



SUSE OpenStack Cloud Deployment

February 2019

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Sales Engineer



OpenStack Deployment Overview

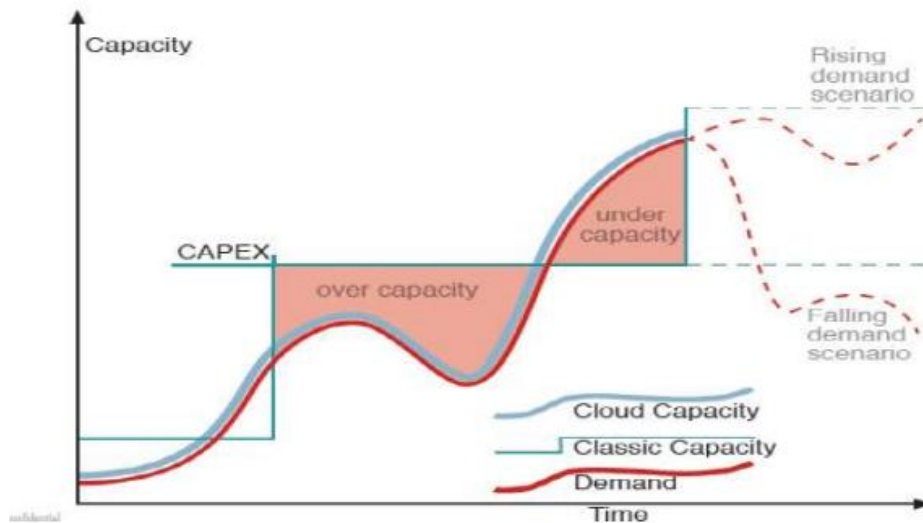
OpenStack 参与者

- 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

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

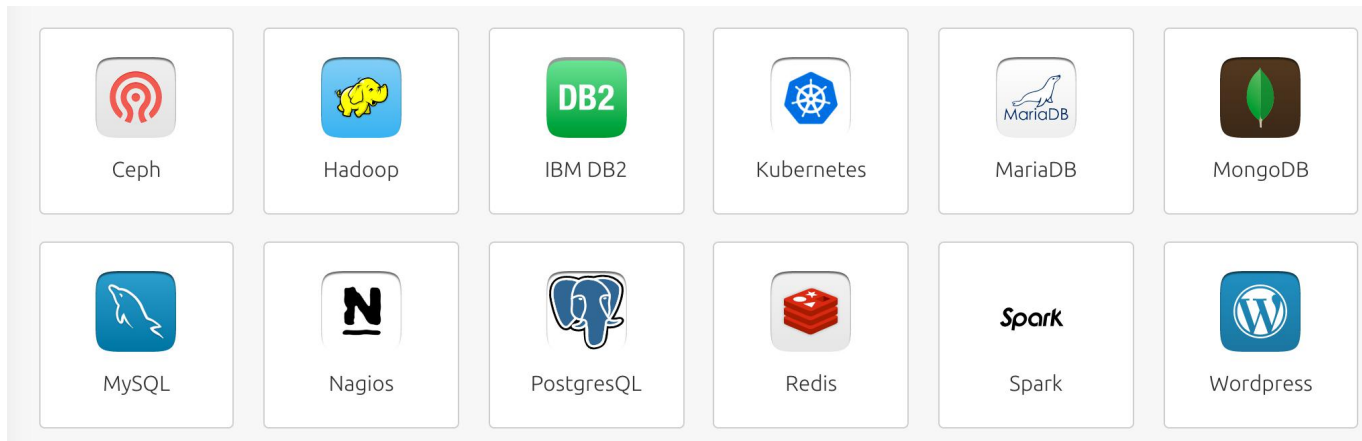
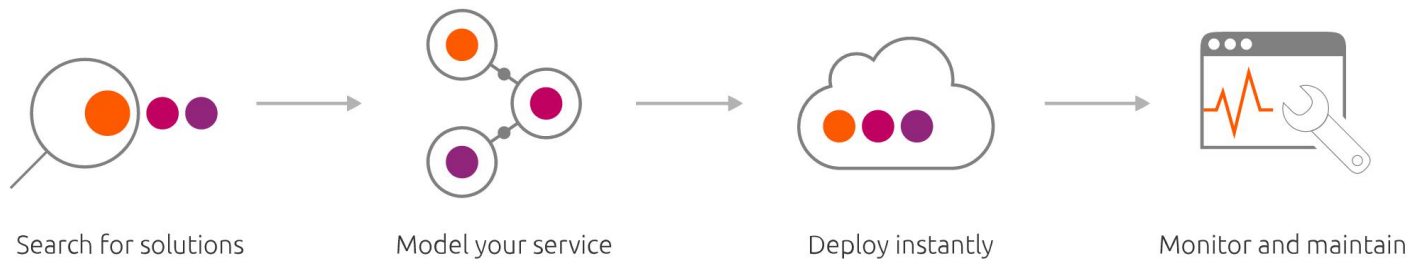
支持多节点安装以及模块配置

