

---

# Amazon Route 53

## Developer Guide

### API Version 2013-04-01



## Amazon Route 53: Developer Guide

Copyright © 2017 Amazon Web Services, Inc. and/or its affiliates. All rights reserved.

Amazon's trademarks and trade dress may not be used in connection with any product or service that is not Amazon's, in any manner that is likely to cause confusion among customers, or in any manner that disparages or discredits Amazon. All other trademarks not owned by Amazon are the property of their respective owners, who may or may not be affiliated with, connected to, or sponsored by Amazon.

# Table of Contents

What Is Amazon Route 53?	1
How Domain Registration Works	2
How Internet Traffic Is Routed to Your Website or Web Application	2
How to Configure Amazon Route 53 to Route Internet Traffic for Your Domain	3
How Amazon Route 53 Routes Traffic for Your Domain	4
How Amazon Route 53 Checks the Health of Your Resources	5
Amazon Route 53 Concepts	6
Domain Registration Concepts	7
Domain Name System (DNS) Concepts	8
Health Checking Concepts	10
How to Get Started with Amazon Route 53	11
Related Services	11
Accessing Amazon Route 53	11
AWS Identity and Access Management	12
Amazon Route 53 Pricing	12
HIPAA Compliance	12
Setting Up	13
Sign Up for AWS	13
Access Your Account	14
Access the Console	14
Access the API, AWS CLI, AWS Tools for Windows PowerShell, or the AWS SDKs	14
Create an IAM User	14
Set Up the AWS Command Line Interface or AWS Tools for Windows PowerShell	16
Download an AWS SDK	16
Getting Started	17
Prerequisites	18
Step 1: Register a domain	18
Step 2: Create an S3 Bucket and Configure It to Host a Website	19
Step 3 (Optional): Create Another S3 Bucket, for <i>www.your-domain-name</i>	20
Step 4: Create a Website and Upload It to Your S3 Bucket	21
Step 5: Route DNS Traffic for Your Domain to Your Website Bucket	21
Step 6: Test Your Website	22
Integration with Other Services	24
Logging, Monitoring, and Tagging	24
Routing Traffic to Other AWS Resources	25
Registering Domain Names	27
Registering Domains	27
Registering a New Domain	28
Values that You Specify When You Register a Domain	31
Values that Amazon Route 53 Returns When You Register a Domain	34
Viewing the Status of a Domain Registration	35
Updating Settings for a Domain	35
Updating Contact Information and Ownership for a Domain	35
Enabling or Disabling Privacy Protection for Contact Information for a Domain	39
Enabling or Disabling Automatic Renewal for a Domain	40
Locking a Domain to Prevent Unauthorized Transfer to Another Registrar	41
Extending the Registration Period for a Domain	41
Adding or Changing Name Servers and Glue Records for a Domain	42
Renewing Registration for a Domain	43
Restoring an Expired Domain	44
Transferring Domains	45
Transferring Domain Registration to Amazon Route 53	46
Viewing the Status of a Domain Transfer	55
How Transferring a Domain to Amazon Route 53 Affects the Expiration Date	56

Transferring a Domain to a Different AWS Account .....	57
Transferring a Domain from Amazon Route 53 .....	58
Resending Authorization and Confirmation Emails .....	60
Updating Your Email Address .....	61
Resending Emails .....	61
Configuring DNSSEC for a Domain .....	63
Overview of How DNSSEC Protects Your Domain .....	63
Prerequisites and Limits for Configuring DNSSEC for a Domain .....	65
Adding Public Keys for a Domain .....	65
Deleting Public Keys for a Domain .....	66
Deleting a Domain Name Registration .....	66
Downloading a Domain Billing Report .....	67
Domains That You Can Register with Amazon Route 53 .....	68
Generic Top-Level Domains .....	68
Geographic Top-Level Domains .....	181
Configuring Amazon Route 53 as Your DNS Service .....	209
Migrating DNS Service for an Existing Domain to Amazon Route 53 .....	209
Step 1: Create a Hosted Zone .....	210
Step 2: Get Your Current DNS Configuration from Your DNS Service Provider .....	210
Step 3: Create Resource Record Sets .....	211
Step 4: Check the Status of Your Changes (API Only) .....	211
Step 5: Update Your Registrar's Name Servers .....	211
Step 6: Wait 48 Hours for Your Changes to Take Effect .....	212
Working with Public Hosted Zones .....	213
Creating a Public Hosted Zone .....	213
Getting the Name Servers for a Public Hosted Zone .....	214
Listing Public Hosted Zones .....	215
Deleting a Public Hosted Zone .....	215
Checking DNS Responses from Amazon Route 53 .....	216
Configuring White Label Name Servers .....	219
NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone .....	224
Working with Private Hosted Zones .....	225
Creating a Private Hosted Zone .....	228
Listing Private Hosted Zones .....	229
Associating More Amazon VPCs with a Private Hosted Zone .....	229
Associating an Amazon VPC and a Private Hosted Zone That You Created with Different AWS Accounts .....	230
Disassociating Amazon VPCs from a Private Hosted Zone .....	230
Deleting a Private Hosted Zone .....	231
Working with Resource Record Sets .....	231
Choosing a Routing Policy .....	232
Choosing Between Alias and Non-Alias Resource Record Sets .....	235
Supported DNS Record Types .....	237
Creating Resource Record Sets by Using the Amazon Route 53 Console .....	244
Values That You Specify When You Create or Edit Amazon Route 53 Records .....	246
Creating Resource Record Sets By Importing a Zone File .....	298
Editing Resource Record Sets .....	300
Deleting Resource Record Sets .....	300
Listing Resource Record Sets .....	301
Using Traffic Flow to Route DNS Traffic .....	301
Creating and Managing Traffic Policies .....	302
Creating and Managing Policy Records .....	311
Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain ....	313
Creating a Subdomain That Uses Amazon Route 53 as the DNS Service without Migrating the Parent Domain .....	313
Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain .....	315

DNS Constraints and Behaviors .....	318
Maximum Response Size .....	318
Authoritative Section Processing .....	318
Additional Section Processing .....	318
DNS Domain Name Format .....	319
Formatting Domain Names for Domain Name Registration .....	319
Formatting Domain Names for Hosted Zones and Resource Record Sets .....	319
Using an Asterisk (*) in the Names of Hosted Zones and Resource Record Sets .....	320
Formatting Internationalized Domain Names .....	320
Routing Internet Traffic to Your AWS Resources .....	322
Amazon CloudFront Web Distribution .....	322
Prerequisites .....	323
Configuring Amazon Route 53 to Route Traffic to a CloudFront Web Distribution .....	323
Amazon EC2 Instance .....	324
Prerequisites .....	325
Configuring Amazon Route 53 to Route Traffic to an Amazon EC2 Instance .....	325
AWS Elastic Beanstalk Environment .....	326
Deploying an Application into an Elastic Beanstalk Environment .....	326
Getting the Domain Name for Your Elastic Beanstalk Environment .....	327
Creating an Amazon Route 53 Resource Record Set .....	327
ELB Load Balancer .....	329
Prerequisites .....	329
Configuring Amazon Route 53 to Route Traffic to an ELB Load Balancer .....	330
Amazon RDS Database Instance .....	331
Prerequisites .....	331
Configuring Amazon Route 53 So You Can Use Your Domain Name to Open Connections .....	332
Amazon S3 Bucket .....	333
Prerequisites .....	333
Configuring Amazon Route 53 to Route Traffic to an S3 Bucket .....	333
Amazon WorkMail .....	334
Creating Health Checks and Configuring DNS Failover .....	337
Types of Amazon Route 53 Health Checks .....	338
Creating, Updating, and Deleting Health Checks .....	338
Creating and Updating Health Checks .....	339
Updating Health Checks When You Change CloudWatch Alarm Settings .....	346
Deleting Health Checks .....	347
Updating or Deleting Health Checks when DNS Failover Is Configured .....	347
Configuring Router and Firewall Rules for Amazon Route 53 Health Checks .....	348
How Amazon Route 53 Determines Whether an Endpoint Is Healthy .....	348
Monitoring Health Check Status and Getting Notifications .....	349
Viewing Health Check Status and the Reason for Health Check Failures .....	349
Monitoring the Latency Between Health Checkers and Your Endpoint .....	350
Monitoring Health Checks Using CloudWatch .....	351
Configuring DNS Failover .....	356
How Health Checks Work in Simple Amazon Route 53 Configurations .....	356
How Health Checks Work in Complex Amazon Route 53 Configurations .....	358
Task List for Configuring DNS Failover .....	363
Configuring Failover in a Private Hosted Zone .....	364
Options for Configuring Amazon Route 53 Active-Active and Active-Passive Failover .....	365
How Amazon Route 53 Averts Failover Problems .....	368
Naming and Tagging Health Checks .....	368
Tag Restrictions .....	369
Adding, Editing, and Deleting Tags for Health Checks .....	369
Using API Versions Before 2012-12-12 .....	370
Troubleshooting .....	371
My domain is unavailable on the internet .....	371
You registered a new domain, but you didn't click the link in the confirmation email .....	371

