Architecting with Google Kubernetes Engine

Duración: 3 Días **Código del Curso: GO6594** **Version: 1.7.1**

Temario:

Learn how to deploy and manage containerized applications on Google Kubernetes Engine (GKE) and the other tools on Google Cloud. This course features a combination of lectures, demos, and hands-on labs to help you explore and deploy solution elements —including infrastructure components like pods, containers, deployments, and services —along with networks and application services.
You'll also learn how to deploy practical solutions, including security and access management, resource management, and resource monitoring.

Dirigido a:

This class is intended for the following participants: SysOps/DevOps architects, administrators and staff who are using the Google Cloud to create new solutions or to integrate existing systems, application environments and infrastructure with the Google Cloud.

Objetivos:

- This course teaches participants the following skills:
- Understand how software containers work
- Understanding the architecture of Kubernetes
- Understanding the Google Cloud architecture
- Understanding how the pod network works in the Kubernetes engine
- Create and manage Kubernetes Engine clusters using the GC console and the gcloud/kubectl commands
- Launch, Use Secrets and ConfigMaps to isolate security credentials and configuration artifacts
- Understand GC options for managed storage services Monitor applications running on Kubernetes Engine

Prerequisitos:

To get the most out of this course, participants should have: - Completed Google Cloud Fundamentals: Core Infrastructure or have equivalent experience. - Basic proficiency with command-line tools and Linux operating system environments.

Contenido:

Module 1: Introduction to Google Cloud

- Use the Google Cloud Console.
- Use Cloud Shell.
- Define cloud computing.
- Identify Google Cloud compute services.
- Understand regions and zones.
- Understand the cloud resource hierarchy.
- Administer your Google Cloud resources.

Module 2: Containers and Kubernetes in Google Cloud

- Create a container using Cloud Build.
- Store a container in Container Registry.
- Understand the relationship between Kubernetes and Google Kubernetes Engine (GKE).
- Understand how to choose among Google Cloud Compute platforms.

Module 3: Kubernetes Architecture

- Understand the architecture of Kubernetes: pods, namespaces.
- Understand the control-plane components of Kubernetes.
- Create container images using Google Cloud Build.
- Store container images in Google Container Registry.
- Create a Kubernetes Engine cluster.

Module 4: Kubernetes Operations

- Work with the kubectl command.
- Inspect the cluster and Pods.
- View a Pod's console output.
- Sign in to a Pod interactively.

Module 5: Deployment, Jobs, and Scaling

- Deployments.
- Ways to create deployments.
- Services and scaling.
- Updating deployments.
- Rolling updates.
- Blue/green deployments.
- Canary deployments.
- Managing deployments.
- Jobs and CronJobs.
- Parallel Jobs.
- CronJobs.
- Cluster scaling.
- Downscaling.
- Node pools.
- Controlling pod placement.
- Affinity and Anti-Affinity.
- Pod placement example.
- Taints and tolerations.
- Getting software into your cluster.

Module 6: GKE Networking

- Introduction.
- Pod networking.
- Services.
- Finding services.
- Service types and load balancers.
- How load balancers work.
- Ingress resource.
- Container-native load balancing.
- Network security.

Module 7: Persistent Data and Storage

- Volumes.
- Volume types.
- The PersistentVolume abstraction.
- More on PersistentVolumes.
- StatefulSets.
- ConfigMaps.
- Secrets.

Module 8: Access Control and Security in Kubernetes and Kubernetes Engine

- Understand Kubernetes authentication and authorization.
- Define Kubernetes RBAC roles and role bindings for accessing resources in namespaces.
- Define Kubernetes RBAC cluster roles and cluster role bindings for accessing cluster-scoped resources.
- Define Kubernetes pod security policies.
- Understand the structure of IAM.
- Define IAM roles and policies for Kubernetes Engine cluster administration.

Module 9: Logging and Monitoring

- Use Cloud Monitoring to monitor and manage availability and performance.
- Locate and inspect Kubernetes logs.
- Create probes for wellness checks on live applications.

Module 10: Using GCP Managed Storage Services from Kubernetes Applications

- Understand pros and cons for using a managed storage service versus self-managed containerized storage.
- Enable applications running in GKE to access Google Cloud storage services.
- Understand use cases for Cloud Storage, Cloud SQL, Cloud Spanner, Cloud Bigtable, Cloud Firestore, and BigQuery from within a Kubernetes application.

Más información:

Para más información o para reservar tu plaza llámanos al (34) 91 425 06 60

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