

## 2. Setup autoscaling infrastructure with ELB and scale up / down on scheduled time as well on CPU > 5%

Step 1: Define Load Balancer

Basic Configuration

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

Load Balancer name:

Create LB inside:

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

Enable advanced VPC configuration: ☐

Listener Configuration:

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

Add

Cancel Next: Assign Security Groups

Step 2: Assign Security Groups

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

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

Attached Security Group

Security Group ID	Name	Description	Actions
sg-0f0a5eb27e2daff2	default	default VPC security group	<a href="#">Copy to new</a>
sg-077ede3b90fc3125	launch-wizard-1	launch-wizard-1 created 2021-04-25T22:32:13.793+05:30	<a href="#">Copy to new</a>
sg-0292414f81fdcf559	launch-wizard-10	launch-wizard-10 created 2021-08-10T11:44:59.894+05:30	<a href="#">Copy to new</a>
sg-0f9f1713c74d71d2d	launch-wizard-2	launch-wizard-2 created 2021-04-26T09:04:58.879+05:30	<a href="#">Copy to new</a>
sg-01979244cb6e6aba0	launch-wizard-4	launch-wizard-4 created 2021-07-04T17:02:43.015+05:30	<a href="#">Copy to new</a>
sg-01ad5dbb559c05de1	launch-wizard-5	launch-wizard-5 created 2021-07-31T01:39:32.224+05:30	<a href="#">Copy to new</a>
sg-0f0c19cae641b39a3	launch-wizard-6	launch-wizard-6 created 2021-08-03T11:47:10.719+05:30	<a href="#">Copy to new</a>
sg-0ed9e60d9b24c581b	launch-wizard-7	launch-wizard-7 created 2021-08-05T12:28:50.366+05:30	<a href="#">Copy to new</a>
sg-0186113094de2341d	launch-wizard-8	launch-wizard-8 created 2021-08-06T11:58:11.821+05:30	<a href="#">Copy to new</a>
sg-0f7b74bd59ecd6ae	launch-wizard-9	launch-wizard-9 created 2021-08-09T11:58:14.850+05:30	<a href="#">Copy to new</a>

Cancel Previous Next: Configure Security Settings

Create Load Balancer | EC2 Man... x Create Load Balancer | EC2 Man... x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#CreateELBWizard:

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

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

## Step 4: Configure Health Check

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

Ping Protocol HTTP

Ping Port 80

Ping Path /index.php

### Advanced Details

Response Timeout 5 seconds

Interval 30 seconds

Unhealthy threshold 2

Healthy threshold 10

Cancel Previous Next: Add EC2 Instances

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Instances | EC2 Management Co... Create Load Balancer | EC2 Man... x Create Load Balancer | EC2 Man... x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#CreateELBWizard:

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

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

## Step 5: Add EC2 Instances

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

VPC vpc-0fe4ead84a10b9c9a (172.31.0.0/16)

<input type="checkbox"/>	Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
<input checked="" type="checkbox"/>	i-0b474159b7aa1115	Jenkins Integrate	stopped	launch-wizard-4	ap-south-1a	subnet-0c3d4f65...	172.31.32.0/20
<input type="checkbox"/>	i-0fd738447de04246		stopped	launch-wizard-5	ap-south-1a	subnet-0c3d4f65...	172.31.32.0/20
<input type="checkbox"/>	i-03069e9bec31fc615	test	stopped	launch-wizard-1	ap-south-1b	subnet-02f680f6...	172.31.0.0/20
<input type="checkbox"/>	i-080ee1c12eba99b8b	windowinstance	stopped	launch-wizard-2	ap-south-1b	subnet-02f680f6...	172.31.0.0/20
<input type="checkbox"/>	i-00f7e475c233177a8	terraform	stopped	default	ap-south-1b	subnet-02f680f6...	172.31.0.0/20
<input type="checkbox"/>	i-0df175483b40d4c16	Ansible Testing	stopped	launch-wizard-7	ap-south-1b	subnet-02f680f6...	172.31.0.0/20
<input type="checkbox"/>	i-0e5e0f292187cd885	Jenkins-Master	stopped	launch-wizard-8	ap-south-1b	subnet-02f680f6...	172.31.0.0/20

### Availability Zone Distribution

1 instance in ap-south-1a

☒ Enable Cross-Zone Load Balancing

☒ Enable Connection Draining 300 seconds

Attaching Instance for ELB

Cancel Previous Next: Add Tags

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Connect to instance | EC2 Management Console | Load Balancers | EC2 Management | phpinfo()

