

AWS LAB WORK

- 1) LAB 1 -Ec2 launch in windows**
- 2) LAB 2- Launch Website with Windows server**
- 3) LAB 3- Put Load balancer in Ec2 machine**
- 4) LAB 4 – Scaling in EC2 machine**
- 5) LAB 5 – EC2 launch with linux**
- 6) LAB 6 – Backup of EC2 and relaunch it after termination**
- 7) LAB 7 – Detach EBS from EC2 and then connect it with a new Ec2 machine created**
- 8) LAB 8 – Relaunch a EC2 with AMI**
- 9) LAB 9 – Creating Capacity Reservation**
- 10) LAB 10 -Launch a Dynamic website on EC2 and attach security and Load balancers with scaling enabled.**
- 11) LAB 11 – Launching a Wordpress website on EC2 machine with the help of AMI**

LAB session 1 : Creating EC2 Machine

Step 1: Login to aws console

Step 2: Go to EC2

The screenshot shows the AWS EC2 Management Console interface. The left sidebar is collapsed, showing the 'New EC2 Experience' toggle, 'EC2 Dashboard' (New), 'Events', 'Tags', 'Limits', 'Instances' (with 'Instances' (New), 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances' (New), 'Dedicated Hosts', 'Capacity Reservations'), 'Images' (AMIs), and a search bar. The main content area displays the 'Resources' section with the following data:

Instances (running)	0	Dedicated Hosts	0
Elastic IPs	0	Instances	3
Key pairs	1	Load balancers	0
Placement groups	0	Security groups	3
Snapshots	1	Volumes	0

A callout box in the bottom left corner of the resources section says: "Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. [Learn more](#)". To the right of the resources section is the 'Account attributes' sidebar, which includes sections for 'Supported platforms' (VPC), 'Default VPC' (vpc-2a920741), 'Settings', 'EBS encryption', 'Zones', 'EC2 Serial Console', 'Default credit specification', and 'Console experiments'. At the bottom of the page, there are links for 'Feedback', 'English (US)', 'Privacy Policy', 'Terms of Use', and 'Cookie preferences', along with a search bar and a taskbar.

Step 3: Click instances

The screenshot shows the AWS EC2 Management Console. On the left, there's a navigation sidebar with sections like EC2 Dashboard, Instances, and Images. The main area displays 'Resources' with a table showing counts for various EC2 components. A tooltip is visible over the 'Instances' row. To the right, the 'Account attributes' pane is open, listing supported platforms (VPC), default VPC (vpc-2a920741), and other settings. At the bottom, there's a search bar and a taskbar.

Step 4: click on launch instance

The screenshot shows the AWS EC2 Management Console on the 'Instances' page. The left sidebar is identical to the previous screenshot. The main area shows a table of instances with a filter for 'running' instances. A prominent orange 'Launch instances' button is located at the top right of the table. Below the table, a message says 'No matching instances found'. The bottom of the screen shows a search bar and a taskbar.

Step 5: Select Ami
(use freetier for free account for windows use **Microsoft Windows Server 2012 R2 Base**)

Click on next

Step 6: select t2.micro

The screenshot shows the AWS Launch Instance Wizard interface. The user is on Step 2: Choose an Instance Type. The table lists four instance types: t2.nano, t2.micro (selected), t2.small, and t2.medium. The t2.micro row is highlighted with a green background and has a green label 'Free tier eligible' over it. The table columns include Family, Type, vCPUs, Memory (GiB), Instance Storage (GiB), EBS-Optimized Available, Network Performance, and IPv6 Support.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GiB)	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

At the bottom, there are buttons for Cancel, Previous, Review and Launch (highlighted in blue), and Next: Configure Instance Details.

Step 7: Now click on Configure instance details

Launch instance wizard | EC2 Manager

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

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 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
<input checked="" type="checkbox"/>	t2	t2.micro <small>Free tier eligible</small>	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

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

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6:09 PM 5/27/2021

Step 8: Make no change in Ec2 configure instance page

Launch instance wizard | EC2 Manager

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

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 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	<input type="text" value="1"/> Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances
Network	vpc-2a920741 (default) <small>Create new VPC</small>
Subnet	No preference (default subnet in any Availability Zone) <small>Create new subnet</small>
Auto-assign Public IP	Use subnet setting (Enable)
Placement group	<input type="checkbox"/> Add instance to placement group
Capacity Reservation	Open
Domain join directory	No directory <small>Create new directory</small>
IAM role	None <small>Create new IAM role</small>
Shutdown behavior	Stop
Stop - Hibernate behavior	<input type="checkbox"/> Enable hibernation as an additional stop behavior

Cancel Previous **Review and Launch** Next: Add Storage

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Step 9: Add storage

The screenshot shows the AWS Launch Instance Wizard at Step 4: Add Storage. The page title is "Launch instance wizard | EC2 Management Console". The navigation bar includes "Services", "Search for services, features, marketplace products, and docs", and user information "Krishna", "Ohio", and "Support". Below the navigation is a progress bar with steps 1 through 7. Step 4, "Add Storage", is highlighted.

The main content area displays a table for configuring storage volumes:

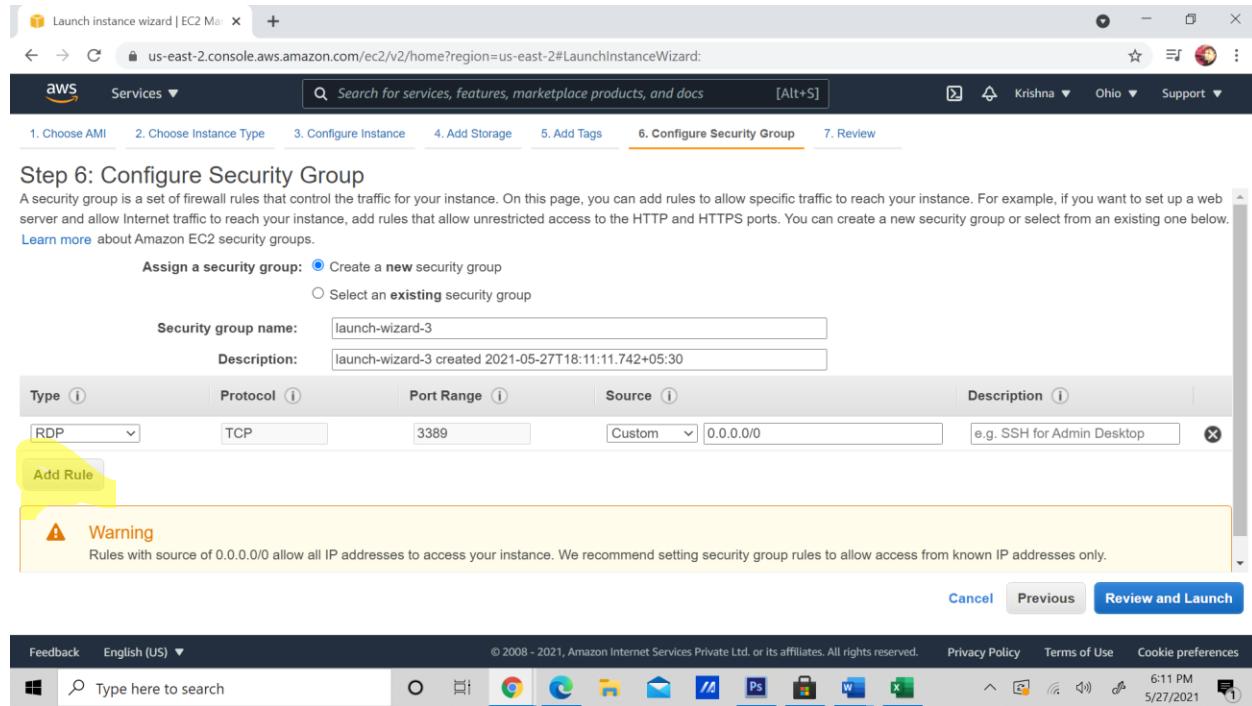
Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-0e60a1fc685e9a366	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

A button labeled "Add New Volume" is located below the table. A note below the table states: "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."

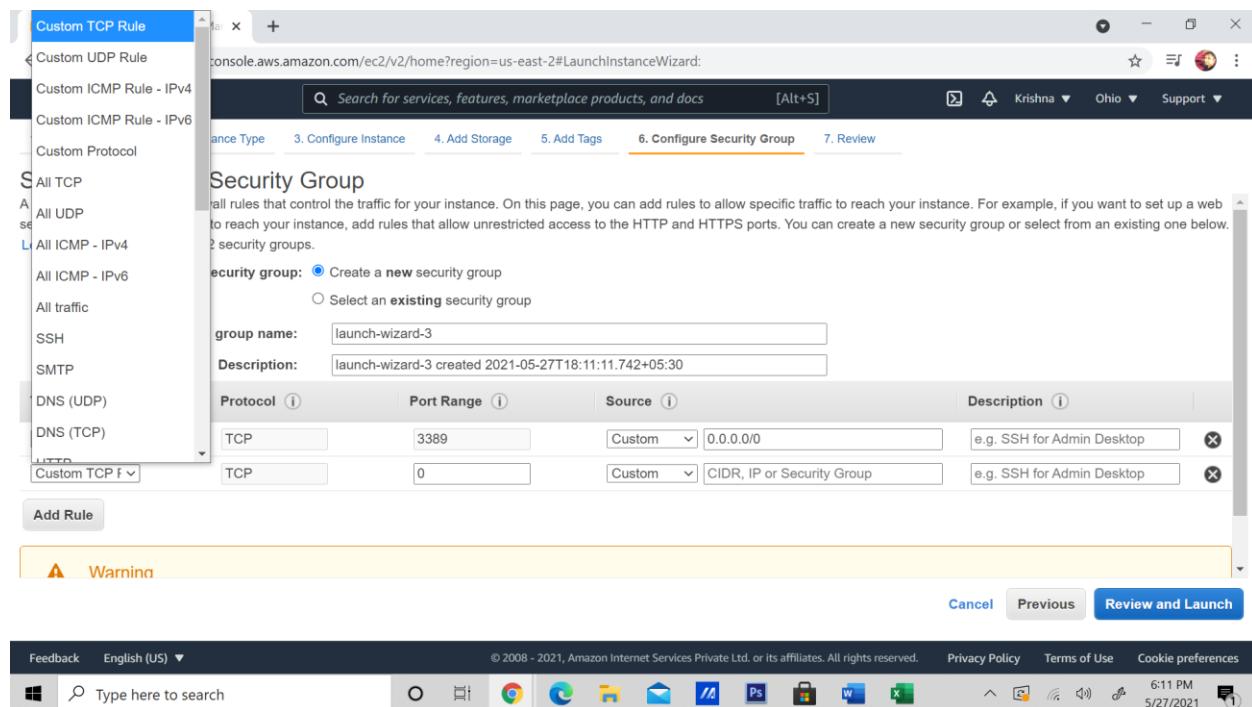
At the bottom right of the page, there are buttons for "Cancel", "Previous", "Review and Launch", and "Next: Add Tags". A yellow callout highlights the "Next: Add Tags" button.

Step 10: Add tags

Step 11: Configure security group



Step 12: Add Http and https for internet connectivity in my Ec2 machine



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	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

Cancel Previous Review and Launch

Step 13: Now review and launch

Step 14: Click on launch

Step 7: Review Instance Launch

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
i2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	0.0.0.0/0	
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	::/0	

Launch

Step 15: Create a key pair

Step 7: Review Instance Launch

Select an existing key pair or create a new key pair

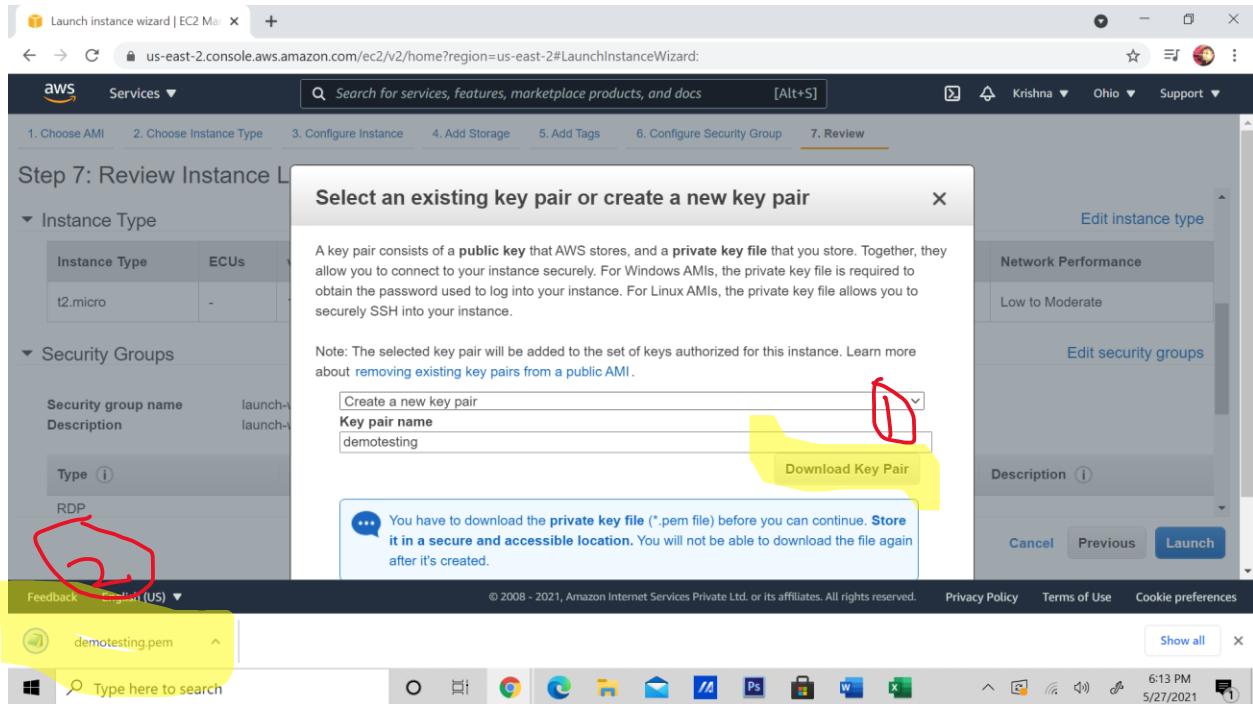
A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key 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: demotesting
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.

Launch



(Make sure that you do not loose this downloaded file as it is available only once. Later after creating an instance you can recreate it)

Step 16) Click on launch instance

Step 17) Give the name to your instance .

Instances | EC2 Management Con... +

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

Krishna Ohio Support

New EC2 Experience Tell us what you think

EC2 Dashboard New

Events

Tags

Limits

Instances Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances New

Dedicated Hosts

Capacity Reservations

Instances (4) Info

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability zone
akshat	i-052f96054d37ff181	Terminated	t2.micro	-	No alarms	+
akshat2	i-0c2659b5d01aa0c2d	Terminated	t2.micro	-	No alarms	+
-	i-096edd9d38396e230	Terminated	t2.micro	-	No alarms	+
-	i-00d9584c4fe021350	Pending	t2.micro	-	No alarms	+

Select an instance above

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demotesting.pem Show all

Type here to search

6:15 PM 5/27/2021

A red arrow points from the text "click here" to the "Edit Name" input field in the screenshot below.

Instances | EC2 Management Con... +

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

Krishna Ohio Support

New EC2 Experience Tell us what you think

EC2 Dashboard New

Events

Tags

Limits

Instances Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances New

Dedicated Hosts

Capacity Reservations

Instances (1/4) Info

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability zone
akshat	i-052f96054d37ff181	Terminated	t2.micro	-	No alarms	+
akshat2	i-0c2659b5d01aa0c2d	Terminated	t2.micro	-	No alarms	+
-	i-096edd9d38396e230	Terminated	t2.micro	-	No alarms	+
-	i-00d9584c4fe021350	Running	t2.micro	-	No alarms	+

Edit Name

Cancel Save

Instance: i-00d9584c4fe021350

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demotesting.pem Show all

Type here to search

6:16 PM 5/27/2021

A screenshot of the AWS EC2 Management Console. The left sidebar shows navigation options like EC2 Dashboard, Instances, and Actions. The main area displays a table of instances. A yellow box highlights the 'Machine1' row, which has a checked checkbox. The 'Connect' button is located in the top right corner of the instance table header. The status of 'Machine1' is shown as 'Running'.