You transferred domain registration to Amazon Route 53, but you didn't transfer DNS service ...	372
You transferred domain registration and specified the wrong name servers in the domain settings .....	373
You transferred DNS service first, but you didn't wait long enough before transferring domain registration .....	374
Your domain has been suspended .....	374
My domain is suspended (status is ClientHold) .....	374
You registered a new domain, but you didn't click the link in the confirmation email .....	375
You disabled automatic renewal for the domain, and the domain expired .....	375
We couldn't process your payment for automatic domain renewal, and the domain expired .....	375
We suspended the domain for a violation of the AWS Acceptable Use Policy .....	376
We suspended the domain because of a court order .....	376
Transferring my domain to Amazon Route 53 failed .....	376
You didn't click the link in the authorization email .....	376
The authorization code that you got from the current registrar is invalid .....	376
"Parameters in request are not valid" error when trying to transfer a .es domain to Amazon Route 53 .....	377
I changed DNS settings, but they haven't taken effect .....	377
You transferred DNS service to Amazon Route 53 in the last 48 hours, so DNS is still using your previous DNS service .....	378
You recently transferred DNS service to Amazon Route 53, but you didn't update the name servers with the domain registrar .....	378
DNS resolvers still are using the old settings for the resource record set .....	379
My browser displays a "Server not found" error .....	379
You didn't create a resource record set for the domain or subdomain name .....	380
You created a resource record set but specified the wrong value .....	380
The resource that you're routing traffic to is unavailable .....	380
I can't route traffic to an Amazon S3 bucket that's configured for website hosting .....	380
I was billed twice for the same hosted zone .....	380
Logging DNS Queries .....	382
Configuring Logging for DNS Queries .....	382
Using Amazon CloudWatch to Access DNS Query Logs .....	384
Changing the Retention Period for Logs and Exporting Logs to Amazon S3 .....	385
Stopping Query Logging .....	385
Format of DNS Query Logs .....	385
IP Address Ranges .....	387
Authentication and Access Control .....	388
Authentication .....	388
Access Control .....	389
Overview of Managing Access .....	390
ARNs for Amazon Route 53 Resources .....	390
Understanding Resource Ownership .....	391
Managing Access to Resources .....	391
Specifying Policy Elements: Resources, Actions, Effects, and Principals .....	393
Specifying Conditions in a Policy .....	393
Using IAM Policies for Amazon Route 53 .....	393
Permissions Required to Use the Amazon Route 53 Console .....	395
AWS Managed (Predefined) Policies for Amazon Route 53 .....	396
Customer Managed Policy Examples .....	397
Amazon Route 53 API Permissions Reference .....	398
Required Permissions for Actions on Public Hosted Zones .....	399
Required Permissions for Actions on Private Hosted Zones .....	400
Required Permissions for Actions on Reusable Delegation Sets .....	400
Required Permissions for Actions on Resource Record Sets .....	401
Required Permissions for Actions on Traffic Policies .....	401
Required Permissions for Actions on Traffic Policy Instances .....	402
Required Permissions for Actions on Health Checks .....	403

Required Permissions for Actions on Domain Registrations .....	404
Required Permissions for Actions on Tags for Hosted Zones and Health Checks .....	406
Required Permissions for Actions on Tags for Domains .....	406
Monitoring .....	408
Monitoring Domain Registrations .....	408
Monitoring Your Resources with Amazon Route 53 Health Checks and Amazon CloudWatch .....	409
Metrics and Dimensions .....	409
Capturing API Requests with CloudTrail .....	411
Configuring CloudTrail for Amazon Route 53 .....	411
Amazon Route 53 Information in CloudTrail Log Files .....	411
Understanding Amazon Route 53 Log File Entries .....	412
Tagging Resources .....	416
Tutorials .....	417
Transitioning to Latency-Based Routing in Amazon Route 53 .....	417
Adding Another Region to Your Latency-Based Routing in Amazon Route 53 .....	419
Using Latency and Weighted Resource Record Sets in Amazon Route 53 to Route Traffic to Multiple Amazon EC2 Instances in a Region .....	420
Managing Over 100 Weighted Resource Record Sets in Amazon Route 53 .....	421
Weighting Fault-Tolerant Multi-Record Answers in Amazon Route 53 .....	421
Limits .....	423
Limits on API Requests .....	423
Number of Elements and Characters in <code>ChangeResourceRecordSets</code> Requests .....	423
Frequency of Amazon Route 53 API Requests .....	423
Limits on Entities .....	424
Resources .....	426
AWS Resources .....	426
Third-Party Tools and Libraries .....	427
Graphical User Interfaces .....	428
Document History .....	429
2017 Releases .....	429
2016 Releases .....	429
2015 Releases .....	432
2014 Releases .....	433
2013 Releases .....	435
2012 Release .....	436
2011 Releases .....	436
2010 Release .....	437
AWS Glossary .....	438

# What Is Amazon Route 53?

You can use Amazon Route 53 to help you get a website or web application up and running. Amazon Route 53 performs three main functions:

- **Register domain names** – Your website needs a name, such as example.com. Amazon Route 53 lets you register a name for your website or web application, known as a *domain name*. For an overview, see [How Domain Registration Works \(p. 2\)](#).
- **Route internet traffic to the resources for your domain** – When a user opens a web browser and enters your domain name in the address bar, Amazon Route 53 helps the Domain Name System (DNS) connect the browser with your website or web application. For an overview, see [How Internet Traffic Is Routed to Your Website or Web Application \(p. 2\)](#).
- **Check the health of your resources** – Amazon Route 53 sends automated requests over the internet to a resource, such as a web server, to verify that it's reachable, available, and functional. You also can choose to receive notifications when a resource becomes unavailable and choose to route internet traffic away from unhealthy resources. For an overview, see [How Amazon Route 53 Checks the Health of Your Resources \(p. 5\)](#).

You can use any combination of these functions. For example, you can use Amazon Route 53 both to register your domain name and to route internet traffic for the domain, or you can use Amazon Route 53 to route internet traffic for a domain that you registered with another domain registrar. If you choose to use Amazon Route 53 for all three functions, you register your domain name, then configure Amazon Route 53 to route internet traffic for your domain, and finally configure Amazon Route 53 to check the health of your resources.

## Topics

- [How Domain Registration Works \(p. 2\)](#)
- [How Internet Traffic Is Routed to Your Website or Web Application \(p. 2\)](#)
- [How Amazon Route 53 Checks the Health of Your Resources \(p. 5\)](#)
- [Amazon Route 53 Concepts \(p. 6\)](#)
- [How to Get Started with Amazon Route 53 \(p. 11\)](#)
- [Related Services \(p. 11\)](#)
- [Accessing Amazon Route 53 \(p. 11\)](#)
- [AWS Identity and Access Management \(p. 12\)](#)
- [Amazon Route 53 Pricing \(p. 12\)](#)
- [HIPAA Compliance \(p. 12\)](#)



## How Domain Registration Works

If you want to create a website or a web application, you start by registering the name of your website, known as a [domain name](#). Your domain name is the name, such as `example.com`, that your users enter in a browser to display your website.

Here's an overview of how you register a domain name with Amazon Route 53:

1. You choose a domain name and confirm that it's available, meaning that no one else has registered the domain name that you want.

If the domain name you want is already in use, you can try other names or try changing only the *top-level domain*, such as `.com`, to another top-level domain, such as `.ninja` or `.hockey`. For a list of the top-level domains that Amazon Route 53 supports, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

2. You register the domain name with Amazon Route 53. When you register a domain, you provide names and contact information for the domain owner and other contacts.

When you register a domain with Amazon Route 53, the service automatically makes itself the DNS service for the domain by doing the following:

- Creates a [hosted zone](#) that has the same name as your domain.
- Assigns a set of four name servers to the hosted zone. When someone uses a browser to access your website, such as `www.example.com`, these name servers tell the browser where to find your resources, such as a web server or an Amazon S3 bucket. ([Amazon S3](#) is object storage for storing and retrieving any amount of data from anywhere on the web. A bucket is a container for objects that you store in S3.)
- Gets the name servers from the hosted zone and adds them to the domain.

For more information, see [How Internet Traffic Is Routed to Your Website or Web Application \(p. 2\)](#).

