

Cloud Computing – Assignment 2

Title: Deploy a website on the AWS EC2.

Objective: To understand the working of Amazon EC2 Linux AMI.

Problem Statement: Deploy a Website on the AWS EC2 instance.

Software Requirements: Browser (Chrome/Firefox), Amazon EC2 instance.

Hardware Requirements: Laptop/Desktop, internet connection

Theory:

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.



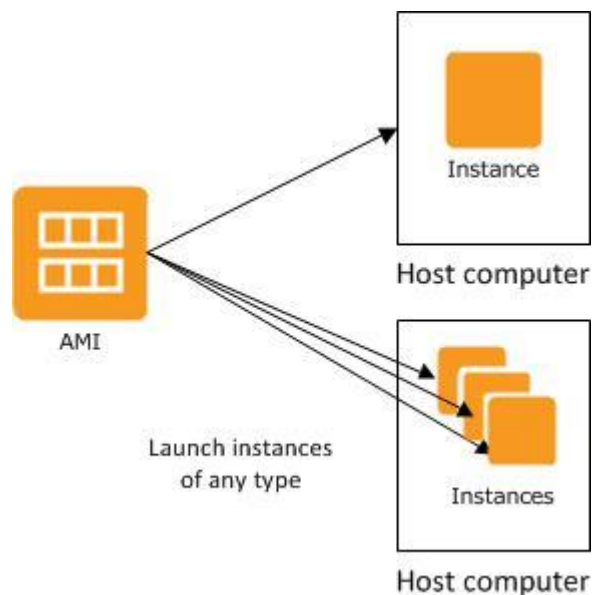
Features of Amazon EC2

- 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



Related Steps and Screenshots

console.aws.amazon.com/console/home?region=us-east-1#

AWS

Services

Resource Groups

vocstartsoft/user250140=ria.m...

N. Virginia

Support

AWS Management Console

AWS services

Find Services

You can enter names, keywords or acronyms.

Example: Relational Database Service, database, RDS

Recently visited services

EC2

S3

All services

Compute

EC2

Lightsail

Lambda

Batch

Elastic Beanstalk

Serverless Application Repository

AWS Outposts

EC2 Image Builder

Blockchain

Amazon Managed Blockchain

Satellite

Ground Station

Quantum Technologies

Amazon Braket

Security, Identity, & Compliance

IAM

Resource Access Manager

Cognito

Secrets Manager

GuardDuty

Inspector

Amazon Macie

AWS Single Sign-On

Certificate Manager

Key Management Service

Containers

Elastic Container Registry

Management & Governance

AWS Organizations

Access resources on the go

Access the Management Console using the AWS Console Mobile App.

Learn more

Explore AWS

AMD Powered EC2 Instances

Featuring AMD EPYC processors provide up to 10% lower cost than comparable instances.

Learn more

AWS IQ

Connect with AWS Certified third-party experts for on-demand consultations and project help.

Get started

EMR Migration Guide

Move your on-premises Apache Spark and Hadoop to Amazon EMR.

Learn more

Activate Windows

Go to Settings to activate Windows.

console.aws.amazon.com/ec2/v2/home?region=us-east-1#Home:

AWS

Services

Resource Groups

vocstartsoft/user250140=ria.m...

N. Virginia

Support

New EC2 Experience

Learn more

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

EC2

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) Region:

Running instances

0

Elastic IPs

0

Dedicated Hosts

0

Snapshots

0

Volumes

0

Load balancers

0

Key pairs

0

Security groups

1

Placement groups

0

Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

Launch instance

Note: Your instances will launch in the US East (N. Virginia) Region

Service health

Service Health Dashboard

Region

US East (N. Virginia)

Status

This service is operating normally

Availability Zone status

Account attributes

Supported platforms

VPC

Default VPC

vpc-23848659

Console experiments

Settings

Explore AWS

Easily launch third-party AMI products

AWS Marketplace has thousands of third-party AMI products that you can find, buy, and deploy with 1-click using the Amazon EC2 console.

Learn more

Save 10% with AMD EPYC-Powered Instances

Lower cost on compute and memory with AMD EPYC processors.

Learn more

Feedback

English (US)

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12:01 AM 22/04/2020

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Services Resource Groups vocstartsoft/user250140=ria.m... N. Virginia Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☐ Free tier only ⓘ

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0323c3dd2da7fb37d (64-bit x86) / ami-0ce2e5b7d27317779 (64-bit Arm) **Select**

Amazon Linux 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 2.26, Binutils 2.29.1, and the latest software packages through extras.

