# 部署企业级 OpenStack

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# OpenStack 的痛点

"OpenStack is…consistently recognized as overly complex to configure, deploy and upgrade.“ 451 Research Feb 2015

"OpenStack 被一直认为很难部署、配置和升级 “ 451 Research Feb 2015

**用户需求： 企业级 !!!**

# 用户对企业级 OpenStack 需求

- 自主可控的云平台，不受制于人
  - 硬件选择的自由
  - 异构 Hypervisor 支持 : VMWare, KVM/Xen, Docker
  - 软件平台不会变成非 xxx 不可
- 平台安全稳定，能够支持商用
  - 稳定基础平台 : OS, Hypervisor, Storage, Networking(NFV)
  - 排出所有 openstack 上遇到的坑，让系统跑起来
  - 长期、大规模使用不会出大事
  - 即便出了事，能及时恢复
  - 平台能够跟随 openstack 社区升级，享受社区红利
- 功能上能满足业务、管理、维护的需要
  - 能够实现个性化的需求
  - 能够为业务流程进行系统优化和配置
  - 能够纳入日常维护体系

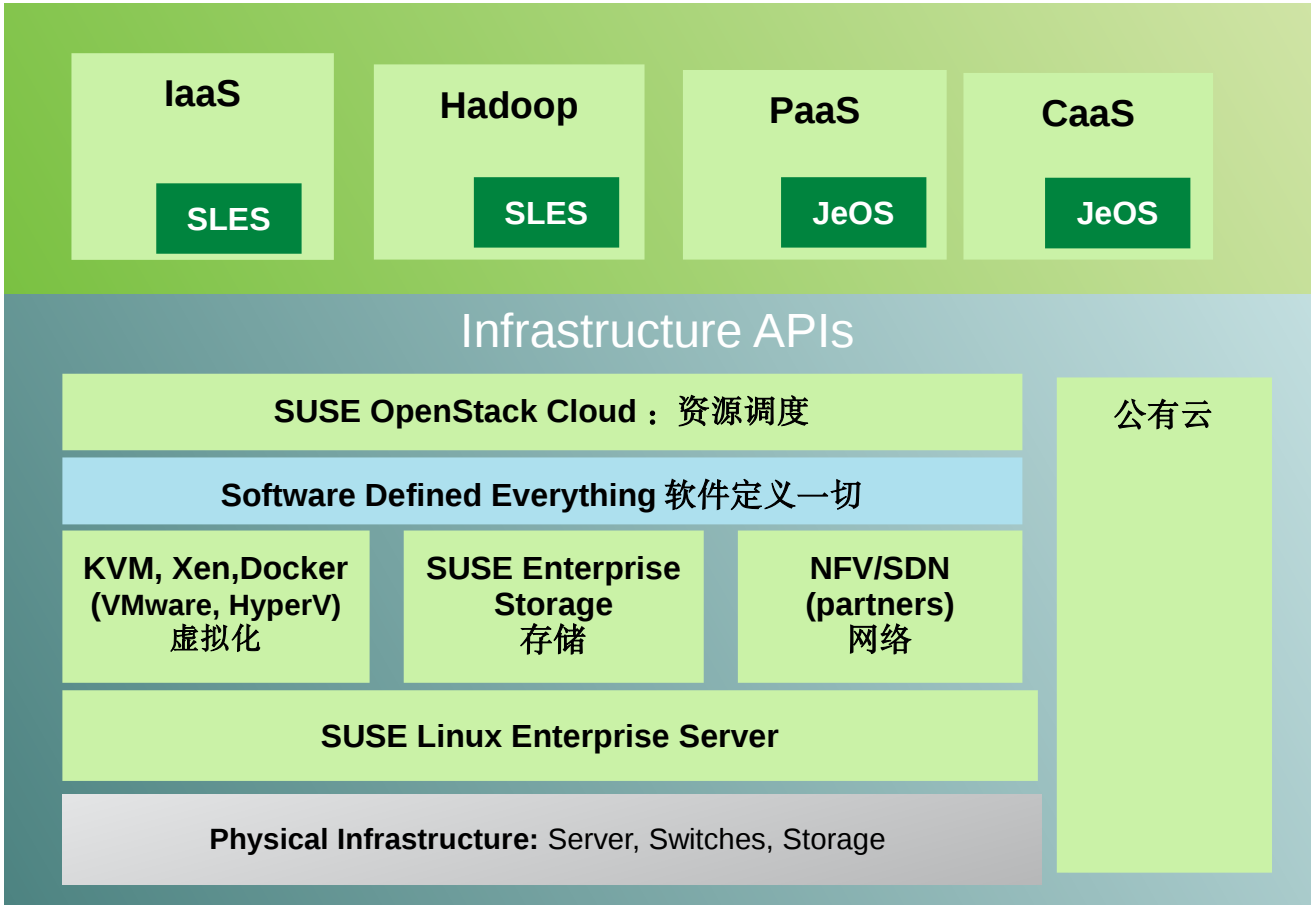
- 兼容性
- 依赖程度

- 懂系统
- 稳定性
- Bug 修复
- 可升级

- 定制
- 调优
- 日常维护

# 稳定可靠基础架构
# SUSE OpenStack Cloud

管理
- SUSE Manager: 监控和补丁
- SUSE Studio: 镜像
- SaltStack: 配置管理



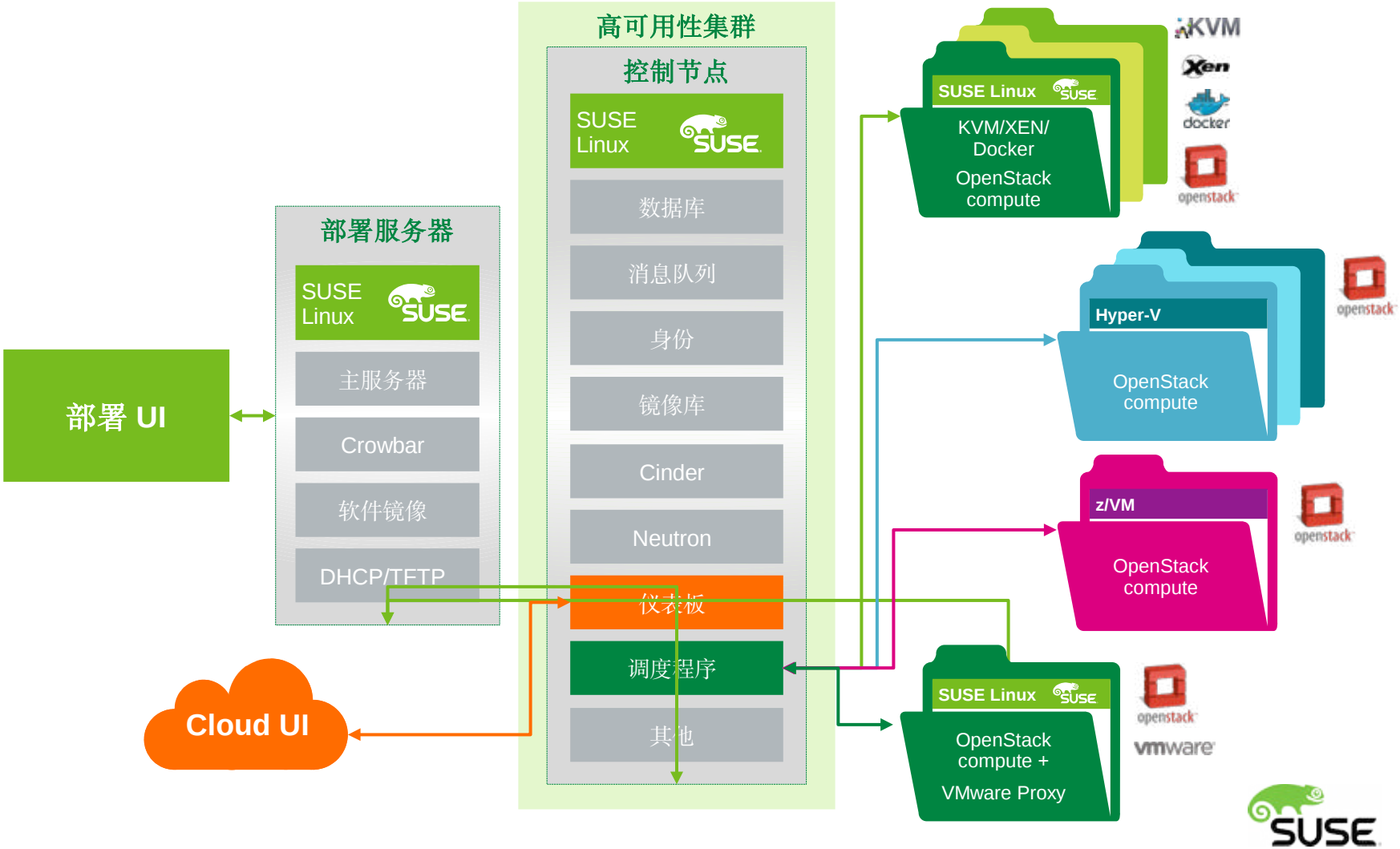

提供计算、存储、网络、管理完整的解决方案

# 兼容性 - 不被厂家锁定

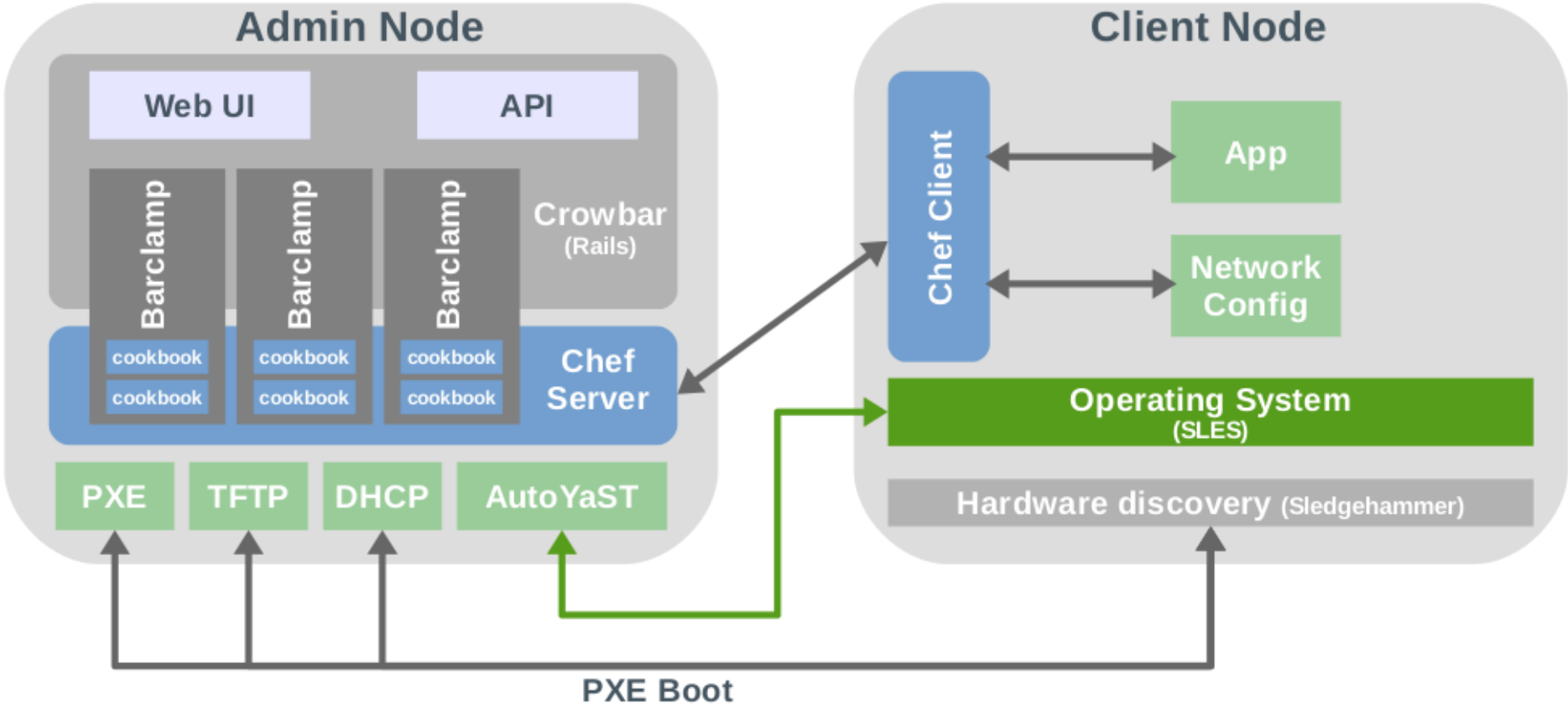
- 确保主流硬件兼容性
- 确保虚拟化 Hypervisor 与 VM 的兼容性支持
- 兼容多种后台存储方案
- 兼容多种网络方案

