SUSE OpenStack Cloud Deployment

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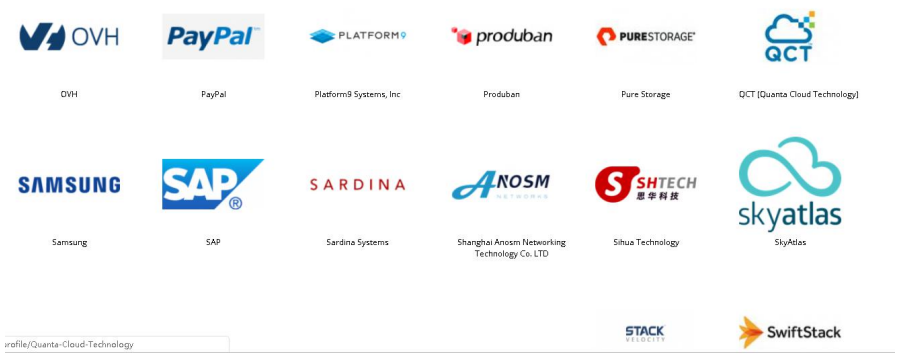
Arthur Yang
Sales Engineer

OpenStack Deployment Overview

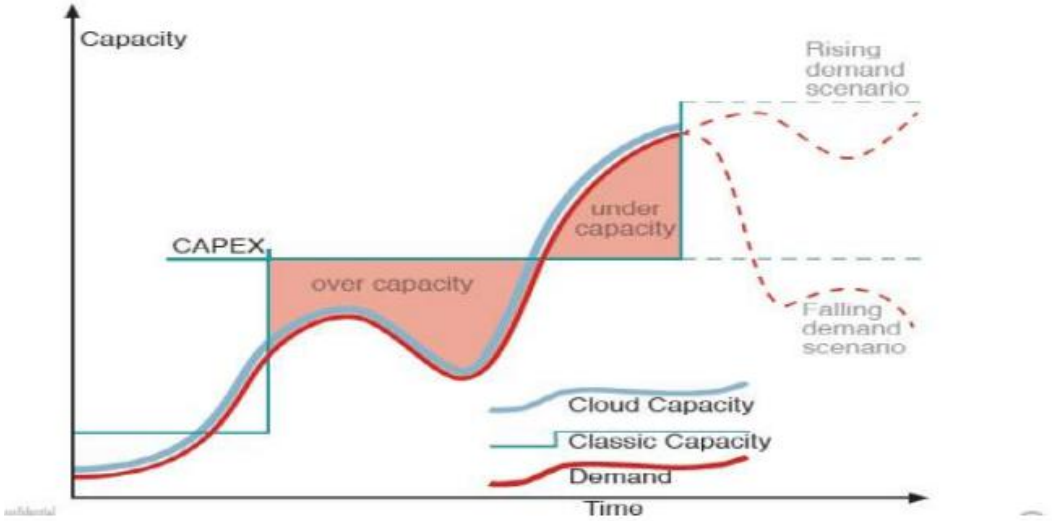
OpenStack 参与者

- 传统的硬件提供商– Cisco, HP, Dell, etc…
- 网络提供商– Rackspace, Telecom,AT&T, Comcast, etc…
- 创业公司 – PistonCloud, 99cloud,SurCloud and many, many more…
- 发行版– Red Hat, Canonical, SUSE, Mirantis
- 其它– 或聚焦于驱动，或聚焦于计费，或聚焦于监控，或聚焦于高可靠



某些厂商的承诺

- Cost
- HA
- Performance
- Ops



部署方式

•Single Shot –手工搭建所有的模块:
– 深入了解安装程序的内容
–了解openstack各个组件间的通信的最好方式
•Semi-Automatic – 部分工作采用自动化的方式进行安装，见主流安装工具

•Automatic – Install > Operate > Upgrade
– CI/CD充当主要角色

5

安装工具

Deployment Tools (6 Results)

CHEF OPENSTACK
Chef cookbooks for OpenStack

KOLLA
Container deployment

OPENSTACK CHARMS
Juju Charms for OpenStack

OPENSTACK-ANSIBLE
Ansible Playbooks for OpenStack

PUPPET OPENSTACK
Puppet Modules for OpenStack

TRIPLEO
Deployment service

Packstack

- Install Packstack:

  yum install -y openstack-packstack

- Generate SSH keys (or let Packstack do it):

  ssh-keygen

- Generate an answer file:

  packstack --gen-answer-file=~/answers.cfg

- Run the answer file:
  packstack --answer-file=~/answers.cfg

PackStack Answer File

非生产环境

```
CONFIG_PROVISION_DEMO=n
CONFIG_LBAAS_INSTALL=y
CONFIG_NEUTRON_FWAAS=y
CONFIG_NEUTRON_VPNAAS=y
```

简洁高效

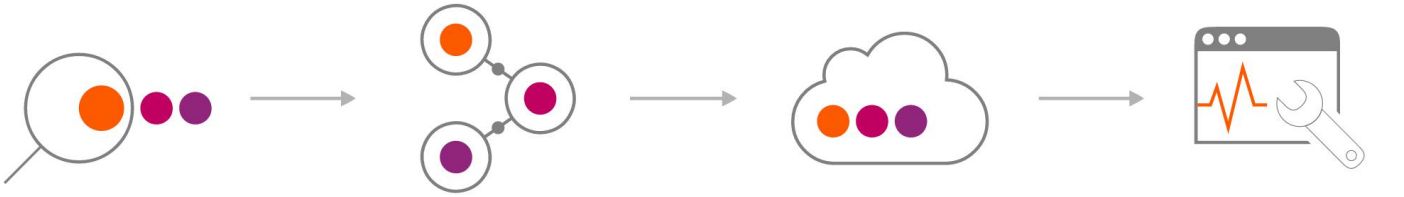
支持多节点安装以及模块配置

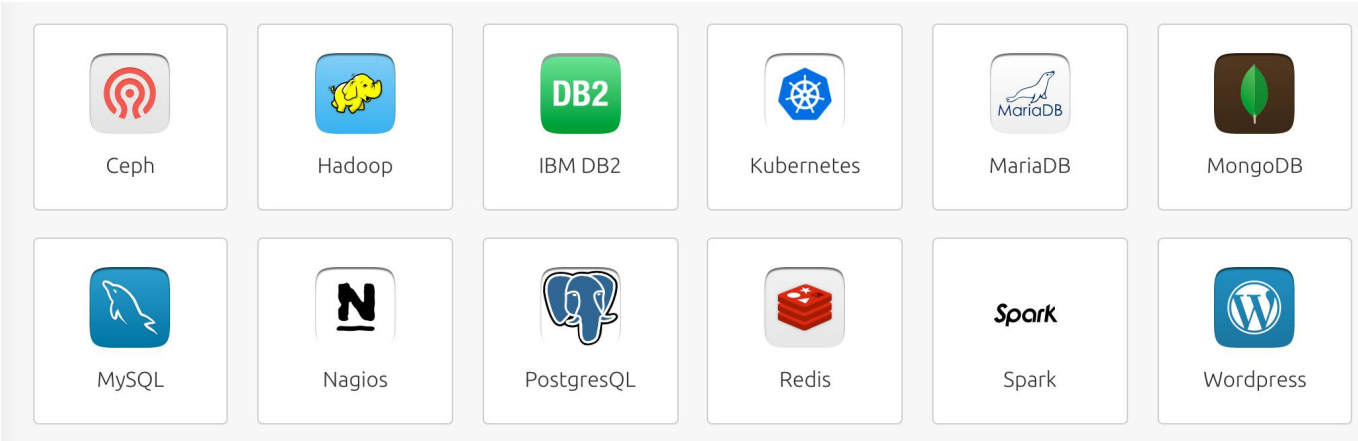
基本的网络配置

```
CONFIG_CONTROLLER_HOST=192.168.0.66
CONFIG_COMPUTE_HOSTS=192.168.0.66,192.168.0.67,192.168.0.68
CONFIG_NETWORK_HOSTS=192.168.0.66
```

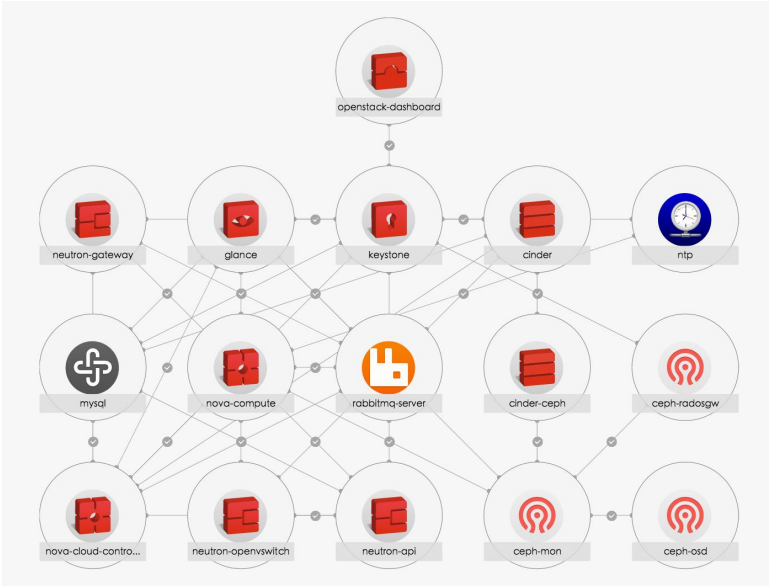
支持计算节点动态扩展

juju-service modeling made simple





Juju for OpenStack



Demo:https://jujucharms.com/

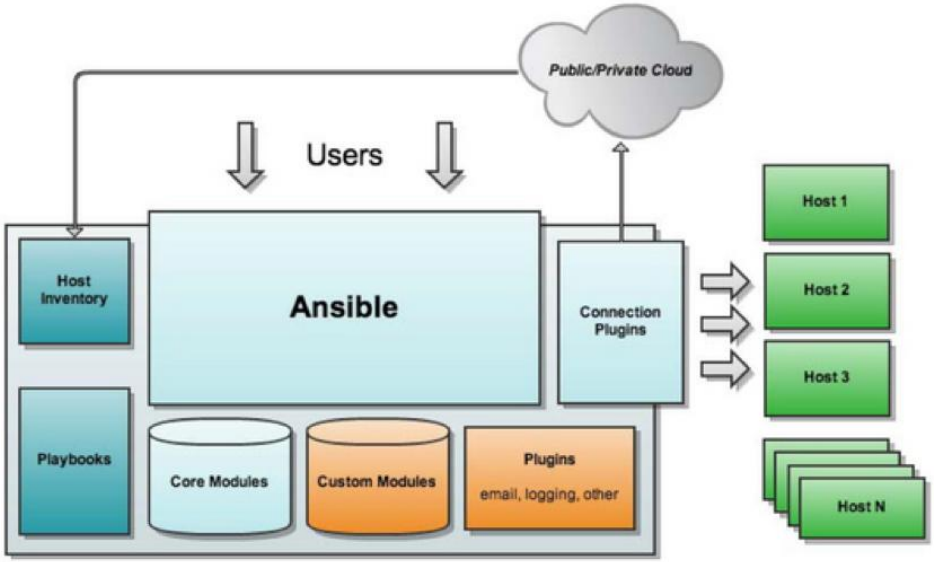
#juju add-unit nova-compute # Add one more unit
#juju add-unit -n5 nova-compute # Add 5 more units

