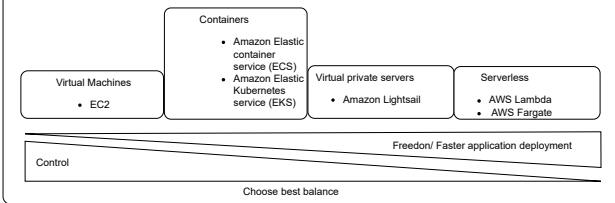


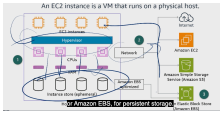
Module 5

Runtime compute choices



Amazon EC2

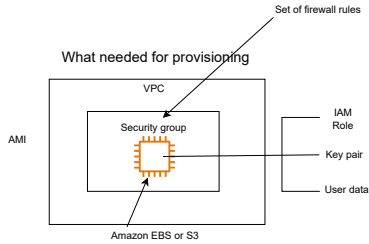
Virtual Machines in the cloud



Benefits Why

- Complete control
- Cost effectiveness
- Flexibility
- can handle large variety of workloads

What needed for provisioning



Selecting EC2 instance type

Available over 270 types

When choosing consider

- Workload needs
- Performance needs
- Cost requirements

EC2 instance type defines

- CPU
- Storage
- Network performance characteristics

Naming Convention

C 7 g n . xlarge

- C = Family
- 7 = Generation
- G = processor family
- Additional capabilities
- Size

Best to start with the family that aligns with planned workload

Each type has certain optimization for for certain workloads

Latest available generations has best price-performance ratio

Instance types page helps to choose

Displays available types

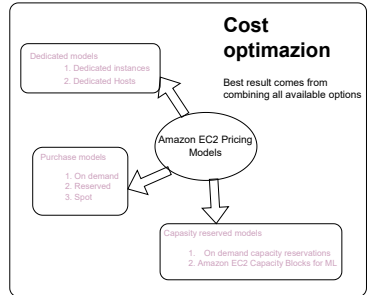
If you have already running instance use AWS

Compute Optimizer Service

Analyses EC2 Instances & Auto Scaling groups and generates recommendations to improve

Cost optimization

Best result comes from combining all available options



Adding Storage to EC 2

EC2 Storage resource

Amazon EBS

- Block level storage
- Persist independency
 - eg. S3 can be back up
 - stand alone database
- Low access latency

Instance store

- Temporary Block level storage
- Good for temp use
 - eg. cache or buffer

Amazon elastic file system EFS

- Provides file system storage for linux-based workloads
- Fully managed elastic file system
- Multiple access possible
- Auto scaling
 - eg. Database backups or file systems for enterprise applications, media workflows

Amazon FSx for Windows File Server

- Basically as EFS but for Windows
- eg. Home directories, Data analytics

File sharing

EBS	S3	EFS or FSx
Not OK	Bad	Good

Additional Configurations

- Run initialization script specified by user data
- run only when instance is launched
- With running instance you can access by
 - Stop -> Modify script -> Remove: config_scripts_userfile -> Re-run

AMI Deployment models

Choose impacts

- How security updates configurations are provisioned
- New versions of applications
- app conf changes
- dependency updates

Placement groups

- Where group of interdependent instances run within availability zone

- Reduce correlated or simultaneous failure
- 3 options for strategies
 - Cluster
 - partition
 - spread

Choosing AMI to launch EC2 instance

AMI includes:

- Template -> OS plus possible other stuff
- Launch permission -> Who can access/ use to launch
- Block device mappings

Benefits:

- Repeatability
- Reusability
- Recoverability

Choose AMI by

- Region
- OS
- Storage type
- Architecture
- Virtualization type

Best performance achieved by HVM

AMI lifecycle

