

New Features in OpenNebula

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Acknowledgments



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New Features in OpenNebula

- What You Are Missing if You Don't Upgrade
- A New Provisioning Model
- The Cloud Consumer Perspective
- Coming Soon

Why People Don't Upgrade

- Many organizations run old OpenNebula versions
- Upgrades are scary
 - Downtime
 - Break compatibility (*sorry!*)
 - It just works

- Let's review some of the latest features of this year

A Quick Recap

4.0 May 8th 2013

- Sunstone views
- VM & disk snapshots
- VM capacity resize
- VM programmable actions
- IPv6
- Ceph

A Quick Recap

4.2 July 26th 2013

- Storage monitorization
- VMware redesign
- OneFlow: multi-tiered applications
 - Elasticity
 - Autoscaling
- OneGate: application insight

A Quick Recap

4.4 December 3rd, 2013

- Multiple system Datastores
- Storage scheduling
- Secondary groups
- New monitorization: push model

A Quick Recap

4.6 April 29th, 2014

- Virtual Data Center
- New Sunstone Cloud View
- Federation of Multiple Instances
- Better GlusterFS support

Simple but feature-rich, production-ready, customizable solution to build clouds



SIMPLE

Easy to operate, install and upgrade, with packages for the main Linux distributions



FLEXIBLE

Really open-source and customizable to fit into any data center and policies



ROBUST

Production-ready, mature, reliable and commercially supported



POWERFUL

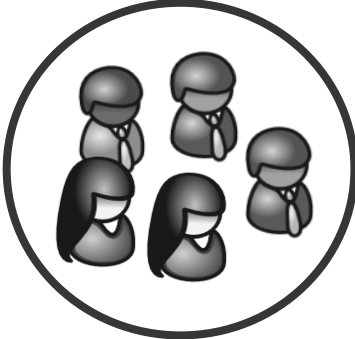
Innovative functionality for enterprise clouds and data center virtualization

1. The Goal: Dynamic Allocation of Private and Public Resources to Groups of Users

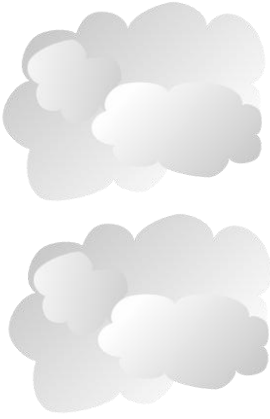
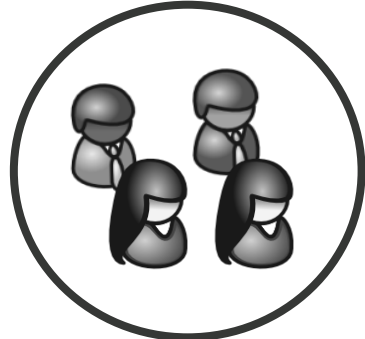
Web Development



