



Lab Manual- Create EC2 Instance for Windows VM on AWS Platform

TABLE OF CONTENTS:

1	Objective	2
2	EC2 Instance Types	2
3	Pre Requisites	2
4	Creating Windows EC2 Instance	3

1. OBJECTIVE

An instance is a virtual server in the AWS Cloud. With Amazon EC2, you can set up and configure the operating system and applications that run on your instance.

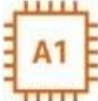


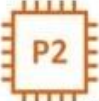
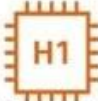
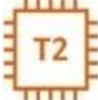
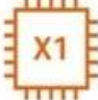

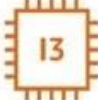

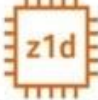
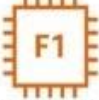
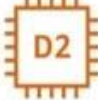
Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instance types comprise varying combinations of CPU, memory, storage, and networking capacity and give you the flexibility to choose the appropriate mix of resources for your applications.

EC2 Instance can even be launched with help of AWS CLI

Note: When you sign up for AWS, you can get started with Amazon EC2 using the **AWS Free Tier**. If you created your AWS account less than 12 months ago, and have not already exceeded the free tier benefits for Amazon EC2, it will not cost you anything to complete this tutorial, because we help you select options that are within the free tier benefits. Otherwise, you'll incur the standard Amazon EC2 usage fees from the time that you launch the instance until you terminate the instance (which is the final task of this tutorial), even if it remains idle.

2. EC2 Instance types

It is important to select the right instance size and type for the working of our virtual machine perfectly. So, these are the types that are available within AWS.

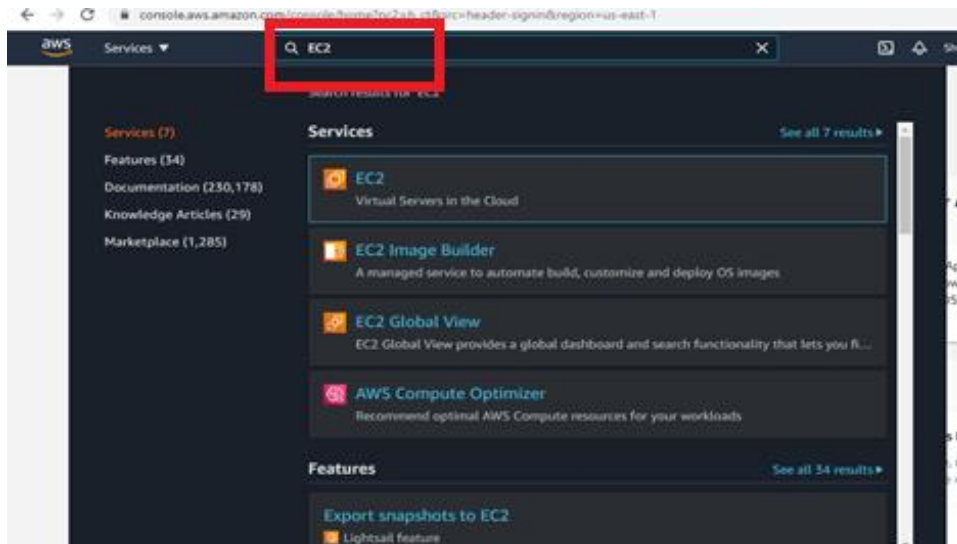
General Purpose	Compute Optimised	Memory Optimised	Accelerated Computing	Storage Optimised
 ARM based core and custom silicon	 Compute - CPU intensive apps and DBs	 RAM - Memory intensive apps and DB's	 Processing optimised - Machine Learning	 High Disk Throughput - Big data clusters
 Tiny - Web servers and small DBs		 Xtreme RAM - For SAP/Spark	 Graphics Intensive - Video and streaming	 IOPS - NoSQL DBs
 Main - App servers and general purpose		 High Compute and High Memory - Gaming	 Field Programmable - Hardware acceleration	 Dense Storage - Data Warehousing

