

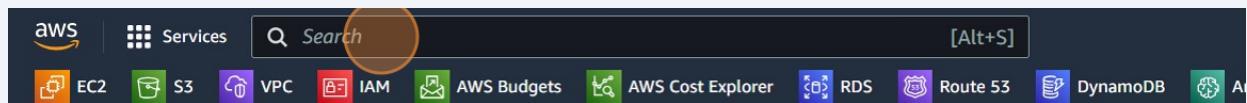
# Application Load Balancer (ALB)

This guide provides step-by-step instructions on how to set up an Application Load Balancer (ALB) on AWS. It includes detailed instructions on launching instances, creating security groups and target groups, and configuring the ALB. If you need to distribute incoming traffic across multiple instances, this guide will help you set up an ALB efficiently.

This guide was created by Nijat Hajiyev

- 1 Navigate to [aws.amazon.com](https://aws.amazon.com)

- 2 Click the "Search" field.



## Console Home Info

### Recently visited Info

- EC2
- Route 53
- AWS Budgets
- Amazon Textract
- Amazon Forecast
- Amazon Comprehend

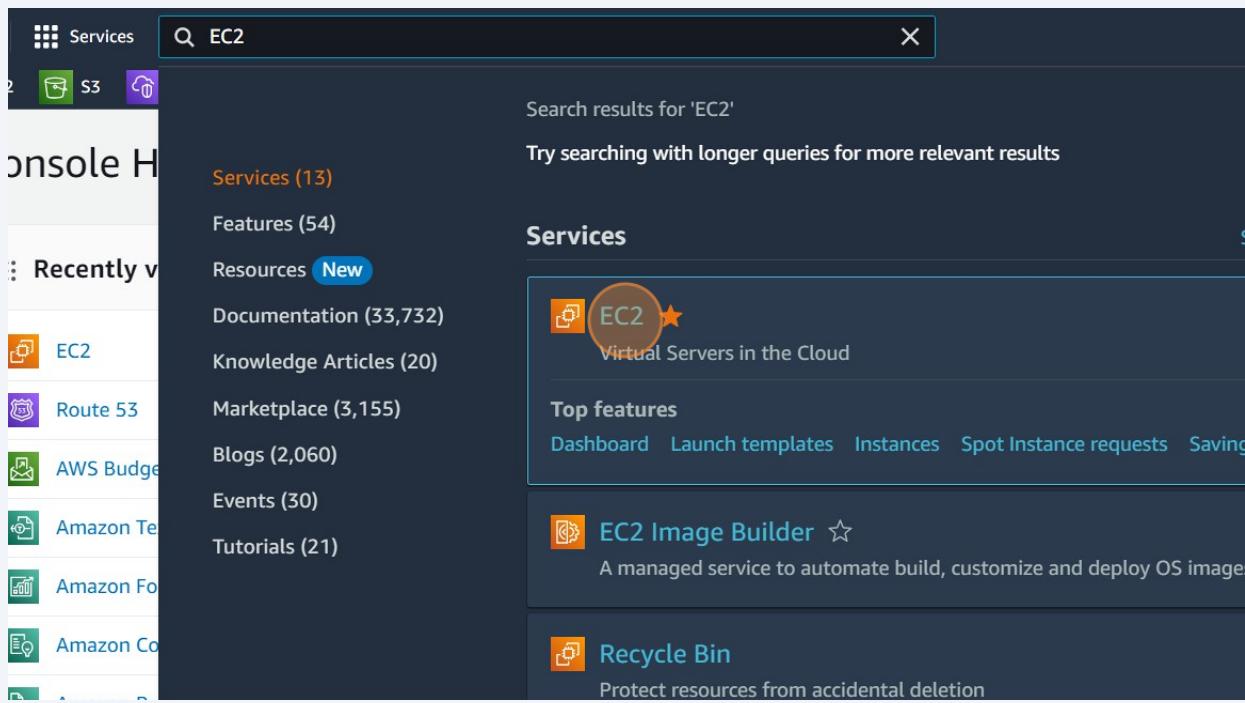
- Amazon Transcribe
- Amazon Rekognition
- Billing
- AWS Resource Explorer

### Welcome to AW

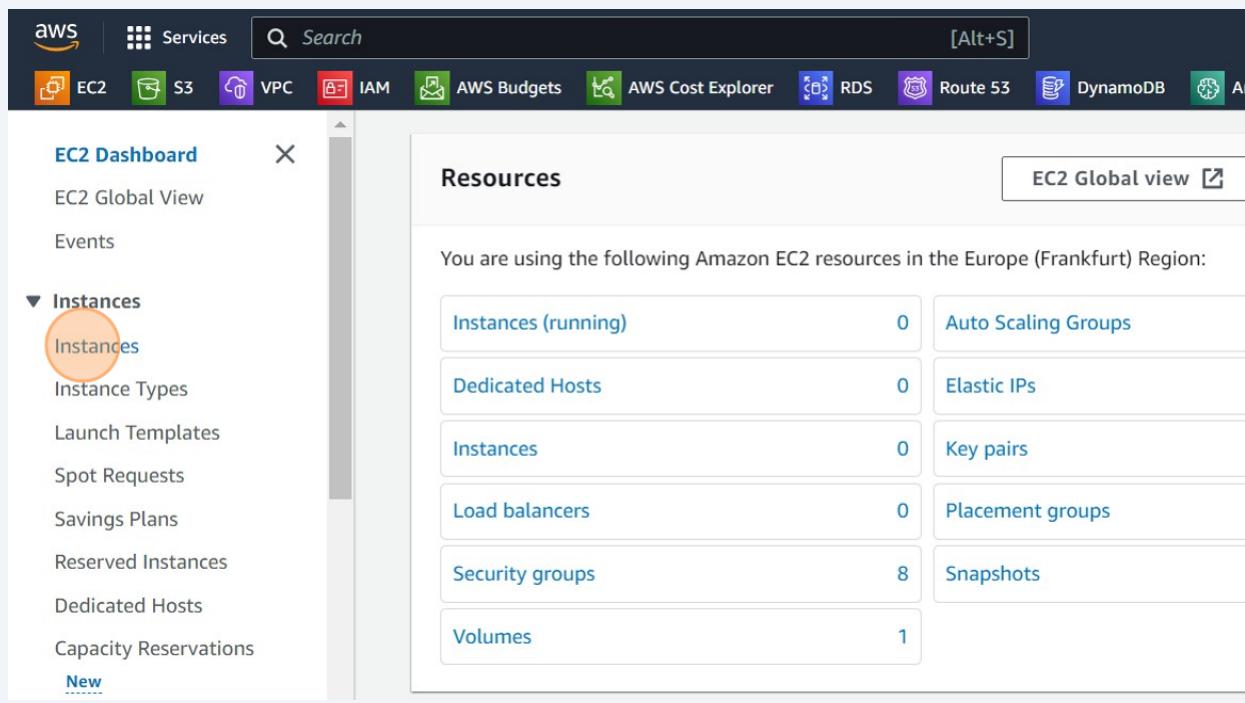
- Getting started with AWS Info  
Learn the fundamentals of AWS to find valuable resources and get the most out of your AWS experience.
- Training and certification Info  
Learn from AWS training courses to advance your skills and earn certifications.

- 3 Type "EC2"

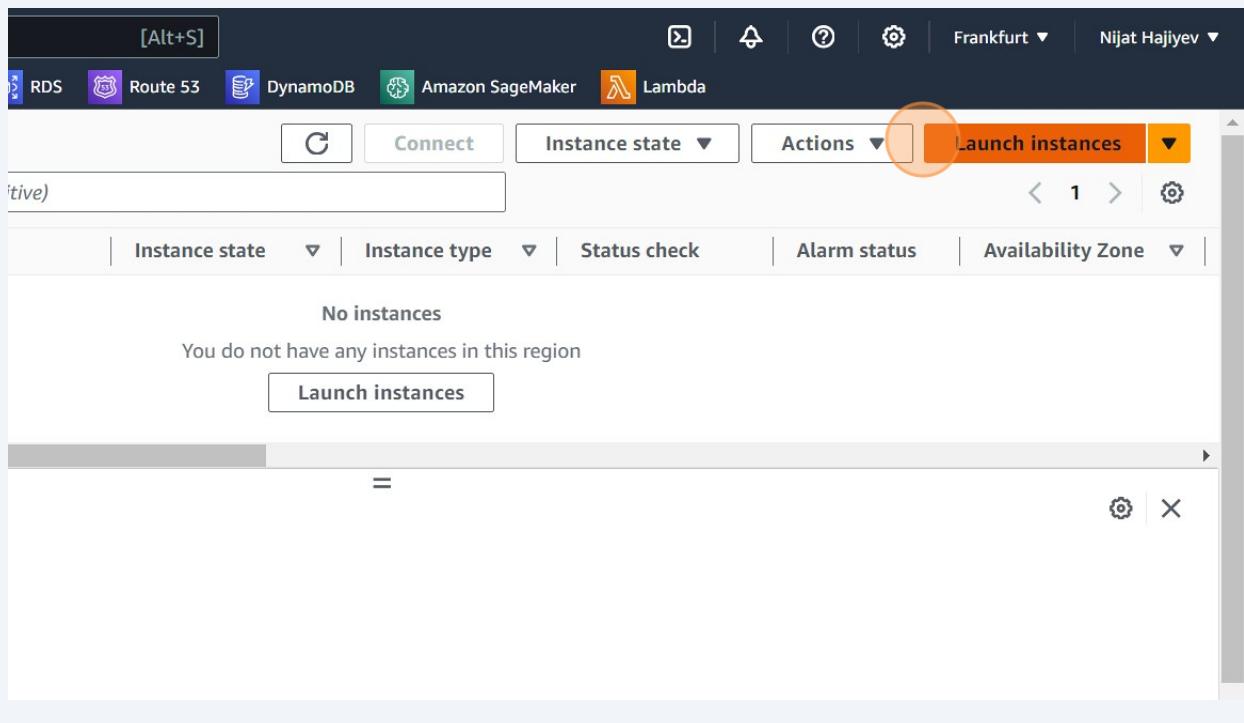
4 Click "EC2"



