AWS CERTIFIED SOLUTIONS ARCHITECT - ASSOCIATE

PRE ASSESSMENT TEST

25 QUESTIONS / 30 MINUTES

CLEARING THE AIR

No must have !!!!

Discussion about the AWS Certified Solutions Architect Associate level exam seems to generally focus on what you need to study to pass, and how you should go about it. However, I believe that it can be useful to spend some time talking about what you **don’t** have to know. You might just save yourself some serious time and effort

No must have !!!!

1. The AWS Command Line Interface (CLI)

As per the AWS documentation:

> “ The AWS Command Line Interface (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.

No must have !!!!

No CLI-related question in the AWS Certified Solutions Architect exam sample questions, the AWS Certified Solutions Architect practice exam, or the full AWS Certified Solutions Architect exam itself. So don’t expect to see something like

What does the following command do?

```
aws s3 rb s3://bucket-name --force
```

No must have !!!!

2. Mobile Services (except Amazon SNS)

The following services are described in AWS documentation as Mobile Services:

- Amazon Cognito
- Amazon Mobile Analytics
- ***Amazon SNS***
- AWS Mobile SDK for Android
- AWS Mobile SDK for iOS
- AWS Mobile SDK for Unity

But, besides SNS, I haven't seen a single question relating to any of them in any AWS Certified Solutions Architect exam. You will need to understand SNS well, mind you, but I think you can confidently and safely ignore the rest.

No must have !!!!

3. Enterprise Applications

The following services are described as Enterprise Applications:

- Amazon WorkSpaces
- Amazon WAM
- Amazon WorkDocs
- Amazon WorkMail

Again: not a whisper about any of 'em in the exam. As a matter of fact, Amazon WorkMail is still only available as a preview…and, even then, only for those lucky few whose requests are granted.

No must have !!!!

4. Lambda and CodeDeploy

AWS *Lambda* is a zero-administration compute platform with a fine-grained pricing structure for back-end web developers that runs code in the AWS cloud for you. **AWS *CodeDeploy*** is a deployment service that helps developers automate application deployments and management. Once again, you won't find a word about either in your AWS Certified Solutions Architect Exam. This may not be true of the AWS Certified Developer or DevOps exams.

No must have !!!!

5. CloudFormation Templates

AWS CloudFormation is a service that helps you model your AWS resources so that you can spend less time managing those resources and more time focusing on your applications. You create a template that describes all the AWS resources that you want (like EC2 or RDS DB instances), and AWS CloudFormation takes care of the infrastructure.

The key to getting the most out of AWS CloudFormation is a thorough understanding of templates. A template is a text file whose format complies with the JSON standard like the one below.AWS Certified Solutions Architect Exam

No must have !!!!

```
"UserData" : {
    "Fn::Base64" : {
        "Fn::Join" : [
            "", [
                { "Ref" : "MyValue" },
                { "Ref" : "MyName" },
                "Hello World"
            ]
        ]
    }
}
```

You should know what AWS CloudFormation is and how it differs from other services such as AWS Elastic Beanstalk and AWS OpsWorks, but don't panic if you have no idea what the above code actually does, as you definitely won't encounter anything like it on the AWS Certified Solutions Architect exam.

EXAM OVERVIEW

Must Know

Area	FAQ Link	Documentation Link	Exam Importance
Compute			
	Auto Scaling FAQ	Auto Scaling	🔥🔥🔥🔥
	Amazon EC2 FAQ	Amazon EC2	🔥🔥 🔥🔥
	AWS Elastic Beanstalk FAQ	AWS Elastic Beanstalk	🔥🔥
	Elastic Load Balancing FAQ	Elastic Load Balancing	🔥🔥🔥🔥
	Amazon VPC FAQ	Amazon VPC	🔥🔥🔥🔥🔥

Must Know

Networking	-	-	
	Amazon VPC FAQ	Amazon VPC	🔥🔥🔥🔥🔥
	AWS Direct Connect FAQ	AWS Direct Connect	🔥🔥
	Elastic Load Balancing FAQ	Elastic Load Balancing	🔥🔥🔥🔥
	Amazon Route 53 FAQ	Amazon Route 53	🔥🔥🔥