3. PRE-REQUISISTE

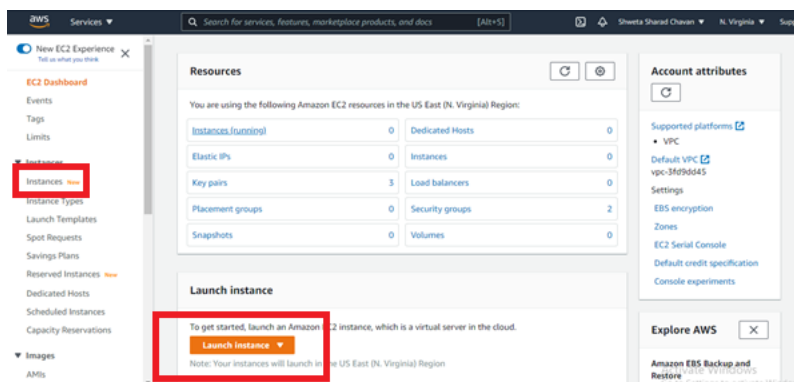
- **Accounts in AWS A local Computer with 4 CPU, 16 GB RAM, 200 GB disk space**

4. Creating Windows EC2 instance and connect with RDP

Step 1: Login to AWS management Console and Type EC2 in service search box and click on it.



Step 2: In EC2 dashboard click **instances** from left side menu and click **Launch Instance**



Step 3: First Step is to choose an Amazon Machine Image so select **Windows Server 2016 Base** as we are creating a Windows VM.

aws Services Search for services, features, marketplace products, and docs [Alt+S] Shweta Sharad Chavan 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

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 windows 2016 Search by Systems Manager parameter

AWS Launch Wizard for SQL Server offers an easy way to size, configure, and deploy Microsoft SQL Server Always On availability groups. Use AWS Launch Wizard for this launch

Quick Start (8) 1 to 8 of 8 AMIs

My AMIs (0)

AWS Marketplace (287)

Community AMIs (1626)

☐ Free tier only

Windows **Free tier eligible** **Microsoft Windows Server 2016 Base** - ami-026419edf88a9e928 **Select**
 Microsoft Windows 2016 Datacenter edition. [English]
 Root device type: ebs Virtualization type: hvm ENA Enabled: Yes 64-bit (x86)

Windows **Free tier eligible** **Microsoft Windows Server 2016 Base with Containers** - ami-0b5828c30aeb7a93d **Select**
 Microsoft Windows 2016 Datacenter edition with Containers. [English]
 Root device type: ebs Virtualization type: hvm ENA Enabled: Yes 64-bit (x86)

Microsoft Windows Server 2016 with SQL Server 2016 Standard - ami-0995dde612c880f85 **Select**

Activate Windows

Step 4: Choose Instance Type as we select a free tier eligible **t2 micro** instance provides **1vCPU** and **1Gb** Memory.

aws Services Search for services, features, marketplace products, and docs [Alt+S] Shweta Sharad Chavan 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 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
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes

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

Step 5: Keep the default option in Configure Instance. Notice the VPC and Click Next

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-3f9d345 (default) [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 [Create new directory](#)

IAM role: None [Create new IAM role](#)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

Step 6: in add storage details as default as we are creating it for training purpose and move to add Tags.

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-0929e3aff18832e99	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt

[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.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

Go to Settings to activate Windows.

Step 6: Leave the Tag option Default

aws Services Search for services, features, marketplace products, and docs [Alt+S]

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 ⓘ
This resource currently has no tags				
Choose the Add tag button or click to add a Name tag . Make sure your IAM policy includes permissions to create tags.				

[Add Tag](#) (Up to 50 tags maximum)

Cancel Previous **Review and Launch** Next: Configure Security Group

Go to Settings to activate Windows.

Step 8: Next Configure Security group by creating a security group letting a default name and description and adding rules as RDP and **All traffic** to be allowed from anywhere source.

aws Services Search for services, features, marketplace products, and docs [Alt+S]

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 ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	Description ⓘ
RDP	TCP	3389	Anywhere 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop
All traffic	All	0 - 65535	Anywhere 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.

Cancel Previous **Review and Launch**

Go to Settings to activate Windows.

Step 9: Lastly Review the instance and click launch .

aws Services Search for services, features, marketplace products, and docs [Alt+S] Shweta Sharad Chavan 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 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-2, 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](#)

Microsoft Windows Server 2016 Base - ami-026419edf88a9e928
Free tier eligible Microsoft Windows 2016 Datacenter edition. [English]
Root Device Type: ebs Virtualization type: hvm
If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the [License Mobility Form](#). Don't show me this again

Instance Type [Edit instance type](#)

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

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

Feedback English (US) © 2008 - 2021, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use Cookie preferences

Type here to search 32°C Rain showers 4:34 PM 8/10/2021

Step 10: As Password required to login to instance, for that create a key to obtain it and name the **keypair** as key pair. Also, **download the key pair**, losing this .pem file will not let you obtain your password..