5 Click "Instances"



- 6 Click "Launch instances"



- 7 Click the "Name" field.

## Launch an instance Info

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

### Name and tags Info

Name

e.g. My Web Server

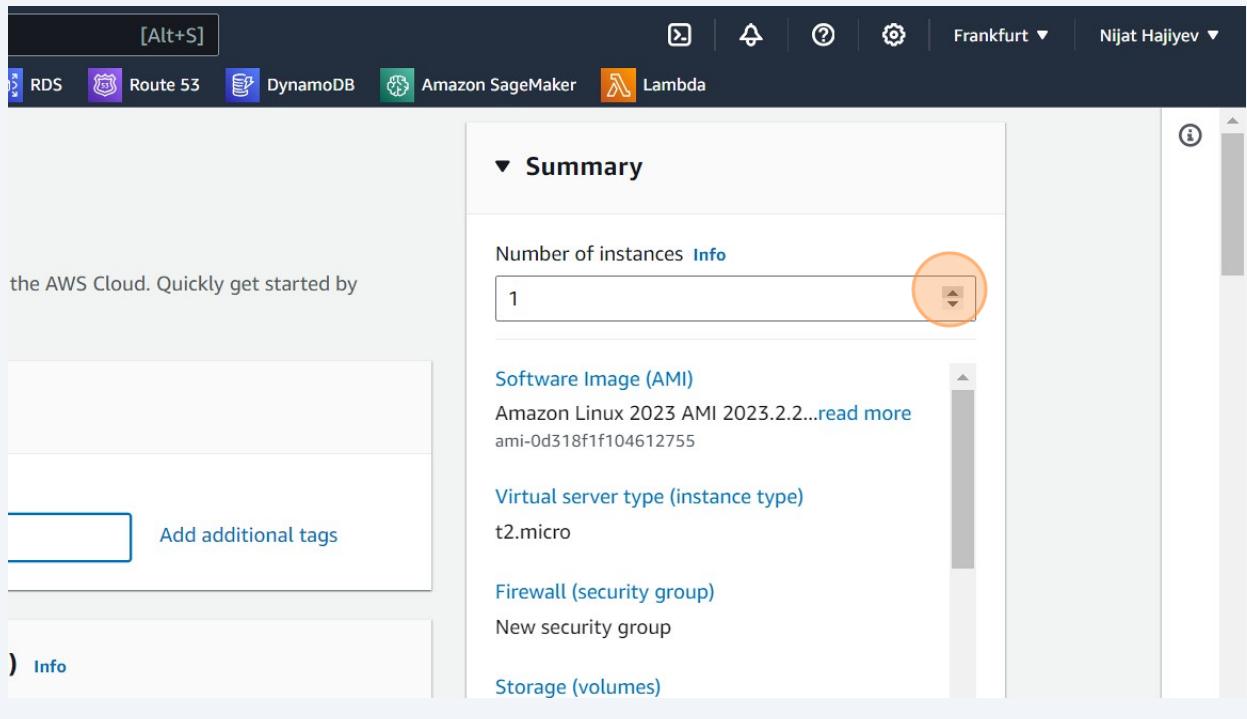
Add additional tags

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

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

- 8 Type "Instance-1"

- 9 Click the "Number of instances Info:" field. Make "2"



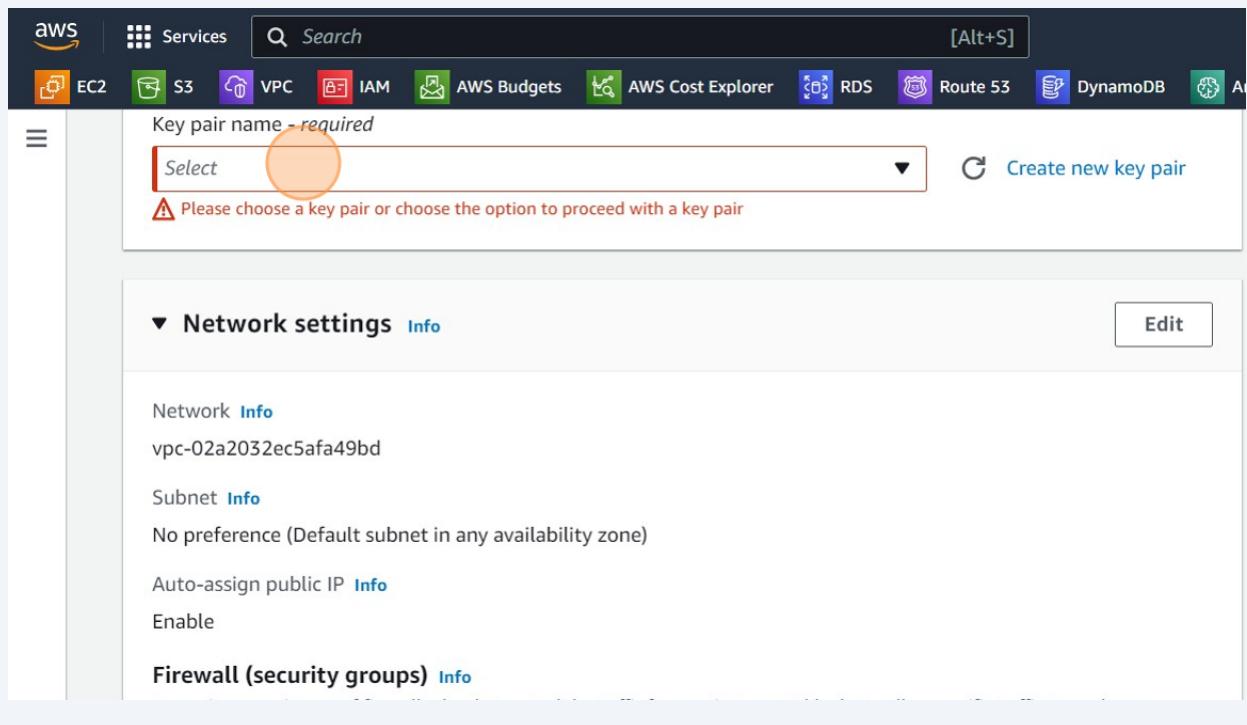
## 10 Click "Free tier eligible"

The screenshot shows the AWS Services navigation bar with EC2 selected. Below it, a search bar and a 'Services' dropdown are visible. A 'Search' field contains the text 'Search'. The main content area displays a grid of AMI icons for Linux, AWS Mac, Ubuntu, Microsoft, Red Hat, and SUSI. To the right, a link 'Browse more AMIs' is shown with the note 'Including AMIs from AWS, Marketplace and the Community'. Below the grid, a section titled 'Amazon Machine Image (AMI)' lists the 'Amazon Linux 2023 AMI' with its details: ami-0d318f1f104612755 (64-bit (x86)) / ami-06e14f82ec5afe2af (64-bit (Arm)), Virtualization: hvm, ENA enabled: true, Root device type: ebs. A 'Free tier eligible' badge is present. A description below states 'Amazon Linux 2023 AMI 2023.2.20231026.0 x86\_64 HVM kernel-6.1'. Under 'Architecture', a dropdown menu shows '64-bit (x86)'. Under 'AMI ID', the value 'ami-0d318f1f104612755' is listed next to a 'Verified provider' badge.

