Google Cloud Platform for Systems Operations Professionals (CPO200)
Course Agenda

Module 1: Google Cloud Platform Projects

- Identify project resources and quotas

- Explain the purpose of Google Cloud Resource Manager and Identity and Access Management

Lab: Google Cloud Platform Projects

- Use the Cloud Platform Console to create and manage multiple projects

- Use service accounts and permissions to share view-level access between projects

Module 2: Instances

- Explain how to create and move instances

- Identify how to connect to and manage instances

Lab: Google Compute Engine Instances and Machine Types

- Create an instance using the Cloud Platform Console

- Configure the Cloud SDK on the Compute Engine instance

- Initialize Cloud Source Repositories using Git

Module 3: Networks

- Explain how to create and manage networks in projects

- Identify how to create and manage firewall rules, routes, and IP addresses

Lab: Google Compute Engine Networks

- Create a non-default network

- Compare default and non-default networks

- Create firewall-rules with and without tags

- Review network configuration in Google Cloud Monitoring

Module 4: Disks and Images

- Explain how to create and manage persistent disks

- Identify how to create and manage disk images

Lab: Google Compute Engine Disks and Images

- Create an instance and install the Java 7 JRE from OpenJDK

- Create a customized Compute Engine image

- Launch and test a Compute Engine instance based on your image

Module 5: Authorization

- Explain the purposes of and use cases for Google Compute Engine service accounts

- Identify the types of service account scopes

Lab: Google Compute Engine Authorization

- Set authorization scopes for a Compute Engine instance

- Reserve the external IP address for the new instance

- Install and configure Jenkins on a Compute Engine instance

Module 6: Snapshots

- Identify the purpose of and use cases for disk snapshots

- Explain the process of creating a snapshot

Lab: Google Compute Engine Snapshots

- Prepare and snapshot a Compute Engine instance

- Restore and test the snapshot to a different zone

- Snapshot a data disk without shutting down an instance

Module 7: Google Cloud Storage

- Explain the purpose of and use cases for Google Cloud Storage

- Identify methods for accessing Google Cloud Storage buckets and objects

- Explain the security options available for Google Cloud Storage buckets and objects

Lab: Google Cloud Storage for Backups

- Create and configure Nearline and DRA buckets

- Modify the lifecycle management policy for a bucket

- Copy data to a bucket using the Cloud SDK

- Review, modify, and test bucket ACLs

- Configure Jenkins to perform a backup to Cloud Storage

- Test and verify that the backups are working

Lab: Google Container Registry

- Create a customized Jenkins build node instance

- Create an image using the instance's boot persistent disk

- Create a test build node instance based on the new image

- Test uploading images to Google Container Registry

Module 8: Instance Groups

- Identify the purpose of and use cases for instance groups

- Explain the process of creating and using instance groups

Lab: Google Compute Engine Instance Groups

- Create a Compute Engine instance group with instances

- Define Jenkins build tasks and run them

- Run the build tasks to create a guestbook image

Module 9: Google Cloud SQL

- Understand how to create and administer Cloud SQL instances

- Explain how to access Cloud SQL instances from Compute Engine instances

Lab: Google Cloud SQL

- Create a Cloud SQL instance using the Cloud SDK

- Create a Compute Engine instance from a custom image

- Deploy and test the Guestbook web application

Module 10: Metadata

- Explain the purpose of metadata and identify the use cases for project and instance metadata

- Identify how to set and query metadata

Lab: Google Compute Engine Metadata

- Add instance and project metadata

- Query instance and project metadata using the Cloud SDK

- Query metadata from inside a Compute Engine instance

Module 11: Startup and Shutdown Scripts

- Identify the purpose of and use cases for startup and shutdown scripts

Lab: Google Compute Engine Startup Scripts

- Create an instance with a startup script in metadata

- Create an instance with a startup script from Cloud Storage

- Create an instance with a shutdown script and install the Cloud Logging agent

Lab: Google API Client Library

- Use the API Explorer to query an API request

- Run sample code that uses the Google API Client Library

- Test and build a container that uses the Cloud SQL APIs

- Create a new Compute Engine image

Module 12: Autoscaling

- Explain the use cases for autoscaling and how autoscaling functions

- Identify the purpose of autoscaling policies

Lab: Google Compute Engine Autoscaler

- Create an instance template and managed instance group

- Configure the managed instance group for autoscaling

- Generate an artificial load to trigger scaling of your cluster

Module 13: Load Balancing

- Explain the differences between network load balancing and HTTP load balancing

- Identify the purpose of and use cases for cross-region and content-based load balancing

Lab: HTTP/HTTPS Load Balancing

- Create multiple autoscaled managed instance groups

- Configure fault-tolerant HTTP load balancing

- Test health checks for use with HTTP load balancing

Lab: Google Cloud Deployment Manager

- Create a Guestbook deployment using a plain YAML format

- Manage a Guestbook deployment using a Jinja template

- Create a Guestbook deployment using Python templates

Lab: Deleting Cloud Platform Projects and Resources

- Delete Google Cloud Platform resources

- Test dependencies between resources

- Delete Google Cloud Platform projects

For information on the course, visit: http://www.simplilearn.com/virtualization-and-cloud-computing/google-cloud-platform-systems-operations-cpo200-training

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