Tamkang University
淡江大學

雲端應用程式開發

淡江大學資訊管理學系
鄭啟斌 教授

aws academy
Accredited Instructor

AWS 認證

AWS Certification Overview

2021-05-27 (四) 7,8 14:10-15:00 Online

戴敏育 副教授

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國立臺北大學 資訊管理研究所

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https://web.ntpu.edu.tw/~myday

Tamkang University
淡江大學

aws educate | Cloud Ambassador
2020 Cohort

aws academy
Accredited Educator

aws certified
Solutions Architect
Associate

aws certified
Cloud Practitioner

NTPU
國立臺北大學
National Taipei University

戴敏育 博士
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國立台北大學 資訊管理研究所 副教授

中央研究院 資訊科學研究所 訪問學人

國立台灣大學 資訊管理 博士

Publications Co-Chairs, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2013-)

Program Co-Chair, IEEE International Workshop on Empirical Methods for Recognizing Inference in TExt (IEEE EM-RITE 2012-)

Publications Chair, The IEEE International Conference on Information Reuse and Integration (IEEE IRI)

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國立臺北大學
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aws training and certification

AWS Certification

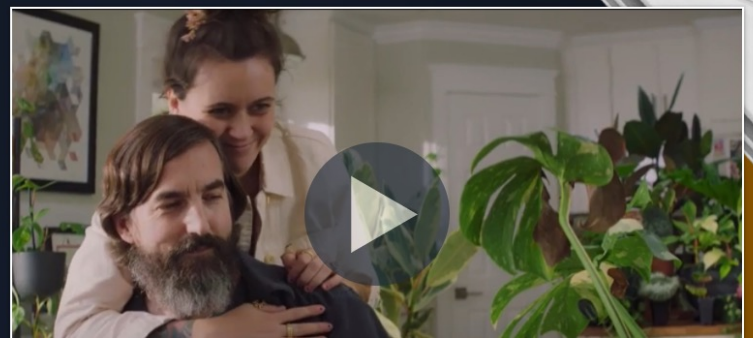
Validate technical skills and cloud expertise to grow your career and business.

Schedule an exam | Prepare for an exam

Earn an industry-recognized credential

AWS Certification validates cloud expertise to help professionals highlight in-demand skills and organizations build effective, innovative teams for cloud initiatives using AWS. Choose from diverse certification exams by role and specialty designed to empower individuals and teams to meet their unique goals.

Explore our role-based certifications for those in Cloud Practitioner, Architect, Developer, and Operations roles, as well as our



https://aws.amazon.com/certification/

https://aws.amazon.com/certification/

AWS Certification

Professional

Two years of comprehensive experience designing, operating, and troubleshooting solutions using the AWS Cloud