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

aws Services Search for services, features, marketplace products, and docs [Alt+S] Shweta Sharad Chavan 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 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 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](#)

Microsoft Windows Server 2016 Base - ami-026419edf88a9e928
Free tier eligible Microsoft Windows 2016 Datacenter edition. [English]
Root Device Type: ebs Virtualization type: hvm
If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the [License Mobility Form](#). Don't show me this again

Instance Type [Edit instance type](#)

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

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

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 [Download Key Pair](#)

Key pair name

keypair

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](#)

Step 11: Wait and observe the instance state from pending to running and status checked from initializing to 2/2 checks passed then your instance is launched and ready to connect..

← → ↻ console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard: ☆ ⚙️ 🌐

aws Services ▾ 🔍 Search for services, features, marketplace products, and docs [Alt+S] 📧 🔔 Shweta Sharad Chavan ▾ N. Virginia ▾ Support ▾

Launch Status

✓ **Your instances are now launching**
The following instance launches have been initiated: [i-04798d2d43b4f2a09](#) [View launch log](#)

ℹ️ **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 Windows instance
- Amazon EC2: User Guide
- Learn about AWS Free Usage Tier
- Amazon EC2: Microsoft Windows Guide

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:search=i-04798d2d43b4f2a09;sort=instanceid Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use Cookie preferences

keypair (1).pem ^

Type here to search

32°C Rain showers 4:35 PM 8/10/2021

← → ↻ console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances: ☆ ⚙️ 🌐

aws Services ▾ 🔍 Search for services, features, marketplace products, and docs [Alt+S] 📧 🔔 Shweta Sharad Chavan ▾ N. Virginia ▾ Support ▾

New EC2 Experience Tell us what you think ✕

EC2 Dashboard

Events

Tags

Limits

▼ Instances

Instances **New**

Instance Types

Launch Templates

Spot Requests

Instances (1) Info

Filter Instances

Connect Instance state Actions Launch instances

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	Windows Mac...	i-04798d2d43b4f2a09	Running	t2.micro	Initializing	No alarms +	us-east-1e

Select an instance above

Step 12: Click Connect, Login via RDP

aws Services ▾ 🔍 Search for services, features, marketplace products, and docs [Alt+S] 📧 🔔 Shweta Sharad Chavan ▾ N. Virginia ▾ Support ▾

New EC2 Experience Tell us what you think ✕

EC2 Dashboard

Events

Tags

Limits

▼ Instances

Instances **New**

Instance Types

Launch Templates

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Instances (1/1) Info

Connect Instance state Actions Launch instances

Filter Instances

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	Windows Mac...	i-04798d2d43b4f2a09	Running	t2.micro	2/2 checks passed	No alarms +	us-east-1e

Instance: i-04798d2d43b4f2a09 (Windows Machine)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

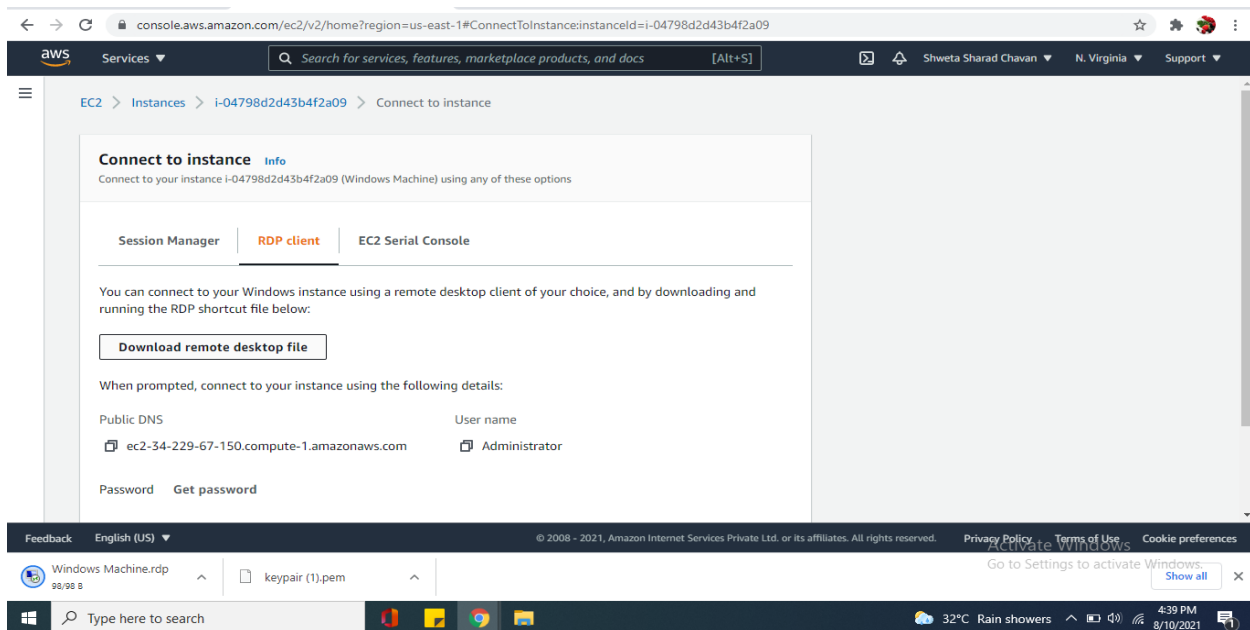
Instance ID	Public IPv4 address	Private IPv4 addresses
i-04798d2d43b4f2a09 (Windows Machine)	34.229.67.150 open address	172.31.56.50

