Heat – Orchestration for OpenStack
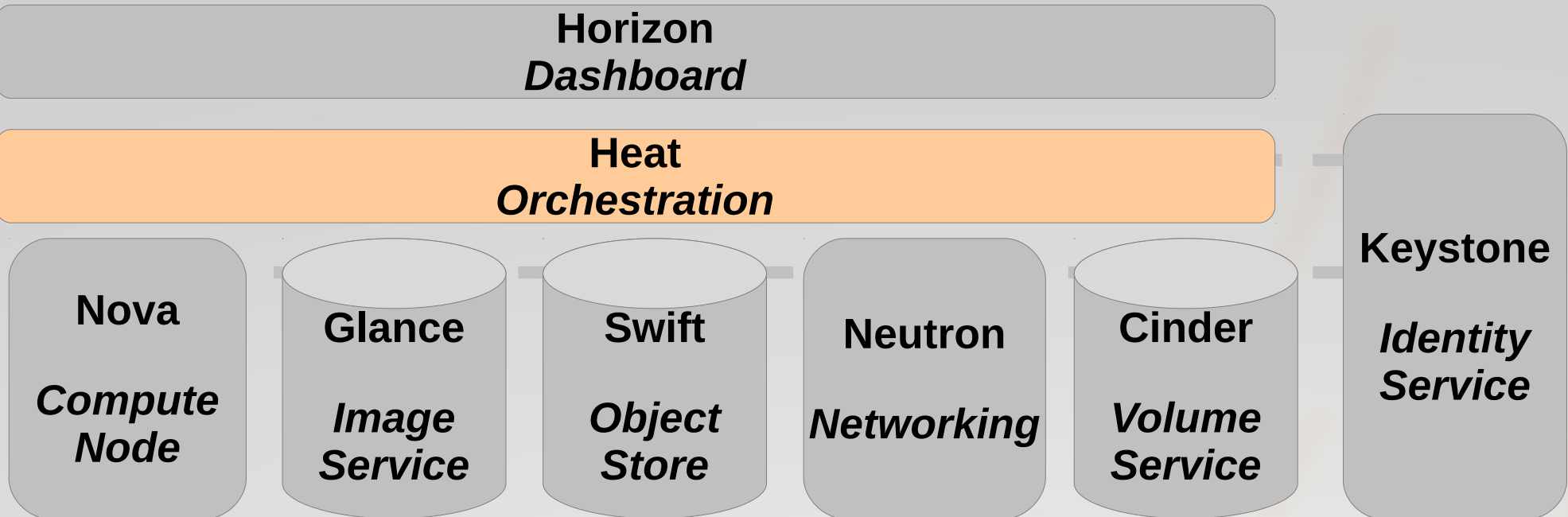## Overview, AutoScaling & Ceilometer
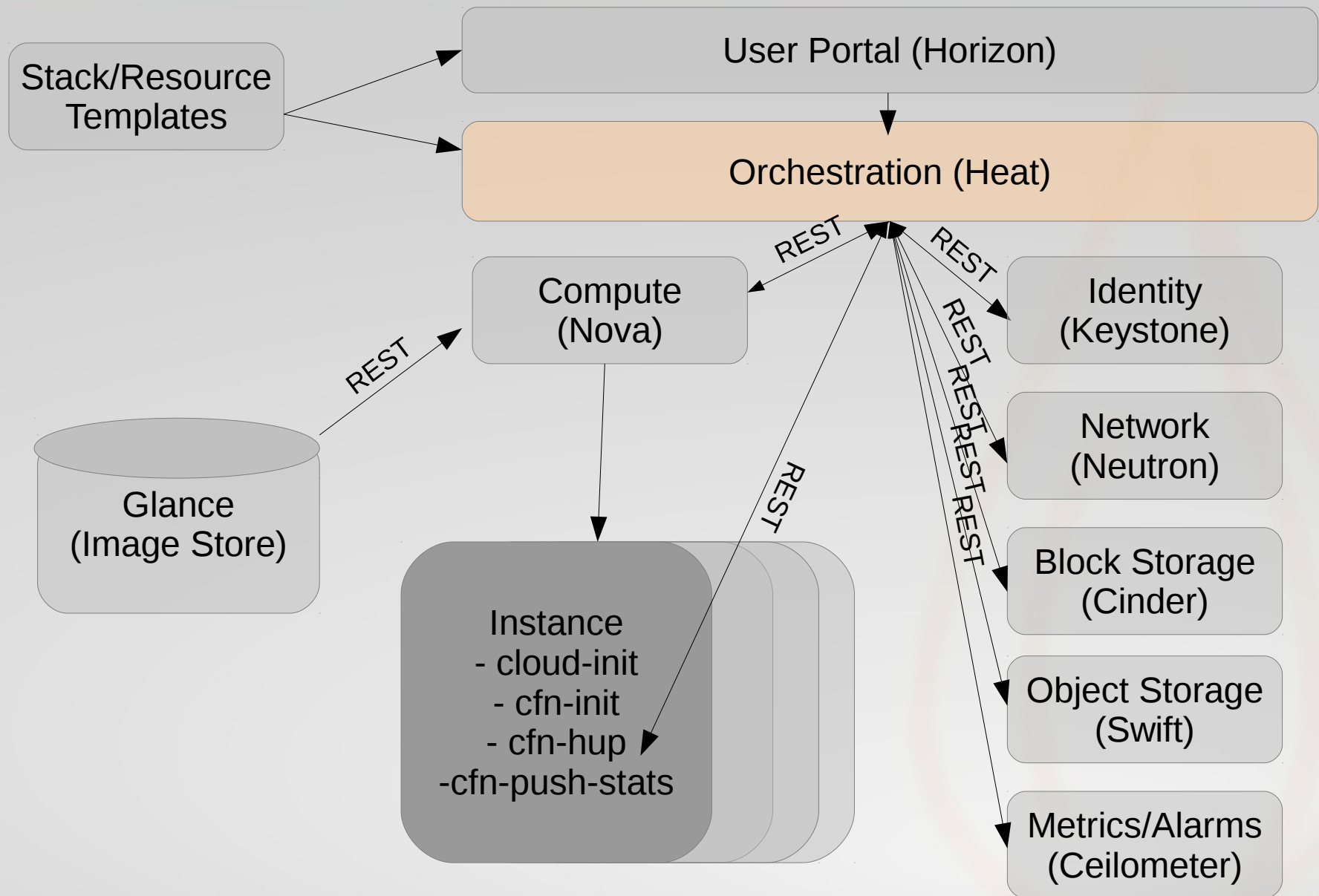
Steven Hardy (shardy@redhat.com)

