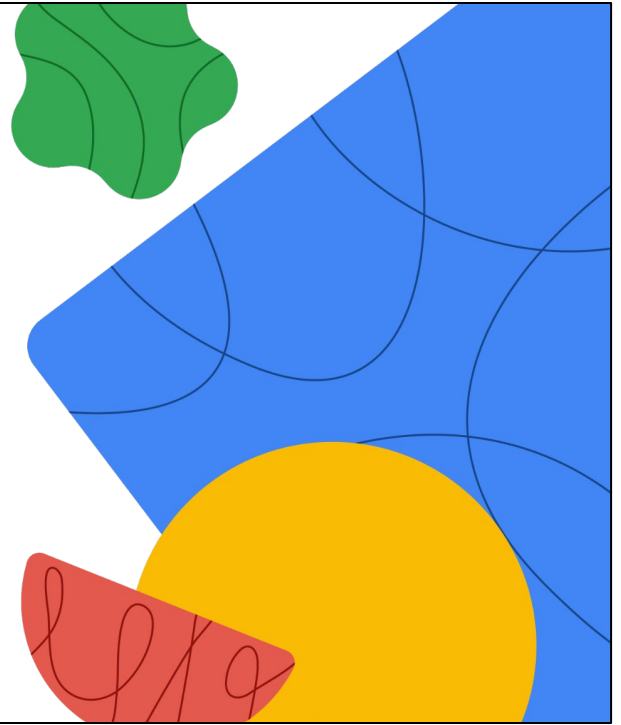Google Cloud

Preparing for Your Professional Cloud Security Engineer Journey
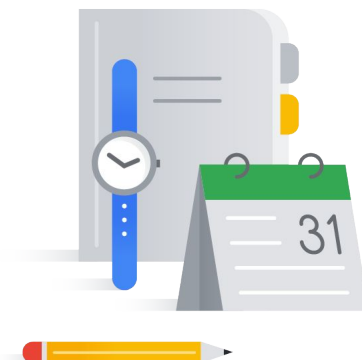
Introduction

Welcome to Preparing for Your Professional Cloud Security Engineer Journey.

Course agenda

0	Introduction
1	Configuring Access
2	Securing Communications and Establishing Boundary Protection
3	Ensuring Data Protection
4	Managing Operations
5	Supporting Compliance Requirements
6	Your Next Steps

Google Cloud

In this course, you'll learn more about the skills covered on the Professional Cloud Security Engineer certification exam. Each module points to one section of the exam guide.

However, it's important to clarify that this course by itself will not prepare you to take the certification exam. This is not a "cram session." The exam is purposefully calibrated to test your ability to apply the knowledge required of a Professional Cloud Security Engineer, not merely repeat it. Cram sessions have minimal impact on your ability to pass the exam.

Instead, the goal of this course is to help you better structure your preparation time for the exam. You'll learn about the scope of each exam section, assess your current knowledge and skills through diagnostic questions, and review where to find additional tools and resources to include in your study plan.

Module agenda

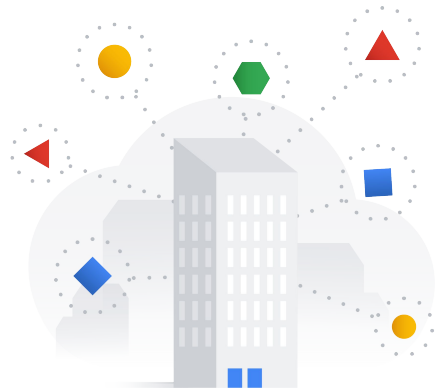**01** What is the role of a Professional Cloud Security Engineer?