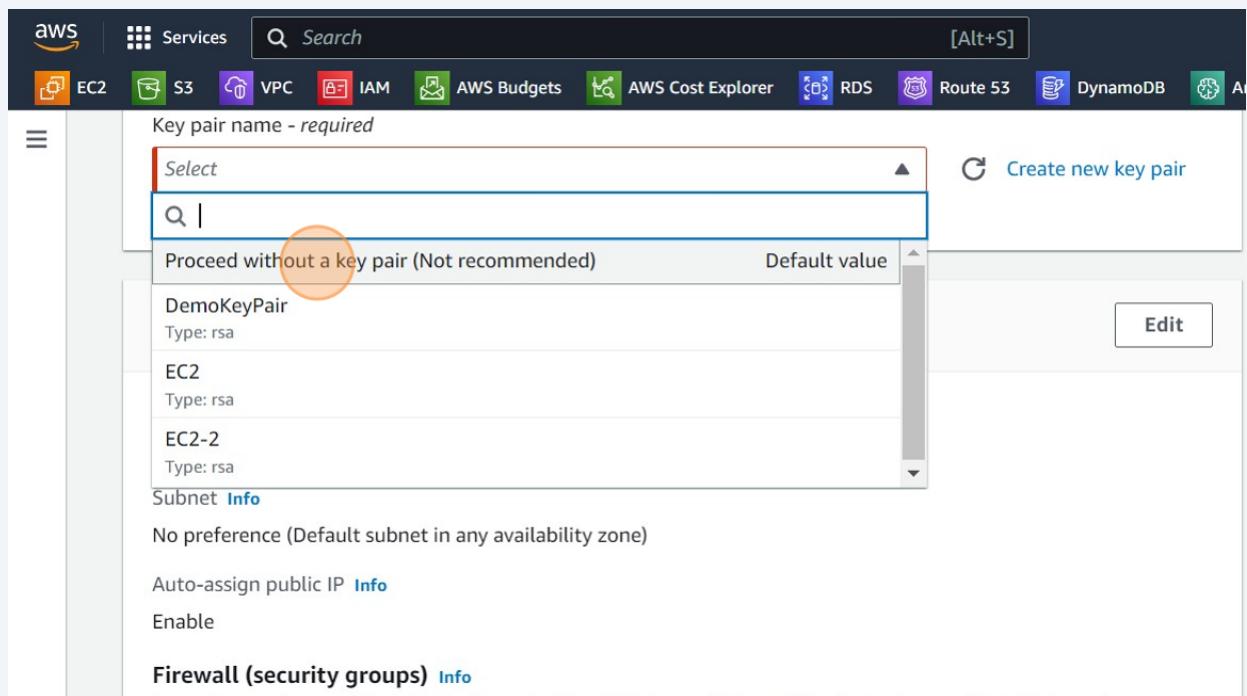
## 11 Click "Amazon Linux 2 AMI(HVM) - Kernel 5.10, SSD Volume Type"

The screenshot shows the same search interface as the previous one. The search term 'Amazon Linux 2 AMI(HVM) - Kernel 5.10, SSD Volume Type' has been entered into the search bar. The results list includes the 'Amazon Linux 2023 AMI' at the top, followed by the target item, 'Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type', which is also highlighted with an orange circle. This item has the same detailed description and badge as the first one. Below these, other items like 'Amazon Linux 2 LTS with SQL Server 2019 Standard' and 'Amazon Linux 2 LTS with SQL Server 2017 Standard' are listed. At the bottom, there is a section for 'Instance type'.

12 Click "Select"



13 Click "Proceed without a key pair (Not recommended)"



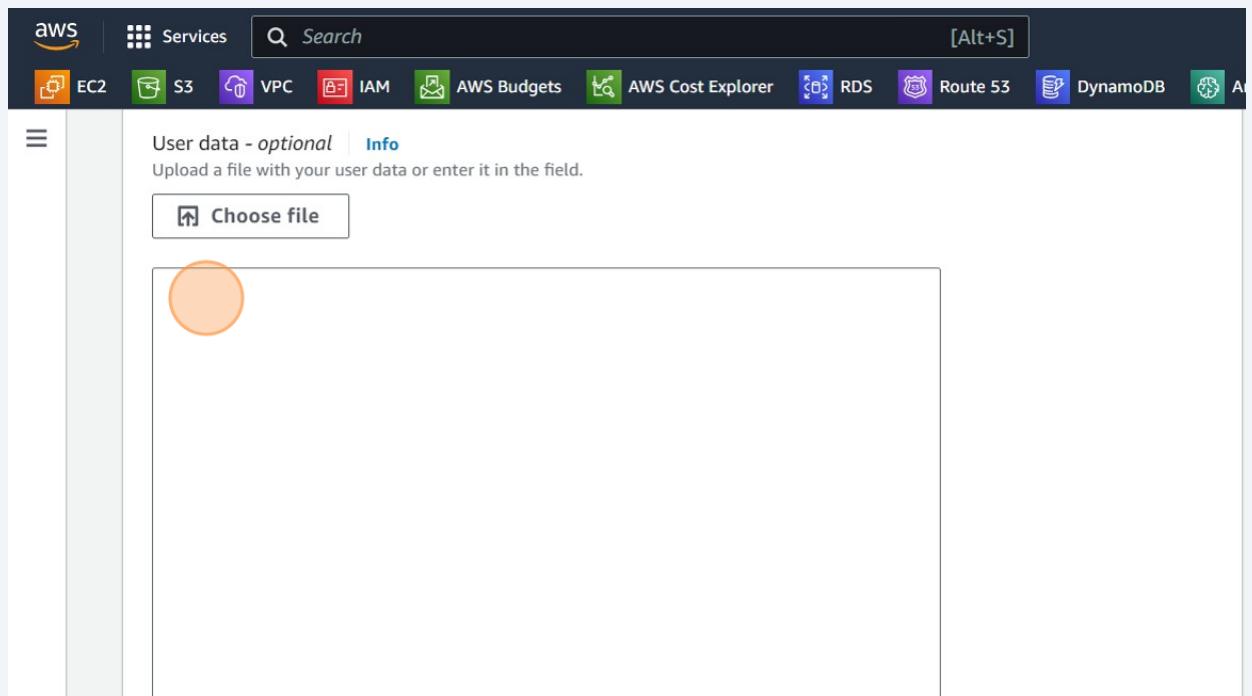
## 14 Allow HTTP traffic from the internet

The screenshot shows the AWS EC2 Security Groups interface. At the top, there's a navigation bar with tabs like Services, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and others. Below the navigation bar, it says "No preference (Default subnet in any availability zone)". There are two buttons: "Create security group" (selected) and "Select existing security group". A note below says "We'll create a new security group called 'launch-wizard-10' with the following rules:". There are three checkboxes: "Allow SSH traffic from Anywhere (0.0.0.0/0)" (checked), "Allow HTTPS traffic from the internet To set up an endpoint, for example when creating a web server" (unchecked), and "Allow HTTP traffic from the internet To set up an endpoint, for example when creating a web server" (checked). A warning message in a yellow box says: "⚠ 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." An orange arrow points to the "Allow HTTP traffic from the internet" checkbox.

## 15 Click "Advanced details"

The screenshot shows the AWS EC2 instance configuration page. It includes sections for "Configure storage" (with a root volume of 8 GiB gp2), "File systems" (0 x File systems), and "Advanced details". The "Advanced details" section is circled in orange. At the bottom, there are links for "CloudShell" and "Feedback".

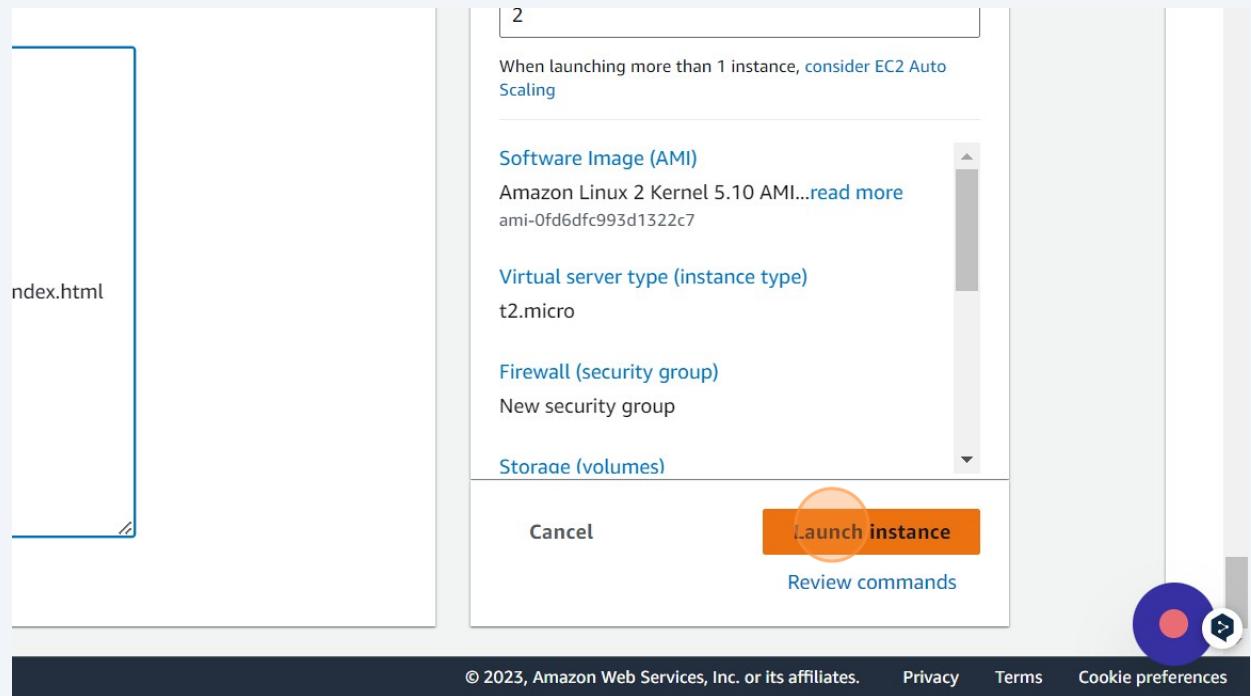
- 16** Click the "User data - optional" field.