Juju用户

USERS AND CONTRIBUTORS

http://demo.fuel-infra.org:8000/

Kolla

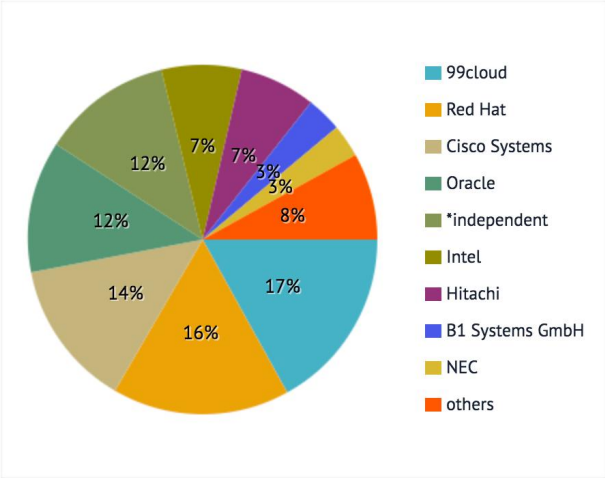

Public/Private Cloud
Users
Host Inventory
Ansible
Connection Plugins
Playbooks
Core Modules
Custom Modules
Plugins
email, logging, other
Host 1
Host 2
Host 3
Host N

背景

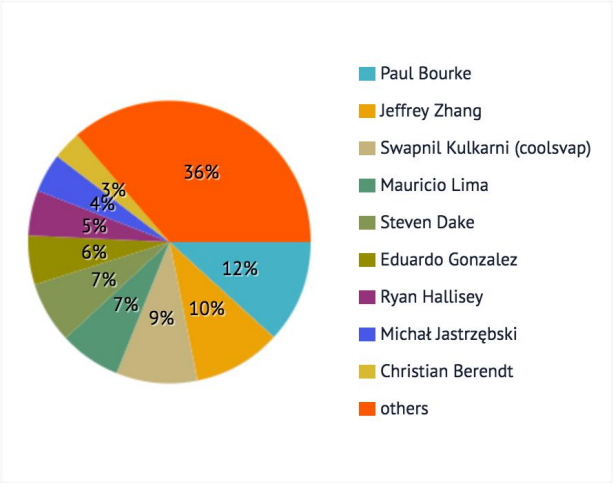
- Deploying OpenStack is difficult
- Operating OpenStack is even more difficult
- Until recently, deployment options consisted of bare metal or VM’s
- A little-known technology called **Docker** is becoming a household name
- No tool has emerged as the **leader**