02 Resources to support your certification journey

03 Creating your study plan

Google Cloud

In this introductory module, you'll learn about the role of a Professional Cloud Security Engineer, the types of resources available to support your study, and how you will use the workbook in this course to create your study plan.
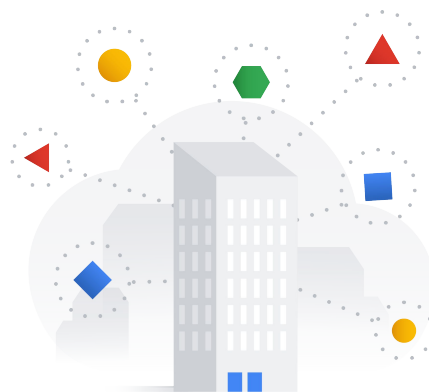
What is the role of a
Professional Cloud
Security Engineer?

So, you're preparing for the Professional Cloud Security Engineer certification… but what exactly is the role of a Professional Cloud Security Engineer?

What is the role of a
Professional Cloud Security Engineer?

- Enables organizations to design and implement secure workloads and infrastructure on Google Cloud

- Designs, develops, and manages a secure solution by leveraging Google Cloud security technologies

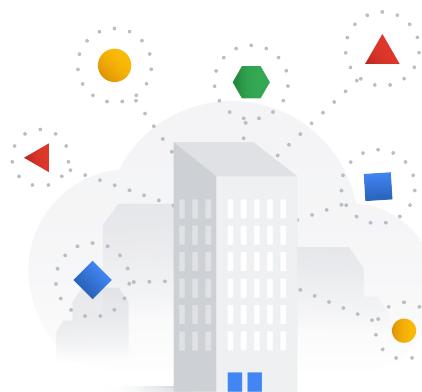Google Cloud

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Let's review the job role description:

A Professional Cloud Security Engineer enables organizations to design and implement secure workloads and infrastructure on Google Cloud.

Through an understanding of security best practices and industry security requirements, this individual designs, develops, and manages a secure solution by leveraging Google Cloud security technologies.

What is the role of a Professional Cloud Security Engineer?

- Should be proficient in:
  - Identity and access management
  - Defining the resource hierachy and policies
  - Using Google Cloud technologies to provide data protection
  - Configuring network security defenses
  - Monitoring environments for threat detection and incident response
  - Security policy as code and the secure software development lifecycle
  - Enforcing regulatory controls
- For more information, visit the [Professional Cloud Security Engineer certification](#) page

Google Cloud

The Professional Cloud Security Engineer should be proficient in all aspects of cloud security, including identity and access management, defining the resource hierarchy and policies, using Google Cloud technologies to provide data protection, configuring network security defenses, monitoring environments for threat detection and incident response, security policy as code, the secure software development lifecycle, and enforcing regulatory controls.

A Professional Cloud Security Engineer should have 3+ years of industry experience, including more than 1 year designing and managing solutions using Google Cloud.

For more information, visit the [Professional Cloud Security Engineer certification](#) page.

Cymbal Bank

Digitally Transforming

A nationally-recognized American retail bank founded in 1920 and acquired by Cymbal in 1975.

In this course, you'll examine the role of a Professional Cloud Security Engineer by putting yourself in the shoes of an Professional Cloud Security Engineer working for Cymbal Bank, a fictional company that is digitally transforming and in the process of designing and developing a secure Google Cloud system.

Secure Cymbal Bank's
cloud environment
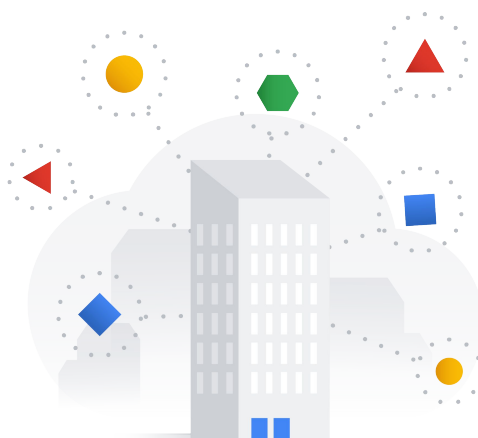
As part of its digital transformation, Cymbal Bank needs to determine how to set up and secure operations within a hybrid cloud environment.

