
Host Website On Windows EC2 Instance Using IIS

[Edition 06]

[Last Update 220620]

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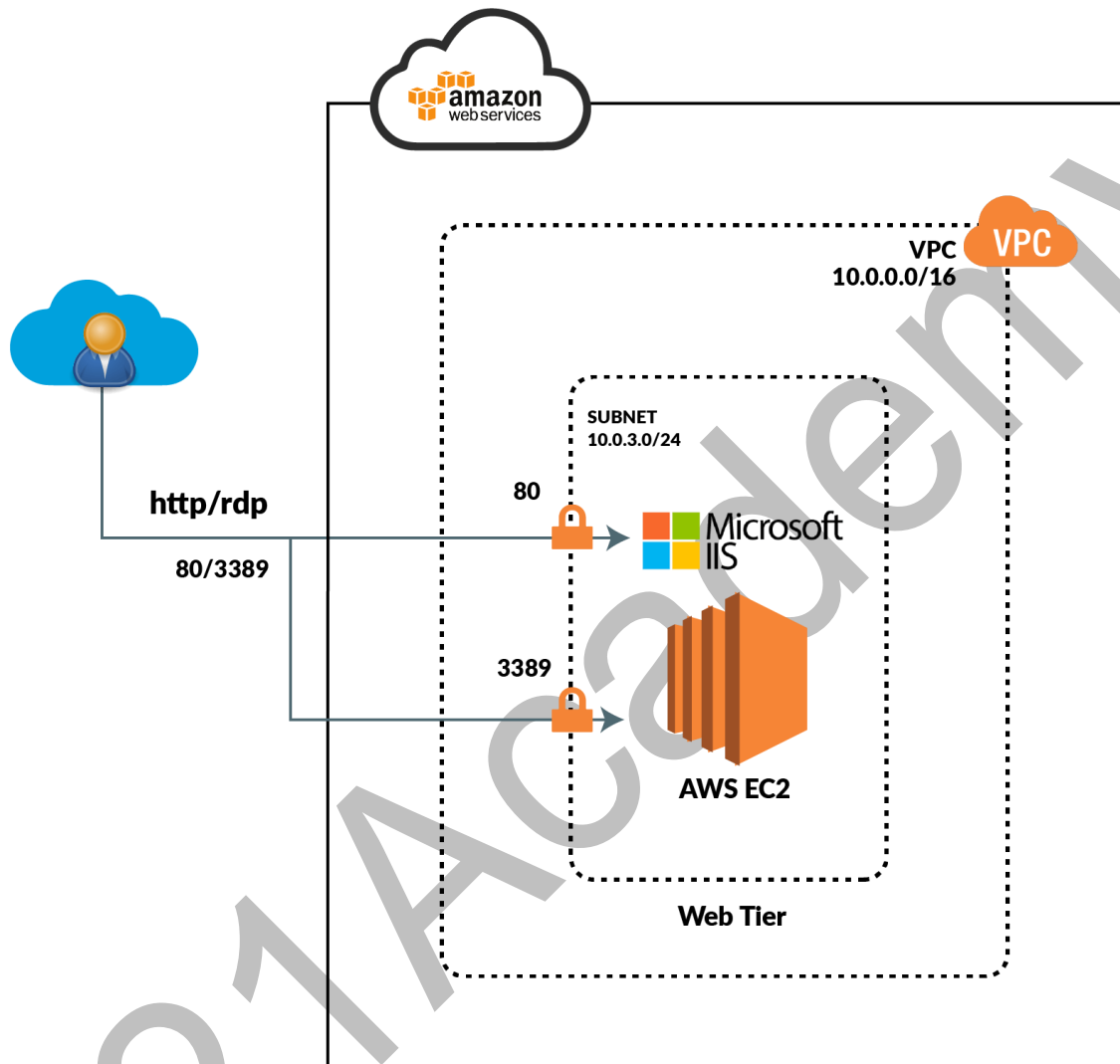
1 INTRODUCTION

Amazon EC2 presents a true virtual computing environment, allowing you to use web service interfaces to launch instances with a variety of operating systems, load them with your custom application environment, manage your network's access permissions, and run your image using as many or few systems as you desire.

To use Amazon EC2, you are simply:

1. Select a pre-configured, templated Amazon Machine Image (AMI) to get up and running immediately, or create an AMI containing your applications, libraries, data, and associated configuration settings.
2. Configure security and network access on your Amazon EC2 instance.
3. Choose which instance type(s) you want, then start, terminate, and monitor as many instances of your AMI as needed, using the web service APIs or the variety of management tools provided.
4. Determine whether you want to run in multiple locations, utilize static IP endpoints, or attach persistent block storage to your instances.
5. Pay only for the resources that you consume, like instance-hours or data transfer.

Architecture Diagram:



This activity guide cover steps for:

1. Create Windows EC2 Instance
2. Connect to Windows EC2 Instance
3. Install Web Server (IIS) in Windows EC2 Instance
4. Access Webpage through Server Manager
5. Delete Resources

2 DOCUMENTATION LINKS

1. Amazon EC2
<https://aws.amazon.com/ec2/>
2. Features of Amazon EC2
<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/concepts.html>
3. Amazon EC2 FAQs
<https://aws.amazon.com/ec2/faqs/>
4. Creating a Windows Instance Using Amazon EC2
https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/EC2_GetStarted.html#ec2-launch-instance

3 PREREQUISITE

1. An AWS Account (Free or Paid).

K21Academy

4 CREATE A WINDOWS EC2 INSTANCE

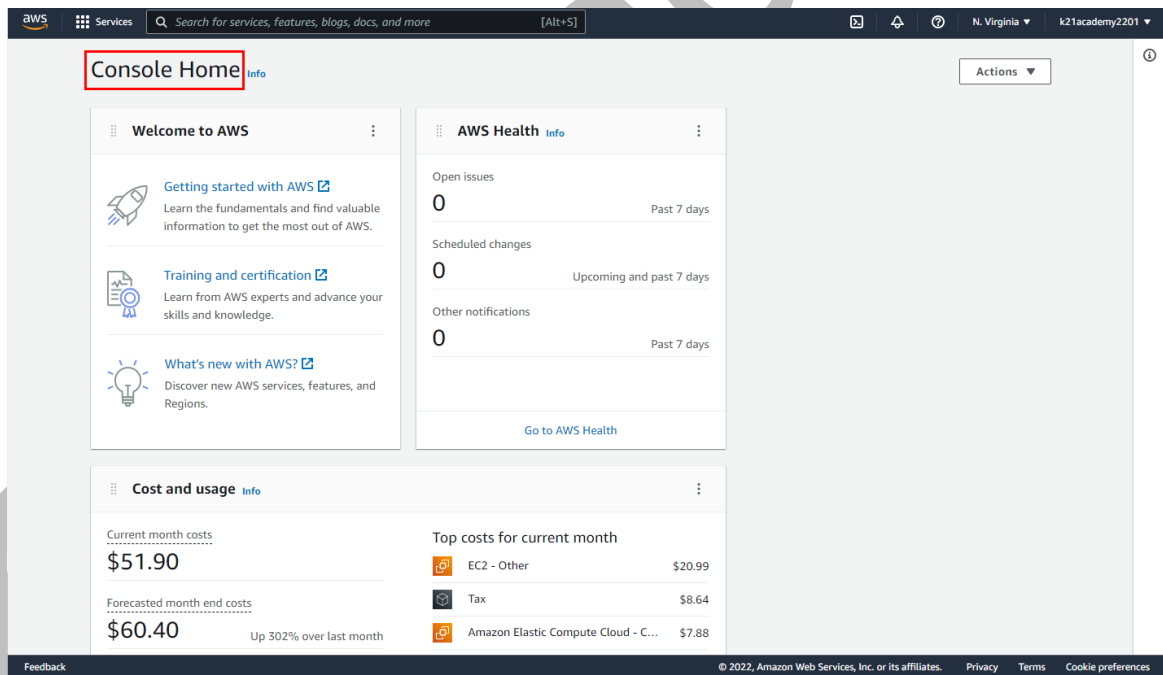
An **EC2 Instance** is a virtual server in Amazon's Elastic Compute Cloud (EC2) for running applications on the Amazon Web Services infrastructure. Amazon provides a variety of types of instances with different configurations of CPU, memory, storage, and networking resources to suit user needs. Each type is also available in two different sizes to address workload requirements.

4.1 Launch a Windows Instance

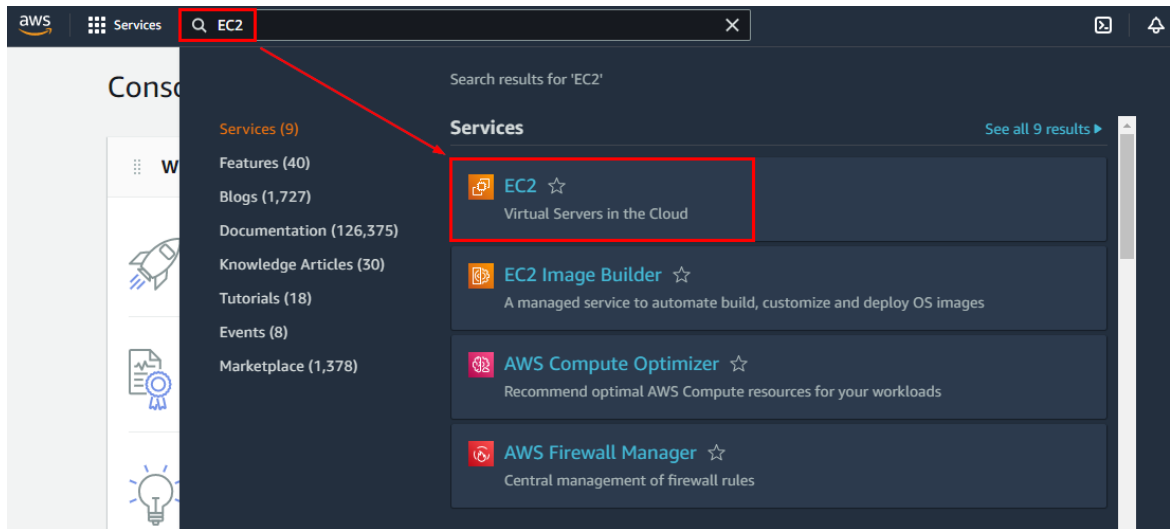
Note: In this section we will be providing detailed steps for creating a Windows Server 2019 Base

For this lab, we are using **N. Virginia Region**. You can select any region according to your choice.

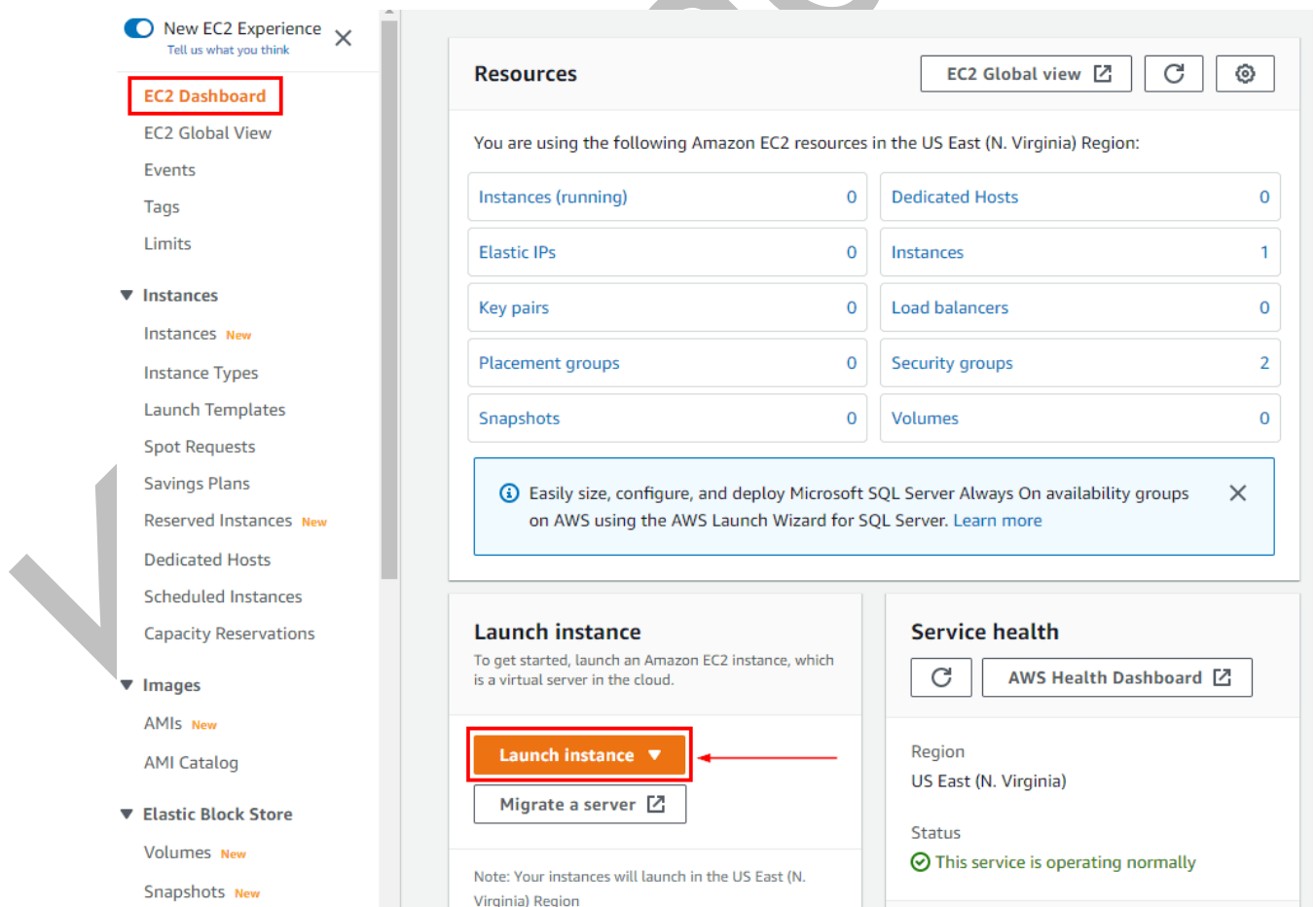
1. Log in to your **AWS Management Console**.



