



## CLOUD SERVICES

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## Infrastructure as a Service

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## Compute Service

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Provide dynamically **scalable compute capacity** in the cloud.

Can be provisioned on-demand in the form of **virtual machines**.

VMs are created from **standard images** (Ubuntu image and Windows server image) and custom images created by the users.

A machine image is a template that contains a software configuration (**operating system, application server, and applications**).

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## Compute Service

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Compute services can be accessed from the web consoles

GUIs for provisioning, managing and monitoring these services

Features:

- **Scalable** – rapidly provision as many as VMs. Auto-scaling policies (Workload thresholds) defines when to be scaled up and scaled down
- **Flexible** – Wide range of VMs with multiple types
- **Secure** – Access controls and users have to authenticate themselves as OAuth or security key pairs
- **Cost-effective** – Various billing options like billed-per-hour, one-time payment etc.

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## Amazon EC2

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EC2 represents **Elastic Compute Cloud**

Amazon EC2 is an Infrastructure-as-a-Service (**IaaS**) provided by Amazon

EC2 delivers scalable, pay-as-you-go compute capacity in the cloud

EC2 is a web service that provides computing capacity in the form of **virtual machines** that are launched in Amazon's cloud computing environment.

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## Amazon EC2

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It is web service that provide secure , resizable compute capacity in the cloud

It is designed to make web-scale cloud computing easier for developers

EC2 is a simple web service interface makes it easier to **provision and configure capacity** by using APIs

You will have the **complete control on the computing resources** and they will be running on amazons infrastructure

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## Getting Started with Amazon EC2

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- Step 1: Sign up for AWS account
- Step 2: Create a key pair
- Step 3: Launch an Amazon EC2 instance
- Step 4: Connect to the instance
- Step 5: Customize the instance
- Step 6: Terminate instance and delete the volume created

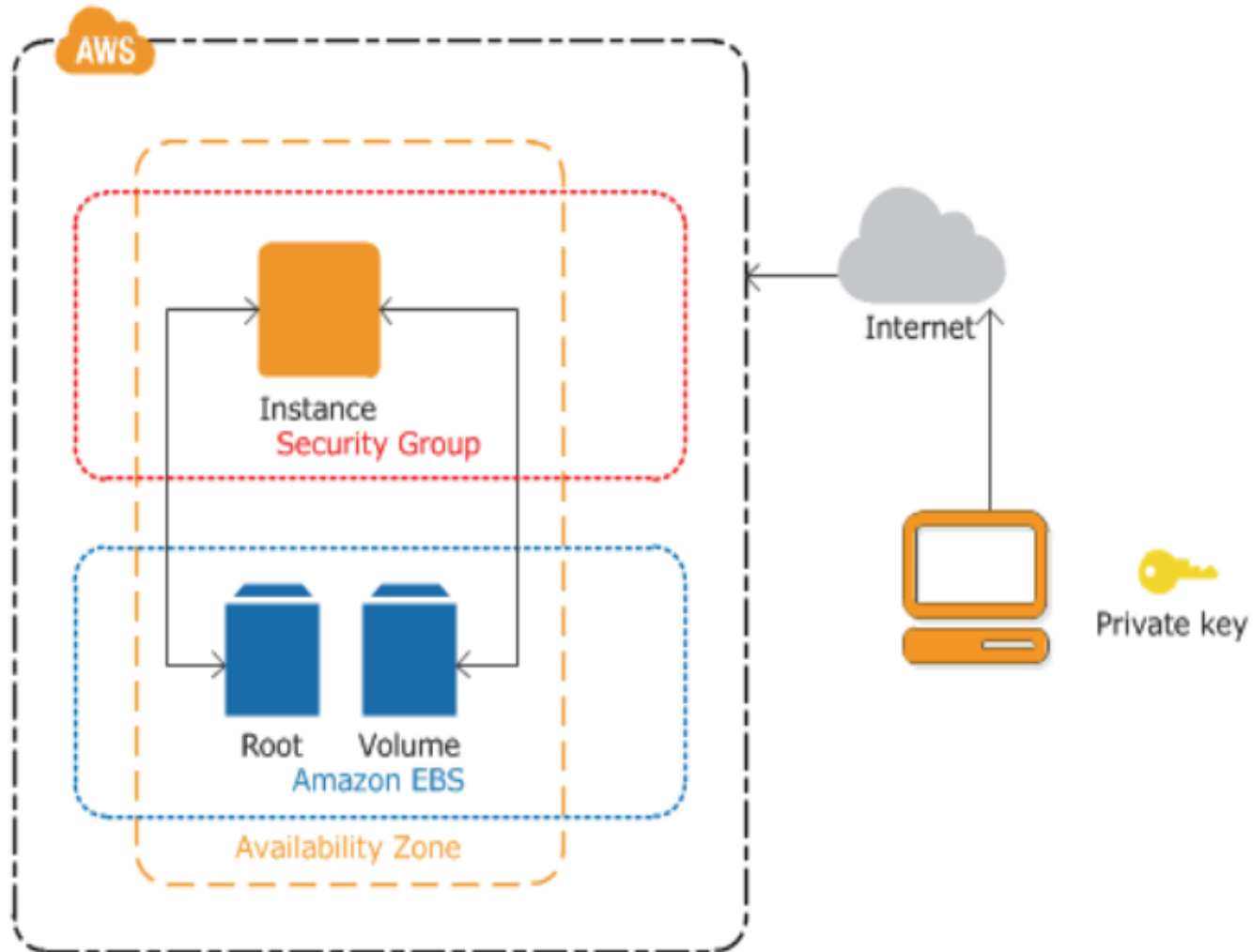
Several properties has to be configured in the EC2 instance