基本的网络配置

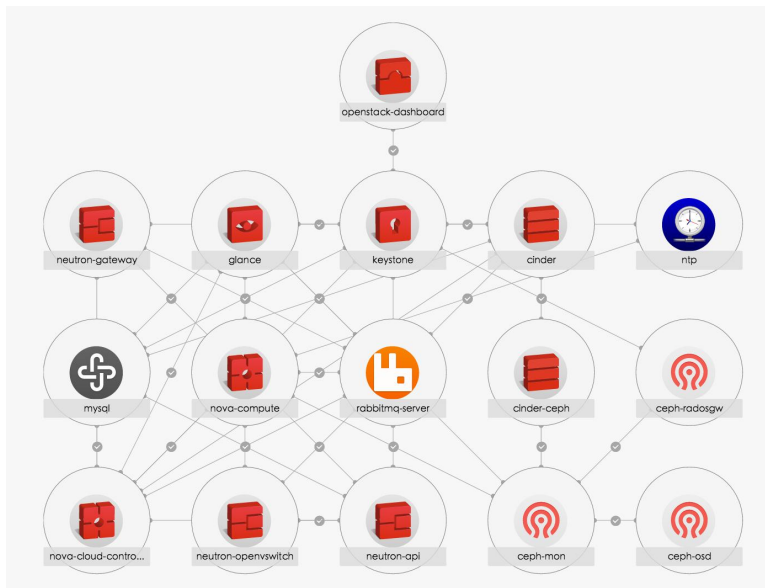
```
CONFIG_CONTROLLER_HOST=192.168.0.66  
CONFIG_COMPUTE_HOSTS=192.168.0.66,192.168.0.67,192.168.0.68  
CONFIG_NETWORK_HOSTS=192.168.0.66
```

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

ubuntu

■ ■ ■ T Deutsche
Telekom

IBM

intel

Microsoft Azure

|||||
CISCO

中国电信
CHINA TELECOM

NEC

hp

YAHOO!
JAPAN

✓
verizon

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



环境

EQUIPMENT

版本

插件

技术支持

首页 / 环境 / amal osman / 控制台

amal osman (0 个节点)

控制台

节点

网络

设置

日志

健康检查

欢迎来到新的OpenStack环境!

You must add at least one node to your environment in order to deploy. See the [用户指南](#) 有关如何将角色分配给节点并将它们添加到

+ 添加节点

总结

名称	amal osman
状态	新建
OpenStack发行版	Liberty on Ubuntu 14.04
计算	QEMU
网络	Neutron 并使用 VLAN
后端存储	Ceph RadosGW for objects (Swift API)