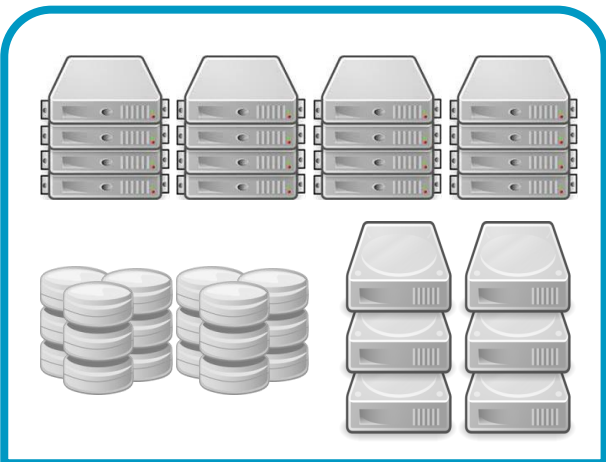
Human Resources



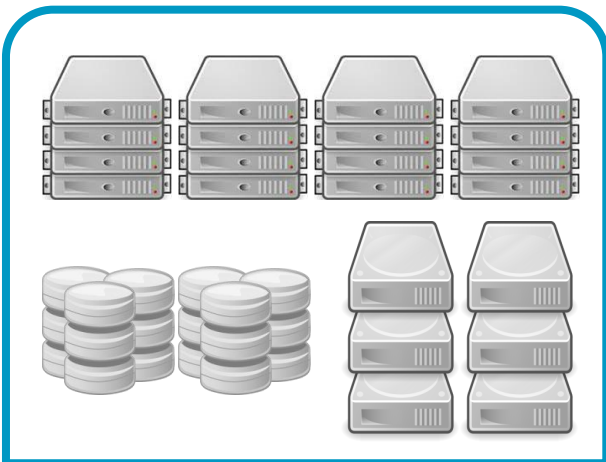
Big Data Analysis



Public Clouds



DC West Coast



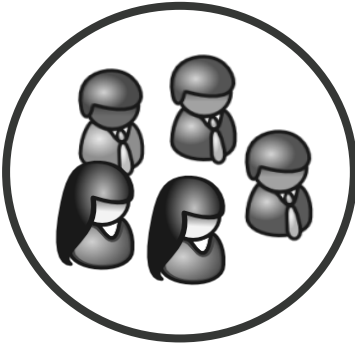
DC Europe

2. Definition of Clusters

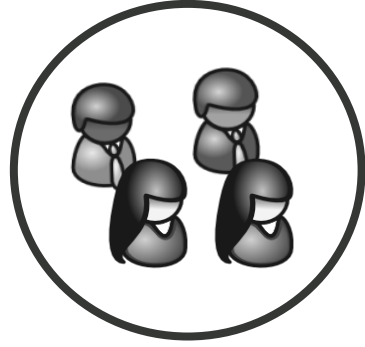
Web Development



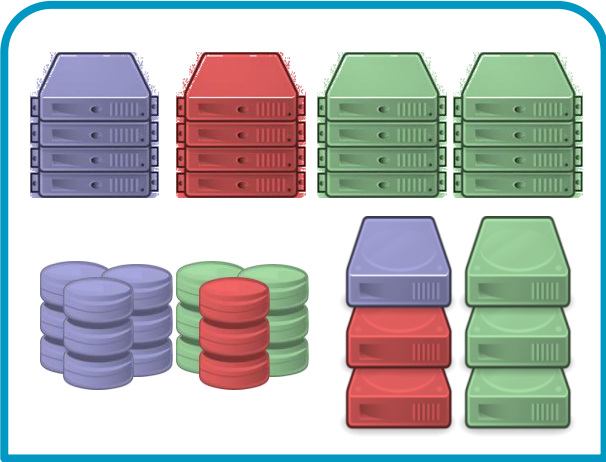
Human Resources



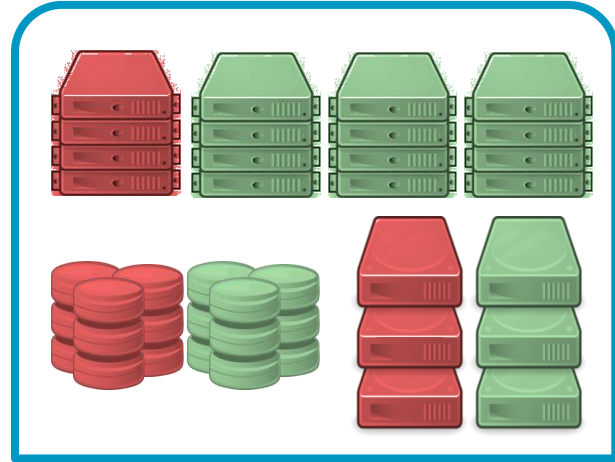
Big Data Analysis



