

kubernetes监控：Weave Scope

参考：<https://segmentfault.com/a/1190000013383594>

插件：<https://github.com/weaveworks-plugins/>

- [scope简介](#)
- [scope部署](#)
- [插件安装](#)

scope简介

scope 是 weave公司开源的用于监控，可视化，管理kubernetes集群的一个类似于dashbord的UI系统。有以下四大特点：

- 1、实时了解你的docker容器。
- 2、相关细节和深层链接。提供了容器tags，元数据，metrics等细节，也提供了cpu和内存指标。
- 3、集成了容器管理。可以pause，stop容器，也提供了webshell，方便对容器进行操作。
- 4、插件机制。这个很重要，可以根据约定，写一些自己需要的插件。官方提供的插件集中在github。

scope提供了容器之间的业务拓扑，可以很方便的查看调用关系。

scope部署

WeaveScope.yaml

```
$ vim WeaveScope.yaml

apiVersion: v1
kind: List
items:
  - apiVersion: v1
    kind: Namespace
    metadata:
      name: weave
      annotations:
        cloud.weave.works/version: v1.0.0-44-gd0d2369
  - apiVersion: v1
    kind: ServiceAccount
    metadata:
      name: weave-scope
      annotations:
        cloud.weave.works/launcher-info: |-
          {
            "original-request": {
              "url": "/k8s/scope.yaml?k8s-version=1.8.0",
              "date": "Sat Feb 24 2018 09:12:44 GMT+0000 (UTC)"
            },
            "email-address": "support@weave.works"
```

```

    }
    labels:
      name: weave-scope
      namespace: weave
- apiVersion: rbac.authorization.k8s.io/v1beta1
  kind: ClusterRole
  metadata:
    name: weave-scope
    annotations:
      cloud.weave.works/launcher-info: |-
        {
          "original-request": {
            "url": "/k8s/scope.yaml?k8s-version=1.8.0",
            "date": "Sat Feb 24 2018 09:12:44 GMT+0000 (UTC)"
          },
          "email-address": "support@weave.works"
        }
    labels:
      name: weave-scope
      namespace: weave
  rules:
    - apiGroups:
        - '*'
      resources:
        - '*'
      verbs:
        - '*'
    - nonResourceURLs:
        - '*'
      verbs:
        - '*'
- apiVersion: rbac.authorization.k8s.io/v1beta1
  kind: ClusterRoleBinding
  metadata:
    name: weave-scope
    annotations:
      cloud.weave.works/launcher-info: |-
        {
          "original-request": {
            "url": "/k8s/scope.yaml?k8s-version=1.8.0",
            "date": "Sat Feb 24 2018 09:12:44 GMT+0000 (UTC)"
          },
          "email-address": "support@weave.works"
        }
    labels:
      name: weave-scope
      namespace: weave
  roleRef:
    kind: ClusterRole
    name: weave-scope
    apiGroup: rbac.authorization.k8s.io
  subjects:
    - kind: ServiceAccount

```

```

      name: weave-scope
      namespace: weave
- apiVersion: apps/v1beta1
  kind: Deployment
  metadata:
    name: weave-scope-app
    annotations:
      cloud.weave.works/launcher-info: |-
        {
          "original-request": {
            "url": "/k8s/scope.yaml?k8s-version=1.8.0",
            "date": "Sat Feb 24 2018 09:12:44 GMT+0000 (UTC)"
          },
          "email-address": "support@weave.works"
        }
    labels:
      name: weave-scope-app
      app: weave-scope
      weave-cloud-component: scope
      weave-scope-component: app
    namespace: weave
  spec:
    replicas: 1
    revisionHistoryLimit: 2
    template:
      metadata:
        labels:
          name: weave-scope-app
          app: weave-scope
          weave-cloud-component: scope
          weave-scope-component: app
      spec:
        containers:
          - name: app
            args:
              - '--no-probe'
              - '--weave=false'
            env: []
            image: 'weaveworks/scope'
            imagePullPolicy: IfNotPresent
            ports:
              - containerPort: 4040
                protocol: TCP
- apiVersion: v1
  kind: Service
  metadata:
    name: weave-scope-app
    annotations:
      cloud.weave.works/launcher-info: |-
        {
          "original-request": {
            "url": "/k8s/scope.yaml?k8s-version=1.8.0",
            "date": "Sat Feb 24 2018 09:12:44 GMT+0000 (UTC)"
          }
        }