社区

Contribution by companies



Contribution by contributors



存在的问题

已有系统的整合

与vmware整合

已有业务系统的整合

app的云化

网络架构的调整

高可靠的支持

运维的持续性

应用的编排

OpenStack架构

专业人员的培养

系统监控

SUSE OpenStack Deployment

部署架构

Crowbar Base

ardana

Crowbar简介

Dell开发

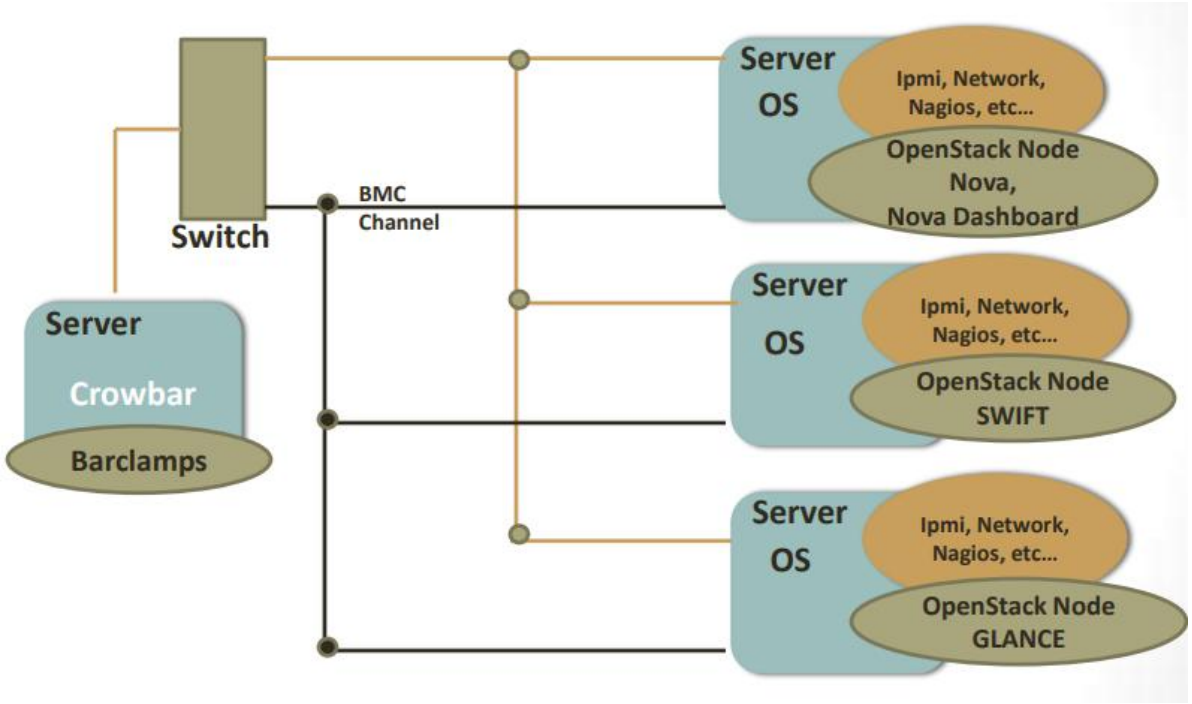
SuSE发展

基于chef

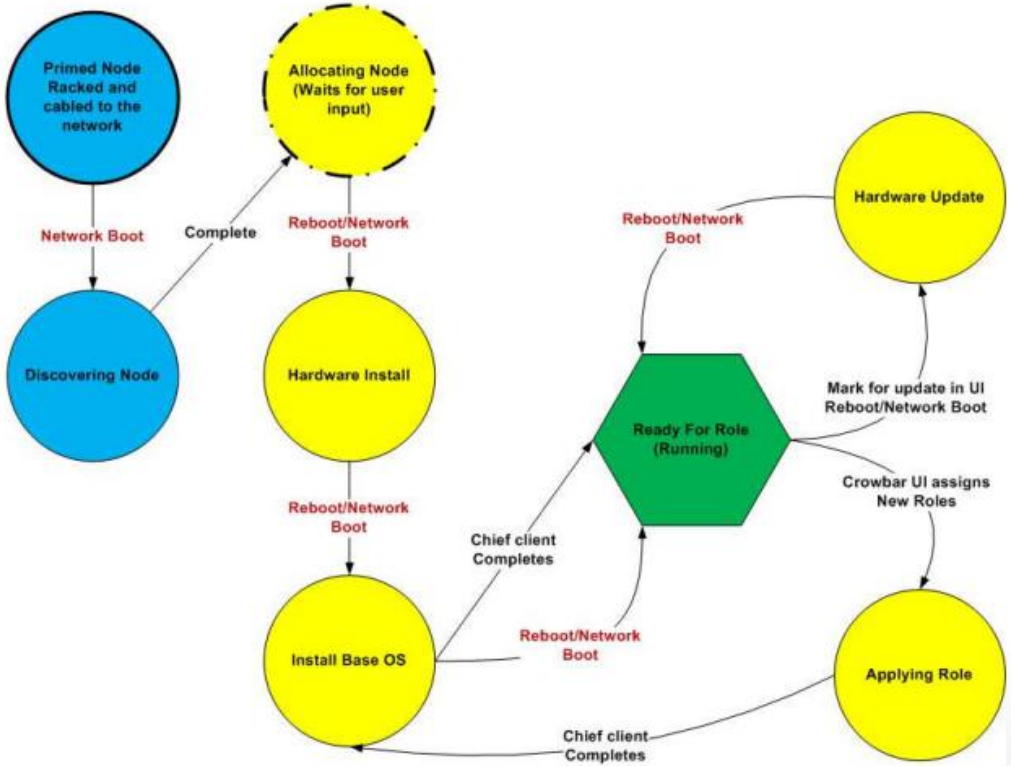
强大的命令行与页面支持

快速地将bare-metal转化成生产级的openstack集群

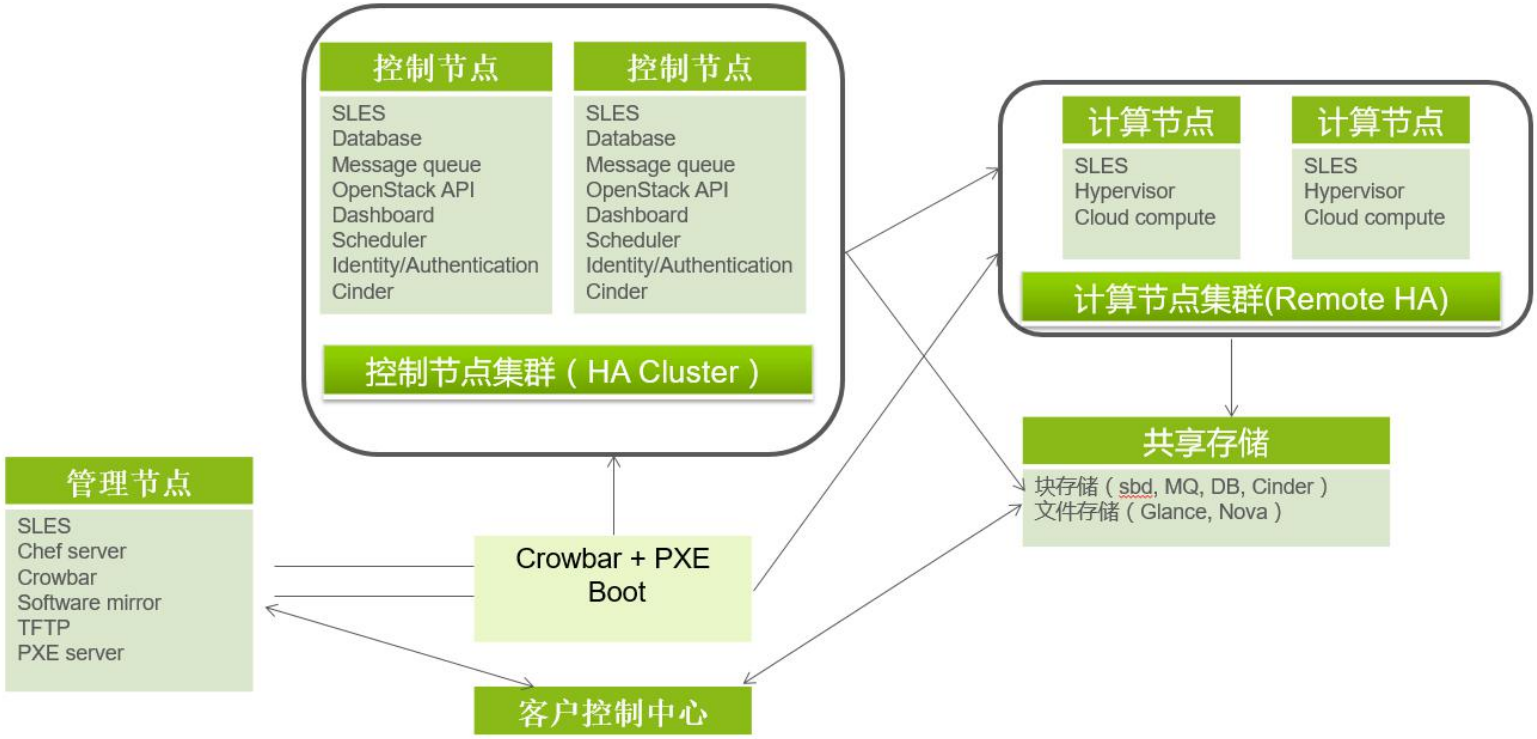
Crowbar架构


Switch
BMC
Channel
Server
Crowbar
Barclamps
Server
OS
Ipmi, Network,
Nagios, etc...
OpenStack Node
Nova,
Nova Dashboard
Server
OS
Ipmi, Network,
Nagios, etc...
OpenStack Node
SWIFT
Server
OS
Ipmi, Network,
Nagios, etc...
OpenStack Node
GLANCE

