

RDS RESUME/CV project

Step 1:

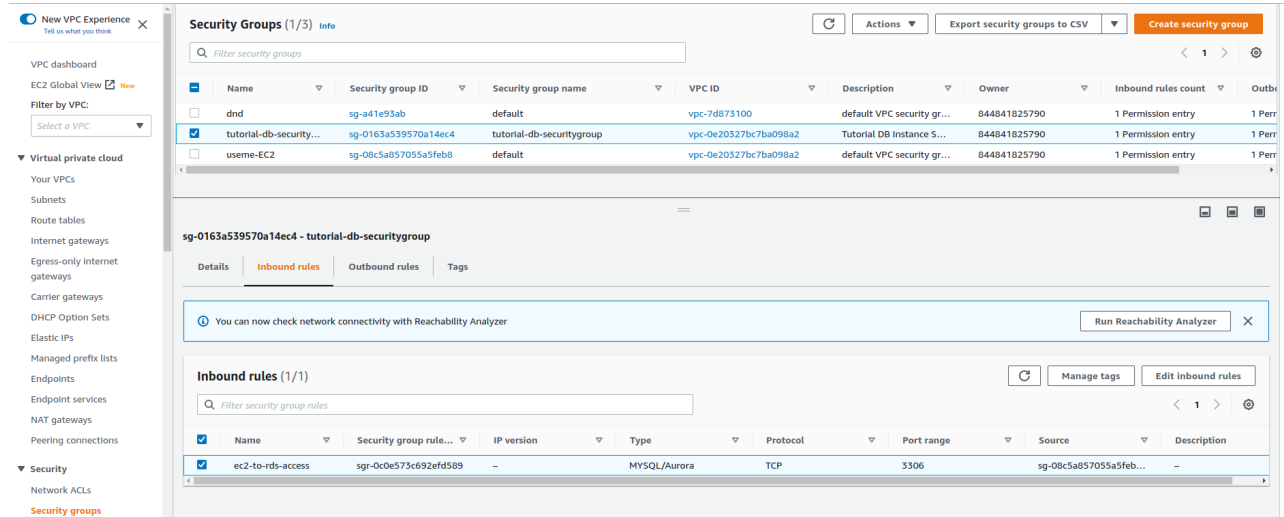
create vpc and all its components: IGW, RT, subnets-pub-1a, pub-1b

