

Openstack India Meetup

May 5

Deepak Garg

Citrix R&D



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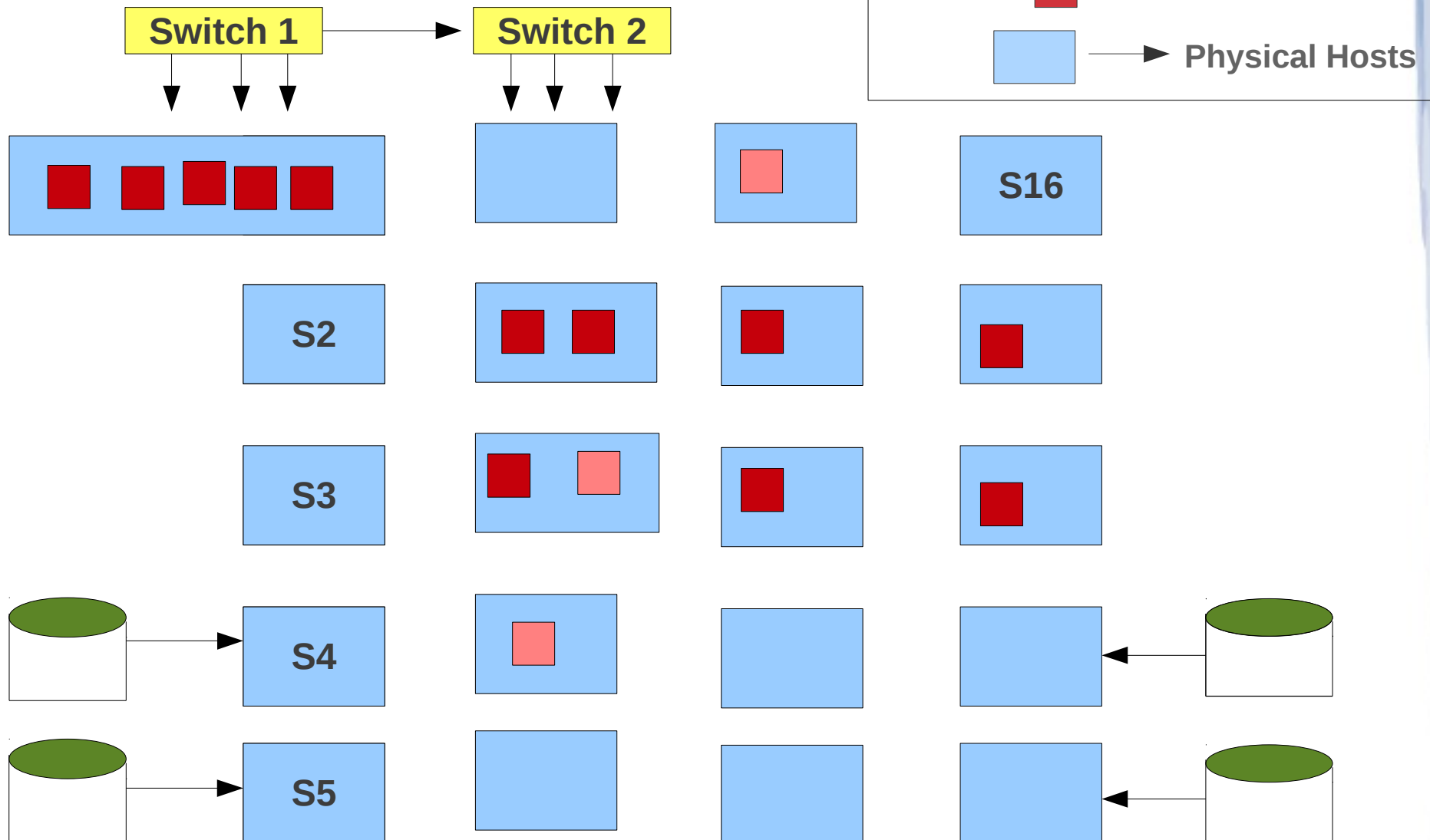
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- My DC !
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- History and Motivation
- Partners
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- Community in India
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Some of the pics in this slide is taken from Ken Pepple's website <http://ken.pepple.info>