Public Clouds



DC West Coast



DC Europe

3. Definition of vDCs

Web Development



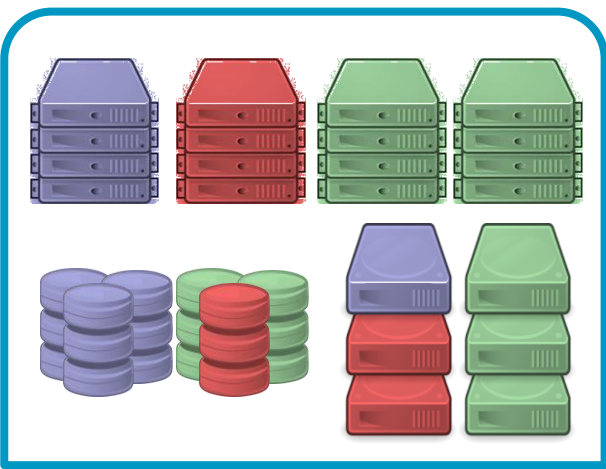
Human Resources



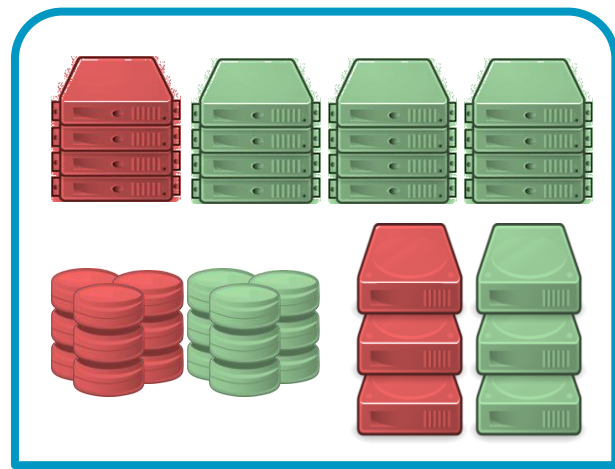
Big Data Analysis



Public Clouds



DC West Coast



DC Europe

The OpenNebula Provisioning Model

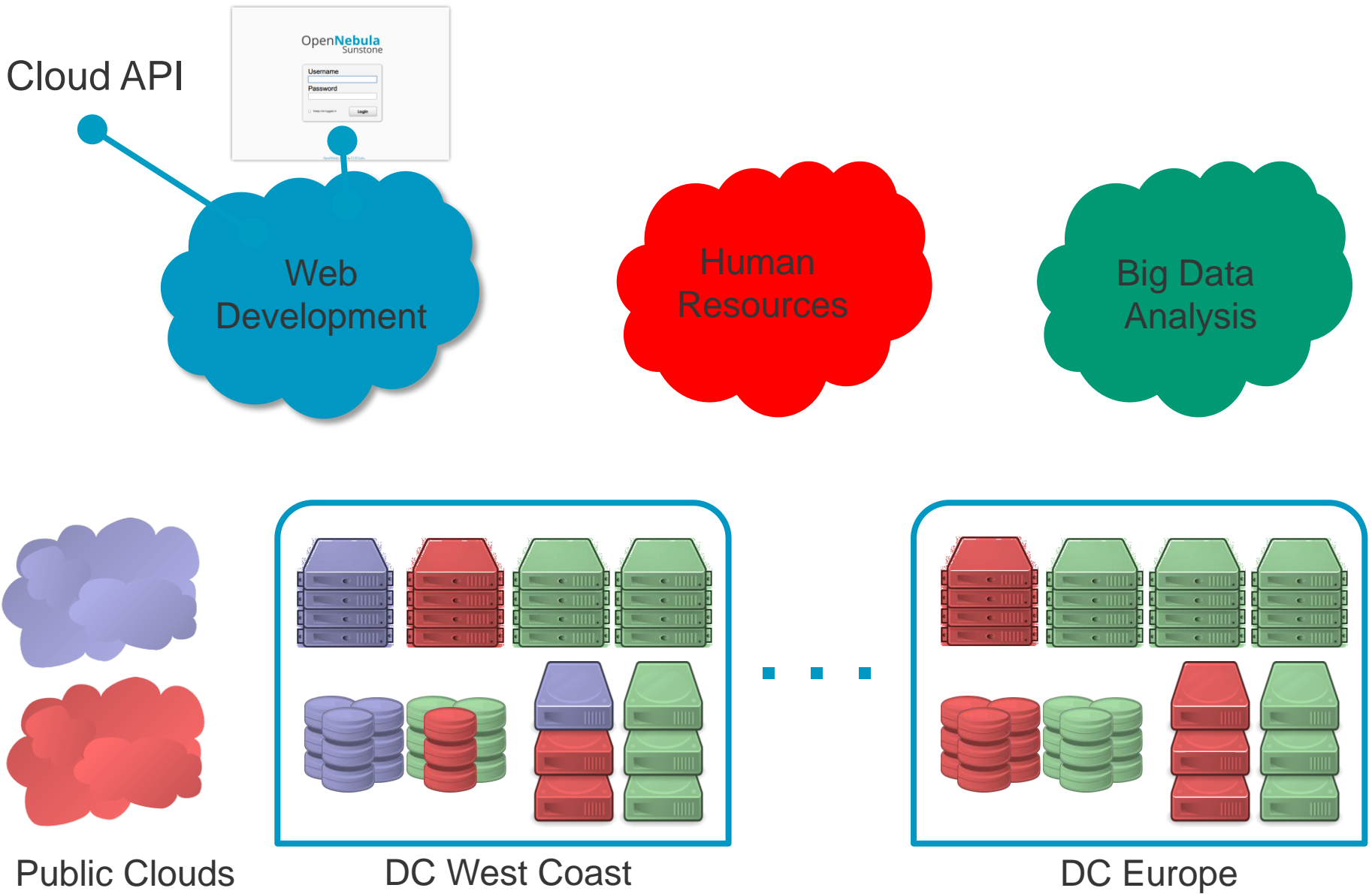
4. Admins in each Group/vDC Manage to its Own Virtual Private Cloud

