Part -2
AWS Certified Cloud Practitioner Certification

Right Sizing (AWS explorer recommend Right Sizing)

Provisioning Instances to Match Workloads

Right sizing is the process of matching instance types and sizes to your workload performance and capacity requirements at the lowest possible cost. It's also the process of looking at deployed instances and identifying opportunities to eliminate or downsize without compromising capacity or other requirements, which results in lower costs.

Amazon DynamoDB

Serverless, NoSQL, fully managed database with single-digit millisecond performance at any scale

Amazon DynamoDB is a serverless, NoSQL, fully managed database service with single-digit millisecond response times at any scale, enabling you to develop and run modern applications while only paying for what you use.

gateway vpc endpoint

Amazon Aurora

Unparalleled high performance and availability at global scale with full MySQL and PostgreSQL compatibility

Amazon Aurora provides built-in security, continuous backups, serverless computers, up to 15 read replicas, automated multi-Region replication, and integrations with other AWS services.
Amazon Aurora machine learning (ML) enables you to add ML-based predictions to applications via the familiar SQL programming language, so you don't need to learn separate tools or have prior machine learning experience. It provides simple, optimized, and secure integration between Aurora and AWS ML services without having to build custom integrations or move data around. When you run a ML query, Aurora calls Amazon Sage Maker or Amazon Bedrock for a wide

variety of ML algorithms including generative AI or Amazon Comprehend for sentiment analysis, so your application doesn't need to call these services directly.

Amazon Memory DB for Redis

Redis-compatible, durable, in-memory database service for ultra-fast performance

Amazon memory DB for Redis is a durable database with microsecond reads, low single-digit millisecond writes, scalability, and enterprise security. memory DB delivers 99.99% availability and near instantaneous recovery without any data loss.

Amazon Redshift

Power data driven decisions with the best price-performance cloud data warehouse.

Amazon Redshift uses SQL to analyze structured and semi-structured data across data warehouses, operational databases, and data lakes, using AWS-designed hardware and machine learning to deliver the best price performance at any scale.

AWS Well-Architected

Learn, measure, and build using architectural best practices.

AWS Well-Architected helps cloud architects build secure, high-performing, resilient, and efficient infrastructure for a variety of applications and workloads. Built around six pillars—operational excellence, security, reliability, performance efficiency, cost optimization, and sustainability—AWS Well-Architected provides a consistent approach for customers and partners to evaluate architectures and implement scalable designs.

Operational Excellence Pillar

The operational excellence pillar focuses on running and monitoring systems, and continually improving processes and procedures. Key topics include automating changes, responding to events, and defining standards to manage daily operations.

Security Pillar

The security pillar focuses on protecting information and systems. Key topics include confidentiality and integrity of data, managing user permissions, and establishing controls to detect security events.

Reliability Pillar

The reliability pillar focuses on workloads performing their intended functions and how to recover quickly from failure to meet demands. Key topics include distributed system design, recovery planning, and adapting to changing requirements.

Performance Efficiency Pillar

The performance efficiency pillar focuses on structured and streamlined allocation of IT and computing resources. Key topics include selecting resource types and sizes optimized for workload requirements, monitoring performance, and maintaining efficiency as business needs evolve.

Cost Optimization Pillar

The cost optimization pillar focuses on avoiding unnecessary costs. Key topics include understanding spending over time and controlling fund allocation, selecting resources of the right type and quantity, and scaling to meet business needs without overspending.

Sustainability Pillar

The sustainability pillar focuses on minimizing the environmental impacts of running cloud workloads. Key topics include a shared responsibility model for sustainability, understanding impact, and maximizing utilization to minimize required resources and reduce downstream impacts.

Shared Responsibility Model

Inherited Controls – Controls which a customer fully inherits from AWS.

- Physical and Environmental controls

Shared Controls – Controls which apply to both the infrastructure layer and customer layers, but in completely separate contexts or perspectives. In a shared control, AWS provides the requirements for the infrastructure and the customer must provide their own control implementation within their use of AWS services. Examples include:

- Patch Management – AWS is responsible for patching and fixing flaws within the infrastructure, but customers are responsible for patching their guest OS and applications.
- Configuration Management – AWS maintains the configuration of its infrastructure devices, but a customer is responsible for configuring their own guest operating systems, databases, and applications.
- Awareness & Training - AWS trains AWS employees, but a customer must train their own employees.

