



OPENSTACK DEPLOYMENT AND AUTOMATION

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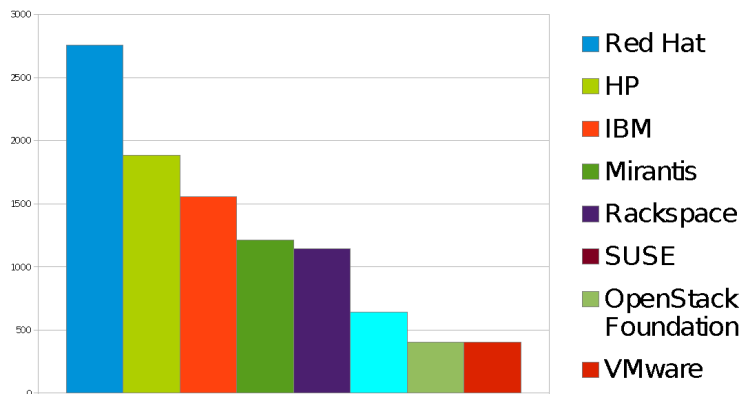
May 5, 2015

OPENSTACK AT RED HAT

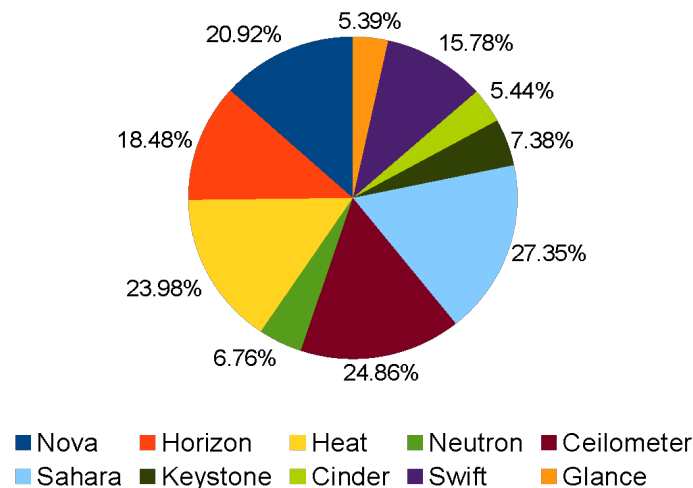
OPENSTACK CONTRIBUTIONS

Red Hat Cares ... About Every Project

Overall Commits by Company (aggregated)



Red Hat Commits by Project



Bitergia: <http://activity.openstack.org/dash/browser/scm-companies.html?release=juno>
Stackalytics: <http://stackalytics.com/?release=juno&company=red%20hat>

RHEL OpenStack Platform 7

- OpenStack Kilo
- 3 Year Life-Cycle
- Co-Engineered with RHEL 7
- Faster Paced Management Tool Release (2 months)



NEW SERVICES

- Database as a Service (“Trove”) - Fully supported
- VM high availability Service based on Pacemaker Remote
- DNS as a Service (“Designate”) - Tech Preview
- Operational tools (logging, monitoring, etc) - Tech Preview
- File Share Service (“Manila”) - Tech Preview

RED HAT CONTRIBUTIONS TO KILO

Networking

- ML2/OVS port security
- DPDK accelerated OVS (Tech Preview)
- LBaaS v2 API

Compute

- I/O based NUMA scheduling
- Quiesce file-systems during image snapshot using QEMU guest agent
- Support for vhost-user virtual interfaces

Storage

- Image Conversion
- Incremental Backup
- Private Volume Types
- Import/Export snapshots

Identity

- Hierarchical multi-tenancy
- Federation support

Dashboard

- Refined Plugin Framework
- AngularJS based wizards
- Improved Network Topology Graph

Management

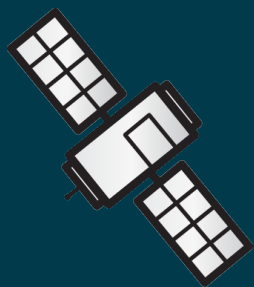
- Pluggable Horizon component
- Integrated management tools



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Multiple Methodologies For Deployment