As a Professional Cloud Security Engineer at Cymbal Bank, your role involves working with cloud architects and network engineers to design Cymbal Bank's cloud environment using recommended security practices that are in compliance with industry regulations.

You'll be involved in configuring Identity and Access Management (IAM) and helping define the Cymbal Bank's resource hierarchy and policies. You'll also ensure that Cymbal Bank makes use of Google Cloud technologies for data protection, network security and defenses, logging, and managing incident responses.

As you continue through this course, you'll explore the role of a Professional Cloud Security Engineer as Cymbal Bank defines different aspects of security for its cloud environment. We'll use this scenario to illustrate the types of considerations and tasks that correspond to each section of the exam guide.

Cymbal Bank's network will also provide context for many of the diagnostic questions you'll encounter along the way.

Why become Google certified?

Gain industry recognition!

Validate your technical expertise!

Take your career to the next level!

Google Cloud

Why become a Google Cloud Certified Professional Cloud Security Engineer?

Certification value has skyrocketed. Becoming Google Cloud certified gives you industry recognition. It validates your technical expertise and can be the starting point to take your career to the next level.

What is a Professional certification?

Professional Level Certification	→	Business requirements	Technical requirements	Customer Implementation
		Design Plan Ensure feasibility Optimize	Build Deploy Manage	

Google Cloud
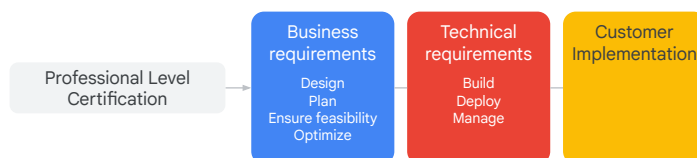
You may be curious about what differentiates a "professional" cloud certification from an "associate" level one. The professional level certification expects the exam taker to know how to evaluate case studies and design solutions to meet business requirements—in addition to knowing about technical requirements—for customer implementation.

Understand the scope of the exam based on the Professional Cloud Security Engineer Exam Guide.

cloud.google.com/certification/guides/cloud-security-engineer

Google Cloud

The Professional Cloud Security Engineer certification exam is based on the exam guide. In the following modules, you'll take diagnostic questions to assess your knowledge of each section of the exam guide.

The exam guide is divided into 5 sections. Each section has several objectives. We'll focus on where you can find resources at the section objective level.

You can find the exam guide on the certification page cloud.google.com/certification/guides/cloud-security-engineer.

Resources to support your certification journey
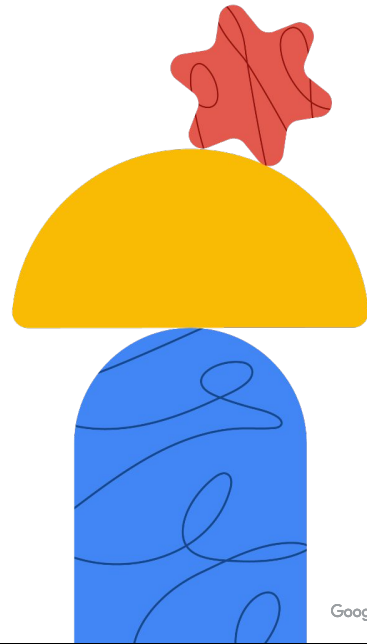
Google Cloud

Throughout this course, you'll be pointed to specific resources and documentation that can help you fill the gaps you identify through the diagnostic questions. Let's go over the types of resources you may want to include in your study plan.