Must Know

Management Tools			
	Amazon CloudWatch FAQ	Amazon CloudWatch	🔥🔥🔥
	AWS CloudFormation FAQ	AWS CloudFormation	🔥🔥
	Amazon CloudTrail FAQ	AWS CloudTrail	🔥
	AWS Management Console FAQ	AWS Management Console	🔥🔥
	AWS OpsWorks FAQ	AWS OpsWorks	🔥🔥

Must Know

Security & Identity			
	AWS Identity and Access Management FAQ	IAM	🔥🔥🔥🔥
	AWS Directory Service FAQ	AWS Directory Service	🔥🔥

Must Know

Mobile Services	-	-	
	Amazon SNS FAQ	Amazon SNS	🔥🔥

Must Know

Storage & Content Delivery	-	-	
	Amazon S3 FAQ	Amazon S3	🔥🔥🔥🔥
	Amazon CloudFront FAQ	Amazon CloudFront	🔥🔥🔥
	Amazon EBS FAQ	Amazon EBS	🔥🔥🔥
	Amazon Glacier FAQ	Amazon Glacier	🔥🔥🔥
	AWS Import/Export Snowball FAQ	AWS Import/Export	🔥🔥
	AWS Storage Gateway FAQ	AWS Storage Gateway	🔥🔥

Must Know

Database	-	-	
	Amazon RDS FAQ	Amazon RDS	🔥🔥🔥
	Amazon DynamoDB FAQ	Amazon DynamoDB	🔥🔥
	Amazon ElastiCache FAQ	Amazon ElastiCache	🔥🔥🔥🔥
	Amazon Redshift FAQ	Amazon Redshift	🔥🔥

Must Know

Application Services			
	Amazon SES FAQ	Amazon SES	🔥🔥
	Amazon SNS FAQ	Amazon SNS	🔥🔥
	Amazon SQS FAQ	Amazon SQS	🔥🔥
	Amazon SWF FAQ	Amazon SWF	🔥🔥

Must Know

This is 60% of the Exam so it is obviously the most important. If I had to put this into one coherent sentence this is it.

> **You need to understand Virtual Private Cloud (VPC) architecture inside out.**

Exam Tips

- Understand the fundamentals of **Amazon EC2, Amazon S3, Amazon VPC and Amazon RDS**.
- After you are done with the above, focus on **Amazon CloudWatch, Amazon SQS, Amazon SNS, Amazon OpsWorks, AWS CloudFormation, ELB and Auto Scale**.
- Don't bother about the command line syntax and parameters. AWS doesn't want to test how well you remember the sequence of command line parameters. Same is applicable to API calls.
- **Knowing VPC is the key to clear any AWS certification. You should be confident of ENI, EIP, Security Groups, Network ACL, Routers, Gateways and NAT Instances.**
- **Understand the integration between Amazon S3 and Glacier, Lifecycle of objects and Bucket Policy vs ACLs.**
- **Understand the scenarios on choosing the right AWS services**. This includes Auto Scale vs Beanstalk, EBS vs Ephemeral Storage, Security Groups vs NACLs, CloudFormation vs OpsWorks and so on.
- There is **less emphasis on advanced services like Elastic MapReduce, Redshift and Kinesis**.
- **Focus more on RDS concepts than specific database specific implementation details**. This includes understanding the snapshots, impact of maintenance window and parameter groups.
- Understand the shared responsibility model of AWS. Clearly differentiate between your activities vs. AWS tasks.
- Know the performance optimization techniques in terms of choosing the right EC2 instance, PIOPS of EBS and EBS Optimized Instances.
- Read the question carefully because most of the correct answers can be derived from the problem statement.
- Finally, applying common sense will help you eliminate wrong choices.