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Heat Overview

Horizon
Dashboard

Heat
Orchestration

Nova

Compute Node

Glance

Image Service

Swift

Object Store

Neutron

Networking

Cinder

Volume Service
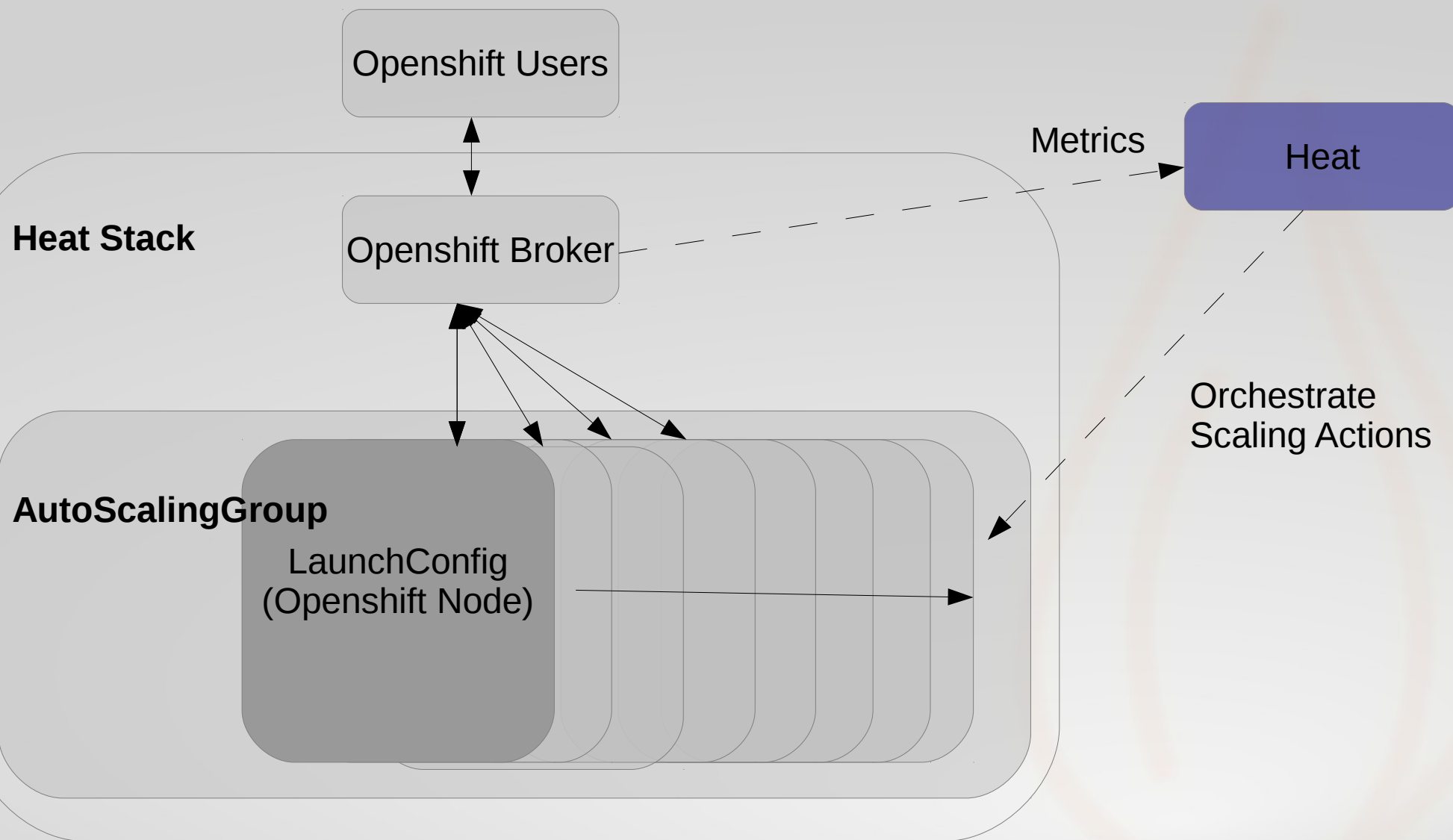