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

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0915e09cc7c9ee3ab **Select**

Amazon Linux Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

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

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-0c322300a1dd5dc79 (64-bit x86) / ami-03587fa4048e9eb62 (64-bit Arm) **Select**

Red Hat Free tier eligible

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

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

SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type - ami-0df6cfabf6e4385b7 (64-bit x86) / ami-0e83525f5b2878f0 (64-bit Arm) **Select**

SUSE Linux Free tier eligible

SUSE Linux Enterprise Server 15 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

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

Activate Windows
Go to Settings to activate Windows.

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Services Resource Groups vocstartsoft/user250140=ria.m... N. Virginia Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. 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 types Current generation Show/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	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

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Launch Instance Wizard

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

ServicesResource Groups

vocstartsoft/user250140~ria.m...N. VirginiaSupport

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

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 instances1Launch into Auto Scaling Group

Purchasing option☐ Request Spot instances

Networkvpc-23848659 (default)Create new VPC

Subnetsubnet-ab8b778a | Default in us-east-1a4091 IP Addresses availableCreate new subnet

Auto-assign Public IPUse subnet setting (Enable)

Placement group☐ Add instance to placement group

Capacity ReservationOpenCreate new Capacity Reservation

IAM roleNoneCreate new IAM role

Shutdown behaviorTerminate

Stop - Hibernate behavior☐ Enable hibernation as an additional stop behavior

Enable termination protection☐ Protect against accidental termination

Monitoring☐ Enable CloudWatch detailed monitoring

CancelPreviousReview and LaunchNext: Add Storage

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Launch Instance Wizard

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

ServicesResource Groups

vocstartsoft/user250140~ria.m...N. VirginiaSupport

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

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-024a04301b08d170a	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

CancelPreviousReview and LaunchNext: Add Tags

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)	Value (256 characters maximum)	Instances ①	Volumes ①
cloudcomputing	cd	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

Type ①	Protocol ①	Port Range ①	Source ①	Description ①
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

[Add Rule](#)

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#) [Go to Settings to activate Windows](#)

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard

Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. 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.

Improve your instances' security. Your security group, launch-wizard-1, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0915e09cc7ceee3ab

Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups [Edit security groups](#)

Security group name launch-wizard-1

Description launch-wizard-1 created 2020/04/22 09:07:31 346A0630

[Cancel](#) [Previous](#) [Launch](#)

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard

Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

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Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0915e09cc7ceee3ab

Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs
t2.micro	Variable	1

Security Groups [Edit security groups](#)

Security group name launch-wizard-1

Description launch-wizard-1 created 2020/04/22 09:07:31 346A0630

Type SSH **Protocol** TCP

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

Tags [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](#)

[Cancel](#) [Previous](#) [Launch](#)

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

other packages.

Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs
t2.micro	Variable	1

Security Groups

Security group name: launch-wizard-1
Description: launch-wizard-1 created 20...

Type: SSH Protocol: TCP

Instance Details

Storage

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.

Create a new key pair

Key pair name: cc-key-for-instance

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel Launch Instances


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cc-key-for-instance.pem

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Launch Status



Initiating Instance Launches

Please do not close your browser while this is loading

Creating security groups... Successful

Authorizing inbound rules... Successful

Initiating launches...

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cc-key-for-instance.pem

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard

Services

Resource Groups

vocstartsoft/user250140=ria.m...N. VirginiaSupport

Launch Status

✓

Your instances are now launching

The following instance launches have been initiated: i-080b25be115f36d22

Creating security groups

Successful (sg-060c5b24e7387ad5c)

Authorizing inbound rules

Successful

Initiating launches

Successful

Launch initiation complete

i

Get notified of estimated charges

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. Find out how to connect to your instances.

