

AWS Elastic compute cloud

EC2 Basics

- Launching of instance
- Use computer , charge is hourly basis
- software part - AMI , hardware part - instance type

Intance types

AMI

- Aws published
- Marketplace
 - Additional charges
- Saved from ec2 instance
- VM/Imported Uploaded * Usage * Migrate Your Existing Applications and Workloads to Amazon EC2 * Create a Disaster Recovery Repository for your VM images * Copy Your VM Image Catalog to Amazon EC2

Security of instances

Addressing of instances

- public DNS name
- public Ip
 - persists only till ec2 runs
- elastic Ip
 - persists even when ec2 is terminated

Initial access

- Public key cryptography
- Windows - admin password encrypted using symmetric key encryption

Virtual firewall

- Security groups
 - accept / deny rules, stateful

Lifecycle of instances

Launching

- bootstarpping
 - install custom software while instance is being launched

- UserData - script to be executed. un-encrypted - no passwords should be mentioned
- Uses - install custom s/w , enroll into directory services, OS level patch, chef / puppet
- vm/import export
 - can import existing vm images to ec2 (and then back)
 - instances launch within AWS from AMI's cant exported
- instance metadata
 - <http://publicip/latest/meta-data>
 - instance type , id, security group, ami

Managing

- Tagging
- Monitoring

Modifying instance

- Instance type can be changed by stopping, specifying new type and relaunching it
- Changing security group to allow more protocols

Termination protection

- call for termination will be failed till it disables
- still can terminate using - os shutdown command, autoscale, overbidden

Options

Pricing

- On-Demand instance
 - price/ hour, no up-front commitment
 - provision computer for unpredictable load
- Reserved
 - upfront commit for predictable and steady load
 - saves 75% of price than on-Demand
 - cost depends on two factors
 - Term commitment
 - One or three years
 - payment Options
 - all upfront
 - partial
 - no upfront
- Spot
 - Workload is not time critical and interruption tollerent
 - Specify price for instance,
 - so instance runs till
 - customer terminates or someone bids higher

Tenancy

- Shared
 - One host machine can serve EC2 of more than one customer
- Dedicated instance
 - One host machine serves EC2 instances of only one customers
- Dedicated host
 - One machine serves as only ONE EC2 insatce
 - required for licensing

Placement groups

- logical grouping of EC2 instance within single avaiability zones
- applications benefitted from low network latency
- EC2 which supports enahnced networking should be chosen

Instance stores

- Temporary storage attached to host machine
- no persistancy
- idle for temp storage backup , cahche, db io buffer
- use on EC2 where data processing is more important than data storage
- Multiple types
 1. Ephimeral
 2. Non Volatile Memory -i3 instance
 3. TRIM