Courses and skill badges in the learning path

Courses				Skill badges		

| 1 Day | 3 Days | | 3 Days | 7 Hours | 7 Hours | 8 Hours |

Fundamentals: Core Infrastructure

Networking in Google Cloud

Security in Google Cloud

SKILL BADGE
Build and Secure Networks in Google Cloud

SKILL BADGE
Implement Cloud Security Fundamentals on Google Cloud
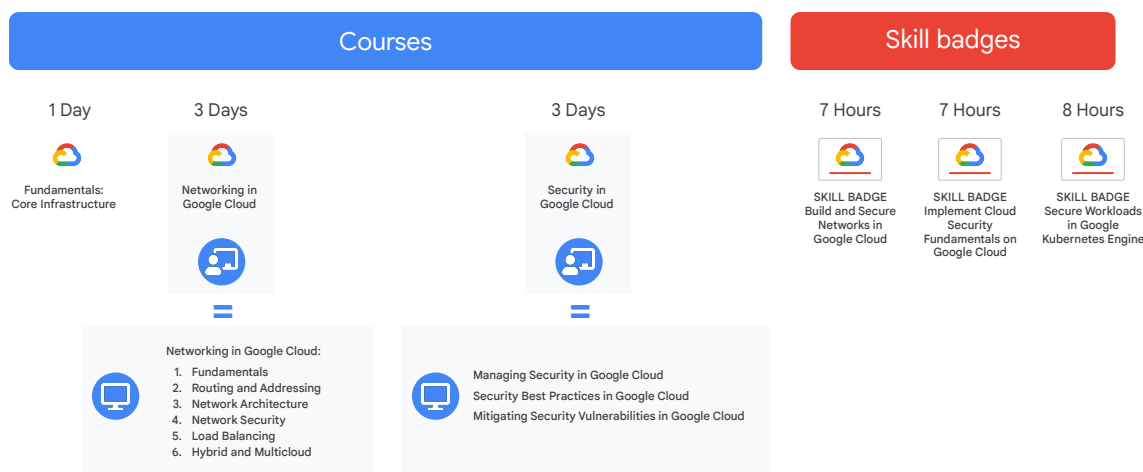
SKILL BADGE
Secure Workloads in Google Kubernetes Engine

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Networking in Google Cloud:
1. Fundamentals
2. Routing and Addressing
3. Network Architecture
4. Network Security
5. Load Balancing
6. Hybrid and Multicloud

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Managing Security in Google Cloud
Security Best Practices in Google Cloud
Mitigating Security Vulnerabilities in Google Cloud

Google Cloud

Google provides resources to help you develop your skills and experience with Google Cloud solutions. The learning path for this certification includes in-person or online courses, online practice labs, skill badges, and practice questions.

The courses recommended for the Professional Cloud Security Engineer certification include Google Cloud Fundamentals: Core Infrastructure, Networking in Google Cloud, and Security in Google Cloud. You'll learn more about how these courses relate to the sections of the exam guide as you complete the modules in this course.

Keep in mind that Networking in Google Cloud is available in an on-demand format as a six-course series. You should take all six courses, Fundamentals, Routing and Addressing, Network Architecture, Network Security, Load Balancing, and Hybrid and Multicloud for equivalent content to the 3-day instructor-led course.

Similarly, Security in Google Cloud is available in an on-demand format as a three-course series. You should take all three courses, Managing Security in Google Cloud, Security Best Practices in Google Cloud, and Mitigating Security Vulnerabilities in Google Cloud, for equivalent content to the 3-day instructor-led course.

The skill badges provide hands-on experience working in Google Cloud. Skill badges are learning paths made up of labs that give you hands-on practice with Google Cloud services or solutions. Pass the challenge lab at the end of the skill badge and you will receive a shareable credential that recognizes your ability to solve real-world

problems with your cloud knowledge.

As we review the diagnostic questions in this course, you'll also get recommendations for skill badges to include in your study plan.

Sample questions

A Cloud Development team needs to use service accounts extensively in their local environment. You need to provide the team with the keys for these service accounts. You want to follow Google-recommended practices.
What should you do?

A. Implement a daily key rotation process that generates a new key and commits it to the source code repository every day.

B. Implement a daily key rotation process, and provide developers with a Cloud Storage bucket from which they can download the new key every day.

C. Create a Google Group with all developers. Assign the group the IAM role of Service Account User, and have developers generate and download their own keys.