Here are some helpful resources to get you started

How to connect to your Linux instance

Learn about AWS Free Usage Tier

Amazon EC2: User Guide

Amazon EC2: Discussion Forum

Feedback

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cc-key-for-instance.pem

12:09 AM
22/04/2020

console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:sort=instancetype

Services

Resource Groups

vocstartsoft/user250140=ria.m...N. VirginiaSupport

New EC2 Experience

Learn more

Launch Instance

Connect

Actions

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Dedicated Hosts

Scheduled Instances

Capacity Reservations

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ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

Filter by tags and attributes or search by keyword

1 to 1 of 1

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IF
	i-080b25be115f36d22	t2.micro	us-east-1a	running	Initializing	None	ec2-18-234-241-201.co...	18.234.241.201	-

Instance: i-080b25be115f36d22

Public DNS: ec2-18-234-241-201.compute-1.amazonaws.com

Description

Status Checks

Monitoring

Tags

Instance ID

i-080b25be115f36d22

Public DNS (IPv4)

ec2-18-234-241-201.compute-1.amazonaws.com

Instance state

running

IPv4 Public IP

18.234.241.201

Instance type

t2.micro

IPv6 IPs

-

Finding

You may not have permission to access AWS Compute Optimizer

Elastic IPs

Activate Windows
Go to Settings to activate Windows.

Feedback

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12:10 AM
22/04/2020



Download PuTTY: latest release (0.73)

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Download: [Stable](#) / [Snapshot](#) / [Docs](#) / [Changes](#) / [Wishlist](#)

This page contains download links for the latest released version of PuTTY. Currently this is 0.73, released on 2019-09-29.

When new releases come out, this page will update to contain the latest, so this is a good source to bookmark or link to. [Altnamatic has a permanent link to the 0.73 release.](#)

Release versions of PuTTY are versions we think are reasonably likely to work out the [development snapshots](#), to see if the problem has already been fixed in the next release. If you have a problem with this release, then it might be worth trying

Package files

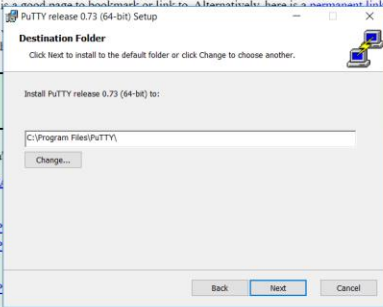
You probably want one of these. They include versions of all the PuTTY executables and DLLs. (Not sure whether you want the 32-bit or the 64-bit version? Read the [FAQ entry](#).)

MSI ("Windows Installer")

32-bit: [putty-0.73-installer.msi](#) ([or by FTP](#))
64-bit: [putty-64bit-0.73-installer.msi](#) ([or by FTP](#))

Unix source archive

.tar.gz: [putty-0.73.tar.gz](#) ([or by FTP](#))



