3tier-Architechture with Custom Domain Name (Routing the traffic API Gateway to Custom domain name by using Route53)

Version History

#	Version	Author	Reviewer
1			

Overview

The goal of this Proof of Concept (PoC) is to demonstrate how to route traffic to a custom domain for your API. This process involves configuring your API Gateway or web server to accept requests made to your custom domain and directing them to the appropriate API endpoints. By implementing this, you can enhance the accessibility and branding of your API while maintaining control over its routing.
Typically, after deploying an API on AWS API Gateway, you're provided with a URL of the format **https://api-id.execute-api.region.amazonaws.com/stage**

EX: https://8bue09wn9h.execute-api.us-west-2.amazonaws.com/test

While the **region** and **stage** are relatively stable, the **api-id** is a random and hard-to-remember string. If you ask your customer to remember that string to communicate with your website it is not going to be easy for them. Instead of that string if you gave any user-

friendly name like **https://myapi.example.com** They don't have any worry about remembering the numbers and they will happily coming back to your website again and again. That is where this DNS resolution comes.
To enhance user experience and branding, you can route traffic from this generic URL to a custom domain name.

Procedure

Heare is a steps to achieve this

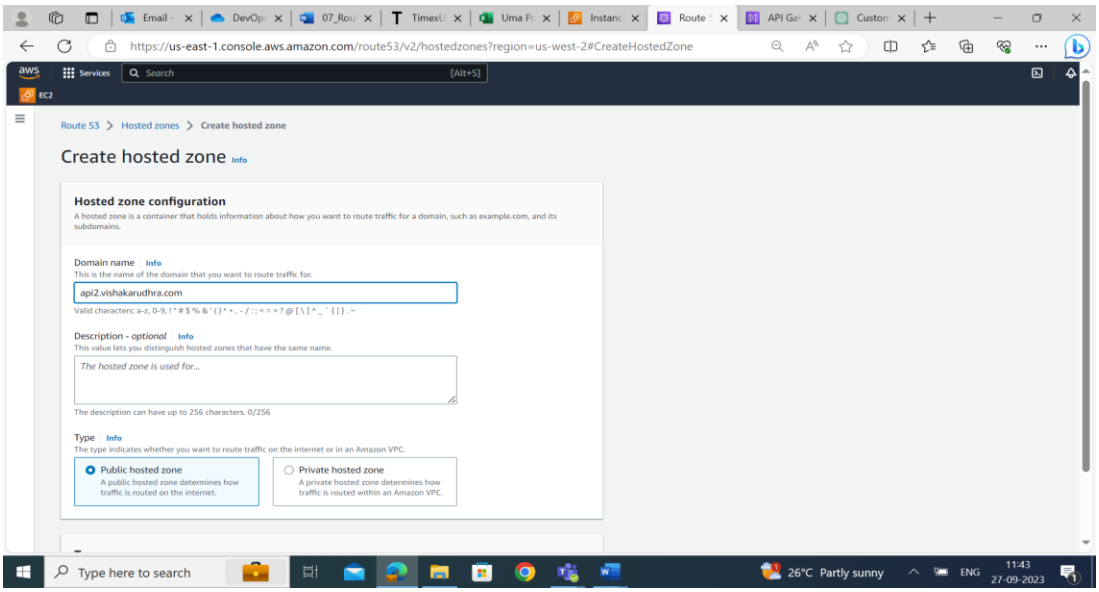
1. Decide the custom domain name you want to use
2. Create hosted zone records
3. Get an SSL Certificate for your Domain name
4. Create custom Domain name in API Gateway
5. Create a DNS A record in Route53

Step1: Decide the custom domain name you want to use

- Purchase a Domain Name (if you haven't already): If you don't already have a custom domain name, you will need to purchase one from a domain registrar. Popular registrars include GoDaddy, Namecheap, and Google Domains.
- I decide to use following form i.e. with a subdomain **"api2.vishakarudhra.com"**