- Amazon Machine Image (AMI)
- Instance Types
- Security groups
- Storage
- Key pairs



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## EC2 Configuration



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## Amazon Machine Image

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Amazon Machine Image (AMI) is an instance template that contains the software configuration (including operating system and applications) required to launch an instance.

AMIs are based on **Linux or Windows operating systems**.

AMIs can come from different sources such as: **AMIs published by AWS, AWS marketplace, Community AMIs or Your own AMIs created from existing instances**

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## EC2 instance types

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- General
- Compute Optimized
- Memory optimized
- Storage optimized
- Accelerated computing

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## Security Groups

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- A *security group* acts as a **virtual firewall**
- Controls **incoming and outgoing traffic**
- Inbound rules control the incoming traffic and outbound rules control the outgoing traffic
- You can specify one or more security groups
- If you don't specify a security group, Amazon EC2 uses the default security group.
- You can add/modify rules to each security group that allow traffic to or from its associated instances.

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## Storage

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- Amazon EBS volume is a durable, block-level storage device that you can attach to your instances
- You can attach multiple EBS volumes to a single instance
- The volume and instance must be in the same Availability Zone
- Volume Types: General Purpose SSD (gp2), Provisioned IOPS SSD (io1), Throughput Optimized HDD (st1), Cold HDD (sc1), and Magnetic (standard, a previous-generation type).

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## Launch an Ubuntu Instance

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1. Choose an Amazon Machine Image (Ami). Choose Ubuntu Server 20.04 Lts (HVM), SSD, Volume type-ami- 2ef48339, 64-bit version.
2. Choose an Instance Type. Use a t2.micro instance (low to moderate). Go to> Next
3. Configure Instance Details . Here number of instance is '1'. Let it be as default VPC and the default Subnet
4. Add Storage: By default, EC2 comes with an 8 GiB disk size

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## Launch an Ubuntu Instance