2. Search for **EC2** in the search box and click on it to open it.



3. Once you are at the EC2 Dashboard, click on **Launch** to launch an instance.



4. In the Name and Tags step you can add tags to an instance, here tags help you to enable categorize AWS resources in different ways, for example, by owner, environment, or purpose.

EC2 > Instances > Launch an instance

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name

[Add additional tags](#)

Note: A **tag** is a label that you assign to an AWS resource. Tags enable you to categorize your AWS resources in different ways, for example, by purpose, owner, or environment. For example, you could define a set of tags for your account's Amazon EC2 instances that helps you track each instance's owner and stack level.

5. In Select **Windows** under QuickStart and Select **Microsoft Windows Server 2019 Base** AMI. You can also select other AMI as per your need but here we are launching a Windows Server, so we have to select the Windows Server 2019 Base AMI.

▼ **Application and OS Images (Amazon Machine Image)** [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents | **Quick Start**

Amazon Linux
aws

Ubuntu
ubuntu

Windows
Microsoft

Red Hat
Red Hat

SUSE Linux
SUSE

Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

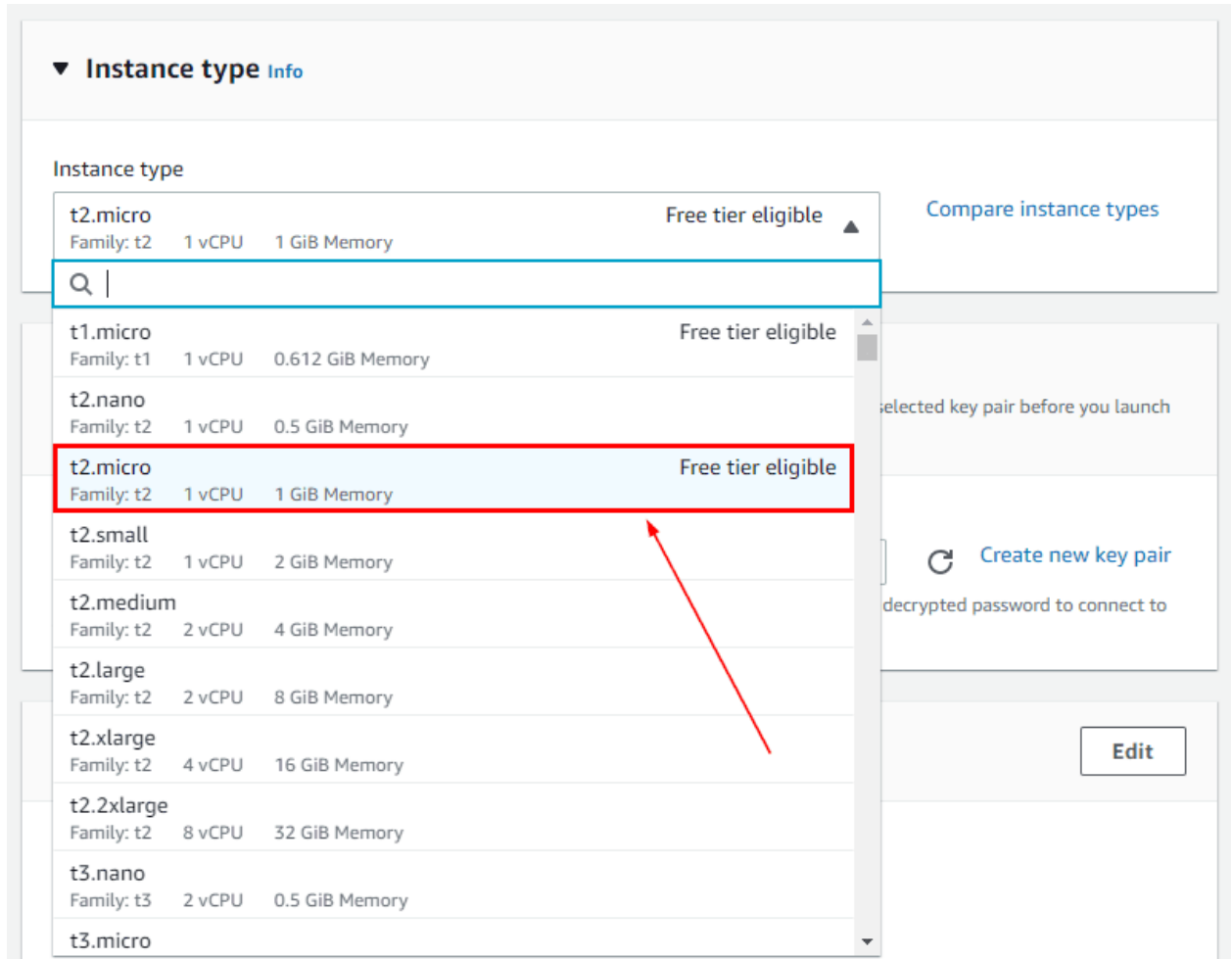
Microsoft Windows Server 2019 Base Free tier eligible ▼
ami-0f9a92942448ac56f (64-bit (x86))
Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Microsoft Windows Server 2019 with Desktop Experience Locale English AMI provided by Amazon

Architecture	AMI ID
64-bit (x86)	ami-0f9a92942448ac56f

6. Select the **t2.micro** instance type, if you want you may select another instance type but they are chargeable so we choose the t2.micro instance type which is eligible for the free tier and limited resources.



▼ Instance type [Info](#)

Instance type

t2.micro Free tier eligible [Compare instance types](#)

Family: t2 1 vCPU 1 GiB Memory

Q |

t1.micro Free tier eligible

Family: t1 1 vCPU 0.612 GiB Memory

t2.nano

Family: t2 1 vCPU 0.5 GiB Memory

t2.micro Free tier eligible

Family: t2 1 vCPU 1 GiB Memory

t2.small

Family: t2 1 vCPU 2 GiB Memory

t2.medium

Family: t2 2 vCPU 4 GiB Memory

t2.large

Family: t2 2 vCPU 8 GiB Memory

t2.xlarge

Family: t2 4 vCPU 16 GiB Memory

t2.2xlarge

Family: t2 8 vCPU 32 GiB Memory

t3.nano

Family: t3 2 vCPU 0.5 GiB Memory

t3.micro

selected key pair before you launch

[Create new key pair](#)

decrypted password to connect to

[Edit](#)

Note: T2 instances are a new low-cost, General Purpose instance type that are designed to provide a baseline level of CPU performance with the ability to burst above the baseline. T2 instances are engineered specifically for these use cases. T2 instances are available in three sizes: **t2. micro**, **t2.**

7. Select an existing key pair or create a new one, we will Create a new one, enter the name of the Key-pair as Windows-Key and Create the Key Pair.

▼ **Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

[Create new key pair](#)

For Windows instances, you use a key pair to decrypt the administrator password. You then use the decrypted password to connect to your instance.

Create key pair

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** [Learn more](#)

Key pair name

Windows-Key

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

Private key file format

☒ .pem

For use with OpenSSH

☐ .ppk

For use with PuTTY

Cancel

Create key pair

8. Since it is a Windows Instance, we will require **RDP** on port **3389** which is selected by default. Also, for accessing the web page we will add **HTTP** rule by clicking on **Add Rule**.

Network settings Edit

Network
vpc-094a729d439e25fdd | Default VPC

Subnet
No preference (Default subnet in any availability zone)

Auto-assign public IP
Enable

Security groups (Firewall) [Info](#)
We'll create a new security group called 'launch-wizard-8' with the following rules:

- ☒ Allow RDP traffic from
Helps you connect to your instance
Anywhere
0.0.0.0/0
- ☐ Allow HTTPs traffic from the internet
To set up an endpoint, for example when creating a web server
- ☒ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

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.

Note: A **security group** acts as a virtual firewall for your instance to control inbound and outbound traffic. For, each security group, you add rules that control the inbound traffic to instances, and a separate set of rules that control the outbound traffic.

9. Now, keep everything default and click on **Launch Instance**.

Network settings Edit

Network
vpc-081fb74c129d9e2b7

Subnet
No preference (Default subnet in any availability zone)

Auto-assign public IP
Enable

Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group ☐ Select existing security group

We'll create a new security group called 'launch-wizard-3' with the following rules:

☒ Allow RDP traffic from
Helps you connect to your instance Anywhere
0.0.0.0/0

☐ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

⚠ 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. ×

Summary

Number of instances Info
1

Software Image (AMI)
Microsoft Windows Server 2019 ...read more
ami-0297fbf7e83dd1209

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 30 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet. ×

Cancel **Launch instance**

10. Now click on **View all Instances**.

EC2 > Instances > Launch an instance

✓ **Success**
Successfully initiated launch of instance (i-01bac39bf43f9790d)
[Launch log](#)

Next Steps

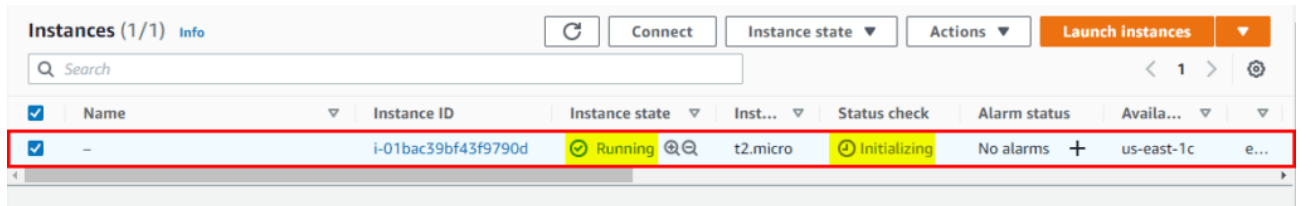
Get notified of estimated charges
[Create billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier)

How to connect to your instance
Your instance is launching and it might be a few minutes until it is in the running state, when it will be ready for you to use
Click [View Instances](#) to monitor your instance's status. Once your instance is in the 'running' state, you can connect to it from the Instances screen. Find out [how to connect to your instance](#)

[View more resources to get you started](#)

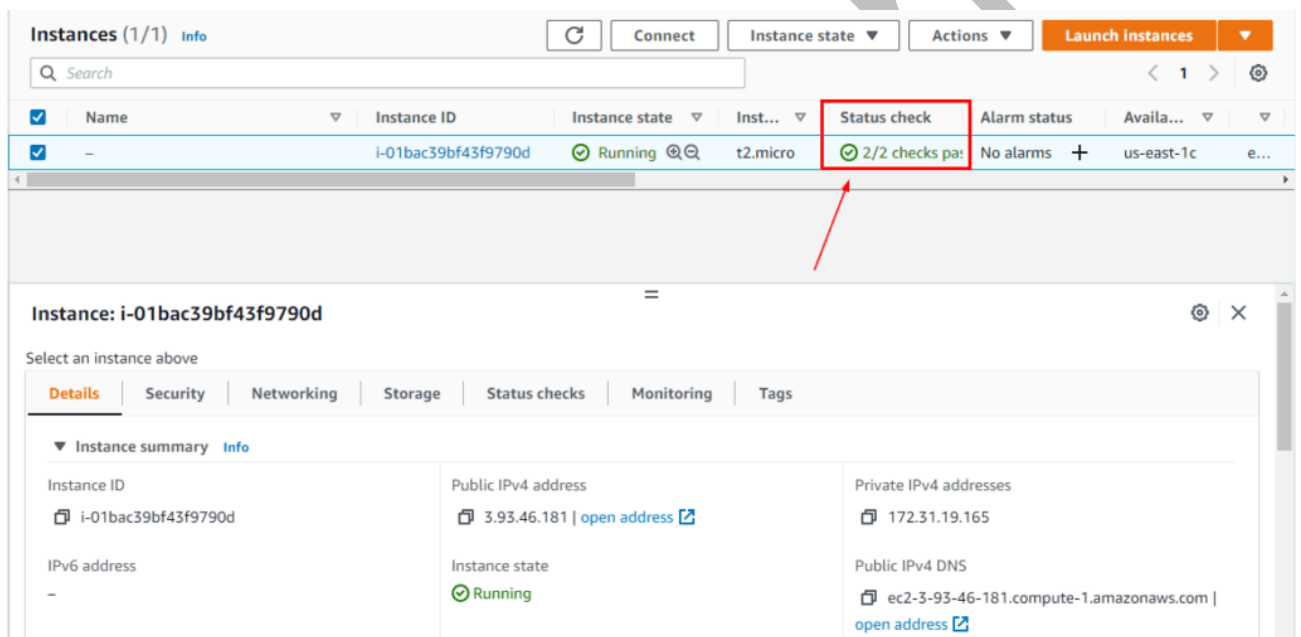
View all instances

11. Here, you shall see your instance is launching and the Status check is **Initializing**, wait for some time.



	Name	Instance ID	Instance state	Inst...	Status check	Alarm status	Availa...	
<input checked="" type="checkbox"/>	-	i-01bac39bf43f9790d	Running	t2.micro	Initializing	No alarms	us-east-1c	e...

