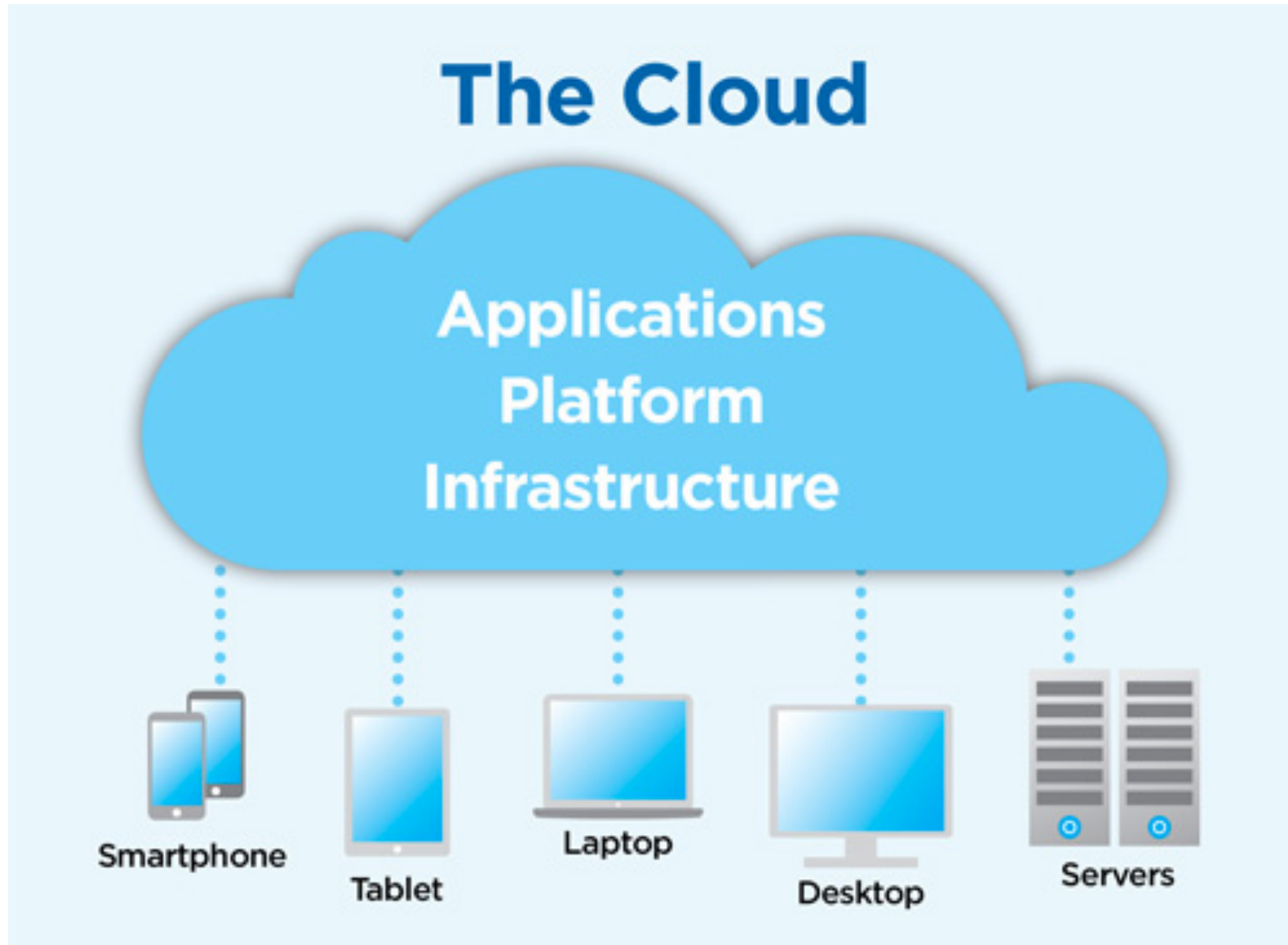


# **Amazon Web Services Tutorial**

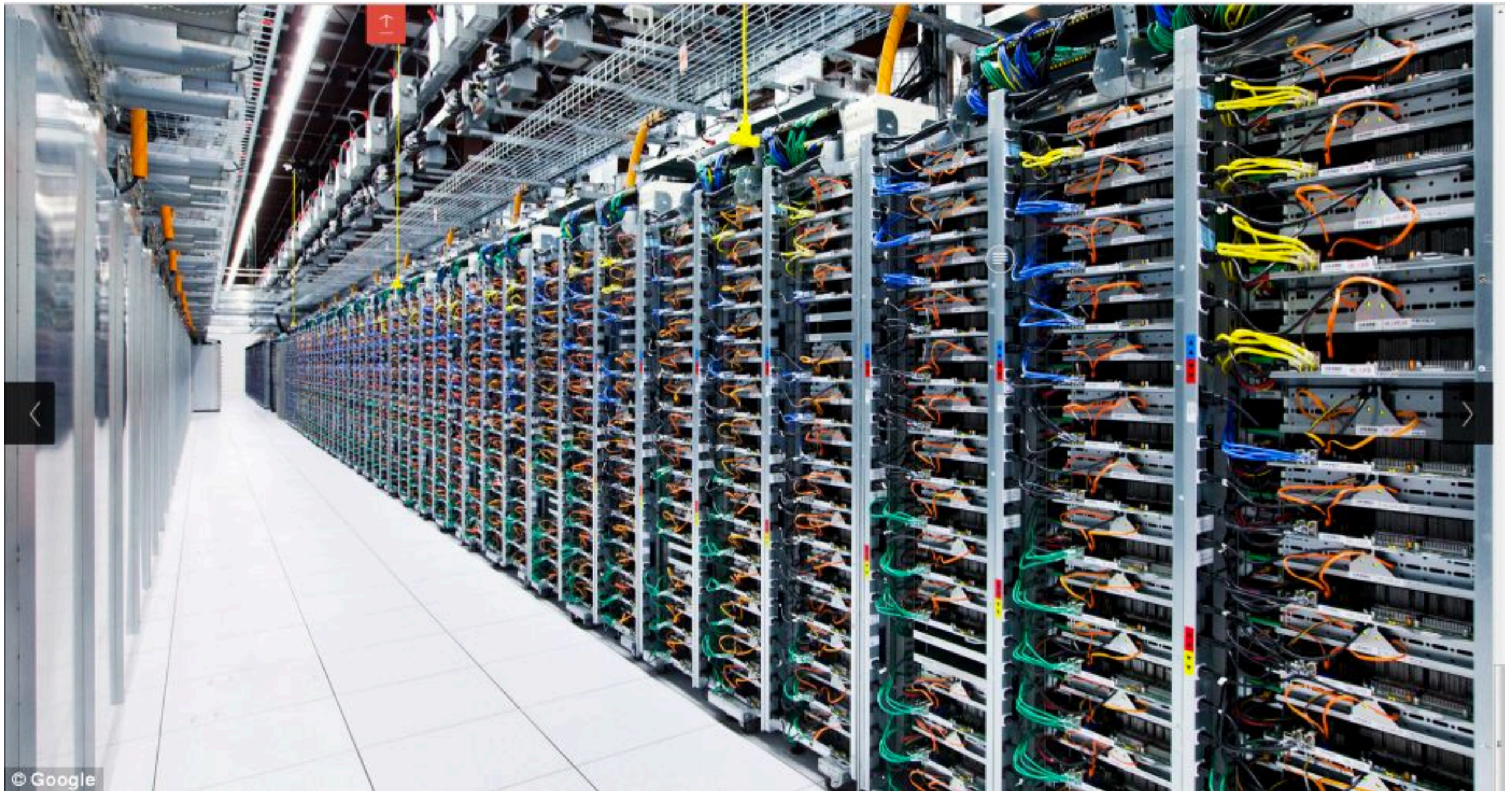
**(Cloud Computing)**

<https://www.datamation.com/cloud-computing/what-is-cloud-computing.html>

# What?








<http://www.dailymail.co.uk/sciencetech/article-2219188/Inside-Google-pictures-gives-look-8-vast-data-centres.html>



# Why?

- Hyperparameters
- Large Models
- Specialized hardware

# How?

- Your school's or lab's computing resources (“pseudo”-cloud)
-   
Extreme Science and Engineering  
Discovery Environment
  - <https://www.xsede.org/>
- Amazon Web Services (AWS), Google Cloud, etc.