vpc: 10.0.0.0/16

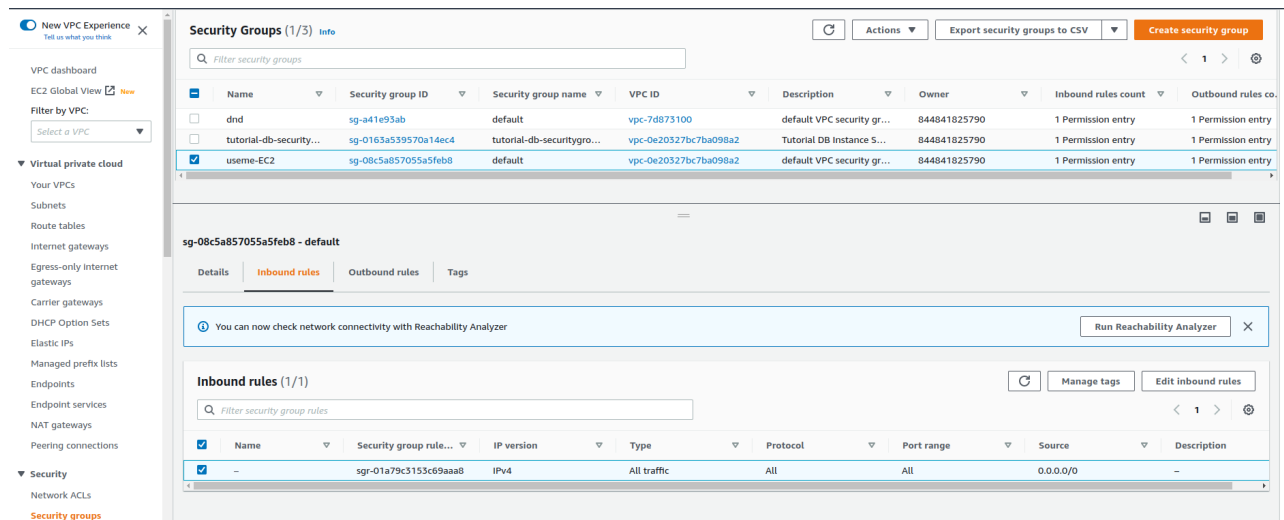
pub-1a: 10.0.1.0/24

pub-1b: 10.0.2.0/24

create a security group for you RDS instance, and in Inbound rules: allow mysql traffic only from ec2-Security-group.



In Inbound Rules: Allow all traffic from anywhere to for use in EC2.



Step 2:

Create a public and private bucket in S3. And upload one images to each. Pub image: your photo.

Step 3:

configure RDS

https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_Tutorials.WebServerDB.CreatedBInstance.html

follow through: 1. Create a DB Instance , 2. Create a web server

Following is the VPC conf. At RDS Database creation console:

The screenshot shows the AWS RDS Database creation console with the following configuration options:

- Virtual private cloud (VPC)** [Info](#)
VPC that defines the virtual networking environment for this DB instance.
Dropdown menu: **useme (vpc-0e20327bc7ba098a2)**
Only VPCs with a corresponding DB subnet group are listed.
- Subnet group** [Info](#)
DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.
Dropdown menu: **Create new DB Subnet Group**
- Public access** [Info](#)
☐ **Yes**
Amazon EC2 instances and devices outside the VPC can connect to your database. Choose one or more VPC security groups that specify which EC2 instances and devices inside the VPC can connect to the database.
☒ **No**
RDS will not assign a public IP address to the database. Only Amazon EC2 instances and devices inside the VPC can connect to your database.
- VPC security group**
Choose a VPC security group to allow access to your database. Ensure that the security group rules allow the appropriate incoming traffic.
☒ **Choose existing**
Choose existing VPC security groups
☐ **Create new**
Create new VPC security group
- Existing VPC security groups**
Dropdown menu: **Choose VPC security groups**
Text input: **tutorial-db-securitygroup** (with a close button)
- Availability Zone** [Info](#)
Dropdown menu: **No preference**

Step 4:

Now Launch an EC2 by hand/manually. And set it up to host SamplePage.php. We will test it and once everything is up and running, we will take an AMI snapshot out of that EC2 Instance state.

Use the bootstrap script to while launching EC2:

```
#!/bin/bash
sudo yum -y update
sleep 5
sudo yum -y install httpd
sleep 10
sudo amazon-linux-extras install php8.0 mariadb10.5 -y
sleep 30
sudo systemctl restart httpd
sleep 4
sudo systemctl enable httpd
```

```
sleep 4
sudo mkdir /var/www/inc
sleep 2
```

Login to instance and make the necessary changes:

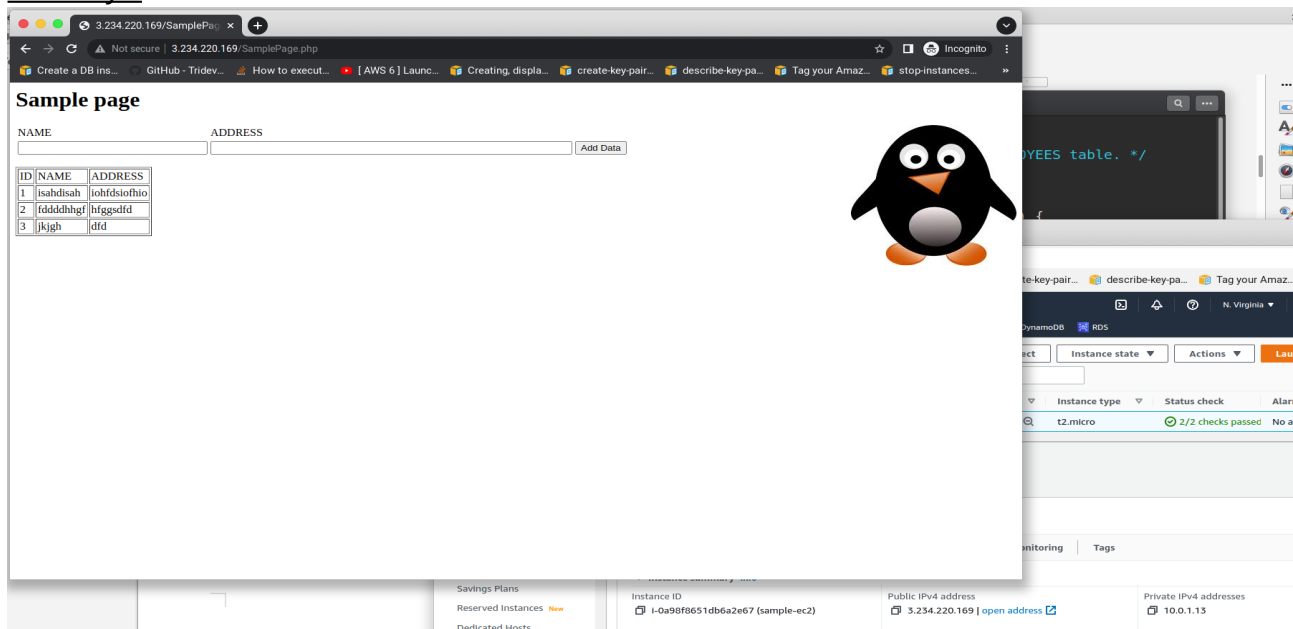
```
# cat > /var/www/inc/dbinfo.inc
<?php
```

```
define('DB_SERVER', 'tutorial-db-instance.cnekvosk6jnc.us-east-1.rds.amazonaws.com');
define('DB_USERNAME', 'tutorial_user');
define('DB_PASSWORD', 'admin123');
define('DB_DATABASE', 'sample');
```

```
?>"
```

```
# cat > /var/www/html/SamplePage.php <-- "Enter the contents from AWS docs" and add img src taag for your S3 public-object url.
```

Verify:



Step 4:

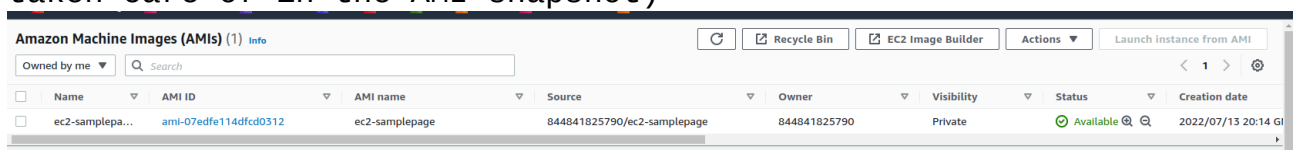
Taking Backups for automated/further use:

Create AMI from instance:

Now create an AMI snapshot of the EC2: instance -> actions -> image and templates -> Create Image

create Launch template from instance:

Now create an AMI snapshot of the EC2: instance -> actions -> image and templates -> create template from instance (conditions: 1. Do not keep AZ, 2. remove the bootstrap script as it is already taken care of in the AMI snapshot)

