



OpenStack or: How I Learned to Stop Worrying and Love the Cloud



Agenda

- **What is “The Cloud”?**
- **Cloud components**
- **OpenStack**
- **OpenStack components**
- **OpenStack demo**
- **Questions**

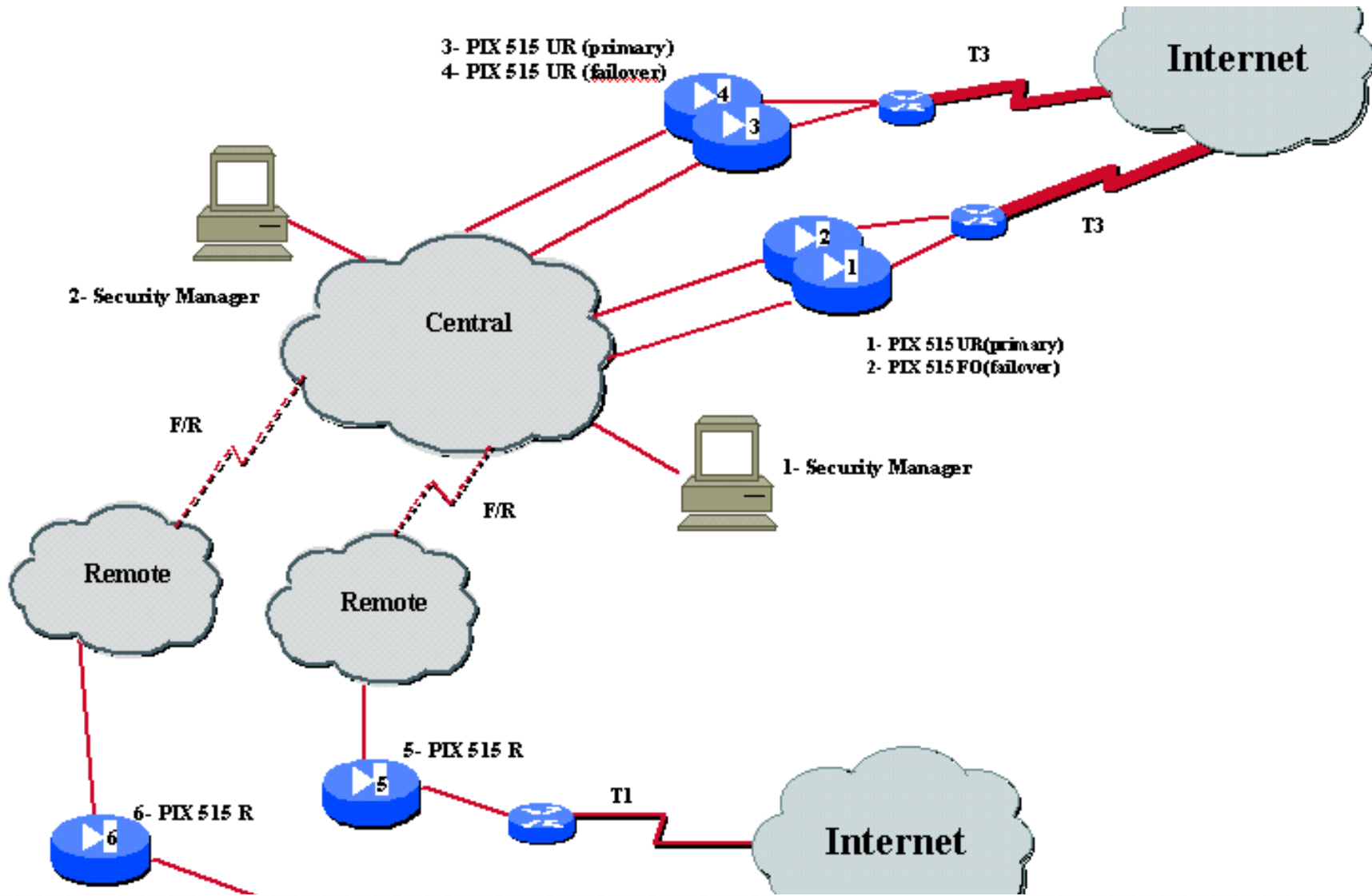




WHAT IS “THE CLOUD”?

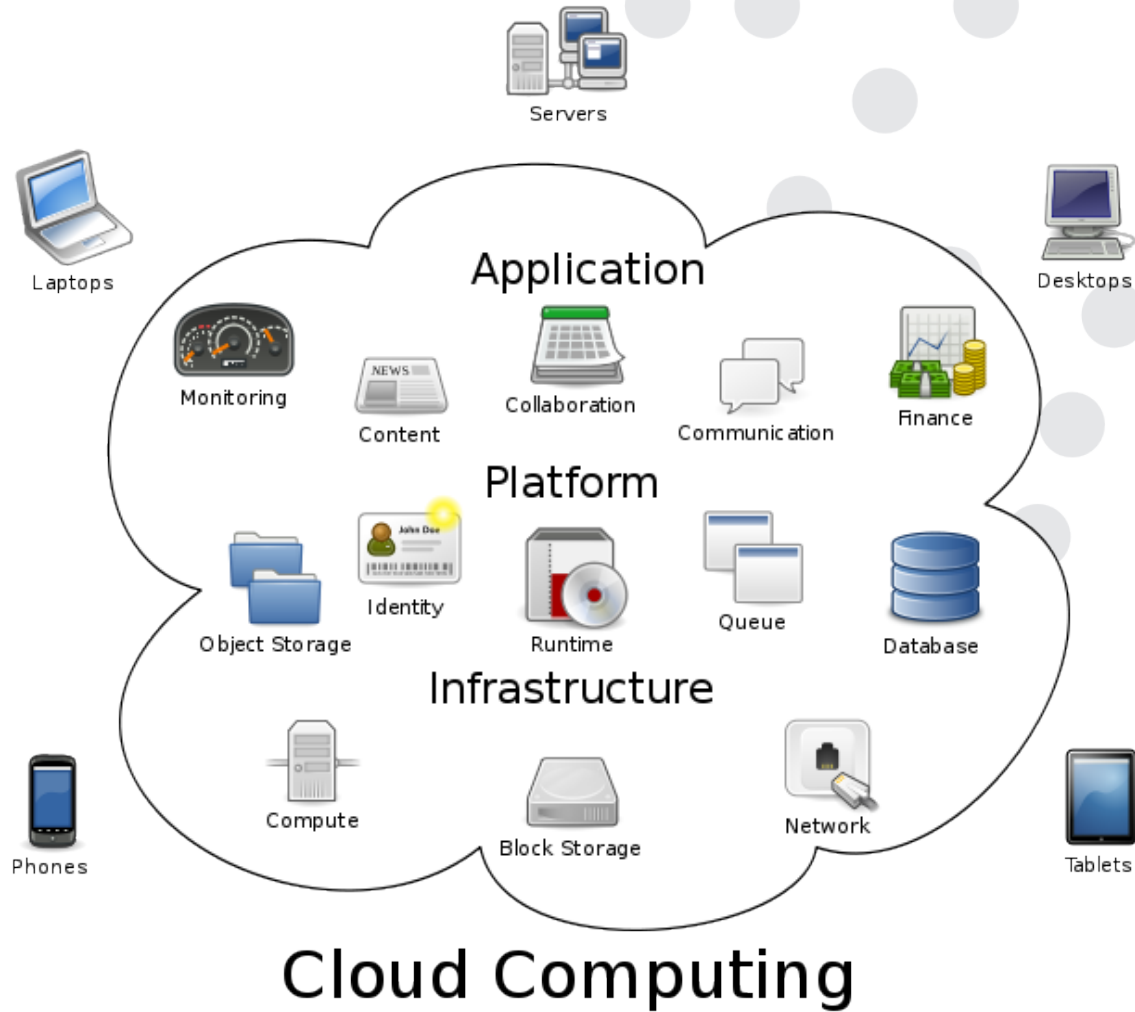


What is "The Cloud"?