# Amazon EC2

Secure and resizable compute capacity in the cloud. Launch applications when needed without upfront commitments.

[Get started with Amazon EC2](#)

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.

Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment. Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change. Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use. Amazon EC2 provides developers the tools to build failure-resilient applications and isolate them from common failure scenarios.

[Try Amazon EC2 for Free](#)

AWS Free Tier includes 750 hours of Linux and Windows t2.micro instances each month for one year. To stay within the Free Tier, use only EC2 Micro instances.

[View AWS Free Tier details >>](#)

## Benefits

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Load Balancers

Target Groups

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SYSTEMS MANAGER SERVICES

Run Command

Resources

You are using the following Amazon EC2 resources in the US West (Oregon) region:

0 Running Instances

0 Elastic IPs

0 Dedicated Hosts

0 Snapshots

0 Volumes

0 Load Balancers

0 Key Pairs

1 Security Groups

0 Placement Groups

Learn more about the latest in AWS Compute from AWS re:Invent 2017 by viewing the EC2 Videos.

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the US West (Oregon) region.

Service Health

Service Status:

US West (Oregon):

Availability Zone Status:

us-west-2a: Availability zone is operating normally

us-west-2b: Availability zone is operating normally

us-west-2c: Availability zone is operating normally

Service Health Dashboard

Scheduled Events

US West (Oregon):

No events

Account Attributes

Supported Platforms

VPC

Default VPC

vpc-f682456e

Resource ID length management

Console experiments

Additional Information

Getting Started Guide

Documentation

All EC2 Resources

Forums

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AWS Marketplace

Find free software trial products in the AWS Marketplace from the EC2 Launch Wizard. Or try these popular AMIs:

Barracuda CloudGen Firewall for AWS - PAYG

Provided by Barracuda Networks, Inc.

Rating

Starting from \$0.80/hr or from \$4,590/yr (12% savings) for software + AWS usage fees

View all Infrastructure Software

Matillion ETL for Amazon Redshift

Provided by Matillion

Rating

Starting from \$1.37/hr or from \$9,850/yr (17% savings) for software + AWS usage fees

View all Business Software

Trend Micro Deep Security

Provided by Trend Micro

Rating

FeedbackEnglish (US)

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Quick Start 1 to 35 of 35 AMIs

Amazon Linux	Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through <code>yum</code> .	Default
--------------	---	---------

Community AMIs		
	Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-a0cfead8	Select

Root device type: ebs    Virtualization type: hvm    ENA Enabled: Yes

Red Hat	Red Hat Enterprise Linux version 7.6 (HVM), EBS General Purpose (SSD) Volume Type	64-bit
---------	---	--------

	SUSE Linux Enterprise Server 12 SP3 (HVM), SSD Volume Type - ami-81a29cf9	Select
---	---	--------

Root device type: ebs	Virtualization type: hvm	ENA Enabled: Yes
-----------------------	--------------------------	------------------

Free tier eligible	Ubuntu Server 16.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical ( <a href="http://www.ubuntu.com/cloud/services">http://www.ubuntu.com/cloud/services</a> ).	64-bit
--------------------	---	--------

Are you launching a database instance? Try Amazon RDS. Hide

[Launch a database using RDS](#)

Microsoft Windows Server 2016 Datacenter - KMS-Activated

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Secure | https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

awsServicesResource Groups

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

## Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance typesCurrent generationShow/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	m5d.large	2	8	1 x 75 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	General purpose	m5d.xlarge	4	16	1 x 150 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	General purpose	m5d.2xlarge	8	32	1 x 300 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	General purpose	m5d.4xlarge	16	64	2 x 300 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	General purpose	m5d.12xlarge	48	192	2 x 900 (SSD)	Yes	10 Gigabit	Yes

