

PREPKLOUD FIELD GUIDE SERIES

AWS Cloud Practitioner CLF-C02 Field Guide

Understand the cloud, recognize core AWS services, and reason through security and billing scenarios.

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About this guide

AWS Certified Cloud Practitioner is a foundational, role-independent exam. This book is aligned with the active CLF-C02 guide's four domains: Cloud Concepts (24%), Security and Compliance (30%), Cloud Technology and Services (34%), and Billing, Pricing, and Support (12%). The goal is to recognize which AWS concept solves a given problem, not to design production architectures or memorize console clicks.

Read the explanations, then cover the answers in the practice chapter. For each missed question, write down the clue in the scenario and the reason the nearest alternative is wrong. The optional exercise in Chapter 10 uses a disposable AWS account; the exam does *not* require implementation or coding.

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The exam and the cloud decision framework

CLF-C02 checks breadth, not configuration depth. The official guide includes multiple-choice and multiple-response questions, 50 scored and 15 unscored items, and a passing scaled score of 700. Coding, troubleshooting, implementation, and architecture design are explicitly outside the target candidate's job scope. Expect to identify a service family and explain why it meets a business need.

Domain	Weight	A useful question to ask
Cloud Concepts	24%	Why use cloud, and which design benefit applies?
Security and Compliance	30%	Who secures what, and where do access and audit fit?
Cloud Technology and Services	34%	Which service category matches the workload?
Billing, Pricing, and Support	12%	Which pricing, budget, or support resource fits?

When reading a question, underline its **verb** (store, audit, notify, estimate) and **constraint** (no servers, private, worldwide, historic). First choose a service category; then compare named services. “Notify several teams” points to pub/sub, whereas “retain tasks until workers are ready” points to a queue.

Boundary to remember

Cloud Practitioner is not Solutions Architect Associate.
Knowing that multi-AZ improves availability is in scope.
Designing a production failover architecture is not required.
Avoid spending weeks memorizing implementation limits instead of learning use cases.

Recall

- Can I state all four exam domains and their approximate weights?
- Can I extract the action and constraint from a scenario?

Why organizations adopt cloud computing

An on-premises organization purchases capacity ahead of demand and pays for facilities, hardware, power, procurement, maintenance, and staff time. Cloud converts much of that fixed expenditure into usage-based expenditure. It gives teams speed of provisioning and global reach, but it does not remove the customer's need for security governance or cost control.

Term	Meaning	Scenario cue
Elasticity	Capacity grows and shrinks as demand changes.	Holiday spikes with quiet periods.
Scalability	Ability to handle growth by adding or changing capacity.	Business increases its customer base.
High availability	Service continues despite component failures.	One location fails; service remains online.
Agility	Teams provision, test, and iterate quickly.	Launch a pilot in hours, not weeks.
Economies of scale	Shared infrastructure and volume lower unit costs.	Provider spreads cost across many customers.

A hybrid deployment connects on-premises resources with cloud resources. “All-in on cloud” is not the only migration strategy: rehost, replatform, or refactor decisions involve different time,

cost, and operational tradeoffs. The AWS Cloud Adoption Framework organizes organizational perspectives such as business, people, governance, platform, security, and operations; cloud migration is a people/process change as well as a technical one.

A retailer's seasonal storefront

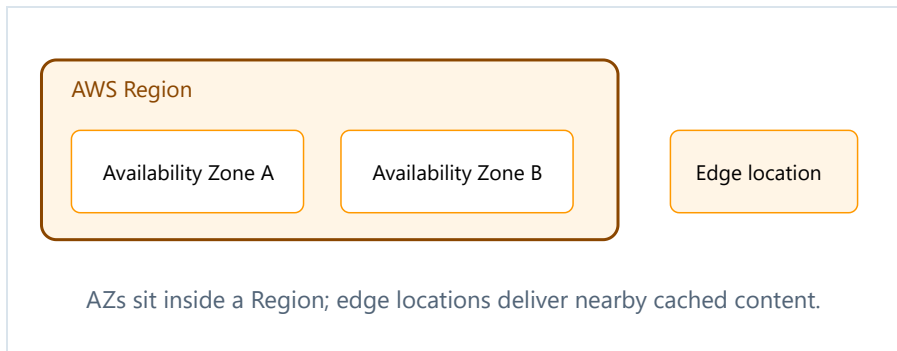
Traffic increases sharply for six weeks, then returns to baseline. Buying servers to handle the peak leaves capacity idle most of the year. Elastic cloud capacity is the key benefit. This is not automatically a claim that every bill will fall: usage, architecture, and transfer still determine cost.