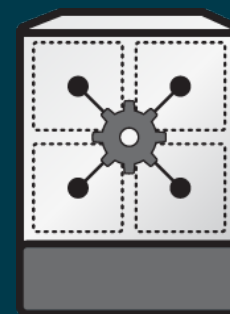
CONFIGURATION MANAGEMENT

Leverage existing expertise
to deploy OpenStack



RDO MANAGER

Tools for deploying and
managing OpenStack with
OpenStack

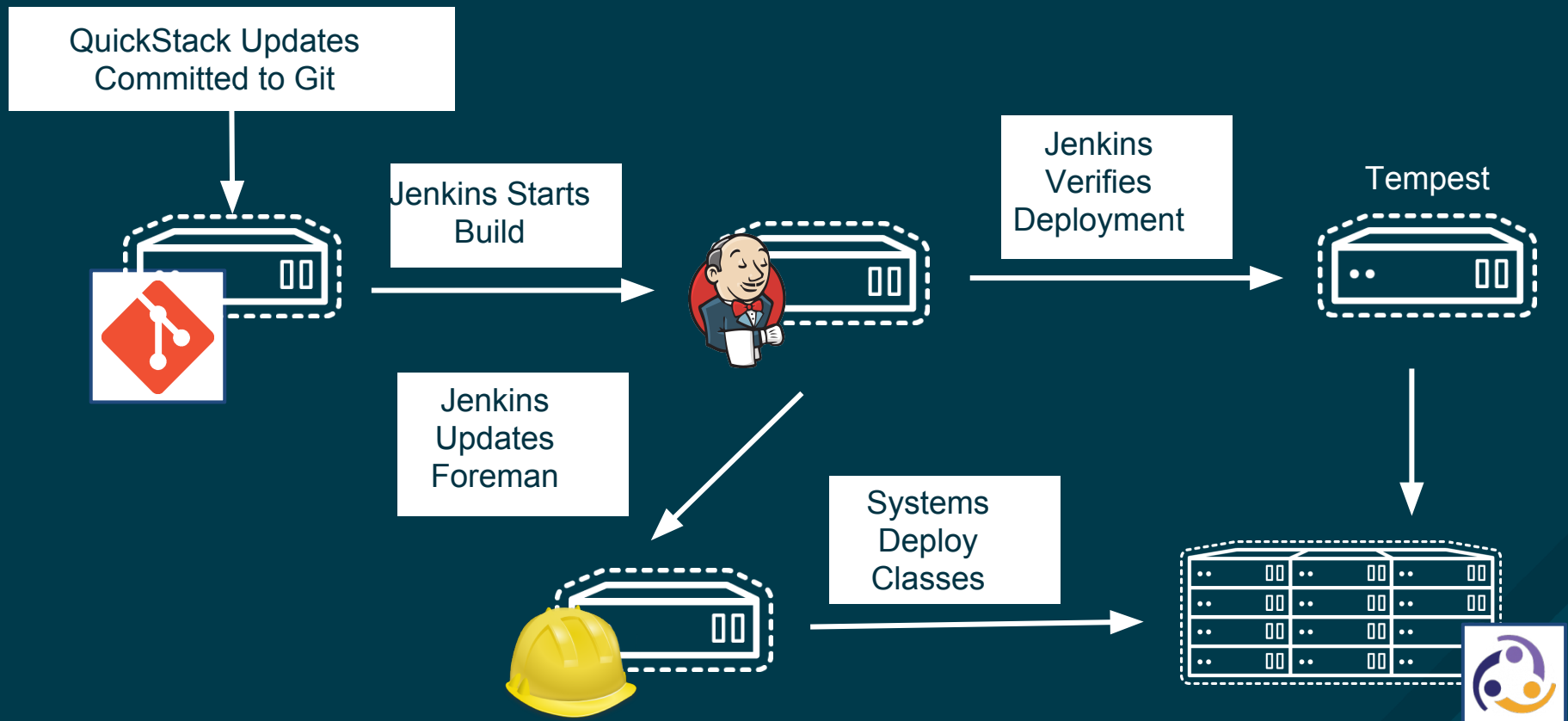


CONTAINERS

The not so distant future for
OpenStack deployments

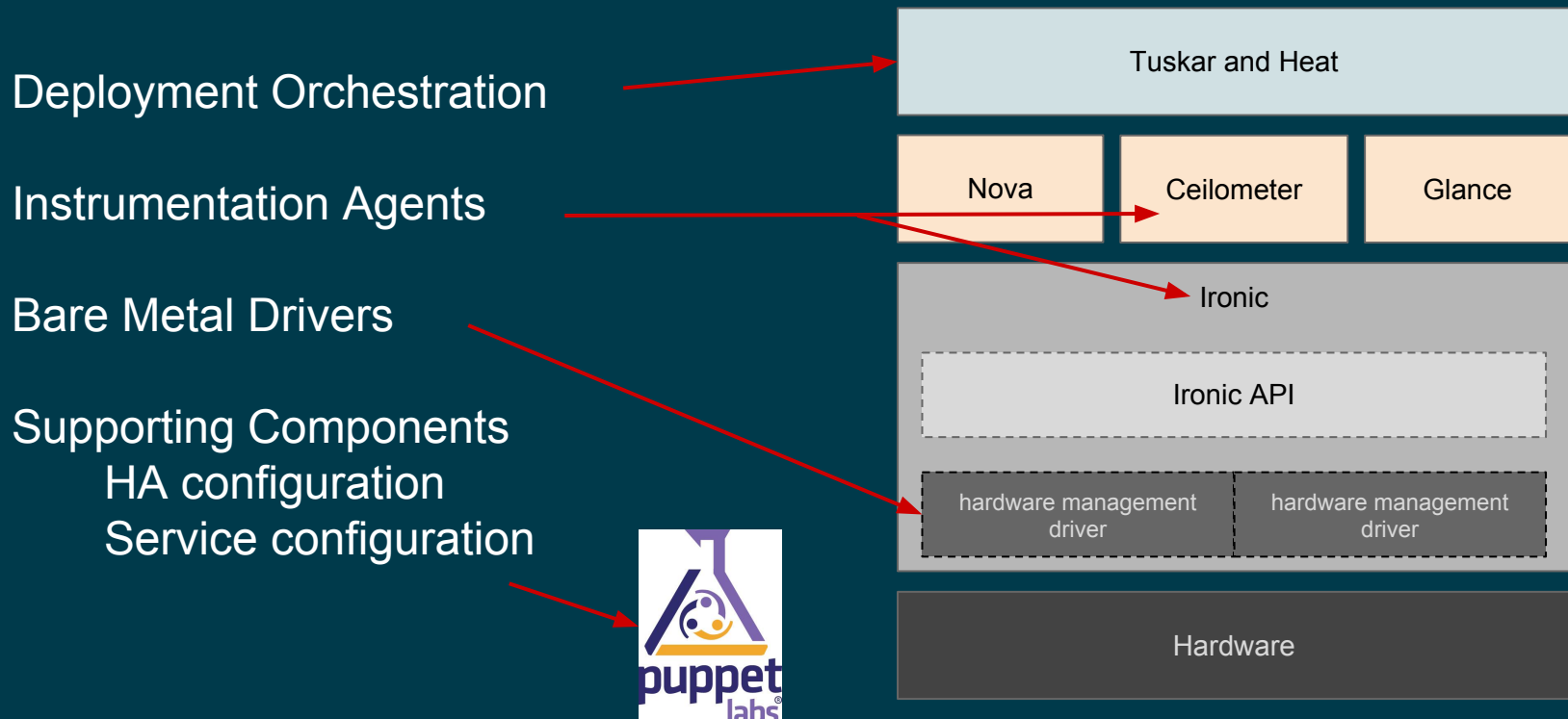
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Configuration Management