Customer Specific – Controls which are solely the responsibility of the customer based on the application they are deploying within AWS services. Examples include:

- Service and Communications Protection or Zone Security which may require a customer to route or zone data within specific security environments.

AWS Managed Services

Operational excellence in the cloud

AWS Managed Services (AMS) helps you adopt AWS at scale and operate more efficiently and securely. We leverage standard AWS services and offer guidance and execution of operational best practices with specialized automations, skills, and experience that are contextual to your environment and applications.

AWS Migration Hub

Simplifying your end-to-end migration and modernization journey

AWS Migration Hub delivers a guided end-to-end migration and modernization journey through discovery, assessment, planning, and execution. Access the latest guidance and tools from one location to get automated recommendations, a prescriptive plan and cross-team collaboration and tracking to accelerate your transformation. Simplify rehost, refactor and replat form of your applications today with specialized services in Migration Hub built from the experience of migrating thousands of customers to AWS.

AWS Cloud Adoption Framework (AWS CAF)

Accelerating your cloud-powered digital business transformation

The AWS Cloud Adoption Framework (AWS CAF) leverages AWS experience and best practices to help you digitally transform and accelerate your business outcomes through innovative use of AWS. AWS CAF identifies specific organizational capabilities that underpin successful cloud transformations. These capabilities provide best practice guidance that helps you improve your cloud readiness. AWS CAF groups its capabilities in six perspectives: Business, People, Governance, Platform, Security, and Operations. Each perspective comprises a set of capabilities that functionally related stakeholders own or manage in the cloud transformation journey. Use the AWS CAF to identify and prioritize transformation opportunities, evaluate and improve your cloud readiness, and iteratively evolve your transformation roadmap.

Business (It focuses on ensuring cloud investment align with business Goals ultimately driving digital transformation)

The Business perspective helps ensure that your cloud investments accelerate your digital transformation ambitions and business outcomes. Common stakeholders include chief executive officer (CEO), chief financial officer (CFO), chief operations officer (COO), chief information officer (CIO), and chief technology officer (CTO).

People (**Bridgeing between technology and business to help evolve to a culture of continuous growth and learning adaptability to change emphasis culture evaluation building a culture of agility and evaluation workforce transformation developing cloud skills realing roles for cloud)**

The People perspective serves as a bridge between technology and business, accelerating the cloud journey to help organizations more rapidly evolve to a culture of continuous growth, learning, and where change becomes business-as-normal, with focus on culture, organizational structure, leadership, and workforce. Common stakeholders include CIO, COO, CTO, cloud director, and cross-functional and enterprise-wide leaders.

Governance (**It is about managing the policies process and controlling the cloud useses**)

The Governance perspective helps you orchestrate your cloud initiatives while maximizing organizational benefits and minimizing transformation-related risks. Common stakeholders include chief transformation officer, CIO, CTO, CFO, chief data officer (CDO), and chief risk officer (CRO).

Platform (**It focuses on designing buildings and managing scalable and reliable cloud Architecture)**

Data analytics architecture)

The Platform perspective helps you build an enterprise-grade, scalable, hybrid cloud platform, modernize existing workloads, and implement new cloud-native solutions. Common stakeholders include CTO, technology leaders, architects, and engineers.

Security (**It ensures data confidentiality integrity and availability**)

The Security perspective helps you achieve the confidentiality, integrity, and availability of your data and cloud workloads. Common stakeholders include chief information security officer (CISO), chief compliance officer (CCO), internal audit leaders, and security architects and engineers.

Operations (**It all does monitoring mentioning and optimising cloud infrastructure and application)**

The Operations perspective helps ensure that your cloud services are delivered at a level that meets the needs of your business. Common stakeholders include infrastructure and operations leaders, site reliability engineers, and information technology service managers.

