

# Set up AWS EC2 with Load Balancer and Auto Scaling

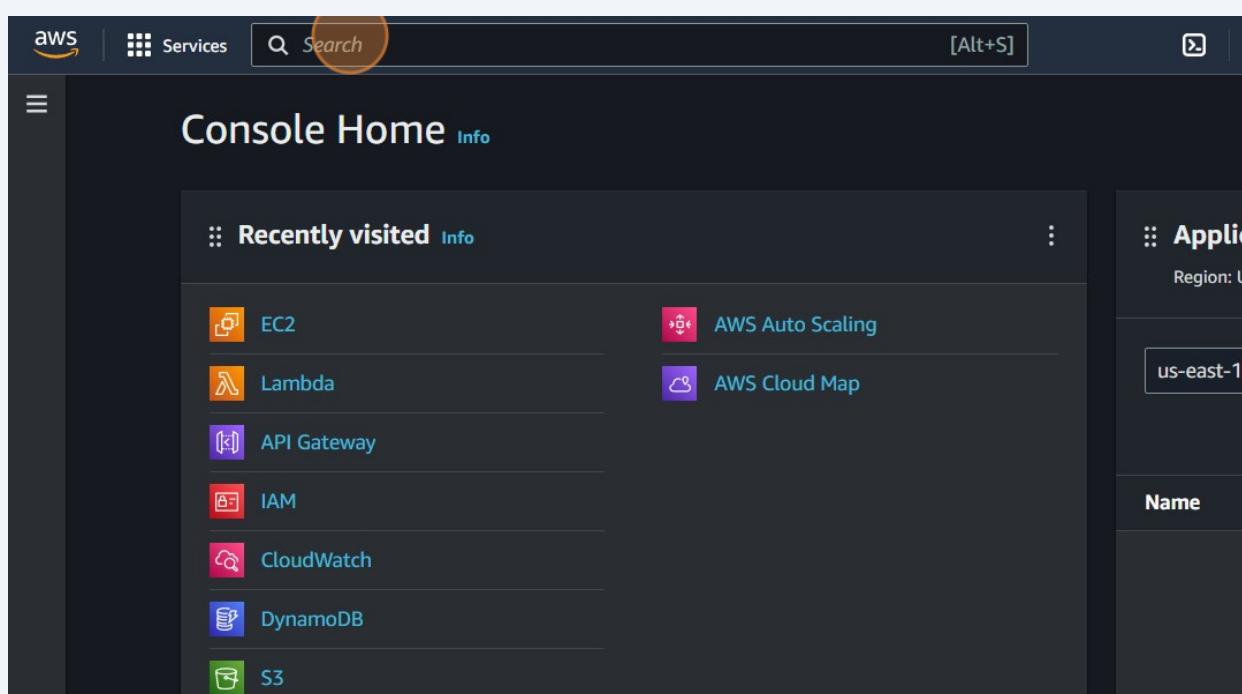
Scribe 

1

Navigate to  
<https://us-east-1.console.aws.amazon.com/console/home?region=us-east-1>

2

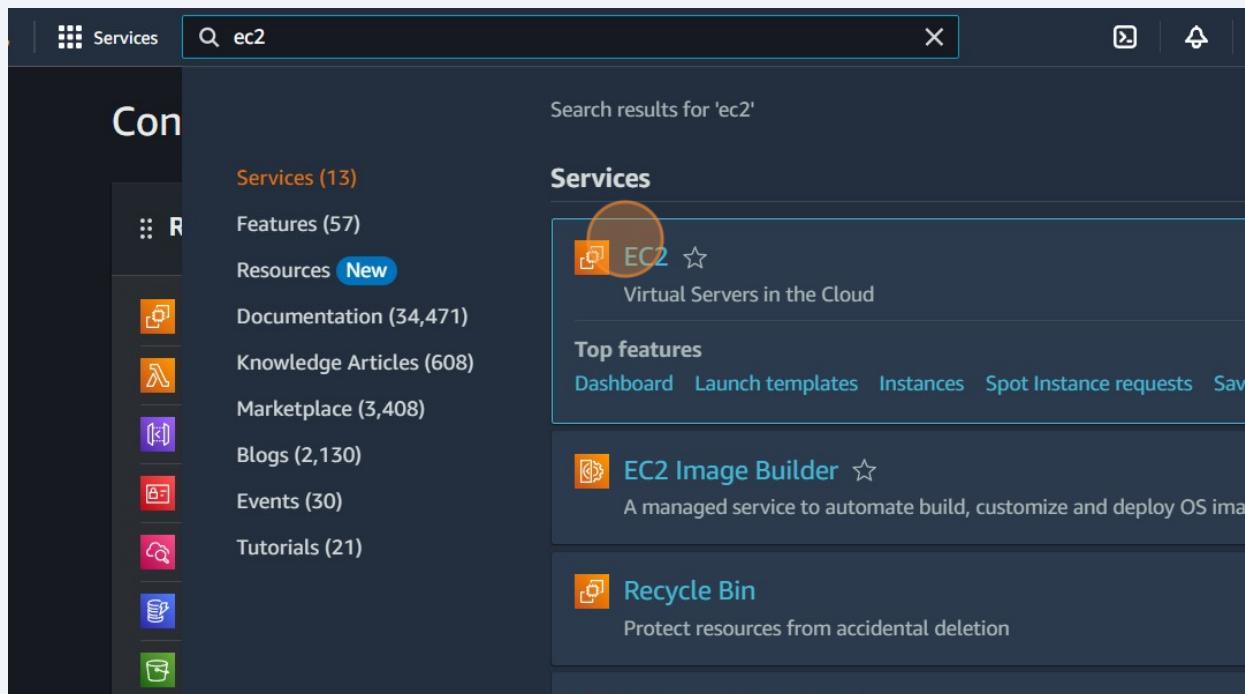
Click the "Search" field.



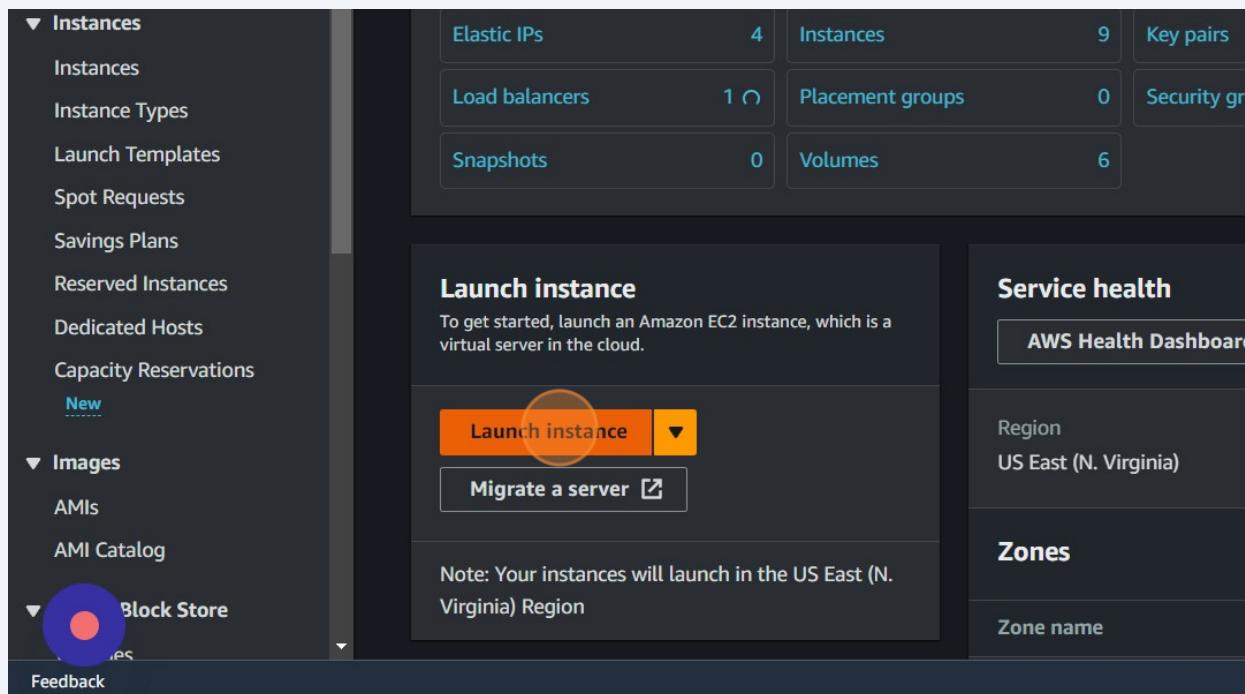
3

Type "ec2"

4 Click "EC2"



5 Click "Launch instance"



6 Click "Load Balancers"

The screenshot shows the AWS Lambda console interface. On the left, there's a sidebar with several sections: 'Lifecycle Manager', 'Network & Security' (with 'Security Groups', 'Elastic IPs', 'Placement Groups', 'Key Pairs', 'Network Interfaces'), 'Load Balancing' (with 'Load Balancers' highlighted and circled in orange), 'Target Groups', 'Trust Stores', 'Auto Scaling' (with 'Auto Scaling Groups' highlighted and circled in blue), and 'CloudShell' and 'Feedback' buttons at the bottom.

The main area is a table listing EC2 instances:

	Instance ID	ARN	Status	Action
<input type="checkbox"/>	ec2_15	i-05723299b3dd22811	Running	
<input type="checkbox"/>	ec2_15	i-061d0ffb79c270ee2	Running	
<input type="checkbox"/>	ec2_server_20	i-04217eaa13ec54c88	Terminated	
<input type="checkbox"/>	ec2_server_20	i-0b385efdf0f9ce807	Terminated	
<input type="checkbox"/>	ec2_server_20	i-0973cee4efda52663	Terminated	
<input type="checkbox"/>		i-047bf1996905d0fcf	Running	
<input type="checkbox"/>	ec2instance-12	i-06ecc72bd967ef354	Stopped	
<input type="checkbox"/>	bascilabec2	i-0269f54c88c05c0a4	Stopped	
<input type="checkbox"/>	ssh-test	i-07c9c89730b8f1d6a	Stopped	
<input type="checkbox"/>	ec2-server	i-05140bf67e567667f	Stopped	
<input type="checkbox"/>	ec2_lab_2	i-001f648b2d61e33d0	Stopped	

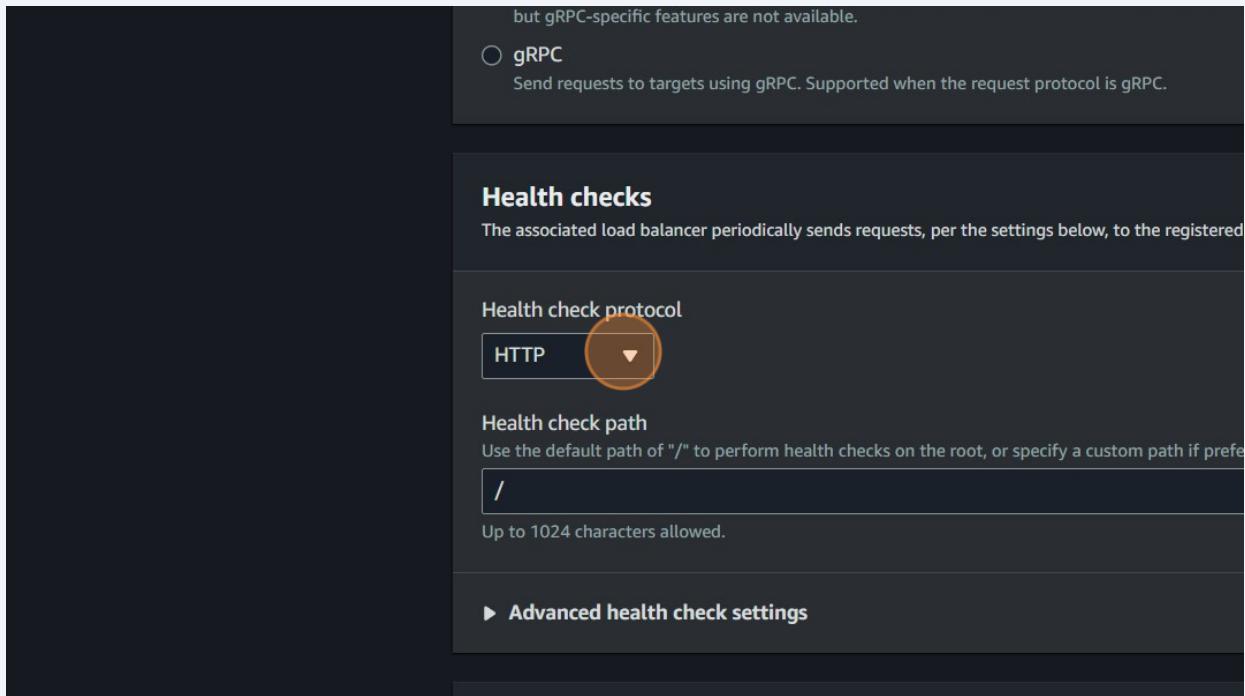
A modal window titled 'Select an instance' is open at the bottom, showing a list of instances: 'ec2\_15', 'ec2\_15', 'ec2\_server\_20', 'ec2\_server\_20', 'ec2\_server\_20', 'ec2instance-12', 'bascilabec2', 'ssh-test', 'ec2-server', and 'ec2\_lab\_2'.