- Each vDC has an admin user
- Delegation of management in the VDC
- Only virtual resources, not the underlying physical infrastructure

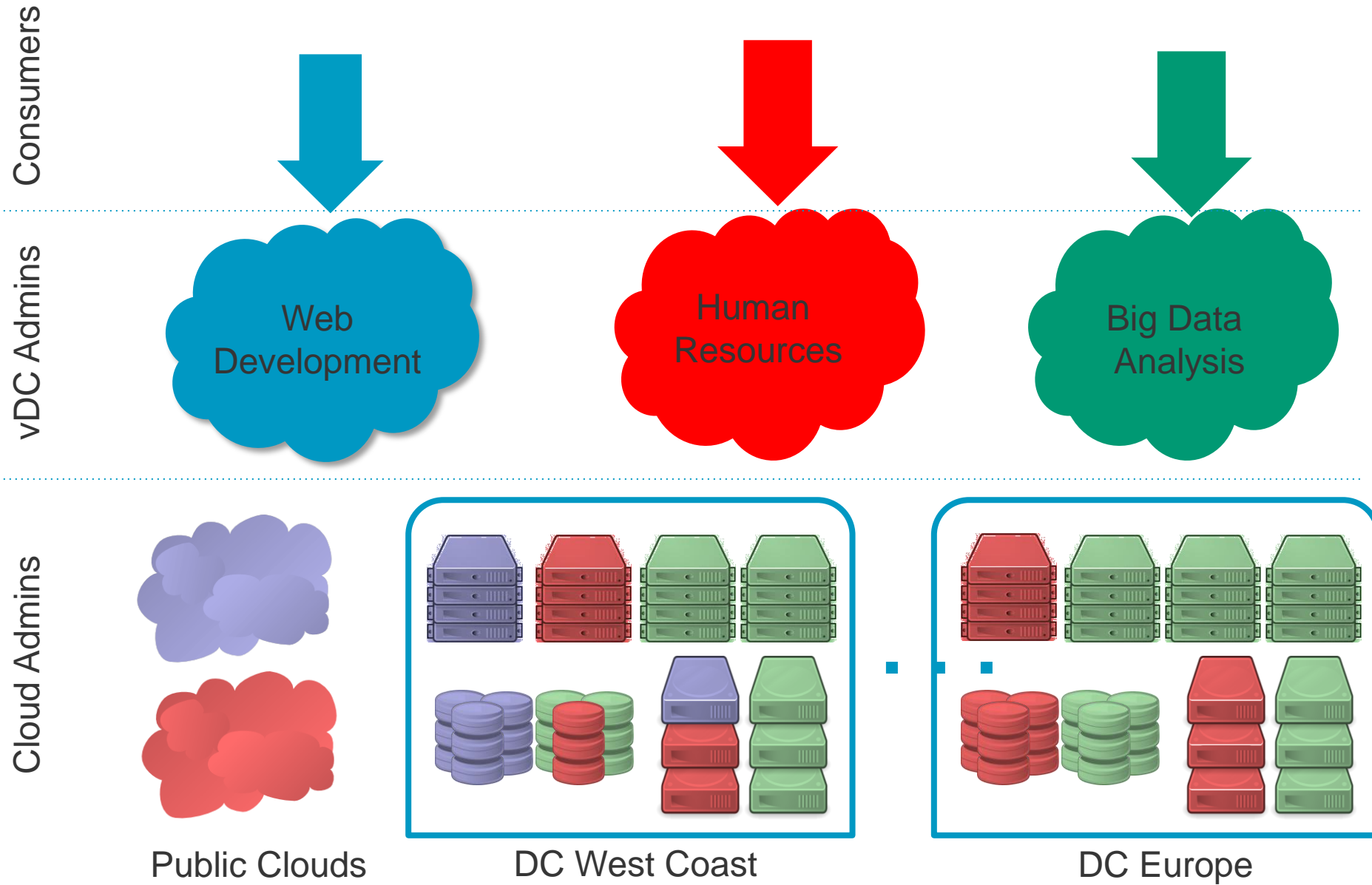
The screenshot shows the OpenNebula Sunstone dashboard for a user named 'web-dev-admin'. The dashboard is divided into several sections:

- Virtual Machines:** A summary card showing 2 TOTAL VMs, 1 ACTIVE, 1 PENDING, and 0 FAILED. It includes a 'REAL CAPACITY USAGE' bar chart with 6% CPU usage and 100% Memory usage.
- Users:** A card showing 3 USERS and 0 GROUPS.
- Network:** A card showing 1 VNETS and 2 USED IPs.
- Storage:** A card showing 1 IMAGES and 40MB USED.
- User Quotas:** A table for 'Datastore' with columns for ID, Images, and Size. It shows one entry with ID 1, 1 image, and 40MB size.
- Group Quotas:** A series of progress bars for VMs (2/15), CPU (5/15), Memory (4.1GB/8GB), Volatile disks (0KB/-), and Image.

5. Users in each Group/vDC Access to its Own Virtual Private Cloud



6. New Level of Provisioning: IaaS as a Service

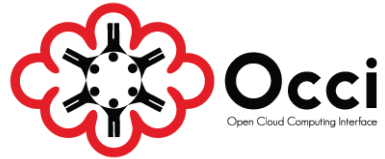
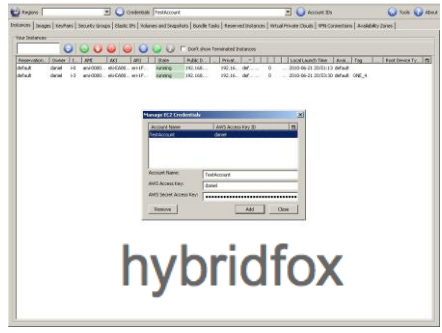
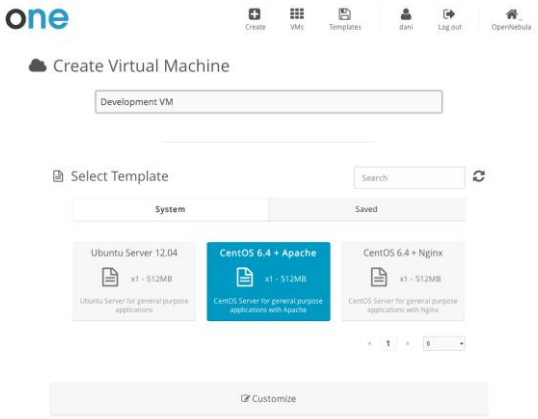


7. Benefits

- Partition of cloud resources
- Complete isolation of users, organizations or workloads
- Allocation of Clusters with different levels of security, performance or high availability to different groups with different workload profiles
- Containers for the execution of virtual appliances (SDDCs)
- Way of hiding physical resources from Group members
- Simple federation and scalability of cloud infrastructures beyond a single cloud instance and data center

Create and Manage my Virtual Infrastructure

... standards (*de facto* and *de jure*) Cloud APIs to leverage existing ecosystems and ensure portability across providers, and self-service portal