3. At the end of the registration process, we send your information to the registrar for the domain. The [domain registrar](#) is either Amazon Registrar, Inc. or our registrar associate, Gandi. To find out who the registrar is for your domain, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).
4. The registrar sends your information to the *registry* for the domain. A registry is a company that sells domain registrations for one or more top-level domains, such as `.com`.
5. The registry stores the information about your domain in their own database and also stores some of the information in the public WHOIS database.

For more information about how to register a domain name, see [Registering a New Domain \(p. 28\)](#).

If you already registered a domain name with another registrar, you can choose to transfer the domain registration to Amazon Route 53. This isn't required to use other Amazon Route 53 features. For more information, see [Transferring Registration for a Domain to Amazon Route 53 \(p. 46\)](#).

## How Internet Traffic Is Routed to Your Website or Web Application

All computers on the internet, from your smart phone or laptop to the servers that serve content for massive retail websites, communicate with one another by using numbers. These numbers, known as *IP addresses*, are in one of the following formats:

- Internet Protocol version 4 (IPv4) format, such as `192.0.2.44`

- Internet Protocol version 6 (IPv6) format, such as 2001:0db8:85a3:0000:0000:abcd:0001:2345

When you open a browser and go to a website, you don't have to remember and enter a long number like that. Instead, you can enter a domain name like `example.com` and still end up in the right place. A DNS service such as Amazon Route 53 helps to make that connection between domain names and IP addresses.

#### Topics

- [How to Configure Amazon Route 53 to Route Internet Traffic for Your Domain \(p. 3\)](#)
- [How Amazon Route 53 Routes Traffic for Your Domain \(p. 4\)](#)

## How to Configure Amazon Route 53 to Route Internet Traffic for Your Domain

Here's an overview of how to use the Amazon Route 53 console to register a domain name and configure Amazon Route 53 to route internet traffic to your website or web application.

1. You register the domain name that you want your users to use to access your content. For an overview, see [How Domain Registration Works \(p. 2\)](#).
2. After you register your domain name, Amazon Route 53 automatically creates a public hosted zone that has the same name as the domain. For more information, see [Working with Public Hosted Zones \(p. 213\)](#).
3. To route traffic to your resources, you create *resource record sets*, also known as *records*, in your hosted zone. Each record includes information about how you want to route traffic for your domain, such as the following:

#### **Name**

The name of the record corresponds with the domain name (`example.com`) or subdomain name (`www.example.com`, `retail.example.com`) that you want Amazon Route 53 to route traffic for.

The name of every record in a hosted zone must end with the name of the hosted zone. For example, if the name of the hosted zone is `example.com`, all record names must end in `example.com`. The Amazon Route 53 console does this for you automatically.

#### **Type**

The record type usually determines the type of resource that you want traffic to be routed to. For example, to route traffic to an email server, you specify MX for Type. To route traffic to a web server that has an IPv4 IP address, you specify A for Type.

#### **Value**

Value is closely related to Type. If you specify MX for Type, you specify the names of one or more email servers for Value. If you specify A for Type, you specify an IP address in IPv4 format, such as `192.0.2.136`.

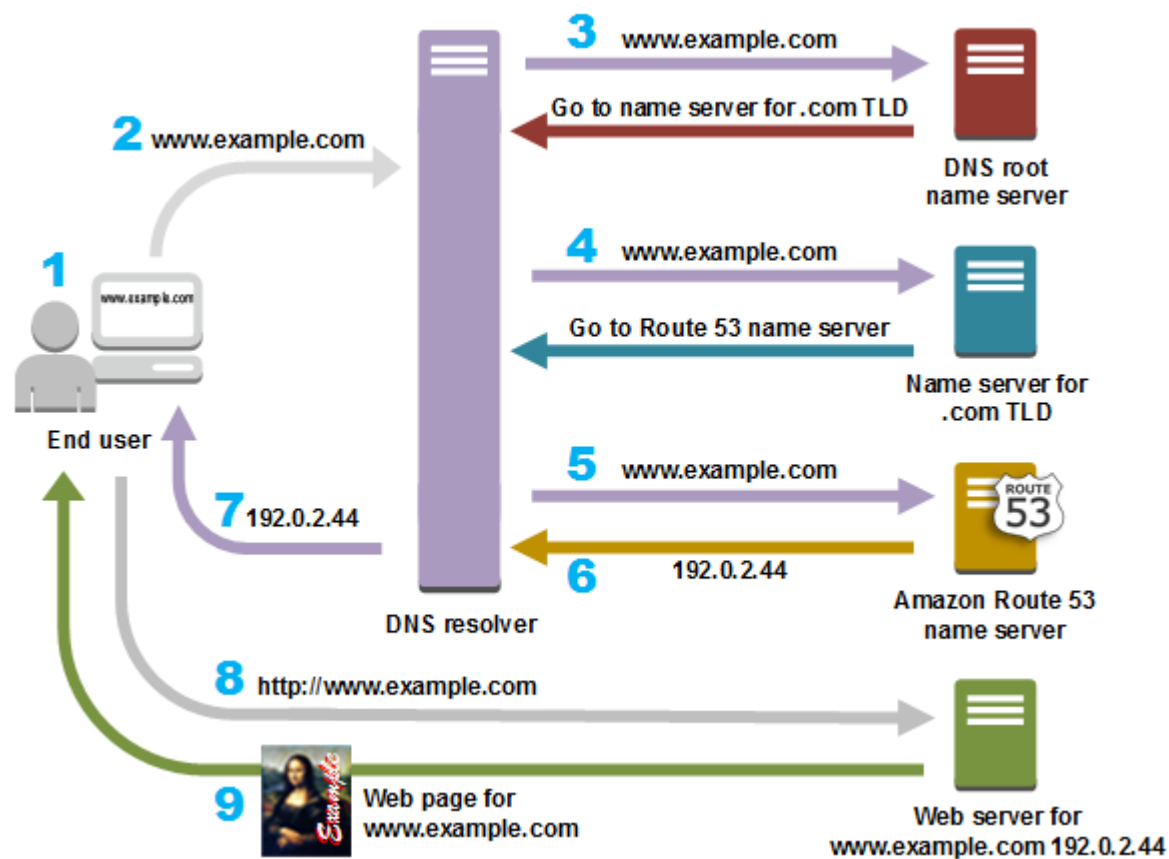
For more information about resource records sets, see [Working with Resource Record Sets \(p. 231\)](#).

You can also create special Amazon Route 53 resource record sets, called alias resource record sets, that route traffic to Amazon S3 buckets, Amazon CloudFront distributions, and other AWS resources. For more information, see [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#) and [Routing Internet Traffic to Your AWS Resources \(p. 322\)](#).

For more information about routing internet traffic to your resources, see [Configuring Amazon Route 53 as Your DNS Service \(p. 209\)](#).

## How Amazon Route 53 Routes Traffic for Your Domain

After you configure Amazon Route 53 to route your internet traffic to your resources, such as web servers or Amazon S3 buckets, here's what happens in just a few milliseconds when someone requests content for `www.example.com`:



1. A user opens a web browser, enters `www.example.com` in the address bar, and presses Enter.
2. The request for `www.example.com` is routed to a DNS resolver, which is typically managed by the user's internet service provider (ISP), such as a cable internet provider, a DSL broadband provider, or a corporate network.
3. The DNS resolver for the ISP forwards the request for `www.example.com` to a DNS root name server.
4. The DNS resolver forwards the request for `www.example.com` again, this time to one of the TLD name servers for `.com` domains. The name server for `.com` domains responds to the request with the names of the four Amazon Route 53 name servers that are associated with the `example.com` domain.

The DNS resolver caches (stores) the four Amazon Route 53 name servers. The next time someone browses to `example.com`, the resolver skips steps 3 and 4 because it already has the name servers for `example.com`. The name servers are typically cached for two days.

5. The DNS resolver chooses an Amazon Route 53 name server and forwards the request for `www.example.com` to that name server.
6. The Amazon Route 53 name server looks in the `example.com` hosted zone for the `www.example.com` record, gets the associated value, such as the IP address for a web server, `192.0.2.44`, and returns the IP address to the DNS resolver.

- The DNS resolver finally has the IP address that the user needs. The resolver returns that value to the web browser.