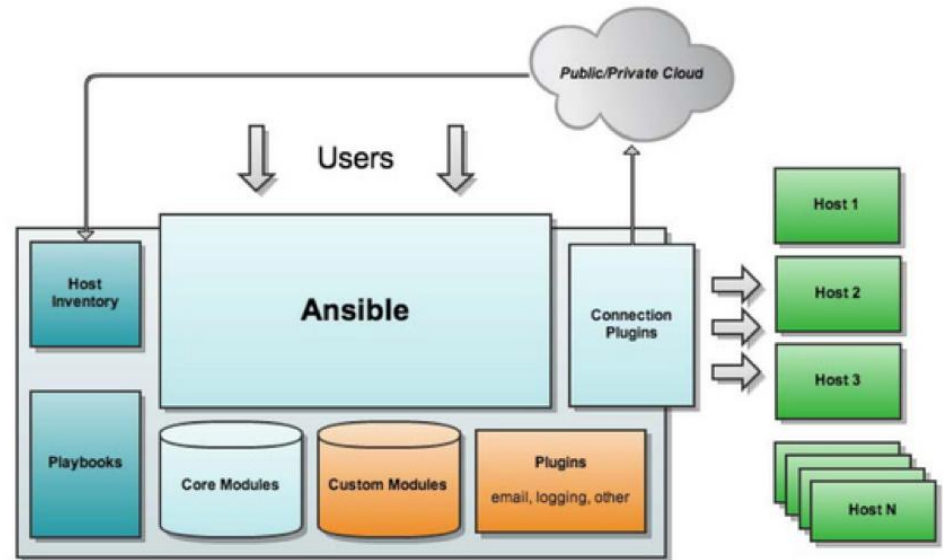
容量

CPU核数	0 (0)	内存
-------	-------	----

节点统计

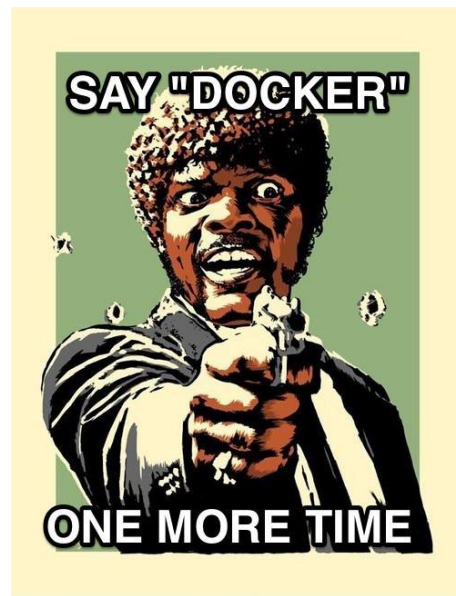
该环境中无节点, 请在节点选项卡添加节点并重

Kolla



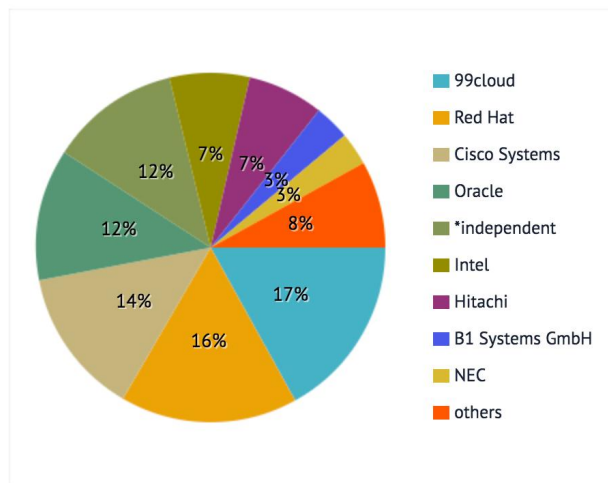
背景

- 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**

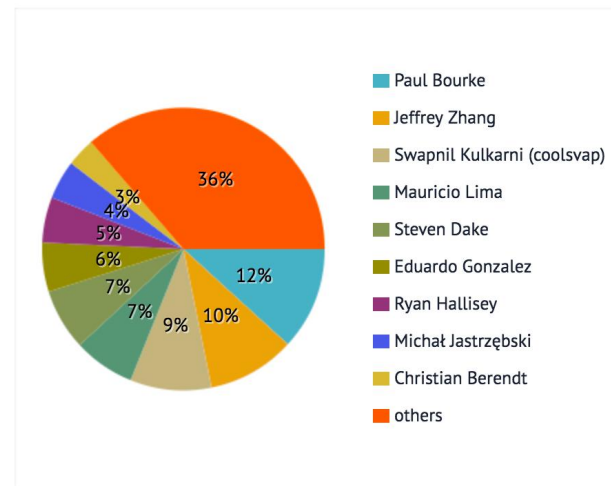


社区

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

网络结构的调整

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



SUSE® OpenStack Cloud

Nodes - Network - Barclamps - Utilities - Help

Node

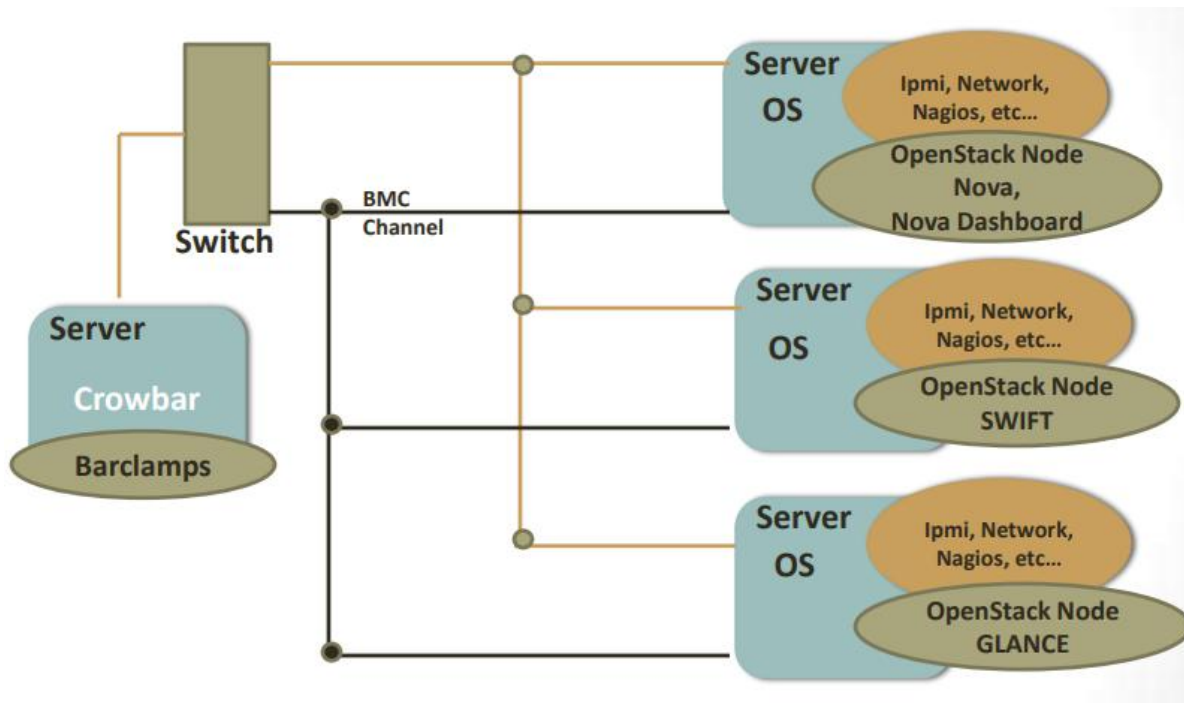
control-data

Full Name	d52-54-00-8e-96-71.cloud.fs	Hardware	Standard PC (i440FX + PIIX, 1996)
Public Name	---	Service Tag	Not Specified (Not Specified)
Description	---	CPU	QEMU Virtual CPU version 2.3.1 (x86_64)
Target Platform	SLES 12 SP2	Memory	3.86 GB
Uptime	32 minutes 46 seconds	Disk Drives	2
Allocated	Allocated	MAC Address	52:54:00:8e:96:71
State	Ready	Switch Name/Port	Unknown / Unknown
Intended Role	Controller		
Availability Zone	---		
IP Address	• admin • eth0: 192.168.134.81		
Links	• No links available		
Applied Barclamps	• Crowbar <ul style="list-style-type: none">• DNS• Deployer• IPMI• Logging• NTP• Network• Provisioner		
Applied Roles	• Crowbar <ul style="list-style-type: none">• bmc-nat-client• deployer-client• dns-client• ipmi• logging-client• network• ntp-client• provisioner-base		

