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## PROJECT 1 :

### Deploying a web server in Windows instance

1. login to your AWS console -> go to services -> go to EC2 -> go to instances -> go to launch instances -> select AMI as Microsoft Windows Server 2019 Base

The screenshot shows the AWS Management Console's 'Launch Instance Wizard' at Step 1: Choose an Amazon Machine Image (AMI). The 'Microsoft Windows Server 2019 Base' AMI (ami-0239d3998515e9ed1) is selected. The console also shows other AMIs like 'Microsoft Windows Server 2019 Base with Containers' and 'Microsoft Windows Server 1909 Core Base'. The 'Launch a database using RDS' button is visible at the top.

Step 1: Choose an Amazon Machine Image (AMI)

Amazon RDS database management tasks. With RDS, you can easily deploy Amazon Aurora, MariaDB, MySQL, Oracle, PostgreSQL, and SQL Server databases on AWS. Aurora is a MySQL- and PostgreSQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. [Learn more about RDS](#)

[Launch a database using RDS](#)

**Microsoft Windows Server 2019 Base** - ami-0239d3998515e9ed1  
Microsoft Windows 2019 Datacenter edition, [English]  
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes  
64-bit (x86) [Select](#)

**Microsoft Windows Server 2019 Base with Containers** - ami-0860285e3eeb23175  
Microsoft Windows 2019 Datacenter edition with Containers, [English]  
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes  
64-bit (x86) [Select](#)

**Microsoft Windows Server 1909 Core Base** - ami-0a631ae0cabf58a92  
Microsoft Windows Server 1909 Semi-Annual Channel release [English]  
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes  
64-bit (x86) [Select](#)

2. After selecting AMI -> Choose an instance type -> select t2 type micro which should be free tier eligible -> and click on Next : configure instance details

The screenshot shows the AWS Management Console's 'Launch Instance Wizard' at Step 2: Choose an Instance Type. The 't2.micro' instance type is selected, which is marked as 'Free tier eligible'. The console also shows other instance types like 't2.nano', 't2.small', 't2.medium', and 't2.large'. The 'Review and Launch' button is visible at the bottom.

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 (GB)	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

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

### 3. Configure Instance Details -> Select no of instances = 1 and auto assign ip address as enable -> and click on Next : Add Storage

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  [Launch into Auto Scaling Group](#)

Purchasing option ☐ Request Spot instances

Network  [Create new VPC](#)

Subnet  [Create new subnet](#)

Auto-assign Public IP

Placement group ☐ Add instance to placement group

Capacity Reservation

Domain join directory  [Create new directory](#)

IAM role  [Create new IAM role](#)

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

### 4. Add Storage -> In add storage let everything be default and Delete on Termination must be selected and click on Next : 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-0fce5b6ed98763b0e	30	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.

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

## 5. Add Tags -> In Add Tags enter any you want to give to your instance and click on Next: Configure Security Group.

The screenshot shows the 'Add Tags' step in the AWS Launch Instance Wizard. The breadcrumb trail at the top indicates the steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags (current), 6. Configure Security Group, and 7. Review. The page title is 'Step 5: Add Tags'. A descriptive text explains that a tag is a case-sensitive key-value pair and can be applied to instances and volumes. Below this, there is a table with columns 'Key', 'Value', 'Instances', and 'Volumes'. A single tag is added with the key 'Name' and value 'Windows'. The 'Instances' and 'Volumes' columns have checkboxes that are both checked. At the bottom, there are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Configure Security Group'. The footer shows the user's name 'Yash Uttam semlani', location 'Ohio', and a timestamp of 03:01 PM on 18-08-2020.

Key	Value	Instances	Volumes
Name	Windows	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Buttons: Cancel, Previous, Review and Launch, Next: Configure Security Group

## 6. Configure Security Groups -> In Configure Security Group -> Create a new security group -> Select Type = All Traffic and Source = Custom -> Click Next: Review and launch.