Exam Overview

- Multiple choice and multiple answer questions
- 80 minutes to complete the exam
- Available in English, Japanese, Simplified Chinese, Traditional Chinese, Korean, German, Russian, Spanish, and Brazilian Portuguese
- Practice Exam Registration fee is USD 20
- Exam Registration fee is USD 150

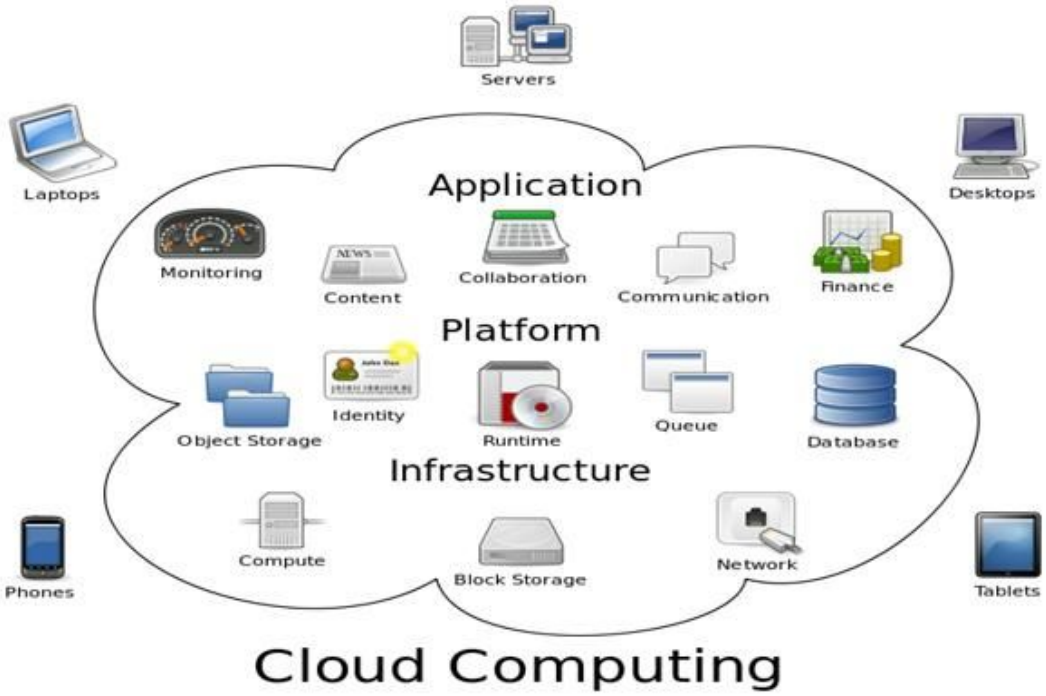
INTRODUCTION TO CLOUD COMPUTING

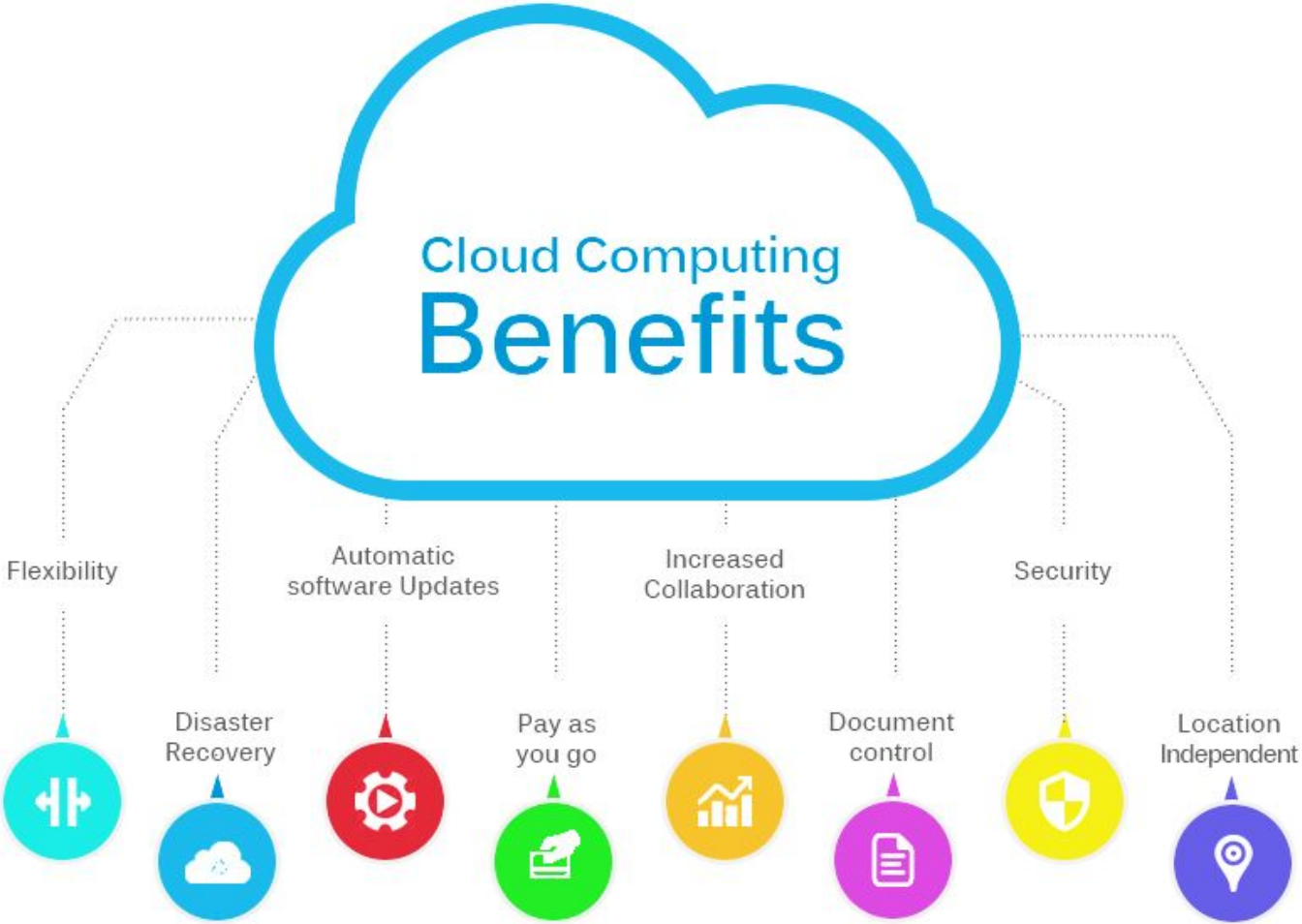
Audience

Cloud Computing and will help you in career paths aimed for AWS Solution Architect, AWS Engineer, DevOps Engineer, Cloud Architect etc.

What Is Cloud Computing?

Cloud computing is the on-demand delivery of IT resources and applications via the Internet with pay-as-you-go pricing.




Cloud Computing
Benefits
Flexibility
Disaster Recovery
Automatic software Updates
Pay as you go
Increased Collaboration
Document control
Security
Location Independent

Six advantages of cloud computing

- Variable vs. Capital Expense
  - Pay only when you consume computing resources and pay only for how much you consume
- Economies of Scale
  - organizations benefit from massive economies of scale
- Stop Guessing Capacity
  - access as much or as little as they need and scale up or down as required with only a few minutes' notice
- Increase Speed and Agility
  - reduce the time it takes to make those resources available to developers from weeks to just minutes
- Focus on Business Differentiators
  - focus on their business priorities, instead of on the heavy lifting of racking, stacking, and powering servers
- Go Global in Minutes
  - provide redundancy across the globe and to deliver lower latency and better experiences to their customers at minimal cost

Cloud Computing Deployment Models

- All-in cloud-based application
  - An all-in cloud-based application is fully deployed in the cloud, with all components of the application running in the cloud. Applications in the cloud have either been created in the cloud or migrated from an existing infrastructure.
- Hybrid deployment
  - A hybrid deployment is a common approach taken by many enterprises that connects infrastructure and applications between cloud-based resources and existing resources, typically in an existing data center. The most common method of hybrid deployment is between the cloud and existing on-premises infrastructure to extend and grow an organization's infrastructure while connecting cloud resources to internal systems. Choosing between an existing investment in infrastructure and moving to the cloud does not need to be a binary decision. Leveraging dedicated connectivity, identity federation, and integrated tools allows organizations to run hybrid applications across on-premises and cloud services.

