Troubleshoot FailedGetResourceMetric Events Generated by Istiod Pods

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Introduction

This document describes how to address FailedGetResourceMetric events generated by istiod pods.

Problem

<#root>

After deploying Subscriber Microservices Infrastructure (SMI) cluster using 2023.01 Cloud Native Deployment Platform (CNDP) release it has been noticed istiod pods keep generating FailedGetResourceMetric events:

```
cloud-user@ndce-smi-1:~$
kubectl get events -A -o yaml
apiVersion: v1
items:
- apiVersion: v1
count: 467057
 eventTime: null
 firstTimestamp: "2023-12-31T03:57:42Z"
 involvedObject:
    apiVersion: autoscaling/v2beta2
    kind: HorizontalPodAutoscaler
    name: istiod
    namespace: istio-system
    resourceVersion: "4374"
    uid: c85a05a1-b9ec-4241-8347-0b3c9eec1193
 kind: Event
 lastTimestamp: "2024-03-22T14:42:49Z"
message: 'unable to get metrics for resource cpu: unable to fetch metrics from resource
   metrics API: the server could not find the requested resource (get pods.metrics.k8s.io)'
```

```
metadata:
    creationTimestamp: "2023-12-31T03:57:42Z"
   managedFields:
    - apiVersion: v1
      fieldsType: FieldsV1
      fieldsV1:
        f:count: {}
        f:firstTimestamp: {}
        f:involvedObject:
          f:apiVersion: {}
          f:kind: {}
          f:name: {}
          f:namespace: {}
          f:resourceVersion: {}
          f:uid: {}
        f:lastTimestamp: {}
        f:message: {}
        f:reason: {}
        f:source:
          f:component: {}
        f:type: {}
      manager: kube-controller-manager
      operation: Update
      time: "2023-12-31T03:57:42Z"
    name: istiod.17a5ce7b410bceb6
    namespace: istio-system
    resourceVersion: "55452121"
    selfLink: /api/v1/namespaces/istio-system/events/istiod.17a5ce7b410bceb6
    uid: 9616bdc6-90d1-4475-b6af-6d41e185b434
reason: FailedGetResourceMetric
  reportingComponent: ""
  reportingInstance: ""
  source:
component: horizontal-pod-autoscaler
 type: Warning
kind: List
metadata:
 resourceVersion: ""
 selfLink: ""
```

Analysis

The issue appears to be due to Horizontal Pod Autoscaler (HPA) is enabled in istiod pods during the deployment. Since HPA requires Metrics API to determine CPU utilization for scaling pods up/down, and Metrics API is not currently used in CNDP managed Kubernetes cluster, then this is a design flaw in istiod deployment.

Solution

HPA has been removed starting 2023.03 CNDP release onwards.