Public IPv4 address

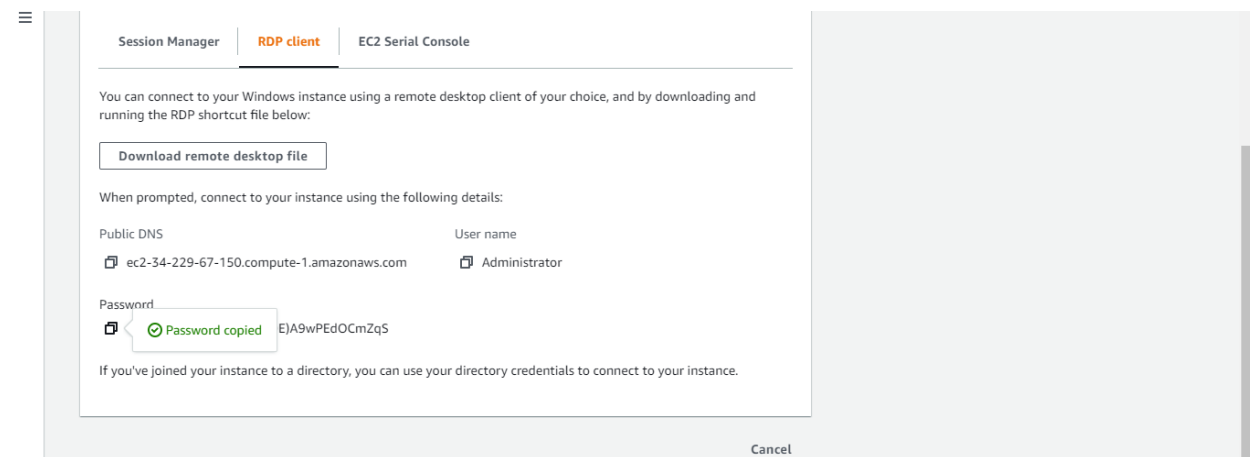
Public IPv4 address

b

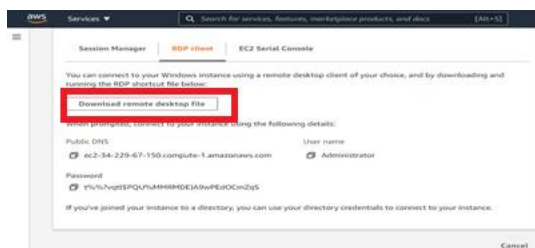
Step 12: Select RDP Client and browse your keypair.pem file upload it