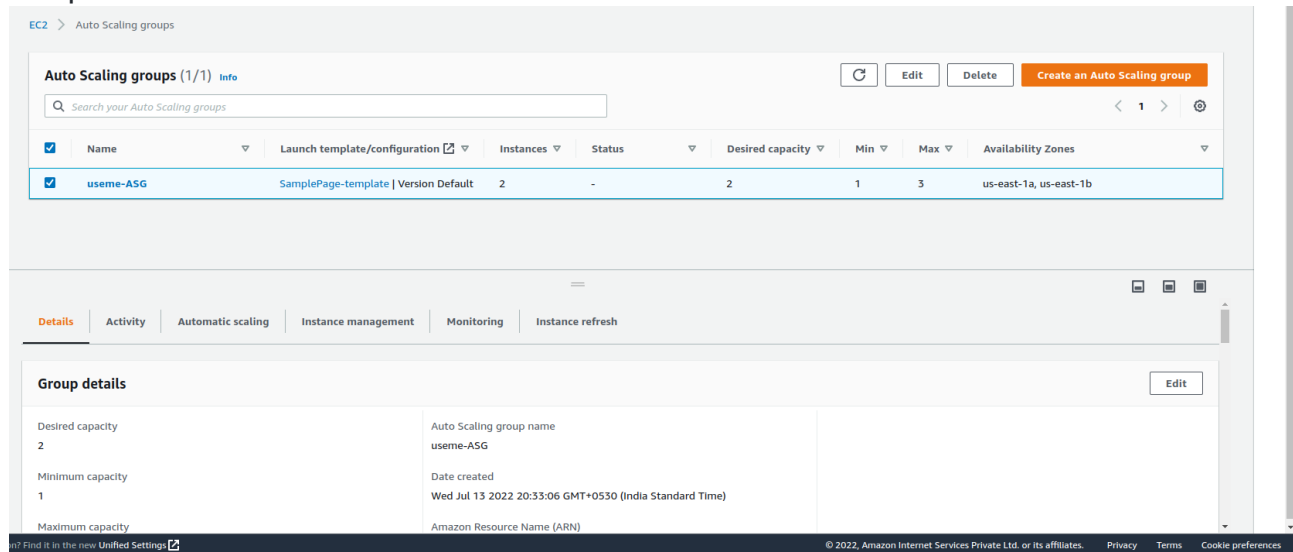


Now, stop/terminate the unnecessary EC2 instance.

Step 5:

Create AutoScaling Group:

only public subnet - create Auto scaling with ELB, and target group, scale in protection for autoscaling -> off, using launch template



Auto Scaling groups (1/1)

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
useme-ASG	SamplePage-template Version Default	2	-	2	1	3	us-east-1a, us-east-1b

Group details

Desired capacity: 2

Minimum capacity: 1

Maximum capacity: 3

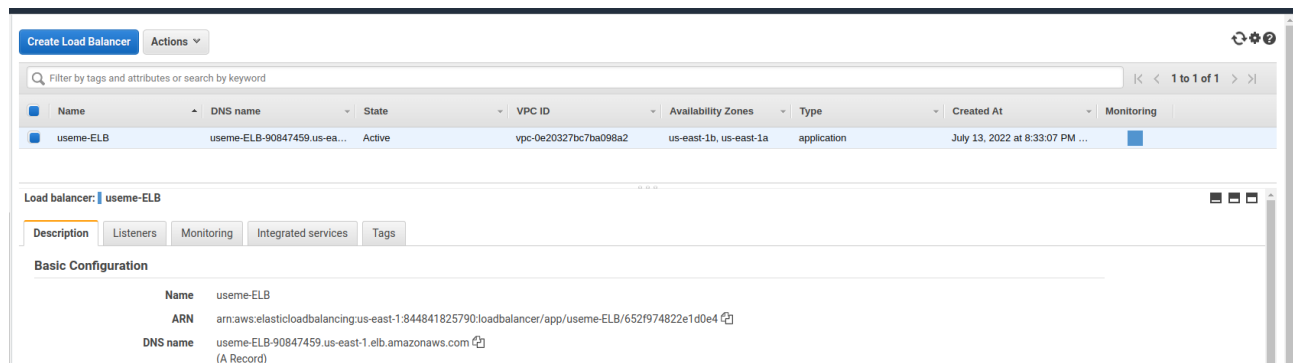
Auto Scaling group name: useme-ASG

Date created: Wed Jul 13 2022 20:33:06 GMT+0530 (India Standard Time)

Amazon Resource Name (ARN):

Creating autoscaling group also create the target group and ELB for me, and launched the instances.