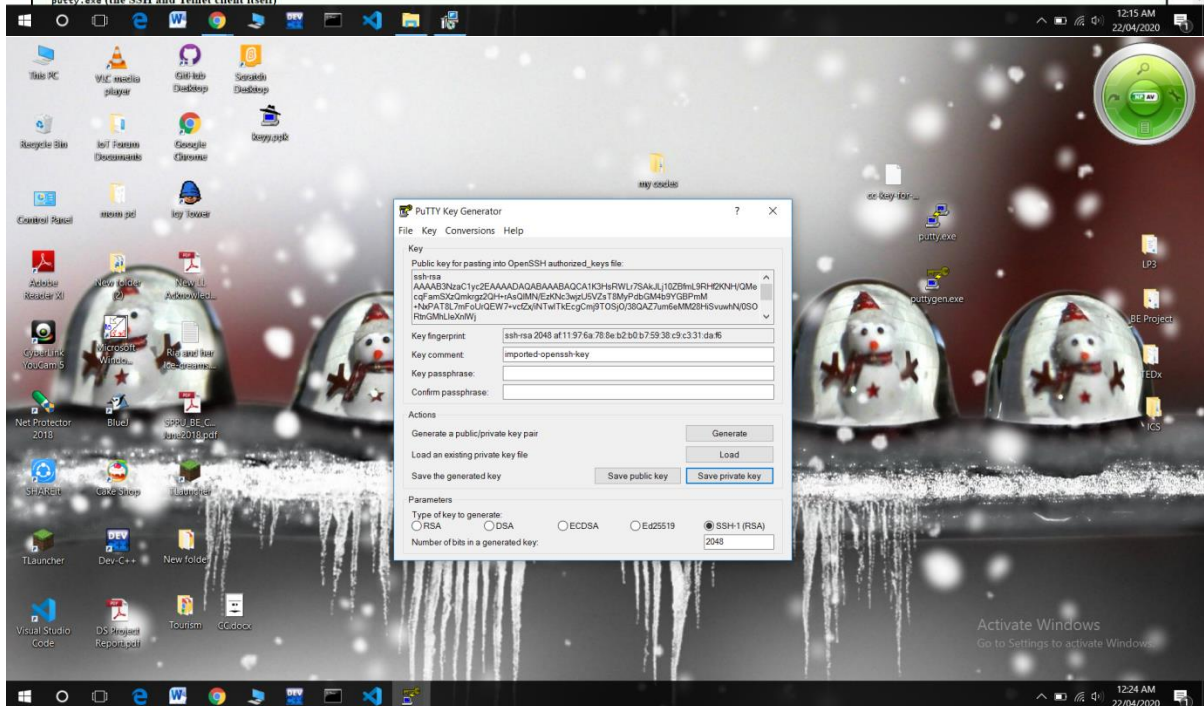
Alternative binary files

The installer packages above will provide versions of all of these (except PuTTYtel), but you can download standalone binaries one by one if you prefer.

(Not sure whether you want the 32-bit or the 64-bit version? Read the [FAQ entry](#).)

[putty.exe](#) (the SSH and Telnet client itself)

Activate Windows
Go to Settings to activate Windows.




```

ubuntu@ip-172-31-82-104:~$ sudo ufw allow 'Apache Full'
Available applications:
  Apache
  Apache Full
  Apache Secure
  OpenSSH
ubuntu@ip-172-31-82-104:~$ sudo ufw allow 'Apache Full'
Skipping adding existing rule (v6)
ubuntu@ip-172-31-82-104:~$ sudo ufw status
Status: inactive
ubuntu@ip-172-31-82-104:~$ sudo apache2 -v
Server version: Apache/2.4.18 (Ubuntu)
Server built:   2016-10-08 11:31:25
ubuntu@ip-172-31-82-104:~$ sudo apache2ctl start
httpd (pid 20246) already running
ubuntu@ip-172-31-82-104:~$ sudo systemctl status apache2
● apache2.service - LSB: Apache2 web server
   Loaded: loaded (/etc/init.d/apache2; had: vendor preset: enabled)
   Drop-In: /lib/systemd/system/apache2.service.d
            └─apache2-systemd.conf
   Active: active (running) since Tue 2020-04-21 19:46:55 UTC; 14h ago
     Docs: man:systemd-sysv-generator(8)
    Tasks: 55
   Memory: 2.3M
     CPU: 31.030s
   CGroup: /system.slice/apache2.service
            └─20246 /usr/sbin/apache2 -k start
              └─20249 /usr/sbin/apache2 -k start
                └─20250 /usr/sbin/apache2 -k start

Apr 21 19:46:54 ip-172-31-82-104 systemd[1]: Stopped LSB: Apache2 web server.
Apr 21 19:46:54 ip-172-31-82-104 systemd[1]: Starting LSB: Apache2 web server...
Apr 21 19:46:54 ip-172-31-82-104 apache2[20227]: * Starting Apache httpd web server apache2
Apr 21 19:46:55 ip-172-31-82-104 apache2[20227]: *
Apr 21 19:46:55 ip-172-31-82-104 systemd[1]: Started LSB: Apache2 web server.
ubuntu@ip-172-31-82-104:~$