**Note**

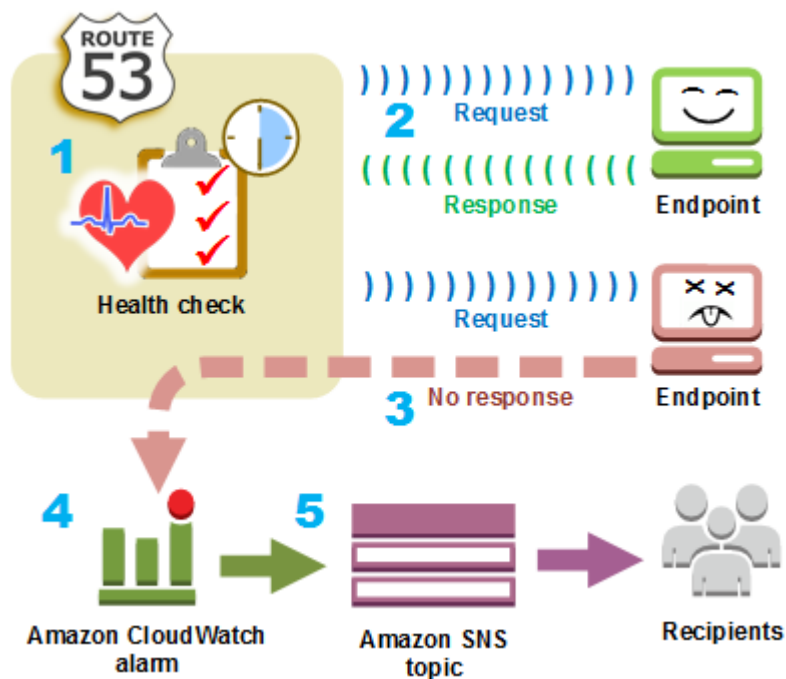
The DNS resolver also caches the IP address for example.com for an amount of time that you specify so that it can respond more quickly the next time someone browses to example.com. For more information, see [time to live \(TTL\)](#).

- The web browser sends a request for www.example.com to the IP address that it got from the DNS resolver. This is where your content is, for example, a web server running on an Amazon EC2 instance or an Amazon S3 bucket that's configured as a website endpoint.
- The web server or other resource at 192.0.2.44 returns the web page for www.example.com to the web browser, and the web browser displays the page.

## How Amazon Route 53 Checks the Health of Your Resources

Amazon Route 53 health checks monitor the health of your resources such as web servers and email servers. You can optionally configure Amazon CloudWatch alarms for your health checks, so that you receive notification when a resource becomes unavailable.

Here's an overview of how health checking works if you want to be notified when a resource becomes unavailable:



- You create a health check and specify values that define how you want the health check to work, such as the following:
  - The IP address or domain name of the endpoint, such as a web server, that you want Amazon Route 53 to monitor. (You can also monitor the status of other health checks, or the state of a CloudWatch alarm.)
  - The protocol that you want Amazon Route 53 to use to perform the check: HTTP, HTTPS, or TCP.

- How often you want Amazon Route 53 to send a request to the endpoint. This is the *request interval*.
  - How many consecutive times the endpoint must fail to respond to requests before Amazon Route 53 considers it unhealthy. This is the *failure threshold*.
  - Optionally, how you want to be notified when Amazon Route 53 detects that the endpoint is unhealthy. When you configure notification, Amazon Route 53 automatically sets a CloudWatch alarm. CloudWatch uses Amazon SNS to notify users that an endpoint is unhealthy.
2. Amazon Route 53 starts to send requests to the endpoint at the interval that you specified in the health check.
- If the endpoint responds to the requests, Amazon Route 53 considers the endpoint to be healthy and takes no action.
3. If the endpoint doesn't respond to a request, Amazon Route 53 starts to count the number of consecutive requests that the endpoint doesn't respond to:
- If the count reaches the value that you specified for the failure threshold, Amazon Route 53 considers the endpoint unhealthy.
  - If the endpoint starts to respond again before the count reaches the failure threshold, Amazon Route 53 resets the count to 0, and CloudWatch doesn't contact you.
4. If Amazon Route 53 considers the endpoint unhealthy and if you configured notification for the health check, Amazon Route 53 notifies CloudWatch.
- If you didn't configure notification, you can still see the status of your Amazon Route 53 health checks in the Amazon Route 53 console. For more information, see [Monitoring Health Check Status and Getting Notifications](#) (p. 349).
5. If you configured notification for the health check, CloudWatch triggers an alarm and uses Amazon SNS to send notification to the specified recipients.

In addition to checking the health of a specified endpoint, you can configure a health check to check the health of one or more other health checks so that you can be notified when a specified number of resources, such as two web servers out of five, are unavailable. You can also configure a health check to check the status of a CloudWatch alarm so that you can be notified on the basis of a broad range of criteria, not just whether a resource is responding to requests.

If you have multiple resources that perform the same function, for example, web servers or database servers, and you want Amazon Route 53 to route traffic only to the resources that are healthy, you can configure DNS failover by associating a health check with each resource record set for that resource. If a health check determines that the underlying resource is unhealthy, Amazon Route 53 routes traffic away from the associated resource record set.

For more information about using Amazon Route 53 to monitor the health of your resources, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover](#) (p. 337).

## Amazon Route 53 Concepts

Here's an overview of the concepts that are discussed throughout the *Amazon Route 53 Developer Guide*.

### Topics

- [Domain Registration Concepts](#) (p. 7)
- [Domain Name System \(DNS\) Concepts](#) (p. 8)
- [Health Checking Concepts](#) (p. 10)

# Domain Registration Concepts

Here's an overview of the concepts that are related to domain registration.

- [domain name](#)
- [domain registrar](#)
- [domain registry](#)
- [domain reseller](#)
- [top-level domain \(TLD\)](#)

## domain name

The name, such as `example.com`, that a user types in the address bar of a web browser to access a website or a web application. To make your website or web application available on the internet, you start by registering a domain name. For more information, see [How Domain Registration Works](#) (p. 2).

## domain registrar

A company that is accredited by ICANN (Internet Corporation for Assigned Names and Numbers) to process domain registrations for specific top-level domains (TLDs). For example, Amazon Registrar, Inc. is a domain registrar for `.com`, `.net`, and `.org` domains. Our registrar associate, Gandi, is a domain registrar for hundreds of TLDs, such as `.apartments`, `.boutique`, and `.camera`. For more information, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).

## domain registry

A company that owns the right to sell domains that have a specific top-level domain. For example, [VeriSign](#) is the registry that owns the right to sell domains that have a `.com` TLD. A domain registry defines the rules for registering a domain, such as residency requirements for a geographic TLD. A domain registry also maintains the authoritative database for all of the domain names that have the same TLD. The registry's database contains information such as contact information and the name servers for each domain.

## domain reseller

A company that sells domain names for registrars such as Amazon Registrar. Amazon Route 53 is a domain reseller for Amazon Registrar and for our registrar associate, Gandi.

## top-level domain (TLD)

The last part of a domain name, such as `.com`, `.org`, or `.ninja`. There are two types of top-level domains:

### generic top-level domains

These TLDs typically give users an idea of what they'll find on the website. For example, domain names that have a TLD of `.bike` often are associated with websites for motorcycle or bicycle businesses or organizations. With a few exceptions, you can use any generic TLD you want, so a bicycle club could use the `.hockey` TLD for their domain name.

### geographic top-level domains

These TLDs are associated with geographic areas such as countries or cities. Some registries for geographic TLDs have residency requirements, while others, such as `.io` (p. 192), allow or even encourage use as a generic TLD.

For a list of the TLDs that you can use when you register a domain name with Amazon Route 53, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).

# Domain Name System (DNS) Concepts

Here's an overview of the concepts that are related to the Domain Name System (DNS).

- [alias resource record set](#)
- [authoritative name server](#)
- [DNS query](#)
- [DNS resolver](#)
- [Domain Name System \(DNS\)](#)
- [hosted zone](#)
- [IP address](#)
- [name servers](#)
- [private DNS](#)
- [recursive name server](#)
- [resource record set \(DNS record\)](#)
- [reusable delegation set](#)
- [subdomain](#)
- [time to live \(TTL\)](#)

## **alias resource record set**

A type of resource record set that you can create with Amazon Route 53 to route traffic to AWS resources such as Amazon CloudFront distributions and Amazon S3 buckets. For more information, see [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#).

## **authoritative name server**

A name server that has definitive information about one part of the Domain Name System (DNS) and that responds to requests from a DNS resolver by returning the applicable information. For example, an authoritative name server for the .com top-level domain (TLD) knows the names of the name servers for every registered .com domain. When a .com authoritative name server receives a request from a DNS resolver for example.com, it responds with the names of the name servers for the DNS service for the example.com domain.

Amazon Route 53 name servers are the authoritative name servers for every domain that uses Amazon Route 53 as the DNS service. The name servers know how you want to route traffic for your domain and subdomains based on the resource record sets that you created in the hosted zone for the domain. (Amazon Route 53 name servers store the hosted zones for the domains that use Amazon Route 53 as the DNS service.)

For example, if an Amazon Route 53 name server receives a request for www.example.com, it finds that record and returns the IP address, such as 192.0.2.33, that is specified in the record.