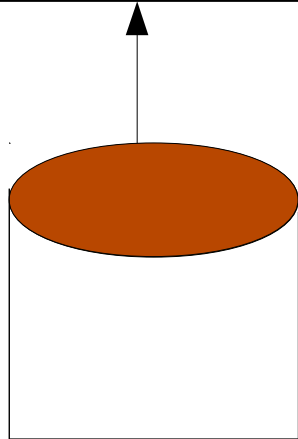
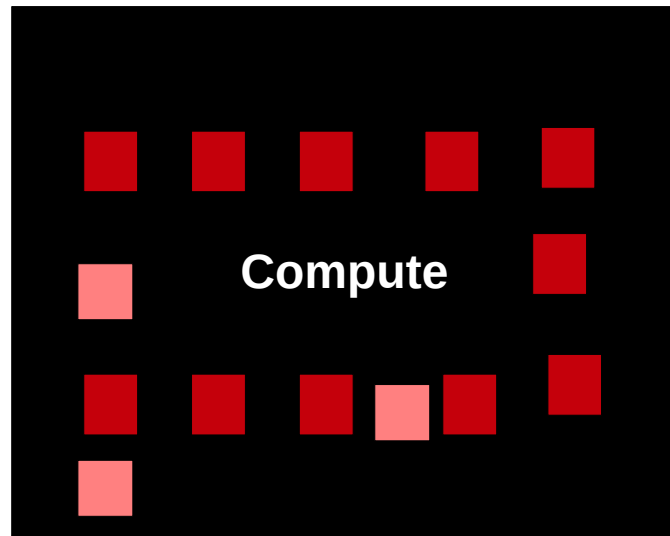
What does it do !

- A Software to create IaaS clouds
- Infrastructure → Physical Servers, Physical Storage, Network Switches etc..
- Pool your Compute (Servers), Storage (FS, SAN, Filers etc..), Control your network devices
- 100 Servers each with 32 GiB RAM ≈ a Black box with 3200 GiB RAM
- On demand !
- Seamless

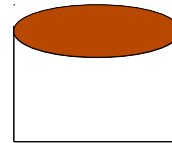
My DC !



How it looks to the User !



Pooling the compute.
To the user, it can serve
scalable and infinite
compute on demand



Pooling the storage. To
the user, it can serve
scalable and infinite
storage on demand

Components

- Nova – Openstack Compute
- Swift – Openstack Object Storage
- Glance – Openstack Image Service
- Keystone – Openstack Identity Service
- Horizon – Openstack Dashboard
- Quantum – Openstack Networking Service
- Others:
 - Atlaas – Load Balancing as a Service

Nova

- VM lifecycle → provisioning, maintaining
- ~ Amazon EC2, RAX Cloud Servers, VPS
- Also provides volume service ~ EBS
- Further divided into logical components: nova-api, nova-compute, nova-network,
 - nova-schedule:- decides which physical host the VM should run. Scheduling algos can be very simple or very complex
 - nova-api:- provides endpoint for OS/EC2 API, initiates req.
 - nova-compute:- lifecycle of VMs
 - nova-volume:- creates, attaches, detaches persistent vols
 - nova-network:- provisioning vifs, firing iptable rules

Swift

- Object Blob Store
- ~ Amazon S3 or RAX Cloud Files
- Distributed architecture -- no SPOF, scale horizontally
 - Proxy Server:- provides API endpoint
 - Account Server:- manage accounts
 - Container Server:- maps containers (folders)
 - Object Server:- manage actual files/objects

Keystone

- Users and Tenants management
- AuthN and AuthZ services
- ~ Amazon IAM
- All components talk to Keystone
- Give your username/password and get a token
 - Pass token to other services for the API calls you make
 - Services verify that token with Keystone for AuthN / AuthZ
 - Pluggable backend → LDAP, SQL, Key-Value stores

Glance

- Discover, Storage and Retrieval of VM images for Nova
- Can use Swift or any other filesystem for backend storage
- Optional component but recommended
 - glance-api:- provides api endpoint
 - glance-registry:- metadata about images
 - image-store:- could be swift / S3 etc.

Horizon and Quantum

- GUI for admins, tenants and users
- Uses keystone API for commands
- Quantum:
 - plays with switches → physical and virtual
 - pluggable architecture → drivers available for OVS, Nicira, Cisco etc., write your own proprietary driver

Instances – OpenStack Dashboard - Mozilla Firefox

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DateiBearbeitenAnsichtChronikLesezeichenExtrasHilfe