The screenshot shows the 'Configure Security Group' step in the AWS Launch Instance Wizard. The breadcrumb trail at the top indicates the steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group (current), and 7. Review. The page title is 'Step 6: Configure Security Group'. A descriptive text explains that a security group is a set of firewall rules that control traffic. Below this, there is a section 'Assign a security group' with two options: 'Create a new security group' (selected) and 'Select an existing security group'. Under 'Create a new security group', there is a form with 'Security group name' (launch-wizard-1) and 'Description' (launch-wizard-1 created 2020-08-18T14:56:36.919+05:30). Below this is a table with columns 'Type', 'Protocol', 'Port Range', 'Source', and 'Description'. A single rule is added with 'Type' set to 'All traffic', 'Protocol' set to 'All', 'Port Range' set to '0 - 65535', 'Source' set to 'Custom' with IP '0.0.0.0/0', and 'Description' set to 'e.g. SSH for Admin Desktop'. At the bottom, there is a warning box stating: '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.' Below the warning, there are buttons for 'Cancel', 'Previous', and 'Review and Launch'. The footer shows the user's name 'Yash Uttam semlani', location 'Ohio', and a timestamp of 03:03 PM on 18-08-2020.

Type	Protocol	Port Range	Source	Description
All traffic	All	0 - 65535	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Buttons: Cancel, Previous, Review and Launch

## 7. Review All Steps and click on launch

**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.

**Warning:** 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](#)  
Microsoft Windows Server 2019 Base - ami-0239d3998515e9ed1  
Microsoft Windows 2019 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	Variable	1	1	EBS only	-	Low to Moderate

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

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## 8. After launching create a new key pair which will allow us to get connect to instance, and then click on download key pair and click on launch instances

**Step 7: Review Instance Launch**

**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](#).

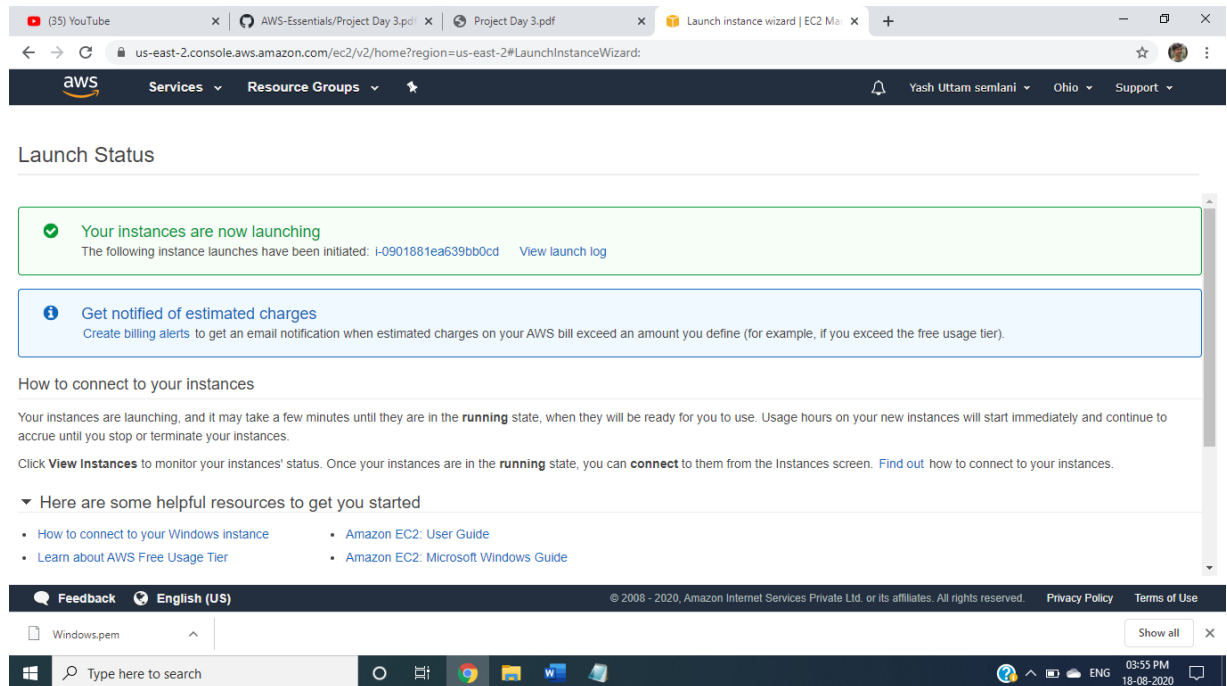
Create a new key pair  
**Key pair name**  
Windows  
[Download Key Pair](#)

