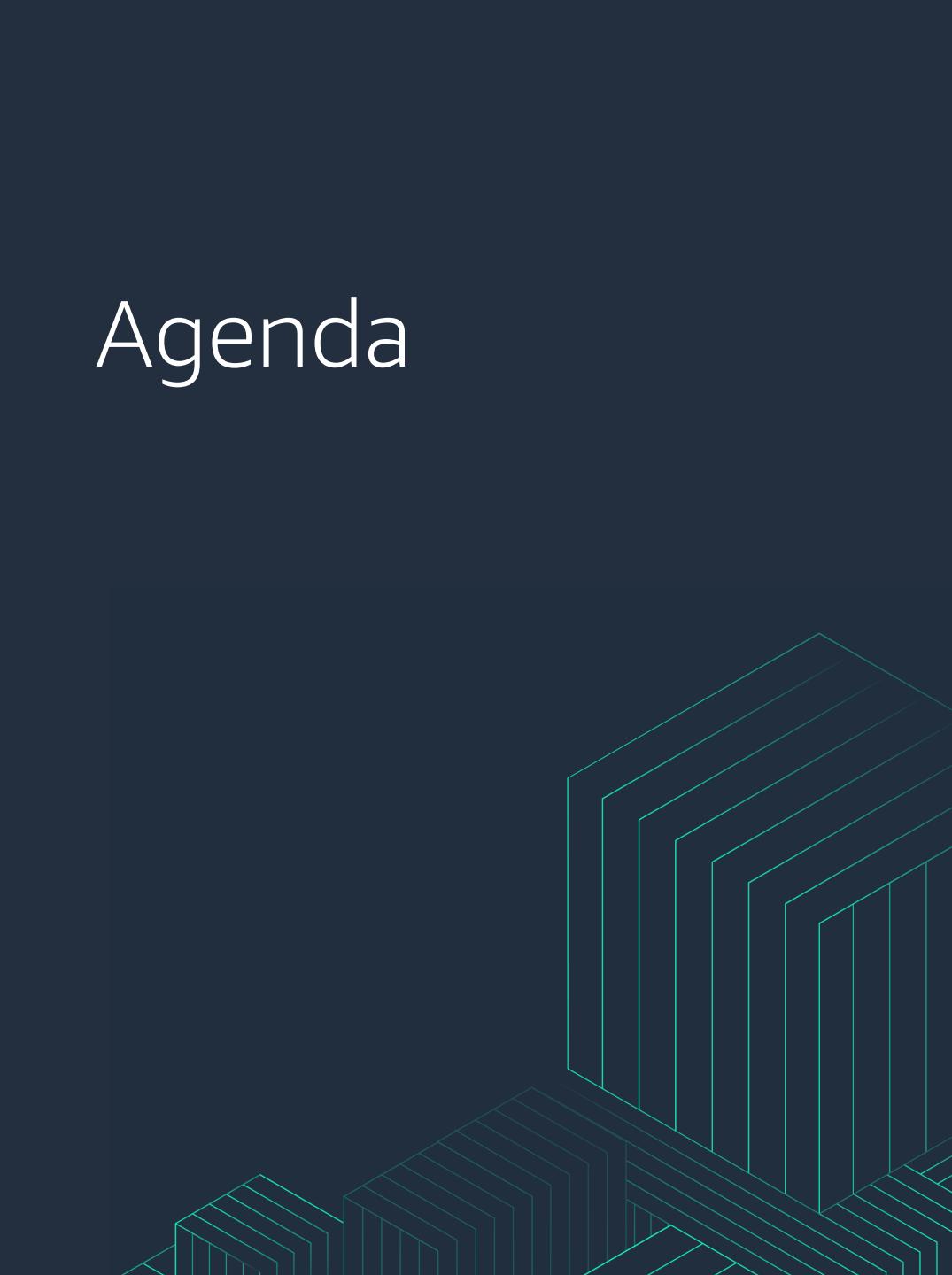


AWS Partner: AWS Cloud Practitioner Essentials

Course Overview

Agenda

A dark blue background featuring a series of light blue, translucent 3D-style rectangular blocks arranged in a perspective view, creating a sense of depth and technology.

Introduction: Course Overview

Module 1: Introduction to Amazon Web Services

Module 2: Compute in the Cloud

Module 3: Global Infrastructure and Reliability

Module 4: Networking

Module 5: Storage and Databases

Module 6: Security

Module 7: Monitoring and Analytics

Module 8: Pricing and Support

Module 9: Migration and Innovation

Module 10: AWS Certified Cloud Practitioner Basics

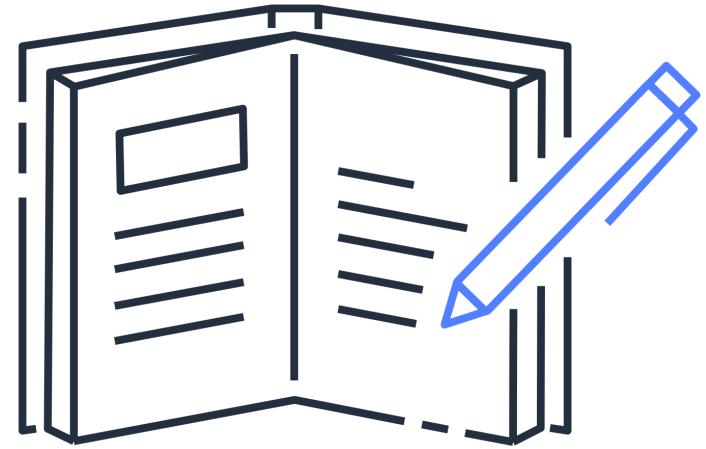
Module 1

Introduction to Amazon Web Services

Module 1 objectives

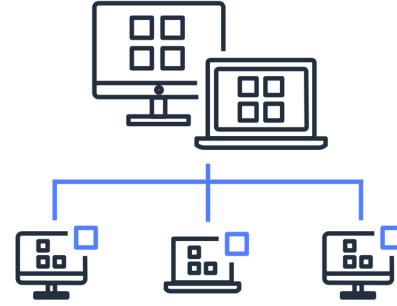
In this module, you will learn how to:

- Describe three cloud computing deployment models
- Describe six benefits of cloud computing



Cloud computing

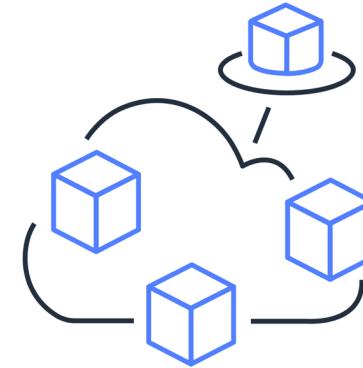
What is cloud computing?



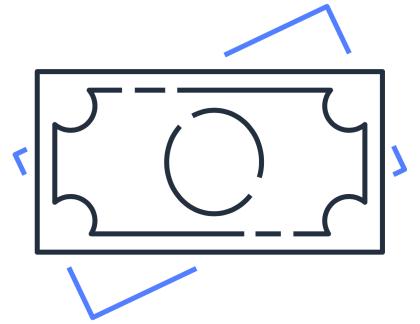
Access services
on demand



Avoid large upfront
investments



Provision computing
resources as needed



Pay only for what
you use

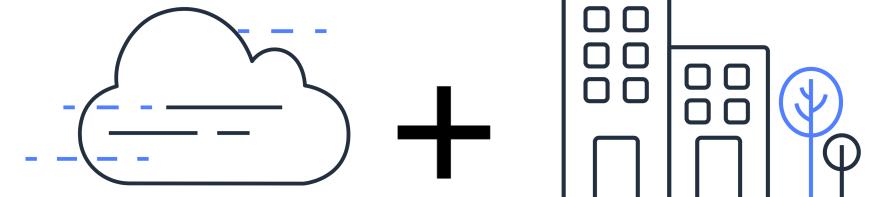
Cloud computing deployment models



Cloud



On premises



Hybrid

Cloud-based deployment

- Run all parts of the application in the cloud
- Migrate existing applications to the cloud
- Design and build new applications in the cloud



Cloud

On-premises deployment

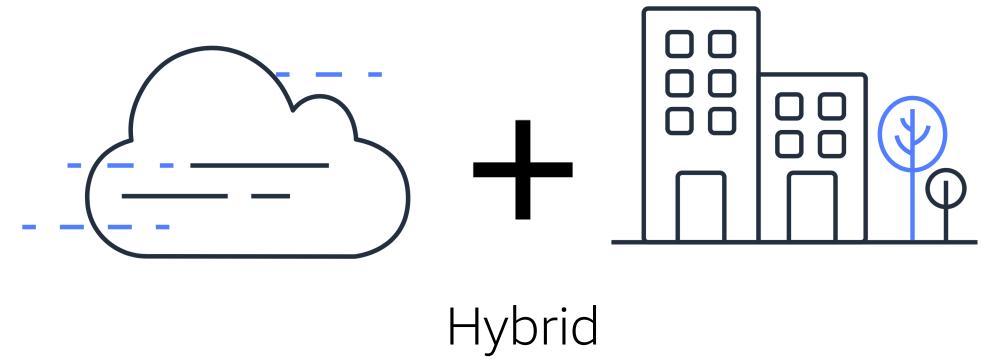
- Use virtualization and resource management tools to deploy resources
- Use application management and virtualization technologies to increase resource usage



On premises

Hybrid deployment

- Connect cloud-based resources to on-premises infrastructure
- Integrate cloud-based resources with legacy IT applications



AWS Cloud



aws Services Search [Alt+S] N. Virginia ▾ Sampleuser ▾

CloudFront IAM Route 53 RDS EC2 Console Home CloudWatch S3 Lambda

Console Home Info

[Reset to default layout](#) [+ Add widgets](#)

Recently visited Info

S3	CloudShell
EC2	CloudSearch
Route 53	AWS Well-Architected Tool
CloudFront	Trusted Advisor
RDS	Lambda
IAM	Amazon AppFlow
CloudWatch	AWS Cost Explorer

Privacy Terms Cookie preferences

© 2022, Amazon Web Services, Inc. or its affiliates.

Cloud computing benefits

Variable expenses

Upfront expenses



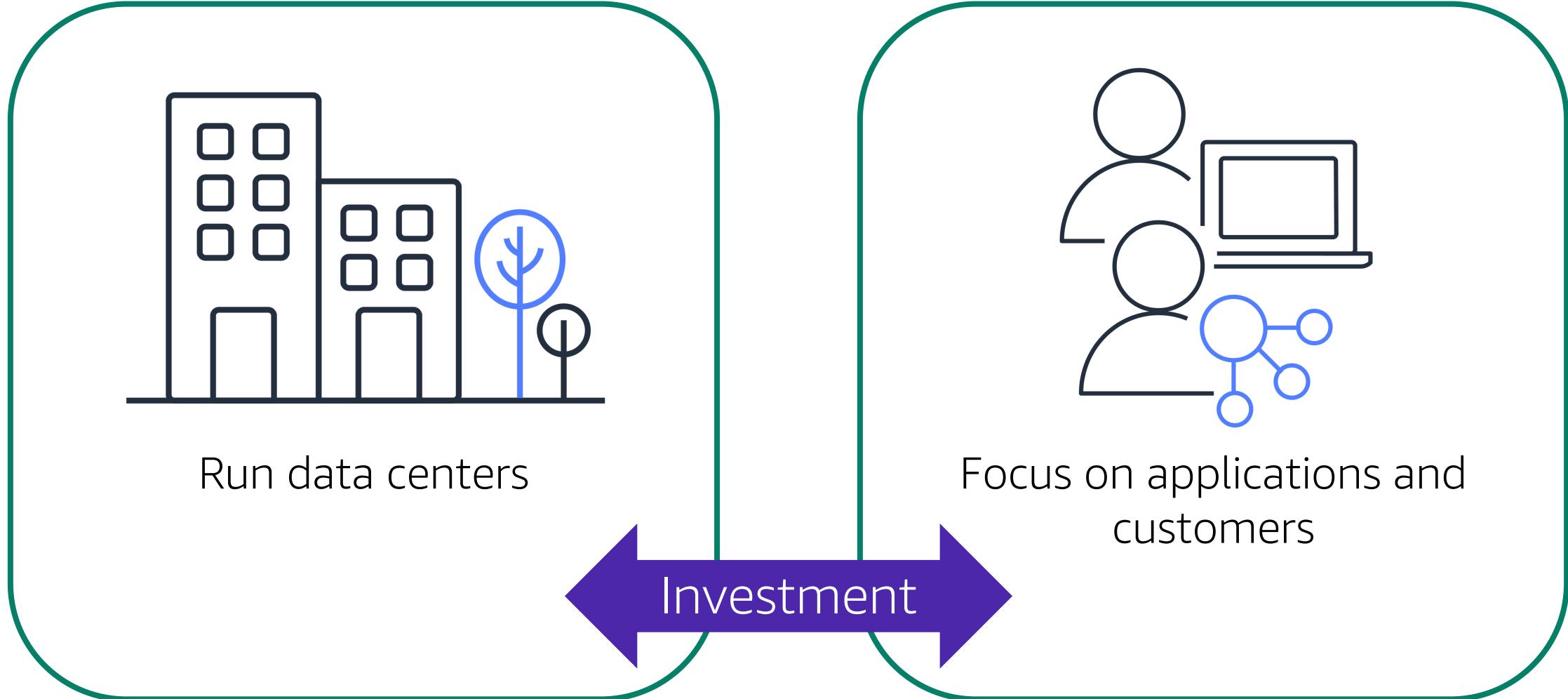
Invest in technology resources before using them

Variable expenses



Pay only for what you use

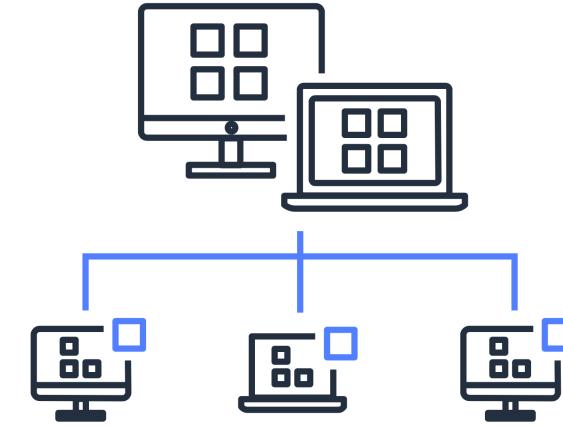
Cost optimization



Capacity



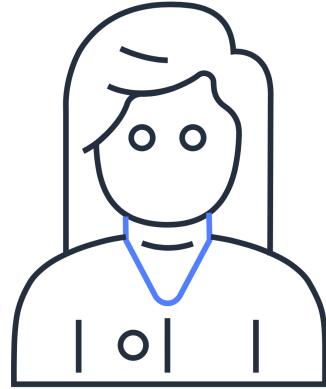
Stop guessing on your infrastructure capacity needs



Scale in and scale out as needed

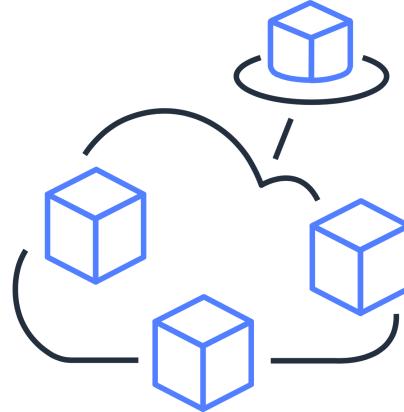
Economies of scale

Smaller scale



Pay higher prices based on
only your own usage

Economies of scale



Benefit from customers'
aggregated usage

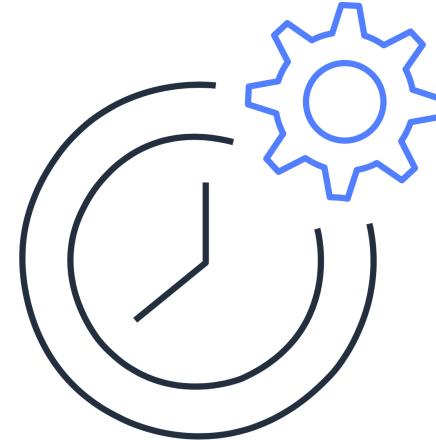
Speed and agility

Data centers



Weeks between wanting resources and having resources

Cloud computing

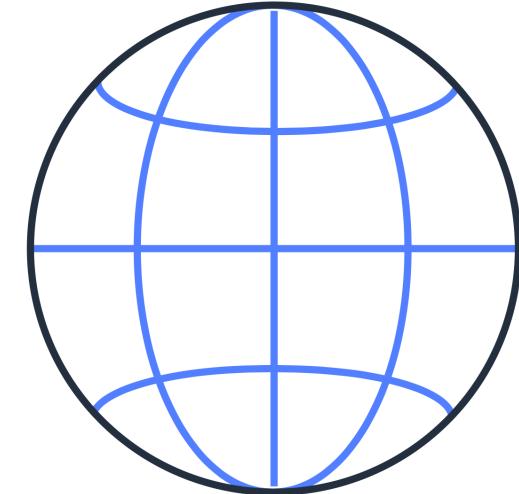


Minutes between wanting resources and having resources

Global in minutes

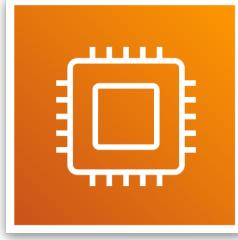


Quickly deploy applications
worldwide



Use the AWS global
infrastructure.

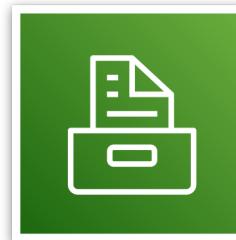
AWS core service categories



Compute



Networking and
Content Delivery



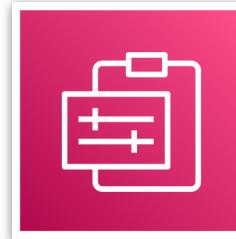
Storage



Database



Security, Identity,
and Compliance



Management
and Governance

Module 1

Knowledge check

Knowledge check question 1



What is cloud computing?

- A. Backing up files that are stored on desktop and mobile devices to prevent data loss
- B. Deploying applications that are connected to an on-premises infrastructure
- C. Using on-demand delivery of IT resources and applications through the internet
- D. Running code without needing to manage or provision servers

Knowledge check answer 1



What is cloud computing?

- A. Backing up files that are stored on desktop and mobile devices to prevent data loss
- B. Deploying applications that are connected to an on-premises infrastructure
- C. **Using on-demand delivery of IT resources and applications through the internet (correct)**
- D. Running code without needing to manage or provision servers

Knowledge check question 2



What is another name for on-premises deployment?

- A. Cloud-based application
- B. Hybrid deployment
- C. Private cloud deployment
- D. AWS Cloud

Knowledge check answer 2



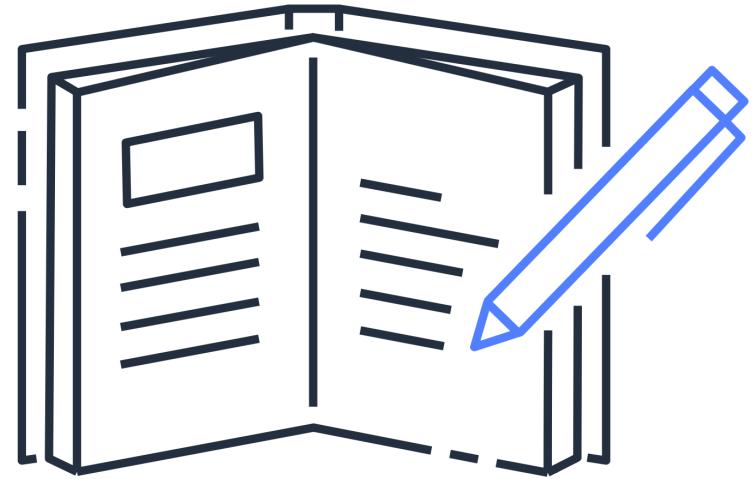
What is another name for on-premises deployment?

- A. Cloud-based application
- B. Hybrid deployment
- C. **Private cloud deployment (correct)**
- D. AWS Cloud

Module 1 summary

In this module, you learned about:

- Three cloud computing deployment models
- Six benefits of cloud computing



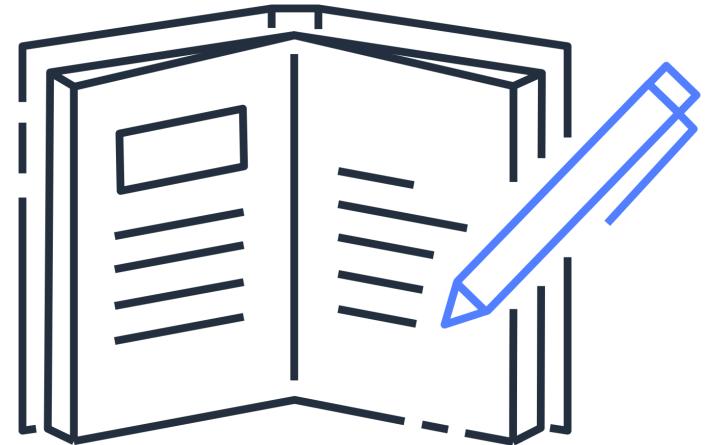
Module 2

Compute in the Cloud

Module 2 objectives

In this module, you will learn how to:

- Describe Amazon EC2 benefits
- Identify the Amazon EC2 instance types
- Differentiate among Amazon EC2 billing options
- Summarize Amazon EC2 Auto Scaling benefits
- Summarize Elastic Load Balancing benefits
- Provide examples of Elastic Load Balancing uses
- Describe differences between Amazon SNS and Amazon SQS
- Summarize additional AWS compute options

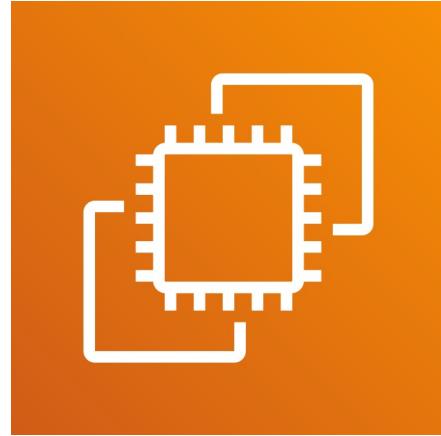


Amazon Elastic Compute Cloud (Amazon EC2)

Amazon EC2

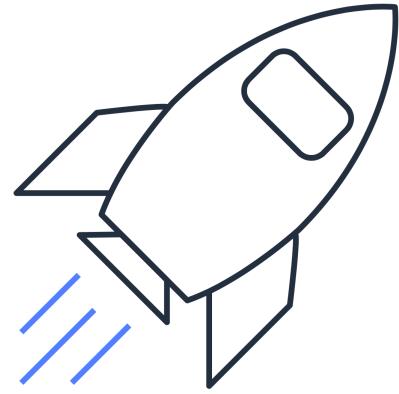


- Use secure, sizable compute capacity
- Boot server instances in minutes
- Pay only for what you use

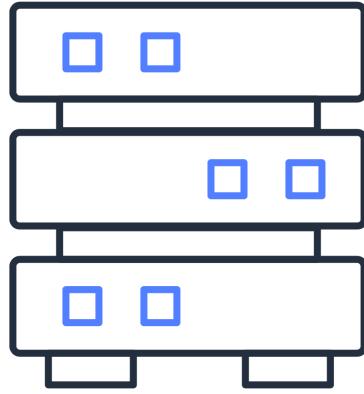


Amazon EC2

How Amazon EC2 works



Launch an instance



Connect to the instance



Use the instance

Amazon EC2 instance types

Amazon EC2 instance types



General purpose

- Balances compute, memory, and networking resources
- Suitable for a broad range of workloads

Compute optimized

- Offers high-performance processors
- Ideal for compute-intensive applications and batch processing workloads

Memory optimized

- Delivers fast performance for memory-intensive workloads
- Well suited for high-performance databases

Accelerated computing

- Uses hardware accelerators to expedite data processing
- Ideal for application streaming and graphics workloads

Storage optimized

- Offers low latency and high input/output operations per second (IOPS)
- Suitable for workloads such as distributed file systems and data warehousing applications

Amazon EC2 pricing

Amazon EC2 instance pricing options



On-Demand

- No upfront costs or minimum contracts
- Ideal for short-term, irregular workloads

Spot

- Ideal for workloads with flexible start and end times
- Offers savings over On-Demand prices

Reserved

- Provides a billing discount over On-Demand pricing
- Requires a 1-year or 3-year term commitment

Compute Savings Plans

- Offer up to 66% savings over On-Demand costs for a consistent amount of compute usage
- Require a 1-year or 3-year term commitment

Dedicated Instance

- An EC2 *instance* that runs in a VPC on hardware for a single customer
- Higher cost compared to standard Amazon EC2 instances

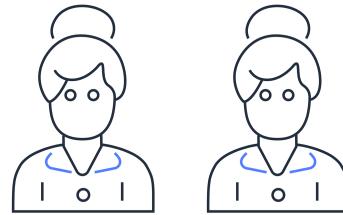
Dedicated Host

- A *physical server* with EC2 instance capacity for a single customer
- Most expensive Amazon EC2 option

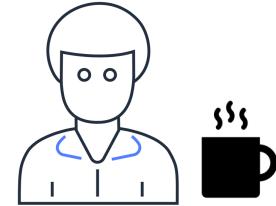
Amazon EC2 Auto Scaling

Manual scaling

Low demand

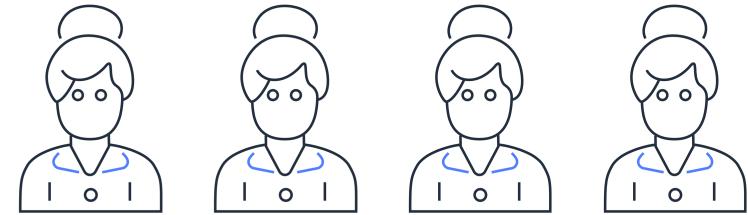


Customers



Barista

High demand



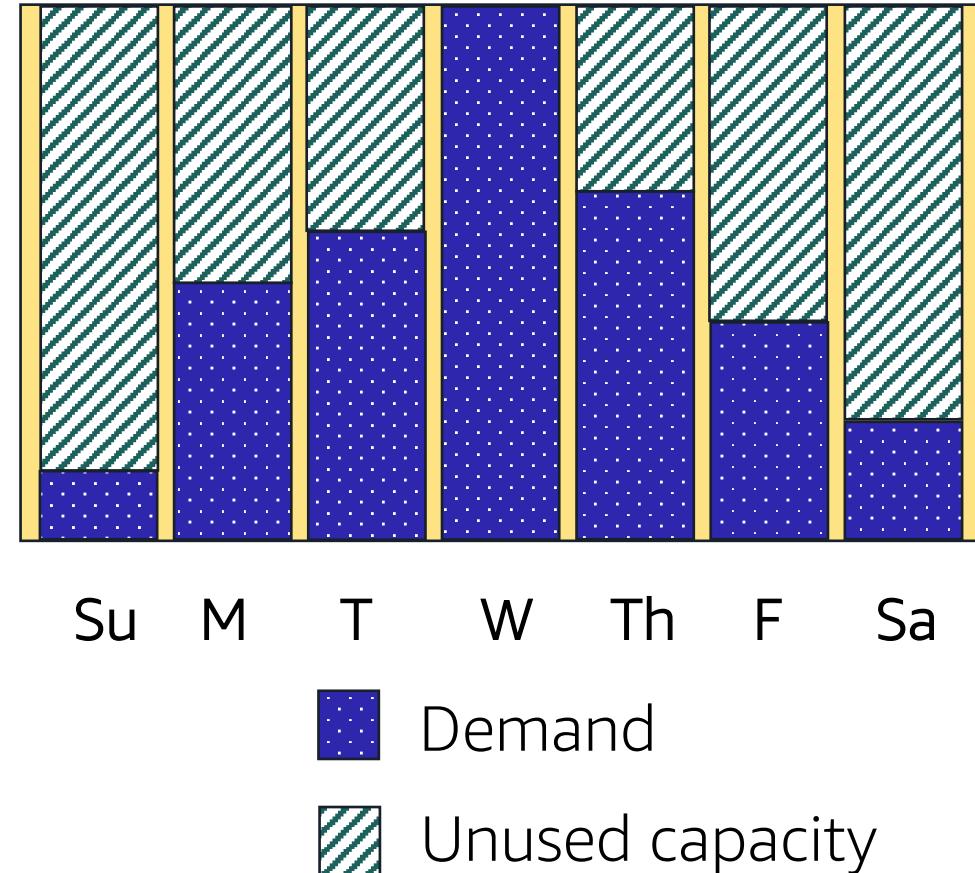
Customers



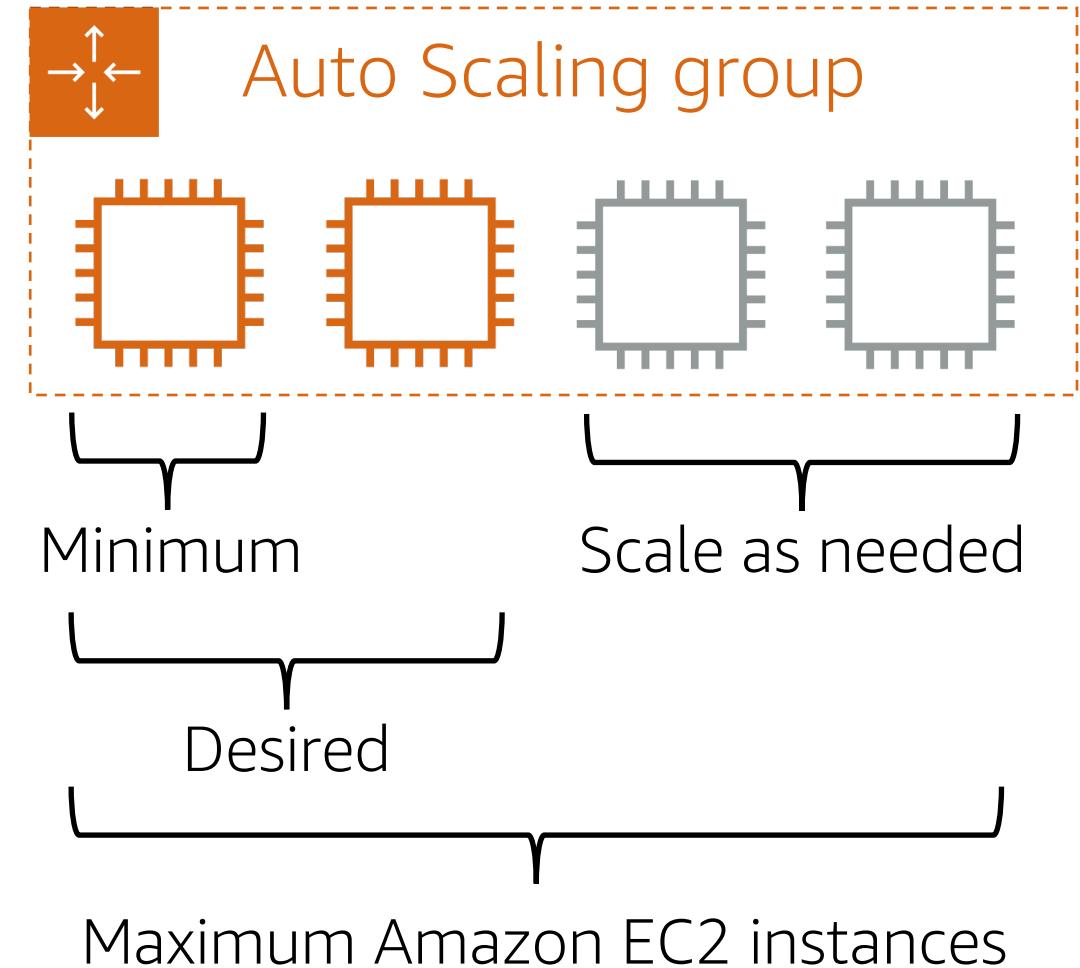
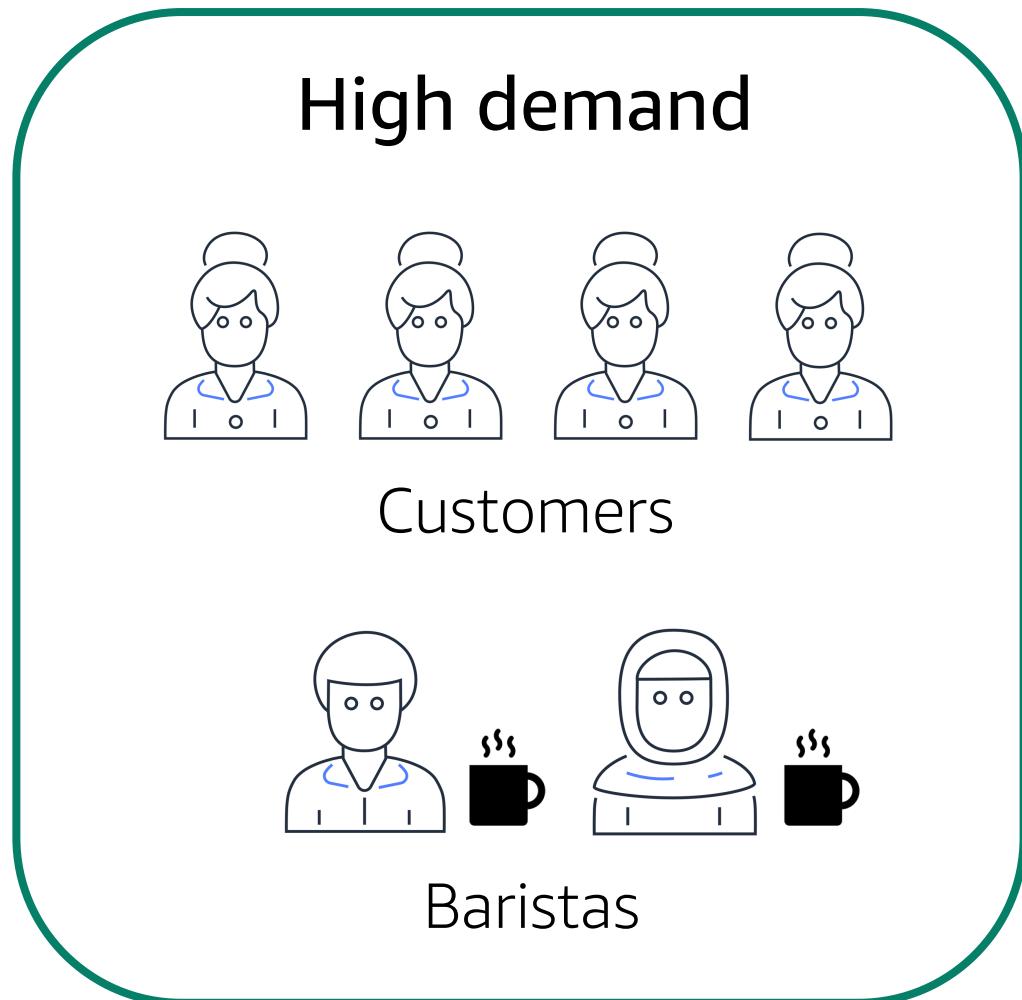
Baristas

Amazon EC2 Auto Scaling

- Scale capacity as computing requirements change
- Use dynamic scaling and predictive scaling



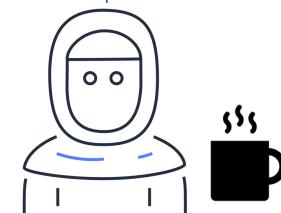
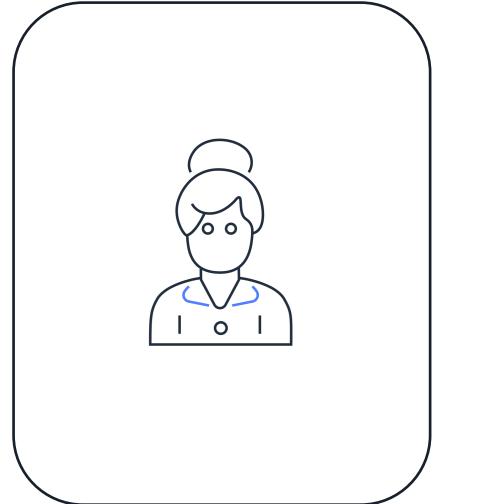
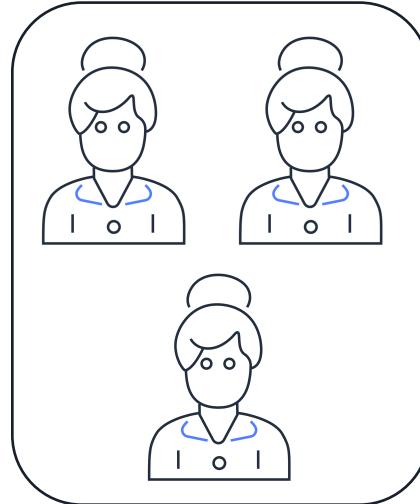
Amazon EC2 Auto Scaling (cont.)