Recall

- Can I distinguish elasticity from availability?
- Can I explain fixed vs variable cost without promising universal savings?
- Can I describe why organizations use hybrid deployments?

Global infrastructure and Well-Architected principles

A **Region** is a geographic area. A Region contains multiple isolated **Availability Zones (AZs)**. Spreading a workload across AZs reduces single-AZ failure exposure. A second Region may be justified by disaster recovery, data residency, or global latency—but adds complexity and cost. **Edge locations** serve content closer to users; they are not interchangeable with Regions or AZs.



The Well-Architected Framework's six pillars are **operational excellence** (operate and improve), **security** (protect information and systems), **reliability** (recover and meet demand), **performance efficiency** (use resources efficiently), **cost optimization** (avoid unnecessary spend), and **sustainability** (reduce environmental impact). In a question, choose the pillar that addresses the stated goal rather than the one whose name sounds most impressive.

Streaming to distant customers

Users far from the origin wait for the same videos. An edge delivery service such as CloudFront reduces distance and origin load. Adding another AZ in the same Region improves availability but does not by itself put cached content near distant users.

Recall

- Can I distinguish Region, AZ, and edge location?
- Can I name all six Well-Architected pillars and explain one example of each?

Shared responsibility and account security

AWS secures the **infrastructure of the cloud**: facilities, physical hardware, and foundational managed-service infrastructure. Customers secure **their use of the cloud**: data, identity and access, application configuration, and—for EC2—guest operating systems and patches. As you move to fully managed services such as Lambda, AWS manages more of the underlying runtime, but you still own permissions and data decisions.

Situation	Who is responsible?
Physical data-center access	AWS
EC2 guest OS patches	Customer
Restricting access to a customer's S3 bucket	Customer
Managed-service physical hosts	AWS
Data classification, retention, and permissions	Customer

Protect the account root user with multifactor authentication and avoid using root for routine work. Apply **least privilege**: grant only actions required by a role. IAM policies define permissions; IAM roles provide temporary credentials to workloads or cross-account principals. IAM Identity Center provides workforce access across accounts and applications. Secrets Manager is for

managing sensitive credentials and can support rotation; never paste long-lived access keys into application source.

Two commonly confused ideas

Authentication asks who you are; **authorization** asks what you may do. Enabling MFA strengthens authentication. Scoping an IAM policy to a bucket and specific actions restricts authorization.

Recall

- For EC2, who patches the guest OS?
- Why are IAM roles preferable to hardcoded access keys?
- How do MFA and least privilege solve different problems?

Governance, monitoring, and threat protection

Observability, audit, compliance, and threat detection are different jobs. Learn the question each tool answers; the exam often supplies distractors that all sound like “security.”

Tool	Primary job
Amazon CloudWatch	Collect metrics/logs, create alarms, observe health.
AWS CloudTrail	Record API activity: who called what and when.
AWS Config	Record resource configuration changes and evaluate compliance rules.
AWS Artifact	Access AWS compliance reports and agreements.
Amazon GuardDuty	Detect suspicious activity/threats using data sources.
Amazon Inspector	Identify software vulnerabilities and unintended exposure in supported workloads.
AWS WAF / Shield	Protect web applications / provide DDoS protection.
AWS KMS	Manage cryptographic keys used by integrated AWS services.

AWS Organizations groups accounts for consolidated governance and billing. Service control policies set permission guardrails across accounts and organizational units; an SCP does *not* grant access by itself. Security Hub consolidates and prioritizes security findings. Encryption at rest protects stored data; encryption in transit protects connections. A compliance certificate held by AWS does not automatically make a customer's application compliant.

Auditor's three requests

"Who deleted the resource?" → CloudTrail. "What did its configuration look like yesterday?" → Config. "Show the provider's audit report." → Artifact. All three involve governance, but only one matches each question.

Recall

- Can I separate CloudWatch, CloudTrail, Config, and Artifact?
- Can I identify WAF, Shield, GuardDuty, and Inspector by their purposes?