Keystone

Identity Service

- Provides AWS Cloudformation and native ReST API
- Abstract configuration of services to single-template (CFN/HOT)
- HA/Autoscaling features
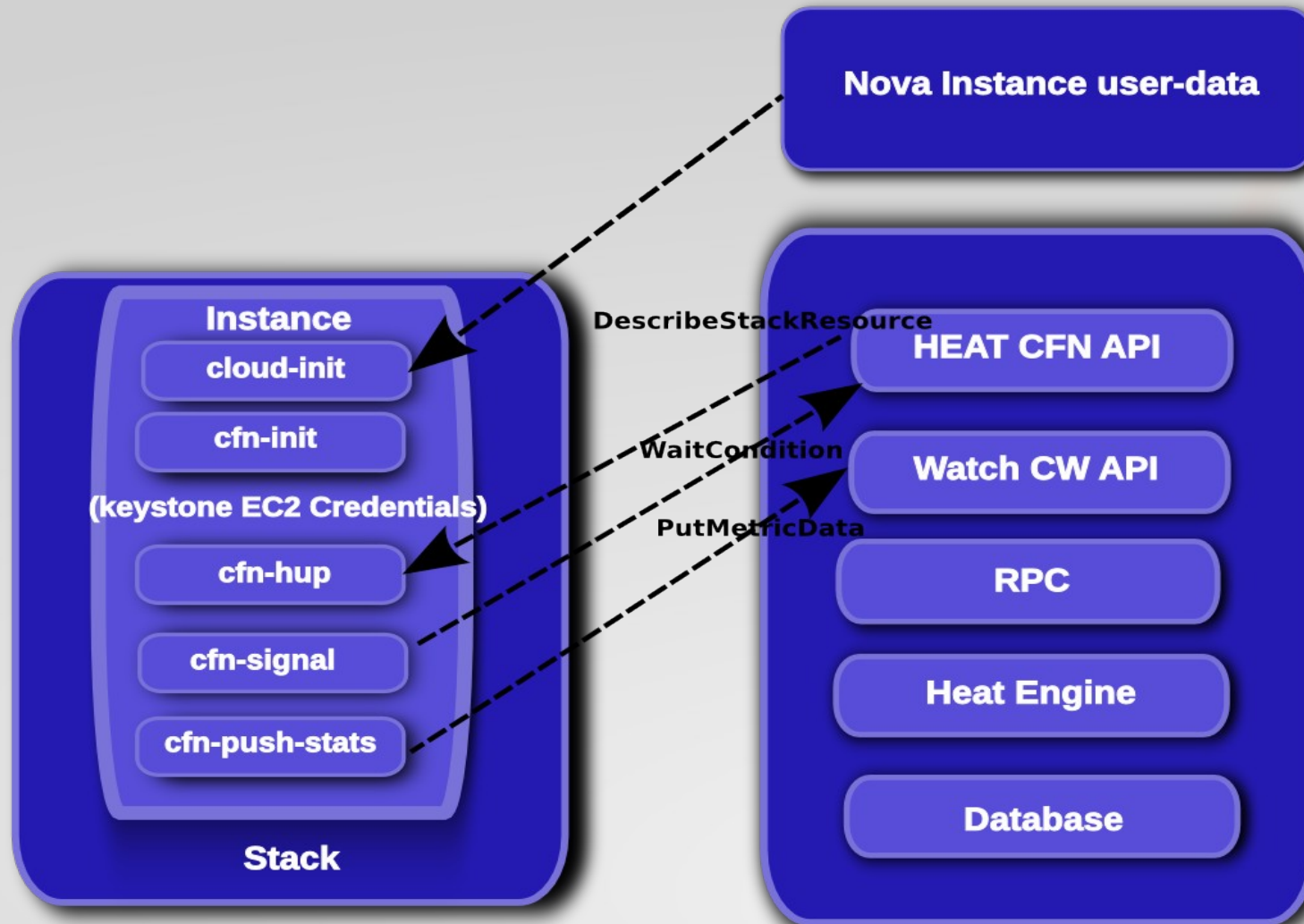- Openstack integrated project