Crowbar 服务器状态转换图



Crowbar部署架构



Admin节点

部署节点

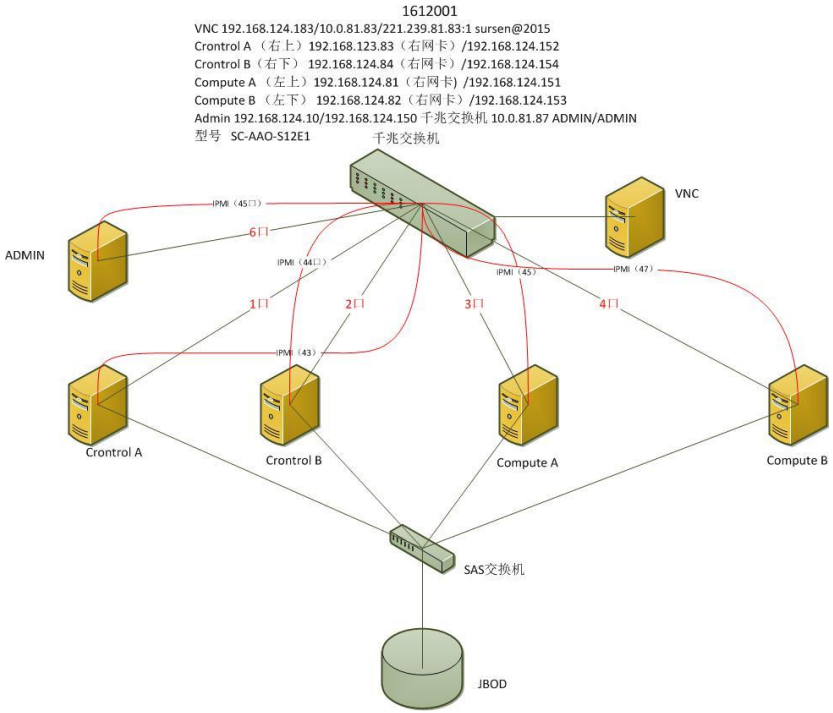
安装源节点

提供dns服务

Chef-server

非必须

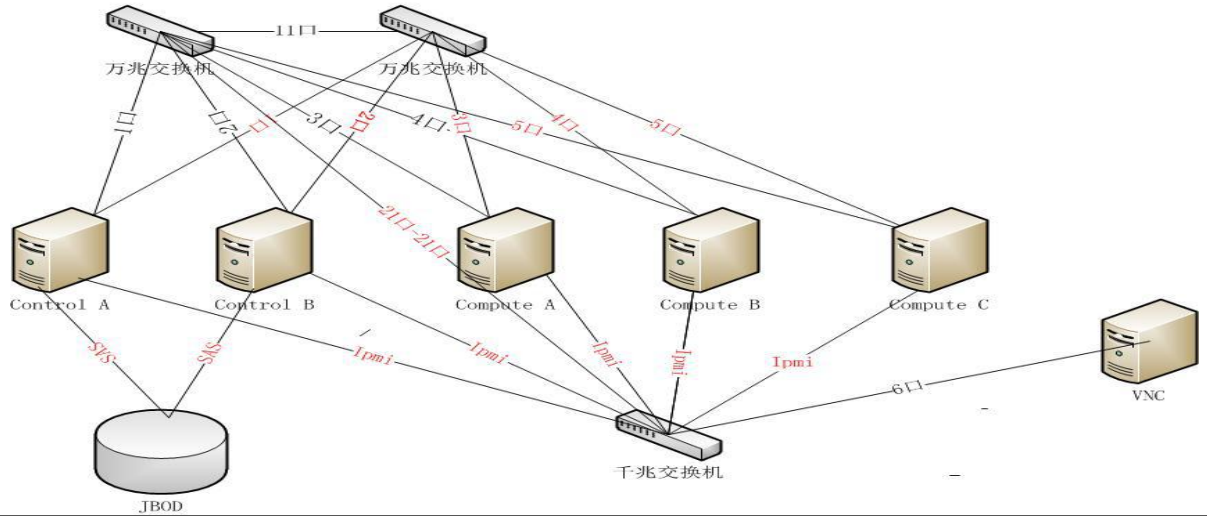
pxe-server



五节点举例

1703001

VNC 192.168.124.186/10.10.21.190/36.110.28.93:2 sursen@2015
Control A（左上） 192.168.124.81/192.168.124.154
Control B（右上） 192.168.124.82/192.168.124.152
Compute A（左下） 192.168.124.83/192.168.124.151
Compute B（右下） 192.168.124.84/192.168.124.153
万兆交换机 10.2.0.240/10.2.0.241 admin/pica8
型号 SC-AAO-E10