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LoadBalancers:sort=loadBalancerName

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Tags

Limits

Instances

Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

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Dedicated Hosts

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

1 to 1 of 1

Name	DNS name	State	VPC ID	Availability Zones	Type	Created
Techify-ELB	Techify-ELB-1473444687.ap...	Available	vpc-0fe4ead84a10b9c9a	ap-south-1a, ap-south-1b	classic	August 10, 2021

Description Instances Health check Listeners Monitoring Tags Migration

Connection Drainings: Enabled, 300 seconds (Edit)

Edit Instances

Instance ID	Name	Availability Zone	Status	Actions
i-0b474159b7aaf1115	Jenkins Integrate	ap-south-1a	InService	Remove from Load Balancer

Edit Availability Zones

Availability Zone	Subnet ID	Subnet CIDR	Instance Count	Healthy?	Actions
ap-south-1a	subnet-0c3d4f65067541007	172.31.32.0/20	1	Yes	Remove from Load Balancer
ap-south-1b	subnet-02f680f6886d7cd03	172.31.0.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer

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Connect to instance | EC2 Management Console | Load Balancers | EC2 Management | phpinfo()

techify-elb-1473444687.ap-south-1.elb.amazonaws.com

PHP Version 5.4.16

System

Linux ip-172-31-36-262.ap-south-1.compute.internal 4.14.238-192.422.amzn2.x86\_64 #1 SMP Tue Jul 20 20:35:54 UTC 2021 x86\_64

Build Date

Oct 31 2019 18:35:17

Server API

Apache 2.0 Handler

Virtual Directory Support

disabled

Configuration File (php.ini) Path

/etc

Loaded Configuration File

/etc/php.ini

Scan this dir for additional .ini files

/etc/php.d

Additional .ini files parsed

/etc/php.d/curl.ini, /etc/php.d/fileinfo.ini, /etc/php.d/json.ini, /etc/php.d/phar.ini, /etc/php.d/zip.ini

PHP API

20100412

PHP Extension

20100525

Zend Extension

220100525

Zend Extension Build

API220100525.NTS

PHP Extension Build

API20100525.NTS

Debug Build

no

Thread Safety

disabled

Zend Signal Handling

disabled

Zend Memory Manager

enabled

Zend Multibyte Support

disabled

IPv6 Support

enabled

OTrace Support

disabled

Registered PHP Streams

https, ftps, compress.zlib, compress.bzip2, php, file, glob, data, http, ftp, phar, zip

Registered Stream Socket Transports

tcp, udp, unix, udg, ssl, sslv3, tls

Registered Stream Filters

zlib\*, bzip2\*, convert.iconv\*, string.rot13, string.toupper, string.tolower, string.strip\_tags, convert.\*, consumed, dechunk

This program makes use of the Zend Scripting Language Engine: Zend Engine v2.4.0, Copyright (c) 1998-2013 Zend Technologies

Powered By Zend

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Instances | EC2 Management Console

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#Instances:

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

Services

Instances (1/10) Info

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm state
Jenkins Integr...	i-0b474159b7aaf1115	Running	t2.micro	2/2 checks passed	No alarm
-	i-0fdf738447de04246	Stopped	t2.micro	-	No alarm
test	i-03069e9bec31fc615	Stopped	t2.micro	-	No alarm
windowinstance	i-080ee1c12eba99b8b	Stopped	t2.micro	-	No alarm
terraform	i-00f7e475c233177a8	Stopped	t2.micro	-	No alarm
Ansible Testing	i-0df175483b40d4c16	Stopped	t2.micro	-	No alarm

Actions

- Connect
- View details
- Manage instance state
- Instance settings
- Networking
- Security
- Image and templates
- Monitor and troubleshoot

Create image

Create template from instance

Launch more like this

Instance: i-0b474159b7aaf1115 (Jenkins Integrate)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary Info

Instance ID

i-0b474159b7aaf1115 (Jenkins Integrate)

Public IPv4 address

3.108.184.227 | open address

Private IPv4 addresses

172.31.36.252

Instance state

Running

Public IPv4 DNS

ec2-3-108-184-227.ap-south-1.compute.amazonaws.com | open address

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Create template from instance | EC2 Management Console

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#CreateTemplateFromInstance?instanceId=i-0b474159b7aaf1115

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

Services

EC2 > Launch templates > Create template from instance

## Create launch template

Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

Launch template name and description

Source instance

i-0b474159b7aaf1115

Launch template name - required

My-Techify\_Test

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '"', '@'.