What is "The Cloud"?

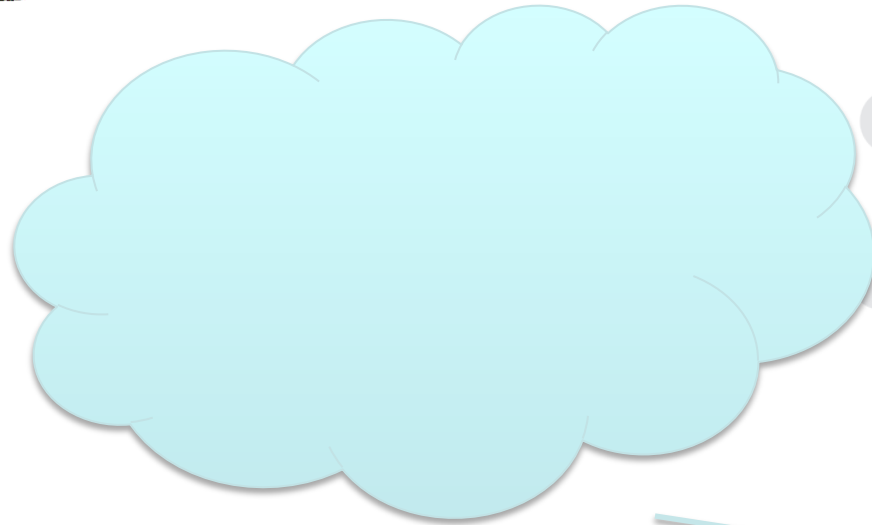


Cloud Computing



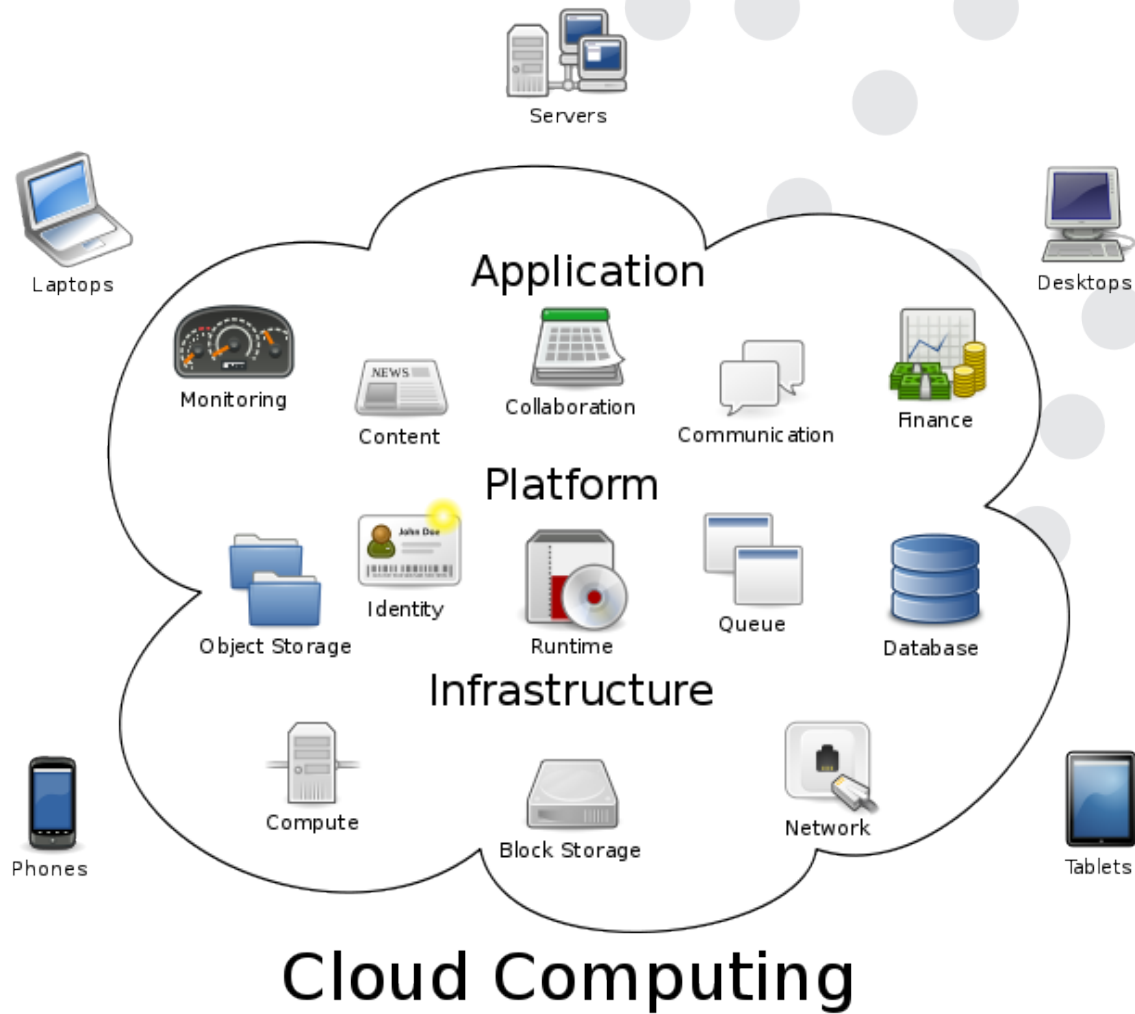


What is “The Cloud”?





What is "The Cloud"?





What is “The Cloud”?