D. Create a Google Group with all developers. Assign the group the IAM role of Service Account Admin, and have developers generate and download their own keys.

Google Cloud

Sample questions are another resource you can use to prepare. The diagnostic questions in this course are designed to help you identify your knowledge gaps. On the certification page, Google provides a different set of *sample* questions that can help you familiarize yourself with the format of the exam questions.

Once you complete the question set, you will receive feedback describing the rationale for the correct answers.

The sample questions provide a good opportunity to practice taking the type of scenario-based, application-level questions on the exam. The exam questions present you with a scenario, explain the goal or what you are trying to achieve, and ask you what you would do in that situation.

Remember these tips for multiple choice questions:
- Read the question stem carefully. Make sure you understand exactly what the question is asking.
- Try to anticipate the correct answer before looking at the options. You may be able to come up with the correct answer just from reading the question stem.
- You may find that more than one answer may be possible on multiple choice tests.
- Take questions at face value. If certain details are omitted, then they are unlikely to contribute to the selection of the best answer.
- Pay attention to qualifiers ("usually", "all", "never", "none") and key words ("the best", "the least", "except").

Product Documentation

Google supplies official public documentation for its products and services.

cloud.google.com/docs

Get started

Build solutions
Top use cases
Best practices
All solutions

Cloud products
Featured products
AI and Machine Learning
API Management
Compute
Containers
Data Analytics
Databases
Developer Tools
Healthcare and Life Sciences

Get started with Google Cloud

Jump right into code, transfer your knowledge, or see the big picture.

△ Google Cloud

Cloud basics
Develop an understanding of cloud development and of Google Cloud.

Enterprise guides
Follow a guided sequence for configuring Google Cloud for the enterprise.

Platform compar
Compare Google C
premises data cent

Google Cloud Fr
New customers ge
Cloud. All custome

Program "Hello, Google Cloud"

Get started with Google Cloud using a familiar programming language:

Java   Node.js   Python   C# / .NET

Google Cloud

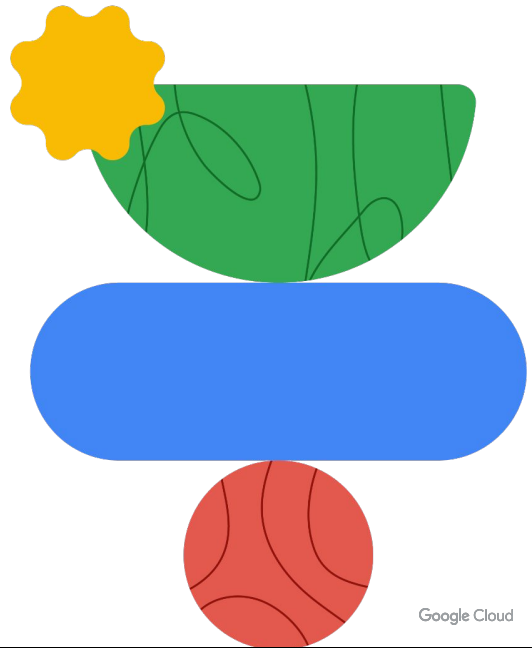Google also supplies official public documentation for its products and services. This documentation can be found at cloud.google.com/docs.

In each of the following modules, you'll learn about specific documentation resources to help you study that section in preparation for the exam.
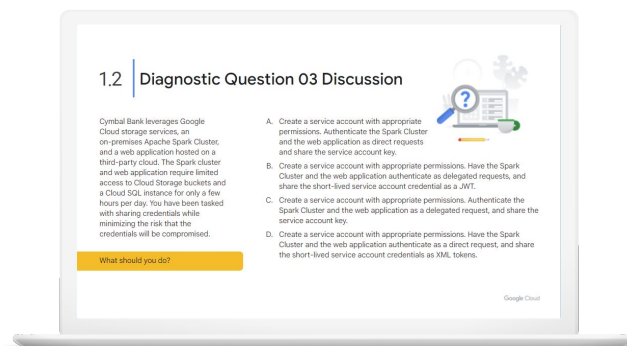
Creating your study plan

One of the primary goals for this course is to help you devise a study strategy that focuses on the areas you need to work on. Let's quickly explore how the course is set up.