7 Click the "Target group name" field.

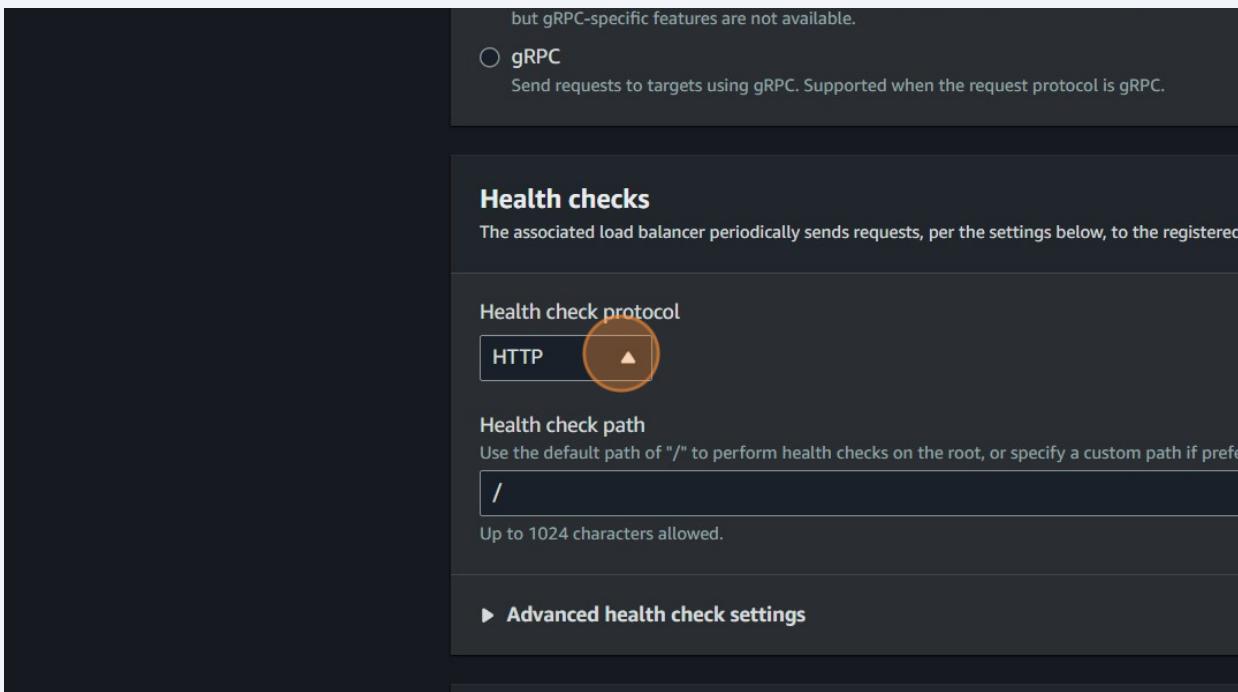
This screenshot shows the 'Create Target Group' wizard, Step 1: Set Load Balancer Type. It has two options: 'Network Load Balancer' and 'Application Load Balancer'. The 'Application Load Balancer' option is selected and highlighted with a blue background. Below it is a 'Target group name' input field, which is also highlighted with a blue background and has a red circle around its placeholder text 'Target group name'. A note below the input field says: 'A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.' To the right of the input field is a 'Protocol : Port' section, which includes a dropdown menu set to 'HTTP' and a port number '80'. At the bottom is an 'IP address type' section with the note: 'Only targets with the indicated IP address type can be registered to this target group.'

**8** Type the target name field "targetgrp15"

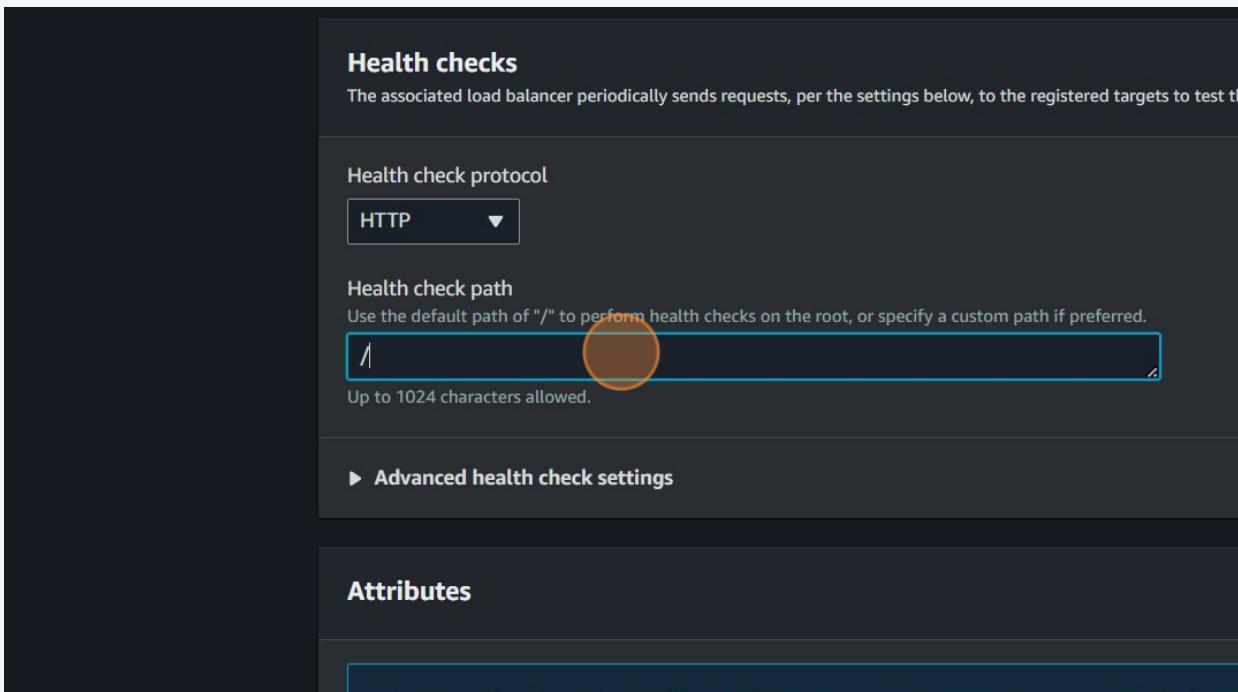
**9** Click here.



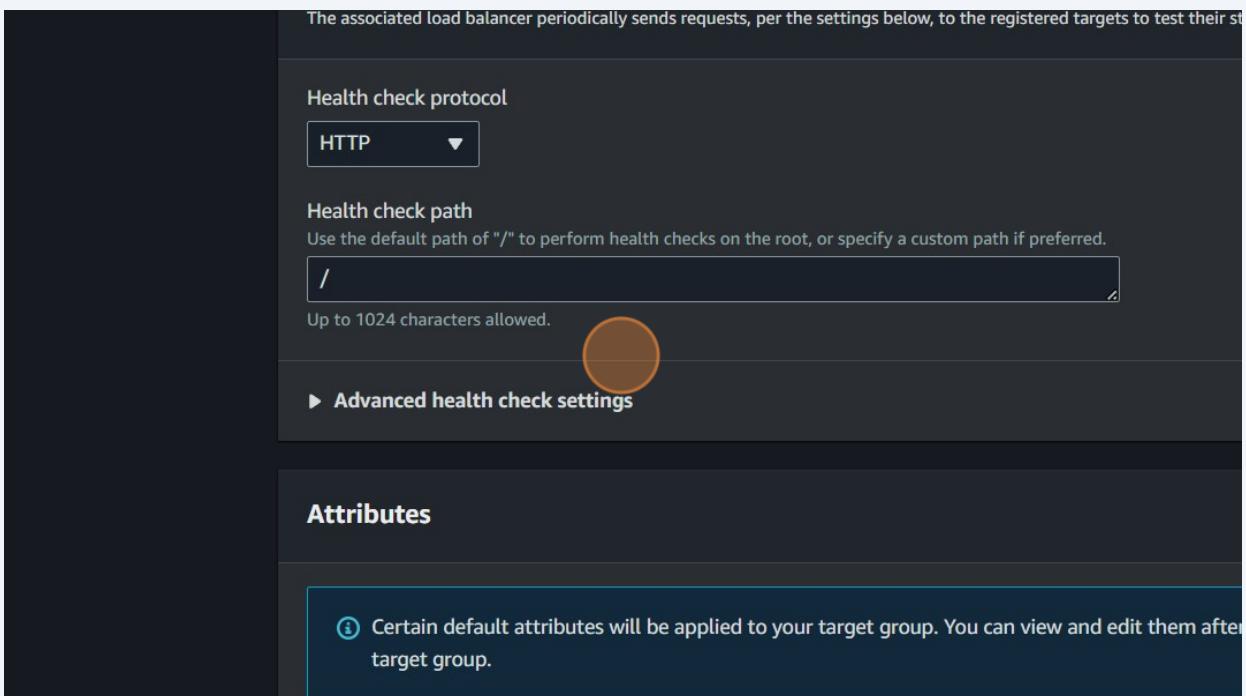
10 Click here.