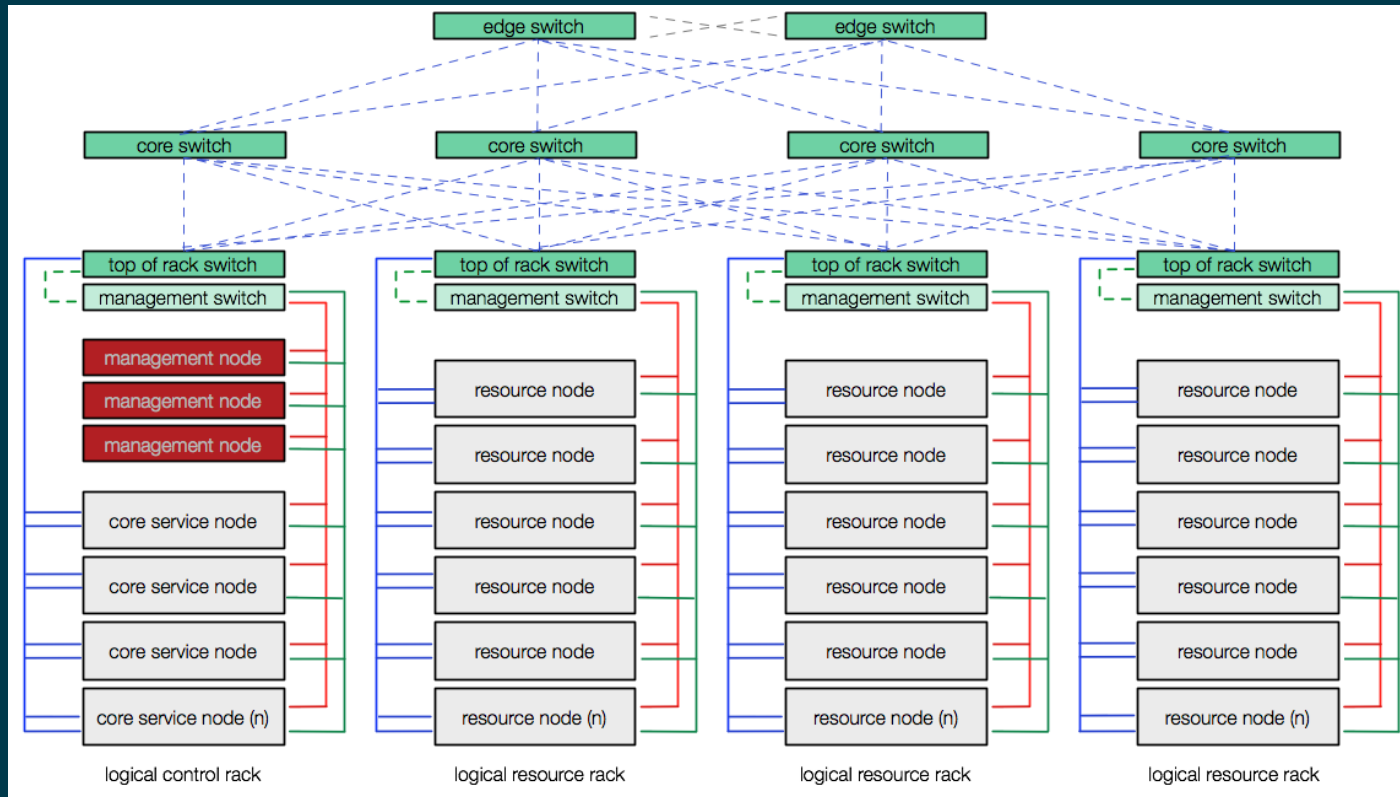
DEPLOYMENT AND AUTOMATION

RDO Manager



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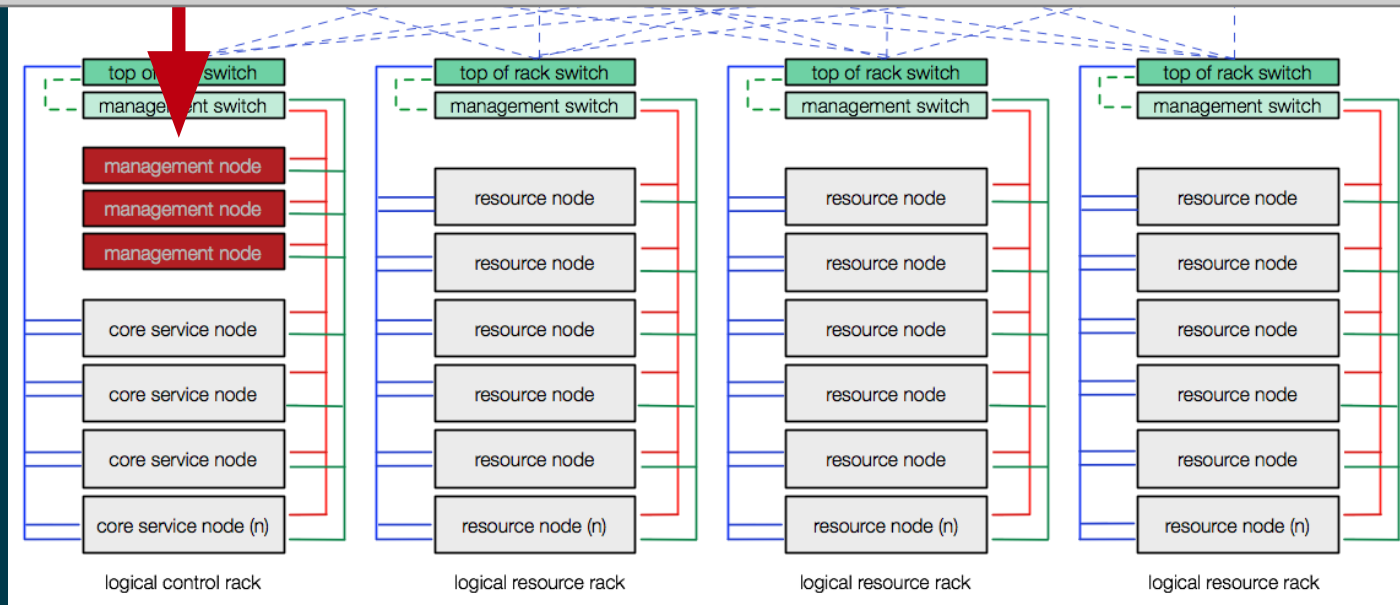
RDO Manager