# 灵活成熟的部署架构

# SUSE OpenStack Cloud
# 灵活成熟的部署架构



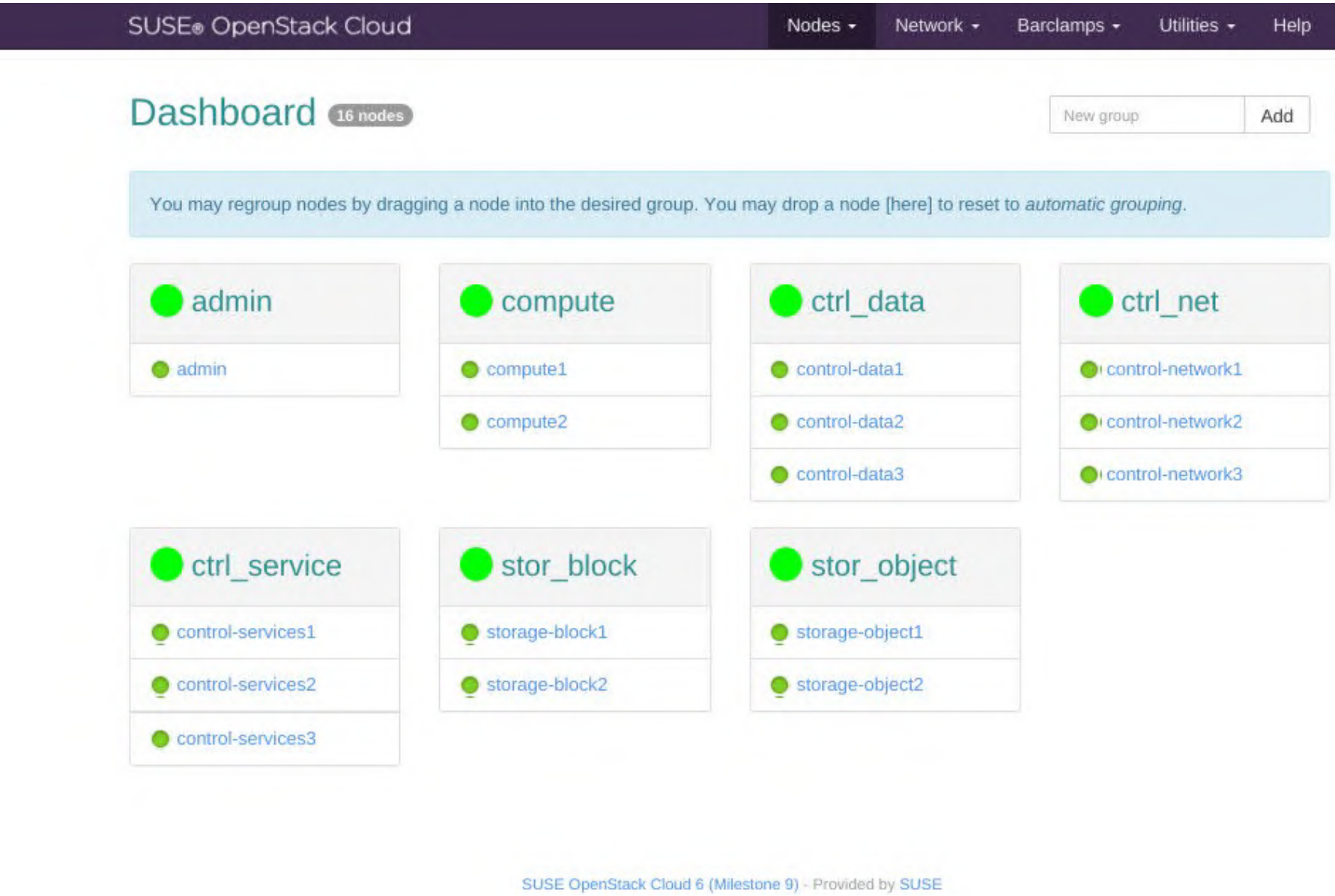
# 部署架构 Crowbar + Chef



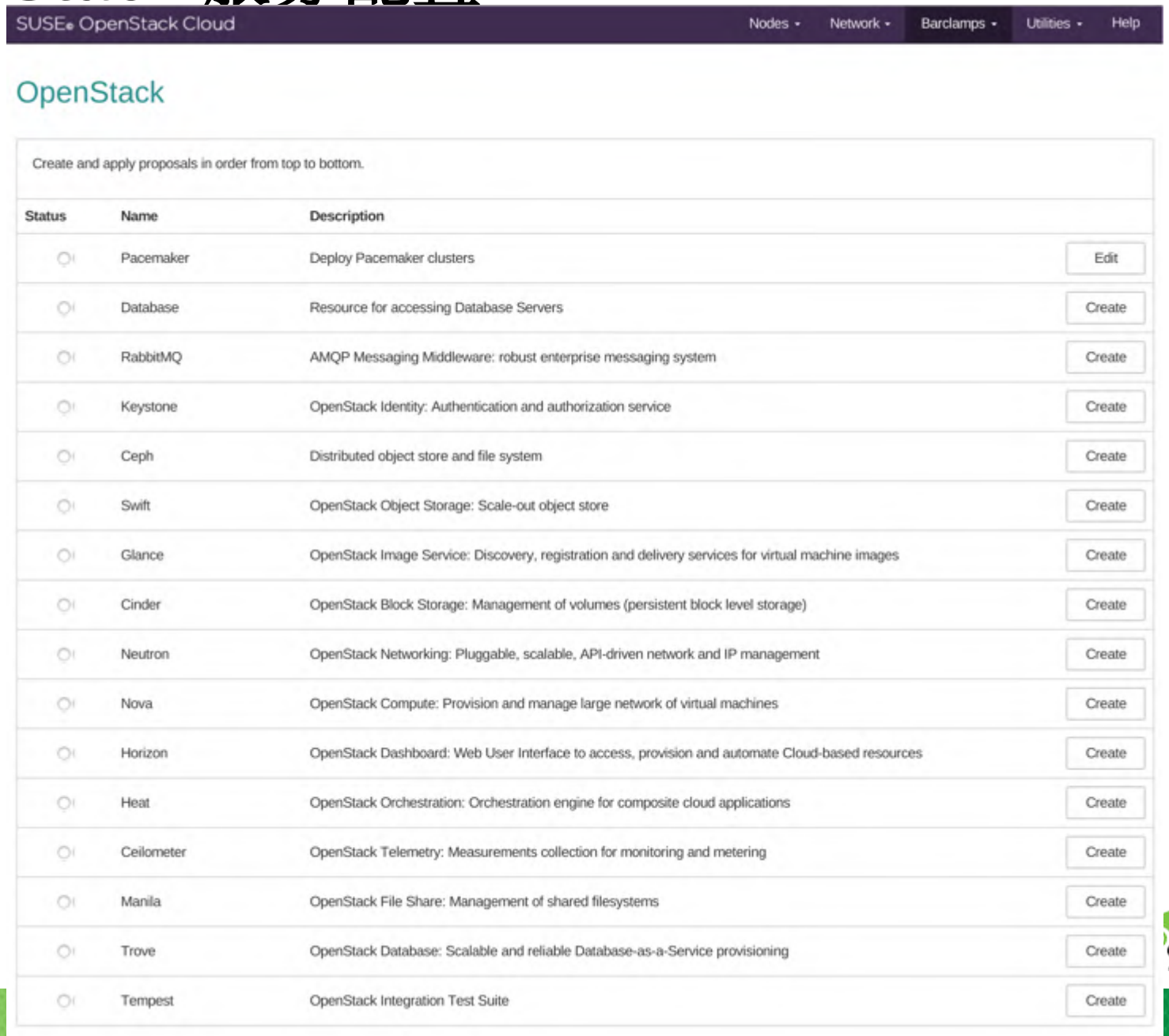

- 硬件发现
- Firmware 更新

- 裸机管理、安装
- 服务安装配置

# 节点的安装部署

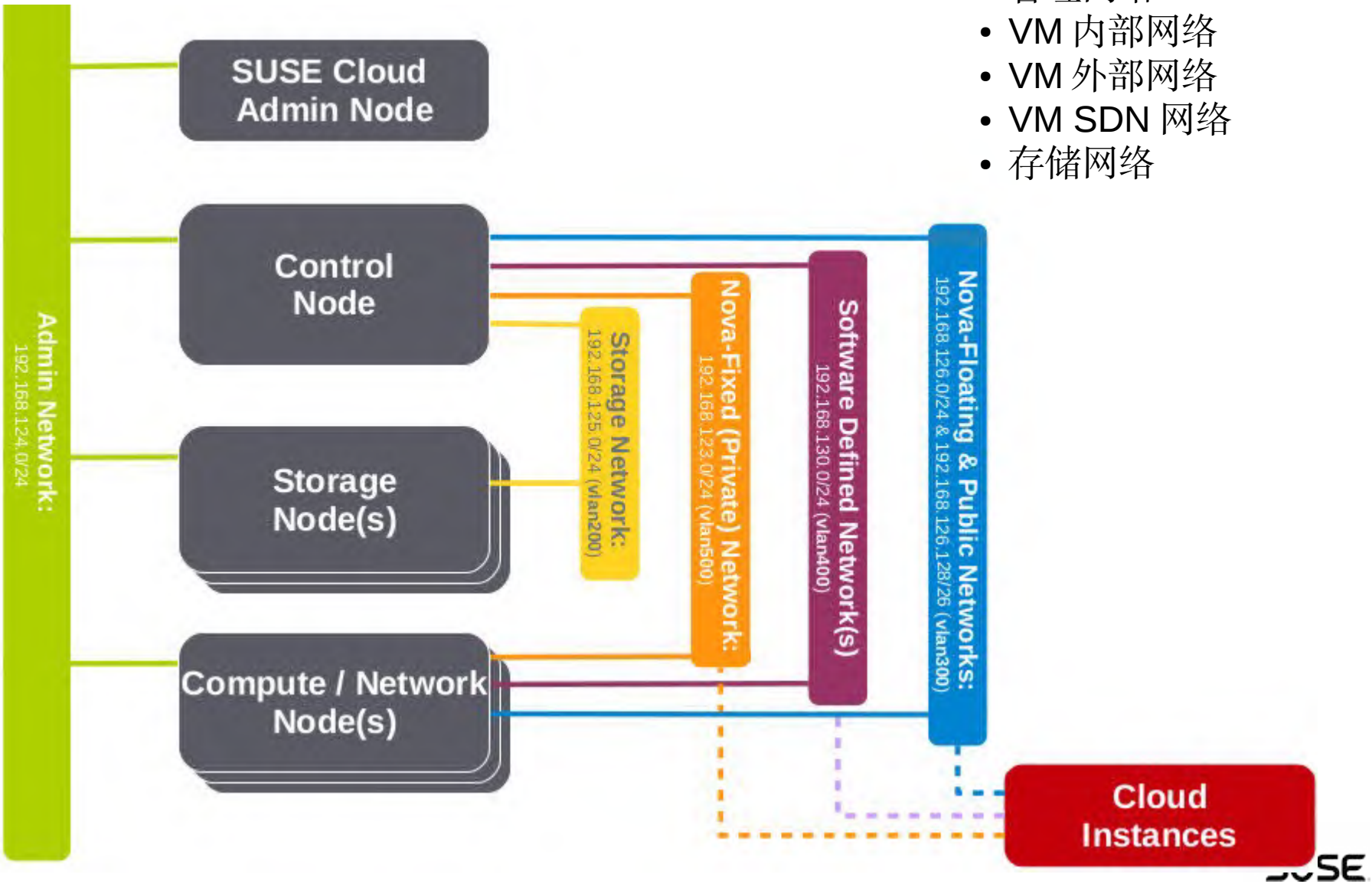

SUSE® OpenStack Cloud
Nodes
Network
Barclamps
Utilities
Help
Dashboard
16 nodes
New group
Add
You may regroup nodes by dragging a node into the desired group. You may drop a node [here] to reset to automatic grouping.
admin
admin
compute
compute1
compute2
ctrl_data
control-data1
control-data2
control-data3
ctrl_net
control-network1
control-network2
control-network3
ctrl_service
control-services1
control-services2
control-services3
stor_block
storage-block1
storage-block2
stor_object
storage-object1
storage-object2
SUSE OpenStack Cloud 6 (Milestone 9) - Provided by SUSE

