Lab 1

1. creating an EC2 instance in Linux.

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Q Search for an AMI by entering a search term e.g. "Windows"   ×

Search by Systems Manager parameter

Quick Start		1 to 44 of 44 AMIs

My AMIs		**Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-087c17d1fe0178315 (64-bit x86) / ami-029c64b3c205e6cce (64-bit Arm)	**Select**
AWS Marketplace	**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. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.	◉ 64-bit (x86) ○ 64-bit (Arm)
Community AMIs		Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	

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 families ▾   Current generation ▾   **Show/Hide Columns**

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs (i)	Memory (GiB)	Instance Storage (GB) (i)	EBS-Optimized Available (i)	Network Performance (i)	IPv6 Support (i)
☐	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
■	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
☐	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
☐	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
☐	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
☐	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
☐	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
☐	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

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 (i)	1	Launch into Auto Scaling Group (i)

Purchasing option (i)	☐ Request Spot instances

Network (i)	vpc-0177f40e392a6dfb3 (default) ▾	C Create new VPC
Subnet (i)	No preference (default subnet in any Availability Zone ▾	Create new subnet
Auto-assign Public IP (i)	Use subnet setting (Enable) ▾	

Placement group (i)	☐ Add instance to placement group
Capacity Reservation (i)	Open ▾

Domain join directory (i)	No directory	C Create new directory
IAM role (i)	None ▾	C Create new IAM role

Shutdown behavior (i)	Stop ▾
Stop - Hibernate behavior (i)	☐ Enable hibernation as an additional stop behavior
Enable termination protection (i)	☐ Protect against accidental termination

▼ Advanced Details

Enclave	ⓘ	☐ Enable
Metadata accessible	ⓘ	Enabled ⬍
Metadata version	ⓘ	V1 and V2 (token optional) ⬍
Metadata token response hop limit	ⓘ	1 ⬍
User data	ⓘ	⦿ As text ○ As file ☐ Input is already base64 encoded

(Optional)

---

1. Choose AMI 2. Choose Instance Type 3. Configure Instance **4. Add Storage** 5. Add Tags 6. Configure Security Group 7. 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-0699a041095ac5492	8	General Purpose SSD (gp2)	100 / 3000	N/A	☑	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.

---

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 ⓘ	Volumes ⓘ	Network Interfaces ⓘ	
lab 1	linux	☑	☑	☑	⊗

Add another tag   (Up to 50 tags maximum)

---

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: launch-wizard-1

Description: launch-wizard-1 created 2021-09-11T01:16:50.726+05:30

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ		Description ⓘ	
SSH ⌄	TCP	22	Custom ⌄	0.0.0.0/0	e.g. SSH for Admin Desktop	⊗
HTTP ⌄	TCP	80	Custom ⌄	0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop	⊗
HTTPS ⌄	TCP	443	Custom ⌄	0.0.0.0/0, ::/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.

Instance

Creating a virtual desktop in the current instance.

Python is pre-installed in Linux. Installing pip package.

Executing a program

```
[ec2-user@ip-172-31-22-64 ~]$ touch admin.py
[ec2-user@ip-172-31-22-64 ~]$ ls -lrt
total 0
-rw-rw-r-- 1 ec2-user ec2-user 0 Sep 10 20:05 admin.py
[ec2-user@ip-172-31-22-64 ~]$ cat admin.py
[ec2-user@ip-172-31-22-64 ~]$ python admin.py
[ec2-user@ip-172-31-22-64 ~]$ python admin.py
[ec2-user@ip-172-31-22-64 ~]$ touch admin.py
[ec2-user@ip-172-31-22-64 ~]$ ls -lrt
total 0
-rw-rw-r-- 1 ec2-user ec2-user 0 Sep 10 20:10 admin.py
[ec2-user@ip-172-31-22-64 ~]$ nano admin.py
```

```
ec2-user@ip-172-31-22-64:~                                                    —    □    ×
  GNU nano 2.9.8                          admin.py

print ('amazon EC2 is a web service')




^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur Pos     M-U Undo      M-A Mark Text
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Linter   ^_ Go To Line  M-E Redo      M-6 Copy Text
```

output

```
[ec2-user@ip-172-31-22-64 ~]$ cat admin.py

print ('amazon EC2 is a web service')
[ec2-user@ip-172-31-22-64 ~]$ python admin.py
amazon EC2 is a web service
[ec2-user@ip-172-31-22-64 ~]$
```