What is AWS?

In 2006, Amazon Web Services, Inc. (AWS) began offering **IT infrastructure services** to businesses **in the form of web services**, now commonly known as **cloud computing**. One of the key benefits of cloud computing is the opportunity to **replace up-front capital infrastructure expenses with low variable costs that scale with your business**. With the cloud, **businesses no longer need to plan for and procure servers and other IT infrastructure weeks or months in advance**. Instead, they can instantly **spin up hundreds or thousands of servers in minutes** and **deliver results faster**.

AWS Fundamentals

AWS provides on-demand delivery of IT resources via the Internet on a **secure cloud services platform, offering compute power, storage, databases, content delivery, and other functionality** to help businesses scale and grow. Using AWS resources instead of your own is like purchasing electricity from a power company instead of running your own generator, and it provides the key advantages of cloud computing: Capacity exactly matches your need, you pay only for what you use, economies of scale result in lower costs, and the service is provided by a vendor experienced in running large-scale networks.

AWS global infrastructure and AWS approach to security and compliance are key foundational concepts to understand as you prepare for the exam.

Global Infrastructure

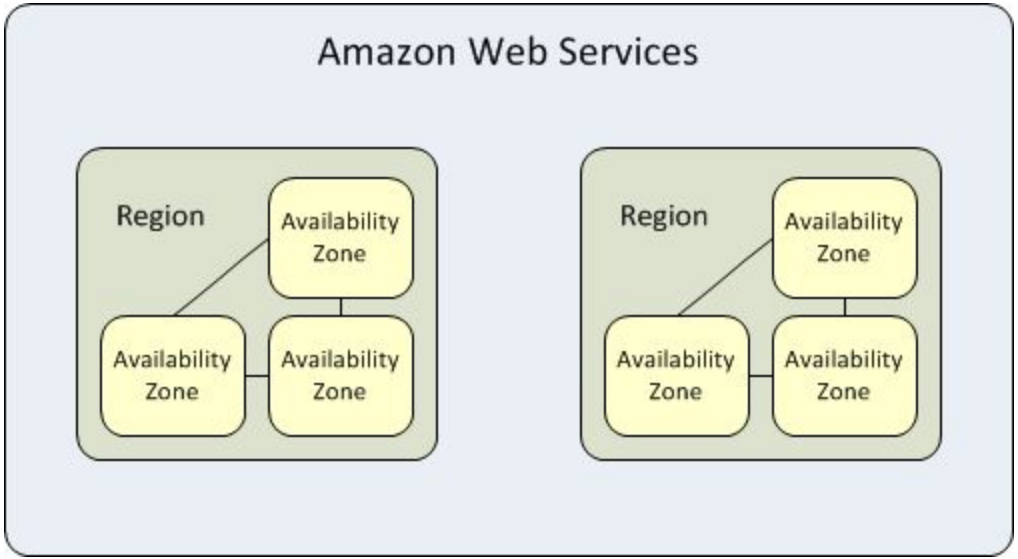
AWS serves over one million active customers in more than 190 countries, and it continues to expand its global infrastructure steadily to help organizations achieve lower latency and higher throughput for their business needs.

AWS provides a highly available technology infrastructure platform with multiple locations worldwide. These locations are composed of **Regions** and **Availability Zones**.

Regions & Availability Zones

Amazon EC2 is hosted in multiple locations worldwide. These locations are composed of regions and Availability Zones. Each ***region* is a separate geographic area**. Each region has **multiple, isolated locations known as *Availability Zones***. Amazon EC2 provides you the **ability to place resources, such as instances, and data in multiple locations**. **Resources aren't replicated across regions** unless you do so specifically.