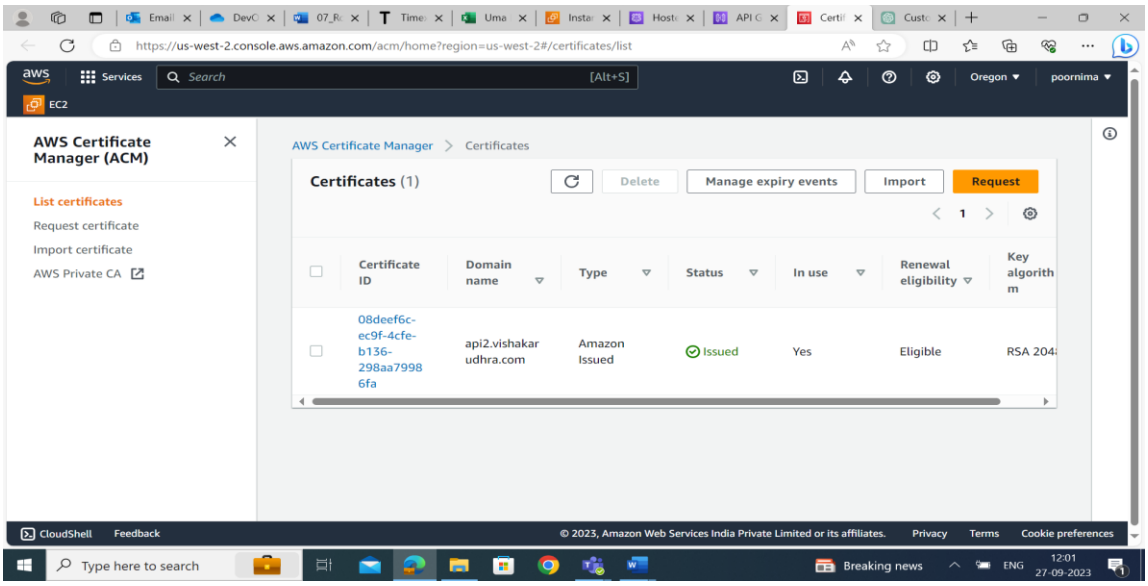
Step2: Create Hosted zone records

- Create a hosted zone record with your custom domain name

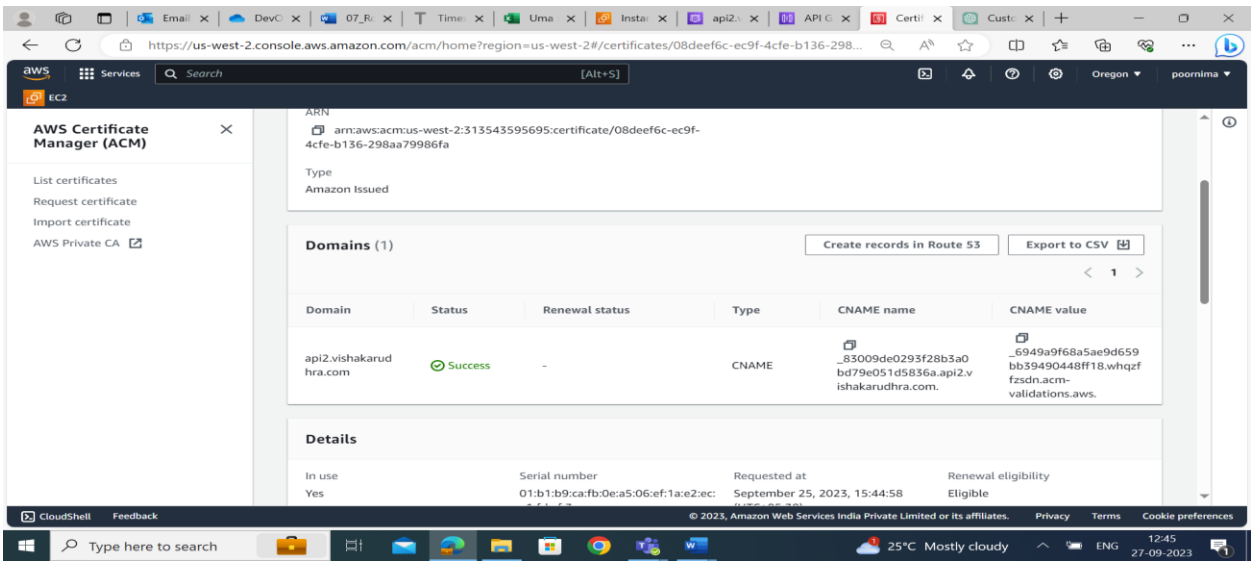


Step3: Get an SSL Certificate for your Domain name

- For enhanced security, consider obtaining an SSL/TLS certificate. Many registrars offer SSL certificates, or you can obtain one from a certificate authority like Let's Encrypt. This certificate will enable HTTPS, protecting data transmitted between clients and your API.



