Cloud Computing Nanodegrees Notes

Cloud infastructure

3 Models for cloud computing

- pay as you go
  - no obligation to continue
- serverless
  - only write code, no need to concern deployment
- autoscaling
  - resources scale based on demand

Service types

- Infrastructure as a service (Iaas)
  - server instances
  - storage
  - user management
- PaaS (Platform as a service)
  - hosted infrastructure
  - development tools
  - eg godaddy
- Saas (server as a service)
  - gmail/ office 365

Deployment model

- Public
  - eg AWS
- Private cloud

    - eg oracle/ SAP
    - also known as on premises
- Hybrid cloud
    - eg PII for sap

Regions

- Edge location
    - used to cache file in datacentres
- region
    - geographic locations

EC2

- EBS allow data to be saved even after ec2 is terminated

Network

- VPC is a network between aws infrastructure

Lambda

- compute power in the cloud
- trigger by various events such as record to db/s3 upload
- custom runtime is available

Elastic Beanstalk

- setting up server and deploy automatically (orchestration)
    - EC2
    - Auto-scaling
    - Elastic load balancer
    - Admin separately
- runtime

    - java
    - python
    - docker
- Steps
    - Setting up
        - upload war file
        - create application
    - deleting
        - terminate environment
        - delete applications

Delivery/database

- Scaling
    - Verticle
        - more mem
    - Horizontal
        - more servers
    - diagonal
        - both

S3

- Object storage (like file system)
- Usage
    - static site
    - content delivery
    - Apps data
- Glacier
    - for archiving
    - log files
    - for audit purposes

Database

No-sql

DynamoDB

- schema-less
- faster than sql
- json

SQL
- mysql
- oracle
- aurora

Redshift
- Data warehouse
- queries with SQL /ETL/ BL
- main purpose
    - query and analysis

CDN (content delivery network)
- cache and reduce latency for a service
- reduce server workload
- better user experience

Cloud front
- store items at edge location otherwise pull from origin

Security

AWS Shield
- protect from DDoS (Distributed denial of service
- security --> std is always on
- advances provides enhanced detection

WAF

- firewall
- only allow certain attack eg
    - SQL inj
    - Cross site scripting

IAM

- lease privileged access
- make sure to setup MFA

AWS Management

Cloud trail track operations

- audit/review activities
    - eg who accessed your account
    - what did they do
    - all the logs
- include all sdk

Cloud watch

- monitor resources
    - eg trigger lambda

Cloud Formation

- infrastructure as code
- automatically spin up components
- use json/yaml
    - drag & drop interface on cloudformation console
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