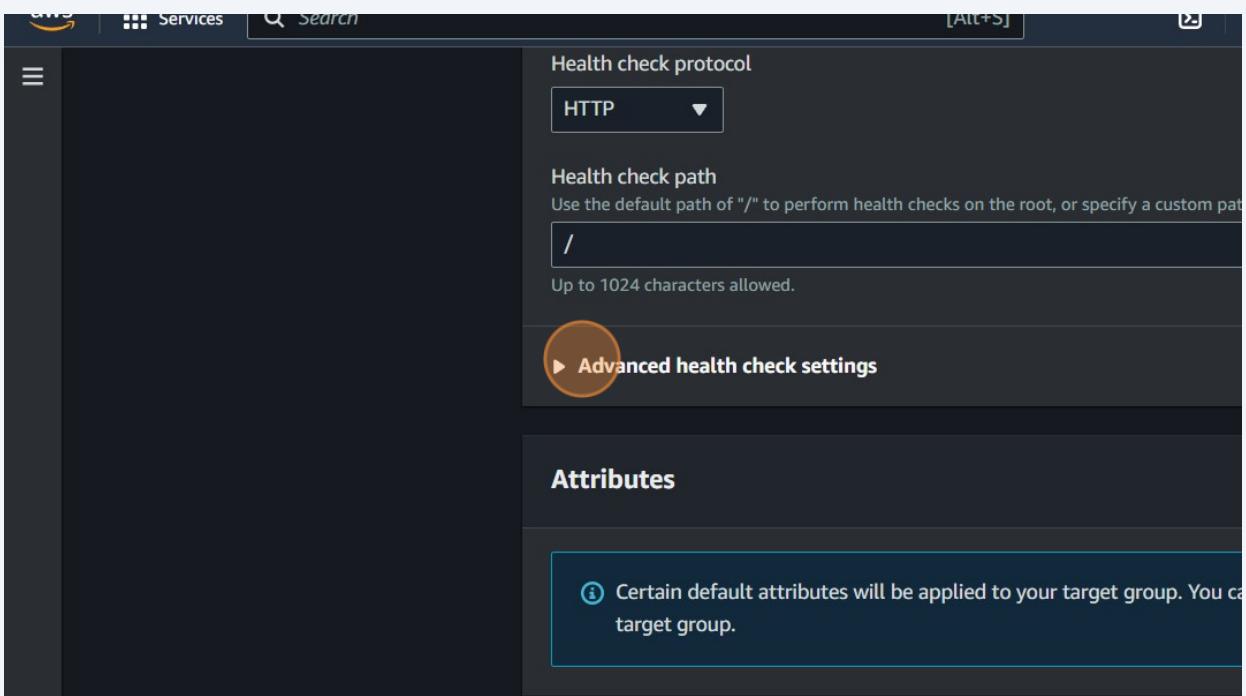
11 Click the "Health check path" field.



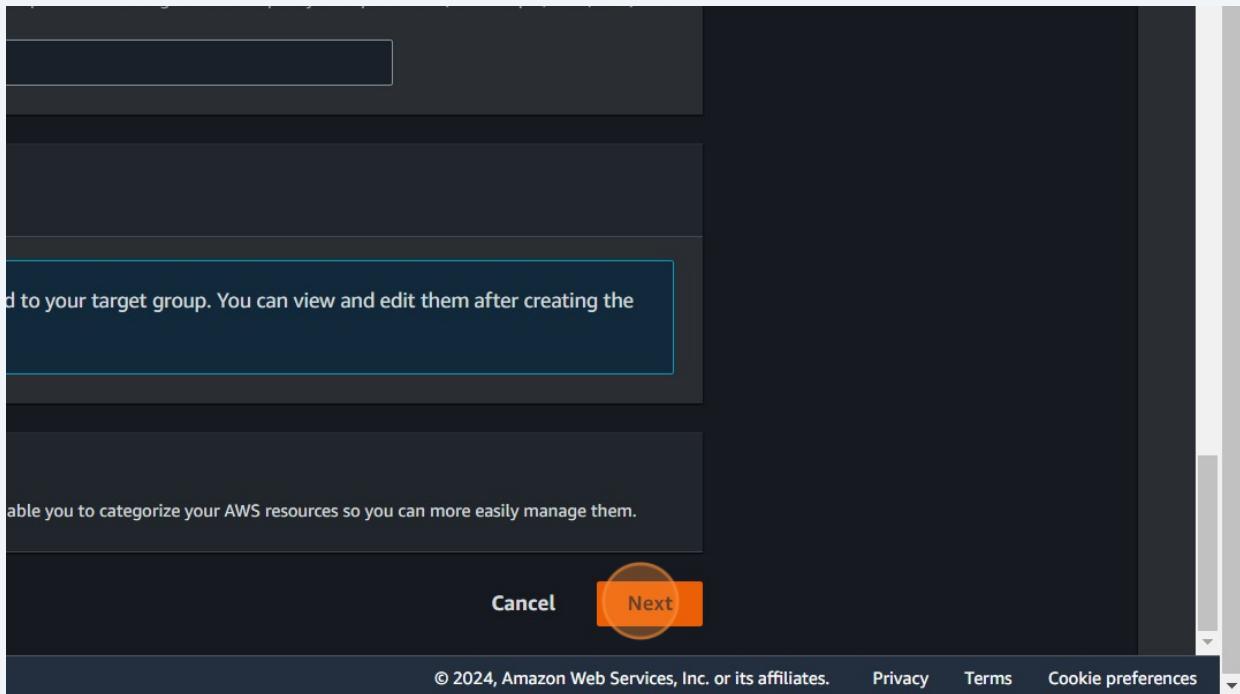
12 Click here.



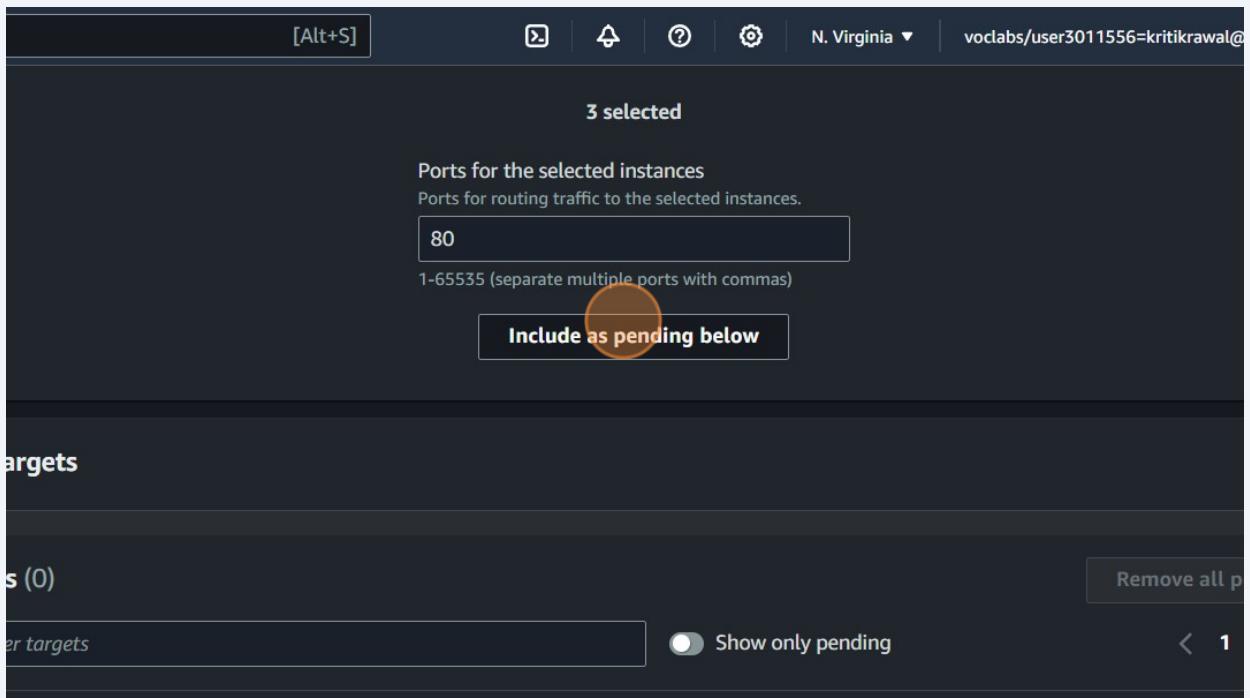
13 Click "Advanced health check settings"



**14** Click "Next"



**15** Click "Include as pending below"



**16** Click "Create target group"

The screenshot shows a table of registered targets. The columns are Port, State, Security groups, Zone, Private IPv4 address, and Subnet ID. There are three entries, all in a 'Running' state. The 'Create target group' button at the bottom right is circled in red.

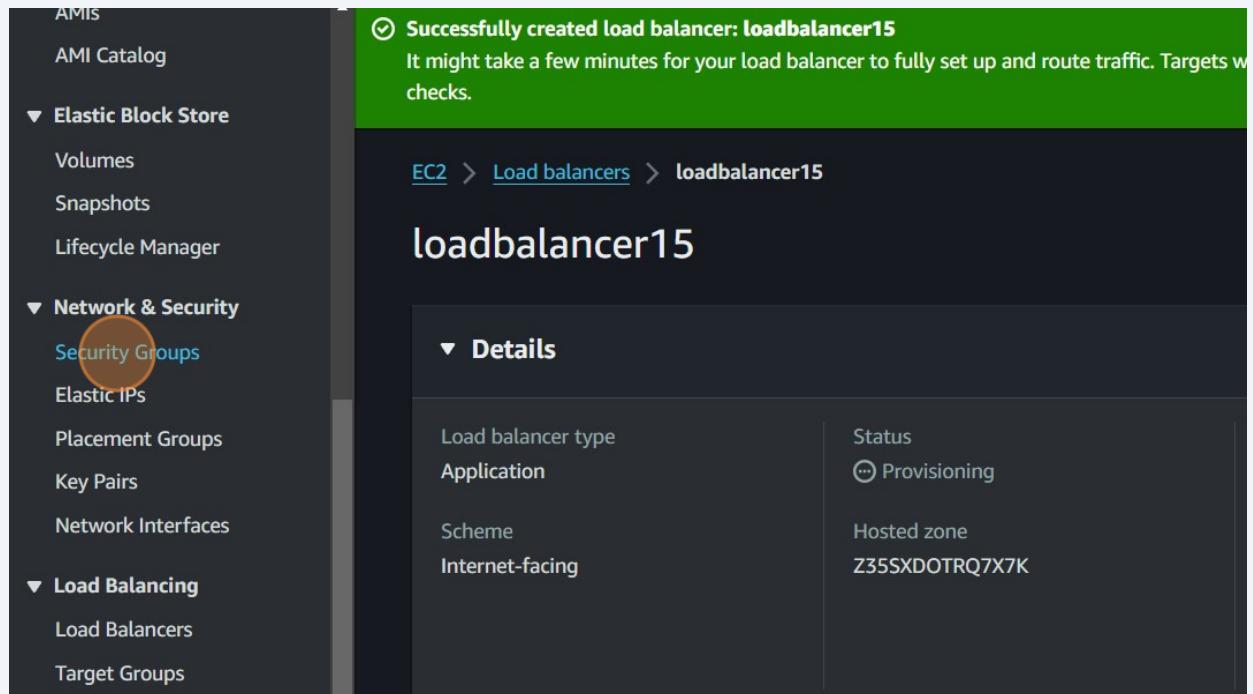
Port	State	Security groups	Zone	Private IPv4 address	Subnet ID
80	Running	secgrp15	us-east-1a	172.31.18.73	subnet-0092
80	Running	secgrp15	us-east-1a	172.31.29.110	subnet-0092
80	Running	secgrp15	us-east-1a	172.31.25.210	subnet-0092

**17** Check the status

The screenshot shows the 'Attributes' tab selected. It displays a message about anomaly mitigation being 'Not applicable'. Below this, there is a table of health status details. The first entry is 'Unused' with a note about the target group not being used. The second entry is also 'Unused' with a similar note. The 'Register targets' button is circled in red.

Port	Zone	Health status	Health status details	Launch...
80	us-east-1a	Unused	Target group is not co...	February ...
80	us-east-1a	Unused	Target group is not co...	February ...

