Presentation on "Google Career Readiness -
Associate Cloud Engineer Path"

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Google Cloud Fundamentals: Core Infrastructure

Introduction to Google Cloud: I learned that Google Cloud is like renting space on the internet to store data and run programs.

Computing Services: I found out how to use computing power in Google Cloud for running software applications efficiently, using services like Compute Engine (for virtual machines) and Kubernetes Engine (for managing containers).

Storage Services: I discovered where to store data on Google Cloud, like Cloud Storage (for files) and Persistent Disk (like a hard drive in the cloud).

Resource Management: I learned how to control the digital resources I use on Google Cloud to avoid using too much computing power or storage.

Service Comparison: I compared different Google Cloud services to find the best ones for specific tasks, like deciding between Cloud Storage or Persistent Disk for storing data.

Security Considerations: I learned about keeping data and applications safe on Google Cloud, using tools like encryption and firewalls.

Essential Google Cloud Infrastructure: Foundation

Introduction to Google Cloud Infrastructure: Explored the foundational elements of Google Cloud, essential for building and running various software and services.

Focus on Compute Engine: Examined Compute Engine, a key tool allowing the rental of virtual computers on the internet for running programs and apps.

Comprehensive Coverage: Explored topics like data movement, storage, and security within Google Cloud's infrastructure.

Flexible Solutions: Discussed the variety of options available on Google Cloud for problem-solving and project development, catering to diverse needs from small websites to complex systems.

Solution Deployment: Explored the process of translating ideas into action on Google Cloud, from planning to execution for smooth operations.

Scalability and Reliability: Addressed Google Cloud's infrastructure's ability to handle varying levels of traffic while ensuring data and services remain accessible and secure.

Essential Google Cloud Infrastructure: Core Services

Comprehensive Introduction: I learned about Google Cloud's main services, like Compute Engine, which lets me rent virtual computers for running software on the internet.

Exploration of Solution Elements: We explored building and deploying solutions using Google Cloud. This included setting up networks to connect different parts of my digital setup, managing systems to keep everything running smoothly, and using application services to build and run programs.

Deployment of Practical Solutions: I learned to solve real-world problems, like encrypting data for security, managing access, monitoring spending, and checking resources to ensure everything works well.

Emphasis on Security: We stressed the importance of keeping data safe with encryption and access management.

Optimization Techniques: We also discussed using resources efficiently by monitoring spending and making adjustments to save money without losing performance.

Elastic Google Cloud Infrastructure: Scaling and Automation

Introduction to Elastic Infrastructure: In this part, I was introduced to the idea of elastic infrastructure on Google Cloud, which was like having a digital system that could automatically grow or shrink in size based on how much I needed it.

Infrastructure Automation: I discovered tools to automate repetitive tasks, like setting up new computers or installing updates, saving time for more important projects.

Exploring Solution Elements: I looked into different ways to make my setup more flexible and efficient. This included securely connecting different parts, balancing incoming traffic, adjusting the number of computers automatically, and automating repetitive tasks.

Secure Network Interconnection: I learned to keep data moving between different parts of my setup safe and private using encryption and secure connections.
Load Balancing: I found ways to spread internet traffic across multiple computers, preventing overload and keeping everything running smoothly.

Autoscaling: I made my system smart enough to add or remove computers based on the workload, like having a digital team that grows or shrinks as needed.

Getting Started with Google Kubernetes Engine

Introduction to Google Kubernetes Engine (GKE): This course introduced me to GKE, a special tool for managing and running my applications on Google Cloud.

Basics of Kubernetes: I learned about Kubernetes, a software layer that helps organize and manage applications for smooth running on hardware.

Managed Service on Google Cloud: GKE brings Kubernetes to Google Cloud as a managed service, so Google handles complex tasks, letting me focus on my applications.

Containerization of Applications: I explored how to put applications into containers, making them easier to manage and move around digitally.

Running Applications on Google Cloud: I discovered how to get my containerized applications running on Google Cloud using GKE, making them available to internet users.

Overview of Kubernetes Operations: I gained insights into how Kubernetes works, its structure, and how to perform tasks like scaling up or down based on demand.

Hands-on Experience: Throughout the course, I gained practical experience by working with Kubernetes and GKE, deploying and managing my own containerized applications.

