GKE Training: Troubleshooting a broken cluster

# **Overview**

This lab

## What You’ll Learn

In this Workshop you will learn how to:

* How to trouble unschedulable pods in a cluster and resolve the issue

# **Lab 1: Unschedulable pods 1**

## Objectives

This lab demonstrates the deployment of a GKE cluster, deployment of wrongly configured Jobs and the resolution needed to resolve the induced in the cluster issues.

* Create cluster
* Deploy workloads
* Fix workloads

# **Task 1. Create cluster**

In this section, you:

* Create a GKE cluster in a specific network/subnetwork

#### Setting up your environment

1. In the browser window where you have logged into the Cloud Console, click [this link](https://console.cloud.google.com/cloudshell/) to load a Cloud Shell  
     
   Alternatively, you can copy the URL below to open the Cloud Shell:

| https://console.cloud.google.com/cloudshell/ |
| --- |

1. Run this command to create a network and subnetwork

| # create network  gcloud compute networks create gke-clusters-network --subnet-mode=custom  # create subnetwork  gcloud compute networks subnets create gke-subnetwork --network=gke-clusters-network --region=us-central1 --range=10.1.0.0/28 |
| --- |

1. Run this command to create a GKE cluster where all VMs will reside in the network/subnetwork you just created.

| # create cluster  gcloud beta container clusters create "standard-cluster-1" --zone "us-central1-a" \  --no-enable-basic-auth \  --machine-type "n1-standard-1" \  --image-type "COS" \  --disk-type "pd-standard" \  --disk-size "100" \  --num-nodes "3" \  --enable-cloud-logging \  --enable-cloud-monitoring \  --enable-ip-alias \  --network=gke-clusters-network \  --subnetwork=gke-subnetwork \  --default-max-pods-per-node "30" \  --addons HorizontalPodAutoscaling,HttpLoadBalancing \  --enable-autorepair \  --scopes "https://www.googleapis.com/auth/devstorage.read\_only","https://www.googleapis.com/auth/logging.write","https://www.googleapis.com/auth/monitoring","https://www.googleapis.com/auth/servicecontrol","https://www.googleapis.com/auth/service.management.readonly","https://www.googleapis.com/auth/trace.append" |
| --- |

1. Create additional node pools and delete default node pool

| # create additional node pools  gcloud beta container node-pools create node-pool-0 \  --num-nodes=3 \  --machine-type=n1-standard-1 \  --disk-size=100 \  --disk-type=pd-standard \  --scopes=https://www.googleapis.com/auth/devstorage.read\_only,https://www.googleapis.com/auth/logging.write,https://www.googleapis.com/auth/monitoring,https://www.googleapis.com/auth/servicecontrol,https://www.googleapis.com/auth/service.management.readonly,https://www.googleapis.com/auth/trace.append \  --image-type=COS \  --max-pods-per-node=30 \  --enable-autorepair \  --enable-autoupgrade \  --cluster=standard-cluster-1 \  --zone=us-central1-a \  --node-taints=team=research:NoSchedule  # delete default node pool  gcloud container node-pools delete default-pool --cluster=standard-cluster-1 --zone us-central1-a |
| --- |

# **Task 2. Deploy problematic workload**

1. Deploy a workload using the YAML below

| $ kubectl apply -f https://storage.googleapis.com/breakfix/job.yaml |
| --- |

# 

# **Task 3. Identify issue and resolve it**

* Now that you’ve deployed the workload. Find the issue (why are pods not schedulable) and resolve it by making whatever change to the cluster.
* If resolved, the workload’s pods status go from “Pending” to “Running”. We’ll discuss your resolution later.

# **Lab 2: Unschedulable pods 2**

# **Task 1. Deploy the workload**

Using the same cluster you created earlier, deploy this new workload

1. Deploy a workload using the YAML below

| $ kubectl apply -f https://storage.googleapis.com/breakfix/job2.yaml |
| --- |

# 

# **Task 2. Identify the issue and resolve it**

* Now that you’ve deployed the workload. Find the issue (why are pods not schedulable) and resolve it by making whatever change to the cluster.
* If resolved, the workload’s pods status go from “Pending” to “Running”. We’ll discuss your resolution later.