Compute, networking, and storage

Amazon EC2 provides configurable virtual machines; you manage the guest OS and choose an instance family to fit CPU, memory, or storage needs. **AWS Lambda** runs event-driven code without managing servers. **AWS Fargate** runs containers without managing underlying servers; ECS and EKS orchestrate containers. Auto Scaling adjusts capacity as demand changes, while Elastic Load Balancing distributes traffic to healthy targets.

A **VPC** is your logically isolated network. Subnets divide its address range; security groups restrict traffic to resources, and network ACLs provide subnet-level controls. Route 53 is DNS. CloudFront is a content delivery network using edge locations. Site-to-Site VPN provides encrypted connectivity over the internet; Direct Connect provides dedicated connectivity.

Storage need	Service to recognize
Objects such as images or backups	Amazon S3
Block disk attached to a virtual machine	Amazon EBS
Shared elastic Linux file system	Amazon EFS
Managed Windows or specialized file systems	Amazon FSx
Hybrid on-premises storage integration	AWS Storage Gateway

S3 storage classes trade storage price against retrieval price, speed, and minimum storage duration. Lifecycle rules automate transitions or expiration. Choose a class based on how often data is needed; "rarely used" does not automatically mean "archive" if instant retrieval is required. AWS Backup centralizes supported service backups.

Memory hook

S3 = object; EBS = block; EFS/FSx = file. EC2 = virtual machine; Lambda = event-driven code; Fargate = managed container infrastructure.

Recall

- Can I choose object, block, or file storage from a use case?
- Can I distinguish a container orchestration service from serverless container compute?
- Can I distinguish DNS, CDN, and private networking?

Databases, integration, analytics, and AI

Relational data with SQL and joins commonly fits Amazon RDS; Aurora is a managed relational engine compatible with MySQL/PostgreSQL. DynamoDB is managed NoSQL for key-value/document access patterns. ElastiCache places frequently accessed data in memory to reduce repeated work. AWS DMS helps migrate databases; migration is not the same as storing a production dataset.

Need	Service family
Hold work until consumers process it	SQS queue
Fan out a notification to many subscribers	SNS pub/sub
Route events by rules to targets	EventBridge event bus
Query files in S3 using SQL	Athena
Move/prepare data for analytics	AWS Glue
Process streaming data	Amazon Kinesis
Build and operate machine-learning workflows	Amazon SageMaker AI
Build conversational interfaces	Amazon Lex

Identify the workload before naming a service. "Save a message until a worker is available" is not the same as "notify 30 subscribers immediately." A BI dashboard is not a query engine: Amazon Quick Sight provides visualization; Athena queries data. The exam expects recognition of use cases, not the syntax for configuring these services.

Retail operations

A retailer stores sales files in S3, wants occasional SQL queries, and wants managers to see dashboards. Athena can query the files; Quick Sight can present results. A full self-managed database cluster is unnecessary for occasional queries.

Recall

- Can I identify relational, NoSQL, and in-memory database use cases?
- Can I distinguish SNS, SQS, and EventBridge?
- Can I recognize analytics vs visualization services?

Billing, pricing, and support

Pay-as-you-go does not mean “free until someone notices.” Cost depends on resources, region, usage duration, requests, storage tier, and data transfer. A pricing model should match how predictable—and how interruptible—a workload is.

Choice	Best-fit situation
On-Demand compute	Variable or short-lived use without a long-term commitment.
Savings Plans / Reserved Instances	Predictable ongoing baseline in exchange for commitment.
Spot Instances	Workloads that tolerate interruption.
S3 lifecycle tiers	Access frequency changes with age; retention is known.

AWS Pricing Calculator estimates future service costs before deploying. **Cost Explorer** analyzes historical and forecast spending. **AWS Budgets** tracks thresholds and sends alerts or triggers configured actions. **Cost and Usage Reports** support detailed billing analysis; cost allocation tags help attribute spending. AWS Organizations supports consolidated billing across accounts.

Support offerings vary over time. The official guide currently includes Basic Support, Business Support+, Enterprise Support,

and Unified Operations among possible options. Match the need to the current AWS support description instead of relying on an old memorized plan comparison. AWS re:Post, documentation, and Prescriptive Guidance offer learning and troubleshooting resources; AWS Health reports events affecting your services; Trusted Advisor provides recommendations in areas including cost and security, with access depending on support entitlements.

Three-tool distinction

Estimate a *future design* → Pricing Calculator. Investigate *past spending* → Cost Explorer. Alert when a *threshold is crossed* → Budgets. A budget is not a universal hard cap on the AWS bill.