DEPLOYMENT AND AUTOMATION

RDO Manager

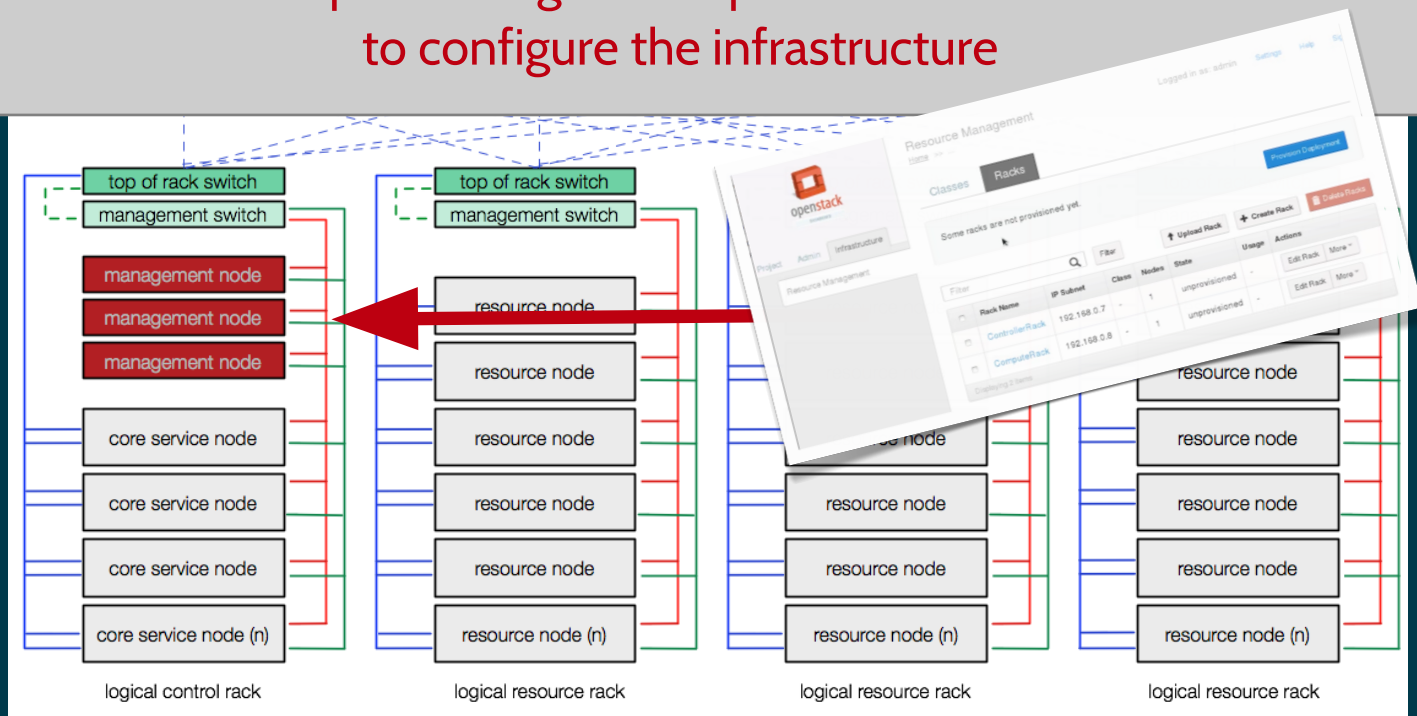
1. One or more Management Nodes are installed in the control rack.



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RDO Manager

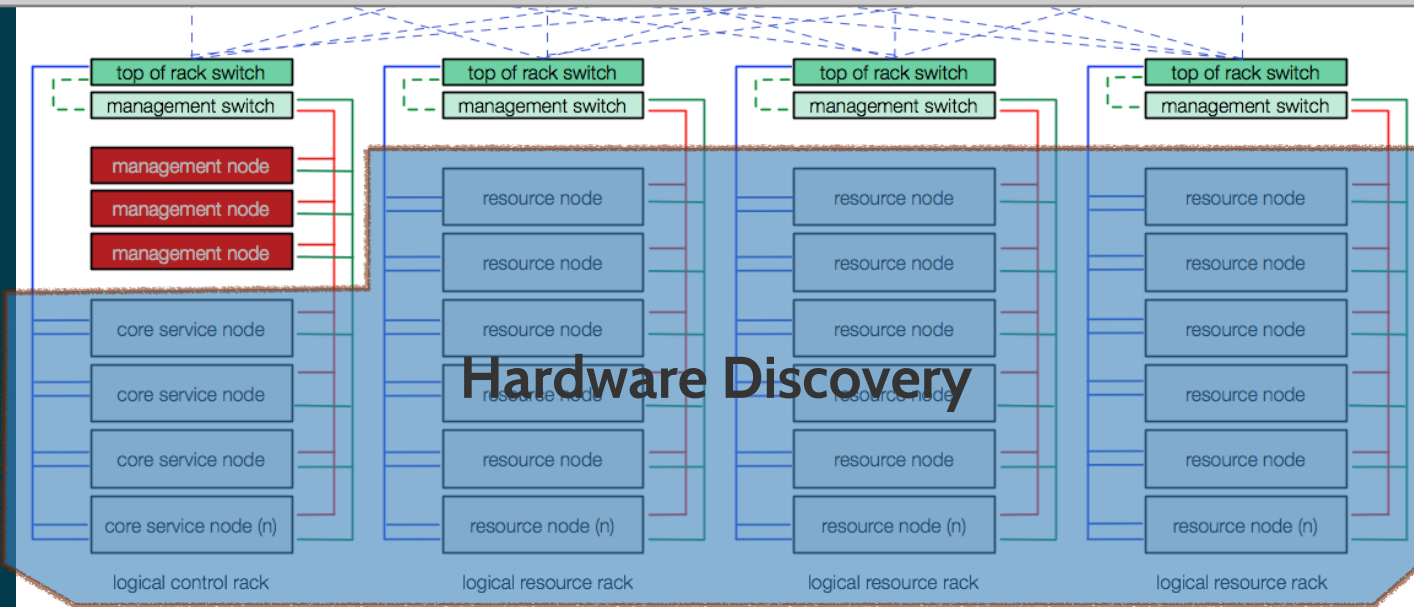
2. Operator logs into Operator Dashboard to configure the infrastructure



