

部署企业级 OpenStack

林培峰

SUSE 中国区技术总监

pflin@suse.com



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

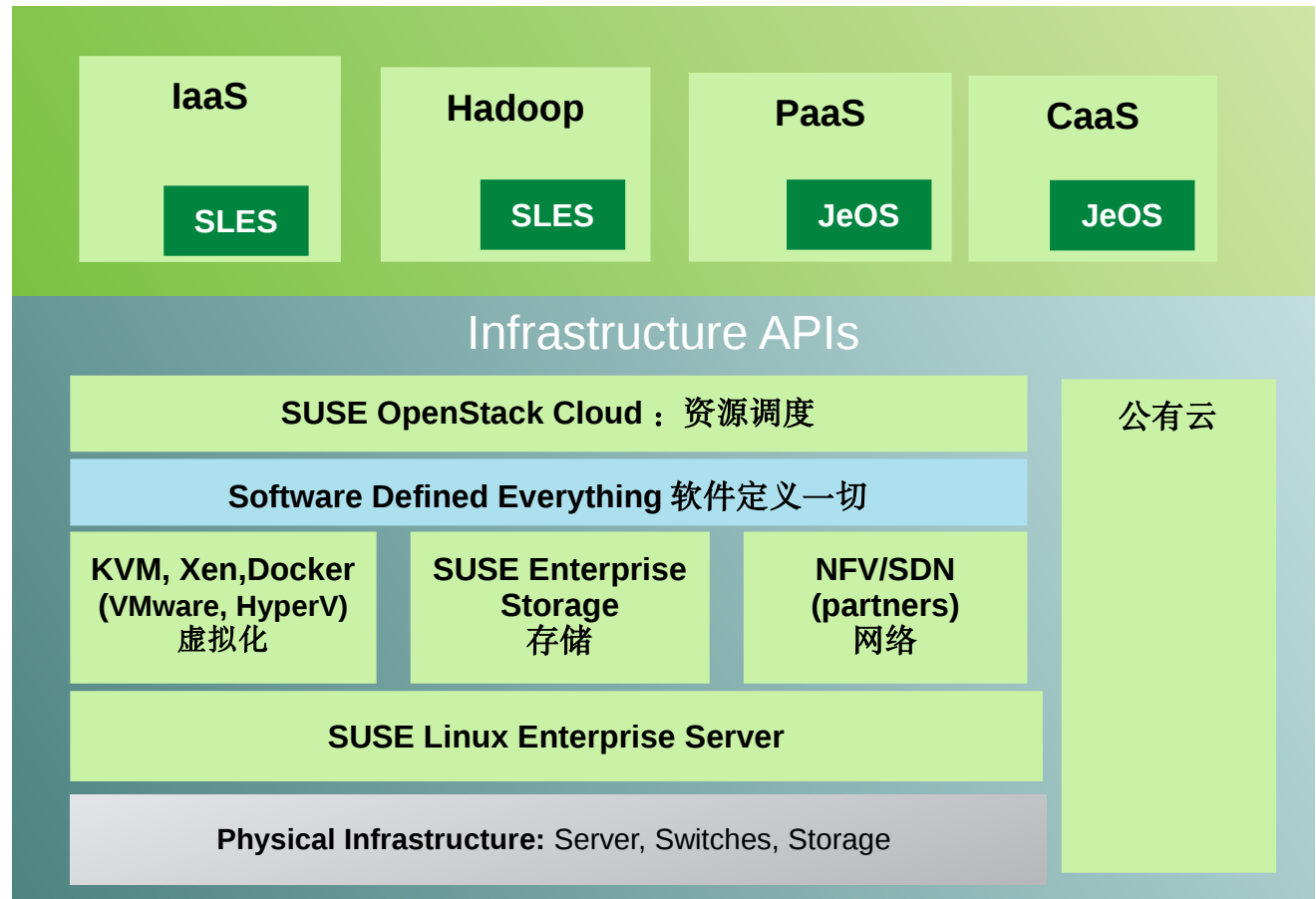
- 自主可控的云平台，不受制于人
 - › 硬件选择的自由
 - › 异构 Hypervisor 支持：VMWare, KVM/Xen, Docker
 - › 软件平台不会变成非 xxx 不可
 - 平台安全稳定，能够支持商用
 - › 稳定基础平台：OS, Hypervisor, Storage, Networking(NFV)
 - › 排出所有 openstack 上遇到的坑，让系统跑起来
 - › 长期、大规模使用不会出大事
 - › 即便出了事，能及时恢复
 - › 平台能够跟随 openstack 社区升级，享受社区红利
 - 功能上能满足业务、管理、维护的需要
 - › 能够实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

