

Kubernetes入门之快速创建集群

Kubernetes Master Class 第一期



培训大纲

- 快速部署单节点Rancher Server
- 快速创建AWS集群
- 创建腾讯云托管k8s集群
- 导入已有k8s集群
- 创建custom集群（RKE YAML配置参数）
- 创建ARM64集群
- 创建Windows集群
- 快速部署工作负载
- 通过node port暴露服务
- 扩容AWS集群

快速部署单节点Rancher Server

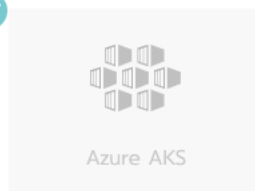
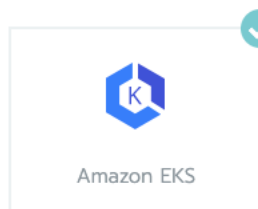
- 使用Docker run 命令部署单节点Rancher server
 - <https://rancher.com/docs/rancher/v2.x/en/installation/single-node>
- 必要前置条件
 - OS with docker version:
 - Ubuntu 16.04 (64-bit)
 - Docker 17.03.x, 18.06.x, 18.09.x
 - Ubuntu 18.04 (64-bit)
 - Docker 18.06.x, 18.09.x
 - Red Hat Enterprise Linux (RHEL)/CentOS 7.6 (64-bit)
 - RHEL Docker 1.13
 - Docker 17.03.x, 18.06.x, 18.09.x
 - RancherOS 1.5.1 (64-bit)
 - Docker 17.03.x, 18.06.x, 18.09.x

快速创建AWS集群

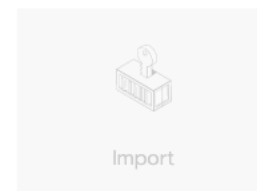
- AWS EKS cluster
- AWS EC2 cluster

Add Cluster

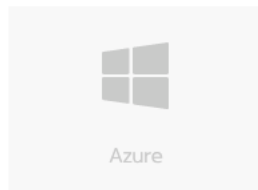
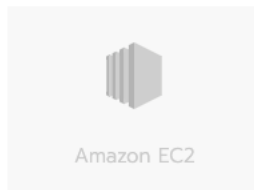
In a hosted Kubernetes provider