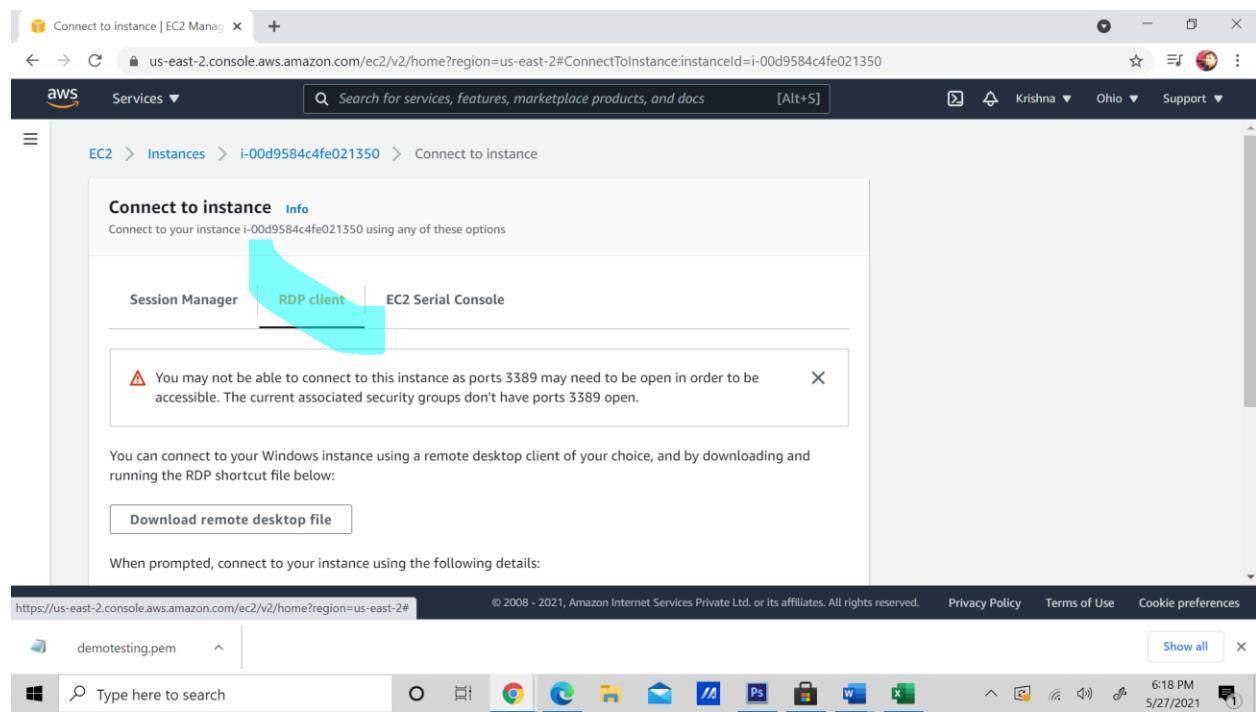
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
akshat	i-052f96054d37ff181	Terminated	t2.micro	-	No alarms	+
akshat2	i-0c2659b5d01aa0c2d	Terminated	t2.micro	-	No alarms	+
-	i-096edd9d38396e230	Terminated	t2.micro	-	No alarms	+
<input checked="" type="checkbox"/> Machine1	i-00d9584c4fe021350	Running	t2.micro	-	No alarms	+

Step 18: Now select your machine and click on connect

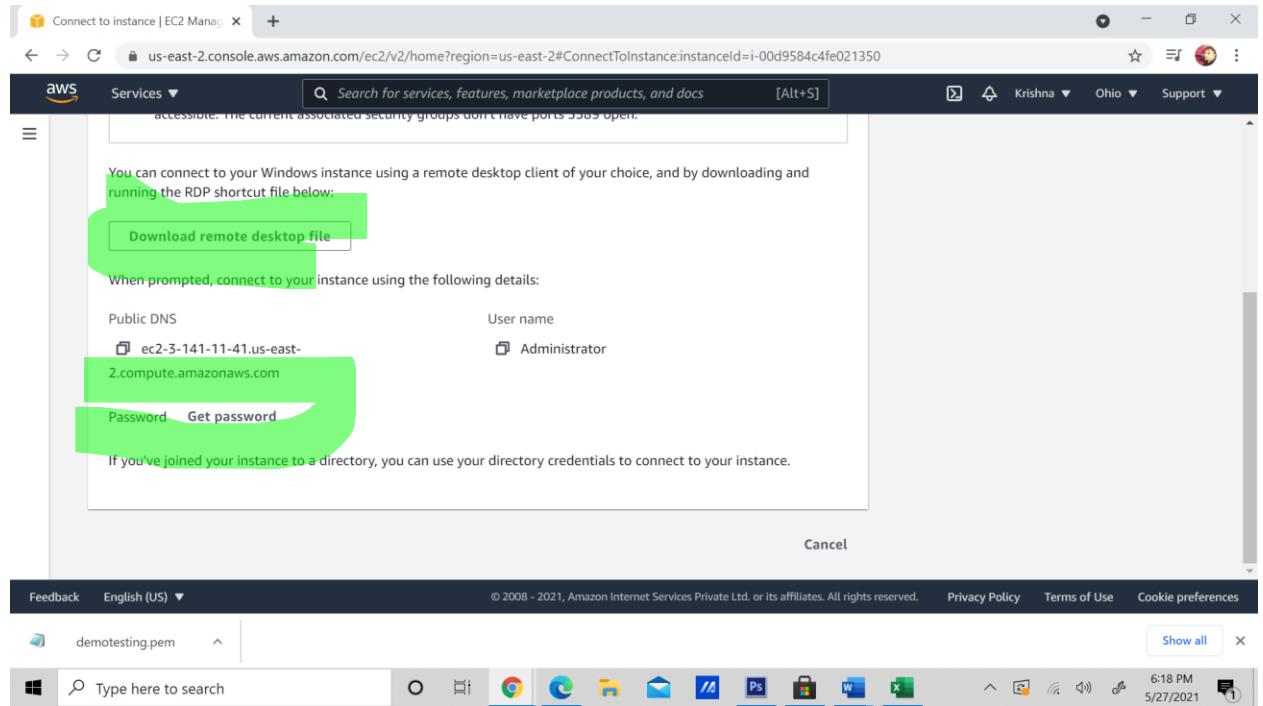
A screenshot of the AWS EC2 Management Console, similar to the previous one but with annotations. A cyan callout points to the 'Machine1' row in the table. A red callout points to the 'Connect' button in the top right of the instance table header. The 'Machine1' row is selected, and the 'Connect' button is highlighted with a red circle.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
akshat	i-052f96054d37ff181	Terminated	t2.micro	-	No alarms	+
akshat2	i-0c2659b5d01aa0c2d	Terminated	t2.micro	-	No alarms	+
-	i-096edd9d38396e230	Terminated	t2.micro	-	No alarms	+
<input checked="" type="checkbox"/> Machine1	i-00d9584c4fe021350	Running	t2.micro	-	No alarms	+

Step 19: go to RDP client



Step 20: Click on download RDP and click on get password



Step 21: After you click on get password either you can browse and upload the pem file (demotesting.pem) or open pem file in notepad and copy paste the content and paste it

Get windows password | EC2 Ma... +

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#GetWindowsPassword:instanceId=i-00d9584c4fe021350;previousPlace=ConnectToInstance

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

Retrieves and decrypts 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 demotesting

Browse to your key pair:

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

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Get windows password | EC2 Ma... +

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#GetWindowsPassword:instanceId=i-00d9584c4fe021350;previousPlace=ConnectToInstance