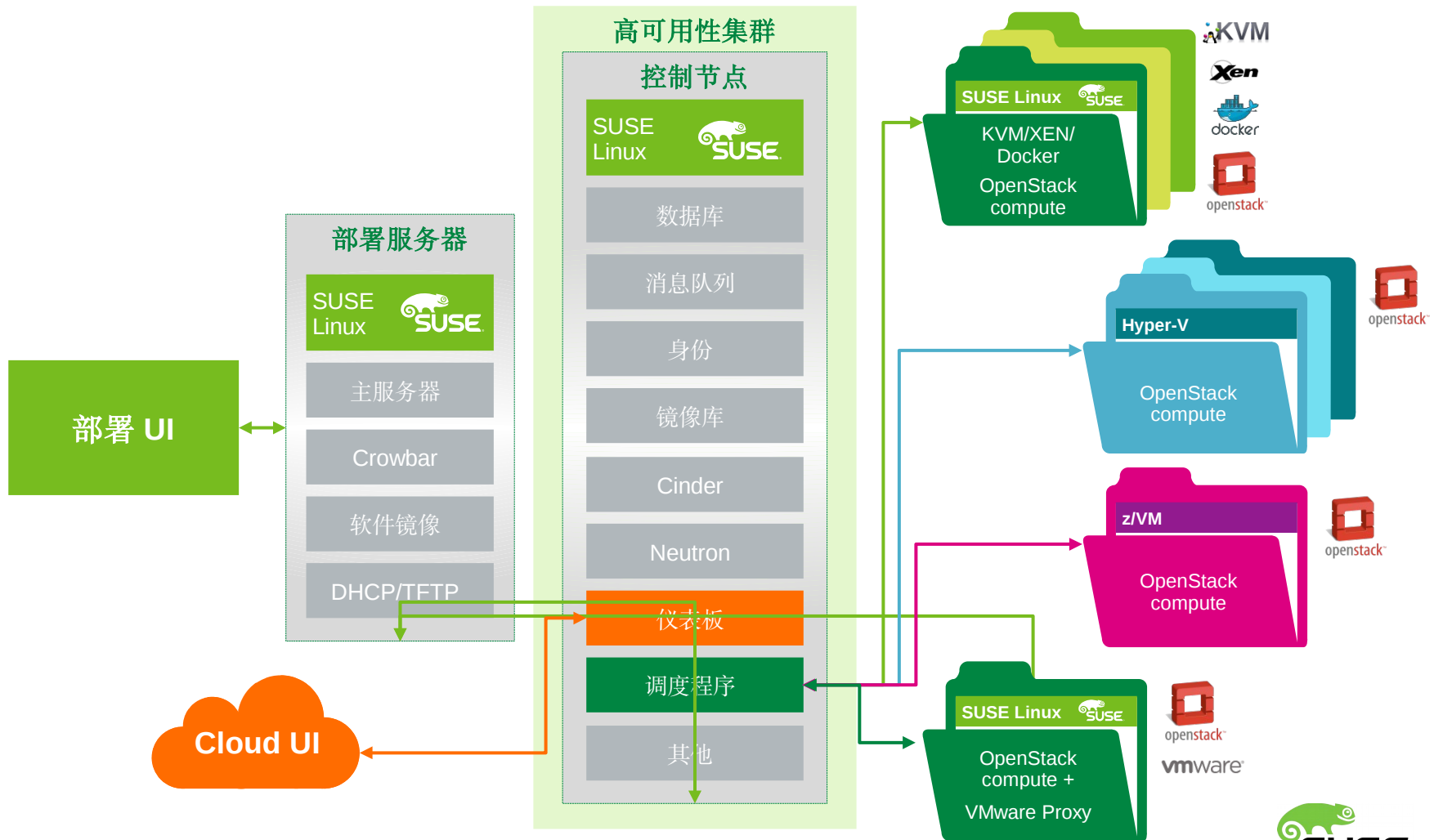
兼容性 - 不被厂家锁定

- 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

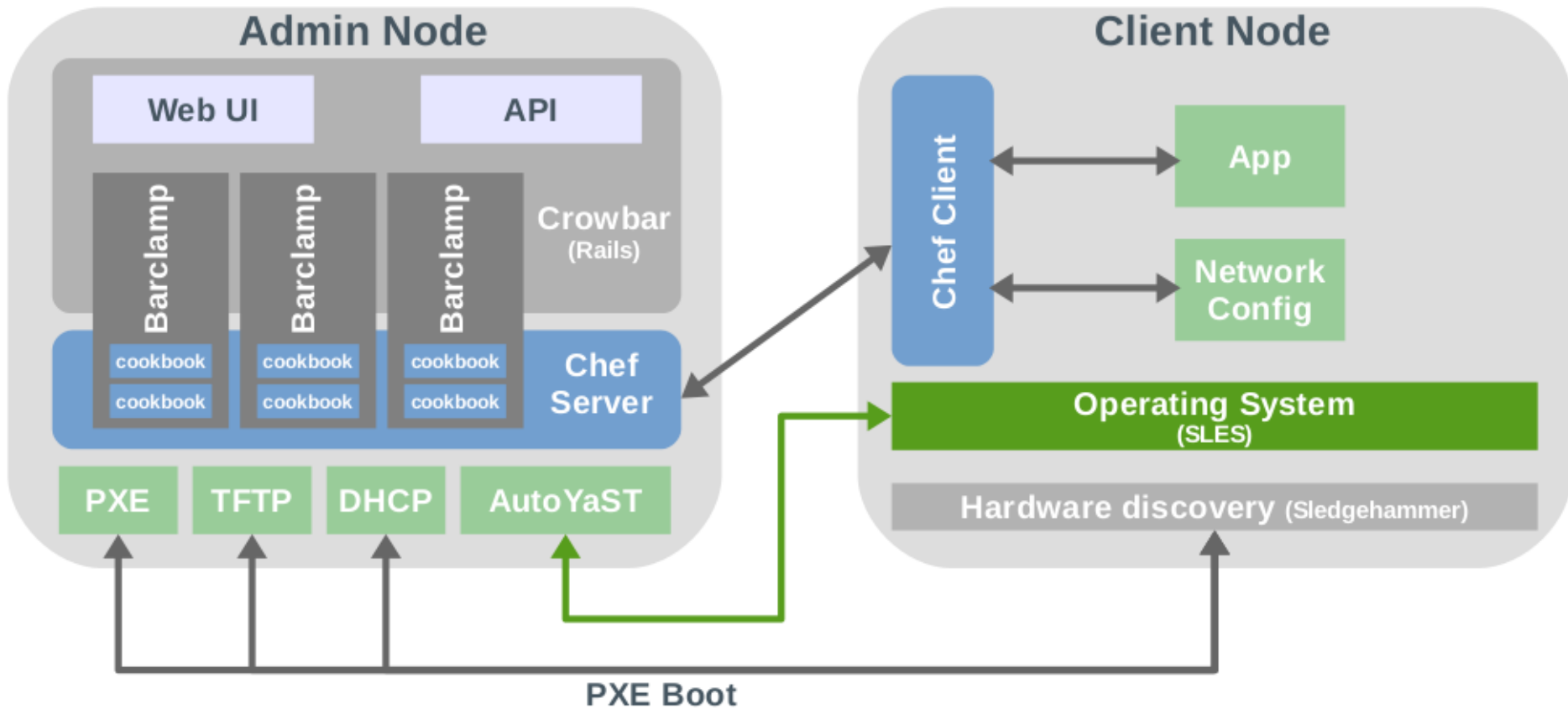
灵活成熟的部署架构

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

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*.

