

**018 Practical - Auto Scaling  
with Target Tracking Policy -  
02 Mar 2022**

- We have to create one instance using AMAZON Linux AMI.
- After launching Instance we have installed httpd by using **yum install httpd -y** command
- Start the server by using **service httpd start** command
- Now go to **/var/www/html** directory by using **cd** command
- Add one **index.html** file into html directory
- Use **chkconfig httpd on** command

**Now go to AWS Console and create AMI of that instance**

The screenshot shows the AWS EC2 Management Console interface. The left sidebar has a tree view with the following branches:

- Instances
- Images
  - AMIs
  - AMI Catalog
- Elastic Block Store
  - Volumes
  - Snapshots
  - Lifecycle Manager
- Network & Security
  - Security Groups
  - Elastic IPs
  - Placement Groups
  - Key Pairs

The main content area shows the "Amazon Machine Images (AMIs) (1)" list. The table has columns: Name, AMI ID, Visibility, Status, Creation date, and Platform. One item is listed:

Name	AMI ID	Visibility	Status	Creation date	Platform
AMI-for-Target-Tracking	ami-065ca4a17b107d8fd	Private	Available	2022/03/03 12:47 GMT+5:30	Linux/UNIX

A modal window titled "Select an AMI" is displayed in the center. It contains a single row with the text "AMI-for-Target-Tracking".

At the bottom, there are footer links for Feedback, English (US), Privacy, Terms, and Cookie preferences. The status bar shows the date and time as 2:49 PM 3/3/2022.

- Here we have created one AMI

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#TargetGroups](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#TargetGroups). The left sidebar is expanded, showing categories like AMIs, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. Under Load Balancing, the 'Target Groups' link is highlighted with a red box. The main content area is titled 'Target groups' and shows a table with columns: Name, ARN, Port, Protocol, Target type, and Load balancer. A message at the bottom says 'No target groups to display.' A red box highlights the 'Create target group' button in the top right corner of the table header.

- Now go to Target Group
- Click on Create Target Group

The screenshot shows the AWS EC2 Management Console interface for creating a target group. The title bar indicates the URL is `us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup`. The main content area is titled "Specify group details" under "Step 1". A sidebar on the left shows "Step 2 Register targets". The central panel is titled "Basic configuration" and contains the instruction: "Settings in this section cannot be changed after the target group is created." Below this, a section titled "Choose a target type" lists four options: "Instances" (selected and highlighted with a red box), "IP addresses", "Lambda function", and "Application Load Balancer". Each option has a list of bullet points describing its features.

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- Click on Instances

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup). The page is titled "Create target group".

**Target group name:** target-group-for-target-tracking

**Protocol:** HTTP : 80

**VPC:** Select the VPC with the instances that you want to include in the target group.

- vpc-0d530da491583e01c  
IPv4: 172.31.0.0/16

**Protocol version:**

- HTTP1**  
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.
- HTTP2**  
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.
- gRPC**  
Send requests to targets using gRPC. Supported when the request protocol is gRPC.

**Health checks:**  
The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

**Health check protocol:**

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- Give Name to Target group
- Select Http Protocol and Port 80

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup). The page is titled "Create target group" and is on Step 2: Set Health Check Configuration.

**Health checks**

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

**Health check protocol**

HTTP

**Health check path**

Use the default path of "/" to ping the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

**Advanced health check settings**

**Tags - optional**

Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.

Cancel **Next**

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- Scroll Down
- Click on Next

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup). The page is titled "Register targets".

**Step 1: Specify group details**

**Step 2: Register targets**

**Available instances (0)**

No Available instances

0 selected

Ports for the selected instances  
Ports for routing traffic to the selected instances.

80  
1-65535 (separate multiple ports with commas)

[Include as pending below](#)

**Review targets**

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- Then Again Scroll Down

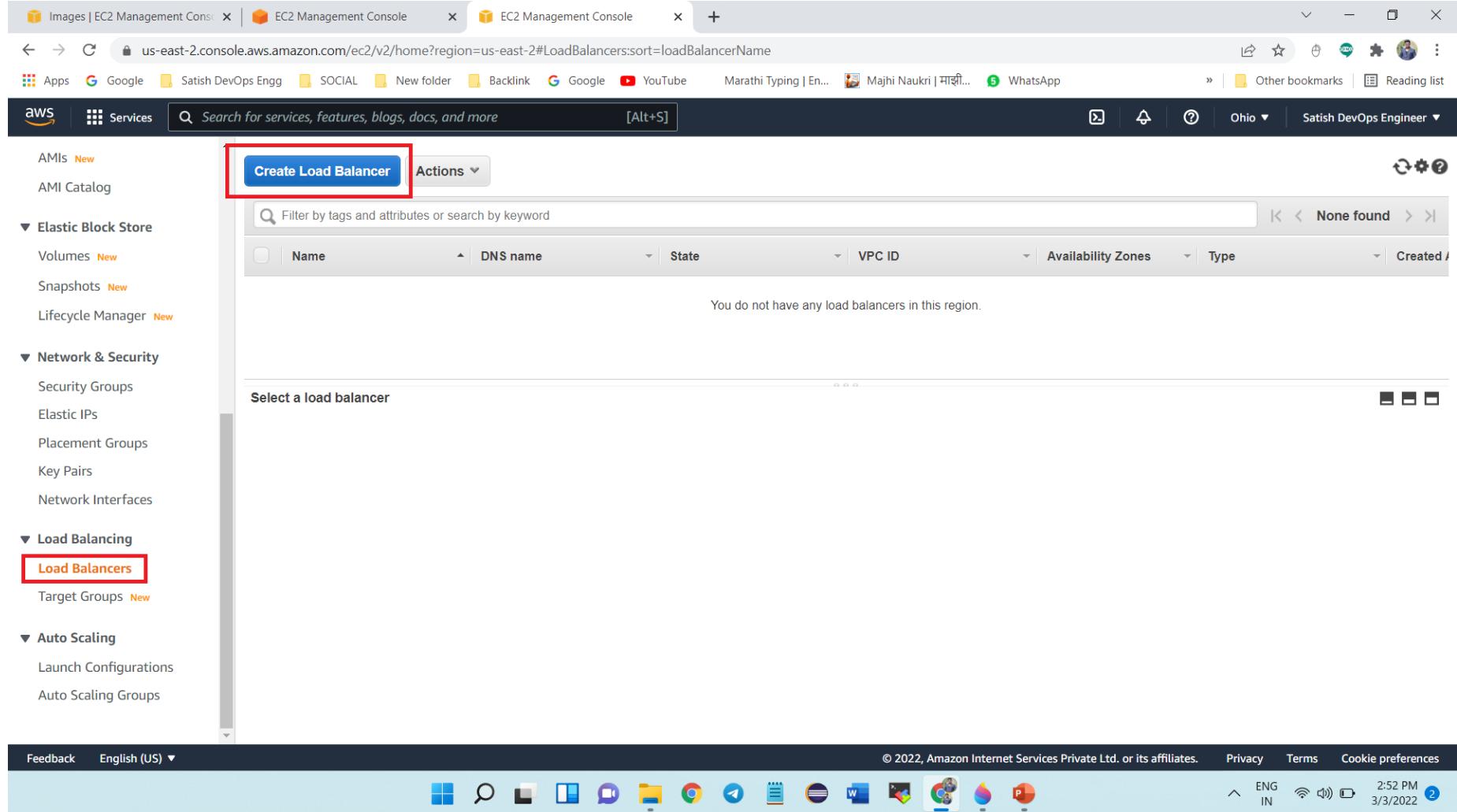
The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateTargetGroup). The browser tabs include 'Images | EC2 Management Conso', 'EC2 Management Console', and 'Target groups | EC2 Management'. The search bar at the top contains 'Search for services, features, blogs, docs, and more [Alt+S]'. The main content area is titled 'Create target group' and shows the 'Ports for the selected instances' section with the port number '80' entered. Below it is a link 'Include as pending below'. The 'Review targets' section shows a table with columns: Remove, Health status, Instance ID, Name, Port, State, Security groups, Zone, and Subnet ID. A message 'No instances added yet' is displayed, along with a note to 'Specify instances above, or leave the group empty if you prefer to add targets later.' At the bottom, there are buttons for 'Cancel', 'Previous', and 'Create target group' (in orange). The footer includes links for Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons for ENG IN, battery level, and network.

- Click on Create Target Group

The screenshot shows the AWS EC2 Management Console with three tabs open: 'Images | EC2 Management Console', 'EC2 Management Console', and 'Target groups | EC2 Management'. The URL in the address bar is 'us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#TargetGroups'. The main content area displays a success message: 'Successfully created target group: target-group-for-target-tracking'. Below this, the 'Target groups (1) Info' section is shown with a table. The table has columns: Name, ARN, Port, Protocol, Target type, and Load balancer. One row is present: 'target-group-for-target-tracking' with ARN 'arn:aws:elasticloadbalancing:us-east-2:123456789012:targetgroup/target-group-for-target-tracking', Port '80', Protocol 'HTTP', Target type 'Instance', and Load balancer 'None associated'. A red box highlights the 'None associated' text under the Load balancer column. The left sidebar shows navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (with sub-links for AMIs, AMI Catalog), and Elastic Block Store.

Name	ARN	Port	Protocol	Target type	Load balancer
target-group-for-target-tracking	arn:aws:elasticloadbalancing:us-east-2:123456789012:targetgroup/target-group-for-target-tracking	80	HTTP	Instance	None associated

- Here our target group is created and there is no instance inside that target group.
- Also it is not connected to any Load Balancer



- Now go to Load Balancers
- Click on Create Load Balancer

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#SelectCreateELBWizard](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#SelectCreateELBWizard). The page title is "Select load balancer type". It displays three options: Application Load Balancer, Network Load Balancer, and Gateway Load Balancer. Each option includes a diagram and a brief description. The "Create" button for the Application Load Balancer is highlighted with a red box.

**Load balancer types**

**Application Load Balancer** Info

Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

**Network Load Balancer** Info

Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

**Gateway Load Balancer** Info

Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.

**Create**

▶ Classic Load Balancer - previous generation

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- Select Application Load Balancer

Images | EC2 Management Cons... | EC2 Management Console | Load balancers | EC2 Management... +

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

Apps Google Satisf DevOps Engg SOCIAL New folder Backlink Google YouTube Marathi Typing | En... Majhi Naukri | माझी... WhatsApp Other bookmarks Reading list

Services Search for services, features, blogs, docs, and more [Alt+S]

applicable, it selects a target from the target group for the rule action.

▶ How Application Load Balancers work

### Basic configuration

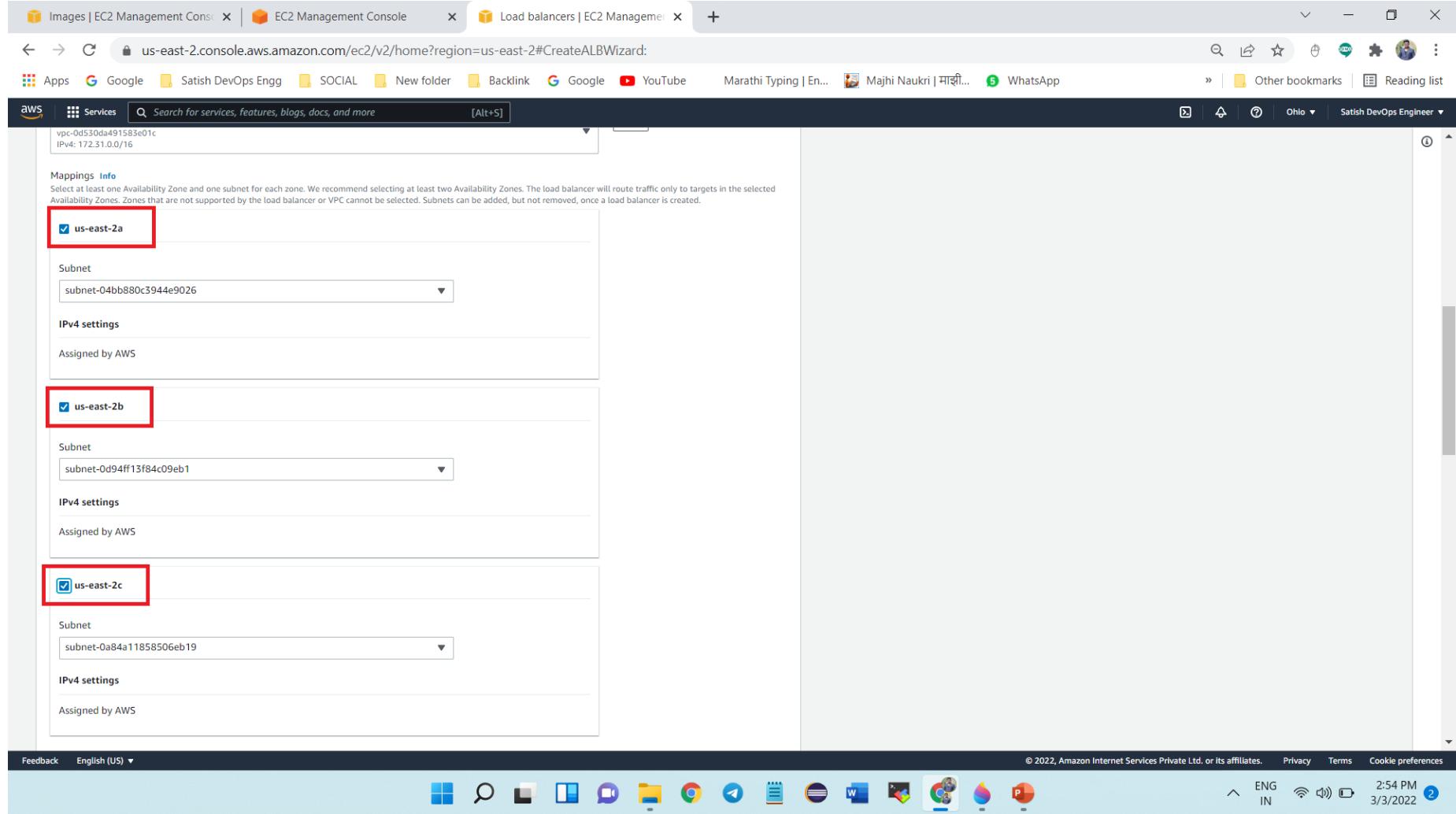
Load balancer name  
Name must be unique within your AWS account and cannot be changed after the load balancer is created.  
lb-for-target-tacking  
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen

Scheme [Info](#)  
Scheme cannot be changed after the load balancer is created.  
 Internet-facing  
An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)  
 Internal  
An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type [Info](#)  
Select the type of IP addresses that your subnets use.  
 IPv4  
Recommended for internal load balancers.  
 Dualstack  
Includes IPv4 and IPv6 addresses.