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

demotesting - Notepad

File Edit Format View Help

-----BEGIN RSA PRIVATE KEY-----

```
MIIEcwIBAAKCAQEAhsdu5F8/H+wQV1T3jXaQXMNOCAzU6MZX3Ko1Qxrjt3dV7z
w69NmssfNMw46Km9krfMoywCa5Ybw64f4JyYIiZilKUuE7u4dLM1pyqus3eebQeI
BhsHuuiNUzKr6CDM6P/M0dT30vaWhjexbDYKiiinxKxtnwGQaby7eaPi6NmW4jY
UAPD+r2NjvEnooRn0dcGL4Lx1z3dVg7dcQkQpmjKChRYKHod4/GqyeP2L0115
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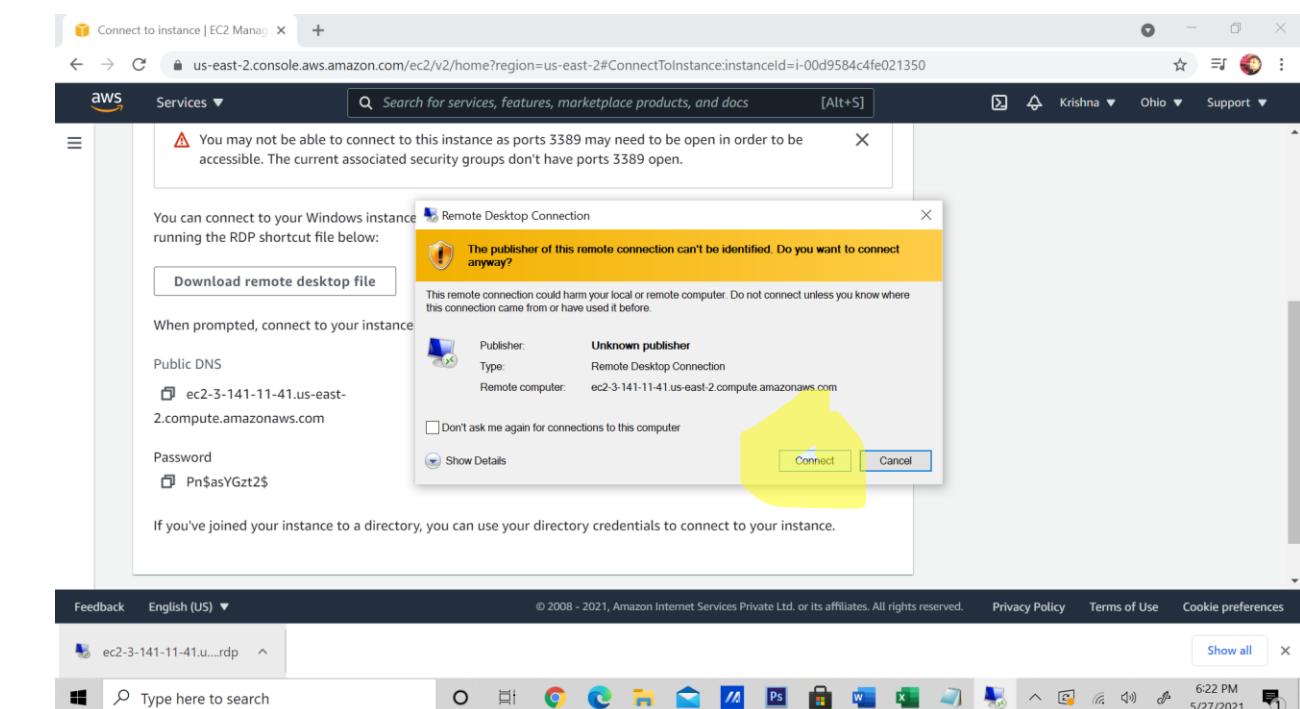
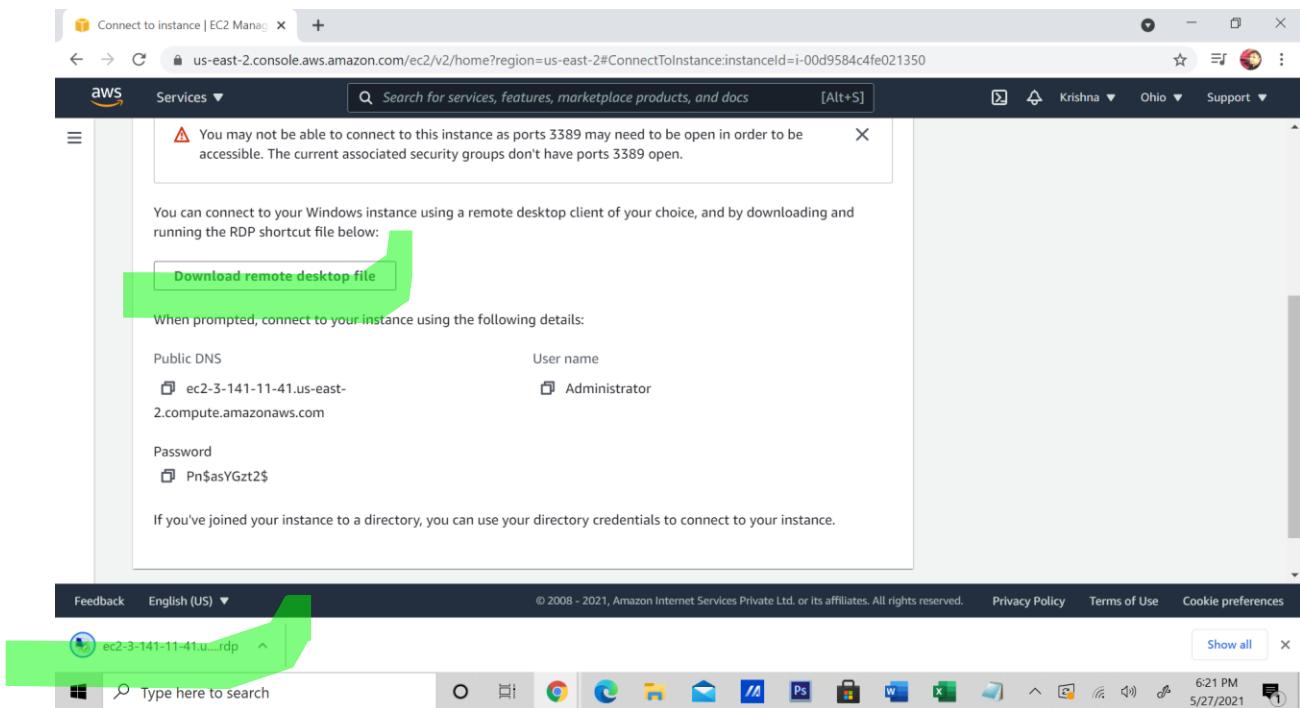
Ln 1, Col 1 100% Windows (CRLF) UTF-8

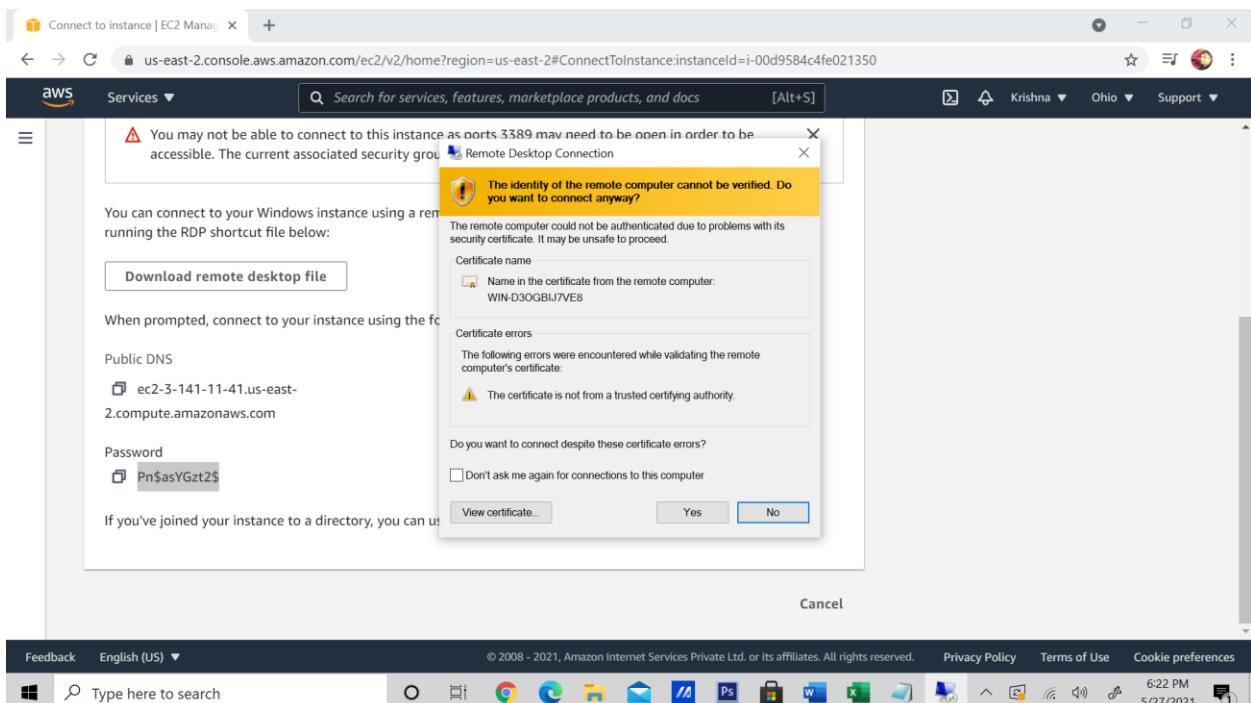
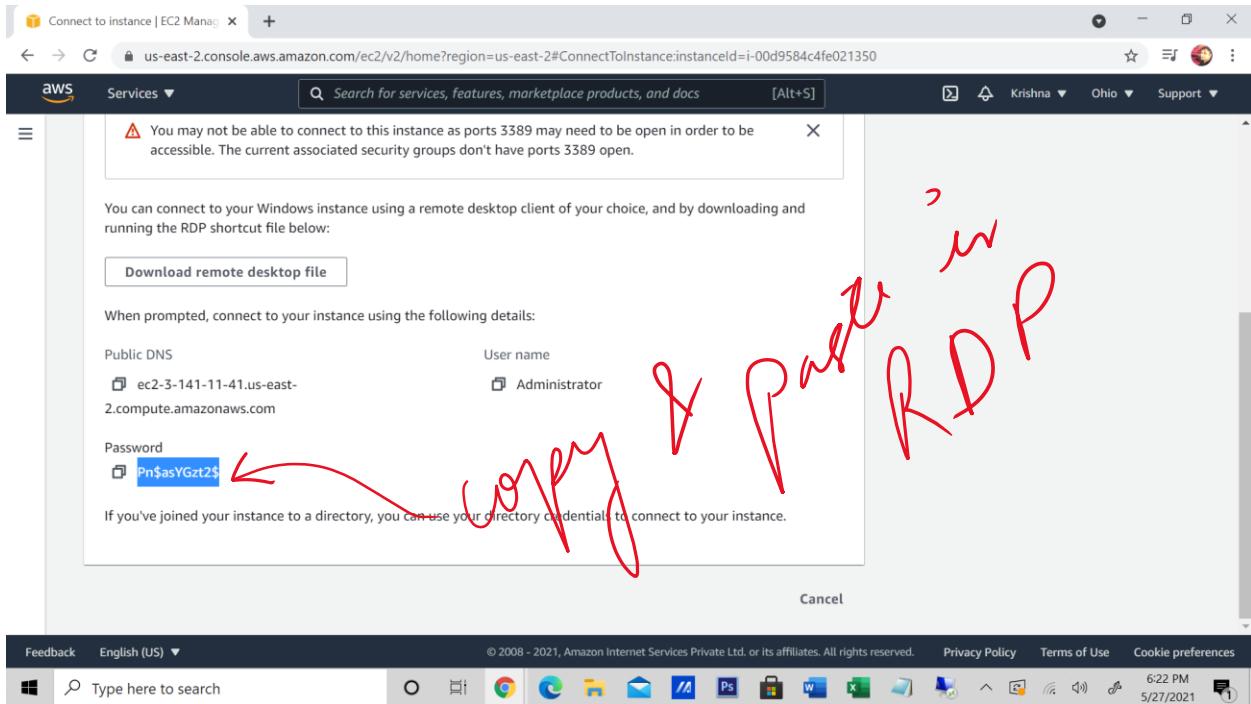
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A screenshot of a web browser window titled "Get windows password | EC2 Manager". The URL is <https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#GetWindowsPassword:instanceId=i-00d9584c4fe021350;previousPlace=ConnectToInstance>. The page displays the "Key pair associated with this instance" for the instance "demotesting". A large yellow arrow points from the text "Paste the keypair here" to the text area containing the RSA PRIVATE KEY. The key itself is a long string of characters starting with "-----BEGIN RSA PRIVATE KEY-----".

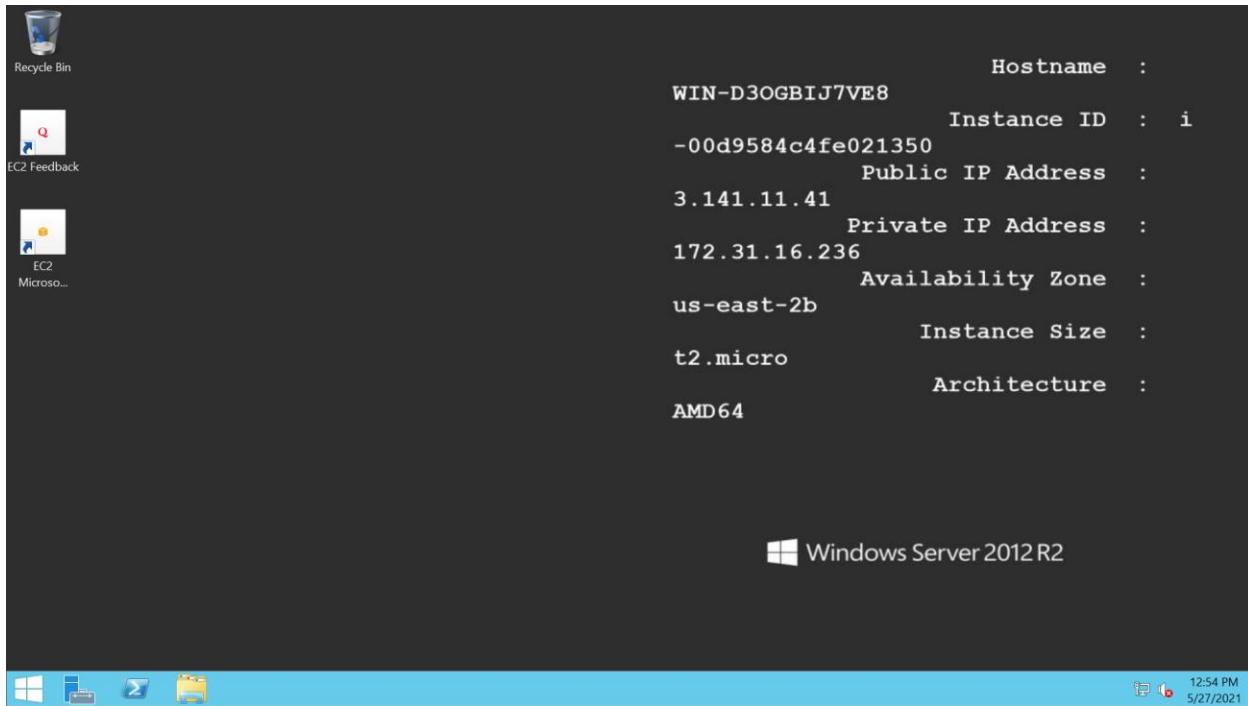
Decrypt password. And download rdp

A screenshot of a web browser window titled "Connect to instance | EC2 Manager". The URL is <https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#ConnectToInstance:instanceId=i-00d9584c4fe021350>. A warning message states: "You may not be able to connect to this instance as ports 3389 may need to be open in order to be accessible. The current associated security groups don't have ports 3389 open." Below this, instructions say: "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." A "Download remote desktop file" button is shown. Connection details are listed: Public DNS is "ec2-3-141-11-41.us-east-2.compute.amazonaws.com" (with the entire field circled in red), User name is "Administrator", and Password is "Pn\$asYGzt2\$". A note at the bottom says: "If you've joined your instance to a directory, you can use your directory credentials to connect to your instance." The status bar at the bottom shows the date and time as "6:21 PM 5/27/2021".





Instance would be launched



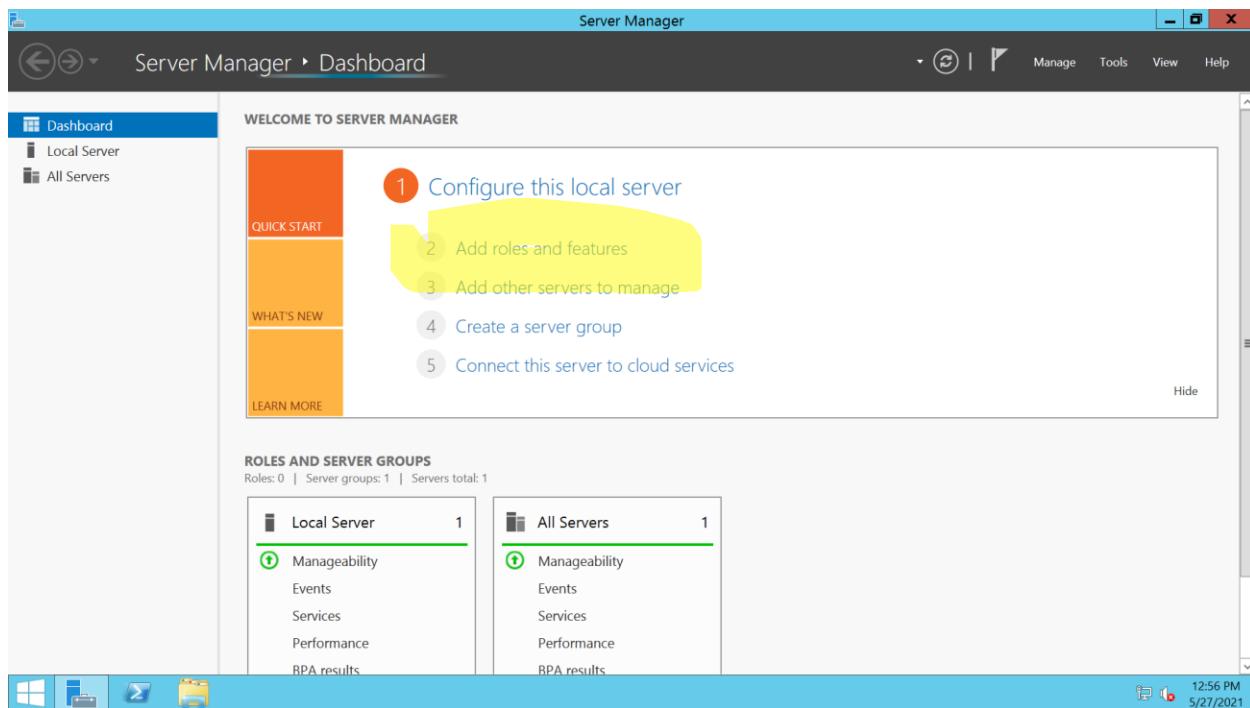
LAB 2: LAUNCH STATIC WEBSITE ON EC2 MACHINE



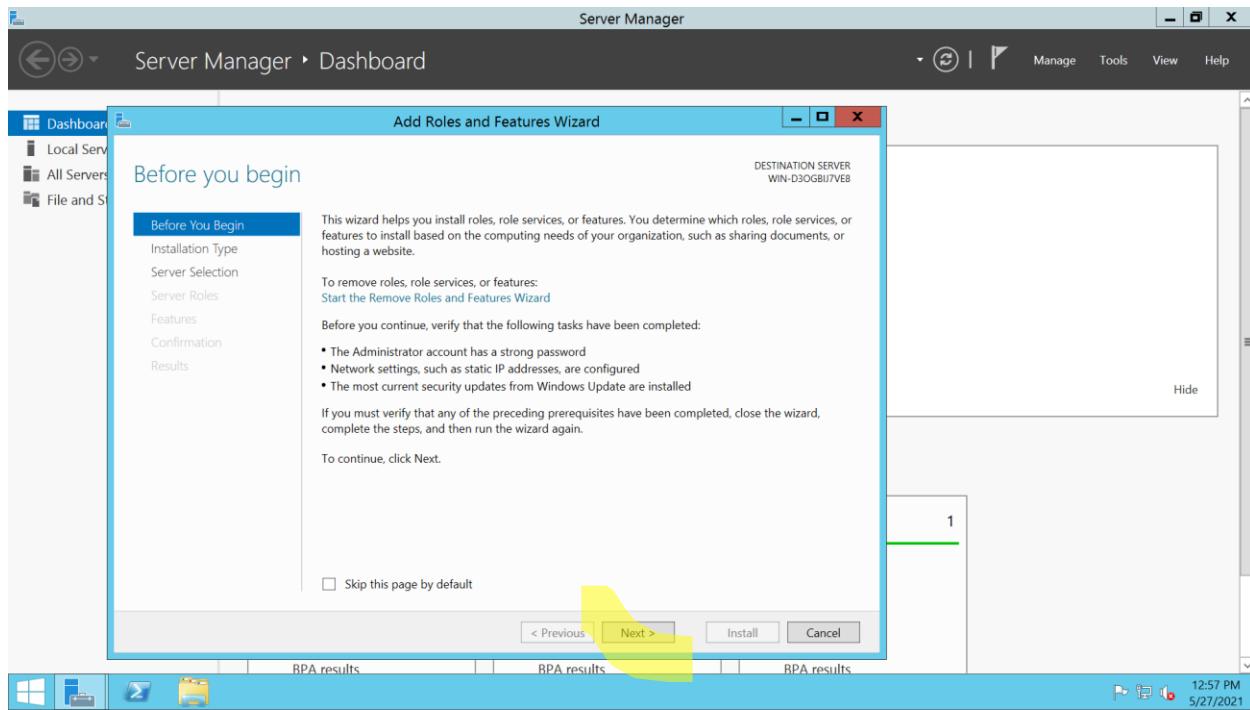


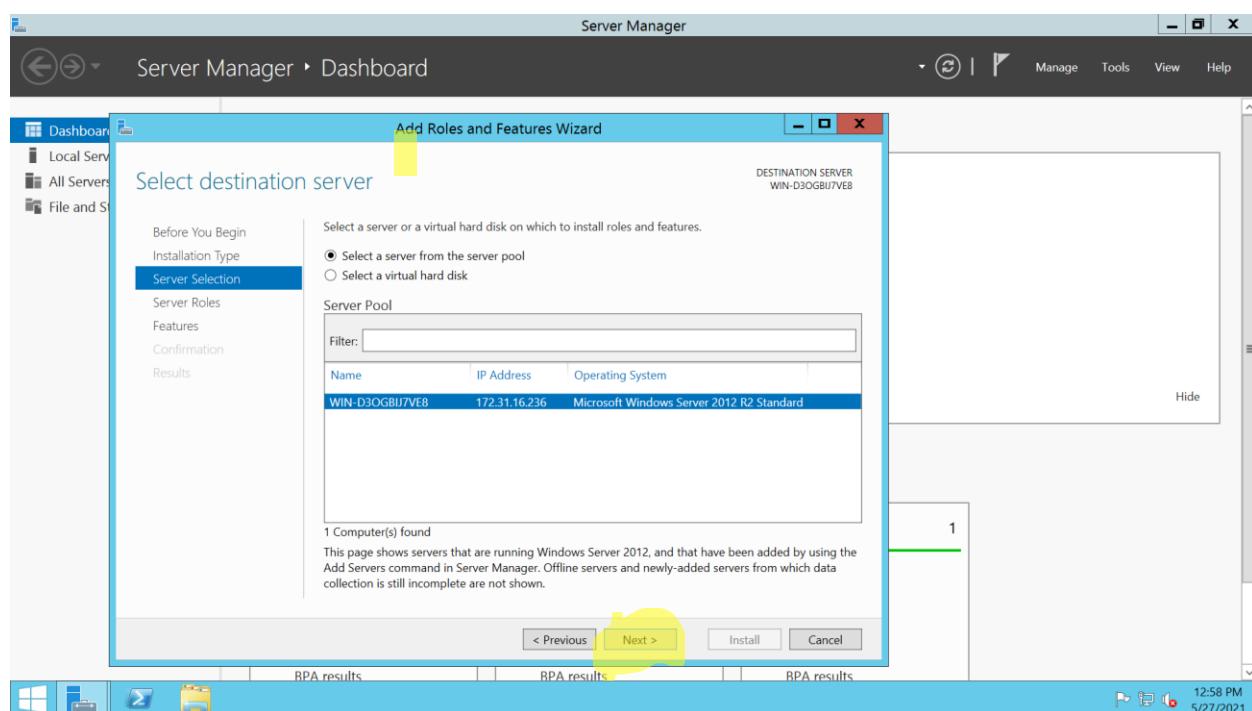
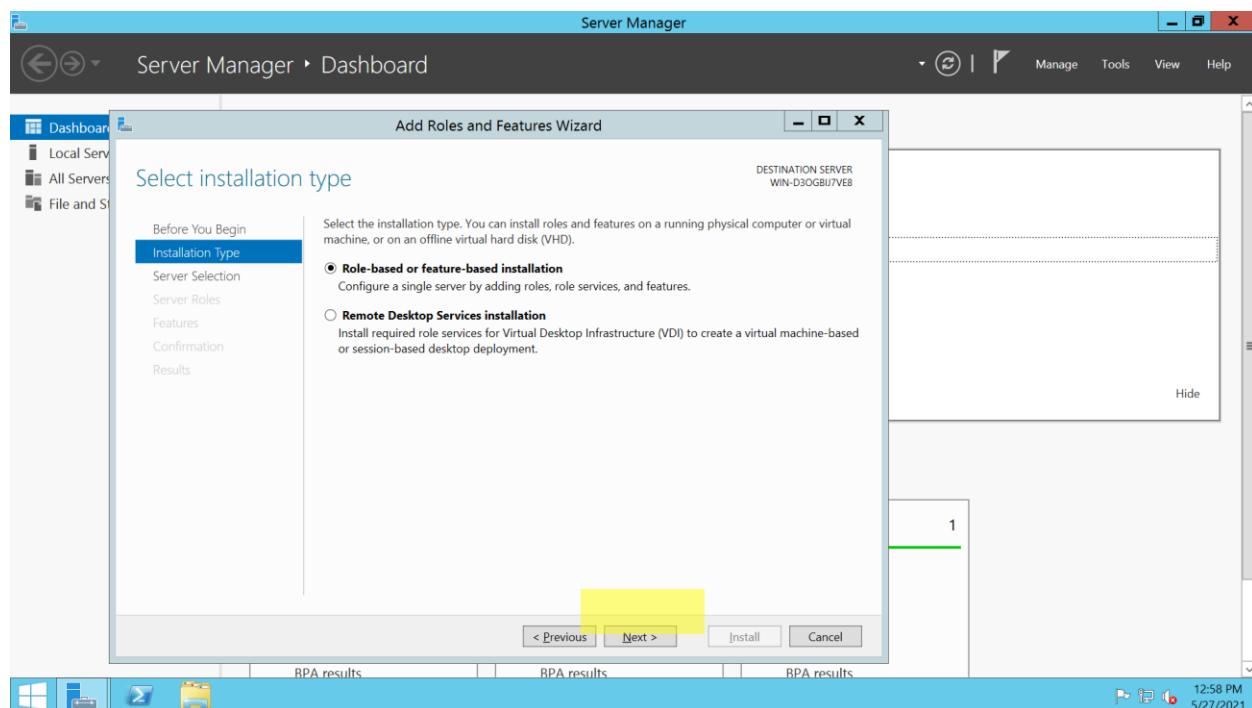
Step 1) Click on the yellow mark after launching an Ec2 machine (refer lab 1)

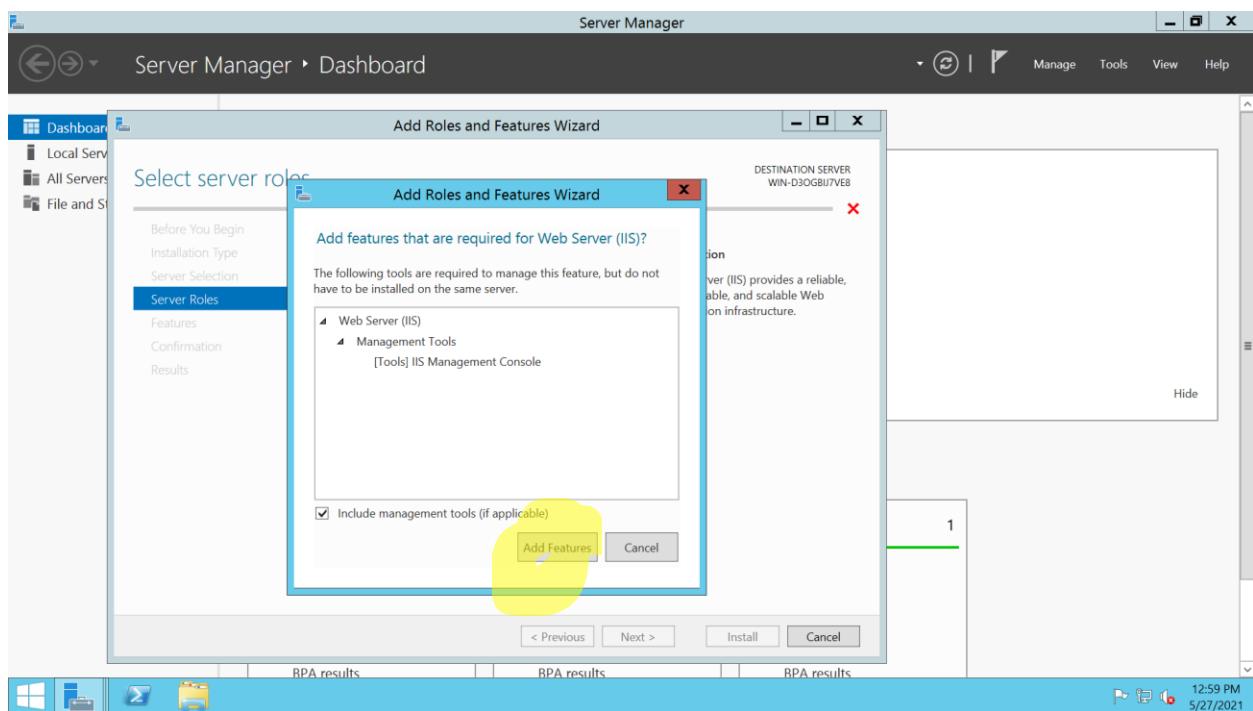
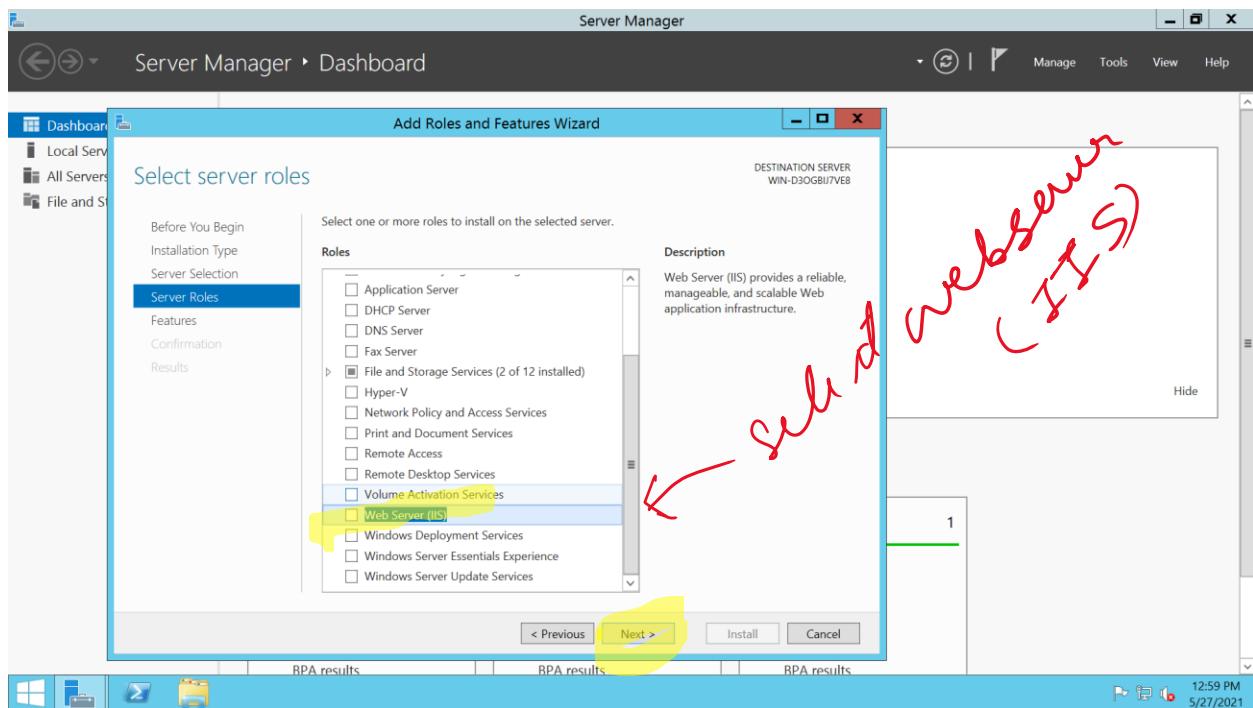
Step 2: Open server manager in your rdp . Click on add roles and features



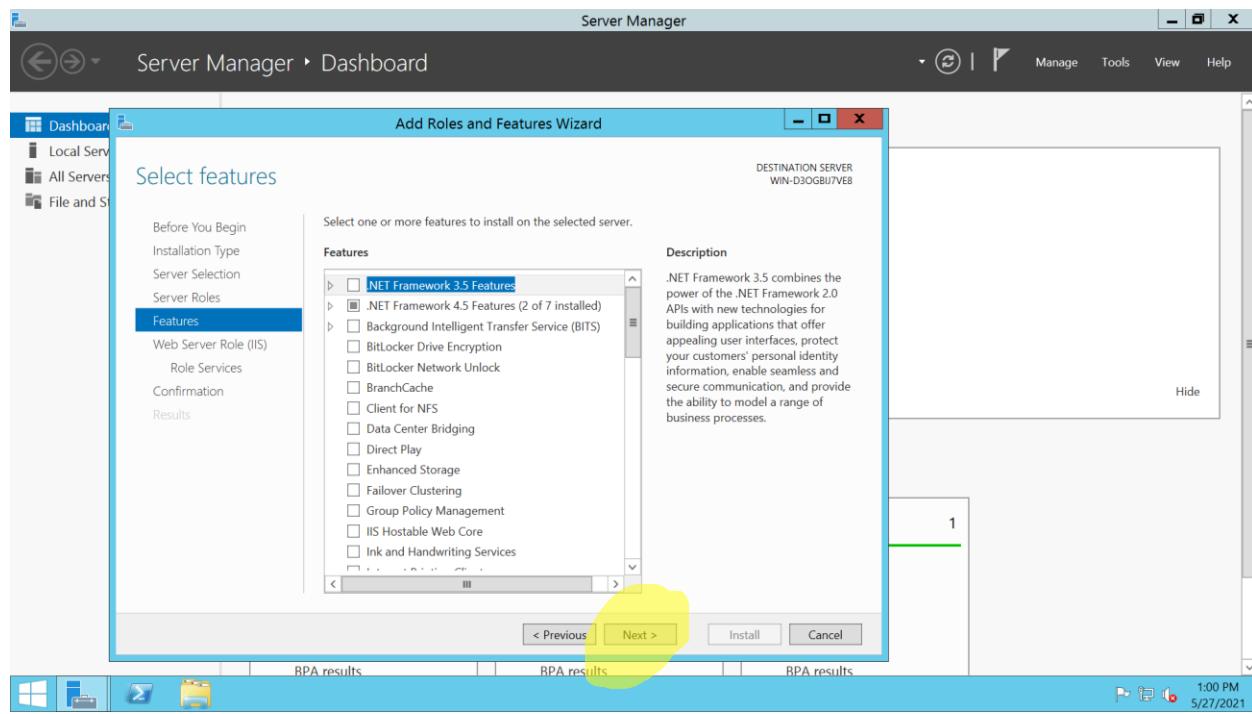
Step 3: Now follow the steps as per the image

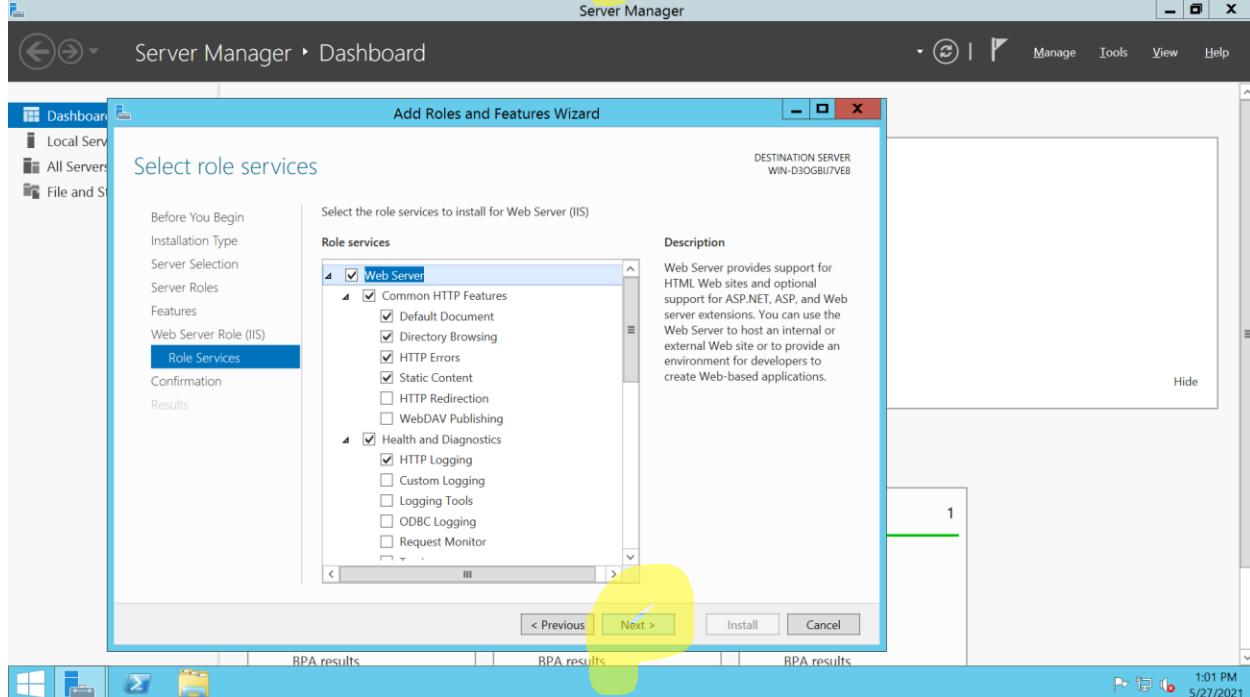
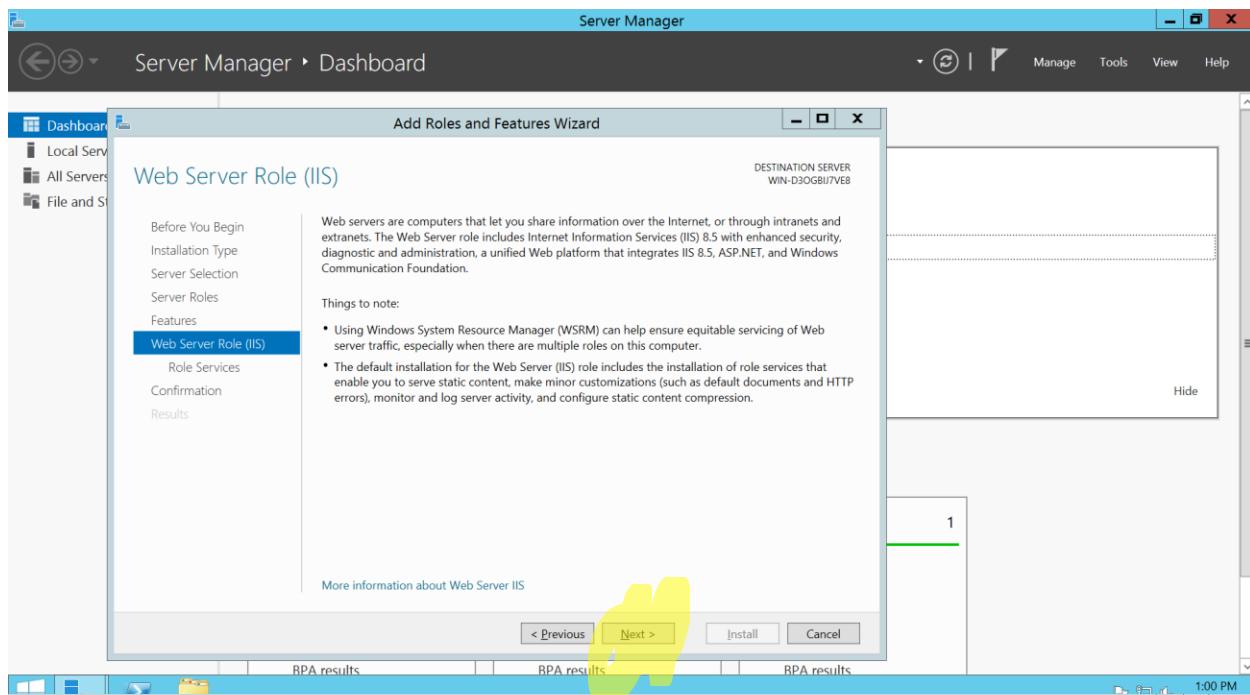


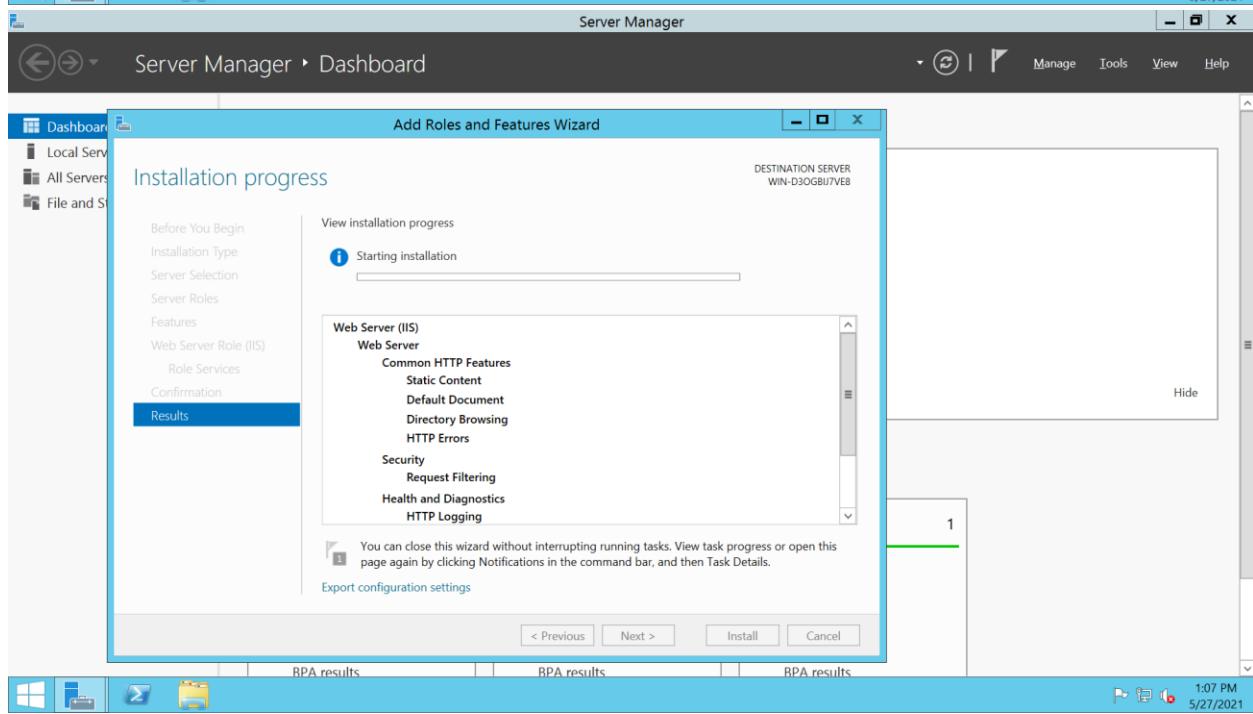
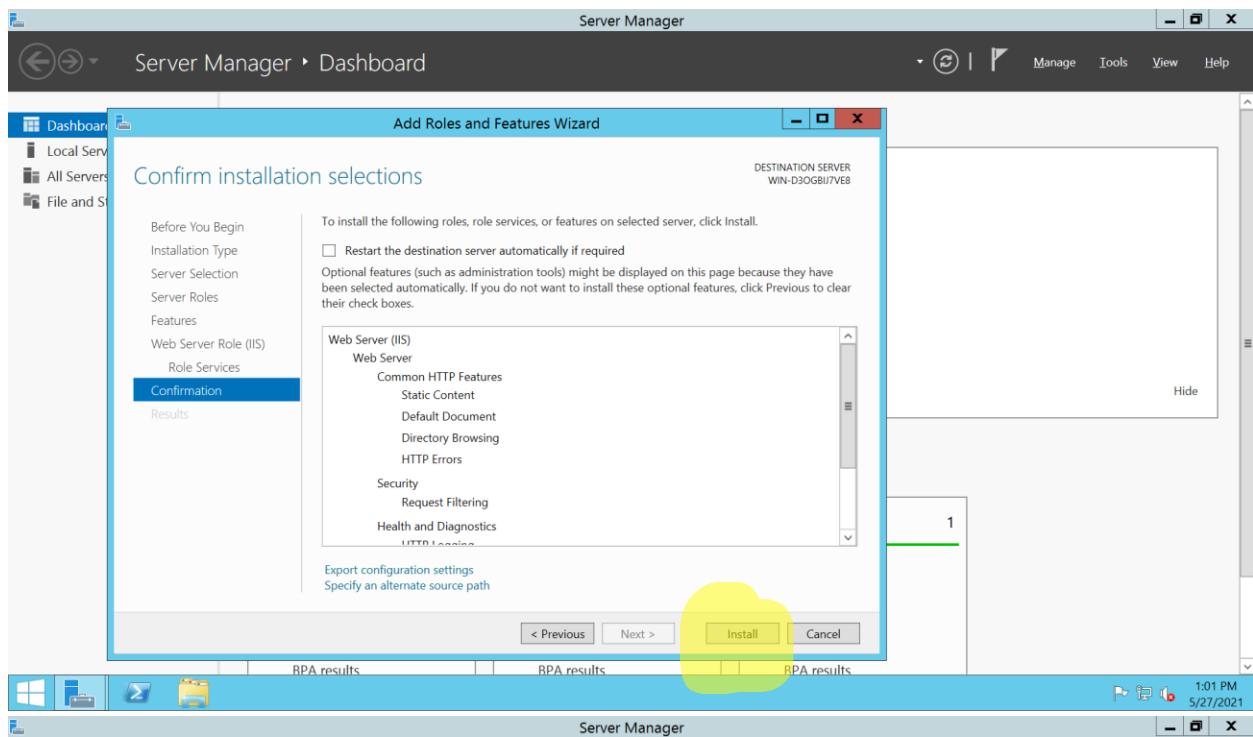




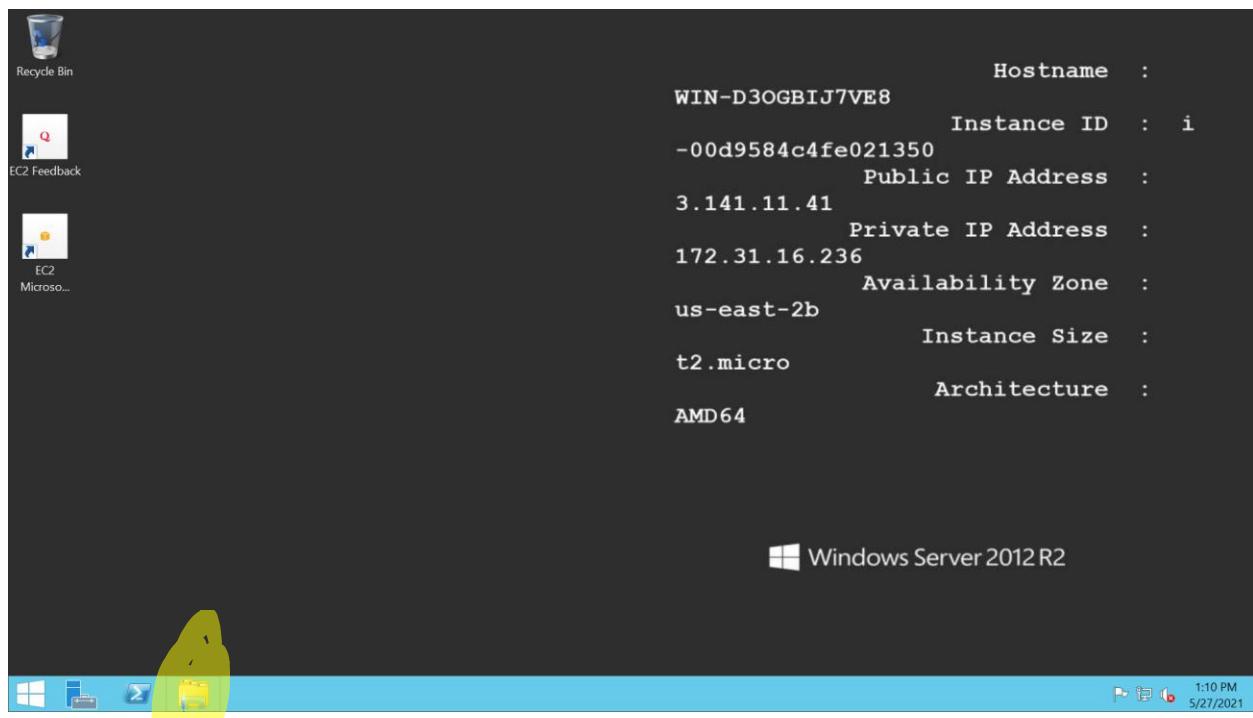
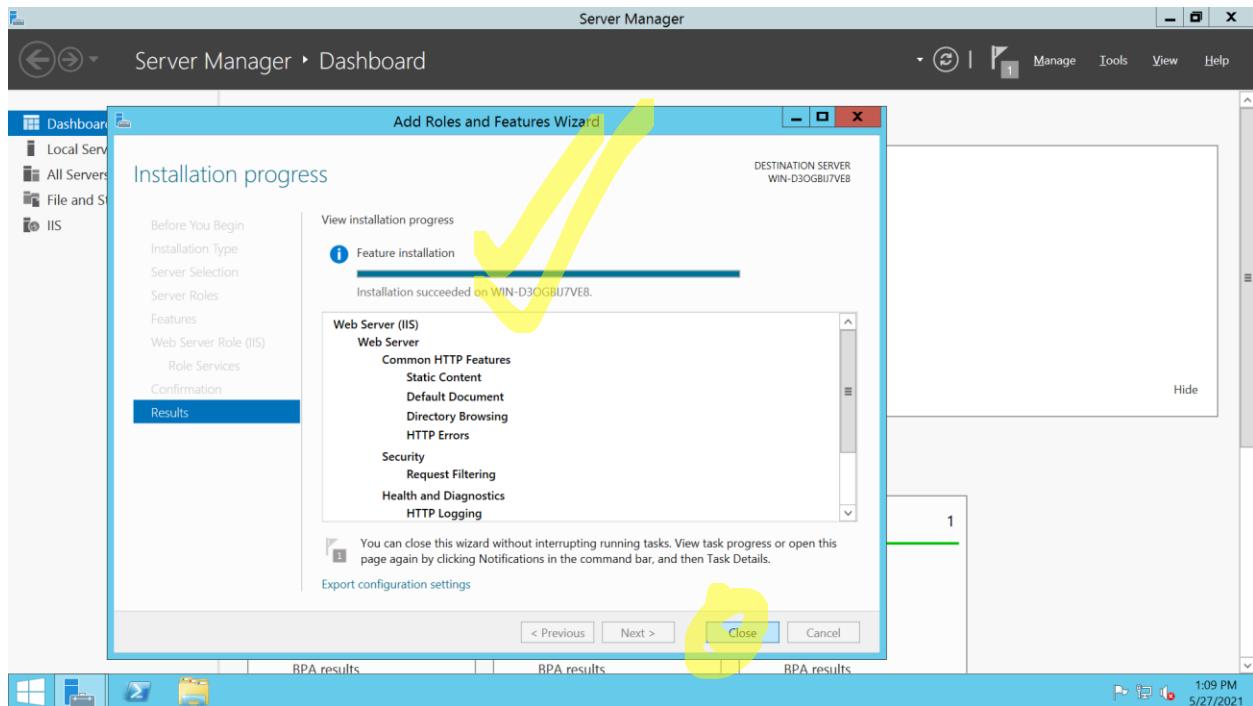
Click on add features and then click on next





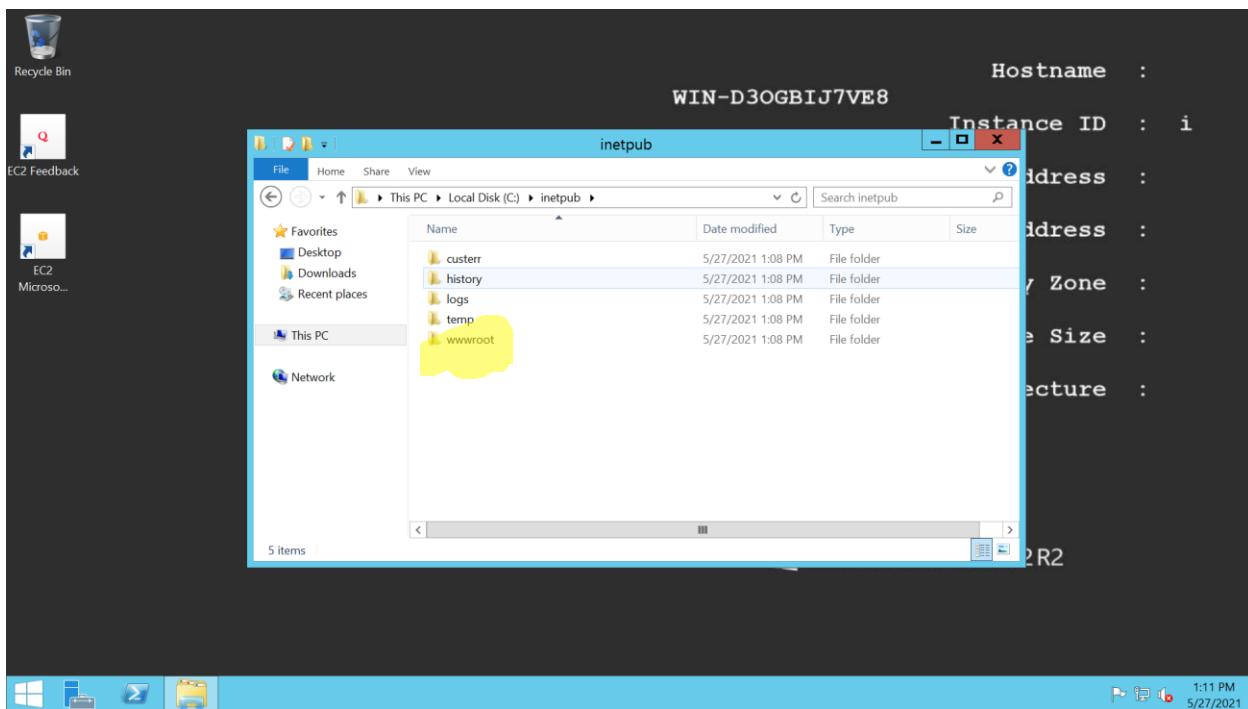
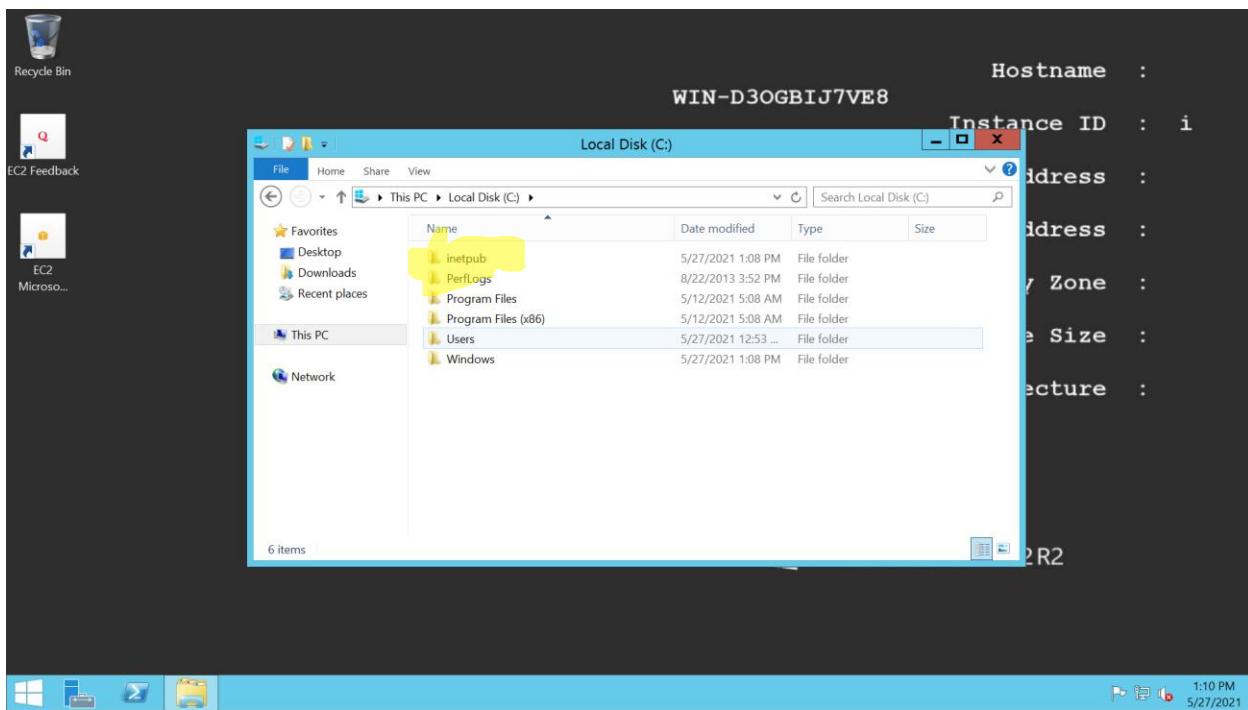


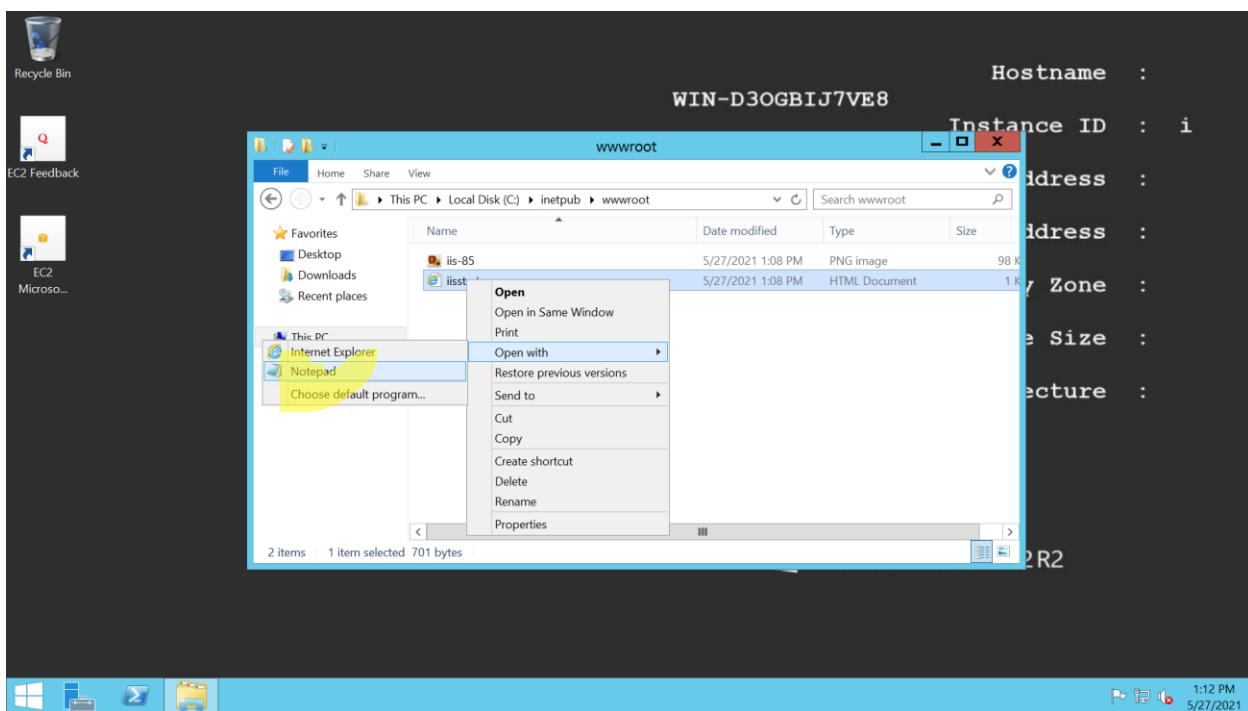
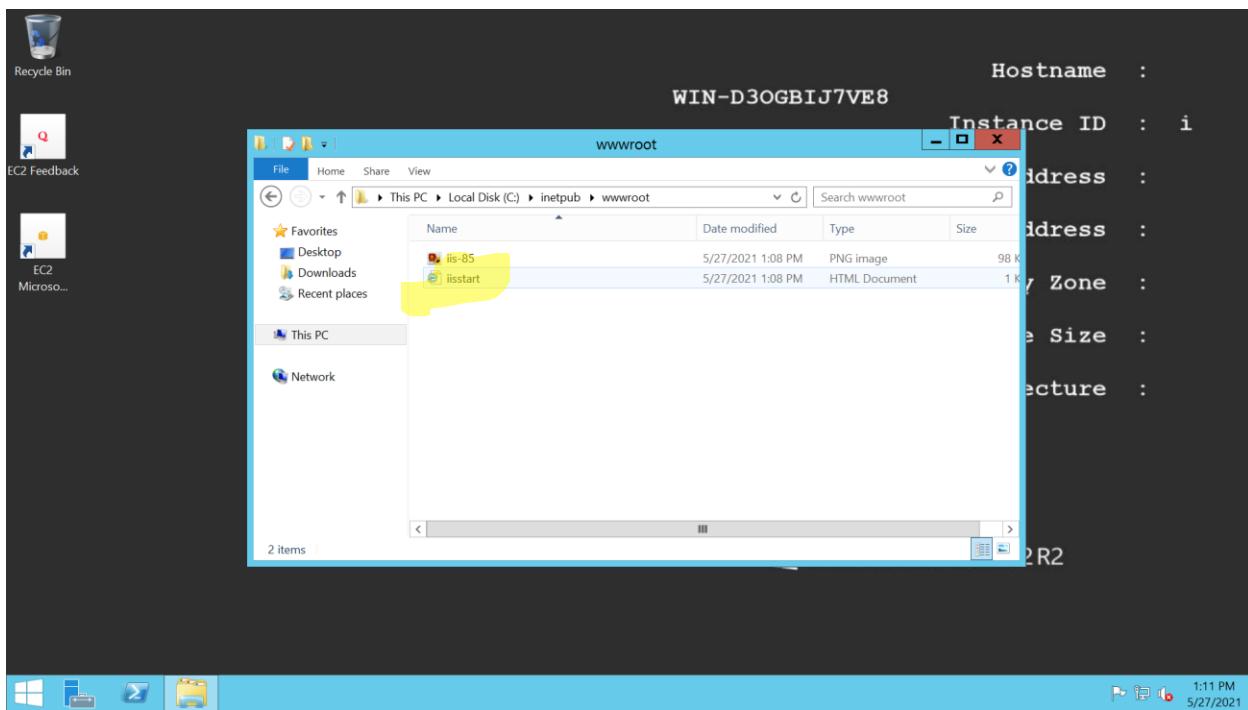
After installation is done

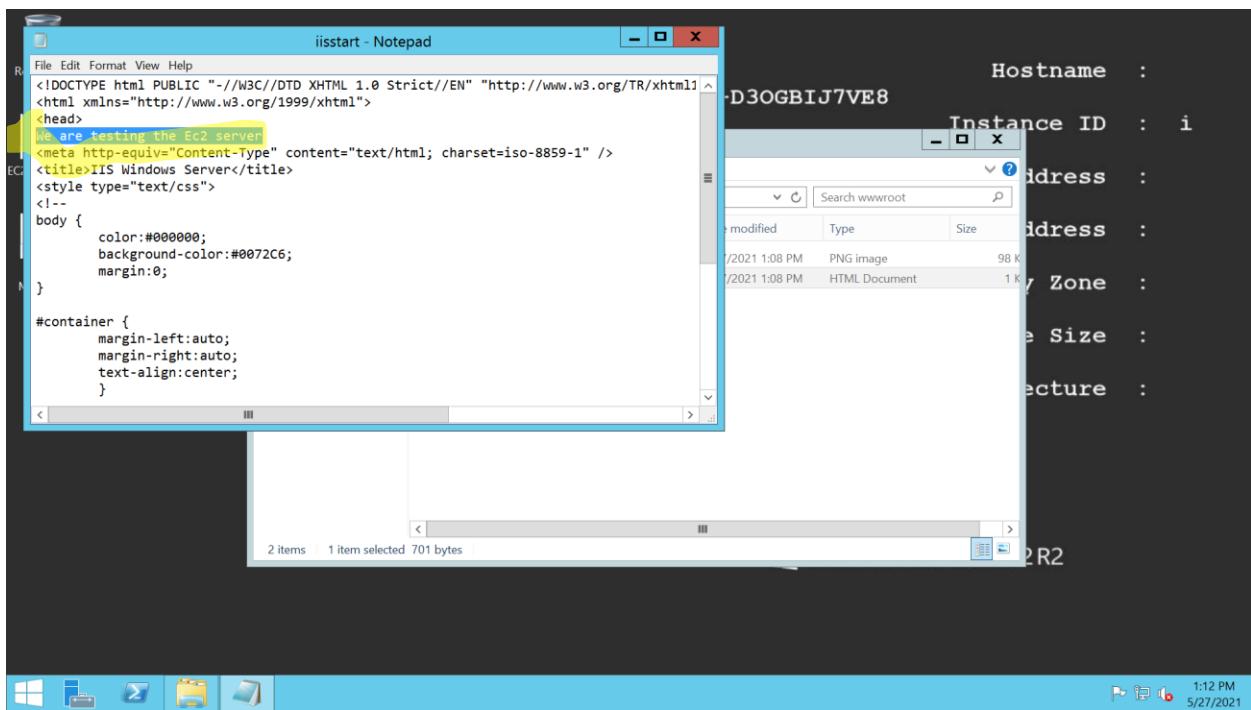


In c drive of your virtual machine

Since we
need to go
to my computer







Now again come to your AWS panel ..

Copy public ip of your ec2 machine

Instances | EC2 Management Con... + us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:

New EC2 Experience Tell us what you think

Services ▾

EC2 Dashboard New

Events

Tags

Limits

Instances Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances Reserved Instances New

Dedicated Hosts

Capacity Reservations

Images AMIs

Feedback English (US) ▾

Type here to search

Instances (1/4) Info

Filter instances

Name Instance ID Instance state Instance type Status check Alarm status Available

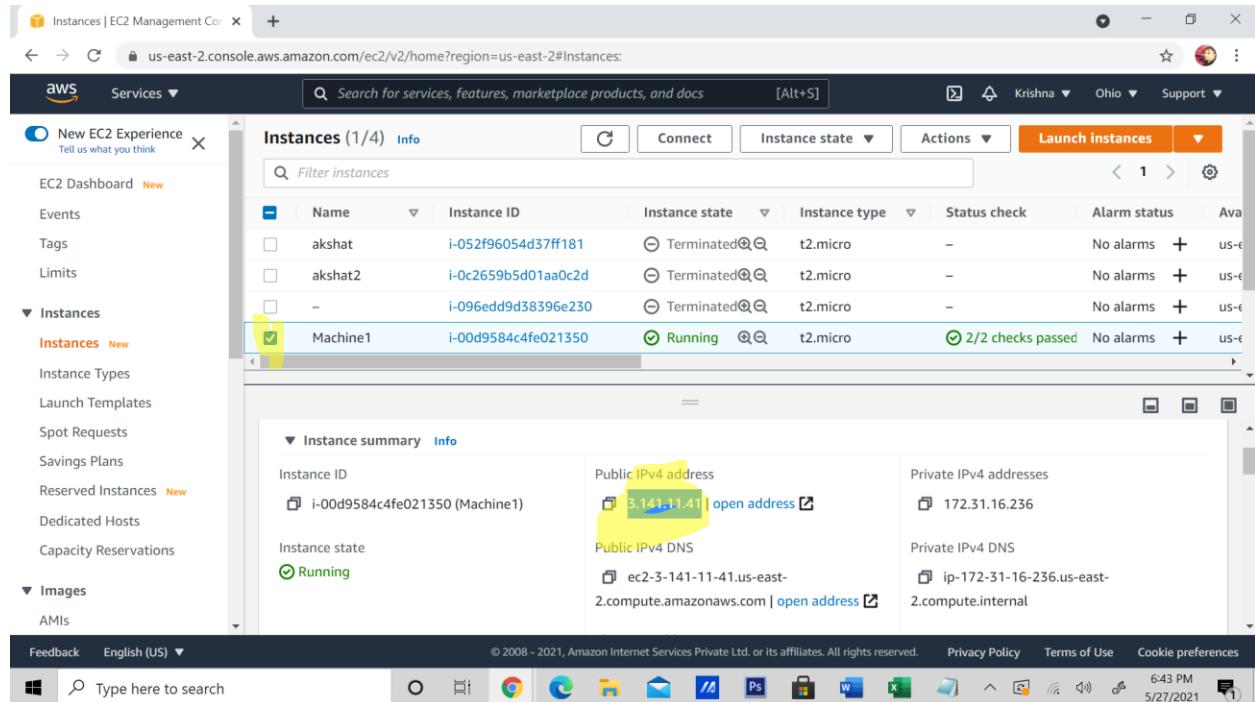
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
akshat	i-052f96054d37ff181	Terminated	t2.micro	-	No alarms	+
akshat2	i-0c2659b5d01aa0c2d	Terminated	t2.micro	-	No alarms	+
-	i-096edd9d38396e230	Terminated	t2.micro	-	No alarms	+
Machine1	i-00d9584c4fe021350	Running	t2.micro	2/2 checks passed	No alarms	+

Instance summary Info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-00d9584c4fe021350 (Machine1)	5.141.11.41 open address	172.31.16.236
Instance state	Public IPv4 DNS	Private IPv4 DNS
Running	ec2-3-141-11-41.us-east-2.compute.amazonaws.com open address	ip-172-31-16-236.us-east-2.compute.internal

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Instances | EC2 Management Con... New Tab

3.141.11.41

Apps 3.141.11.41

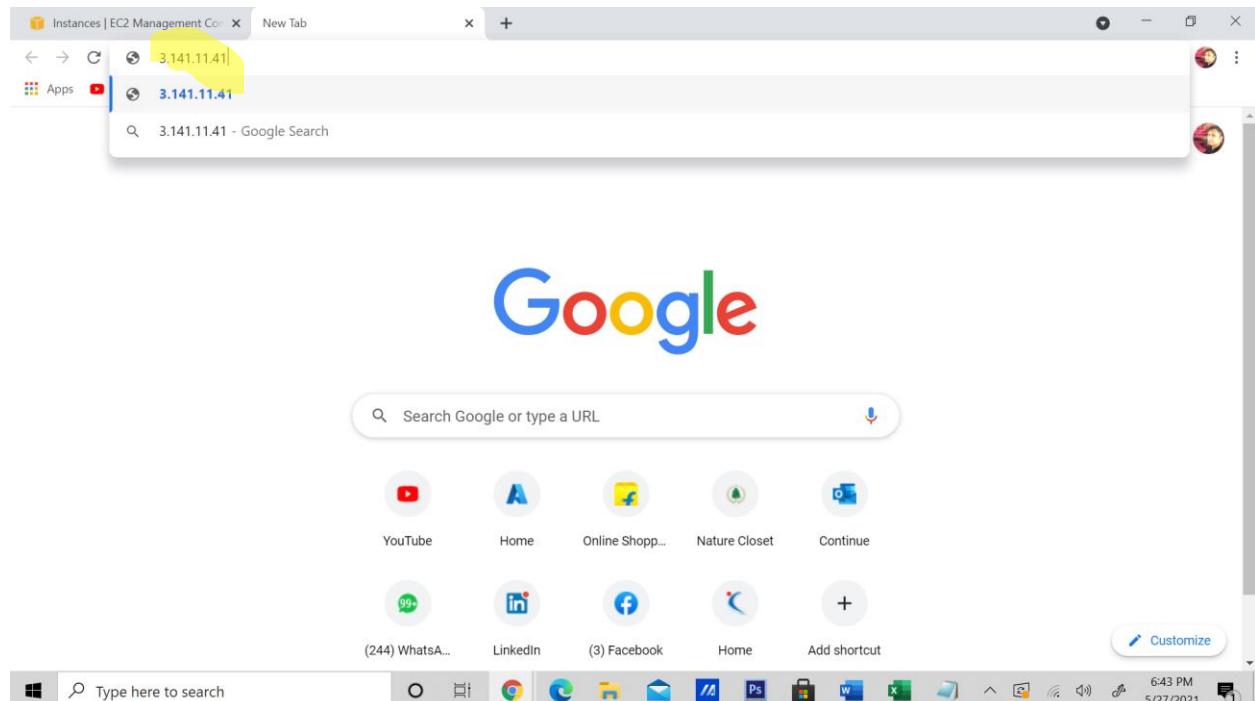
3.141.11.41 - Google Search

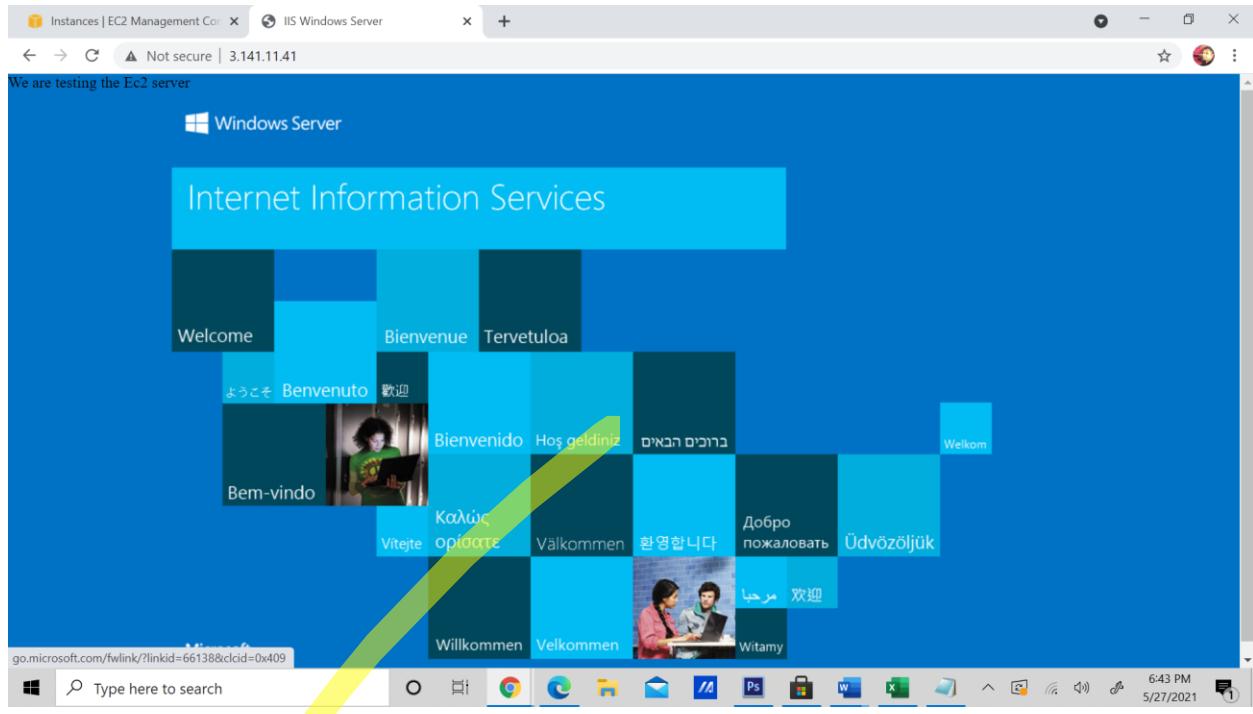
Search Google or type a URL

YouTube Home Online Shopp... Nature Closet Continue

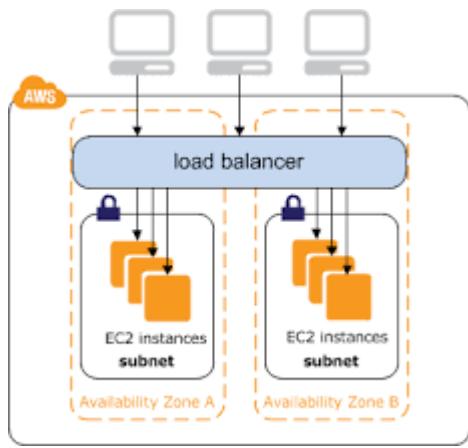
(244) WhatsA... LinkedIn (3) Facebook Home Add shortcut Customize

Type here to search





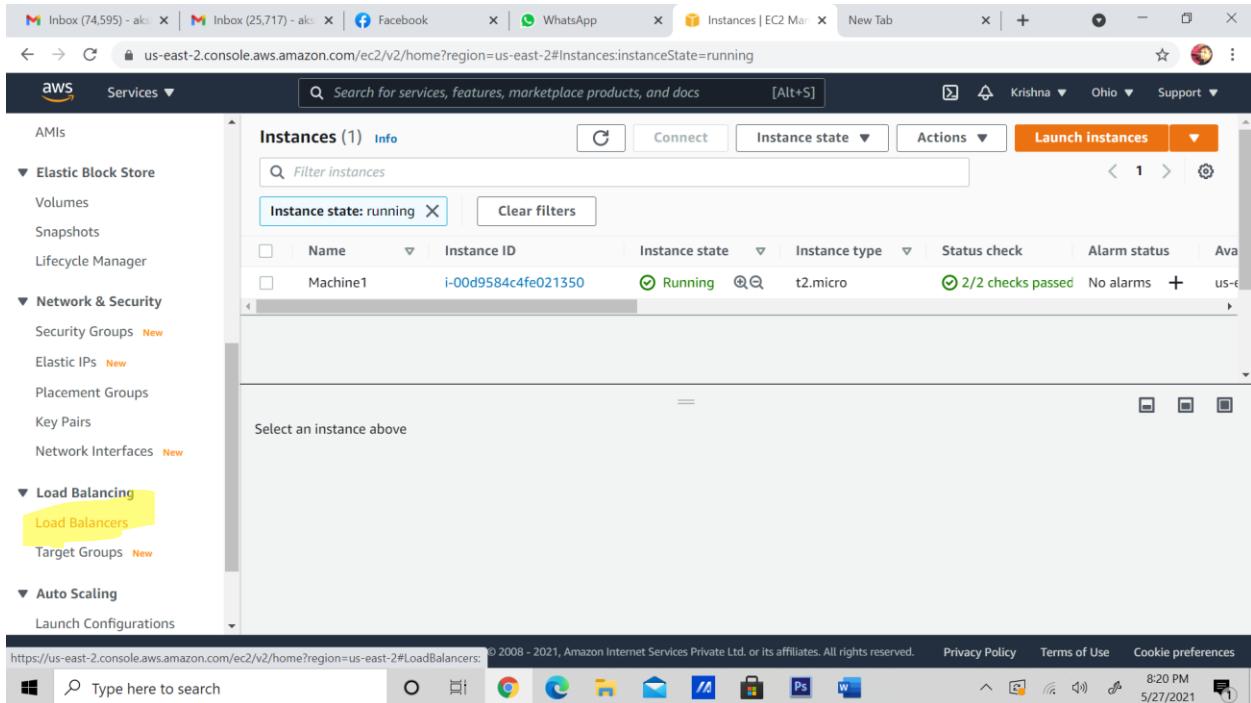
Lab 3 : Put load balancer in AWS



Step 1: Create two(2) instance (Ec2) (use lab 1 for the same and in configure instance details use number of instances as 2) and in both

the instances ensure that you have enable web IIS (lab 2) and have changed the content of the file so that when we refresh we can differentiate them