Associate

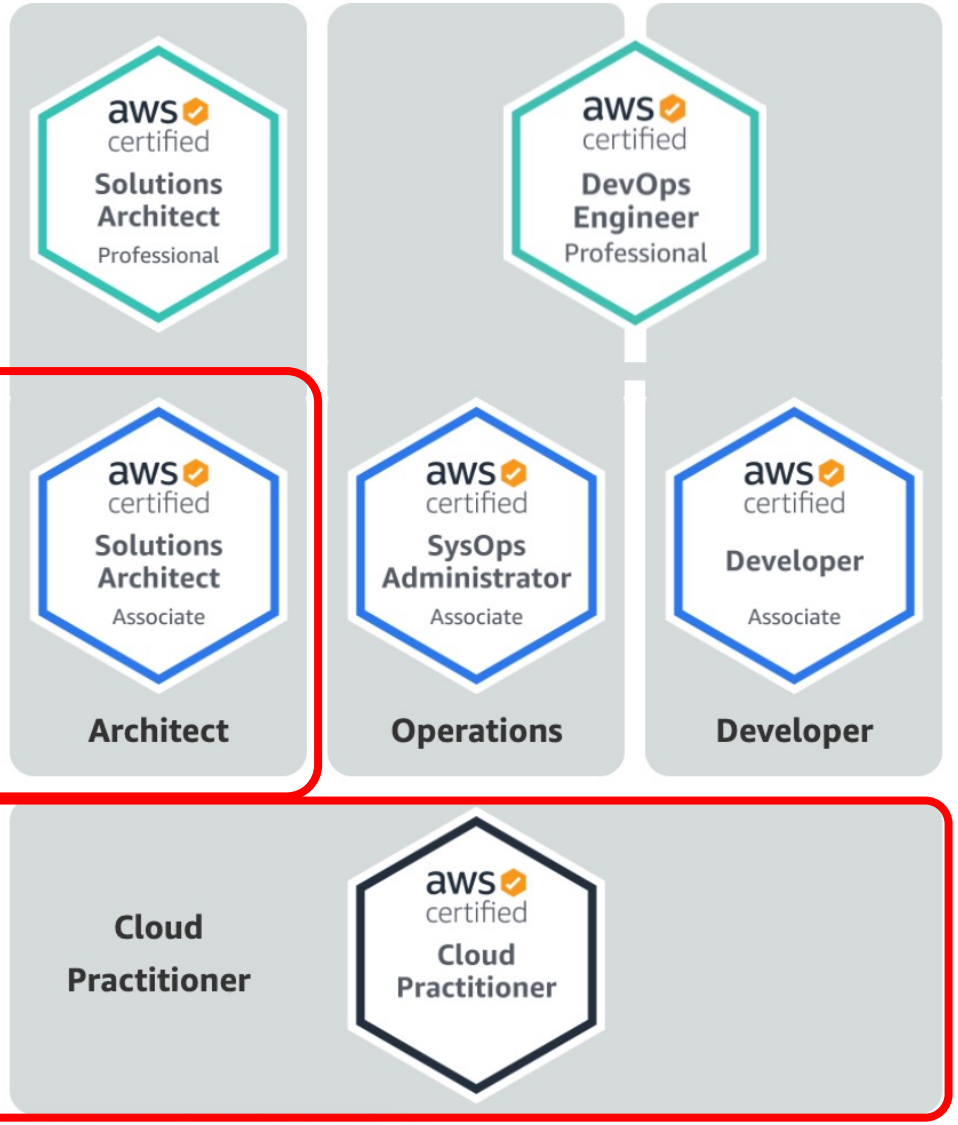
One year of experience solving problems and implementing solutions using the AWS Cloud

2 SAA

Foundational

Six months of fundamental AWS Cloud and industry knowledge

1 CLF



Specialty

Technical AWS Cloud experience in the Specialty domain as specified in the **exam guide**

https://aws.amazon.com/certification/

AWS Certification

Format
65 questions; either multiple choice or multiple response

Type
Foundational

Delivery Method
Testing center or online proctored exam

Time
90 minutes to complete the exam

Cost
100 USD (Practice Exam: 20 USD)

Language
Available in English, Indonesian (Bahasa), Japanese, Korean, and Simplified Chinese

Foundational

Six months of fundamental AWS Cloud and industry knowledge

Cloud Practitioner

https://aws.amazon.com/certification/

AWS Certification

Associate

One year of experience solving problems and implementing solutions using the AWS Cloud

Format
65 questions; either multiple choice or multiple response

Type
Associate

Delivery Method
Testing center or online proctored exam

Time
130 minutes to complete the exam

Cost
150 USD (Practice exam: 20 USD)

Language
Available in English, Japanese, Korean, and Simplified Chinese

https://aws.amazon.com/certification/

AWS Certification

Professional

Two years of comprehensive experience designing, operating, and troubleshooting solutions using the AWS Cloud

Format
75 questions; either multiple choice or multiple response

Type
Professional

Delivery Method
Testing center or online proctored exam

Time
180 minutes to complete the exam

Cost
300 USD (Practice Exam: 40 USD)

Language
Available in English, Japanese, Korean, and Simplified Chinese

https://aws.amazon.com/certification/

AWS Certification

Associate

One year of experience solving problems and implementing solutions using the AWS Cloud

Format
65 questions; either multiple choice or multiple response

Type
Associate

Delivery Method
Testing center or online proctored exam

Time
130 minutes to complete the exam

Cost
150 USD (Practice exam: 20 USD)

Language
Available in English, Japanese, Korean, and Simplified Chinese

https://aws.amazon.com/certification/

AWS Certification

Associate

One year of experience solving problems and implementing solutions using the AWS Cloud

Architect

Operations

Developer

Format
65 questions; either multiple choice or multiple response

Type
Associate

Delivery Method
Testing center or online proctored exam

Time
130 mins to complete the exam

Cost
150 USD (Practice exam: 20 USD)

Language
Available in English, Japanese, Korean, and Simplified Chinese

https://aws.amazon.com/certification/

AWS Certification

Professional

Two years of comprehensive experience designing, operating, and troubleshooting solutions using the AWS Cloud