12. Refresh and you shall see your instance is Up and Running, and the Status check has changed to **2/2 checks**.



	Name	Instance ID	Instance state	Inst...	Status check	Alarm status	Availa...	
<input checked="" type="checkbox"/>	-	i-01bac39bf43f9790d	Running	t2.micro	2/2 checks passed	No alarms	us-east-1c	e...

Instance: i-01bac39bf43f9790d

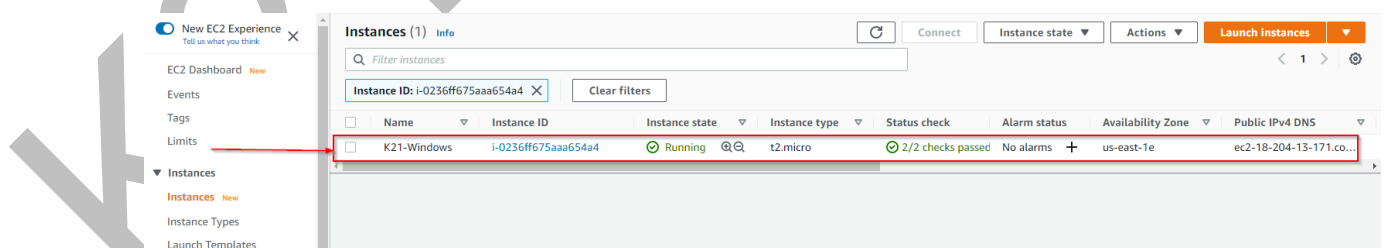
Select an instance above

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

Instance summary Info

Instance ID i-01bac39bf43f9790d	Public IPv4 address 3.93.46.181 open address	Private IPv4 addresses 172.31.19.165
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-93-46-181.compute-1.amazonaws.com open address

13. Now we have successfully created our **Windows EC2 Instance**.



New EC2 Experience

EC2 Dashboard | Events | Tags | Limits

Instances

Instances | Instance Types | Launch Templates

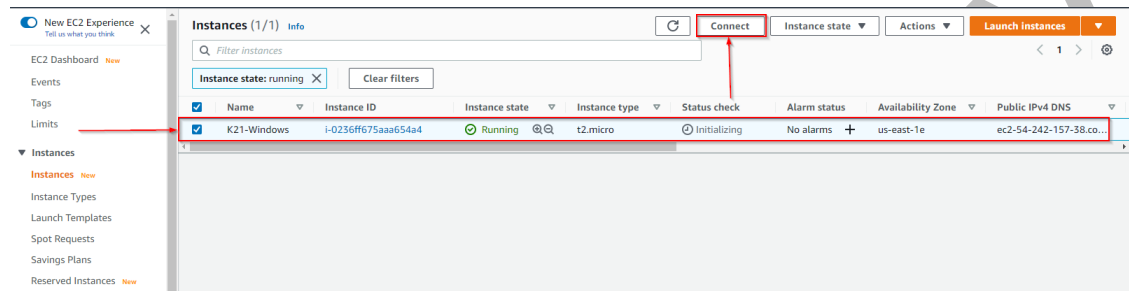
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input checked="" type="checkbox"/>	K21-Windows	i-0236ff675aaa654a4	Running	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-18-204-13-171.co...

Thus we have successfully created the Windows Instance

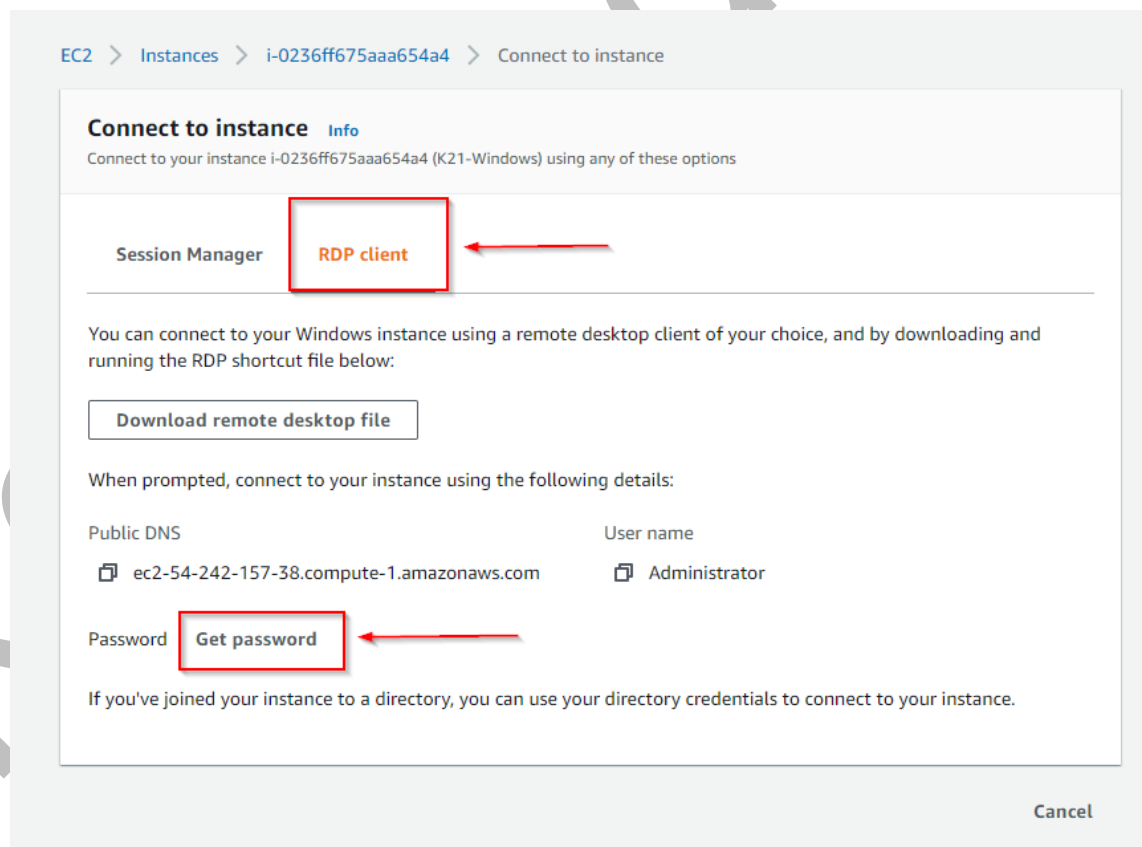
4.2 Connect to the Windows Instance

Note: In this section we will be providing detailed steps for connecting to our Windows Instance using Remote Desktop Connection.

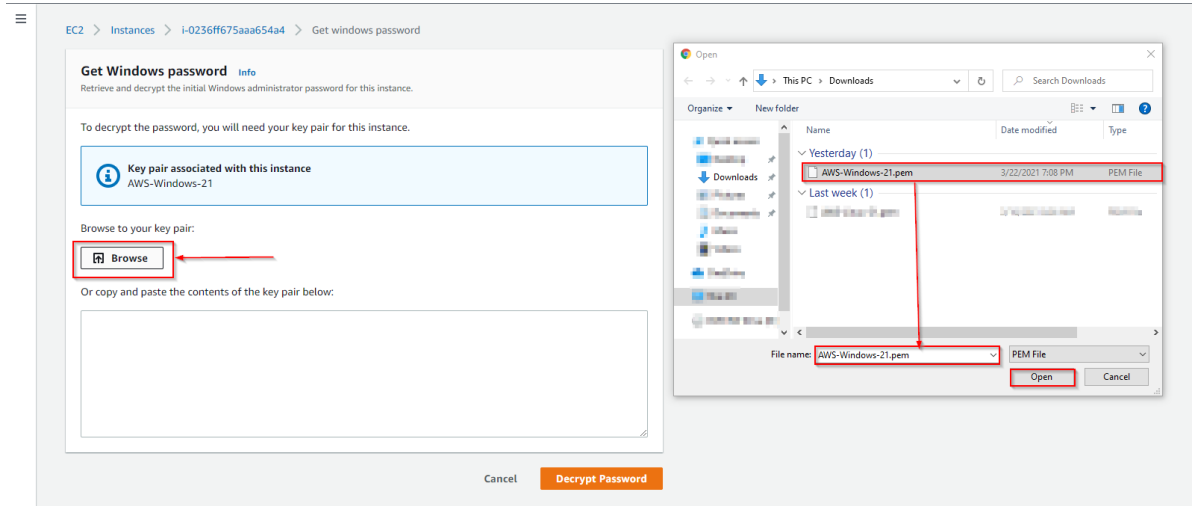
1. Select the **Windows Instance** we just created and click on **Connect**



2. Click on **RDP Client** and then click on **Get Password**.



3. Now click on Browse and select the **key pair** we just created at the time of instance launching. Then click on **Open**




4. Click on **Decrypt Password**

EC2 > Instances > i-0236ff675aaa654a4 > Get windows password


Get Windows password [Info](#)


Retrieve and decrypt the initial Windows administrator password for this instance.

To decrypt the password, you will need your key pair for this instance.

 **Key pair associated with this instance**
AWS-Windows-21

Browse to your key pair:

 Browse

 AWS-Windows-21.pem
1.7KB

Or copy and paste the contents of the key pair below:

```
-----BEGIN RSA PRIVATE KEY-----  
MIIEogIBAAKCAQEAfMegQGMkIYvpyYPc6rTUul68Fdxv/zcyQSCD+Kg0E6e3CXy6  
IPmAbAVI/WQWpfa3hxBf12C9LF//cRKm3+vOMMVdaZcinjb+x35gzXCe6qBUaU0  
XkNKSHVWTE4O95D+Wfbe4aW6V56ylCgUQese61HN8BsoGnM0HxrRtADxJsGLAFV9  
3iN9r8FUPCQ8DkpDAbW0cyTZt/Ck/PBVZGNAX3/p165L/M5pHlimcb4KAg2dujaO  
mNqQiv0mHRvtmRVT7h84uYkPvaAosnneUOSs/bl75jvVf8upjsH2YSAzd7u04kaA  
e25LwfoNv9ycTpT/33Wazulx18MVA4PZIWEA4wIDAQABAolBABXKz/GPD52Tkhcy  
pliN6k6k4iA3v4CHK7V/LmYMgRUBkFqH+snx7jqxq518JECmiRtnas5vsva99JDD
```

[Cancel](#) [Decrypt Password](#)

5. After this you will get the **decrypted password** for the instance.

EC2 > Instances > i-0236ff675aaa654a4 > Connect to instance

Connect to instance [Info](#)

Connect to your instance i-0236ff675aaa654a4 (K21-Windows) using any of these options

Session Manager | **RDP client**

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
ec2-54-242-157-38.compute-1.amazonaws.com