- IaaS
- PaaS
- SaaS





laaS

INFRASTRUCTURE AS A SERVICE





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www.cybera.ca



Xen

 **KVM**

 **vmware®**







PaaS

PLATFORM AS A SERVICE





Core FTP Lite - www.sunrockland.edu:21

File View Sites Manage Help

LIST
Connect socket #612 to 192.203.40.13, port 36314...
150 Opening ASCII mode data connection for file list
226 Transfer complete
Transferred 1,178 bytes in 0.008 seconds

Upload Button

C:\Documents and Settings\jsmith\My Documents\PI → /Members/jsmith/

Filename	Size	Date
..		09/13/06 10:58
ftp-connect.gif	15 KB	09/13/06 10:58
howto-ftp.html	2 KB	09/13/06 10:58
login-name-passwd.gif	30 KB	09/11/06 16:13
login-welcome.gif	23 KB	09/11/06 16:28
login.gif	22 KB	09/11/06 16:11
logout.gif	26 KB	09/11/06 16:32
menu-bar.gif	47 KB	09/11/06 17:01
roc plone Tutorials.doc	6,946 KB	09/13/06 10:18

Filename	Size	Date
<..>		08/18/06 00:36
..		08/28/06 20:46
plone-help		08/28/06 20:46
core-ftp.gif	5 KB	08/30/06 13:55
enrollment.htm	38 KB	08/28/06 16:46
ftp-connect.gif	3 KB	09/13/06 14:49
howto-ftp.html	2 KB	09/13/06 14:50
in-ftp.gif	3 KB	09/13/06 14:49

Host	Destination	Bytes	Size	Rate	Type	Status	Source
No transfers...							

Ready





(mt)TM



Host Gator

GoogleTM
App Engine



 heroku



O P E N S H I F TTM

PaaS by Red Hat® Cloud



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SaaS

SOFTWARE AS A SERVICE







Hotmail



Basecamp



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So That's "The Cloud"

- **Services that have always been available**
- **Just with a new buzzword attached**





OPENSTACK





OpenStack

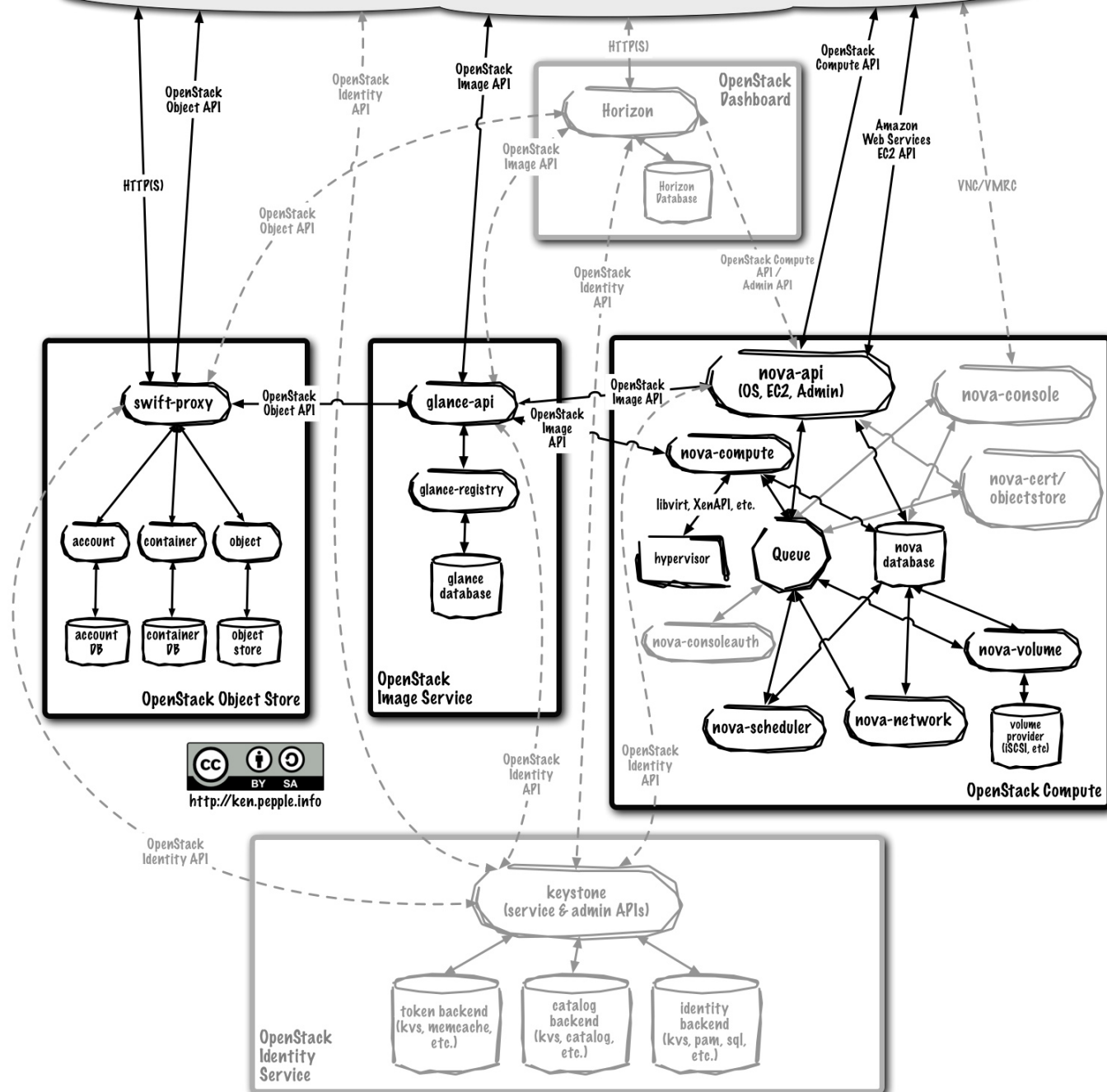


openstack™
CLOUD SOFTWARE

- **"To produce the ubiquitous Open Source cloud computing platform that will meet the needs of public and private cloud providers regardless of size, by being simple to implement and massively scalable."**



OpenStack End Users

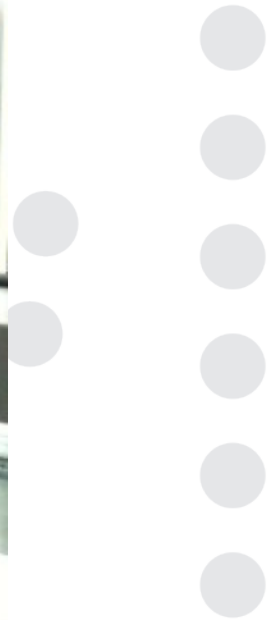




OpenStack Object Storage (Swift)



