

VERSION

23

CRASH COURSE

SR. CODE

EAPL/CRASH/CRTC23

COURSE CODE

EACGC

SUB CATEGORY

NETWORKING & SECURITY


TOTAL DURATION
45
HOURS


THEORY TAKEN
15
HOURS


PRACTICAL TAKEN
30
HOURS

ELYSIUM
ACADEMY
GOOGLE
CLOUD
ASSOCIATE
**ELYSIUM
ACADEMY
GOOGLE
CLOUD
ASSOCIATE**
ELYSIUM
ACADEMY
GOOGLE
CLOUD
ASSOCIATE

COURSE DESCRIPTION



The Google Cloud Associate Cloud Engineer course is designed for IT professionals who are new to cloud computing or who want to learn more about Google Cloud Platform. The course is also a good choice for developers who want to learn how to deploy and manage applications on Google Cloud Platform. It is a valuable credential for IT professionals who want to work in the cloud computing industry. The course demonstrates your knowledge of Google Cloud Platform and your ability to design, deploy, and manage solutions on Google Cloud Platform.

COURSE GOALS



- Demonstrate your ability to deploy, manage, and troubleshoot applications and infrastructure on Google Cloud Platform.
- Show that you have the skills and knowledge necessary to be a successful cloud engineer.
- Give you a competitive edge in the job market.

FUTURE SCOPE



- This will help you build a profitable business in cloud computing. So people can start their work on Google Cloud.
- This is a fantastic opportunity to network with individuals who share your interests.
- A raise in pay and more job prospects are on the horizon.

01

CHAPTER

1. SETTING UP CLOUD PROJECTS AND ACCOUNTS

- a. Creating a resource hierarchy.
- b. Applying organizational policies to the resource hierarchy.
- c. Granting members IAM roles within a project.
- d. Managing users and groups in Cloud Identity (manually and automated).
- e. Enabling APIs within projects.
- f. Provisioning and setting up products in Google Cloud's operations suite



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02

CHAPTER

2. MANAGING BILLING CONFIGURATION

- a. Creating one or more billing accounts.
- b. Linking projects to a billing account.
- c. Establishing billing budgets and alerts.
- d. Setting up billing exports.
- e. Installing and configuring the command line interface (CLI) specifically the cloud SDK log setting the default project.



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CHAPTER

3. PLANNING AND CONFIGURING COMPUTE RESOURCES

- a. Promising and estimating google cloud product using the price calculator.
- b. Selecting appropriate compute choices for a given workload (e.g., Compute Engine, Google Kubernetes Engine, Cloud Run, Cloud Functions).
- c. Using pre-emptible VMs and custom machine types as appropriate.



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04

CHAPTER

4. PLANNING AND CONFIGURING DATA STORAGE OPTIONS

- a. Product choice
(e.g., Cloud SQL, Big Query, Fire store, Cloud Spanner, Cloud Bigtable)
- b. Choosing storage options
(e.g., Zonal persistent disk, Regional balanced persistent disk, Standard, Nearline, Coldline, Archive).



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05

CHAPTER

5. PLANNING AND CONFIGURING NETWORK RESOURCES

- a. Differentiating load balancing options
- b. Identifying resource locations in a network for availability
- c. Configuring Cloud DNS



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MINS



02
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06

CHAPTER

6. DEPLOYING AND IMPLEMENTING COMPUTE ENGINE RESOURCES

- a. Launching a compute instance using the Google Cloud console and Cloud SDK (gcloud) (e.g., assign disks, availability policy, SSH keys).
- b. Creating an autoscaled managed instance group using an instance template.
- c. Generating/uploading a custom SSH key for instances.
- d. Installing and configuring the Cloud Monitoring and Logging Agent.
- e. Assessing compute quotas and requesting increases.



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CHAPTER

7. DEPLOYING AND IMPLEMENTING GOOGLE KUBERNETES ENGINE RESOURCES

- a. Installing and configuring the command line interface (CLI) for Kubernetes (kubectl).
- b. Deploying a Google Kubernetes Engine cluster with different configurations including AutoPilot, regional clusters, private clusters, etc.
- c. Deploying a containerized application to Google Kubernetes Engine
- d. Configuring Google Kubernetes Engine monitoring and logging.



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CHAPTER

8. DEPLOYING AND IMPLEMENTING CLOUD RUN AND CLOUD FUNCTIONS RESOURCES

- a. Deploying an application and updating scaling configuration, versions, and traffic splitting.
- b. Deploying an application that receives Google Cloud events (e.g., Pub/Sub events, Cloud Storage object change notification events).



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CHAPTER

9. DEPLOYING AND IMPLEMENTING DATA SOLUTIONS

- a. Initializing data systems with products (e.g., Cloud SQL, Firestore, BigQuery, Cloud Spanner, Pub/Sub, Cloud Bigtable, Dataproc, Dataflow, Cloud Storage).
- b. Loading data (e.g., command line upload, API transfer, import/export, load data from Cloud Storage, streaming data to Pub/Sub).



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CHAPTER

10. DEPLOYING AND IMPLEMENTING NETWORKING RESOURCES

- a. Creating a VPC with subnets (e.g., custom-mode VPC, shared VPC).
- b. Launching a Compute Engine instance with custom network configuration (e.g., internal-only IP address, Google private access, static external and private IP address, network tags).