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RDO Manager

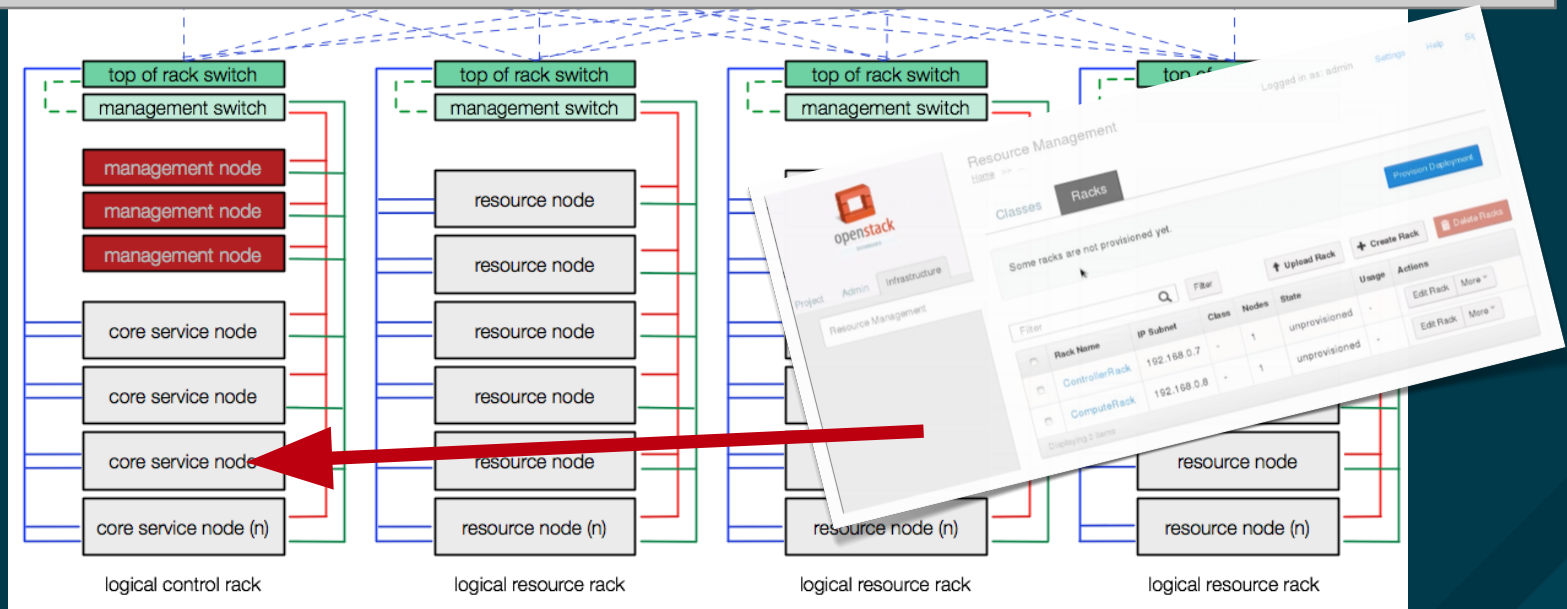
3. Management App *discovers* your infrastructure hardware.



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RDO Manager

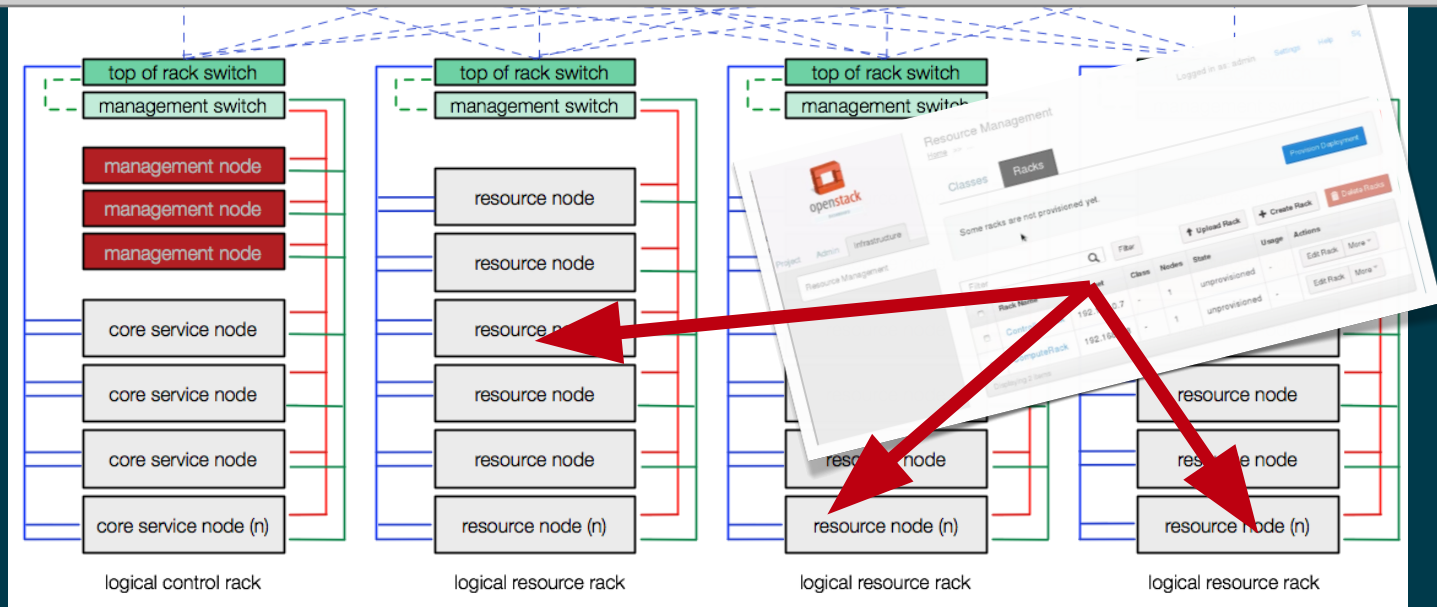
4. Operator defines the OpenStack control services.