2. Creating an EC2 instance in windows

Step 1: Choose an Amazon Machine Image (AMI)

Deep Learning Base AMI (Ubuntu 16.04) Version 40.0 - ami-0415b5cd9318a45f3

Built with NVIDIA CUDA, cuDNN, NCCL, GPU Drivers, Intel MKL-DNN, Docker, NVIDIA-Docker and EFA support. For a fully managed experience, check: https://aws.amazon.com/sagemaker

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

Select
64-bit (x86)

Microsoft Windows Server 2019 Base with Containers - ami-02cc00a60f7d8adb7

Windows
Free tier eligible

Microsoft Windows 2019 Datacenter edition with Containers. [English]

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

Select
64-bit (x86)

Microsoft Windows Server 2019 with SQL Server 2017 Standard - ami-0358eb0c541bbfe09

Windows

Microsoft Windows 2019 Datacenter edition, Microsoft SQL Server 2017 Standard. [English]

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

Select
64-bit (x86)

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 families ▾   Current generation ▾   **Show/Hide Columns**

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs ⓘ	Memory (GiB)	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ	IPv6 Support ⓘ
☐	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
■	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
☐	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
☐	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
☐	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
☐	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes

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`   Launch into Auto Scaling Group ⓘ

Purchasing option ⓘ   ☐ Request Spot instances

Network ⓘ   vpc-0177f40e392a6dfb3 (default) ⬦   C Create new VPC

Subnet ⓘ   No preference (default subnet in any Availability Zone ⬦   Create new subnet

Auto-assign Public IP ⓘ   Use subnet setting (Enable) ⬦

Placement group ⓘ   ☐ Add instance to placement group

Capacity Reservation ⓘ   Open ⬦

Domain join directory ⓘ   No directory   C Create new directory

IAM role ⓘ   None ⬦   C Create new IAM role

Shutdown behavior ⓘ   Stop ⬦

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

Enable termination protection ⓘ   ☐ Protect against accidental termination

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/sda1	snap-0450837d182e3b89a	30	General Purpose SSD (gp2) ▾	100 / 3000	N/A	☑	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.

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 ⓘ	Volumes ⓘ	Network Interfaces ⓘ	
lab1	windows	☑	☑	☑	✕

Add another tag   (Up to 50 tags maximum)

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: launch-wizard-2

Description: launch-wizard-2 created 2021-09-11T01:56:49.856+05:30

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	Description ⓘ	
RDP ▾	TCP	3389	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.

Instances

Instances (1/3) **Info**   ⟳   Connect   Instance state ▾   Actions ▾   **Launch instances** ▾

Q Filter instances   ‹ 1 › ⚙

	Name ▽	Instance ID	Instance state ▽	Instance type ▽	Status check	Alarm status	Availability Zone ▽	Public IPv4 DNS
☐	Bastion Host	i-0b01d790532773ef7	⊘ Running ⊕⊖	t2.micro	⊘ 2/2 checks passed	No alarms +	us-east-1a	ec2-52-207-220-
☐	lab1	i-0ac8c8507454a2e8d	⊖ Terminated⊕⊖	t2.micro	–	No alarms +	us-east-1b	–
☑	Lab 1	i-084831d7fb1b07f61	⊘ Running ⊕⊖	t2.micro	⊘ 2/2 checks passed	No alarms +	us-east-1b	ec2-3-89-137-25