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- Give name to Load Balancer



- Select all three zones.

The screenshot shows the AWS Load Balancers console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateALBWizard](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateALBWizard). The 'Security groups' section is open, displaying a list of available security groups:

- default (sg-005a9761f1028d93f)
- ohio-instance (sg-0151153ca6adc0c8d)
- ohio-security-group-http-80 (sg-03ca72a52fa7e0e71)
- ohio-ssh-http-80-90 (sg-08ff2ccb0ec97fe5f) - This item is highlighted with a red box.
- 90-ssh (sg-09e4a973982f1bded)

Below the security group list, a 'Protocol' dropdown is set to 'HTTP' and a 'Port' input field shows '80'. A 'Default action' section includes a 'Forward to' dropdown set to 'Select a target group' and a 'Create target group' button. At the bottom left, there is an 'Add listener' button.

- Select security group in which **HTTP** port 80 is opened

The screenshot shows the AWS Load Balancers console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateALBWizard](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateALBWizard). The top navigation bar includes links for EC2 Management Console, Load balancers, and other services like Images, Google, and YouTube. The main interface shows a 'Security groups' section with two entries: 'default sg-005a9761f1028d93f' and 'ohio-security-group-http-80 sg-03ca72a52fa7e0e71'. The second entry is highlighted with a red box. Below this, the 'Listeners and routing' section is expanded, showing a 'Listener HTTP:80' configuration. The 'Protocol' is set to 'HTTP' and 'Port' is '80'. The 'Default action' dropdown is set to 'Forward to target-group-for-target-tracking' with 'HTTP' selected. A red box highlights this configuration. At the bottom of the page, there are optional add-on services like CloudWatch Metrics and CloudWatch Logs.

- Now in the listener select that the created target group

**Summary**

Review and confirm your configurations. [Estimate cost](#)

Basic configuration <a href="#">Edit</a>	Security groups <a href="#">Edit</a>	Network mapping <a href="#">Edit</a>	Listeners and routing <a href="#">Edit</a>
lb-for-target-tracking <ul style="list-style-type: none"><li>Internet-facing</li><li>IPv4</li></ul>	<ul style="list-style-type: none"><li>default <a href="#">sg-005a9761f1028d93f</a></li><li>ohio-security-group-http-80 <a href="#">sg-03ca72a52fa7e0e71</a></li></ul>	VPC <a href="#">vpc-0d530da491583e01c</a> <ul style="list-style-type: none"><li>us-east-2a <a href="#">subnet-04bb880c3944e9026</a></li><li>us-east-2b <a href="#">subnet-0d94ff13f84c09eb1</a></li><li>us-east-2c <a href="#">subnet-0a84a11858506eb19</a></li></ul>	<ul style="list-style-type: none"><li>HTTP:80 defaults to <a href="#">target-group-for-target-tracking</a></li></ul>
<b>Add-on services</b> <a href="#">Edit</a> None		<b>Tags</b> <a href="#">Edit</a> None	
<b>Attributes</b> <div style="border: 1px solid #ccc; padding: 5px;"><p><span style="color: #0070C0;">i</span> Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.</p></div>			

[Cancel](#) **Create load balancer**

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- Now click on Create Load Balancer

The screenshot shows a browser window with three tabs open: 'Images | EC2 Management Cons...', 'EC2 Management Console', and 'Load balancers | EC2 Management...'. The active tab is 'Load balancers | EC2 Management...' with the URL 'us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#CreateLBWizardSuccess:loadBalancerArn=arn:aws:elasticloadbalancing:us-east-2:876283541003:loadbalancer/app/lb...'. The page title is 'Create Application Load Balancer'. A green success message at the top states 'Successfully created load balancer: lb-for-target-tacking' and includes a note: 'Note: It might take a few minutes for your load balancer to be fully set up and ready to route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.' Below the message, the breadcrumb navigation shows 'EC2 > Load balancers > Create Application Load Balancer'. A 'Suggested next steps' box contains two items: 'Review, customize, or enable attributes for your load balancer and listeners using the Description and Listeners tabs within lb-for-target-tacking.' and 'Discover other services that you can integrate with your load balancer. Visit the Integrated services tab within lb-for-target-tacking.' At the bottom right is a blue 'View load balancer' button. The browser's address bar shows 'Search for services, features, blogs, docs, and more [Alt+S]' and lists various bookmarks like Apps, Google, Satisf DevOps Engg, SOCIAL, New folder, Backlink, YouTube, Marathi Typing | En..., Majhi Naukri | माझी..., WhatsApp, Other bookmarks, and Reading list. The bottom of the screen shows the Windows taskbar with icons for File Explorer, Search, Task View, Task Manager, File, Mail, File, Word, Excel, Powerpoint, and Google Chrome.

- Our Load Balancer is created successfully
- Click on View Load Balancer

Images | EC2 Management Console | EC2 Management Console | EC2 Management Console | +

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LoadBalancers:search=lb-for-target-tacking:sort=loadBalancerName

Apps Google Satisch DevOps Engg SOCIAL New folder Backlink Google YouTube Marathi Typing | En... Majhi Naukri | माझी... WhatsApp Other bookmarks Reading list Ohio Satish DevOps Engineer

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events Tags Limits

Instances Instances New Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Capacity Reservations

Images AMIs New AMI Catalog

Elastic Block Store

Create Load Balancer Actions

search : lb-for-target-tacking Add filter

Name	DNS name	State	VPC ID	Availability Zones	Type	Created At
lb-for-target-tacking	lb-for-target-tacking-102438...	Provisioning	vpc-0d530da491583e01c	us-east-2a, us-east-2c, ...	application	March 3, 2022

Load balancer: lb-for-target-tacking

Description Listeners Monitoring Integrated services Tags

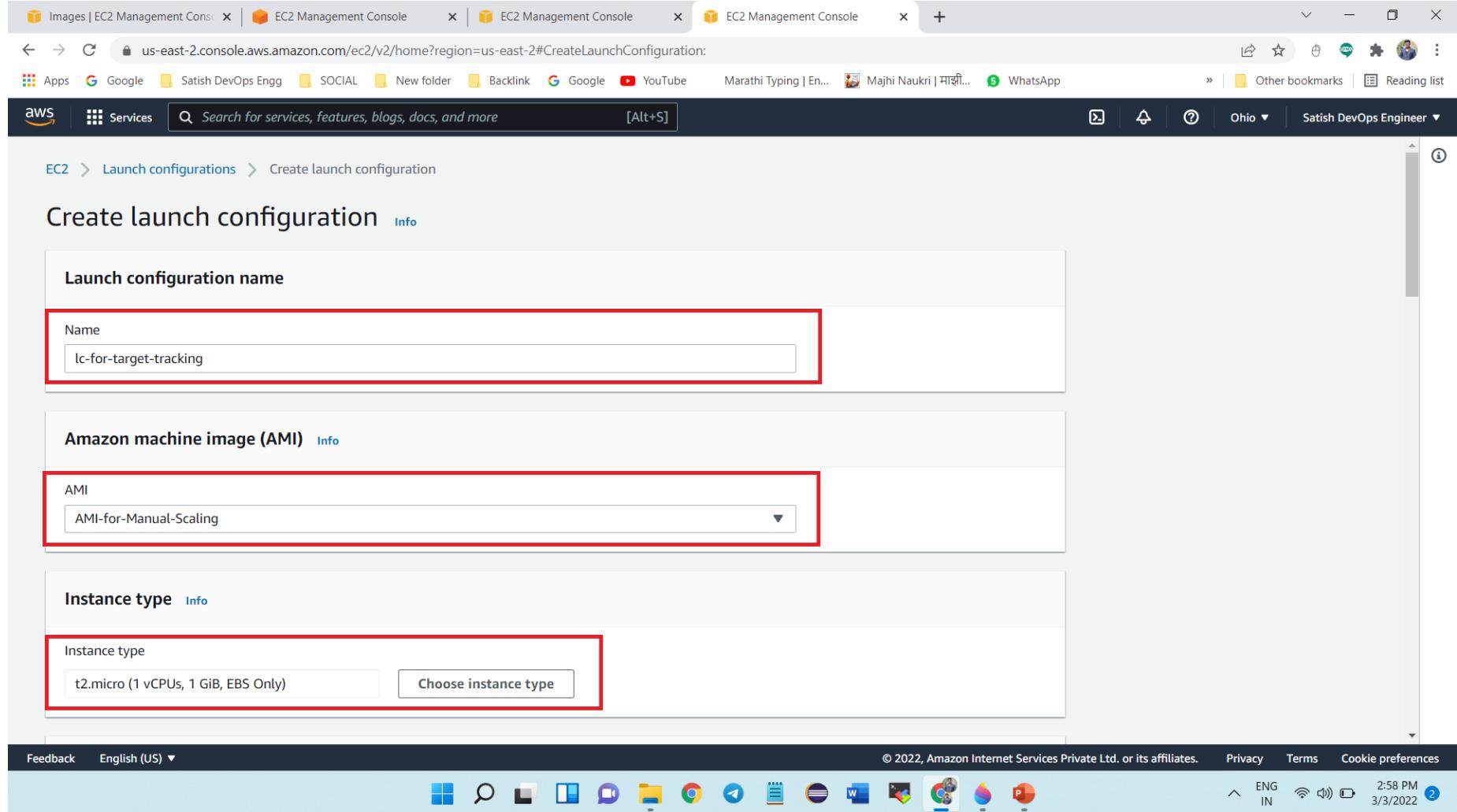
**Basic Configuration**

Name	lb-for-target-tacking
ARN	arn:aws:elasticloadbalancing:us-east-2:876283541003:loadbalancer/app/lb-for-target-tacking/063d8e889bb44c6f
DNS name	lb-for-target-tacking-1024387144.us-east-2.elb.amazonaws.com (A Record)
State	Provisioning
Type	application
Scheme	internet-facing
IP address type	ipv4

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The screenshot shows the AWS EC2 Management Console interface. The top navigation bar includes tabs for 'Images | EC2 Management Console', 'EC2 Management Console', and 'EC2 Management Console'. The URL is 'us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchConfigurations:'. The browser toolbar shows various pinned and recent tabs like 'Apps', 'Google', 'Satisf DevOps Engg', 'SOCIAL', 'New folder', 'Backlink', 'Google', 'YouTube', 'Marathi Typing | En...', 'Majhi Naukri | माझी...', and 'WhatsApp'. The AWS logo and 'Services' menu are at the top left. A search bar says 'Search for services, features, blogs, docs, and more [Alt+S]'. The main content area is titled 'Launch configurations (0) Info'. It has a table header with columns: Name, AMI ID, Instance type, Spot price, and Creation time. Below the table, a message says 'No launch configurations found in this region.' with a 'Create launch configuration' button. The left sidebar is expanded to show 'Auto Scaling' under 'Load Balancing', with 'Launch Configurations' highlighted by a red box. Other sections visible in the sidebar include 'AMI Catalog', 'Elastic Block Store' (with 'Volumes' and 'Snapshots'), 'Network & Security' (with 'Security Groups' and 'Elastic IPs'), 'Placement Groups', 'Key Pairs', 'Network Interfaces', and 'Target Groups'. The bottom of the screen shows standard browser controls and a footer with links for 'Feedback', 'English (US)', 'Privacy', 'Terms', 'Cookie preferences', and system status indicators.