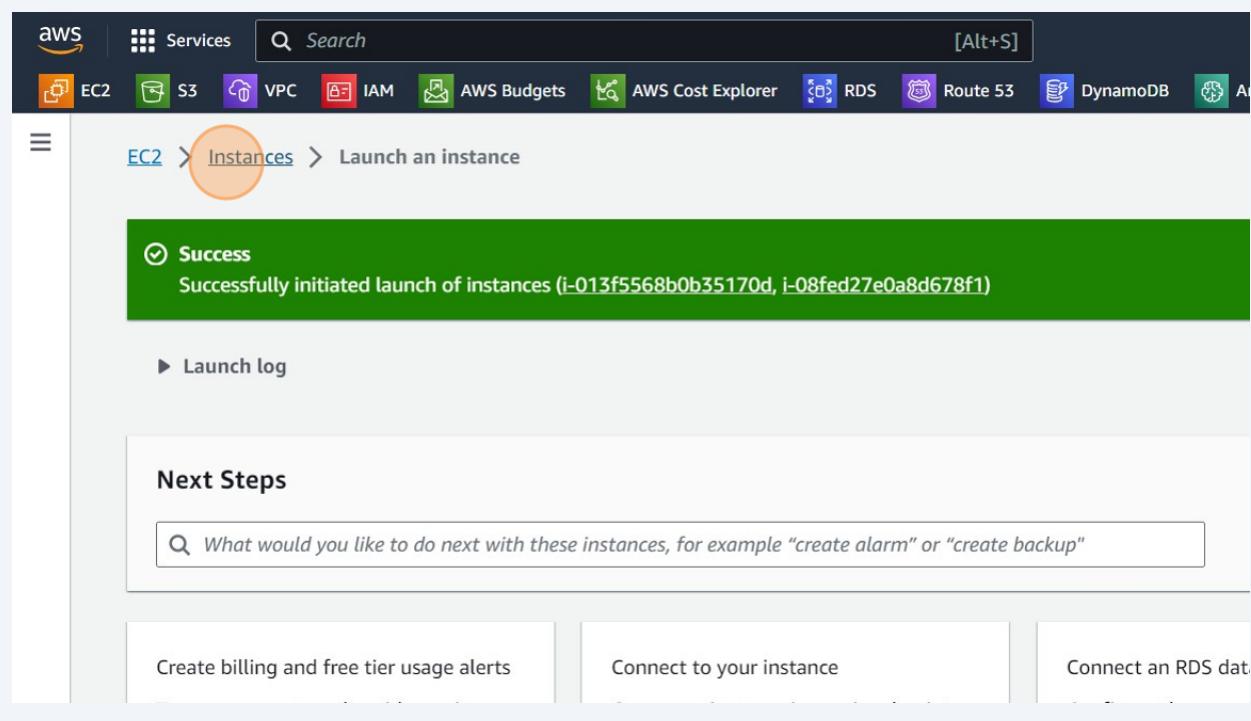
- 17** Paste:

```
#!/bin/bash
#Use this for your user data (script from top to bottom)
#install httpd (Linux 2 version)
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1>Hello World from $(hostname -f)</h1>" > /var/www/html/index.html
```

## 18 Click "Launch instance"



## 19 Click "Instances"



**20** Click here.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with various EC2-related options like Instances, Instance Types, and Launch Templates. The main area displays a table of instances. The second row in the table is highlighted with a red circle around its edit icon. The table columns include Name, Instance ID, Instance state, and Instance type.

Name	Instance ID	Instance state	Instance type
Instance-1	i-08fed27e0a8d678f1	Pending	t2.micro
Instance-1	i-013f5568b0b35170d	Pending	t2.micro

**21** Type " Backspace 2"

22 Click here.

The screenshot shows the AWS EC2 Instances page. On the left, a sidebar lists various EC2-related options like EC2 Dashboard, Global View, Events, Instances, and Capacity Reservations. The 'Instances' section is expanded, and 'Instances' is selected. The main pane displays a table of instances with columns for Name, Instance ID, Instance state, and Instance type. Two instances are listed: 'Instance-1' (pending, t2.micro) and 'Instance-2' (pending, t2.micro). A red circle highlights the checkbox for 'Instance-2'. Below the table, a detailed view for 'Instance-2' is shown, including tabs for Details, Security, Networking, Storage, Status checks, and Monitoring. The 'Details' tab is active.

23 Click this checkbox.

The screenshot shows the AWS EC2 Instances page. The sidebar and instance table are identical to the previous screenshot. However, the checkbox for 'Instance-1' is now checked (blue checkmark), and a red circle highlights this checked checkbox. The detailed view for 'Instance-1' is displayed below the table.

**24** Click here.

The screenshot shows the AWS Lambda console. At the top, there are navigation links for Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda. Below this, the 'Info' tab is selected. A search bar contains the placeholder text 'Search by attribute or tag (case-sensitive)'. A red circle highlights the 'Connect' button. To its right are dropdown menus for 'Instance state' and 'Actions'. The main table lists two Lambda functions:

	Instance ID	Instance state	Instance type	Status check	Alarm status
ce-1	i-08fed27e0a8d678f1	Pending	t2.micro	-	No alarms +
ce-2	i-013f5568b0b35170d	Pending	t2.micro	-	No alarms +

A large red circle highlights the 'Connect' button in the top right corner of the table header.

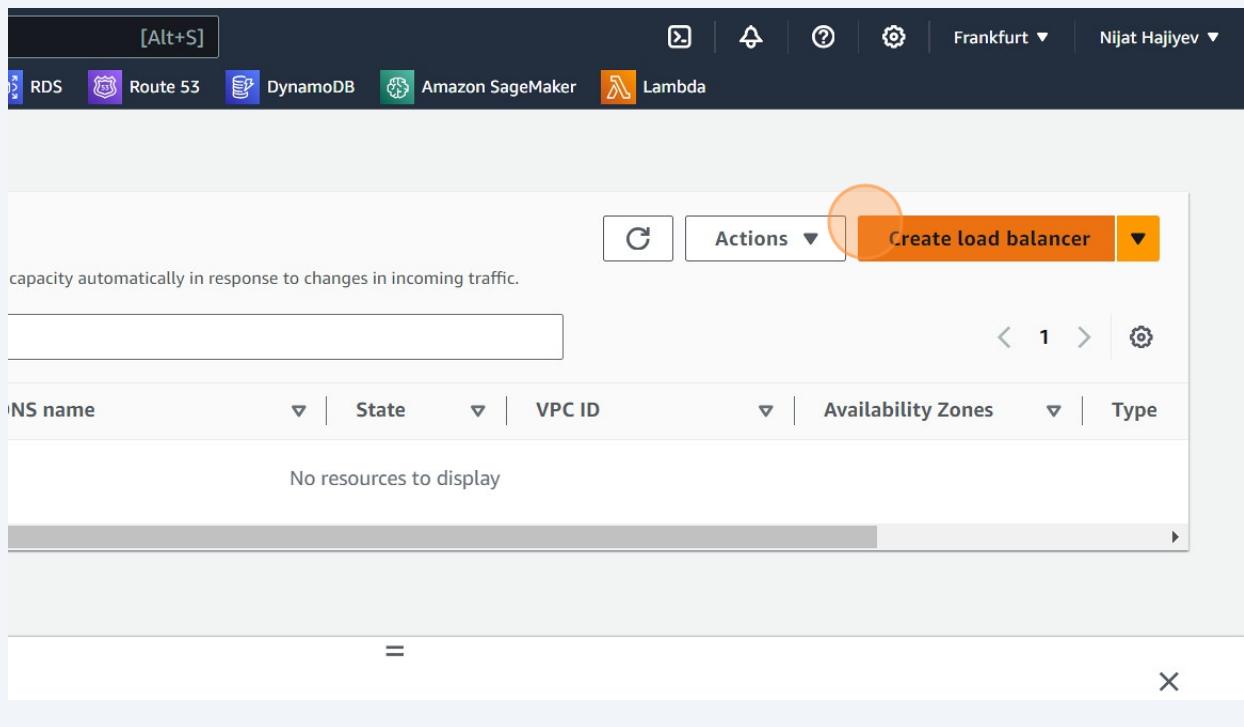
**25** Click "Load Balancers"