## **DNS query**

Usually a request that is submitted by a device, such as a computer or a smart phone, to the Domain Name System (DNS) for a resource that is associated with a domain name. The most common example of a DNS query is when a user opens a browser and types the domain name in the address bar. The response to a DNS query typically is the IP address that is associated with a resource such as a web server. The device that initiated the request uses the IP address to communicate with the resource. For example, a browser can use the IP address to get a web page from a web server.

## **DNS resolver**

A DNS server, often managed by an internet service provider (ISP), that acts as an intermediary between user requests and DNS name servers. When you open a browser and type a domain name in

the address bar, your query goes first to a DNS resolver. The resolver communicates with DNS name servers to get the IP address for the corresponding resource, such as a web server. A DNS resolver is also known as a recursive name server because it sends requests to a sequence of authoritative DNS name servers until it gets the response (typically an IP address) that it returns to a user's device, for example, a web browser on a laptop computer.

### Domain Name System (DNS)

A worldwide network of servers that help computers, smart phones, tablets, and other IP-enabled devices to communicate with one another. The Domain Name System translates easily understood names such as `example.com` into the numbers, known as *IP addresses*, that allow computers to find each other on the internet.

See also [IP address](#).

### hosted zone

A container for resource record sets, which include information about how you want to route traffic for a domain (such as `example.com`) and all of its subdomains (such as `www.example.com`, `retail.example.com`, and `seattle.accounting.example.com`). A hosted zone has the same name as the corresponding domain.

For example, the hosted zone for `example.com` might include a resource record set that has information about routing traffic for `www.example.com` to a web server that has the IP address `192.0.2.243`, and a resource record set that has information about routing email for `example.com` to two email servers, `mail1.example.com` and `mail2.example.com`. Each email server also requires its own resource record set.

See also [resource record set \(DNS record\)](#).

### IP address

A number that is assigned to a device on the internet—such as a laptop, a smart phone, or a web server—that allows the device to communicate with other devices on the internet. IP addresses are in one of the following formats:

- Internet Protocol version 4 (IPv4) format, such as `192.0.2.44`
- Internet Protocol version 6 (IPv6) format, such as `2001:0db8:85a3:0000:0000:abcd:0001:2345`

Amazon Route 53 supports both IPv4 and IPv6 addresses for the following purposes:

- You can create resource record sets that have a type of `A`, for IPv4 addresses, or a type of `AAAA`, for IPv6 addresses.
- You can create health checks that send requests either to IPv4 or to IPv6 addresses.
- If a DNS resolver is on an IPv6 network, it can use either IPv4 or IPv6 to submit requests to Amazon Route 53.

### name servers

Servers in the Domain Name System (DNS) that help to translate domain names into the IP addresses that computers use to communicate with one another. Name servers are either recursive name servers (also known as [DNS resolver](#)) or [authoritative name servers](#).

For an overview of how DNS routes traffic to your resources, including the role of Amazon Route 53 in the process, see [How Amazon Route 53 Routes Traffic for Your Domain \(p. 4\)](#).

### private DNS

A local version of the Domain Name System (DNS) that lets you route traffic for a domain and its subdomains to Amazon EC2 instances within one or more Amazon virtual private clouds (VPCs). For more information, see [Working with Private Hosted Zones \(p. 225\)](#).

### recursive name server

See [DNS resolver](#).



### resource record set (DNS record)

An object in a hosted zone that you use to define how you want to route traffic for the domain or a subdomain. For example, you might create resource record sets for `example.com` and `www.example.com` that route traffic to a web server that has an IP address of `192.0.2.234`.

For more information about resource record sets, including information about functionality that is provided by Amazon Route 53–specific resource record sets, see [Configuring Amazon Route 53 as Your DNS Service](#) (p. 209).

### reusable delegation set

A set of four authoritative name servers that you can use with more than one hosted zone. By default, Amazon Route 53 assigns a random selection of name servers to each new hosted zone. To make it easier to migrate DNS service to Amazon Route 53 for a large number of domains, you can create a reusable delegation set and then associate the reusable delegation set with new hosted zones. (You can't change the name servers that are associated with an existing hosted zone.)

You create a reusable delegation set and associate it with a hosted zone programmatically; using the Amazon Route 53 console isn't supported. For more information, see [CreateHostedZone](#) and [CreateReusableDelegationSet](#) in the *Amazon Route 53 API Reference*. The same feature is also available in the [AWS SDKs](#), the [AWS Command Line Interface](#), and [AWS Tools for Windows PowerShell](#).

### subdomain

A domain name that has one or more labels prepended to the registered domain name. For example, if you register the domain name `example.com`, then `www.example.com` is a subdomain. If you create the hosted zone `accounting.example.com` for the `example.com` domain, then `seattle.accounting.example.com` is a subdomain.

To route traffic for a subdomain, create a resource record set that has the name that you want, such as `www.example.com`, and specify the applicable values, such as the IP address of a web server.

### time to live (TTL)

The amount of time, in seconds, that you want a DNS resolver to cache (store) the values for a resource record set before submitting another request to Amazon Route 53 to get the current values for that resource record set. If the DNS resolver receives another request for the same domain before the TTL expires, the resolver returns the cached value.

A longer TTL reduces your Amazon Route 53 charges, which are based in part on the number of DNS queries that Amazon Route 53 responds to. A shorter TTL reduces the amount of time that DNS resolvers route traffic to older resources after you change the values in a resource record set, for example, by changing the IP address for the web server for `www.example.com`.

## Health Checking Concepts

Here's an overview of the concepts that are related to Amazon Route 53 health checking.

- [DNS failover](#)
- [endpoint](#)
- [health check](#)

### DNS failover

A method for routing traffic away from unhealthy resources and to healthy resources. When you have more than one resource performing the same function—for example, more than one web

server or mail server—you can configure Amazon Route 53 health checks to check the health of your resources and configure resource record sets in your hosted zone to route traffic only to healthy resources.

For more information, see [Configuring DNS Failover \(p. 356\)](#).

#### endpoint

The resource, such as a web server or an email server, that you configure a health check to monitor the health of. You can specify an endpoint by IPv4 address (192.0.2.243), by IPv6 address (2001:0db8:85a3:0000:0000:abcd:0001:2345), or by domain name (example.com).

#### Note

You can also create health checks that monitor the status of other health checks or that monitor the alarm state of a CloudWatch alarm.

#### health check

An Amazon Route 53 component that lets you do the following:

- Monitor whether a specified endpoint, such as a web server, is healthy
- Optionally, get notified when an endpoint becomes unhealthy
- Optionally, configure DNS failover, which allows you to reroute internet traffic from an unhealthy resource to a healthy resource

For more information about how to create and use health checks, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## How to Get Started with Amazon Route 53

For information about getting started with Amazon Route 53, see the following topics in this guide:

- [Setting Up Amazon Route 53 \(p. 13\)](#), which explains how to sign up for AWS, how to secure access to your AWS account, and how to set up programmatic access to Amazon Route 53
- [Getting Started with Amazon Route 53 \(p. 17\)](#), which describes how to register a domain name, how to create an Amazon S3 bucket and configure it to host a static website, and how to route internet traffic to the website

## Related Services

For information about the AWS services that Amazon Route 53 integrates with, see [Integration with Other Services \(p. 24\)](#).

## Accessing Amazon Route 53

You can access Amazon Route 53 in the following ways:

- **AWS Management Console** – The procedures throughout this guide explain how to use the AWS Management Console to perform tasks.
- **AWS SDKs** – If you're using a programming language that AWS provides an SDK for, you can use an SDK to access Amazon Route 53. SDKs simplify authentication, integrate easily with your development environment, and provide easy access to Amazon Route 53 commands. For more information, see [Tools for Amazon Web Services](#).

- **Amazon Route 53 API** – If you're using a programming language that an SDK isn't available for, see the [Amazon Route 53 API Reference](#) for information about API actions and about how to make API requests.
- **AWS Command Line Interface** – For more information, see [Getting Set Up with the AWS Command Line Interface](#) in the *AWS Command Line Interface User Guide*.
- **AWS Tools for Windows PowerShell** – For more information, see [Setting up the AWS Tools for Windows PowerShell](#) in the *AWS Tools for Windows PowerShell User Guide*.

## AWS Identity and Access Management

Amazon Route 53 integrates with AWS Identity and Access Management (IAM), a service that lets your organization do the following:

- Create users and groups under your organization's AWS account
- Easily share your AWS account resources among the users in the account
- Assign unique security credentials to each user
- Granularly control user access to services and resources

For example, you can use IAM with Amazon Route 53 to control which users in your AWS account can create a new hosted zone or change resource record sets.