Diagnostic
questions:

Identify areas you need
to study and resources
to support you

The course - and your course workbook - focuses on each section of the exam guide in turn. To help you craft a study strategy, you'll take diagnostic questions as part of each module. Many of these questions relate to our Cymbal Bank scenario and ask you to apply concepts you will need to be familiar with as an Professional Cloud Security Engineer. You will complete the questions in the workbook provided.

Keep in mind that these diagnostic questions are meant to help you identify gaps in your knowledge, but they don't represent all possible topics on the exam.

Remember, we don't expect that you'll answer all these questions correctly right now. This is meant to be a course that you take toward the beginning of your Professional Cloud Security Engineer journey, and many of you may not be security experts yet.

Locate
resources:

Take notes in your
workbook on the
resources and
documentation to fill
your gaps
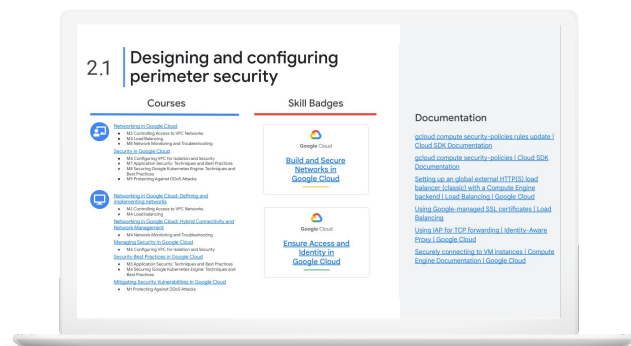
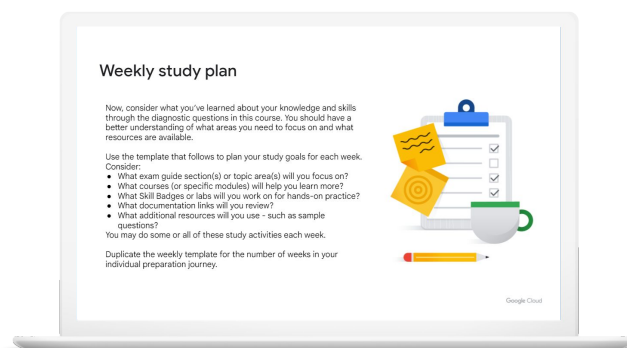We'll review the answers to the questions related to each section objective. As we
cover each objective, you'll learn more about where the key concepts appear in
Google Cloud documentation, specific courses and modules, and/or specific skill
badges.

At the end of each section objective, you'll find a list of related resources. Mark or
highlight the specific resources you need in your study plan.

Use the
workbook:

Plan your study for
each week in the journey

Weekly study plan

Now, consider what you've learned about your knowledge and skills
through the diagnostic questions in this course. You should have a
better understanding of what areas you need to focus on and what
resources are available.

Use the template that follows to plan your study goals for each week.
Consider:
- What exam guide section(s) or topic area(s) will you focus on?
- What courses (or specific modules) will help you learn more?
- What Skill Badges or labs will you work on for hands-on practice?
- What documentation links will you review?
- What additional resources will you use - such as sample
  questions?
You may do some or all of these study activities each week.

Duplicate the weekly template for the number of weeks in your
individual preparation journey.

Google Cloud

Google Cloud

In the final part of your workbook, you'll find a template to help you identify weekly
goals and study activities. We'll talk more about putting together weekly goals at the
end of this course.

Let's start on your
**Professional Cloud
Security Engineer journey.**

Now that you know about the overall setup of this course and how to use the workbook, let's get started by exploring section 1 of the exam guide.