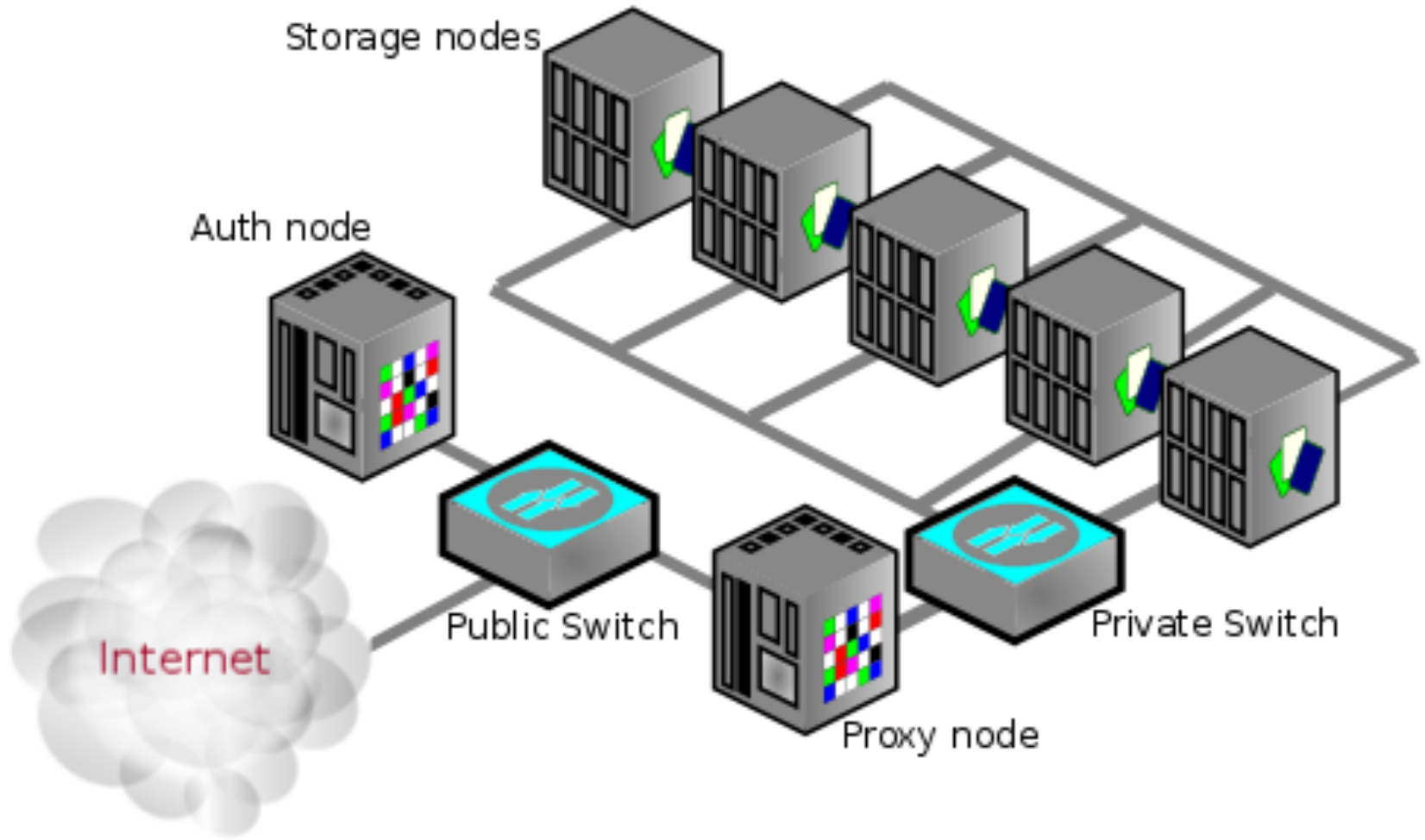
Did someone order a petabyte?