User name
Administrator

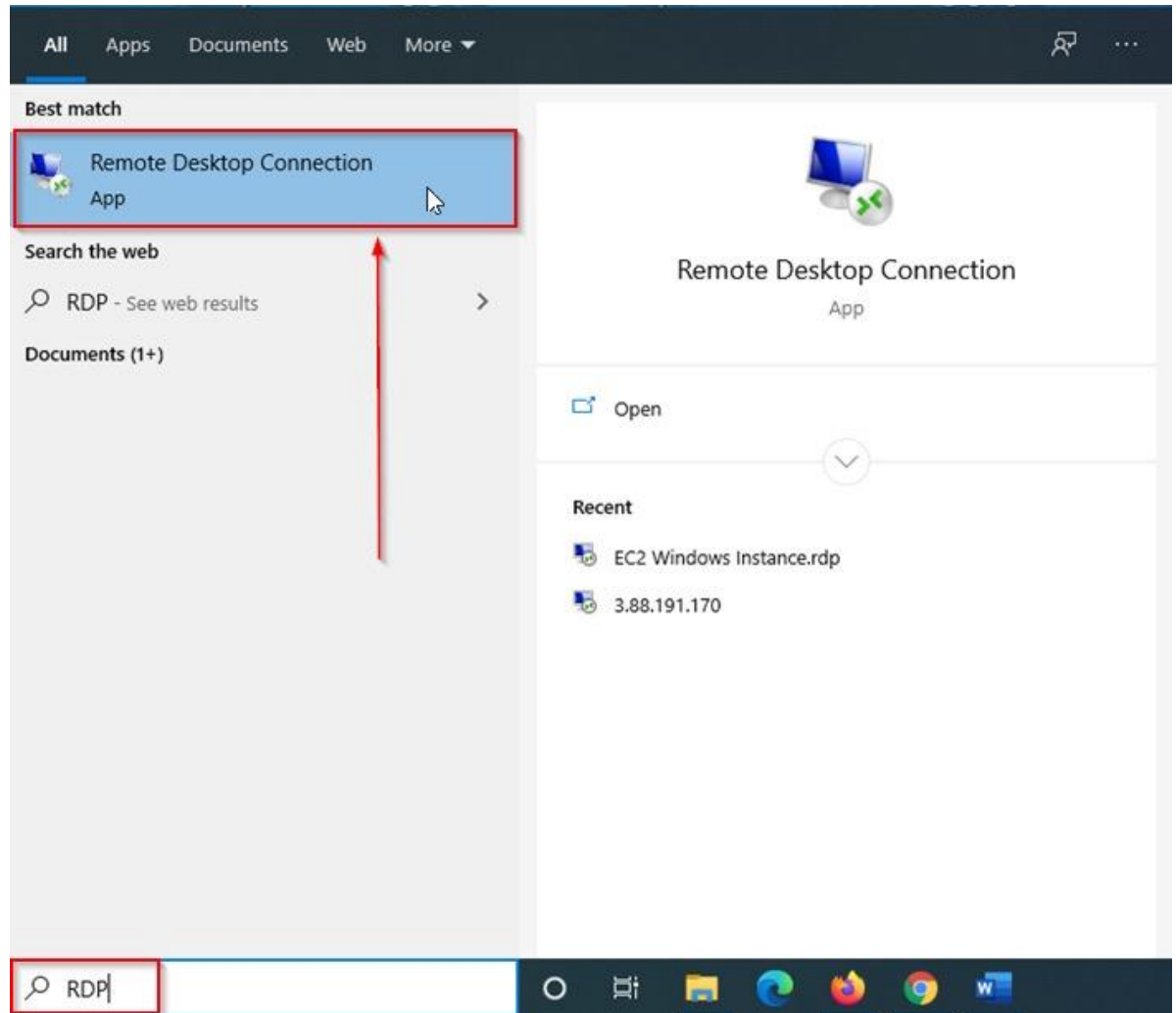
Password
7V.ISlu5UAV)@Lyx3=g\$iZNdGgc3MHnR

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

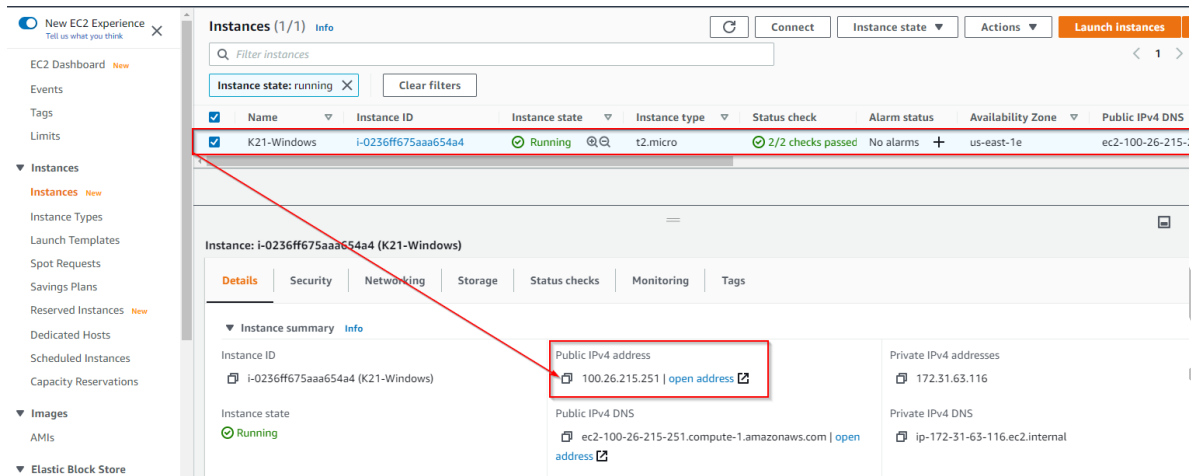
Cancel

Note: Make a note of this **Username and Password** as we will be using this password for connecting to the Windows Instance.

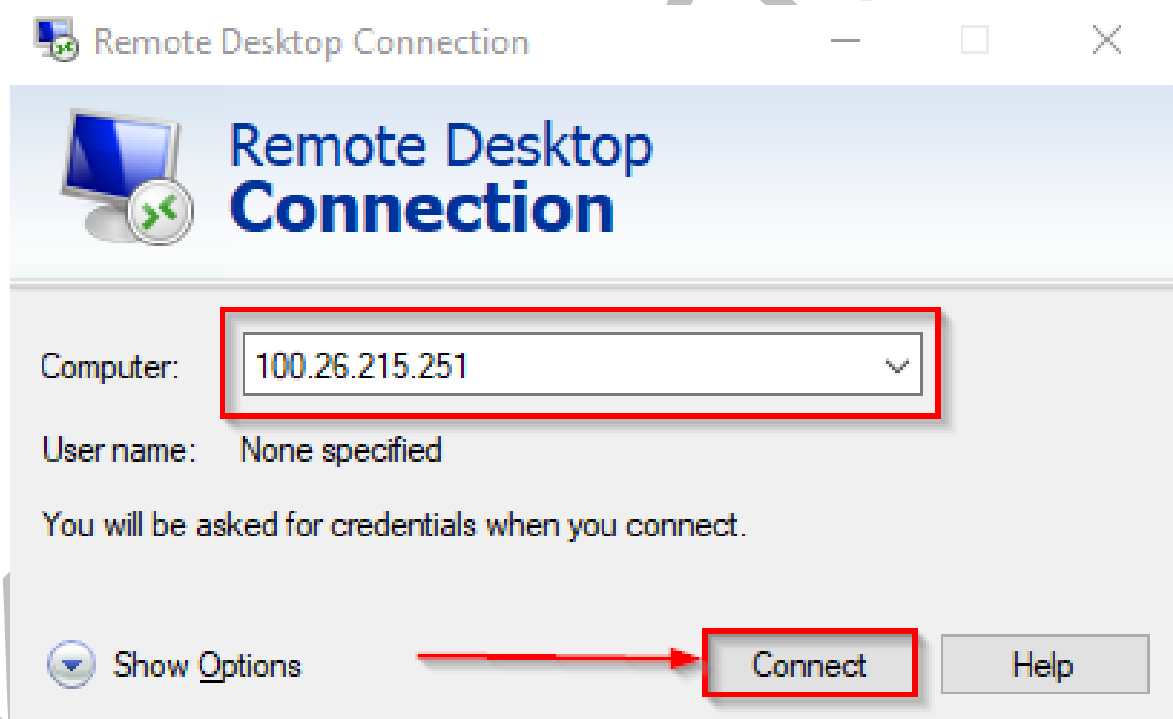
6. In order to connect to the instance again, search for **RDP** in the Start menu and open it.



7. Now copy the **Public IP** of the Windows Instance and paste it and click on **Connect**

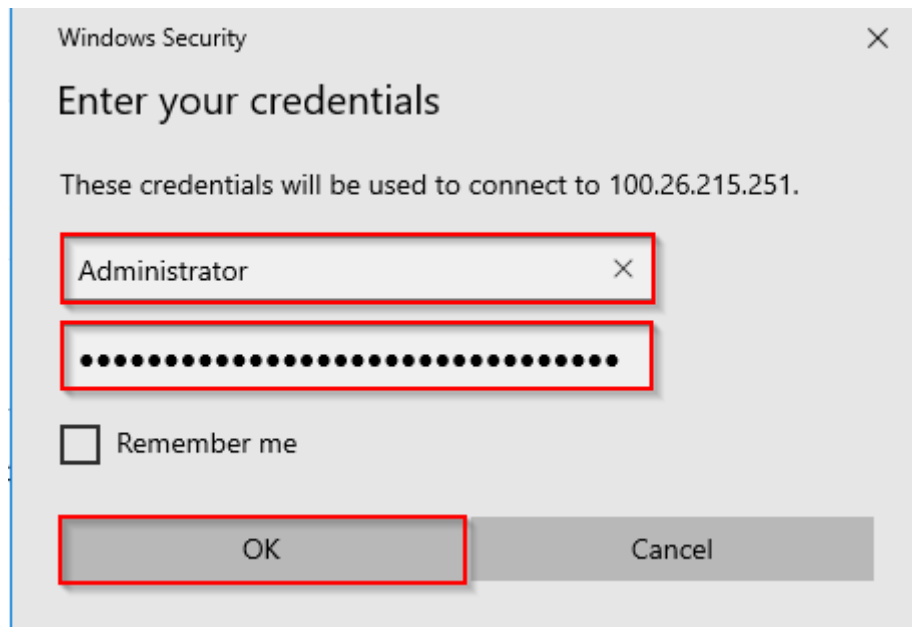


The screenshot shows the AWS Management Console 'Instances' page. The instance 'K21-Windows' (ID: i-0236ff675aaa654a4) is in a 'Running' state. The 'Public IPv4 address' is highlighted as 100.26.215.251. Below, the 'Remote Desktop Connection' window is open, with the 'Computer' field set to 100.26.215.251. The 'Connect' button is also highlighted.



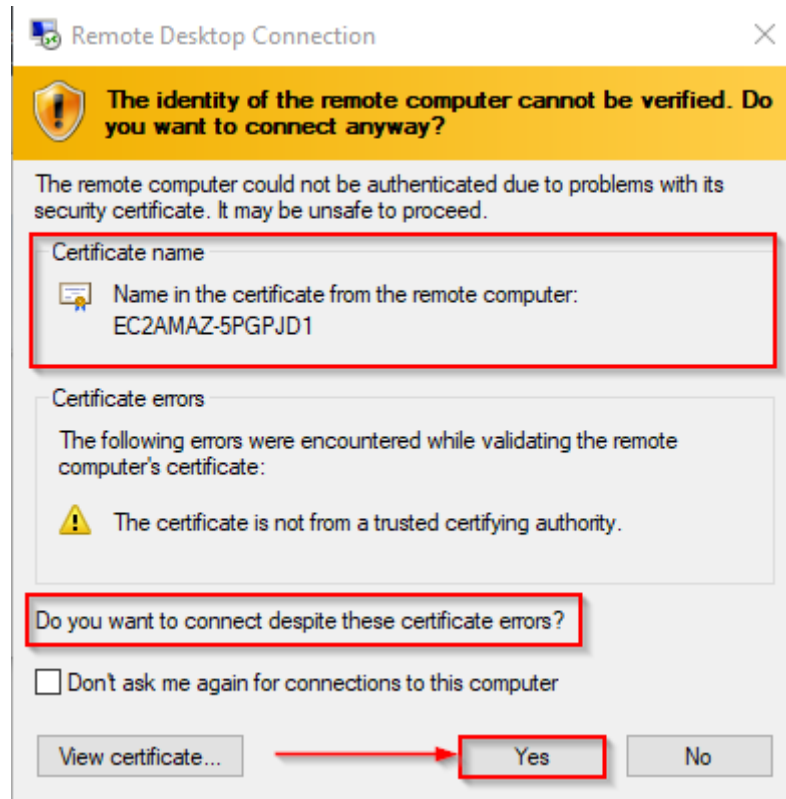
The 'Remote Desktop Connection' window is shown. The 'Computer' field contains '100.26.215.251'. The 'User name' field is 'None specified'. A message states: 'You will be asked for credentials when you connect.' At the bottom, the 'Connect' button is highlighted with a red box and a red arrow.