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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## 9. Instance is created and click on instance id which will take you directly to the instance list



**Launch Status**

✓ **Your instances are now launching**  
The following instance launches have been initiated: [i-0901881ea639bb0cd](#) [View launch log](#)

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

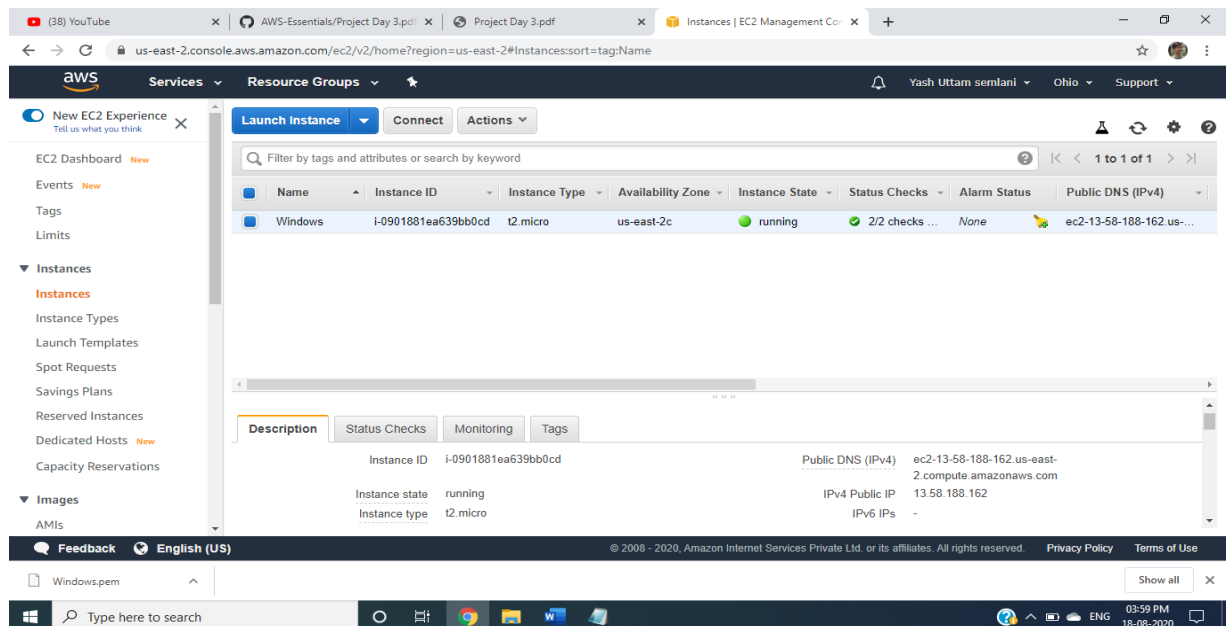
- [How to connect to your Windows instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Microsoft Windows Guide](#)

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Windows.pem ^ Show all x

Type here to search

## 10. Wait till the status check is done



**Instances | EC2 Management Console**

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
Windows	i-0901881ea639bb0cd	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-13-58-188-162.us-...