Self-service Portal with Sunstone Views



- Create
- VMs
- Templates
- dani
- Log out
- OpenNebula

Virtual Machines

<p>CentOS 6.4 Server-81 </p> <p> x8 - 8GB</p> <p> Ubuntu 12.04</p> <p> 192.168.1.7</p> <p>DEPLOYING (1/3) 3m ago</p>	<p>CentOS 6.4 Server-80 </p> <p> x1 - 512MB</p> <p> Ubuntu 12.04</p> <p> 192.168.1.6</p> <p>RUNNING 3m ago</p>	<p>CentOS 6.4 + Nginx </p> <p> x1 - 512MB</p> <p> Ubuntu 12.04</p> <p> 192.168.1.5</p> <p>RUNNING 3m ago</p>
<p>Ubuntu Server 12.04-78 </p> <p> x1 - 512MB</p> <p> Ubuntu 12.04</p> <p> 192.168.1.4</p> <p>RUNNING 3m ago</p>	<p>Ubuntu Server 12.04-77 </p> <p> x1 - 512MB</p> <p> Ubuntu 12.04</p> <p> 192.168.1.3</p> <p>OFF 3m ago</p>	<p>Development VM </p> <p> x1 - 512MB</p> <p> Ubuntu 12.04</p> <p> 192.168.1.2</p> <p>RUNNING 4m ago</p>

« **1** »

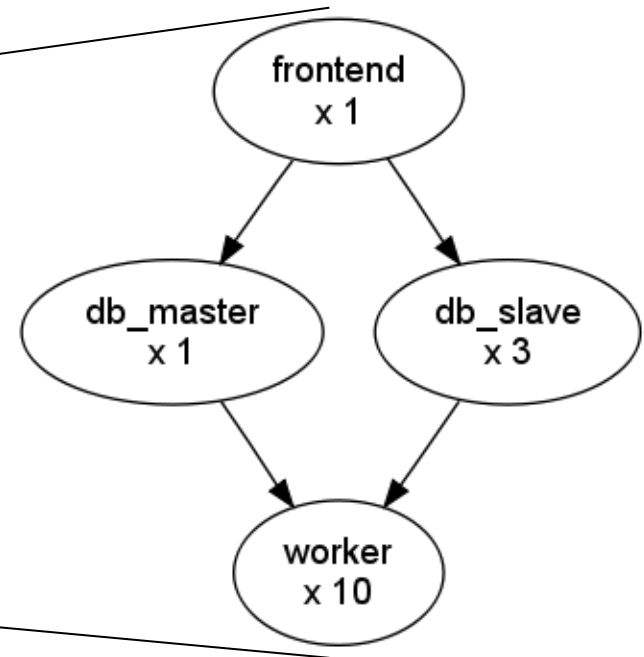
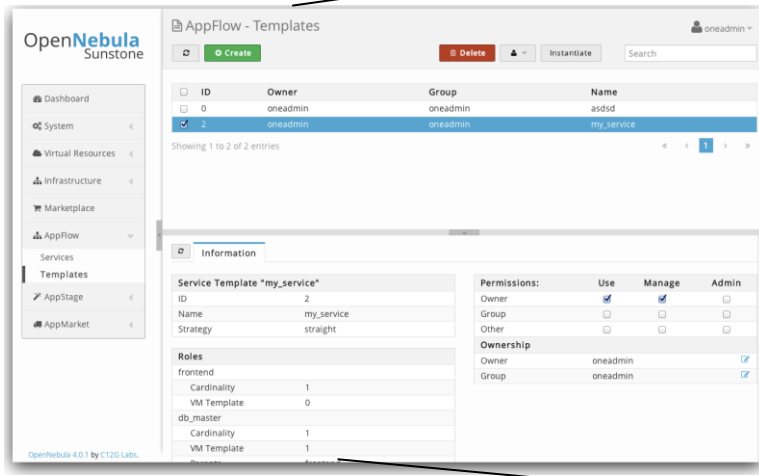
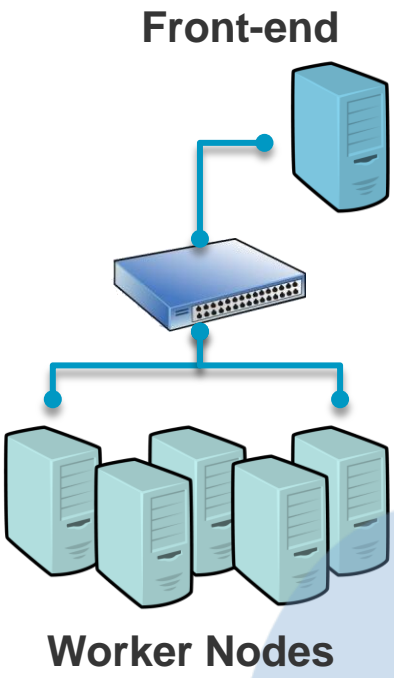
Create Virtual Machine

OpenNebula 4.5.80 by C12G Labs.