**18** Click "Security Groups"



**19** Switch to tab "Target group details | EC2 | us-east-1"

**20** Switch to tab "Auto Scaling groups | EC2 | us-east-1"

**21** Click "Load Balancers"

The screenshot shows the AWS CloudFront console. On the left, there's a navigation sidebar with sections like Lifecycle Manager, Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups, Trust Stores), and Auto Scaling (Auto Scaling Groups). The 'Load Balancers' item under 'Load Balancing' is highlighted with a red circle. The main content area shows details for a specific load balancer, including its Owner (471112841584) and Inbound rules count (2 Permission entries). Below this, there are tabs for 'Inbound rules' (which is active), 'Outbound rules', and 'Tags'. The 'Inbound rules' section displays two entries:

Name	Security group rule...	IP version
-	sgr-02c1b3582404d9c...	IPv4
-	sgr-01e869435d612e...	IPv4

**22** In a new tab, navigate to  
<http://loadbalancer15-361498212.us-east-1.elb.amazonaws.com/>

**23** Click "Hello World from ip-172-31-25-210.ec2.internal"

**m ip-172-31-25-210.ec2.internal**

**24** Click "Hello World from ip-172-31-25-210.ec2.internal"

**ld from ip-172-31-25-210.ec2.internal**



**25** Click "Auto Scaling Groups"

The screenshot shows the AWS CloudWatch Metrics Insights interface. On the left, there's a sidebar with navigation links: Lifecycle Manager, Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups, Trust Stores New), and Auto Scaling (Auto Scaling Groups). The 'Auto Scaling Groups' link is highlighted with a blue circle. The main panel has a header with an info icon and the text "Introducing Automatic Target Weights (ATW) to increase application availability". Below this is a "Details" section with the ARN: arn:aws:elasticloadbalancing:us-east-1:471112841584:targetgroup/targetgrp20/941d346425e25. It shows the following configuration:

Target type	Protocol : Port
Instance	HTTP: 80
IP address type	Load balancer
IPv4	<b>None associated</b>
Total targets	Healthy
0	0
Anomalous	Unhealthy
0	0

**26** Type "templete15"

27

Double-click "An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your i..."

The screenshot shows the AWS Management Console with the AWS logo and Services navigation bar at the top. The main content area is titled "Launch template contents" and contains a sub-section titled "Application and OS Images (Amazon Machine Image) - required". A descriptive text states: "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". Below this is a search bar with the placeholder "Search our full catalog including 1000s of application and OS images". At the bottom, there are two tabs: "Recents" (selected) and "Quick Start", followed by two buttons: "Recently launched" and "Currently in use". To the right is a "Browse more AMIs" button with a magnifying glass icon.

28

Click "An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your i..."

29 Click here.

A prod webserver for MyApp

Max 255 chars

Auto Scaling guidance | Info

Select this if you intend to use this template with EC2 Auto Scaling

Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

▶ **Template tags**

▶ Source template

**Launch template contents**

Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

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

An AMI is a template that contains the software configuration (operating system, application server, and

30 Click here.

A prod webserver for MyApp

Max 255 chars

Auto Scaling guidance | Info

Select this if you intend to use this template with EC2 Auto Scaling

Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

▼ **Template tags**

No template tags are currently applied to this template. Add a template tag to apply it to the launch template.

**Add new tag**

You can add up to 50 more tags.

▶ **Source template**

**Launch template contents**

Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

31 Click here.

A prod webserver for MyApp

Max 255 chars

Auto Scaling guidance | [Info](#)  
Select this if you intend to use this template with EC2 Auto Scaling

Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

▶ [Template tags](#)  
▶ **Source template**

**Launch template contents**  
Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

▼ Application and OS Images (Amazon Machine Image) - required [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

32 Click "Select a launch template"

Select this if you intend to use this template with EC2 Auto Scaling

Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

▶ [Template tags](#)  
▼ **Source template**

You can optionally specify a source template if you would like to create a template from another existing template

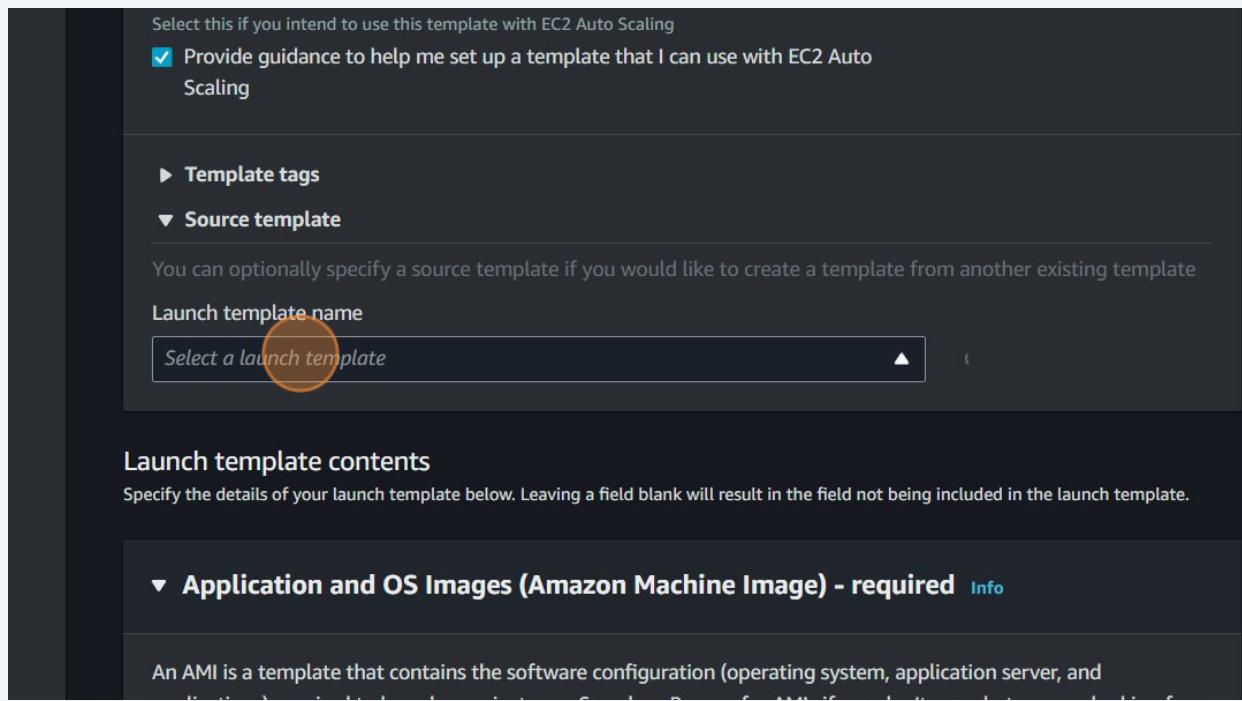
Launch template name

**Launch template contents**  
Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

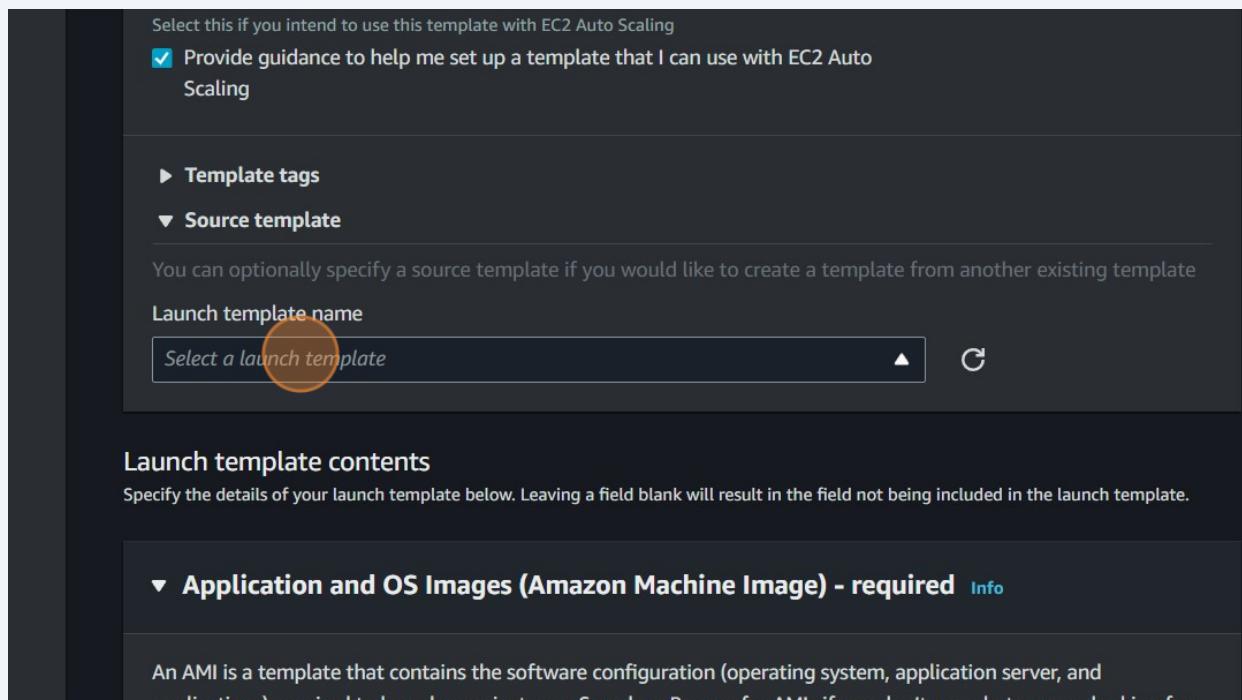
▼ Application and OS Images (Amazon Machine Image) - required [Info](#)

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

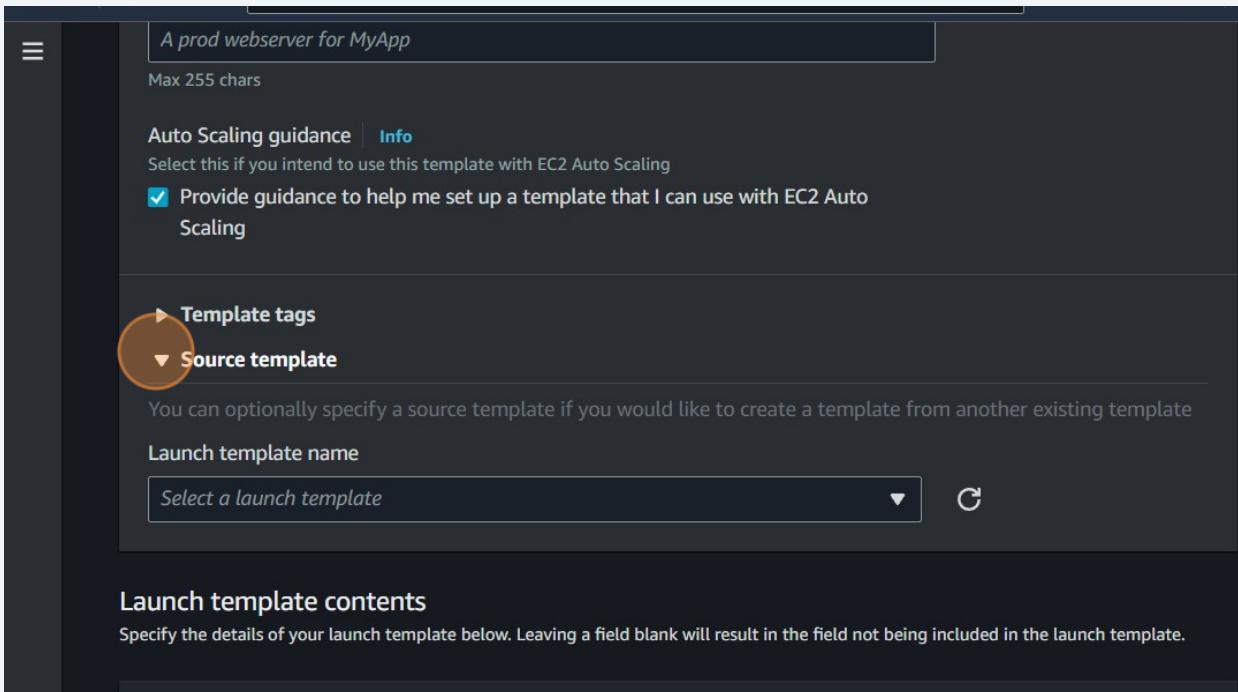
### 33 Double-click "Select a launch template"