01
HRS



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- c. Creating ingress and egress firewall rules for a VPC (e.g., IP subnets, network tags, service accounts).
- d. Creating a VPN between a Google VPC and an external network using Cloud VPN.
- e. Creating a load balancer to distribute application network traffic to an application (e.g., Global HTTP(S) load balancer, Global SSL Proxy load balancer, Global TCP Proxy load balancer, regional network load balancer, regional internal load balancer).

11

CHAPTER

11. DEPLOYING A SOLUTION USING CLOUD MARKETPLACE

- a. Browsing the Cloud Marketplace catalog and viewing solution details.
- b. Deploying a Cloud Marketplace solution.



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12

CHAPTER

12.IMPLEMENTING RESOURCES VIA INFRASTRUCTURE AS CODE

- a. Building infrastructure via Cloud Foundation Toolkit templates and implementing best practices.
- b. Installing and configuring Config Connector in Google Kubernetes Engine to create, update, delete, and secure resources.



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CHAPTER

13.MANAGING COMPUTE ENGINE RESOURCES

- a. Managing a single VM instance (e.g., start, stop, edit the configuration, or delete an instance).
- b. Remotely connecting to the instance
- c. Attaching a GPU to a new instance and installing necessary dependencies.
- d. Viewing current running VM inventory (instance IDs, details).



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- e. Working with snapshots
(e.g., create a snapshot from a VM, view snapshots, delete a snapshot).
- f. Working with images
(e.g., create an image from a VM or a snapshot, view images, delete an image).
- g. Working with instance groups
(e.g., set autoscaling parameters, assign instance template, create an instance template, remove instance group).
- h. Working with management interfaces
(e.g., Google Cloud console, Cloud Shell, Cloud SDK).

14

CHAPTER

14. MANAGING GOOGLE KUBERNETES ENGINE RESOURCES

- a. Viewing current running cluster inventory (nodes, pods, services).
- b. Browsing Docker images and viewing their details in the Artifact Registry.
- c. Working with node pools
(e.g., add, edit, or remove a node pool).



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HRS



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- d. Working with pods
(e.g., add, edit, or remove pods).
- e. Working with services
(e.g., add, edit, or remove a service).
- f. Working with stateful applications
(e.g. persistent volumes, stateful sets).
- g. Managing Horizontal and Vertical
autoscaling configurations.
- h. Working with management interfaces
(e.g., Google Cloud console, Cloud Shell,
Cloud SDK, kubectl).

15

CHAPTER

15. MANAGING CLOUD RUN RESOURCES

- a. Adjusting application traffic-
splitting parameters.
- b. Setting scaling parameters for
autoscaling instances.
- c. Determining whether to run Cloud
Run (fully managed) or Cloud
Run for Anthos.



15
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16

CHAPTER

16. MANAGING STORAGE AND DATABASE SOLUTIONS

- a. Managing and securing objects in and between Cloud Storage buckets.
- b. Setting object life cycle management policies for Cloud Storage buckets.
- c. Executing queries to retrieve data from data instances (e.g., Cloud SQL, BigQuery, Cloud Spanner, Datastore, CloudBigtable).
- d. Estimating costs of data storage resources.
- e. Backing up and restoring database instances (e.g., Cloud SQL, Datastore).
- f. Reviewing job status in Dataproc, Dataflow, or BigQuery.



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CHAPTER

17. MANAGING NETWORK RESOURCES

- a. Adding a subnet to an existing VPC.
- b. Expanding a subnet to have more IP addresses.
- c. Reserving static external or internal IP addresses.
- d. Working with CloudDNS, CloudNAT, Load Balancers, and firewall rules.



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18

CHAPTER

18. MONITORING AND LOGGING

- a. Creating Cloud Monitoring alerts based on resource metrics.
- b. Creating and ingesting Cloud Monitoring custom metrics (e.g., from applications or logs).
- c. Configuring log sinks to export logs to external systems (e.g., on-premises or BigQuery)
- d. Configuring log routers.
- e. Viewing and filtering logs in Cloud Logging.
- f. Viewing specific log message details in Cloud Logging. Using cloud diagnostics to research an application issue (e.g., viewing Cloud Trace data, using Cloud Debug to view an application point-in-time).
- g. Viewing Google Cloud status.



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CHAPTER

19. MANAGING IDENTITY AND ACCESS MANAGEMENT (IAM)

- a. Viewing IAM policies.
- b. Creating IAM policies.
- c. Managing the various role types and defining custom IAM roles (e.g., primitive, predefined, and custom).



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CHAPTER

20. MANAGING SERVICE ACCOUNTS

- a. Creating service accounts.
- b. Using service accounts in IAM policies with minimum permissions.
- c. Assigning service accounts to resources.
- d. Viewing audit logs
- e. Managing IAM of a service account.
- f. Managing service account impersonation.
- g. Creating and managing short-lived service account credentials.



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MINS



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Placement Assistance

100%

135+ Professional Courses

Practical Sessions

90%

67+ Global Pacts

Corporate Placements

65%

170+ IT Companies Tie-Up

ELYSIUM
GROUP OF
COMPANIES

**ELYSIUM
ACADEMY**

**PRIVATE
LIMITED**

AUTHORIZED INTERNATIONAL

Partners



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