

# Kubernetes 发行版实践

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主办方：

caicloud | IT 浪潮



协办方：





# 为什么选择 Kubernetes 发行版

# Kubernetes 非常好，但是



学习成本高

部署安装复杂

功能组件选型复杂

缺少对多租户的支持

隐形成本高

App Definition and Development

Orchestration & Management

Runtime

Provisioning

Cloud

caicloud 浪潮云

Public

Private

Database and Data Warehouse

Streaming

Source Code Management

Application Definition and Image Build

Continuous Integration / Continuous Delivery (CI/CD)

Scheduling & Orchestration

Coordination & Service Discovery

Service Management

Cloud-Native Storage

Container Runtime

Cloud-Native Network

Host Management / Tooling

Infrastructure Automation

Container Registries

Secure Images

Key Management

Platforms

Certified Kubernetes - Distribution

Certified Kubernetes - Hosted

Certified Kubernetes - Installer

Non-Certified Kubernetes

PaaS/Container Service

Observability & Analysis

Monitoring

Logging

Tracing

Serverless

**l.cncf.io**

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

**CLOUD NATIVE Landscape**

**CLOUD NATIVE COMPUTING FOUNDATION**

**Redpoint Amplify**

Kubernetes Certified Service Provider

Kubernetes Training Partner

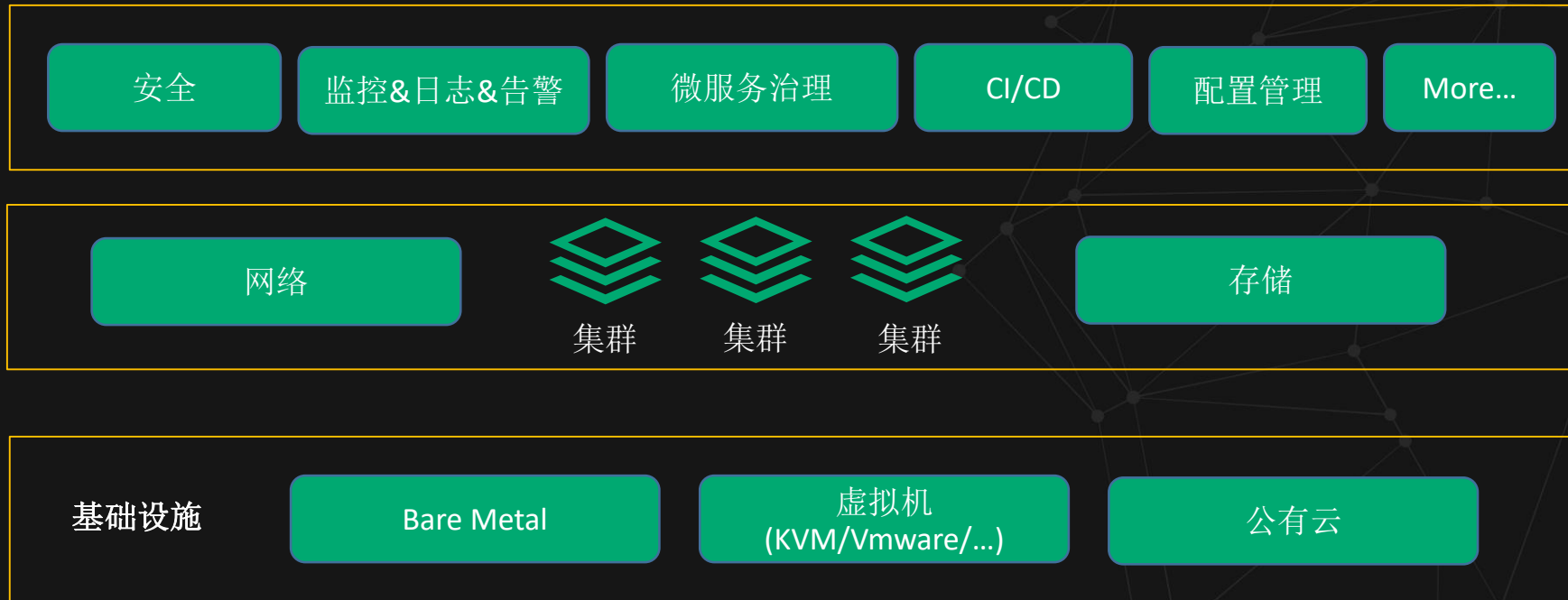
# 什么是 Kubernetes 发行版



An operating system for your datacenter. The Linux Kernel for distributed systems.

