AWS EC2: Launch, Configure, and SSH Access

Day 7 Training

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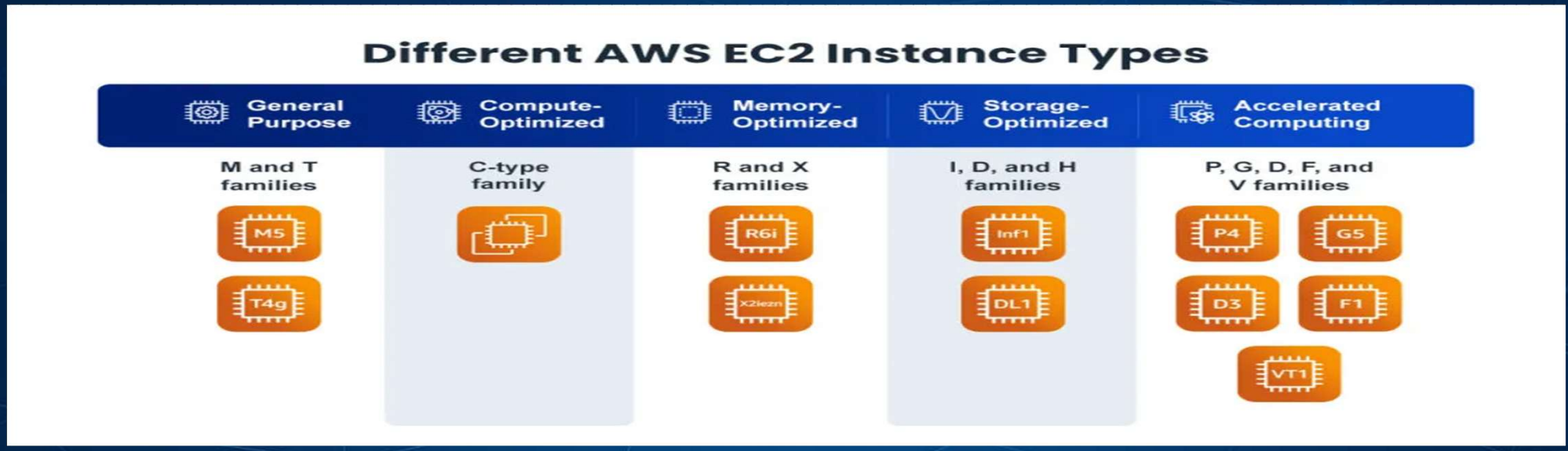
Introduction to AWS EC2

- AWS EC2 provides scalable compute capacity in the cloud.
- Key features include:
  - Scalability
  - Flexibility
  - Reliability
  - Customizability
  - Cost-Efficiency

Types of EC2 Instances

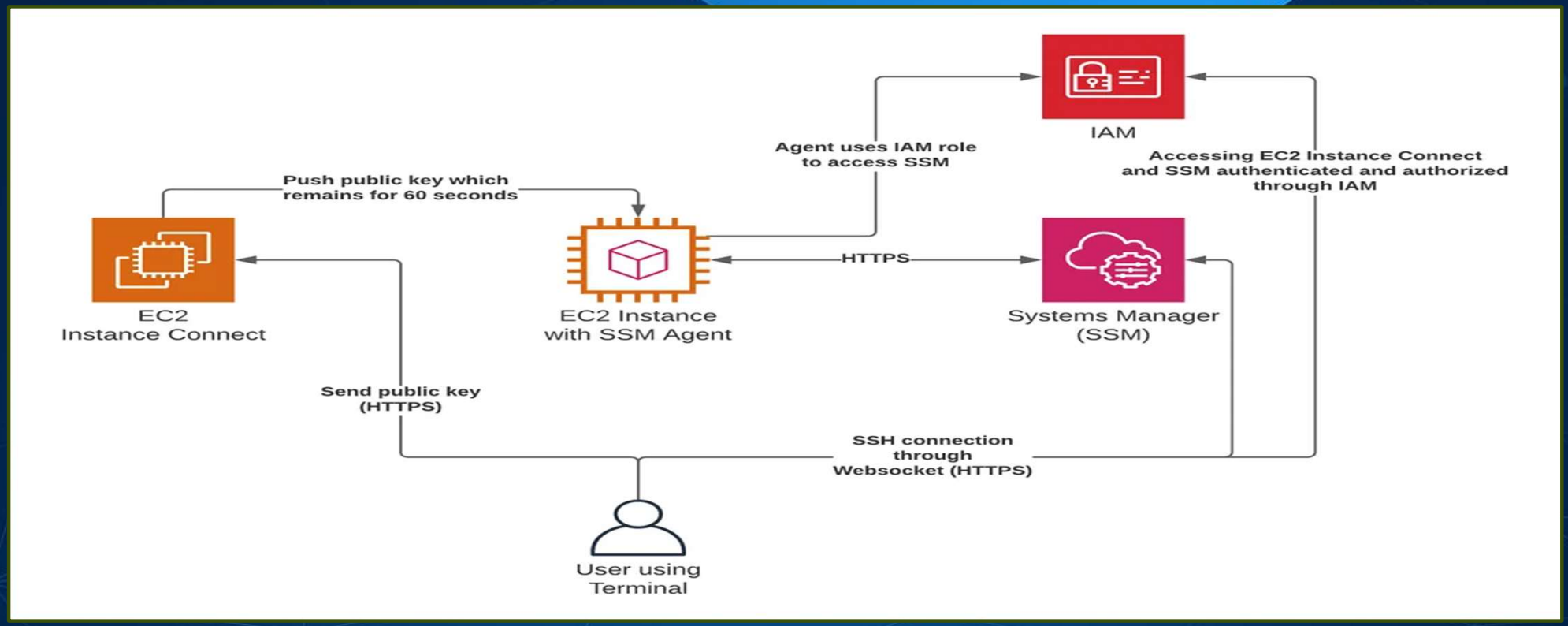
EC2 instances are categorized based on use case:

- General Purpose: Balanced compute, memory, and networking.
- Compute Optimized: Ideal for compute-intensive tasks.
- Memory Optimized: Designed for memory-intensive applications.
- Storage Optimized: Suitable for high disk throughput workloads.
- Accelerated Computing: Uses GPUs or FPGAs.



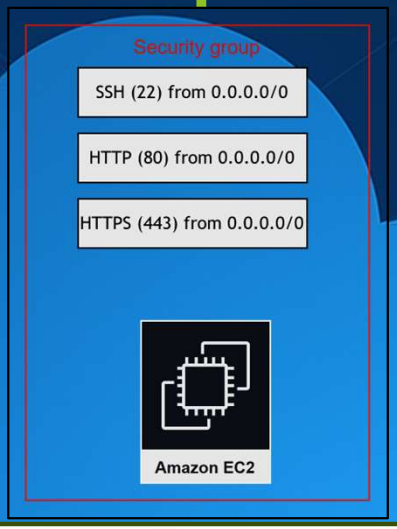
Launching an EC2 Instance

1. Open the EC2 Dashboard.
2. Click 'Launch Instance' and choose an AMI (e.g., Amazon Linux 2, Ubuntu).
3. Select an instance type (e.g., t2.micro for Free Tier).
4. Configure instance details such as network and IAM role.



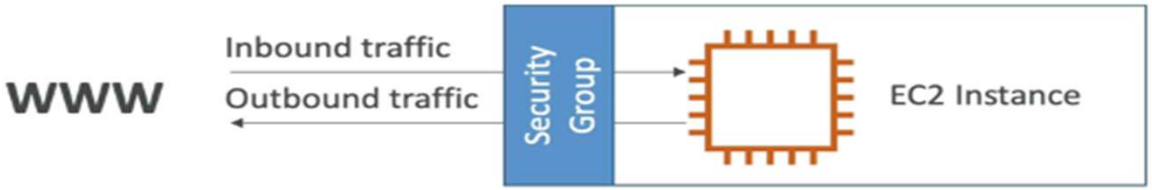
Configuring Security Group

- Create or select a Security Group.
- Add rules to allow traffic:
  - SSH (22) from 0.0.0.0/0
  - HTTP (80) from 0.0.0.0/0
  - HTTPS (443) from 0.0.0.0/0



Introduction to 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

Connecting to EC2 via SSH

1. Set key permissions:

   chmod 400 mykey.pem

2. Connect to the instance:

   ssh -i 'mykey.pem' ec2-user@<EC2-Public-IP>

3. Verify the web server:

   sudo systemctl status apache2

Managing EC2 Instances

- Create an instance:

  aws ec2 run-instances --image-id <ami-id> --instance-type <instance-type> --key-name <keypair name> --security-group-ids <Sg id> --subnet-id <subnet id> --count <number> --tag-specification `ResourceType=instance, Tags=[{key=name, Value=MyEC2Instance}]`

- Stop an instance:

  aws ec2 stop-instances --instance-ids <instance-id>

- Start an instance:

aws ec2 start-instances --instance-ids <instance-id>

- Terminate an instance:

  aws ec2 terminate-instances --instance-ids <instance-id>

- Check instance status:

  aws ec2 describe-instances

Best Practices for EC2

- Use IAM Roles instead of hardcoded credentials.
- Regular backups using AMIs or snapshots.
- Secure access by restricting SSH by IP.
- Automate deployments with scripts.
- Monitor usage using CloudWatch.