The screenshot shows the AWS CloudWatch Metrics console. On the left, a sidebar menu includes 'Snapshots', 'Lifecycle Manager', 'Network & Security' (with 'Security Groups', 'Elastic IPs', 'Placement Groups', 'Key Pairs', and 'Network Interfaces'), 'Load Balancing' (with 'Load Balancers' highlighted by a red circle), and 'Auto Scaling' (with 'Auto Scaling Groups'). The main area displays a table of metrics:

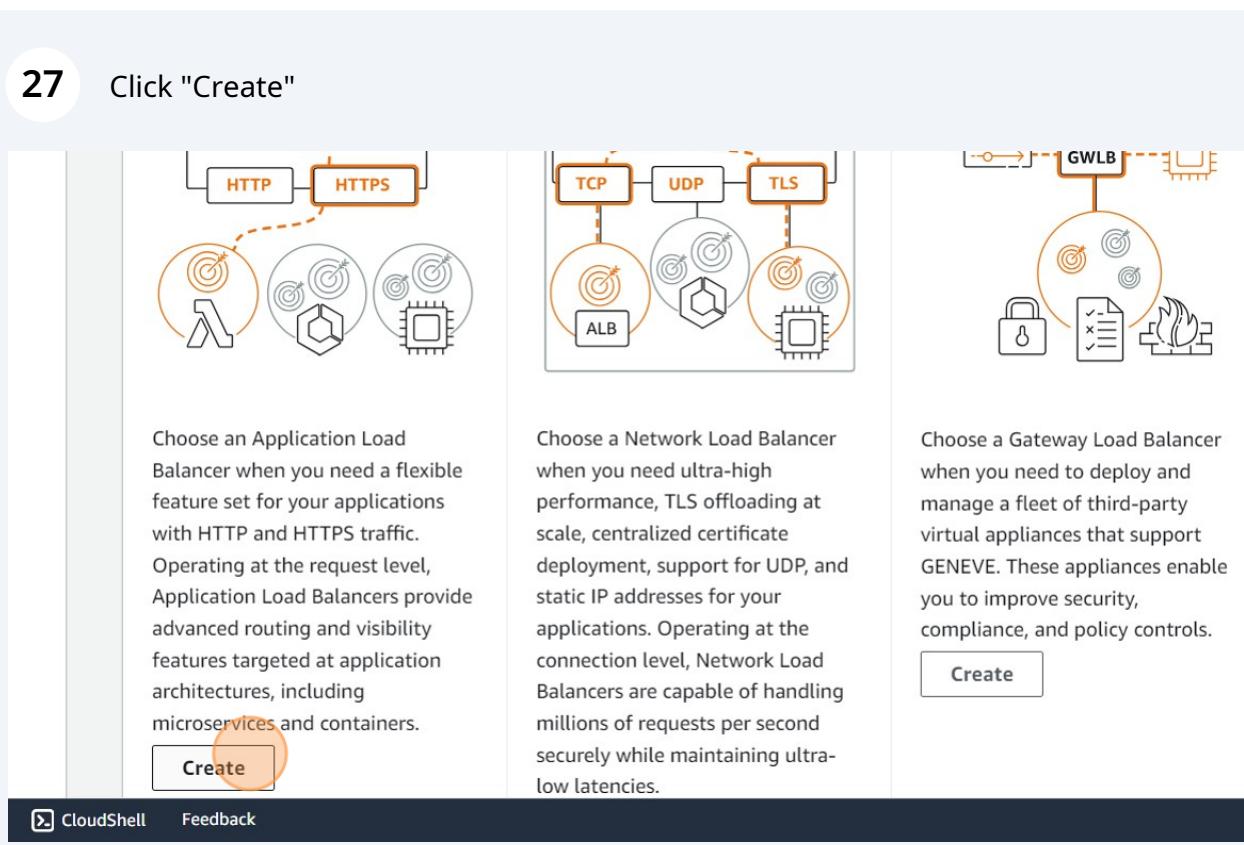
Name	Instance ID	Instance state	Instance type
Instance-1	i-08fed27e0a8d678f1	Running	t2.micro
Instance-2	i-013f5568b0b35170d	Running	t2.micro

Below the table, a section titled 'Select an instance' is visible. At the bottom of the screen, there are links for 'CloudShell' and 'Feedback'.

**26** Click "Create load balancer"



**27** Click "Create"



**28** Click the "Load balancer name" field.

#### ► How Elastic Load Balancing works

#### Basic configuration

##### Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.



A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

##### Scheme | [Info](#)

Scheme can't 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.

**29** Type "ALB"

## 30 Click this checkbox.

The screenshot shows the 'Mappings' section of the AWS Load Balancer configuration. At the top, there is a note about selecting a VPC. Below it, a list of targets is shown, with the first target, 'eu-central-1a (euc1-az2)', having its checkbox selected and highlighted with an orange circle. The other two targets, 'eu-central-1b (euc1-az3)' and 'eu-central-1c (euc1-az1)', have their checkboxes unselected. The 'Security groups' section is also visible below, with a note about selecting a security group.

## 31 Click this checkbox.

The screenshot shows the 'Mappings' section of the AWS Load Balancer configuration. The 'eu-central-1a (euc1-az2)' checkbox is checked and highlighted with an orange circle. The 'Subnet' field contains the value 'subnet-0bad224858369b2d4'. The 'IPv4 address' field is labeled 'Assigned by AWS'. Below the mappings, the 'eu-central-1b (euc1-az3)' checkbox is unselected and highlighted with an orange circle, while 'eu-central-1c (euc1-az1)' is also unselected. The 'Security groups' section is visible at the bottom, with a note about selecting a security group.

**32** Click this checkbox.

eu-central-1a (euc1-az2)

Subnet

subnet-0bad224858369b2d4

IPv4 address

Assigned by AWS

eu-central-1b (euc1-az3)

Subnet

subnet-0fedb0605dd1a09e3

IPv4 address

Assigned by AWS

eu-central-1c (euc1-az1)

### Security groups [Info](#)

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new one](#).

[CloudShell](#)

[Feedback](#)

**33** Click here.

Assigned by AWS

### Security groups [Info](#)

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new one](#).

#### Security groups

Select up to 5 security groups

default

sg-031f14ceb215ed551 VPC: vpc-02a2032ec5afa49bd



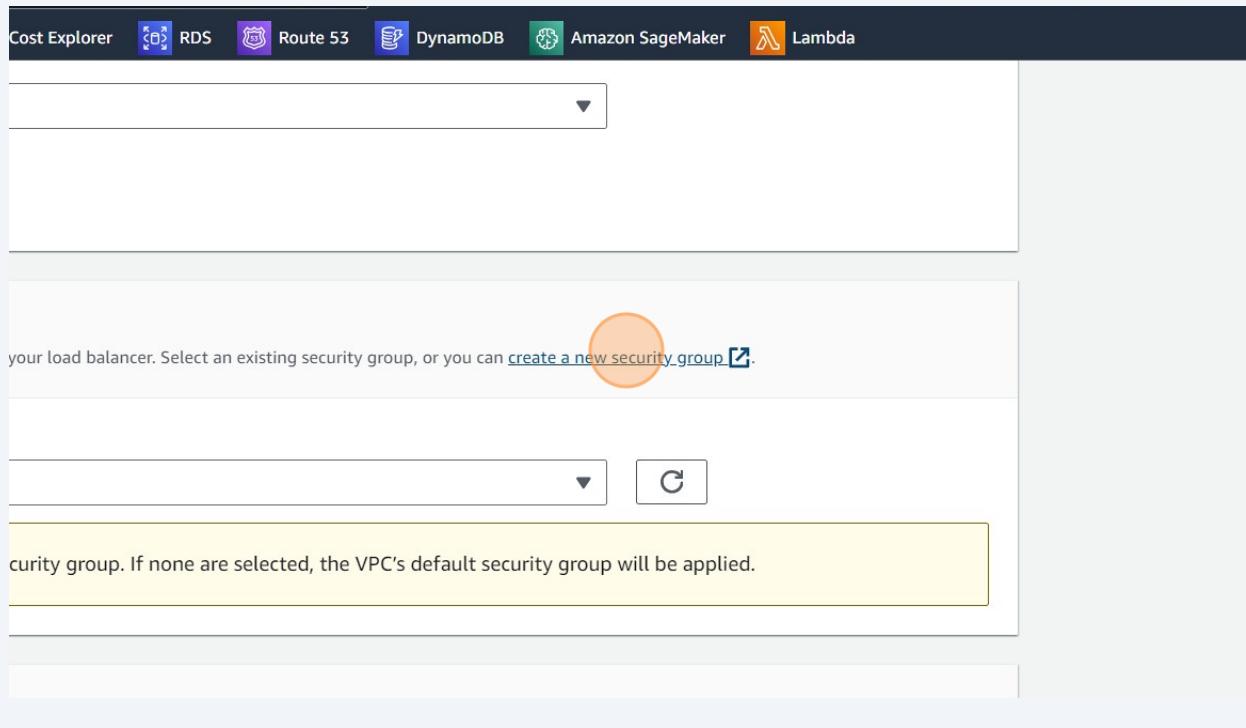
### Listeners and routing [Info](#)

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener direct traffic to its registered targets.