Template version description

v1

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

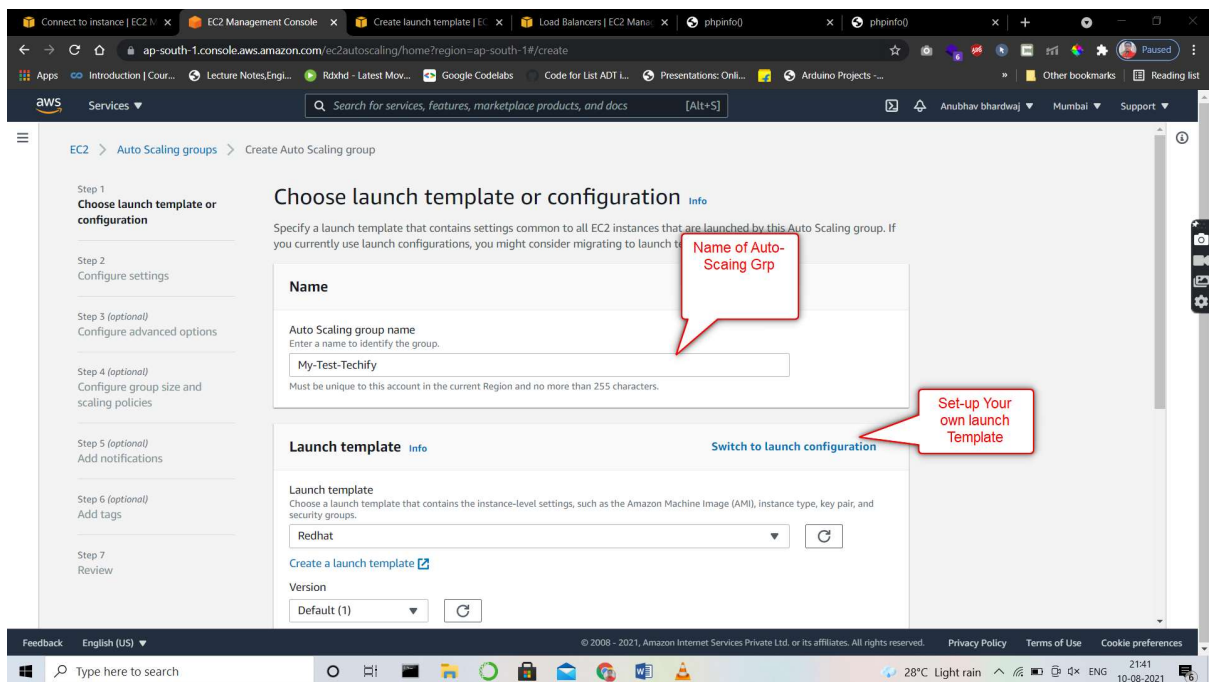
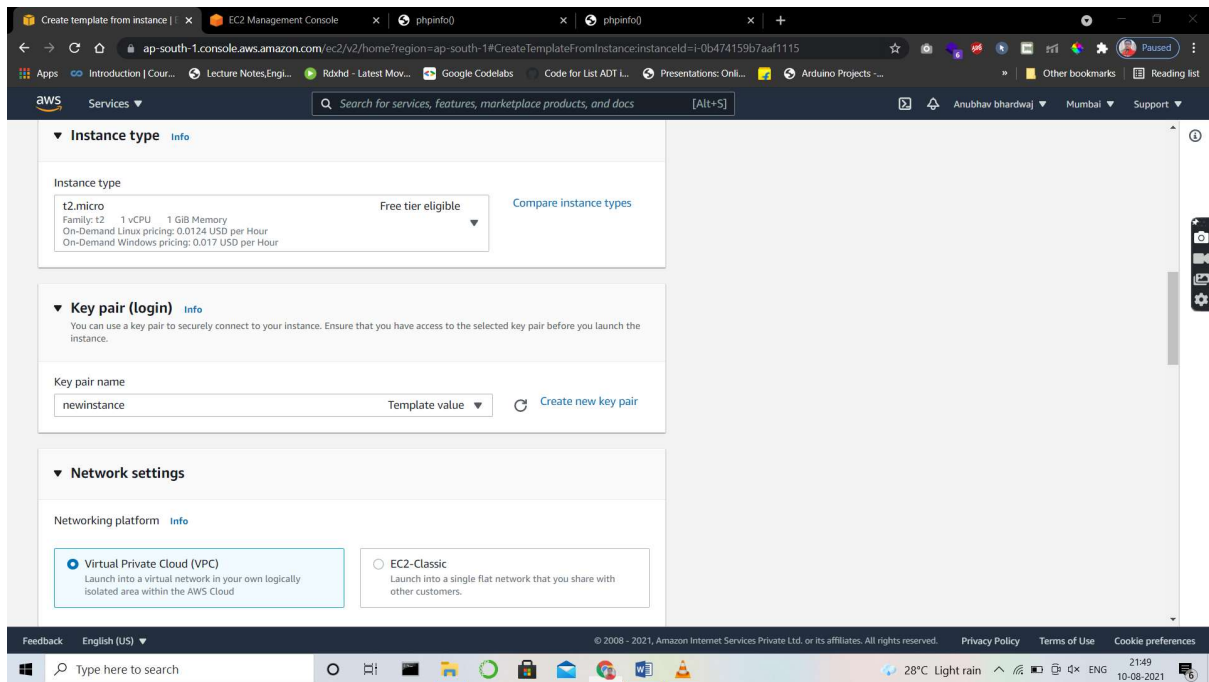
Template tags