For general information about IAM, see the following:

- [Authentication and Access Control for Amazon Route 53 \(p. 388\)](#)
- [Identity and Access Management \(IAM\)](#)
- [IAM User Guide](#)

## Amazon Route 53 Pricing

As with other AWS products, there are no contracts or minimum commitments for using Amazon Route 53—you pay only for the hosted zones that you configure and the number of DNS queries that Amazon Route 53 answers. For more information, see [Amazon Route 53 Pricing](#).

## HIPAA Compliance

AWS has expanded its HIPAA compliance program to include Amazon Route 53 as a HIPAA eligible service. If you have executed Business Associate Addendum (BAA) with AWS, you can use Amazon Route 53 to access resources that transmit or store protected health information (PHI) or personally identifiable information (PII), such as web servers running on EC2 or storage such as S3. Don't store PHI or PII data in any Amazon Route 53 resource names or tags because these values aren't encrypted. For more information, see [HIPAA Compliance](#).

# Setting Up Amazon Route 53

The overview and procedures in this section help you get started with AWS.

## Topics

- [Sign Up for AWS \(p. 13\)](#)
- [Access Your Account \(p. 14\)](#)
- [Create an IAM User \(p. 14\)](#)
- [Set Up the AWS Command Line Interface or AWS Tools for Windows PowerShell \(p. 16\)](#)
- [Download an AWS SDK \(p. 16\)](#)

## Sign Up for AWS

When you sign up for AWS, your AWS account is automatically signed up for all services in AWS, including Amazon Route 53. You are charged only for the services that you use.

If you have an AWS account already, skip to [Access Your Account \(p. 14\)](#). If you don't have an AWS account, use the following procedure to create one.

### To create an AWS account

1. Open <https://aws.amazon.com/>, and then choose **Create an AWS Account**.

#### Note

This might be unavailable in your browser if you previously signed into the AWS Management Console. In that case, choose **Sign In to the Console**, and then choose **Create a new AWS account**.

2. Follow the online instructions.

Part of the sign-up procedure involves receiving a phone call and entering a PIN using the phone keypad.

Note your AWS account number, because you'll need it later.

## Access Your Account

You use AWS services by using any of the following options:

- AWS Management Console
- API for each service
- AWS Command Line Interface (AWS CLI)
- AWS Tools for Windows PowerShell
- AWS SDKs

For each of those options, you need to access your AWS account by providing credentials that verify that you have permissions to use the services.

### Access the Console

To access the AWS Management Console for the first time, you provide an email address and a password. This combination of your email address and password is called your *root identity* or *root account credentials*. After you access your account for the first time, we strongly recommend that you don't use your root account credentials again for everyday use. Instead, you should create new credentials by using [AWS Identity and Access Management](#). To do that, you create a user account for yourself known as an *IAM user*, and then add the IAM user to an IAM group with administrative permissions or grant the IAM user administrative permissions. You then can access AWS using a special URL and the credentials for the IAM user. You also can add other IAM users later, and restrict their access to specified resources in the account.

#### Note

Some ad-blocking plugins for web browsers interfere with Amazon Route 53 console operations, which can cause the console to behave unpredictably. If you installed an ad-blocking plugin for your browser, we recommend that you add the URL for the Amazon Route 53 console, <https://console.aws.amazon.com/route53/home>, to the whitelist for the plugin.

### Access the API, AWS CLI, AWS Tools for Windows PowerShell, or the AWS SDKs

To use the API, the AWS CLI, AWS Tools for Windows PowerShell, or the AWS SDKs, you must create *access keys*. These keys consist of an access key ID and secret access key, which are used to sign programmatic requests that you make to AWS.

To create the keys, you sign in to the AWS Management Console. We strongly recommend that you sign in with your IAM user credentials instead of your root credentials. For more information, see [Access Keys](#) in the *IAM User Guide*.

## Create an IAM User

Perform the following procedures to create a group for administrators, create an IAM user, and then add the IAM user to the administrators group. If you signed up for AWS but have not created an IAM user for yourself, you can create one using the IAM console. If you aren't familiar with using the console, see [Working with the AWS Management Console](#) for an overview.

#### To create an IAM user for yourself and add the user to an Administrators group

1. Use your AWS account email address and password to sign in to the [AWS Management Console](#) as the *AWS account root user*.

2. In the navigation pane of the console, choose **Users**, and then choose **Add user**.
3. For **User name**, type `Administrator`.
4. Select the check box next to **AWS Management Console access**, select **Custom password**, and then type the new user's password in the text box. You can optionally select **Require password reset** to force the user to select a new password the next time the user signs in.
5. Choose **Next: Permissions**.
6. On the **Set permissions for user** page, choose **Add user to group**.
7. Choose **Create group**.
8. In the **Create group** dialog box, type `Administrators`.
9. For **Filter**, choose **Job function**.
10. In the policy list, select the check box for **AdministratorAccess**. Then choose **Create group**.
11. Back in the list of groups, select the check box for your new group. Choose **Refresh** if necessary to see the group in the list.
12. Choose **Next: Review** to see the list of group memberships to be added to the new user. When you are ready to proceed, choose **Create user**.

You can use this same process to create more groups and users, and to give your users access to your AWS account resources. To learn about using policies to restrict users' permissions to specific AWS resources, go to [Access Management](#) and [Example Policies](#).

### To sign in as your new IAM user

1. Sign out of the AWS console.
2. Sign in by using the following URL, where `your_aws_account_id` is your AWS account number without the hyphens. For example, if your AWS account number is 1234-5678-9012, your AWS account ID is 123456789012:

```
https://your_aws_account_id.signin.aws.amazon.com/console/
```

3. Enter the IAM user name (not your email address) and password that you just created. When you're signed in, the navigation bar displays "`your_user_name @ your_aws_account_id`".

If you don't want the URL for your sign-in page to contain your AWS account ID, you can create an account alias.

### To create an account alias and conceal your account ID

1. On the IAM console, choose **Dashboard** in the navigation pane.
2. On the dashboard, choose **Customize** and enter an alias such as your company name.
3. Sign out of the AWS console.
4. Sign in by using the following URL:

```
https://your_account_alias.signin.aws.amazon.com/console/
```

To verify the sign-in link for IAM users for your account, open the IAM console and check under **IAM users sign-in link** on the dashboard.

For more information about using IAM, see [Authentication and Access Control for Amazon Route 53](#) (p. 388).

## Set Up the AWS Command Line Interface or AWS Tools for Windows PowerShell

The AWS Command Line Interface (AWS CLI) is a unified tool for managing AWS services. For information about how to install and configure the AWS CLI, see [Getting Set Up with the AWS Command Line Interface](#) in the *AWS Command Line Interface User Guide*.

If you have experience with Windows PowerShell, you might prefer to use AWS Tools for Windows PowerShell. For more information, see [Setting up the AWS Tools for Windows PowerShell](#) in the *AWS Tools for Windows PowerShell User Guide*.

## Download an AWS SDK

If you're using a programming language that AWS provides an SDK for, we recommend that you use an SDK instead of the Amazon Route 53 API. The SDKs make authentication simpler, integrate easily with your development environment, and provide easy access to Amazon Route 53 commands. For more information, see [Tools for Amazon Web Services](#).

# Getting Started with Amazon Route 53

This Getting Started tutorial shows you how to perform the following tasks:

- Register a domain name, such as example.com
- Create an Amazon S3 bucket and configure it to host a website
- Create a sample website and save the file in your S3 bucket
- Configure Amazon Route 53 to route traffic to your new website

When you're finished, you'll be able to open a browser, enter the name of your domain, and view your website.

**Note**

You can also transfer an existing domain to Amazon Route 53, but the process is more complex and time consuming than registering a new domain. For more information, see [Transferring Registration for a Domain to Amazon Route 53](#) (p. 46).

**Estimated cost**

- There's an annual fee to register a domain, ranging from \$9 to several hundred dollars, depending on the top-level domain, such as .com. For more information, see [Amazon Route 53 Pricing for Domain Registration](#). This fee is not refundable.
- When you register a domain, we automatically create a hosted zone that has the same name as the domain. You use the hosted zone to specify where you want Amazon Route 53 to route traffic for your domain. The fee for a hosted zone is \$0.50 per month. You can delete the hosted zone if you want to avoid this charge.
- If you're a new AWS customer, you can get started with Amazon S3 for free. If you're an existing AWS customer, charges are based on how much data you store, on the number of requests for your data, and on the amount of data transferred. For more information, see [Amazon S3 Pricing](#).