Step 2: Go to load balancers



The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar navigation bar includes options like AMIs, Elastic Block Store, Network & Security, Load Balancing (which is highlighted with a yellow box), Auto Scaling, and Launch Configurations. The main content area displays a table titled 'Instances (1)'. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability zone. One row is listed: 'Machine1' with Instance ID 'i-00d9584c4fe021350', Instance state 'Running', Instance type 't2.micro', Status check '2/2 checks passed', Alarm status 'No alarms', and Availability zone 'us-east-2a'. Below the table, a message says 'Select an instance above'.

Step 3: Create load balancer

Select classic load balancers

Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

Learn more >

addresses for your application. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

Learn more >

enable you to improve security, compliance, and policy controls.

Learn more >

Classic Load Balancer

PREVIOUS GENERATION
for HTTP, HTTPS, and TCP

Create

Choose a Classic Load Balancer when you have an existing application running in the EC2-Classic network.

Learn more >

Cancel

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Type here to search

8:20 PM 5/27/2021

Step 4:

1. Define Load Balancer 2. Assign Security Groups 3. Configure Security Settings 4. Configure Health Check 5. Add EC2 Instances 6. Add Tags 7. Review

Step 1: Define Load Balancer

Basic Configuration

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer name: Testing-LB

Create LB Inside: My Default VPC (172.31.0.0/16)

Create an internal load balancer: (what's this?)

Enable advanced VPC configuration:

Listener Configuration:

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTP	80	HTTP	80

Add Cancel Next: Assign Security Groups

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Type here to search

8:21 PM 5/27/2021

(Select any security group or create a new)

Make sure you select the one with Http and https access

The screenshot shows the AWS Lambda Create Function wizard at Step 2: Assign Security Groups. The user has selected the option to "Select an existing security group". A table lists four existing security groups: default, launch-wizard-1, launch-wizard-2, and launch-wizard-3. The "Actions" column for each row contains a "Copy to new" link.

Security Group ID	Name	Description	Actions
sg-6c2bbf18	default	default VPC security group	Copy to new
sg-0df4934fd402352	launch-wizard-1	launch-wizard-1 created 2021-05-27T12:11:24.944+05:30	Copy to new
sg-084d0389252c12f9a	launch-wizard-2	launch-wizard-2 created 2021-05-27T12:26:52.644+05:30	Copy to new
sg-07dfbad8390092fe4	launch-wizard-3	launch-wizard-3 created 2021-05-27T18:11:11.742+05:30	Copy to new

If you create new Security group

Step 2: Assign Security Groups

You have selected the option of having your Elastic Load Balancer inside of a VPC, which allows you to assign security groups to your load balancer. Please select the security groups to assign to this load balancer. This can be changed at any time.

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

Security group name: quick-create-1

Description: quick-create-1 created on Thursday, May 27, 2021 at 8:21:26 PM UTC+

Type	Protocol	Port Range	Source
Custom TCP	TCP	80	Custom 0.0.0.0/0

Add Rule

Step 2: Assign Security Groups

You have selected the option of having your Elastic Load Balancer inside of a VPC, which allows you to assign security groups to your load balancer. Please select the security groups to assign to this load balancer. This can be changed at any time.

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

Security group name: quick-create-1

Description: quick-create-1 created on Thursday, May 27, 2021 at 8:21:26 PM UTC+

Type	Protocol	Port Range	Source
Custom TCP	TCP	80	Custom 0.0.0.0/0
HTTP	TCP	80	Custom 0.0.0.0/0
HTTPS	TCP	443	Custom 0.0.0.0/0

Add Rule

Step 5: Change ping protocol to TCP

Step 4: Configure Health Check

Your load balancer will automatically perform health checks on your EC2 instances and only route traffic to instances that pass the health check. If an instance fails the health check, it is automatically removed from the load balancer. Customize the health check to meet your specific needs.

Ping Protocol: TCP

Advanced Details:

- Response Timeout: 5 seconds
- Interval: 30 seconds
- Unhealthy threshold: 2
- Healthy threshold: 10

Very Important Step

Step 4: Configure Health Check

Your load balancer will automatically perform health checks on your EC2 instances and only route traffic to instances that pass the health check. If an instance fails the health check, it is automatically removed from the load balancer. Customize the health check to meet your specific needs.

Ping Protocol: HTTP

Ping Port: 80

Advanced Details:

- Response Timeout: 5 seconds
- Interval: 30 seconds
- Unhealthy threshold: 2
- Healthy threshold: 10

Cancel Previous Next: Add EC2 Instances

Step 6: You will find the instances you have created ..In this case we have created 2 instances and we are able to see 2 instances

Step 5: Add EC2 Instances

The table below lists all your running EC2 Instances. Check the boxes in the Select column to add those instances to this load balancer.

VPC `vpc-2a920741 (172.31.0.0/16)`

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