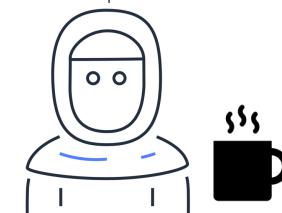
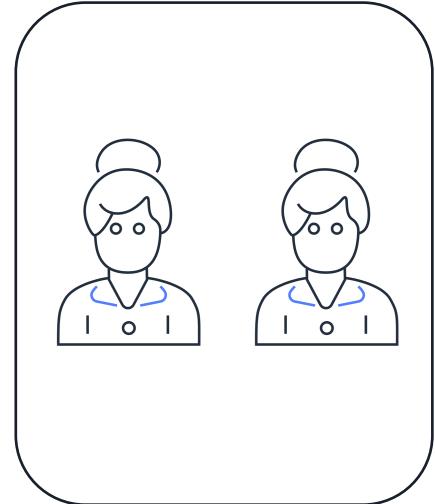
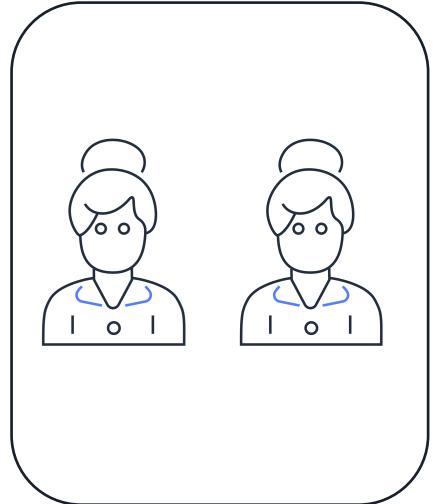
Elastic Load Balancing

Load balancing

Unbalanced workload



Balanced workload



Elastic Load Balancing



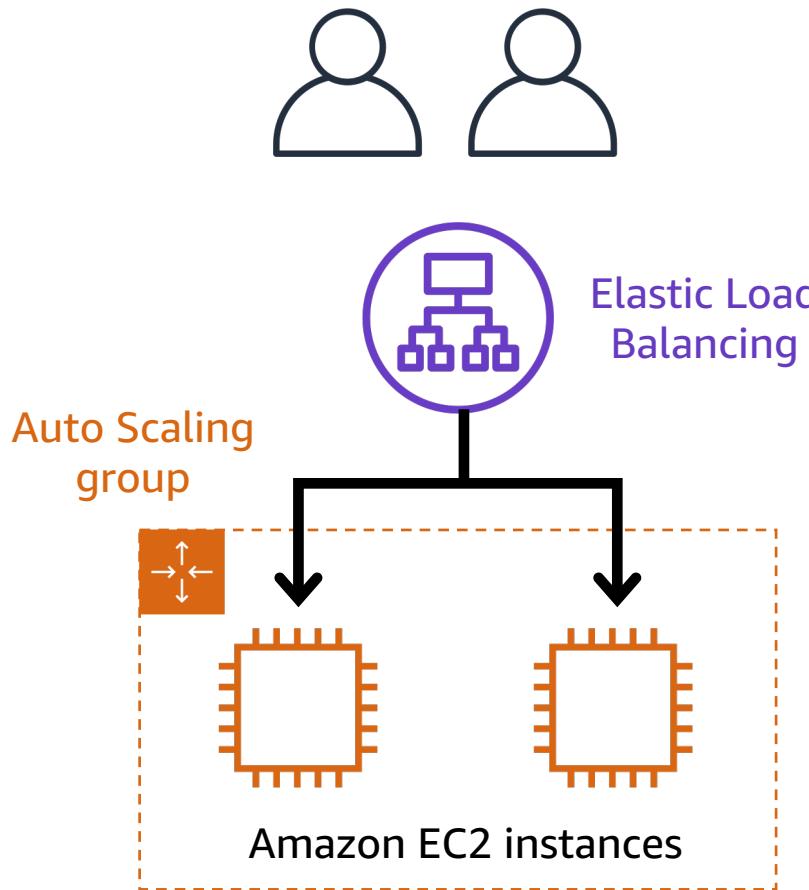
- Automatically distributes traffic across multiple resources
- Provides a single point of contact for your Auto Scaling group



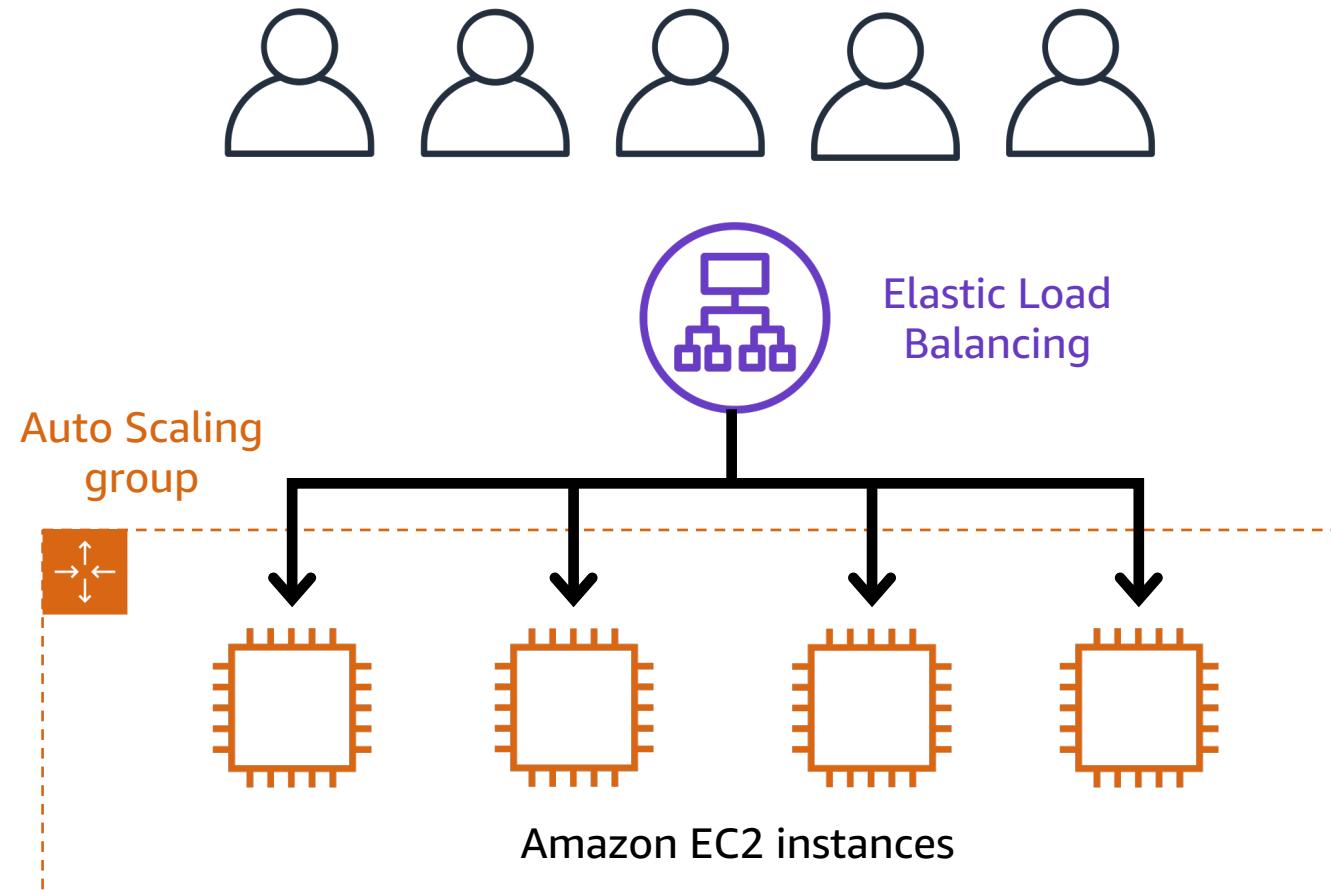
Elastic Load Balancing

Scalability and load balancing

Low-demand period



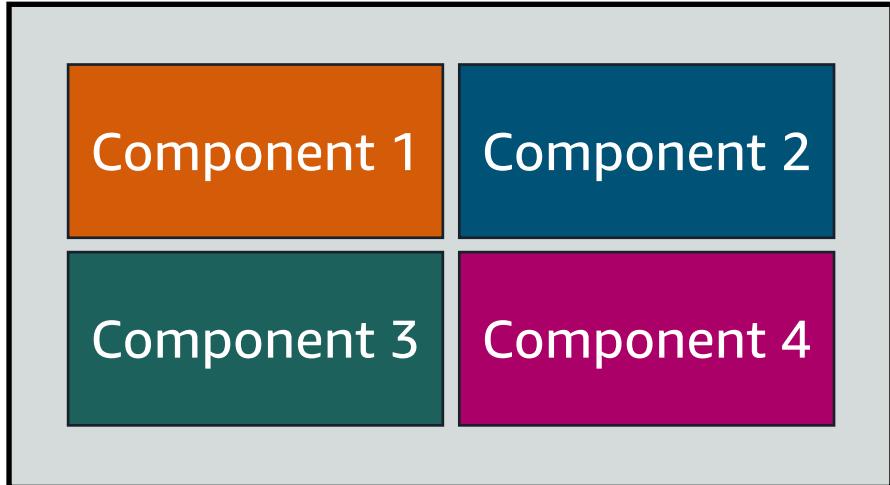
High-demand period



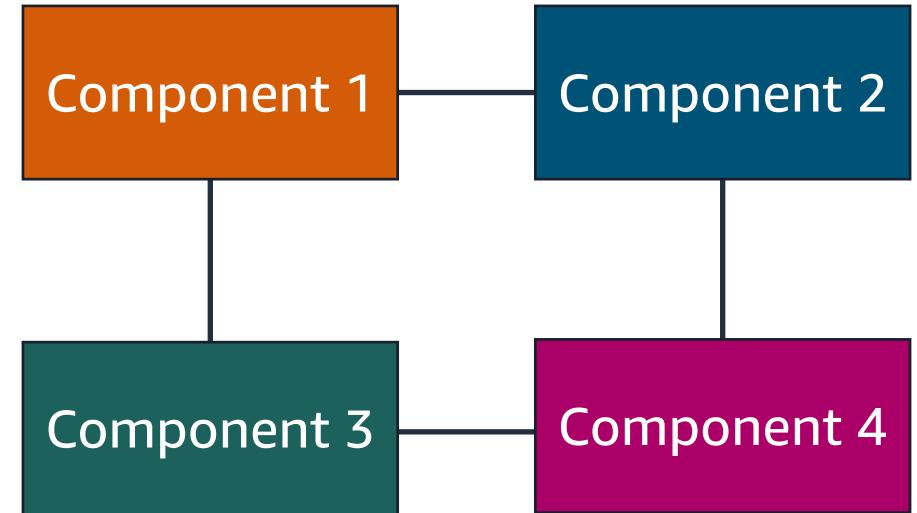
AWS messaging services

Application architecture

Monolithic application



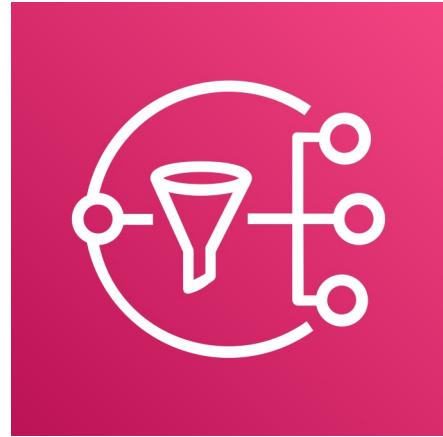
Microservices



Amazon Simple Notification Service



- Messages are published to topics.
- Subscribers immediately receive messages for their topics.

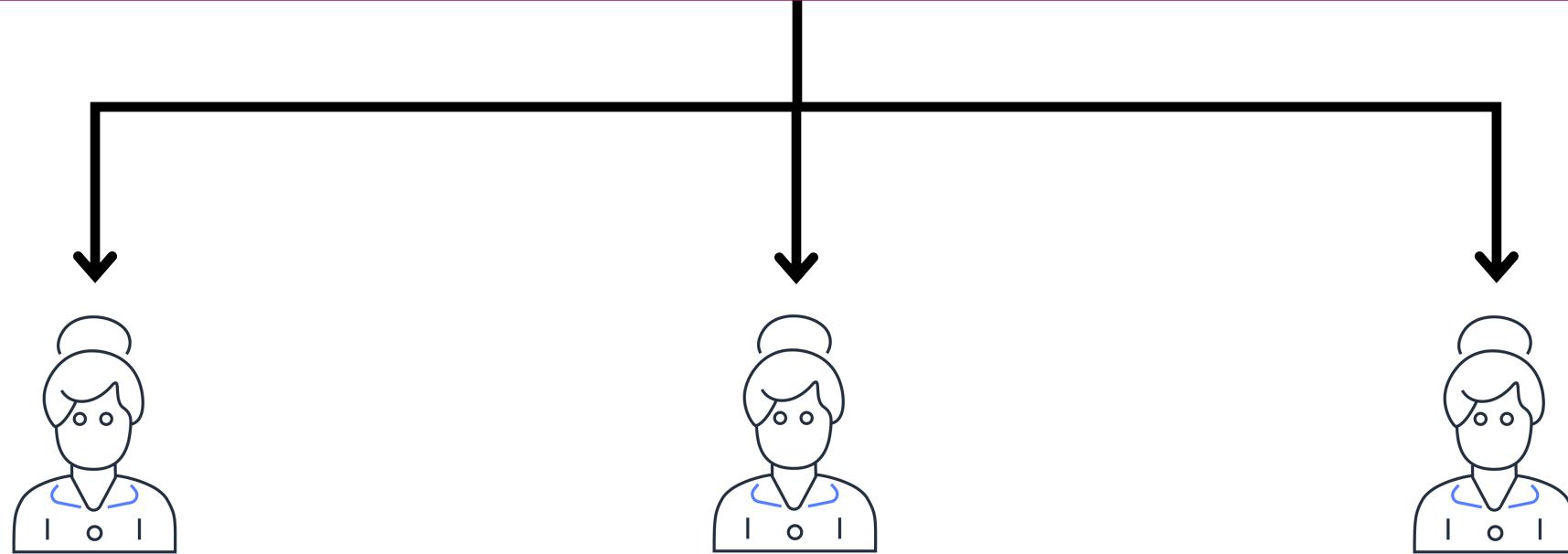


Amazon Simple
Notification Service
(Amazon SNS)

Publish updates from a single topic



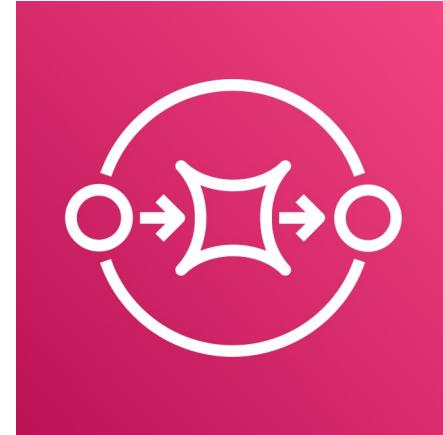
Coupons, coffee trivia, and new products



Amazon Simple Queue Service

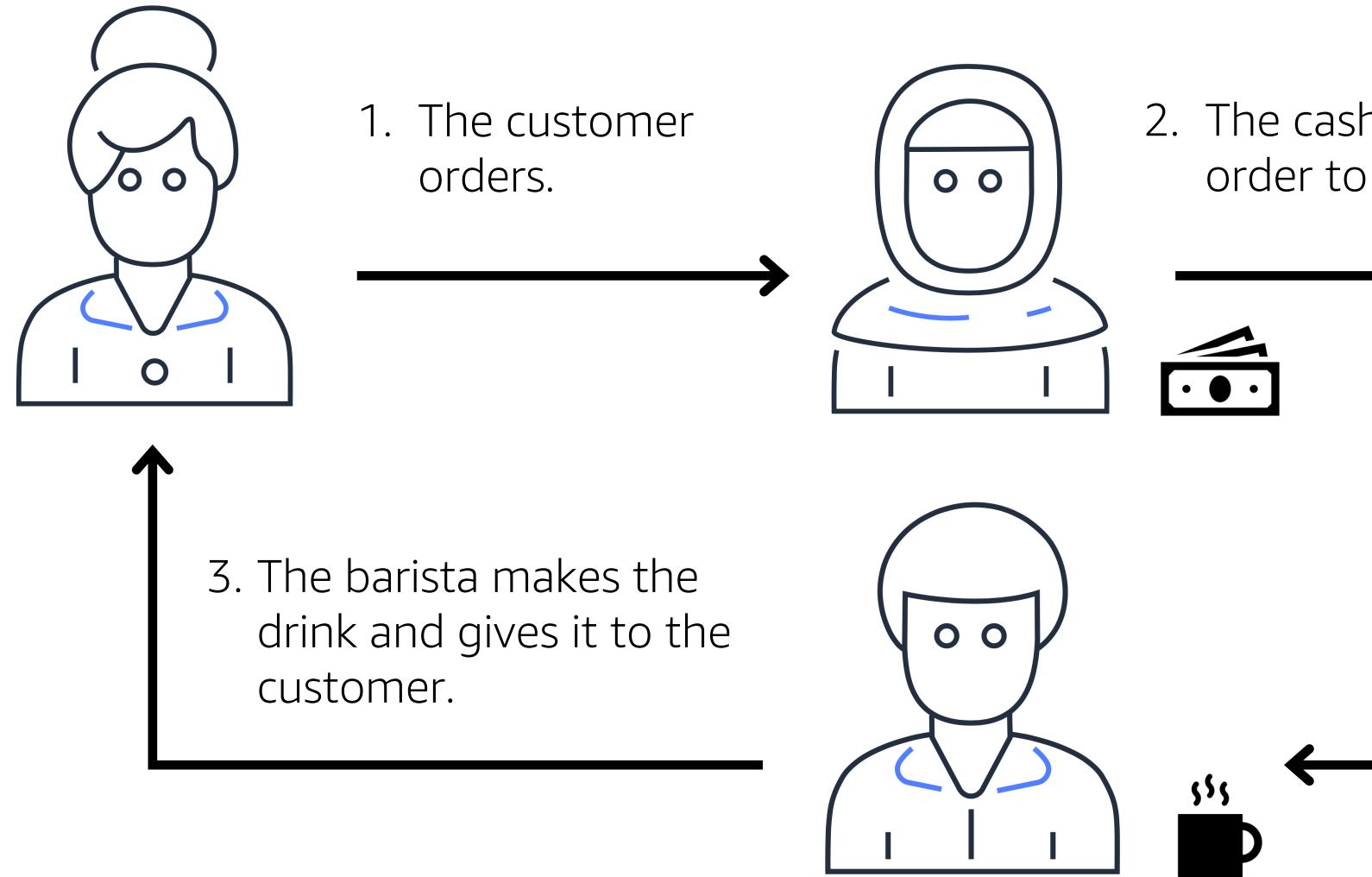


- Send, store, and receive messages between software components
- Queue messages without requiring other services to be available

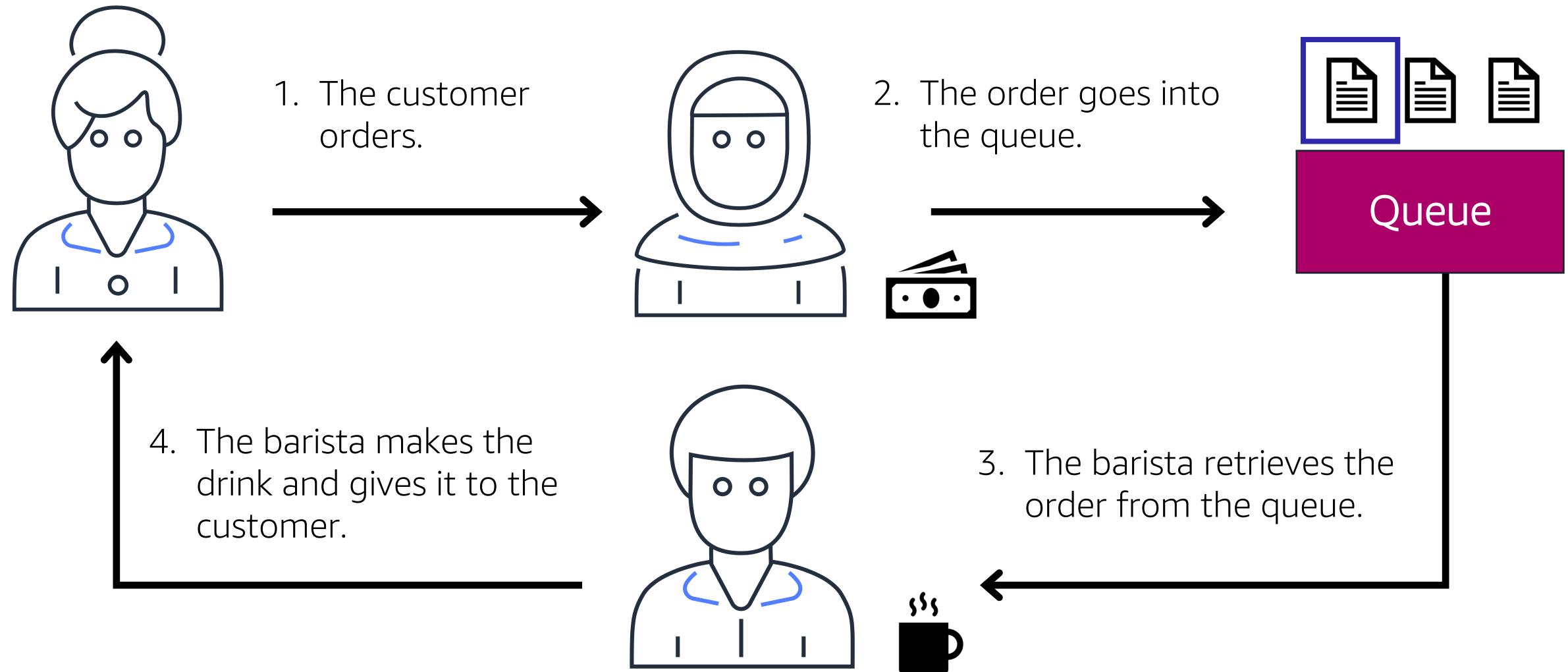


Amazon Simple
Queue Service
(Amazon SQS)

Example: Fulfill an order



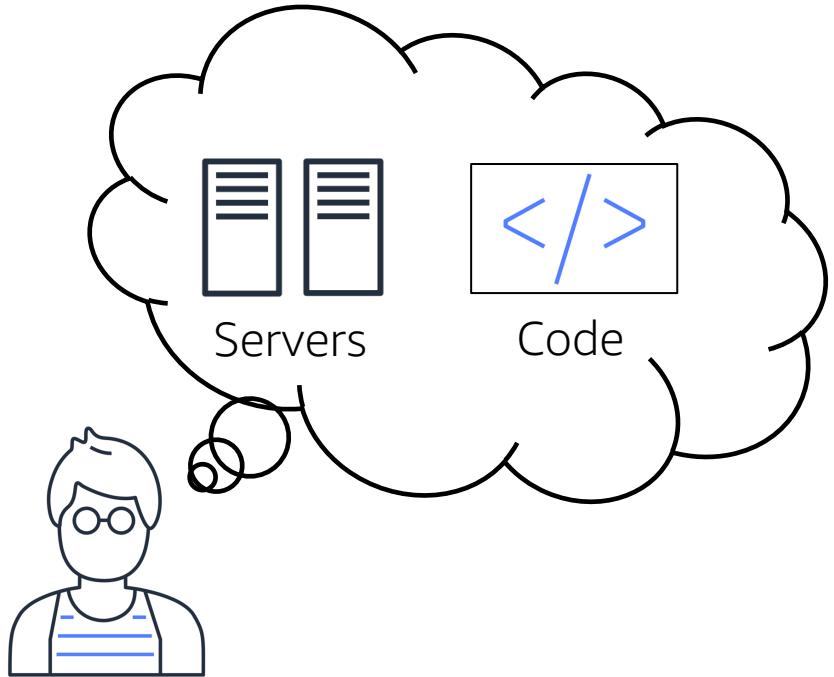
Example: Orders in a queue



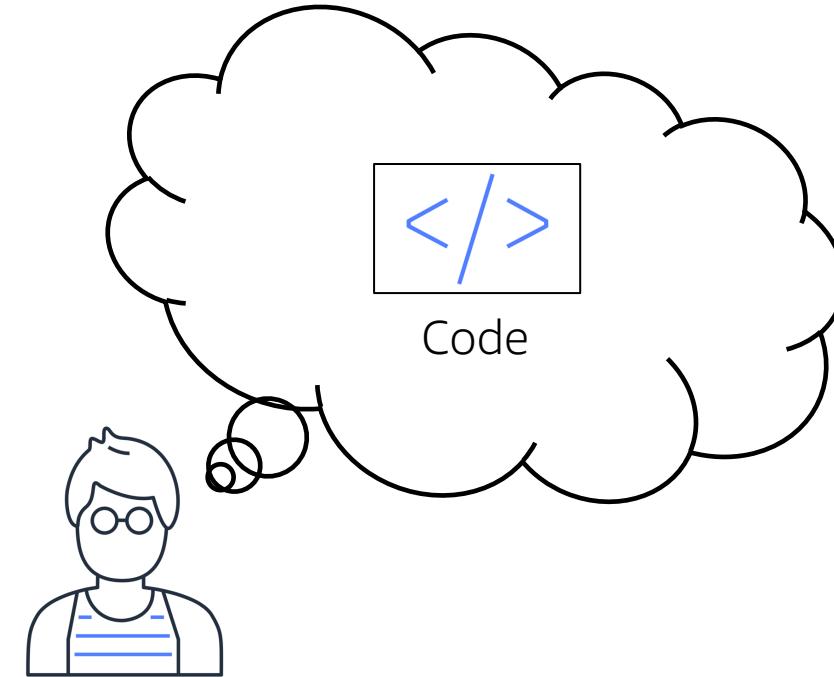
Serverless compute services

Serverless computing

Computing with
virtual servers



Serverless computing



AWS Lambda

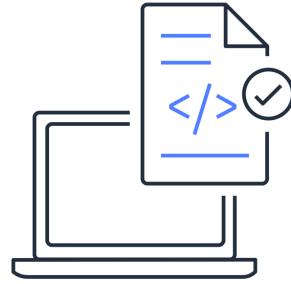


- Run code without provisioning or managing servers
- Pay only for compute time while code is running
- Use other AWS services to automatically trigger code

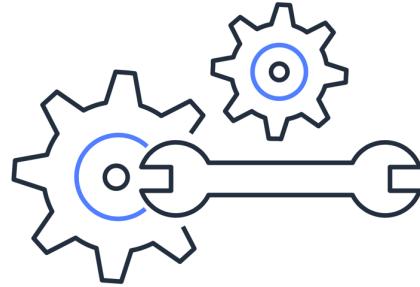


AWS Lambda

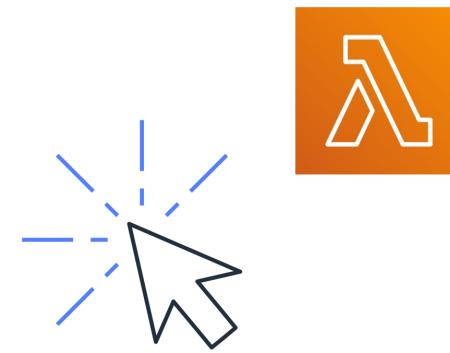
How AWS Lambda works



Upload code to Lambda.



Set code to trigger from an event source.



Code runs only when triggered.

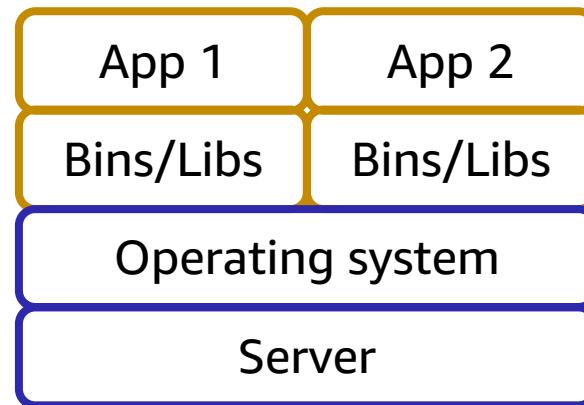


Pay only for the compute time you use.

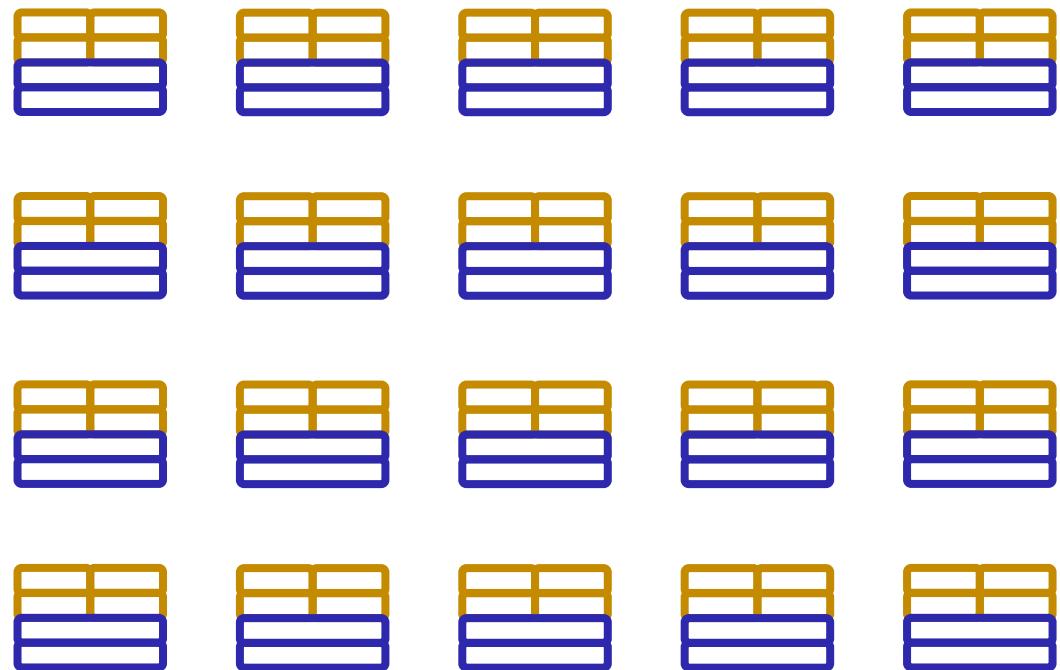
AWS container services

Containers

One host with multiple containers



Tens of hosts with hundreds of containers



AWS container orchestration services



**Amazon Elastic
Container Service
(Amazon ECS)**

- Run and scale containerized applications
- Use simple API calls to control Docker-enabled applications



**Amazon Elastic
Kubernetes Service
(Amazon EKS)**

- Run and scale Kubernetes applications
- Readily update applications with new features

AWS Fargate



- Run serverless containers with Amazon ECS or Amazon EKS
- Pay only for the resources you use



AWS Fargate

Module 2

Knowledge check

Knowledge check question 1



A customer wants to use an Amazon EC2 instance for a batch processing workload. Which Amazon EC2 instance type should they use?

- A. General purpose
- B. Compute optimized
- C. Memory optimized
- D. Storage optimized

Knowledge check answer 1



A customer wants to use an Amazon EC2 instance for a batch processing workload. Which Amazon EC2 instance type should they use?

- A. General purpose
- B. **Compute optimized (correct)**
- C. Memory optimized
- D. Storage optimized

Knowledge check question 2



What are the contract length options for Amazon EC2 Reserved Instances? (Select TWO.)

- A. 1 year
- B. 2 years
- C. 3 years
- D. 4 years
- E. 5 years

Knowledge check answer 2



What are the contract length options for Amazon EC2 Reserved Instances? (Select TWO.)

- A. 1 year (correct)
- B. 2 years
- C. 3 years (correct)
- D. 4 years
- E. 5 years

Knowledge check question 3



A customer has a workload that will run for a total of 6 months and can withstand interruptions. What would be the most cost-efficient Amazon EC2 instance purchasing option?

- A. Reserved Instance
- B. Dedicated Instance
- C. On-Demand Instance
- D. Spot Instance

Knowledge check answer 3



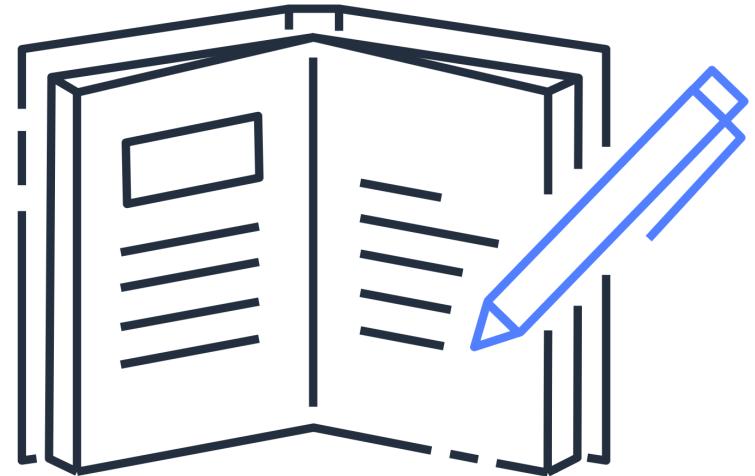
A customer has a workload that will run for a total of 6 months and can withstand interruptions. What would be the most cost-efficient Amazon EC2 instance purchasing option?