**Topics**

- [Prerequisites](#) (p. 18)
- [Step 1: Register a domain](#) (p. 18)
- [Step 2: Create an S3 Bucket and Configure It to Host a Website](#) (p. 19)
- [Step 3 \(Optional\): Create Another S3 Bucket, for www.your-domain-name](#) (p. 20)
- [Step 4: Create a Website and Upload It to Your S3 Bucket](#) (p. 21)



- [Step 5: Route DNS Traffic for Your Domain to Your Website Bucket \(p. 21\)](#)
- [Step 6: Test Your Website \(p. 22\)](#)

## Prerequisites

Before you begin, be sure that you've completed the steps in [Setting Up Amazon Route 53 \(p. 13\)](#).

## Step 1: Register a domain

To use a domain name such as `example.com`, you need to find a domain name that isn't already in use by someone else and register it. When you register a domain name, you reserve it for your exclusive use everywhere on the internet, typically for one year. By default, we automatically renew your domain name at the end of each year, but you can disable automatic renewal.

### To register a new domain using Amazon Route 53

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. If you're new to Amazon Route 53, under **Domain Registration**, choose **Get Started Now**.  
If you're already using Amazon Route 53, in the navigation pane, choose **Registered Domains**.
3. Choose **Register Domain**.
4. Enter the domain name that you want to register, and choose **Check** to find out whether the domain name is available.

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

5. If the domain is available, choose **Add to cart**. The domain name appears in your shopping cart.

The **Related domain suggestions** list shows other domains that you might want to register instead of your first choice (if it's not available) or in addition to your first choice. Choose **Add to cart** for each additional domain that you want to register, up to a maximum of five domains.

If the domain name isn't available and you don't want one of the suggested domain names, repeat step 4 until you find an available domain name that you like.

#### Note

If you also want your users to be able to use `www.your-domain-name`, such as `www.example.com`, to access your sample website, you don't need to register a second domain. Later in this Getting Started topic, we explain how to route traffic for `www.your-domain-name` to your website.

6. In the shopping cart, choose the number of years that you want to register the domain for.
7. To register more domains, repeat steps 4 through 6.
8. Choose **Continue**.
9. On the **Contact Details for Your *n* Domains** page, enter contact information for the domain registrant, administrator, and technical contacts. The values that you enter here are applied to all of the domains that you're registering.

By default, we use the same information for all three contacts. If you want to enter different information for one or more contacts, change the value of **My Registrant, Administrative, and Technical Contacts are all the same** to **No**.

If you're registering more than one domain, we use the same contact information for all of the domains.

For more information, see [Values that You Specify When You Register a Domain](#) (p. 31).

10. For some top-level domains (TLDs), we're required to collect additional information. For these TLDs, enter the applicable values after the **Postal/Zip Code** field.
11. Choose whether you want to hide your contact information from WHOIS queries. For more information, see the following topics:
  - [Enabling or Disabling Privacy Protection for Contact Information for a Domain](#) (p. 39)
  - [Domains That You Can Register with Amazon Route 53](#) (p. 68)
12. Choose **Continue**.
13. Review the information that you entered, read the terms of service, and select the check box to confirm that you've read the terms of service.
14. Choose **Complete Purchase**.

We send an email to the registrant for the domain to verify that the registrant contact can be reached at the email address that you specified. (This is an ICANN requirement.) The email comes from one of the following email addresses:

- **noreply@registrar.amazon.com** – for TLDs registered by Amazon Registrar.
- **noreply@domainnameverification.net** – for TLDs registered by our registrar associate, Gandi. To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).

### **Important**

The registrant contact must follow the instructions in the email to confirm that the email was received, or we must suspend the domain as required by ICANN. When a domain is suspended, it's not accessible on the internet.

You'll receive another email when your domain registration has been approved. To determine the current status of your request, see [Viewing the Status of a Domain Registration](#) (p. 35).

By default, you register a domain for one year. If you won't want to keep the domain, you can disable automatic renewal, so the domain expires at the end of a year.

### **(Optional) To disable automatic renewal for a domain**

1. In the navigation pane, choose **Registered domains**.
2. In the list of domains, choose the name of your domain.
3. If the value of the **Auto renew** field is **Enabled (disable)**, choose **disable** to turn automatic renewal off. The change takes effect immediately.

If the value of the field is **Disabled (enable)**, don't change the setting.

## Step 2: Create an S3 Bucket and Configure It to Host a Website

Amazon S3 lets you store and retrieve your data from anywhere on the internet. To organize your data, you create buckets and upload your data to the buckets by using the AWS Management Console. You can use S3 to host a static website in a bucket. The following procedure explains how to create a bucket and configure it for website hosting.

### To create an S3 bucket and configure it to host a website

1. Open the Amazon S3 console at <https://console.aws.amazon.com/s3/>.
2. If a **Switch to the old console** button appears in the upper-right corner of the S3 console, choose it.
3. Choose **Create bucket**.
4. For **Bucket Name**, type the name of your domain, such as **example.com**.
5. For **Region**, choose the region closest to most of your users.

Make note of the region that you choose; you'll need this information later in the process.

6. Choose **Create**.
7. In the right pane, expand **Permissions**.
8. Choose **Add bucket policy**.
9. Copy the following bucket policy and paste it into a text editor. This policy grants everyone on the internet ("Principal": "\*") permission to get the files ("Action": ["s3:GetObject"]) in the S3 bucket that is associated with your domain name ("arn:aws:s3:::*your-domain-name*/\*"):

```
{
  "Version": "2012-10-17",
  "Statement": [{
    "Sid": "AddPerm",
    "Effect": "Allow",
    "Principal": "*",
    "Action": [
      "s3:GetObject"
    ],
    "Resource": [
      "arn:aws:s3:::your-domain-name/*"
    ]
  }]
}
```

10. In the bucket policy, replace the value *your-domain-name* with the name of your domain, such as *example.com*.
11. Choose **Save**.
12. In the right pane, expand **Static website hosting**.
13. Choose **Enable website hosting**.
14. For **Index document**, type **index.html**. This is the name that you'll give the HTML file that you'll create later in this process.
15. Choose **Save**.

## Step 3 (Optional): Create Another S3 Bucket, for *www.your-domain-name*

In the preceding procedure, you created a bucket for your domain name, such as *example.com*. This allows your users to access your website by using your domain name, such as *example.com*.

If you also want your users to be able to use ***www.your-domain-name***, such as *www.example.com*, to access your sample website, you create a second S3 bucket. You then configure the second bucket to route traffic to the first bucket.

### To create an S3 bucket for *www.your-domain-name*

1. Choose **Create bucket**.

2. For **Bucket Name**, type **www.your-domain-name**. For example, if you registered the domain name example.com, type **www.example.com**.
3. For **Region**, choose the same region that you created the first bucket in.
4. Choose **Create**.
5. In the right pane, expand **Static website hosting**.
6. Choose **Redirect all requests to another host name**.
7. For **Redirect all requests to**, type your domain name.
8. Choose **Save**.

## Step 4: Create a Website and Upload It to Your S3 Bucket

Now that you have an S3 bucket to save your website in, you can create the first page for your website and upload it to (save it in) your bucket.

### To create a website and upload it to your S3 bucket

1. Copy the following text and paste it into a text editor:

```
<html>
<head>
<title>Amazon Route 53 Getting Started</title>
</head>

<body>

<h1>Routing Internet Traffic to an Amazon S3 Bucket for Your Website</h1>

<p>For more information, see
<a href url="http://docs.aws.amazon.com/Route53/latest/DeveloperGuide/getting-
started.html">Getting Started with Amazon Route 53</a>
in the <em>Amazon Route 53 Developer Guide</em>.</p>

</body>

</html>
```

2. Save the file with the file name **index.html**.
3. In the Amazon S3 console, choose the name of the bucket that you created in the procedure [To create an S3 bucket and configure it to host a website \(p. 20\)](#).
4. Choose **Upload**.
5. Choose **Add files**.
6. Follow the on-screen prompts to select **index.html**, and then choose **Start Upload**.

## Step 5: Route DNS Traffic for Your Domain to Your Website Bucket

You now have a one-page website in your S3 bucket. To start routing internet traffic for your domain to your S3 bucket, perform the following procedure.

### To route traffic to your website

1. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted zones**.

#### Note

When you registered your domain, Amazon Route 53 automatically created a hosted zone with the same name. A hosted zone contains information about how you want Amazon Route 53 to route traffic for the domain.

3. In the list of hosted zones, choose the name of your domain.
4. Choose **Create Record Set**.

#### Note

Each resource record set contains information about how you want to route traffic for one domain (such as example.com) or subdomain (such as www.example.com or test.example.com). Resource record sets are stored in the hosted zone for your domain.

5. Specify the following values:

#### Name

For the first resource record set that you'll create, accept the default value, which is the name of your hosted zone and your domain. This will route internet traffic to the bucket that has the same name as your domain.