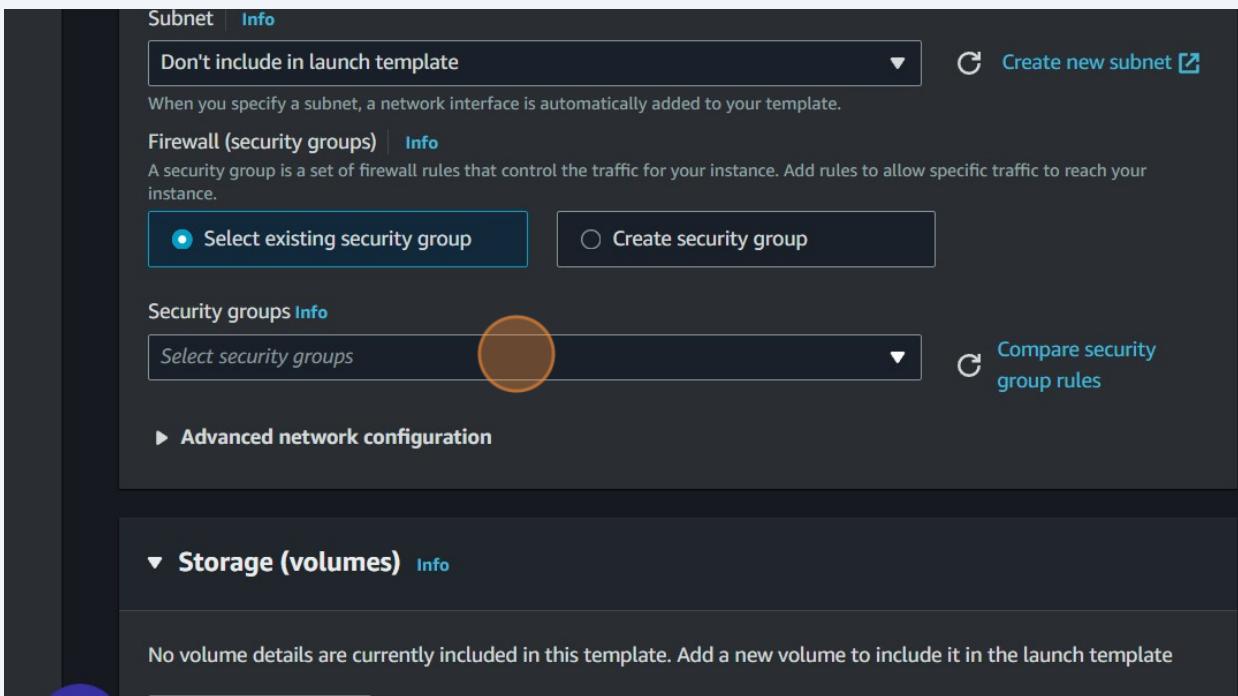
### 34 Click "Select a launch template"



35 Click here.

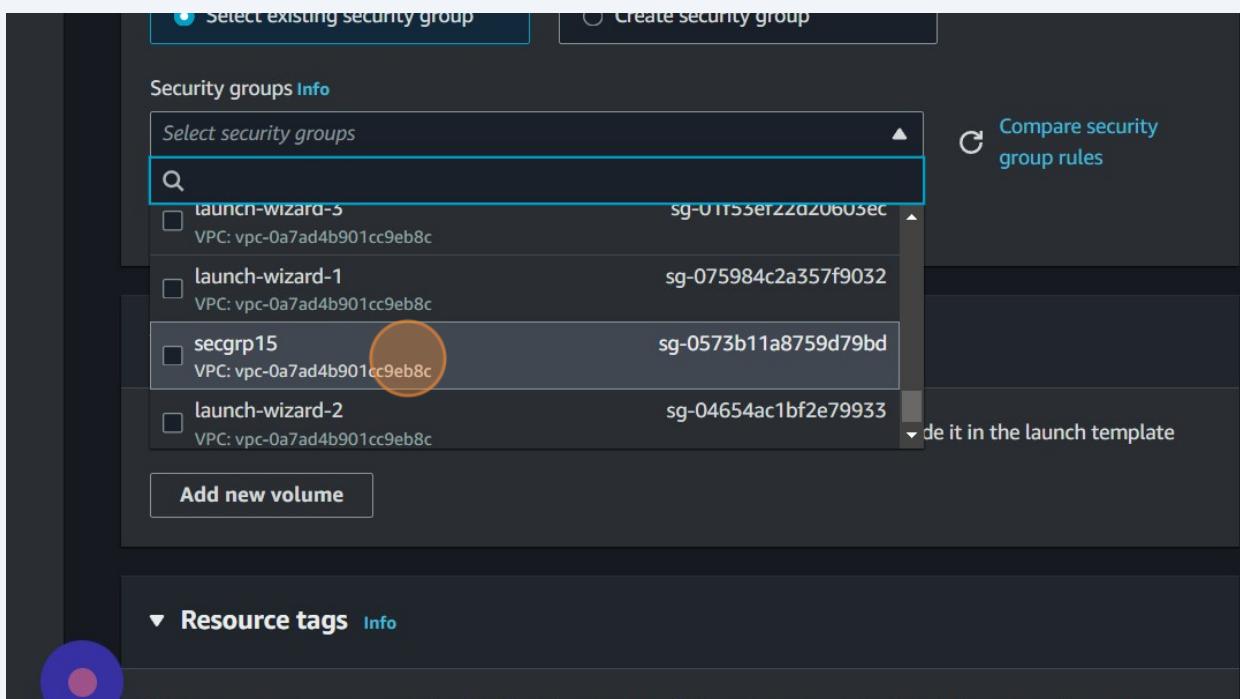


36 Click "Select security groups"



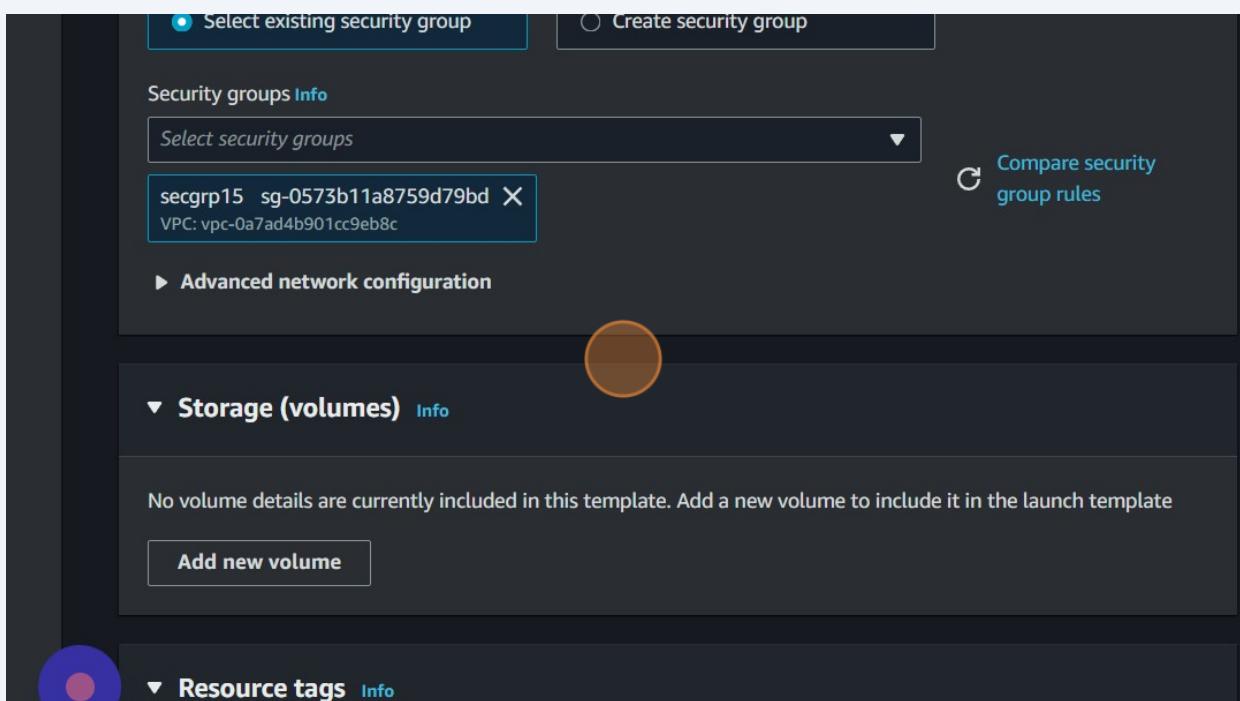
37

Click "VPC: vpc-0a7ad4b901cc9eb8c"