- A. Reserved Instance
- B. Dedicated Instance
- C. On-Demand Instance
- D. **Spot Instance (correct)**

Module 2 summary

In this module, you learned how to:

- Describe Amazon EC2 benefits
- Identify the Amazon EC2 instance types
- Differentiate among Amazon EC2 billing options
- Summarize Amazon EC2 Auto Scaling benefits
- Summarize Elastic Load Balancing benefits
- Provide examples of Elastic Load Balancing uses
- Describe differences between Amazon SNS and Amazon SQS
- Summarize additional AWS compute options



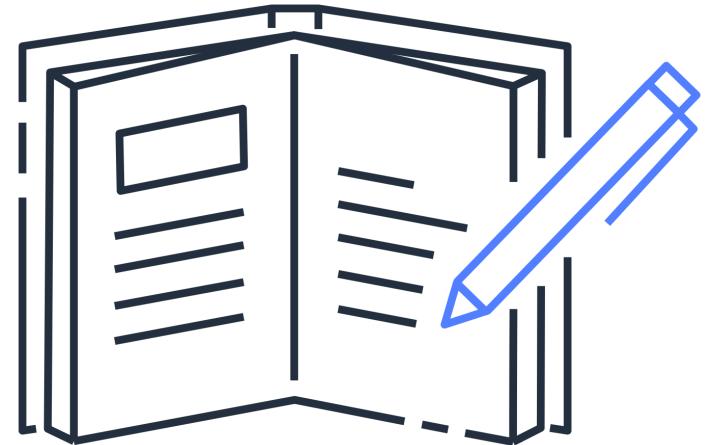
Module 3

Global Infrastructure and Reliability

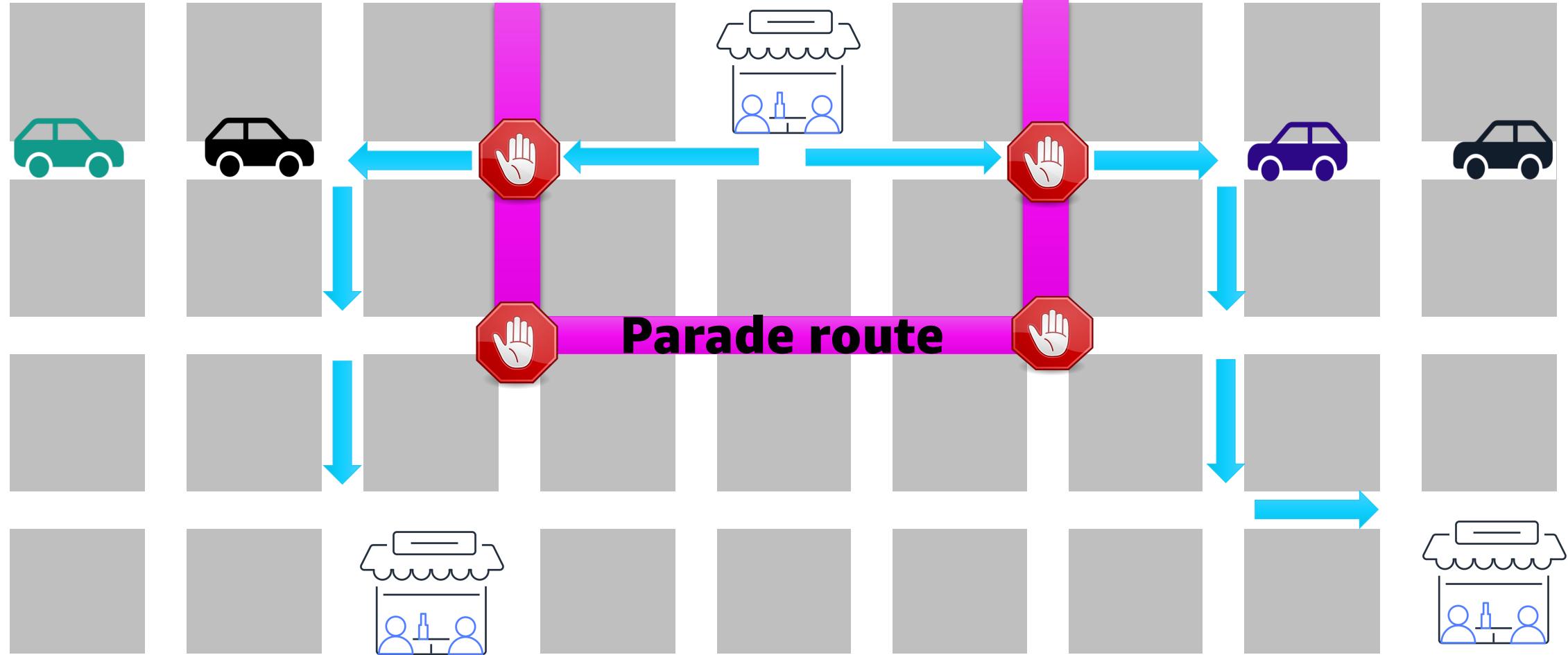
Module 3 objectives

In this module, you will learn how to:

- Summarize the AWS Global Infrastructure benefits
- Describe Availability Zones
- Describe the benefits of Amazon CloudFront and edge locations.
- Compare methods for provisioning AWS services.



Build a global footprint

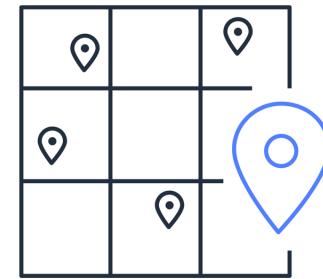


Select a Region

Determine the right Region for your services, data, and applications based on:



Compliance with data governance and legal requirements



Proximity to your customers

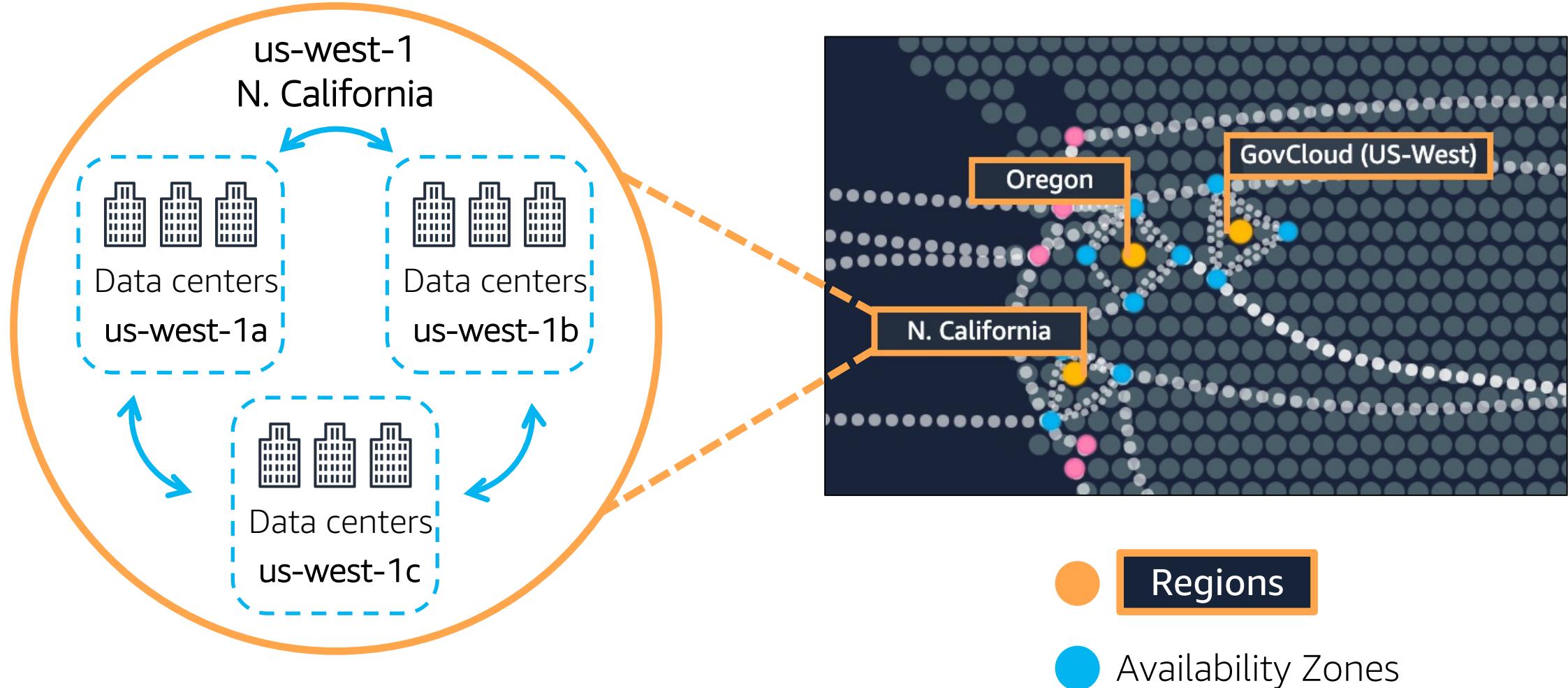


Available services within a Region

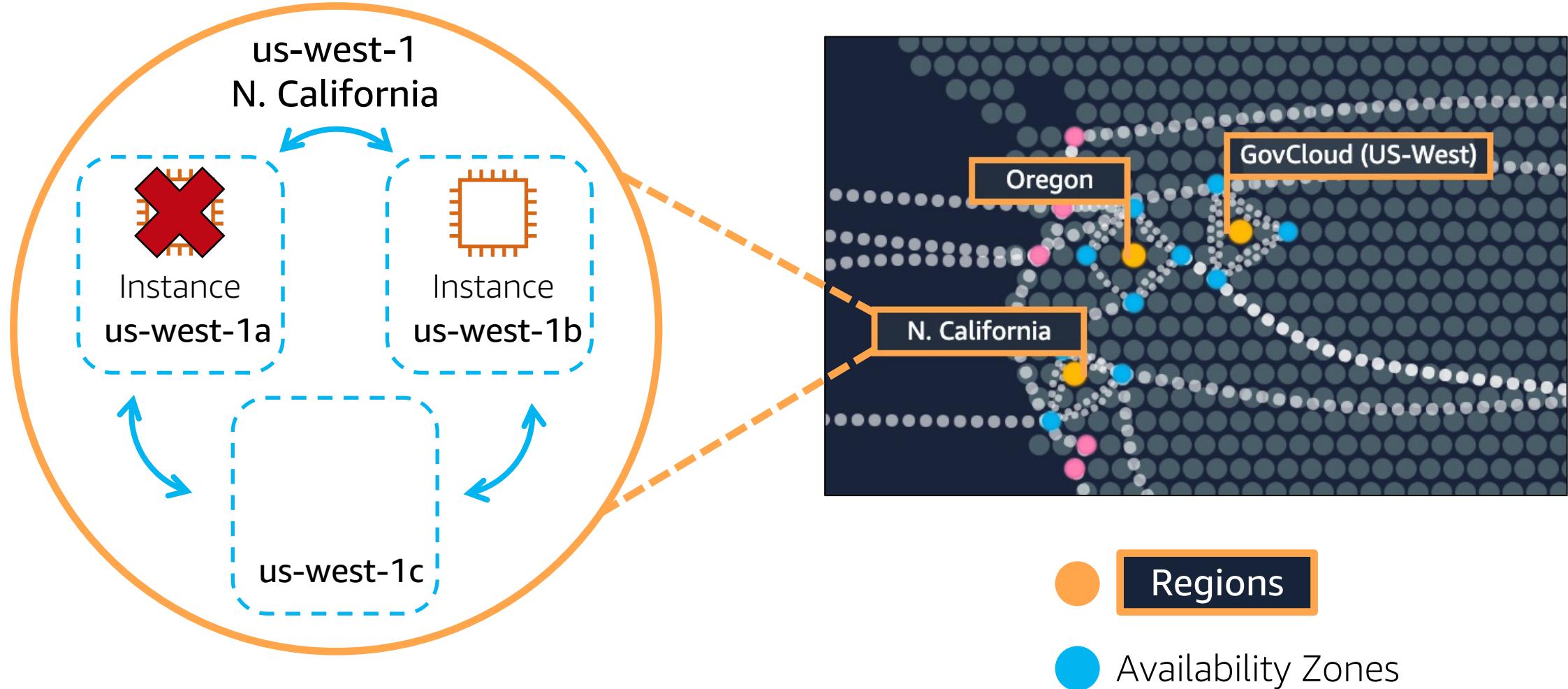


Pricing

Availability Zones

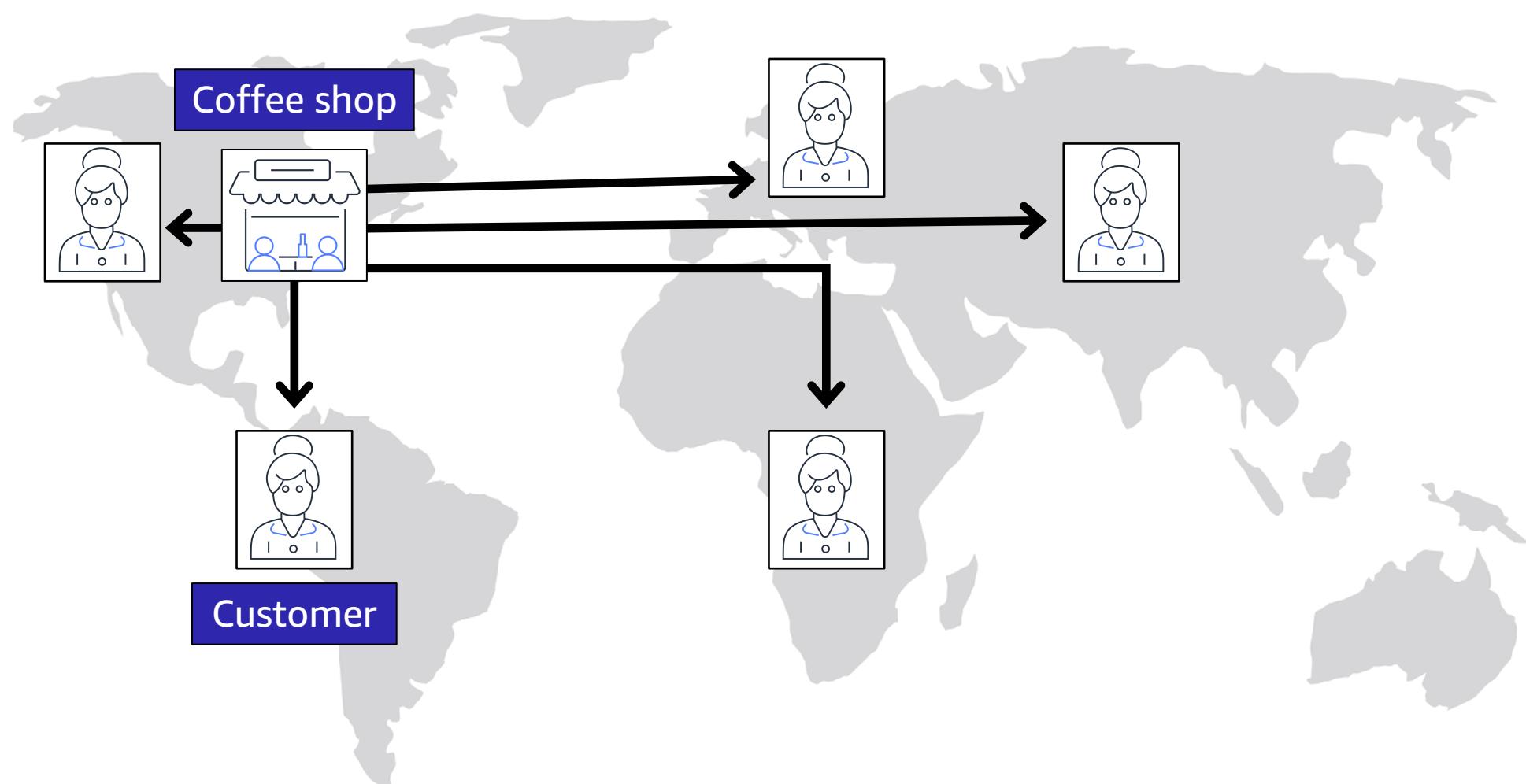


Amazon EC2 instances in multiple AZs

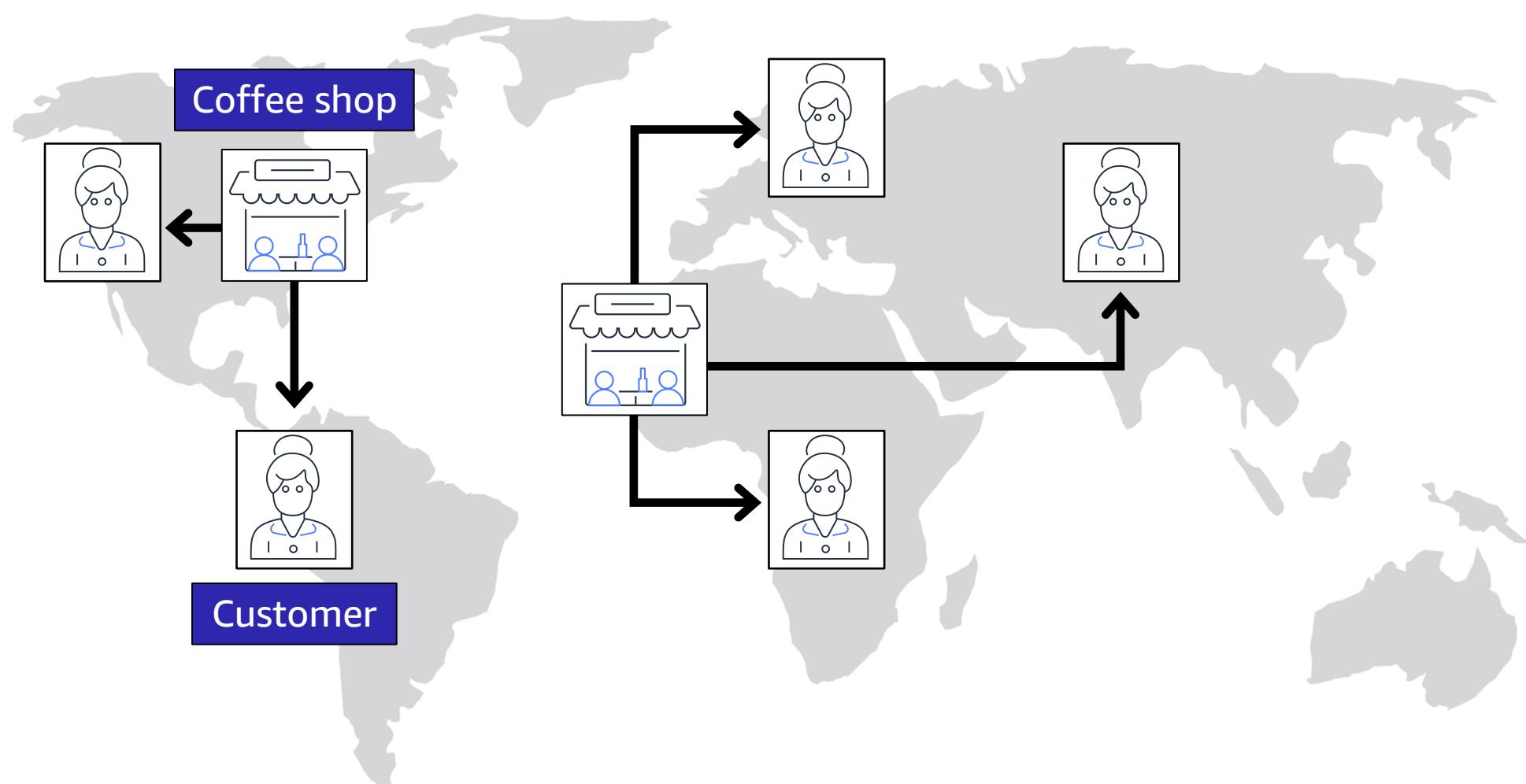


Get closer to your customers

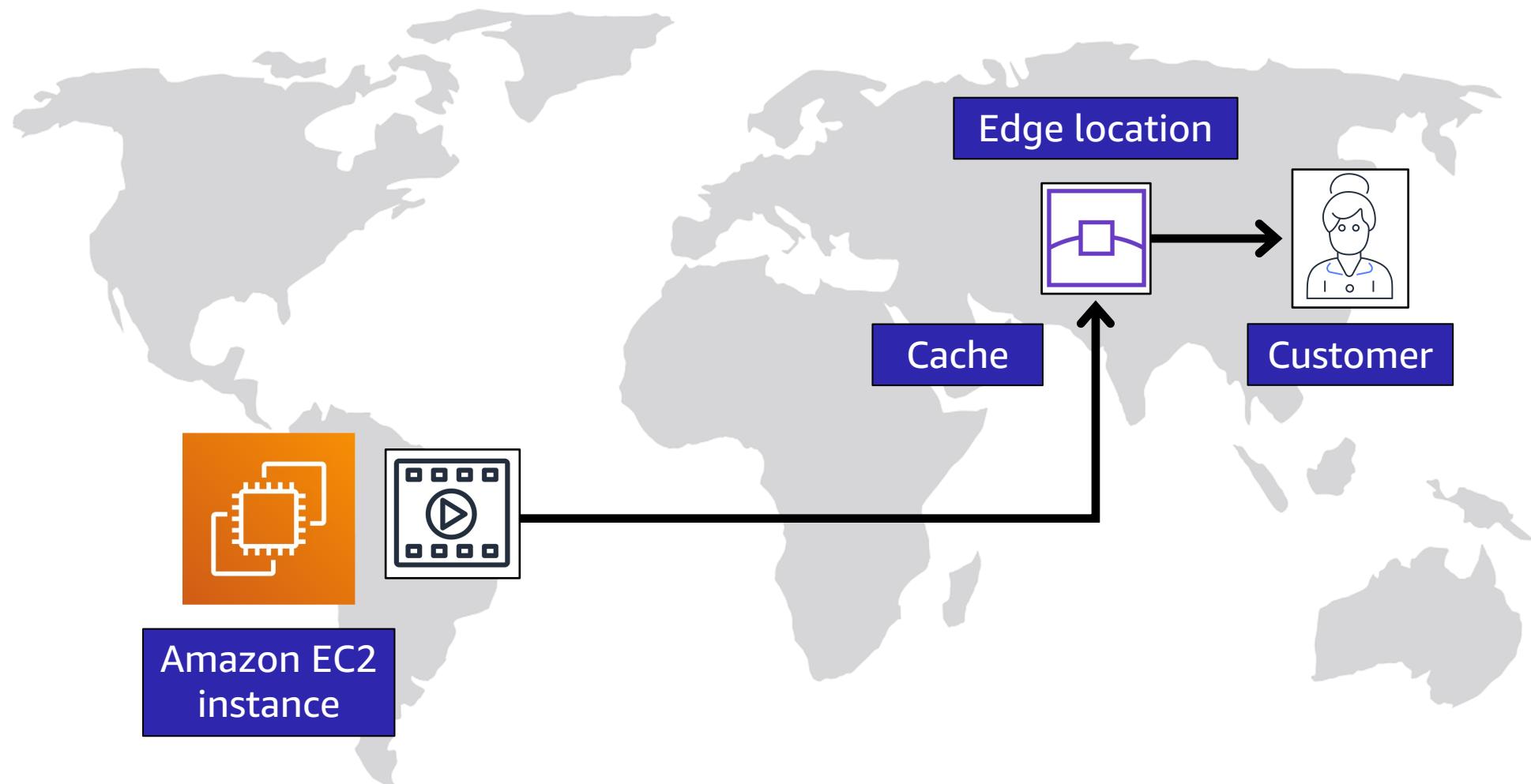
Global content delivery



Global content delivery

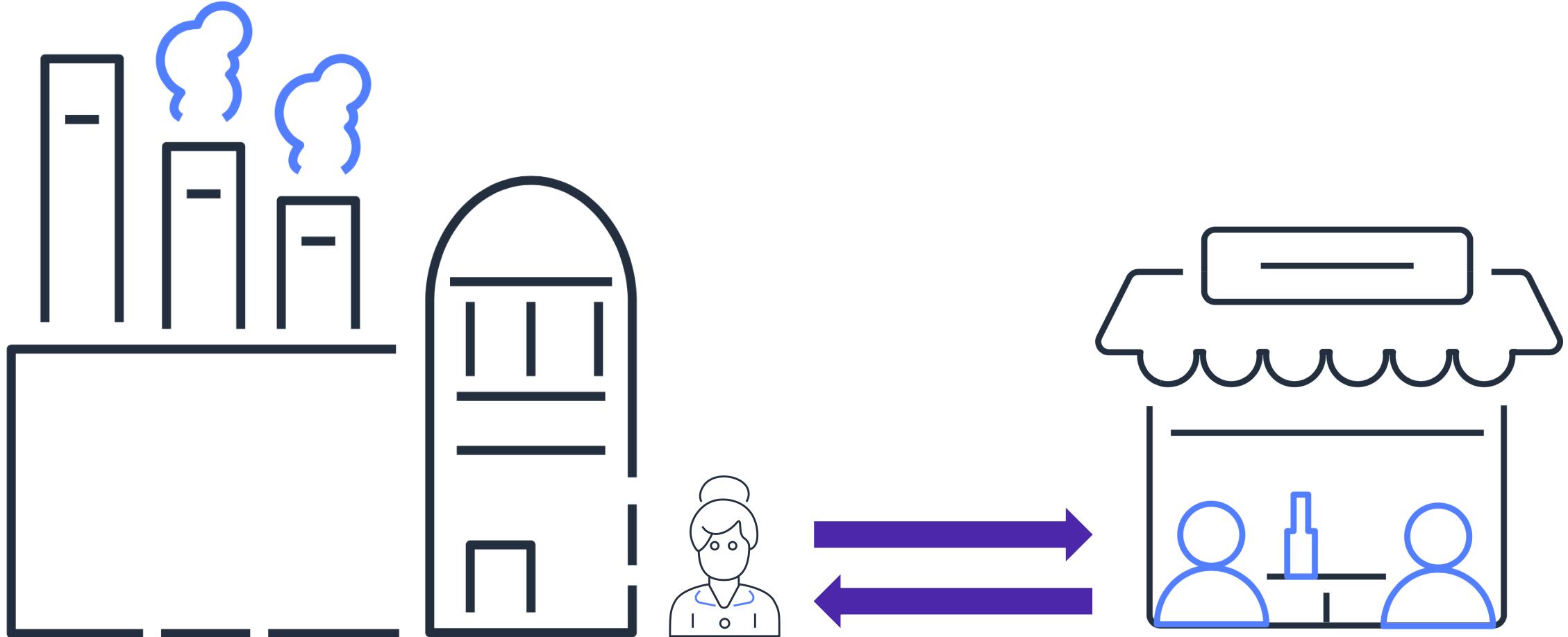


Amazon CloudFront delivers content

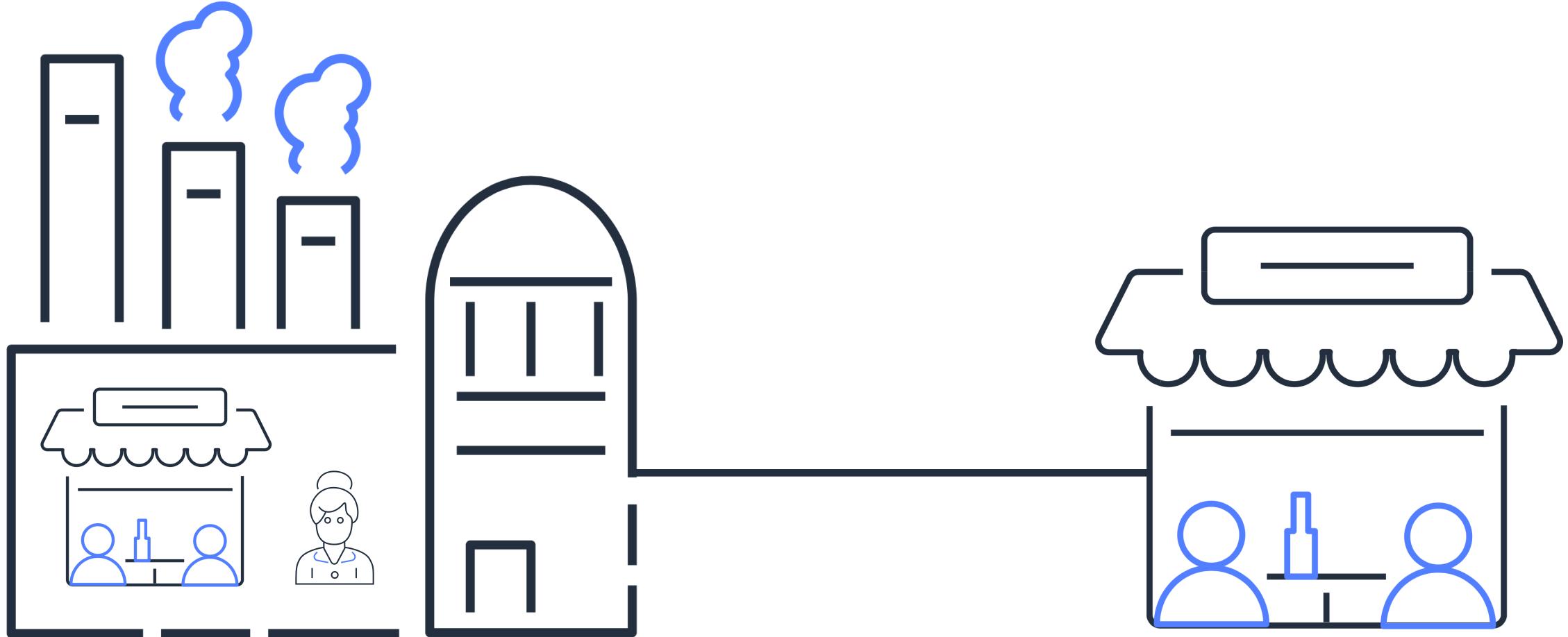


AWS Outposts

Get products from the coffee shop



Get products from the coffee shop



AWS Outposts



AWS Outposts



Extend AWS infrastructure and services to different locations, including your on-premises data center

Interact with AWS services

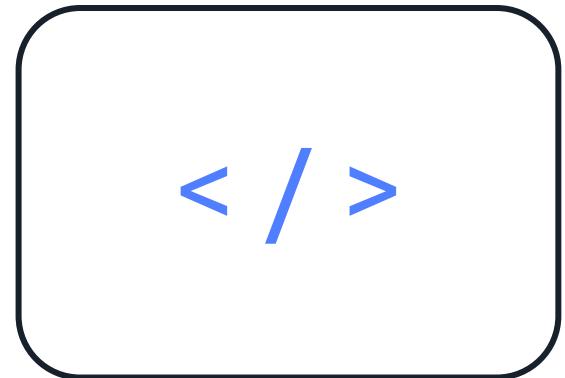
Interact with AWS services



AWS Management Console



AWS Command Line
Interface (AWS CLI)



Software development kits
(SDKs)

Module 3

Knowledge check

Knowledge check question 1



Which of the following is TRUE for the AWS Global Infrastructure?

- A. An Availability Zone consists of a single Region.
- B. An Availability Zone consists of two or more Regions.
- C. A Region consists of a single Availability Zone.
- D. A Region consists of three or more Availability Zones.

Knowledge check answer 1



Which of the following is TRUE for the AWS Global Infrastructure?

- A. An Availability Zone consists of a single Region.
- B. An Availability Zone consists of two or more Regions.
- C. A Region consists of a single Availability Zone.
- D. **A Region consists of three or more Availability Zones. (correct)**

Knowledge check question 2



Which factors should be considered when selecting a Region? (Select TWO.)

- A. Compliance with data governance and legal requirements
- B. Proximity to your customers
- C. Access to 24/7 technical support
- D. Ability to assign custom permissions to different users
- E. Access to the AWS Command Line Interface (AWS CLI)

Knowledge check answer 2



Which factors should be considered when selecting a Region? (Select TWO.)

- A. **Compliance with data governance and legal requirements (correct)**
- B. **Proximity to your customers (correct)**
- C. Access to 24/7 technical support
- D. Ability to assign custom permissions to different users
- E. Access to the AWS Command Line Interface (AWS CLI)

Knowledge check question 3



Which statement best describes Amazon CloudFront?

- A. A service that allows you to run infrastructure in a hybrid cloud approach
- B. A serverless compute engine for containers
- C. A service that allows you to send and receive messages between software components through a queue
- D. A global content delivery service

Knowledge check answer 3



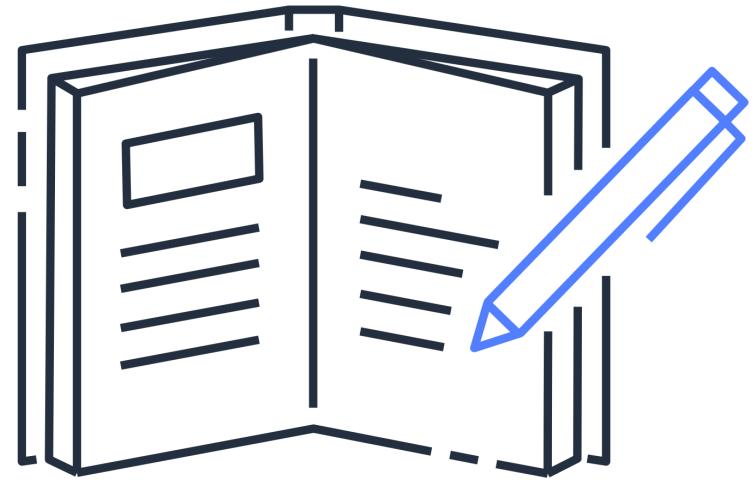
Which statement best describes Amazon CloudFront?