8. Now enter the **Username** (Administrator by default) and the **Password** that you had decrypted earlier.



A screenshot of a Windows Security dialog box titled "Enter your credentials". The dialog box is light gray with a blue border. It contains the text "These credentials will be used to connect to 100.26.215.251." Below this text are two input fields: the first is labeled "Administrator" and the second is a password field filled with black dots. Both input fields are outlined with a red border. Below the password field is a checkbox labeled "Remember me". At the bottom of the dialog box are two buttons: "OK" and "Cancel". The "OK" button is also outlined with a red border. A large, faint, diagonal watermark reading "K21Academy" is visible across the lower half of the image.

9. Click on **Yes**.



10. You will be logged in to the **Windows Instance**

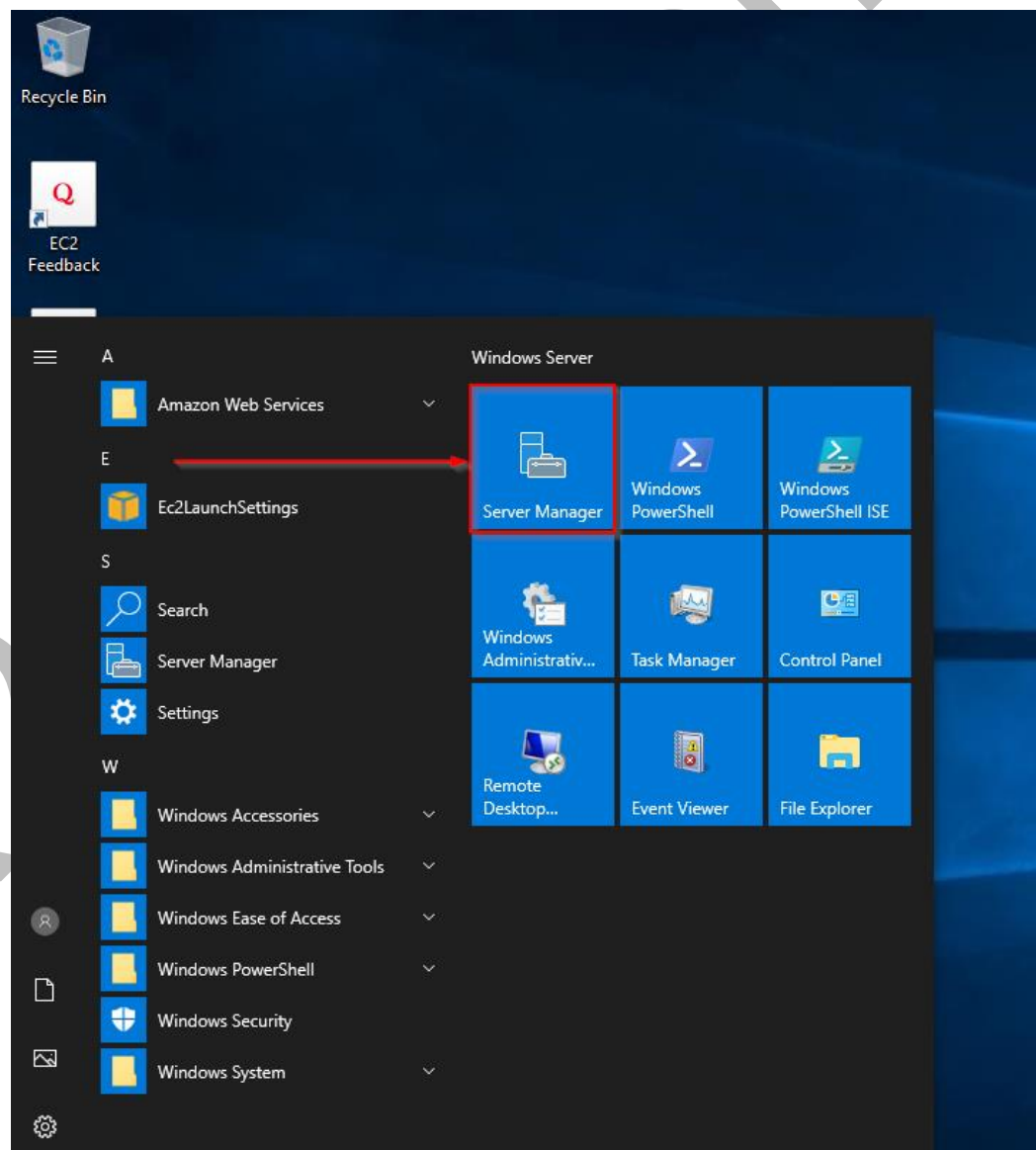


Thus, we have successfully logged in to the Windows Instance

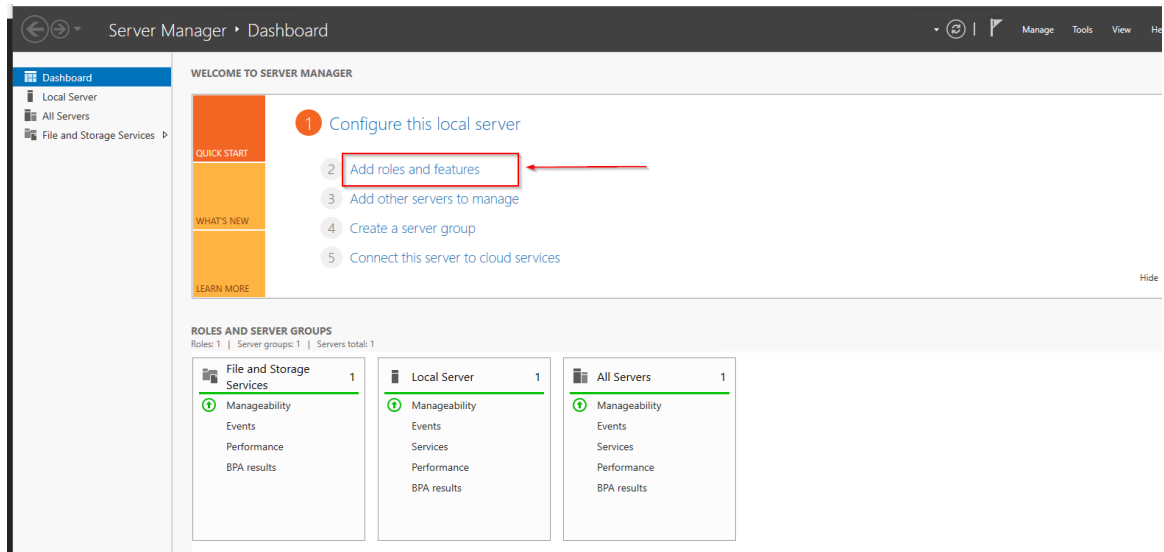
5 INSTALL WEB SERVER (IIS) ON WINDOWS EC2 INSTANCE

Internet Information Services (IIS, formerly Internet Information Server) is an extensible web **server** software created by **Microsoft** for use with the **Windows** NT family. IIS is used to host ASP.NET web **applications** and static websites. It can also be used as an FTP server, host WCF services, and be extended to host web applications built on other platforms such as PHP. There are built-in authentication options such as Basic, ASP.NET, and Windows auth.

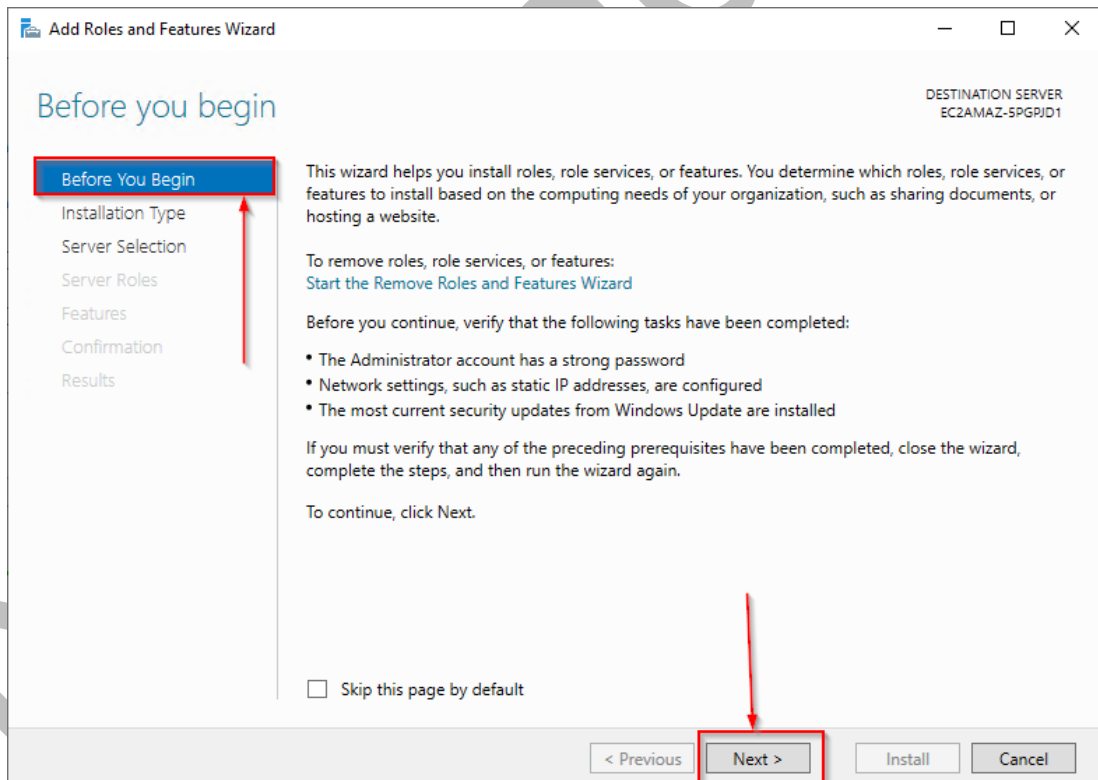
1. Once logged in to the Windows Instance, click on **Start button** and then click on **Server Manager**.



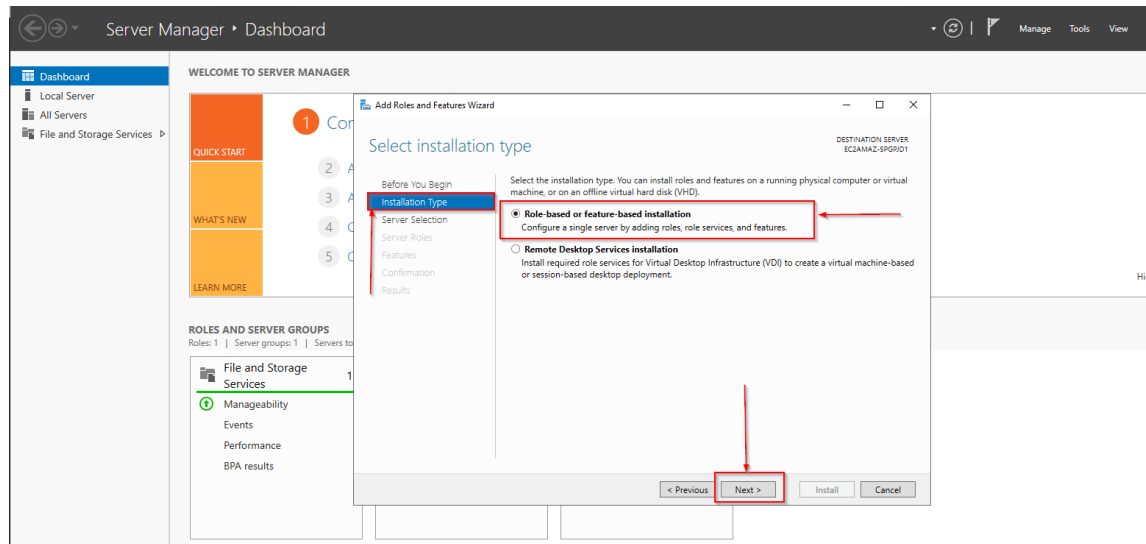
2. Click on **Add roles and features**.