Format
75 questions; either multiple choice or multiple response

Type
Professional

Delivery Method
Testing center or online proctored exam

Time
180 minutes to complete the exam

Cost
300 USD (Practice exam: 40 USD)

Language
Available in English, Japanese, Korean, and Simplified Chinese

https://aws.amazon.com/certification/

AWS Certification

Specialty

Technical AWS Cloud experience in the Specialty domain as specified in the **exam guide**

Format
65 questions; either multiple choice or multiple response

Type
Specialty

Delivery Method
Testing center or online proctored exam

Time
180 minutes to complete the exam

Cost
300 USD (Practice exam: 40 USD)

Language
Available in English, Japanese, Korean, and Simplified Chinese

https://aws.amazon.com/certification/

AWS Certified Cloud Practitioner (CLF-C01)

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Cloud Practitioner

- This certification provides individuals in a larger variety of cloud and technology roles with a way to validate their AWS Cloud knowledge and enhance their professional credibility.
- This exam covers four domains, including cloud concepts, security, technology, and billing and pricing.

https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Solutions Architect – Associate (SAA-C02)

Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Certified Solutions Architect – Associate

- This certification validates your ability to effectively demonstrate knowledge of how to architect and deploy secure and robust applications on AWS technologies.
- This exam is for anyone with at least one year of hands-on experience designing available, cost-efficient, fault-tolerant, and scalable and distributed systems on AWS.

https://aws.amazon.com/certification/certified-solutions-architect-associate/

AWS Academy and Certifications

- **AWS Academy Cloud Foundations (ACF)**
  - **AWS Certified Cloud Practitioner (CLF-C01)**
  - https://aws.amazon.com/certification/certified-cloud-practitioner/

1

- **AWS Academy Cloud Architecting (ACA)**
  - **AWS Certified Solutions Architect – Associate (SAA-C02)**
  - https://aws.amazon.com/certification/certified-solutions-architect-associate/

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https://aws.amazon.com/training/awsacademy/

AWS Academy and Certifications

- **AWS Academy Cloud Foundations (ACF)**
  - **AWS Certified Cloud Practitioner (CLF-C01)** (2021/05)
  - https://aws.amazon.com/certification/certified-cloud-practitioner/
  - **AWS Cloud Practitioner Essentials (Second Edition)**
    - https://aws.amazon.com/training/course-descriptions/cloud-practitioner-essentials/
  - **AWS Technical Essentials**
    - https://aws.amazon.com/training/course-descriptions/essentials/

1

- **AWS Academy Cloud Architecting (ACA)**
  - **AWS Certified Solutions Architect – Associate (SAA-C02)**
  - https://aws.amazon.com/certification/certified-solutions-architect-associate/
  - **Architecting on AWS**
    - https://aws.amazon.com/training/course-descriptions/architect/

2

https://aws.amazon.com/training/awsacademy/

AWS Certified Cloud Practitioner (CLF-C01)

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

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Solutions Architect – Associate (SAA-C02)

Domain	% of Examination
Domain 1: Design Resilient Architectures	30%
Domain 2: Design High-Performing Architectures	28%
Domain 3: Specify Secure Applications and Architectures	24%
Domain 4: Design Cost-Optimized Architectures	18%
TOTAL	100%

Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Certified Cloud Practitioner (CLF-C01)

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Cloud Practitioner (CLF-C01)

- **Domain 1: Cloud Concepts**
  - 1.1 Define the AWS Cloud and its value proposition
  - 1.2 Identify aspects of AWS Cloud economics
  - 1.3 List the different cloud architecture design principles

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Cloud Practitioner (CLF-C01)

- **Domain 2: Security and Compliance**
  - 2.1 Define the AWS shared responsibility model
  - 2.2 Define AWS Cloud security and compliance concepts
  - 2.3 Identify AWS access management capabilities
  - 2.4 Identify resources for security support

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Cloud Practitioner (CLF-C01)

- **Domain 3: Technology**
  - 3.1 Define methods of deploying and operating in the AWS Cloud
  - 3.2 Define the AWS global infrastructure
  - 3.3 Identify the core AWS services
  - 3.4 Identify resources for technology support

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Cloud Practitioner (CLF-C01)

- **Domain 4: Billing and Pricing**
  - 4.1 Compare and contrast the various pricing models for AWS
  - 4.2 Recognize the various account structures in relation to AWS billing and pricing
  - 4.3 Identify resources available for billing support