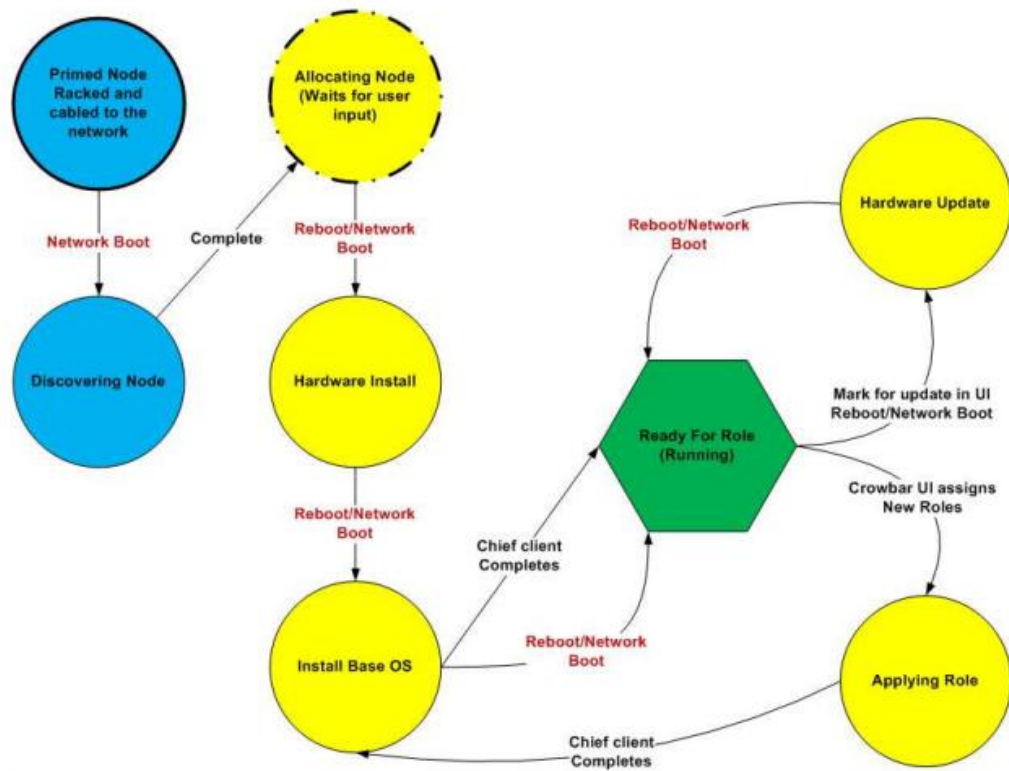
Forget Reinstall Deallocate

Power Actions

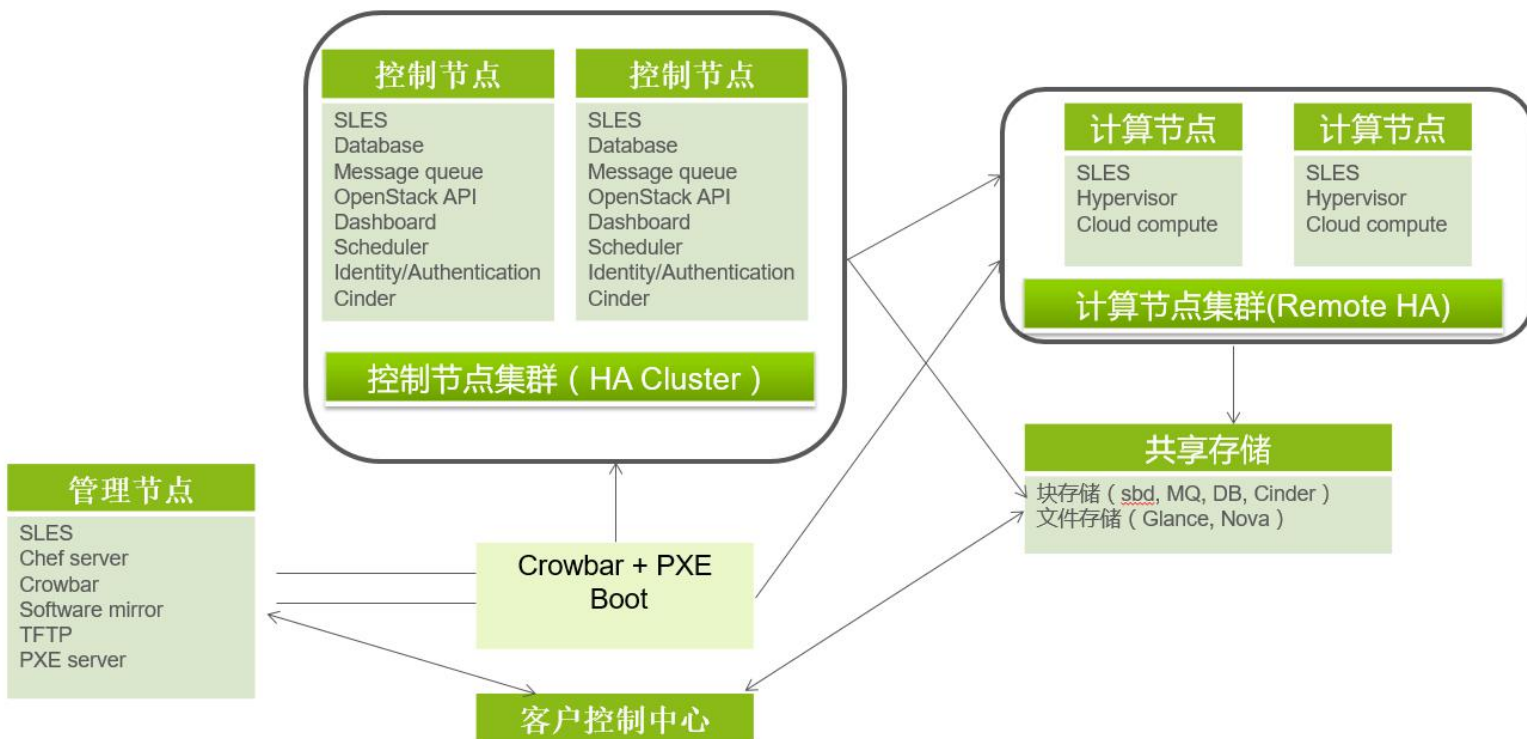
Crowbar架构



Crowbar 服务器状态转换图



Crowbar部署架构



Admin节点

部署节点

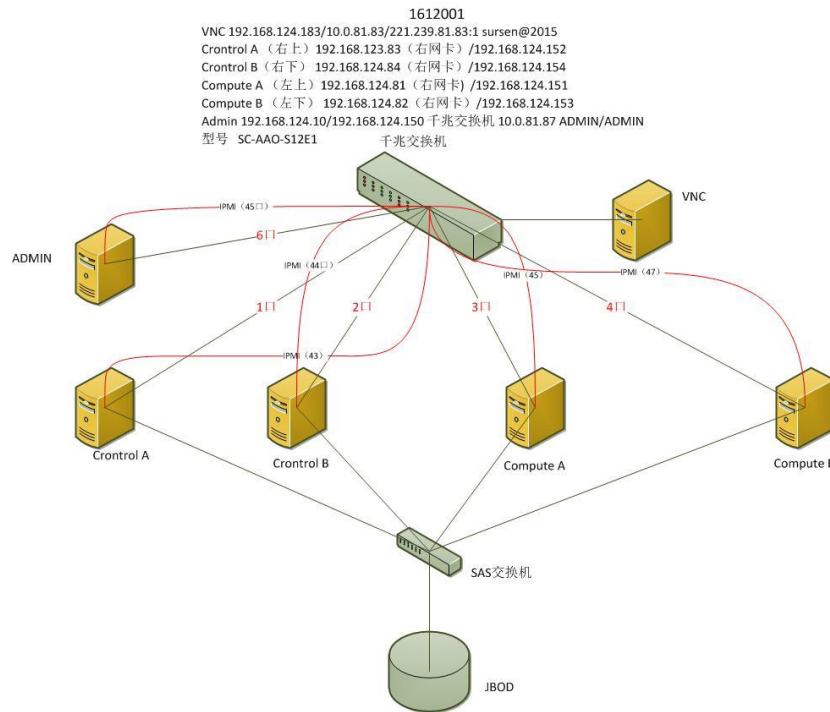
安装源节点

提供dns服务

Chef-server

非必须

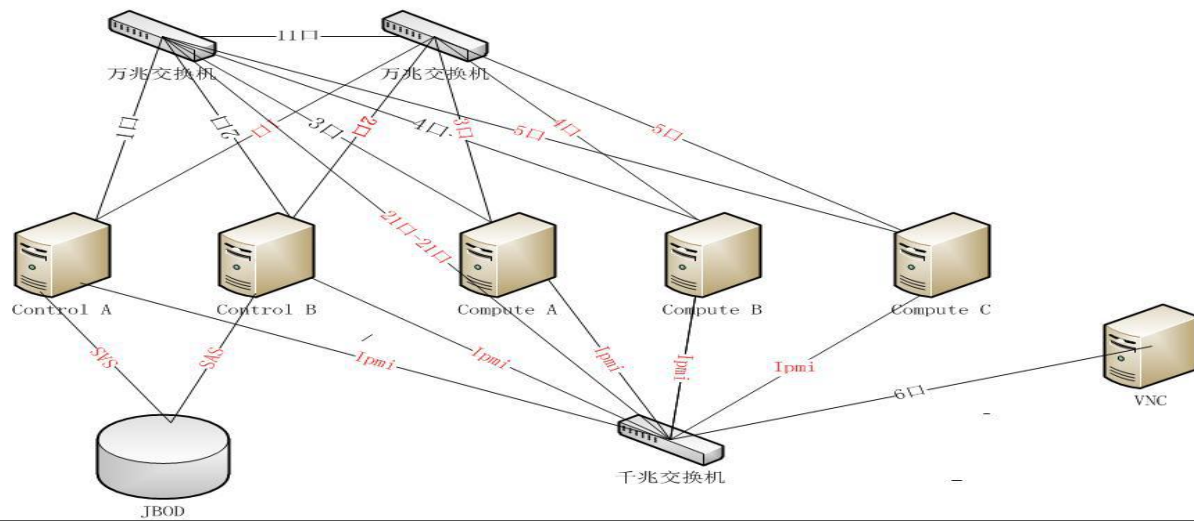
pxe-server