Amazon Neptune

High-performance graph analytics and serverless database for superior scalability and availability

Amazon Athena

Analyze petabyte-scale data where it lives with ease and

flexibility

Amazon Athena is an interactive query service that makes it easy to analyze data directly in Amazon Simple Storage Service (Amazon S3) using standard SQL. With a few actions in the AWS Management Console, you can point Athena at your data stored in Amazon S3 and begin using standard SQL to run ad-hoc queries and get results in seconds. Run querie

Amazon Athena is a serverless, interactive analytics service built on open-source frameworks, supporting open-table and file formats. Athena provides a simplified, flexible way to analyze petabytes of data where it lives. Analyze data or build applications from an Amazon Simple Storage Service (S3) data lake and 30 data sources, including on-premises data sources or other cloud systems using SQL or Python. Athena is built on open-source Trino and Presto engines and Apache Spark frameworks, with no provisioning or configuration effort required.

AWS Secrets Manager

Centrally manage the lifecycle of secrets

AWS Secrets Manager helps you manage, retrieve, and rotate database credentials, API keys, and other secrets throughout their lifecycles.

Amazon Elasticache

Real-time performance for real-time applications

Amazon ElastiCache is a serverless, Redis- and Memcached-compatible caching service delivering real-time, cost-optimized performance for modern applications. ElastiCache scales to hundreds of millions of operations per second with microsecond response times and offers enterprise-grade security and reliability.

AWS Identity and Access Management

Securely manage identities and access to AWS services and resources

With AWS Identity and Access Management (IAM), you can specify who or what can access services and resources in AWS, centrally manage fine-grained permissions, and analyze access to refine permissions across AWS.

AWS Cloud Resilience

Build and run resilient, highly available applications in the AWS cloud

Cloud resilience refers to the ability for an application to resist or recover from disruptions, including those related to infrastructure, dependent services, misconfigurations, transient network issues, and load spikes. Cloud resilience also

plays a critical role in an organization's broader business resilience strategy, including the ability to meet digital sovereignty requirements.

Machine Learning Service - Amazon SageMaker

Build, train, and deploy machine learning models for any use case with fully managed infrastructure, tools, and workflows.

Extract & Analyze Data:-

Automatically extract, process, and analyze documents for more accurate investigation and faster decision making.

Fraud Detection:-

Automate detection of suspicious transactions faster and alert your customers to reduce potential financial loss.

Churn Prediction:-

Predict likelihood of customer churn and improve retention by honing in on likely abandoners and taking remedial actions such as promotional offers.

Personalized Recommendations:-

Deliver customized, unique experiences to customers to improve customer satisfaction and grow your business rapidly.

Amazon Mechanical Turk

Access a global, on-demand, 24x7 workforce

Amazon Mechanical Turk (MTurk) is a crowdsourcing marketplace that makes it easier for individuals and businesses to outsource their processes and jobs to a distributed workforce who can perform these tasks virtually. This could include anything from conducting simple data validation and research to more subjective tasks like survey participation, content moderation, and more. MTurk enables

companies to harness the collective intelligence, skills, and insights from a global workforce to streamline business processes, augment data collection and analysis, and accelerate machine learning development.

Amazon Transcribe

Automatically convert speech to text

Amazon Recognition

Automate and lower the cost of your image recognition and video analysis with machine learning

Face liveness

Face compare and search

Face detection and analysis

Content moderation

Custom labels

Text detection

Video segment detectionhfsbvmh8jioplaaaaamnbvcxzasfhko987621nbmmfeuuuuoibhyuyuuuuygyufycfvgjhkg'v'h/jdq47i

Amazon CloudFront

Securely deliver content with low latency and high transfer speeds.(Content delivery n/w service)

AWS Artifact

Access AWS and ISV security and compliance reports (compliance reports)

AWS Artifact is your go-to, central resource for compliance-related information that matters to you. It provides on-demand access to security

and compliance reports from AWS and ISVs who sell their products on AWS Marketplace.

S3

Object storage built to retrieve any amount of data from anywhere

infinitily scalability cost-effective storage
gateway vpc endpoint

AWS CloudFormation

Speed up cloud provisioning with infrastructure as code

;CloudFormation handles that. Deploing resources fast and reapetable manner (aws service catlog)

AWS OpsWorks

Automate Operations with Chef and Puppet

AWS OpsWorks is a configuration management service that provides managed instances of Chef and Puppet. Chef and Puppet are automation platforms that allow you to use code to automate the configurations of your servers.