- Now go to Launch Configuration
- Click on Create Launch Configuration

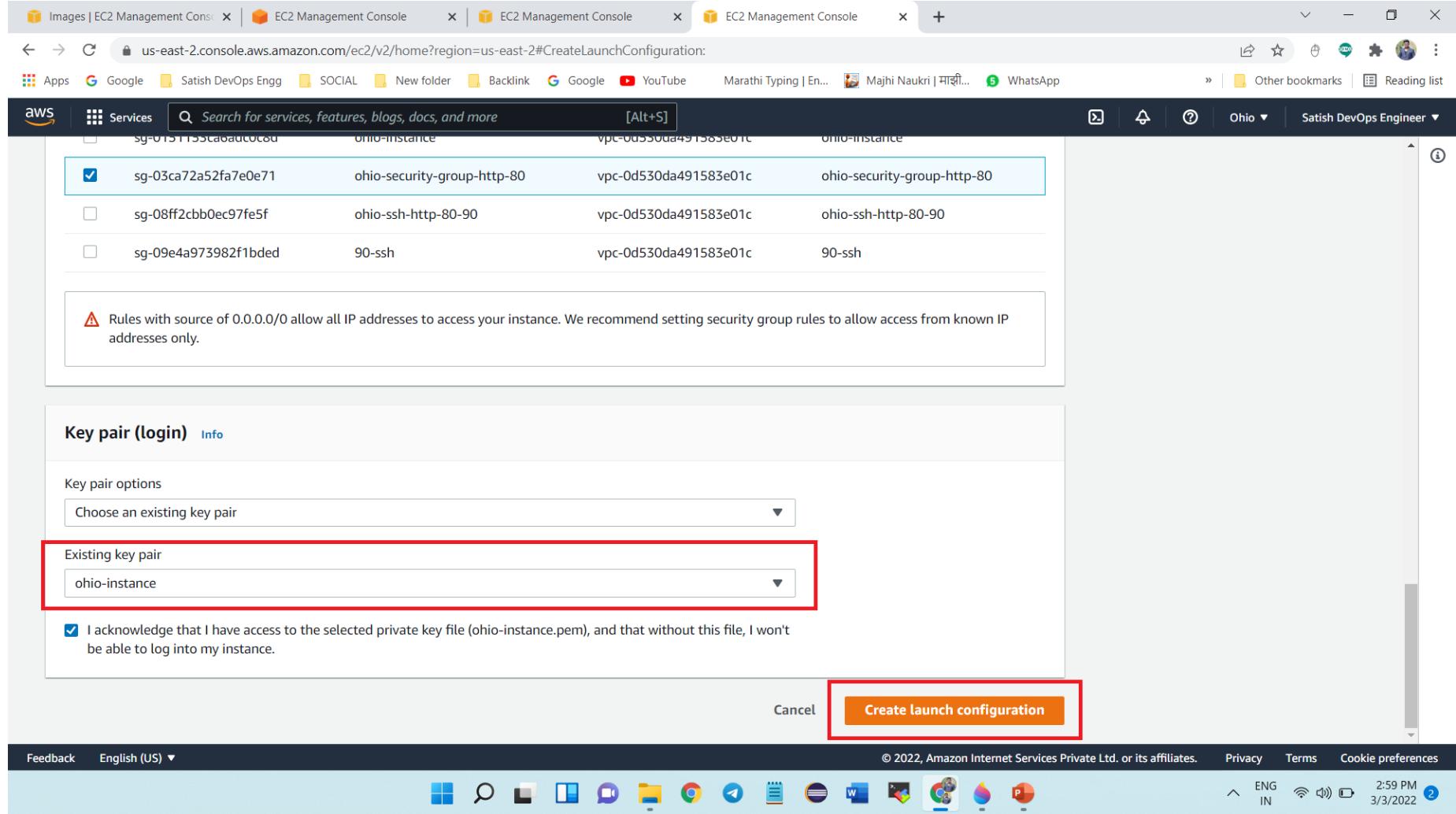


- Give name to Launch Configuration
- Select Particular AMI
- Select Instance Type as t2.micro

The screenshot shows the AWS EC2 Management Console interface. The user is in the 'Security groups' section, specifically under the 'Assign a security group' tab. A red box highlights the 'Select an existing security group' option, which is selected. Another red box highlights the row for 'sg-03ca72a52fa7e0e71' named 'ohio-security-group-http-80'. A warning message at the bottom left of the list area states: '⚠ 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.'

Security group ID	Name	VPC ID	Description
sg-005a9761f1028d93f	default	vpc-0d530da491583e01c	default VPC security group
sa-0151153ca6adc0c8d	ohio-instance	vpc-0d530da491583e01c	ohio-instance
sg-03ca72a52fa7e0e71	ohio-security-group-http-80	vpc-0d530da491583e01c	ohio-security-group-http-80
sg-08ff2ccb0ec97fe5f	ohio-ssh-http-80-90	vpc-0d530da491583e01c	ohio-ssh-http-80-90
sg-09e4a973982f1bded	90-ssh	vpc-0d530da491583e01c	90-ssh

- Select the same security group in which HTTP port 80 is opened



- Select key pair also
- Then click on Create Launch Configuration

The screenshot shows the AWS EC2 Management Console interface. The top navigation bar includes tabs for 'Images | EC2 Management Console' (active), 'EC2 Management Console', and 'EC2 Management Console'. The URL in the address bar is 'us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchConfigurations:'. The browser's bookmarks bar contains links like 'Apps', 'Google', 'Satisch DevOps Engg', 'SOCIAL', 'New folder', 'Backlink', 'Google', 'YouTube', 'Marathi Typing | En...', 'Majhi Naukri | माझी...', and 'WhatsApp'. The top right corner shows account information for 'Ohio' and 'Satisch DevOps Engineer'.

The left sidebar menu is open, showing sections for 'Services' (selected), 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances' (selected), 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images' (selected), 'AMIs', and 'Elastic Block Store'.

The main content area displays a success message: 'Successfully created launch configuration: lc-for-target-tracking'. Below this, the 'Launch configurations (1)' section is shown, featuring a table with one row:

	Name	AMI ID	Instance type	Spot price	Creation time
<input type="checkbox"/>	lc-for-target-tracking	ami-065ca4a17b...	t2.micro	-	Thu Mar 03 2022 14:59:54 ...

A message at the bottom of the page reads 'Select a a launch configuration above'.

The footer of the browser window includes links for 'Feedback', 'English (US)', 'Privacy', 'Terms', and 'Cookie preferences'. It also shows system status icons for battery, signal, and network, along with the date and time '2:59 PM 3/3/2022'.

- Our Launch Configuration is created successfully

The screenshot shows the AWS EC2 Management Console home page for the us-east-2 region. The left sidebar contains navigation links for AMIs, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The 'Auto Scaling Groups' link is highlighted with a red box. The main content area features a large title 'Amazon EC2 Auto Scaling' with the subtitle 'helps maintain the availability of your applications'. A call-to-action button 'Create Auto Scaling group' is also highlighted with a red box. Below the main title, there's a description of what Auto Scaling groups are and how they work. To the right, there are sections for 'How it works' (with a diagram showing an 'Auto Scaling group' icon) and 'Pricing'.

- Now go to Auto Scaling Group
- Click on Create Auto Scaling Group

EC2 > Auto Scaling groups > Create Auto Scaling group

Choose launch template or configuration [Info](#)

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.

Name

Auto Scaling group name  
Enter a name to identify the group.  
asg-for-target-tracking

Must be unique to this account in the current Region and no more than 255 characters.

Launch template [Info](#) [Switch to launch configuration](#)

Launch template  
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

Select a launch template [C](#)

Create a launch template [E](#)

Cancel [Next](#)

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- Give name to ASG
- Then click on Switch to Launch Configuration

The screenshot shows the AWS EC2 Management Console interface for creating a new Auto Scaling group. On the left, a sidebar lists various services: AMIs, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The 'Auto Scaling Groups' option is currently selected. The main panel displays a step-by-step wizard:

- Step 2: Choose instance launch options
- 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

In the 'Name' field, the value 'asg-for-target-tracking' is entered. In the 'Launch configuration' dropdown, the value 'lc-for-target-tracking' is selected. Below the dropdown, a table provides details about the launch configuration:

Launch configuration	AMI ID	Date created
lc-for-target-tracking	ami-065ca4a17b107d8fd	Thu Mar 03 2022 14:59:54 GMT+0530 (India Standard Time)
Security groups	Instance type	Key pair name
sg-03ca72a52fa7e0e71	t2.micro	ohio-instance

- Select launch configuration
- Then click on next

The screenshot shows the AWS EC2 Management Console interface for creating a new Auto Scaling group. The left sidebar lists various services under 'Auto Scaling'. The main window is titled 'Step 2 Choose instance launch options'. The 'Network' section is active, showing the following configuration:

- VPC:** Choose the VPC that defines the virtual network for your Auto Scaling group. A dropdown menu shows 'vpc-0d530da491583e01c' (172.31.0.0/16) as the default.
- Availability Zones and subnets:** Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC. Three subnets are listed:
  - us-east-2a | subnet-04bb880c3944e9026 (172.31.0.0/20)
  - us-east-2b | subnet-0d94ff13f84c09eb1 (172.31.16.0/20)
  - us-east-2c | subnet-0a84a11858506eb19 (172.31.32.0/20)

At the bottom of the window, there are 'Cancel', 'Previous', 'Skip to review', and 'Next' buttons. The 'Next' button is highlighted with a red box.

- Select all availability zones
- Then click on Next

The screenshot shows the AWS Management Console with the URL [us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create](https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create). The left sidebar shows the navigation path: Services > Auto Scaling > Create Auto Scaling group. The main content area displays the 'Configure advanced options' step of the wizard. The steps listed are:

- Step 1: Choose launch template or configuration
- Step 2: Choose instance launch options
- 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

The 'Configure advanced options' section contains a description: "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." Below this is a 'Load balancing - optional' section. It includes three options:

- 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. This option is highlighted with a red box.
- Attach to a new load balancer: Quickly create a basic load balancer to attach to your Auto Scaling group.

Below this is another section titled 'Attach to an existing load balancer'. It says: "Select the load balancers that you want to attach to your Auto Scaling group." It contains two options:

- Choose from your load balancer target groups: This option allows you to attach Application, Network, or Gateway Load Balancers. This option is highlighted with a red box.
- Choose from Classic Load Balancers

At the bottom of the page, there are links for Feedback, English (US), Privacy, Terms, and Cookie preferences. The status bar at the bottom right shows ENG IN, a battery icon, 3:03 PM, and 3/3/2022.

- Select **Attach to an Existing Load Balancer**
- Also select **Choose from your load balancer target groups**

This option allows you to attach Application, Network, or Gateway Load Balancers.

Existing load balancer target groups  
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

target-group-for-target-tracking | HTTP  
Application Load Balancer: lb-for-target-tracking | HTTP

Health check type [Info](#)  
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.

EC2     ELB

Health check grace period  
The amount of time until EC2 Auto Scaling performs the first health check on new instances after they are put into service.

300 seconds

Additional settings - optional

Monitoring [Info](#)

Enable group metrics collection within CloudWatch

Cancel Previous Skip to review **Next**

Feedback English (US) © 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences

ENG IN 3:04 PM 3/3/2022 2

- Select that existing load balancer target group

The screenshot shows the AWS EC2 Management Console interface for creating a new Auto Scaling group. The left sidebar navigation includes 'AMIs', 'Elastic Block Store' (with 'Volumes' and 'Snapshots' sub-options), 'Network & Security' (with 'Security Groups', 'Elastic IPs', 'Placement Groups', 'Key Pairs', and 'Network Interfaces'), 'Load Balancing' (with 'Load Balancers' and 'Target Groups' sub-options), and 'Auto Scaling' (with 'Launch Configurations' and 'Auto Scaling Groups' sub-options). The 'Auto Scaling Groups' option is currently selected. In the main content area, under the 'Load Balancing' section, there is a 'Select target groups' dropdown menu containing one item: 'target-group-for-target-tracking | HTTP'. Below this, the 'Health checks - optional' section is visible, showing the 'Health check type' dropdown with 'EC2' and 'ELB' options, where 'ELB' is checked. The 'Health check grace period' input field contains '120' followed by 'seconds'. The 'Additional settings - optional' section includes a 'Monitoring' sub-section with a checkbox for 'Enable group metrics collection within CloudWatch', which is unchecked. At the bottom of the page, there are 'Cancel', 'Previous', 'Skip to review', and 'Next' buttons, with the 'Next' button being highlighted with a red box.

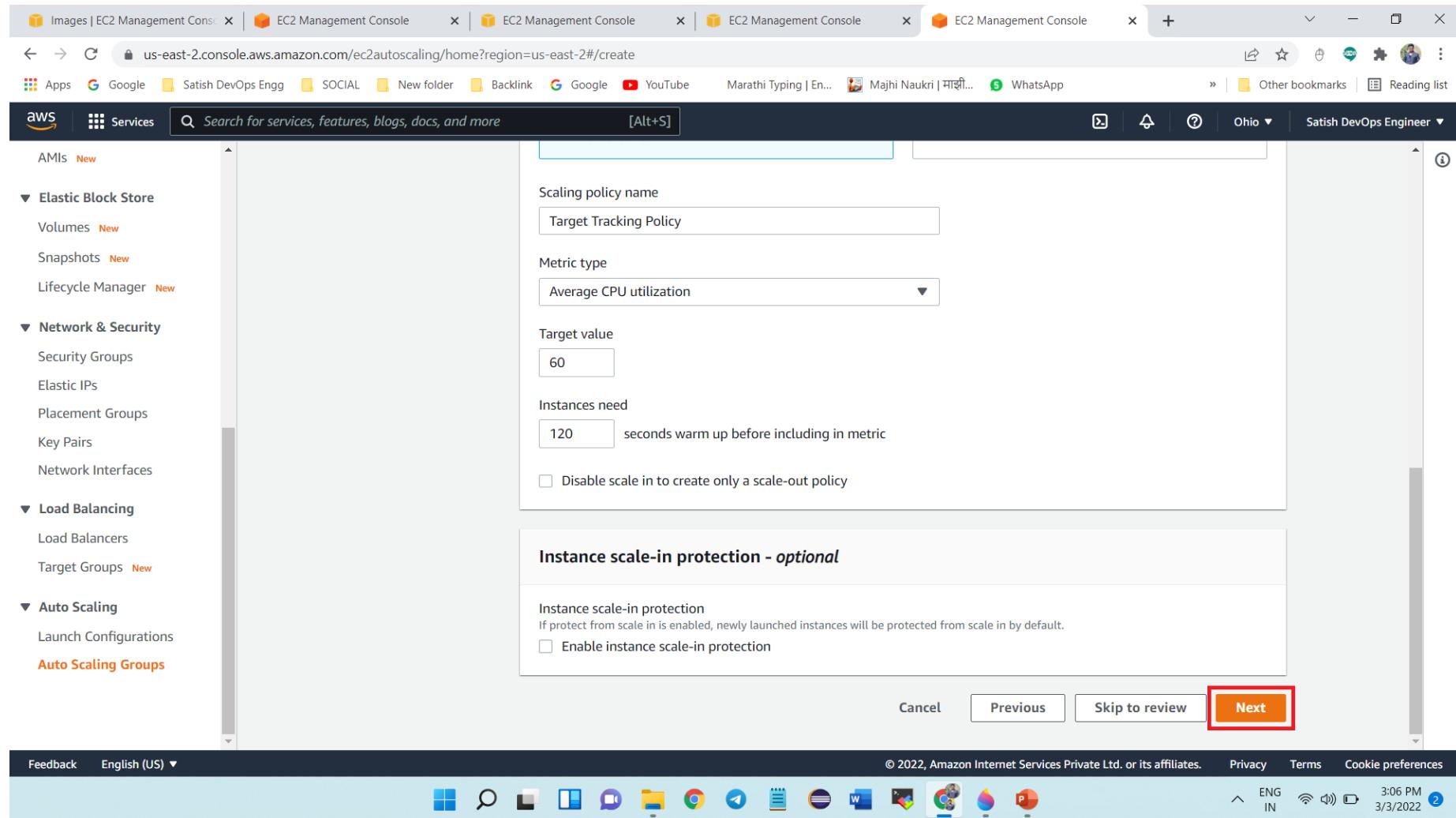
- Click on **ELB**
- Change Grace period to 120 Seconds
- Then click on **Next**

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](https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create). The left sidebar navigation includes AMIs, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The main content area shows the 'Create Auto Scaling group' wizard, Step 4: Configure group size and scaling policies. The 'Group size - optional' section is highlighted with a red box, containing fields for Desired capacity (2), Minimum capacity (2), and Maximum capacity (6).