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-AA0-E10



Why Crowbar



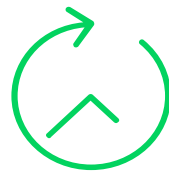
完全自动化
支持**OpenStack**大多数服务



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



NOVA



HORIZON



TROVE



MANILA



IRONIC



CINDER



KEYSTONE



HEAT



MAGNUM



GLANCE



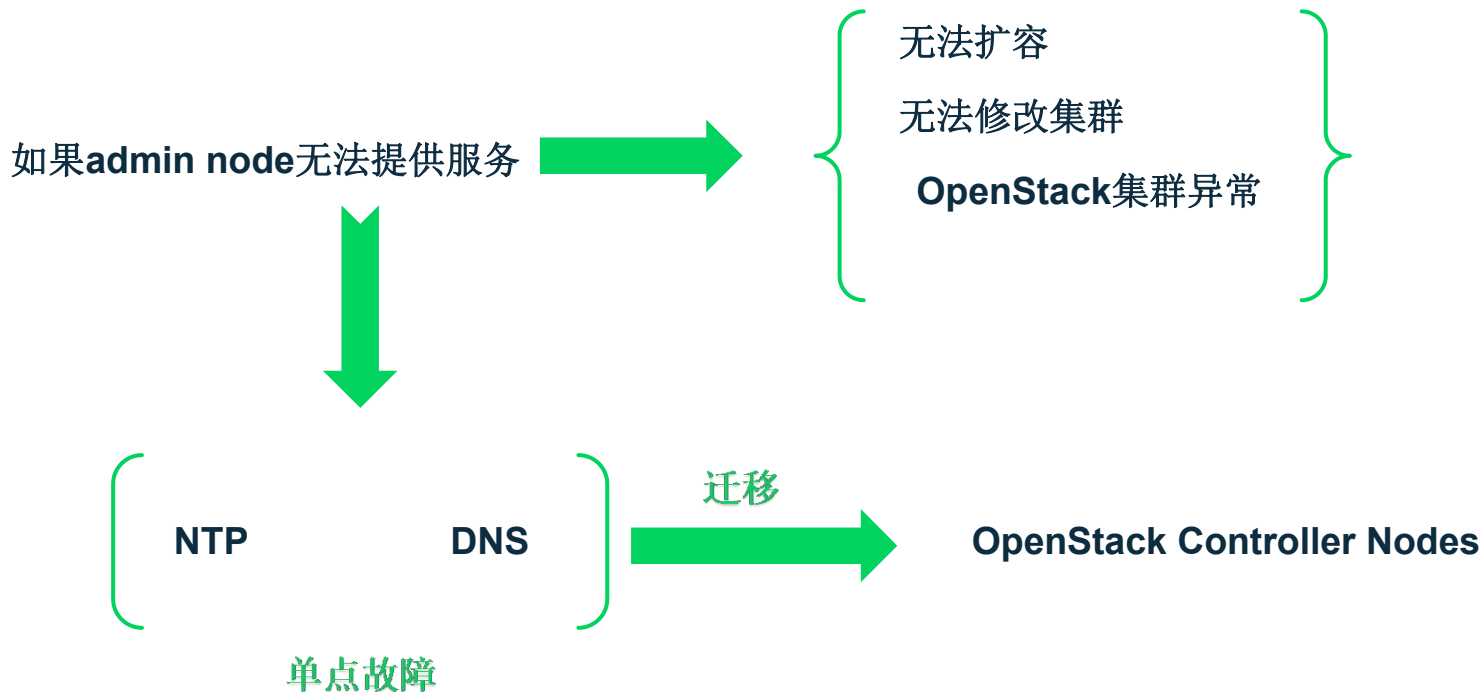