Amazon operates state-of-the-art, highly-available data centers. Although rare, failures can occur that affect the availability of instances that are in the same location. If you **host all your instances in a single location that is affected by such a failure, none of your instances would be available**.


Amazon Web Services
Region
Availability Zone
Availability Zone
Availability Zone
Region
Availability Zone
Availability Zone
Availability Zone


IRELAND
3
2
FRANKFURT
OHIO (Coming soon)
UK (Coming soon)
OREGON
3
2
3
N. CALIFORNIA
5
N. VIRGINIA
AWS GOVCLOUD
BEIJING
SEOUL
2
2
3
TOKYO
NINGXIA (Coming soon)
INDIA (Coming soon)
2
SINGAPORE
3
SÃO PAULO
2
SYDNEY
Region & Number of Availability Zones
New Region Coming Soon

Regions

Each Amazon EC2 region is designed to be **completely isolated from the other** Amazon EC2 regions. This **achieves the greatest possible fault tolerance and stability**. When you view your resources, you'll only **see the resources tied to the region you've specified**. This is because regions are isolated from each other, and we don't replicate resources across regions automatically.

When you launch an instance, you must select an AMI that's in the same region. If the AMI is in another region, you can copy the AMI to the region you're using.

Code	Name
us-east-1	US East (N. Virginia)
us-east-2	US East (Ohio)
us-west-1	US West (N. California)
us-west-2	US West (Oregon)
ca-central-1	Canada (Central)
eu-west-1	EU (Ireland)
eu-central-1	EU (Frankfurt)
eu-west-2	EU (London)
ap-northeast-1	Asia Pacific (Tokyo)
ap-northeast-2	Asia Pacific (Seoul)
ap-southeast-1	Asia Pacific (Singapore)
ap-southeast-2	Asia Pacific (Sydney)
ap-south-1	Asia Pacific (Mumbai)
sa-east-1	South America(São Paulo)

Availability Zones

When you **launch an instance, you can select an Availability Zone** or let AWS choose one for you. If you **distribute your instances across multiple Availability Zones** and one instance fails, you can design your application so that an instance in another Availability Zone can handle requests.

You can also **use Elastic IP addresses to mask the failure of an instance in one Availability Zone** by rapidly remapping the address to an instance in another Availability Zone. (Covered Later)

An Availability Zone is **represented by a region code followed by a letter identifier**; for example, us-east-1a. To ensure that **resources are distributed across the Availability Zones for a region**, AWS independently map Availability Zones to identifiers for each account. For example, **your Availability Zone us-east-1a might not be the same location as us-east-1a for another account**. There's no way for