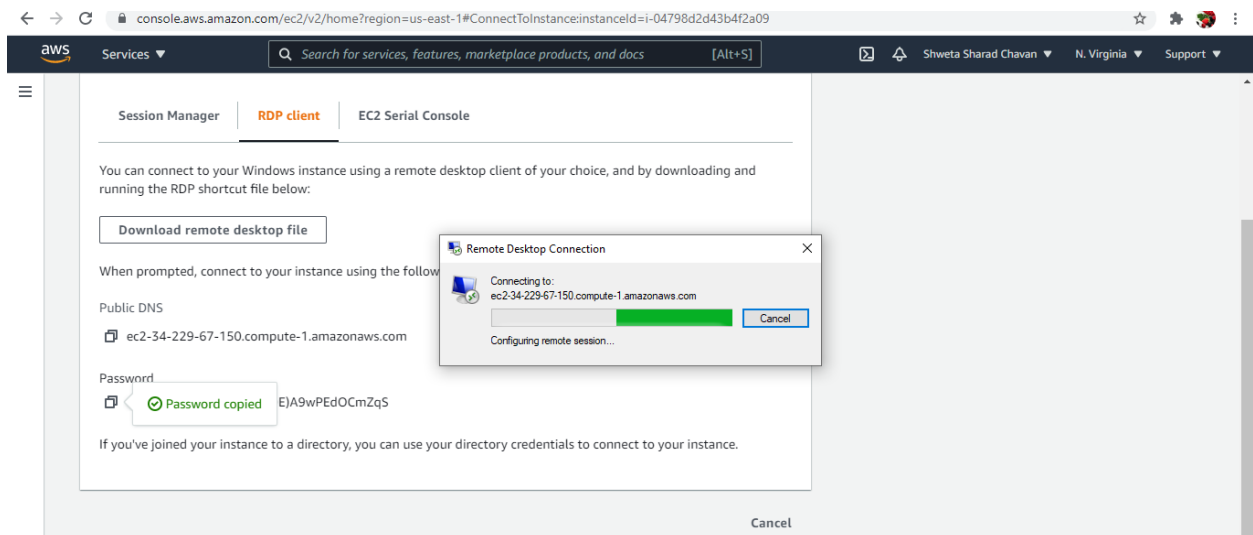
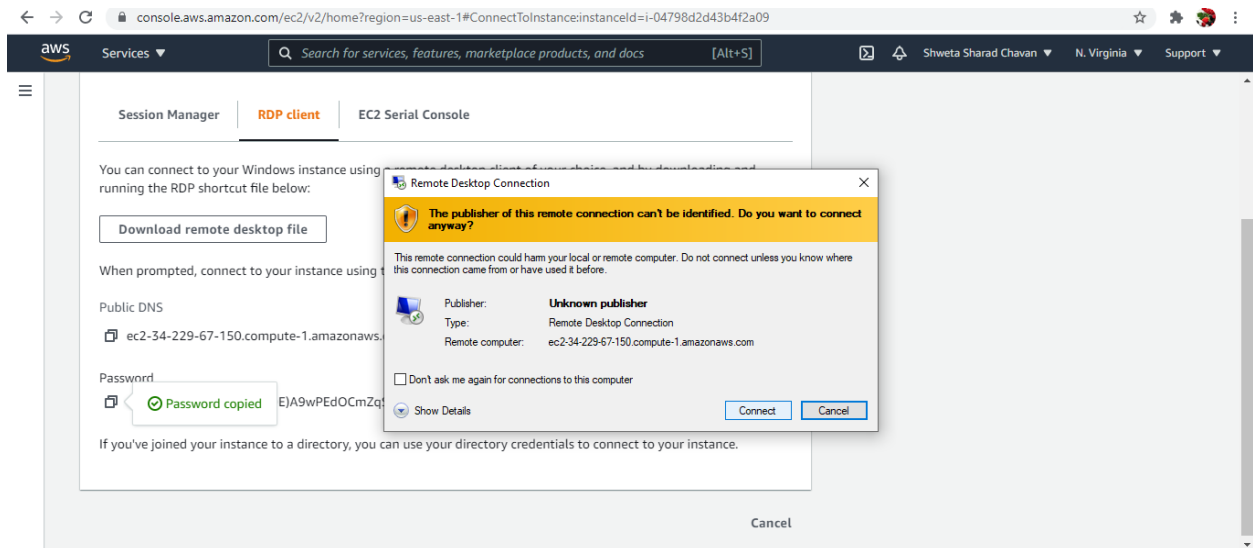
Step 13: Decrypt The Password and the password obtained is to be copied..