[CloudShell](#)

[Feedback](#)

**34** Click "create a new security group"



**35** Click the "Security group name Info:" field.

[EC2](#) > [Security Groups](#) > [Create security group](#)

## Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group

**Basic details**

Security group name Info

A text input field containing "MyWebServerGroup", which is highlighted with an orange circle.

Name cannot be edited after creation.

Description Info

VPC Info

**36** Type "alb-security-group"

**37** Click "Add rule"

The screenshot shows the AWS VPC Security Groups console. At the top, there is a navigation bar with icons for EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and Lambda. Below the navigation bar, the URL is visible: https://console.aws.amazon.com/vpc/home?region=us-east-1#security-groups:group/alb-security-group.

The main content area displays two sections: "Inbound rules" and "Outbound rules".

**Inbound rules:** A message states "This security group has no inbound rules." Below this message is a button labeled "Add rule", which is highlighted with a yellow circle.

**Outbound rules:** A message states "This security group has no outbound rules." Below this message is a button labeled "Add rule".

**38** Click "Custom TCP"

The screenshot shows the AWS VPC Security Groups Inbound rules configuration. At the top, there's a navigation bar with icons for EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and other services. Below the navigation bar, the main section is titled "Inbound rules" with a "Info" link. It has four columns: "Type", "Protocol", "Port range", and "Source". A dropdown menu under "Type" is set to "Custom TCP", which is highlighted with an orange circle. The "Protocol" is set to "TCP", "Port range" is "0", and "Source" is "Cust...". There's also a search bar and an "Add rule" button. Below this section, another titled "Outbound rules" with an "Info" link shows the message "This security group has no outbound rules."

**39** Type "http"

**40** Click "HTTP"

The screenshot shows the 'Inbound rules' section of the AWS Security Groups configuration. The 'Type' dropdown is set to 'Custom TCP'. The 'Protocol' dropdown is set to 'TCP'. The 'Port range' input field contains '0'. The 'Source' dropdown is set to 'Cust...'. A search bar at the top has 'http' typed into it. Below the search bar, a dropdown menu is open, showing several options: 'Custom TCP' (selected), 'Q http' (highlighted with an orange circle), 'HTTP' (highlighted with an orange circle), 'HTTPS', 'WinRM-HTTP', and 'WinRM-HTTPS'. At the bottom of the page, a message states 'This security group has no outbound rules.' There is also a 'Add rule' button.

**41** Click this text field.

The screenshot shows the 'Inbound rules' section of the AWS Security Groups configuration. The 'Port range' input field contains '80'. The 'Source' dropdown is set to 'Cust...'. A search bar next to the source dropdown has a magnifying glass icon and is highlighted with an orange circle. At the bottom of the page, a message states 'This security group has no outbound rules.'

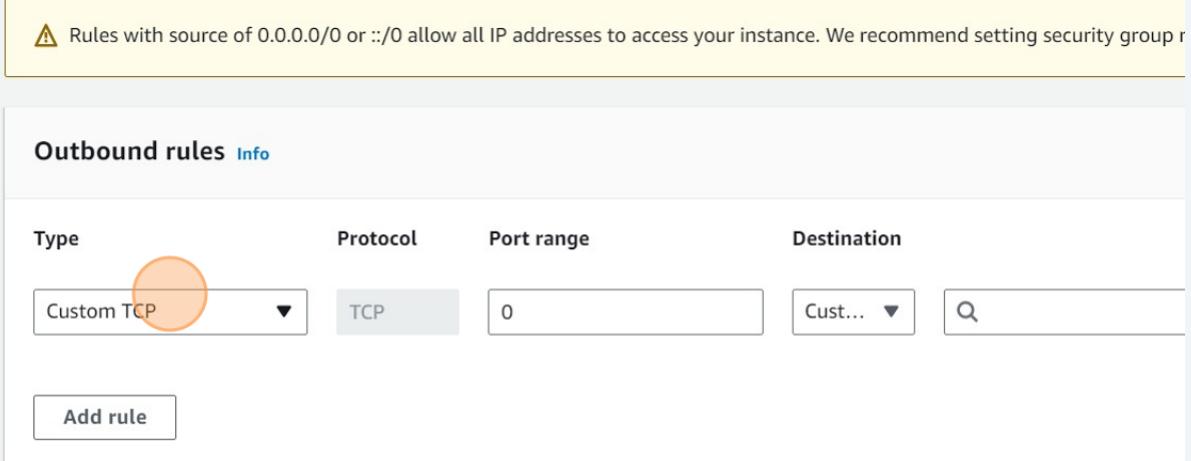
**42** Click "0.0.0.0/0"

The screenshot shows the AWS Security Groups interface. A new rule is being added. In the 'Port range' field, '80' is entered. In the 'Source' field, a dropdown menu is open, showing a search bar and a list of CIDR blocks. The list includes '0.0.0.0/0', which is circled in orange. Other options in the list are '0.0.0.0/8', '0.0.0.0/16', '0.0.0.0/24', '0.0.0.0/32', '::/0', and '::/16'. Below the dropdown, a message states 'This security group has no outbound rules.'

**43** Click "Add rule"

The screenshot shows the 'Outbound rules' section of the AWS Security Groups interface. A warning message at the top states: '⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules for specific IP addresses or ranges.' Below this, the 'Outbound rules' heading is followed by the message 'This security group has no outbound rules.' At the bottom of the page, the 'Tags - optional' section is shown, which contains the text 'A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources.' and 'No tags associated with the resource.' There is also a 'Add new tag' button.

**44** Click "Custom TCP"



The screenshot shows the 'Outbound rules' section of the AWS Management Console. At the top, there is a warning message: '⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules.' Below this, the 'Outbound rules' table has four columns: 'Type', 'Protocol', 'Port range', and 'Destination'. In the 'Type' column, the dropdown menu is open, showing 'Custom TCP' (which is circled in orange), 'HTTP', 'HTTPS', and 'All traffic'. The 'Protocol' column shows 'TCP', 'Port range' shows '0', and 'Destination' shows 'Custom...'. There is also an 'Add rule' button. Below the table, there is a section titled 'Tags - optional' with a note: 'A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources.'.

**45** Type "htt"

**46** Click "HTTP"

Type	Protocol	Port range	Destination
Custom TCP	TCP	0	Cust...
HTTP			
HTTPS			
WinRM-HTTP			
WinRM-HTTPS			

**47** Click this text field.

/all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Port range      Destination      Description - optional

80

Cust... ▾

🔍

Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

**48** Click "0.0.0.0/0"

The screenshot shows the 'Edit inbound rule' dialog. In the 'Destination' column, a dropdown menu is open, showing a search bar and a list of CIDR blocks. The item '0.0.0.0/0' is highlighted with a large orange circle. Other items in the list include '0.0.0.0/8', '0.0.0.0/16', '0.0.0.0/24', '0.0.0.0/32', and '::/0'. A tooltip at the bottom left of the dropdown says: 'A key consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.'

**49** Click "Create security group"

The screenshot shows the 'Create security group' dialog. At the top, there is a note: 'We recommend setting security group rules to allow access from known IP addresses only.' Below this is a text input field with placeholder text: 'Value. You can use tags to search and filter your resources or track your AWS costs.' At the bottom right, there are three buttons: 'Cancel', 'Create security group' (which is highlighted with a large orange circle), and 'Create'.

