AWS – EC2 – Usage Types

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EC2 Instances usage type

- **On-Demand Instance**

- Reserved - Instance

- Spot Instance

- Scheduled Reserved Instance

EC2 Instances usage type – On-Demand

- On-Demand Instance
  - Shared
  - Dedicated
  - Dedicated – Host

Enable termination protection	ⓘ	☐ Protect against accidental termination
Monitoring	ⓘ	☐ Enable CloudWatch detailed monitoring
		Additional charges apply.
Tenancy	ⓘ	Shared - Run a shared hardware instance ▾
		Shared - Run a shared hardware instance
		Dedicated - Run a Dedicated instance
		Dedicated host - Launch this instance on a Dedicated host
T2/T3 Unlimited	ⓘ	☐ Enable
		Additional charges may apply

EC2 Instances usage type – On-Demand

- On-Demand Instance
  - Shared →
    - Instances are running on a shared hardware where it would host multiple customers instances
  - Dedicated →
    - Dedicated Instances are Amazon EC2 instances that run in a VPC on hardware that's dedicated to a single customer.
    - Your Dedicated instances are physically isolated at the host hardware level from instances that belong to other AWS accounts.
    - Dedicated instances may share hardware with other instances from the same AWS account that are not Dedicated instances.
  - Dedicated – Host →
    - An Amazon EC2 Dedicated Host is a physical server with EC2 instance capacity fully dedicated to your use. Dedicated Hosts can help you address compliance requirements and reduce costs by allowing you to use your existing server-bound software licenses.

DEMO – On Demand Instance

EC2 Instances usage type

- On-Demand Instance

- **Reserved - Instance**

- Spot Instance

- Scheduled Reserved Instance

EC2 Instances usage type - Reserved - Instance

- Amazon EC2 Reserved Instances (RI) provide a significant discount (up to 75%) compared to On-Demand pricing and provide a capacity reservation when used in a specific Availability Zone

- If you purchase a large number of RIs in an AWS region, you will automatically receive discounts on your upfront fees and hourly fees for future purchases of RIs in that AWS region.

- Reserved Instance Marketplace allows other AWS customers to list their Standard RIs for sale.

- Payment terms – ALL UPFRONT, PARTIAL UPFRONT, NO UPFRONT

EC2 Instances usage type - Reserved - Instance

Differences between Standard and Convertible RIs

Characteristic	Standard	Convertible
Terms (avg. discount off On-Demand)	1yr (40%), 3yr (60%)	1yr (31%), 3yr (54%)
Change Availability Zone, instance size (for Linux OS), networking type	Yes (Using ModifyReservedInstances API and console)	Yes (Using ExchangeReservedInstances API and console)
Change instance families, operating system, tenancy, and payment option		Yes
Benefit from Price Reductions		Yes
Sellable on the Reserved Instance Marketplace	Yes (After linking account with a US bank account)	Coming soon

DEMO – Reserved Instance

EC2 Instances usage type

- On-Demand Instance

- Reserved - Instance

- **Spot Instance**

- Scheduled Reserved Instance

EC2 Instances usage type - Spot - Instance

- Amazon EC2 Spot Instances offer spare compute capacity available in the AWS cloud at steep discounts compared to On-Demand instances

- Spot Instances can be interrupted by EC2 with two minutes of notification when EC2 needs the capacity back.

- You can use Spot Instances for various fault-tolerant and flexible applications, such as big data, containerized workloads, high-performance computing (HPC), stateless web servers, rendering, CI/CD and other test & development workloads.

EC2 Instances usage type - Spot - Instance

Request Spot Instances

Request type

○ 🕐 **Request**
Submit a one-time Spot instance request

○ 🕐 **Request and Maintain**
Request a fleet of Spot instances to maintain your target capacity

○ 🕐 **Reserve for duration**
Request a Spot instance with no interruption for 1 to 6 hours (a Spot block)

Amount

Total target capacity ⓘ | 1 | instances ▾

Optional On-Demand portion
Learn more

You can designate a portion of your total target capacity as On-Demand. Your On-Demand portion persists, while your Spot capacity can be tied to scaling, per your settings. You must specify a Launch template for your On-Demand capacity request to be valid.
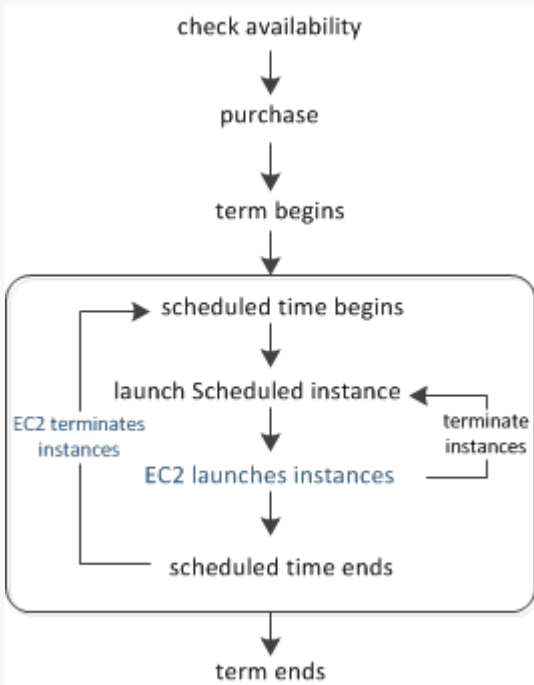
0 | instances

DEMO – SPOT Instance

EC2 Instances usage type

- On-Demand Instance

- Reserved - Instance

- Spot Instance

- **Scheduled Reserved Instance**

EC2 Instances usage type - Scheduled - Instance

The following diagram illustrates the lifecycle of a Scheduled Instance.

Amazon EC2 sets aside pools of EC2 instances in each Availability Zone for use as Scheduled Instances. Each pool supports a specific combination of instance type, operating system, and network.

EC2 Instances usage type - Scheduled - Instance

| | Purchase Scheduled Instances | Launch Scheduled Reserved Instances | | | | | ⟳ |

☐	Id	Instance Type	Availability Zone	Instance count	State ▲	Prev schedule end	Next schedule start	Recurring
☐	sci-7e47...	c4.large	us-east-1d	1	🟡 scheduled	2 days ago	in 19 hours	Weekly on Mon, Tue, Thu, Fri

Scheduled Instance Id: sci-7e47-0e89-499b-9190-8c1ccae6d891

Description | Instances

Instance Type	c4.large		**Prev schedule end**	10/19/2018, 7:27 PM
Platform	Linux/UNIX (EC2-VPC)		**Next schedule start**	10/22/2018, 1:30 PM
Availability Zone	us-east-1d		**Term**	9/14/2018 - 9/14/2019
Slot duration	6 hours		**Created**	9/14/2018, 11:17 AM
Recurring	Weekly on Mon, Tue, Thu, Fri			
Instance count	1			
Hourly price	$0.094 / $117.88 per year			

DEMO – Scheduled Instance

Pricing Example 4

C4.large – On-Demand Price is 0.1/hr per Instance

Usage → 10 Hrs per Day , 50 instance , Mon to Friday, For 1 yr

Total On demand price would be → 10hr * 5 * 52 *0.1 = $260 per instance

For 50 Instance == $ 13,000 per year.

Total Reserved Instance pricing → 24hr* 365 *0.063 = $551.88 per instance

For 50 instance == $ 27,594 Per yr.