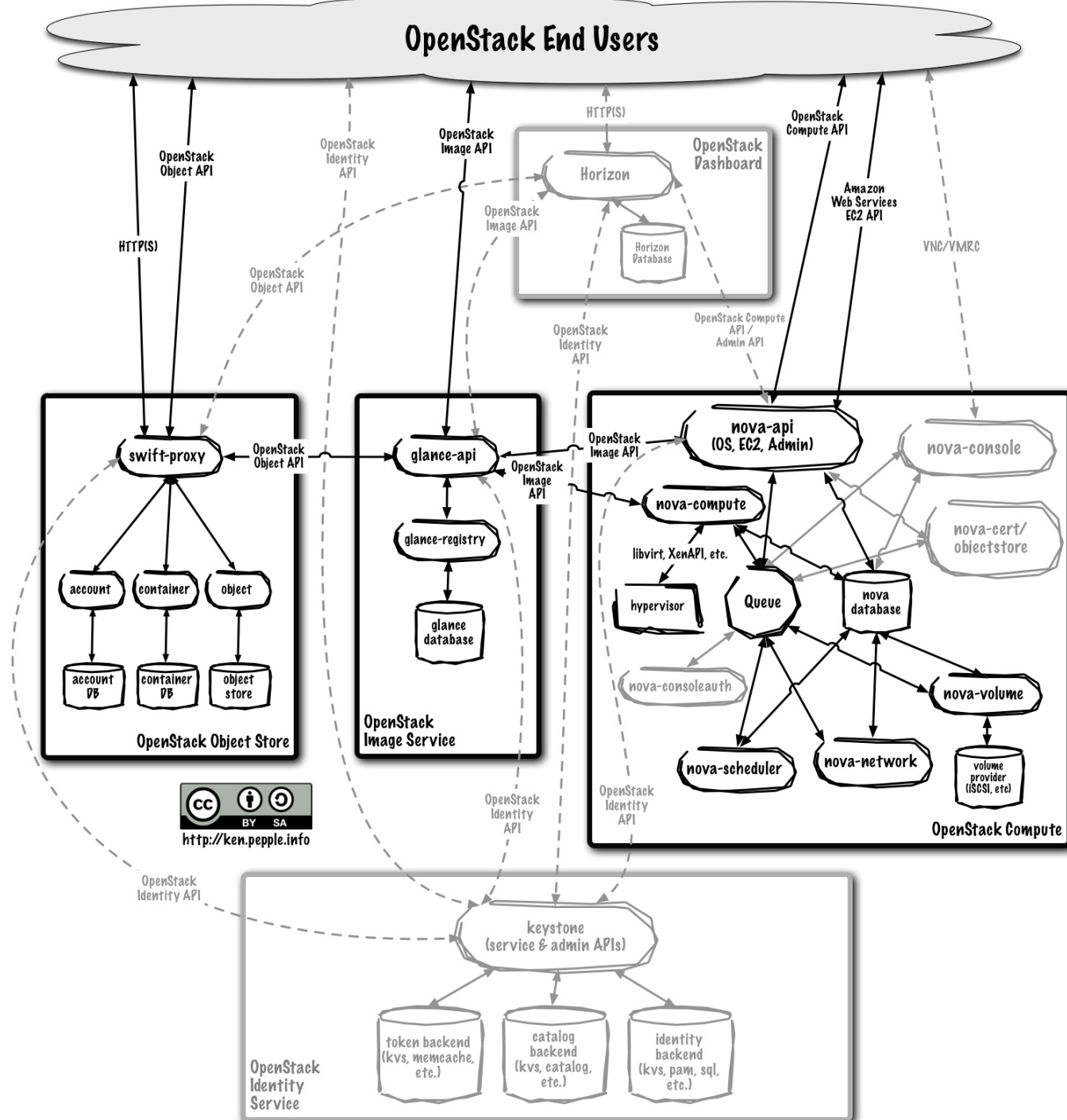




OpenStack Object Storage

Stores container databases, account databases, and stored objects

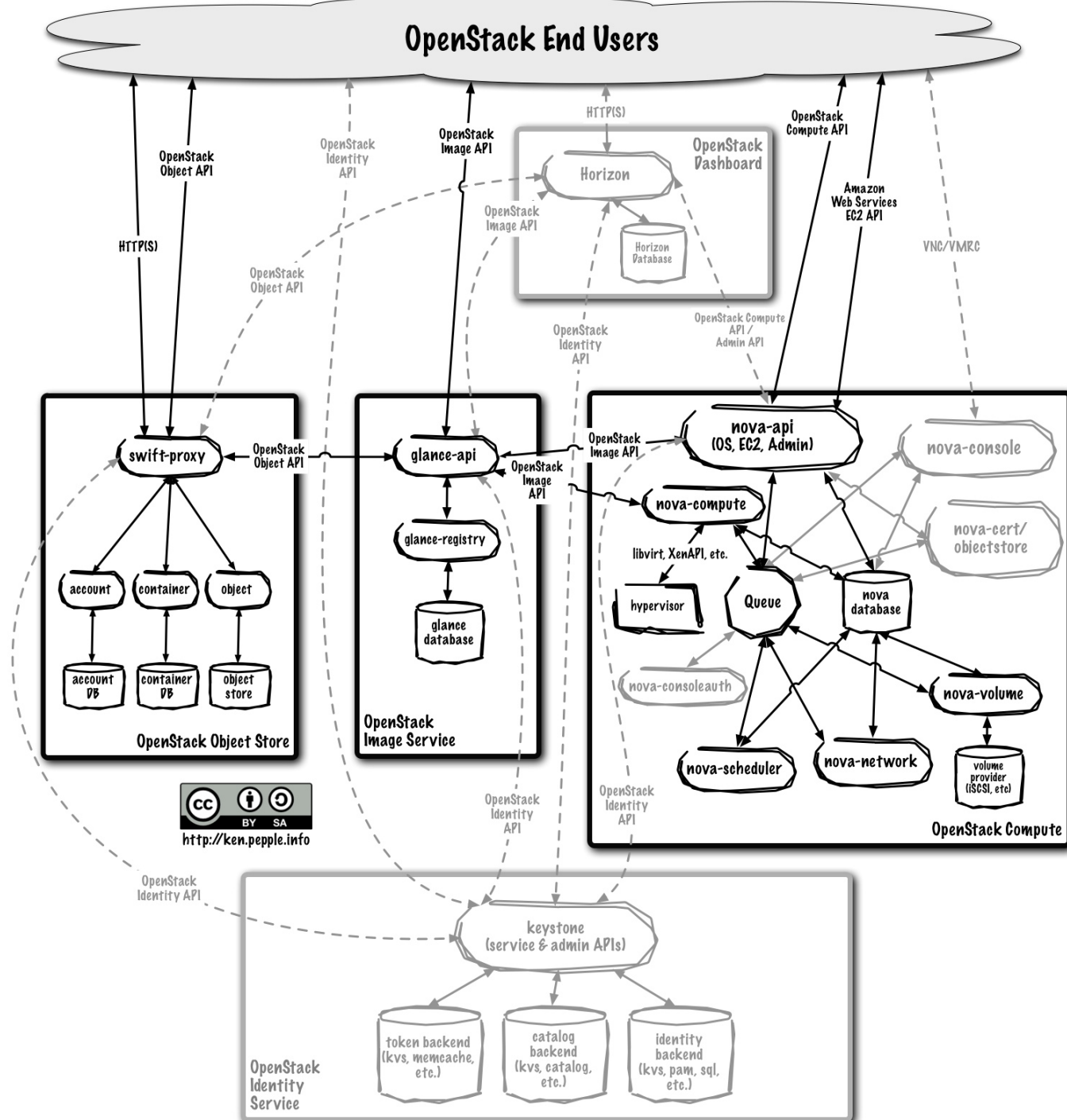






OpenStack Image Service (Glance)

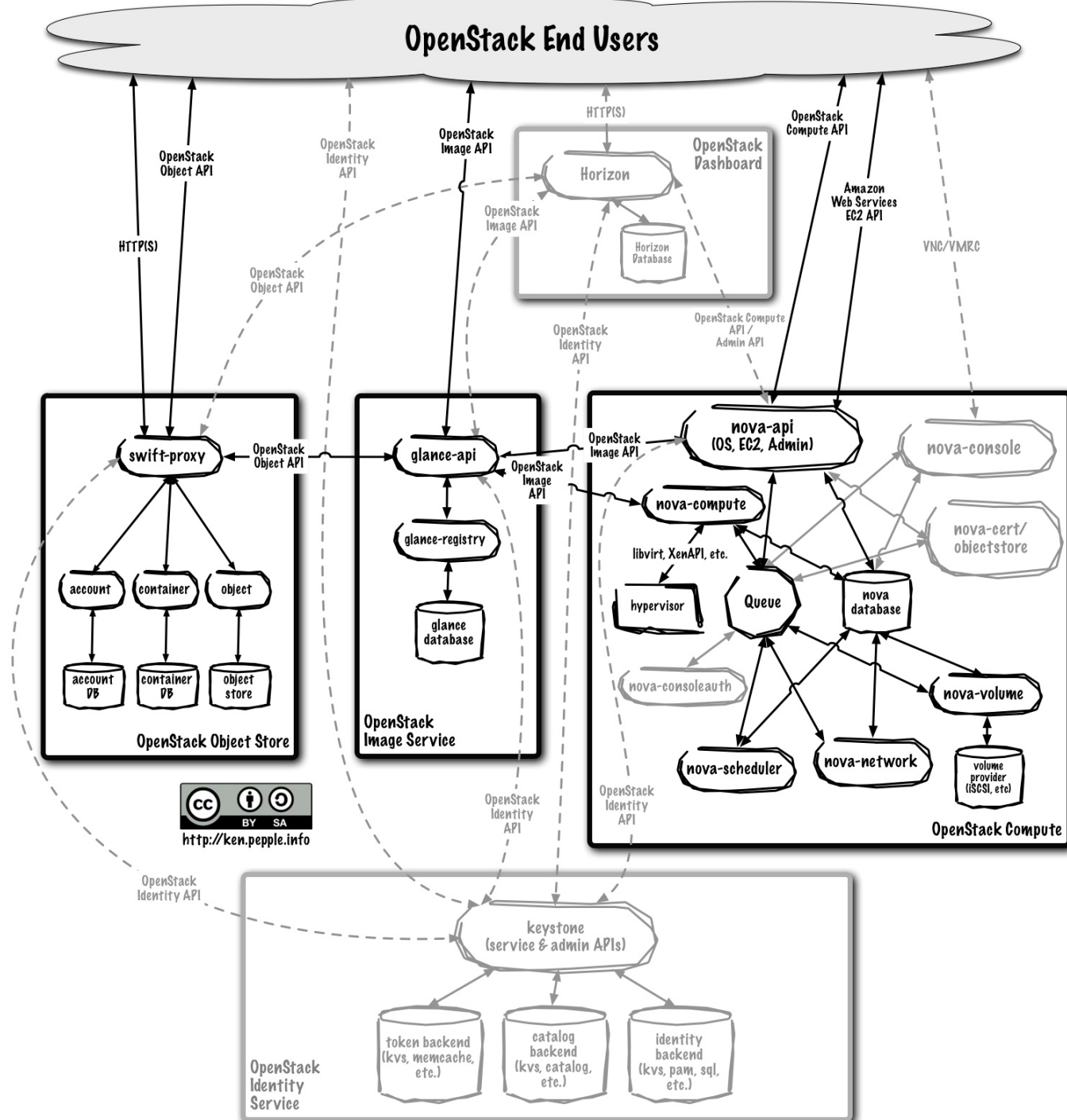






OpenStack Identity Service (Keystone)