<p> admin</p> <p> admin</p>	<p> compute</p> <p> compute1</p> <p> compute2</p>	<p> ctrl_data</p> <p> control-data1</p> <p> control-data2</p> <p> control-data3</p>	<p> ctrl_net</p> <p> control-network1</p> <p> control-network2</p> <p> control-network3</p>
<p> ctrl_service</p> <p> control-services1</p> <p> control-services2</p> <p> control-services3</p>	<p> stor_block</p> <p> storage-block1</p> <p> storage-block2</p>	<p> stor_object</p> <p> storage-object1</p> <p> storage-object2</p>	

OpenStack 服务配置

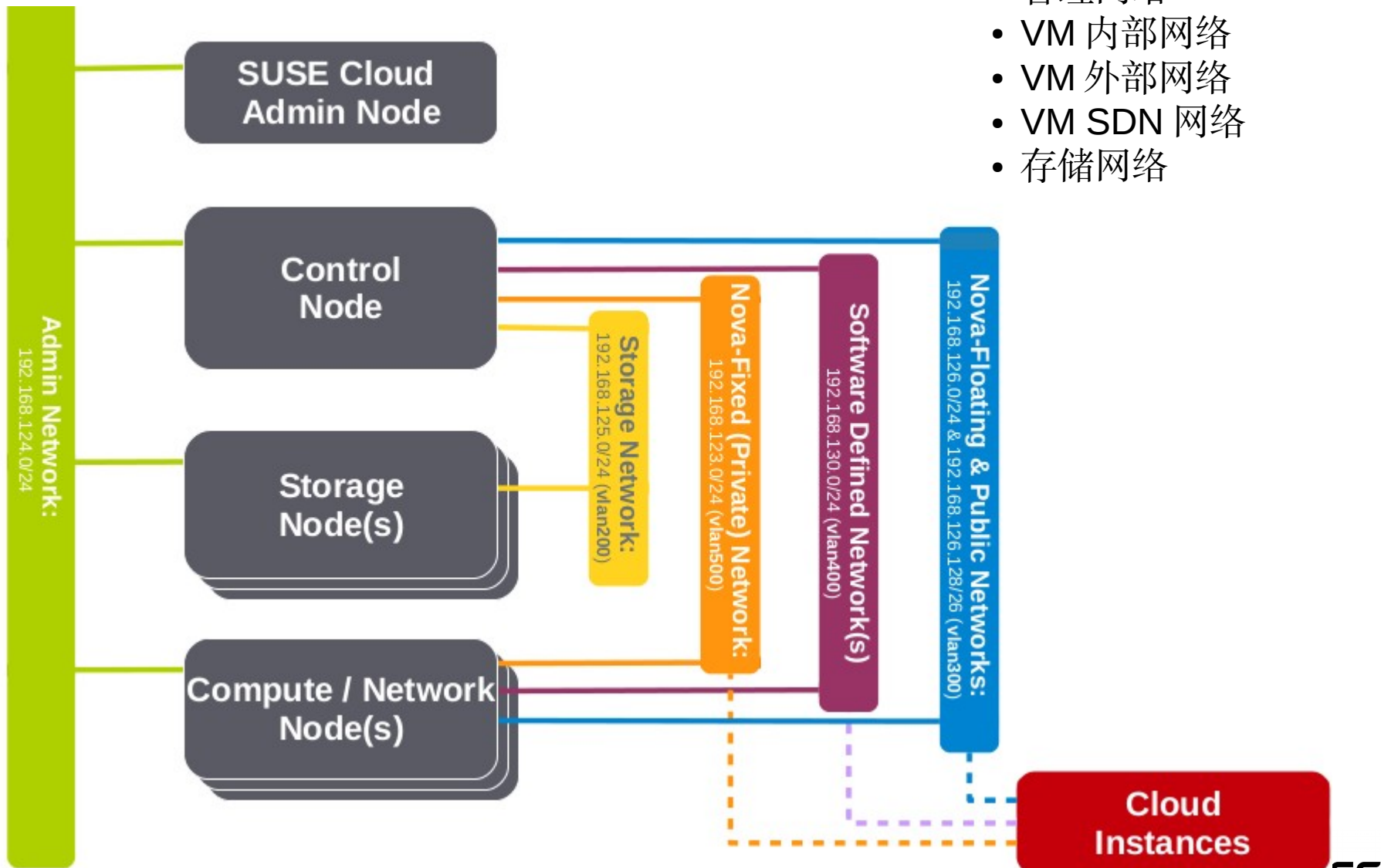
OpenStack

Create and apply proposals in order from top to bottom.

Status	Name	Description	
<input type="radio"/>	Pacemaker	Deploy Pacemaker clusters	Edit
<input type="radio"/>	Database	Resource for accessing Database Servers	Create
<input type="radio"/>	RabbitMQ	AMQP Messaging Middleware: robust enterprise messaging system	Create
<input type="radio"/>	Keystone	OpenStack Identity: Authentication and authorization service	Create
<input type="radio"/>	Ceph	Distributed object store and file system	Create
<input type="radio"/>	Swift	OpenStack Object Storage: Scale-out object store	Create
<input type="radio"/>	Glance	OpenStack Image Service: Discovery, registration and delivery services for virtual machine images	Create
<input type="radio"/>	Cinder	OpenStack Block Storage: Management of volumes (persistent block level storage)	Create
<input type="radio"/>	Neutron	OpenStack Networking: Pluggable, scalable, API-driven network and IP management	Create
<input type="radio"/>	Nova	OpenStack Compute: Provision and manage large network of virtual machines	Create
<input type="radio"/>	Horizon	OpenStack Dashboard: Web User Interface to access, provision and automate Cloud-based resources	Create
<input type="radio"/>	Heat	OpenStack Orchestration: Orchestration engine for composite cloud applications	Create
<input type="radio"/>	Ceilometer	OpenStack Telemetry: Measurements collection for monitoring and metering	Create
<input type="radio"/>	Manila	OpenStack File Share: Management of shared filesystems	Create
<input type="radio"/>	Trove	OpenStack Database: Scalable and reliable Database-as-a-Service provisioning	Create
<input type="radio"/>	Tempest	OpenStack Integration Test Suite	Create