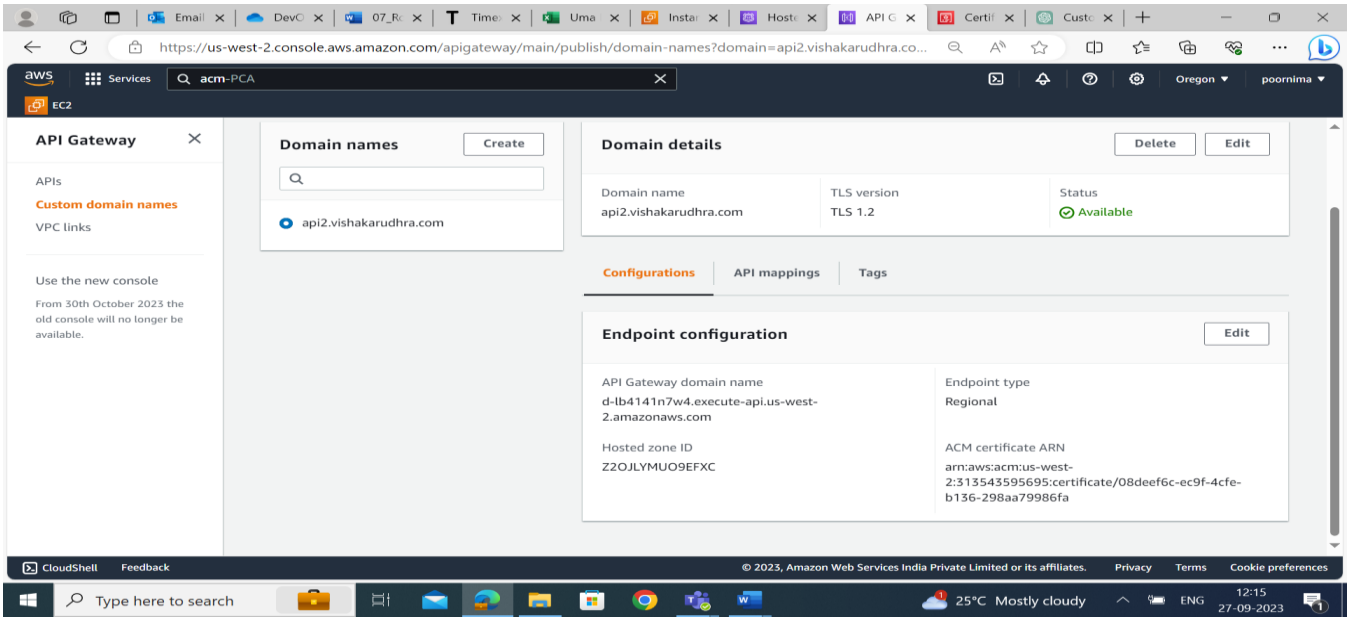
- For creating SSL Certificate go to AWS Certificate Manager (ACM) in left side bar you can able to see List certificates option click on that
- Click on Request option for requesting certificate and select "Request a public certificate" and click on next and provide your custom domain name "**api2.vishakarudhra.com"** and click on request. Your certificate is created.
- Click on the Certificate ID there we can able to see the option like "Create records in Route 53" click on that and add the CNAME record for the custom domain name automatically into the route53 hosted zone records.