Source: https://aws.amazon.com/certification/certified-cloud-practitioner/

AWS Certified Solutions Architect – Associate (SAA-C02)

Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Certified Solutions Architect – Associate (SAA-C02)

- **Domain 1: Design Resilient Architectures**
  - 1.1 Design a multi-tier architecture solution
  - 1.2 Design highly available and/or fault-tolerant architectures
  - 1.3 Design decoupling mechanisms using AWS services
  - 1.4 Choose appropriate resilient storage

Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Certified Solutions Architect – Associate (SAA-C02)

- **Domain 2: Design High-Performing Architectures**
  - 2.1 Identify elastic and scalable compute solutions for a workload
  - 2.2 Select high-performing and scalable storage solutions for a workload
  - 2.3 Select high-performing networking solutions for a workload
  - 2.4 Choose high-performing database solutions for a workload

Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Certified Solutions Architect – Associate (SAA-C02)

- **Domain 3: Design Secure Applications and Architectures**
  - 3.1 Design secure access to AWS resources
  - 3.2 Design secure application tiers
  - 3.3 Select appropriate data security options

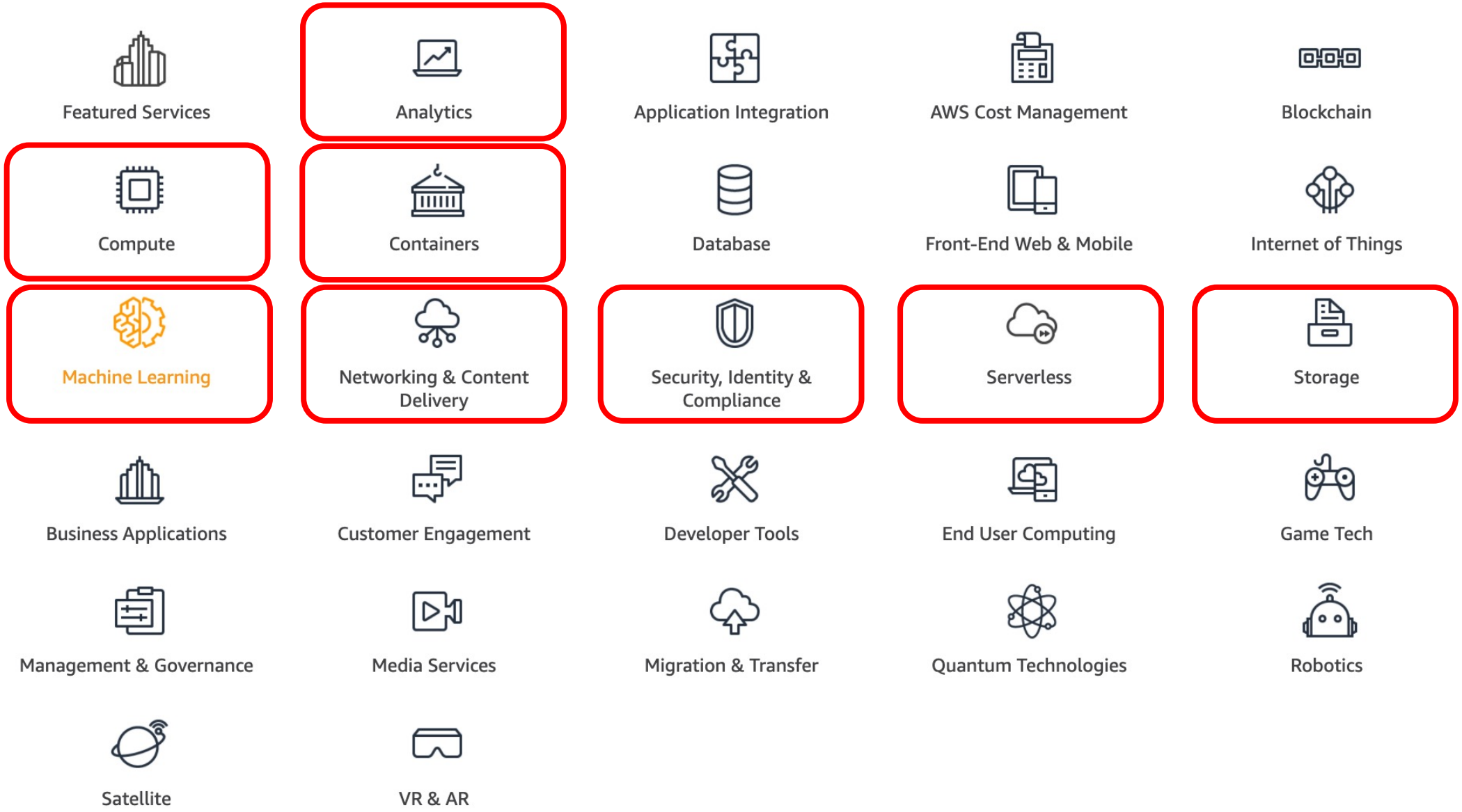
Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Certified Solutions Architect – Associate (SAA-C02)