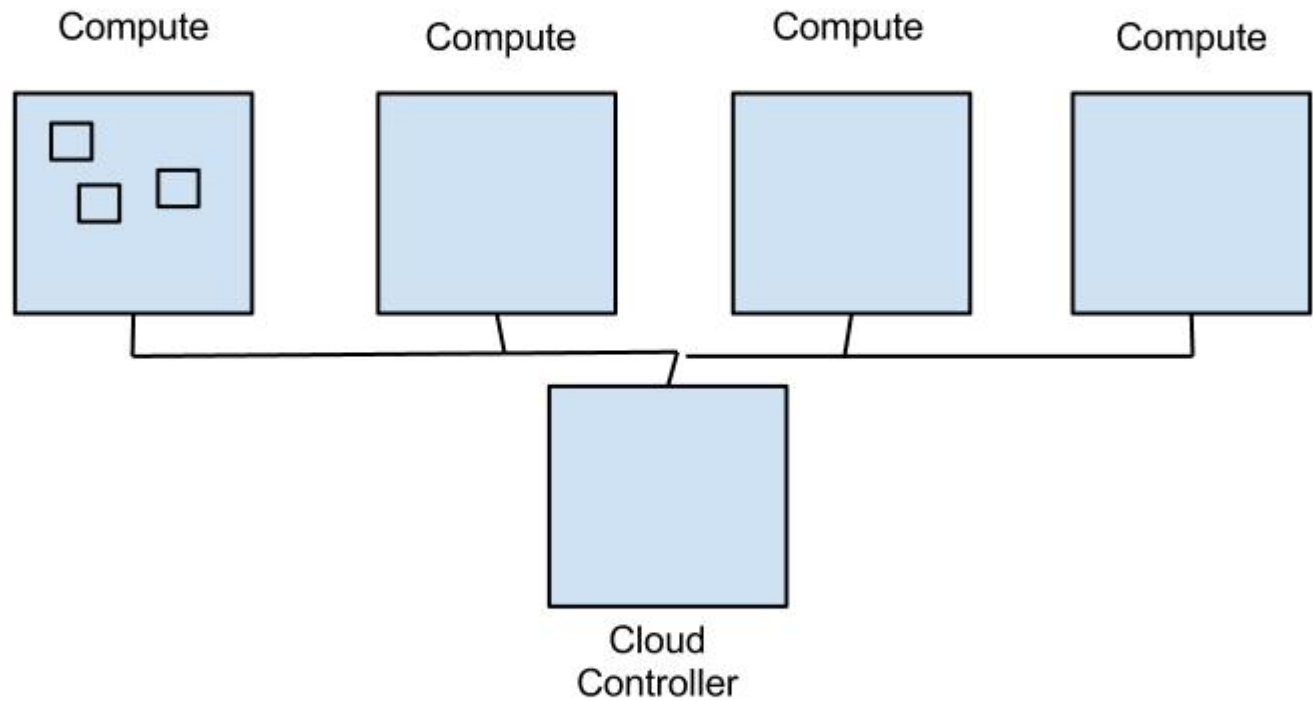


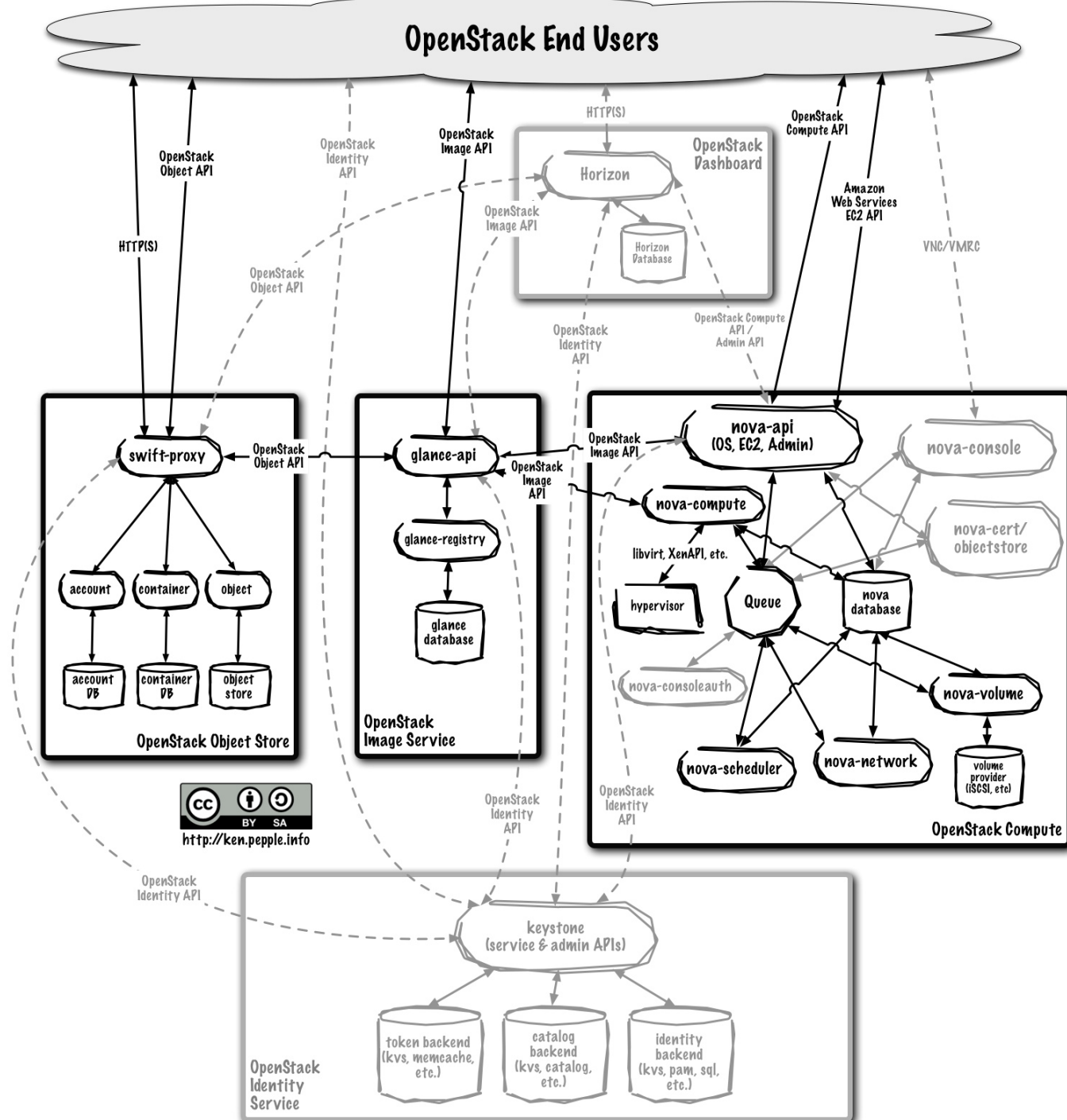




OpenStack Compute (Nova)