底层基于原生或定制化的 Kubernetes，上层封装多种服务组件，能在 Kubernetes 之上提供更多增值服务，满足所业务场景需求的分布式容器编排管理平台。

# Kubernetes 发行版架构图



# Kubernetes 发行版优势



开箱即用

平台的安全方案

统一的管理平台

针对不同的业务场景弹性可配

## Certified Kubernetes - Distribution





# Kubernetes 发行版实践





Namespace隔离用户资源

Network Policy 来隔离用户网络

结合K8S细粒度的权限控制

审计





In-tree : Kubernetes 代码绑定, 充分利用 Kubernetes runtime 的功能, 但依赖于 Kubernetes 的发布周期, 更新不及时

Out-of-tree : Kubernetes 解耦, 目前有 FlexVolume 和 CSI 两种方案

# 存储插件



直接挂载性能盘和超高性能盘，利用硬盘多副本的自身优势

使用Flex Volume方式外挂存储插件，扩展 Kubernetes PersistentVolume

通过 Kubernetes 的 PersistentVolumeClaim，无需预创建硬盘，实现对应用透明

支持有状态容器(StatefulSet)的迁移

CSI 方式，并支持 NeoSAN



<https://github.com/yunify/qingcloud-volume-provisioner>



配置自定义的 Cloud provider : kube-cloud-controller-manager.yaml

```
--cloud-provider=qingcloud -cloud-config=/etc/kubernetes/qingcloud.conf
```

扩展Specification，通过 annotation 来定义与青云 LoadBalancer 相关的属性，如负载均衡器的规格，类型，监听器的负载方式



<https://github.com/yunify/qingcloud-cloud-controller-manager>

# 负载均衡插件



```
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: helloworld
5    annotations:
6      service.beta.kubernetes.io/qingcloud-load-balancer-eip-ids: "eip-xxxx"
7      service.beta.kubernetes.io/qingcloud-load-balancer-type: "0"
8  spec:
9    ports:
10     - port: 80
11       targetPort: 80
12    selector:
13      app: helloworld
14    type: LoadBalancer
15  ---
16  apiVersion: v1
17  kind: Service
18  metadata:
19    name: helloworld-internal
20  spec:
21    ports:
22     - port: 80
23       targetPort: 80
24    selector:
25      app: helloworld
```











## OpenPitrix 管理应用生命周期

一键部署

应用仓库

 <p><b>mongodb-replicaset</b> 仓库: incubator 关键字: - NoSQL document-oriented database that stores JSON-like documents with</p> <p>最新版本: 0.2.0 <a href="#">应用详情</a></p>	 <p><b>chartmuseum</b> 仓库: incubator 关键字: chartmuseum, helm, charts repo Helm Chart Repository with support for Amazon S3 and Google Cloud Storage</p> <p>最新版本: 1.1.1 [0.5.1] <a href="#">应用详情</a></p>	 <p><b>tensorflow-inception</b> 仓库: incubator 关键字: - Open source software library for numerical computation using data flow</p> <p>最新版本: 0.3.0 [1.4.0] <a href="#">应用详情</a></p>
 <p><b>schema-registry</b> 仓库: incubator 关键字: confluent, kafka, schema-registry Schema Registry provides a serving layer for your metadata. It provides a</p> <p>最新版本: 0.4.4 [4.0.1] <a href="#">应用详情</a></p>	 <p><b>vault</b> 仓库: incubator 关键字: - A Helm chart for Vault, a tool for managing secrets</p> <p>最新版本: 0.12.0 [0.10.1] <a href="#">应用详情</a></p>	 <p><b>jenkins</b> 仓库: Google 关键字: - Open source continuous integration server. It supports multiple SCM tools</p> <p>最新版本: 0.16.6 [2.121.1] <a href="#">应用详情</a></p>



<https://github.com/openpitrix/openpitrix>



## mongodb-replicaset

NoSQL document-oriented database that stores JSON-like documents with dynamic schemas, simplifying the integration of



关键字: -

维护者: Anirudh Ramanathan

说明文档

### MongoDB Helm Chart

#### Prerequisites Details

- Kubernetes 1.5+ with Beta APIs enabled.
- PV support on the underlying infrastructure.

#### StatefulSet Details

- <https://kubernetes.io/docs/concepts/abstractions/controllers/statefulsets/>

#### StatefulSet Caveats

- <https://kubernetes.io/docs/concepts/abstractions/controllers/statefulsets/#limitati>



### 基本信息

应用信息与设置

名称:

最长63个字符，只能包含小写字母、数字及分隔符("-")，且必须以小写字母或数字开头及结尾

版本:

项目:

资源将被创建到该项目中

描述信息:

代码模式

取消

部署

# 谢 谢



主办方：



协办方：