- **Domain 4: Design Cost-Optimized Architectures**
  - 4.1 Identify cost-effective storage solutions
  - 4.2 Identify cost-effective compute and database services
  - 4.3 Design cost-optimized network architectures

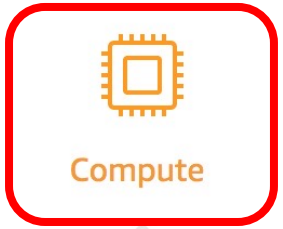
Source: https://aws.amazon.com/certification/certified-solutions-architect-associate

AWS Products and Services



Source: https://aws.amazon.com/

AWS Compute



Amazon EC2
Virtual servers in the cloud

Amazon EC2 Auto Scaling
Scale compute capacity to meet demand

Amazon Elastic Container Registry
Store and retrieve docker images

Amazon Elastic Container Service
Run and manage docker containers

Amazon Elastic Kubernetes Service
Run managed Kubernetes on AWS

Amazon Lightsail
Launch and manage virtual private servers

AWS Batch
Run batch jobs at any scale

AWS Elastic Beanstalk
Run and manage web apps

AWS Fargate
Run containers without managing servers or clusters

AWS Lambda
Run code without thinking about servers

AWS Outposts
Run AWS infrastructure on-premises

AWS Serverless Application Repository
Discover, deploy, and publish serverless applications

AWS Wavelength
Deliver ultra-low latency applications for 5G devices

VMware Cloud on AWS
Build a hybrid cloud without custom hardware

Source: https://aws.amazon.com/

AWS Database

Amazon Aurora
High Performance Managed Relational Database

Amazon DynamoDB
Managed NoSQL Database

Amazon DocumentDB (with MongoDB compatibility)
Fully managed document database

Amazon ElastiCache
In-memory Caching System

Amazon Managed Apache Cassandra Service
Managed Cassandra-compatible database

Amazon Neptune
Fully Managed Graph Database Service

Amazon Quantum Ledger Database (QLDB)
Fully managed ledger database

Amazon RDS
Managed Relational Database Service for MySQL, PostgreSQL, Oracle, SQL Server, and MariaDB