Why Crowbar

完全自动化
支持OpenStack大多数服务

便捷性
快速扩展

易扩展
快速扩展

社区支持
社区活跃度高

Crowbar部署基础服务

NTP

DNS

NFS

PXE

Hardware Management

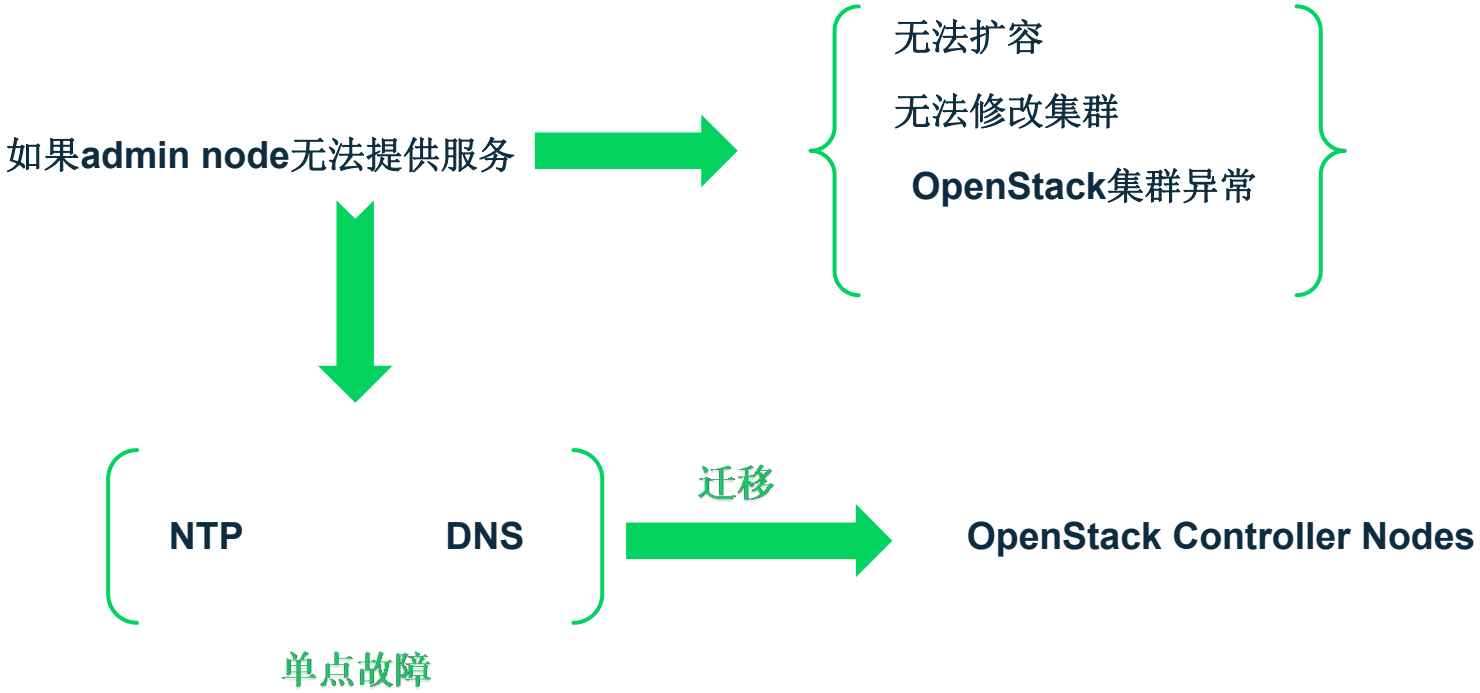
Network Conf

IPMI

Logging

Crowbar部署OpenStack服务

Crowbar Admin Node HA



Crowbar使用

crowbarctl help

crowbar network allocate_ip default xxxx.kisyun.com storage host

crowbarctl database create

crowbarctl services list_restarts

crowbarctl backup list

ardana 简介

Input Model and Configuration Processor

生命周期管理

集成Ansible

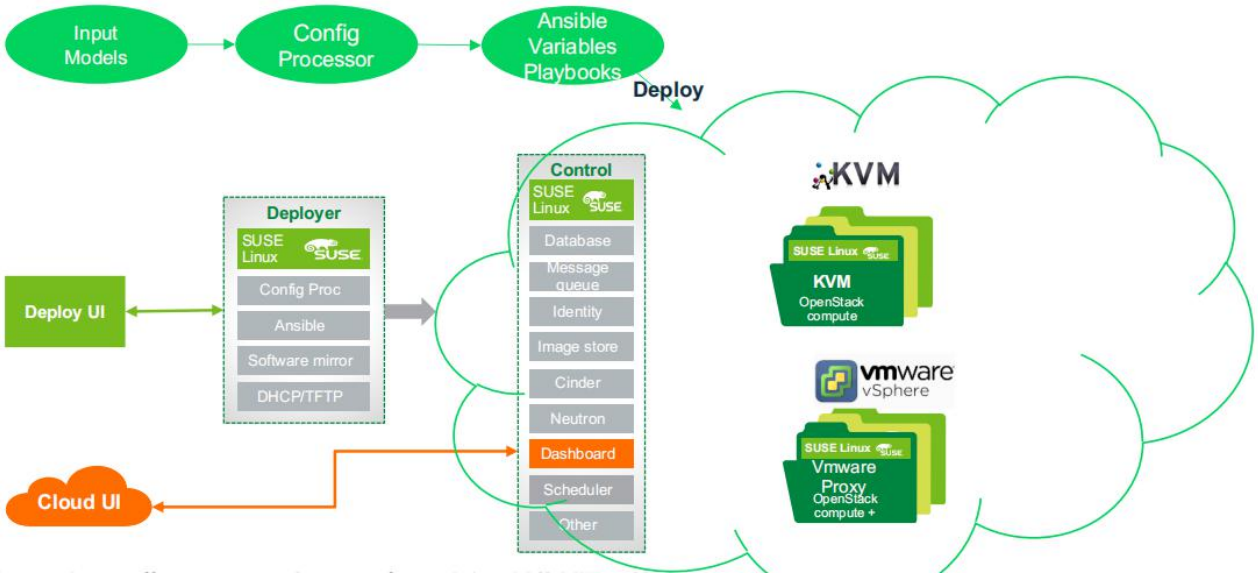
Control Plane

Compute Plane

Ceph Plane

集成git

集成cobbler



Input Model

- Which OpenStack services run on which server nodes
- How individual servers are configured in terms of disk and network adapters
- The overall network configuration of the cloud
- Network traffic separation
- CIDR and VLAN assignments

configuration processor 检查和配置Input Model

Input Model主要解决如下问题：

Cloud Architecture:
- Which services are included?
- Where do they run?
- What are the regions?

Networks:
- How does each service connect to the network?
- How is traffic routed between networks?

Servers:
- What are the server “types” in the cloud?
- How should local storage be used?
- How do network interfaces map to networks?

Physical Constraints:
- Which networks are connected to each group of servers?
- How are servers grouped for availability?