# OpenStack 服务配置

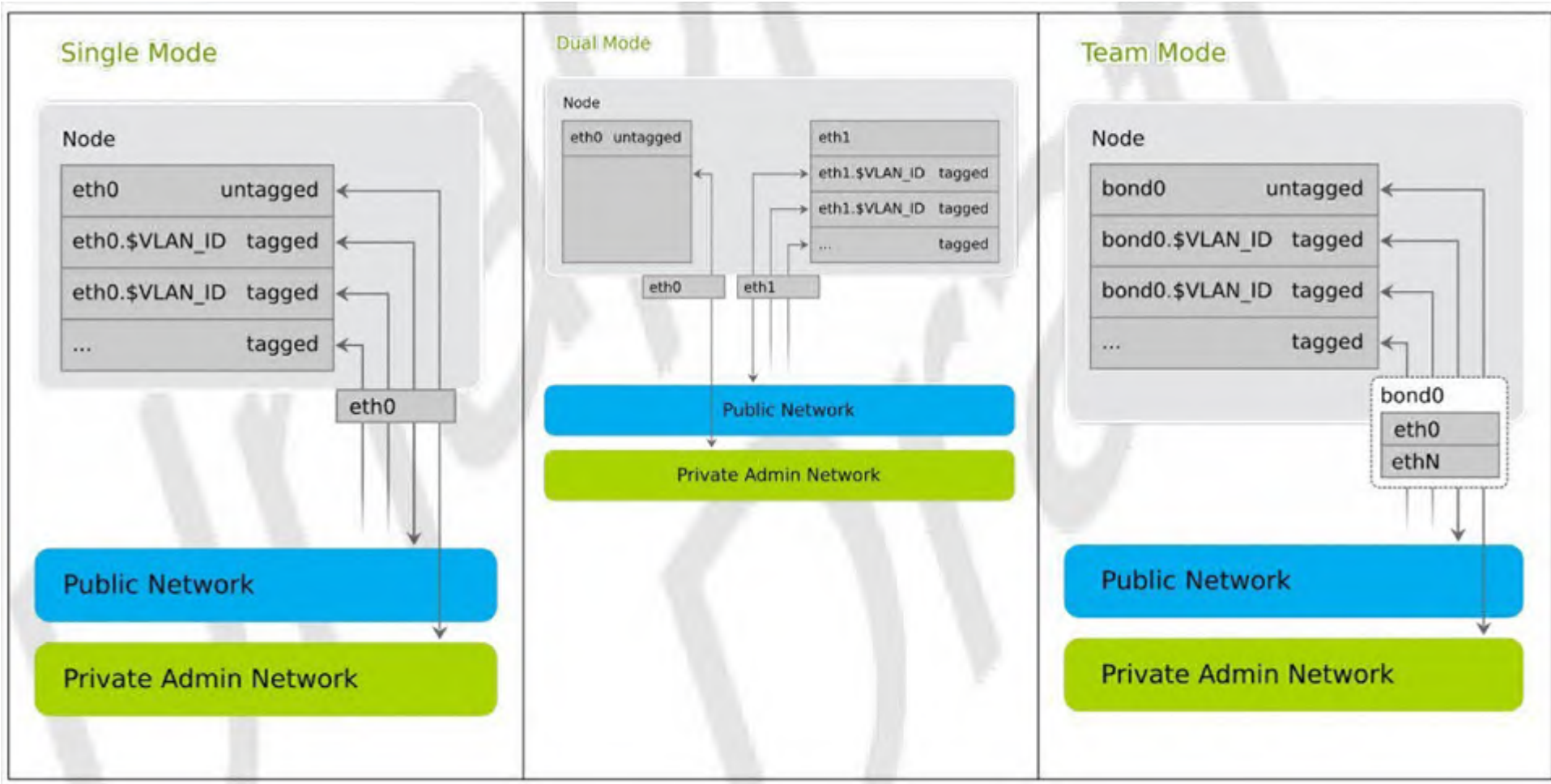


# 网络规划

- 管理网络
- VM 内部网络
- VM 外部网络
- VM SDN 网络
- 存储网络



# 多种网络配置模式

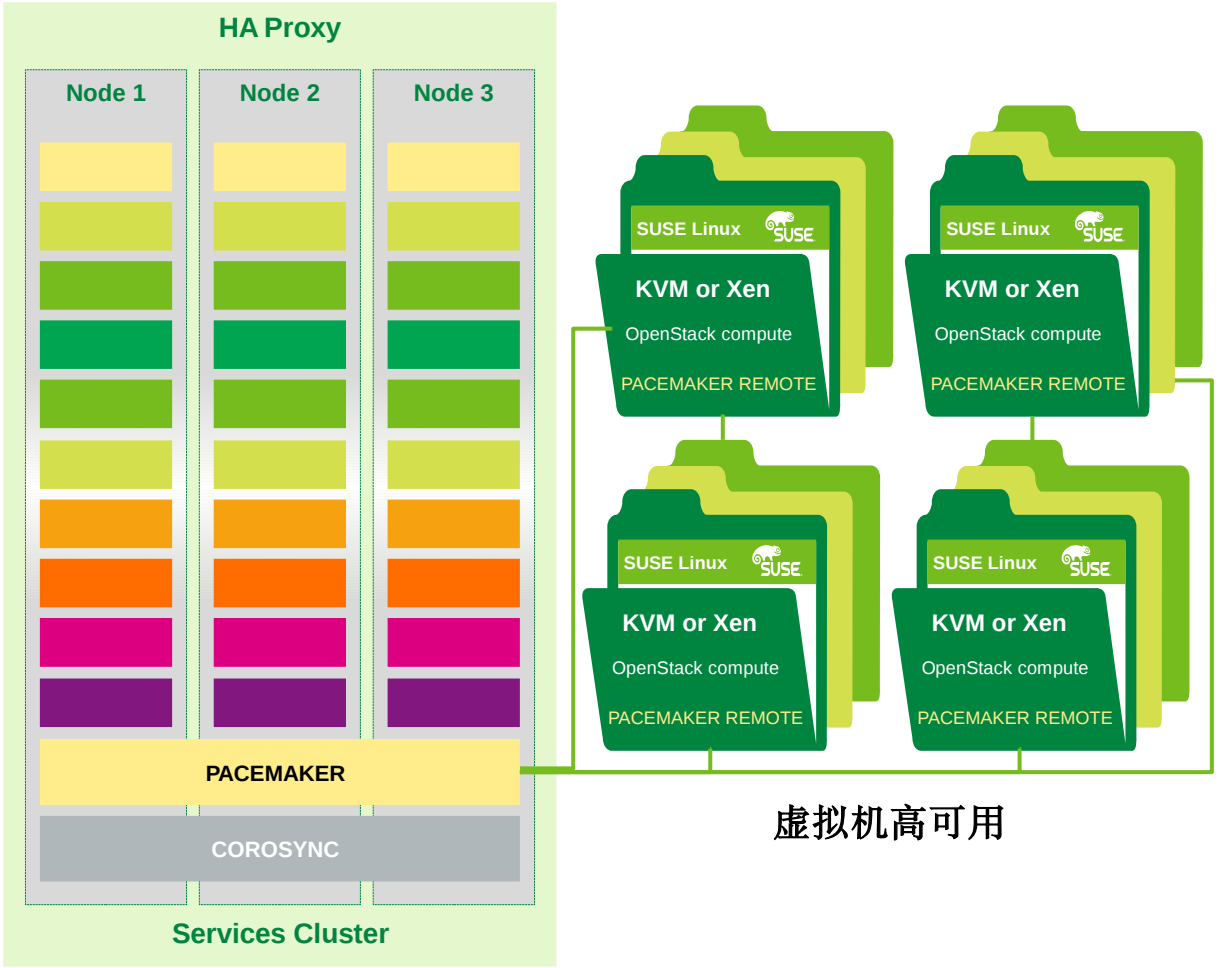

Single Mode
Node
eth0 untagged
eth0.$VLAN_ID tagged
eth0.$VLAN_ID tagged
... tagged
eth0
Public Network
Private Admin Network
Dual Mode
Node
eth0 untagged
eth1
eth1.$VLAN_ID tagged
eth1.$VLAN_ID tagged
... tagged
eth0
eth1
Public Network
Private Admin Network
Team Mode
Node
bond0 untagged
bond0.$VLAN_ID tagged
bond0.$VLAN_ID tagged
... tagged
bond0
eth0
ethN
Public Network
Private Admin Network

# 企业级高可用

# SUSE OpenStack Cloud 高可用特性

- 基于成熟的 SUSE HA 套件 : Corosync+Pacemaker
  - 由 SUSE 主要维护
- Many Bugs Fixed
- HA 组件更好协同
- DRBD 支持（不需要共享存储）
- 计算节点 HA 增强
- 容易部署
- 容易管理和监控 Web UI