- A. A service that allows you to run infrastructure in a hybrid cloud approach
- B. A serverless compute engine for containers
- C. A service that allows you to send and receive messages between software components through a queue
- D. **A global content delivery service (correct)**

Module 3 summary

In this module, you learned about:

- Three aspects of the AWS Global Infrastructure
- Four factors to consider when selecting an AWS Region
- Three ways to interact with AWS services



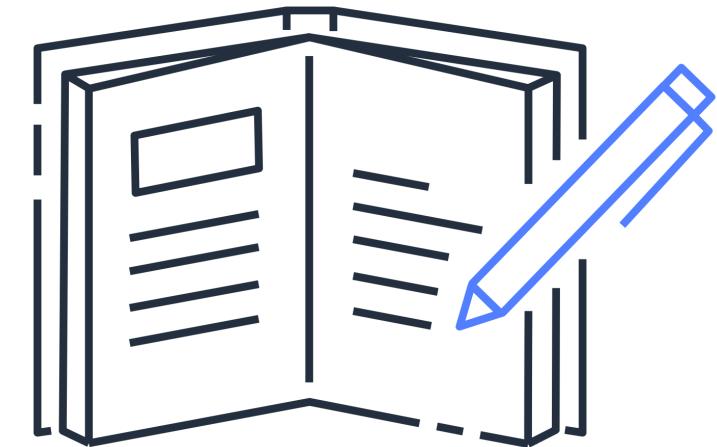
Module 4

Networking

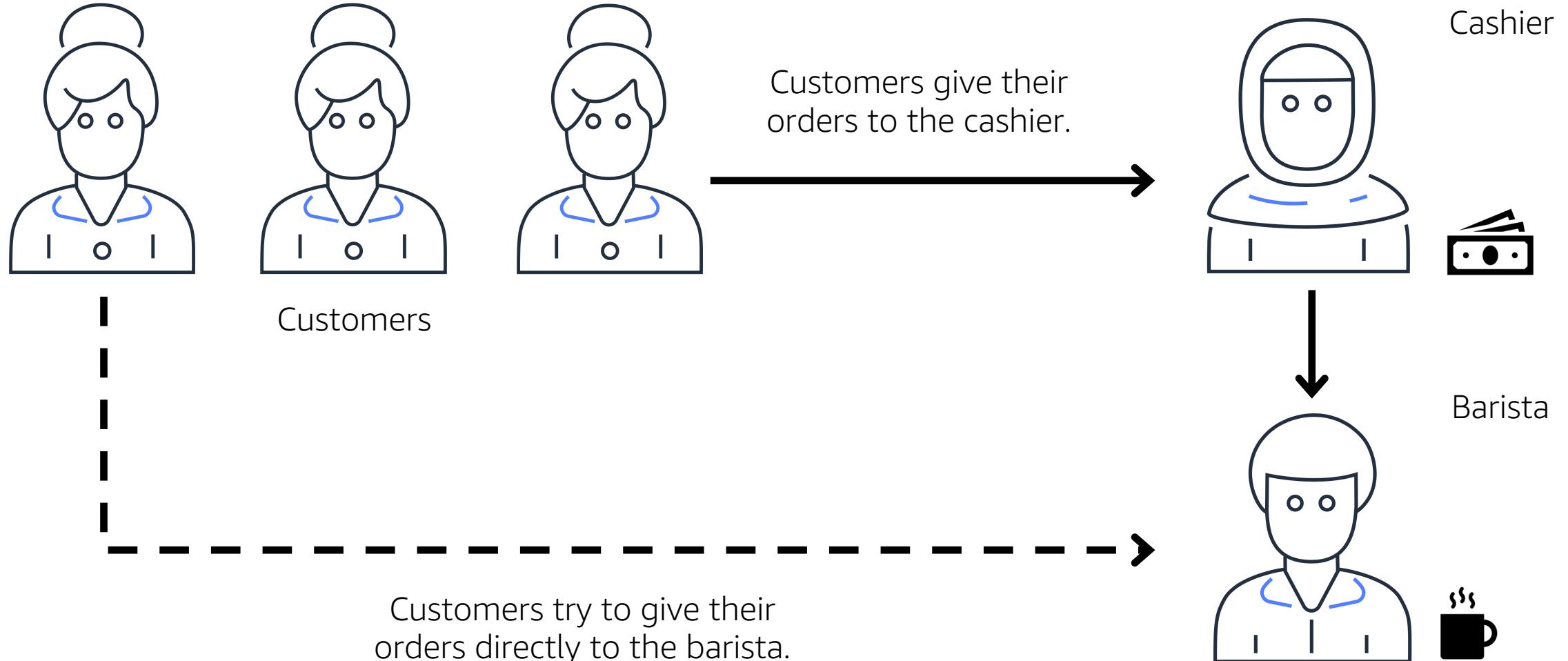
Module 4 objectives

In this module, you will learn how to:

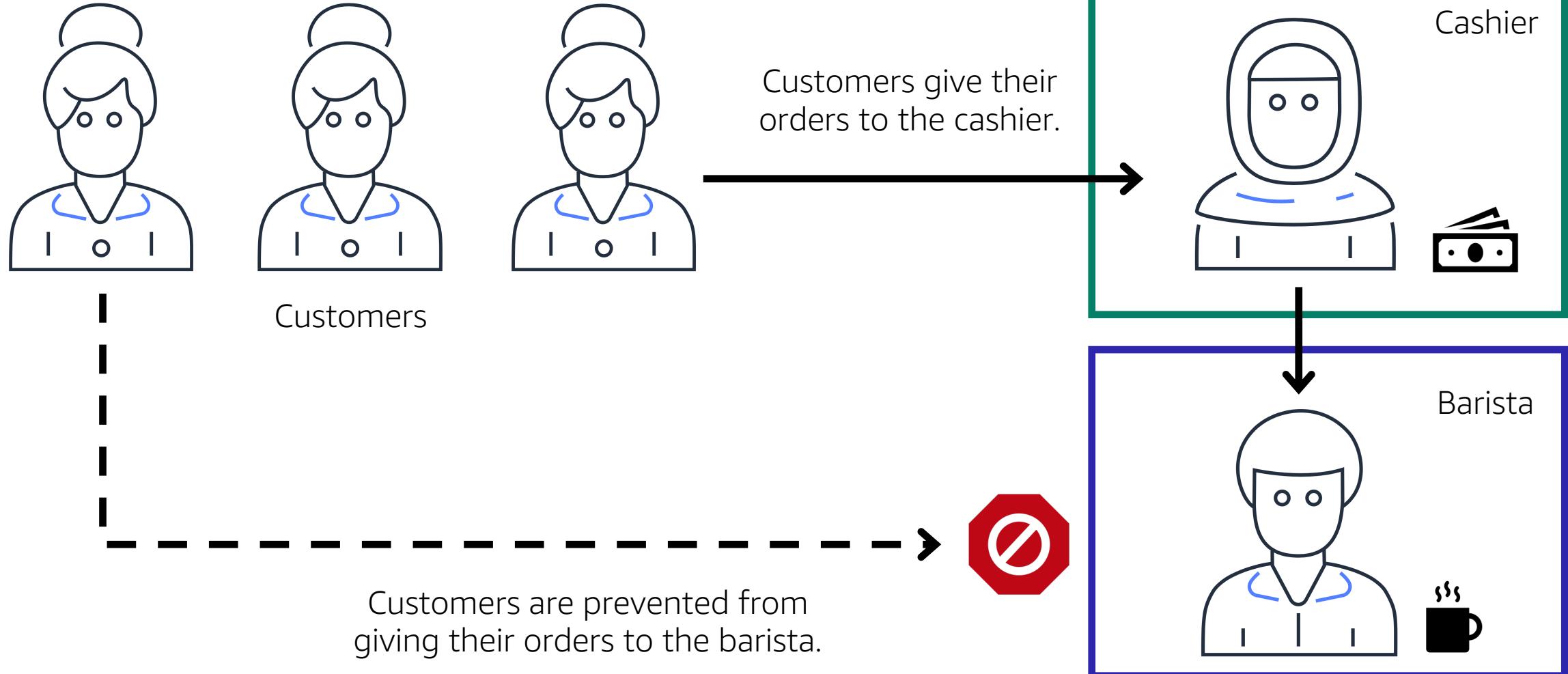
- Describe basic networking concepts
- Describe the differences between public and private networking resources
- Explain a virtual private gateway using a real-life scenario
- Explain a VPN using a real-life scenario
- Describe AWS Direct Connect benefits
- Describe hybrid deployment benefits
- Describe the layers of security in an IT strategy
- Describe the services customers use to interact with the AWS global network



Traffic in the coffee shop



Traffic in the coffee shop



Amazon Virtual Private Cloud (Amazon VPC)

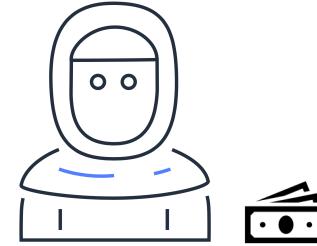


Amazon Virtual Private Cloud (Amazon VPC) enables you to launch resources in a virtual network that you define.

Counter area

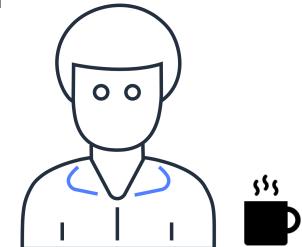
Public workstation

Cashier



Private workstation

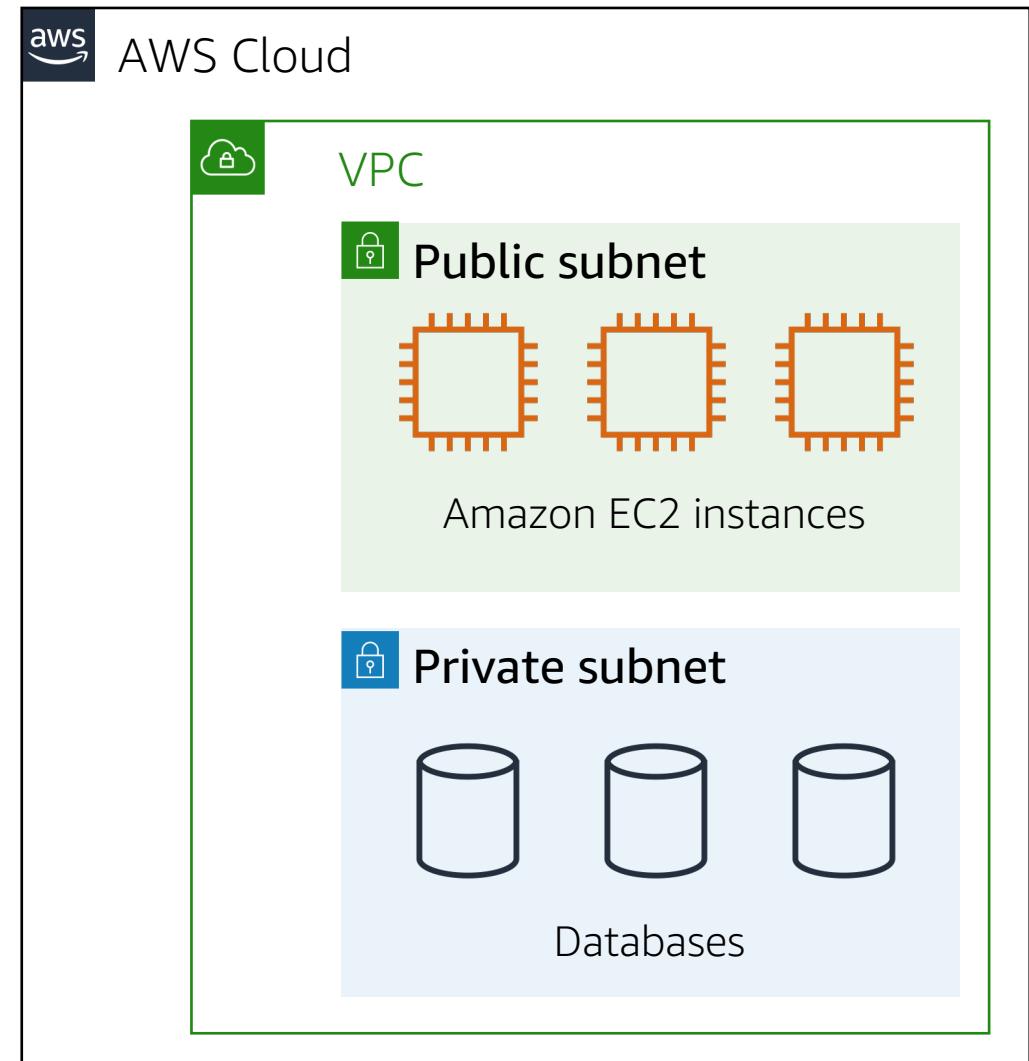
Barista



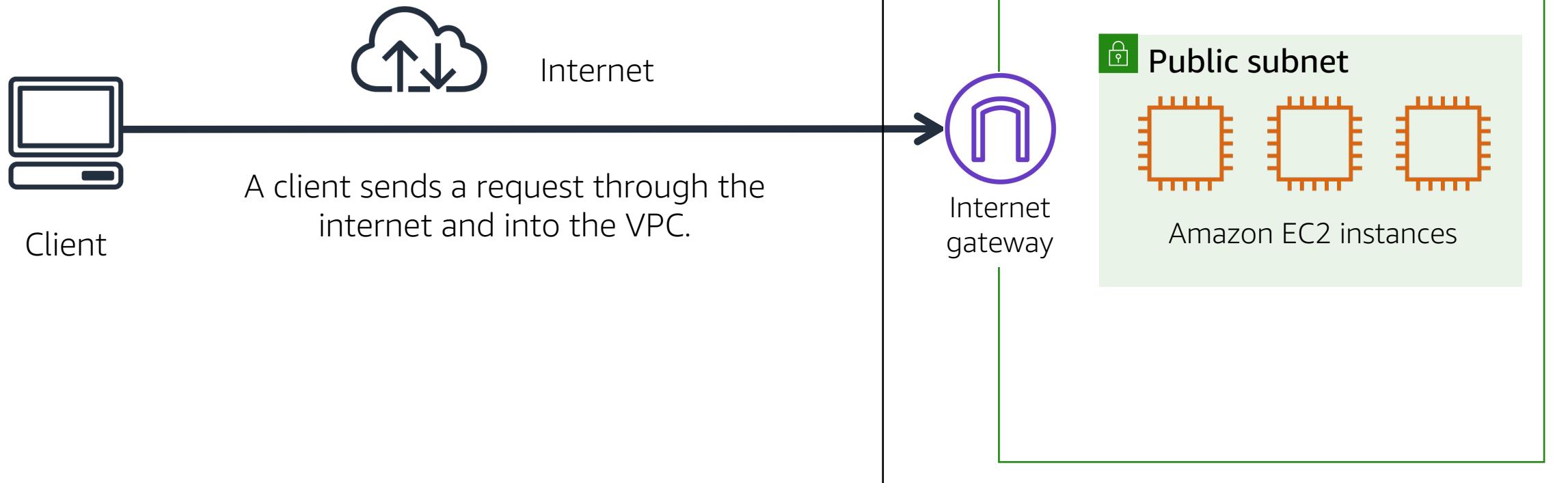
Subnets

A **subnet** is a section in a VPC in which you can place groups of isolated resources.

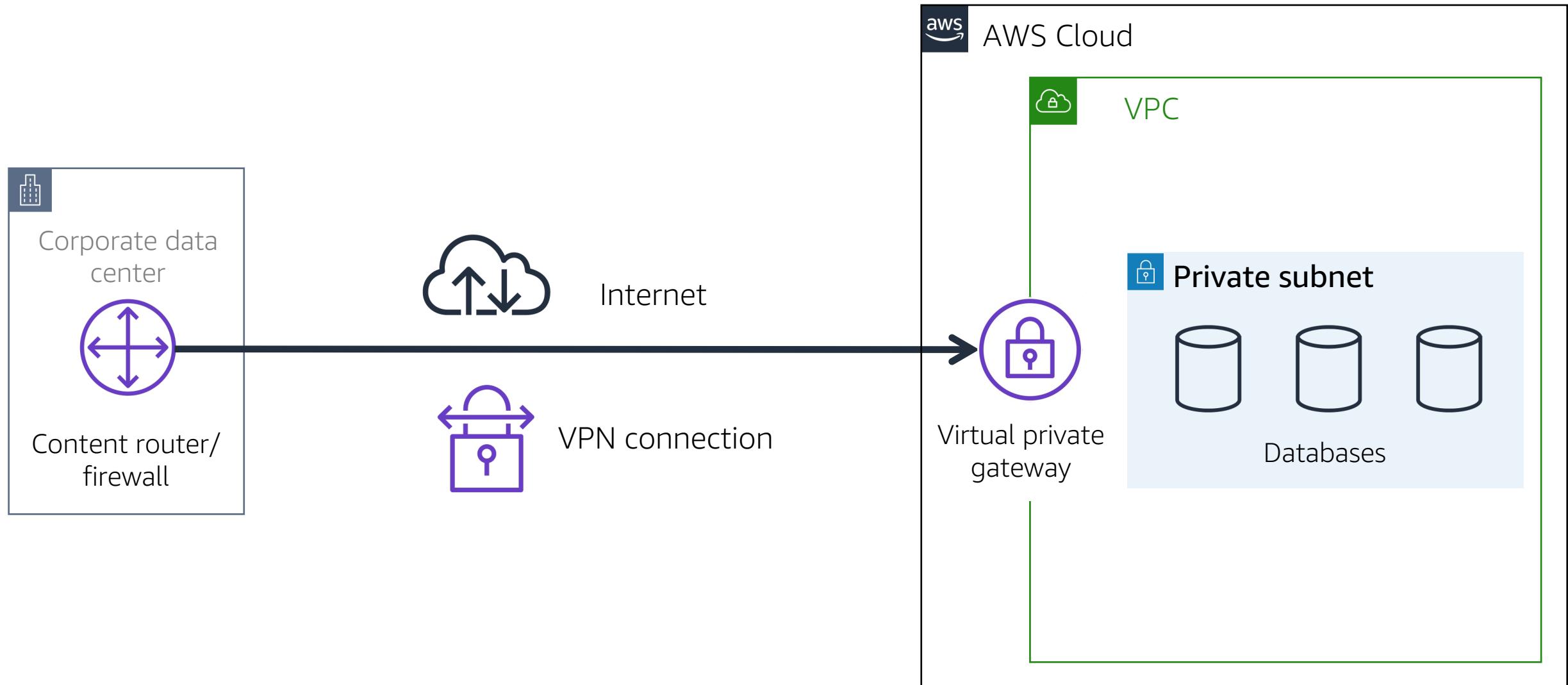
A subnet can be public or private.



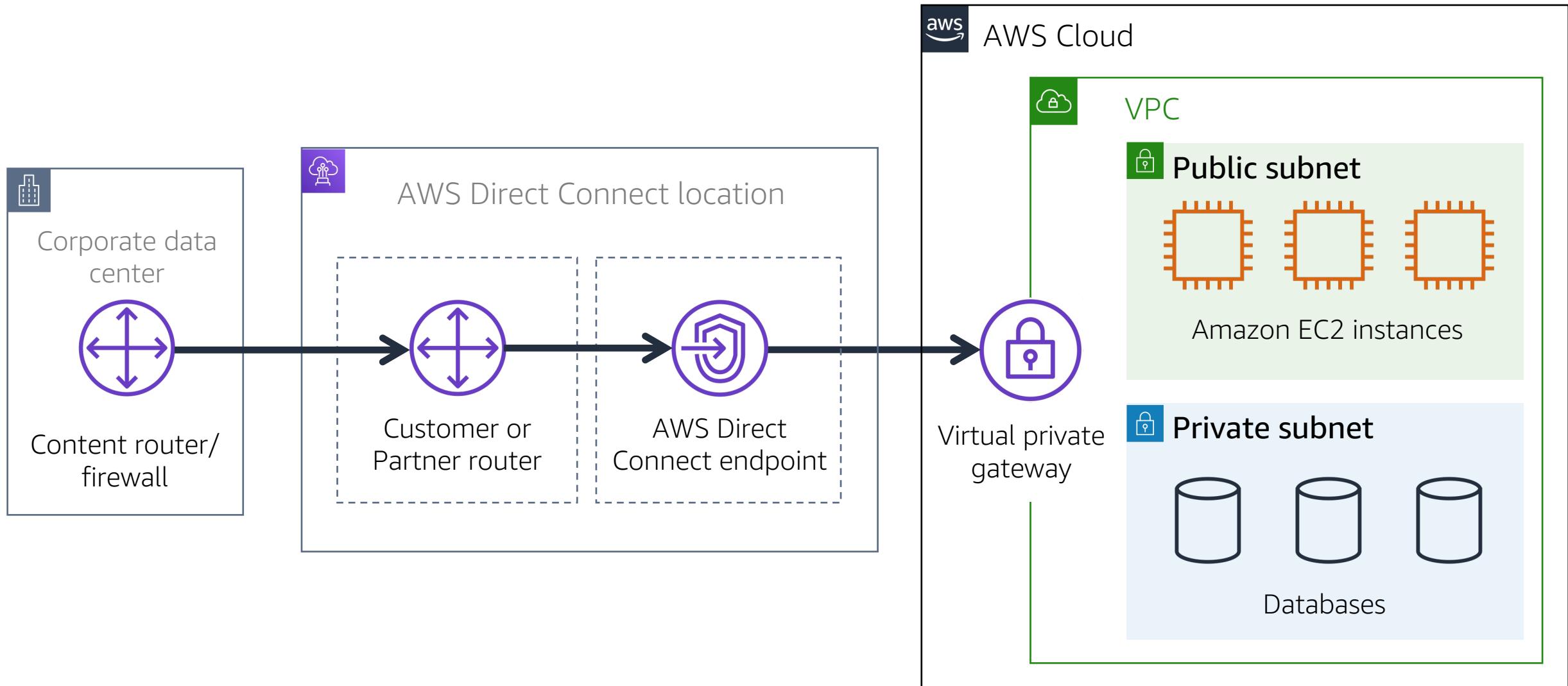
Internet gateway



Virtual private gateway

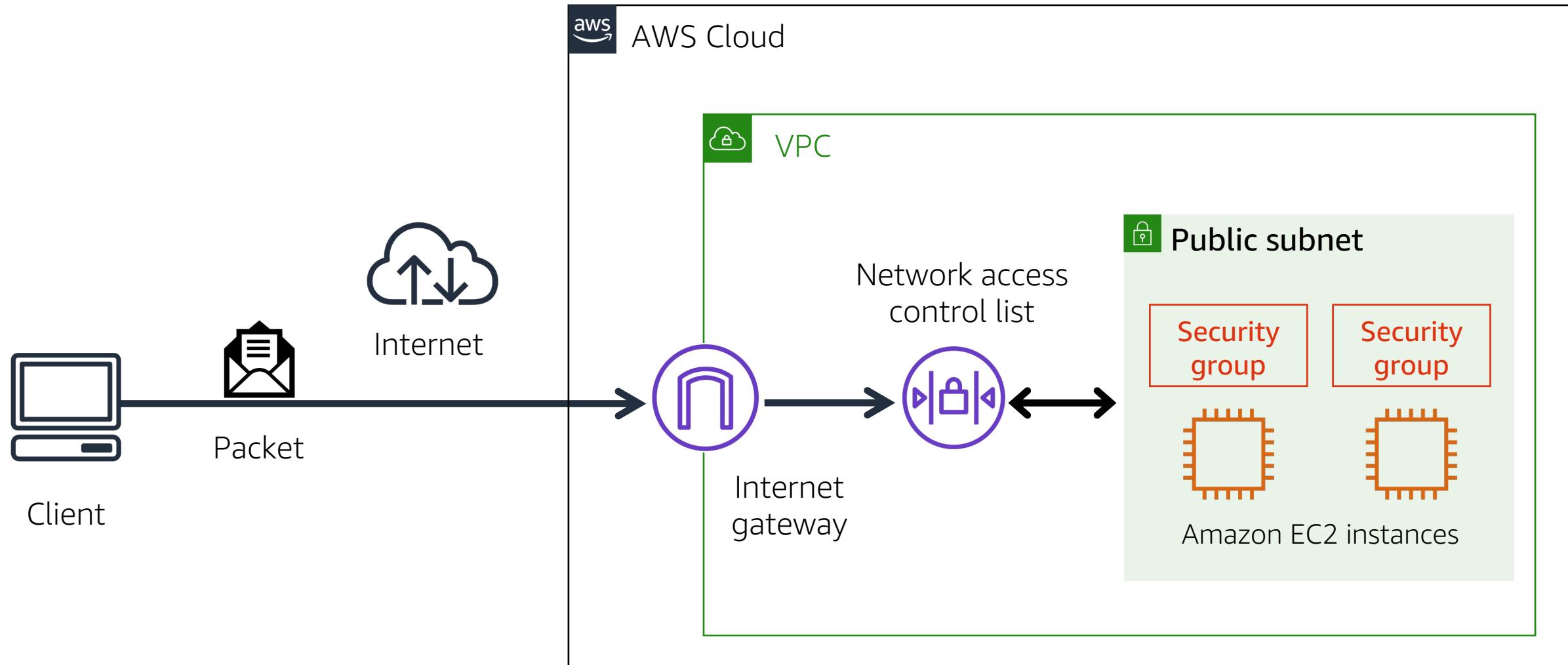


AWS Direct Connect



Network access control lists and security groups

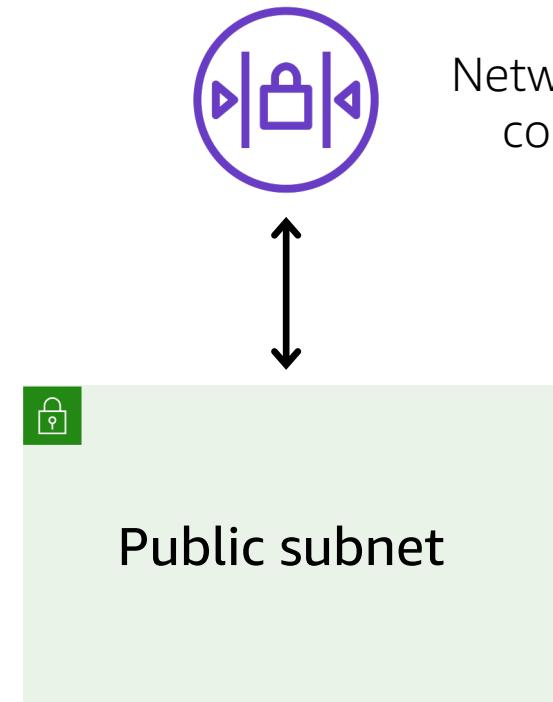
Network traffic in a VPC



Network access control lists

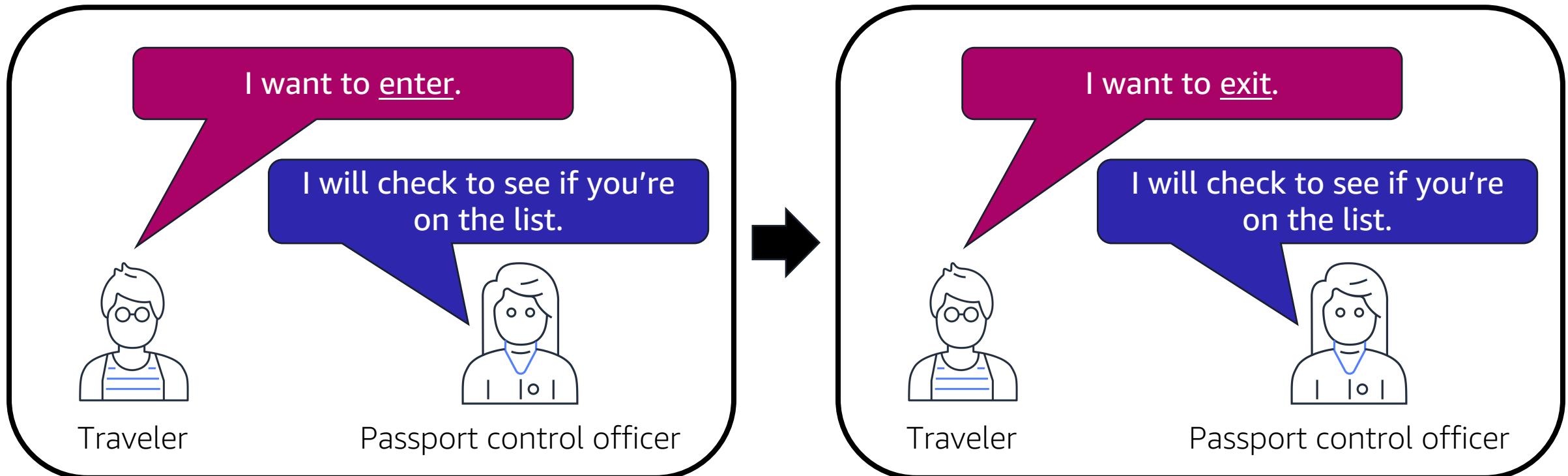
A **network access control list (network ACL)** is a virtual firewall for a subnet. By default:

- The default network ACL allows all inbound and outbound traffic.
- Custom network ACLs deny all inbound and outbound traffic.



Stateless packet filtering

- Network ACLs perform **stateless** packet filtering.
- Before a packet can exit a subnet, it must be checked against the outbound rules.

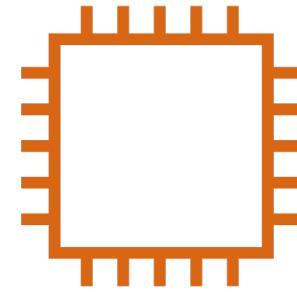


Security groups

A **security group** is a virtual firewall for an Amazon EC2 instance.

By default, a security group denies all inbound traffic and allows all outbound traffic.

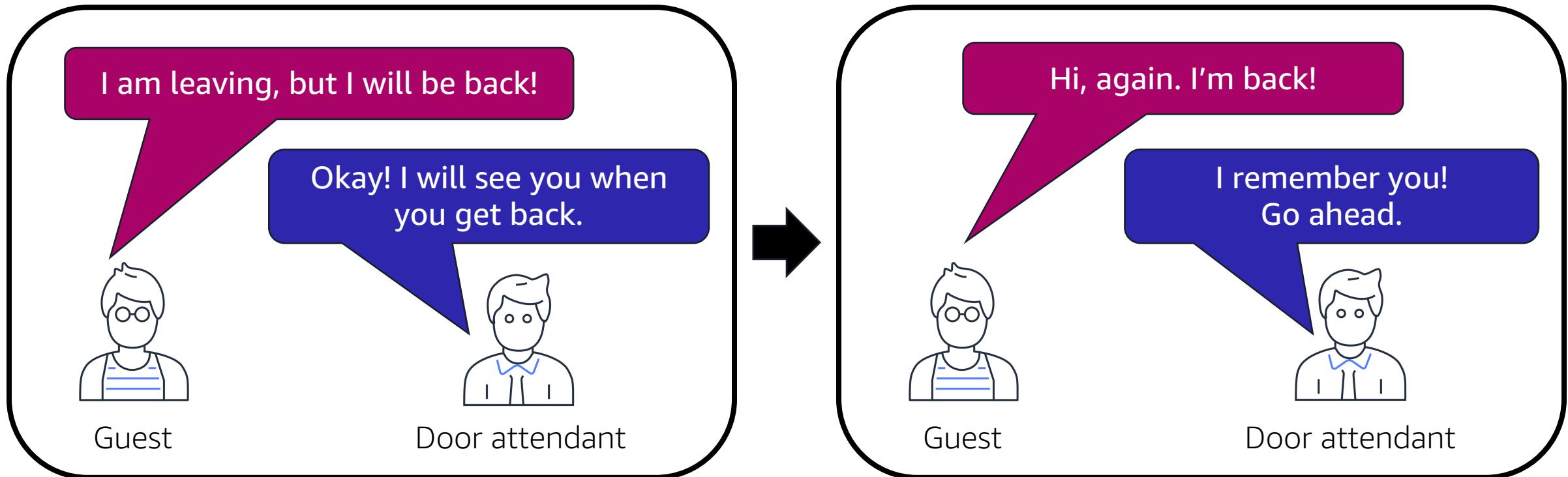
Security group



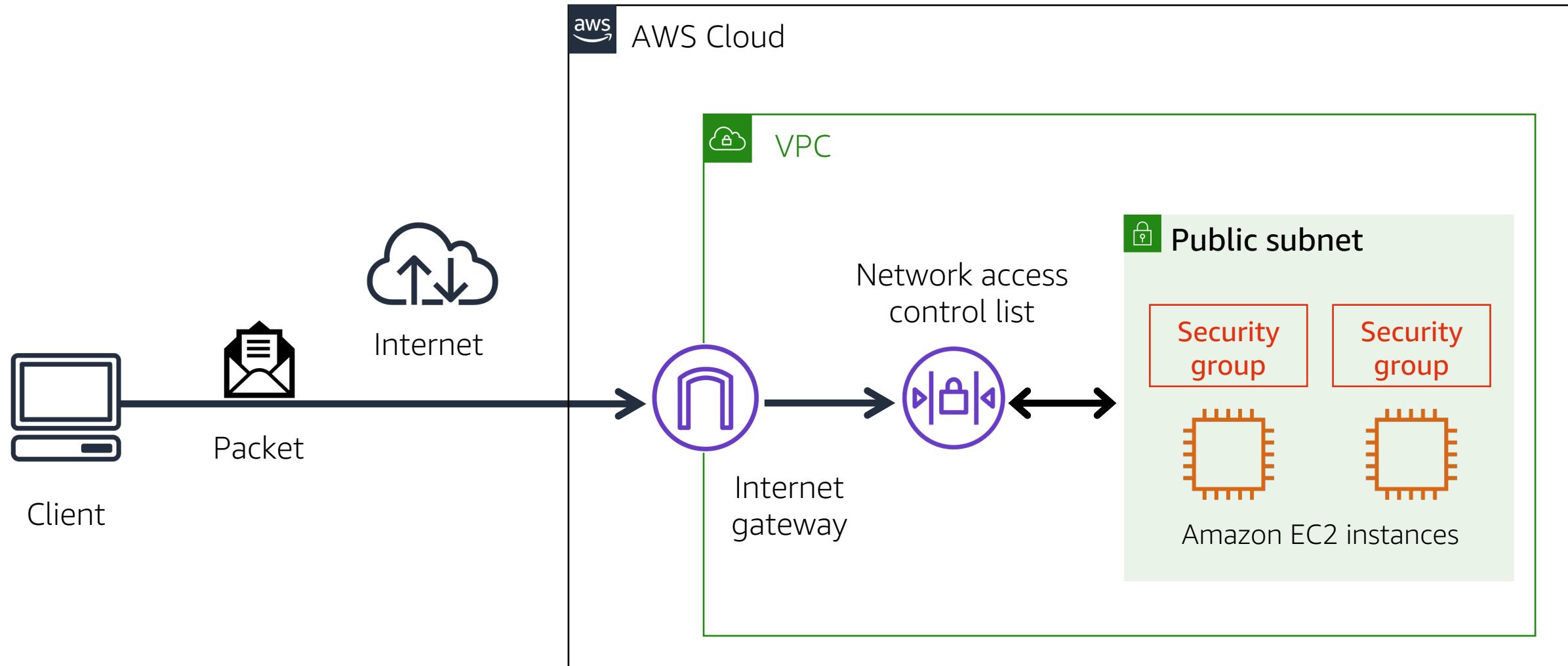
Amazon EC2 instance

Stateful packet filtering

- Security groups perform **stateful** packet filtering.
- They remember previous decisions that were made for incoming packets.



Network traffic in a VPC



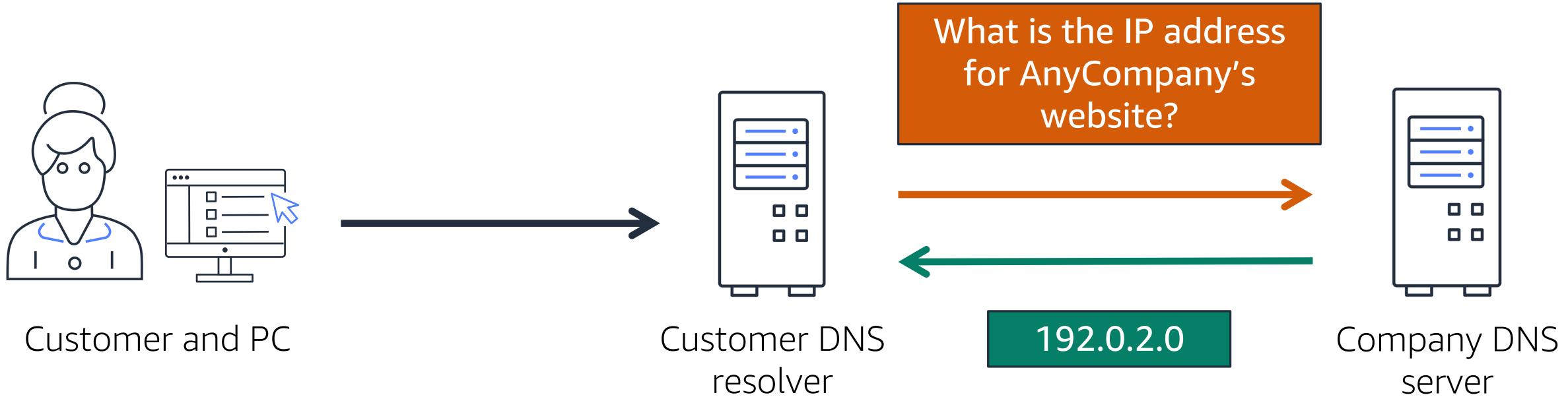
Knowledge check



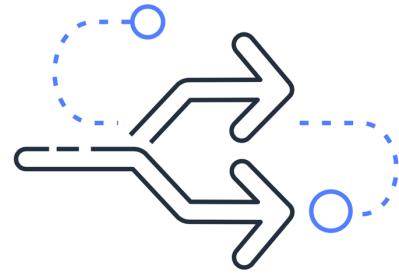
Security groups	Network access control lists
Virtual firewalls for Amazon EC2 instances.	Virtual firewalls for subnets.
Default action: Deny	Default action: Allow
Perform stateful packet filtering.	Perform stateless packet filtering.
Supports allow rules only	Supports allow and deny rules

Interact with the AWS global network

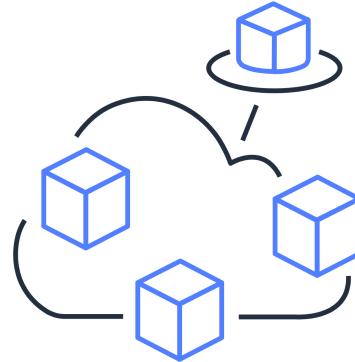
Domain Name System (DNS)



Amazon Route 53



Route users to internet applications



Connect user requests to infrastructure in AWS and outside of AWS



Manage DNS records for domain names

Module 4

Knowledge check

Knowledge check question 1



Which component or service can be used to establish a private dedicated connection between a company's data center and AWS?