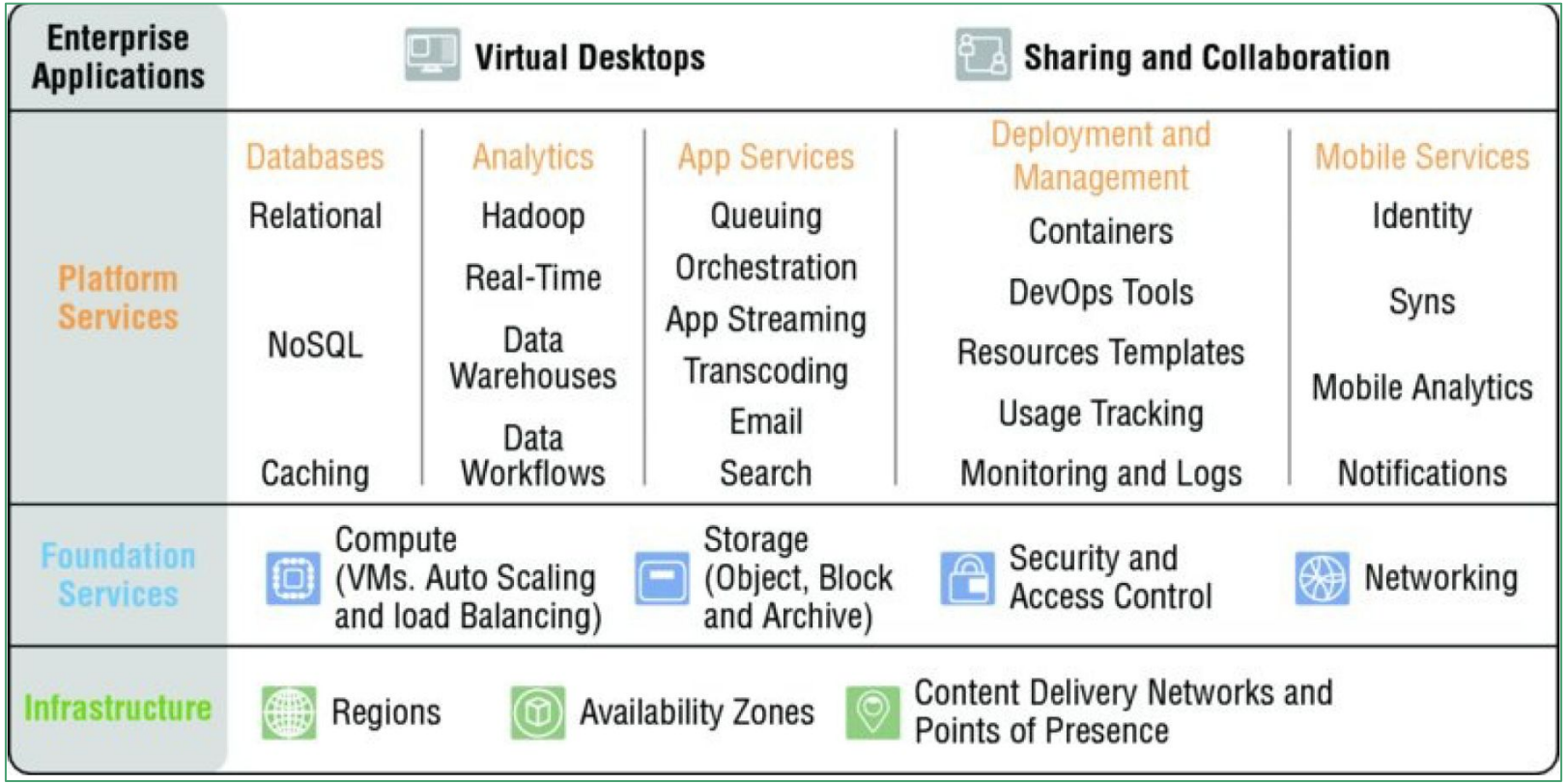
Security and Compliance

AWS and its partners offer hundreds of tools and features to help organizations meet their security objectives for visibility, auditability, controllability, and agility. This means that organizations can have the security they need, but without the capital outlay and with much lower operational overhead than in an on-premises environment.

Organizations retain complete control and ownership over the region in which their data is physically located, allowing them to meet regional compliance and data residency requirements.

AWS Cloud Computing Platform

Cloud Services



Accessing the Platform

- AWS Management Console
  - Intuitive **user interface** for performing many tasks
- AWS Command Line Interface
  - Control multiple services from the **command line** and automate them through scripts
- AWS Software Development Kits
  - API that interacts with the web services that fundamentally make up the AWS platform

Compute and Networking Services

- Amazon Elastic Compute Cloud (Amazon EC2)
  - Secure, resizable **compute capacity in the cloud**
- AWS Lambda
  - Lets you run code without provisioning or managing servers
- Auto Scaling
  - **Automatically launch or terminate EC2 instances** based on user-defined policies, health status checks, and schedules
- Elastic Load Balancing
  - Automatically **distributes incoming application traffic** across multiple Amazon EC2 instances
- AWS Elastic Beanstalk
  - **Automatically handles the details** of capacity provisioning, load balancing, scaling, and application health monitoring
- Amazon Virtual Private Cloud (Amazon VPC)
  - Your own **data center** in cloud
- AWS Direct Connect
  - Establish **private connectivity** between AWS and your datacenter, office, or colocation environment

