AWS® Certified Cloud Practitioner

STUDY GUIDE

FOUNDATIONAL (CLF-C01) EXAM

Includes interactive online learning environment and study tools:

Two custom practice exams

100 electronic flashcards

Searchable key term glossary

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Certified Cloud Practitioner

Study Guide

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Lastly—once again—the authors would like to thank each other!

About the Authors

David Clinton is a Linux server admin who has worked with IT infrastructure in both academic and enterprise environments. He has authored technology books—including *AWS Certified Solutions Architect Study Guide: Associate SAA-C01 Exam, Second Edition* (Sybex, 2019)—and created 20 video courses teaching Amazon Web Services and Linux administration, server virtualization, and IT security for Pluralsight.

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Introduction

Studying for any certification always involves deciding how much of your studying should be practical hands-on experience and how much should be simply memorizing facts and figures. Between the two of us, we've taken more than 20 different IT certification exams, so we know how important it is to use your study time wisely. We've designed this book to help you discover your strengths and weaknesses on the AWS platform so that you can focus your efforts properly. Whether you've been working with AWS for a long time or you're relatively new to it, we encourage you to carefully read this book from cover to cover.

Passing the AWS Certified Cloud Practitioner exam won't require you to know how to provision and launch complex, multitier cloud deployments. But you will need to be broadly familiar with the workings of a wide range of AWS services. Everything you'll have to know should be available in this book, but you may sometimes find yourself curious about finer details. Feel free to take advantage of Amazon's official documentation, which is generally available in HTML, PDF, and Kindle formats.

Even though the *AWS Certified Cloud Practitioner Study Guide CLF-C01 Exam* skews a bit more to the theoretical side than other AWS certifications, there's still a great deal of value in working through each chapter's hands-on exercises. The exercises here aren't meant to turn you into a solutions architect who knows *how* things work but to help you understand *why* they're so important.

Bear in mind that some of the exercises and figures rely on the AWS Management Console, which is in constant flux. As such, screen shots and step-by-step details of exercises may change. If what you see in the Management Console doesn't match the way it's described in this book, use it as an opportunity to dig into the AWS online documentation or experiment on your own.

Each chapter includes review questions to thoroughly test your understanding of the services you've seen. We've designed the questions to help you realistically gauge your understanding and readiness for the exam. Although the difficulty level will vary between questions, you can be sure there's no "fluff." Once you complete a chapter's assessment, refer to Appendix A for the correct answers and detailed explanations.

The book also comes with a self-assessment exam at the beginning with 25 questions, two practice exams with a total of 100 questions, and flashcards to help you learn and retain key facts needed to prepare for the exam.

Changes to AWS services happen frequently, so you can expect that some information in this book might fall behind over time. To help you keep up, we've created a place where we'll announce relevant updates and where you can also let us know of issues you encounter. Check in regularly to this resource at `https://awsccp.github.io/`.

What Does This Book Cover?

This book covers topics you need to know to prepare for the Amazon Web Services (AWS) Certified Cloud Practitioner Study Guide exam:

Chapter 1: The Cloud This chapter describes the core features of a cloud environment that distinguish it from traditional data center operations. It discusses how cloud platforms provide greater availability, scalability, and elasticity and what role technologies such as virtualization and automated, metered billing play.

Chapter 2: Understanding Your AWS Account In this chapter, you'll learn about AWS billing structures, planning and monitoring your deployment costs, and how you can use the Free Tier for a full year to try nearly any AWS service in real-world operations for little or no cost.

Chapter 3: Getting Support on AWS This chapter is focused on where to find support with a problem that needs solving or when you're trying to choose between complex options. You'll learn about what's available under the free Basic Support plan as opposed to the Developer, Business, and Enterprise levels.

Chapter 4: Understanding the AWS Environment In this chapter, we discuss how, to enhance security and availability, Amazon organizes its resources in geographic regions and Availability Zones. You'll also learn about Amazon's global network of edge locations built to provide superior network performance for your applications.

Chapter 5: Securing Your AWS Resources The focus of this chapter is security. You'll learn how you control access to your AWS-based resources through identities, authentication, and roles. You'll also learn about data encryption and how AWS can simplify your regulatory compliance.

Chapter 6: Working with Your AWS Resources How will your team access AWS resources so they can effectively manage them? This chapter will introduce you to the AWS Management Console, the AWS Command Line Interface, software development kits, and various infrastructure monitoring tools.

