



## **Placement Empowerment Program**

### ***Cloud Computing and DevOps Centre***

**Implement DNS for Your Application:** Set up a DNS record to map your web application's IP or load balancer to a domain name.

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## Introduction

Domain Name System (DNS) is a crucial component of web applications, enabling human-readable domain names (e.g., `www.example.com`) to be mapped to machine-readable IP addresses. This eliminates the need for users to remember complex numerical IP addresses, enhancing accessibility and user experience.

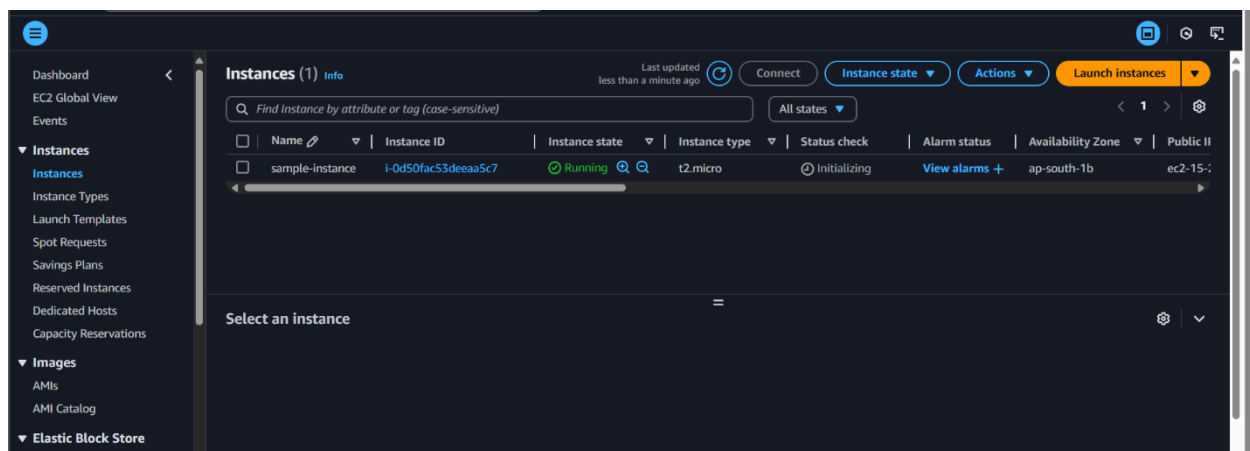
## Objectives

- Set up a DNS record using a cloud provider's DNS service (e.g., AWS Route 53).
- Map your web application's IP or Load Balancer to a domain name.
- Verify and test DNS resolution by accessing the domain in a web browser.

## Step by Step Overview

### 1. Create an EC2 instance

- log into your aws account.
- create an EC2 instance.



## 2. Open the EC2 dashboard

Find your instance and copy the Public IPv4 Address.

The screenshot displays the AWS Management Console's 'Instance summary' page for instance `i-0d50fac53deea5c7`. The instance is in a 'Running' state. A tooltip above the 'Public IPv4 address' field indicates that the address has been copied. The public IPv4 address is `15.207.71.54`. Other details include the instance type `t2.micro`, VPC ID `vpc-0dc478e33f2218481`, and Subnet ID `subnet-0e71bd486fe2bba26`.