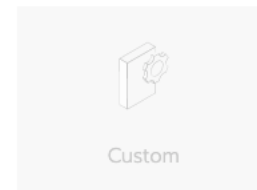
Import existing cluster



From nodes in an infrastructure provider

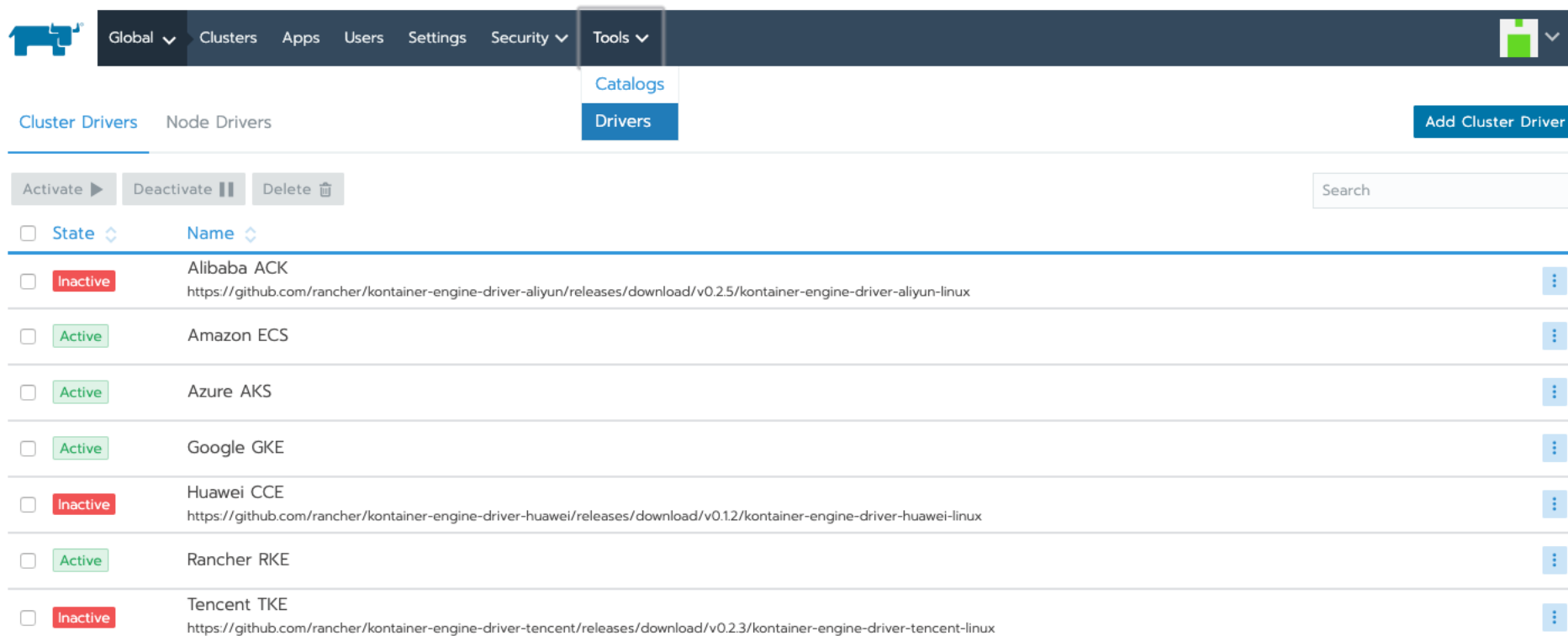


From my own existing nodes



创建腾讯云托管k8s集群

- 启用腾讯云cloud driver
- 使用腾讯云cloud driver创建k8s集群



The screenshot shows the Rancher management interface. At the top, a dark navigation bar contains the Rancher logo and several menu items: Global, Clusters, Apps, Users, Settings, Security, and Tools. The 'Tools' menu is currently open, showing 'Catalogs' and 'Drivers' as options. Below the navigation bar, the main content area is titled 'Cluster Drivers'. On the right side of this section is a button labeled 'Add Cluster Driver'. Below the title, there are three buttons: 'Activate', 'Deactivate', and 'Delete'. A search bar is also present. The main part of the interface is a table with two columns: 'State' and 'Name'. The table lists several cluster drivers with their respective states and names.

State	Name
Inactive	Alibaba ACK https://github.com/rancher/kontainer-engine-driver-aliyun/releases/download/v0.2.5/kontainer-engine-driver-aliyun-linux
Active	Amazon ECS
Active	Azure AKS
Active	Google GKE
Inactive	Huawei CCE https://github.com/rancher/kontainer-engine-driver-huawei/releases/download/v0.1.2/kontainer-engine-driver-huawei-linux
Active	Rancher RKE
Inactive	Tencent TKE https://github.com/rancher/kontainer-engine-driver-tencent/releases/download/v0.2.3/kontainer-engine-driver-tencent-linux

导入已有k8s集群

Add Cluster: test-cluster

Note: If you want to import a Google Kubernetes Engine (GKE) cluster (or any cluster that does not supply you with a kubectl configuration file with the ClusterRole **cluster-admin** bound to it), you need to bind the ClusterRole **cluster-admin** using the command below.



Replace **[USER_ACCOUNT]** with your Google account address (you can retrieve this using **gcloud config get-value account**). If you are not importing a Google Kubernetes Engine cluster, replace **[USER_ACCOUNT]** with the executing user configured in your kubectl configuration file.

```
kubectl create clusterrolebinding cluster-admin-binding --clusterrole cluster-admin --user [USER_ACCOUNT]
```



Run the kubectl command below on an existing Kubernetes cluster running a supported Kubernetes version to import it into Rancher:

```
kubectl apply -f https://[redacted]/v3/import/cmdckgp96xxwlwrnv5545stf8nvs5s4rk7m6x48pd4bdd17v8kz6wz.yaml
```



If you get an error about 'certificate signed by unknown authority' because your Rancher installation is running with an untrusted/self-signed SSL certificate, run the command below instead to bypass the certificate check:

```
curl --insecure -sL https://[redacted]/v3/import/cmdckgp96xxwlwrnv5545stf8nvs5s4rk7m6x48pd4bdd17v8kz6wz.yaml | kubectl apply -f -
```



创建custom集群

- RKE YAML配置参数
 - 文档 <https://rancher.com/docs/rke/v0.1.x/en/config-options/>
 - Nodes配置
 - 集群相关配置
 - K8s服务相关配置
 - 网络配置

创建ARM64集群

- 前置条件
 - 使用custom/node driver模式创建arm集群
 - 目前在AWS us-east区域可以创建共有ARM 64的虚拟机
 - ARM 64节点/集群只能在flannel网络模式下运行
- 注意事项
 - ARM 64集群需要注意容器部署时的调度规则

创建Windows集群

- 前置条件
 - Only support Windows Server 1803
 - Must have Linux host as master(control plane & etcd)
- 注意事项
 - Windows集群需要注意容器部署时的调度规则

快速部署工作负载

- Demo



通过node port暴露服务

- Demo

扩容AWS集群

- 扩容EKS集群
- 扩容EC2集群



THANK YOU