Recall

- Can I match a purchasing option to predictability and interruption tolerance?
- Can I distinguish Calculator, Explorer, Budgets, and the detailed report?

Scenario-to-service decision workshop

Case A: audit vs health

An operations lead asks whether API errors spiked last night. Use CloudWatch metrics and alarms. An auditor asks who changed an IAM policy. Use CloudTrail. The first is system health; the second is recorded API action.

Case B: bursty image-processing tasks

Uploads arrive unevenly and image jobs can wait. S3 is object storage; SQS queues tasks until workers are ready; Lambda can process short event-driven work. SNS would notify subscribers but does not replace a durable work queue.

Case C: confidential customer files

The company needs to know who can read objects, protect stored content, and show provider compliance reports. Use IAM and bucket access controls, encryption with managed keys as appropriate, and Artifact for AWS compliance documentation. The existence of AWS reports does not configure customer permissions.

Case D: new feature cost review

Estimate a new service before launch using Pricing Calculator. After deployment, examine historical charges with Cost Explorer; set alert thresholds through Budgets and use cost tags to identify the responsible team.

Case E: international download speed

Static files accessed by many global users are good candidates for CloudFront caching from an S3 origin. More EC2 CPUs in the origin Region will not eliminate physical distance; edge delivery addresses the stated latency problem.

Low-risk familiarization exercise

Using the console once makes the names feel real. The exam does not ask you to implement this lab. If you have a sandbox AWS account, first set a small AWS Budget alert and confirm its email subscription. A budget alert is a warning, not a spending kill switch. Never assume the free tier covers every service, region, or request.

1. Record the account/Region, create only a small private S3 bucket with a unique name, and keep Block Public Access enabled.
2. Upload a harmless synthetic text document; observe the bucket name, object key, and Region. Do not upload personal or company data.
3. Locate the bucket's encryption and permissions settings and note which choices belong to the customer in the shared-responsibility model.
4. Explore Cost Explorer and estimate a separate hypothetical workload with Pricing Calculator; do not deploy that hypothetical workload.
5. Delete the object and bucket, confirm deletion, and inspect the billing dashboard afterward for delayed charges.

Safety

Do not create access keys for the root user or disable account protections. If you cannot guarantee a disposable environment and a clear cleanup path, use AWS documentation and the console tour instead of deploying resources.

Practice questions and explanations

Try to answer before reading the line underneath. These questions deliberately test service distinctions, not recalled exam wording.

Cloud concepts (1–6)

1. A retailer needs extra capacity for six weeks each year and little the rest of the year. Which cloud benefit matters most?

Elasticity.

Capacity can rise with demand and fall later; high availability is a different objective.

2. A company wants to launch a test environment in hours rather than wait for hardware procurement. Which benefit?

Agility.

Rapid provisioning shortens feedback cycles; it does not imply that compliance happens automatically.

3. A web app must keep serving users if one facility within a Region fails. What should the team use conceptually?

Multiple Availability Zones.

AZs are isolated inside a Region; edge locations cache content but do not provide a replacement app tier.

4. A company wants to minimize environmental impact in its architecture reviews. Which pillar applies?

Sustainability.

It is one of the six Well-Architected pillars, distinct from cost optimization.

5. Why might an organization keep some resources on premises while moving others to AWS?

A hybrid deployment meets migration, regulatory, or integration needs.

Cloud adoption need not be all-or-nothing.

6. A service adds capacity when user traffic grows and reduces it afterward. What is this behavior called?

Elastic scaling.

It adapts to demand and reduces idle capacity.

Security and compliance (7–14)

7. Who patches the guest operating system of a customer's EC2 instance?

The customer.

AWS handles the underlying physical infrastructure.

8. A workload needs AWS permissions but must not hold a permanent access key in source code. Which identity type?

An IAM role.

Roles provide temporary credentials for authorized workloads.

9. An auditor asks who deleted a storage resource yesterday. Which service records the API action?

AWS CloudTrail.

Config records configuration state; CloudTrail records API activity.

10. A compliance team needs the provider's audit reports. Where should it look?

AWS Artifact.

Artifact provides access to AWS compliance reports and agreements, not resource monitoring.

11. Which feature adds a second proof of identity to account sign-in?

Multifactor authentication (MFA).

MFA strengthens authentication; it does not replace authorization policies.

12. A security team wants to identify suspicious account activity using AWS threat-detection signals. Which service?

Amazon GuardDuty.

