

TUT15981: Deploying an elastic Hadoop cluster

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Agenda

- Hadoop Overview
- SUSE OpenStack Cloud
- Manual Deployment
- Orchestration
 - Generic workload autoscaling
- Sahara
 - Dedicated for Hadoop Ecosystem
- QA

Hadoop

What is it and how does it look like?

Overview

Hadoop

- Framework that allows for the distributed processing of large data sets across clusters of nodes
- The NameNode stores all metadata
- Datanodes carry the Data blocks and execute jobs locally.
- Store data that is relevant in bulk.
- Applications are adjusted to better mine unstructured data.
- Analyze marketing campaigns, fuel efficiency, weather, sequences and predictions.

Hadoop

What can I do?

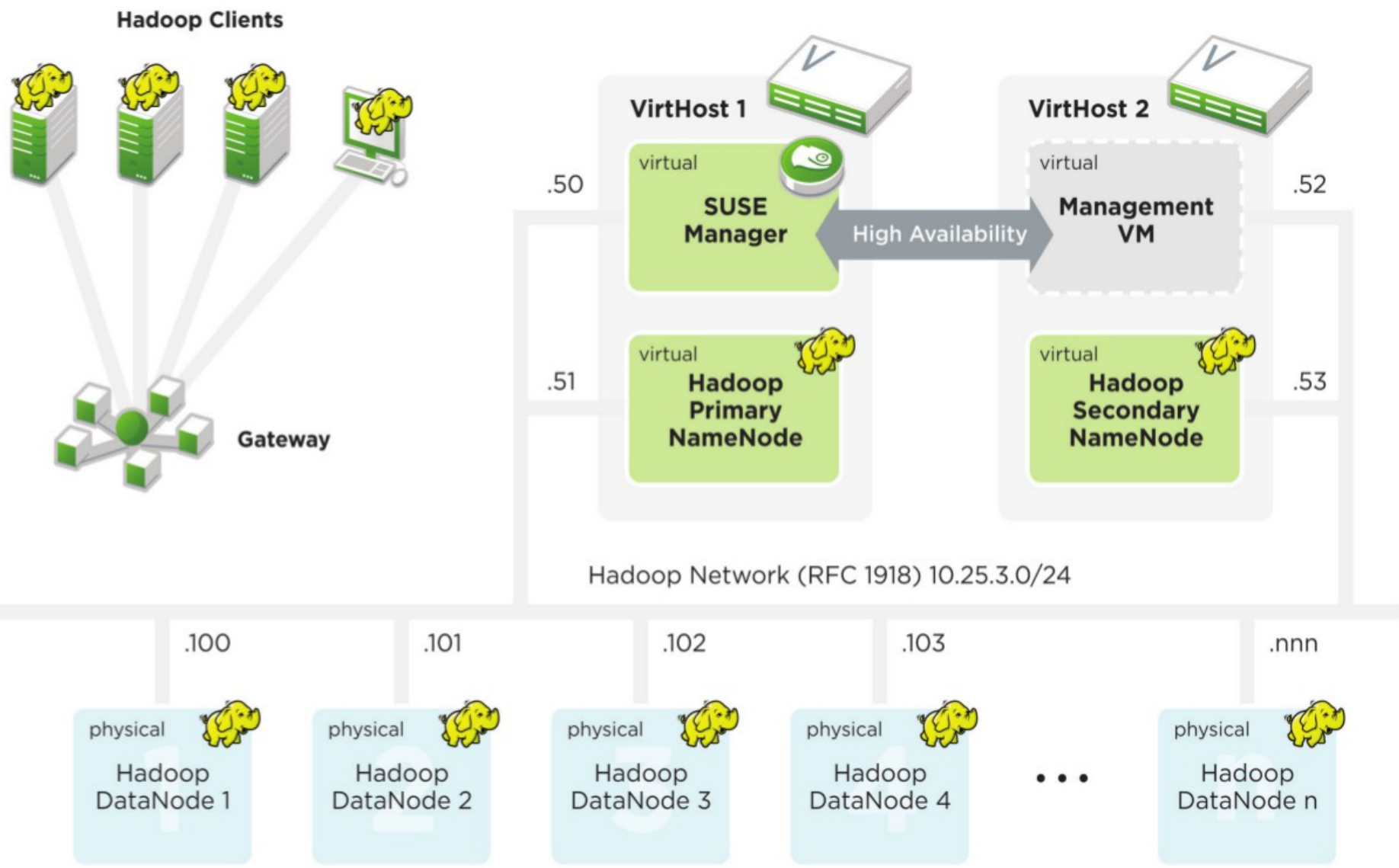
Leverage Data – Warm and Cold

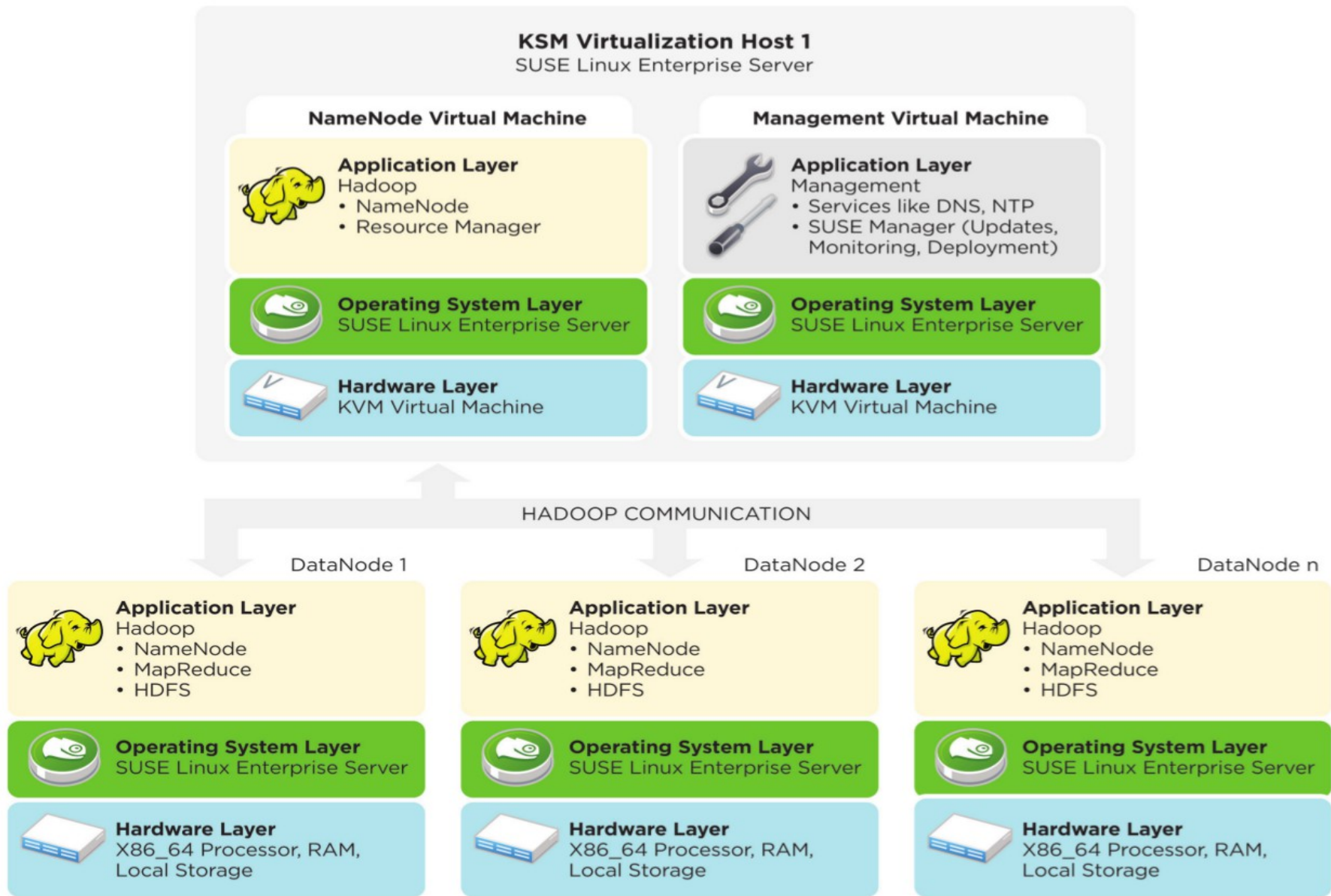
- Attitudinal, Behavioral and Interactive (data)

For

- Account Intelligence
- Fraud Management
- Predictive Maintenance
- Customer Value, Sentiment, Social - Intelligence
- Responsive Manufacturing
- Risk Analysis