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Create template from instance | x EC2 Management Console x phpinfo() x phpinfo() x +

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#CreateTemplateFromInstance:instanceId=i-0b474159b7aaf1115

Success  
Successfully created My-Techify\_Test (lt-02be908ecda697d94)

Actions log

Next steps

Launch an instance

With On-Demand Instances, you pay for compute capacity by the second (for Linux, with a minimum of 60 seconds) or by the hour (for all other operating systems) with no long-term commitments or upfront payments. Launch an On-Demand Instance from your launch template.

Launch instance from this template

Create an Auto Scaling group from your template

Amazon EC2 Auto Scaling helps you maintain application availability and allows you to scale your Amazon EC2 capacity up or down automatically according to conditions you define. You can use Auto Scaling to help ensure that you are running your desired number of Amazon EC2 instances during demand spikes to maintain performance and decrease capacity during lulls to reduce costs.

Create Auto Scaling group

Create Spot Fleet

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Template  
Launched  
Successfully

Create template from instance | x EC2 Management Console x phpinfo() x phpinfo() x +

ap-south-1.console.aws.amazon.com/ec2/autoscaling/home?region=ap-south-1#/create

configuration

Step 2  
Configure settings

Step 3 (optional)  
Configure advanced options

Step 4 (optional)  
Configure group size and scaling policies

Step 5 (optional)  
Add notifications

Step 6 (optional)  
Add tags

Step 7  
Review

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.

My-Techify-ASG

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.

My-Techify\_Test

Create a launch template

Version

Default (1)

