Cloud Computing & OpenStack

An Overview

EternalTyro

Dummy Company
Dummy workshop

http://dummydummy.com

June, 22 2013

Cloud computing

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- Metered & on demand

Available Cloud Platforms

Popular public cloud platforms: Internet based; little control on data and infrastructure.

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- Rackspace Cloud
- Domestic players like Sify, ISPs, etc.

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Public and private clouds may be mixed and used in a hybrid cloud model.

OpenStack

- Cloud framework
- Founded by NASA & Rackspace
- Compute & Storage in the beginning
- Written in Python
- REST based APIs
- Apache Licensed

Components

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- Horizon

Nova Compute

- Manages VMs aka instances and their lifecycle
- LXC, KVM, Xen, etc.
- ARM / x86 / AMD64
- Host - Guest isolation; Guest - Guest isolation

Features

- Support for commodity servers
- Networking support - Flat / DHCP / VLAN / IPv6
- REST-ified API
- Floating IPs
- RBAC

Glance

- Image delivery service
- Snapshots
- RAW, QCOW, VMDK, VDI, AMI etc.

Cinder

- Block storage service
- Analogous to EBS
- Persistant, Mountable

Quantum

- Manages networking for instances
- Network connectivity as a Service
- Pluggable, Scalable
- API driven
- Extension framework: IDS / Firewalls / LB / VPN

Nova Swift

- Object Storage
- Analogous to S3
- REST API, duh..
- Hash rings

Keystone

- Identity and access management
- Password, token and key based access mechanisms
- LDAP? oh yes!
- Service lists
- RBAC
- ...and APIs

Other components

- Schedulers
- Queue
- Metering
- Monitoring & Management.

Control Flow

- User initiates an Instance from within the Dashboard
- Authentication & authorization token from Keystone
- Token and Catalog sent through the AMQP to the Scheduler

Be a hero

- Code
- Build, deploy and document
- File bugs
- ..or fix bugs
- Document, blog and share

Get Help

- IRC #openstack on freenode
- Official documentation docs.openstack.org
- Blogs, wikis, etc..
- Meetups

Thank You!

Questions??