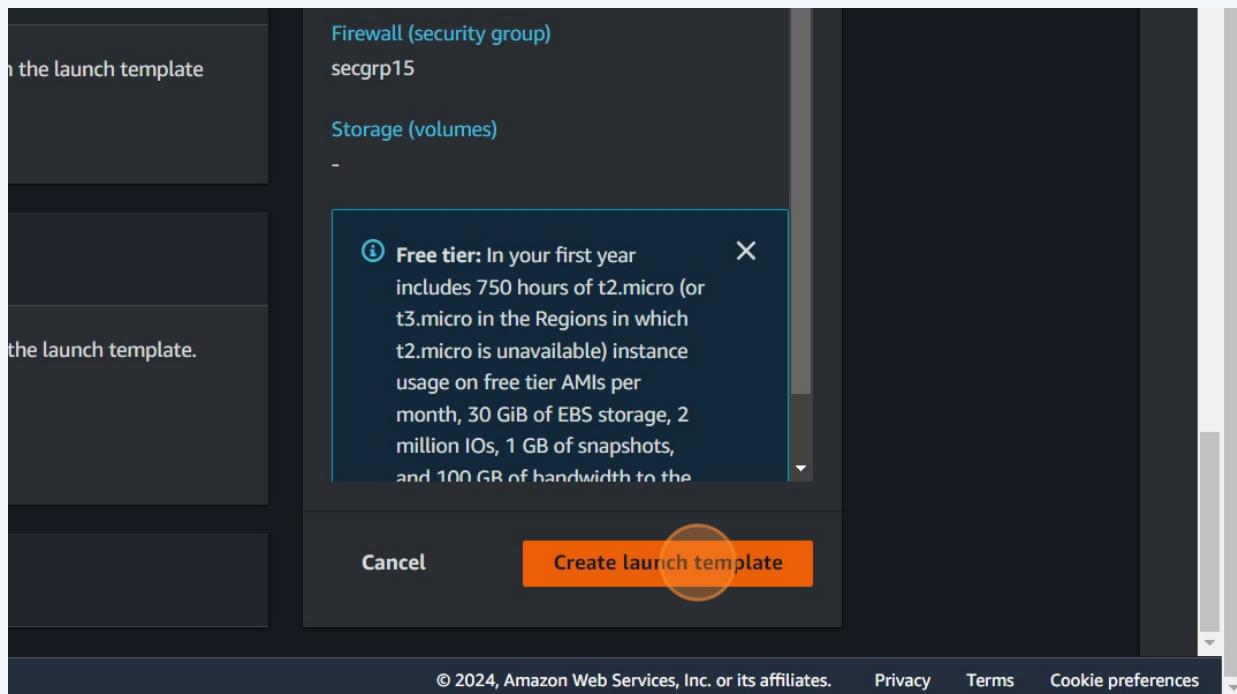


38

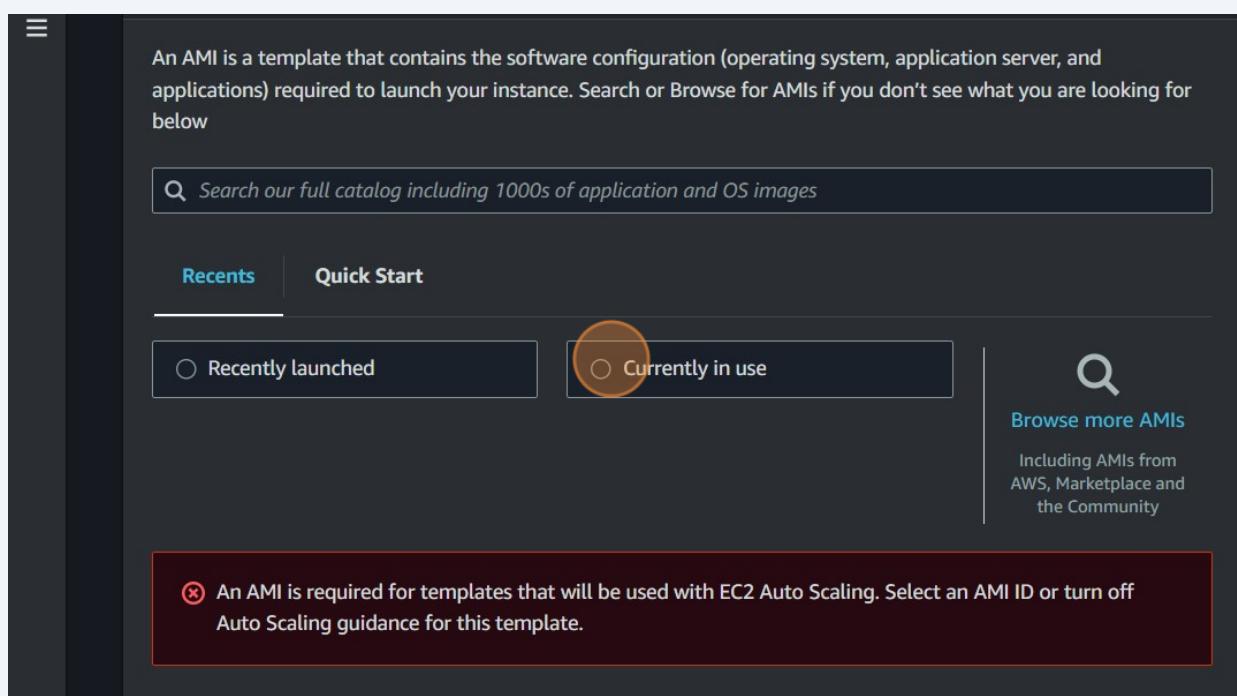
Click here.



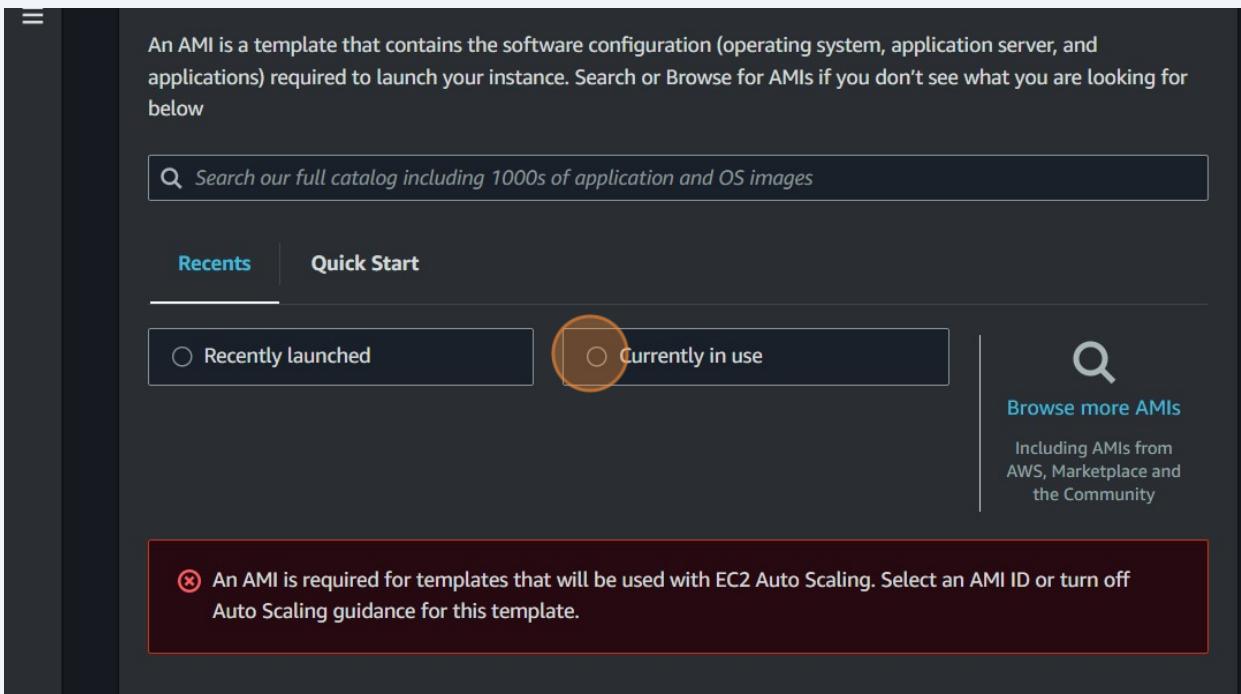
**39** Click "Create launch template"



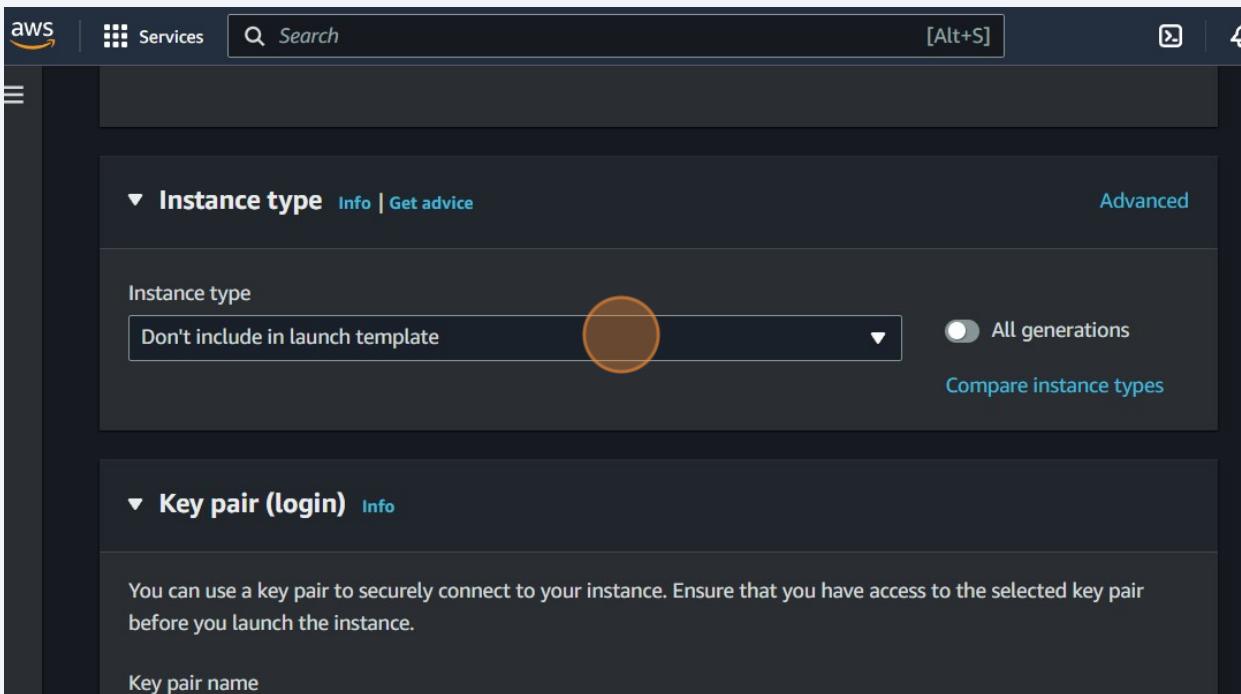
**40** Click "Currently in use"



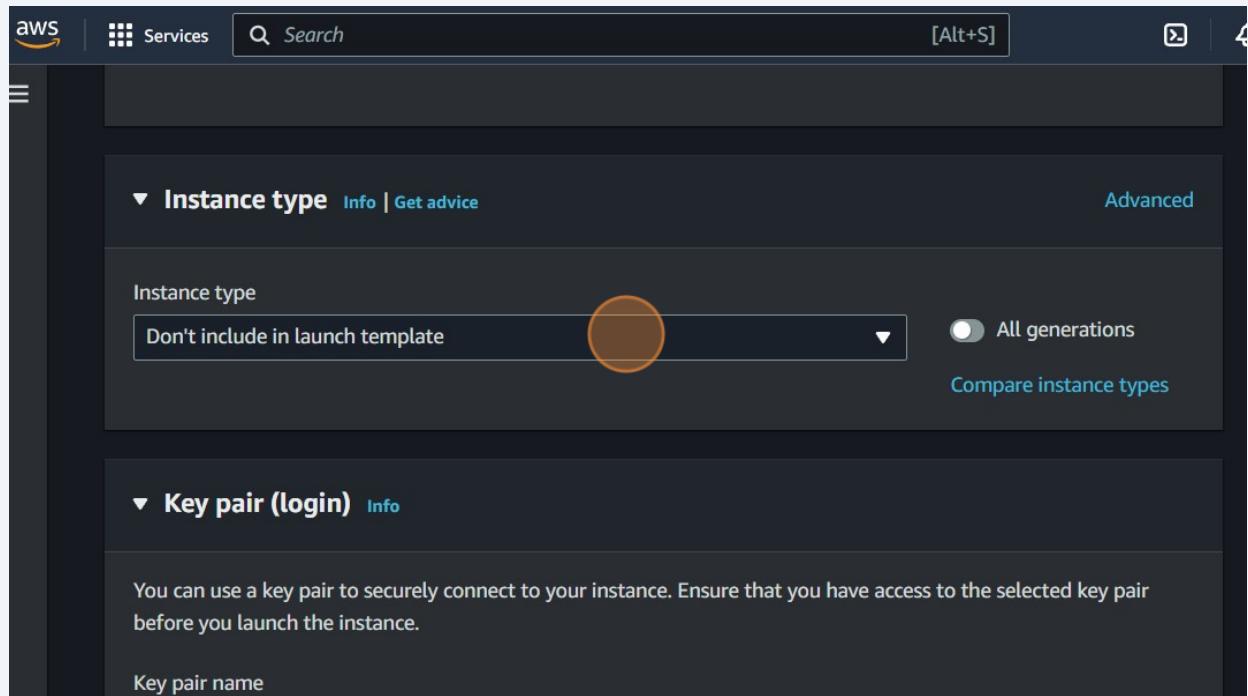
41 Click this radio button.