**Description** Status Checks Monitoring Tags

Instance ID: i-0901881ea639bb0cd

Instance state: running

Instance type: t2.micro

Public DNS (IPv4): ec2-13-58-188-162.us-east-2.compute.amazonaws.com

IPv4 Public IP: 13.58.188.162

IPv6 IPs: -

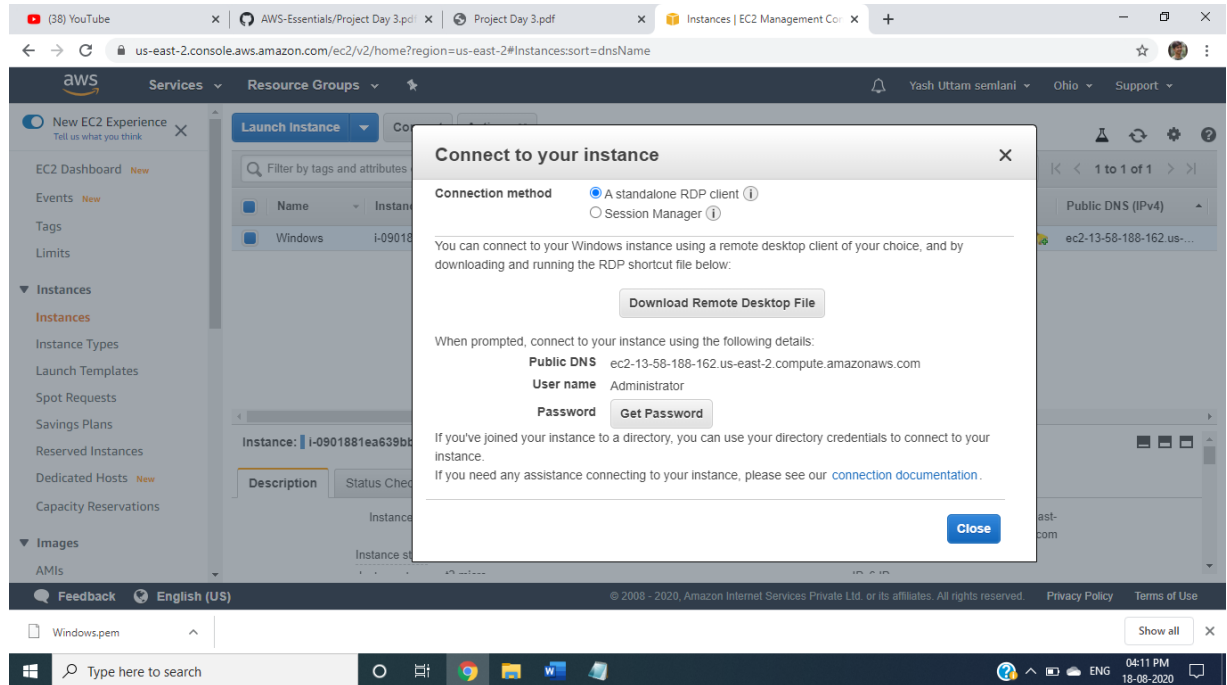
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Windows.pem ^ Show all x