- A. Private subnet
- B. DNS
- C. AWS Direct Connect
- D. Amazon CloudFront

Knowledge check answer 1



Which component or service can be used to establish a private dedicated connection between a company's data center and AWS?

- A. Private subnet
- B. DNS
- C. **AWS Direct Connect (correct)**
- D. Amazon CloudFront

Knowledge check question 2



Which statement describes security groups?

- A. They are stateful and allow all inbound traffic by default.
- B. They are stateful and deny all inbound traffic by default.
- C. They are stateless and allow all inbound traffic by default.
- D. They are stateless and deny all inbound traffic by default.

Knowledge check answer 2



Which statement describes security groups?

- A. They are stateful and allow all inbound traffic by default.
- B. **They are stateful and deny all inbound traffic by default. (correct)**
- C. They are stateless and allow all inbound traffic by default.
- D. They are stateless and deny all inbound traffic by default.

Knowledge check question 3



Which component is used to connect a VPC to the internet?

- A. Internet gateway
- B. Public subnet
- C. Edge location
- D. Security group

Knowledge check answer 3



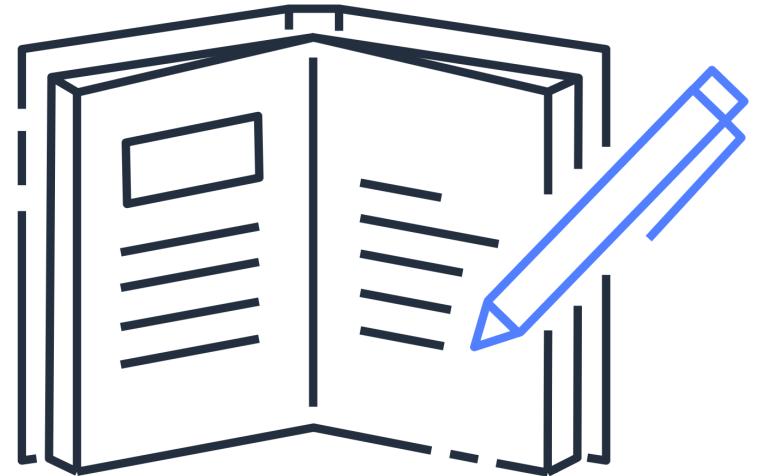
Which component is used to connect a VPC to the internet?

- A. **Internet gateway (correct)**
- B. Public subnet
- C. Edge location
- D. Security group

Module 4 summary

In this module, you learned about:

- Structuring and connecting to a VPC
- Securing VPC resources with network access control lists and security groups
- Using Amazon Route 53 and Amazon CloudFront to deliver content



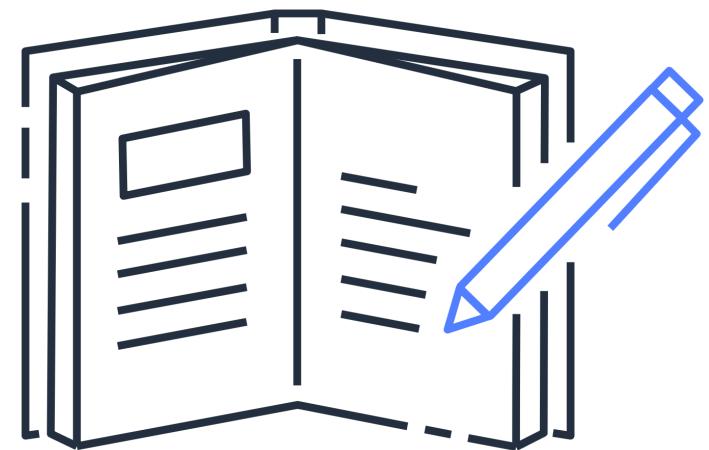
Module 5

Storage and Databases

Module 5 objectives

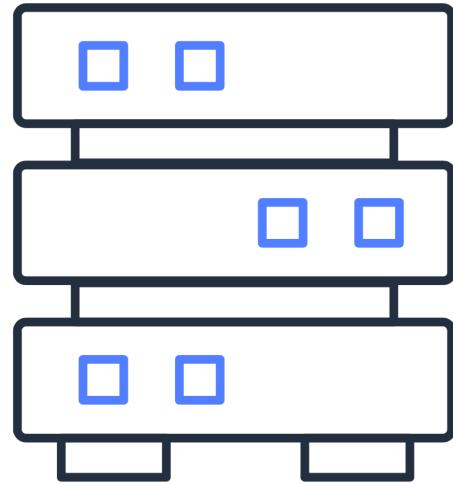
In this module, you will learn how to:

- Summarize the basic concept of storage and databases
- Describe Amazon Elastic Block Store (Amazon EBS) benefits
- Describe Amazon Simple Storage Service (Amazon S3) benefits
- Describe Amazon Elastic File System (Amazon EFS) benefits
- Summarize various storage solutions
- Describe Amazon Relational Database Service (Amazon RDS) benefits
- Describe Amazon DynamoDB benefits
- Summarize various database services

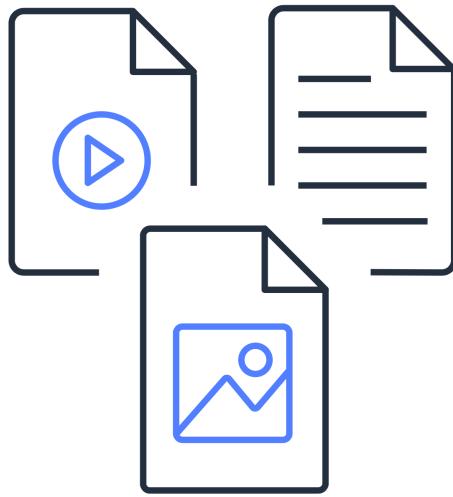


AWS storage

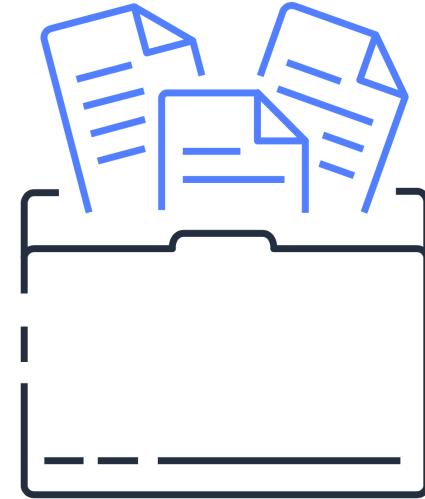
AWS storage types



Block storage



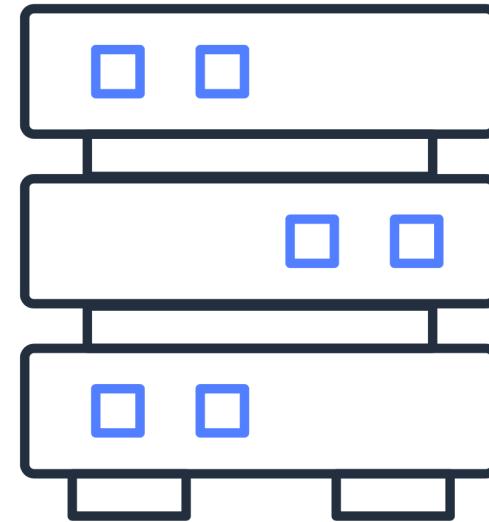
Object storage



File storage

Block storage

- In **block storage**, files are separated into equal-sized pieces (blocks) of data.
- Block storage is used for applications that run on Amazon EC2 instances.



Block storage

Instance store

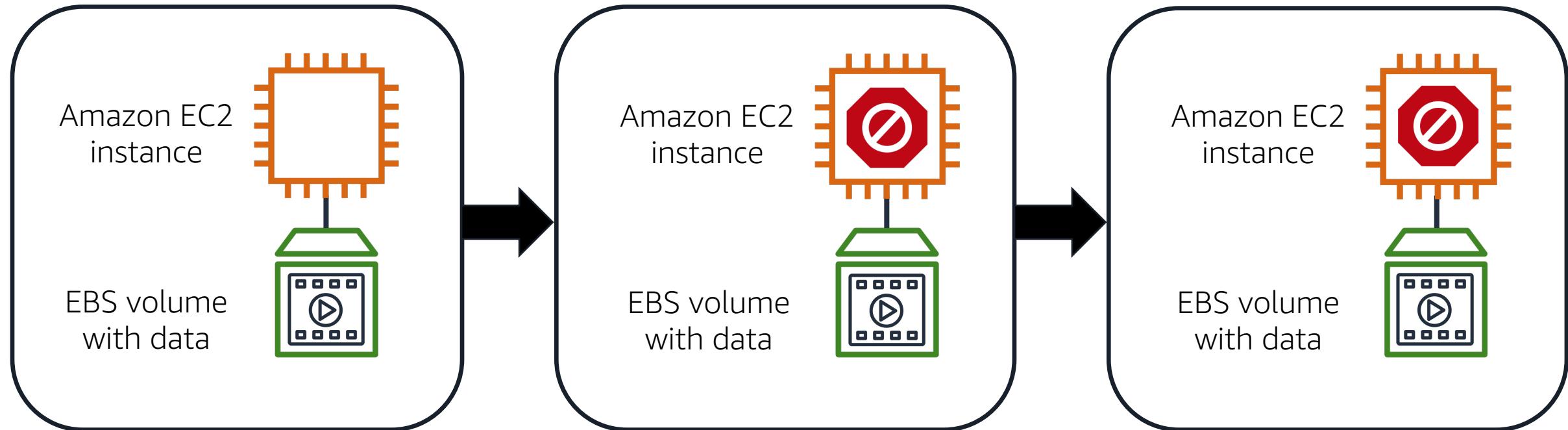


An Amazon EC2 instance with an attached instance store is running.

The instance is stopped or terminated.

All data on the attached instance store is deleted.

Amazon EBS volumes

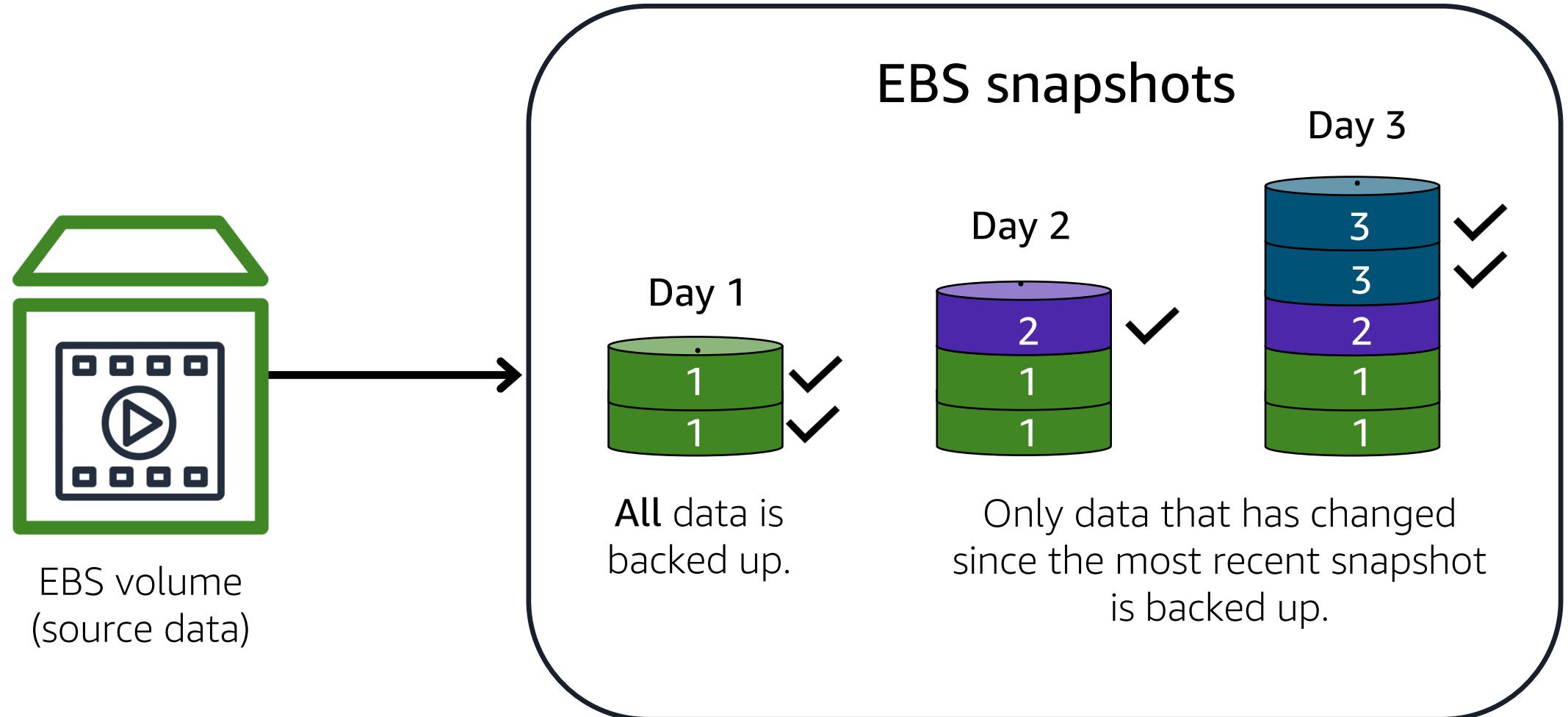


An Amazon EC2 instance
with an attached
EBS volume is running.

The instance is stopped or
terminated. (If terminated, the
EBS volume is removed by
default.)

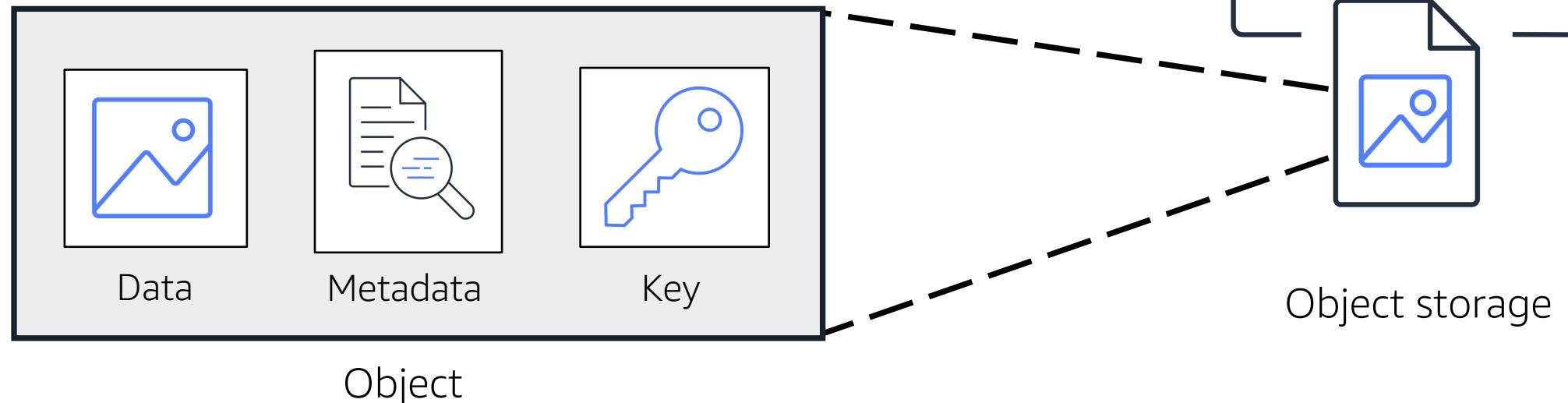
All data on the attached
EBS volume remains
available.

Amazon EBS snapshots

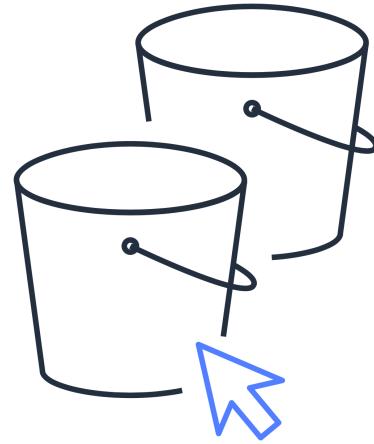


Object storage

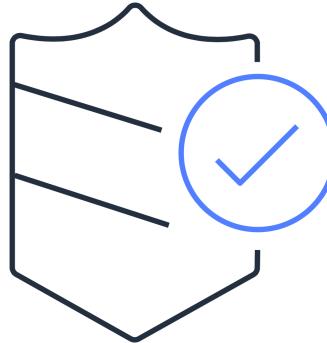
In **object storage**, each object consists of data, metadata, and a key.



Amazon Simple Storage Service



Store objects in buckets



Set permissions to control
access to objects



Choose from a range of
storage classes for
different use cases

Amazon S3 storage classes



S3 Standard

- Designed for frequently accessed data
- Stores data in a minimum of three Availability Zones

S3 Standard-IA

- Ideal for infrequently accessed data
- Similar to S3 Standard but has a lower storage price and higher retrieval price

S3 One Zone-IA

- Stores data in a single Availability Zone
- Has a lower storage price than S3 Standard-IA

Amazon S3 storage classes



S3 Intelligent-Tiering

- Ideal for data with unknown or changing access patterns
- Requires a small monthly monitoring and automation fee per object

S3 Glacier Instant Retrieval

- Low-cost storage designed for data archiving
- Able to retrieve objects in milliseconds

S3 Glacier Flexible Retrieval

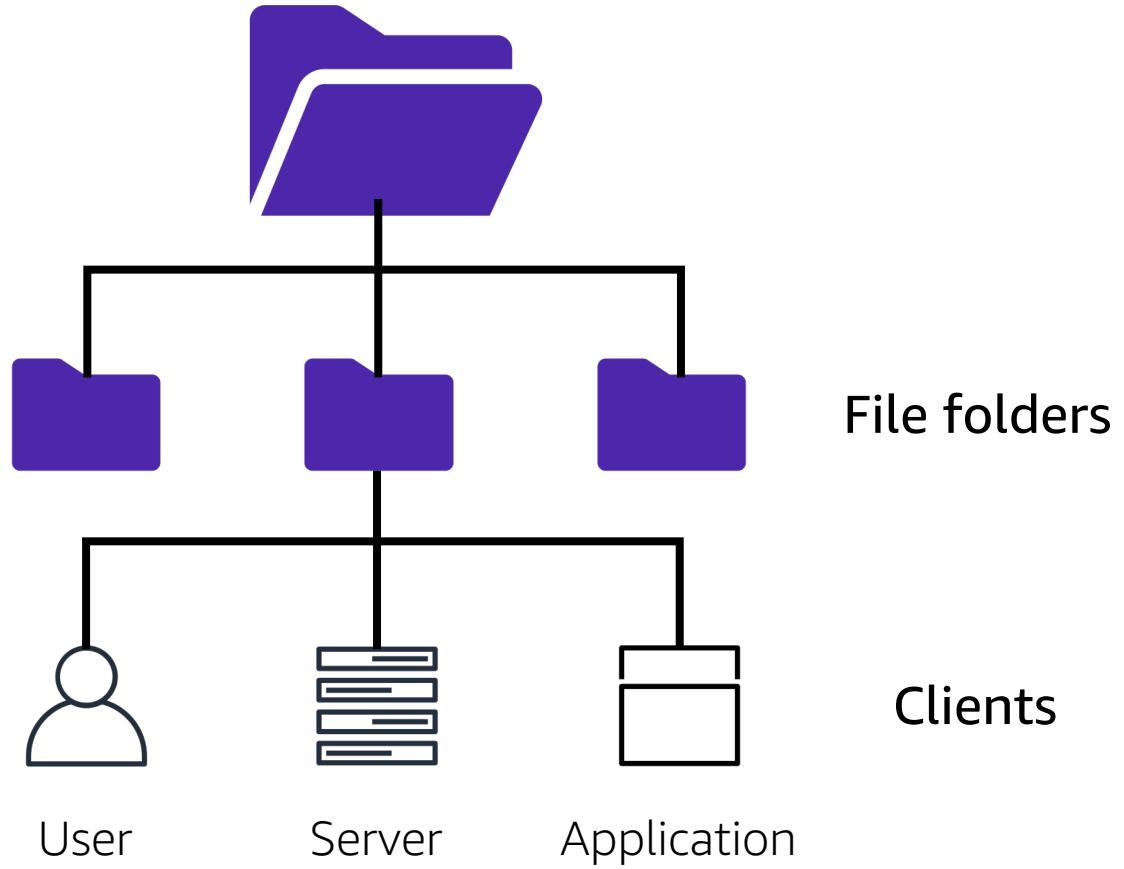
- Lowest-cost object storage class
- Configurable retrieval time from minutes to hours

S3 Glacier Deep Archive

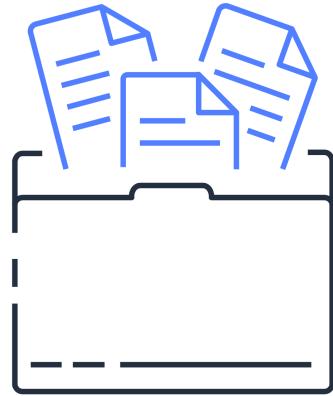
- Lowest-cost object storage class
- Able to retrieve objects within 12 hours

File storage

In **file storage**, multiple clients can access data that is stored in shared file folders.



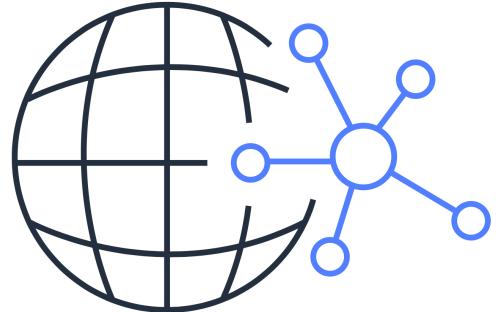
Amazon Elastic File System



Store data in a scalable file system.



Provide data to thousands of Amazon EC2 instances concurrently.



Store data in and across multiple Availability Zones by default.

AWS databases

Database types



Relational database

ID	Product name	Size	Price
1	Medium roast ground coffee	12 oz.	\$5.30
2	Dark roast ground coffee	20 oz.	\$9.27

Nonrelational database

Key	Value
1	Name: John Doe Address: 123 Any Street Favorite drink: Medium latte
2	Name: Mary Major Address: 100 Main Street Birthday: July 5, 1994

Relational databases

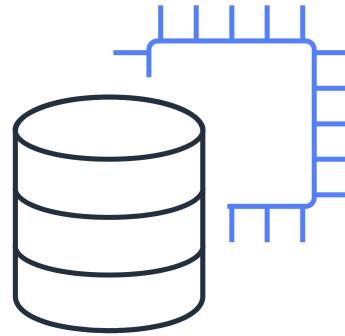


- In a **relational database**, data is stored in a way that relates it to other pieces of data.
- Relational databases use **structured query language (SQL)** to store and query data.

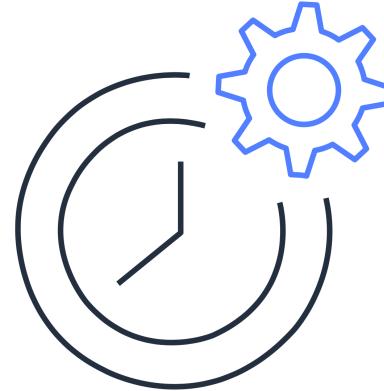
ID	Product name	Size	Price
1	Medium roast ground coffee	Small	\$5.30
2	Dark roast ground coffee	Large	\$9.27

Example of data in a relational database

Amazon Relational Database Service



Operate and scale a relational database in the AWS Cloud



Automate time-consuming administrative tasks



Store and transmit data securely

Amazon RDS database engines



- Amazon Aurora
- PostgreSQL
- MySQL
- MariaDB
- Oracle Database
- Microsoft SQL Server



Amazon RDS

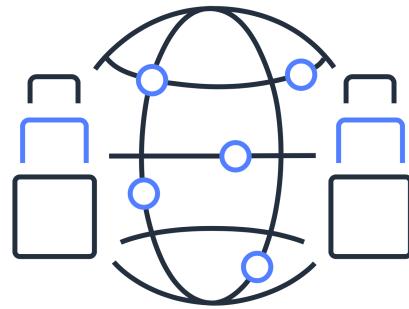
Amazon Aurora



Store data in an enterprise-class relational database



Reduce database costs by eliminating unnecessary input/output (I/O) operations



Replicate six copies of data across three Availability Zones

Nonrelational databases

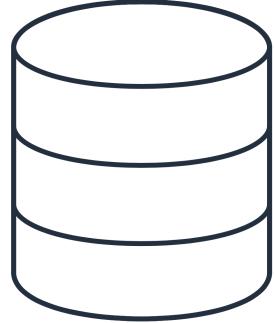


- A **nonrelational database** uses structures other than rows and columns to organize data.
- For example, with **key-value pairs**, data is organized into items (keys), and items have attributes (values).

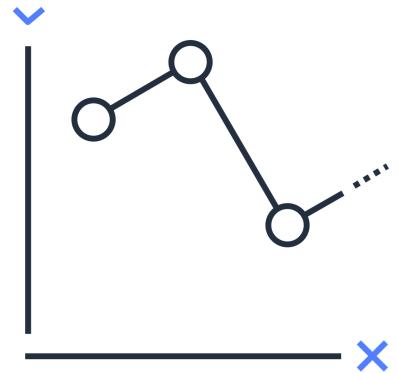
Key	Value
1	Name: John Doe Address: 123 Any Street Favorite drink: Medium latte
2	Name: Mary Major Address: 100 Main Street Birthday: July 5, 1994

Example of data in a nonrelational database

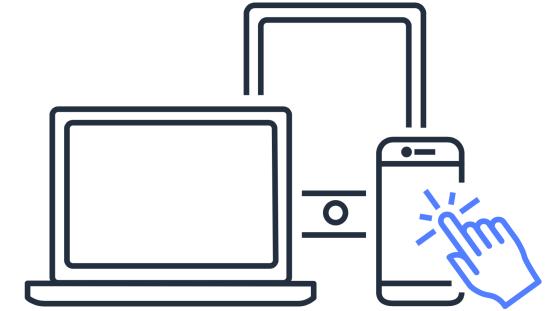
Amazon DynamoDB



Amazon DynamoDB is a serverless key-value database.



It automatically scales to adjust for capacity changes and maintain consistent performance.



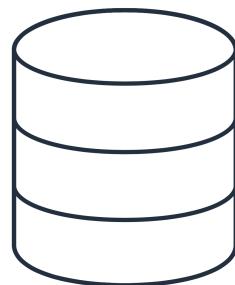
It is designed to handle over 10 trillion requests per day.

AWS Database Migration Service

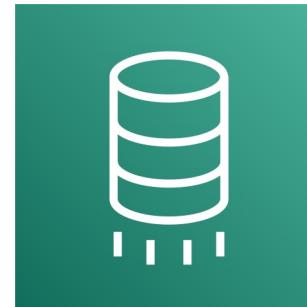


Migrate relational databases, nonrelational databases, and other types of data stores

Example



MySQL database
(Source)



AWS Database
Migration Service
(AWS DMS)



Amazon Aurora
(Target)

Additional database services

Additional database services



Amazon Redshift

Query and analyze data across a data warehouse



Amazon DocumentDB

Run MongoDB workloads in a document database service



Amazon Neptune

Run applications that use highly connected datasets



Amazon QLDB

Review a complete history of changes to your application data

Additional database services



Amazon Managed Blockchain

Run a decentralized ledger database



Amazon ElastiCache

Add caching layers to improve database read times



Amazon DynamoDB Accelerator

Improve DynamoDB response times from single-digit milliseconds to microseconds

Module 5

Knowledge check

Knowledge check question 1



Which Amazon S3 storage classes are optimized for archival data?
(Select TWO.)

- A. S3 Standard
- B. S3 Glacier Flexible Retrieval
- C. S3 Intelligent-Tiering
- D. S3 Glacier Deep Archive
- E. S3 Standard-IA

Knowledge check answer 1



Which Amazon S3 storage classes are optimized for archival data?
(Select TWO.)

- A. S3 Standard
- B. **S3 Glacier Flexible Retrieval (correct)**
- C. S3 Intelligent-Tiering
- D. **S3 Glacier Deep Archive (correct)**
- E. S3 Standard-IA

Knowledge check question 2



Which option is TRUE about Amazon EBS volumes and Amazon EFS file systems?

- A. EBS volumes store data in a single Availability Zone. Amazon EFS file systems store data across multiple Availability Zones by default.
- B. EBS volumes store data across multiple Availability Zones. Amazon EFS file systems store data in a single Availability Zone.
- C. EBS volumes and Amazon EFS file systems both store data in a single Availability Zone.
- D. EBS volumes and Amazon EFS file systems both store data across multiple Availability Zones.

Knowledge check answer 2



Which option is TRUE about Amazon EBS volumes and Amazon EFS file systems?

- A. **EBS volumes store data in a single Availability Zone. Amazon EFS file systems store data across multiple Availability Zones by default. (correct)**
- B. EBS volumes store data across multiple Availability Zones. Amazon EFS file systems store data in a single Availability Zone.
- C. EBS volumes and Amazon EFS file systems both store data in a single Availability Zone.
- D. EBS volumes and Amazon EFS file systems both store data across multiple Availability Zones.

Knowledge check question 3



A customer wants to store data in an object storage service. Which AWS service should the customer use for this type of storage?

- A. Amazon Managed Blockchain
- B. Amazon Elastic File System (Amazon EFS)
- C. Amazon Elastic Block Store (Amazon EBS)
- D. Amazon Simple Storage Service (Amazon S3)

Knowledge check answer 3



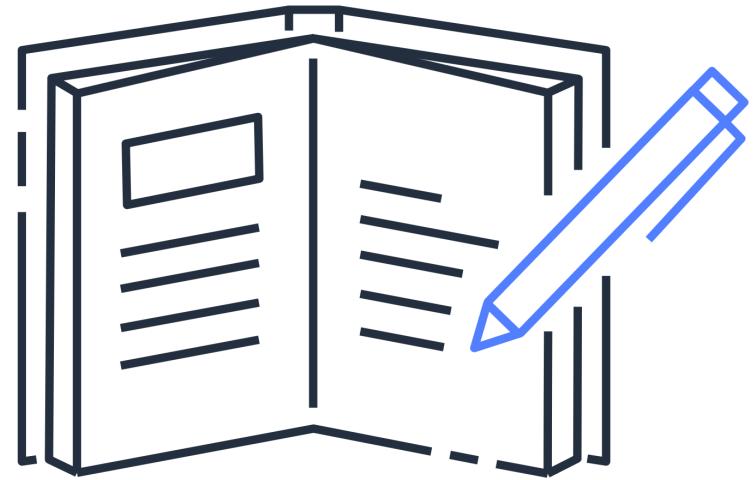
A customer wants to store data in an object storage service. Which AWS service should the customer use for this type of storage?

- A. Amazon Managed Blockchain
- B. Amazon Elastic File System (Amazon EFS)
- C. Amazon Elastic Block Store (Amazon EBS)
- D. **Amazon Simple Storage Service (Amazon S3) (correct)**

Module 5 summary

In this module, you learned about:

- AWS storage services and resources
- Amazon S3 storage classes
- AWS database services



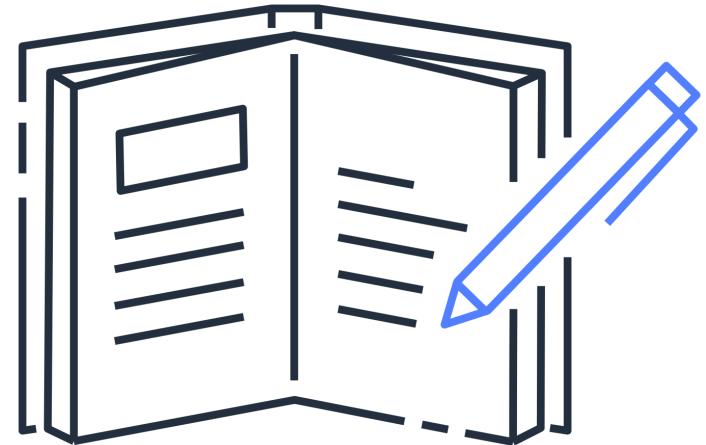
Module 6

Security

Module 6 objectives

In this module, you will learn how to:

- Explain the benefits of the shared responsibility model
- Describe multi-factor authentication (MFA)
- Differentiate among the AWS Identity and Access Management (IAM) security levels
- Explain AWS Organizations benefits
- Describe security policies
- Summarize the benefits of compliance with AWS
- Explain additional AWS security services



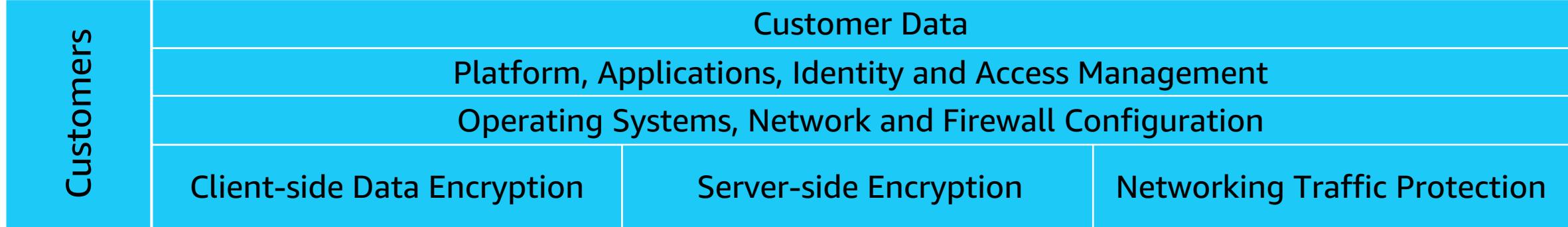
Shared responsibility model

Shared responsibility model



Customers	Customer Data		
	Platform, Applications, Identity and Access Management		
	Operating Systems, Network and Firewall Configuration		
	Client-side Data Encryption	Server-side Encryption	Networking Traffic Protection
AWS	Software		
	Compute	Storage	Database
	Networking		
	Hardware/AWS Global Infrastructure		
	Regions	Availability Zones	Edge Locations

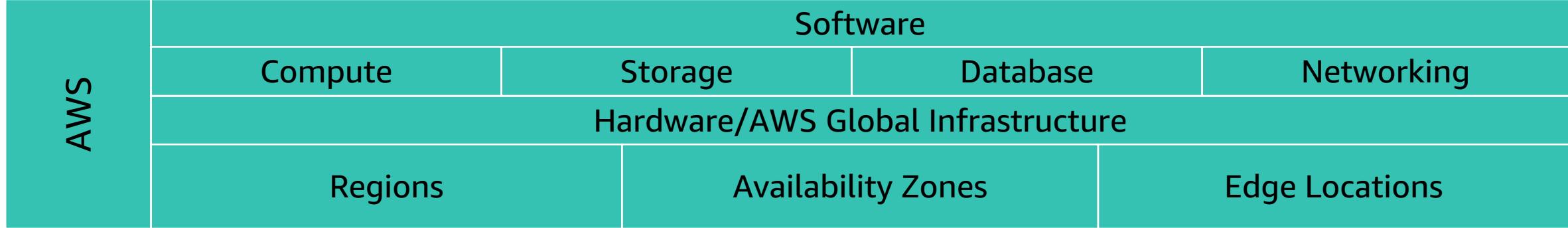
Customers: Security IN the cloud



Examples of customer responsibilities include:

- Instance operating system
- Applications
- Security groups
- Host-based firewalls
- Account management

AWS: Security OF the cloud



Examples of AWS responsibilities include:

- Physical security of data centers
- Network infrastructure
- Hardware and software infrastructure
- Virtualization infrastructure

Review: Shared responsibility model



Are these tasks the responsibilities of **customers** or **AWS**?