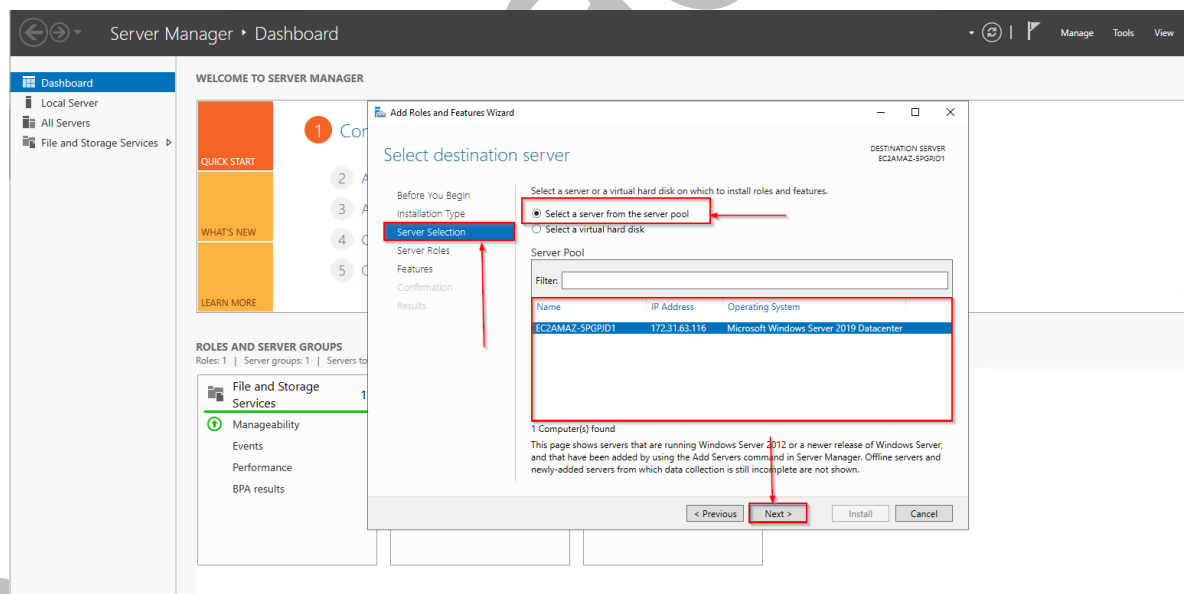
3. Click on **Next**.



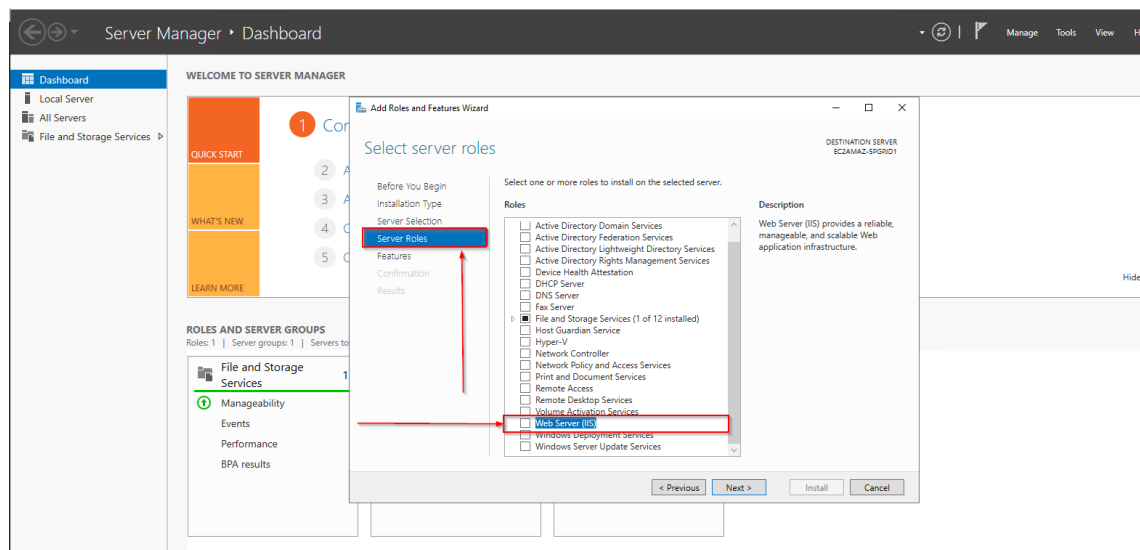
4. Click on **Role based or feature based Installation** and then click on **Next**



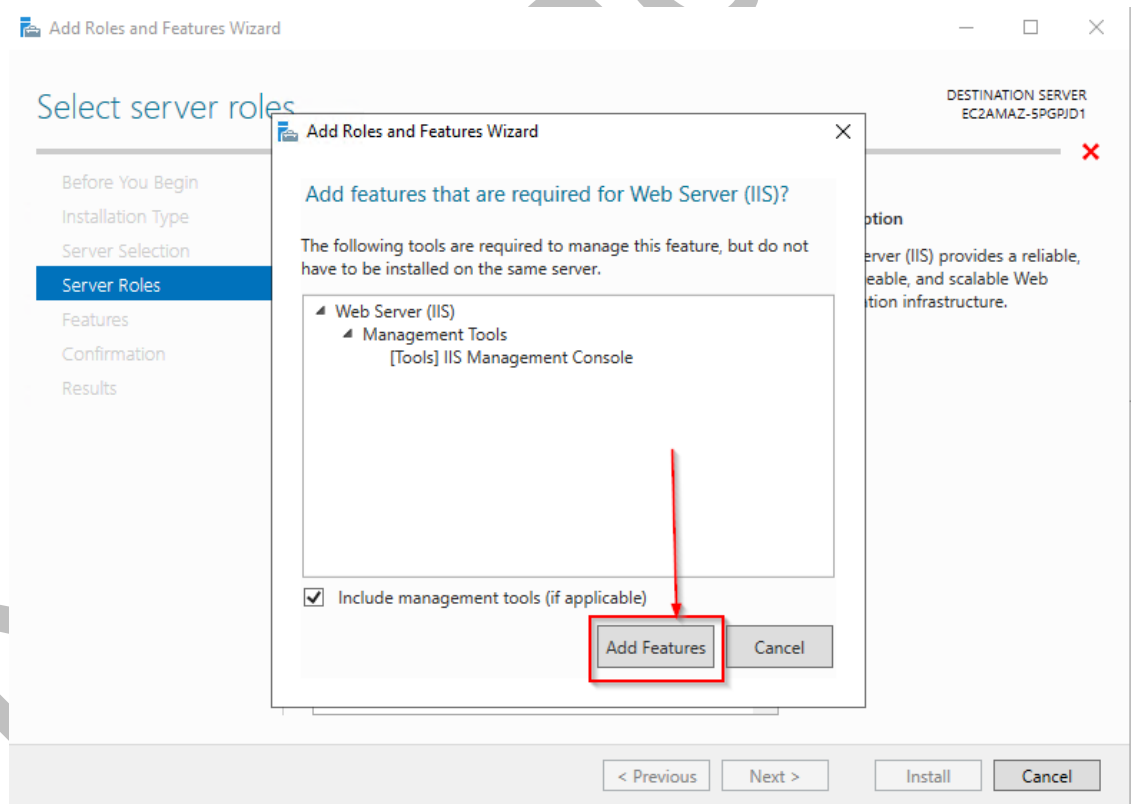
5. Keep everything **default** and click on **Next**



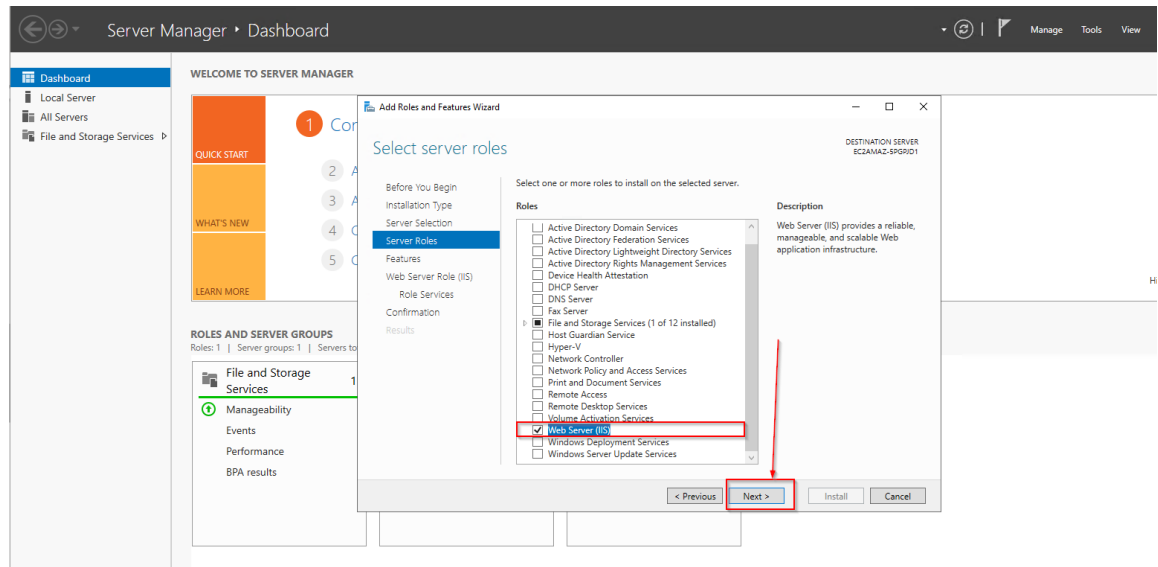
6. Scroll down a bit and click on **Web Server (IIS)**



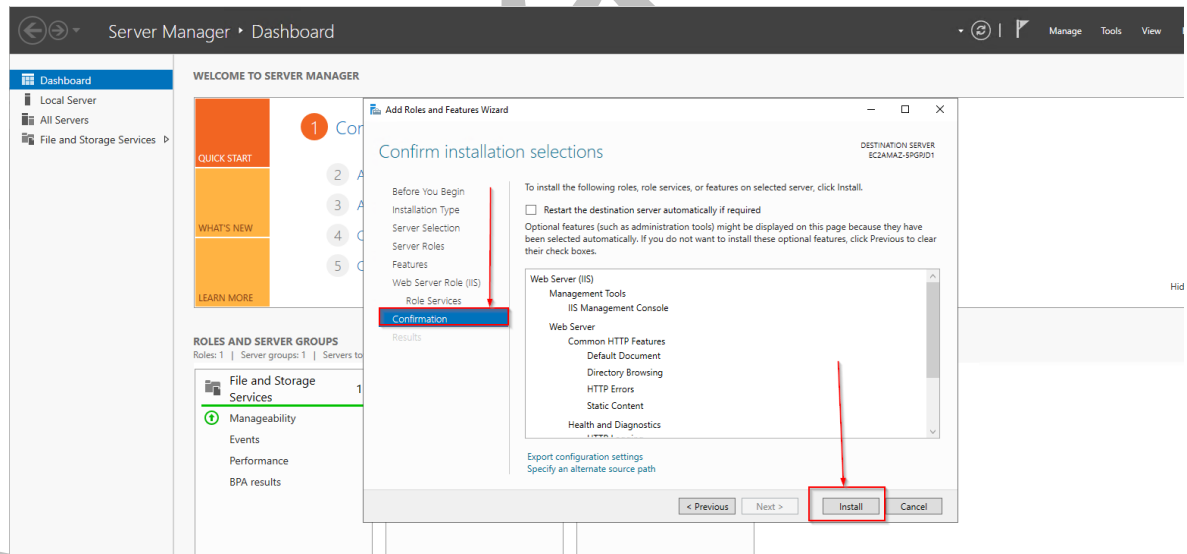
7. As you click on **Web Server (IIS)**, a small dialog box will open. Click on **Add Features**



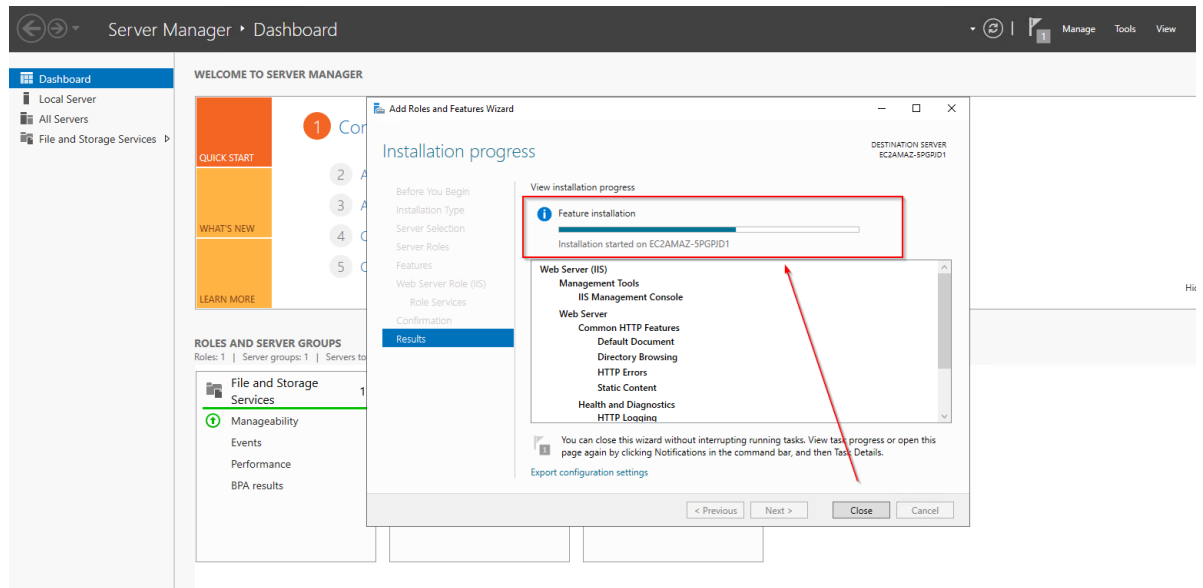
8. Now click on **Next** again.