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5. Operator defines the OpenStack resource nodes.

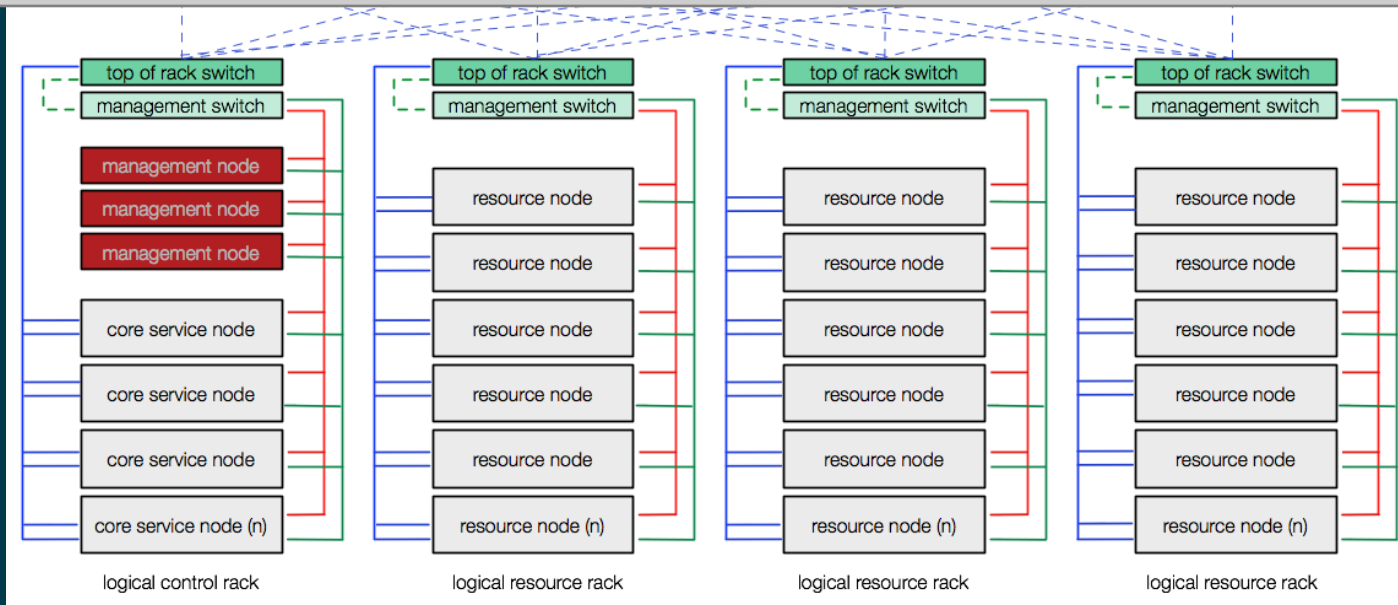


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6. Control service and Resource nodes get provisioned.

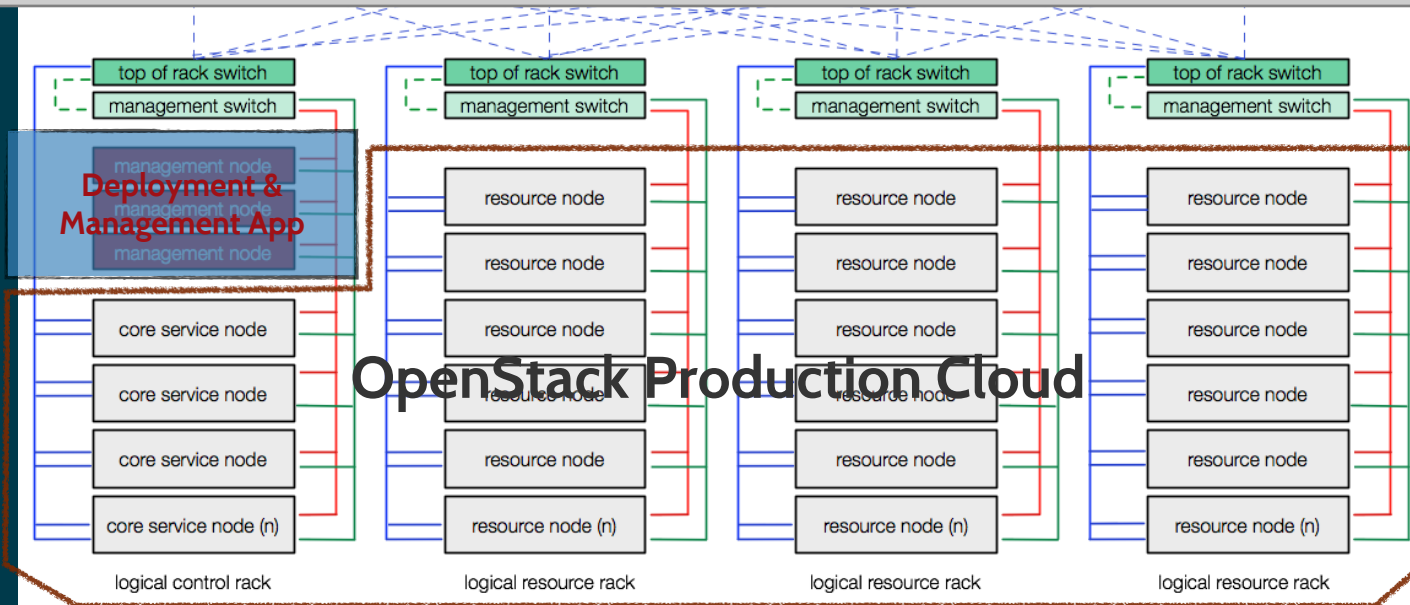
(Tuskar -> Heat -> Nova -> Ironic -> Hardware)