- Now set desired capacity as 2
- Minimum capacity as 2
- Maximum capacity as 6

The screenshot shows the AWS EC2 Management Console interface for creating a new Auto Scaling group. The left sidebar lists services like AMIs, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. Under Auto Scaling, 'Auto Scaling Groups' is selected. The main pane is titled 'Scaling policies - optional' and contains instructions to choose a scaling policy to dynamically resize the group. It offers two options: 'Target tracking scaling policy' (selected) and 'None'. The 'Target tracking scaling policy' section includes fields for 'Scaling policy name' (set to 'Target Tracking Policy'), 'Metric type' (set to 'Average CPU utilization'), 'Target value' (set to '60'), and 'Instances need' (set to '120 seconds warm up before including in metric'). A checkbox for 'Disable scale in to create only a scale-out policy' is also present. The bottom of the screen shows the standard Windows taskbar with various pinned icons.

- Select Target Tracking Policy
- Use Target Value as 60
- Warm up time as 120 Seconds



- Now click on Next

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](https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create). The left sidebar is collapsed, showing the navigation menu. The main content area displays the 'Create Auto Scaling group' wizard, Step 5: Add notifications. The steps are listed vertically on the left: Step 1 (Choose launch template or configuration), Step 2 (Choose instance launch options), Step 3 (optional) Configure advanced options, Step 4 (optional) Configure group size and scaling policies, Step 5 (optional) Add notifications (which is currently selected), Step 6 (optional) Add tags, and Step 7 (Review). A large 'Add notification' button is centered in the Step 5 section. At the bottom right of the wizard, there are 'Cancel', 'Previous', 'Skip to review', and 'Next' buttons. The 'Next' button is highlighted in orange. The bottom of the screen shows the standard AWS footer with links for Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons.

- Click on Next

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](https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/create). The left sidebar is collapsed, and the main area displays the 'Create Auto Scaling group' wizard, currently on Step 6: Add tags.

**Step 6: Add tags**

Add tags to help you search, filter, and track your Auto Scaling group across AWS. You can also choose to automatically add these tags to instances when they are launched.

**Info:** You can optionally choose to add tags to instances (and their attached EBS volumes) by specifying tags in your launch template. We recommend caution, however, because the tag values for instances from your launch template will be overridden if there are any duplicate keys specified for the Auto Scaling group.

**Tags (0)**

Add tag

50 remaining

Cancel Previous Next

**Navigation:** Back, Forward, Home, Search, Refresh, Stop, Bookmarks, Help, User Profile, Ohio, Reading list.

**Search Bar:** Search for services, features, blogs, docs, and more [Alt+S]

**Sidebar (Collapsed):**

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

- Click on Next

The screenshot shows the AWS EC2 Management Console interface. The left sidebar navigation includes categories like AMIs, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The 'Auto Scaling Groups' link is highlighted in orange. The main content area displays the 'Create Auto Scaling group' wizard, specifically Step 7: Review. The steps listed are: Step 1 (Choose launch template or configuration), Step 2 (Choose instance launch options), Step 3 (optional) Configure advanced options, Step 4 (optional) Configure group size and scaling policies, Step 5 (optional) Add notifications, and Step 6 (optional) Add tags. Step 7 is labeled 'Review'. The 'Group details' section shows the Auto Scaling group name as 'asg-for-target-tracking'. The 'Launch configuration' section shows 'lc-for-target-tracking'. The 'Step 2: Choose instance launch options' section shows the 'Network' settings, which include a VPC selection with the ID 'vpc-0d530da491583e01c'. The bottom of the screen shows standard browser controls, a toolbar with various icons, and a status bar indicating the date and time.

- Review and Scroll Down

The screenshot shows the AWS EC2 Management Console interface for creating a new Auto Scaling Group. The left sidebar lists various services: AMIs, Elastic Block Store (selected), Network & Security, Load Balancing, and Auto Scaling (selected). The main content area is titled "Instance scale-in protection" and contains a checkbox labeled "Enable instance protection from scale in". Below this are two steps: "Step 5: Add notifications" and "Step 6: Add tags". The "Notifications" step shows "No notifications" and an "Edit" button. The "Tags" step shows "Tags (0)" and a table with columns "Key" and "Value", with a "Tag new instances" option. At the bottom right is a large orange "Create Auto Scaling group" button. The bottom navigation bar includes links for Feedback, English (US), Privacy, Terms, and Cookie preferences.

- Click on Create Auto Scaling Group

The screenshot shows the AWS EC2 Management Console interface. The left sidebar navigation includes 'AMIs', 'Elastic Block Store' (with 'Volumes' and 'Snapshots' sub-options), 'Lifecycle Manager', 'Network & Security' (with 'Security Groups', 'Elastic IPs', 'Placement Groups', 'Key Pairs', and 'Network Interfaces'), 'Load Balancing' (with 'Load Balancers' and 'Target Groups' sub-options), and 'Auto Scaling' (with 'Launch Configurations' and 'Auto Scaling Groups'). The 'Auto Scaling Groups' option is currently selected. The main content area displays the 'Auto Scaling groups (1)' table. The table has columns: Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Available. A single row is present for the group 'asg-for-target-tracking', which is associated with the launch configuration 'lc-for-target-tracking'. The 'Status' column for this row contains the text 'Updating capacity' and is highlighted with a red box. The 'Desired capacity' is set to 2, while 'Min' and 'Max' are set to 2 and 6 respectively. The 'Available' column shows 'us-east-2'. At the top of the main content area, a green banner message states 'asg-for-target-tracking, 1 Scaling policy created successfully'.

- Here we can see that our ASG is updating Capacity because our desired capacity is 2

The screenshot shows the AWS EC2 Management Console interface. The left sidebar navigation includes: AMIs, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The 'Auto Scaling Groups' section is currently selected.

The main content area displays a success message: "asg-for-target-tracking, 1 Scaling policy created successfully". Below this, the "Auto Scaling groups (1/1)" table lists one group named "asg-for-target-tracking" with a capacity of 2 instances. The "Activity history" section shows two entries:

Status	Description	Cause	Start time	End time
PreInService	Launching a new EC2 instance: i-029fd...84706	At 2022-03-03T09:39:34Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2022-03-03T09:39:35Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2022 March 03, 03:09:37 PM +05:30	
Successful	Launching a new EC2 instance: i-0e1cc...eb25d0	At 2022-03-03T09:39:34Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2022-03-03T09:39:35Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2022 March 03, 03:09:37 PM +05:30	2022 March 03, 03:09:37 PM +05:30

The bottom status bar shows the URL as <https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#details?id=asg-for-target-tracking&view=activity>, the copyright notice "© 2022, Amazon Internet Services Private Ltd. or its affiliates.", and the system status "ENG IN" with a battery icon.

- We can see in Activity also

The screenshot shows the AWS EC2 Management Console interface. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store. The main content area displays a table titled 'Instances (2)'. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability zone. It lists two instances: one with Instance ID i-029fda26845c84706 in Pending state and another with Instance ID i-0e1cc9ca259eb25d0 in Running state. A modal window titled 'Select an instance' is open in the foreground. The browser's address bar shows the URL: us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:v=3. The bottom of the screen includes standard browser controls and a taskbar.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability zone
-	i-029fda26845c84706	Pending	t2.micro	-	No alarms	us-east-2
-	i-0e1cc9ca259eb25d0	Running	t2.micro	Initializing	No alarms	us-east-2

- In instances we can see that 2 instances are launched

The screenshot shows the AWS EC2 Instances page. The left sidebar is collapsed, showing the following menu structure:

- New EC2 Experience (button)
- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
  - Instances (New)
  - Instance Types
  - Launch Templates
  - Spot Requests
  - Savings Plans
  - Reserved Instances (New)
  - Dedicated Hosts
  - Capacity Reservations
- Images
  - AMIs (New)
  - AMI Catalog
- Elastic Block Store

The main content area displays the following table for "Instances (2) Info":

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

A modal window titled "Select an instance" is open at the bottom center of the screen.

At the bottom of the browser window, there is a toolbar with various icons and a status bar showing "3:14 PM 3/3/2022".

- Also they are running ok

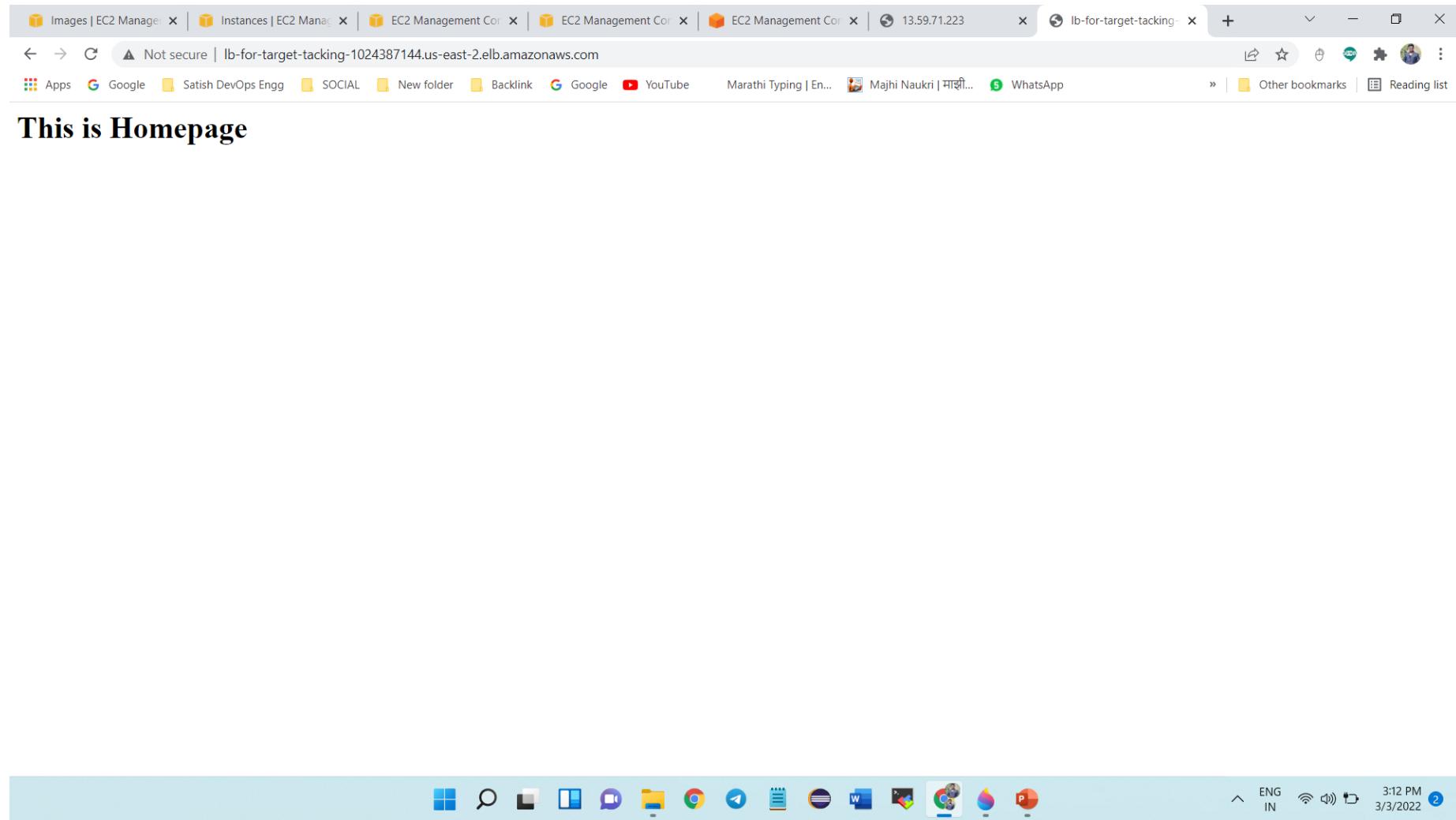
The screenshot shows the AWS Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LoadBalancers:search=lb-for-target-tacking&sort=loadBalancerName](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LoadBalancers:search=lb-for-target-tacking&sort=loadBalancerName). The left sidebar is expanded to show the 'Load Balancing' section, with 'Load Balancers' selected and highlighted with a red box. The main pane displays a table of existing load balancers, with one entry for 'lb-for-target-tacking' selected. The details pane below shows the configuration for this load balancer, specifically highlighting the 'DNS name' field which contains the value 'lb-for-target-tacking-1024387144.us-east-2.elb.amazonaws.com'.