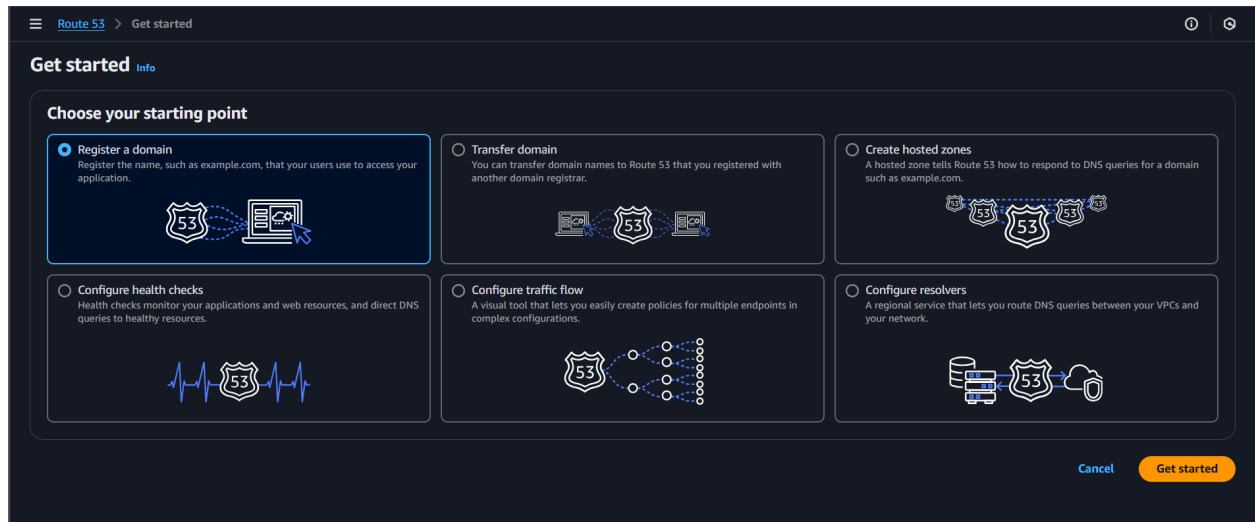
Field	Value
Instance ID	i-0d50fac53deea5c7
Instance state	Running
Public IPv4 address	15.207.71.54
Private IPv4 addresses	172.31.15.59
Public IPv4 DNS	ec2-15-207-71-54.ap-south-1.compute.amazonaws.com
Private IP DNS name (IPv4 only)	ip-172-31-15-59.ap-south-1.compute.internal
Instance type	t2.micro
VPC ID	vpc-0dc478e33f2218481
Subnet ID	subnet-0e71bd486fe2bba26
Instance ARN	arn:aws:ec2:ap-south-1:575108950355:instance/i-0d50fac53deea5c7
Auto-assigned IP address	15.207.71.54 [Public IP]
Hostname type	IP name: ip-172-31-15-59.ap-south-1.compute.internal
Answer private resource DNS name	IPv4 (A)
IAM Role	-
IMDSv2	Required
Elastic IP addresses	-
AWS Compute Optimizer finding	Opt-in to AWS Compute Optimizer for recommendation s.   Learn more
Auto Scaling Group name	-
Managed	false

## 3. Register a domain name

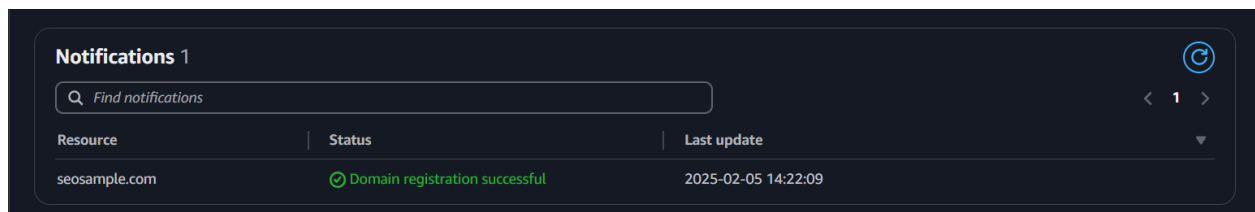
- Open Amazon Route53

The screenshot shows the Amazon Route 53 homepage. The main heading is 'Amazon Route 53' with the tagline 'A reliable way to route users to internet applications'. Below this, it states 'Amazon Route 53 is a highly available and scalable cloud Domain Name System (DNS) web service.' There are sections for 'Get started with Route 53', 'Pricing (US)', and 'More resources'. A 'How it works' section features a diagram showing a user's device connected to a cloud icon labeled 'Amazon Route 53', which is then connected to a server icon. A 'Copy link' button is next to the diagram.

- Click **Register Domain** and follow the steps to purchase a domain.