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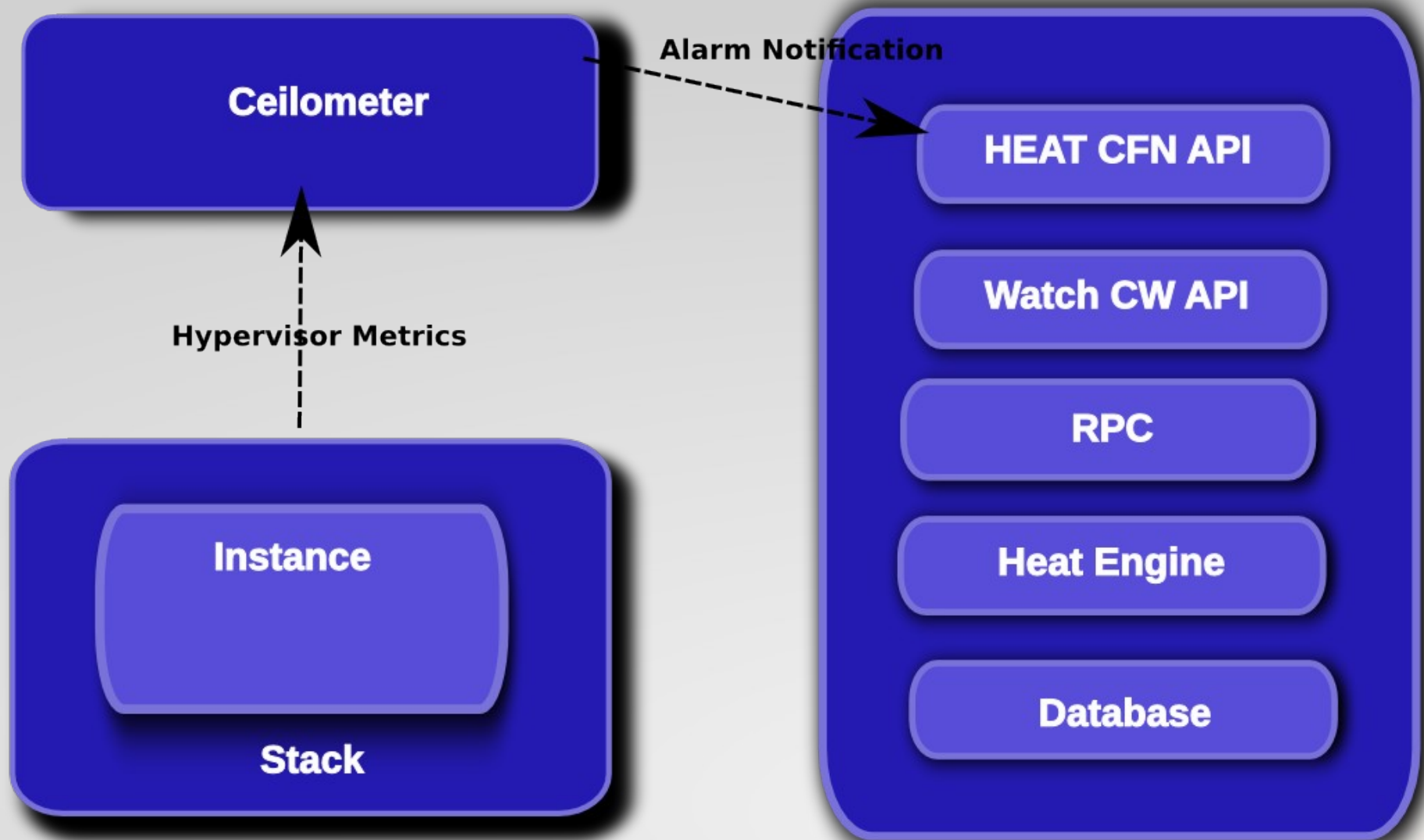# Heat Stack Lifecycle

