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Course Title: AWS Certified Cloud Practitioner (CLF-C01) Cert Prep: 3 Core Services

Description: Documentation and resources for using Amazon Web Services (AWS) are generally rife with technical jargons and concepts that non-engineers find tough to decipher. The Introduction to AWS for No n-Engineers series serves as a bridge between non-engineers and AWS. In this course, the third installm ent in the series, get a nontechnical introduction to the core services that make up Amazon Web Services (AWS). Instructor Hiroko Nishimura—founder of Intro to AWS for Newbies—provides an overview of key AWS technology, including compute, storage, database, and network and content delivery services, as w ell as management tools. Discover which services you'd use to host your website, which ones you'd use t o store videos, and more.Note: This course also maps to the third domain of the AWS Certified Cloud Pra ctitioner exam. Taking all four courses in the Introduction to AWS for Non-Engineers series will help you p repare for the exam.

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Chapter: 1. Compute
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Video: AWS Global Infrastructure

Note Time: Note Text:

0:02:46 AWS compute services -

AWS EC2 (Elastic compute cloud) ?

- Virtual server running on AWS
- Configurable vCPU's, RAM gbs, size/type of storage, network speed
- Deploy extremely scalable and reliable virtual servers within minutes

Elastic beanstalk ?

- handles the deployment process, auto scaling, load balancing and health monitoring
- upload the code and it handles it
- freedom to manage the resources
- automatically provision the resources

Elastic load balancing ?

- distribute the load of overall traffic among the servers so that each server takes care of handling only the fraction of overall traffic
- Fault tolerant, scalable and secure
- Monitor health of servers

AWS Lambda ?

- runs code in response to an event
- automatically runs uploaded code and scale applications
- pay only for the time code is running

Lightsail ?

- pre-configured and ready-to-use OS, web apps and dev stacks

Deploying and operating in AWS ?

- AWS management console
- AWS CLI
- AWS SDK

Global infrastructure ?

- AZs : Availability Zones , AWS data centers around the world. Completely indepednet of each other in n etwork and power source. Currently, almost six dozen AZs around the world.

- regions: made of two or more AZs, currently two dozen around the world.

Choosing which region to deploy the resources can vary on different reasons -

- compliance requirements
- closest to physical location to reduce network latency
- some servies are introduced earlier to some regions
- SLA also vary by region
- some region cost more than others

High availability: hosting in Multiple regions
Resiliency : ability to provide uninterrupted performance, even during natural disasters
Redundancy: having multiple copies of data in different data centers

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Chapter: 2. Storage
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Video: Study break: Reviewing storage services

Note Time: Note Text:

0:00:21 AWS storage services

S3 ?

- Static file storage. Stores everything as a object.
- 99.999999999 % durable 11 9’s
- charged only for what to use
- Max limit of 5 TB (upload size)
- backup and archiving
- different storage classes - standard, intelligent-tiering, standard infrequent access, one zone-infrequent acces, Glacier, Glacier deep archive
- Automated movement of data from storage to another class

EBS (elastic block store) ?

- Raw, unformatted block device attached to an EC2 instance to expand server storage

- can add multiple EBS volumes
- use as file systems or hard drives
- dynamically change configurations to attached volumes
- exist independently of ec2 instances so that they can be moved around

Snowball ?

- data migration tool
- hardware solution - aws will physically ship you a snowball to move your data onto and ship back
- you can move 50 TB with regular snowball up to 100 PB with a snowmobile (45 foot long shipping contai ner)
- Usage fee , service fee, storage fee
- expensive

Storage Gateway ?

- Local data on IT directly connected to s3/EBS via storage gateway
- minimal latency
- File gateway : async updates objects to s3 as local files are updated. Local cache to provide low latency access to recently accessed files
- Volume gateway: upload files in blocks (virtual hard drives). Async backed up as point-in-time snapshots and stored as EBS snapshots.

stored volume: Complete copy on-premises, sends snapshots to AWS.
cached volume: keeps local cache on-premise, complete copy on AWS
- Tape gateway: uses existing tape based backup infra to virtual space. data locally stored and sync uploa des to s3. Data can be archived using Amazon glacier.

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Chapter: 3. Database
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Video: Study break: Reviewing database services

Note Time: Note Text:

0:00:00 AWS database services

DynamoDB ?

- Secure, scalable, fast and flexible NoSQL database
- Virtual unlimited throughput and storage
- serverless : no need to provision, manage or update your own servers
- Scales tables up or down. Fault tolerant.
- Specify workload type

RDS ?

- RDBMS service
- compatible with postgres, mysql, mariaDB, oracle DB, Microsoft SQL server

Amazon Aurora ?

- Fully managed by Amazon.
- 5x faster than standard MYSQL, 3X faster than standard postgres
- DB can scale upto 64TB per instances

RedShift ?

- Data warehouse service , intergated with data lakes (raw unformatted data)
- data warehouse service using encryption that is fully compatible with legal requirements such as HIPAA data.

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Chapter: 4. Network and Content Delivery
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Video: Study break: Network and content delivery

Note Time: Note Text:

0:00:06 AWS network services

AWS VPC (virtual private cloud)

- logically isolated section of cloud
- security groups and network access control lists to filter inbound and outbound traffic at instance and subnet level

Cloudfront ?

- global distributed servers of CDN (content delivery networks) for aws
- integrated with AWS sheild for DDoS mitigation
- cached to edge locations of end-user locations

Route 53 ?

- Own service to setup domain (DNS)
- connect user requests to infra running on aws
- route users to infra outside of aws as DNS service
- auto naming for service discovery
- domain registration and domain name system

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Chapter: 5. Management Tools
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Video: Study break: Reviewing management tools

Note Time: Note Text:

0:00:11 AWS management tools

CloudFormation ?

- Templates : recipes for resource deployment in AWS
- Provision and deploy fully configured infra
- Update or manage stacks using AWS management console, cli or sdks
- Version control
- Infra as a code (IaaC)

CloudTrail ?

- Track user activity and API usage
- Audits, logging of services
- can be automated to notify incase of security events etc...

CloudWatch ?

- Monitoring of services for aws infra
- Natively integrated with over 70 services
- Gain system wide visibility into resource utilization , application performance and operational health
- Get cloudwatch alarms and notifications for alerts