SUSE OpenStack Cloud

SUSE OpenStack Cloud

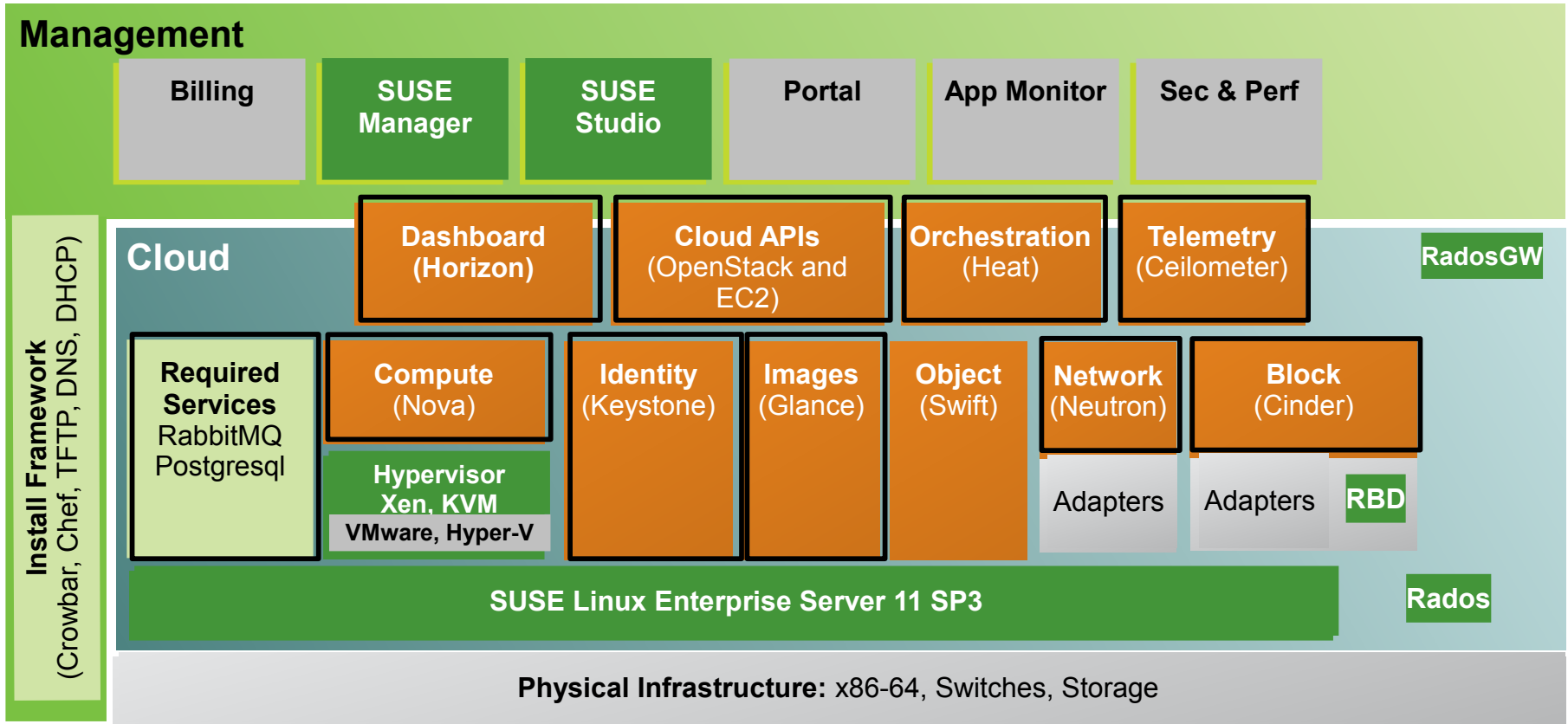


Enterprise OpenStack distribution that rapidly deploys and easily manages highly available, mixed hypervisor IaaS Clouds

- Increase business agility
- Economically scale IT capabilities
- Easily deliver future innovations

Overview

SUSE® OpenStack Cloud 5



- OpenStack Juno
- SUSE Cloud Adds
- SUSE Product
- Ceph
- Highly Available Services
- Partner Solutions

Overview

Why on OpenStack?

- Complex Event Processing, On Demand
- Advanced Resource Management, allocation.
- Flexibility, and ease on Deployment – Virtual or Physical.
- Easy for App Dev testing.
- KVM proves higher performance as it matures.
- After hours analytics of locally stored data / Resource re-utilization.
- Growing Community projects based on OpenStack.

Manual Deployment Method

Manual Deployment

- Requires a base image with Hadoop already pre-configured.
- Static Setup
- Appropriate for a mature Application Cycle stage.
- May require the Management framework “secret sauce” of Hadoop vendors like Cloudera, Hortonworks and MapR.
- Basic flexibility.