Implement Load Balancing on Compute Engine
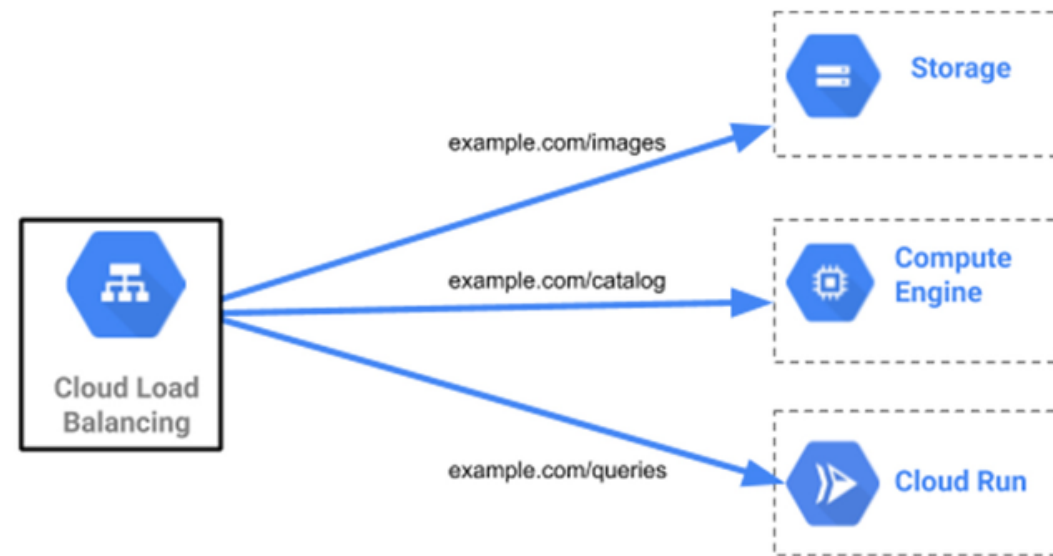
Introduction to Skill Badge: I finished the beginner-level Implement Load Balancing on Compute Engine skill badge to show my ability in using gcloud commands and Cloud Shell, creating and deploying virtual machines, and setting up load balancers on Google Cloud.

Purpose of Skill Badge: This badge tests my knowledge of Google Cloud by focusing on hands-on tasks, especially load balancing on Compute Engine.

Writing gcloud Commands: I practiced using the gcloud command-line tool to interact with Google Cloud services.

Using Cloud Shell: I used Cloud Shell, a web-based command-line tool, to manage resources without installing extra software.

Creating and Deploying Virtual Machines: I made and deployed virtual machines in Compute Engine to host applications and services.

Skill Badge Completion: By finishing the badge and the final challenge lab, I showed my skill in load balancing on Compute Engine and got a special digital badge from Google Cloud, proving my expertise.

Set Up an App Dev Environment on Google Cloud

Introduction to Skill Badge: I earned a skill badge by completing the Set Up an App Dev Environment on Google Cloud course. This course taught me how to build and connect storage-centric cloud infrastructure using basic capabilities of technologies like Cloud Storage, Identity and Access Management (IAM), Cloud Functions, and Pub/Sub.

In the course on Building Cloud Infrastructure, I learned to set up and configure cloud systems, with a focus on storage, for application development. I explored Google Cloud Storage, a secure digital storage solution, for managing application data. Additionally, I gained knowledge of Identity and Access Management (IAM), which controls resource access in Google Cloud projects. Lastly, I discovered Cloud Functions, small code blocks running in response to events, enabling me to enhance application functionality without server management.

Develop your Google Cloud Network

I learned about managing who can access what in Google Cloud through IAM roles. I also discovered how to create secure VPC networks for deploying applications privately. In addition, I mastered deploying and monitoring VMs on Compute Engine and writing SQL queries for data analysis. Furthermore, I learned to deploy apps using Kubernetes, an automation platform. Completing the badge showed my ability to handle networks and apps on Google Cloud, earning me a digital badge to prove my skills.

Build Infrastructure with Terraform on Google Cloud

Understanding Infrastructure as Code (IaC): I learned about using code and tools like Terraform to manage infrastructure instead of doing it manually.

Provisioning Google Cloud Resources: I practiced using Terraform to set up and manage various Google Cloud resources like VMs, networks, storage, and databases, ensuring consistent deployments.

State Management: I discovered methods for handling Terraform state, which keeps track of created resources and their status, both locally and remotely, ensuring accurate infrastructure changes.

Modularizing Terraform Code: I learned to organize Terraform code into reusable modules for easier maintenance and scalability, promoting code reuse across projects.

GCP INFRASTRUCTURE WITH TERRAFORM

THANK YOU