Que

company needs to organize its resources and track AWS costs on a detailed level. The company needs to **categorize costs by business department, environment, and application.**

A. Access the AWS Cost Management console to orgnize resources, set an AWS budget, and receive notfications of unintentional usage.

B. Use **tags** to organize the resources. Activate cost allocation tags to track AWS costs on a detailed level.

C. Create Amazon CloudWatch dashboards to visually organize and track costs individually.

D. Access the AWS Billing and Cost Management dashboard to organize and track resource consumption on a detailed level.

Amazon CloudWatch

Observe and monitor resources and applications on AWS, on premises, and on other clouds

Migration Evaluator

Build a data-driven business case for aws

Fast track decision-making for cloud migration with a customized assessment to reduce costs by up to 50%.

Amazon Macie - pii

Discover and protect your sensitive data at scale

AWS CloudTrail

AWS CloudTrail is an AWS service that helps you enable operational and risk auditing, governance, and compliance of your AWS account. Actions taken by a user, role, or an AWS service are recorded as events in CloudTrail. Events include actions taken in the **AWS**

Management Console, AWS Command Line Interface, and AWS SDKs and APIs.

Amazon Cognito

Socile meidea login credentials

Implement secure, frictionless customer identity and access management that scales.

Aws shield – { Ddos attack }

Maximize application availability and responsiveness with managed DDoS protection

Amazon Route 53

A reliable and cost-effective way to route end users to Internet applications

Amazon Route 53 is a highly available and scalable **Domain Name System (DNS)** web service. Route 53 connects user requests to internet applications running on AWS or on-premises.

AWS Glue- (ETL)

Discover, prepare, and integrate all your data at any scale

AWS Snowball

Accelerate moving offline data or remote storage to the cloud

Peta byte hexa byte

AWS Security Token Service (AWS STS)-

AWS provides AWS Security Token Service (AWS STS) as a web service that enables you to request **temporary, limited-privilege credentials for users.** This guide describes the AWS STS API

Security Hub

Automate AWS security checks and centralize security alerts

the security alerts and must organize the alerts into a single dashboard

Use AWS Security Hub to automate security best practice checks, aggregate security alerts into a single place and format, and understand your overall security posture across all of your AWS accounts.

CloudTrail- (history)

AWS CloudTrail is an AWS service that helps you enable operational and risk auditing, governance, and compliance of your AWS account. Actions taken by a user, role, or an AWS service are recorded as events in CloudTrail. Events include actions taken in the AWS Management Console, AWS Command Line Interface, and AWS SDKs and APIs.

CloudTrail is active in your AWS account when you create it. When activity occurs in your AWS account, that activity is recorded in a CloudTrail event.

Viewing recent events and event history for your AWS account.. Downloading a filtered or complete file of the last 90 days of management events from **Event history**.

AWS CloudTrail is an AWS service that helps you enable operational and risk auditing, governance, and compliance of your AWS account. Actions taken by a user, role, or an AWS service are recorded as events in CloudTrail. Events include actions taken in the AWS Management Console, AWS Command Line Interface, and AWS SDKs and APIs.

AWS Command Line Interface

manage your AWS services through scripts.

The AWS Command Line Interface (AWS CLI) is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and automate them through scripts.

AWS DataSync

Simplify and accelerate secure data migrations

Securely discover and migrate your data to AWS with end-to-end security, including data encryption and data integrity validation.

AWS CodeStar- (ci-cd)

Quickly develop, build, and deploy applications on AWS

Amazon WorkSpaces

Fully managed, secure, reliable virtual desktop solutions for every workload

Amazon Kendra

Find answers faster with intelligent enterprise search powered by machine learning (search for text in any document)

Amazon Polly

Deploy high-quality, natural-sounding human voices in dozens of languages

Text to speech

Amazon Lex

Build bots with Conversational AI (chat bots)

AWS Wavelength

Deliver ultra-low-latency applications for 5G devices

Build next-generation applications without any learning curve using familiar AWS services, APIs, and tools.

AWS Fargate

Serverless compute engine for containers

AWS Global Accelerator

Improve application availability, performance, and security using the AWS global network (IP)

AWS Direct Connect

Create a dedicated network connection b/w on premiss to AWS

Amazon Connect

Transform your customer experience (CX) at scale with Amazon Connect, AWS's AI-powered contact center(customer experience