Customers

1. Configuring security groups on Amazon EC2 instances

AWS

2. Maintaining network infrastructure

AWS

3. Implementing physical security controls at data centers

Customers

4. Patching software on Amazon EC2 instances

AWS

5. Maintaining servers that run Amazon EC2 instances

Customers

6. Setting permissions for Amazon S3 objects

AWS Identity and Access Management (IAM)



AWS Identity and Access Management (IAM) allows you to manage access to AWS services and resources.

IAM features



IAM user



IAM policy



IAM group

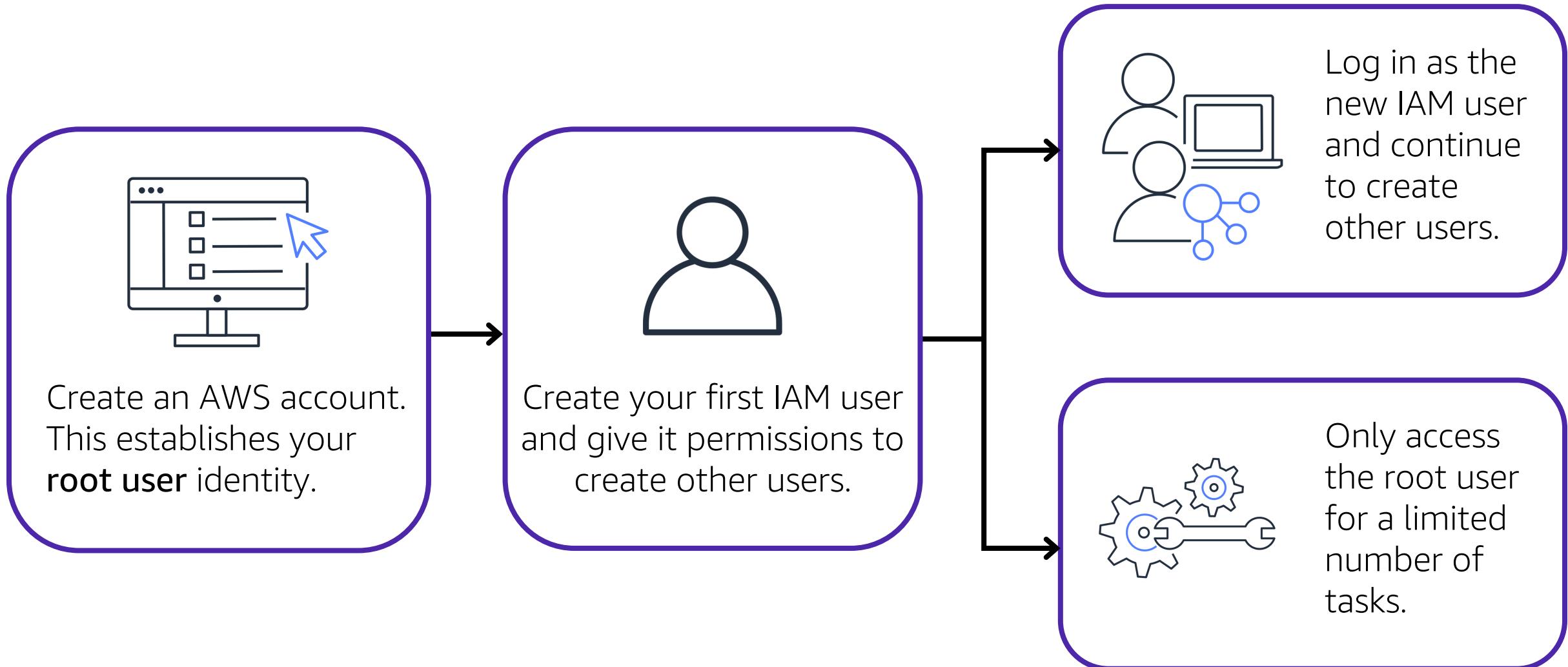


IAM role



Multi-factor authentication

AWS account root user



An **IAM user** is an identity that represents a person or application that interacts with AWS services and resources.

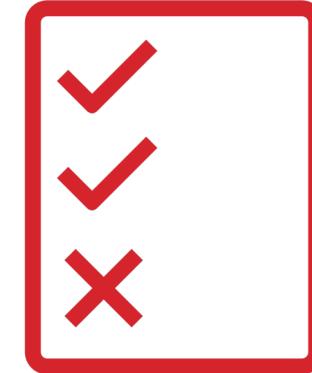
Best practice: Create individual IAM users for each person who needs to access AWS.



IAM user

An **IAM policy** is a document that grants or denies permissions to AWS services and resources.

Best practice: Follow the security principle of least privilege.



IAM policy

Example: IAM policy



This sample IAM policy allows permission to view a list of objects in the Amazon S3 bucket with ID *awsdoc-example-bucket*, and also access them.

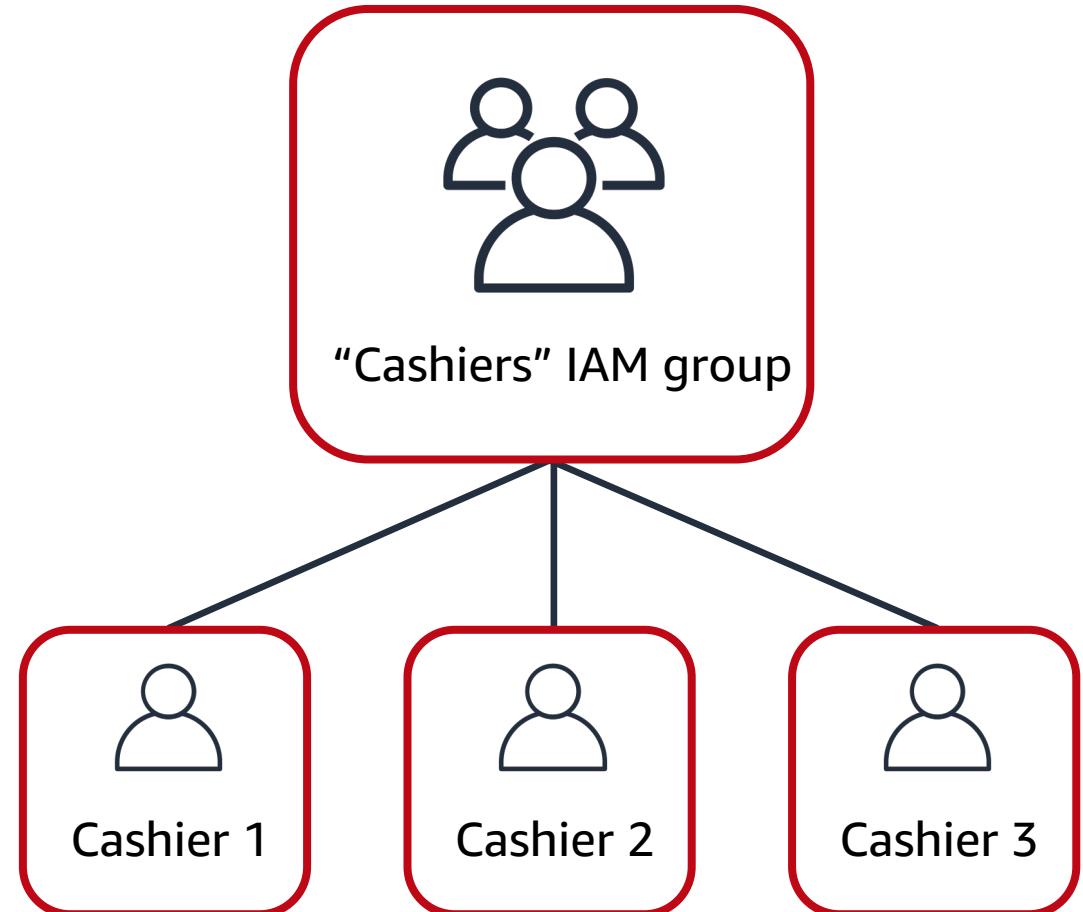
```
{  
    "Version": "2012-10-17",  
    "Statement": {  
        "Effect": "Allow",  
        "Action": ["s3>ListObject", "s3:GetObject"],  
        "Resource": ["arn:aws:s3::: awsdoc-example-bucket",  
                    "arn:aws:s3::: awsdoc-example-bucket/*"]  
    }  
}
```

IAM groups

An **IAM group** is a collection of IAM users.

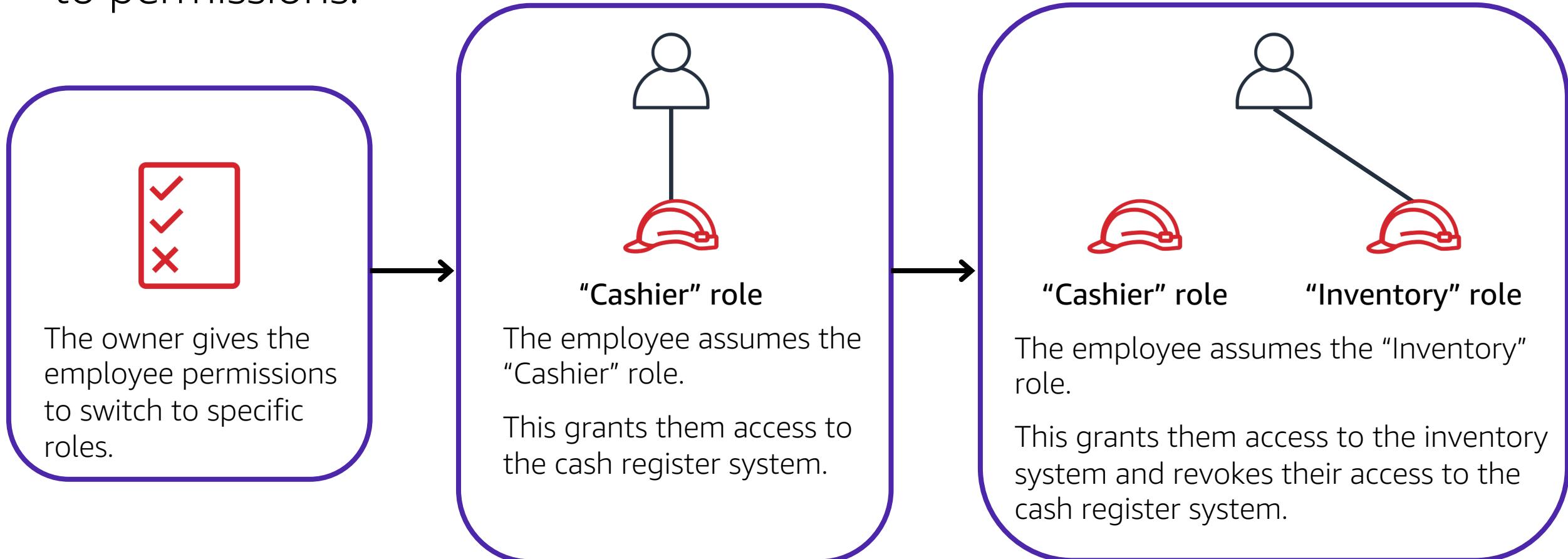
Best practice: Attach IAM policies to IAM groups, rather than to individual IAM users.

Members inherit the policies assigned to the group.



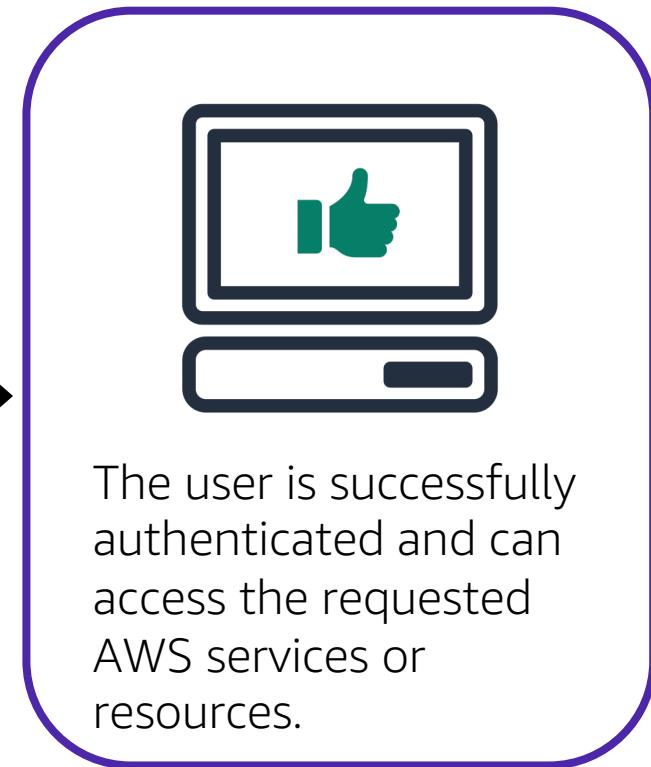
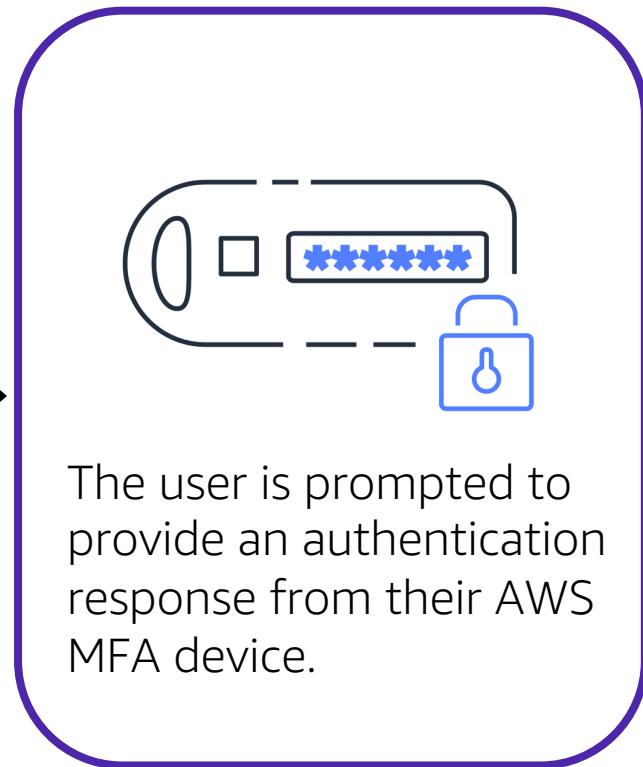
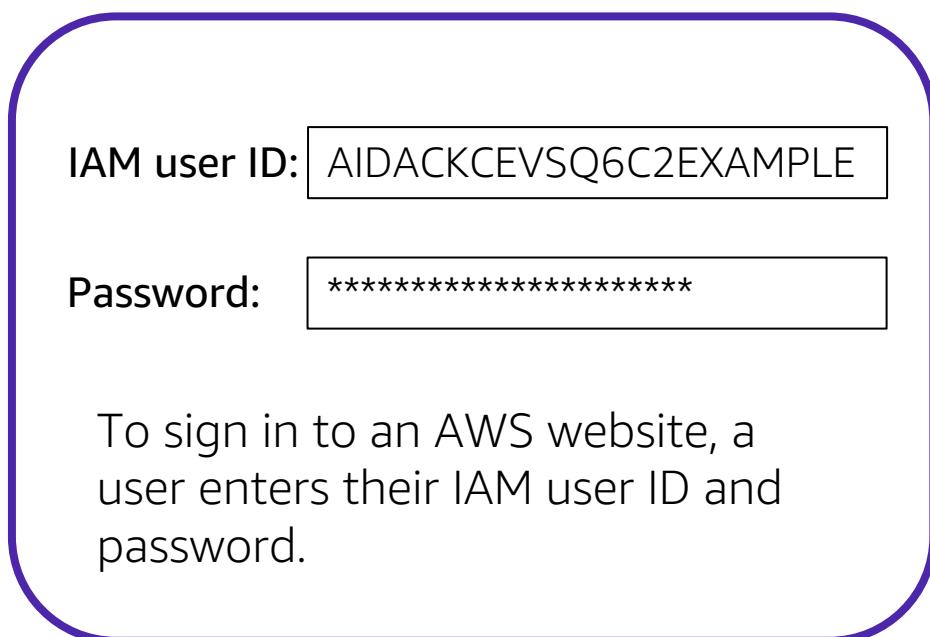
IAM roles

An **IAM role** is an identity that you can assume to gain temporary access to permissions.



Multi-factor authentication

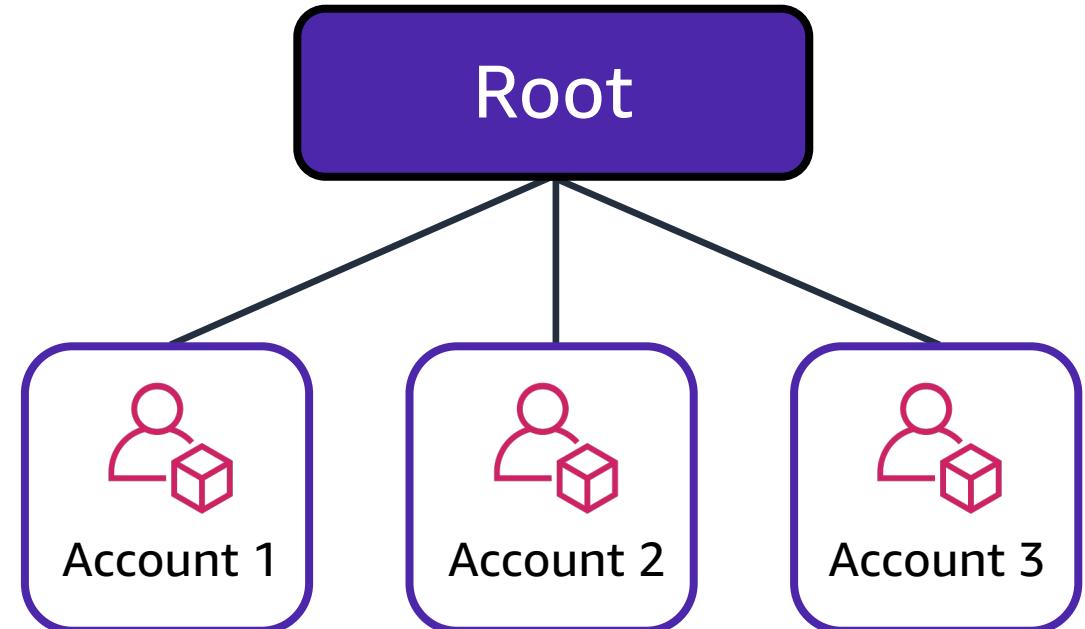
Multi-factor authentication provides an extra layer of protection for your AWS account.



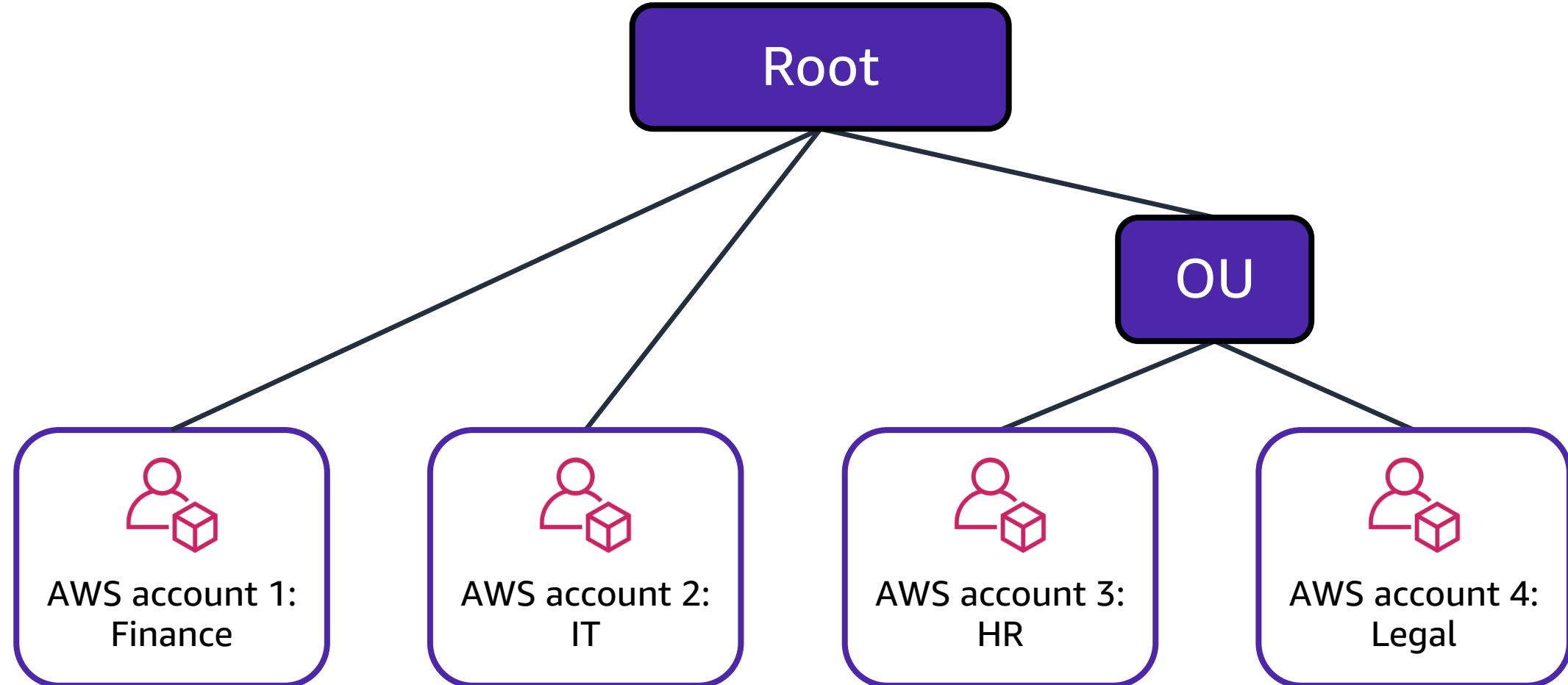
AWS Organizations

AWS Organizations

- AWS **Organizations** helps customers consolidate and manage multiple AWS accounts in a central location.
- Use **service control policies (SCPs)** to centrally control permissions for the accounts in your organization.



Example: Organizational units

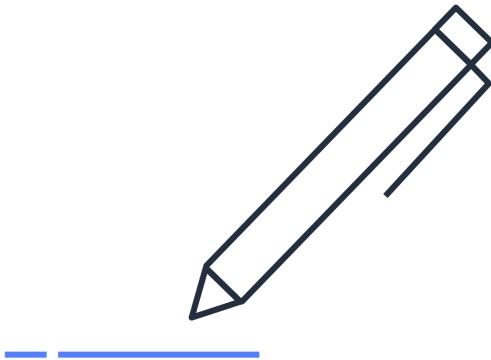


Compliance

AWS Artifact provides on-demand access to security and compliance reports and select online agreements.



Access AWS compliance
reports on demand



Review, accept, and manage
agreements with AWS



Access compliance reports
from third-party auditors

Assurance programs

aws training and certification

Global

USA

Asia Pacific

Europe

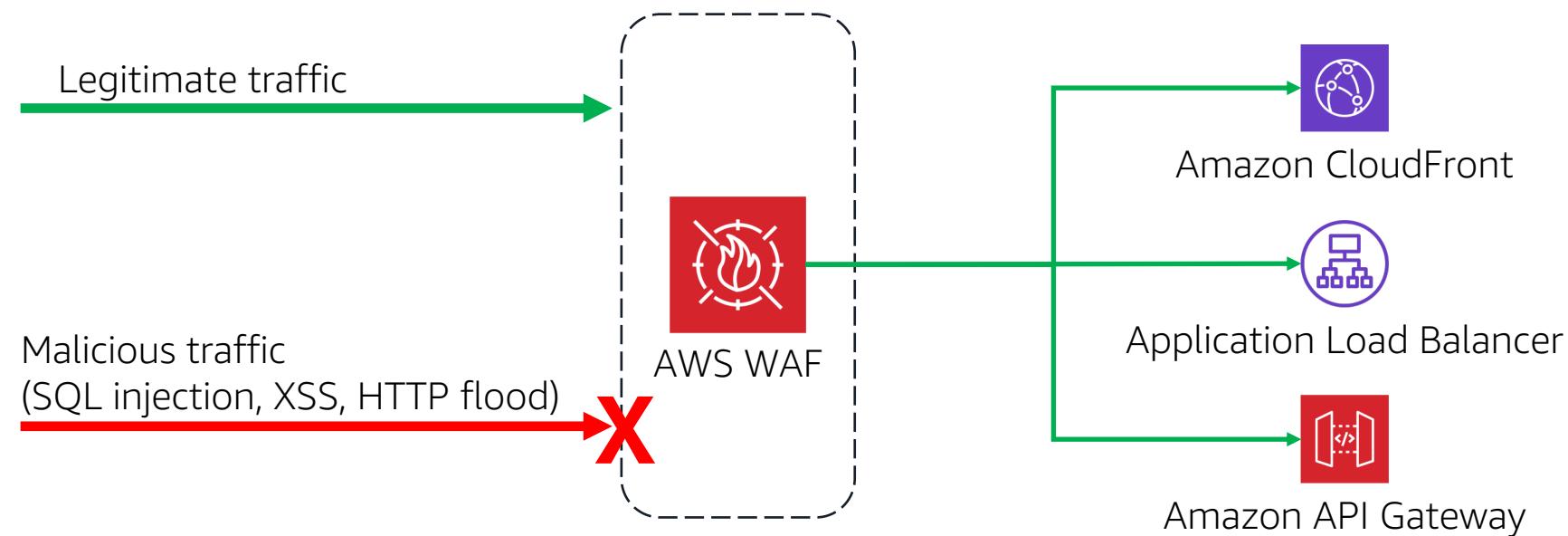
The slide displays a collection of logos for various assurance programs, organized into regional sections: Global, USA, Asia Pacific, and Europe. The Global section includes CSA, ISO 9001, ISO 27001, ISO 27017, ISO 27018, PCI DSS, AICPA SOC 1, AICPA SOC 2, and AICPA SOC 3. The USA section includes CJIS, DOD, FedRAMP, DEPARTMENT OF EDUCATION, FFIEC, FIPS 140-2, FISMA, and HIPAA. The Asia Pacific section includes HITRUST CSF Certified, ITAR, iB, Cybersecurity Essentials Plus, ISMS, IDA Singapore, and the Singapore flag. The Europe section includes C5, CYBER ESSENTIALS PLUS, CERTIFICACIÓN DE CONFORMIDAD DE LA ENTRADA DE Seguridad, TÜV AUSTRIA, and TISAX ENX ASSOCIATION.

Application security

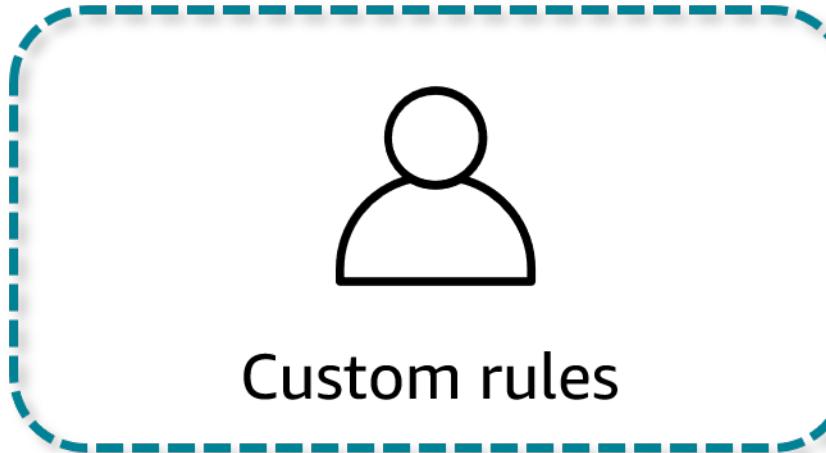


AWS WAF

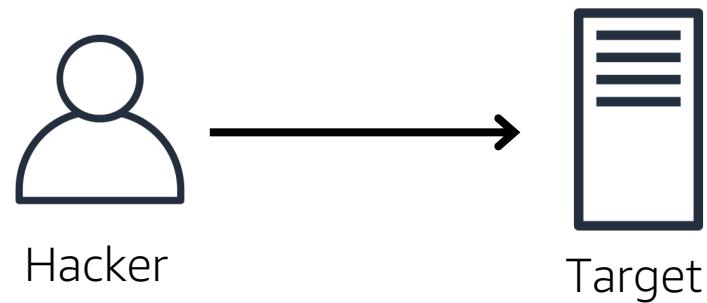
Helps protect your web applications and APIs
against common web exploits



AWS WAF Rules



Denial of service attack

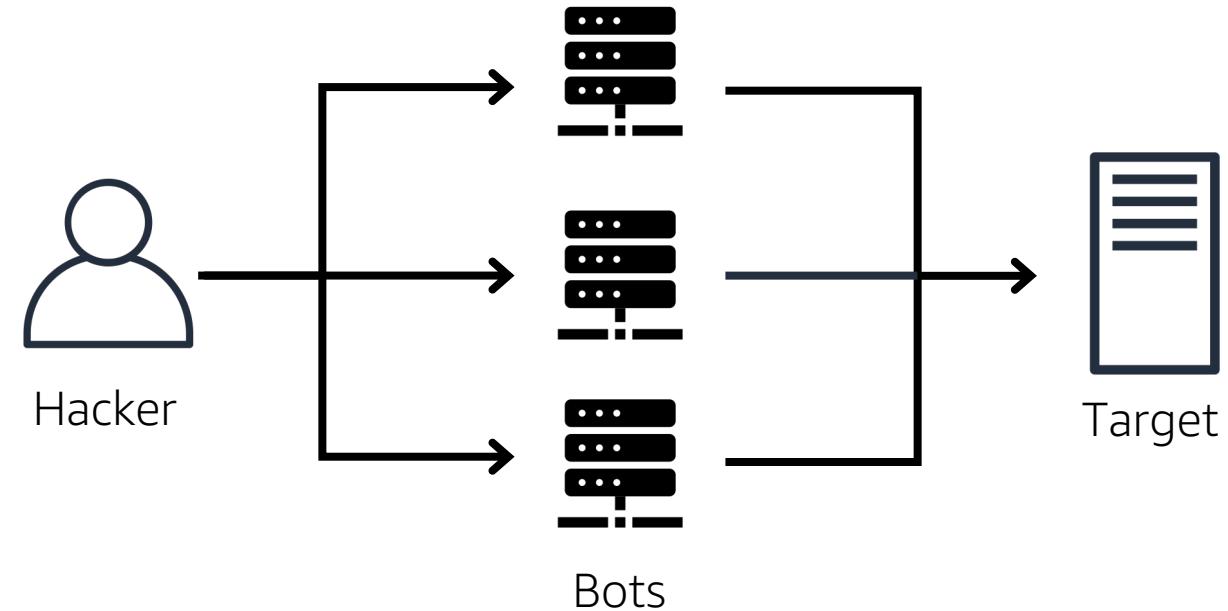


Hacker

Target

The attack originates from a **single** source.

Distributed denial of service attack



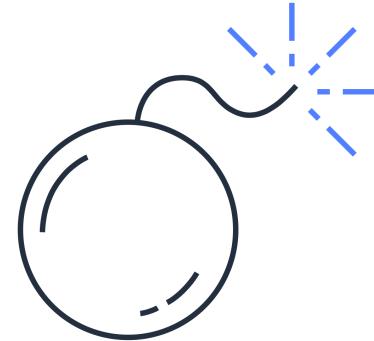
Hacker

Bots

Target

The attack originates from **multiple** sources.

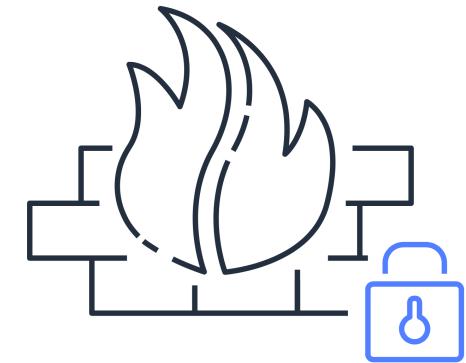
AWS Shield provides protection against distributed denial of service (DDoS) attacks.



Protect applications
against DDoS attacks



Integrate AWS Shield
Advanced with other
AWS services



Write custom web ACL
rules with AWS WAF to
mitigate complex
DDoS attacks

Amazon Inspector



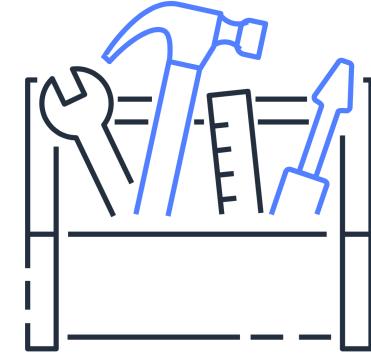
Amazon Inspector allows you to perform automated security assessments on your applications.