Amazon RDS on VMware
Automate on-premises database management

Amazon Redshift
Fast, Simple, Cost-effective Data Warehousing

Amazon Timestream
Fully managed time series database

AWS Database Migration Service
Migrate Databases with Minimal Downtime

Source: https://aws.amazon.com/

AWS Storage

Amazon Simple Storage Service (S3)
Scalable Storage in the Cloud

Amazon Elastic Block Store (EBS)
EC2 block storage volumes

Amazon Elastic File System (EFS)
Fully managed file system for EC2

Amazon FSx for Lustre
High-performance file system integrated with S3

Amazon FSx for Windows File Server
Fully managed Windows native file system

Amazon S3 Glacier
Low-cost Archive Storage in the Cloud

AWS Backup
Centralized backup across AWS services

AWS Snow Family
Physical devices to migrate data into and out of AWS

AWS Storage Gateway
Hybrid Storage Integration

CloudEndure Disaster Recovery
Highly automated disaster recovery

Source: https://aws.amazon.com/

AWS Networking & Content Dilivery

Networking & Content Delivery

Amazon VPC
Isolated Cloud Resources

Amazon API Gateway
Build, Deploy, and Manage APIs

Amazon CloudFront
Global Content Delivery Network

Amazon Route 53
Scalable Domain Name System

AWS PrivateLink
Securely Access Services Hosted on AWS

AWS App Mesh
Monitor and control microservices

AWS Cloud Map
Application resource registry for microservices

AWS Direct Connect
Dedicated Network Connection to AWS

AWS Global Accelerator
Improve application availability and performance

AWS Transit Gateway
Easily scale VPC and account connections

Elastic Load Balancing
Distribute incoming traffic across multiple targets

Source: https://aws.amazon.com/

AWS Security, Identity & Compliance

AWS Identity & Access Management
Manage User Access and Encryption Keys

Amazon Cognito
Identity Management for your Apps

Amazon Detective
Investigate potential security issues

Amazon GuardDuty
Managed Threat Detection Service

Amazon Inspector
Analyze Application Security

Amazon Macie
Discover, Classify, and Protect your Data

AWS Artifact
On-demand access to AWS compliance reports

AWS Certificate Manager
Provision, Manage, and Deploy SSL/TLS Certificates

AWS CloudHSM
Hardware-based Key Storage for Regulatory Compliance

AWS Directory Service
Host and Manage Active Directory

AWS Firewall Manager
Central Management of Firewall Rules

AWS Key Management Service
Managed Creation and Control of Encryption Keys

AWS Resource Access Manager
Simple, secure service to share AWS resources

AWS Secrets Manager
Rotate, Manage, and Retrieve Secrets

AWS Security Hub
Unified security and compliance center

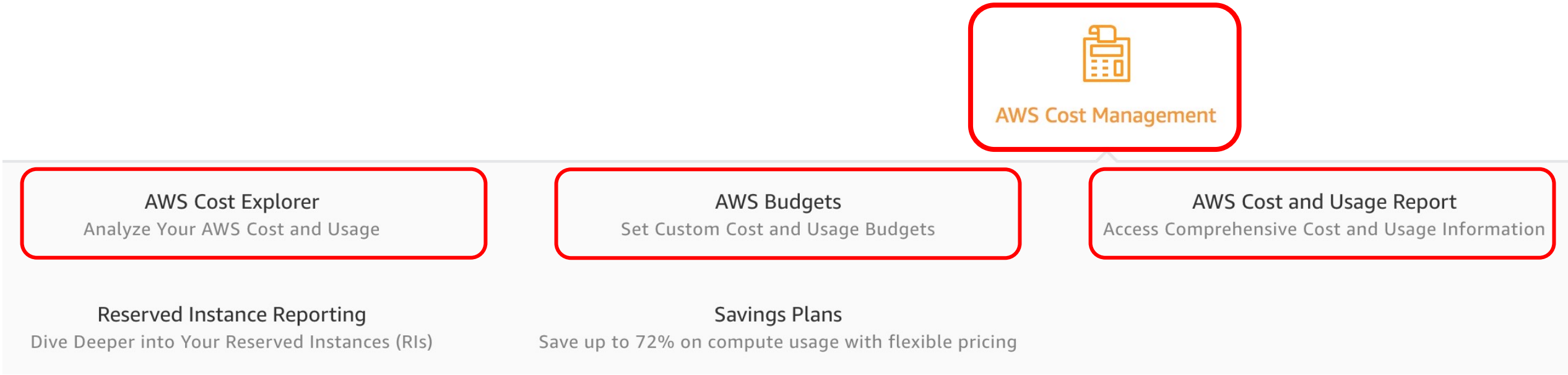
AWS Shield
DDoS Protection

AWS Single Sign-On
Cloud Single Sign-On (SSO) Service

AWS WAF
Filter Malicious Web Traffic

Source: https://aws.amazon.com/

AWS Cost Management



Source: https://aws.amazon.com/

AWS Services

- Amazon **EC2**
  - Virtual servers in the cloud
- Amazon **Simple Storage Service (S3)**
  - Scalable storage in the cloud
- Amazon **Aurora**
  - High performance managed relational database
- Amazon **DynamoDB**
  - Managed NoSQL database
- Amazon **RDS**
  - Managed relational database service for MySQL, PostgreSQL, Oracle, SQL Server, and MariaDB

Source: https://aws.amazon.com/

AWS Services

- AWS **Lambda**
  - Run code without thinking about servers
- AWS **Elastic Beanstalk**
  - Run and manage web apps
- Amazon **VPC**
  - Isolated cloud resources
- Amazon **Lightsail**
  - Launch and manage virtual private servers
- Amazon **SageMaker**
  - Build, train, and deploy machine learning models at scale

Source: https://aws.amazon.com/

References

- https://aws.amazon.com/certification/
- https://www.aws.training/
- https://aws.amazon.com/training/awsacademy/
- https://aws.amazon.com/education/awseducate/
- **AWS Certified Cloud Practitioner**
  - https://aws.amazon.com/certification/certified-cloud-practitioner/
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  - https://aws.amazon.com/certification/certified-solutions-architect-associate/
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  - https://aws.amazon.com/training/course-descriptions/architect/

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