Chapter 7: The Core Compute Services Providing an alternative to traditional physical compute services is a cornerstone of cloud computing. This chapter discusses Amazon's Elastic Compute Cloud (EC2), Lightsail, and Elastic Beanstalk services. We also take a quick look at various serverless workload models.

Chapter 8: The Core Storage Services This chapter explores Amazon's object storage services including Simple Storage Service (S3) and Glacier for inexpensive and highly accessible storage, and Storage Gateway and Snowball for integration with your local resources.

Chapter 9: The Core Database Services Here you will learn about how data is managed at scale on AWS, exploring the SQL-compatible Relational Database Service (RDS), the NoSQL DynamoDB platform, and Redshift for data warehousing at volume.

Chapter 10: The Core Networking Services AWS lets you control network access to your resources through virtual private clouds (VPCs), virtual private networks (VPNs), DNS routing through the Route 53 service, and network caching via CloudFront. This chapter focuses on all of them.

Chapter 11: Automating Your AWS Workloads This chapter covers the AWS services designed to permit automated deployments and close DevOps integration connecting your development processes with your Amazon-based application environments.

Chapter 12: Common Use-Case Scenarios This chapter illustrates some real-world, cloud-optimized deployment architectures to give you an idea of the kinds of application environments you can build on AWS.

Appendix A: Answers to Review Questions This appendix provides the answers and brief explanations for the questions at the end of each chapter.

Appendix B: Additional Services To make sure you're at least familiar with the full scope of AWS infrastructure, this appendix provides brief introductions to many of the services not mentioned directly in the chapters of this book.

Interactive Online Learning Environment and Test Bank

The authors have worked hard to create some really great tools to help you with your certification process. The interactive online learning environment that accompanies this *AWS Certified Cloud Practitioner Study Guide* includes a test bank with study tools to help you prepare for the certification exam—and increase your chances of passing it the first time! The test bank includes the following:

Sample tests All the questions in this book are included online, including the assessment test at the end of this introduction and the review questions printed after each chapter. In addition, there are two practice exams with 50 questions each. Use these questions to assess how you're likely to perform on the real exam. The online test bank runs on multiple devices.

Flashcards The online text banks include 100 flashcards specifically written to hit you hard, so don't get discouraged if you don't ace your way through them at first. They're there to ensure that you're really ready for the exam. And no worries—armed with the review questions, practice exams, and flashcards, you'll be more than prepared when exam day comes. Questions are provided in digital flashcard format (a question followed by a single correct answer). You can use the flashcards to reinforce your learning and provide last-minute test prep before the exam.

We plan to update any errors or changes to the AWS platform that aren't currently reflected in these questions as we discover them here: `https://awsccp.github.io/`.

Should you notice any problems before we do, please be in touch.

Glossary A glossary of key terms from this book is available as a fully searchable PDF.

Go to `www.wiley.com/go/sybextestprep` to register and gain access to this interactive online learning environment and test bank with study tools.

Exam Objectives

According to the *AWS Certified Cloud Practitioner Exam Guide* (version 1.4), the AWS Certified Cloud Practitioner (CLF-C01) examination is "intended for individuals who have the knowledge and skills necessary to effectively demonstrate an overall understanding of the AWS Cloud, independent of specific technical roles addressed by other AWS certifications" (for example, solution architects or SysOps administrators).

To be successful, you'll be expected to be able to describe the following:

- The AWS Cloud and its basic global infrastructure
- AWS Cloud architectural principles
- The AWS Cloud value proposition
- Key AWS services along with their common use cases (for example, highly available web applications or data analysis)
- The basic security and compliance practices relating to the AWS platform and the shared security model
- AWS billing, account management, and pricing models
- Documentation and technical assistance resources
- Basic characteristics for deploying and operating in the AWS Cloud

AWS recommends that "candidates have at least six months of experience with the AWS Cloud in any role, including technical, managerial, sales, purchasing, or financial." They should also possess general knowledge of information technology and application servers and their uses in the AWS Cloud.

Objective Map

The exam covers four domains, with each domain broken down into objectives. The following table lists each domain and its weighting in the exam, along with the chapters in the book where that domain's objectives are covered.