```

```

        },
        "email-address": "support@weave.works"
    }
    labels:
        name: weave-scope-app
        app: weave-scope
        weave-cloud-component: scope
        weave-scope-component: app
    namespace: weave
spec:
    type: NodePort
    ports:
        - name: app
          port: 80
          protocol: TCP
          targetPort: 4040
          nodePort: 32404
    selector:
        name: weave-scope-app
        app: weave-scope
        weave-cloud-component: scope
        weave-scope-component: app
- apiVersion: extensions/v1beta1
  kind: DaemonSet
  metadata:
    name: weave-scope-agent
    annotations:
        cloud.weave.works/launcher-info: |-
            {
                "original-request": {
                    "url": "/k8s/scope.yaml?k8s-version=1.8.0",
                    "date": "Sat Feb 24 2018 09:12:44 GMT+0000 (UTC)"
                },
                "email-address": "support@weave.works"
            }
    labels:
        name: weave-scope-agent
        app: weave-scope
        weave-cloud-component: scope
        weave-scope-component: agent
    namespace: weave
spec:
    template:
        metadata:
            labels:
                name: weave-scope-agent
                app: weave-scope
                weave-cloud-component: scope
                weave-scope-component: agent
        spec:
            containers:
                - name: scope-agent
                  args:

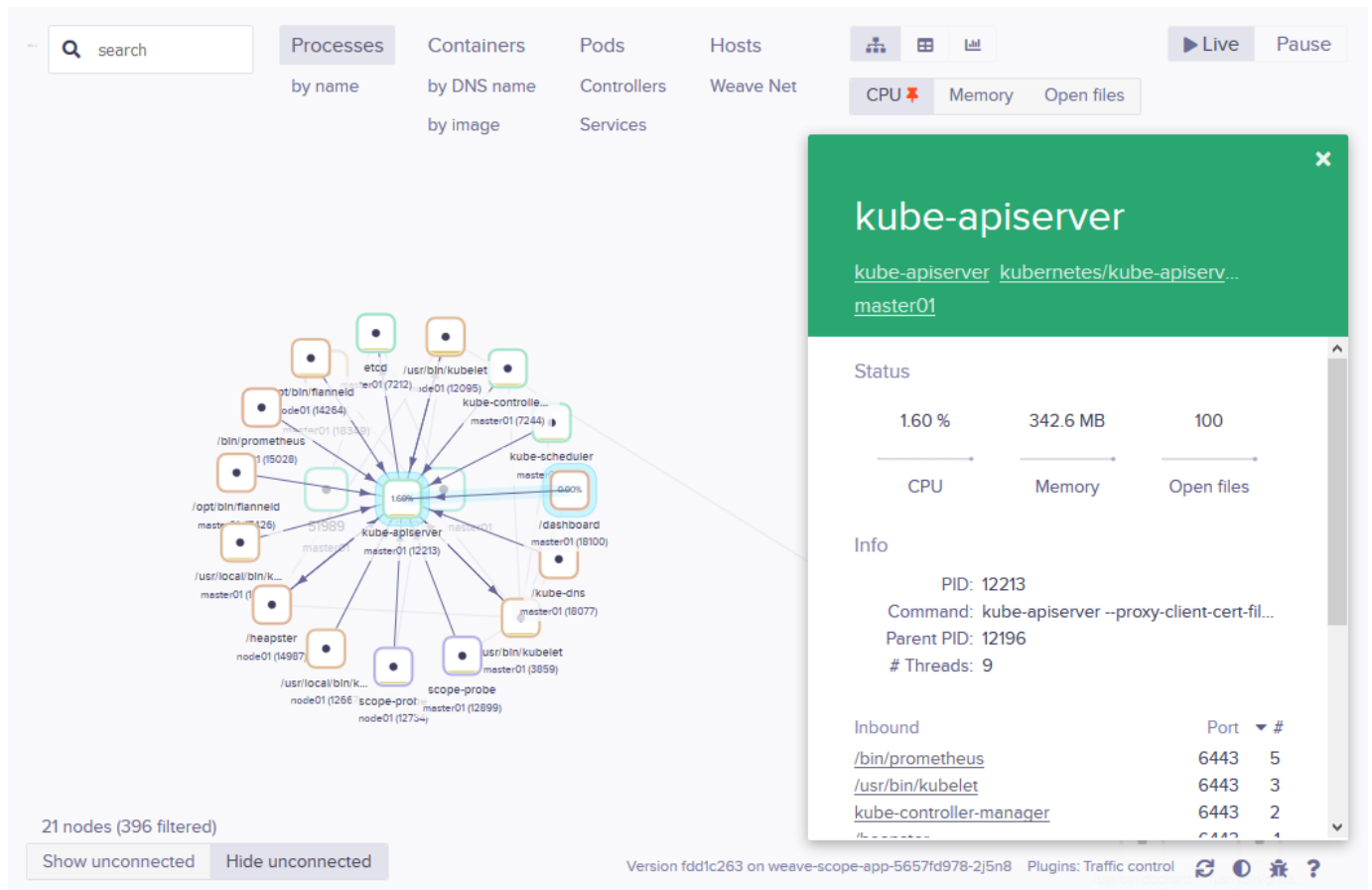
```

```
- '--no-app'
- '--probe.docker.bridge=docker0'
- '--probe.docker=true'
- '--probe.kubernetes=true'
- 'weave-scope-app.weave:80'
- '--weave=false'
env:
  - name: KUBERNETES_HOSTNAME
    valueFrom:
      fieldRef:
        apiVersion: v1
        fieldPath: spec.nodeName
image: 'weaveworks/scope'
imagePullPolicy: IfNotPresent
securityContext:
  privileged: true
volumeMounts:
  - name: docker-socket
    mountPath: /var/run/docker.sock
  - name: scope-plugins
    mountPath: /var/run/scope/plugins
  - name: sys-kernel-debug
    mountPath: /sys/kernel/debug
dnsPolicy: ClusterFirstWithHostNet
hostNetwork: true
hostPID: true
serviceAccountName: weave-scope
tolerations:
  - effect: NoSchedule
    operator: Exists
volumes:
  - name: docker-socket
    hostPath:
      path: /var/run/docker.sock
  - name: scope-plugins
    hostPath:
      path: /var/run/scope/plugins
  - name: sys-kernel-debug
    hostPath:
```

```
path: /sys/kernel/debug
updateStrategy:
  type: RollingUpdate
```

```
$ kubectl apply -f WeaveScope.yaml
```