It detects potential threats, whereas CloudWatch observes operational health.

13. The team must inspect HTTP requests for common web attacks. Which service family fits?

AWS WAF.

WAF applies web application filtering; Shield focuses on DDoS protection.

14. Does an SCP alone grant a user permission to read S3?

No.

An SCP limits maximum permissions; IAM or resource-based policy must allow the action.

Technology and services (15–24)

15. A team stores photos and documents that applications retrieve using object keys. Which storage service?

Amazon S3.

EBS provides block storage for instances; EFS provides a shared file system.

16. A Linux application needs a shared file system accessible by several compute instances. Which service?

Amazon EFS.

It provides managed, elastic file storage.

17. A startup needs a managed SQL database for relational transactions. Which service family?

Amazon RDS.

DynamoDB is NoSQL; relational querying and transactions suggest RDS.

18. A high-scale application uses document/key-value access without SQL joins. Which database often fits?

Amazon DynamoDB.

Its access-pattern model differs from relational RDS.

19. Short event-driven code should run without server administration. What service?

AWS Lambda.

EC2 gives VM control but brings OS management.

20. Containers must run without the team administering host servers. Which compute option?

AWS Fargate.

It supplies serverless compute for supported container orchestration.

21. A producer needs to store jobs until consumers are ready. Which integration service?

Amazon SQS.

A durable queue decouples producer and worker workloads.

22. One announcement must reach many subscribers. Which service?

Amazon SNS.

Publish/subscribe fan-out differs from a worker queue.

23. Global users repeatedly download the same static images. What reduces origin load and distance?

Amazon CloudFront.

Edge caching brings content closer to users.

24. Analysts want SQL queries over files already in S3 without a database cluster. Which service?

Amazon Athena.

Quick Sight visualizes data; Athena queries it.

Pricing and support (25–30)

25. The team wants to estimate a proposed architecture's bill before deployment. Which tool?

AWS Pricing Calculator.

Cost Explorer examines existing and forecast spending.

26. Finance wants to inspect what services cost last month. Which tool?

AWS Cost Explorer.

It analyzes historical spending and trends.

27. Finance wants a warning when spending crosses a specified threshold. Which tool?

AWS Budgets.

An alert does not by itself guarantee service shutdown or a hard spend cap.

28. A batch job tolerates interruption and can resume work. Which purchasing option is a strong cost candidate?

Spot Instances.

Spot suits interruption-tolerant work, not a sole uninterruptible production database.

29. A workload's compute baseline is stable for a year. Which discount approaches merit comparison?

Savings Plans and Reserved Instances.

Commitment-based discounts can reduce baseline cost; compare current terms before purchase.

30. A team wants to attribute monthly costs to business units. What labeling mechanism helps?

Cost allocation tags.

Tags help group charges in AWS billing tools once configured for allocation.

Four-week plan, quick reference, and glossary

Week	Focus	Evidence of learning
1	Cloud concepts, Regions, AZs, six pillars	Explain elasticity and availability with your own examples.
2	Shared responsibility, identity, audit, security	Match ten security requests to AWS controls.
3	Compute, network, storage, databases, analytics	Make your own service-choice table from five scenarios.
4	Billing, support, mixed practice, revision	Explain each missed item without looking at the answer.

One-page recall

- **24/30/34/12:** Concepts / Security / Technology / Billing.
- **Region / AZ / edge:** geography / isolation / nearby content delivery.
- **CloudWatch / CloudTrail / Config:** health / API activity / configuration.
- **S3 / EBS / EFS:** object / block / file.
- **SNS / SQS:** fan-out notification / durable queued work.
- **Calculator / Explorer / Budgets:** estimate / investigate / threshold alerts.

Glossary

Elasticity

Adjusting capacity up or down as demand changes.

Least privilege

Granting only the permissions needed for a task.

Region

Geographic AWS area containing multiple Availability Zones.

Availability Zone

Isolated infrastructure location within a Region.

Edge location

Location that can serve cached content nearer to users.

Serverless

Compute model where the provider manages underlying server provisioning.

Consolidated billing

Combined billing management across accounts in an organization.

Shared responsibility

Division of security duties between AWS and the customer.

Before exam day, confirm the latest outline and support-plan names on the official AWS exam guide. Read the full scenario, eliminate answers that do not solve the stated problem, and make an educated choice rather than leaving an item unanswered.