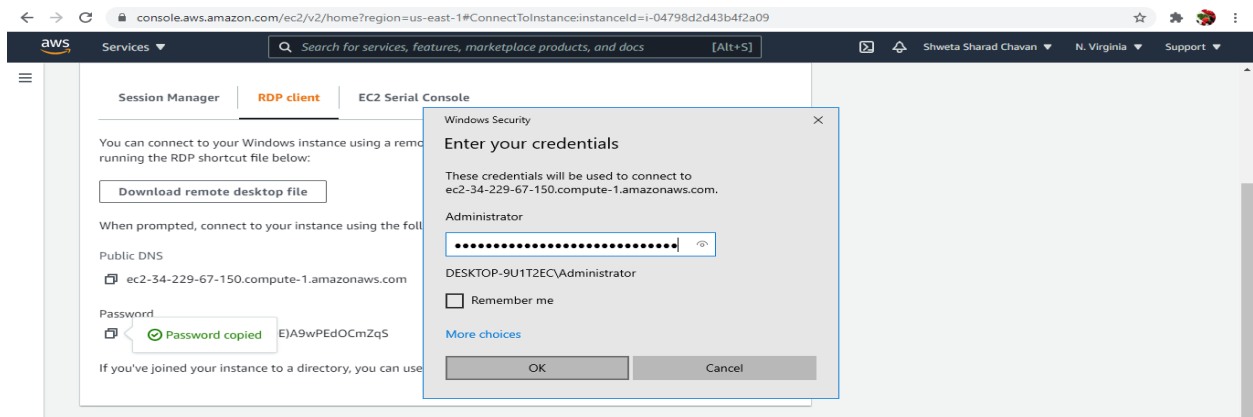
Step 14: Download the RDP File.



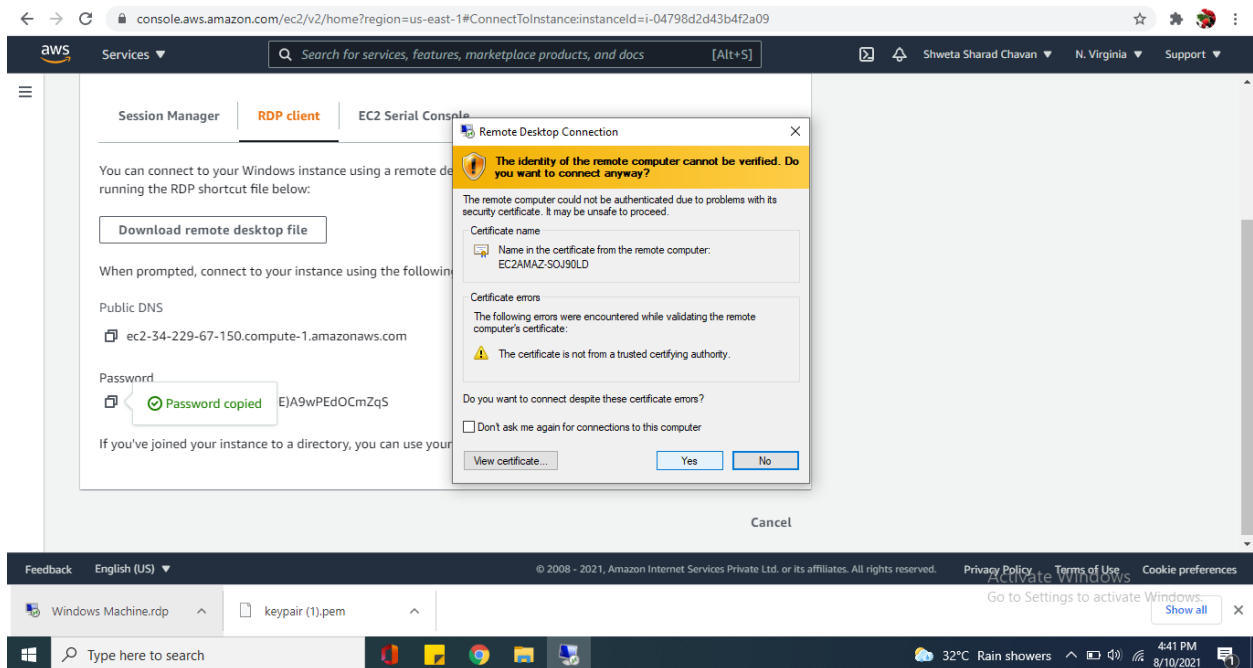
Step 15: Open the RDP downloaded file connect and enter the password and accept the certificate, this will connect to your windows instance.



Step 16: Paste Your Password



Step 17: Click Yes



Step 18: No more into physical machine, entered an Virtual environment with a ready to use Windows Server 2016 VM on right side of vm all details available.