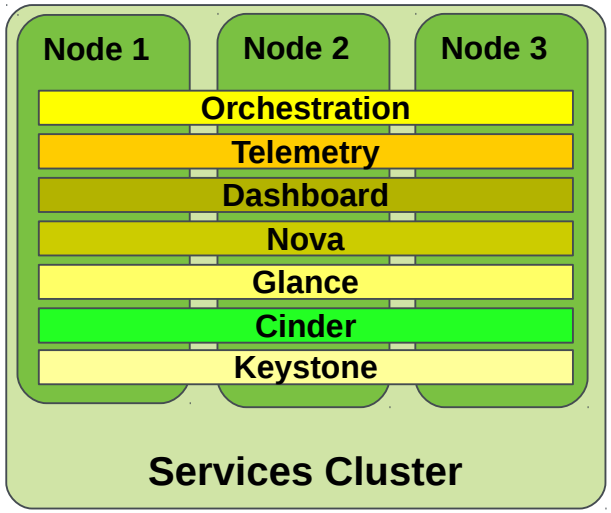
# 高可用增强： 7x24 连续不 Down 机

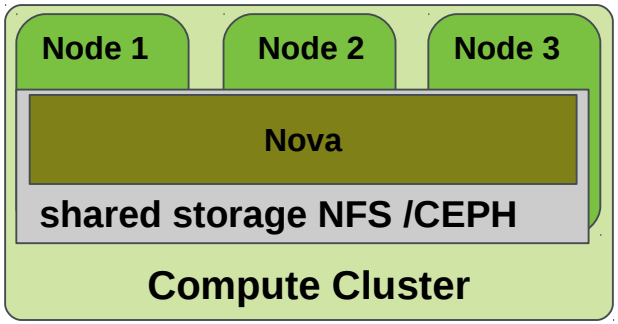


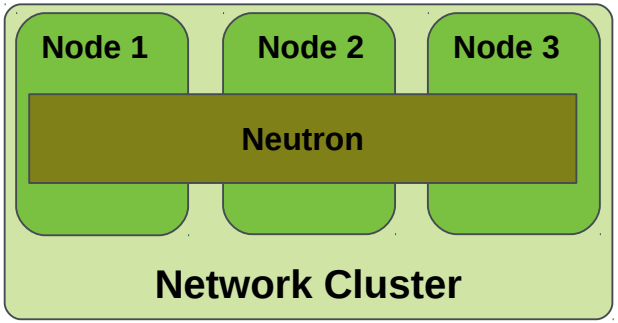

控制节点高可用

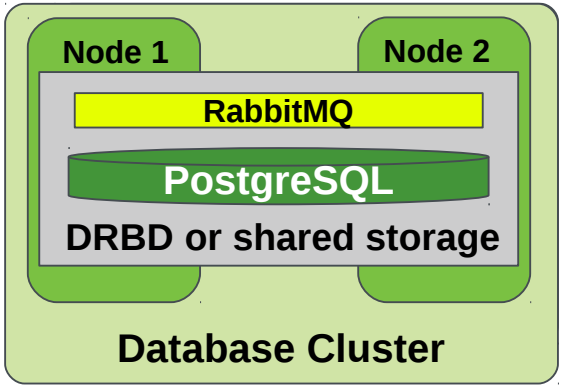
虚拟机高可用

# 推荐架构

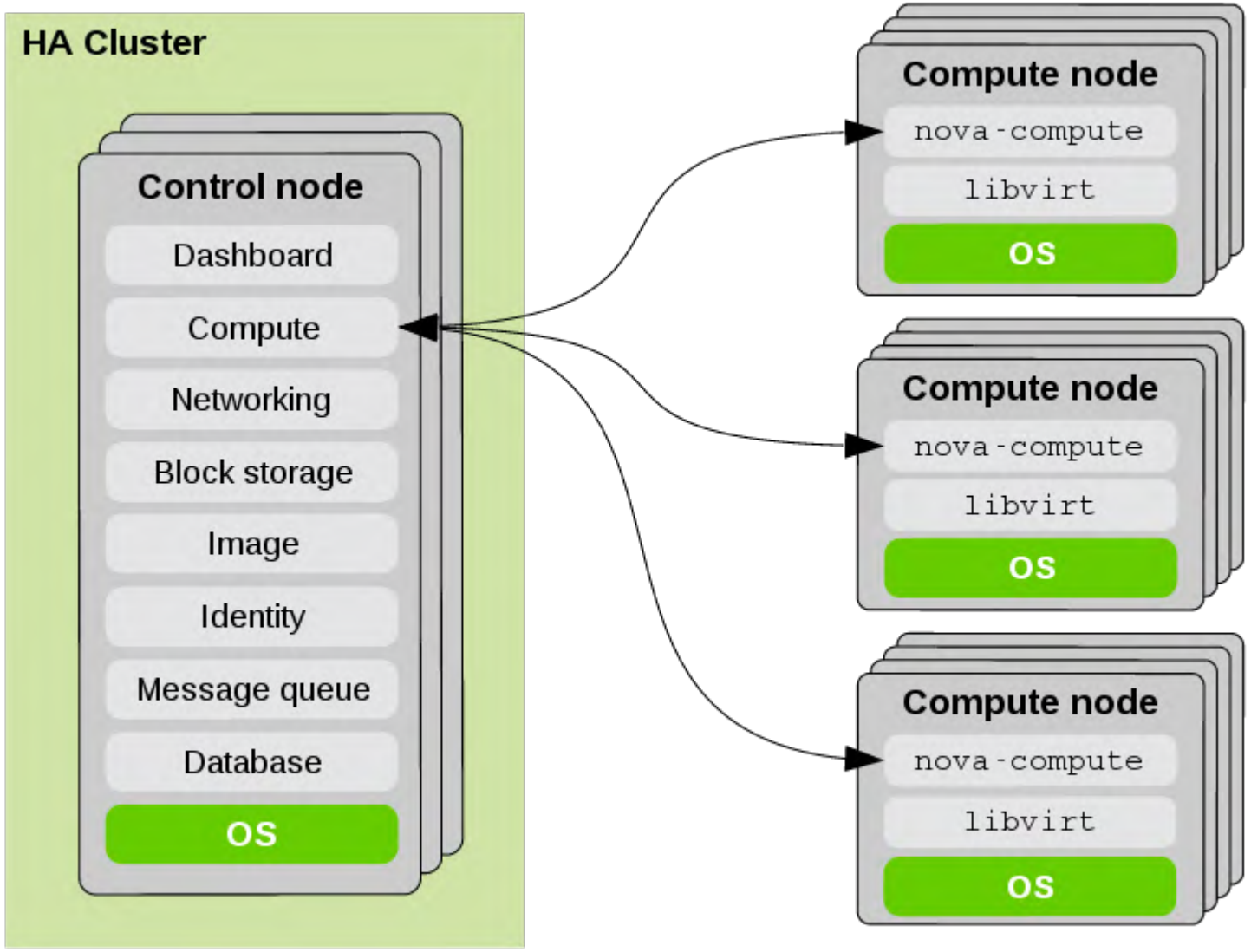

Node 1
Node 2
Node 3
Orchestration
Telemetry
Dashboard
Nova
Glance
Cinder
Keystone
Services Cluster


