 hours, 51 minutes
Create Snapshot
More
Test1
-
50.50.50.9
m1.tiny | 512MB RAM | 1 VCPU | 1.0GB Disk
-
Active
nova
None
Running
7 hours, 9 minutes
Create Snapshot
More
do-lab
cirros
50.50.50.7
m1.large | 8GB RAM | 4 VCPU | 80.0GB Disk
-
Active
nova
None
Running
5 days
Create Snapshot
More
Displaying 5 items

comparison

- Networking: Provides access for users to VMs

Networking	OpenStack	AWS
Name	Neutron	Networking
Offering	IP addressing Load Balancing Firewall (DNS)	IP addressing ELB Firewall DNS and VPC

- Storage:
  - Block Storage: to create virtual disk drives(volumes)
  - Object Storage: to store objects such as files,media,images etc

Storage	OpenStack	AWS
Block Storage	Cinder	EBS
Object storage	Swift	S3
Offered storage	Ability to use traditional storage or software defined storage(CEPH)	Storage offered by AWS

comparison

- Identity and Security

Identity/Security	OpenStack	AWS
Identity, authentication	Keystone	IAM
Network security	Virtual firewall	Virtual firewall

Comparison

- User interface and APIs
  - CLI, GUI and API

UI	OpenStack	AWS
API	OpenStack API	EC2 API
GUI	Horizon	Console

Business Characteristics

SLA	OpenStack	AWS
SLA offering	Support from OpenStack team (deployed by your self)…negotiate with your IT team	99.95%
High Availability	Availability zones	Availability zones
Data ownership and control	You (the IT group of the enterprise)	You but AWS SLA have liability agreement
Cost	Purchase HW and SW Maintenance personnel SW purchase from distributor and license that or subscription for support and right to use “DIY”…download the software and run it by your self	Credit card billing per minute/hour or Pre-purchase blocks of usage at other rates (Reserved instances for some amount of time)

Conclusion

- Both OpenStack and AWS deliver almost similar compute, storage and networking services
- The particular choice depends on the use that is intended for, the estimation of the cost for running as well as other consideration such as SLA and data ownership

References

- http://cnds.eecs.jacobs-university.de/slides/2012-aims-openstack-handouts.pdf
- http://www.openstack.org/
- http://aws.amazon.com/
- http://aws.amazon.com/ec2/

Thank you