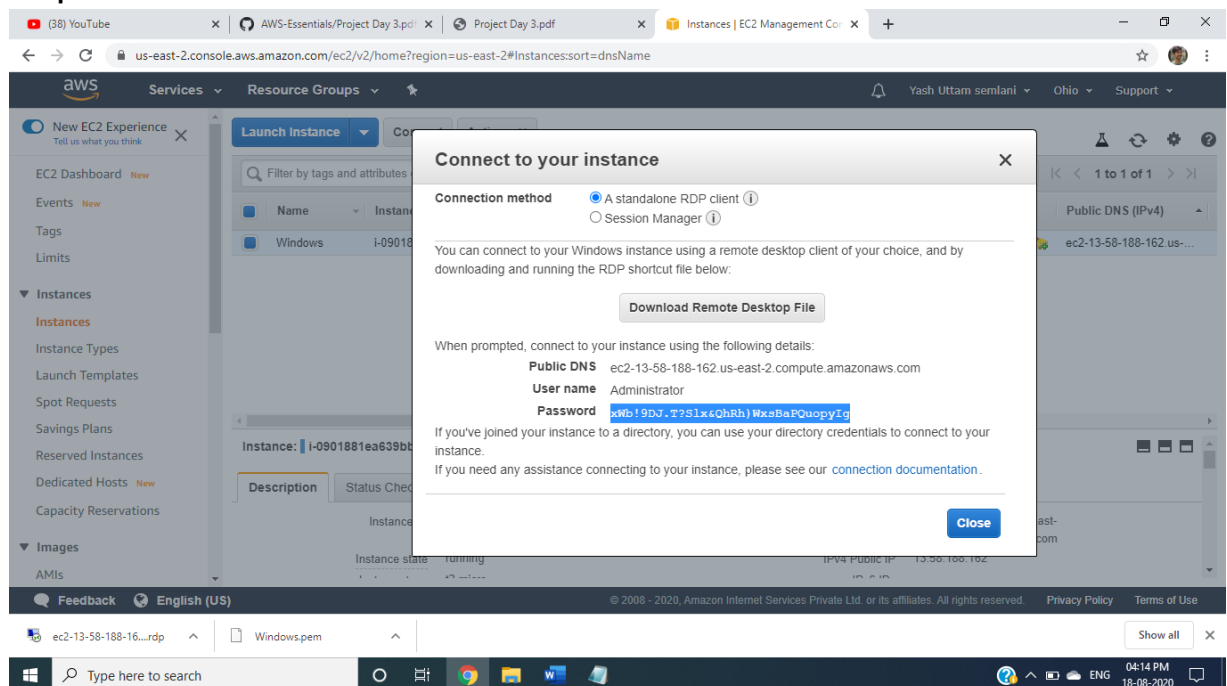
Type here to search

11. After status check is done -> go to actions -> connect -> To connect and launch web server

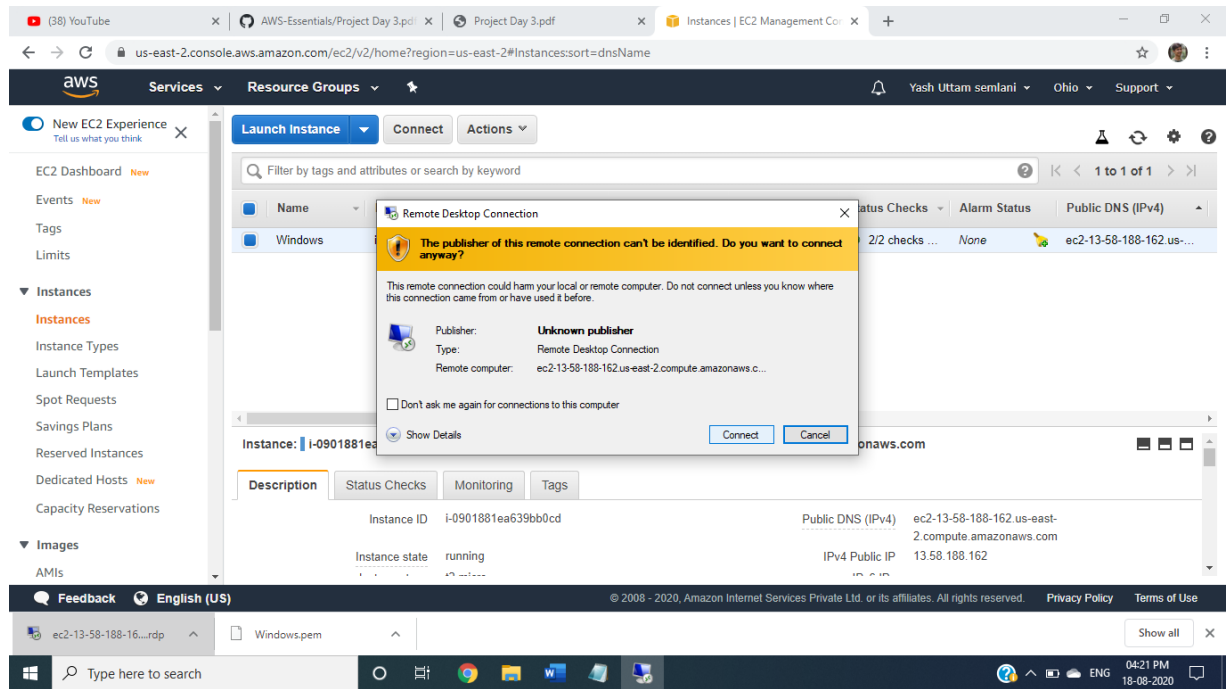
And after connecting it will ask to download remote desktop file and click on get password