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**50** Click "Security group name"

The screenshot shows the AWS EC2 Global View interface. On the left, there's a sidebar with sections like Instances, Images, and New. The main area shows the details for a security group named "sg-01b1157770d2a763a - alb-security-group". The "Details" section contains fields for Security group name (alb-security-group), Security group ID (sg-01b1157770d2a763a), Owner (337238043030), and Inbound rules count (1 Permission entry). Below the Details section are tabs for Inbound rules, Outbound rules, and Tags, with Inbound rules being the active tab.

**51** Click here.

The screenshot shows the configuration page for a load balancer. At the top, there's a navigation bar with tabs for Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda. Below the navigation bar, there's a message about selecting a security group or creating a new one. A dropdown menu is open, showing a list of security groups. One item in the list is circled with an orange box and has a letter 'C' over it, indicating it is the target for step 51. Below the dropdown, there's a note about selecting a security group, and further down, there's a note about configuring a listener.

52 Click here.

The screenshot shows the AWS CloudFront console with the 'Security groups' section highlighted. A security group named 'default' (sg-031f14ceb215ed551) is selected and highlighted with a blue border. An orange circle with a white 'X' is overlaid on the close button of the security group card. Below the card, there is a dropdown menu with the option 'Listeners & routing' selected.

53 Click here.

The screenshot shows the AWS CloudFront console with the 'Listeners and routing' section highlighted. A dropdown menu is open, showing the option 'Listeners & routing' selected. Below the dropdown, a note states: 'Select an existing security group, or you can create a new security group'. A yellow callout box highlights the 'Create new security group' button, which has an orange circle with a white 'C' icon overlaid on it. Further down, another note states: 'If none are selected, the VPC's default security group will be applied.'

**54** Click "alb-security-group"

A screenshot of the AWS VPC Security Groups page. The page title is "Security groups". A search bar at the top says "Select up to 5 security groups". Below it is a search field with a magnifying glass icon. A list of security groups is shown, each with a checkbox and details: sg-08d475c4ee6a061c8 (VPC: vpc-02a2032ec5afa49bd), launch-wizard-2 (sg-0d0ca5c83977bf214, VPC: vpc-02a2032ec5afa49bd), default (sg-031f14ceb215ed551, VPC: vpc-02a2032ec5afa49bd), launch-wizard-4 (sg-0cdc4cf51765da120, VPC: vpc-02a2032ec5afa49bd), alb-security-group (sg-01b1157770d2a763a, VPC: vpc-02a2032ec5afa49bd), and launch-wizard-7 (sg-037fe54a8a424c6fa, VPC: vpc-02a2032ec5afa49bd). The "alb-security-group" entry has a blue selection border around its checkbox and row. At the bottom, there are tabs for "Protocol", "Port", "Default action", and "Info". A navigation bar at the bottom includes "CloudShell" and "Feedback".

**55** Click "Security groups"

A screenshot of the AWS Services dashboard. The top navigation bar shows "aws", "Services", a search bar with "Search [Alt+S]", and various service icons: EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and others. On the left is a sidebar with a "Security groups" section. The main content area shows a "Security groups" section with a "Select up to 5 security groups" dropdown and a search field. A list of security groups is shown, each with a checkbox and details: sg-08d475c4ee6a061c8 (VPC: vpc-02a2032ec5afa49bd), launch-wizard-2 (sg-0d0ca5c83977bf214, VPC: vpc-02a2032ec5afa49bd), default (sg-031f14ceb215ed551, VPC: vpc-02a2032ec5afa49bd), launch-wizard-4 (sg-0cdc4cf51765da120, VPC: vpc-02a2032ec5afa49bd), alb-security-group (sg-01b1157770d2a763a, VPC: vpc-02a2032ec5afa49bd), and launch-wizard-7 (sg-037fe54a8a424c6fa, VPC: vpc-02a2032ec5afa49bd). The "alb-security-group" entry has a blue selection border around its checkbox and row. At the bottom, there are tabs for "Protocol", "Port", "Default action", and "Info".

## 56 Click "Create target group"

Listeners and routing [Intro](#)

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how to route traffic to its registered targets.

▼ Listener **HTTP:80**

Protocol	Port	Default action	Info
HTTP	: 80 1-65535	Forward to	Select a target group
		Create target	<input type="text"/>
No resources to display			

Listener tags - *optional*

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

[Add listener tag](#)

You can add up to 50 more tags.

[Add listener](#)

## 57 Click "Specify group details"

aws Services Search [Alt+S]

EC2 S3 VPC IAM AWS Budgets AWS Cost Explorer RDS Route 53 DynamoDB [Amazon CloudWatch Metrics](#)

EC2 > [Target groups](#) > Create target group

Step 1 **Specify group details**

Step 2 Register targets

**Specify group details**

Your load balancer routes requests to the targets in a target group and performs health checks on them.

**Basic configuration**

Settings in this section can't be changed after the target group is created.

**Choose a target type**

Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of [Amazon EC2 Auto Scaling](#) to manage and scale your application.

IP addresses

## 58 Click "Instances"

Step 1  
**Specify group details**

Step 2  
Register targets

### Specify group details

Your load balancer routes requests to the targets in a target group and performs health checks on them.

#### Basic configuration

Settings in this section can't be changed after the target group is created.

#### Choose a target type

##### Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of [Amazon EC2 Auto Scaling](#) to manage and scale your application.

##### IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 translation.

## 59 Click the "Target group name" field.

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

#### Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests without exposing the private IP addresses of the targets.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

#### Target group name

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

#### Protocol : Port

HTTP



80

1-65535

#### IP address type

Only targets with the indicated IP address type can be registered to this target group.

##### IPv4

Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address.

**60** Type "targetgroup"

**61** Click "Next"

ettings

utes will be applied to your target group. You can view and edit them after creating the

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

Cancel

Next

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**62** Click this checkbox.

The screenshot shows the 'Create target group' wizard at Step 2: 'Register targets'. The title is 'Register targets' and a note says 'This is an optional step to create a target group. However, to ensure that your function can receive traffic, you must register targets.' A table titled 'Available instances (2)' lists two instances: 'Instance-1' (i-08fed27e0a8d678f1) and 'Instance-2' (i-013f5568b0b35170d). The first instance's checkbox is highlighted with an orange circle. Below the table, it says 'Ports for the selected instances' with a value of '80'. At the bottom, there are 'CloudShell' and 'Feedback' buttons.

**63** Click "Include as pending below"

The screenshot shows the 'Register targets' step with '2 selected' instances. It displays the 'Ports for the selected instances' field containing '80'. Below it is a button labeled 'Include as pending below', which is highlighted with an orange circle. At the bottom, there is a section for 'New targets' and a table showing 'Targets (0)' with a 'Remove all pending' button. A 'Filter targets' input field and a 'Show only pending' switch are also present.

64 Click "Create target group"

The screenshot shows the AWS Lambda console interface. At the top, there is a search bar and a 'Create new function' button. Below the search bar, there is a section titled 'Lambda functions' with a 'Create new function' button. The main area displays a table of existing Lambda functions:

Function name	Description	Last modified	Region	Action
lambda-function-1	Test function	2023-07-10 12:34:56	eu-central-1	View
lambda-function-2	Test function	2023-07-10 12:34:56	eu-central-1	View

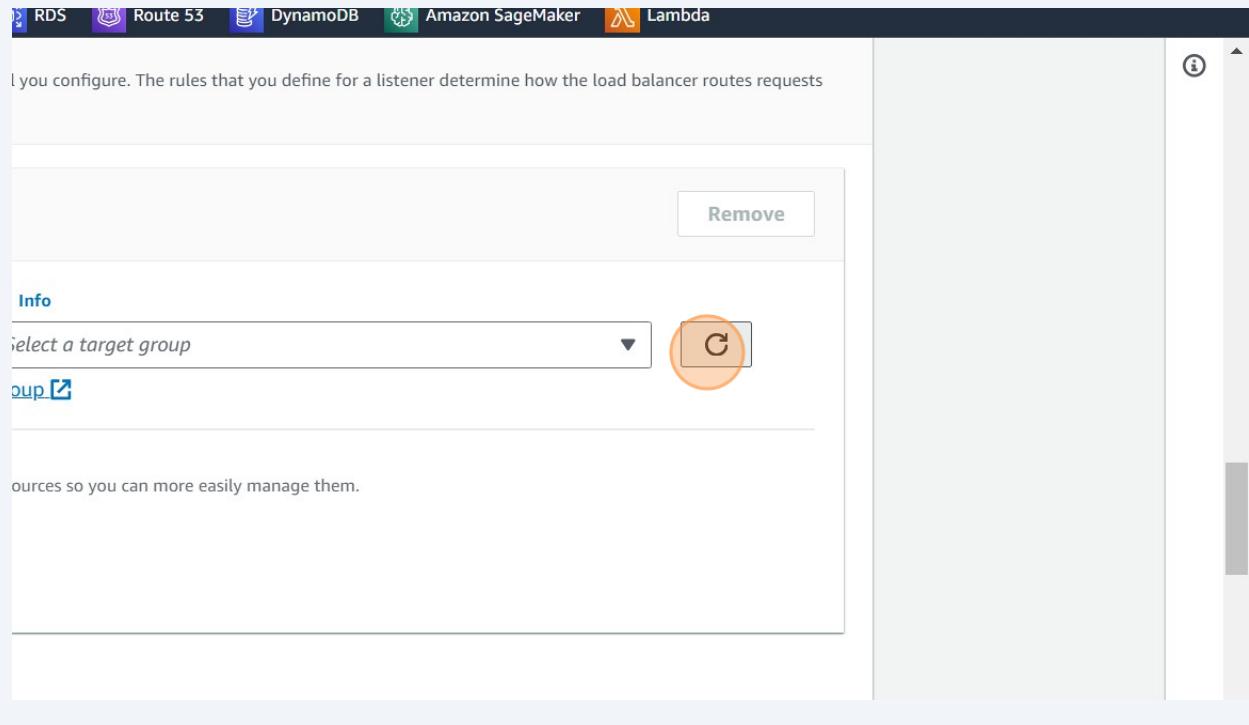
At the bottom of the page, there are navigation buttons for 'Cancel', 'Previous', and 'Create target group'. The 'Create target group' button is highlighted with a red circle.