<input type="checkbox"/> i-00d9584c4fe021350	Machine1	running	launch-wizard-3	us-east-2b	subnet-8507ecf8	172.31.16.0/20
<input type="checkbox"/> i-062dd95b09bb48693		running	launch-wizard-4	us-east-2b	subnet-8507ecf8	172.31.16.0/20

Availability Zone Distribution

Enable Cross-Zone Load Balancing (i)

[Cancel](#) [Previous](#) [Next: Add Tags](#)

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Step 5: Add EC2 Instances

The table below lists all your running EC2 Instances. Check the boxes in the Select column to add those instances to this load balancer.

VPC `vpc-2a920741 (172.31.0.0/16)`

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
<input checked="" type="checkbox"/> i-00d9584c4fe021350	Machine1	running	launch-wizard-3	us-east-2b	subnet-8507ecf8	172.31.16.0/20
<input checked="" type="checkbox"/> i-062dd95b09bb48693		running	launch-wizard-4	us-east-2b	subnet-8507ecf8	172.31.16.0/20

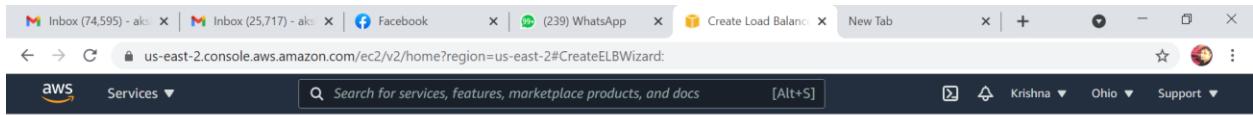
Availability Zone Distribution

2 instances in us-east-2b

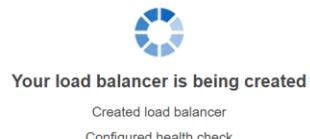
Enable Cross-Zone Load Balancing (i)

[Cancel](#) [Previous](#) [Next: Add Tags](#)

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Load Balancer Creation Status



Step 7: wait for some time until your load balancer is live

You ec2 machines will show out of service

Screenshots showing the AWS EC2 Management Console Load Balancers page.

The left sidebar shows:

- Snapshots
- Lifecycle Manager
- Network & Security**
 - Security Groups New
 - Elastic IPs New
 - Placement Groups
 - Key Pairs
 - Network Interfaces New
- Load Balancing**
 - Load Balancers**
 - Target Groups New
- Auto Scaling**
 - Launch Configurations
 - Auto Scaling Groups

The main content area displays a table of load balancers:

Name	DNS name	State	VPC ID	Availability Zones
lb1	lb1-83266214.us-east-2.elb.amazonaws.com	Active	vpc-2a920741	us-east-2c, us-east-2b, ...

Below the table, a section titled "Connection Draining: Enabled, 300 seconds (Edit)" shows two instances:

Instance ID	Name	Availability Zone	Status	Actions
i-00d9584c4fe021350	Machine1	us-east-2b	OutOfService	Remove from Load Balancer
i-062dd95b09bb48693	machine2	us-east-2b	OutOfService	Remove from Load Balancer

At the bottom of the page, there are links for Feedback, English (US), Privacy Policy, Terms of Use, and Cookie preferences.

Screenshots showing the AWS EC2 Management Console Load Balancers page.

The left sidebar shows:

- Snapshots
- Lifecycle Manager
- Network & Security**
 - Security Groups New
 - Elastic IPs New
 - Placement Groups
 - Key Pairs
 - Network Interfaces New
- Load Balancing**
 - Load Balancers**
 - Target Groups New
- Auto Scaling**
 - Launch Configurations
 - Auto Scaling Groups

The main content area displays a table of load balancers:

Name	DNS name	State	VPC ID	Availability Zones
lb1	lb1-83266214.us-east-2.elb.amazonaws.com	Active	vpc-2a920741	us-east-2c, us-east-2b, ...

Below the table, a section titled "BASIC CONFIGURATION" shows the configuration details for the load balancer:

Name	lb1	Creation time	May 27, 2021 at 10:30:36 PM UTC+5:30
* DNS name	lb1-83266214.us-east-2.elb.amazonaws.com (A Record)	Hosted zone	Z3AADJGX6KTTL2
Type	Classic (Migrate Now)	Status	0 of 2 instances in service
Scheme	internet-facing	VPC	vpc-2a920741
Availability Zones	subnet-068b366d - us-east-2a , subnet-8507ecf8 - us-east-2b , subnet-951446d9 - us-east-2c		

At the bottom of the page, there are links for Feedback, English (US), Privacy Policy, Terms of Use, and Cookie preferences.

But wait for 3-5 minutes it will change to inservice . (you can refresh and check for the same)

The screenshot shows the AWS EC2 Management Console interface. On the left, the navigation menu includes Network & Security, Load Balancing (Load Balancers selected), and Auto Scaling. The main content area displays a table of Load Balancers. One entry, 'lb1', is highlighted. Below the table, a list of targets (Machine1 and machine2) is shown, both marked as 'InService'. A yellow callout box points to the 'InService' status of the targets. At the bottom, there's an 'Edit Availability Zones' section and a feedback bar.

This screenshot shows the 'Basic Configuration' details for the Load Balancer 'lb1'. The configuration includes:

- Name: lb1
- * DNS name: lb1-83266214.us-east-2.elb.amazonaws.com (A Record)
- Type: Classic (Migrate Now)
- Scheme: internet-facing
- Availability Zones: subnet-068b366d - us-east-2a, subnet-8507ecf8 - us-east-2b, subnet-951446d9 - us-east-2c
- Creation time: May 27, 2021 at 10:30:36 UTC+5:30
- Hosted zone: Z3AADJGX6KTTL2
- Status: 2 of 2 instances in service
- VPC: vpc-2a920741

A green callout box highlights the DNS name, and a yellow callout box highlights the Hosted zone and Status. The interface is identical to the one in the previous screenshot.

Copy DNS name now

The screenshot shows the AWS EC2 Management Console with the Load Balancers page open. The left sidebar shows Network & Security, Load Balancing (selected), and Auto Scaling. The main area displays a table of load balancers:

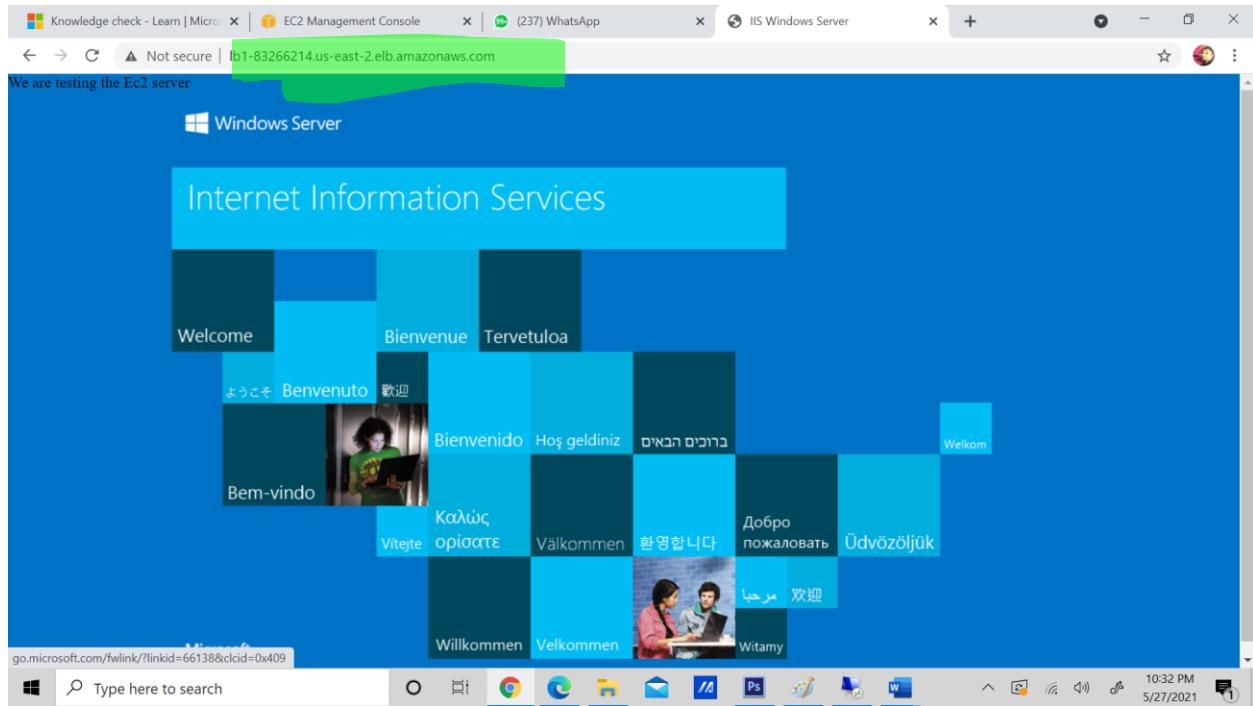
Name	DNS name	State	VPC ID	Availability Zones
lb1	lb1-83266214.us-east-2.elb.amazonaws.com	Active	vpc-2a920741	us-east-2c, us-east-2b, ...

Below the table, the 'Basic Configuration' section provides detailed information:

Name	lb1	Creation time	May 27, 2021 at 10:30:36 PM UTC+5:30
* DNS name	lb1-83266214.us-east-2.elb.amazonaws.com (A Record)	Hosted zone	Z3AADJGX6KTTL2