Automatically conduct application security assessments



Identify security vulnerabilities and deviations from best practices



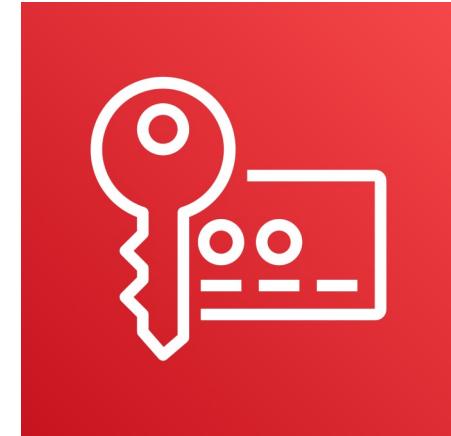
Receive recommendations for how to fix security issues

Additional security services

AWS Key Management Service



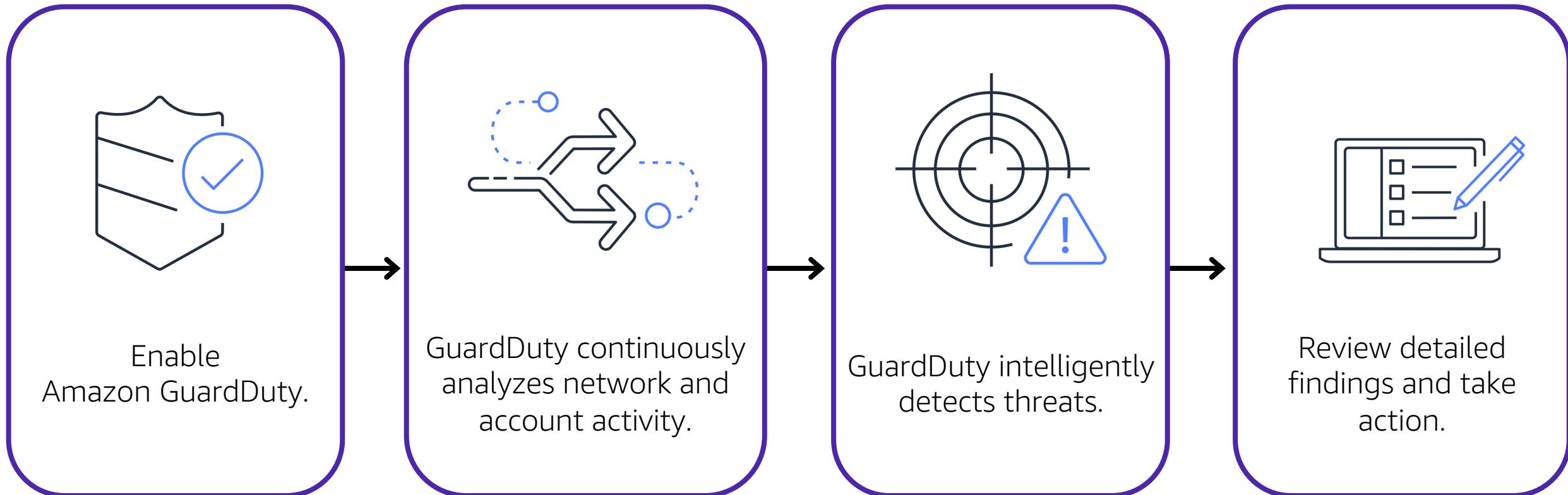
- **AWS Key Management Service (AWS KMS)** helps customers perform encryption operations through the use of cryptographic keys.
- You can choose the specific levels of access control that you need for your keys.



AWS KMS

Amazon GuardDuty

Amazon GuardDuty provides intelligent threat detection for AWS products and services.



Module 6

Knowledge check

Knowledge check question 1



Which statement describes an IAM policy?

- A. An authentication process that provides an extra layer of protection for your AWS account
- B. A document that grants or denies permissions to AWS services and resources
- C. An identity that you can assume to gain temporary access to permissions
- D. The identity that is established when you first create an AWS account

Knowledge check answer 1



Which statement describes an IAM policy?

- A. An authentication process that provides an extra layer of protection for your AWS account
- B. A document that grants or denies permissions to AWS services and resources (correct)
- C. An identity that you can assume to gain temporary access to permissions
- D. The identity that is established when you first create an AWS account

Knowledge check question 2



An employee requires temporary access to create several Amazon S3 buckets. Which option should be used for this task?

- A. AWS account root user
- B. IAM group
- C. IAM role
- D. Service control policy

Knowledge check answer 2



An employee requires temporary access to create several Amazon S3 buckets. Which option should be used for this task?

- A. AWS account root user
- B. IAM group
- C. **IAM role (correct)**
- D. Service control policy

Knowledge check question 3



Which option describes the concept of least privilege?

- A. Adding an IAM user into at least one IAM group
- B. Granting only the permissions that are needed to perform specific tasks
- C. Checking a packet's permissions against an access control list
- D. Performing a denial of service attack that originates from at least one device

Knowledge check answer 3



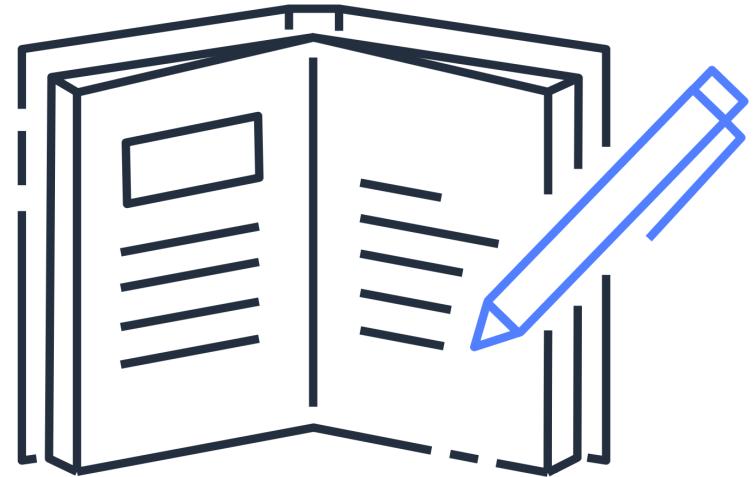
Which option describes the concept of least privilege?

- A. Adding an IAM user into at least one IAM group
- B. **Granting only the permissions that are needed to perform specific tasks (correct)**
- C. Checking a packet's permissions against an access control list
- D. Performing a denial of service attack that originates from at least one device

Module 6 summary

In this module, you learned about:

- Shared responsibility model
- AWS Identity and Access Management features
- Methods of managing multiple accounts in AWS Organizations
- AWS services for application security and encryption
- AWS compliance resources



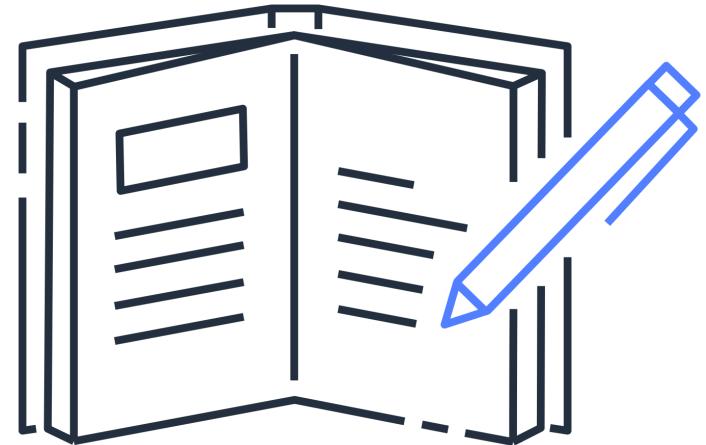
Module 7

Monitoring and Analytics

Module 7 objectives

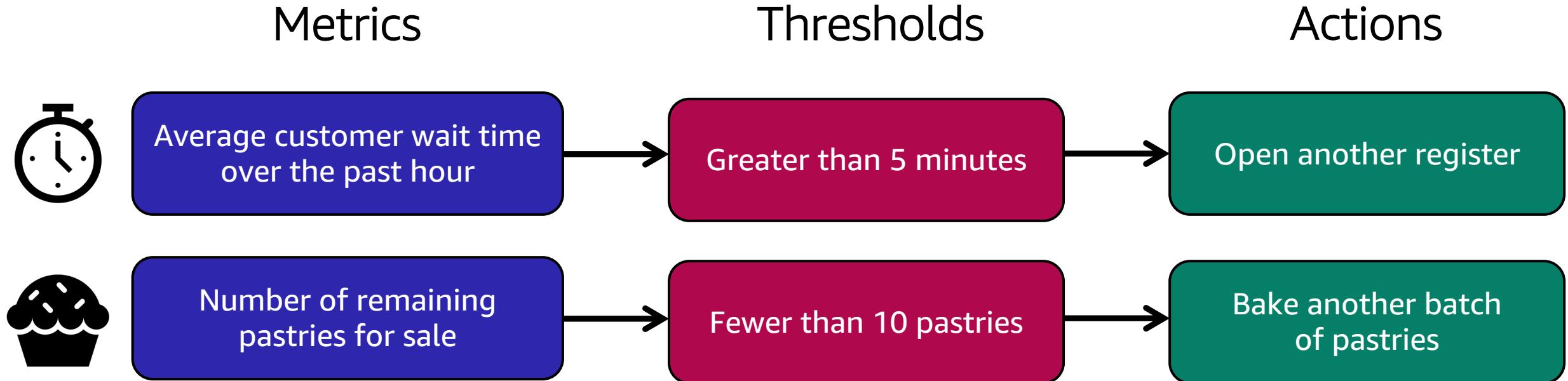
In this module, you will learn how to:

- Summarize approaches to monitoring in AWS
- Describe Amazon CloudWatch benefits
- Describe AWS CloudTrail benefits
- Describe AWS Trusted Advisor benefits

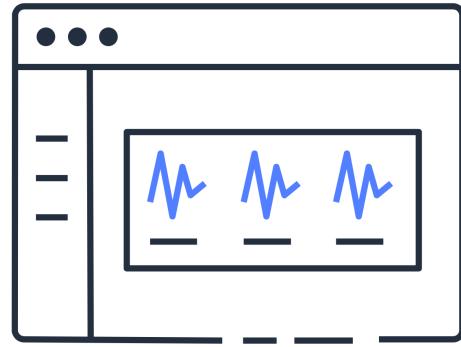


Amazon CloudWatch

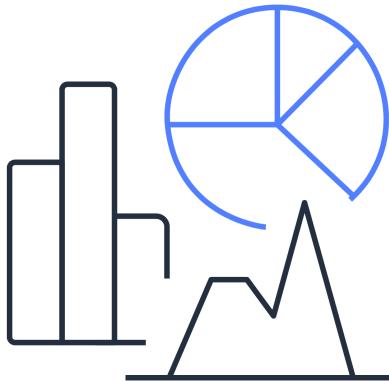
Coffee shop metrics



Amazon CloudWatch



Monitor your AWS and on-premises infrastructure and resources in real time



Access all of your metrics from a single location



Configure automatic alerts and actions in response to metrics

Amazon CloudWatch dashboard



Amazon RDS metrics

2.06 %

20.1 GB

0.38 /s

0.23 /s

CPUUtilization

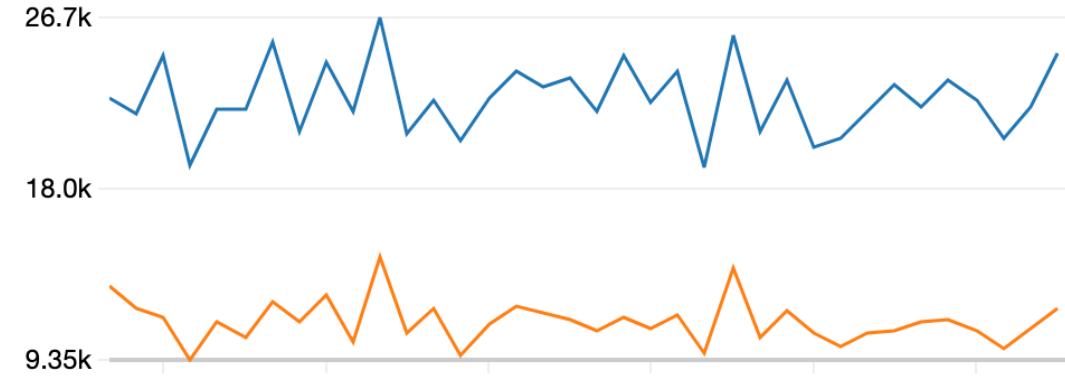
FreeStorageSpace

WriteIOPS

ReadIOPS

Amazon EC2 metrics

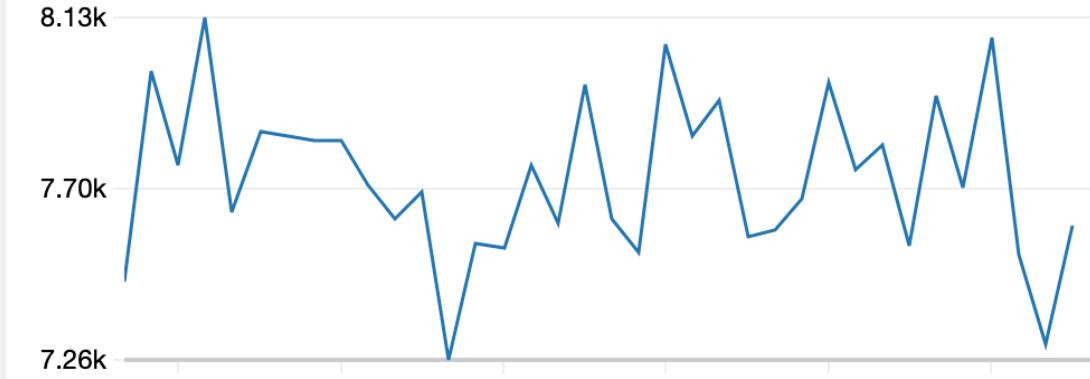
Bytes



NetworkIn NetworkOut

Amazon EBS metrics

Bytes



VolumeWriteBytes

AWS CloudTrail

AWS CloudTrail



Track user activities and API requests throughout your AWS infrastructure



Filter logs generated by API calls to assist with operational analysis and troubleshooting



Automatically detect unusual account activity

AWS CloudTrail event



What happened?

New IAM user (**Mary**) created



Who made the request?

IAM user John



When did this occur?

January 1, 2022 at 9:00 AM



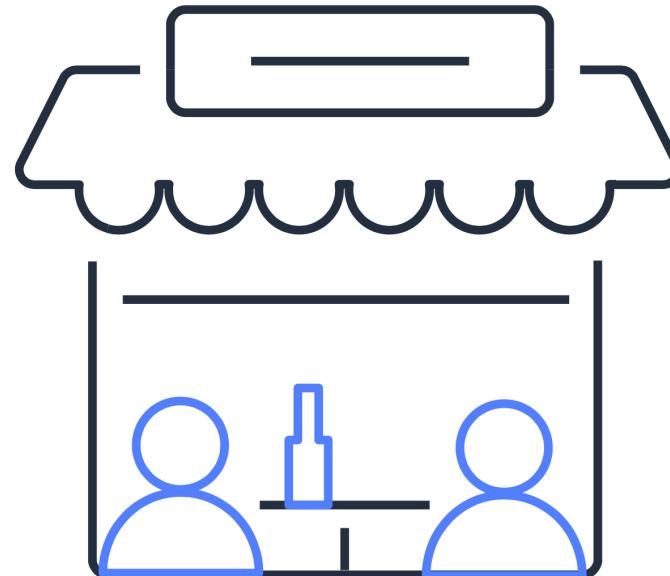
How was the request made?

Through the AWS Management Console



AWS Trusted Advisor

Coffee shop improvements

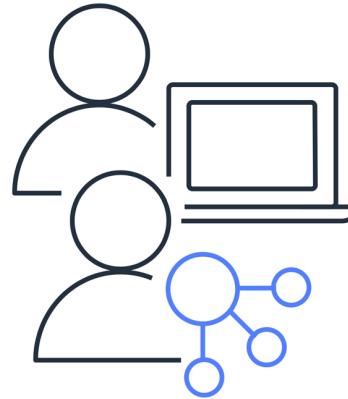


The consultant observes the coffee shop.

The owners implement the suggested changes.

The consultant makes recommendations for improvement.

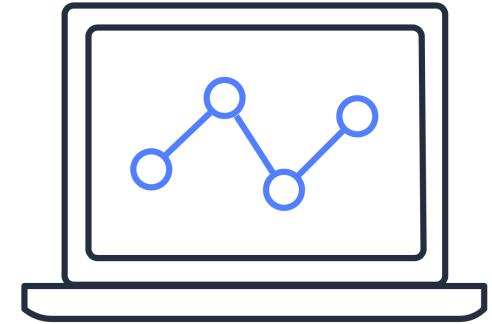
AWS Trusted Advisor



Receive real-time
guidance for improving
your AWS environment



Compare your
infrastructure to AWS best
practices in five categories



Evaluate and implement
guidance at all stages of
deployment

AWS Trusted Advisor dashboard



Number of items for which **no problems** have been detected

Number of recommended investigations

Number of recommended actions

Cost Optimization



0 9 0

\$7,516.85

Potential monthly savings

Performance



3 7 0

Security



2 4 11

Fault Tolerance



0 15 5

Service Limits



37 0 1

Module 7

Knowledge check

Knowledge check question 1



Which actions can you perform using Amazon CloudWatch? (Select TWO.)

- A. Monitor your resources' usage and performance.
- B. Receive real-time guidance for improving your AWS environment.
- C. Compare your infrastructure to AWS best practices in five categories.
- D. Access metrics from a single dashboard.
- E. Automatically detect unusual account activity using AWS GuardDuty.

Knowledge check answer 1



Which actions can you perform using Amazon CloudWatch? (Select TWO.)

- A. Monitor your resources' usage and performance. (correct)
- B. Receive real-time guidance for improving your AWS environment.
- C. Compare your infrastructure to AWS best practices in five categories.
- D. Access metrics from a single dashboard. (correct)
- E. Automatically detect unusual account activity using AWS GuardDuty.

Knowledge check question 2



Which service can you use to review the security of your Amazon S3 buckets by checking for open access permissions?

- A. Amazon CloudWatch
- B. AWS CloudTrail
- C. AWS Trusted Advisor
- D. Amazon GuardDuty

Knowledge check answer 2



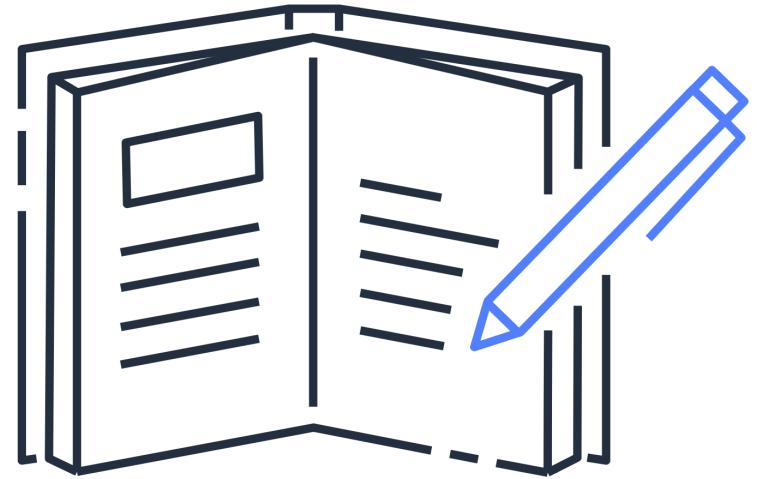
Which service can you use to review the security of your Amazon S3 buckets by checking for open access permissions?

- A. Amazon CloudWatch
- B. AWS CloudTrail
- C. **AWS Trusted Advisor (correct)**
- D. Amazon GuardDuty

Module 7 summary

In this module, you learned about:

- Amazon CloudWatch
- AWS CloudTrail
- AWS Trusted Advisor



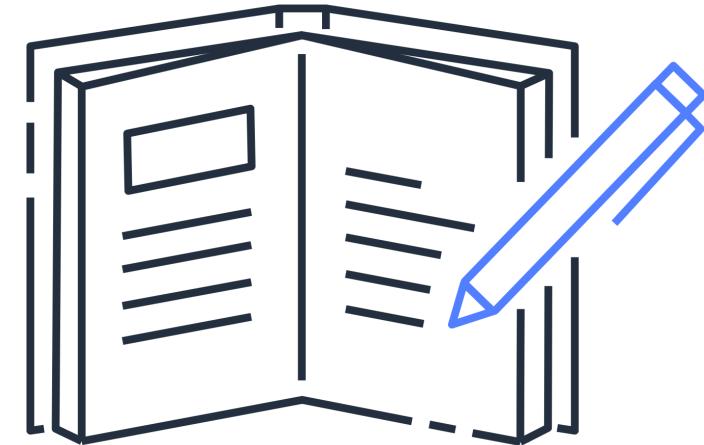
Module 8

Pricing and Support

Module 8 objectives

In this module, you will learn how to:

- Describe AWS pricing and support models
- Describe the AWS Free Tier
- Describe key benefits of AWS Organizations and consolidated billing
- Explain AWS Budgets benefits
- Explain AWS Cost Explorer benefits
- Explain AWS Pricing Calculator benefits
- Distinguish among the AWS Support plans
- Describe AWS Marketplace benefits

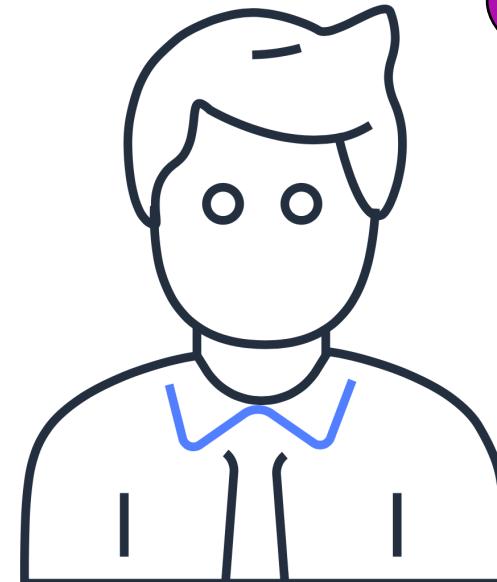


AWS pricing and support



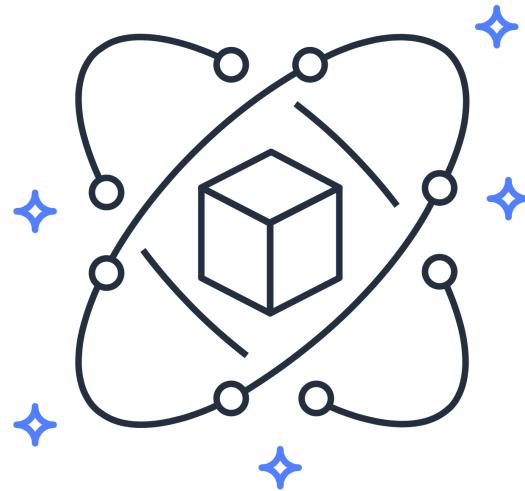
How can I budget
and pay for AWS
services?

Where can I find
support and third-
party software?



AWS pricing

AWS Free Tier categories



Always free



12 months free



Trials

AWS pricing concepts



Pay as you go

Pay only for the resources that you use without provisioning capacity in advance

Pay less when you reserve

Reduce costs by reserving capacity in services such as Amazon Elastic Compute Cloud (Amazon EC2) and Amazon Relational Database Service (Amazon RDS)

Pay less with volume-based discounts

Receive savings through volume-based discounts as your usage increases

AWS Pricing Calculator



AWS pricing calculator

Feedback English ▾ Contact Sales

AWS Pricing Calculator > My Estimate > Add Amazon EC2

Step 1 Select service

Step 2 Configure Amazon EC2

Configure Amazon EC2 Info

Region

US East (Ohio) ▾

Quick estimate
Choose this option for fast and easy route to a ballpark estimate based on minimum requirements or a specific instance search. The estimate assumes consistent utilization.

Advanced estimate
Choose this option for a more detailed estimate that accounts for workload, data transfer costs, additional storage options, and other, less common instance requirements. For example, you know that you get a lot of traffic on Mondays but not much traffic throughout the rest of the week, and you want an estimate that takes this workload into account.

EC2 instance specifications Info

Operating system
Choose which operating system you'd like to run Amazon EC2 instances on.

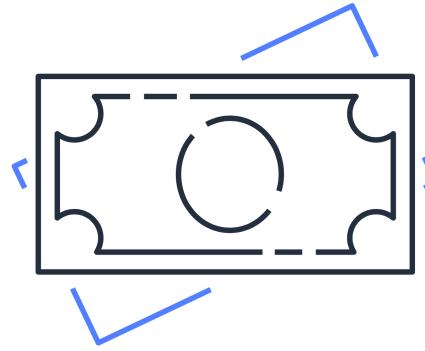
Linux

Consolidated billing

Consolidated billing



Receive a single bill
for all the AWS
accounts in your
organization

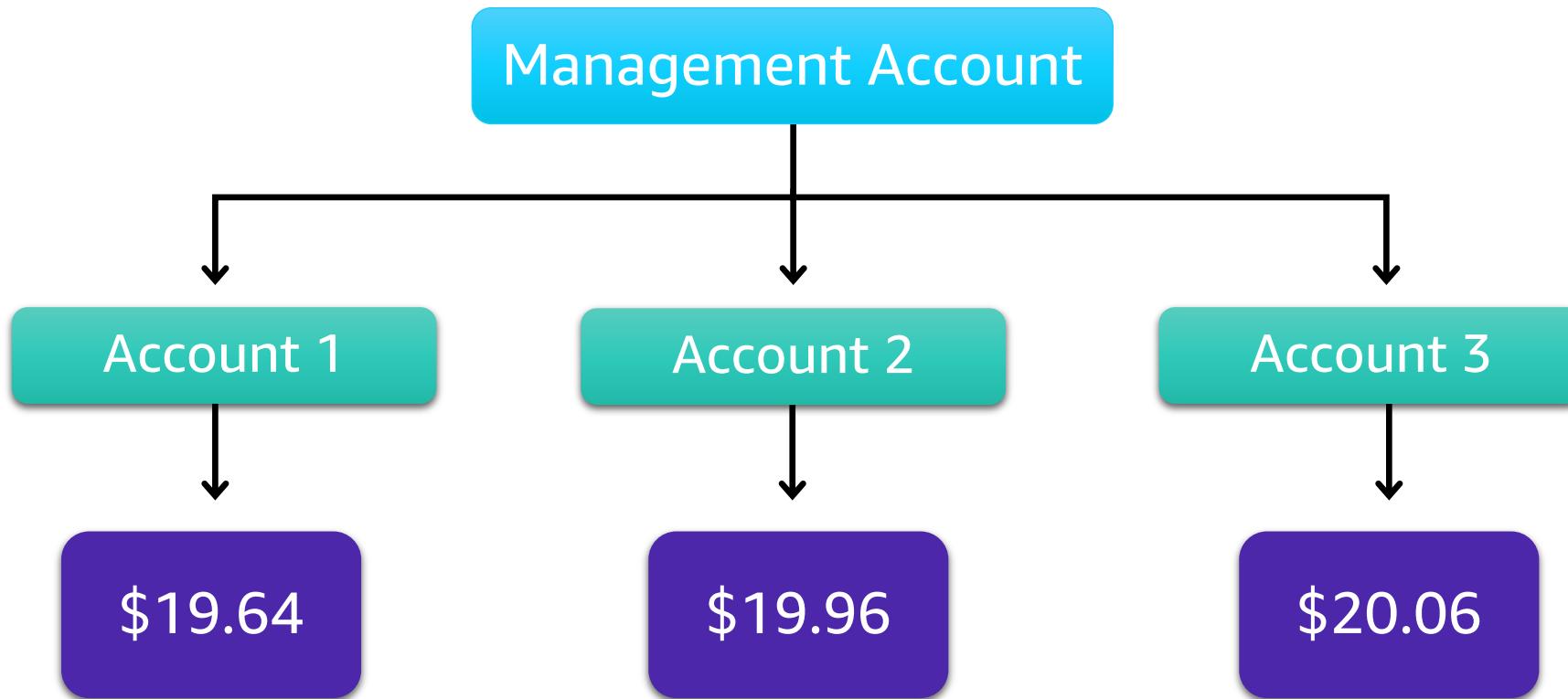


Review itemized
charges that have been
incurred by each
account



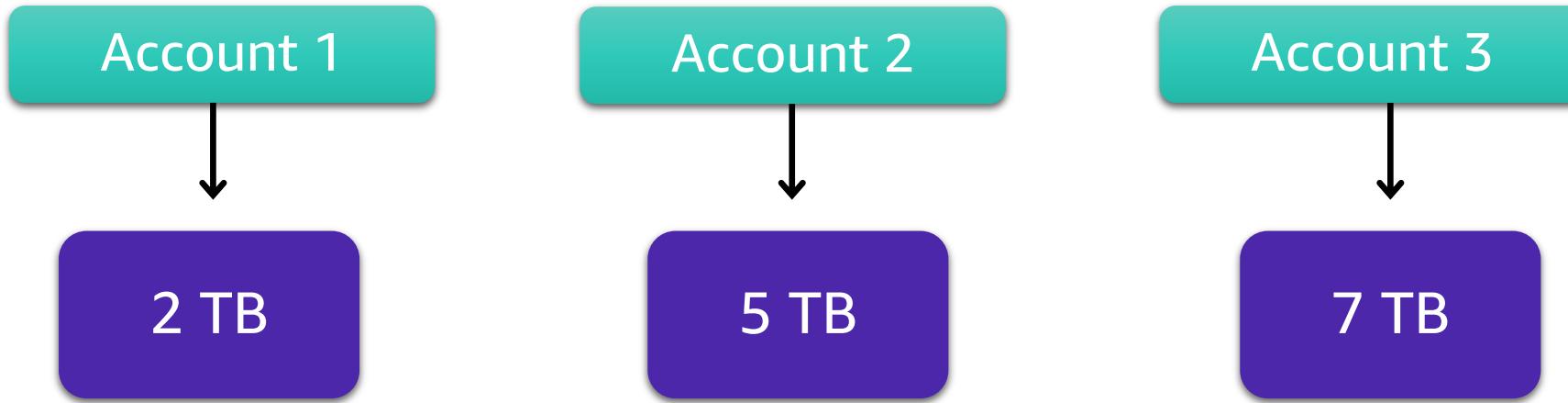
Share savings across
the accounts in your
organization

Example: Consolidated billing

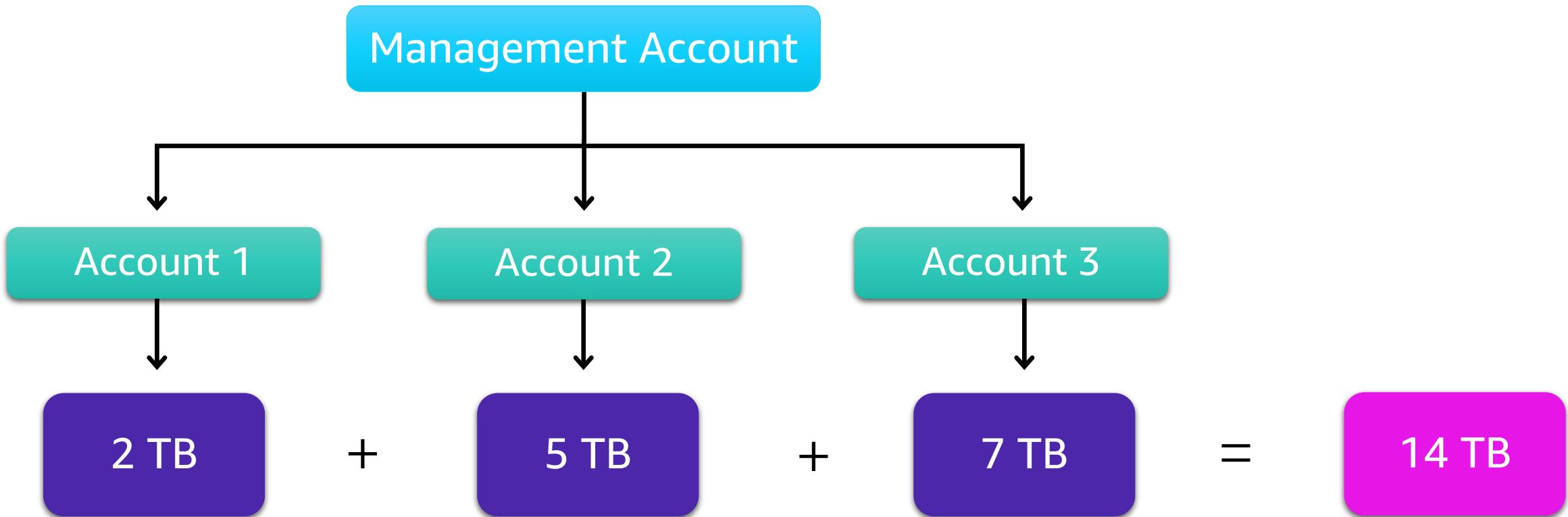


Monthly Consolidated Bill	
Management Account	\$14.14
Account 1	\$19.64
Account 2	\$19.96
Account 3	\$20.06
Total charged to paying account:	\$73.80

Example: Volume pricing in Amazon S3



Example: Volume pricing in Amazon S3



AWS pricing tools

AWS Budgets



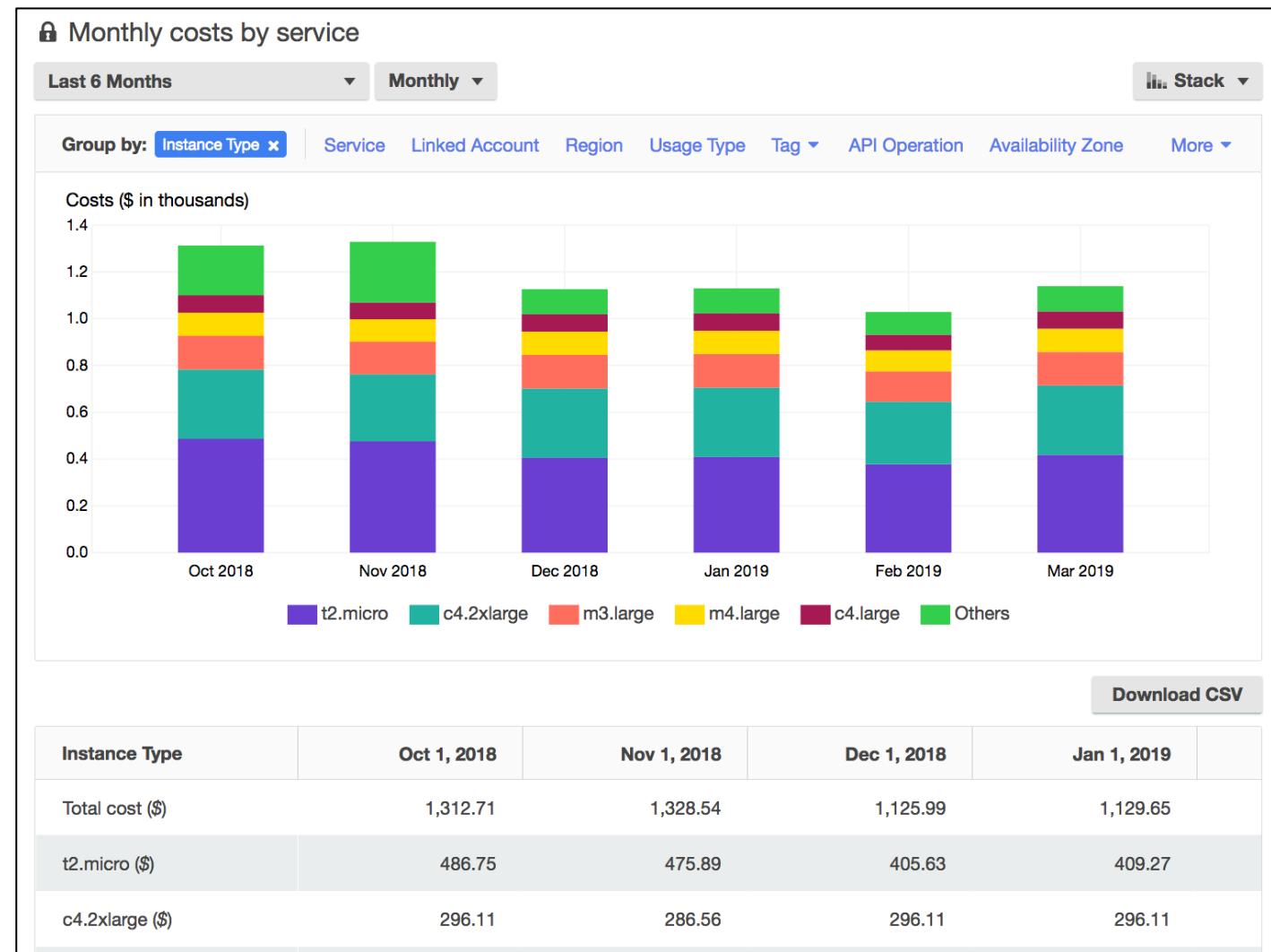
AWS Budgets is a tool that you can use to set thresholds for your AWS service usage and costs.