Storage and Content Delivery

- Amazon Simple Storage Service (Amazon S3)
  - Highly-scalable **object storage**
- Amazon Glacier
  - Extremely **low-cost cloud storage** service for data archiving and long-term backup
- Amazon Elastic Block Store (Amazon EBS)
  - **Persistent block storage** volumes for use with Amazon EC2 instances
- AWS Storage Gateway
  - **Hybrid storage service** that enables your on-premises applications to seamlessly use storage in the AWS Cloud
- Amazon CloudFront
  - **Content delivery network**

Database Services

- Amazon Relational Database Service (Amazon RDS)
  - **Relational database** in the cloud
- Amazon DynamoDB
  - Proprietary **NoSQL** database services that is offered by Amazon.com
- Amazon Redshift
  - Fast, fully managed **data warehouse** that makes it simple and cost-effective to analyze all your data using standard SQL and your existing Business Intelligence (BI) tools
- Amazon ElastiCache
  - Distributed in-memory data store or **cache** in the cloud

Management Tools

- Amazon CloudWatch
  - Amazon CloudWatch is a **monitoring** service for AWS cloud resources and the applications you run on AWS
- AWS CloudFormation
  - AWS CloudFormation gives developers and systems administrators an easy way to create and manage a **collection of related AWS resources**, provisioning and updating them in an orderly and predictable fashion.
- AWS CloudTrail
  - AWS CloudTrail is a service that enables governance, compliance, operational auditing, and risk auditing of your AWS account. Provides a **history of AWS API calls**
- AWS Config
  - AWS Config is a service that enables you to assess, audit, and evaluate the **configurations of your AWS resources**.

Security and Identity

- AWS Identity and Access Management (IAM)
  - **Securely control access** to AWS resources for your users
- AWS Key Management Service (KMS)
  - **Encryption and key management** service scaled for the cloud
- AWS Directory Service
  - Users can use their **existing corporate credentials to log on** to AWS applications, such as Amazon WorkSpaces, Amazon WorkDocs, or Amazon WorkMail
- AWS Certificate Manager
  - Provision, manage, and **deploy** Secure Sockets Layer/Transport Layer Security (SSL/TLS) **certificates**
- AWS Web Application Firewall (WAF)
  - **Protect your web applications** from common web exploits that could affect application availability, compromise security, or consume excessive resources

Application Services

- Amazon API Gateway
  - **Create, publish, maintain, monitor**, and secure APIs at any scale
- Amazon Elastic Transcoder
  - Convert large, high-quality digital media files into multiple formats
- Amazon Simple Notification Service (Amazon SNS)
  - **Push notifications and SMS** to mobile devices
- Amazon Simple Email Service (Amazon SES)
  - Cost-effective **email service**, is a reliable, scalable way to send email & marketing messages
- Amazon Simple Workflow Service (Amazon SWF)
  - Helps developers build, run, and scale **background jobs** that have parallel or sequential steps
- Amazon Simple Queue Service (Amazon SQS)
  - Fully managed message **queuing service** that makes it easy to decouple and scale microservices, distributed systems, and serverless applications

Exam Essentials

Understand the global infrastructure. AWS provides a highly available technology infrastructure platform with multiple locations worldwide. These locations are composed of regions and Availability Zones. Each region is located in a separate geographic area and has multiple, isolated locations known as Availability Zones.

Understand regions. An AWS region is a physical geographic location that consists of a cluster of data centers. AWS regions enable the placement of resources and data in multiple locations around the globe. Each region is completely independent and is designed to be completely isolated from the other regions. This achieves the greatest possible fault tolerance and stability. Resources aren't replicated across regions unless organizations choose to do so.

Understand Availability Zones. An Availability Zone is one or more data centers within a region that are designed to be isolated from failures in other Availability Zones. Availability Zones provide inexpensive, low-latency network connectivity to other zones in the same region. By placing resources in separate Availability Zones, organizations can protect their website or application from a service disruption impacting a single location.

Understand the hybrid deployment model. A hybrid deployment model is an architectural pattern providing connectivity for infrastructure and applications between cloud-based resources and existing resources that are not located in the cloud.

Assessment

Assessment