9. Now keep clicking on **Next** till you reach **Install** dialog box.

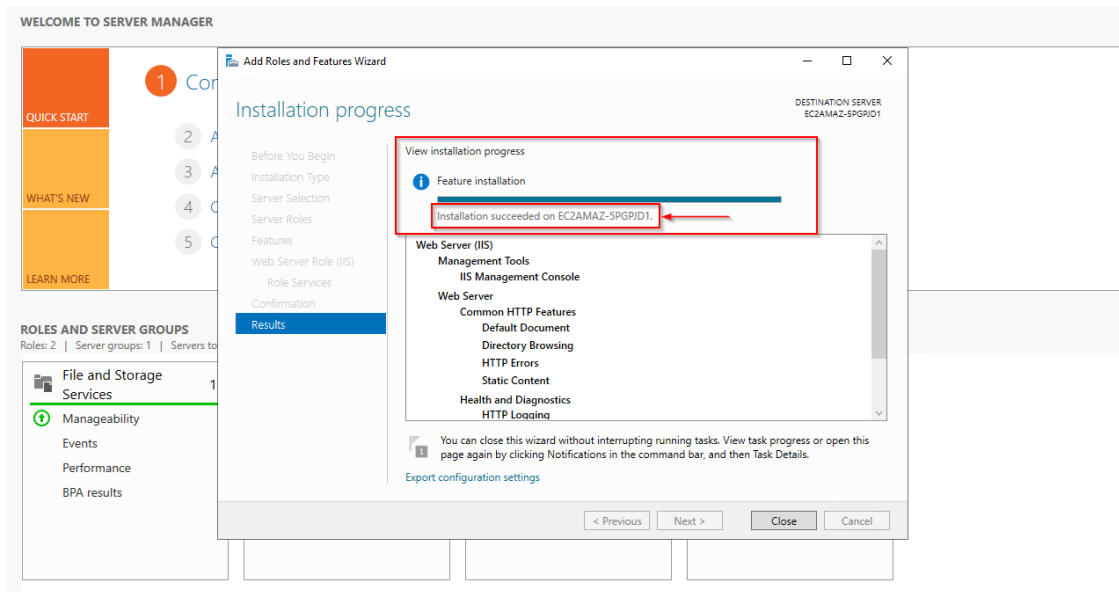


10. The **installation** will start as shown below.



Note: The feature installation will take some time (**approx. 5 minutes**) to complete. Please be patient.

11. The installation is **complete** now.

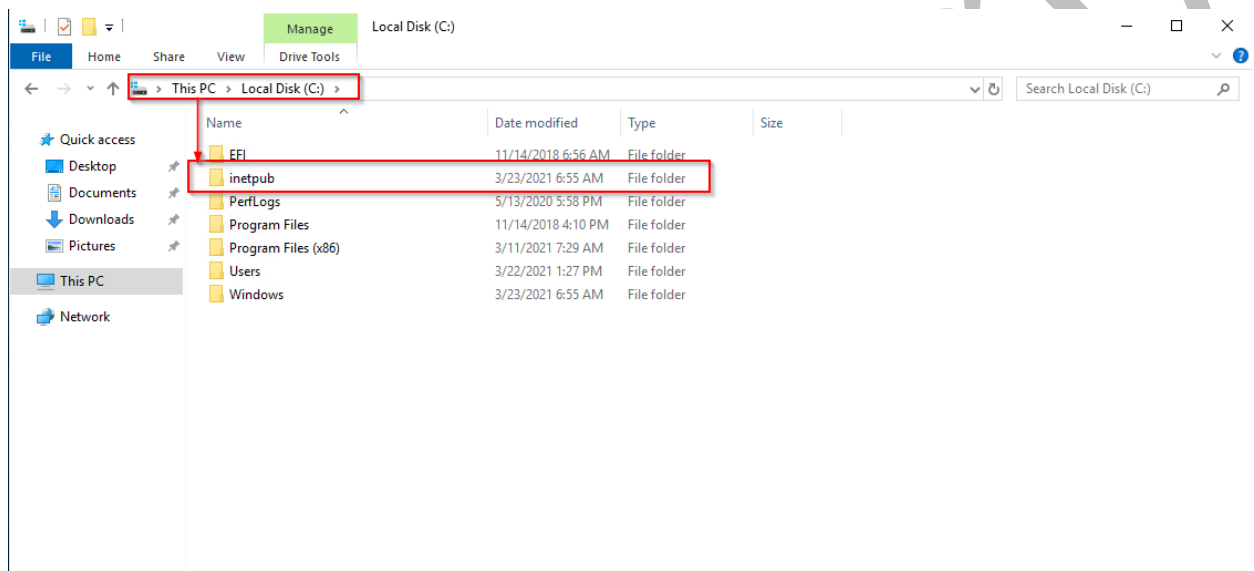


Thus we have successfully installed IIS on our Windows Instance.

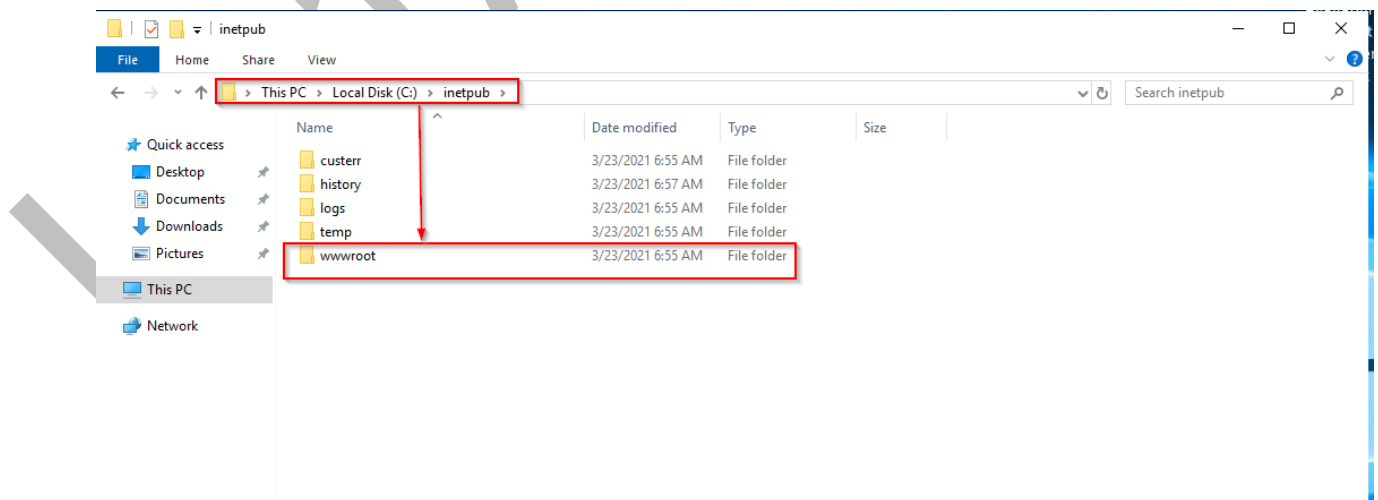
6 ACCESS WEB PAGE THROUGH SERVER MANAGER

In this section we will be providing detailed steps as to how you can access the web page after you have installed IIS on your Windows virtual machine

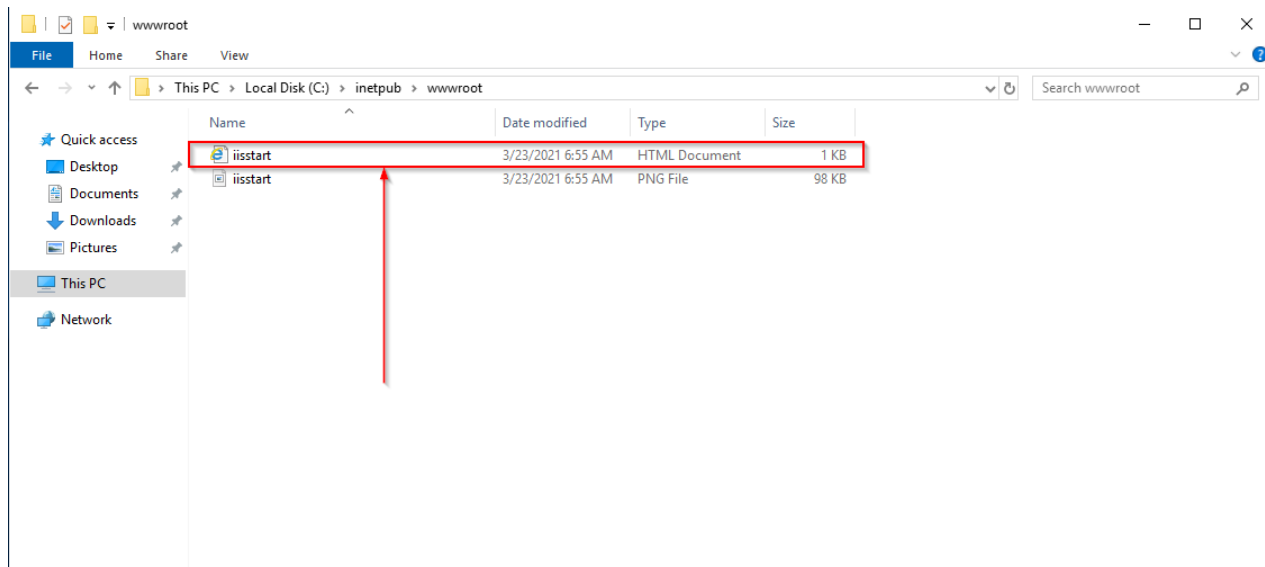
1. Navigate to the **local disk** of you Windows Virtual machine. You will see a folder by the name **inetpub** created in your local disk. Double click to open it.



2. Once you have opened it, now double click on **wwwroot** folder to open it.



3. You will find an HTML document inside by the name **iisstart**. This will be the **home page** of your web server.



4. Right click on this file and open with **Notepad**. It contains a HTML code as shown below.

```
iisstart - Notepad
File Edit Format View Help
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
<title>IIS Windows Server</title>
<style type="text/css">
<!--
body {
    color:#000000;
    background-color:#0072C6;
    margin:0;
}

#container {
    margin-left:auto;
    margin-right:auto;
    text-align:center;
}

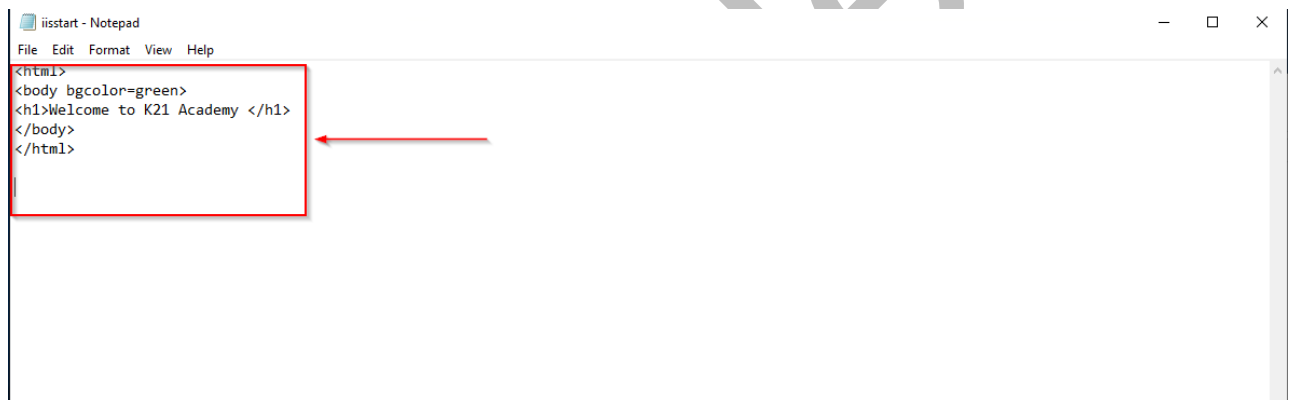
a img {
    border:none;
}

-->
</style>
</head>
<body>
<div id="container">
<a href="http://go.microsoft.com/fwlink/?linkid=66138&clid=0x409"></a>
```

5. Now to make our web page look a bit attractive. We will edit this HTML code by erasing everything in it and write our own HTML code and **Save** it.