Node 1
Node 2
Node 3
Nova
shared storage NFS /CEPH
Compute Cluster

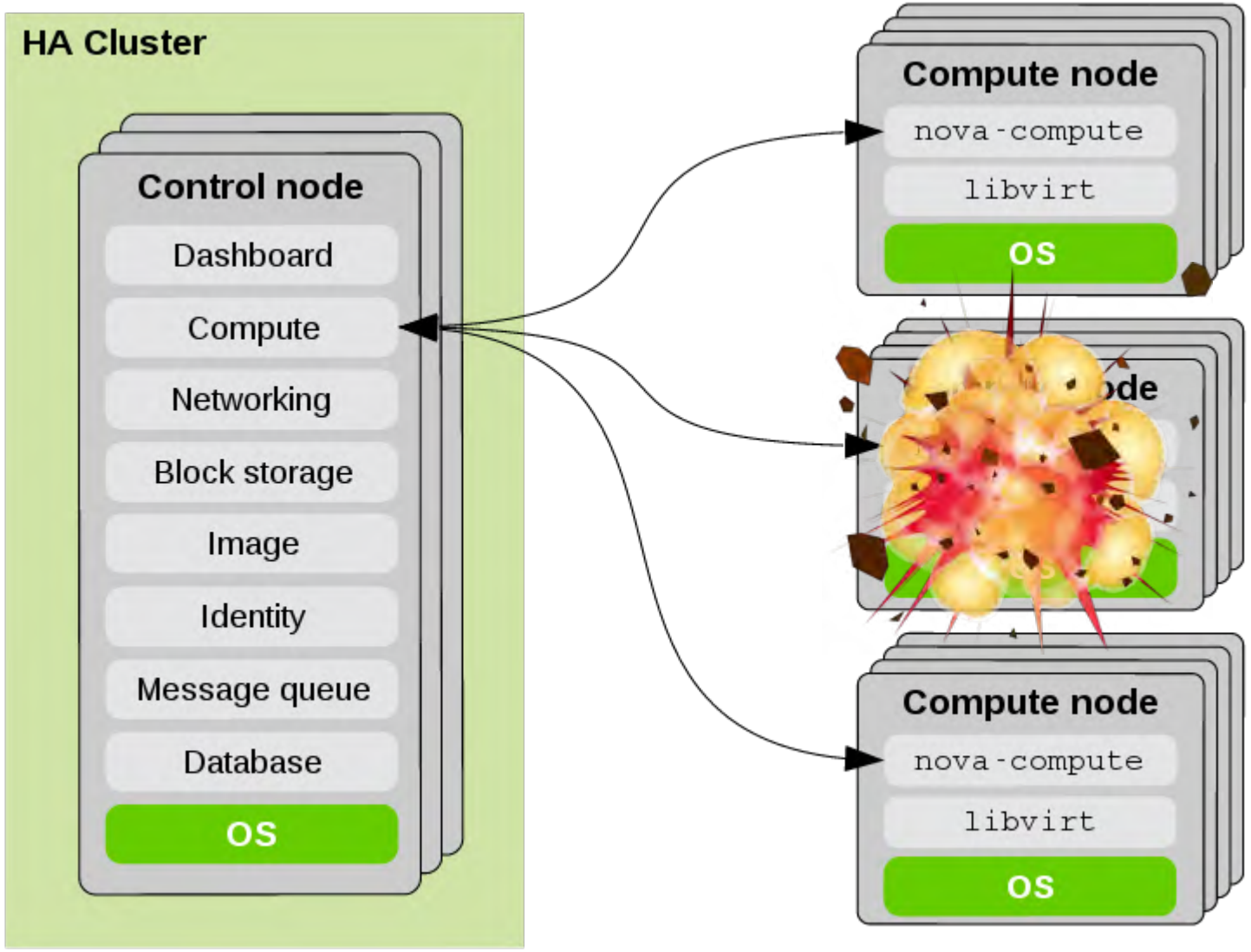

Node 1
Node 2
Node 3
Neutron
Network Cluster


Node 1
Node 2
RabbitMQ
PostgreSQL
DRBD or shared storage
Database Cluster

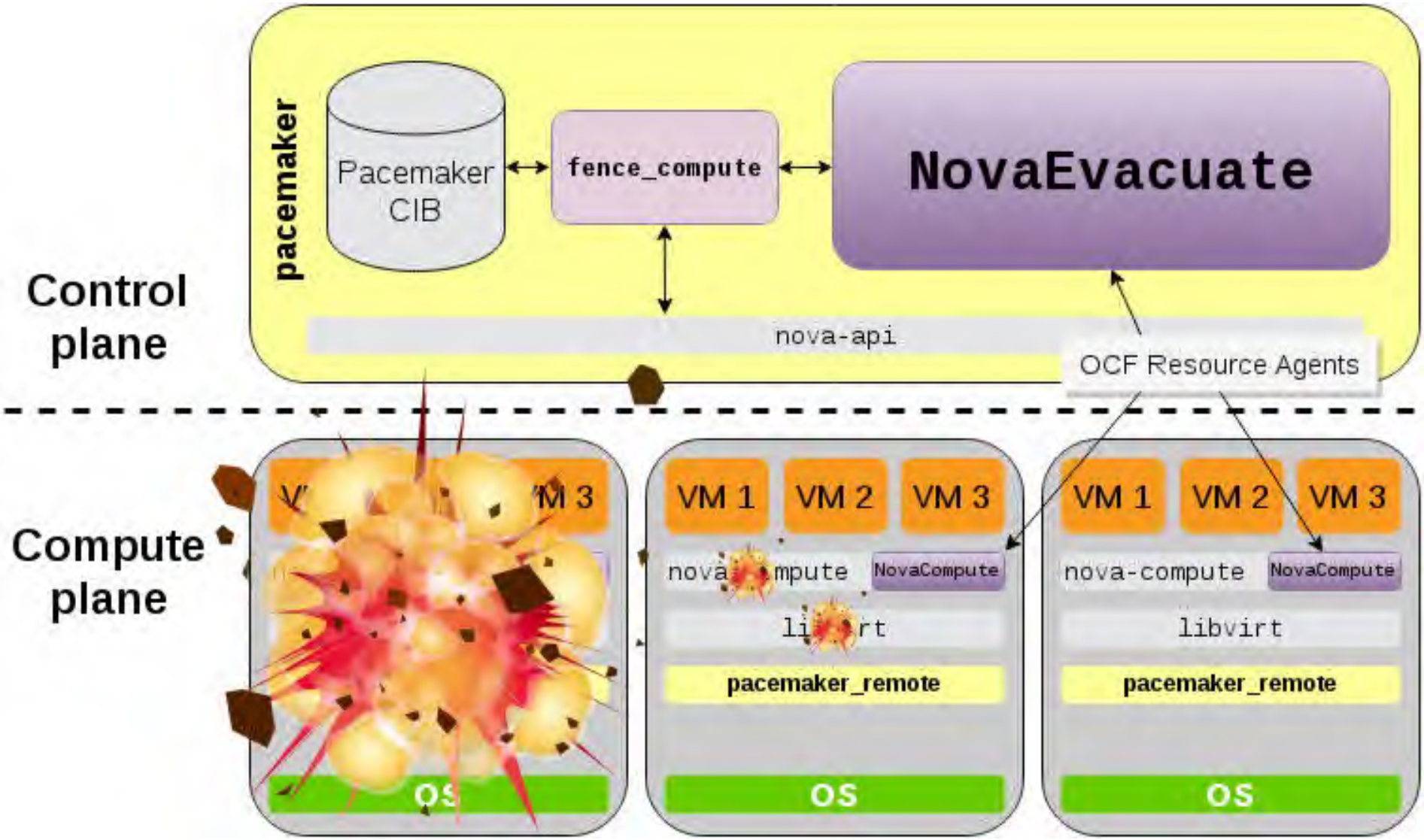
# 计算节点 HA


HA Cluster
Control node
Dashboard
Compute
Networking
Block storage
Image
Identity
Message queue
Database
OS
Compute node
nova-compute