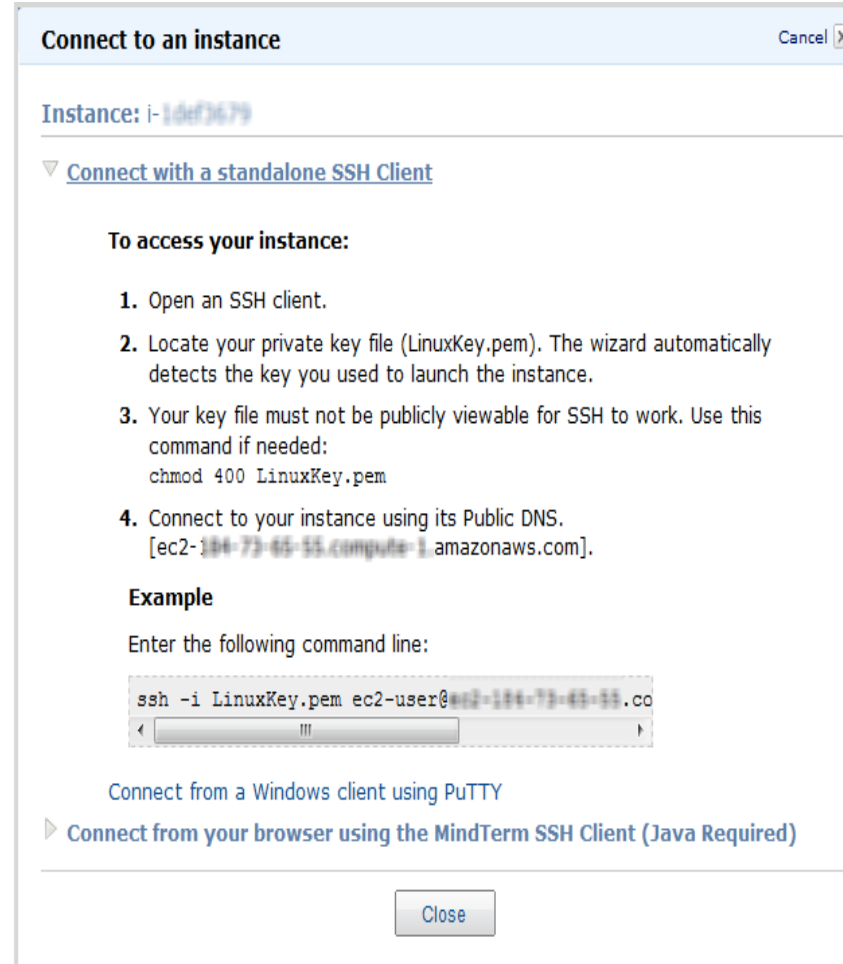
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5. Tag Instance. Give a good name to the server.
6. Configure Security Group. By default, generally you have one Security Group but you should create a new Security Group as per the purpose of the server
7. Review and Launch. Choose the key pair and Launch

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## Connect the instance – Linux/MAC Users

- Right click on the instance to connect to on the AWS console, and click **Connect**.
- Click **Connect using a standalone SSH client**.
- Enter the example command provided in the Amazon EC2 console at the command line shell