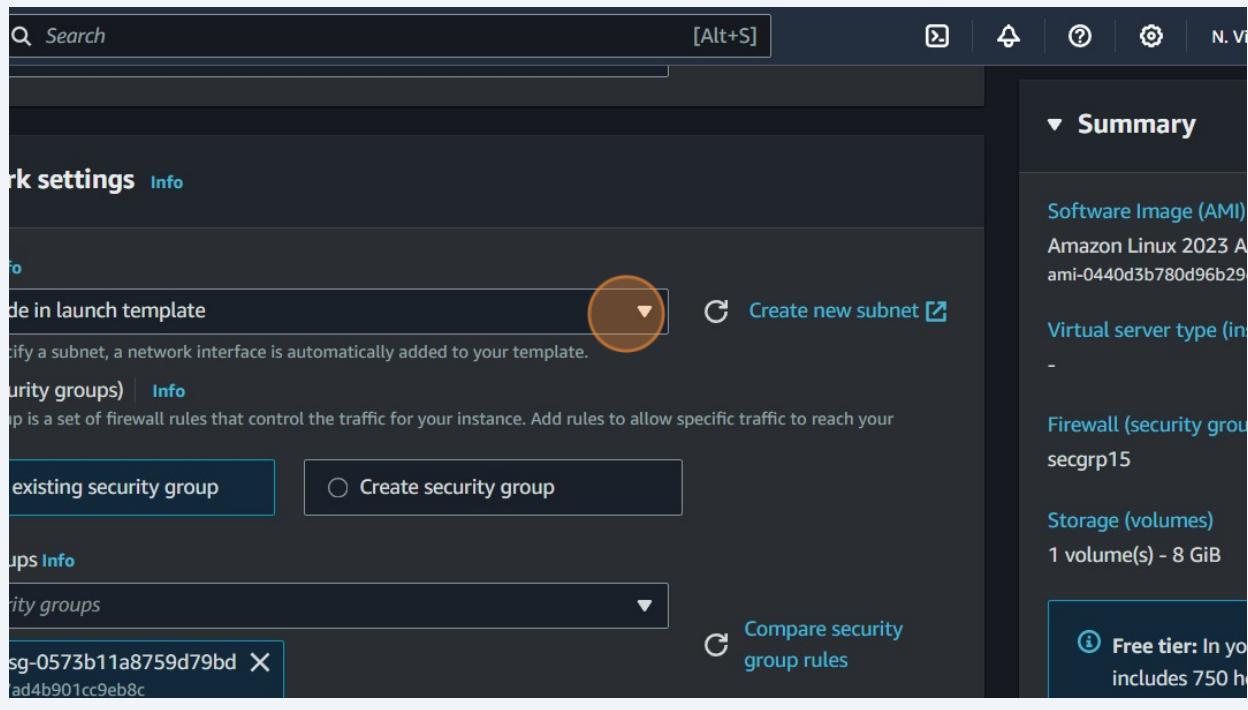
42 Click "Don't include in launch template"



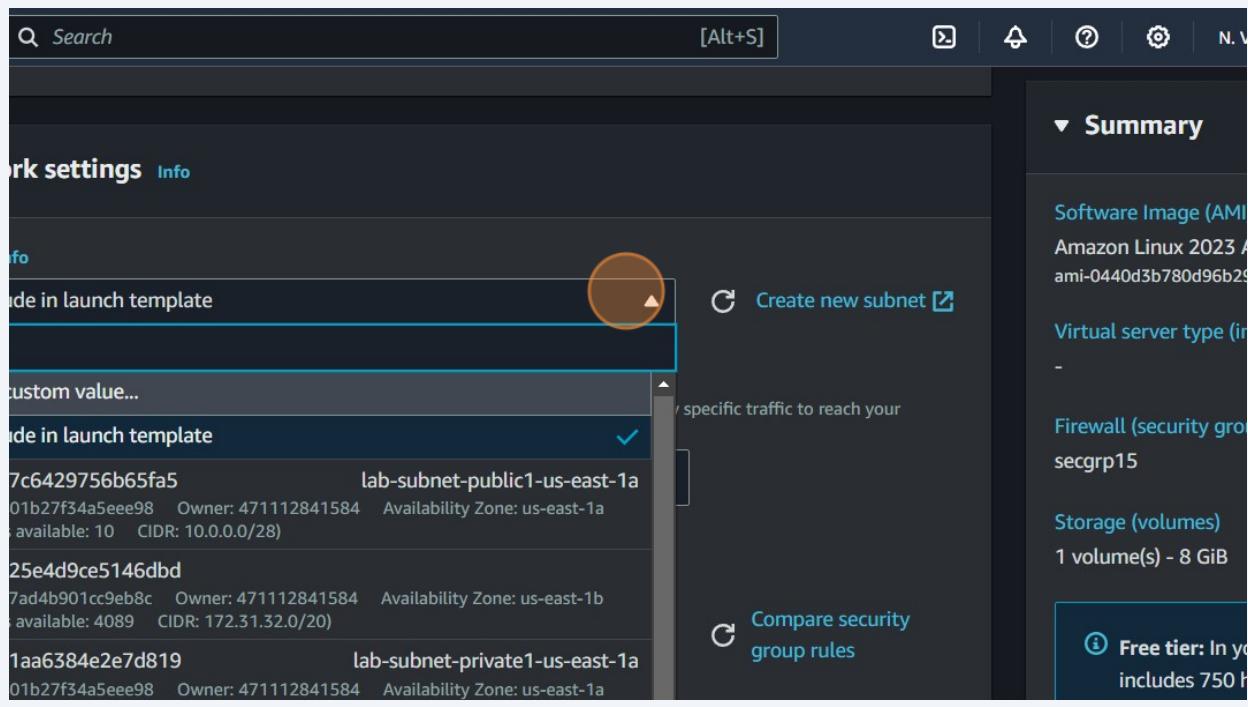
43 Click "Don't include in launch template"



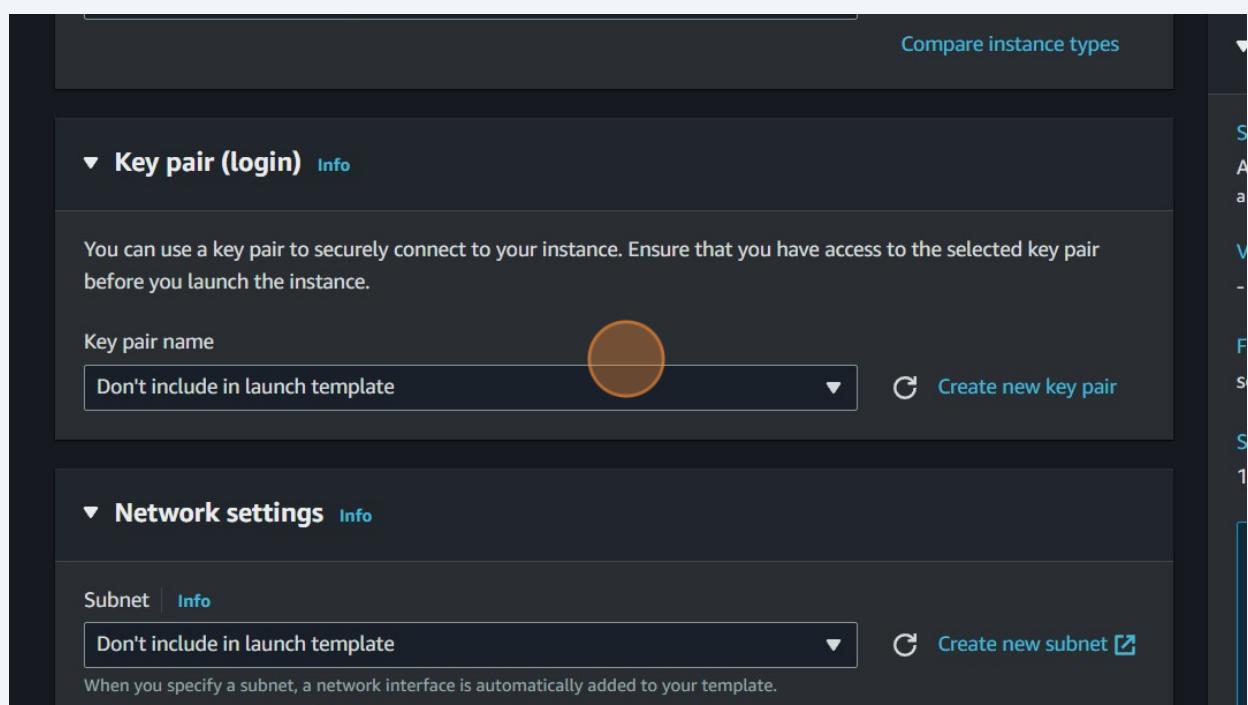
44 Click "Don't include in launch template"



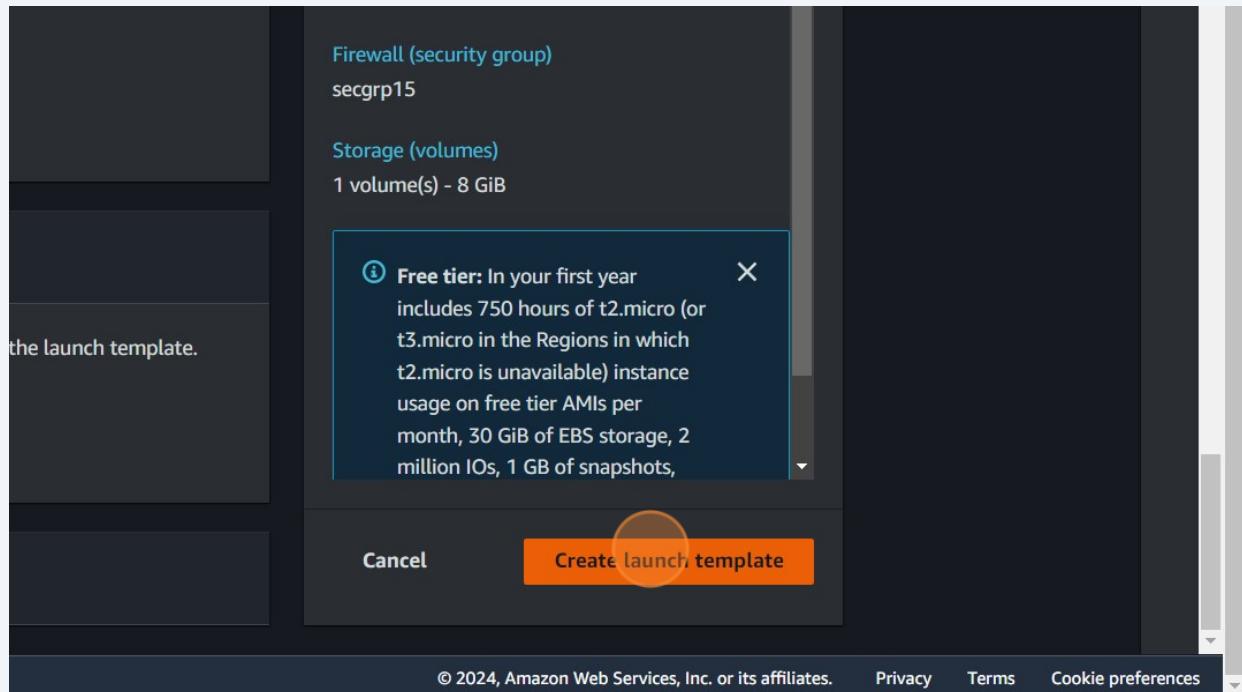
45 Click "Don't include in launch template"



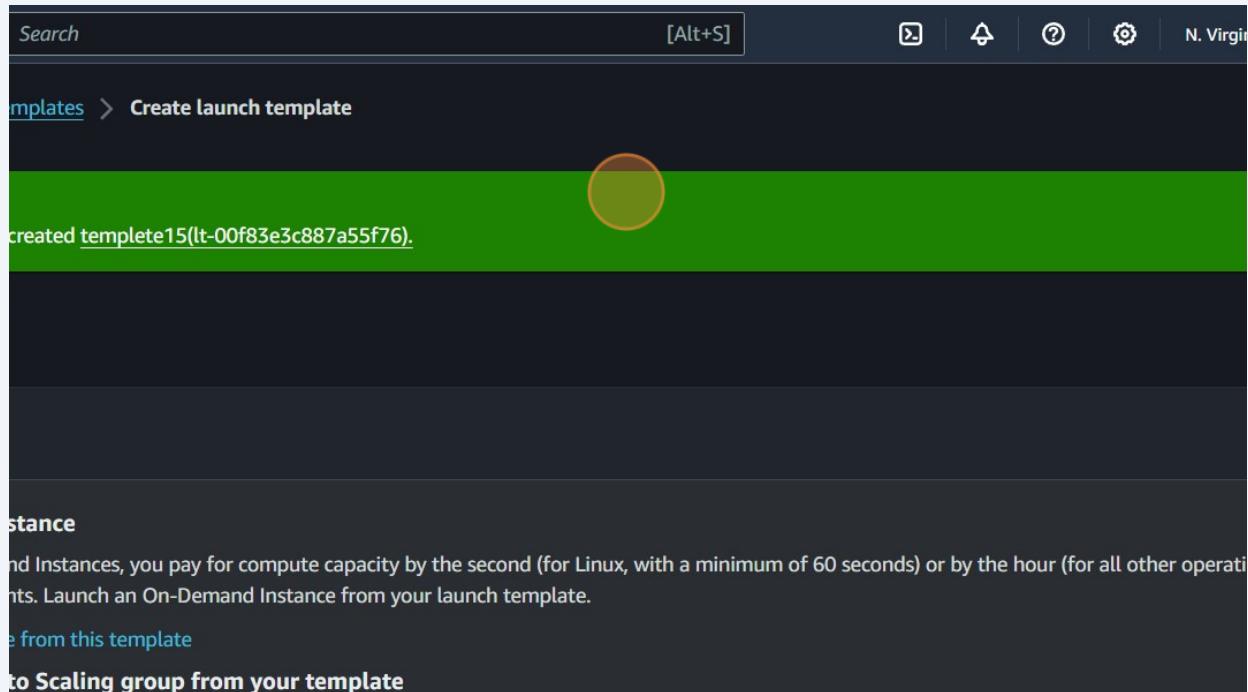
46 Click here.