NEUTRON



Pacemaker



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

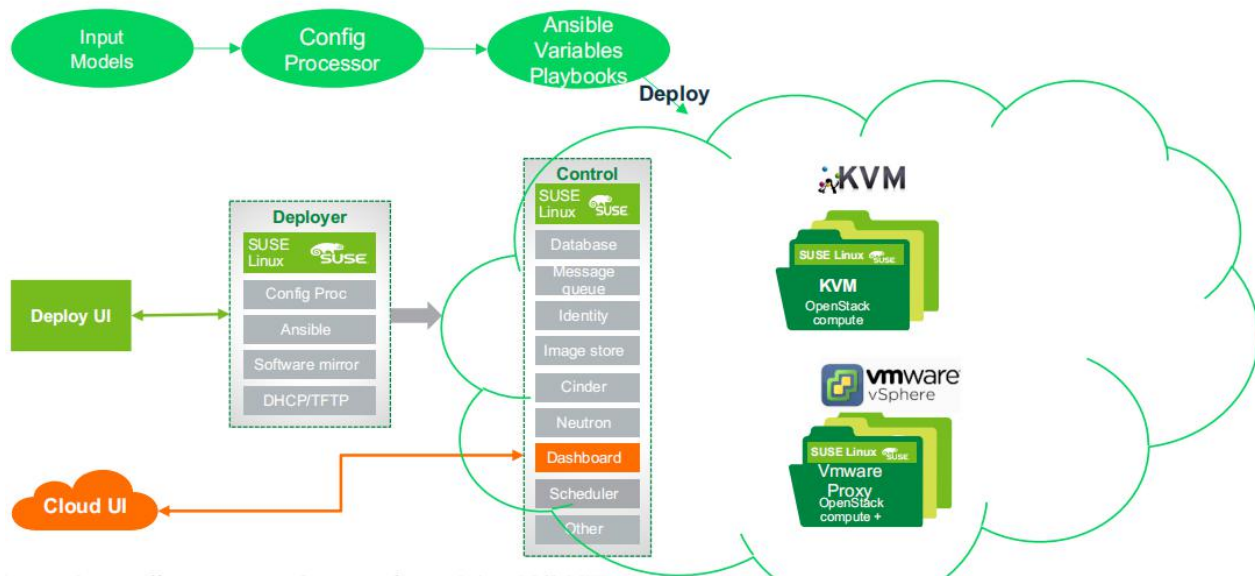
Control Plane

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

Input Model主要解决如下问题:

configuration processor 检查和配置Input Model

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?