Create a launch template version

Description

v1

Launch template

My-Techify\_Test  
lt-02be908ecda697d94

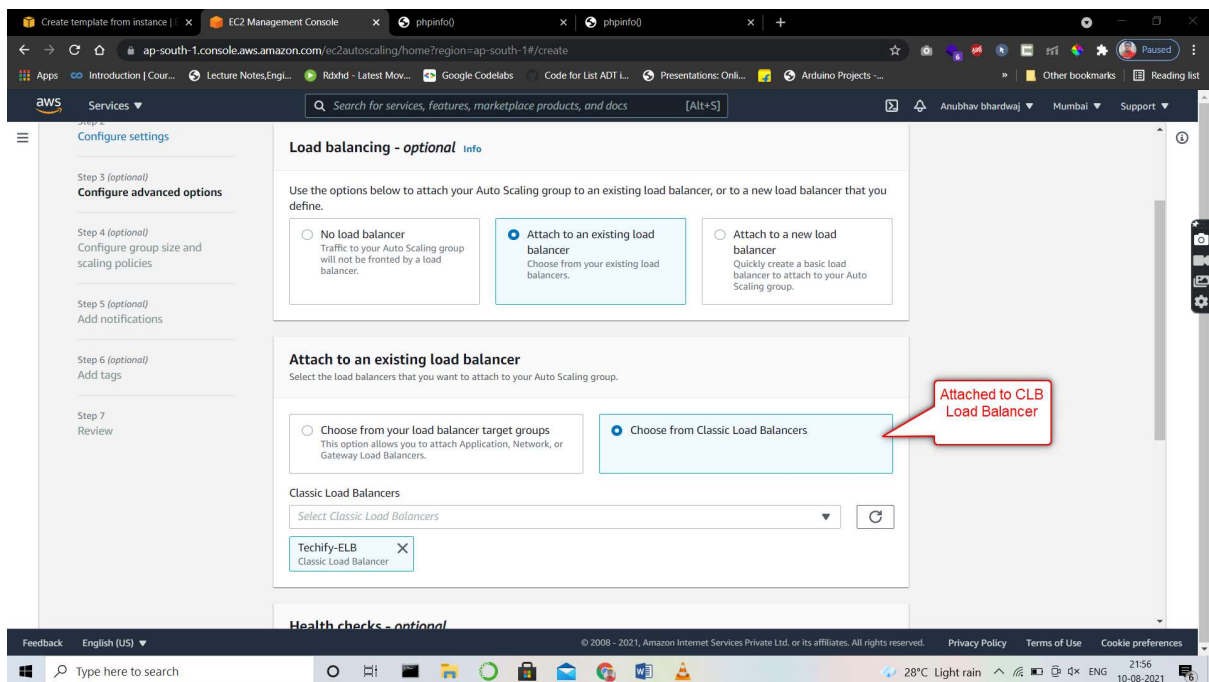
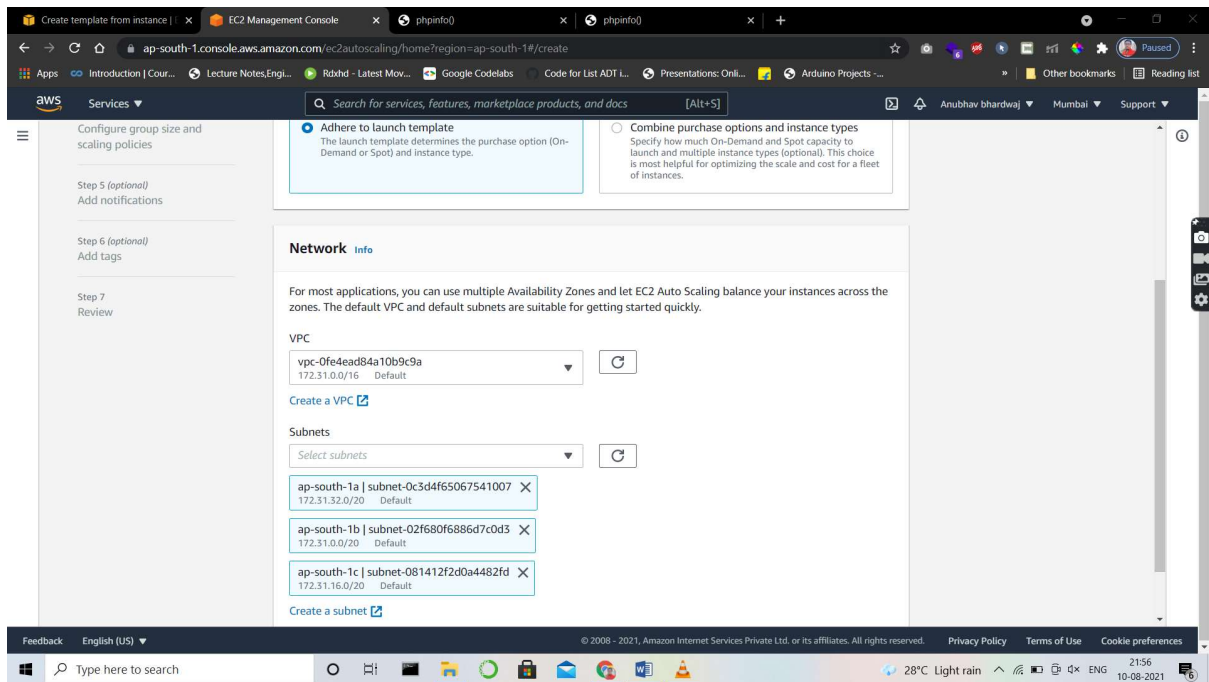
Instance type

t2.micro

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Create template from instance | x EC2 Management Console x phpinfo() x phpinfo() x +

ap-south-1.console.aws.amazon.com/ec2autoscaling/home?region=ap-south-1#/create

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

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1 Choose launch template or configuration

Step 2 Configure settings

Step 3 (optional) Configure advanced options

Step 4 (optional) Configure group size and scaling policies

Step 5 (optional) Add notifications

Step 6 (optional) Add tags

Step 7 Review

### Configure group size and scaling policies [info](#)

Set the desired, minimum, and maximum capacity of your Auto Scaling group. You can optionally add a scaling policy to dynamically scale the number of instances in the group.