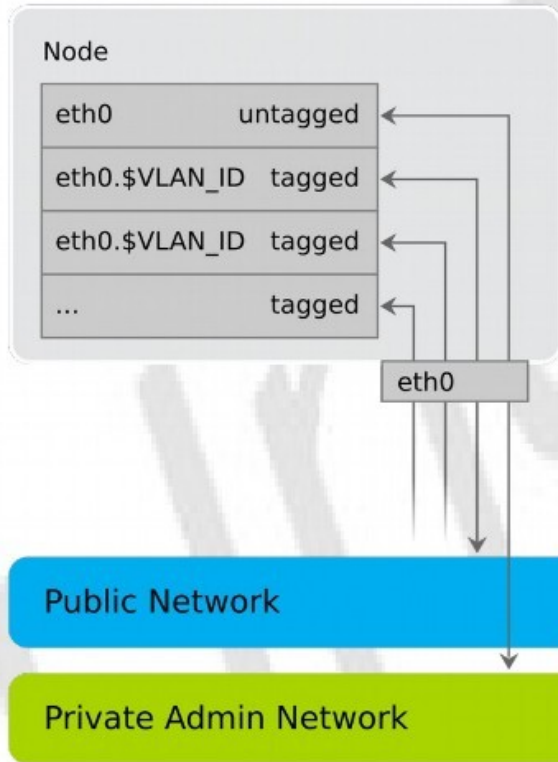
网络规划



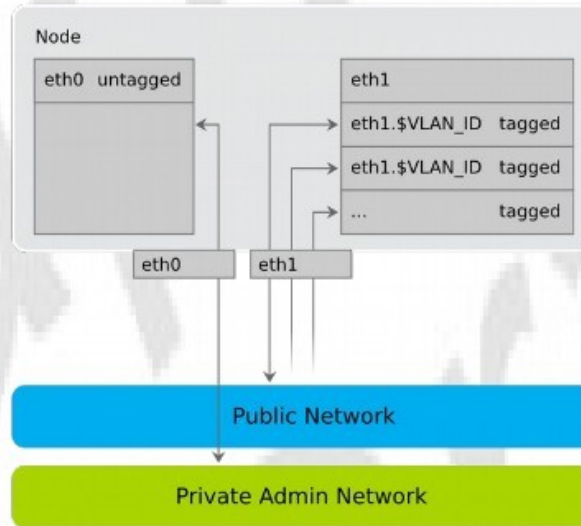
- 管理网络
- VM 内部网络
- VM 外部网络
- VM SDN 网络
- 存储网络