Connect to instance Info

Connect to your instance i-084831d7fb1b07f61 (Lab 1) using any of these options

Session Manager | **RDP client** | EC2 Serial Console

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:
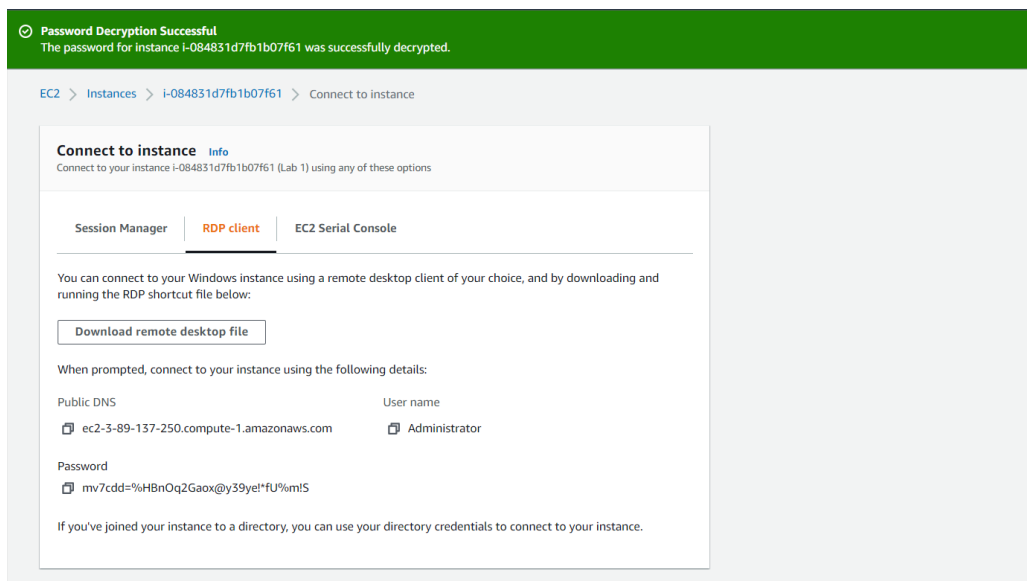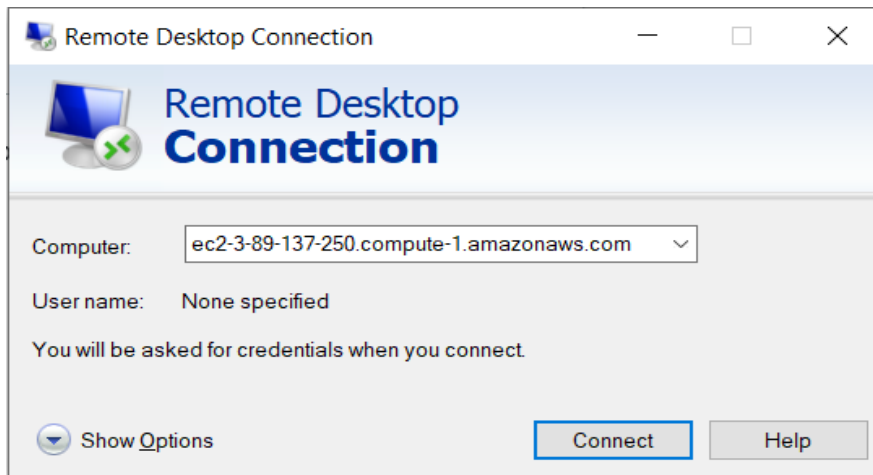
Download remote desktop file

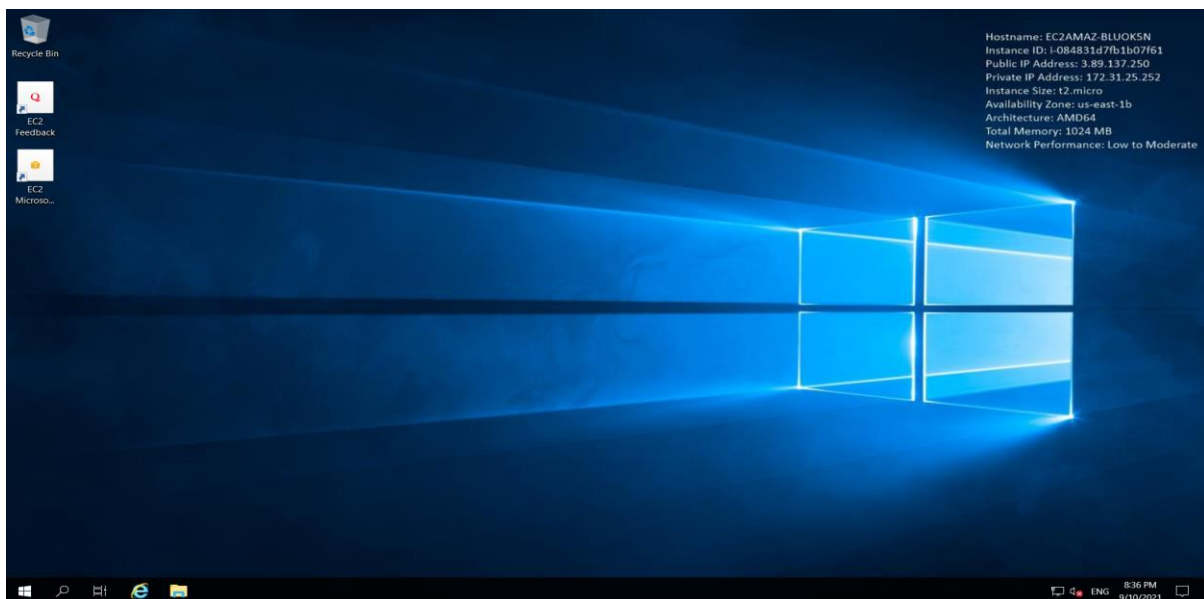When prompted, connect to your instance using the following details:

Public DNS   **User name**

⧉ ⊘ Public DNS copied -1.amazonaws.com   ⧉ Administrator

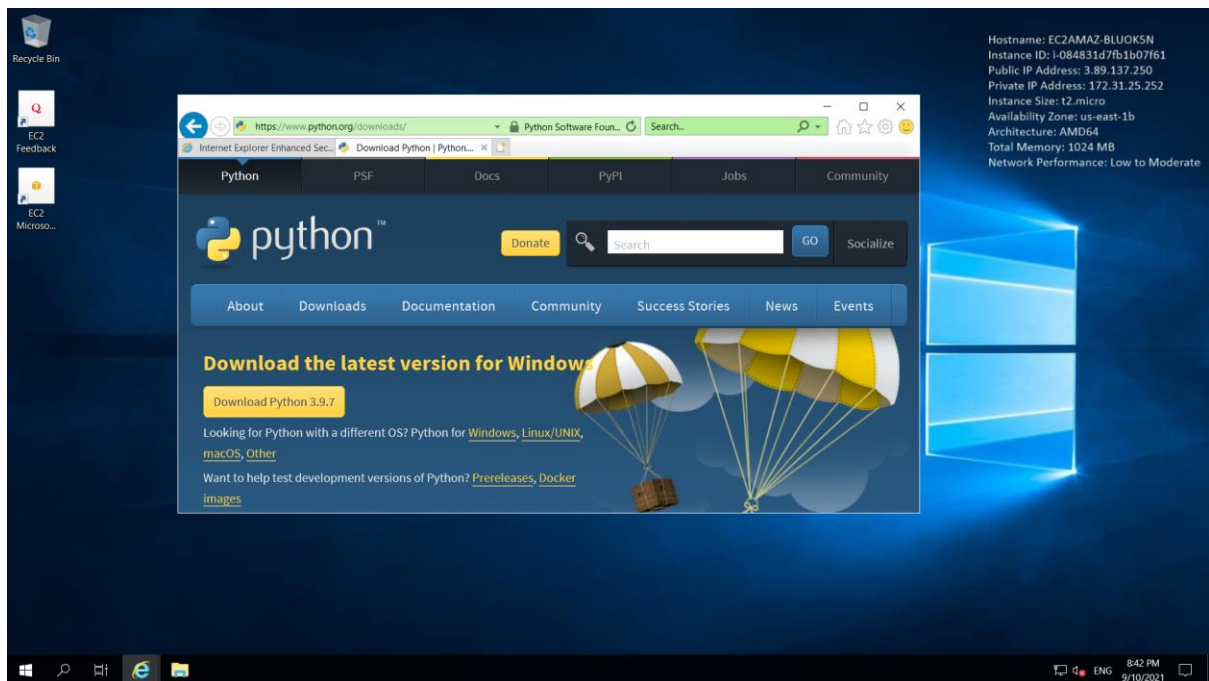**Password**   **Get password**

If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

Virtual Windows desktop

Installing python

Execution

Thank you