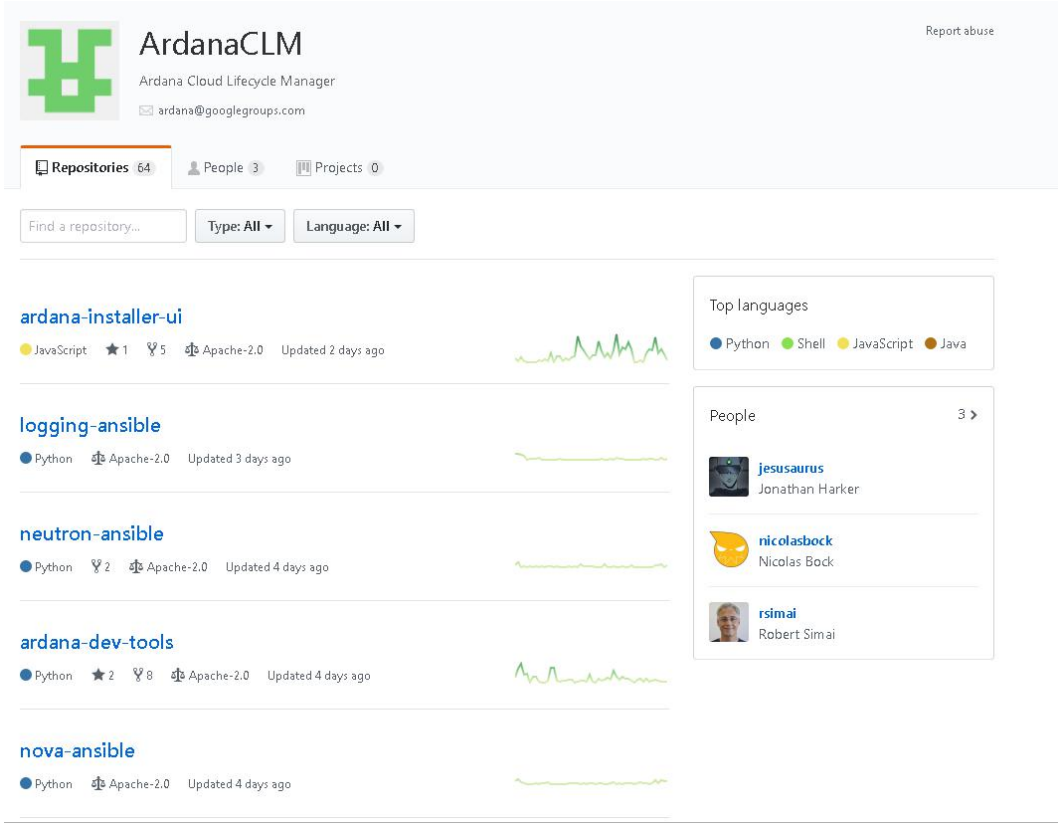
Why ardana

活跃的社区支持

SUSE ALL IN

便捷的配置与管理

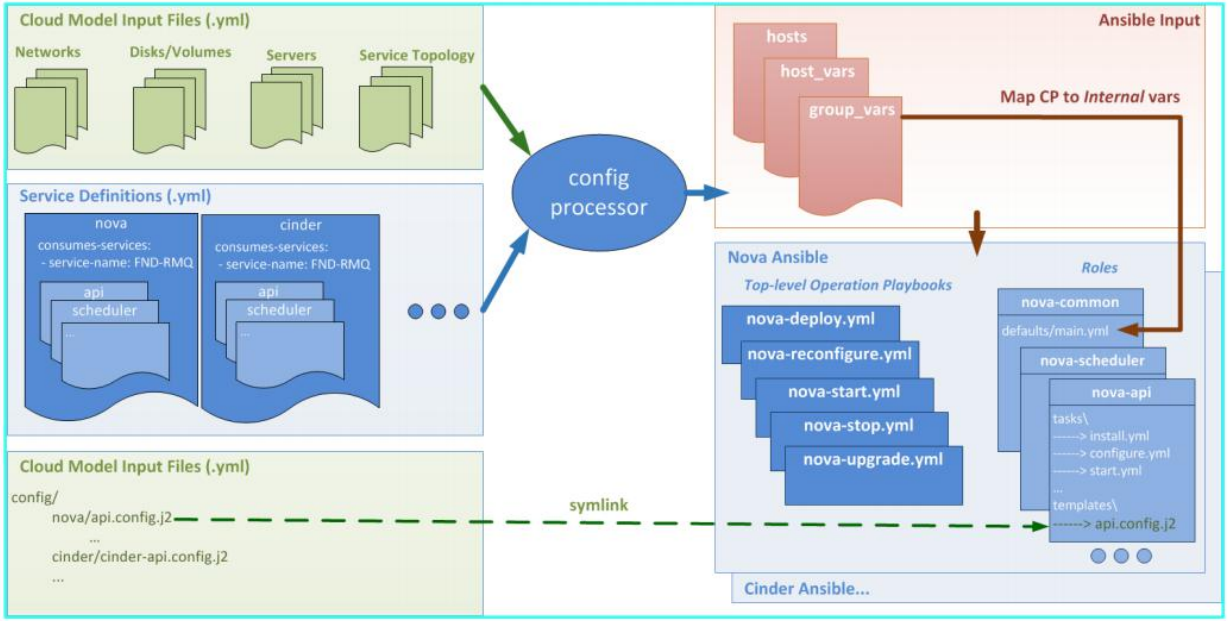
与**Ansible**无缝对接



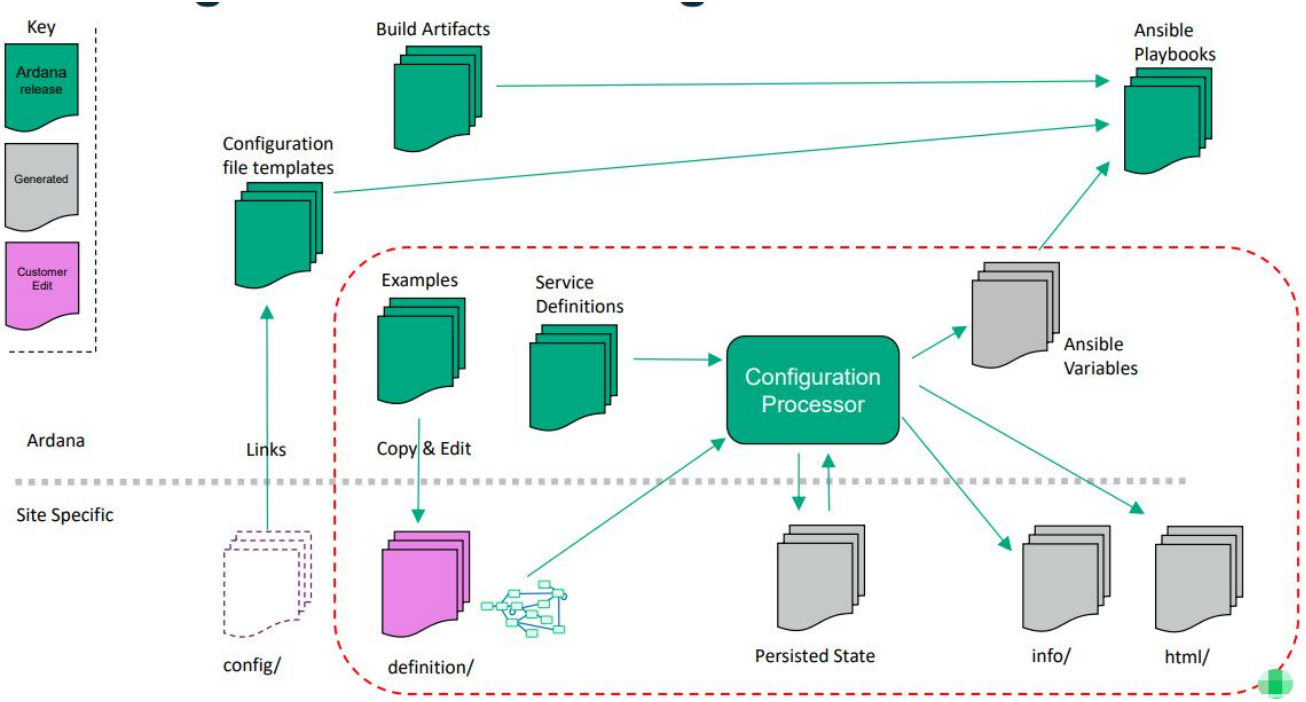
Ansible集成

config processor为ansible提供yml文件

config processor为ansible提供yml文件



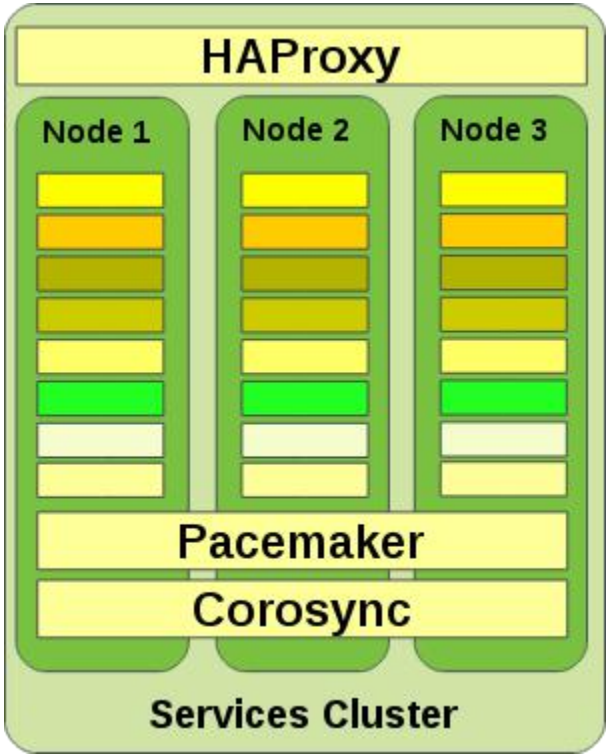
配置处理流程


Key
Ardana release
Generated
Customer Edit
Build Artifacts
Ansible Playbooks