Instances - OpenStack Dashboard

+

10.42.0.6/syspanel/instances/


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Google

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openstack

DASHBOARD

Project

Admin

System Panel

Overview

Instances

Services

Flavors

Images

Projects

Users

Quotas

All Instances

Logged in as: admin

Settings

Sign Out

Instances

Terminate Instances

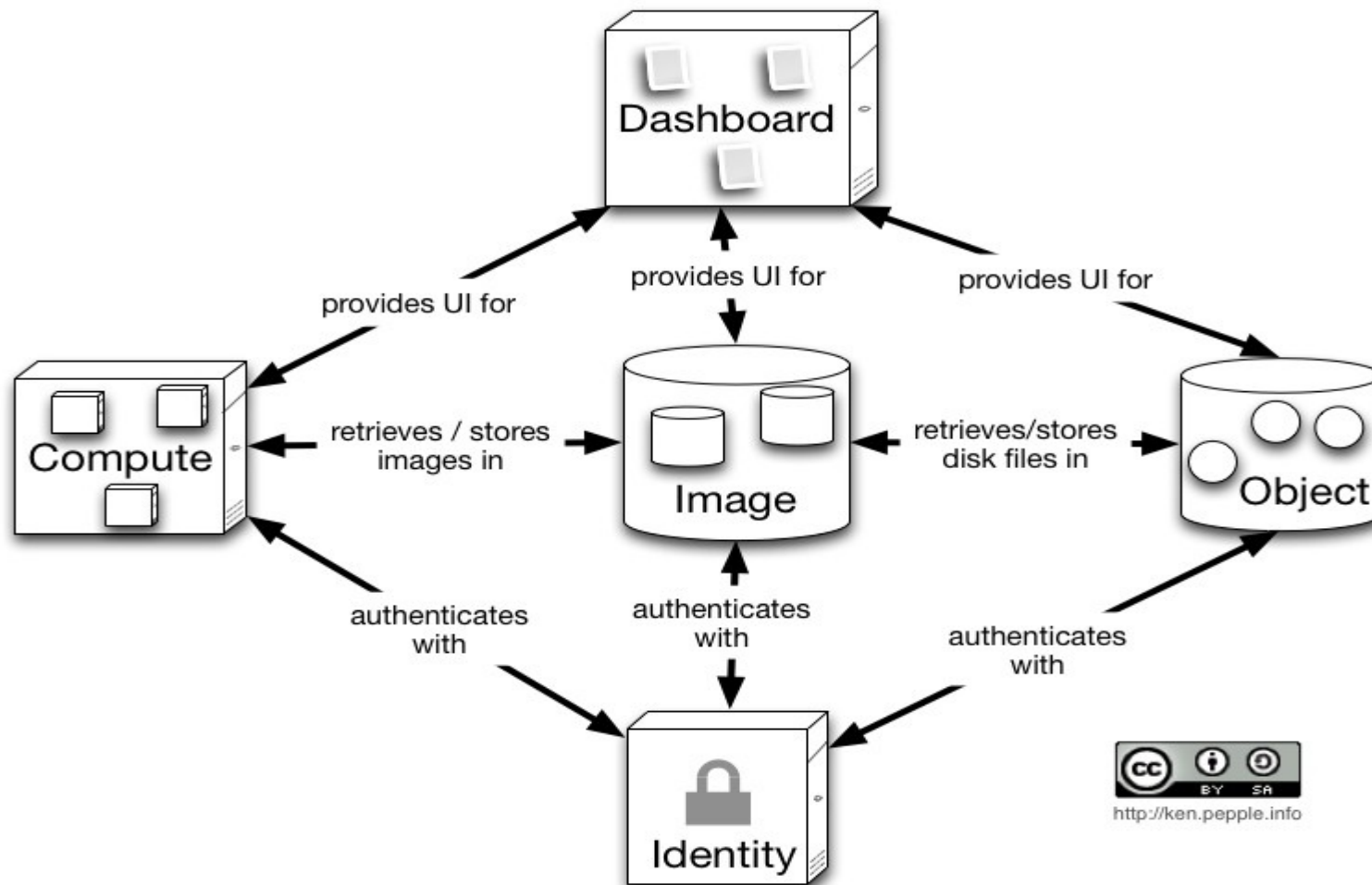
	Tenant	Host	Instance Name	IP Address	Size	Status	Task	Power State	Actions
<input type="checkbox"/>	admin	netbook	superfrobnicator	192.168.22.34	512MB RAM 1 VCPU 0 Disk	Active	None	Running	<div>Edit Instance</div>