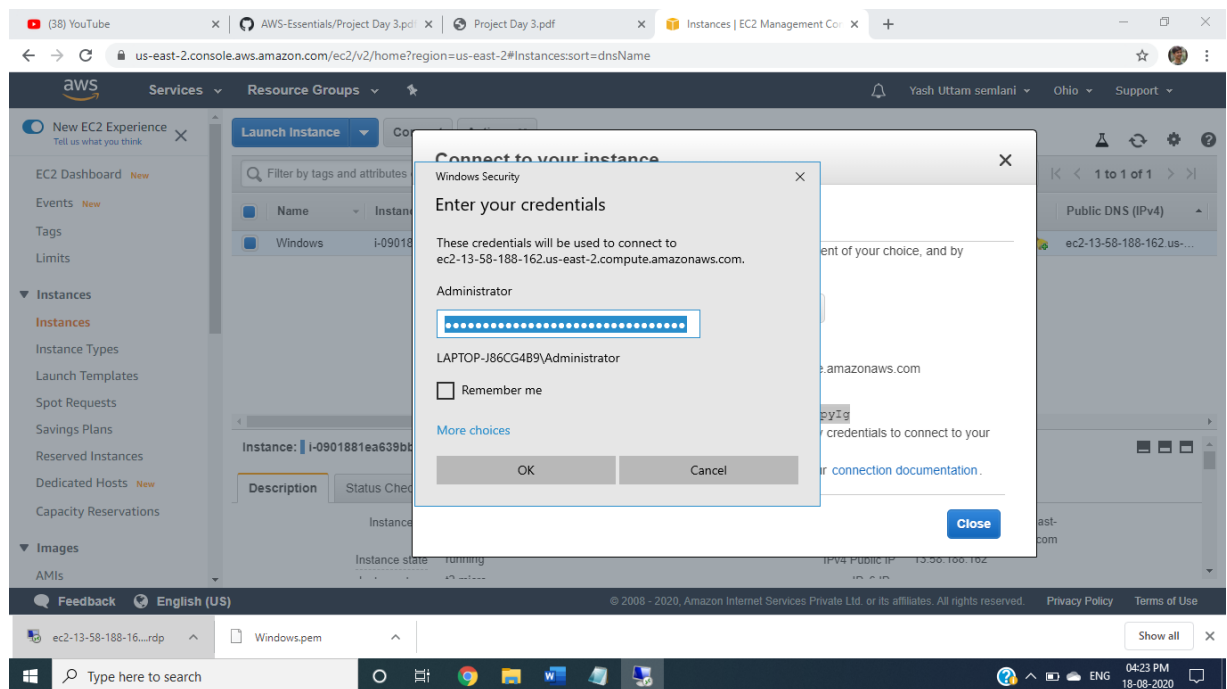
12. Choose your .pem file i.e Windows.pem and decrypt it and password will be displayed -> copy the password and click on close