Orchestration – Heat Method

Orchestration

Heat

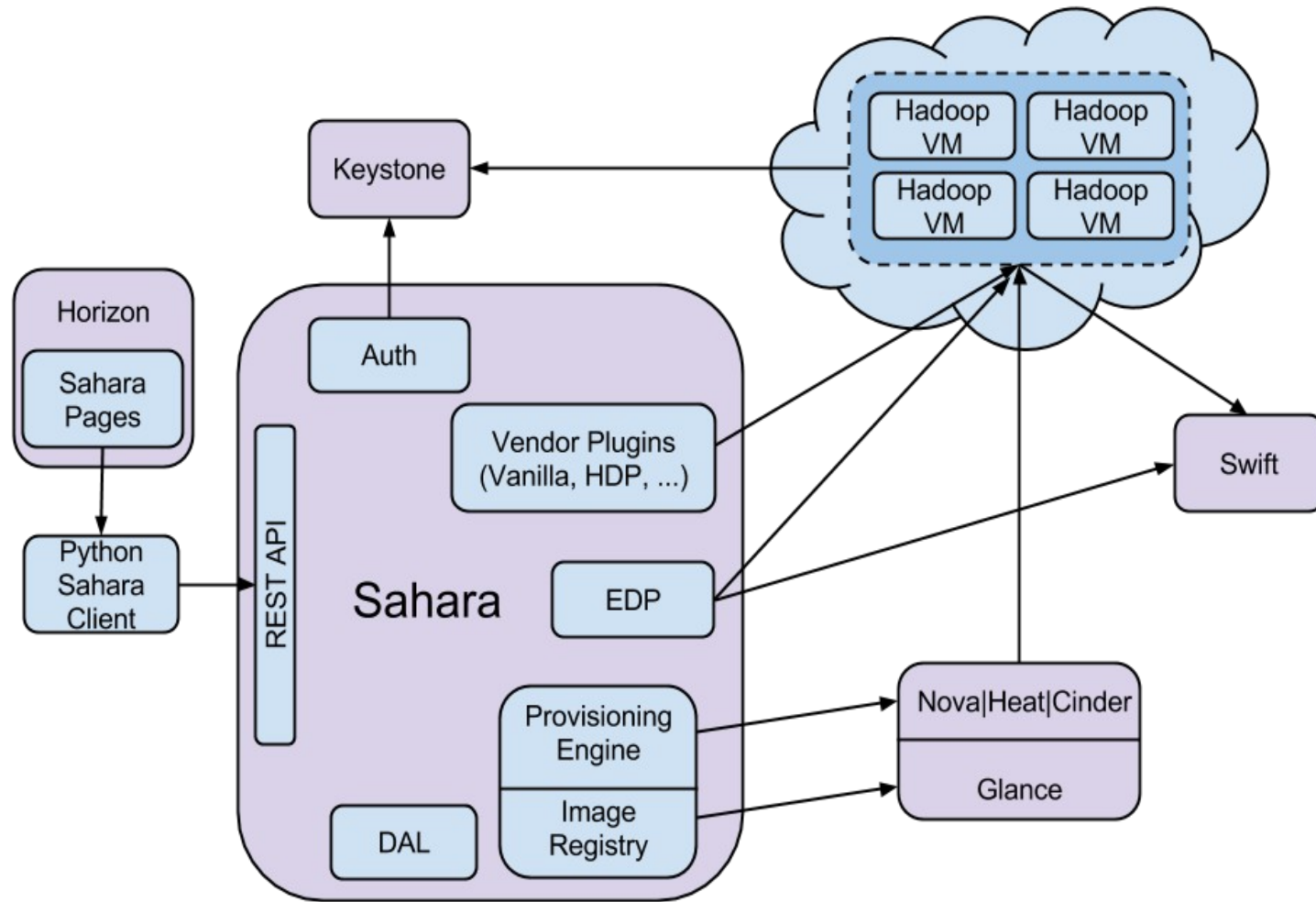
- Implements an orchestration engine to launch multiple composite cloud applications based on templates
- Native Resource Management - servers, floating ips, volumes, security groups, users
- Provides an autoscaling service that integrates with Ceilometer
- Requires a base image with the Hadoop components
- Actions can be triggered based on resource utilization, including auto scale-out

The Sahara Way

Elastic Data Processing facility - EDP

- Sahara's Elastic Data Processing facility allows the execution of jobs on clusters created from Sahara. EDP supports:
 - Hive, Pig, MapReduce, MapReduce.Streaming and Java job types on Hadoop clusters
 - Spark jobs on Spark clusters
 - Access and Storage of job binaries/output in Swift or Sahara's own database
 - Configuration of jobs at submission time
 - Execution of jobs on existing clusters

Sahara Architecture



Demo!

Thank you.







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