Name	DNS name	State	VPC ID	Availability Zones	Type	Created At
lb-for-target-tacking	lb-for-target-tacking-1024387144.us-east-2.elb.amazonaws.com	Active	vpc-0d530da491583e01c	us-east-2a, us-east-2c, ...	application	March 3, 2022

**Basic Configuration**

Name	lb-for-target-tacking
ARN	arn:aws:elasticloadbalancing:us-east-2:876283541003:loadbalancer/app/lb-for-target-tacking/063d8e889bb44c6f
<b>DNS name</b>	lb-for-target-tacking-1024387144.us-east-2.elb.amazonaws.com (A Record)
State	Active
Type	application
Scheme	internet-facing
IP address type	ipv4

- Now copy DNS of Load Balancer



- Check into Browser
- It is working fine

The screenshot shows the AWS EC2 Instances page. In the main table, there are two instances listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
<input checked="" type="checkbox"/> CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

A red box highlights the 'Connect' button in the top right corner of the table header. Another red box highlights the instance name 'CPU-Utilization-Work' in the list.

The 'Details' tab is selected in the modal window for the instance i-0e1cc9ca259eb25d0. The modal displays the following information:

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0e1cc9ca259eb25d0	13.59.71.223   open address	172.31.45.118
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-13-59-71-223.us-east-2.compute.amazonaws.com   open address

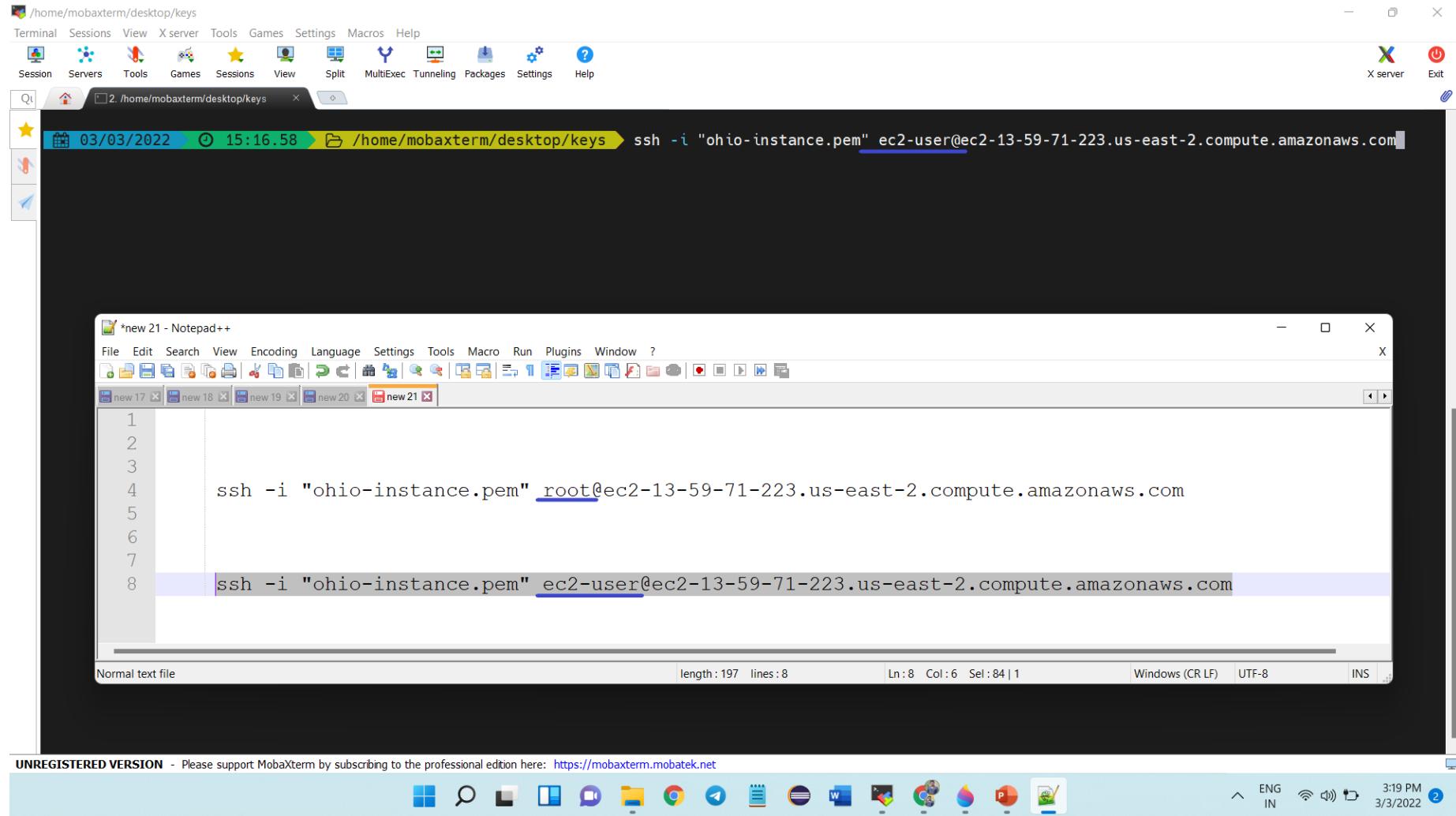
- Now give name to any one instance for recognition
- Then click on connect

The screenshot shows a browser window with multiple tabs open, including various EC2 Management pages and a connection tracking page. The main content is the 'Connect to instance' page for an EC2 instance with ID `i-0e1cc9ca259eb25d0`. The 'SSH client' tab is highlighted with a red box. Below it, the 'Instance ID' is listed as `i-0e1cc9ca259eb25d0`. A list of steps to connect via SSH is provided:

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is `ohio-instance.pem`
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
`chmod 400 ohio-instance.pem`
4. Connect to your instance using its Public DNS:  
`-71-223.us-east-2.compute.amazonaws.com`

A green box indicates the command has been copied: `ssh -i "ohio-instance.pem" root@ec2-13-59-71-223.us-east-2.compute.amazonaws.com`. A note below states: "Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name."

- Click on SSH Client
- Copy command from example
- And at the place of **root** use **ec2-user**



- Like this

ec2-user@ip-172-31-45-118:~

Terminal Sessions View Xserver Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

X server Exit

2 ec2-user@ip-172-31-45-118 ~

```
03/03/2022 15:16.58 /home/mobaxterm/desktop/keys ssh -i "ohio-instance.pem" ec2-user@ec2-13-59-71-223.us-east-2.compute.amazonaws.com
Warning: Permanently added 'ec2-13-59-71-223.us-east-2.compute.amazonaws.com' (RSA) to the list of known hosts.
X11 forwarding request failed on channel 0

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
No packages needed for security; 1 packages available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-45-118 ~]$
```

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3:20 PM 3/3/2022

- Here we can see that we are logged into our instance

root@ip-172-31-45-118:~\$ ssh -i "ohio-instance.pem" ec2-user@ec2-13-59-71-223.us-east-2.compute.amazonaws.com  
Warning: Permanently added 'ec2-13-59-71-223.us-east-2.compute.amazonaws.com' (RSA) to the list of known hosts.  
X11 forwarding request failed on channel 0

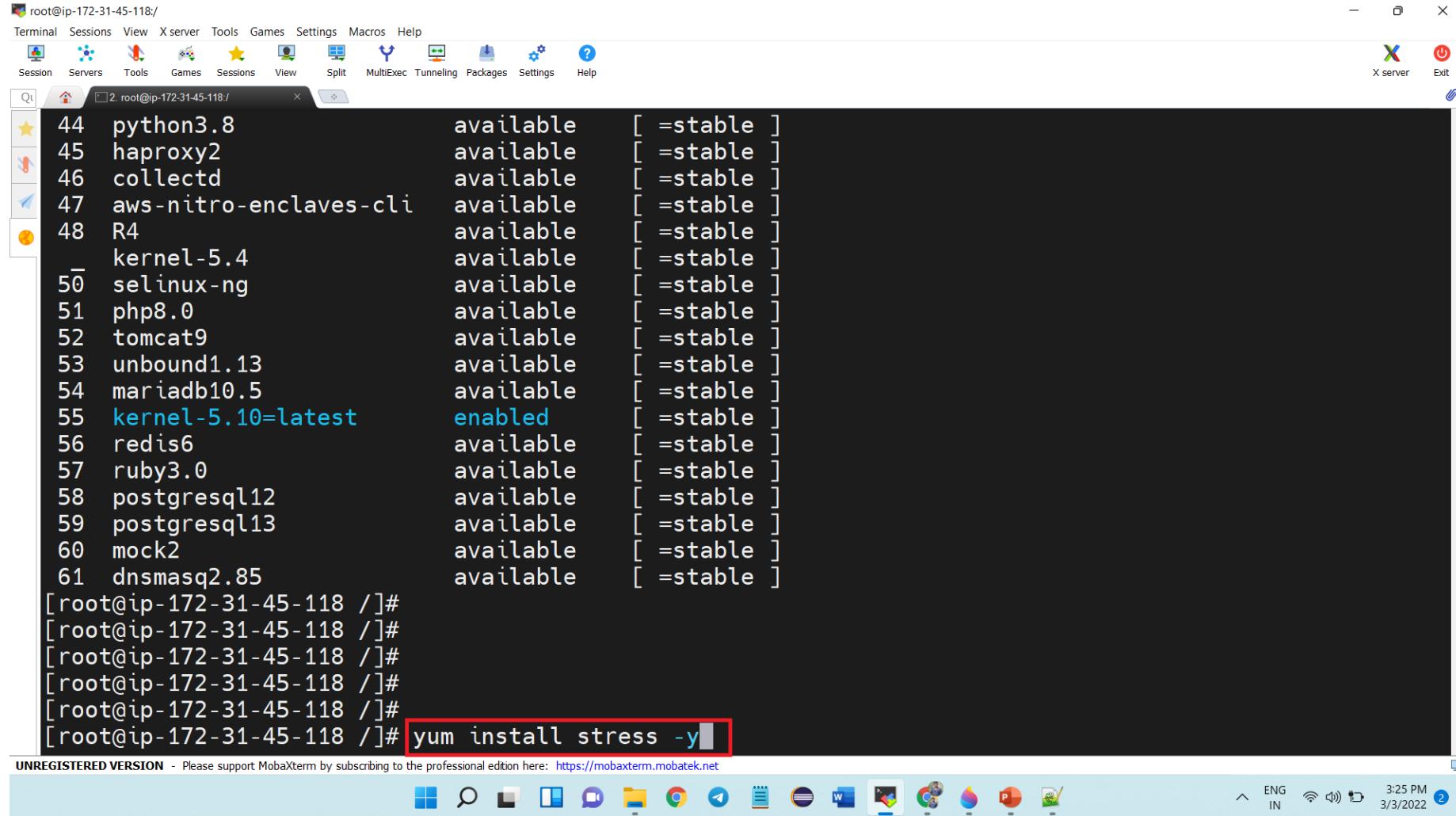
Amazon Linux 2 AMI

<https://aws.amazon.com/amazon-linux-2/>  
No packages needed for security; 1 packages available  
Run "sudo yum update" to apply all updates.

```
[ec2-user@ip-172-31-45-118 ~]$  
[ec2-user@ip-172-31-45-118 ~]$  
[ec2-user@ip-172-31-45-118 ~]$ sudo su -  
[root@ip-172-31-45-118 ~]#  
[root@ip-172-31-45-118 ~]#  
[root@ip-172-31-45-118 ~]# cd /  
[root@ip-172-31-45-118 /]#  
[root@ip-172-31-45-118 /]#  
[root@ip-172-31-45-118 /]#  
[root@ip-172-31-45-118 /]# amazon-linux-extras install epel -y
```