libvirt
OS
Compute node
nova-compute
libvirt
OS
Compute node
nova-compute
libvirt
OS

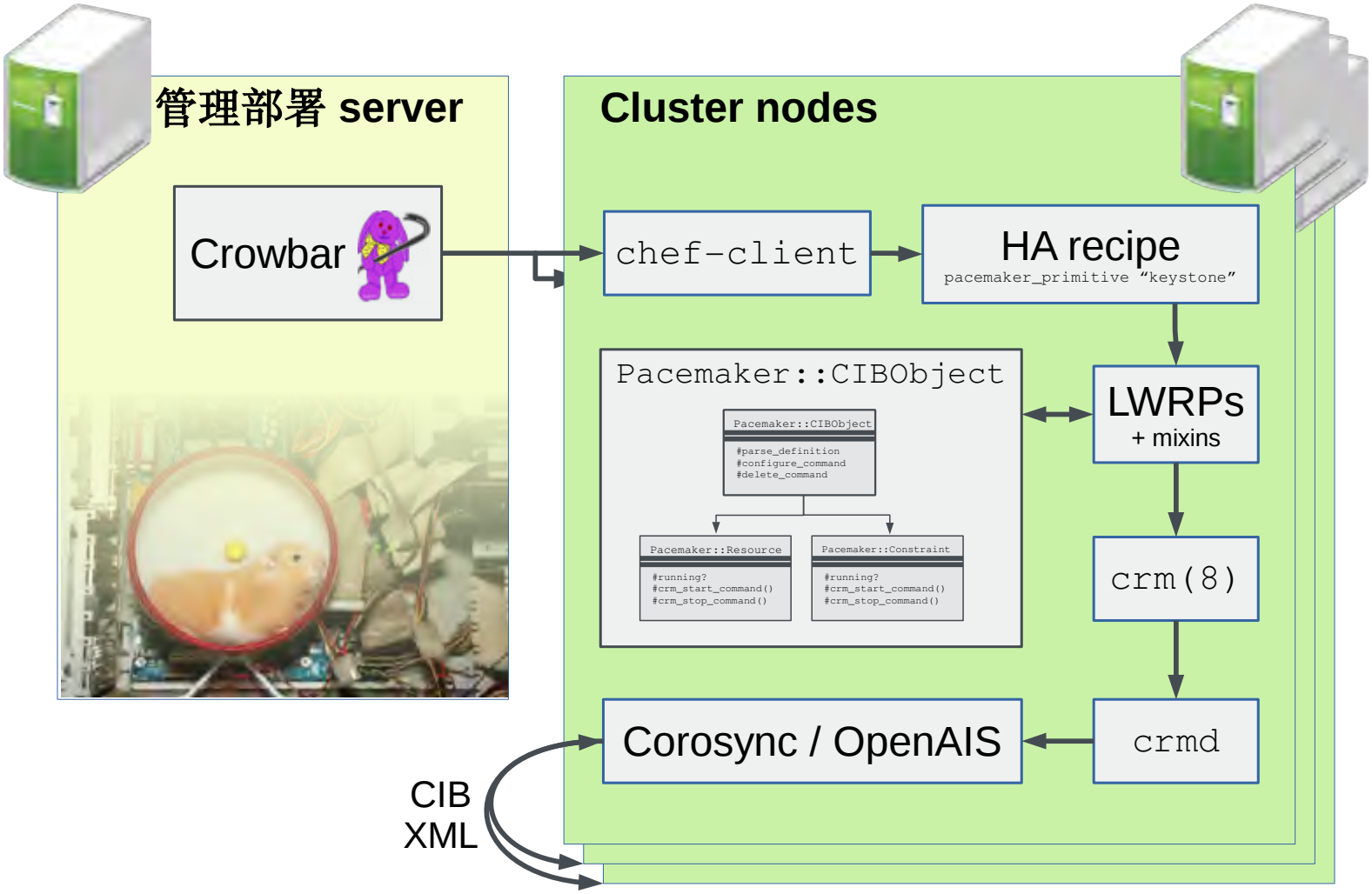
# 计算节点 HA


HA Cluster
Control node
Dashboard
Compute
Networking
Block storage
Image
Identity
Message queue
Database
OS
Compute node
nova-compute
libvirt
OS
Compute node
nova-compute
libvirt
OS

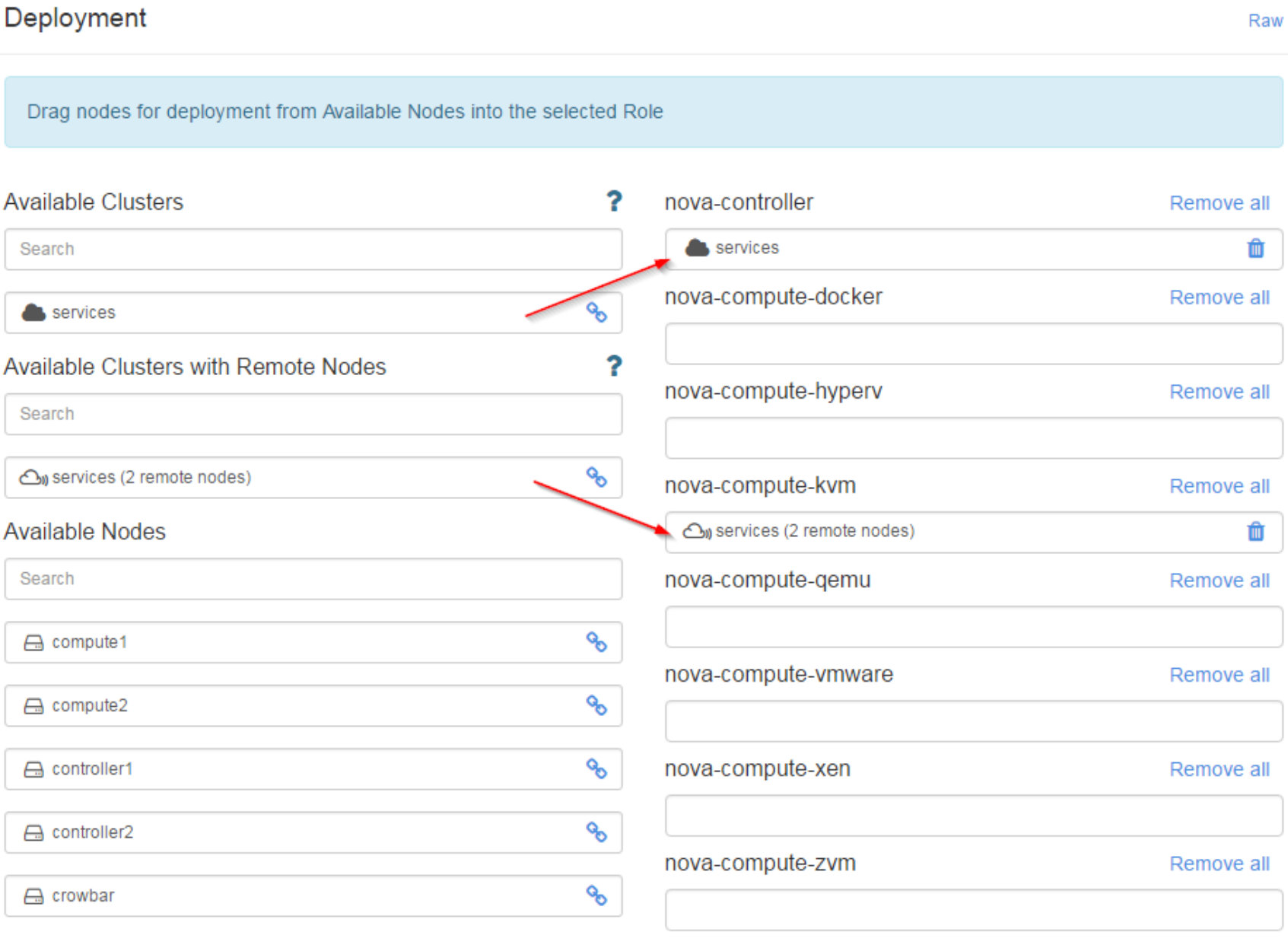
# 计算节点 HA 内部架构：NovaCompute / NovaEvacuate OCF