ELB:



Load balancers

Name	DNS name	State	VPC ID	Availability Zones	Type	Created At	Monitoring
useme-ELB	useme-ELB-90847459.us-east-1.elb.amazonaws.com	Active	vpc-0e20327bc7ba098a2	us-east-1b, us-east-1a	application	July 13, 2022 at 8:33:07 PM ...	

Load balancer: useme-ELB

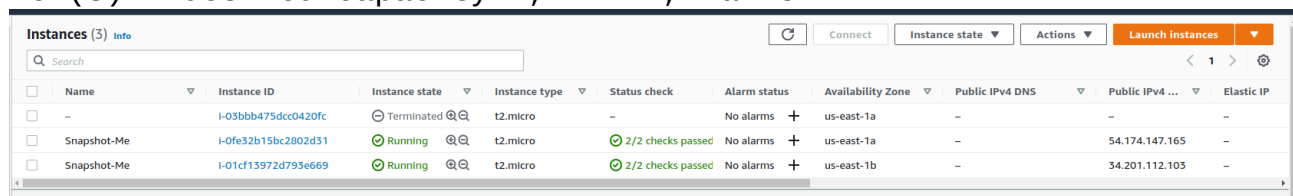
Basic Configuration

Name: useme-ELB

ARN: arn:aws:elasticloadbalancing:us-east-1:844841825790:loadbalancer/app/useme-ELB/652f974822e1d0e4

DNS name: useme-ELB-90847459.us-east-1.elb.amazonaws.com

EC2(s) - desired capacity=2, min=1, max=3:



Instances (3)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
-	i-03bbb475dccc0420fc	Terminated	t2.micro	-	No alarms	us-east-1a	-	-	-
Snapshot-Me	i-0fe32b15bc2802d31	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	-	54.174.147.165	-
Snapshot-Me	i-01cf13972d793e669	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	-	34.201.112.103	-

Target Group:

EC2 > Target groups

Target groups (1/1) Info

Search or filter target groups

Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
useme-TG	arn:aws:elasticloadbalancing:us-east-1:844841825790:targetgroup/useme-TG/21b4a4f8ae75316	80	HTTP	Instance	useme-ELB	vpc-0e20327bc7ba098a2

Target group: useme-TG

Details Targets Monitoring Health checks Attributes Tags

Details

arn:aws:elasticloadbalancing:us-east-1:844841825790:targetgroup/useme-TG/21b4a4f8ae75316

Target type Instance	Protocol : Port HTTP: 80	Protocol version HTTP1	VPC vpc-0e20327bc7ba098a2
IP address type IPv4	Load balancer useme-ELB		

Total targets	Healthy	Unhealthy	Unused	Initial	Draining
2	0	2	0	0	0

Once the desired number: 2 of ec2-instances are running with all checks passed, and ELB provisioned state: active. Browse, ELB DNS NAME url: <http://sample-elb-794607581.us-east-1.elb.amazonaws.com/>
This is our Autoscaled-EC2s running on ELB over http.


proj-elb-647932805.us-east-1.elb.amazonaws.com/SamplePage.php

Sample page

NAME ADDRESS

Add Data

ID	NAME	ADDRESS
1	isahdisah	iohfdiofhio
2	fdiddhhgf	hfggsdfd
3	jkjgh	dfd
4	fgbdcsa	kjhgfd
5	fgbdcsa	kjhgfd



EC2 Management Console

Create an EC2 instance at

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

Create a DB ins... GitHub - Tridev... How to execut... [AWS 6] Launc... Creating, displa... create-key-pair... describe-key-pa... Tag your Amaz... stop-instances...