**`ssh -i /path/my-key-pair.pem ec2-user@public_dns_name`**



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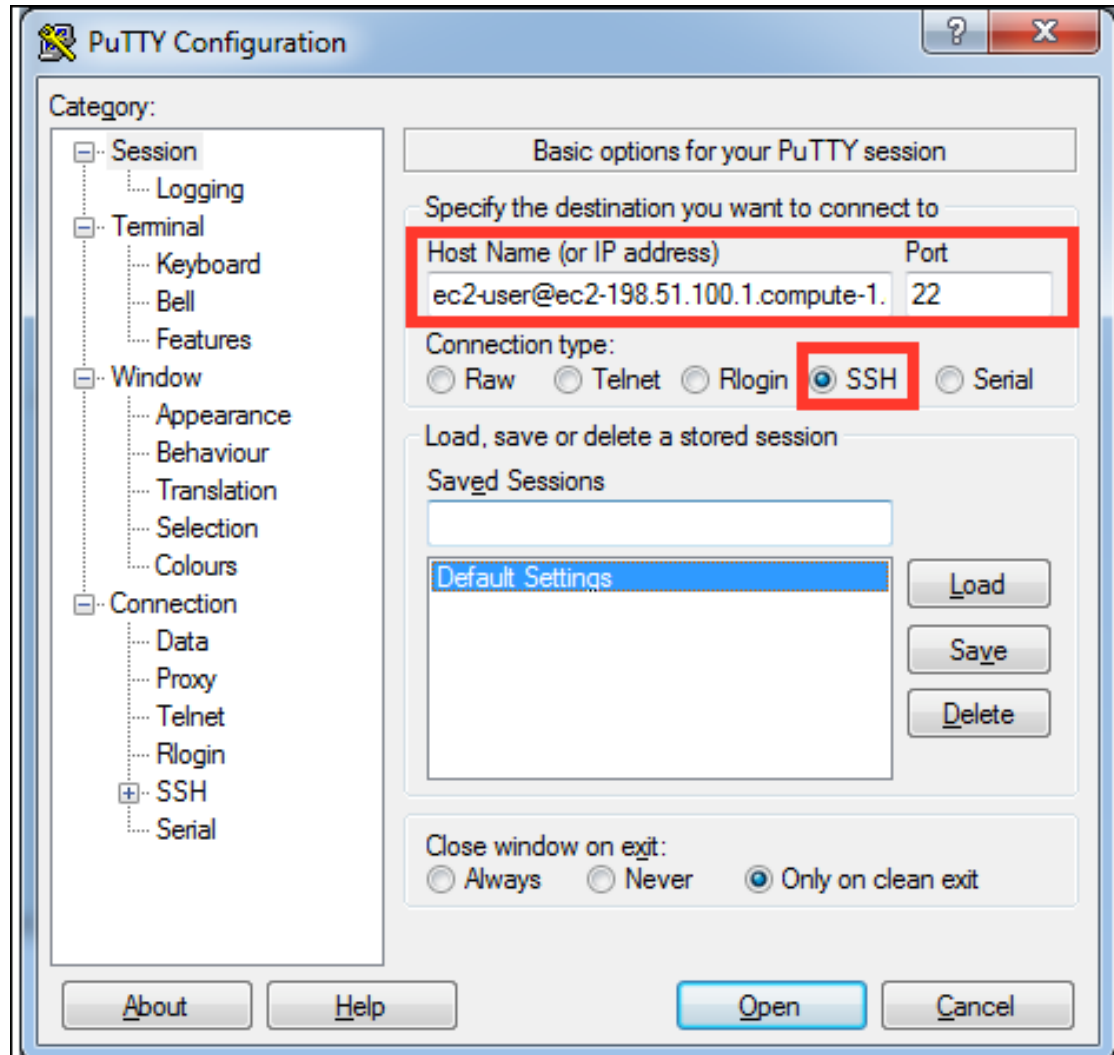
## Connect the instance – Windows Users

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- PuTTY uses .ppk files instead of .pem files.
- From the Start menu, choose PuTTY.
- In the Category pane, choose **Session** and complete the following fields:
  - For Host Name, enter ec2-user@public\_dns\_name.
  - For **Connection type**, choose **SSH**.
  - For **Port**, ensure that the value is **22**.

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## Connect the instance – Windows Users



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### Connect the instance – Windows Users