```

```
ubuntu@ip-172-31-82-104:~$
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libbcmanager0 libnih-dbus1 mountall
Suggested packages:
  graphviz upstart-monitor
The following NEW packages will be installed:
  libbcmanager0 libnih-dbus1 mountall upstart
0 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 497 kB of archives.
After this operation, 2,187 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1-ec2.archive.ubuntu.com/ubuntu xenial/main amd64 libnih-dbus1 amd64 1.0.3-4.3ubuntu1 [14.1 kB]
Get:2 http://us-east-1-ec2.archive.ubuntu.com/ubuntu xenial/main amd64 mountall amd64 2.54ubuntu1 [56.8 kB]
Get:3 http://us-east-1-ec2.archive.ubuntu.com/ubuntu xenial/main amd64 libbcmanager0 amd64 0.39-2ubuntu5 [34.7 kB]
Get:4 http://us-east-1-ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 upstart amd64 1.13.2-0ubuntu21.1 [392 kB]
Fetched 497 kB in 0s (18.7 MB/s)
Selecting previously unselected package libnih-dbus1:amd64.
(Reading database ... 7725 files and directories currently installed.)
Preparing to unpack .../libnih-dbus1_1.0.3-4.3ubuntu1_amd64.deb ...
Unpacking libnih-dbus1:amd64 (1.0.3-4.3ubuntu1) ...
Selecting previously unselected package mountall.
Preparing to unpack .../mountall_2.54ubuntu1_amd64.deb ...
Unpacking mountall (2.54ubuntu1) ...
Selecting previously unselected package libbcmanager0:amd64.
Preparing to unpack .../libbcmanager0_0.39-2ubuntu5_amd64.deb ...
Unpacking libbcmanager0:amd64 (0.39-2ubuntu5) ...
Selecting previously unselected package upstart.
Preparing to unpack .../upstart_1.13.2-0ubuntu21.1_amd64.deb ...
Unpacking upstart (1.13.2-0ubuntu21.1) ...
Processing triggers for libc-bin (2.23-0ubuntu1) ...
Processing triggers for man-db (2.7.5-1) ...
Processing triggers for dbus (1.10.6-1ubuntu3.5) ...
Processing triggers for ureadahead (0.100.0-19.1) ...
Setting up libnih-dbus1:amd64 (1.0.3-4.3ubuntu1) ...
Setting up mountall (2.54ubuntu1) ...
Setting up libbcmanager0:amd64 (0.39-2ubuntu5) ...
Setting up upstart (1.13.2-0ubuntu21.1) ...
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-4.4.0-1105-aws
Found initrd image: /boot/initrd.img-4.4.0-1105-aws
Found linux image: /boot/vmlinuz-4.4.0-1101-aws
Found initrd image: /boot/initrd.img-4.4.0-1101-aws
done
Processing triggers for libc-bin (2.23-0ubuntu1) ...
Processing triggers for dbus (1.10.6-1ubuntu3.5) ...
Processing triggers for ureadahead (0.100.0-19.1) ...
ubuntu@ip-172-31-82-104:~$
```

```

root@ip-172-31-88-192:/home/ec2-user#
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"

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Amazon Linux AMI

https://aws.amazon.com/amazon-linux-ami/2018.03-release-notes/
[ec2-user@ip-172-31-88-192 ~]$ sudo su
[root@ip-172-31-88-192 ec2-user]# yum update -y
Loaded plugins: priorities, update-motd, upgrade-helper
No packages marked for update
[root@ip-172-31-88-192 ec2-user]# yum install httpd -y
Loaded plugins: priorities, update-motd, upgrade-helper
Resolving Dependencies
--> Running transaction check
--> Package httpd.x86_64 0:2.2.34-1.16.amzn1 will be installed
--> Processing Dependency: httpd-tools = 2.2.34-1.16.amzn1 for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Processing Dependency: apr-util-ldap for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Processing Dependency: libaprutil-1.so.0()(64bit) for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Processing Dependency: libapr-1.so.0()(64bit) for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Running transaction check
--> Package apr.x86_64 0:1.5.2-5.13.amzn1 will be installed
--> Package apr-util.x86_64 0:1.5.4-6.18.amzn1 will be installed
--> Package apr-util-ldap.x86_64 0:1.5.4-6.18.amzn1 will be installed
--> Package httpd-tools.x86_64 0:2.2.34-1.16.amzn1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

Package Arch Version Repository Size
-----
Installing:
httpd x86_64 2.2.34-1.16.amzn1 amzn-main 1.2 M
Installing for dependencies:
apr x86_64 1.5.2-5.13.amzn1 amzn-main 118 k
apr-util x86_64 1.5.4-6.18.amzn1 amzn-main 99 k
apr-util-ldap x86_64 1.5.4-6.18.amzn1 amzn-main 19 k
httpd-tools x86_64 2.2.34-1.16.amzn1 amzn-main 80 k

Transaction Summary
Install 1 Package (+4 Dependent packages)

Total download size: 1.5 M
Installed size: 3.6 M
Downloading packages:
(1/5): apr-util-ldap-1.5.4-6.18.amzn1.x86_64.rpm
(2/5): apr-1.5.2-5.13.amzn1.x86_64.rpm