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

N. Virginia cloud_user @ 2920-6101-8164

Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Scheduled Instances Capacity Reservations

Images AMIs New AMI Catalog

Elastic Block Store Volumes New Snapshots New Lifecycle Manager New

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

Name	DNS name	State	VPC ID	Availability Zones	Type
proj-ELB	proj-ELB-647932805.us-east-1.elb.amazonaws.com (A Record)	Active	vpc-0e20327bc7ba098a2	us-east-1a, us-east-1b	application

Basic Configuration

Name	proj-ELB
ARN	arn:aws:elasticloadbalancing:us-east-1:292061018164:loadbalancer/app/proj-ELB/595d52b4a6b2bb35
DNS name	proj-ELB-647932805.us-east-1.elb.amazonaws.com (A Record)
State	Active
Type	application
Scheme	internet-facing

Now, Time to integrate HTTPS and map our freenom domain:

6. For https integration,
in Route53:

- create hosted zone with your full qualified DNS name
- put nameserver details to freenom
- connect record - for elb to hosted zone

- create ACM cert and create its cert record to r53
- ELB (listener rule):
- http -> https
- https connects to acm cert

Introducing the new Route 53 console
We've redesigned the Route 53 console to make it easier to use. [Let us know what you think](#). We are continuing to make improvements to the user experience based on your feedback, stay tuned! If you'd prefer to use the old console, click [here](#).

Record creation method

Quick create (recommended for expert users)
Choose this method if you are confident in the process of creating records and know which options you need.

Wizard (recommended for new users)
Choose this method if you need more explanations as you create your record.

Quick create record [Info](#) [Switch to wizard](#)

Record 1 [Delete](#)

Record name [Info](#): purchasemydomaindasjdg.tk
Keep blank to create a record for the root domain.

Record type [Info](#):

Route traffic to [Info](#) ☒ Alias

Routing policy [Info](#):

Evaluate target health ☒ Yes

[Add another record](#)

[Cancel](#) [Create records](#)

Above: connecting ELB to ROUTE53.

Validate ACM with ROUTE53:

Following: <https://docs.aws.amazon.com/acm/latest/userguide/dns-validation.html>

ACM -> click on your CERT ID -> create record in Route53 -> clear filter and submit.

Route 53 > Hosted zones > purchasemydomaindasjdg.tk

Public purchasemydomaindasjdg.tk [Info](#) [Delete zone](#) [Test record](#) [Configure query logging](#)

Hosted zone details [Edit hosted zone](#)

Records (4) [DNSSEC signing](#) [Hosted zone tags \(0\)](#)

Records (4) [Info](#) [Delete record](#) [Import zone file](#) [Create record](#)

Automatic mode is the current search behavior optimized for best filter results. To change modes go to settings.

<input type="checkbox"/>	Record name	Type	Routin...	Differ...	Value/Route traffic to
<input type="checkbox"/>	purchasemydomaindasjdg.tk	A	Simple	-	dualstack-proj-elb-647932805.us-east-1.elb.amazonaws.com.
<input type="checkbox"/>	purchasemydomaindasjdg.tk	NS	Simple	-	ns-940.awsdns-53.net. ns-290.awsdns-36.com. ns-1381.awsdns-44.org. ns-1548.awsdns-01.co.uk.
<input type="checkbox"/>	purchasemydomaindasjdg.tk	SOA	Simple	-	ns-940.awsdns-53.net. awsdns-hostmaster.amazon.com. 1 7200 900 1209600 86400
<input type="checkbox"/>	_9dfcb019ce64e430f6bc61c3b8a2e4b3.purc...	CNAME	Simple	-	_732eb2f262e8be4b6404c4b0e31b7efe.bwfbqphirkg.acm-validations.aws.