Configuration file templates
Examples
Service Definitions
Configuration Processor
Ansible Variables
Ardana
Site Specific
Links
Copy & Edit
config/
definition/
Persisted State
info/
html/

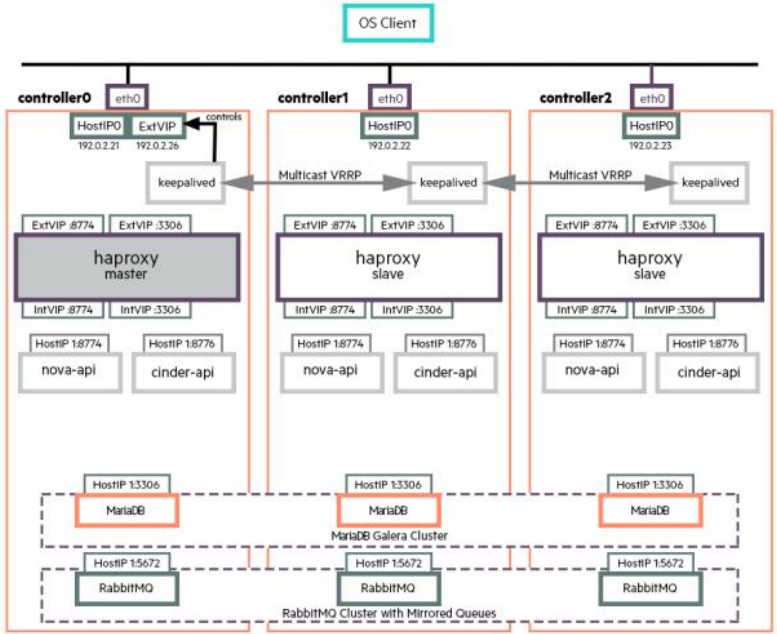
Crowbar & Ardana比较

	使用难度	学习难度	覆盖文件	运维难度	HA支持	Git支持	架构灵活	适合人员
Crowbar	低	低	是	高	优	否	否	中低级
Ardana	高	高	否	低	一般	是	是	中高级

Crowbar & Ardana HA比较



Crowbar



Ardana(CLM)

Questions