Type	Classic (Migrate Now)	Status	2 of 2 instances in service
Scheme	internet-facing	VPC	vpc-2a920741
Availability Zones	subnet-068b366d - us-east-2a , subnet-8507ecf8 - us-east-2b , subnet-951446d9 - us-east-2c		

At the bottom, the browser's address bar shows the URL: us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LoadBalancers:sort=loadBalancerName

Paste it in browser



(try refreshing it ...you will see the other server as well)

LAB 4 : SCALING IN EC2 Machine

Step 1: Create Ec2 Machine (use Lab 1 for the same)

Step 2: Go to instances >> select machine for which you want to do the scaling in case it goes down >> create an image by going to actions on the right top as in image

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with sections like EC2 Dashboard, Instances (selected), and Images. The main area displays two instances: Machine1 (i-00d9584c4fe021350) and machine2 (i-062dd95b09bb48693), both in the 'Running' state and t2.micro type. A context menu is open over Machine1, with options like 'Create image', 'Create template from instance', and 'Launch more like this'. The 'Create image' option is highlighted with a pink box. The top of the screen has a navigation bar with tabs for Knowledge check - Learn, Instances | EC2 Management, WhatsApp, jayendrapatil.com, and IIS Windows Server.

Click on create image.

Put name and image description and then create image

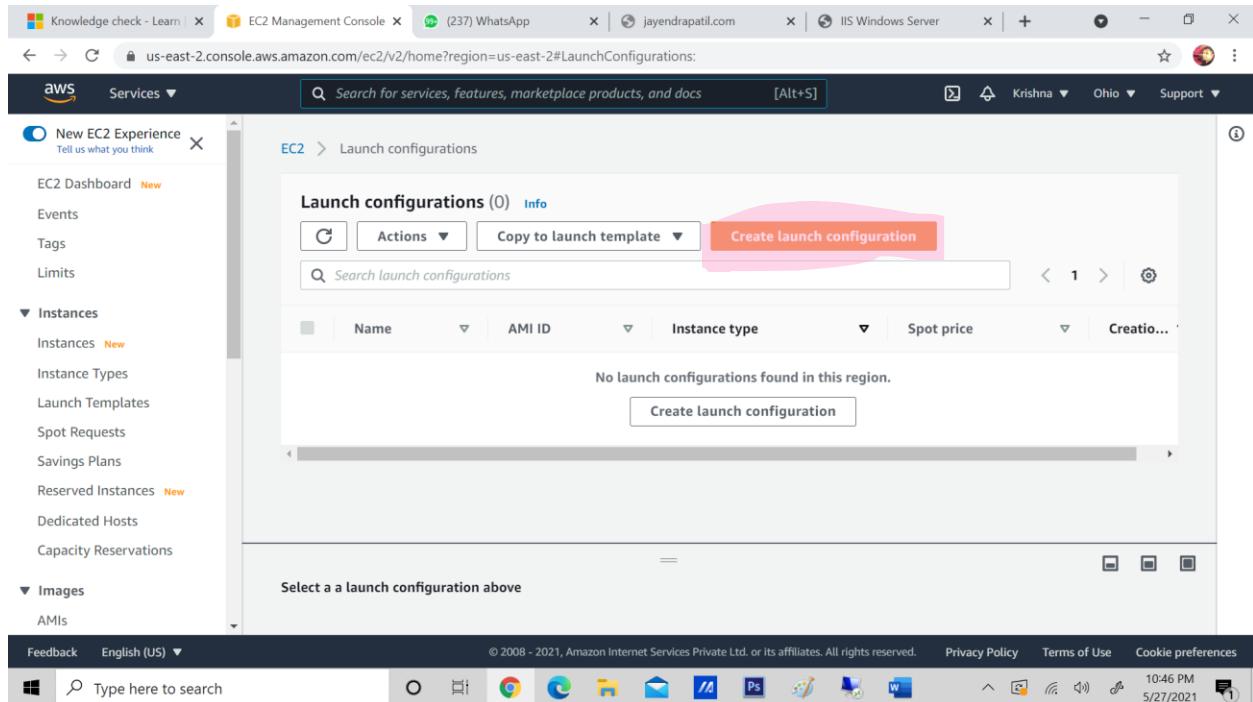
The screenshot shows the AWS EC2 'Create image' page. At the top, the instance ID is listed as **i-00d9584c4fe021350 (Machine1)**. The 'Image name' field contains **image-demo**, and the 'Image description - optional' field contains **image of machine1**. Under 'Instance volumes', there is a table with columns: Volume type, Device, Snapshot, Size, Volume type, IOPS, Throughput, Delete on, and Encrypt. A row is selected for **/dev/sda1**, which has a size of **30** and is using **EBS General Purpose SSD**. The 'Delete on termination' checkbox is checked. The browser's address bar shows the URL <https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateImage:instanceId=i-00d9584c4fe021350>.

The screenshot continues from the previous page. It shows the configuration for creating a snapshot of the selected volume. The 'Size' field is set to **30**. The 'Volume type' dropdown is set to **EBS General Purpose SSD**. The 'Delete on termination' checkbox is checked. Below this, a note states: "In the image creation process, Amazon EC2 creates a snapshot of each of the above volumes." There are two radio button options for tagging: **Tag image and snapshots together** (selected) and **Tag image and snapshots separately**. The browser's address bar shows the same URL as the previous screenshot.

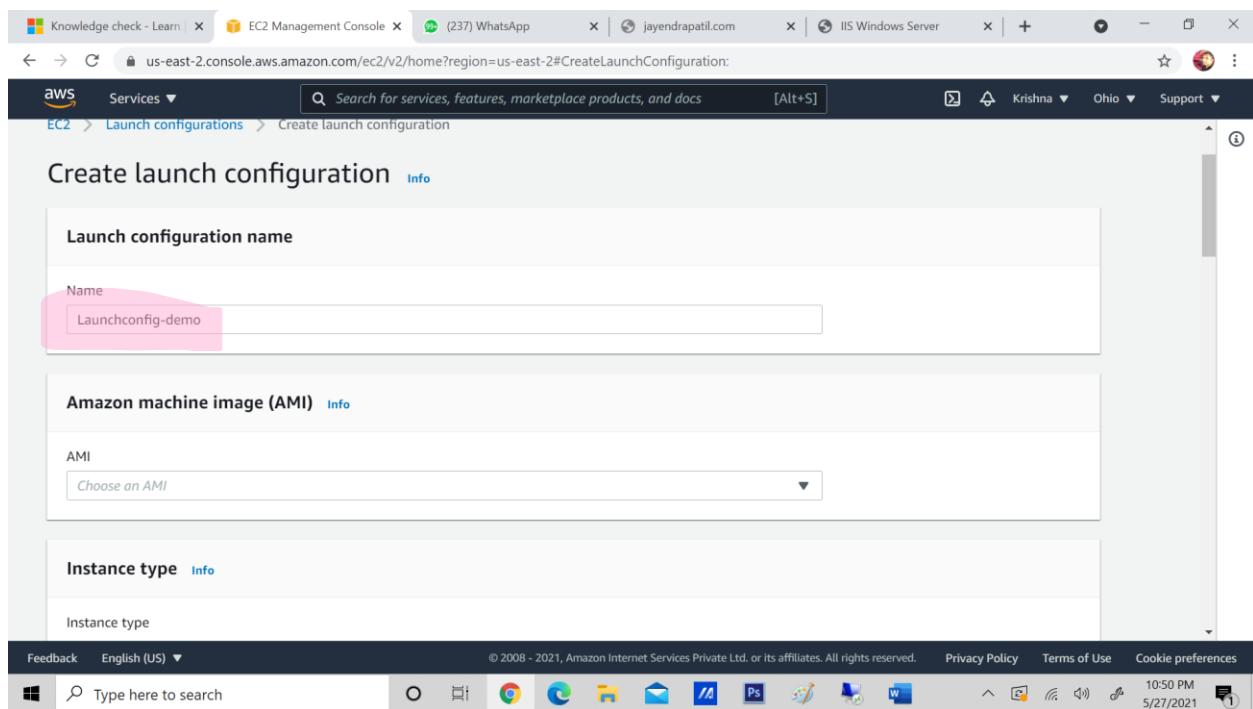
Step 2: Go to launch Configuration

The screenshot shows the AWS Management Console interface. The left sidebar has a pink highlight over the 'Launch Configurations' link under the 'Auto Scaling' section. The main content area shows the 'Load Balancers' section with a message: 'You do not have any load balancers in this region.' There are tabs for 'Create Load Balancer' and 'Actions'. A search bar at the top says 'Search for services, features, marketplace products, and docs [Alt+S]'. The top navigation bar includes tabs for Knowledge check - Learn | Micro, EC2 Management Console, WhatsApp, IIS Windows Server, and other user information like Krishna, Ohio, and Support.

Go to create create launch configuration



After creating Launch configuration put name and in AMI select the image which you have created above



Knowledge check - Learn | EC2 Management Console | (237) WhatsApp | jayendrapatil.com | IIS Windows Server

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

EC2 > Launch configurations > Create launch configuration

Search by AMI ID

My AMIs

- image-demo
ami-0885186496889c0b
architecture: x86_64 virtualization: hvm
- akshat image
ami-0a769b2911e0a7cb7
architecture: x86_64 virtualization: hvm

AWS Marketplace

- TheHive3_20210413_1618302220-b7e97799-e635-4fa4-8af4-fad0cc2b7d03
ami-00de4e47eef87a0370
architecture: x86_64 virtualization: hvm
- Cortex3_20210413_1618302222-7893c21e-ae95-4a33-8767-6feb7734f8dd
Choose an AMI

Instance type Info

Instance type

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10:51 PM 5/27/2021

Select instance type as **t2.micro**

Knowledge check - Learn | EC2 Management Console | (237) WhatsApp | jayendrapatil.com | IIS Windows Server

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

AMI image-demo

Instance type Info

Instance type

Additional configuration

Purchasing option Info
 Request Spot Instances

IAM Instance profile Info
 Select IAM role

Monitoring Info

Choose instance type

Q t2.m

Instance type	vCPUs	Memory (GiB)	Storage (GB)	EBS optimized available	Network performance
t2.micro	1	1	EBS Only	-	Low to Moderate
t2.medium	2	4	EBS Only	-	Low to Moderate

Close Choose

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You can create your own security group or create new one..

Lets create a new security group...do not forget to add http and https

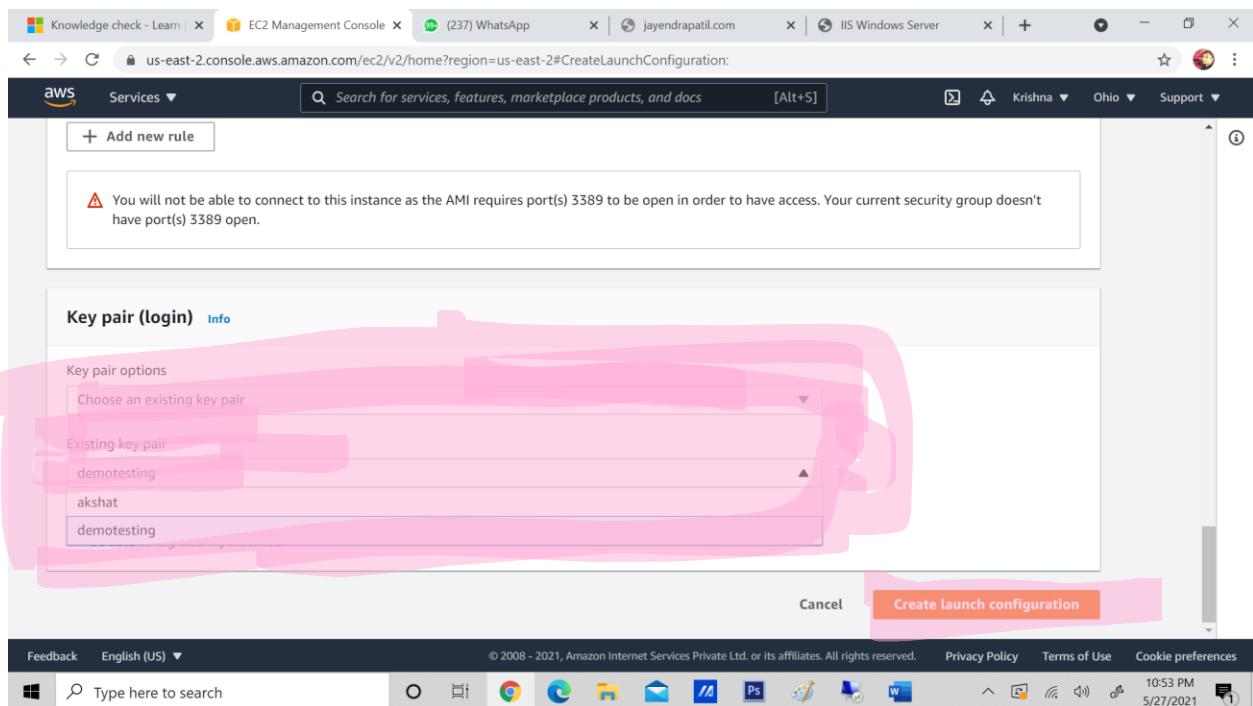
(PREFER TO USE EXISTING SECURITY GROUP)

The screenshot shows the AWS EC2 Management Console interface for creating a new security group. The 'Create a new security group' option is selected. The security group name is 'AutoScaling-Security-Group-1'. The 'Description' field contains 'AutoScaling-Security-Group-1 (2021-05-27T17:20:34.380Z)'. The 'Rules' section displays three entries:

Type	Protocol	Port range	Source type	Source
Custom TCP rule	TCP	0	Custom IP	
HTTP	TCP	80	Custom IP	
HTTPS	TCP	443	Custom IP	

A pink highlight covers the entire 'Rules' section, emphasizing the configuration of ports 80 and 443.

Select keypair...either create new or use old one which you might have used in creating your EC2 machines earlier...



Click on launch configuration

Now go to Autoscaling group

The screenshot shows the AWS EC2 Auto Scaling homepage. The main heading is "Amazon EC2 Auto Scaling helps maintain the availability of your applications". Below it, a sub-section titled "How it works" features a diagram of an "Auto Scaling group". To the right, a "Pricing" section states that there are no additional fees beyond service fees for Amazon EC2, CloudWatch, and other AWS resources. At the top right, a call-to-action button labeled "Create Auto Scaling group" is highlighted with a pink box.

Create autoscaling group

Put name and switch to launch configuration

The screenshot shows the "Create autoscaling group" wizard at Step 2: "Configure settings". The "Name" field contains "testing". A red arrow points from the "Name" field down to the "Launch template" section. A red circle highlights the "Switch to launch configuration" link. The "Launch template" section includes a dropdown menu for selecting a launch template and a link to "Create a launch template".

The screenshot shows the AWS EC2 Management Console with the URL us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create. The page is titled "Step 2: Configure settings". On the left, a sidebar lists steps: Step 2 (Configure settings), Step 3 (optional) (Configure advanced options), Step 4 (optional) (Configure group size and scaling policies), Step 5 (optional) (Add notifications), Step 6 (optional) (Add tags), and Step 7 (Review). The main content area has a "Name" section where "testing" is entered into the "Auto Scaling group name" field. Below it is a "Launch configuration" section with a dropdown menu showing "Select a launch configuration" and a "Create a launch configuration" button. At the bottom right are "Cancel" and "Next" buttons.

This screenshot is identical to the one above, but it includes a pink rectangular highlight around the "Select a launch configuration" dropdown menu. A search bar with the placeholder "Search launch configurations" is overlaid on the dropdown menu, with the text "Launchconfig-demo" typed into it. The rest of the interface and navigation bar at the top remain the same.

'(here the launch configuration which you have created in last step will come)

In step 2 choose any subnet

The screenshot shows the AWS EC2 Management Console interface. The URL in the address bar is `us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create`. The main content area is titled "Step 2 Configure settings". On the left, there's a sidebar with navigation links: "Choose launch template or configuration", "Step 2 Configure settings", "Step 3 (optional) Configure advanced options", "Step 4 (optional) Configure group size and scaling policies", "Step 5 (optional) Add notifications", "Step 6 (optional) Add tags", and "Step 7 Review". The "Step 2 Configure settings" link is currently selected. The main panel is titled "Network Info" and contains instructions: "For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly." Below this, there's a "VPC" section with a list of subnets:

VPC	Subnet ID	CIDR Range	Status
us-east-2a	subnet-068b366d	172.31.0.0/20	Default
us-east-2b	subnet-8507ecf8	172.31.16.0/20	Default
us-east-2c	subnet-951446d9	172.31.32.0/20	Default

A pink callout box highlights the "us-east-2b | subnet-8507ecf8" row. A "Select subnets" button is located above the list, and a "Create a subnet" button is at the bottom. At the very bottom of the screen, the Windows taskbar is visible with icons for File Explorer, Edge, and other Microsoft applications.

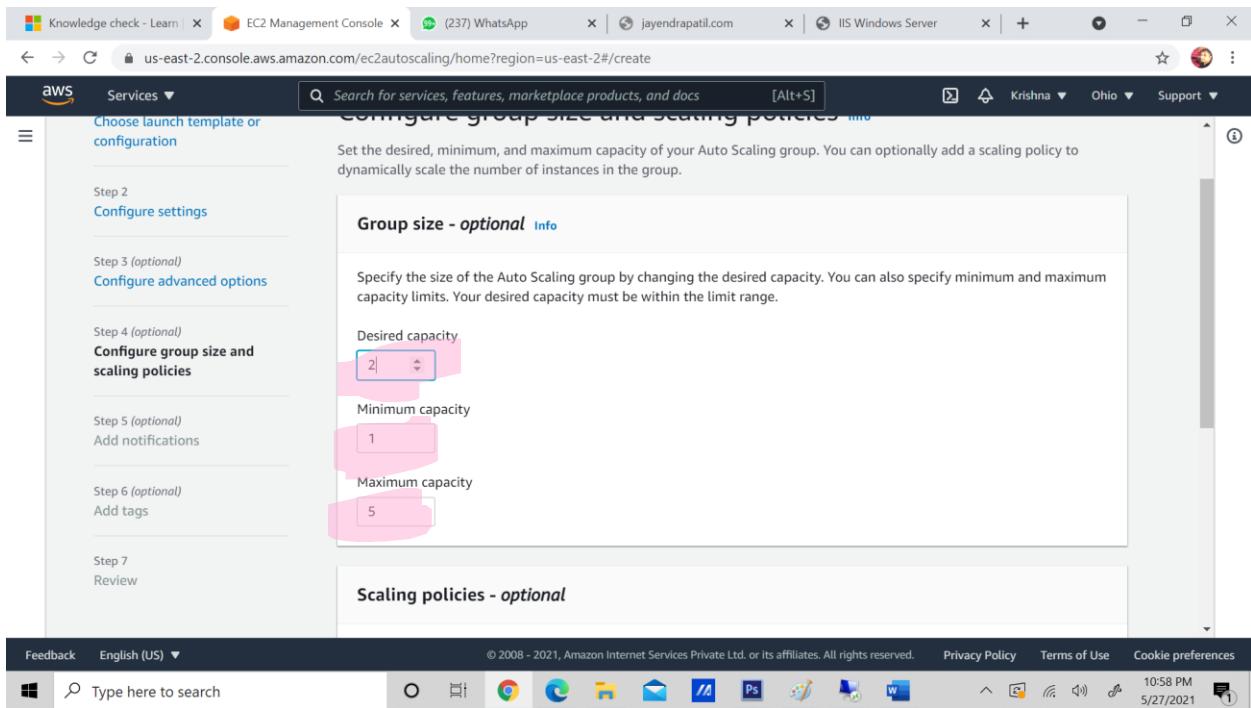
Click next

Knowledge check - Learn | EC2 Management Console | (237) WhatsApp | jayendrapatil.com | IIS Windows Server | Services | Search for services, features, marketplace products, and docs [Alt+S] | Krishna | Ohio | Support | Step 2 Configure settings Step 3 (optional) Configure advanced options Step 4 (optional) Configure group size and scaling policies Step 5 (optional) Add notifications Step 6 (optional) Add tags Step 7 Review Network Info For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly. VPC vpc-2a920741 172.31.0.0/16 Default Create a VPC Subnets Select subnets us-east-2b | subnet-8507ecf8 172.31.16.0/20 Default Create a subnet Cancel Previous Skip to review Next

Since we don't have any loadbalancer we wont be adding any load balancer

