**Features of Amazon EC2**

Amazon EC2 provides the following features:

* Virtual computing environments, known as *instances*
* Preconfigured templates for your instances, known as *Amazon Machine Images (AMIs)*, that package the bits you need for your server (including the operating system and additional software)
* Various configurations of CPU, memory, storage, and networking capacity for your instances, known as *instance types*
* Secure login information for your instances using *key pairs* (AWS stores the public key, and you store the private key in a secure place)
* Storage volumes for temporary data that's deleted when you stop or terminate your instance, known as *instance store volumes*
* Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as *Amazon EBS volumes*
* Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as *regions* and *Availability Zones*
* A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using *security groups*
* Static IPv4 addresses for dynamic cloud computing, known as *Elastic IP addresses*
* Metadata, known as *tags*, that you can create and assign to your Amazon EC2 resources
* Virtual networks you can create that are logically isolated from the rest of the AWS cloud, and that you can optionally connect to your own network, known as *virtual private clouds* (VPCs)

# Instances and AMIs

An Amazon Machine Image (AMI) is a template that contains a software configuration (for example, an operating system, an application server, and applications). From an AMI, you launch an instance, which is a copy of the AMI running as a virtual server in the cloud. You can launch multiple instances of an AMI, as shown in the following figure.


     Launch multiple instances from an AMI
    

Your instances keep running until you stop or terminate them, or until they fail. If an instance fails, you can launch a new one from the AMI.

## Instances

You can launch different types of instances from a single AMI. An instance type essentially determines the hardware of the host computer used for your instance. Each instance type offers different compute and memory capabilities. Select an instance type based on the amount of memory and computing power that you need for the application or software that you plan to run on the instance. For more information about the hardware specifications for each Amazon EC2 instance type, see [Amazon EC2 Instance Types](https://aws.amazon.com/ec2/instance-types/).

After you launch an instance, it looks like a traditional host, and you can interact with it as you would any computer. You have complete control of your instances; you can use **sudo**to run commands that require root privileges.

### Current Generation Instances

For the best performance, we recommend that you use the current generation instance types when you launch new instances.

General purpose t m

Compute optimized c

Memory optimized r x z

Storage optimized d h i

Accelerated computing f g p