Multi-tier Application Management and Catalog

Management of interconnected multi-VM applications:

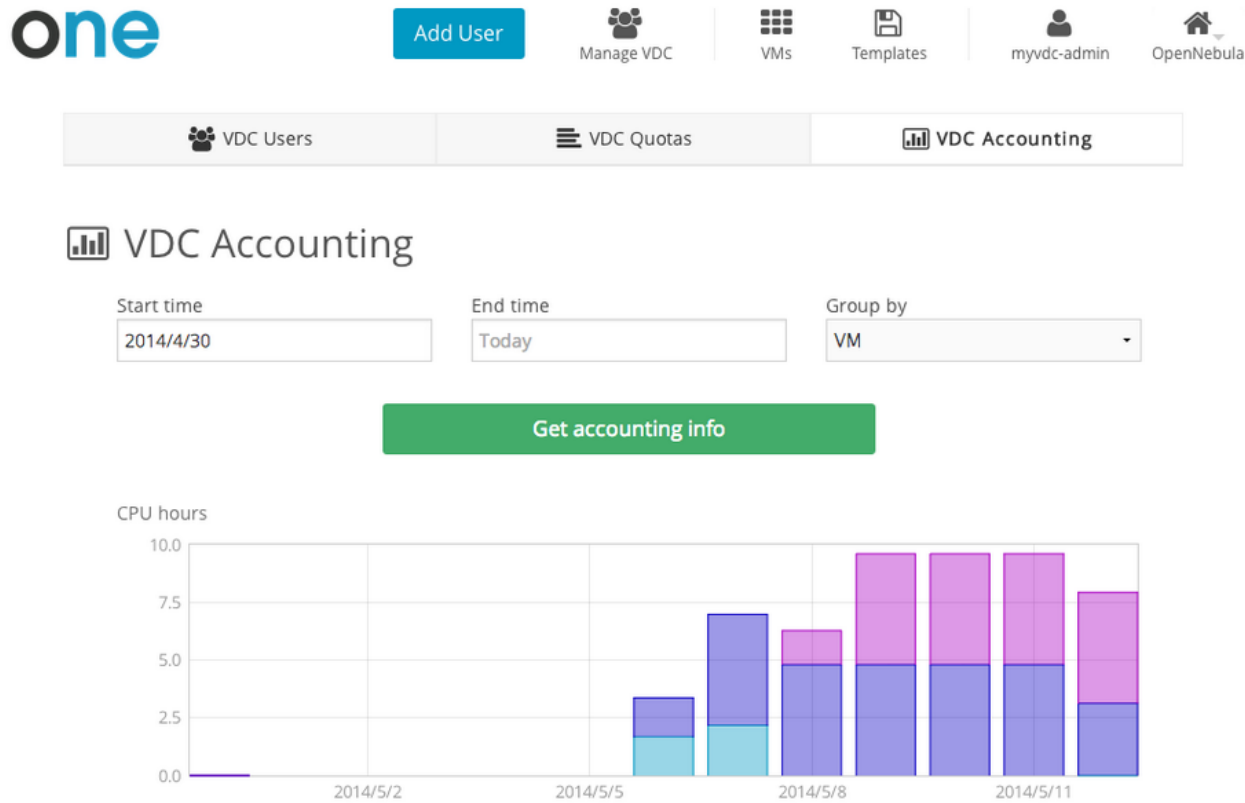
- Definition of application flows
- Catalog with pre-defined applications
- Sharing between users and groups
- Management of persistent scientific data
- Automatic elasticity



vDC Admin View

Simplified administration for the vDC admin user

- User management
- User quota definition
- Intuitive view of the group's virtual resources



Check Out the New Features Yourself

OpenNebula 4.6 & OCCl hands-on tutorial

Tomorrow 11:00 – 12:30, 14:00 – 15:30

Room 12

Questions?

We Will Be Happy to Clarify Any Question