<http://ken.pepple.info>



OpenStack Demonstration

- **Keys**
- **Security Groups**
- **Images**
- **Instances**
- **Floating IPs**
- **Volumes**





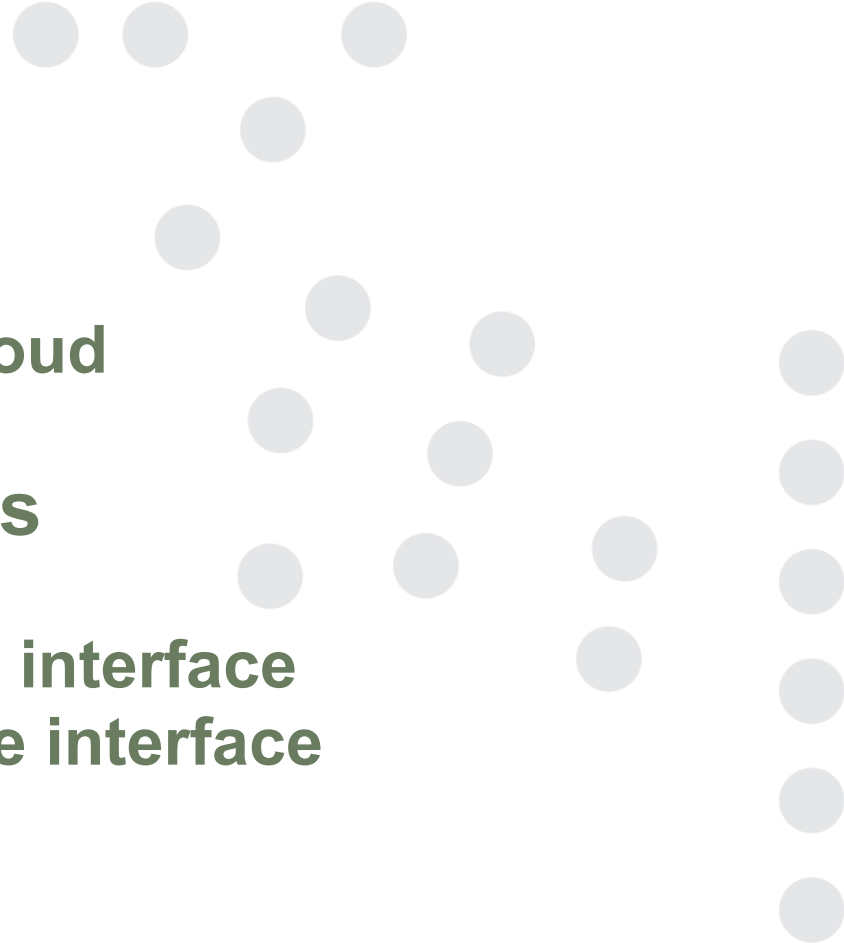
DEMO TIME





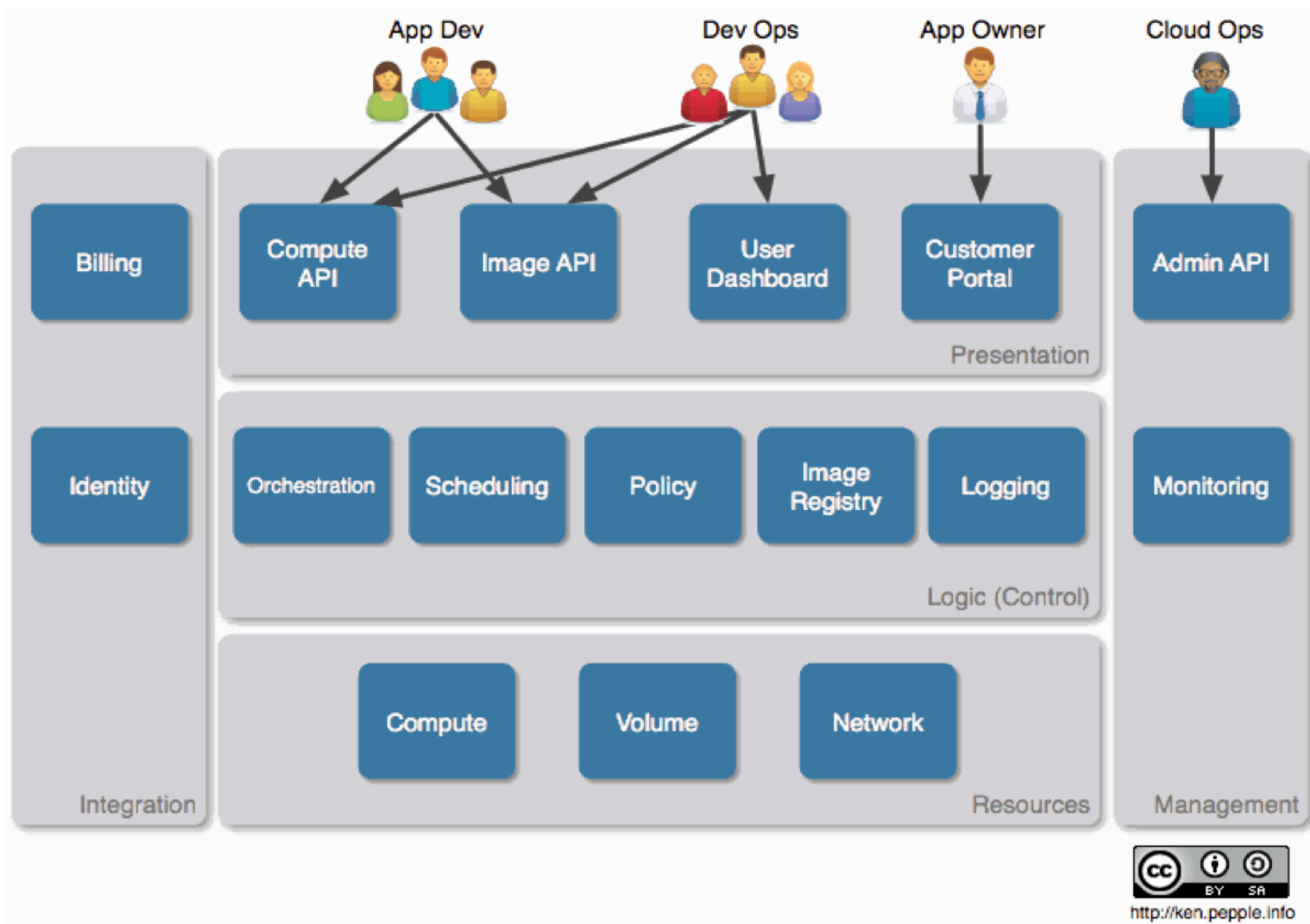
Other Ways to Access OpenStack

- **APIs**
 - AWS's EC2 API
 - OpenStack API
- **3rd party libraries**
 - Python: boto, libcloud
 - Java: jclouds
- **Command line tools**
 - euca2ools
 - EC2 command line interface
 - nova command line interface