多种网络配置模式

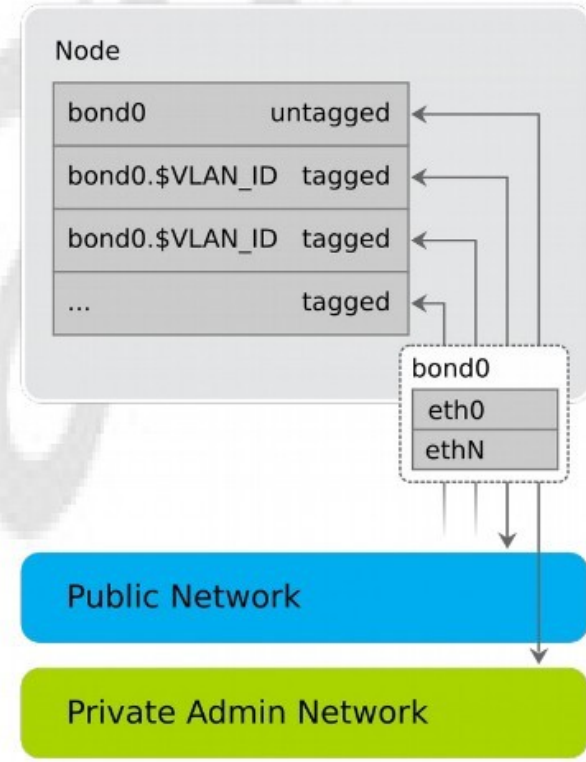
Single Mode



Dual Mode



Team Mode

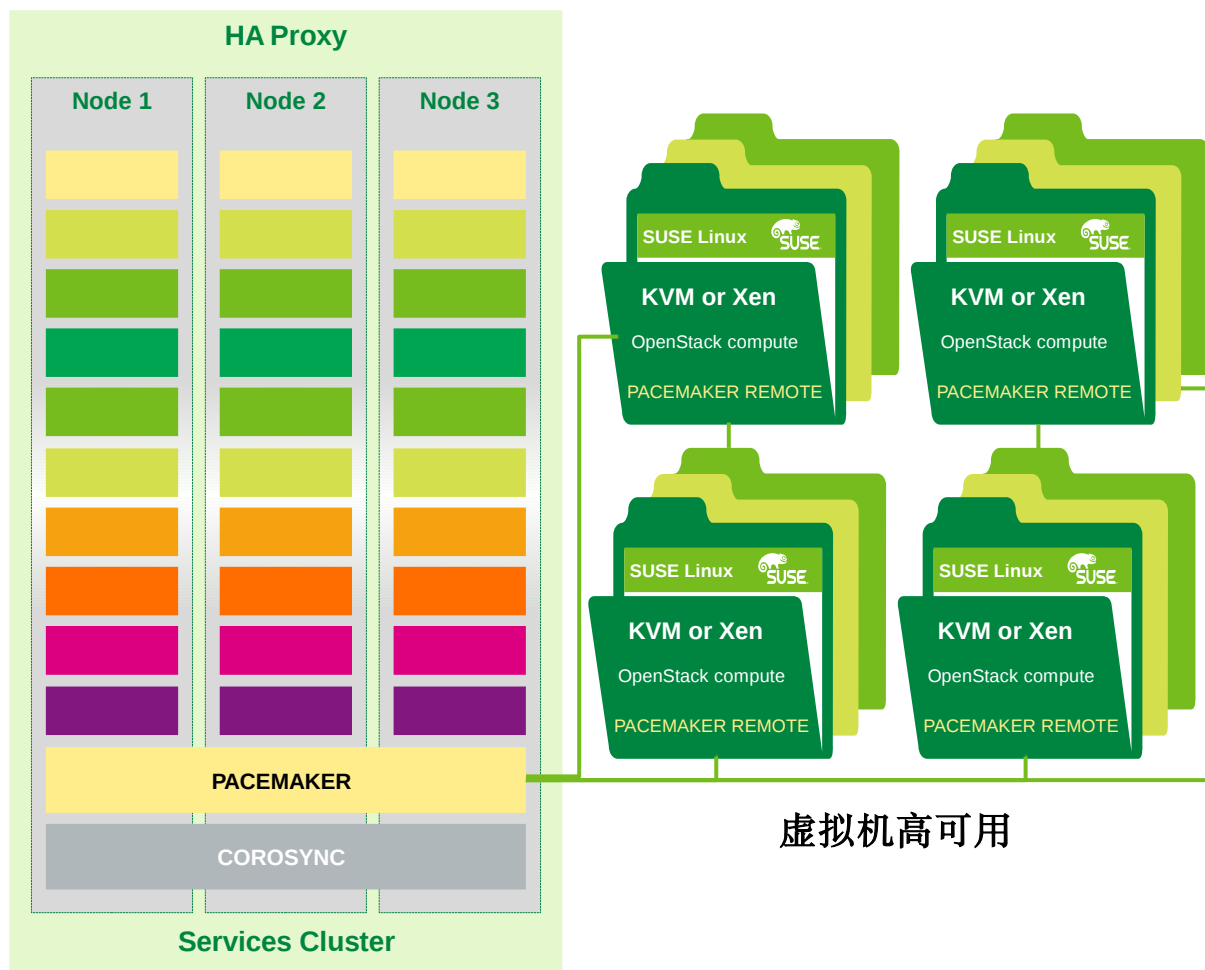


企业级高可用

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

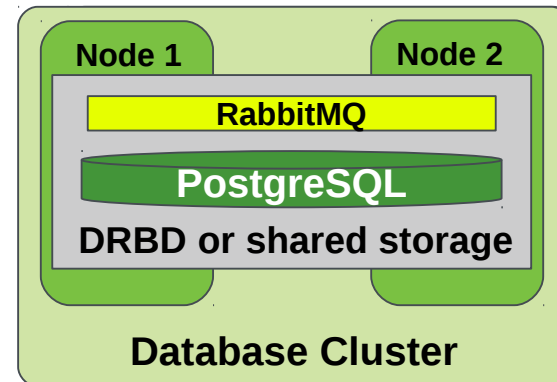
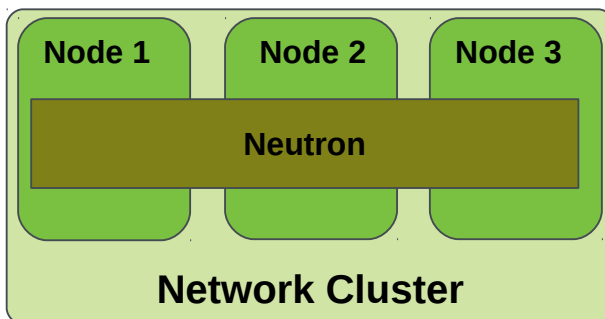
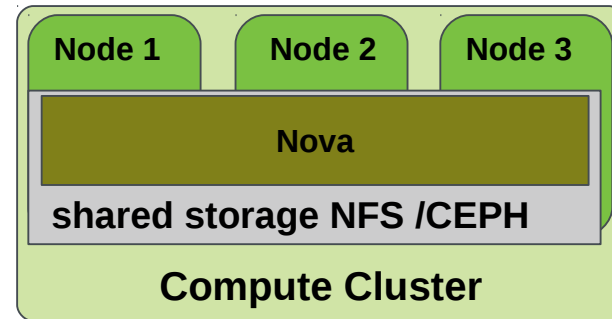
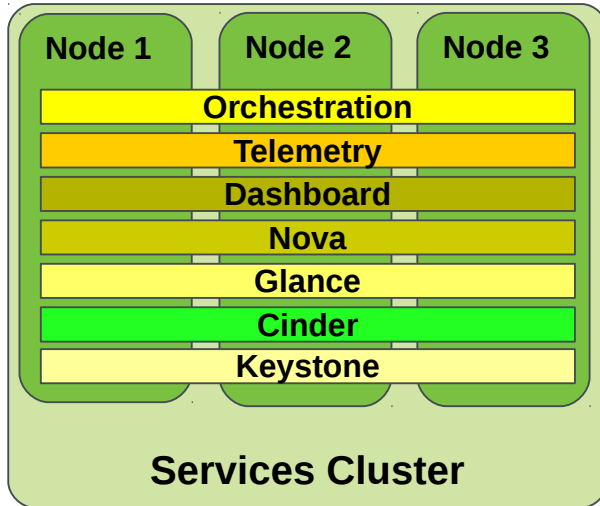
高可用增强：7x24 连续不 Down 机