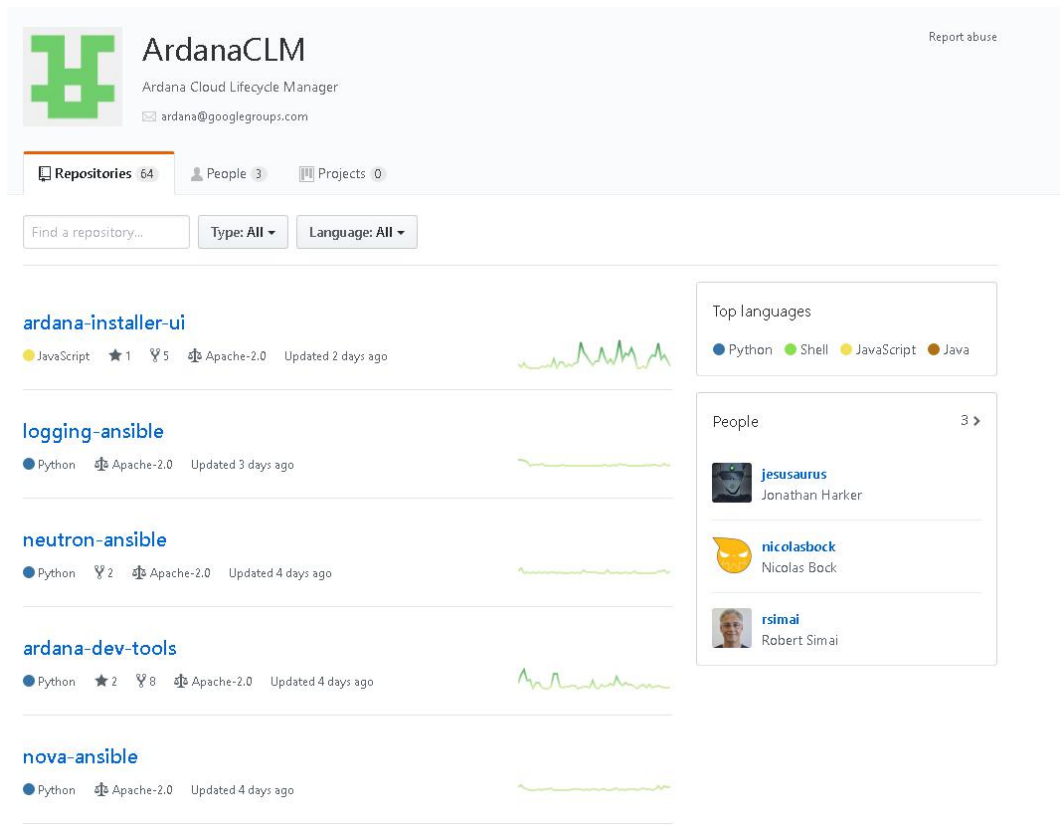
Why ardana

活跃社区支持

SUSE ALL IN

便捷的配置与管理

与Ansible无缝对接



The screenshot displays the GitHub profile for ArdanaCLM, which is described as 'Ardana Cloud Lifecycle Manager' with the email 'ardana@googlegroups.com'. The profile shows 64 repositories, 3 people, and 0 projects. Below the profile, there is a search bar and filters for repository type and language. The main content area lists several repositories with their respective languages, star counts, forks, and update dates:

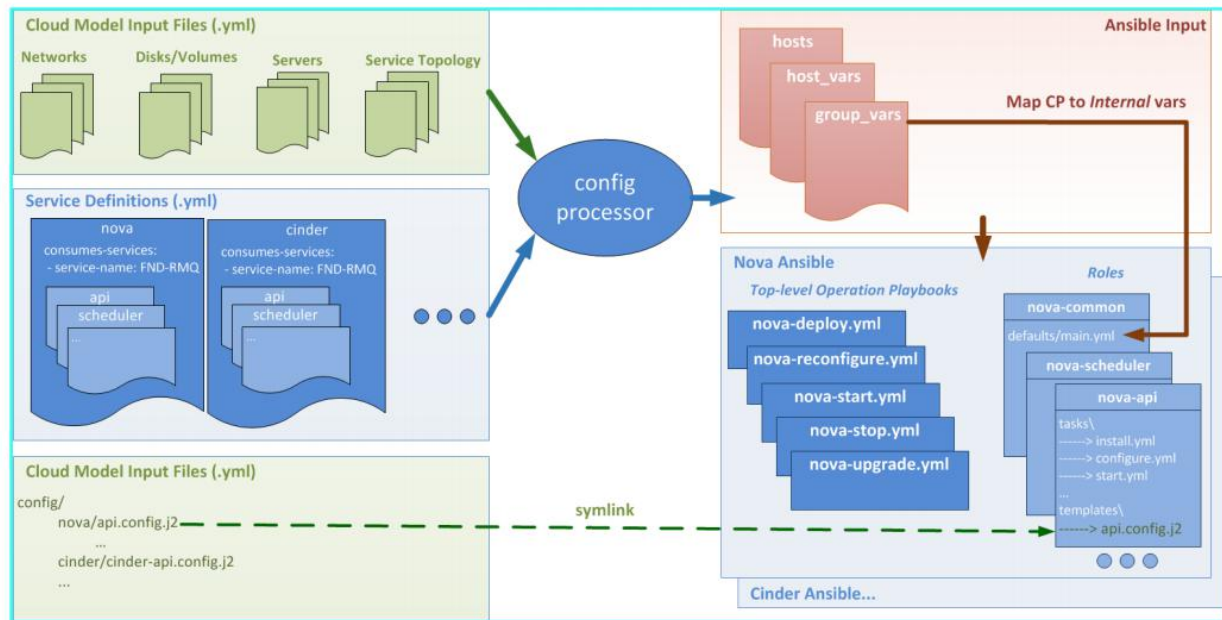
- ardana-installer-ui**: JavaScript, 1 star, 5 forks, updated 2 days ago.
- logging-ansible**: Python, updated 3 days ago.
- neutron-ansible**: Python, 2 stars, updated 4 days ago.
- ardana-dev-tools**: Python, 2 stars, 8 forks, updated 4 days ago.
- nova-ansible**: Python, updated 4 days ago.

On the right side, there are two sidebars. The 'Top languages' sidebar shows Python, Shell, JavaScript, and Java. The 'People' sidebar lists three contributors: Jesusaurus (Jonathan Harker), nicolasbock (Nicolas Bock), and rsimai (Robert Simai).