```



```
root@ip-172-31-88-192/home/ec2-user
Dependencies Resolved

=====
Package                Arch                Version                Repository              Size
=====
Installing:
httpd                  x86_64              2.2.34-1.16.amzn1     amzn-main              1.2 M
Installing for dependencies:
apr                    x86_64              1.5.2-5.13.amzn1     amzn-main              118 k
apr-util              x86_64              1.5.4-6.18.amzn1     amzn-main              99 k
apr-util-ldap         x86_64              1.5.4-6.18.amzn1     amzn-main              19 k
httpd-tools           x86_64              2.2.34-1.16.amzn1     amzn-main              80 k
=====

Transaction Summary
-----
Install 1 Package (+4 Dependent packages)

Total download size: 1.5 M
Installed size: 3.6 M
Downloading packages:
(1/5): apr-util-ldap-1.5.4-6.18.amzn1.x86_64.rpm | 19 kB 00:00:00
(2/5): apr-1.5.2-5.13.amzn1.x86_64.rpm | 118 kB 00:00:00
(3/5): httpd-tools-2.2.34-1.16.amzn1.x86_64.rpm | 80 kB 00:00:00
(4/5): apr-util-1.5.4-6.18.amzn1.x86_64.rpm | 99 kB 00:00:00
(5/5): httpd-2.2.34-1.16.amzn1.x86_64.rpm | 1.2 MB 00:00:00
-----
Total 1.7 MB/s | 1.5 MB 00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Installing : apr-1.5.2-5.13.amzn1.x86_64 1/5
Installing : apr-util-1.5.4-6.18.amzn1.x86_64 2/5
Installing : httpd-tools-2.2.34-1.16.amzn1.x86_64 3/5
Installing : apr-util-ldap-1.5.4-6.18.amzn1.x86_64 4/5
Installing : httpd-2.2.34-1.16.amzn1.x86_64 5/5
Verifying : httpd-tools-2.2.34-1.16.amzn1.x86_64 1/5
Verifying : apr-util-1.5.4-6.18.amzn1.x86_64 2/5
Verifying : httpd-2.2.34-1.16.amzn1.x86_64 3/5
Verifying : apr-1.5.2-5.13.amzn1.x86_64 4/5
Verifying : apr-util-ldap-1.5.4-6.18.amzn1.x86_64 5/5

Installed:
httpd.x86_64 0:2.2.34-1.16.amzn1

Dependency Installed:
apr.x86_64 0:1.5.2-5.13.amzn1 apr-util.x86_64 0:1.5.4-6.18.amzn1 apr-util-ldap.x86_64 0:1.5.4-6.18.amzn1 httpd-tools.x86_64 0:2.2.34-1.16.amzn1

Complete!
[root@ip-172-31-88-192 ec2-user]#
```

```
root@ip-172-31-88-192/var/www/html
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"
Last login: Wed Apr 22 10:47:25 2020 from 106.220.146.211

 _ _ _ _ _
|_| ( _ ) /
 _ _ _ _ _ Amazon Linux AMI

https://aws.amazon.com/amazon-linux-ami/2018.03-release-notes/
[ec2-user@ip-172-31-88-192 ~]$ sudo su
[root@ip-172-31-88-192 ec2-user]# cd /var/www/html
[root@ip-172-31-88-192 html]# nano index.html
[root@ip-172-31-88-192 html]#
```

```
root@ip-172-31-88-192:/var/www/html
GNU nano 2.5.3 File: index.html
DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<!--> <html xmlns="http://www.w3.org/1999/xhtml"> -->
<head>

    <style>

body {
    margin: 0;
    padding: 0;
    text-align: left;
    font: 12px Arial, Helvetica, sans-serif;
    font-size: 13px;
    color: #061C37;
    background: #1F4297;
    background-repeat: repeat-x;
}

{
    margin: 0 auto 0 auto;
    text-align: left;
}

#container
{
    display: block;
    height: auto;
    position: relative;
    width: 940px;
}

#mainpic h1
{
    position: absolute;
    text-align: right;
    font-size: 30px;
    color: #FFF;
    left: 550px;
    top: 100px;
}

#mainpic h2
{
    position: absolute;
    text-align: right;
    font-size: 30px;
    color: #FFF;
    left: 550px;
    top: 100px;
}


```

```
root@ip-172-31-88-192:/var/www/html
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"
Last login: Wed Apr 22 10:47:25 2020 from 106.220.146.211

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Amazon Linux AMI

https://aws.amazon.com/amazon-linux-ami/2018.03-release-notes/
[ec2-user@ip-172-31-88-192 ~]$ sudo su
[root@ip-172-31-88-192 ec2-user]# cd /var/www/html
[root@ip-172-31-88-192 html]# nano index.html
[root@ip-172-31-88-192 html]# nano index.html
[root@ip-172-31-88-192 html]# service httpd start
Starting httpd:
[ OK ]
[root@ip-172-31-88-192 html]# service httpd status
httpd (pid 2898) is running...
[root@ip-172-31-88-192 html]# chkconfig httpd on
[root@ip-172-31-88-192 html]#
```