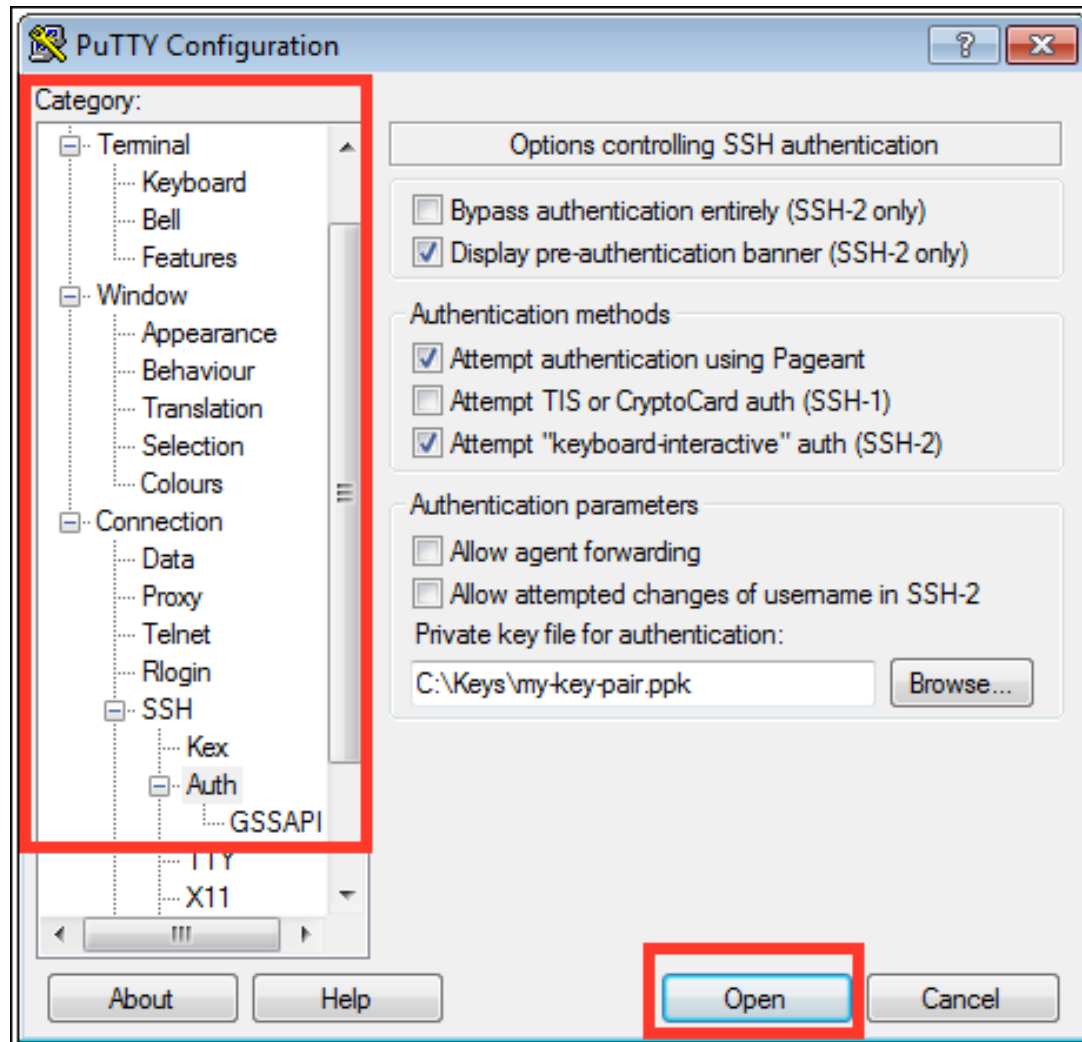
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- In the **Category** pane, choose **Connection, SSH,** and **Auth.** Complete the following:
  - Choose **Browse**, select the .ppk file that you generated for your key pair, and then choose **Open.**
  - Choose **Open** to start the PuTTY session.

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## Connect the instance – Windows Users



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### Connect the instance – Windows Users

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- If this is the first time you have connected to this instance, PuTTY displays a security alert dialog box that asks whether you trust the host you are connecting to. Choose **Yes**. A window opens and you are connected to your instance.

If the instance launched is not in the free usage tier, as soon as the instance starts to boot, the user is billed for each hour the instance keeps running.

A terminated instance cannot be restarted.

To terminate an instance:

1. Open the Amazon EC2 console
2. In the navigation pane, click **Instances**
3. Right-click the instance, then click **Terminate**
4. Click **Yes, Terminate** when prompted for confirmation



# THANK YOU

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