Grafana之KubeGraf可视化k8s资源(第十九篇)

KubeGraf是用于展示kubernetes集群资源性能的一个社区插件，是基于Grafana官方插件"grafana-kubernetes-app"的更新版（grafana-kubernetes-app <https://grafana.com/grafana/plugins/grafana-kubernetes-app> 官方已经2年没更新了）。KubeGraf允许您可视化和分析Kubernetes集群的性能，用图表来展示Kubernetes集群的主要服务度量和特性，同时也可检查应用程序的生命周期和错误日志。

一、插件安装

https://grafana.com/grafana/plugins/devopsprodigy-kubegraf-app
<https://grafana.com/grafana/plugins/devopsprodigy-kubegraf-app>

```
# grafana-cli plugins install devopsprodigy-kubegraf-app
# grafana-cli plugins install grafana-piechart-panel
# systemctl restart grafana-server
```

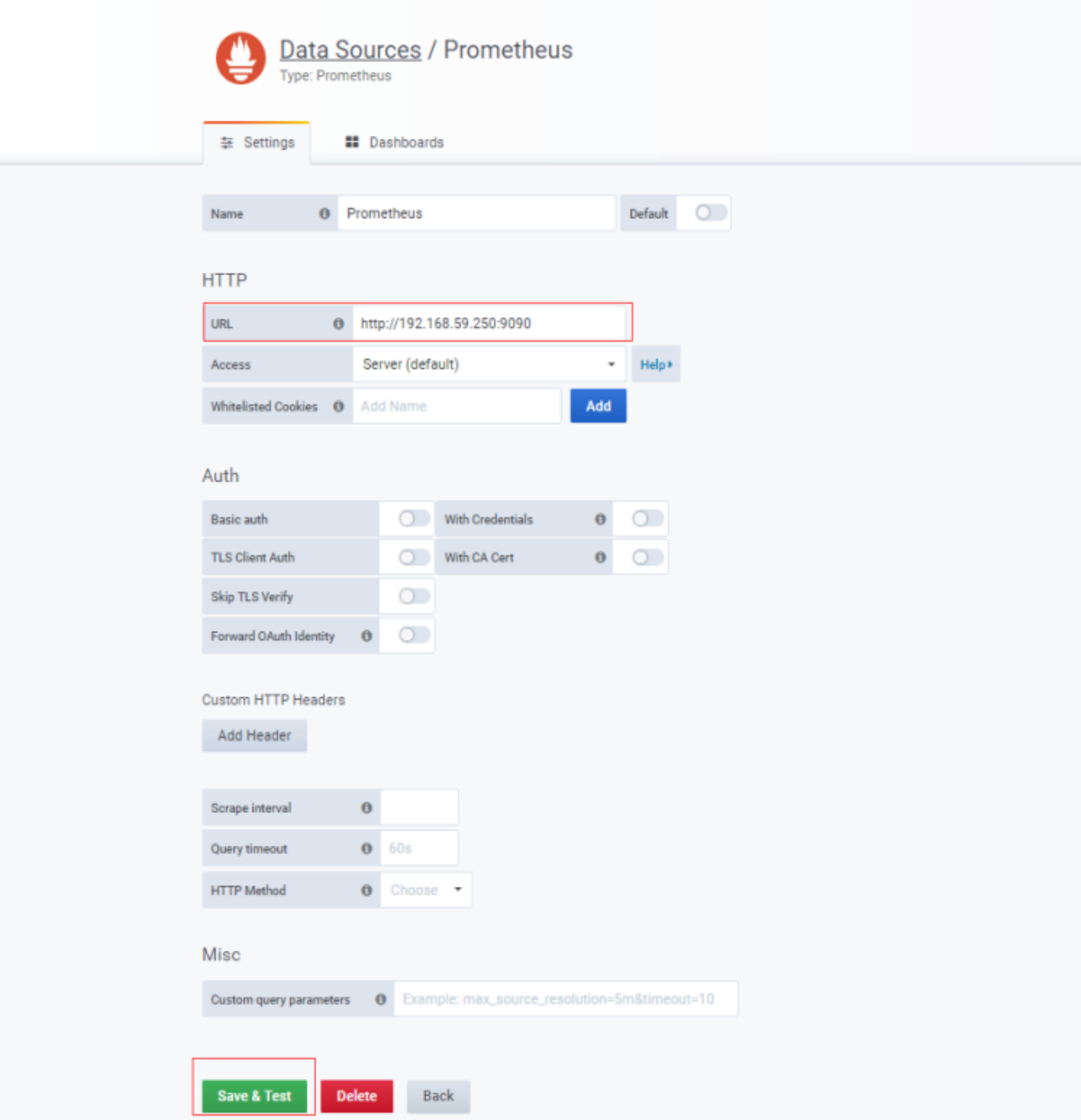
二、插件依赖环境：

1、需先部署好kubernetes集群，因为我们要监控的目标就是kubernetes

2、需先部署好prometheus、node_exporter、kube-state-metrics、cAdvisor等，因为我们要依赖prometheus作为数据源来监控kubernetes，而prometheus需依赖node_exporter、kube-state-metrics、cAdvisor等来采集数据。

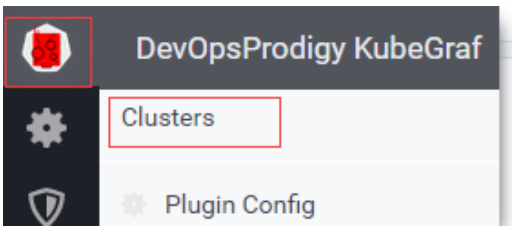
3、需先安装好Grafana-piechart-panel，因为KubeGraf中的Dashboard中有用到piechart-panel。