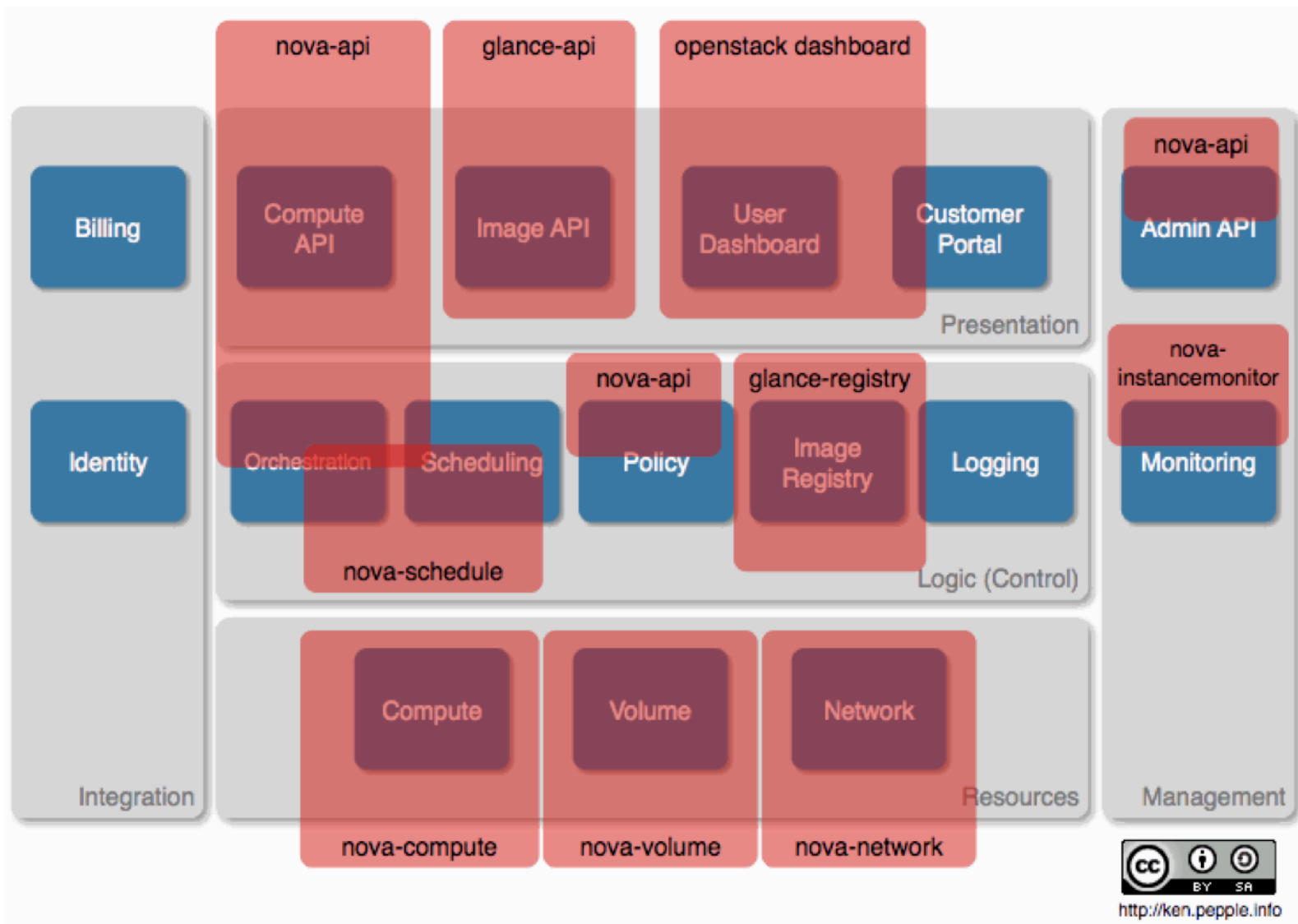


Conceptual Cloud Architecture





OpenStack/Conceptual Cloud Architecture





OpenStack Community



Home Projects Community Blog Wiki Documentation

Events

See us at OpenStack Events

Jobs

Find a job working on OpenStack

Participating Companies

Over 90 companies who are involved in OpenStack.

OpenStack Code

OpenStack source code is available on [LaunchPad](#). Here's how to [contribute](#).

Developers In Action: **Matthew Hooker** recently made a contribution to **OpenStack Compute (nova)** [r 1362](#)

Mailing Lists

- Developer List [Register](#) | [Archives](#)
- OpenStack-Announce [Register](#)
- OpenStack-Partners [Register](#)
- OpenStack-Operators [Register](#)

IRC

- #openstack on Freenode [Pop In](#) (via browser client)

Social Networks

- Twitter: [@openstack](#)
- [Facebook](#)
- [LinkedIn](#)
- [XING](#)
- Ohloh.net: [OpenStack](#) | [Nova](#) | [Swift](#)

User Groups

- [Egypt](#)
- [Japan](#)
- [New York](#)
- [San Francisco](#)
- [South Korea](#)
- [Spanish Language Users Group](#)
- [France](#)
- [Russia](#)

OpenStack Worldwide

Add A Place



View [OpenStack Worldwide Community](#) in a larger map



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Building an OpenStack Cloud

- Roll up your sleeves
- Start small
 - devstack.org
- Look to the documentation
 - docs.openstack.org
- Look to the community
 - openstack.org/community
 - answers.launchpad.net/nova
- Advanced
 - github.com/dellcloudedge/crowbar
 - bit.ly/AnQsQI





OpenStack Projects

- **DAIR**
 - canarie.ca/en/dair-program/about
 - github.com/canarie/dair
- **Cloud-Enabled Space Weather Platform**
- **NeCTAR**
 - nectar.org.au





Questions?

- [meetup.com/Canadian-OpenStack-Users-Group](https://www.meetup.com/Canadian-OpenStack-Users-Group)
- [cybera.ca](https://www.cybera.ca)
- [cybera.ca/tech-radar](https://www.cybera.ca/tech-radar)
- [cybera.ca/tech-radar/getting-started-with-cloud-openstack-cybera](https://www.cybera.ca/tech-radar/getting-started-with-cloud-openstack-cybera)
- groups.google.com/group/cybera-tech-radar