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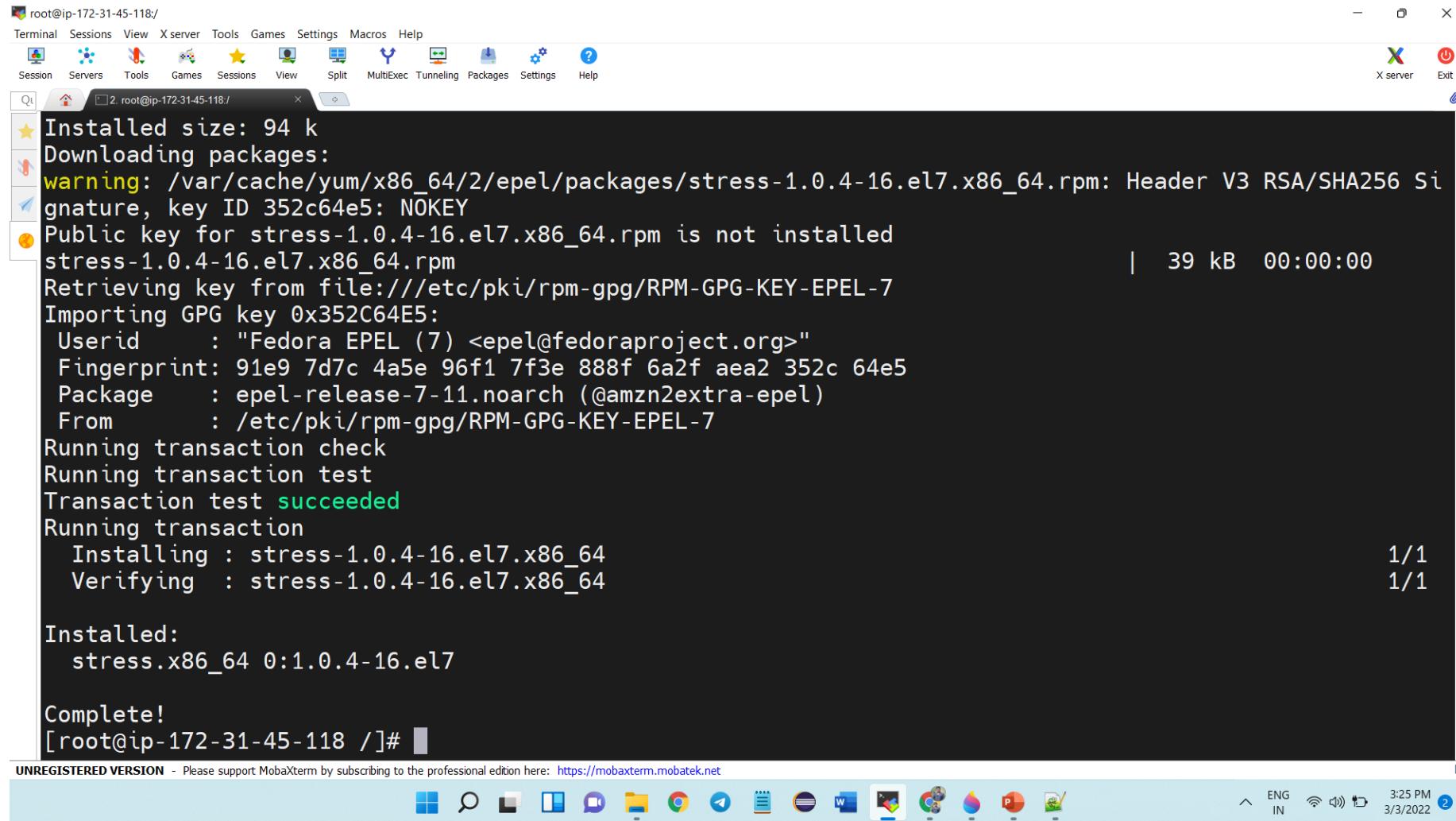
- Login as Root
- Now use **amazon-linux-extras install epel -y**
- To install extra packages into machine



```
root@ip-172-31-45-118:~# rpm -qf $(which stress)
stress-0.14-1.el7.x86_64
root@ip-172-31-45-118:~# yum install stress -y
Available Packages
44  python3.8                  available      [ =stable ]
45  haproxy2                   available      [ =stable ]
46  collectd                   available      [ =stable ]
47  aws-nitro-enclaves-cli    available      [ =stable ]
48  R4                         available      [ =stable ]
49  kernel-5.4                 available      [ =stable ]
50  selinux-ng                 available      [ =stable ]
51  php8.0                     available      [ =stable ]
52  tomcat9                    available      [ =stable ]
53  unbound1.13                available      [ =stable ]
54  mariadb10.5                available      [ =stable ]
55  kernel-5.10=latest         enabled       [ =stable ]
56  redis6                     available      [ =stable ]
57  ruby3.0                    available      [ =stable ]
58  postgresql12               available      [ =stable ]
59  postgresql13               available      [ =stable ]
60  mock2                      available      [ =stable ]
61  dnsmasq2.85               available      [ =stable ]
[root@ip-172-31-45-118 ~]#
[root@ip-172-31-45-118 ~]#
[root@ip-172-31-45-118 ~]#
[root@ip-172-31-45-118 ~]#
[root@ip-172-31-45-118 ~]#
[root@ip-172-31-45-118 ~]# yum install stress -y
```

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- Use **yum install stress -y**



root@ip-172-31-45-118:/

```
Installed size: 94 k
Downloading packages:
warning: /var/cache/yum/x86_64/2/epel/packages/stress-1.0.4-16.el7.x86_64.rpm: Header V3 RSA/SHA256 Si
gnature, key ID 352c64e5: NOKEY
Public key for stress-1.0.4-16.el7.x86_64.rpm is not installed
stress-1.0.4-16.el7.x86_64.rpm
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-7
Importing GPG key 0x352C64E5:
  Userid      : "Fedora EPEL (7) <epel@fedoraproject.org>"
  Fingerprint: 91e9 7d7c 4a5e 96f1 7f3e 888f 6a2f aea2 352c 64e5
  Package     : epel-release-7-11.noarch (@amzn2extra-epel)
  From        : /etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : stress-1.0.4-16.el7.x86_64          1/1
  Verifying   : stress-1.0.4-16.el7.x86_64          1/1

Installed:
  stress.x86_64 0:1.0.4-16.el7

Complete!
[root@ip-172-31-45-118 /]#
```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help X server Exit

ENG IN 3:25 PM 3/3/2022 2

- It is installed successfully

The screenshot shows a terminal window titled 'root@ip-172-31-45-118:/' in MobaXterm. The terminal interface includes a menu bar with 'Terminal', 'Sessions', 'View', 'Xserver', 'Tools', 'Games', 'Settings', 'Macros', and 'Help'. Below the menu is a toolbar with icons for 'Session', 'Servers', 'Tools', 'Games', 'Sessions', 'View', 'Split', 'MultiExec', 'Tunneling', 'Packages', 'Settings', and 'Help'. The main window displays a root shell session. The user runs the command `ps -ef | grep stress`, which outputs a process listing for 'stress'. Then, the user runs `stress -c 10`, which dispatches 10 CPU hogs. The terminal window has scroll bars on the right and bottom. At the bottom, there is an unregistered version notice and a taskbar with various icons.

```
[root@ip-172-31-45-118 /]# ps -ef | grep stress
root      3542  3416  0 09:56 pts/0    00:00:00 grep --color=auto stress
[root@ip-172-31-45-118 /]# stress -c 10
stress: info: [3543] dispatching hogs: 10 cpu, 0 io, 0 vm, 0 hdd
```

- Use **`ps -ef | grep stress`** to check ongoing processes of stress
- Now use **`stress -c 10`**
- But if you pressed **`ctrl+c`** it will exit from stress

The screenshot shows a terminal window titled 'root@ip-172-31-45-118:~'. The window has a dark background and contains the following command-line session:

```
[root@ip-172-31-45-118 ~]# ps -ef | grep stress
root      3542  3416  0 09:56 pts/0    00:00:00 grep --color=auto stress
[root@ip-172-31-45-118 ~]# stress -c 10
stress: info: [3543] dispatching hogs: 10 cpu, 0 io, 0 vm, 0 hdd

[root@ip-172-31-45-118 ~]# nohup stress -c 10 &
[1] 3555
[root@ip-172-31-45-118 ~]# nohup: ignoring input and appending output to 'nohup.out'

[root@ip-172-31-45-118 ~]#
```

The command `nohup stress -c 10 &` is highlighted with a red box.

At the bottom of the terminal window, there is a message: **UNREGISTERED VERSION** - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

The taskbar at the bottom of the screen includes icons for various applications like File Explorer, Task View, Start, Search, Taskbar, File, Microsoft Edge, Google Chrome, Mail, Calendar, OneDrive, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Paint, and Microsoft Snipping Tool. The system tray shows the language is set to English (IN), the date and time are 3:28 PM on 3/3/2022, and there are two notifications.

- So we will use stress in backend
- Now use **nohup stress -c 10 &**
- Press **ctrl+c**

The screenshot shows a terminal window in MobaXterm with the following session history:

```
[root@ip-172-31-45-118 ~]# stress -c 10
stress: info: [3543] dispatching hogs: 10 cpu, 0 io, 0 vm, 0 hdd

[1] 3555
[root@ip-172-31-45-118 ~]# nohup stress -c 10 &
[1] 3555
[root@ip-172-31-45-118 ~]# nohup: ignoring input and appending output to 'nohup.out'

[1] 3555
[root@ip-172-31-45-118 ~]# ps -ef | grep stress
root      3555  3416  0 09:58 pts/0    00:00:00 stress -c 10
root      3556  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3557  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3558  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3559  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3560  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3561  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3562  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3563  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3564  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3565  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3568  3416  0 09:58 pts/0    00:00:00 grep --color=auto stress
```

A red bracket highlights the command `ps -ef | grep stress`. The status bar at the bottom indicates an unregistered version and shows system icons like file explorer, browser, and task manager.

- Now use **ps -ef | grep stress**
- Here 10 processes are ongoing for stress

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store. The main content area displays a table of instances. The first instance is listed with a checkbox and a minus sign. The second instance, 'CPU-Utilization-Work' (ID: i-0e1cc9ca259eb25d0), has a checked checkbox and is highlighted with a blue border. Below the table, a modal window titled 'Instance: i-0e1cc9ca259eb25d0 (CPU-Utilization-Work)' is open. It contains tabs for Details, Security, Networking, Storage, Status checks, Monitoring (which is highlighted with a red box), and Tags. A button labeled 'Manage detailed monitoring' is visible. At the bottom of the screen, there's a taskbar with various icons and a system tray showing the date and time.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

- Now go to instances
- Select the instance which you have connected then click on monitoring

The screenshot shows the AWS EC2 Instances page with two instances listed:

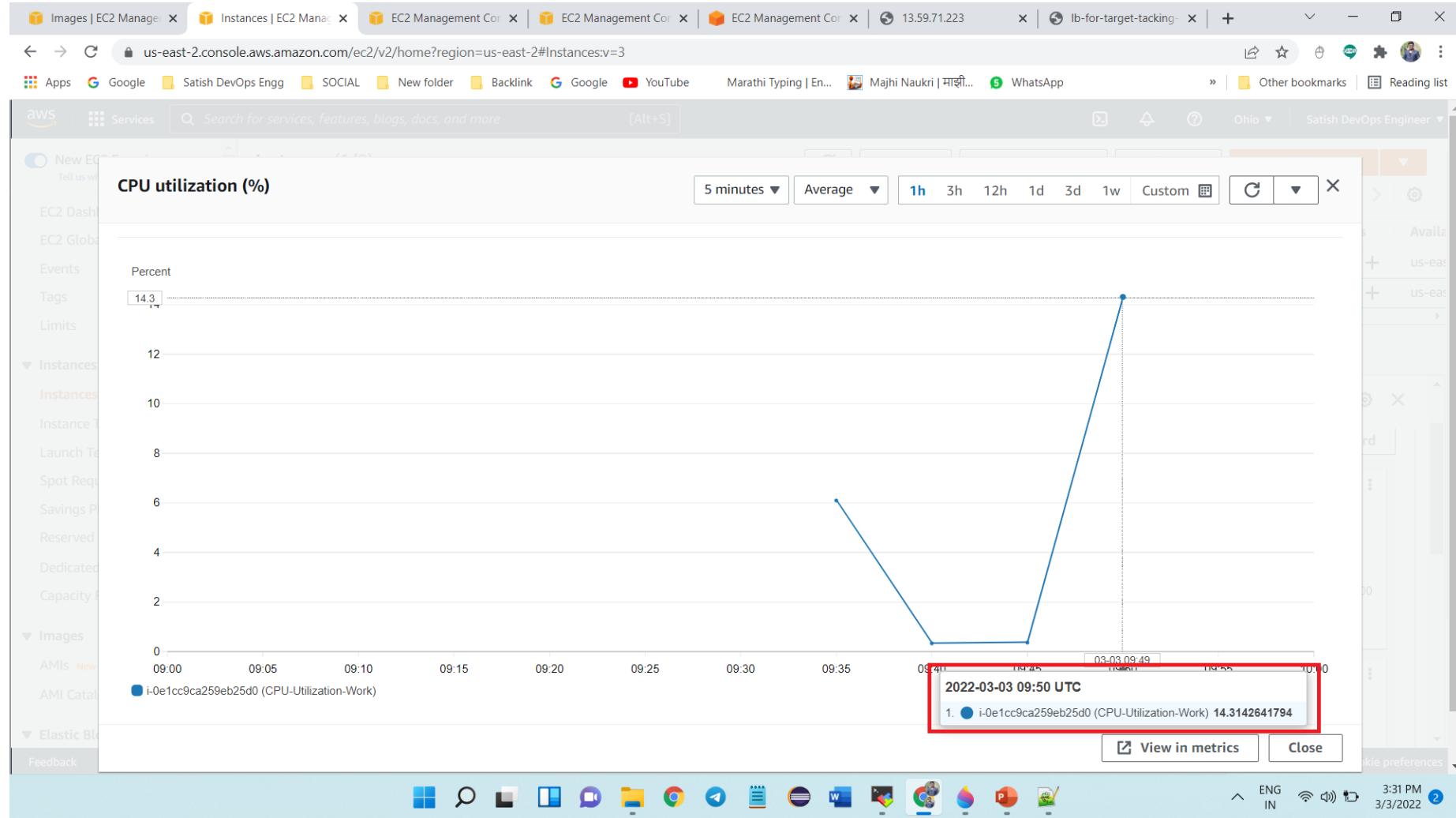
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

The instance **CPU-Utilization-Work** is selected. A modal window titled "Instance: i-0e1cc9ca259eb25d0 (CPU-Utilization-Work)" displays monitoring details. The "CPU utilization (%)" chart is highlighted with a red box. The chart shows utilization over time from 09:00 to 10:00, with values around 7.16% and 14.3%.