Step4: Create Custom Domain name in API Gateway

- Go to your Api gateway page of your region and left you can able to see custom domain name option, click on that

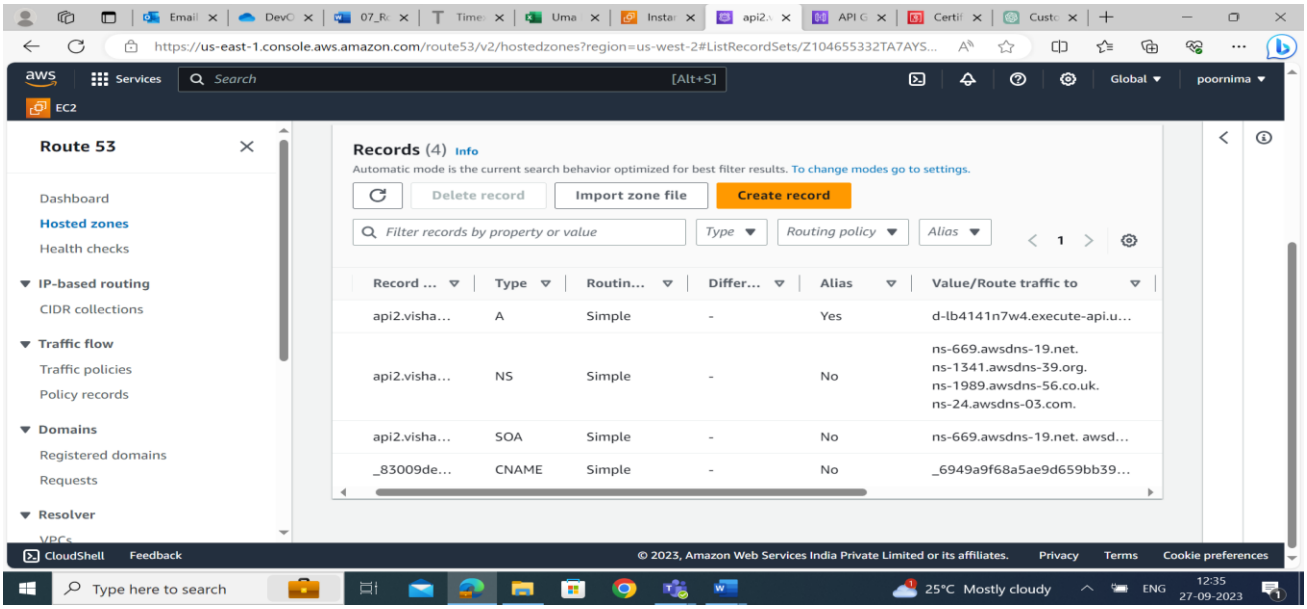
- Enter the custom domain name **"api2.vishakarudhra.com"** (It should be exactly the same as the one we applied for SSL certificate earlier); check the options that fits your need and select the certificate.
- Finally, press the create button to create this custom domain.



- In order to do mapping the APIs we want to use to the custom domain name, click on the Create domain names on the left sidebar again. This time we can see the custom domain we just created. Click on the custom domain, we can check the basic information of this custom domain (pay special attention to the API Gateway domain name as we'll use it later in Route53). Scroll to the bottom we can see the API mappings section is empty. Click on configure API mappings button, select the API we want to map to this domain and optionally supply the path we want to mount the API on and save.
- Now we are done with API Gateway part.

Step5: Create a DNS "A" record in Route53

- First, go to Route53, select Hosted zones in the left sidebar, then click on the Hosted Zone which you created previously in the step1.
- Click on the create record button. In the record name section, type the same subdomain you used in the custom domain name **"api2.vishakarudhra.com"**. Under Record type section select A – Record. Below enable the Alias option there we can able to see the "route your traffic to" section under that section select your API Gateway Region and Choose your custom domain name id (this is the id shown in the custom domain name information page in API Gateway). Select Routing policy as simple routing policy.
- Finally click on the create records button. Wait for around 60 seconds, visit the following URL we just created in browser:
  https:// api2.vishakarudhra.com