说明：在grafana中添加prometheus数据源非常简单，只要配置prometheus的地址即可，不需要配置认证相关信息，如下图所示。

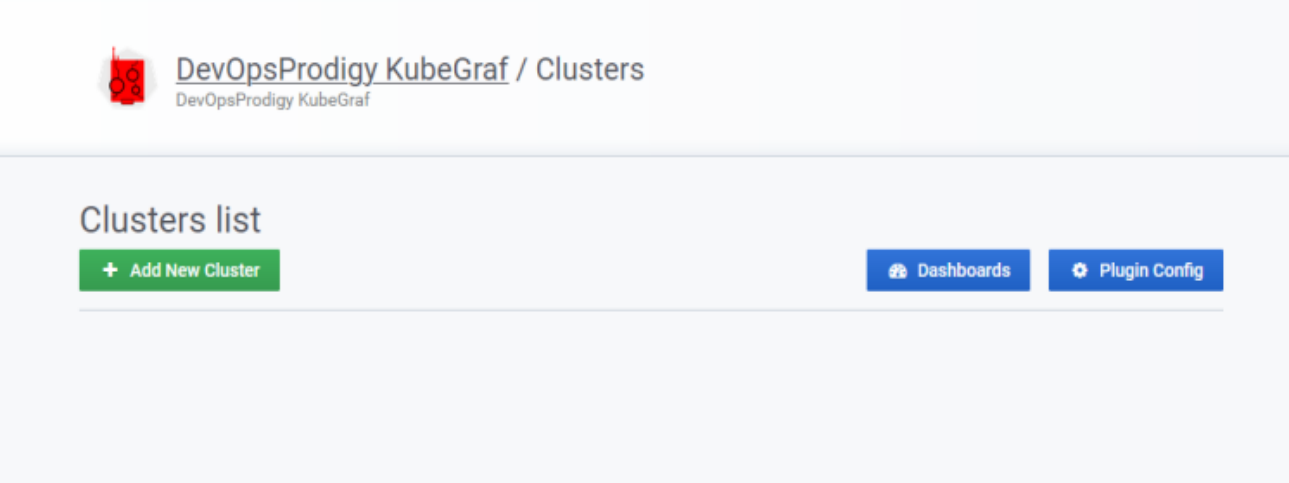


三、上述环境准备就绪后，开始配置KubeGraf

1、登录到grafana控制台，点击左侧菜单栏KubeGraf图标，选择"Clusters"，如下图所示



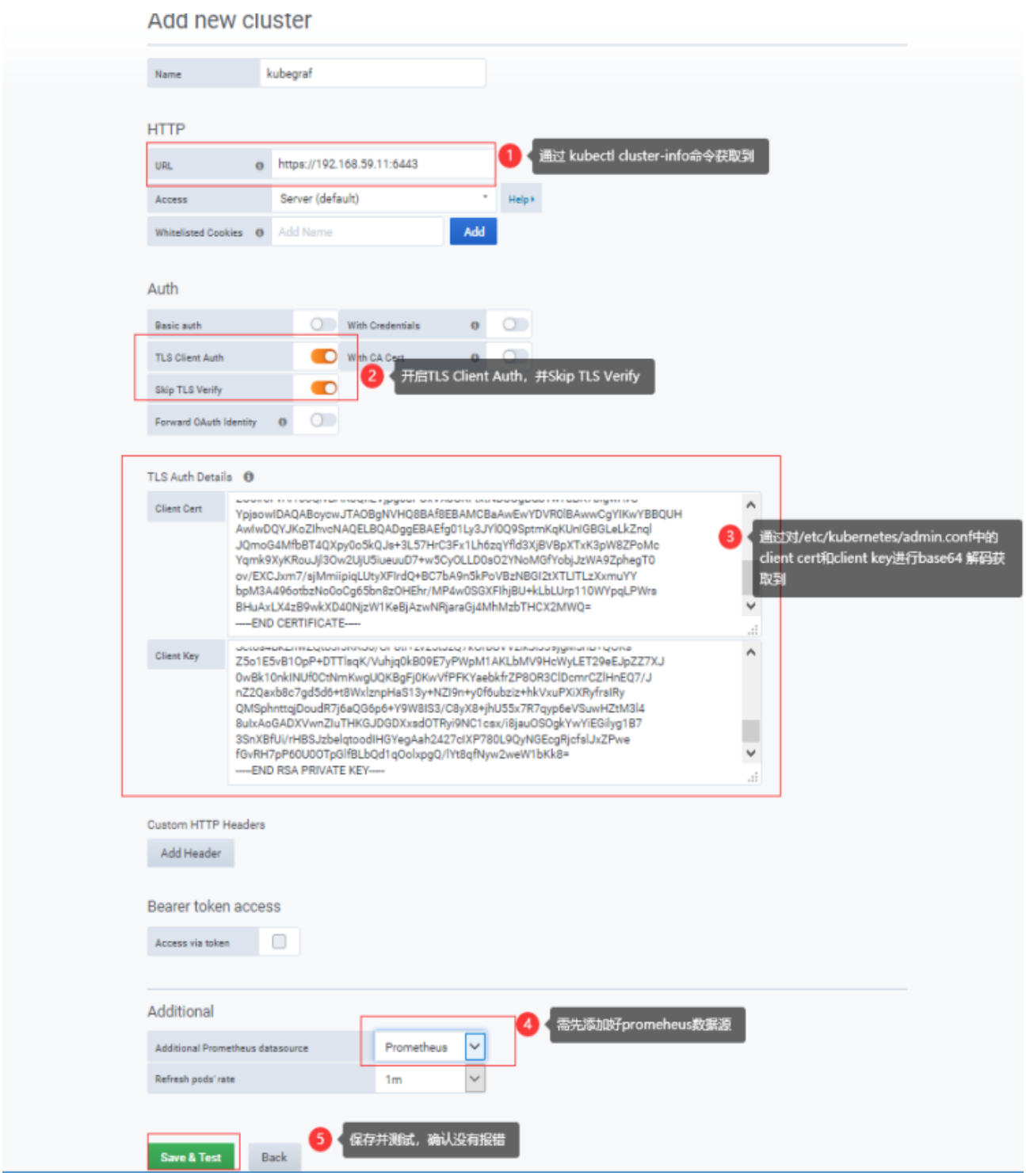
然后，再点击"Add New Cluster"，如下图所示。