ACM status: Issued.

Note to svae troubles: Do not wait too long to add acm record to avoid pending ACM validation problems.

The screenshot shows the AWS Certificate Manager console. At the top, there's a search bar and navigation links for various services. The main heading is "AWS Certificate Manager > Certificates > 50be2794-991e-4271-b7ca-0ce970fe1c99". Below this, the certificate identifier "50be2794-991e-4271-b7ca-0ce970fe1c99" is displayed with a "Delete" button. The "Certificate status" section shows the identifier, ARN, type (Amazon Issued), status (Issued), and detailed status (The certificate was issued at July 15, 2022, 20:51:28 (UTC+05:30)). The "Domains (1)" section has buttons for "Create records in Route 53" and "Export to CSV", followed by a table with one domain record. The "Details" section provides information on whether it's in use, serial number, requested and issued dates, and renewal eligibility.

Domain	Status	Renewal status	Type	CNAME name	CNAME value
purchasemydomaindasjdg.tk	Success	-	CNAME	_9dfcb019ce64e430f6bc61c3b8a2e4b3.purchasemydomaindasjdg.tk.	732eb2f262e8be4b6404c4b0e31b7efe.bwfbp.hirkg.acm-validations.aws.

Add/Update ELB Listener rules to make ELB listen to https/route53:

1. Edit rule for http, remove 'forward to' and replace with HTTP redirect to 443/https.

The screenshot shows the AWS Elastic Load Balancing console. The URL bar indicates the console is in the us-east-1 region. The main heading is "arn:aws:elasticloadbalancing:us-east-1:292061018164:listener/app/proj-ELB/595d52b4a6b2bb35/79d696c808966c52". The "Listener details" section explains that a listener checks for connection requests. The "Protocol" is set to HTTP and the "Port" is 80. The "Default actions" section shows a single action: "1. Redirect". This action is configured with "Itemized URL" selected, "Protocol" set to HTTPS, "Port" set to 443, and "Original host, path, query" selected. The "Status code" is set to "302 - Found".

2. Add new listener rule - HTTPS connects with ACM cert:
protocol: https , forward to: target group, ssl/tls cert: our acm cert.

The screenshot displays the AWS Management Console interface for configuring a listener rule. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#ElbAddListener:loadBalancerArn`. The console header includes the AWS logo, a 'Services' menu, and a search bar. Below the header, a row of service icons is visible, including Elastic Kubernetes Service, EC2, S3, VPC, IAM, CloudFormation, Kinesis, Lambda, Cloud9, DynamoDB, and RDS.

The main content area is titled 'Listener details' and includes a descriptive paragraph: 'A listener is a process that checks for connection requests, using the protocol and port you configure. Traffic received by the listener is then routed per your specification. You can specify multiple rules and multiple certificates per listener after the load balancer is created.'

The configuration section is divided into two main parts:

- Protocol and Port:** A dropdown menu for 'Protocol' is set to 'HTTPS', and a text input for 'Port' is set to '443'. Below the port input, the text '1-65535' is displayed.
- Default actions:** A section titled 'Default actions' with an 'Info' link. It contains a list of actions, currently showing one action: '1. Forward to' with an 'Info' link and a 'Remove' button. The action details include:
 - Target group:** A dropdown menu showing 'proj-TG' with the subtext 'Target type: Instance, IPv4'. To its right is a 'Weight (0-999)' input set to '1' with a 'Traffic distribution: 100%' label and a 'Create target group' link.
 - Enable group-level stickiness:** A checkbox that is currently unchecked, with an 'Info' link. The text below reads: 'If you enable stickiness for your target group, requests routed to it remain in the same group for the duration you specify.'

Below the actions list is an 'Add action' dropdown menu.