Knowledge check - Learn | EC2 Management Console | (237) WhatsApp | jayendrapatil.com | IIS Windows Server | Services | Search for services, features, marketplace products, and docs [Alt+S] | Krishna | Ohio | Support | Choose launch template or configuration Step 2 Configure settings Step 3 (optional) Configure advanced options Step 4 (optional) Configure group size and scaling policies Step 5 (optional) Add notifications Step 6 (optional) Add tags Step 7 Review Configure advanced options Info Choose a load balancer to distribute incoming traffic for your application across instances to make it more reliable and easily scalable. You can also set options that give you more control over health check replacements and monitoring. Load balancing - optional Info Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define. No load balancer Traffic to your Auto Scaling group will not be fronted by a load balancer. Attach to an existing load balancer Choose from your existing load balancers. Attach to a new load balancer Quickly create a basic load balancer to attach to your Auto Scaling group. Health checks - optional Health check type Info EC2 ELB EC2 Auto Scaling automatically replaces instances that fail health checks. If you enabled load balancing, you can enable ELB health checks in addition to the EC2 health checks that are always enabled. Health check grace period 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 10:58 PM 5/27/2021

Click next



When you use target tracking scaling it will ask you after how much resource usage you want to do the scaling and after how much free resources it should scale down

We will keep none...so if our machine goes down a new ec2 should be created

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Step 7 Review Scaling policies - *optional*

Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand. [Info](#)

Target tracking scaling policy Choose a desired outcome and leave it to the scaling policy to add and remove capacity as needed to achieve that outcome.

None

Instance scale-in protection - *optional*

Instance scale-in protection If protect from scale in is enabled, newly launched instances will be protected from scale in by default.

Enable instance scale-in protection

Cancel Previous Skip to review Next

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We don't want any notification so neglect it

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

EC2 > Auto Scaling groups > Create Auto Scaling group Step 1 Choose launch template or configuration

Add notifications [Info](#)

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

Add notification

Cancel Previous Skip to review Next

Step 2 Configure settings

Step 3 (optional) Configure advanced options

Step 4 (optional) Configure group size and scaling policies

Step 5 (optional) Add notifications

Step 6 (optional) Add tags

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Type here to search

You can add notification like this

The screenshot shows the AWS EC2 Management Console interface. The user is on Step 5 (optional) of creating an Auto Scaling group, specifically adding notifications. The left sidebar lists steps from 2 to 7. The main panel shows a configuration for sending notifications to an SNS topic whenever an instance is launched. It includes fields for recipient email and event types (Launch, Terminate, Fail to launch, Fail to terminate), all of which are checked.

Choose launch template or configuration

Step 2 Configure settings

Step 3 (optional) Configure advanced options

Step 4 (optional) Configure group size and scaling policies

Step 5 (optional) Add notifications

Step 6 (optional) Add tags

Step 7 Review

Add notifications Info

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

▼ Notification 1

Send a notification to:

New Ec2 launched

With these recipients:

akshat.affiliates@gmail.com

Use existing topic

Event types

Notify subscribers whenever instances

Launch

Terminate

Fail to launch

Fail to terminate

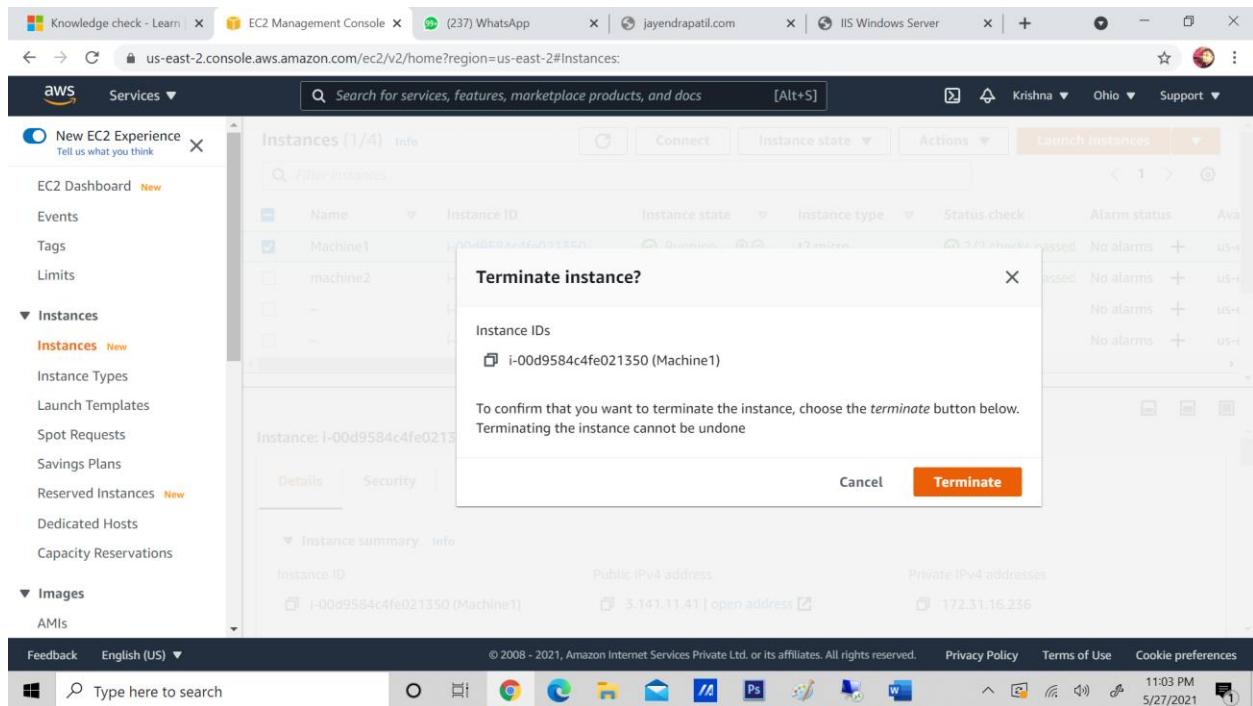
Remove

Create autoscaling group

The screenshot shows the AWS EC2 Management Console. The left sidebar has 'New EC2 Experience' selected. Under 'INSTANCES', 'Instances' is selected. The main content area shows 'Auto Scaling groups (1)'. A table lists one group named 'testing' with a Launch config of 'Launchconfig-demo', 2 instances, and a desired capacity of 2. The status is shown as '-'.

Now lets go to Ec2 and check if we terminate machine what happens

The screenshot shows the AWS EC2 Management Console. The left sidebar has 'New EC2 Experience' selected. Under 'Instances', 'Instances' is selected. The main content area shows 'Instances (1/4)'. A table lists four instances: 'Machine1' (Running), 'machine2' (Running), '-' (Running), and '-' (Running). The 'Actions' dropdown for 'Machine1' is open, showing options: Stop instance, Start instance, Reboot instance, Hibernate instance, and Terminate instance. The 'Terminate instance' option is highlighted. Below the table, the details for 'Machine1' are shown, including its instance ID, public and private IP addresses, and status checks.



Now after termination in 2 minutes the new machines are again created

Knowledge check - Instances | EC2 Man... (237) WhatsApp AWS Certified Solu... jayendrapatil.com IIS Windows Server us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:

New EC2 Experience Tell us what you think

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EC2 Dashboard Instances (6) Info Connect Instance state Actions Launch instances

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Ava...
Machine1	i-00d9584c4fe021350	Terminated	t2.micro	-	No alarms	+
machine2	i-062dd95b09bb48693	Terminated	t2.micro	-	No alarms	+
-	i-08f8fa27bf2b85223	Running	t2.micro	2/2 checks passed	No alarms	+
-	i-0c6edc2a2fa27ef08	Running	t2.micro	2/2 checks passed	No alarms	+
-	i-076b8698314f5bfce	Terminated	t2.micro	-	No alarms	+
-	i-05c655f9cd704ab6c	Terminated	t2.micro	-	No alarms	+

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