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RDO Manager

Logical view of the Management and Production clouds



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Containers

Current deployment methods have difficulties

- Build Based
 - Inefficient - 1 service per operating system
 - Difficult - Imperative deployments are not easily rolled back
 - Slow - `yum install`
- Image Based
 - Difficult - Someone still has to build the image
 - Expensive - New update = Large new image

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Containers

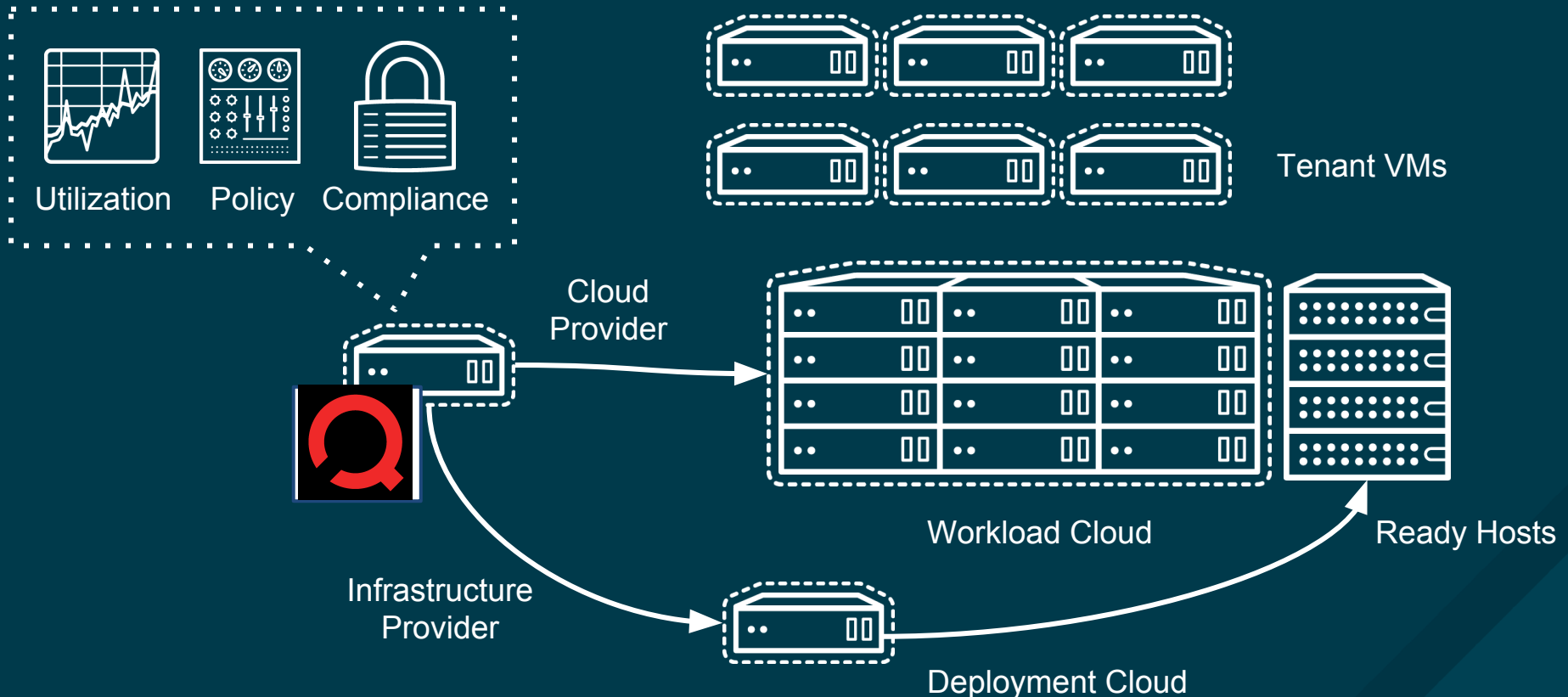
- Project Kolla
 - Container Based Deployment of OpenStack Services
 - Clean separation of host and openstack services
 - Deploy all openstack services in under 2 minutes
- Kubernetes or Heat
 - Declarative method for describing deployment
 - Application driven infrastructure
- Project Atomic
 - minimal OS for container based workloads
 - os-tree for atomic upgrades

CONTAINER BASED SERVICES DEMO

Kolla

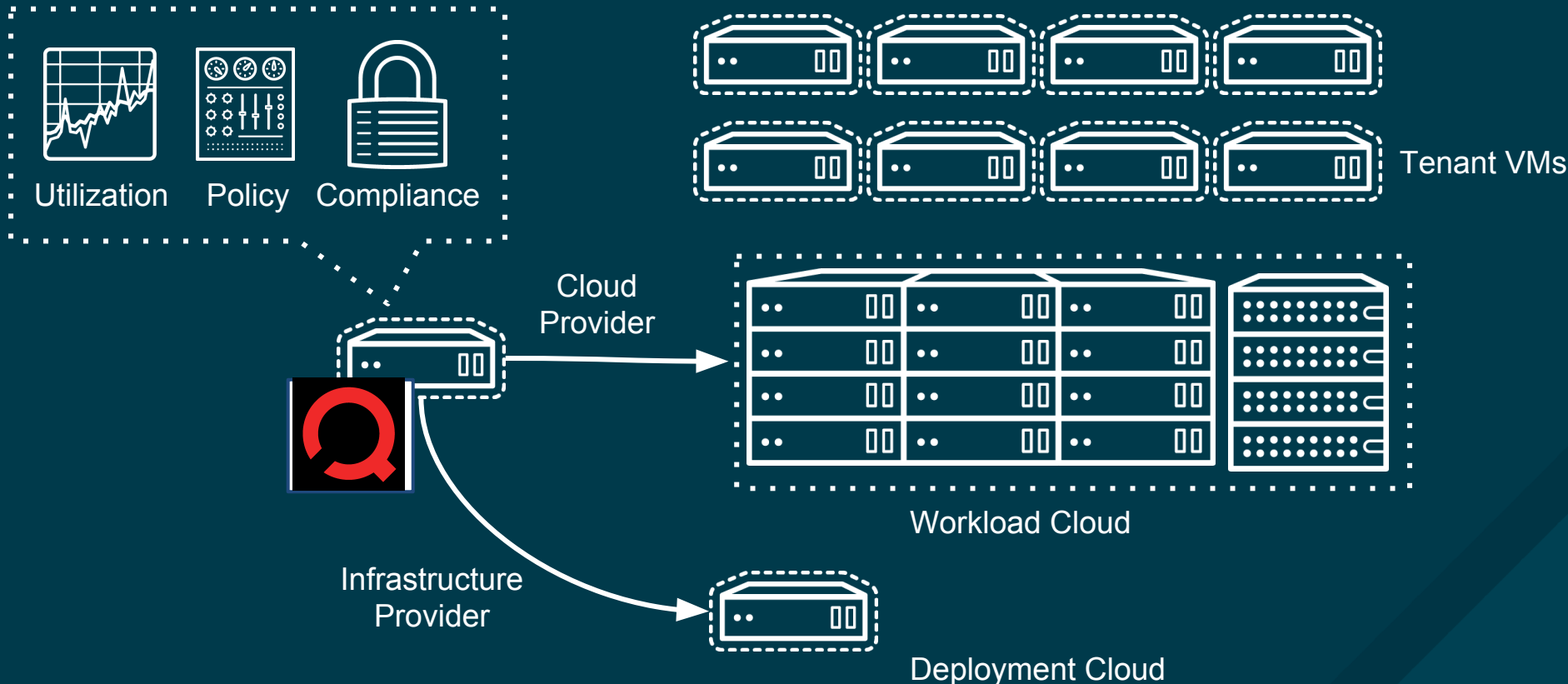
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Automated Scaling