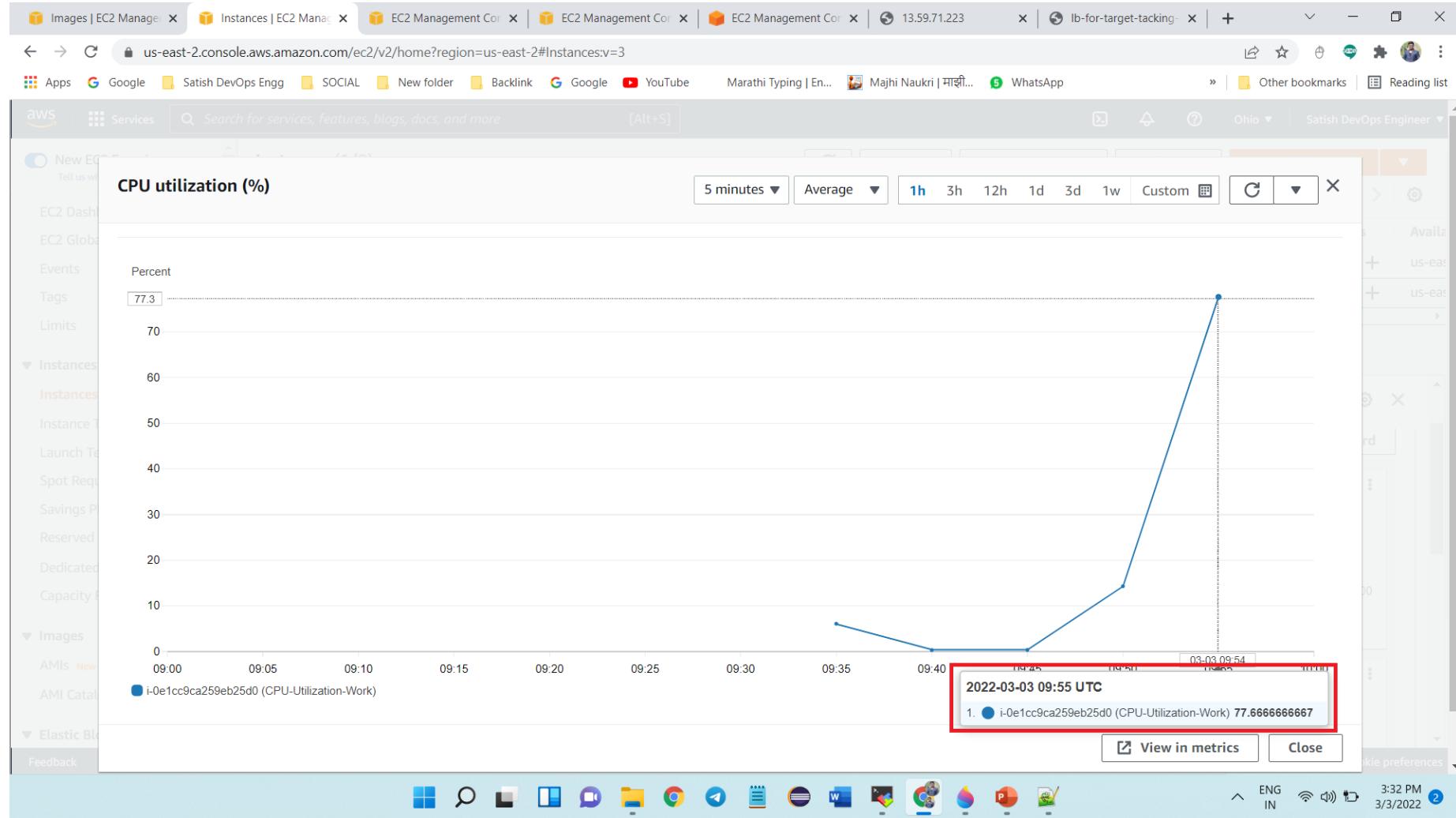
Monitoring metrics shown in the modal:

- CPU utilization (%): Percent (Line chart from 09:00 to 10:00)
- Status check failed (any) (count): Count (Line chart from 09:00 to 10:00)
- Status check failed (instance...) (count): Count (Line chart from 09:00 to 10:00)
- Status check failed (system...) (count): Count (Line chart from 09:00 to 10:00)
- Network in (bytes): Bytes (Line chart from 09:00 to 10:00)
- Network out (bytes): Bytes (Line chart from 09:00 to 10:00)
- Network packets in (count): Count (Line chart from 09:00 to 10:00)
- Network packets out (count): Count (Line chart from 09:00 to 10:00)

- Maximize the CPU Utilization



- Here we can see that our cpu utilization is increasing



- It is now above 60%

The screenshot shows the AWS EC2 Management Console interface. The left sidebar is expanded, showing various services like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with Instances selected), Images, and Elastic Block Store. The main content area is titled "Auto Scaling groups" and displays "Auto Scaling groups (1/1)". A table lists one group: "asg-for-target-trac" (note the misspelling) with a launch template "lc-for-target-tracking". The table columns include Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Available. The "Status" column for the first row shows "Updating capacity". The "Desired capacity" is set to 3. Below the table, there are tabs for Details, Activity, Automatic scaling, Instance management, Monitoring, and Instance refresh. Under the "Group details" section, it shows Desired capacity (2), Auto Scaling group name (asg-for-target-tracking), Minimum capacity (2), and Date created (Thu Mar 03 2022 15:09:34 GMT+0530 (India Standard Time)).

- Here we can see that as the load increases it will scale out the instances

The screenshot shows the AWS EC2 Instances page. The left sidebar is collapsed, and the main area displays a table of instances. The table columns are: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Available. There are three rows:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-0b90bcb65f76791e7	Running	t2.micro	Initializing	No alarms	us-east-2
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

A modal window titled "Select an instance" is open at the bottom of the screen.

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- One new instance is launched

The screenshot shows the AWS Management Console search results for 'cloudwatch'. The search bar at the top contains the query 'cloudwatch'. The results are categorized into 'Services' and 'Features'.

**Services**

- CloudWatch** ☆ Monitor Resources and Applications
- Amazon EventBridge ☆ Serverless event bus that connects application data from your own apps, SaaS, and A...

**Features**

- Servers AWS Transfer Family feature
- CloudWatch Synthetics CloudWatch feature
- CloudWatch Evidently CloudWatch feature
- CloudWatch dashboard

On the right side of the search results, there is a partial view of an Auto Scaling group configuration page. It shows a table with columns for 'Desired capacity', 'Min', 'Max', and 'Availability zone'. The values shown are 2, 6, and us-east-1 respectively. There are also buttons for 'Delete' and 'Create an Auto Scaling group'.

- Now in main search
- Search for CloudWatch
- Click on CloudWatch

The screenshot shows the AWS CloudWatch Alarms interface. On the left, the navigation menu is visible with 'Alarms' selected and 'All alarms' highlighted. The main pane displays a table of alarms:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8	OK	2022-03-03 15:34:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmLow-8aca925a-ac22-4116-97db-d0456e38304d	OK	2022-03-03 15:32:27	CPUUtilization < 42 for 15 datapoints within 15 minutes	Actions enabled

A red box highlights the 'State' column for both rows, showing they are both 'OK'. The entire table area is also enclosed in a red box.

- Here we can see that our alarm state is OK

The screenshot shows the AWS CloudWatch Alarms page. The left sidebar has a 'CloudWatch' tab selected, with 'Alarms' expanded to show 'In alarm' (0), 'All alarms' (2), and other monitoring options like Logs, Metrics, X-Ray traces, Events, Application monitoring, and Insights. The main area displays 'Alarms (2)'. A red box highlights the 'In alarm' status of the second alarm, which is named 'TargetTracking-asg-for-target-tracking-AlarmHigh-...'. The first alarm, 'TargetTracking-asg-for-target-tracking-AlarmLow...', is in 'Insufficient data' state.

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmLow- cd12a8a4-6d83-4eb8-88fb-e36d5d53e140	Insufficient data	2022-03-03 15:37:23	CPUUtilization < 48 for 15 datapoints within 15 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmHigh- bd920ace-1640-4777-9155- 814acf4639c8	In alarm	2022-03-03 15:37:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled

- Now it is changed to In Alarm state

The screenshot shows the AWS CloudWatch Management console with the search bar set to "cloudwatch". The main view is titled "Auto Scaling groups (1/1)". A table lists one Auto Scaling group named "asg-for-target-tracking". The table columns include Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Available. The "Activity" tab is selected under the "Details" section. Below it, the "Activity notifications (0)" section shows a table with columns for Send to and On instance action, stating "No notifications are currently specified".

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Available
asg-for-target-tracking	lc-for-target-tracking	5	-	5	2	6	us-east-2

Activity notifications (0)

Send to	On instance action
No notifications are currently specified	

Create notification

- It has again the desired capacity from 3 to 5

The screenshot shows the AWS EC2 Instances page with the following details:

**Instances (5) Info**

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-0b90bcb65f76791e7	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-00431fec043b92532	Running	t2.micro	Initializing	No alarms	us-east-2
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-0346be631564bbcc3	Running	t2.micro	Initializing	No alarms	us-east-2

**Select an instance**

**Feedback English (US)**

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**ENG IN**

**3:38 PM 3/3/2022**

- Again 2 New instances are launched

The screenshot shows the AWS CloudWatch Alarms interface. On the left, a sidebar menu is open under the 'CloudWatch' heading, with 'Alarms' selected. The main area displays a table titled 'Alarms (2)'. The table has columns for Name, State, Last state update, Conditions, and Actions. Two alarms are listed:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8	OK	2022-03-03 15:39:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmLow-cd12a8a4-6d83-4eb8-88fb-e36d5d53e140	OK	2022-03-03 15:38:35	CPUUtilization < 48 for 15 datapoints within 15 minutes	Actions enabled

The top navigation bar shows the URL as [us-east-2.console.aws.amazon.com/cloudwatch/home?region=us-east-2#alarmsV2](https://us-east-2.console.aws.amazon.com/cloudwatch/home?region=us-east-2#alarmsV2). The browser status bar indicates the IP address 13.59.71.223.

- Here we can see that our alarm state is OK

The screenshot shows the AWS CloudWatch Alarms page. The left sidebar has a 'CloudWatch' tab selected, with 'Alarms' expanded, showing 1 In alarm and 1 OK. The main area displays two alarms in a table:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8	In alarm	2022-03-03 15:42:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmLow-cd12a8a4-6d83-4eb8-88fb-e36d5d53e140	OK	2022-03-03 15:38:35	CPUUtilization < 48 for 15 datapoints within 15 minutes	Actions enabled

At the bottom, there are links for Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons.

- Now it is changed to In Alarm state

The screenshot shows the AWS CloudWatch Metrics console with the search bar set to "cloudwatch". The main content area displays the "Auto Scaling groups" section. A table titled "Auto Scaling groups (1/1)" lists one group named "asg-for-target-tracking". The group details are as follows:

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Available
asg-for-target-tracking	lc-for-target-tracking	6	-	6	2	6	us-east-1

Below the table, there are tabs for "Details", "Activity" (which is selected), "Automatic scaling", "Instance management", "Monitoring", and "Instance refresh". Under the "Activity" tab, there is a section for "Activity notifications (0)".

At the bottom of the page, there is a footer with links for "Feedback", "English (US)", "Privacy", "Terms", and "Cookie preferences". The footer also includes a row of small icons representing various AWS services.

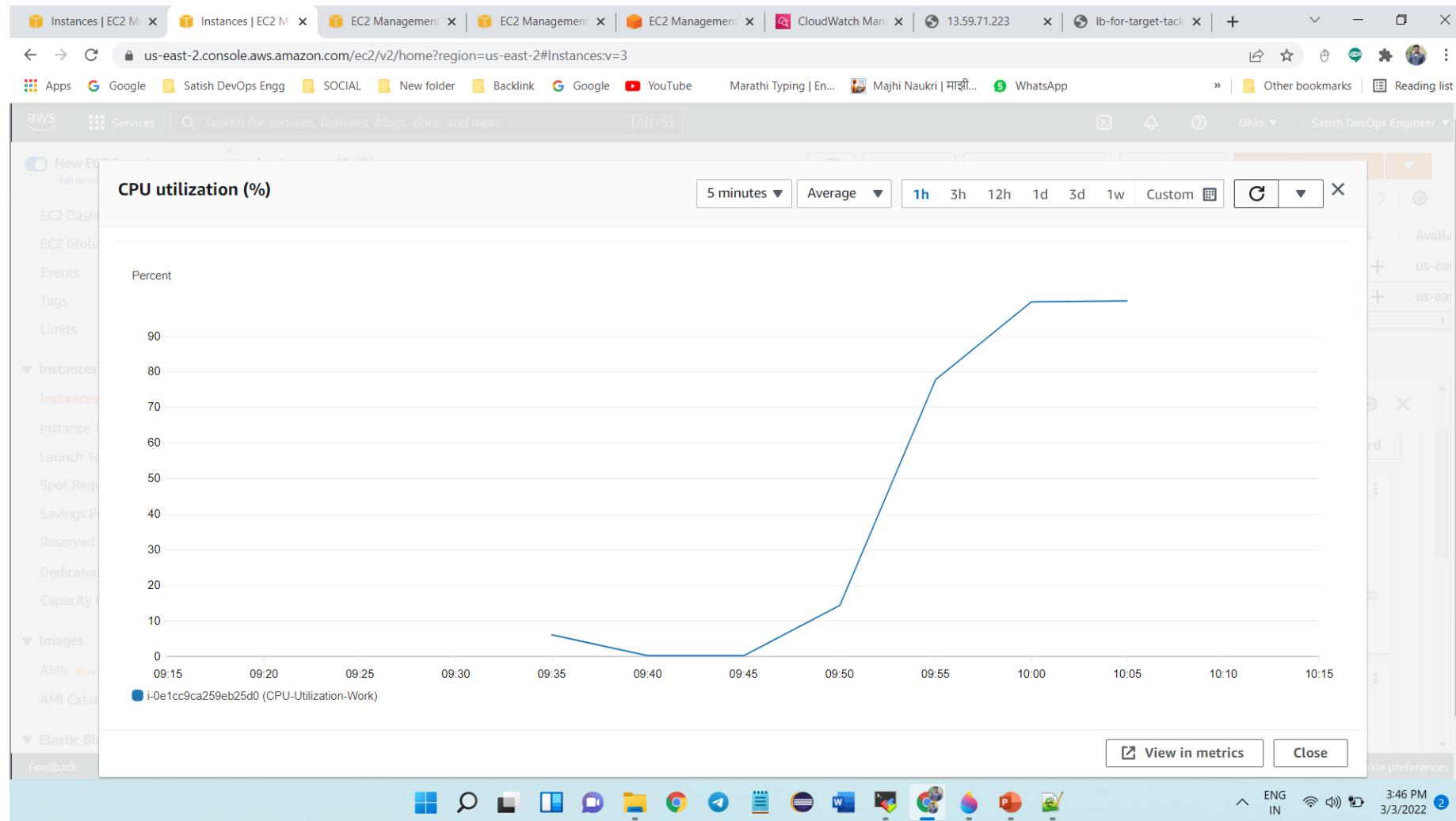
- It has again the desired capacity from 5 to 6