通过kubectl cluster-info获取到master的URL

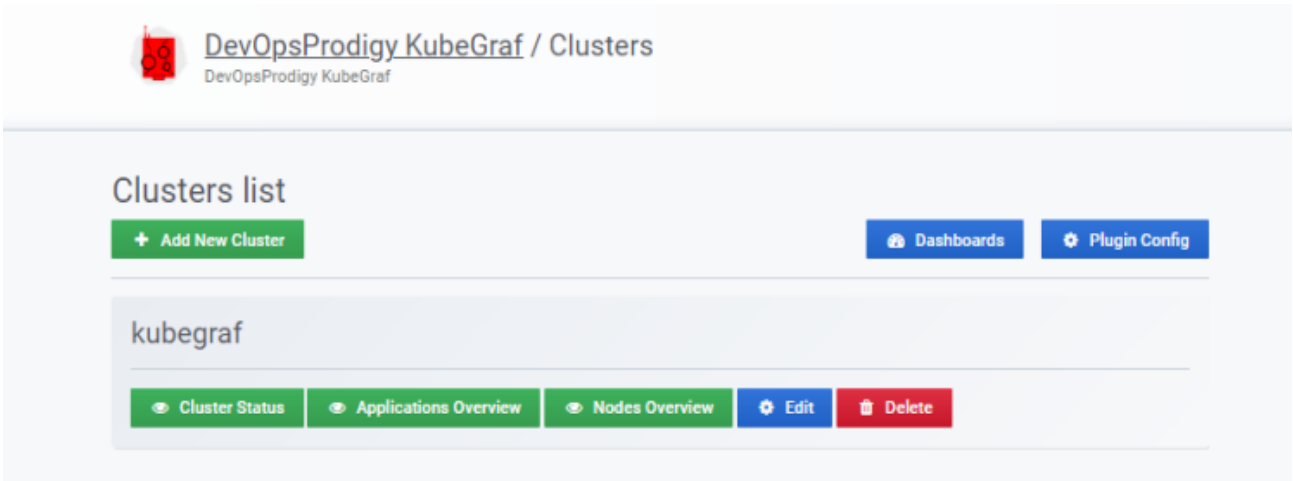
kubectl cluster-info

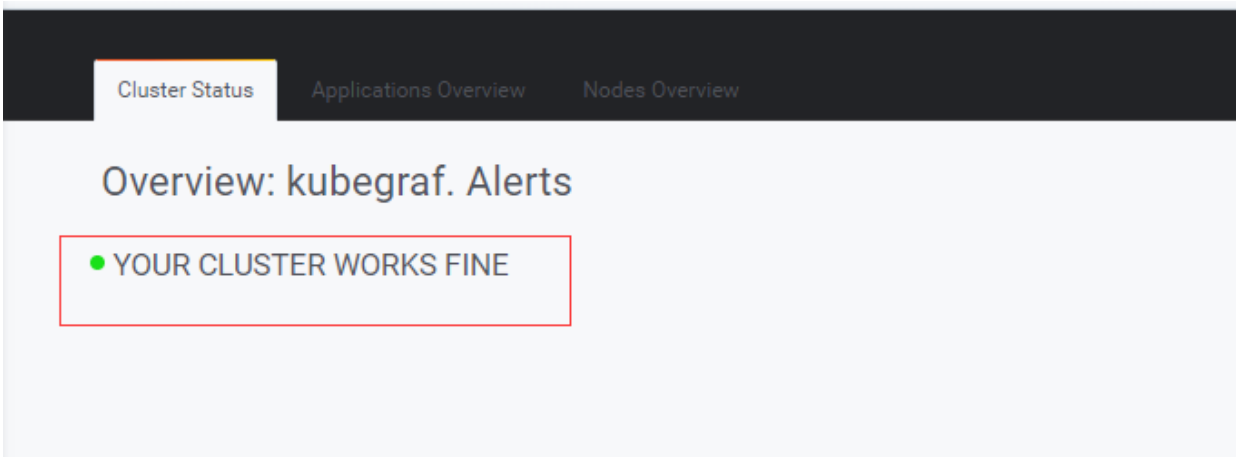
```
[root@master01 ~]# kubectl cluster-info
Kubernetes master is running at https://192.168.59.11:6443
KubeDNS is running at https://192.168.59.11:6443/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy
Metrics-server is running at https://192.168.59.11:6443/api/v1/namespaces/kube-system/services/https:metrics-server:/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
[root@master01 ~]#
```