web页面地址及 端口: <http://192.168.255.132:32404>



插件安装

scope-traffic-control 插件, 该插件用来控制容器的流量。

本身k8s只提供了cpu, 内存和存储的限制。在官方不支持流控之前, 也是一个不侵入的选择。利用的原理就是Linux tc。后期我们会对该插件专门介绍。

```
$ vim k8s-traffic-control.yaml
apiVersion: extensions/v1beta1
kind: DaemonSet
metadata:
  labels:
    app: weavescope
    weavescope-component: weavescope-traffic-control-plugin
  name: weavescope-traffic-control-plugin
spec:
  template:
    metadata:
      labels:
        app: weavescope
        weavescope-component: weavescope-traffic-control-plugin
    spec:
      hostPID: true
      hostNetwork: true
      containers:
        - name: weavescope-traffic-control-plugin
          image: weaveworksplugins/scope-traffic-control:latest
          securityContext:
            privileged: true
          volumeMounts:
            - name: docker-sock
              mountPath: /var/run/docker.sock
            - name: scope-plugins
              mountPath: /var/run/scope/plugins
      volumes:
        - name: docker-sock
          hostPath:
            path: /var/run/docker.sock
        - name: scope-plugins
          hostPath:
            path: /var/run/scope/plugins
```

```
$ kubectl apply -f k8s-traffic-control.yaml
```

Processes

Containers

Pods

Hosts

by name

by DNS name

by image

Controllers

Weave Net

CPU

Memory

Live

Pause

14 nodes (78 filtered)

AllSystem containersApplication containers

Stopped containersRunning containersBoth

Show uncontainedHide uncontained

defaultkube-publickube-systemmonitoringweaveAll N

Version fdd1c263 on weave-scope-app-5657fd978-2j5n8Plugins: Traffic control

POD

kubernetes/pause-amd64
nginx-controller-8kw9q node01

Status

0.00 %576 KB

CPUMemory

Info

Image tag: 3.0
Image name: kubernetes/pause-amd64
Command: /pause
State: Up About an hour
Uptime: 1 hour
Restart #: 0
IPs: 10.244.1.149

POD