The screenshot shows the AWS EC2 Instances page with the following details:

- Instances (6) Info**: The main table displays six running instances. The columns include Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Available.
- Instance Details**: A modal window titled "Select an instance" is open, listing the same six instances for selection.
- Left Sidebar**: The sidebar includes sections for EC2 Dashboard, Events, Tags, Limits, Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store.
- Header**: The header shows the URL as us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:v3 and includes links for Apps, Google, and various social media and productivity tools.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-0b90bcb65f76791e7	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-029fda26845c84706	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-00431fec043b92532	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-0346be631564bbcc3	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-04265cb79ad571f0a	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

- Now we are reached to maximum capacity



The screenshot shows a MobaXterm window with a terminal session running as root. The terminal window has a title bar with tabs labeled 'Session', 'Servers', 'Tools', 'Games', 'Sessions', 'View', 'Split', 'MultiExec', 'Tunneling', 'Packages', 'Settings', 'Help', 'X server', and 'Exit'. The main pane displays the following terminal session:

```
[root@ip-172-31-45-118 /]# nohup stress -c 10 &
[1] 3555
[root@ip-172-31-45-118 /]# nohup: ignoring input and appending output to 'nohup.out'

[root@ip-172-31-45-118 /]# ps -ef | grep stress
root      3555  3416  0 09:58 pts/0    00:00:00 stress -c 10
root      3556  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3557  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3558  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3559  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3560  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3561  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3562  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3563  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3564  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3565  3555  9 09:58 pts/0    00:00:03 stress -c 10
root      3568  3416  0 09:58 pts/0    00:00:00 grep --color=auto stress
[root@ip-172-31-45-118 /]#
[root@ip-172-31-45-118 /]#
[root@ip-172-31-45-118 /]#
[root@ip-172-31-45-118 /]#
[root@ip-172-31-45-118 /]#
[root@ip-172-31-45-118 /]#
[root@ip-172-31-45-118 /]# kill -9 3555 3556 3557 3558 3559 3560 3561 3562 3563 3564 3565
```

The command `kill -9 3555 3556 3557 3558 3559 3560 3561 3562 3563 3564 3565` is highlighted with a red box.

- Now go to MobaXterm
- Then kill the processed

```
root@ip-172-31-45-118:~# ps -ef | grep stress
root      3658  3416  0 10:18 pts/0    00:00:00 grep --color=auto stress
[1]+  Killed                  nohup stress -c 10
root@ip-172-31-45-118:~#
```

- Now there is no any ongoing process

The screenshot shows the AWS CloudWatch Alarms interface. On the left, a sidebar menu is open under the 'CloudWatch' heading, with 'Alarms' selected. The main area displays a table titled 'Alarms (2)'. The table has columns for Name, State, Last state update, Conditions, and Actions. Two alarms are listed:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8	OK	2022-03-03 15:49:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmLow-cd12a8a4-6d83-4eb8-88fb-e36d5d53e140	OK	2022-03-03 15:38:35	CPUUtilization < 48 for 15 datapoints within 15 minutes	Actions enabled

The top navigation bar shows the URL as [us-east-2.console.aws.amazon.com/cloudwatch/home?region=us-east-2#alarmsV2](https://us-east-2.console.aws.amazon.com/cloudwatch/home?region=us-east-2#alarmsV2). The browser toolbar includes various icons for apps, Google search, and social media.

- Here we can see that our alarm state is OK

The screenshot shows the AWS CloudWatch Management console with the search bar set to "cloudwatch". The main view is titled "Auto Scaling groups (1/1)". A table lists one Auto Scaling group named "asg-for-target-tracking". The table columns include Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Available. The "Activity" tab is selected under the "Details" section. Below it, the "Activity notifications (0)" section shows a table with columns for Send to and On instance action, stating "No notifications are currently specified".

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Available
asg-for-target-tracking	lc-for-target-tracking	6	-	6	2	6	us-east-

Activity notifications (0)

Send to	On instance action
No notifications are currently specified	

Create notification

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- Wait for Some Time



- Now our CPU utilization is decreased

The screenshot shows the AWS CloudWatch Alarms page. The left sidebar has a 'CloudWatch' tab selected, with 'Alarms' expanded, showing 2 alarms. The main area displays a table of alarms with columns for Name, State, Last state update, Conditions, and Actions. Two alarms are listed:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmLow- cd12a8a4-6d83-4eb8-88fb-e36d5d53e140	In alarm	2022-03-03 16:03:35	CPUUtilization < 48 for 15 datapoints within 15 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmHigh- bd920ace-1640-4777-9155-814acf4639c8	OK	2022-03-03 15:49:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled

At the bottom, there are links for Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons.

- Now it is changed to In Alarm state

The screenshot shows the AWS EC2 Management console with the URL <https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/details?id=asg-for-target-tracking&view=activity>. The left sidebar is expanded, showing the 'Instances' section with 'Instances New' selected. The main content area displays the 'Auto Scaling groups' page. A table lists one Auto Scaling group:

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Available
asg-for-target-tr...	lc-for-target-tracking	6	-	5	2	6	us-east-

The 'Activity' tab is selected in the navigation bar below the table. The 'Activity notifications' section shows 0 notifications. The footer contains standard AWS links like Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons.

- It has again the desired capacity from 6 to 5

The screenshot shows the AWS CloudWatch Alarms page. The left sidebar has a 'CloudWatch' tab selected, with 'Alarms' expanded to show 1 warning and 1 OK alarm. The main area displays two alarms in a table:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmLow-7b40f525-db8a-440d-906c-380c5383ced3	Insufficient data	2022-03-03 16:05:11	CPUUtilization < 42 for 15 datapoints within 15 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8	OK	2022-03-03 15:49:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled

At the bottom, there are links for Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons.

- Please wait for some time

The screenshot shows the AWS EC2 Management console with the URL [us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/details?id=asg-for-target-tracking&view=activity](https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/details?id=asg-for-target-tracking&view=activity). The left sidebar is expanded, showing categories like Instances, Images, and Elastic Block Store. The main content area displays the 'Auto Scaling groups' section. A table lists one Auto Scaling group:

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Available
asg-for-target-tr...	lc-for-target-tracking	6	Updating capacity	2	2	6	us-east-

The 'Activity' tab is selected in the navigation bar below the table. The 'Activity notifications' section shows no notifications at the moment.

- Here we can see that it is updating capacity
- Now desired capacity is becomes 2

The screenshot shows the AWS CloudWatch Alarms page. The left sidebar has a 'CloudWatch' tab selected, with 'Alarms' expanded to show 1 warning and 1 OK alarm. The main area displays two alarms in a table:

Name	State	Last state update	Conditions	Actions
TargetTracking-asg-for-target-tracking-AlarmLow-7b40f525-db8a-440d-906c-380c5383ced3	In alarm	2022-03-03 16:05:25	CPUUtilization < 42 for 15 datapoints within 15 minutes	Actions enabled
TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8	OK	2022-03-03 15:49:23	CPUUtilization > 60 for 3 datapoints within 3 minutes	Actions enabled

At the bottom, there are links for Feedback, English (US), Privacy, Terms, and Cookie preferences, along with system status icons.

- Wait for some time again



- CPU utilization Becomes 0

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EC2 Auto Scaling groups

### Auto Scaling groups (1/1)

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Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability zone
asg-for-target-tr...	lc-for-target-tracking	6	Updating capacity	2	2	6	us-east-

### Activity

Status	Description	Cause	Start time	End time
Successful	Launching a new EC2 instance: i-04265cb79ad571f0a	At 2022-03-03T10:12:23Z a monitor alarm TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8 in state ALARM triggered policy Target Tracking Policy changing the desired capacity from 5 to 6. At 2022-03-03T10:12:34Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 5 to 6.	2022 March 03, 03:42:36 PM +05:30	2022 March 03, 03:42:36 PM +05:30
Successful	Launching a new EC2 instance: i-0346be631564bbcc3	At 2022-03-03T10:07:23Z a monitor alarm TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8 in state ALARM triggered policy Target Tracking Policy changing the desired capacity from 3 to 5. At 2022-03-03T10:07:29Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 3 to 5.	2022 March 03, 03:37:31 PM +05:30	2022 March 03, 03:37:31 PM +05:30
	Launching a new EC2	At 2022-03-03T10:07:23Z a monitor alarm TargetTracking-asg-for-target-tracking-AlarmHigh-bd920ace-1640-4777-9155-814acf4639c8 in state ALARM triggered policy Target Tracking Policy	2022 March 03, 03:37:31 PM +05:30	2022 March 03, 03:37:31 PM +05:30

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The screenshot shows the AWS EC2 Instances page with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-0b90bcb65f76791e7	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-029fda26845c84706	Shutting-down	t2.micro	-	No alarms	us-east-2
-	i-00431fec043b92532	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-0346be631564bbcc3	Running	t2.micro	2/2 checks passed	No alarms	us-east-2
-	i-04265cb79ad571f0a	Running	t2.micro	2/2 checks passed	No alarms	us-east-2

A modal window titled "Select an instance" is open over the table, indicating that one instance is currently shutting down.

- Now it is terminating 1 random instance automatically

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EC2 > Auto Scaling groups

### Auto Scaling groups (1/1)

Search your Auto Scaling groups

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability zone
asg-for-target-tr...	lc-for-target-tracking	5	Updating capacity	2	2	6	us-east-

WaitingForELBConnectionDraining instance: i-00431fec043b92532 - Waiting For ELB Connection Draining. 7b40f525-db8a-440d-906c-380c5383ced3 in state ALARM triggered policy Target Tracking Policy changing the desired capacity from 3 to 2. At 2022-03-03T10:35:25Z an instance was taken out of service in response to a difference between desired and actual capacity, shrinking the capacity from 3 to 2. At 2022-03-03T10:35:26Z instance i-00431fec043b92532 was selected for termination. 2022 March 03, 04:05:26 PM +05:30

WaitingForELBConnectionDraining instance: i-0b90bc65f76791e7 - Waiting For ELB Connection Draining. At 2022-03-03T10:35:11Z a monitor alarm TargetTracking-asg-for-target-tracking-AlarmLow-61c4ff77-9462-4bed-a1dd-692ff25a3304 in state ALARM triggered policy Target Tracking Policy changing the desired capacity from 4 to 3. At 2022-03-03T10:35:16Z an instance was taken out of service in response to a difference between desired and actual capacity, shrinking the capacity from 4 to 3. At 2022-03-03T10:35:16Z instance i-0b90bc65f76791e7 was selected for termination. 2022 March 03, 04:05:16 PM +05:30

InProgress Terminating EC2 instance: i-0e1cc9ca259eb25d0 At 2022-03-03T10:34:36Z a monitor alarm TargetTracking-asg-for-target-tracking-AlarmLow-cd12a8a4-6d83-4eb8-88fb-e36d5d53e140 in state ALARM triggered policy Target Tracking Policy changing the desired capacity from 5 to 4. At 2022-03-03T10:34:46Z an instance was taken out of service in response to a difference between desired and actual capacity, shrinking the capacity from 5 to 4. At 2022-03-03T10:34:46Z instance i-0e1cc9ca259eb25d0 was selected for termination. 2022 March 03, 04:04:46 PM +05:30

The screenshot shows the AWS EC2 Instances page. The left sidebar lists various EC2-related options like EC2 Dashboard, Events, Tags, Limits, Instances (with 'Instances New' selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, and Elastic Block Store. The main content area displays a table of instances with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available
-	i-0b90bcb65f76791e7	Shutting-down	t2.micro	-	No alarms	+
-	i-029fda26845c84706	Terminated	t2.micro	-	No alarms	+
-	i-00431fec043b92532	Shutting-down	t2.micro	-	No alarms	+
CPU-Utilization-Work	i-0e1cc9ca259eb25d0	Terminated	t2.micro	-	No alarms	+
-	i-0346be631564bbcc3	Running	t2.micro	2/2 checks passed	No alarms	+
-	i-04265cb79ad571f0a	Running	t2.micro	2/2 checks passed	No alarms	+

A red box highlights the first four rows (the terminated instances). A modal window titled "Select an instance" is open over the terminated instances, showing the same list of terminated instances.

- Now it has terminated total 4 random instances automatically

**In this way we have seen that how  
Target tracking Policy works**