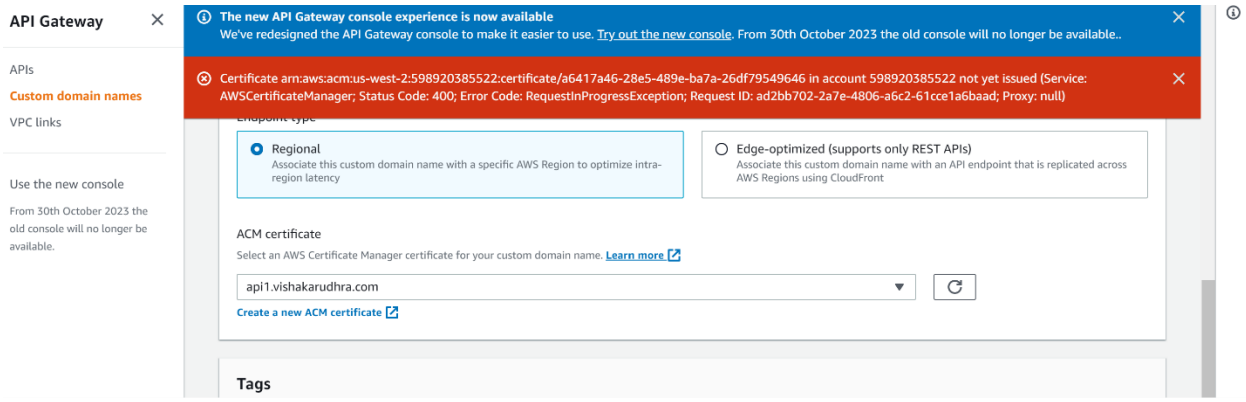


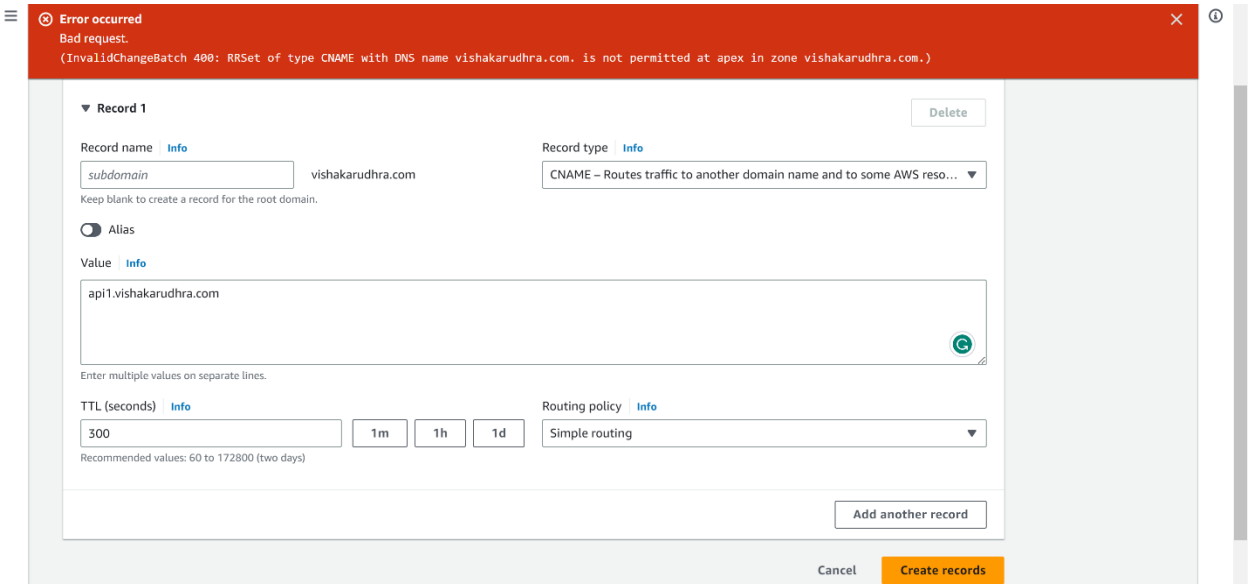
References

[What is DNS? – Introduction to DNS - AWS (amazon.com)]

https://www.youtube.com/watch?v=oWf6hH4iRP4&t=2856s

Other




Error occurred
Bad request.
(InvalidChangeBatch 400: RRSet of type CNAME with DNS name vishakarudhra.com. is not permitted at apex in zone vishakarudhra.com.)
Record 1
Delete
Record name Info
subdomain
vishakarudhra.com
Keep blank to create a record for the root domain.
Record type Info
CNAME – Routes traffic to another domain name and to some AWS reso…
Alias
Value Info
api1.vishakarudhra.com
Enter multiple values on separate lines.
TTL (seconds) Info
300
1m
1h
1d
Recommended values: 60 to 172800 (two days)
Routing policy Info
Simple routing
Add another record
Cancel
Create records