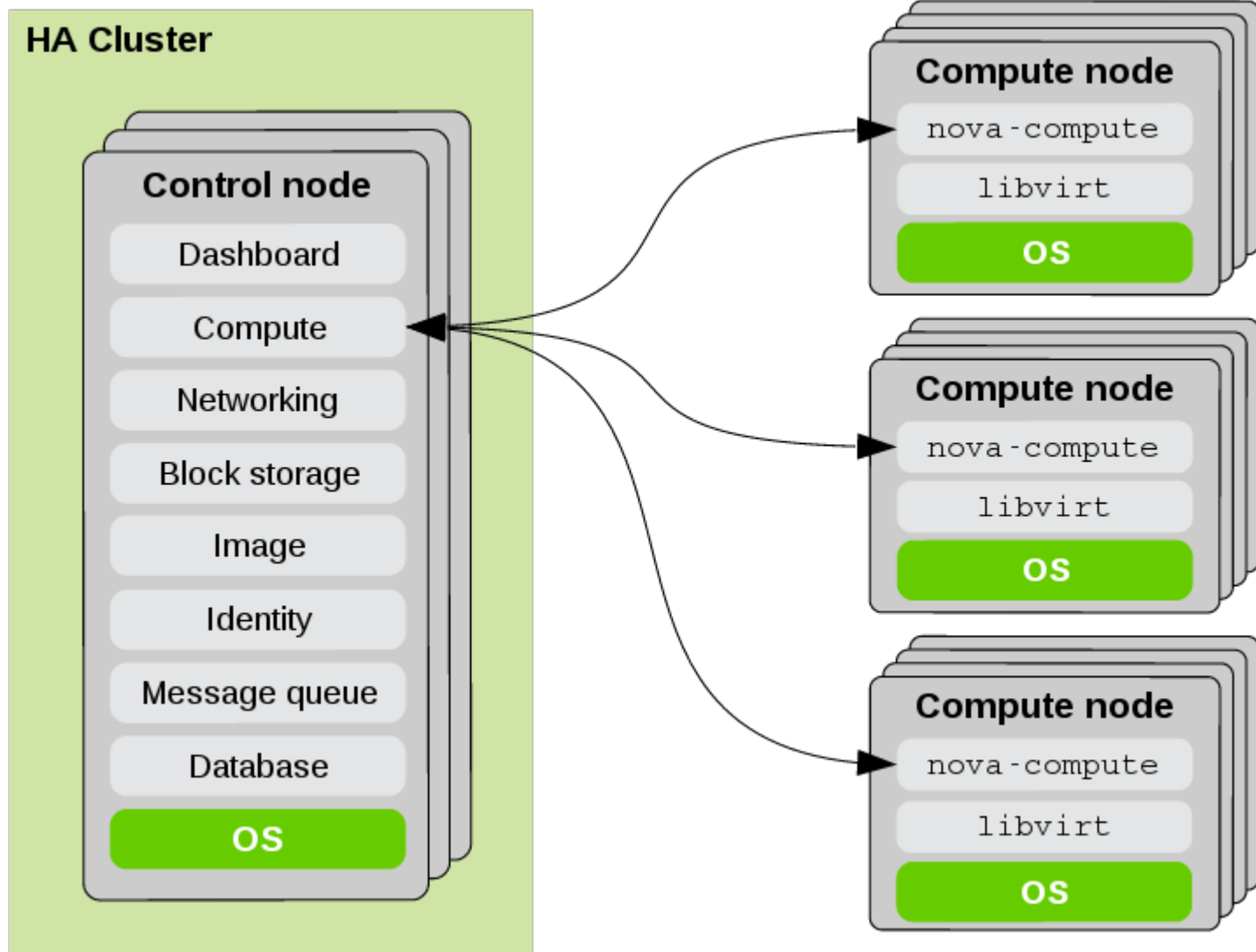
控制节点高可用

虚拟机高可用

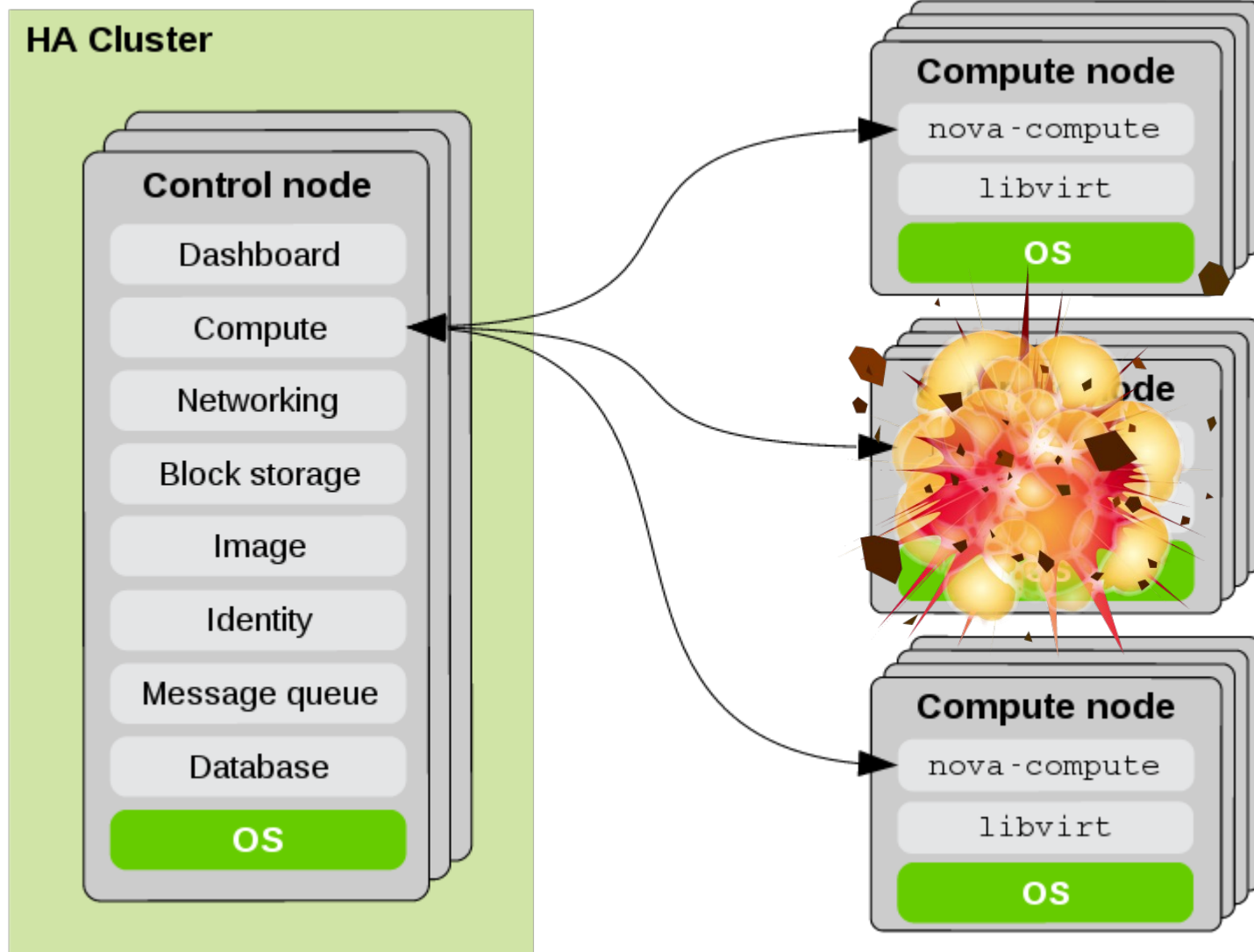
推荐架构



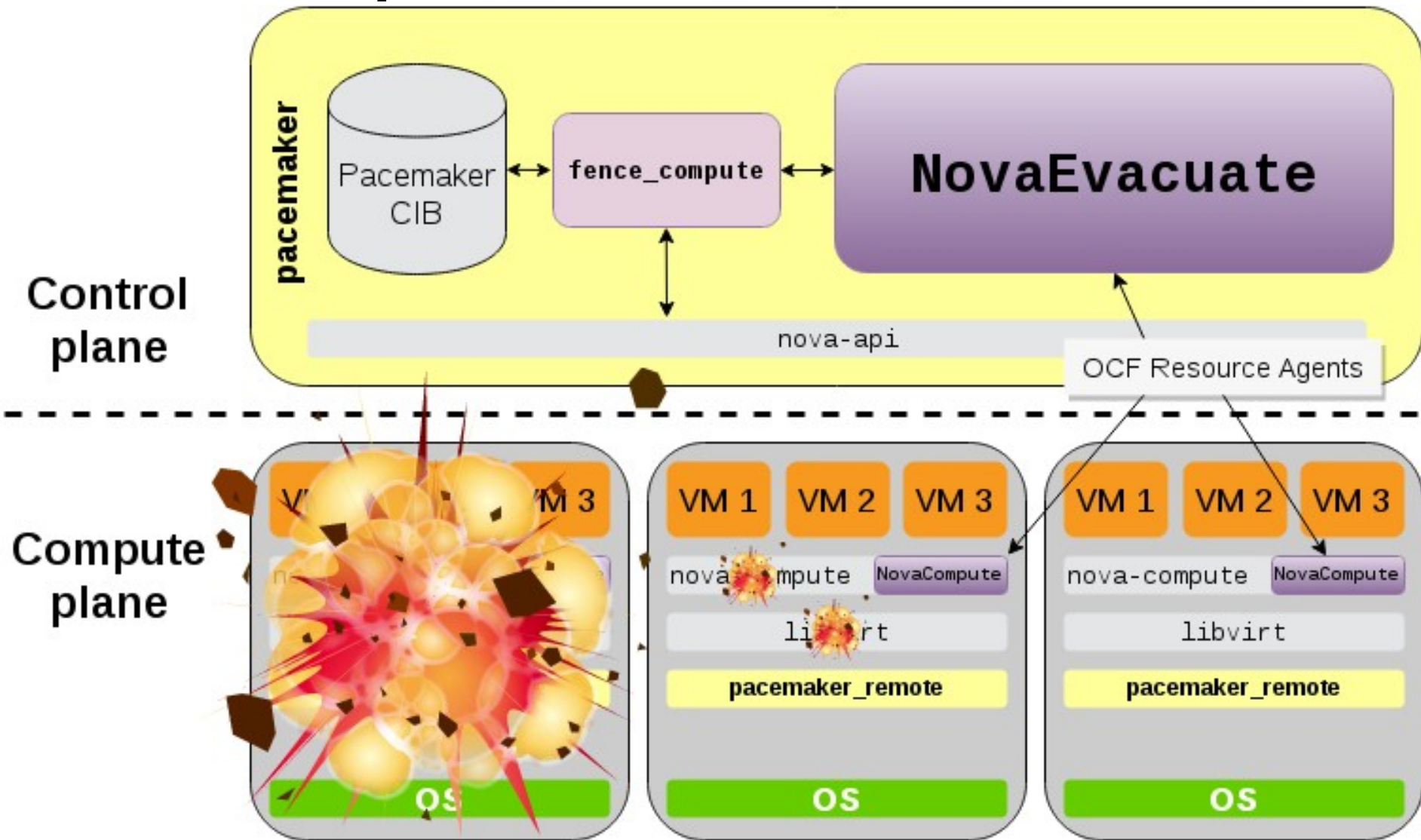
计算节点 HA



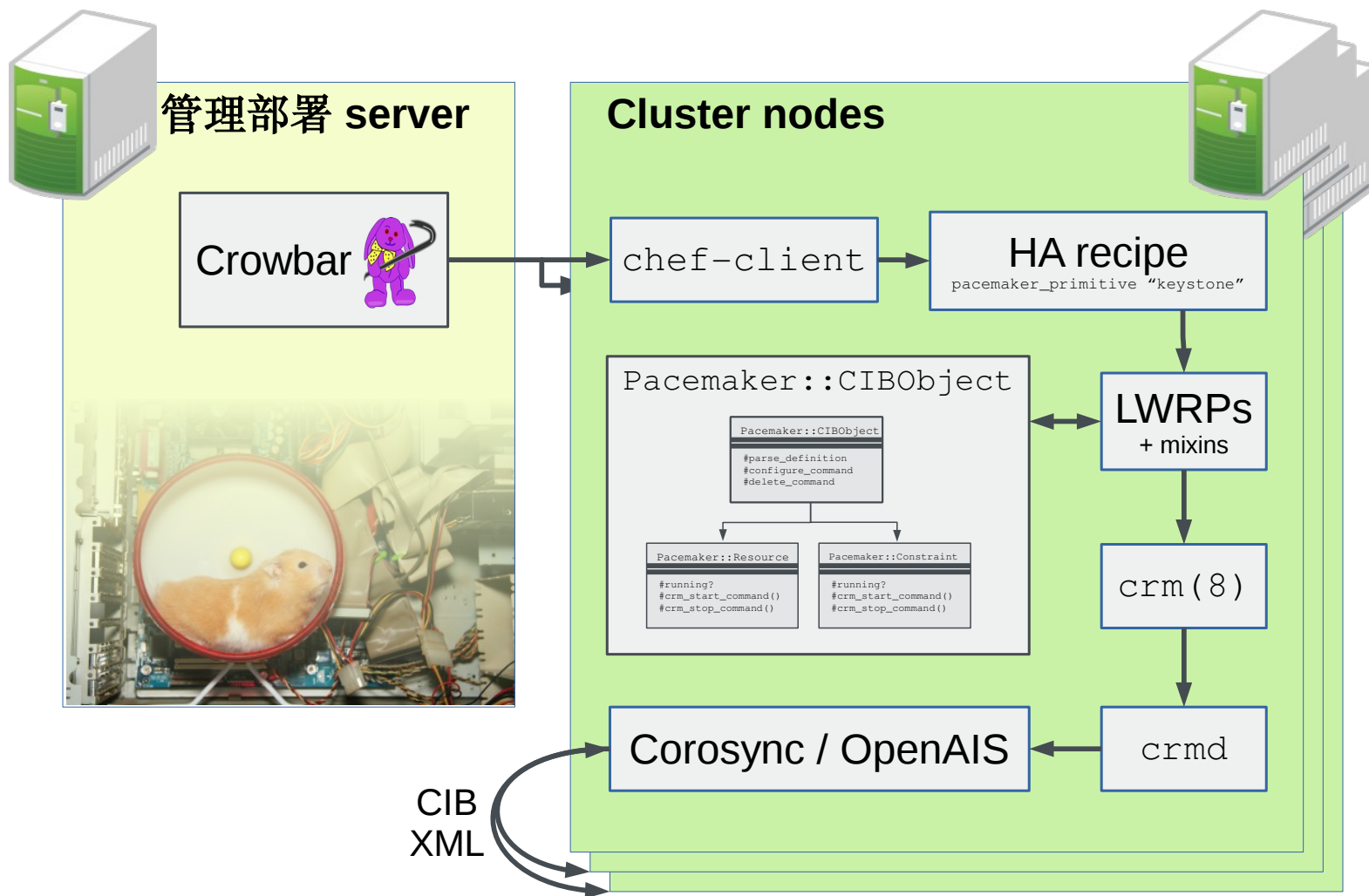