#### Group size - optional [info](#)

Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum capacity limits. Your desired capacity must be within the limit range.

Desired capacity

Minimum capacity

Maximum capacity

Set the Capacity

#### Scaling policies - optional

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

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Create template from instance | x EC2 Management Console x phpinfo() x phpinfo() x +

ap-south-1.console.aws.amazon.com/ec2autoscaling/home?region=ap-south-1#/create

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

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

None ☐

Scaling policy name

Metric type

Target value

Instances need  seconds warm up before including in metric

☐ Disable scale in to create only a scale-out policy

#### Instance scale-in protection - optional

Instance scale-in protection

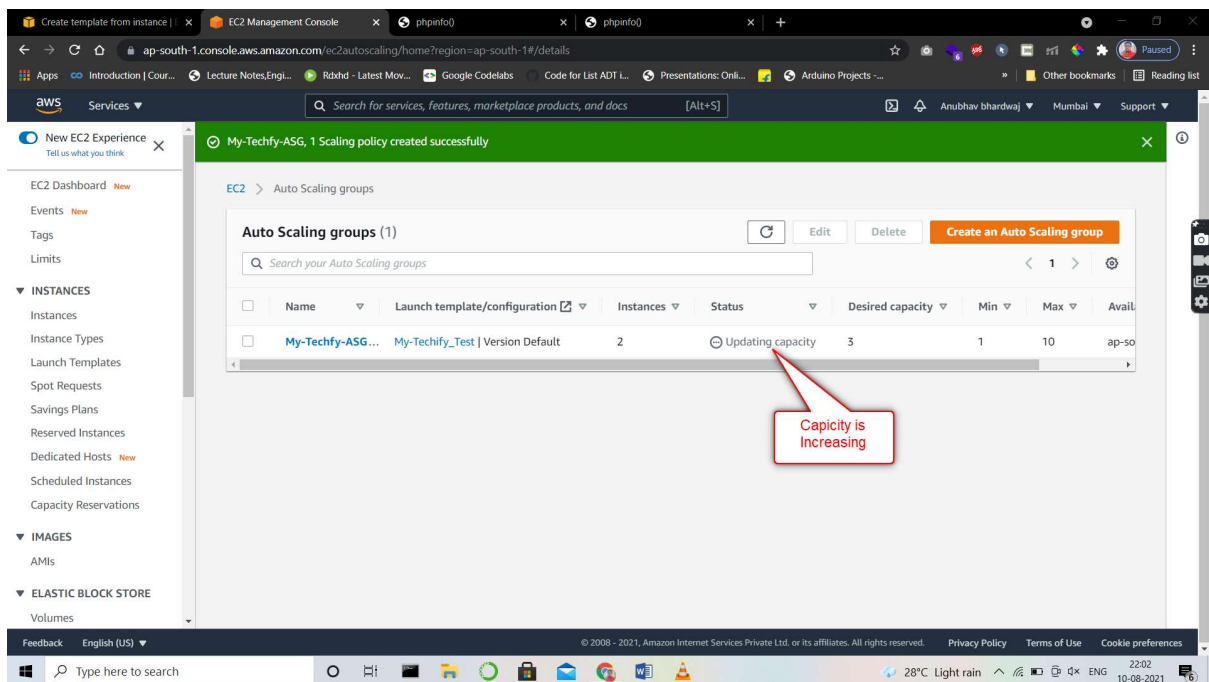
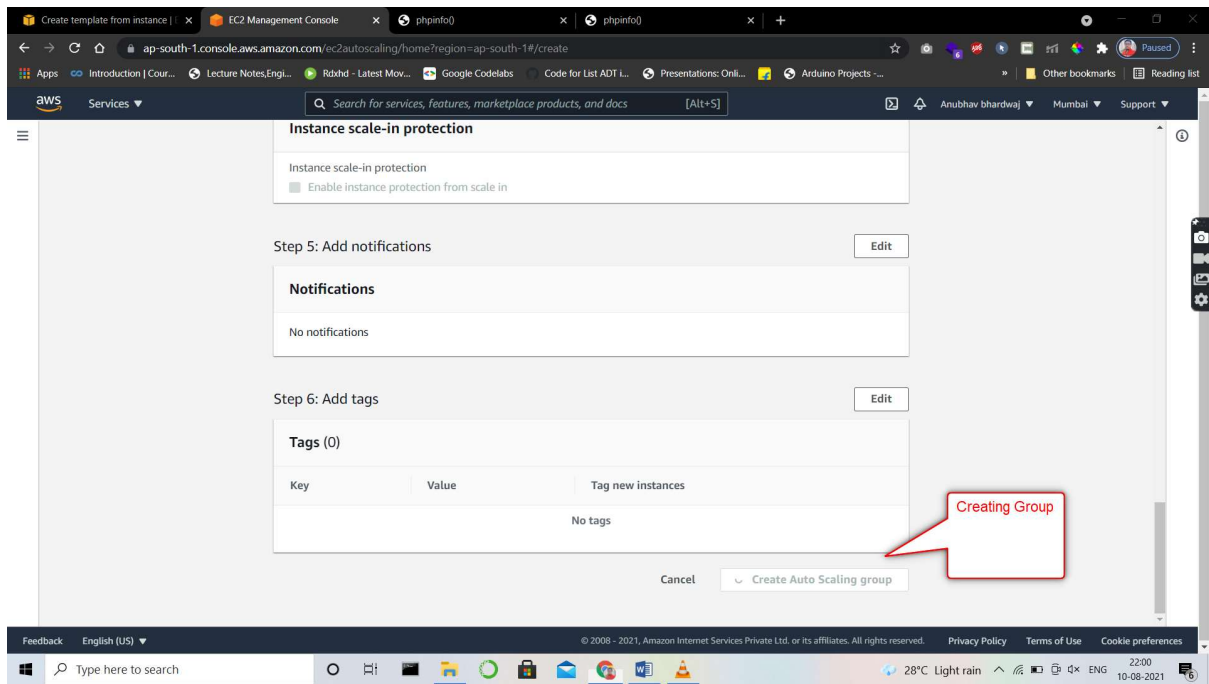
If protect from scale in is enabled, newly launched instances will be protected from scale in by default.