Cancel

Previous

Review and Launch

Next: Configure Instance Details

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## Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	1	<a href="#">Launch into Auto Scaling Group</a>
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-f602456e (default)	<a href="#">Create new VPC</a>
Subnet	No preference (default subnet in any Availability Zone)	<a href="#">Create new subnet</a>
Auto-assign Public IP	Use subnet setting (Enable)	
Placement group	<input type="checkbox"/> Add instance to placement group.	
IAM role	None	<a href="#">Create new IAM role</a>
Shutdown behavior	Stop	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring <a href="#">Additional charges apply.</a>	
Tenancy	Shared - Run a shared hardware instance <a href="#">Additional charges will apply for dedicated tenancy.</a>	
T2 Unlimited	<input type="checkbox"/> Enable <a href="#">Additional charges may apply</a>	

► Advanced Details



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100% Thu Aug 16 12:30 PM Casey Graff

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1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click Launch to assign a key pair to your instance and complete the launch process.

AMI Details

Amazon Linux 2 AMI (HVM), 88D Volume Type - ami-a9d09ed1

Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.28, Binutils 2.29.1, and the latest software packages through extras.

Root Device Type: x86\_64Virtualization Type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Inst
t2.micro	Variable	1	1	0.5

Security Groups

Security group name	launch-wizard-1
Description	launch-wizard-1 created 2018-08-16T12:30:24.734-07:00

Type	Protocol	Port R
		79

Instance Details

Storage

Tags

Edit AMI

Edit instance type

Edit security groups

Edit instance details

Edit storage

Edit tags

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key** file that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Choose an existing key pair

Select a key pair

No key pairs found

No key pairs found

You don't have any key pairs. Please create a new key pair by selecting the **Create a new key pair** option above to continue.

Cancel

Launch instances

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search: i-06cd622a4a5f74860Add filter

	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring	Launch T
		i-06cd622a4a5f74860	t2.micro	us-west-2a	running	Initializing	None	ec2-34-219-178-100.us...	34.219.178.100	-	MacOS - Socr...	disabled	August 18,

Instance: i-06cd622a4a5f74860Public DNS: ec2-34-219-178-100.us-west-2.compute.amazonaws.com

Description

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Monitoring

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Instance state

Instance type

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i-06cd622a4a5f74860

running

t2.micro

us-west-2a

launch-wizard-1, view inbound rules, view outbound rules

No scheduled events

Public DNS (IPv4)

IPv4 Public IP

IPv6 IPs

Private DNS

Private IPs

Secondary private IPs

VPC ID

ec2-34-219-178-100.us-west-2.compute.amazonaws.com

34.219.178.100

-

ip-172-31-22-13.us-west-2.compute.internal

172.31.22.13

vpc-f882456a

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## Connect to Your Linux Instance

Learn how to connect to the Linux instances that you launched and transfer files between your local computer and your instance.

To connect to a Windows instance, see [Connecting to Your Windows Instance](#) in the *Amazon EC2 User Guide for Windows Instances*.

Your Computer	Topic
Linux	<a href="#">Connecting to Your Linux Instance Using SSH</a>
Windows	<a href="#">Connecting to Your Linux Instance from Windows Using PuTTY</a>
	<a href="#">Connecting to Your Linux Instance from Windows Using Windows Subsystem for Linux</a>
All	<a href="#">Connecting to Your Linux Instance Using MindTerm</a>

After you connect to your instance, you can try one of our tutorials, such as [Tutorial: Install a LAMP Web Server with the Amazon Linux AMI](#) or [Tutorial: Hosting a WordPress Blog with Amazon Linux](#).

Document Conventions

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search: I-06cd622a4a5f74860Add filter

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
	I-06cd622a4a5f74860	t2.micro	us-west-2a	stopped	None		-	-	-	MacOS - Selan

Instance: I-06cd622a4a5f74860Private IP: 172.31.22.13

Description

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Platform

IAM role

Key pair name

I-06cd622a4a5f74860

stopped

t2.micro

-

us-west-2a

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-

amzn2-ami-hvm-2.0.20180622.1-x86\_64-gp2 (ami-a9d09cd1)

-

-

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ip-172-31-22-13.us-west-2.compute.internal

172.31.22.13

-

vpc-f582469e

subnet-b8b2c8ca

eth0

True

Disabled

867505344120

August 16, 2018 at 12:31:29 PM UTC-7 (less than one hour)

False

normal

Basic

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