Displaying 1 item

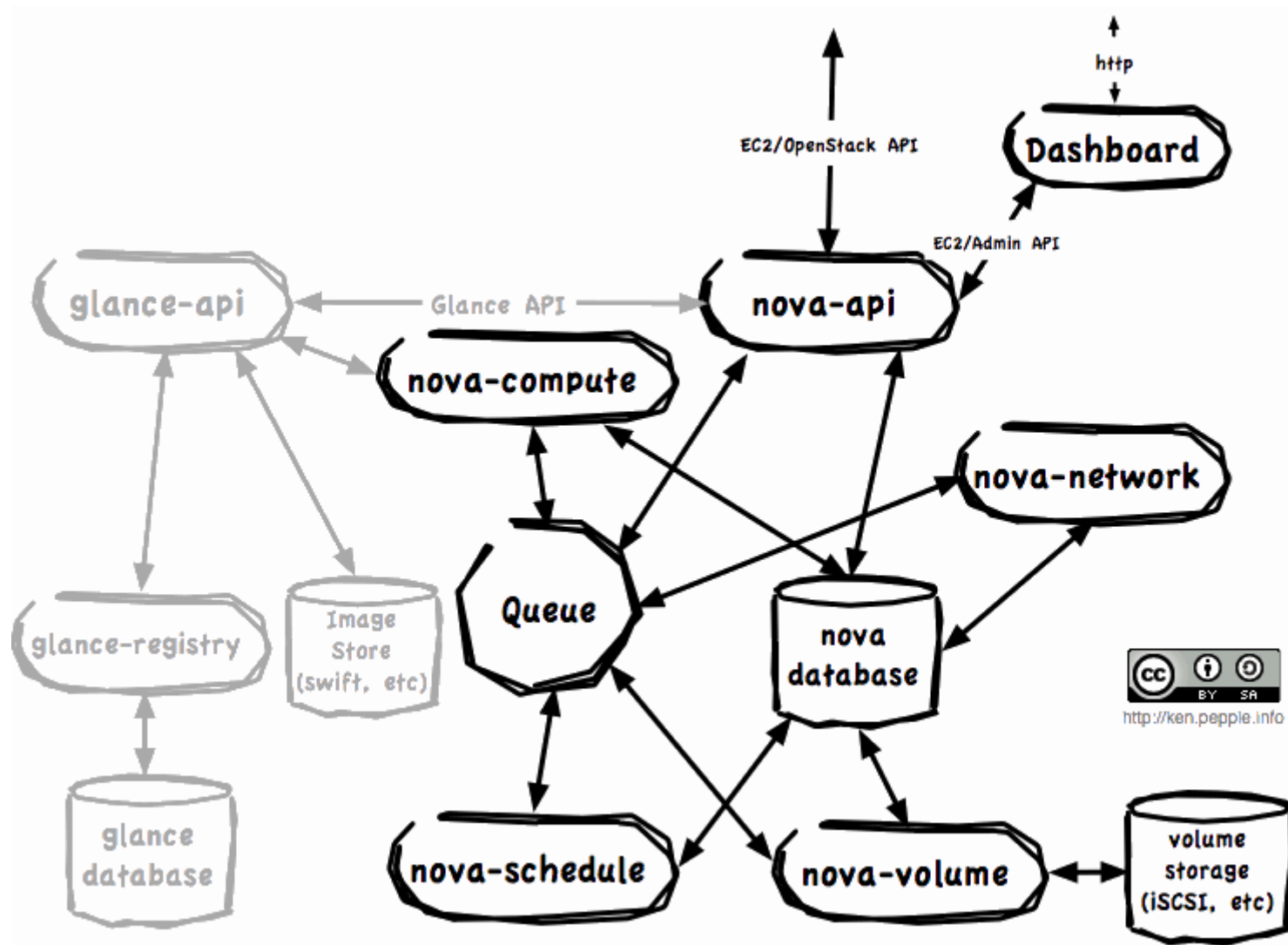
The Others

- Queuing Service → RabbitMQ or any AMQP
- DB → MySql, Postgres, Sqlite
- Apache with mod_wsgi → Dashboard

Simple Workflow



Simple WorkFlow 2.0



History and Motivation

- July 2010,
- RAX and NASA
- RAX to compete in IaaS industry
- RAX Cloud – 2009 Cloud Files rewrite
 - 2010 cloud Servers rewrite/ open source
- NASA launch VMs and launch satellites
 - Nebula – not happy with Eucalyptus
 - Writing their own (in Python)

Partners



Openness and culture

- Open Source → Apache 2.0
- Open Design → Design Summit and Dev conf for every release
- Open Dev → github, Launchpad and gerrit
- Open Community → PTLs and PB members elected by the community

Community in India

- ML: openstackindia@librelist.com
- Meetup Page:
<http://www.meetup.com/Indian-OpenStack-User-Group/>
- LinkedIn: Openstack India community
<http://www.linkedin.com/groups/OpenStack-India-4005742>
- FB: Openstack India User Grp
<http://www.facebook.com/groups/328814400511881/>
- Python Developers Meetup page:
<http://www.meetup.com/Bangalore-Python-Developers-Group/>

Meetups/Events

- Bug Squashing Day / Release Hack Ins
- User grp and Knowledge transfer

Q ?

deepakgarg.iitg@gmail.com

@donji