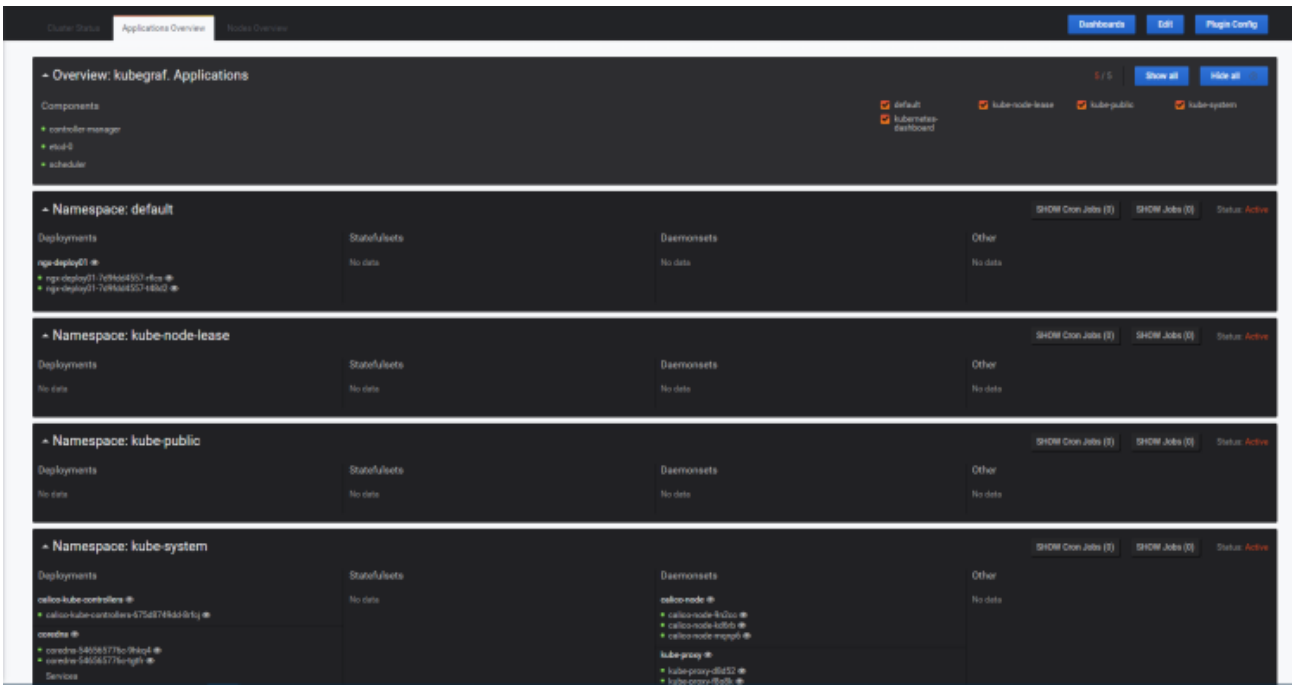


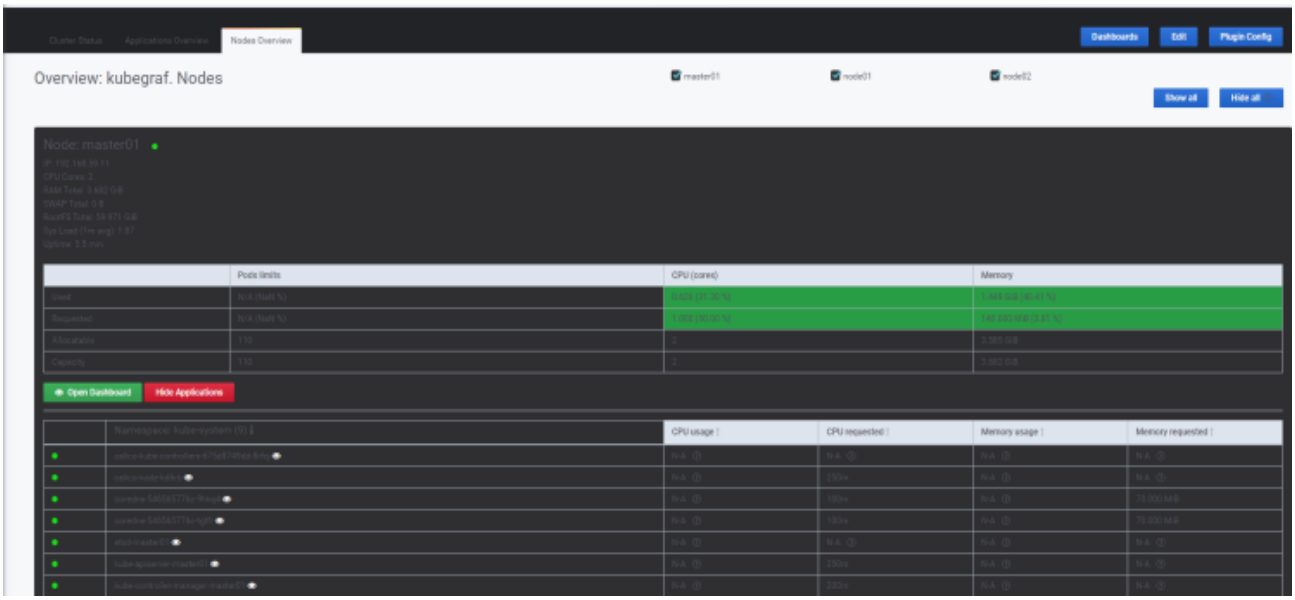
Client Cert和Client key解码获取方法如下：

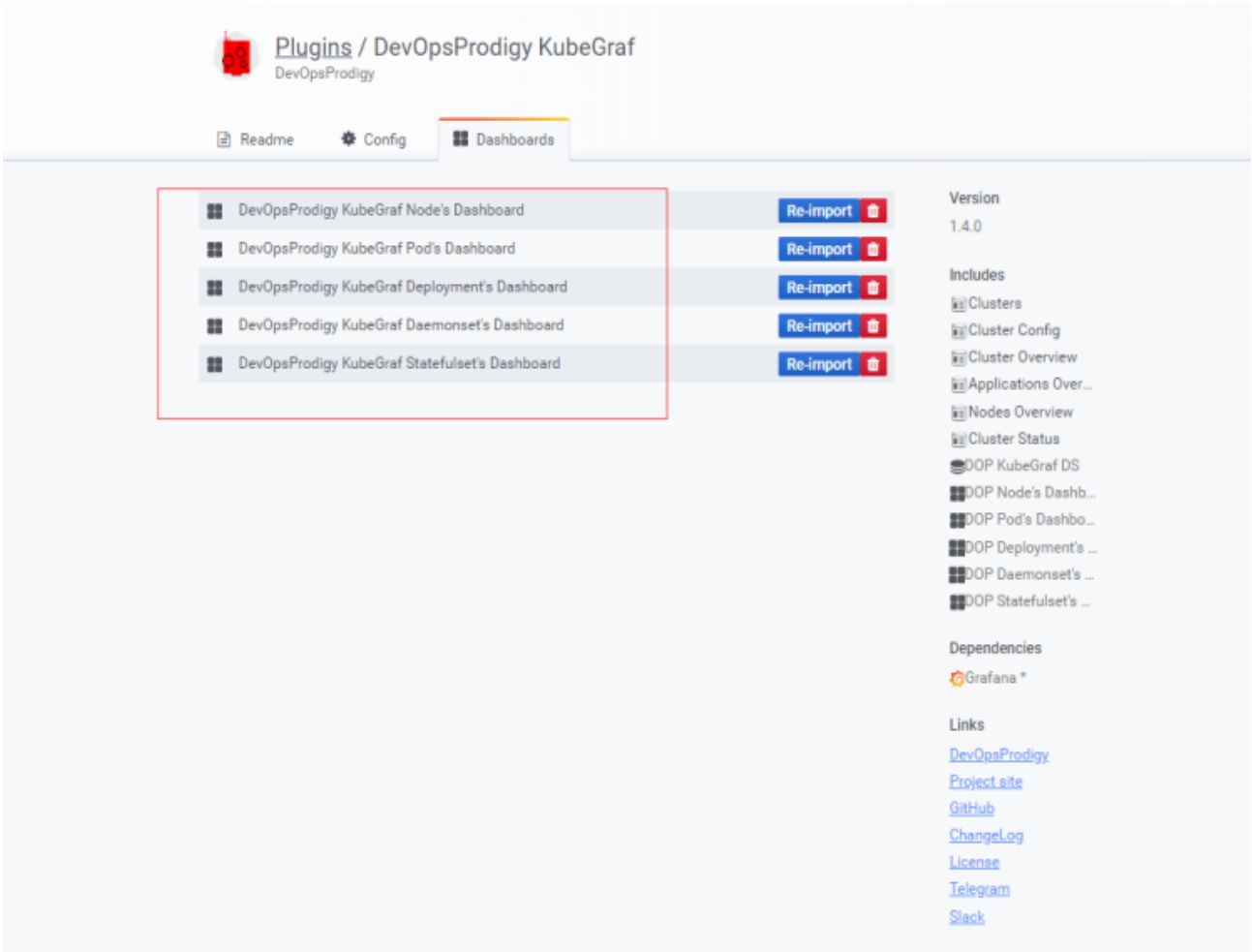
到此，我们就完成了KubeGraf插件的配置。从下图我们看到KubeGraf插件可展示集群的状态(Cluster Status)、应用概况(Applications Overview)、节点概况(Nodes Overview)等信息。




Cluster Status
Applications Overview
Nodes Overview
Overview: kubegraf. Alerts
YOUR CLUSTER WORKS FINE


Applications Overview
Dashboards
Edit
Plugin Config
Overview: kubegraf. Applications
Components
controller-manager
etcd-0
scheduler
default
kube-node-lease
kube-public
kube-system
kubernetes-dashboard
Show all
Hide all
Namespace: default
Deployments
StatefulSets
Daemonsets
Other
No data
Namespace: kube-node-lease
Namespace: kube-public
Namespace: kube-system
calico-kube-controllers
coredns
calico-node
kube-proxy
Services





总结：在安装好插件后，各图表可能会没有数据。原因是：node_exporter/kube-state-metrics/cadvisor版本不同，在收集node/pod/容器等性能数据的标签也不同，需要在grafana中重新调整。不过初次安装配置

grafana-kubernetes-app或者kubeGraf对我们了解k8s的监控指标是很有帮助的。