

# Route53

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## 1 DNS

The Domain Name System (DNS) is like a telephone directory of the Internet. We browse internet through website names such as google.com or wikipedia.org. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.

Each device connected to the Internet has a unique IP address which other machines use to find the device.

DNS servers eliminate the need for humans to memorize IP addresses such as 192.168.1.1 (in IPv4), or more complex newer alphanumeric IP addresses such as 2400:cb00:2048:1::c629:d7a2 (in IPv6).

## 2 Route53

Route 53 is a highly available and scalable cloud DNS.

It is designed to give developers and businesses an extremely reliable and cost effective way to route end users to Internet applications by translating names like www.example.com into IP addresses

## 3 Hosted zones

A hosted zone is a container for records, and records contain information about how you want to route traffic for a specific domain, such as example.com, and its subdomains (acme.example.com, zenith.example.com). A hosted zone and the corresponding domain have the same name. There are two types of hosted zones:

### 3.1 Public hosted zones

They Contain records that specify how you want to route traffic on the internet.

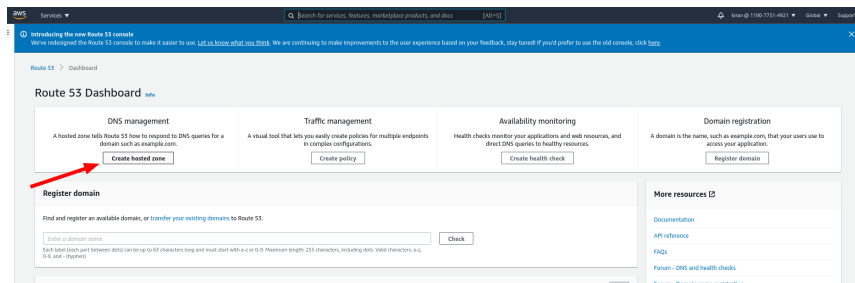
When you register a domain with Route 53, a hosted zone is automatically created.

If you'd like to continue your existing registrar, but use Route 53 as your DNS resolver, you have to create creating a hosted zone for the domain.

In both cases, you then create records in the hosted zone to specify how you want to route traffic for the domain and subdomains. For example, you might create a record to route traffic for www.example.com to a web server in your data center.

Let's see how we a Hosted zone is created for a website called devops-gym.com

1. Go to aws Console and Go to Services and click on Route53
2. In the Route53 page click on **Create hosted Zone**



1. In the next Screen enter the following Details A. Domain Name - Root Name of your domain.  
B. Description (optional).  
C. Type - Choose Public Hosted zone if you'd like you website to be accessible over the Internet. Private hosted zone - if you'd like

your service to be accessible only within the VPC D. Click on **Create hosted zone**

Route 53 > Hosted zones > Create hosted zone

### Create hosted zone [Info](#)

**Hosted zone configuration**  
A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.

**A Domain name** [Info](#)  
This is the name of the domain that you want to route traffic for.  
  
Valid characters: a-z, 0-9, ! \* # \$ % & ' ( ) \* + , - / : ; < = > ? @ [ \ ] ^ \_ ` { } . ~

**B Description - optional** [Info](#)  
This value lets you distinguish hosted zones that have the same name.  
  
The description can have up to 256 characters. 47/256

**Type** [Info](#)  
The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

**C** ☒ **Public hosted zone**  
A public hosted zone determines how traffic is routed on the internet.

☐ **Private hosted zone**  
A private hosted zone determines how traffic is routed within an Amazon VPC.

**Tags** [Info](#)  
Apply tags to hosted zones to help organize and identify them.

No tags associated with the resource.

You can add up to 50 more tags.

**D**

1. Once the hosted zone is created, 2 records are created by default in your hosted zone
  - A. Name Servers - These records are to be updated in your registrar's Name Servers' field
  - B. SOA Record - The DNS **start of authority** (SOA) record stores important information about a domain or zone such as the email address of the administrator, when the domain was last updated, and how long the server should wait between refreshes.
2. To use Route53 as your hosted zone, you need to add a A Record. This could be a DNS Name of your load balancer or a Public IP of your ec2 instances or any other service.

Route 53 > Hosted zones > Create hosted zone

## Create hosted zone [Info](#)

### Hosted zone configuration

A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.

**A Domain name** [Info](#)

This is the name of the domain that you want to route traffic for.

Valid characters: a-z, 0-9, ! " # \$ % & ' ( ) \* + , - / : ; < = > ? @ [ \ ] ^ \_ ` { | } . ~

**B Description - optional** [Info](#)

This value lets you distinguish hosted zones that have the same name.

The description can have up to 256 characters. 47/256

**Type** [Info](#)

The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

☒ **Public hosted zone**

A public hosted zone determines how traffic is routed on the internet.

☐ **Private hosted zone**

A private hosted zone determines how traffic is routed within an Amazon VPC.

**Tags** [Info](#)

Apply tags to hosted zones to help organize and identify them.

No tags associated with the resource.

Add tag

You can add up to 50 more tags.

[Cancel](#) [Create hosted zone](#)

In the above record, the A record is created for the top level site (devopsgym.com). And whenever someone accesses devopsgy.com it would redirect to the IP 120.12.13.14.

If you'd like the traffic to be redirected to a Load Balancer, check the Alias option and pick up the Load Balancer from the dropdown.

TTL: Time to Live is the setting is a setting that tells the DNS resolver how long to cache a query before requesting a new one. The information gathered is then stored in the cache of the recursive or local resolver for the TTL before it reaches back out to collect new, updated details.

Routing Policy: When you create a record, you choose a routing policy, which determines how Amazon Route 53 responds to queries:

- Simple routing policy Use for a single resource that performs a given function for your domain, for example, a web server that serves content for the example.com website.

- Failover routing policy: Use this policy when you want to configure active-passive failover. When you have your application in 2 different clusters, but only of them is Active, you could use this policy to redirect to other cluster (passive) whenever the Active cluster is unhealthy.
- Geolocation routing policy: Use this policy when you want to route traffic based on the location of your users. Applicable if you have application is spread across multiple reasons.
- Geoproximity routing policy: Use this policy when you want to route traffic based on the location of your resources and, optionally, shift traffic from resources in one location to resources in another.
- Latency routing policy: Use this policy when you have resources in multiple AWS Regions and you want to route traffic to the region that provides the best latency.
- Multivalue answer routing policy: Use this policy when you want Route 53 to respond to DNS queries with up to eight healthy records selected at random.
- Weighted routing policy: Use this policy to route traffic to multiple resources in proportions that you specify.

### **3.2 Private hosted zones**

They contain record that specify how you want to route traffic in an Amazon VPC.