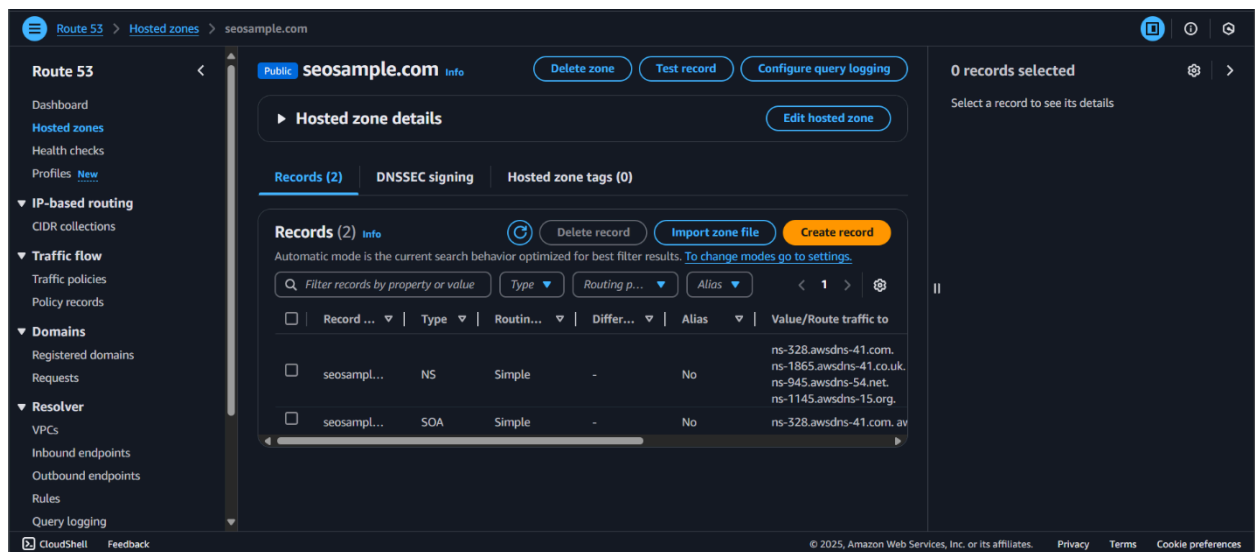


- Now you have successfully registered a Domain. (it might take a few minutes)



## 4. Hosted Zone

When you register the domain, AWS automatically creates a host zone.



## 5. Create Records

- Click **Create record**.
- Choose **Simple routing** → Click Next.
- Configure the record:
  - Record name: Leave blank for root domain (example.com) or enter www for www.example.com.
  - Record type: Choose **A – IPv4 address**.
  - Value: Paste your EC2 Public IPv4 Address (e.g., 3.123.45.67).
  - TTL: Keep default (300 seconds).
- Click Create record.

Route 53 > Hosted zones > seosample.com > Create record

### Create record Info

**Quick create record** Switch to wizard

▼ Record 1 Delete

**Record name** Info subdomain seosample.com **Record type** Info A - Routes traffic to an IPv4 address and some AWS resources

☐ Alias

**Value** Info 15.207.71.54

Enter multiple values on separate lines.

**TTL (seconds)** Info 300 1m 1h 1d **Routing policy** Info Simple routing

Recommended values: 60 to 172800 (two days)

Add another record

**Record for seosample.com was successfully created.** View status ×  
Route 53 propagates your changes to all of the Route 53 authoritative DNS servers within 60 seconds. Use "View status" button to check propagation status.

**Public seosample.com** Info Delete zone Test record Configure query logging

**Hosted zone details** Edit hosted zone

**Records (3)** Info DNSSEC signing Hosted zone tags (0)

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

Filter records by property or value Type Routing p... Alias < 1 > ⚙️

<input type="checkbox"/>	Record ...	Type	Routin...	Differ...	Alias	Value/Route traffic to
<input type="checkbox"/>	seosampl...	A	Simple	-	No	15.207.71.54

## 6. Verify the Domain

Wait a few minutes, then test if the domain resolves correctly.

Using **nslookup <domainname.com>** - you can test the configurations of your EC2 instance.

```
Server:  dns.google
Address:  8.8.8.8

Non-authoritative answer:
Name:     seosample.com
Address:  15.207.71.54
```

## Outcome:

- Custom Domain Access
- Improved User Experience & Branding
- DNS Mapping to Web Application
- Verification of DNS Configuration