AWS Budgets							
All budgets (7)				Cost budgets (5)			
Budget name	Budget type	Current	Budgeted	Forecasted	Current vs. budgeted	Forecasted vs. budgeted	
Project Nemo Cost Budget	Cost	\$43.90	\$45.00	\$56.33	<div style="width: 97.55%; background-color: #0072bc; height: 10px;"></div> 97.55%	<div style="width: 125.17%; background-color: #e57373; height: 10px;"></div> 125.17%	...
Eastern US Regional Budget	Cost	\$85.21	\$100.00	\$125.28	<div style="width: 85.21%; background-color: #0072bc; height: 10px;"></div> 85.21%	<div style="width: 125.28%; background-color: #e57373; height: 10px;"></div> 125.28%	...
Total Monthly Cost Budget	Cost	\$141.50	\$175.00	\$187.00	<div style="width: 80.86%; background-color: #0072bc; height: 10px;"></div> 80.86%	<div style="width: 106.86%; background-color: #e57373; height: 10px;"></div> 106.86%	...
Total EC2 Cost Budget	Cost	\$136.90	\$200.00	\$195.21	<div style="width: 68.45%; background-color: #0072bc; height: 10px;"></div> 68.45%	<div style="width: 97.61%; background-color: #0072bc; height: 10px;"></div> 97.61%	...
S3 Usage Budget	Usage	3,601 Requests	5,500 Requests	4,675.75 Requests	<div style="width: 65.47%; background-color: #0072bc; height: 10px;"></div> 65.47%	<div style="width: 85.01%; background-color: #0072bc; height: 10px;"></div> 85.01%	...

AWS Cost Explorer



AWS Cost Explorer is a tool that you can use to visualize, understand, and manage your AWS costs and usage over time.



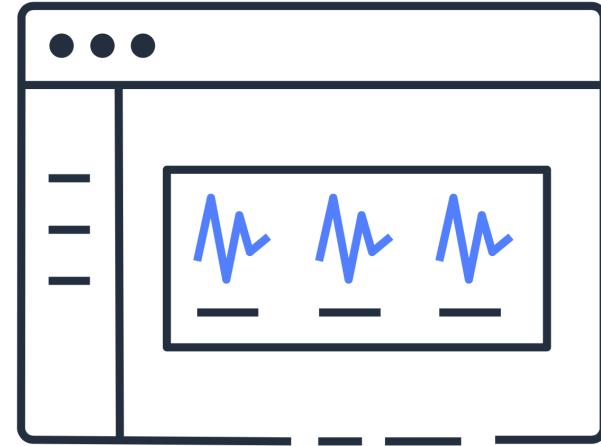
AWS Support plans

Basic Support



Basic Support is free for all AWS customers and includes access to:

- Technical papers, documentation, and support communities
- AWS Personal Health Dashboard
- A limited selection of AWS Trusted Advisor checks



AWS Support plans



Developer

- Best-practice guidance
- Client-side diagnostic tools
- Building-block architecture support

Business

- Use-case guidance
- All AWS Trusted Advisor checks
- Limited support for third-party software

Enterprise On-Ramp

- Application architecture guidance
- Infrastructure event management
- A pool of Technical Account Managers (TAM)

Enterprise

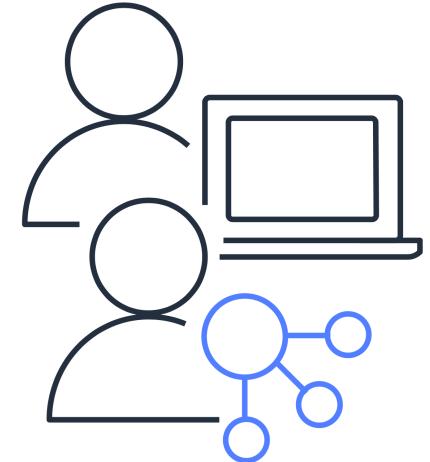
- Application architecture guidance
- Infrastructure event management
- A designated TAM

Technical Account Manager (TAM)



The **Technical Account Manager** is your primary point of contact at AWS.

- Technical Account Managers are included only with the Enterprise On-Ramp or Enterprise Support plans.
- They provide guidance, technical expertise, and best practices.



AWS Marketplace

AWS Marketplace



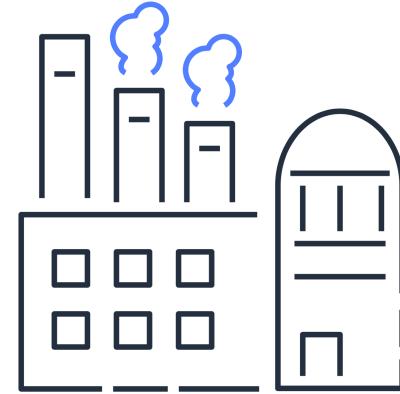
AWS Marketplace is a digital catalog that provides listings of third-party software that runs on AWS.



Discover thousands
of software products
that run on AWS



Access detailed
information and
reviews for each
product listing



Explore software
solutions by industry
and use case

AWS Marketplace categories



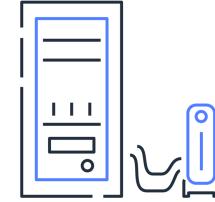
Business
Applications



Data and
Analytics



DevOps



Infrastructure
Software



Internet of
Things (IoT)



Machine
Learning



Migration



Security

Module 8

Knowledge check

Knowledge check question 1



Which action can a customer perform with consolidated billing?

- A. Review how much cost predicted AWS usage will incur by the end of the month
- B. Create an estimate for the cost of use cases on AWS
- C. Combine usage across accounts to receive volume pricing discounts
- D. Visualize and manage AWS costs and usage over time

Knowledge check answer 1



Which action can a customer perform with consolidated billing?

- A. Review how much cost predicted AWS usage will incur by the end of the month
- B. Create an estimate for the cost of use cases on AWS
- C. **Combine usage across accounts to receive volume pricing discounts (correct)**
- D. Visualize and manage AWS costs and usage over time

Knowledge check question 2



Which pricing tool is used to visualize, understand, and manage AWS costs and usage over time?

- A. AWS Pricing Calculator
- B. AWS Budgets
- C. AWS Cost Explorer
- D. AWS Free Tier

Knowledge check answer 2



Which pricing tool is used to visualize, understand, and manage your AWS costs and usage over time?

- A. AWS Pricing Calculator
- B. AWS Budgets
- C. **AWS Cost Explorer (correct)**
- D. AWS Free Tier

Knowledge check question 3



Which pricing tool can a customer use to receive alerts when their service usage exceeds a customer-defined threshold?

- A. Billing dashboard in the AWS Management Console
- B. AWS Budgets
- C. AWS Free Tier
- D. AWS Cost Explorer

Knowledge check answer 3



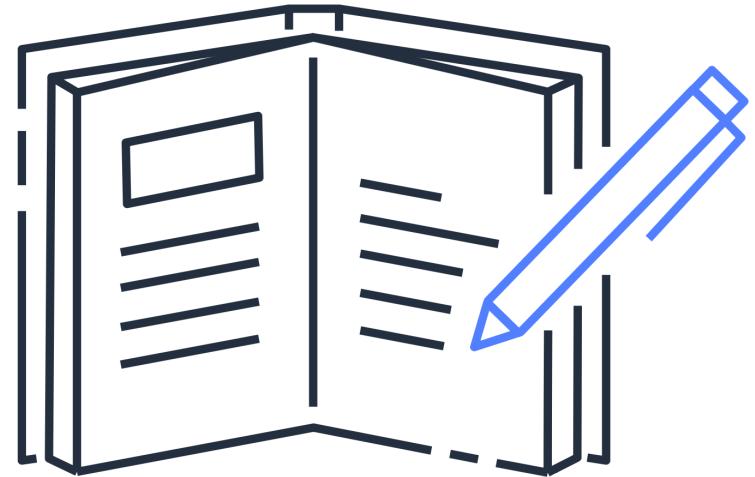
Which pricing tool can a customer use to receive alerts when their service usage exceeds a customer-defined threshold?

- A. Billing dashboard in the AWS Management Console
- B. **AWS Budgets (correct)**
- C. AWS Free Tier
- D. AWS Cost Explorer

Module 8 summary

In this module, you learned about:

- AWS Free Tier
- Consolidated billing
- Tools for planning, estimating, and reviewing AWS costs
- AWS Support plans
- AWS Marketplace benefits



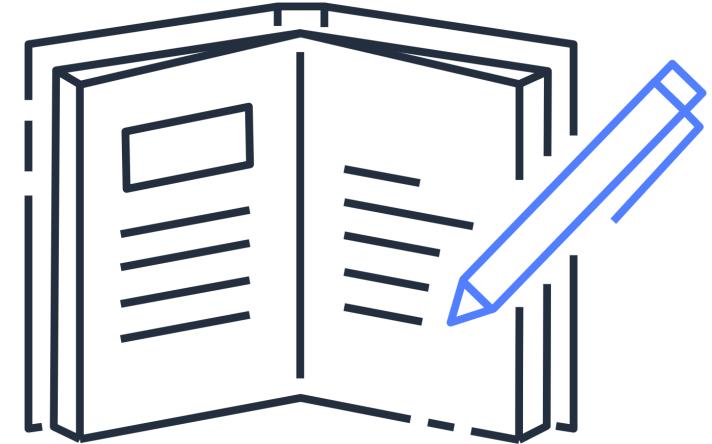
Module 9

Migration and Innovation

Module 9 objectives

In this module, you will learn how to:

- Describe migration and innovation in the AWS Cloud
- Summarize the AWS Cloud Adoption Framework (AWS CAF)
- Summarize the seven key factors of a cloud migration strategy
- Describe the benefits of AWS data migration solutions
- Summarize the broad scope of innovative solutions that AWS offers
- Summarize the six pillars of the AWS Well-Architected Framework



AWS Cloud Adoption Framework

AWS Cloud Adoption Framework

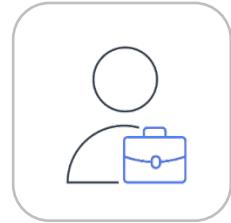


- Provides advice to your company to enable a quick and smooth migration to AWS
- Organizes guidance into six areas of focus, called **perspectives**



Perspectives

Business



People



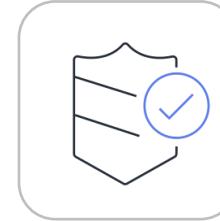
Governance



Platform



Security



Operations



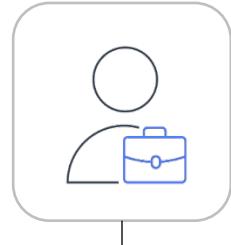
Business
capabilities



Technical
capabilities

Business perspective

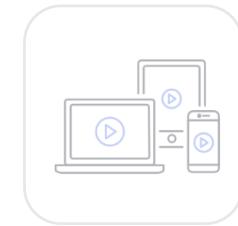
Business



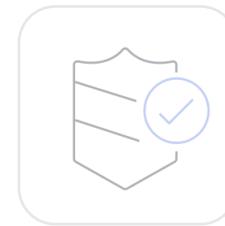
People



Governance



Platform



Security



Operations

Goal

Ensures that IT aligns with business needs and IT investments link to key business results

Common roles

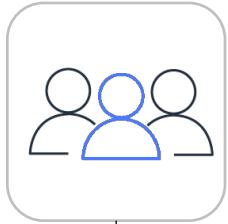
- Business managers
- Finance managers
- Budget owners
- Strategy stakeholders

People perspective

Business



People



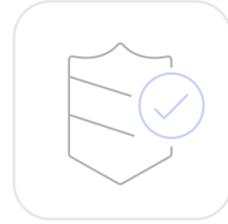
Governance



Platform



Security



Operations



Goal

Supports development of an organization-wide change management strategy for successful cloud adoption

Common roles

- Human resources
- Staffing
- People managers

Governance perspective

Business



People



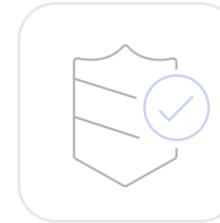
Governance



Platform



Security



Operations



Goal

Focuses on the skills and processes to align IT strategy with business strategy

Common roles

- Chief information officer (CIO)
- Program managers
- Enterprise architects
- Business analysts
- Portfolio managers

Platform perspective

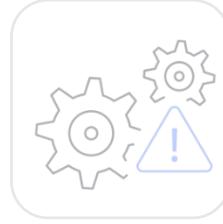
Business



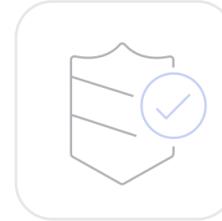
People



Governance



Platform



Security



Operations

Goal

Includes principles and patterns for implementing new solutions in the cloud, and migrating on-premises workloads to the cloud

Common roles

- Chief technology officer (CTO)
- IT managers
- Solutions architects

Security perspective

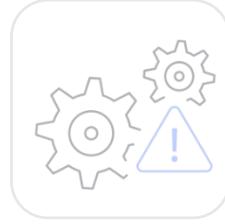
Business



People



Governance



Platform



Security



Operations

Goal

Ensures that the organization meets security objectives for visibility, auditability, control, and agility

Common roles

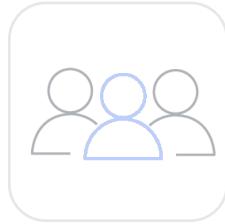
- Chief information security officer (CISO)
- IT security managers
- IT security analysts

Operations perspective

Business



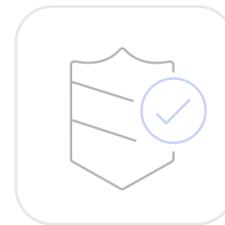
People



Governance



Platform



Security



Operations

Goal

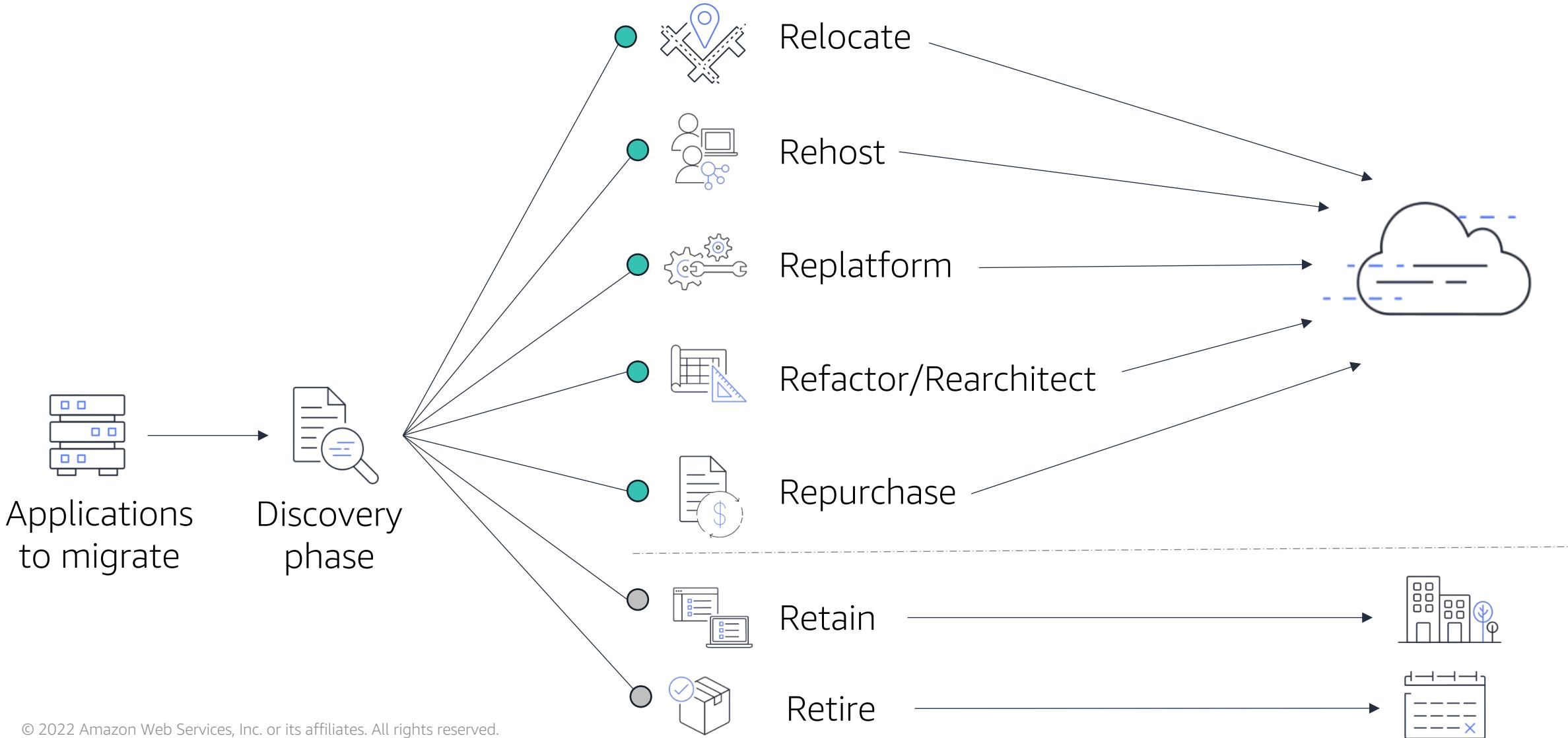
Helps you to enable, run, use, operate, and recover IT workloads to the level agreed on with your business stakeholders

Common roles

- IT operations managers
- IT support managers

Migration strategies

Seven migration strategies



AWS Snow Family

AWS Snow Family



AWS Snowcone

- Small, rugged, and secure edge computing and data transfer device
- Features up to 14 TB of usable storage

AWS Snowball

- AWS Snowball Edge Storage Optimized
- AWS Snowball Edge Compute Optimized

AWS Snowmobile

- Exabyte-scale data transfer service for moving large amounts of data to AWS
- Transfers up to 100 PB of data

AWS Well-Architected Framework

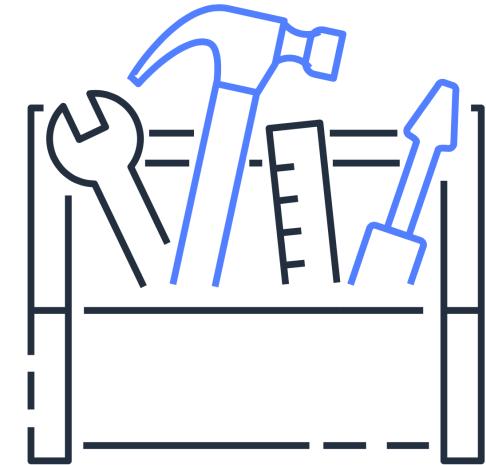
Well-Architected Framework



The **Well-Architected Framework** helps you understand how to design and operate reliable, secure, efficient, and cost-effective systems in the AWS Cloud.

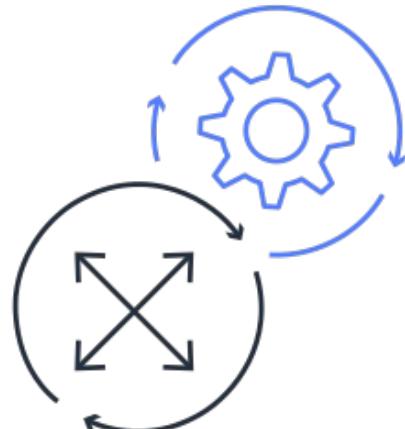
It is based on six pillars:

- Operational excellence
- Security
- Reliability
- Performance efficiency
- Cost optimization
- Sustainability



Operational excellence

Run and monitor systems to deliver business value and to continually improve supporting processes and procedures



- Perform operations as code
- Annotate documentation
- Anticipate failure
- Refine operations procedures frequently
- Make frequent, small, reversible changes

Protect information, systems, and assets while delivering business value through risk assessments and mitigation strategies



- Automate security best practices
- Apply security at all layers
- Protect data in transit and at rest

Reliability

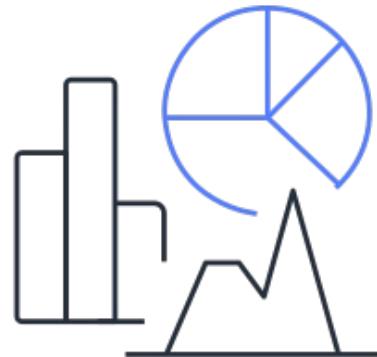
Test recovery procedures, scale horizontally to increase aggregate system availability, and automatically recover from failure



- Recover from infrastructure or service disruptions
- Dynamically acquire computing resources to meet demand
- Mitigate disruptions such as misconfigurations or transient network issues

Performance efficiency

Use computing resources efficiently to meet system requirements and maintain that efficiency as demand changes and technologies evolve



- Experiment more often
- Use serverless architectures
- Go global in minutes

Cost optimization

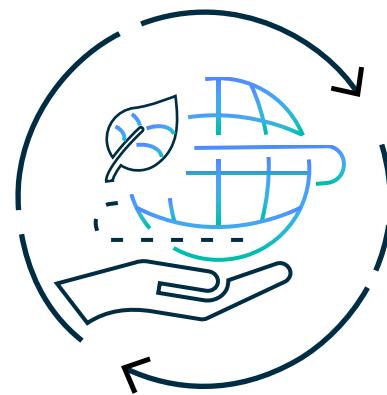
Run systems to deliver business value at the lowest price point



- Adopt a consumption model
- Analyze and attribute expenditure
- Use managed services to reduce cost of ownership

Sustainability

Minimize the environmental impacts of running cloud workloads

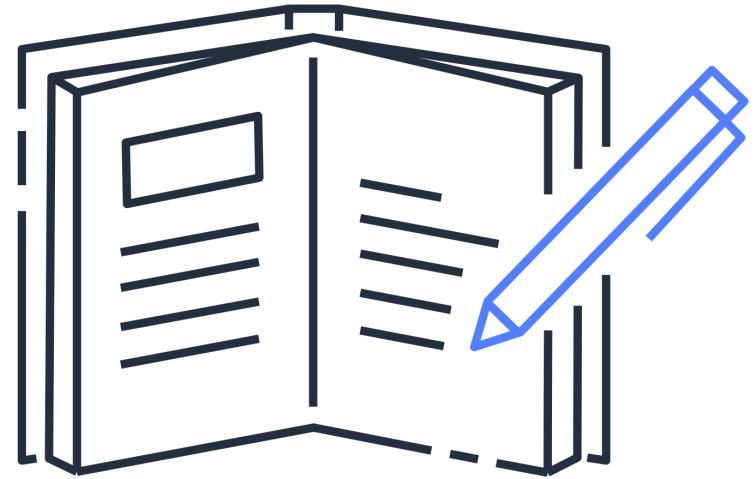


- Understand your impact
- Establish sustainability goals
- Maximize utilization
- Reduce the downstream impact of workload

Module 9 summary

In this module, you learned about:

- AWS Cloud Adoption Framework
- Seven strategies for migration
- AWS Snow Family
- Innovation with AWS services
- Six pillars of the AWS Well-Architected Framework



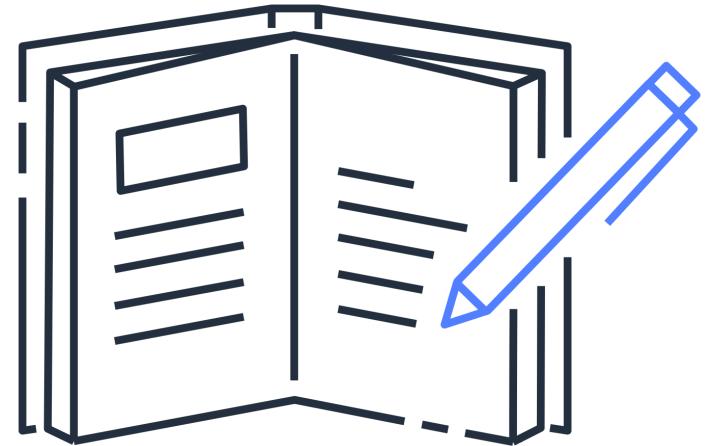
Module 10

AWS Certified Cloud Practitioner Basics

Module 10 objectives

In this module, you will learn how to:

- Determine resources for preparing for the AWS Certified Cloud Practitioner exam
- Evaluate types of questions that are included on the AWS Certified Cloud Practitioner exam



Exam details

Exam domains



Domain	% of Exam
Domain 1: Cloud Concepts	26%
Domain 2: Security and Compliance	25%
Domain 3: Technology	33%
Domain 4: Billing and Pricing	16%
Total	100%

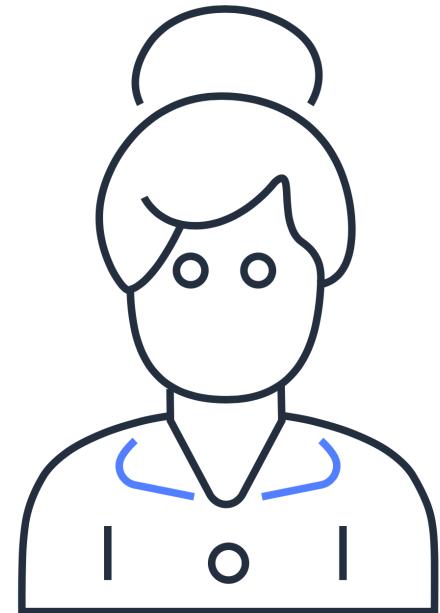
Learn more at: <https://aws.amazon.com/certification/certified-cloud-practitioner>

Recommended experience



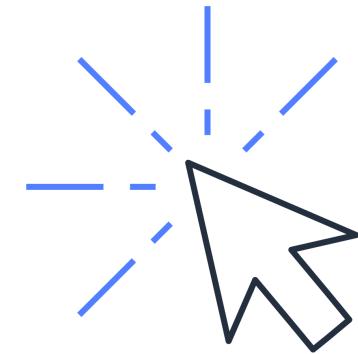
For this exam, you should have:

- Basic understanding of IT services
- At least 6 months experience with the AWS Cloud



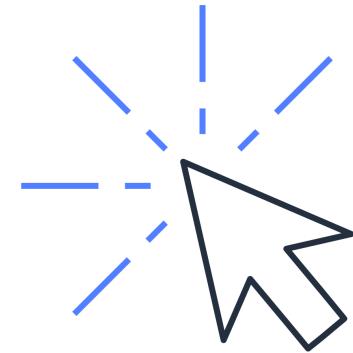
Exam details

- You must complete the exam within 90 minutes.
- The minimum passing score is 700 (the maximum score is 1,000).
- The exam consists of multiple choice and multiple response questions.
- A 30-minute time extension is available upon request to non-native English speakers who are taking an exam in English.



Exam details

- There is no penalty for guessing.
- Unanswered questions are scored as incorrect.
- You can flag questions to review before submitting the exam.

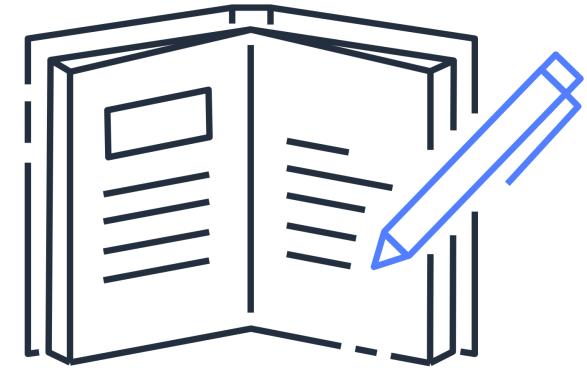


Technical papers and resources



We recommend that you review the following technical papers and resources:

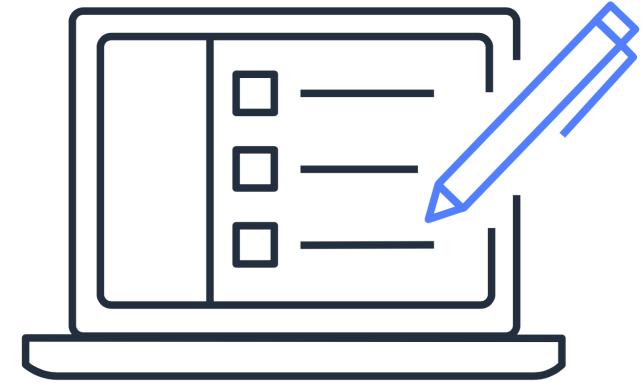
- Overview of Amazon Web Services:
<https://d1.awsstatic.com/whitepapers/aws-overview.pdf>
- Compare AWS Support Plans:
<https://aws.amazon.com/premiumsupport/plans/>
- How AWS Pricing Works:
<https://docs.aws.amazon.com/whitepapers/latest/how-aws-pricing-works/welcome.html>



Exam strategies

Exam strategies

1. Read the full question.
2. Predict the answer before looking at the response options.
3. Exclude incorrect response options.



Sample question 1

Multiple choice



AWS Certified Cloud Practitioner exam results are reported as a score from 100–1,000. What is the minimum passing score?

- A. 650
- B. 700
- C. 850
- D. 900

Sample question 1

Multiple choice



AWS Certified Cloud Practitioner
exam results are reported as a
score from 100–1,000. What is the
minimum passing score?

- A. 650
- B. 700
- C. 850
- D. 900

Sample question 1

Multiple choice



AWS Certified Cloud Practitioner
exam results are reported as a
score from 100–1,000. What is the
minimum passing score?

- A. 650
- B. 700 (correct)
- C. 850
- D. 900

Sample question 2

Multiple response



Which domains are included on the AWS Certified Cloud Practitioner exam? (Select TWO.)

- A. Security and Compliance
- B. Automation and Optimization
- C. Monitoring and Reporting
- D. Billing and Pricing
- E. Deployment and Provisioning

Sample question 2

Multiple response



Which **domains** are included on the **AWS Certified Cloud Practitioner** exam? (Select TWO.)

- A. Security and Compliance
- B. Automation and Optimization
- C. Monitoring and Reporting
- D. Billing and Pricing
- E. Deployment and Provisioning

Sample question 2: Multiple response



Which **domains** are included on the **AWS Certified Cloud Practitioner** exam? (Select TWO.)

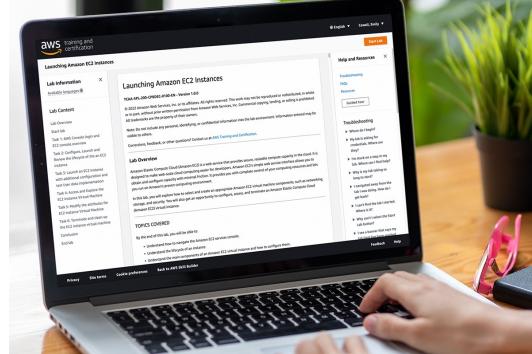
- A. **Security and Compliance (correct)**
- B. Automation and Optimization
- C. Monitoring and Reporting
- D. **Billing and Pricing (correct)**
- E. Deployment and Provisioning

Continue your learning

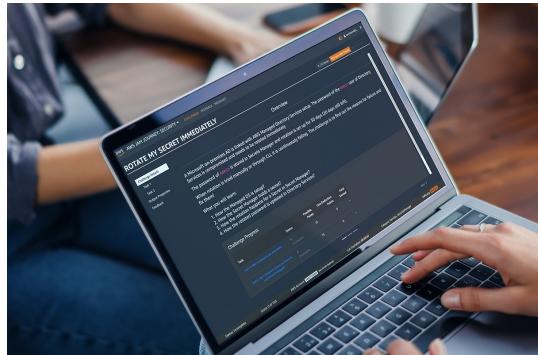
AWS Skill Builder online learning center



Game-based learning



Self-paced labs



Use case challenges



Exam preparation

Continue to deepen the skills you need, your way, with 500+ courses and interactive training developed by the experts at AWS.



Get started

<https://aws.amazon.com/training/digital>

AWS certification

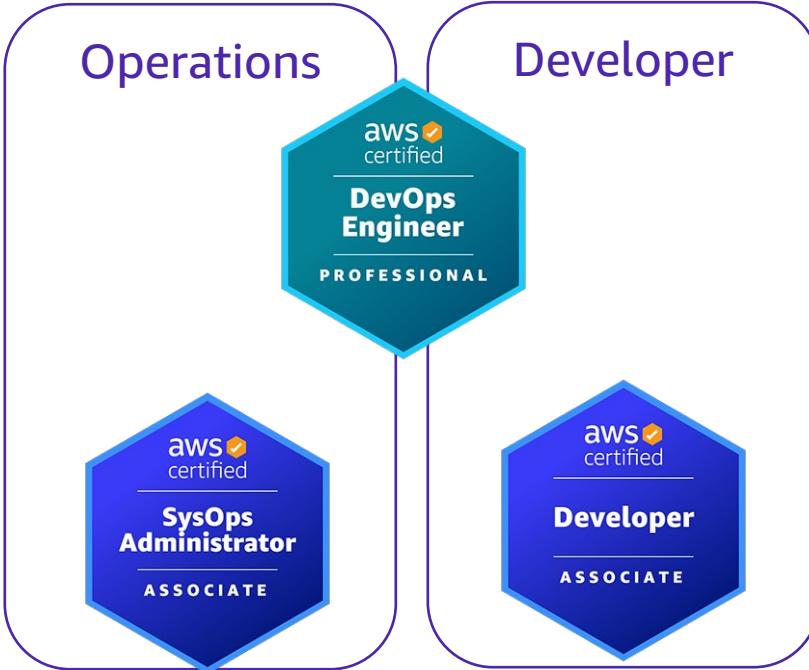


Role-based certifications align to the following roles and levels:

Professional



Associate



Foundational

Cloud Practitioner



Specialty certifications align to domain expertise in the following areas:



Course feedback



Your feedback is critical to us!

1. Sign in to <https://www.aws.training>.
2. Choose **My Account**, and then select **Transcript**.
3. Choose the **Archived** tab.
4. Expand the completed **AWS Partner: AWS Cloud Practitioner Essentials** course, and then choose **Evaluate**.

Thank you

© 2022 Amazon Web Services, Inc. or its affiliates. All rights reserved. This work may not be reproduced or redistributed, in whole or in part, without prior written permission from Amazon Web Services, Inc. Commercial copying, lending, or selling is prohibited. Corrections, feedback, or other questions? Contact us at <https://support.aws.amazon.com/#/contacts/aws-training>. All trademarks are the property of their owners.