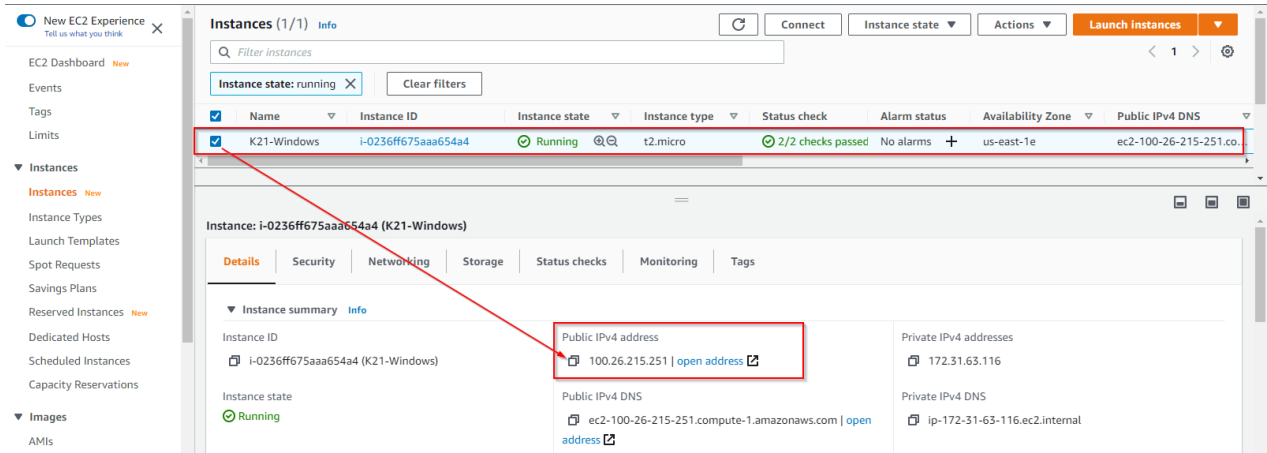
Note: If you don't want to edit the existing **HTML code** and want to keep it as it is you can skip this step and follow the next step

```
<html>
<body bgcolor=green>
<h1>Welcome to K21 Academy </h1>
</body>
</html>
```

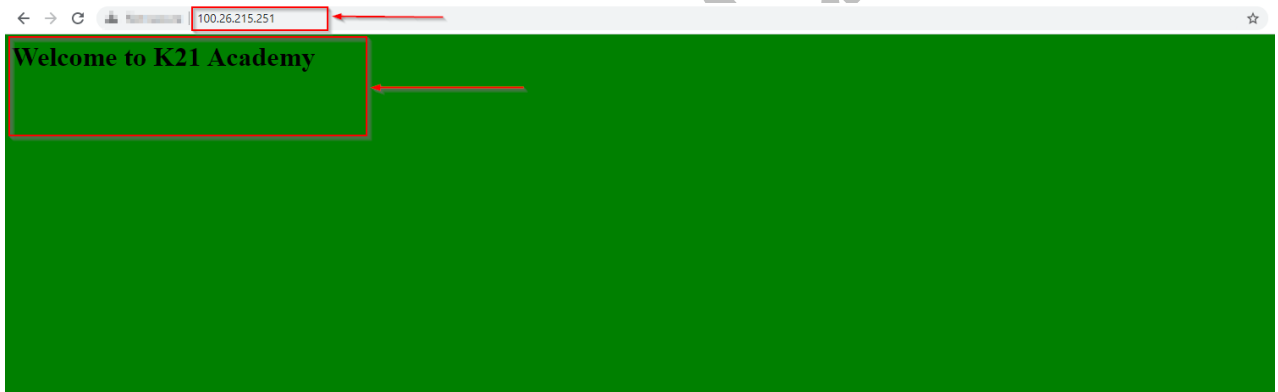


Note: Don't forget to save it by clicking on **File** at the top left corner and then click on **Save**. If you don't save the changes will not appear on the web page

6. Switch to the **EC2 console**, select the **Windows Instance** and copy its **Public IP**.



7. Now try hitting this **Public IP** of the **Windows Instance** in your Browser.



Thus we have successfully accessed the Webpage

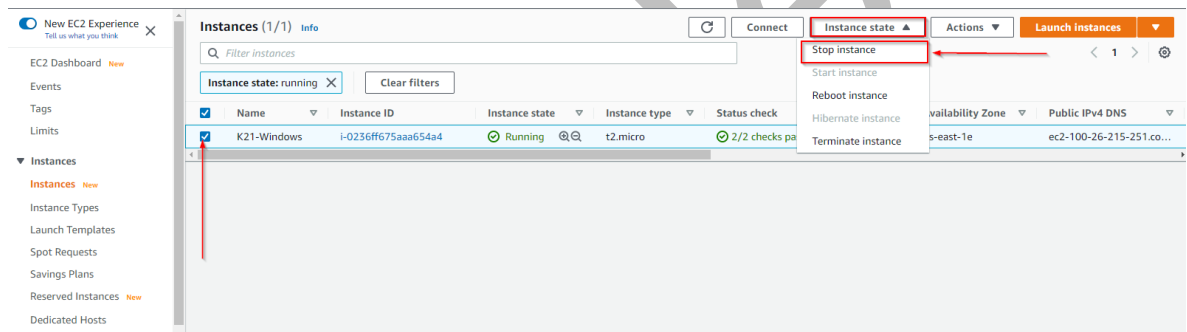
7 DELETE RSOUCES

In this section, we will delete all the resources that we used in the lab as keeping them running will charge us. So, all the resources must be deleted once you do not require them in order to be in free tier limit.

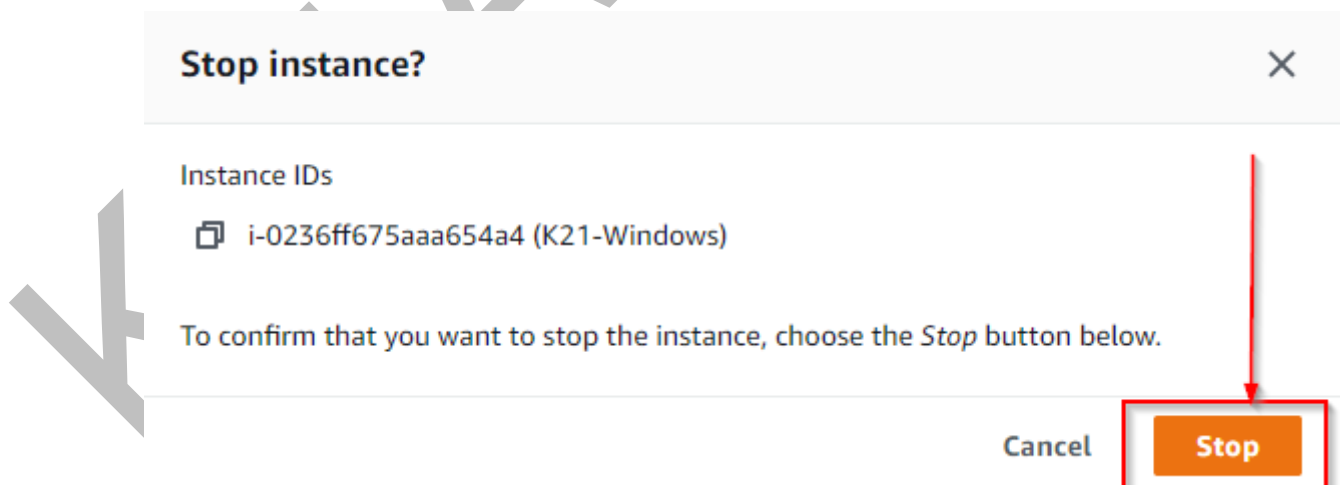
7.1 Stop the Windows Instance

Note: This section will cover steps to stop the windows instance

1. Go to your Instance and select the Windows Instance. Click on **Instance State** and click on **Stop Instance**.



2. Click on **Stop** to stop the Instance

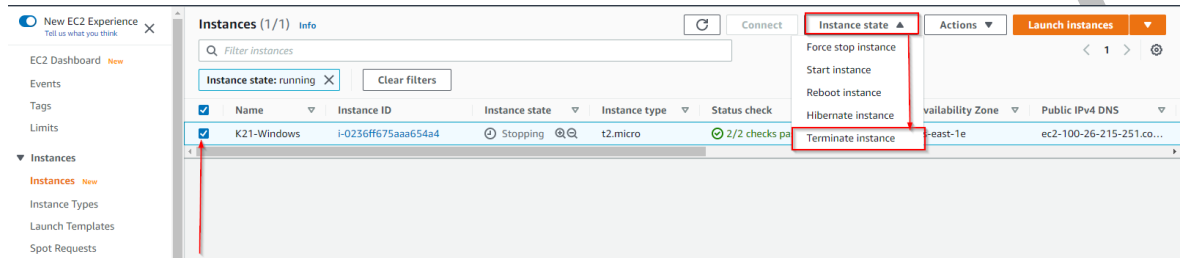


Thus, we have successfully stopped the Instance.

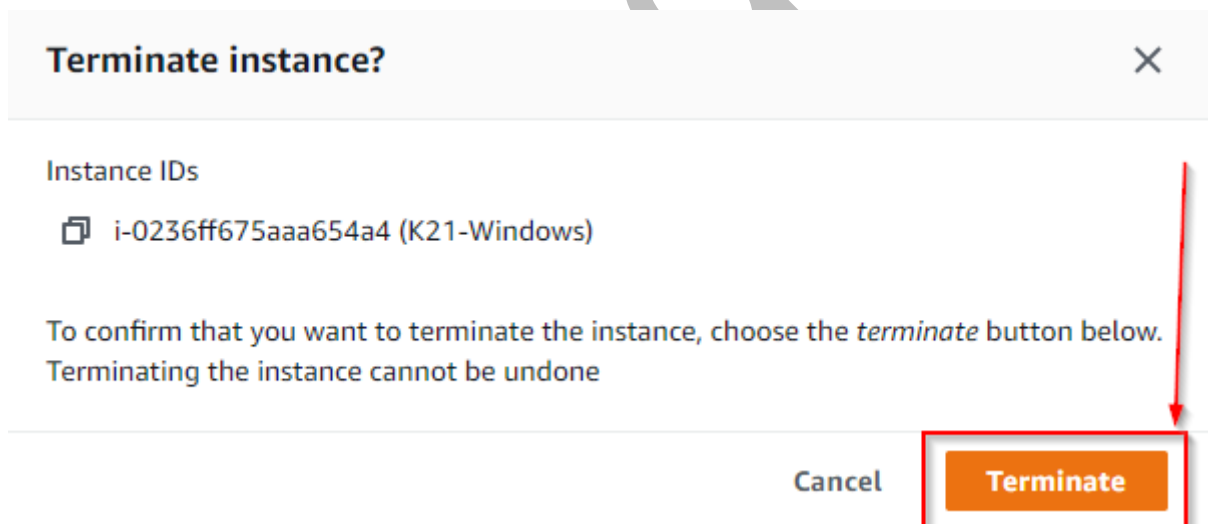
7.2 Terminate the Windows Instance

Note: This section will cover steps to terminate the windows instance

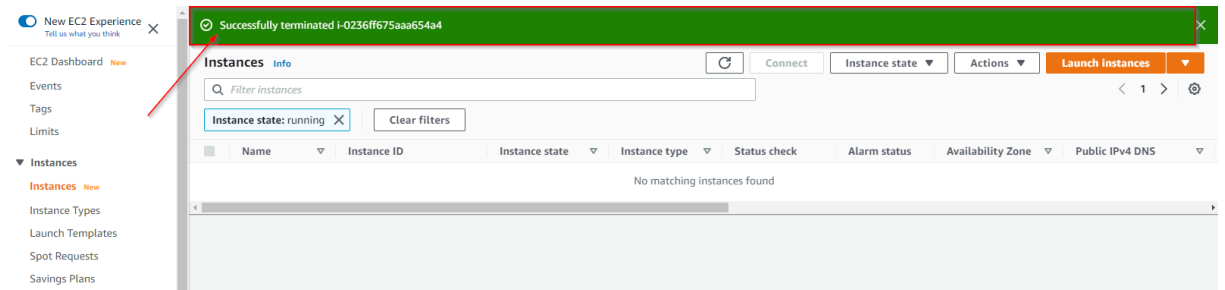
1. Go to your Instance and select the Windows Instance. Click on **Instance State** and click on **Terminate Instance**.



2. Click on **Terminate** to terminate the Instance



3. The Instance will be **deleted**.



Thus we have successfully deleted the Instance

8 SUMMARY

This activity guide cover steps for:

1. Create Windows EC2 Instance
2. Connect to Windows EC2 Instance
3. Install Web Server (IIS) in Windows EC2 Instance
4. Access Webpage through Server Manager
5. Delete Resources