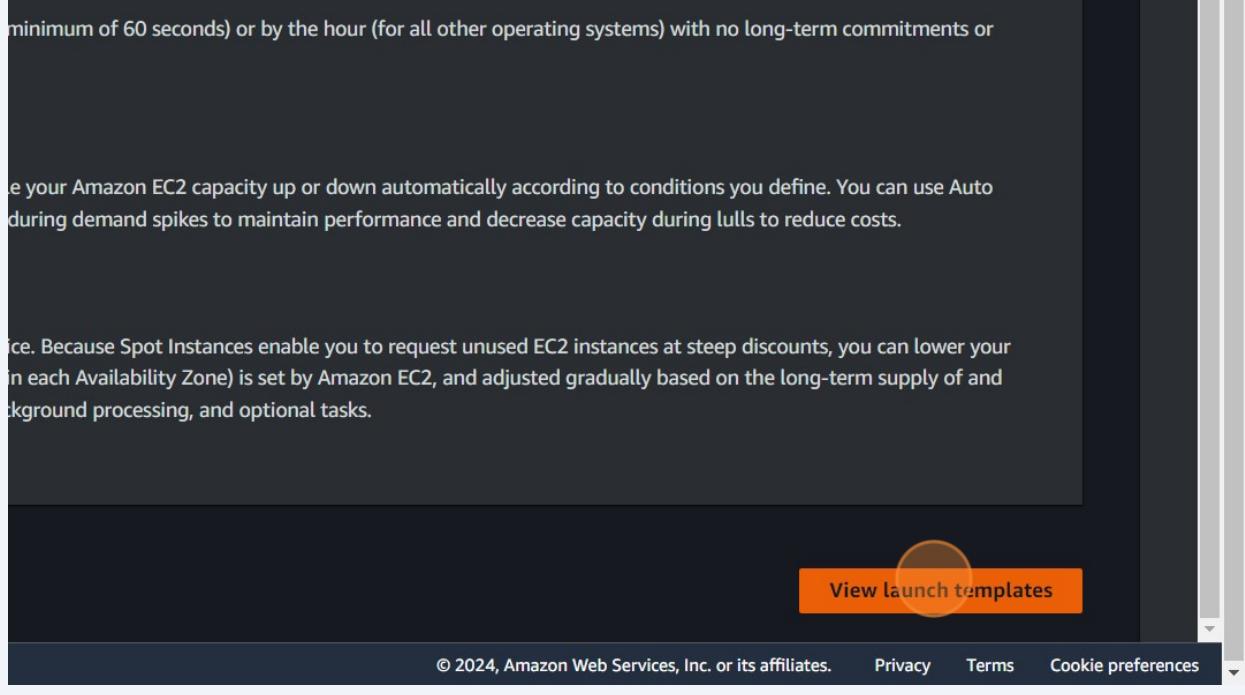
47 Click "Create launch template"



48 Click "Success"



**49** Click "View launch templates"



minimum of 60 seconds) or by the hour (for all other operating systems) with no long-term commitments or

le your Amazon EC2 capacity up or down automatically according to conditions you define. You can use Auto scaling policies to maintain performance and decrease capacity during lulls to reduce costs.

ice. Because Spot Instances enable you to request unused EC2 instances at steep discounts, you can lower your costs. The price you pay for a Spot Instance (the bid price) is set by Amazon EC2, and adjusted gradually based on the long-term supply of and demand for instances. You can use Spot Instances for background processing, and optional tasks.

[View launch templates](#)

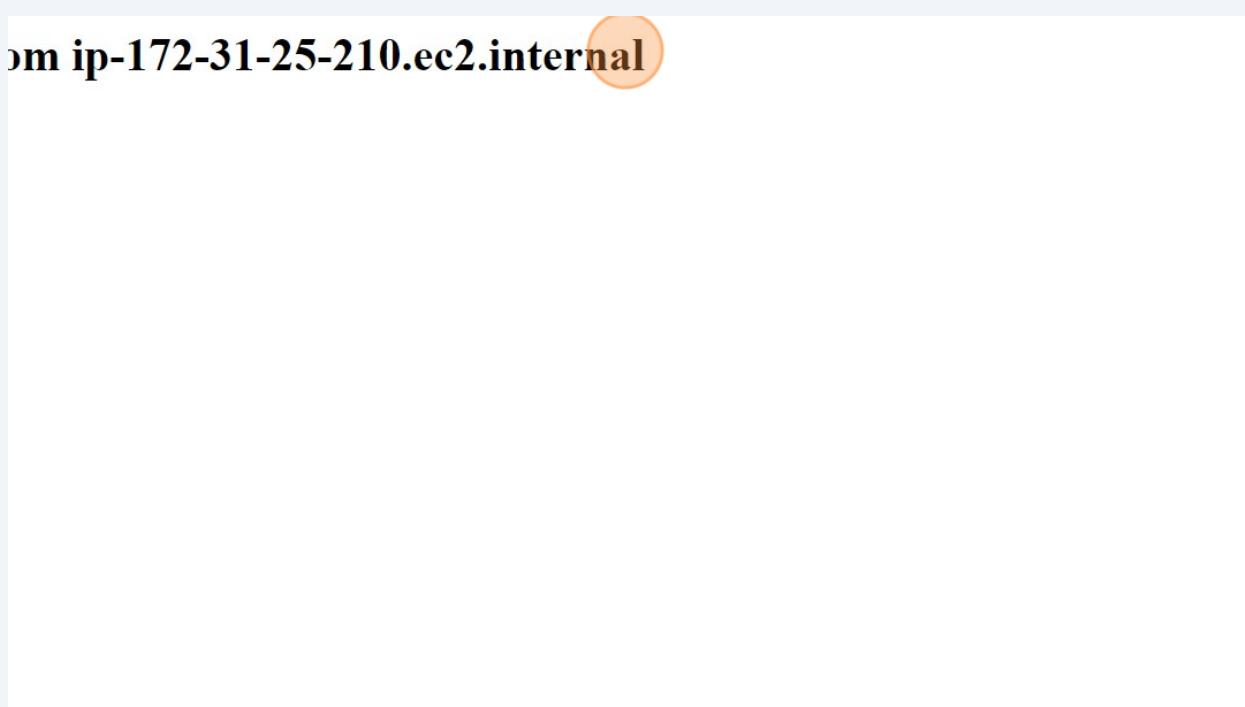
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**50** Double-click "Hello World from ip-172-31-25-210.ec2.internal"



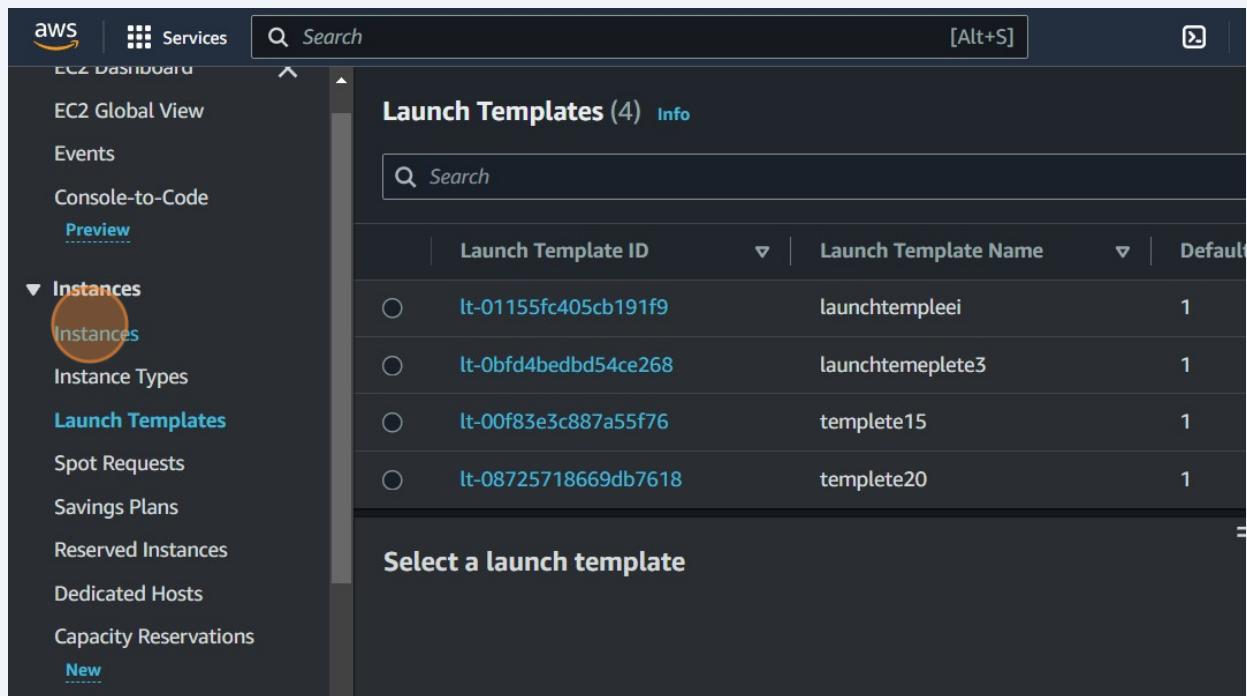
ssh ip-172-31-25-210.ec2.internal

**51** Click "Hello World from ip-172-31-25-210.ec2.internal"

**52** Double-click "Hello World from ip-172-31-25-210.ec2.internal"

ip-172-31-25-210.ec2.internal

53 Click "Instances"



The screenshot shows the AWS EC2 Launch Templates page. The left sidebar has a tree view with 'Instances' expanded, and 'Launch Templates' selected, both highlighted with orange circles. The main content area shows a table of launch templates with columns for ID, Name, and Default. There is also a 'Select a launch template' section at the bottom.

	Launch Template ID	Launch Template Name	Default
<input type="radio"/>	lt-01155fc405cb191f9	launchtempleei	1
<input type="radio"/>	lt-0bfd4bedbd54ce268	launchtemplete3	1
<input type="radio"/>	lt-00f83e3c887a55f76	template15	1
<input type="radio"/>	lt-08725718669db7618	template20	1

54 Double-click "Hello World from ip-172-31-25-210.ec2.internal"

Hello World from ip-172-31-25-210.ec2.internal