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Daemon set

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A Daemon Set ensures that all (or some) Nodes run a copy of a Pod. As nodes are added to the cluster, Pods are added to them. As nodes are removed from the cluster, those Pods are garbage collected. Deleting a Daemon Set will clean up the Pods it created.

Some typical uses of a DaemonSet’s are:

running a cluster storage daemon on every node

running a logs collection daemon on every node

running a node monitoring daemon on every node

daemonset.yaml file below describes a Daemon Set that runs the fluentd-elasticsearch Docker image

fluentd creation manifest yml file

# vi daemonset.yml

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apiVersion: apps/v1

kind: DaemonSet

metadata:

name: fluentd-elasticsearch

namespace: kube-system

labels:

k8s-app: fluentd-logging

spec:

selector:

matchLabels:

name: fluentd-elasticsearch

template:

metadata:

labels:

name: fluentd-elasticsearch

spec:

tolerations:

# these tolerations are to have the daemon set runnable on control plane nodes

# remove them if your control plane nodes should not run pods

- key: node-role.kubernetes.io/control-plane

operator: Exists

effect: NoSchedule

- key: node-role.kubernetes.io/master

operator: Exists

effect: NoSchedule

containers:

- name: fluentd-elasticsearch

image: quay.io/fluentd\_elasticsearch/fluentd:v2.5.2

resources:

limits:

memory: 200Mi

requests:

cpu: 100m

memory: 200Mi

volumeMounts:

- name: varlog

mountPath: /var/log

# it may be desirable to set a high priority class to ensure that a DaemonSet Pod

# preempts running Pods

# priorityClassName: important

terminationGracePeriodSeconds: 30

volumes:

- name: varlog

hostPath:

path: /var/log

...

# Kubectl apply -f daemonset.yml

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Stateful set

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stateless container - no storage

stateful container - storage will be available

stateful pods - storage will be available

stateless pods - no storage will be available

When you want to make your application as a statefull application with some stable storage then you need to create such kind of pods by using statefullset resource

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PV and PVC - (persistent volume and persistent volume claim)

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When you are creating the pods by using stateful set , we need to attach some storage classes on the pod, to attach the storage classes for the pods we are going to use PV and PVC concepts. That will ensure the persistence

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Config map and Secrets

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To supply environment available to the pods

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ingress controller

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To route the incoming traffic to a particular service in the k8s cluster

Routing part will be taken care by ingress controller