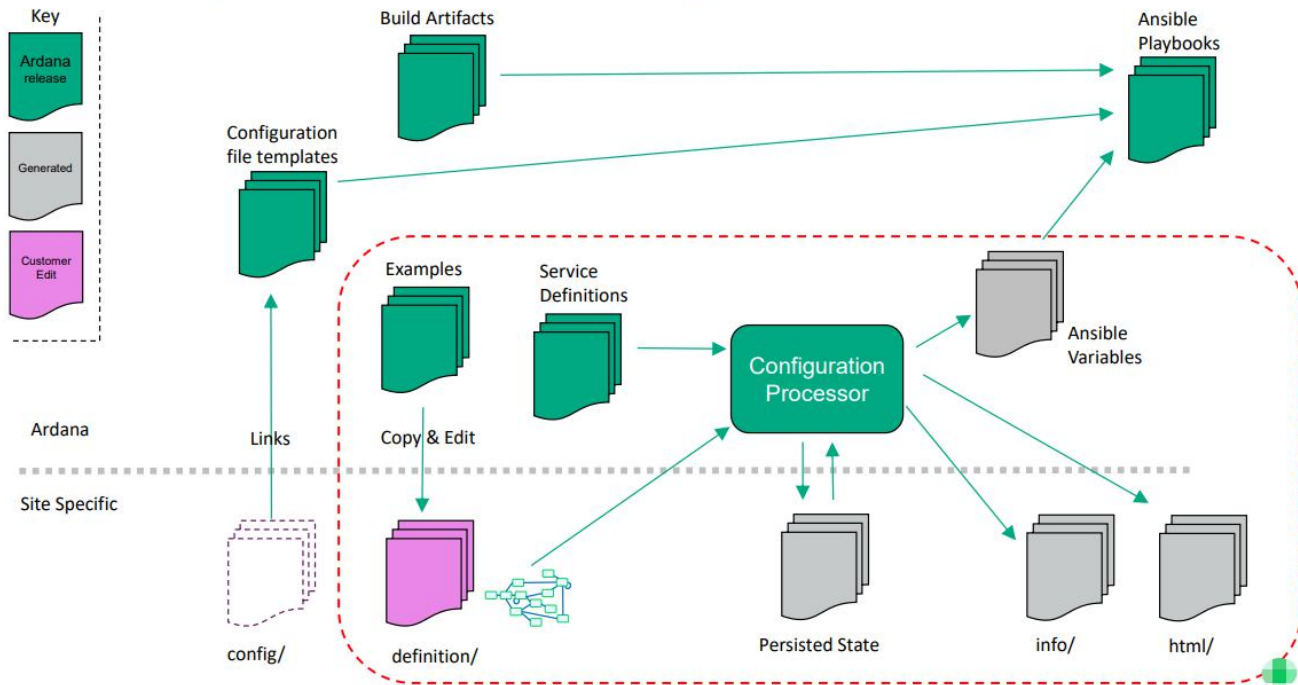
Ansible集成

config processor为ansible
提供yaml文件

config processor为ansible
提供yaml文件



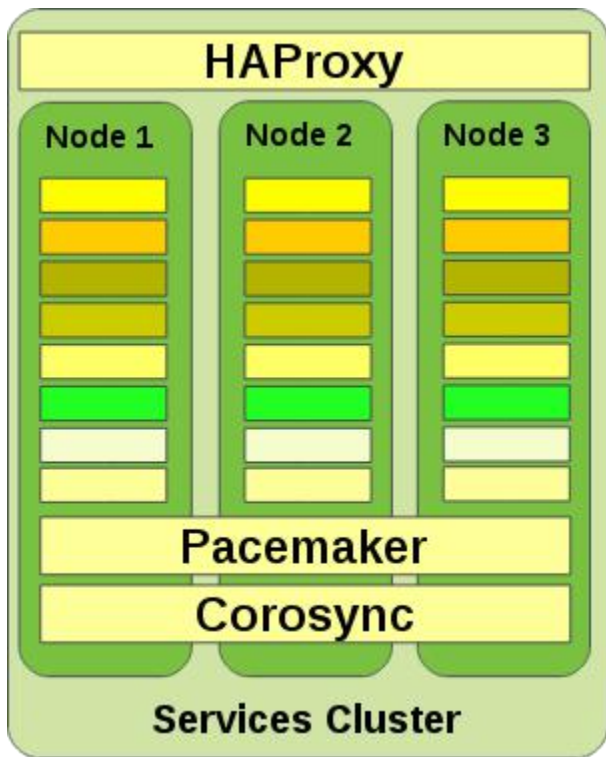
配置处理流程



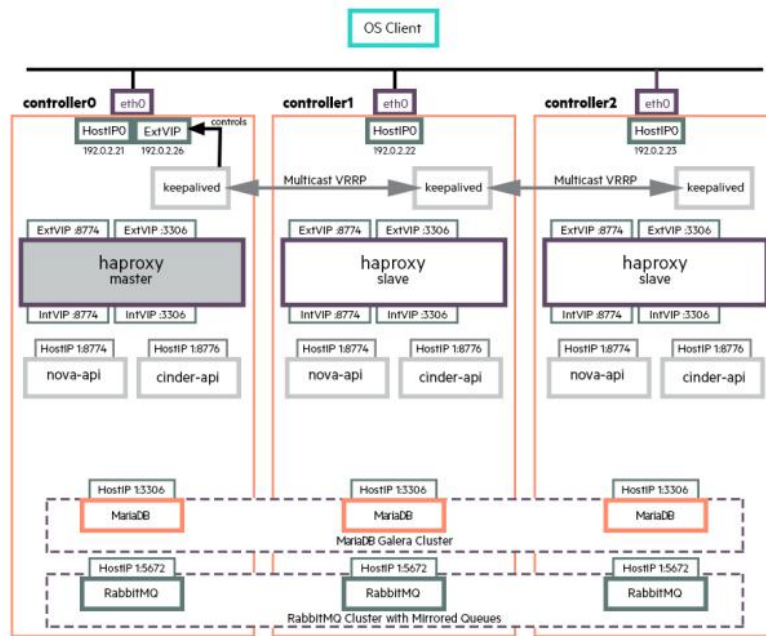
Crowbar & Ardana比较

	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
Cro wbar	低	低	是	高	优	否	否	中低 级
Arda na	高	高	否	低	一般	是	是	中高 级

Crowbar & Ardana HA比较



Crowbar



Ardana(CLM)

Questions



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