计算节点 HA



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?

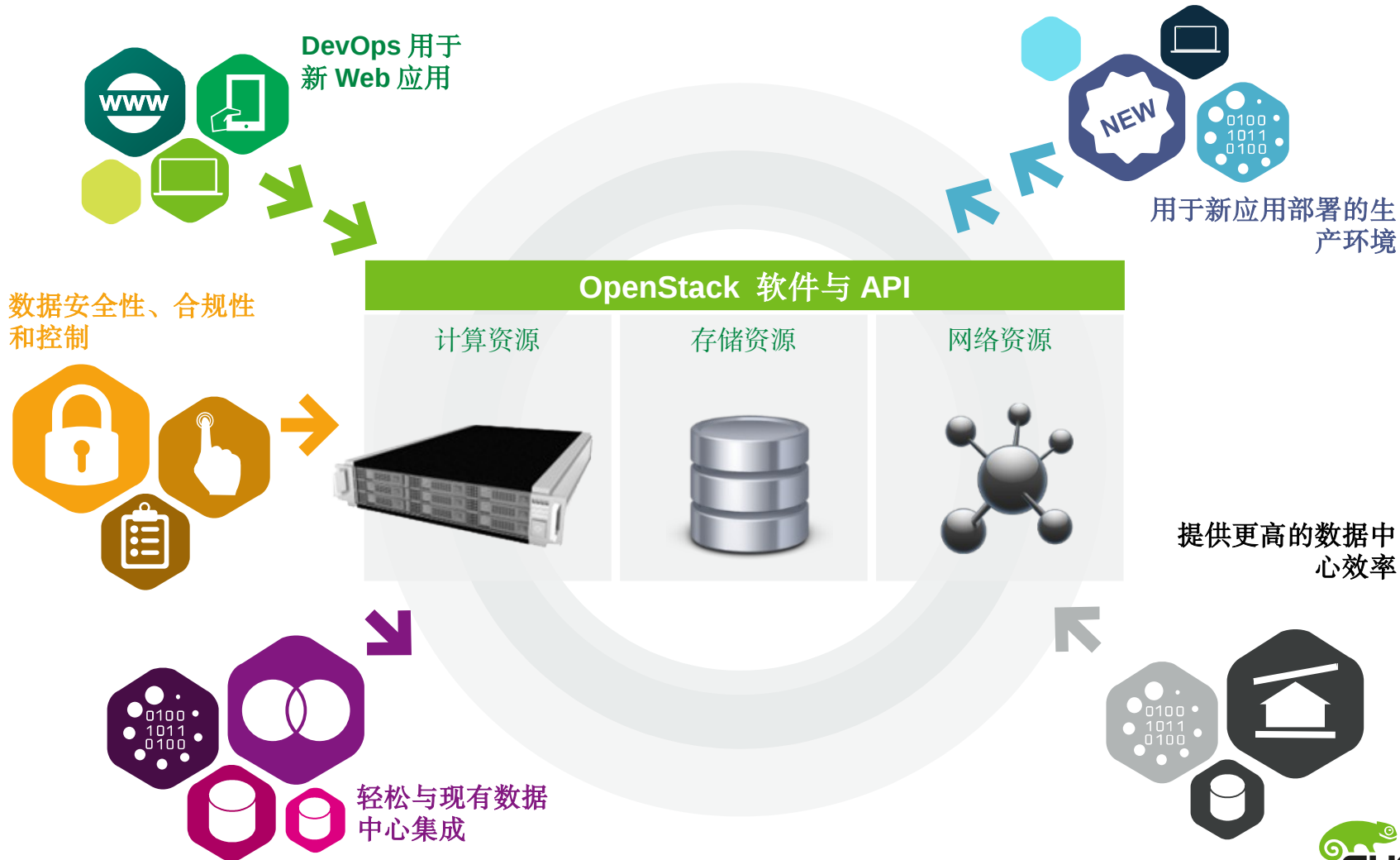


Install from Scratch



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

有部署开发
经验的 ISV



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 Sugon 中科曙光

主流品牌
随意挑选

提供稳定可靠
的基础平台

SUSE OpenStack Cloud 中国本土合作伙伴





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