The second main section is 'Secure listener settings' with an 'Info' link. It includes:

- Security policy:** A dropdown menu showing 'ELBSecurityPolicy-2016-08'.
- Default SSL/TLS certificate:** A section with a descriptive paragraph: 'The certificate used if a client connects without SNI protocol, or if there are no matching certificates. This certificate will automatically be added to your listener certificate list.' It features a dropdown menu set to 'From ACM', a text input showing 'purchasemydomaindasjdg.tk' with the ARN '50be2794-991e-4271-b7ca-0ce970fe1c99', and a 'Request new ACM certificate' link.

Verify:

Both http to https forceful redirection(security) and <https://purchasemydomaindasjdg.tk/SamplePage.php> is verified.

Applications

Google Chrome

EC2 Management Console

Client Area - Freemom

https://purchasemydomainai...

Create a DB ins...

GitHub - Tridev...

How to execut...

[AWS 6] Launc...

Creating, displa...

create-key-pair...

describe-key-pa...

Tag your Amaz...

stop-instances...

terminate-insta...

Managing file s...

amazon web se...


Sample page

NAME

ADDRESS

Add Data

ID	NAME	ADDRESS
1	isabdisah	lohfdslfohlo
2	fdaddhhgt	hfggsdtd
3	fkjgh	dtfd
4	fgbdcsa	kjhfgd
5	fgbdcsa	kjhfgd
6	dskfhu	gdsjklgl



Elements

Console

Sources

Network

Performance

Memory

Filter

Fetch/XHR JS CSS Img Media Font Doc WS Wasm Manifest Other

Blocked Requests

3rd-party requests

100 ms 200 ms 300 ms 400 ms 500 ms 600 ms

Name	Status	Type	Initiator	Size	Time	Waterfall
SamplePage.php	302	docum...	Other	225 B	266 ms	
SamplePage.php	200	docum...	/SamplePage...	1.4 KB	302 ms	
rds-resume-pub.jpeg	200	jpeg	SamplePage.p...	(memo...	0 ms	

3 requests 1.6 kB transferred 7.6 kB resources Finish: 333 ms DOMContentLoaded: 354 ms Load: 354 ms

(Optional) troubleshooting steps for Nameserver/R53 entry check, incase of issues visting your domain.

```
tridev@me: ~  
tridev@me:~$ nslookup purchasemydomaindasjdg.tk  
Server:      127.0.0.53  
Address:     127.0.0.53#53  
  
Non-authoritative answer:  
Name:   purchasemydomaindasjdg.tk  
Address: 44.195.117.169  
Name:   purchasemydomaindasjdg.tk  
Address: 3.233.62.253  
  
tridev@me:~$ dig purchasemydomaindasjdg.tk  
  
; <<>> DiG 9.18.1-lubuntu1.1-Ubuntu <<>> purchasemydomaindasjdg.tk  
;; global options: +cmd  
;; Got answer:  
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 41015  
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 4, ADDITIONAL: 1  
  
;; OPT PSEUDOSECTION:  
; EDNS: version: 0, flags:; udp: 65494  
;; QUESTION SECTION:  
;purchasemydomaindasjdg.tk.      IN      A  
  
;; ANSWER SECTION:  
purchasemydomaindasjdg.tk. 17      IN      A      3.233.62.253  
purchasemydomaindasjdg.tk. 17      IN      A      44.195.117.169  
  
;; AUTHORITY SECTION:  
purchasemydomaindasjdg.tk. 17      IN      NS      ns-1548.awsdns-01.co.uk.  
purchasemydomaindasjdg.tk. 17      IN      NS      ns-1381.awsdns-44.org.  
purchasemydomaindasjdg.tk. 17      IN      NS      ns-940.awsdns-53.net.  
purchasemydomaindasjdg.tk. 17      IN      NS      ns-290.awsdns-36.com.  
  
;; Query time: 0 msec  
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)  
;; WHEN: Fri Jul 15 21:05:35 IST 2022  
;; MSG SIZE rcvd: 226  
  
tridev@me:~$
```