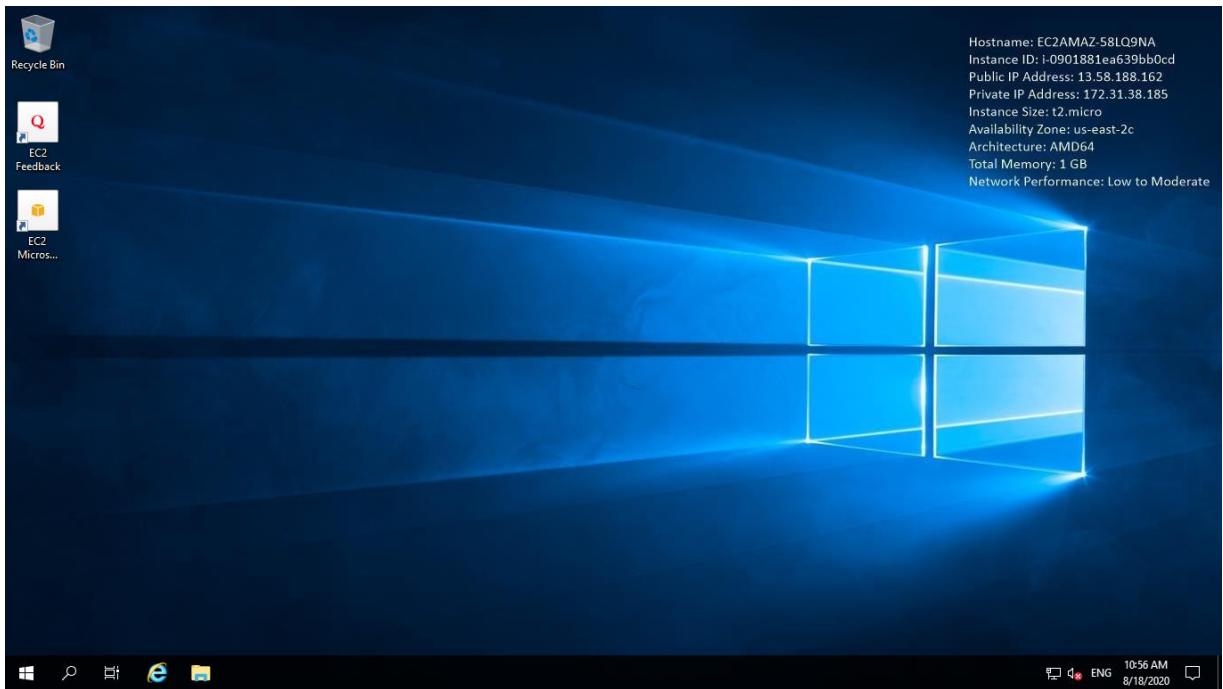
### 13. Open the Remote Desktop file which we downloaded and click on Connect