65 Click "Target groups"

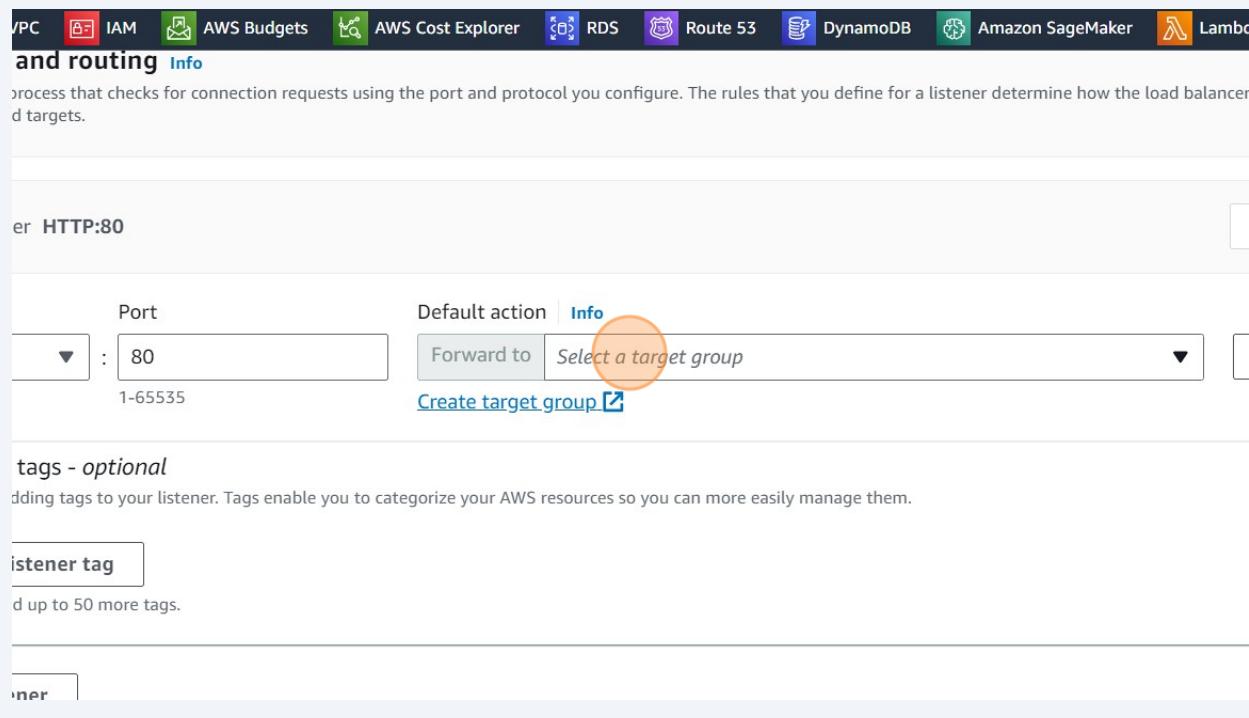
The screenshot shows the AWS EC2 Target Groups page. The top navigation bar includes links for EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and CloudWatch Metrics. The left sidebar has sections for EC2 Dashboard, EC2 Global View, Events, Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, and New), and a 'targetgroup' section which is currently selected. A green success message at the top right says 'Successfully created target group: targetgroup.' The breadcrumb navigation shows 'EC2 > Target groups > targetgroup'. The main content area displays the 'targetgroup' details:

Details		
Target type	Protocol : Port	Protocol
Instance	HTTP: 80	HTTP
IP address type	Load balancer	
IPv4	<a href="#">None associated</a>	

**66** Click here.



**67** Click "Select a target group"



**68** Click "Target type: Instance, IPv4"

The screenshot shows the AWS CloudFormation console with a modal dialog for creating a new resource group. The dialog has the following fields:

- Resource type:** Lambda function
- Name:** Lambda function
- Description:** Lambda function
- Tags:** None
- Code source:** S3 bucket
- Role:** Lambda execution role
- Environment variables:** None
- Runtime:** Node.js 14.x
- Memory size:** 128 MB
- Timeout:** 3 seconds
- Environment:** None
- Deployment settings:** None

The "Code source" dropdown is highlighted with a red circle, indicating the step to click.

**69** Click "Create load balancer"

The screenshot shows the AWS CloudFormation console with a modal dialog for creating a new load balancer. The dialog has the following fields:

- Load balancer type:** Application
- Name:** Load balancer
- Protocol:** HTTP
- Port:** 80
- Default action:** Forward to target group
- Target groups:** Select a target group
- Tags:** None

The "Select a target group" dropdown is highlighted with a red circle, indicating the step to click.

## 70 Click "ALB"

The screenshot shows the AWS Lambda console. At the top, there's a navigation bar with icons for EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and Lambda. A search bar is at the top right with the placeholder 'Search' and a keyboard shortcut '[Alt+S]'. Below the navigation bar, a green banner says 'Successfully created load balancer: ALB' with 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 be registered with the load balancer.' A breadcrumb navigation shows 'EC2 > Load balancers > ALB > Create Application Load Balancer'. The main title 'Create Application Load Balancer' is centered. On the left, a sidebar has a section titled 'Suggested next steps' with two bullet points: 'Review, customize, or configure attributes for your load balancer and listeners using the Description and Listener configuration tabs' and 'Discover other services that you can integrate with your load balancer. Visit the Integrated services tab with the tabs at the bottom of the page'. The 'ALB' part of the breadcrumb is circled in orange.

## 71 Click here.

The screenshot shows the AWS Lambda console. The top navigation bar includes icons for RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda, along with user information for 'Nijat Hajiyev' and a dropdown for 'Frankfurt'. A search bar '[Alt+S]' is at the top right. Below the navigation bar, a large orange button labeled 'Create load balancer' is highlighted with an orange circle. To its left is a circular icon with a 'C' inside. The main area displays a table with columns: 'DNS name', 'State', 'VPC ID', 'Availability Zones', and 'Type'. One row is visible: 'ALB-1307607688.eu-centr...' (Provisioning..), 'vpc-02a2032ec5afa49bd', '3 Availability Zones', and 'application'. The table has dropdown arrows for each column header. The bottom of the screen shows a footer with a horizontal line and a close button 'X'.

72 Click "DNS name"

The screenshot shows the AWS Lambda console with the 'Load balancers' page open. The title bar says 'EC2 > Load balancers'. Below it, a section titled 'Load balancers (1)' displays one item. A search bar labeled 'Filter load balancers' is present. The table has columns: Name, DNS name, State, and VPC ID. The first row shows a load balancer named 'ALB' with a DNS name of 'ALB-1307607688.eu-central-1.elasticloadbalancing.amazonaws.com'. The 'State' column shows 'Active' with a green checkmark, and the 'VPC ID' is 'vpc-02a2'. An orange circle highlights the 'DNS name' column header. The message '0 load balancers selected' and 'Select a load balancer above.' is displayed at the bottom.

Name	DNS name	State	VPC ID
ALB	ALB-1307607688.eu-central-1.elasticloadbalancing.amazonaws.com	Active	vpc-02a2

73 Click here.

This screenshot shows the same 'Load balancers' page as the previous one, but with a different view. The 'Name' column is now highlighted with an orange circle. The rest of the interface is identical to the first screenshot, including the table structure and the bottom message.

Name	DNS name	State	VPC ID
ALB	ALB-1307607688.eu-central-1.elasticloadbalancing.amazonaws.com	Active	vpc-02a2

**74** Open a new tab

**75** Paste