# SUSE Cloud HA 部署架构



# Nova 高可用部署

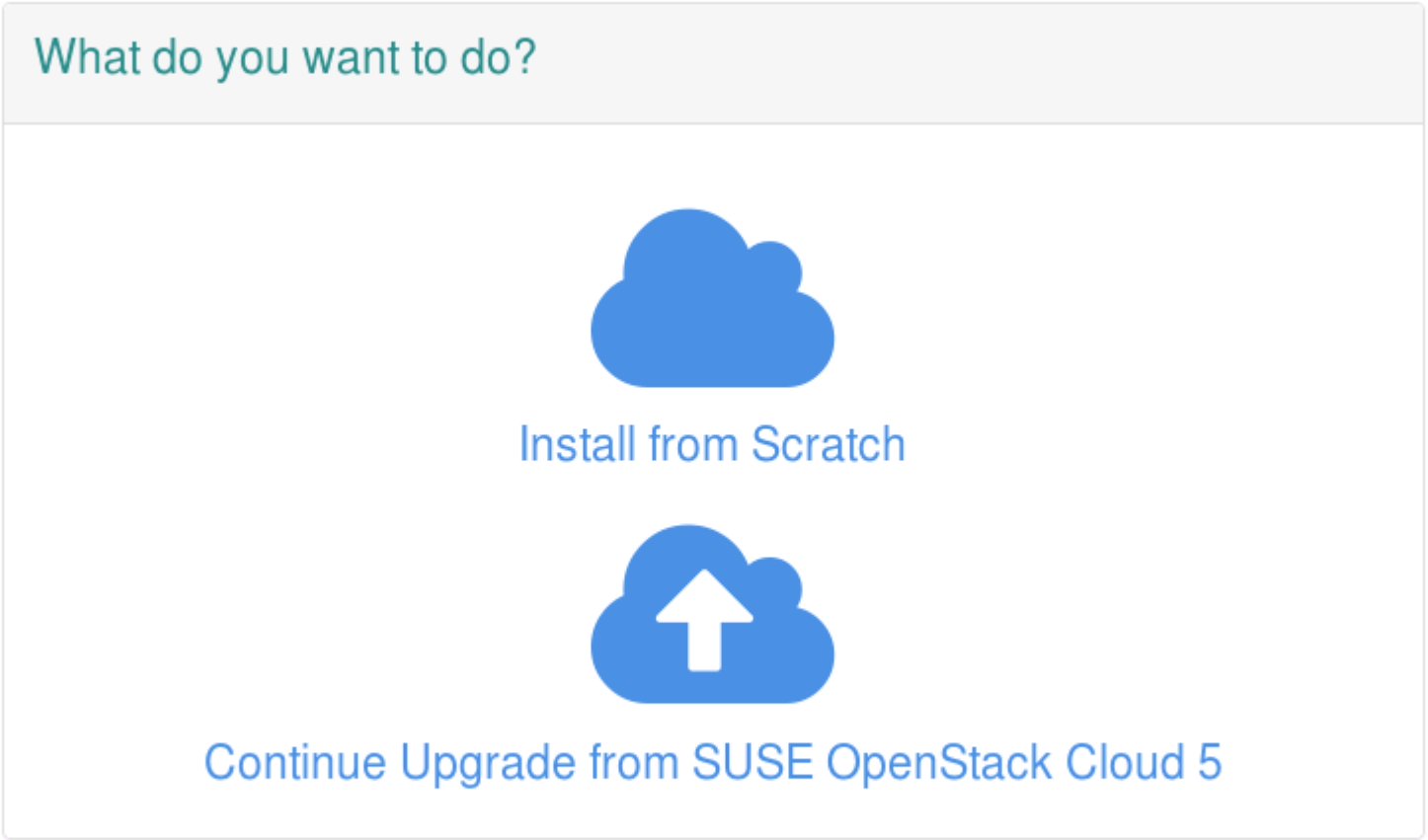

Deployment
Raw
Drag nodes for deployment from Available Nodes into the selected Role
Available Clusters
Search
services
Available Clusters with Remote Nodes
Search
services (2 remote nodes)
Available Nodes
Search
compute1
compute2
controller1
controller2
crowbar
nova-controller
Remove all
services
nova-compute-docker
Remove all
nova-compute-hyperv
Remove all
nova-compute-kvm
Remove all
services (2 remote nodes)
nova-compute-qemu
Remove all
nova-compute-vmware
Remove all
nova-compute-xen
Remove all
nova-compute-zvm
Remove all

# 平滑升级

# 升级步骤

- OpenStack 版本升级
- 操作系统升级
- Ceph 升级

# 在线平滑的版本升级


What do you want to do?
Install from Scratch
Continue Upgrade from SUSE OpenStack Cloud 5

# 企业级 SUSE OpenStack Cloud 为您的数据中心增加价值

# SUSE OpenStack Cloud 定位
# 合作共赢：“1+1>2”

管理 监控 调度 运维 安全

Zaqar Trove Heat Ceilometer Horizon
Sahara NEUTRON NOVA SWIFT Congress
Ironic CINDER KEYSTONE GLANCE Murano
Manila Designate Barbican Magnum

KVM docker Linux ceph

AMD DELL IBM hp HUAWEI
intel lenovo cisco inspur 浪潮 中科曙光 Sugon

有部署开发经验的 ISV

主流品牌随意挑选

SUSE

提供稳定可靠的基础平台

# SUSE OpenStack Cloud
# 中国本土合作伙伴

九州云 Cloud

海云捷迅 AWCLOUD

CertusNet

EasyStack

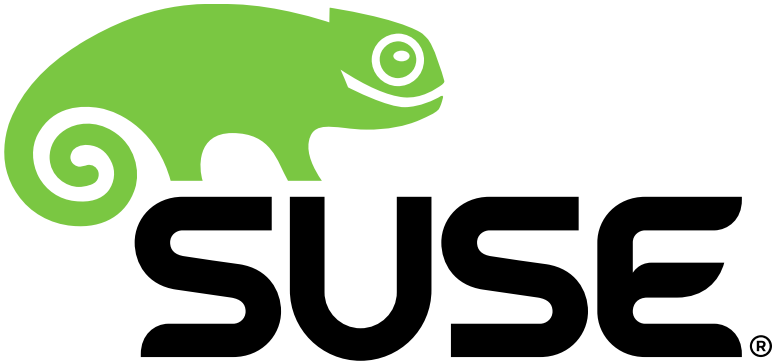
inwinSTACK

荣之联 UNITED ELECTRONICS

sereno cloud brokerage

surren 睿江

MAKE CLOUD EASY
云首信息科技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