Domain	Percentage of Exam	Chapter(s)
Domain 1: Cloud Concepts	28%	
1.1 Define the AWS Cloud and its value proposition		1, 12
1.2 Identify aspects of AWS Cloud economics		1, 12
1.3 List the different cloud architecture design principles		1, 9, 10, 11, 12

Domain	Percentage of Exam	Chapter(s)
Domain 2: Security	24%	
2.1 Define the AWS Shared Responsibility model		4
2.2 Define AWS Cloud security and compliance concepts		5, 6, 8, 10
2.3 Identify AWS access management capabilities		5, 8, 10, 11
2.4 Identify resources for security support		3, 6
Domain 3: Technology	36%	
3.1 Define methods of deploying and operating in the AWS Cloud		6, 7, 8, 9, 10, 11, 12
3.2 Define the AWS global infrastructure		4, 10
3.3 Identify the core AWS services		6, 7, 8, 9, 10
3.4 Identify resources for technology support		3
Domain 4: Billing and Pricing	12%	
4.1 Compare and contrast the various pricing models for AWS		2, 7
4.2 Recognize the various account structures in relation to AWS billing and pricing		2, 7
4.3 Identify resources available for billing support		2, 3, 6

Assessment Test

1. Which of the following describes the cloud design principle of scalability?
   - **A.** The ability to automatically increase available compute resources to meet growing user demand
   - **B.** The ability to route incoming client requests between multiple application servers
   - **C.** The ability to segment physical resources into multiple virtual partitions
   - **D.** The ability to reduce production costs by spreading capital expenses across many accounts

2. Which of the following best describes the cloud service model known as infrastructure as a service (IaaS)?
   - **A.** End user access to software applications delivered over the internet
   - **B.** Access to a simplified interface through which customers can directly deploy their application code without having to worry about managing the underlying infrastructure
   - **C.** Customer rental of the use of measured units of a provider's physical compute, storage, and networking resources
   - **D.** Abstracted interfaces built to manage clusters of containerized workloads

3. How does AWS ensure that no single customer consumes an unsustainable proportion of available resources?
   - **A.** AWS allows customers to consume as much as they're willing to pay for, regardless of general availability.
   - **B.** AWS imposes default limits on the use of its service resources but allows customers to request higher limits.
   - **C.** AWS imposes hard default limits on the use of its service resources.
   - **D.** AWS imposes default limits on the use of its services by Basic account holders; Premium account holders face no limits.

4. The AWS Free Tier is designed to give new account holders the opportunity to get to know how their services work without necessarily costing any money. How does it work?
   - **A.** You get service credits that can be used to provision and launch a few typical workloads.
   - **B.** You get full free access to a few core AWS services for one month.
   - **C.** You get low-cost access to many core AWS services for three months.
   - **D.** You get free lightweight access to many core AWS services for a full 12 months.

5. AWS customers receive "production system down" support within one hour when they subscribe to which support plan(s)?
   - **A.** Enterprise.
   - **B.** Business and Enterprise.
   - **C.** Developer and Basic.
   - **D.** All plans get this level of support.

6. AWS customers get full access to the AWS Trusted Advisor best practice checks when they subscribe to which support plan(s)?
   - **A.** All plans get this level of support.
   - **B.** Basic and Business.
   - **C.** Business and Enterprise.
   - **D.** Developer, Business, and Enterprise.

7. The AWS Shared Responsibility Model illustrates how AWS itself (as opposed to its customers) is responsible for which aspects of the cloud environment?
   - **A.** The redundancy and integrity of customer-added data
   - **B.** The underlying integrity and security of AWS physical resources
   - **C.** Data and configurations added by customers
   - **D.** The operating systems run on EC2 instances

8. Which of these is a designation for two or more AWS data centers within a single geographic area?
   - **A.** Availability Zone
   - **B.** Region
   - **C.** Network subnet
   - **D.** Geo-unit

9. How, using security best practices, should your organization's team members access your AWS account resources?
   - **A.** Only a single team member should be given any account access.
   - **B.** Through a jointly shared single account user who's been given full account-wide permissions.
   - **C.** Through the use of specially created users, groups, and roles, each given the fewest permissions necessary.
   - **D.** Ideally, resource access should occur only through the use of access keys.

10. Which of the following describes a methodology that protects your organization's data when it's on-site locally, in transit to AWS, and stored on AWS?
    - **A.** Client-side encryption
    - **B.** Server-side encryption
    - **C.** Cryptographic transformation
    - **D.** Encryption at rest

11. What authentication method will you use to access your AWS resources remotely through the AWS Command Line Interface (CLI)?
    - **A.** Strong password
    - **B.** Multifactor authentication
    - **C.** SSH key pairs
    - **D.** Access keys