

# EC2

Elastic Compute Cloud

# Introduction to AWS EC2

- EC2 is one of the most popular of AWS' offering
- Provides scalable virtual servers for computing
- Lets you launch and manage applications without buying physical hardware.
- EC2 = Elastic Compute Cloud = Infrastructure as a Service

# Main EC2 Capability

- Renting virtual machines (EC2)
- Storing data on virtual drives (EBS)
- Distributing load across machines (ELB)
- Scaling the services using an auto-scaling group (ASG)

# EC2 sizing & configuration options

- **Operating System (OS): Linux, Windows or Mac OS**
- **How much compute power & cores (CPU)**
- **How much random-access memory (RAM)**
- **How much storage space:**
  - **Network-attached (EBS & EFS)**
  - **hardware (EC2 Instance Store)**
- **Network card: speed of the card, Public IP address**
- **Firewall rules: security group**
- **Bootstrap script (configure at first launch): EC2 User Data**

# EC2 Instance Types

- General Purpose
- Compute Optimized
- Memory Optimized
- Accelerated Computing
- Storage Optimized
- HPC Optimized
- Instance Features

<https://aws.amazon.com/ec2/instance-types/>

<https://instances.vantage.sh/>

# EC2 Security Groups

- **Security Groups are the fundamental of network security in AWS**
- **They control how traffic is allowed into or out of our EC2 Instances.**
- **Security groups only contain Allow rules.**
- **Security groups rules can reference by IP or by security group.**
- **Can be attached to multiple instances.**
- **Scoped to a specific Region and VPC.**
- **Operate at the network level, outside the EC2 instance itself Traffic blocked by a security group never reaches the instance**

# EC2 Security Groups

- Create a separate security group for SSH access to improve security.
- Application inaccessible (timeout)? Check your security group rules first.
- “Connection refused” usually means the app isn't running or has an error, not a security group issue.
- All inbound traffic is blocked unless allowed by a rule.
- All outbound traffic is allowed by default.

# **Thank you**

**- Tushar Vashisht**