### 14. After connecting it will ask to enter your password -> Enter the Password -> click on yes And enter the password

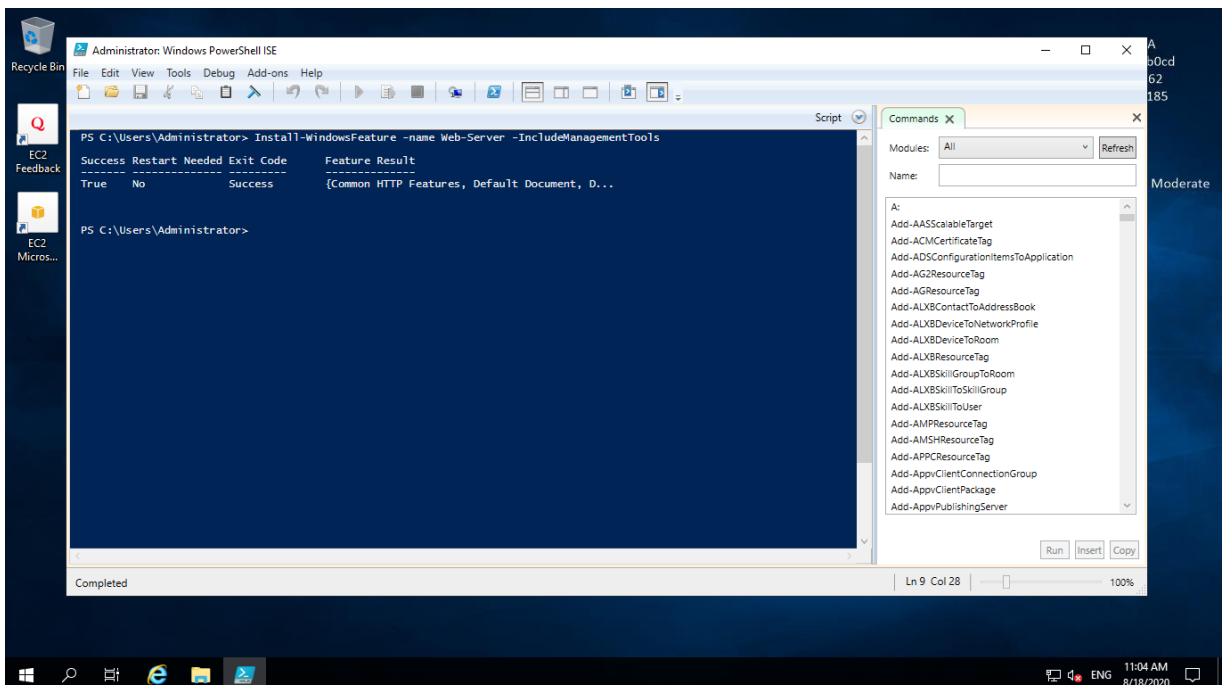


15. Here is the instance created and launched



16. After instance is launched Click on Windows button -> open Windows PowerShell and install the IIS Web Server using the command:

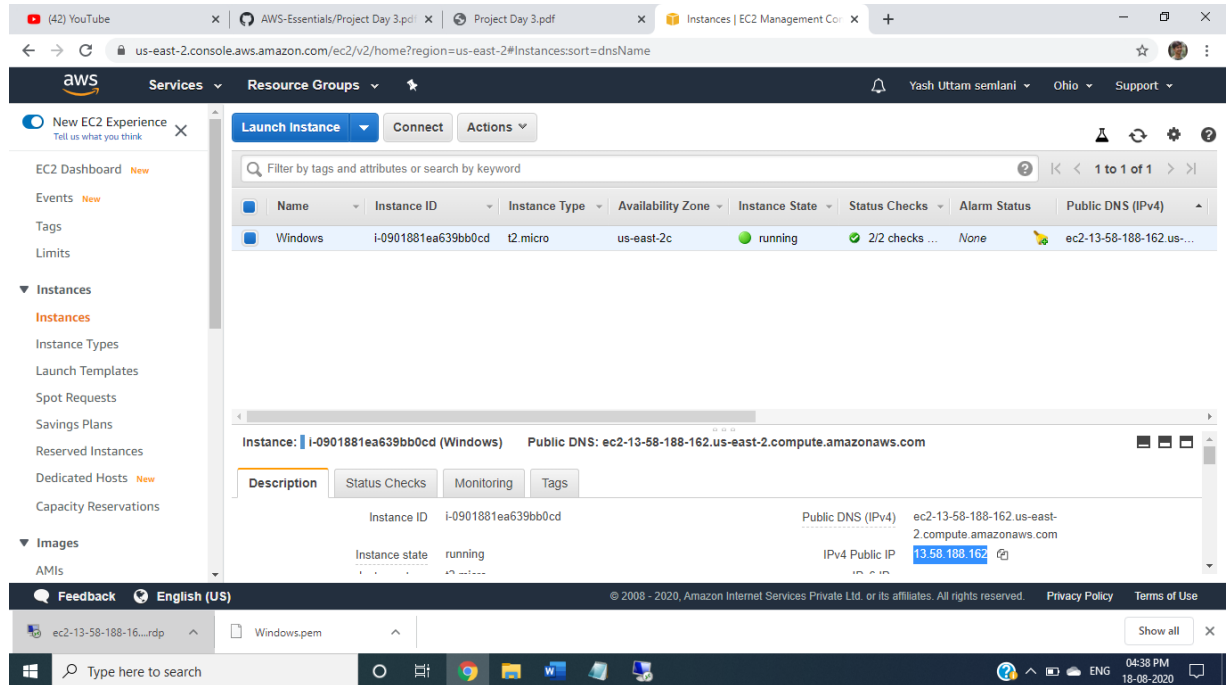
**Install-WindowsFeature -name Web-Server -IncludeManagementTools**





17. After installation minimize the windows launched and go to the original windows 10

Go to instances -> windows instances -> and copy the public ip address i.e. 13.58.188.162



18. After that paste the ip address into address bar and press enter and Windows server is deployed and viewed

