AWS

Cloud

- On demand delivery of compute power, database, storage, applications and other IT resources via internet with pay as you go pricing.

Benefits

- Cost Saving
  - No Upfront investment on hardware, software & support
- Adapts Operations Cost model (Pay as use)
- Scaling
- Resource Pool
- Expand capacity with lesser cost
- Automation to ease the scaling
- Horizontal (Instances) or Vertical (CPU/RAM) scaling
- Higher / Global Availability through cloud data-centers across globe.

Cloud Computing Models

- Infrastructure As A Service : For IT Administrators
- Platform As A Service: For Developers
- Software As A Service: For Customers

Public Vs Private Cloud

- Public Cloud : Managed by Vendor, Resources shared with Public.
- Private Cloud: Dedicated for One Corporate

Introduction to AWS

- Global Presence
  - 21 Geo Locations
  - 66 Availability zones

AWS Services

- Compute
  - EC2 Instances (Virtual Machines)
  - Auto-Scaling (EC2)
  - ECR : Private Container registry
  - ECS : Container Services (Deploy Containers)
  - EKS : Kubernetes Service
  - Lambdas : Server Less applications
- Storage
  - S3 (Simple Storage Service)
  - EFS (Elastic File System)
  - Glacier

AWS Services

- Database:
  - RDS (Relational Database Services)
  - DynamoDB
  - ElastiCache

Compute

- EC2
  - Resizable computing capacity
  - Servers running both linux and windows OS.
  - Custom Images with pre-installed software like MS SQL Database.
- ECR
  - Private Container registries
  - Fully Managed by AWS
  - Secure & allows RBAC
  - Scalable

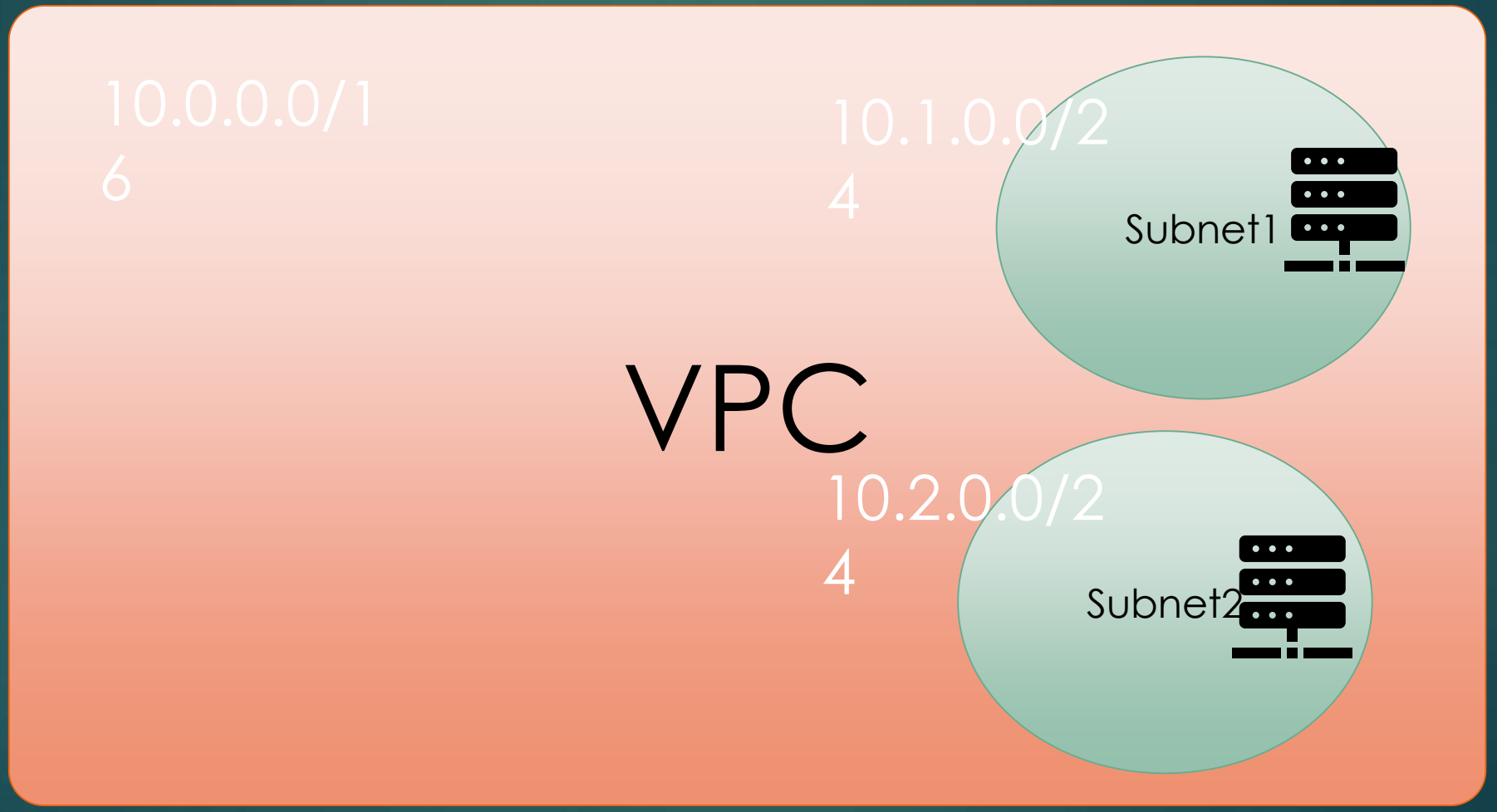
Compute

- ECS
  - Manage Containers across EC2 Instances
- Elastic BeanStalk
  - Deploy Applications on managed environments
  - AWS manages complex runtime environment
  - AWS Manages load balancing, scaling, health monitoring & capacity provisioning.

Storage

- Elastic Block Storage
  - Block Storage, Used by EC2 Instances
- Elastic File System
  - A File System (SMB/CIFS)
  - Mount in and use basic file system commands
- FSx: Third party filesystem with native compatibility
- Simple Storage Service (S3): Store & Retrieve any amount of data.
- Glacier: Long term backup

Network (Virtual Private Cloud)



Security Group

- Create Inbound and Outbound Rules
- Used by Internal Firewall
- Every request would be [illegible] against ru[illegible]

EC2 Instances

- Choose from list of AMI (Amazon Machine Image)
  - Standard Linux & Windows Images
  - Images with Pre-installed Software like RDBMS
  - Custom images from Marketplace
- Uses EBS (Block Storage) for Root storage device
- Uses Public/Private Key Pair for Remote Access
  - Private Key is used for authentication

Elastic BeanStalk

- Platform for Deploying Applications
- Ready to Use environments to choose from:
  - Java
  - Dot Net
  - Node
  - Containers
  - And more…
- Scaling, Load balancing managed by AWS

RDS (Relational Database Service)

- Easy to Setup, Scale and Operate Relational Databases.
- Common DB Administration, Capacity managed by AWS.
- Automatic Software patching, Backups, failure detections & recovery
- Provides managed RDBMS (PaaS or DBaaS)
  - MySQL
  - MariaDB
  - MS SQL
  - Postgres
  - Oracle

AWS Free Tier

- Sign Up at
  - https://aws.amazon.com/free/