AutoScaling Example

Openshift Users

Heat Stack

Metrics

Heat

Openshift Broker

AutoScalingGroup

LaunchConfig
(Openshift Node)

Orchestrate
Scaling Actions

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Heat Stack Management

Heat Stack Management (Ceilometer)

Heat Resource Types

AWS::AutoScaling::AutoScalingGroup
AWS::AutoScaling::LaunchConfiguration
AWS::AutoScaling::ScalingPolicy
AWS::CloudFormation::Stack
AWS::CloudFormation::WaitCondition
AWS::CloudFormation::WaitConditionHandle
AWS::CloudWatch::Alarm
AWS::EC2::EIP
AWS::EC2::EIPAssociation
AWS::EC2::Instance
AWS::EC2::InternetGateway
AWS::EC2::NetworkInterface
AWS::EC2::RouteTable
AWS::EC2::SecurityGroup
AWS::EC2::Subnet
AWS::EC2::SubnetRouteTableAssocation
AWS::EC2::Volume
AWS::EC2::VolumeAttachment
AWS::EC2::VPC
AWS::EC2::VPCGatewayAttachment
AWS::ElasticLoadBalancing::LoadBalancer
AWS::IAM::AccessKey
AWS::IAM::User
AWS::RDS::DBInstance
AWS::S3::Bucket

OS::Ceilometer::Alarm
OS::Cinder::Volume
OS::Cinder::VolumeAttachment
OS::Heat::AccessPolicy
OS::Heat::CWLiteAlarm
OS::Heat::HARestarter
OS::Heat:InstanceGroup
OS::Neutron::Firewall
OS::Neutron::FirewallPolicy
OS::Neutron::FirewallRule
OS::Neutron::FloatingIP
OS::Neutron::FloatingIPAssociation
OS::Neutron::HealthMonitor
OS::Neutron::IKEPolicy
OS::Neutron::IPsecPolicy
OS::Neutron::IPsecSiteConnection
OS::Neutron::LoadBalancer
OS::Neutron::Net
OS::Neutron::Pool
OS::Neutron::Port
OS::Neutron::Router
OS::Neutron::RouterGateway
OS::Neutron::RouterInterface
OS::Neutron::Subnet
OS::Neutron::VPNService
OS::Nova::Server
OS::Swift::Container

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Icehouse Roadmap

- More flexible AutoScaling (API, Resource Scaling, …)

- Developing HOT DSL

- Engine scale-out

- Rolling Updates (UpdatePolicy, Metadata update)

- Native in-instance tools

- Template-function plugins

- Software configuration resources

- More native resource types

- Stack snapshot/restore

In Closing

- Flexible and rapidly evolving orchestration system

- Version your infrastructure like code

- Define custom resources

- Single-template interface to all of openstack

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Thank you!

- http://docs.openstack.org/developer/heat/

- http://openstack.redhat.com/Docs

- http://github.com/openstack/heat

- https://launchpad.net/heat

- http://wiki.openstack.org/wiki/Heat

- http://hardysteven.blogspot.co.uk

- https://github.com/hardys/presentations