☐ Enable instance scale-in protection

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Instances | EC2 Management Console

EC2 Management Console

phpinfo()

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#Instances:

Introduction | Cour...Lecture Notes,Engl...Rdshd - Latest Mov...Google CodelabsCode for List ADT L...Presentations: Onli...Arduino Projects ...

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Anubhav bhardwajMumbaiSupport

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Tags

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Instances

Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances New

Dedicated Hosts

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Instances (31) Info

Filter instances

Connect

Instance state

Actions

Launch instances

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>	Jenkins Integr...	i-0b474159b7aaf1115	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a	ec2-3-108-184-
<input type="checkbox"/>	-	i-0fdf738447de04246	Stopped	t2.micro	-	No alarms	ap-south-1a	-
<input type="checkbox"/>	Jenkins Integr...	i-043a74a72328c2649	Terminated	t2.micro	-	No alarms	ap-south-1a	-
<input type="checkbox"/>	Jenkins Integr...	i-0d77d9fb1bb7286ea	Terminated	t2.micro	-	No alarms	ap-south-1a	-
<input type="checkbox"/>	Jenkins Integr...	i-0acfb9d2c1779473b	Terminated	t2.micro	-	No alarms	ap-south-1a	-
<input type="checkbox"/>	Jenkins Integr...	i-01b554139a601d441	Terminated	t2.micro	-	No alarms	ap-south-1a	-
<input type="checkbox"/>	Jenkins Integr...	i-0f4e32c05db437e3f	Running	t2.micro	2 checks passed	No alarms	ap-south-1a	ec2-13-232-244-
<input type="checkbox"/>	Jenkins Integr...	i-061efc71b5dc5f4f4	Terminated	t2.micro	-	No alarms	ap-south-1a	-
<input type="checkbox"/>	Jenkins Integr...	i-07c0a6fdb8b94536a	Running	t2.micro	Initializing	No alarms	ap-south-1a	ec2-35-154-123-
<input type="checkbox"/>	Jenkins Integr...	i-022d7a1fe96e9ec09	Terminated	t2.micro	-	No alarms	ap-south-1a	-

Select an instance above

Instantiation and Termination after Load Remove

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