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Automated Scaling



AUTOMATED SCALING DEMO

ManageIQ + OpenStack

COMMUNITY TO ENTERPRISE



OpenStack



RED HAT®
ENTERPRISE LINUX®
OPENSTACK® PLATFORM



Foreman



RED HAT®
SATELLITE



ManageIQ



RED HAT®
CLOUDFORMS



Kubernetes



 **OPENSIFT®**
by Red Hat®



Project Atomic



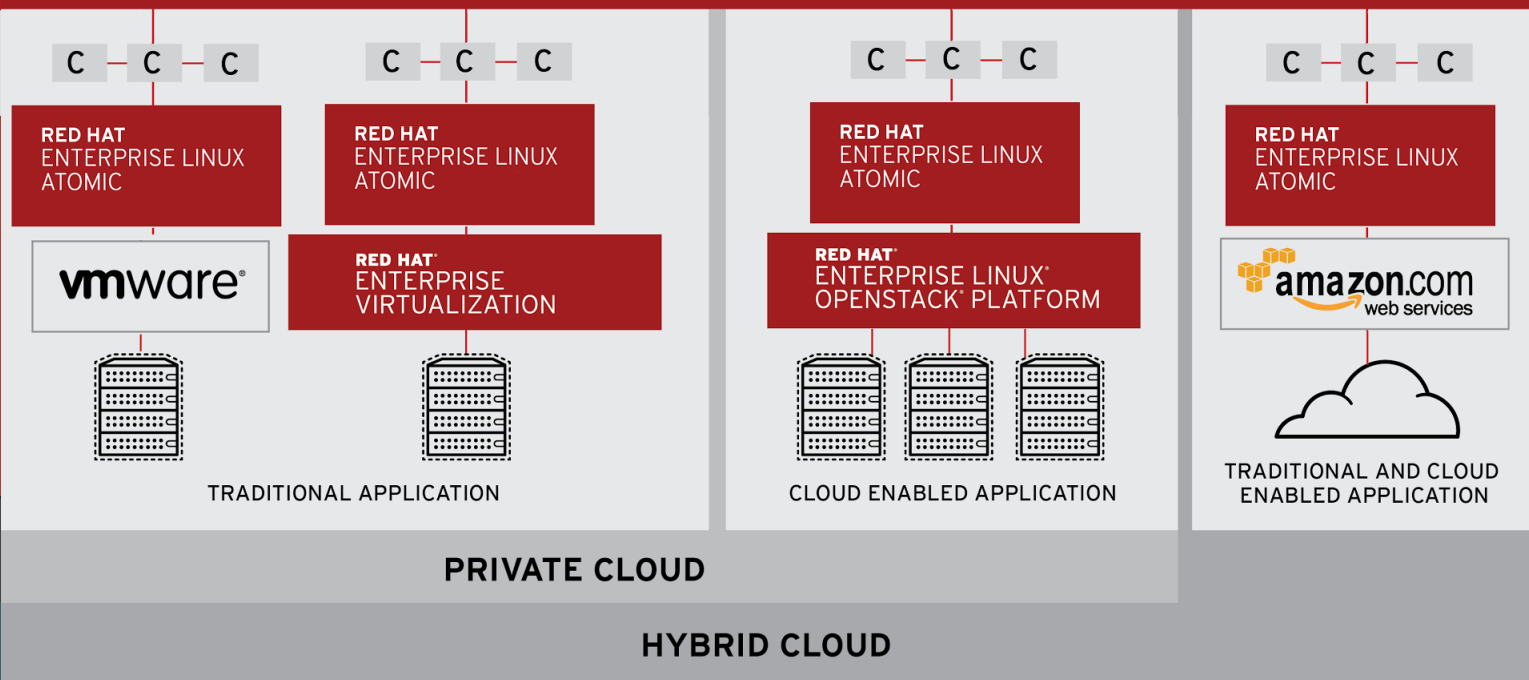
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ENTERPRISE LINUX®
ATOMIC HOST

RED HAT® CLOUD INFRASTRUCTURE

RED HAT® CLOUDFORMS



RED HAT® SATELLITE



RESOURCES

This Presentation - www.allthingsopen.com

Foreman - www.theforeman.org

RDO Manager - <https://www.rdoproject.org/RDO-Manager>

Kolla - <https://github.com/stackforge/kolla>

ManageIQ - www.manageiq.org

Project Atomic - www.projectatomic.io

Kubernetes - www.kubernetes.io



THANK YOU



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