If you created a second S3 bucket, for `www.your-domain-name`, you'll repeat this step to create a second resource record set. For the second resource record set, type **www**. This will route internet traffic to the `www.your-domain-name` bucket.

#### Type

Choose **A – IPv4 address**.

#### Alias

Choose **Yes**.

#### Alias Target

Type the name of the region that you created your S3 bucket in. Use the applicable value from the **Website Endpoint** column in the [Amazon Simple Storage Service Website Endpoints](#) table in the [AWS Regions and Endpoints](#) chapter of the *Amazon Web Services General Reference*.

#### Note

You specify the same value for **Alias Target** for both resource record sets. Amazon Route 53 figures out which bucket to route traffic to based on the name of the resource record set.

#### Routing Policy

Accept the default value of **Simple**.

#### Evaluate Target Health

Accept the default value of **No**.

6. Choose **Create**.
7. If you created a second S3 bucket, for `www.your-domain-name`, repeat steps 4 through 6 to create a resource record set for `www.your-domain-name`.

## Step 6: Test Your Website

To verify that the website is working correctly, open a web browser and browse to the following URLs:

- `http://your-domain-name` – Displays the index document in the `your-domain-name` bucket
- `http://www.your-domain-name` – Redirects your request to the `your-domain-name` bucket

In some cases, you might need to clear the cache to see the expected behavior.

For more advanced information about routing your internet traffic, see [Configuring Amazon Route 53 as Your DNS Service \(p. 209\)](#). For information about routing your internet traffic to AWS resources, see [Routing Internet Traffic to Your AWS Resources \(p. 322\)](#).

# Integration with Other Services

You can integrate Amazon Route 53 with other AWS services to log requests that are sent to the Amazon Route 53 API, monitor the status of your resources, and assign tags to your resources. In addition, you can use Amazon Route 53 to route internet traffic to your AWS resources.

## Topics

- [Logging, Monitoring, and Tagging \(p. 24\)](#)
- [Routing Traffic to Other AWS Resources \(p. 25\)](#)

## Logging, Monitoring, and Tagging

### AWS CloudTrail

Amazon Route 53 is integrated with AWS CloudTrail, a service that captures information about every request that is sent to the Amazon Route 53 API by your AWS account. You can use information in the CloudTrail log files to determine which requests were made to Amazon Route 53, the source IP address from which each request was made, who made the request, when it was made, and so on.

For more information, see [Using AWS CloudTrail to Capture Requests Sent to the Amazon Route 53 API \(p. 411\)](#).

### Amazon CloudWatch

You can use Amazon CloudWatch to monitor the status—healthy or unhealthy—of your Amazon Route 53 health checks. Health checks monitor the health and performance of your web applications, web servers, and other resources. At regular intervals that you specify, Amazon Route 53 submits automated requests over the internet to your application, server, or other resource to verify that it's reachable, available, and functional.

For more information, see [Monitoring Health Checks Using CloudWatch \(p. 351\)](#).

### Tag Editor

A tag is a label that you assign to an AWS resource, including Amazon Route 53 domains, hosted zones, and health checks. Each tag consists of a key and a value, both of which you define. For example, you might assign a tag to a domain registration that has the key "Customer" and the value "Example Corp." You can use tags for a variety of purposes; one common use is to categorize and track your AWS costs.

For more information, see [Tagging Amazon Route 53 Resources \(p. 416\)](#).

# Routing Traffic to Other AWS Resources

You can use Amazon Route 53 to route traffic to a variety of AWS resources.

## Amazon CloudFront

To speed up delivery of your web content, you can use Amazon CloudFront, the AWS content delivery network (CDN). CloudFront can deliver your entire website—including dynamic, static, streaming, and interactive content—by using a global network of edge locations. CloudFront routes requests for your content to the edge location that gives your users the lowest latency. You can use Amazon Route 53 to route traffic for your domain to your CloudFront distribution. For more information, see [Routing Traffic to an Amazon CloudFront Web Distribution by Using Your Domain Name](#) (p. 322).

## Amazon EC2

Amazon EC2 provides scalable computing capacity in the AWS Cloud. You can launch an EC2 virtual computing environment (an instance) using a preconfigured template (an Amazon Machine Image, or AMI). When you launch an EC2 instance, EC2 automatically installs the operating system (Linux or Microsoft Windows) and additional software included in the AMI, such as web server or database software.

If you host a website or run a web application on an EC2 instance, you can route traffic for your domain, such as example.com, to your server by using Amazon Route 53. For more information, see [Routing Traffic to an Amazon EC2 Instance](#) (p. 324).

## AWS Elastic Beanstalk

If you use AWS Elastic Beanstalk to deploy and manage applications in the AWS Cloud, you can use Amazon Route 53 to route DNS traffic for your domain, such as example.com, to an Elastic Beanstalk environment. For more information, see [Routing Traffic to an AWS Elastic Beanstalk Environment](#) (p. 326).

## Elastic Load Balancing

If you host a website on multiple Amazon EC2 instances, you can distribute traffic to your website across the instances by using an Elastic Load Balancing (ELB) load balancer. The ELB service automatically scales the load balancer as traffic to your website changes over time. The load balancer also can monitor the health of its registered instances and route domain traffic only to healthy instances.

You can use Amazon Route 53 to route traffic for your domain to your Classic, Application, or Network Load Balancer. For more information, see [Routing Traffic to an ELB Load Balancer](#) (p. 329).

## Amazon RDS

If you use an Amazon RDS database instance for data storage for your web application, the domain name that is assigned to your DB instance is a long, partially random, alphanumeric string, such as `asmyexampledb.a1b2c3d4wxyz.us-west-2.rds.amazonaws.com`. If you want to use a domain name that's easier to remember, you can use Amazon Route 53 to associate your domain name, such as `productdata.example.com`, with the domain name of your DB instance. For more information, see [Opening Connections to an Amazon RDS Database Instance Using Your Domain Name](#) (p. 331).

## Amazon S3

Amazon Simple Storage Service (Amazon S3) provides secure, durable, highly scalable cloud storage. You can configure an S3 bucket to host a static website that can include web pages and client-side scripts. (S3 doesn't support server-side scripting.) You can use Amazon Route 53 to route traffic to an Amazon S3 bucket. For more information, see the following topics:

- For information about routing traffic to a bucket, see [Routing Traffic to a Website that Is Hosted in an Amazon S3 Bucket](#) (p. 333).



- For a more detailed explanation of how to host a static website in an S3 bucket, see [Getting Started with Amazon Route 53 \(p. 17\)](#).

#### **Amazon WorkMail**

If you're using Amazon WorkMail for your business email and you're using Amazon Route 53 as your DNS service, you can use Amazon Route 53 to route traffic to your Amazon WorkMail email domain. For more information, see [Routing Traffic to Amazon WorkMail \(p. 334\)](#).

# Registering Domain Names Using Amazon Route 53

When you want to get a new domain name, such as the **example.com** part of the URL `http://example.com`, you can register it with Amazon Route 53. You can also transfer the registration for existing domains from other registrars to Amazon Route 53 or transfer the registration for domains that you register with Amazon Route 53 to another registrar.

The procedures in this chapter explain how to register and transfer domains using the Amazon Route 53 console, and how to edit domain settings and view domain status. If you're only registering and managing a few domains, using the console is the easiest way.

If you need to register and manage a lot of domains, you might prefer to make changes programmatically. For more information, see [Setting Up Amazon Route 53 \(p. 13\)](#).

## Note

If you are using a language for which an AWS SDK exists, use the SDK rather than trying to work your way through the APIs. The SDKs make authentication simpler, integrate easily with your development environment, and provide easy access to Amazon Route 53 commands.

Domain name registration services are provided under our [Domain Name Registration Agreement](#).

## Topics

- [Registering Domains \(p. 27\)](#)
- [Updating Settings for a Domain \(p. 35\)](#)
- [Renewing Registration for a Domain \(p. 43\)](#)
- [Restoring an Expired Domain \(p. 44\)](#)
- [Transferring Domains \(p. 45\)](#)
- [Resending Authorization and Confirmation Emails \(p. 60\)](#)
- [Configuring DNSSEC for a Domain \(p. 63\)](#)
- [Deleting a Domain Name Registration \(p. 66\)](#)
- [Downloading a Domain Billing Report \(p. 67\)](#)
- [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#)

## Registering Domains

For information about registering new domains, see the applicable topic.

## Topics

- [Registering a New Domain \(p. 28\)](#)
- [Values that You Specify When You Register a Domain \(p. 31\)](#)
- [Values that Amazon Route 53 Returns When You Register a Domain \(p. 34\)](#)
- [Viewing the Status of a Domain Registration \(p. 35\)](#)

# Registering a New Domain

When you want to register a new domain using the Amazon Route 53 console, perform the following procedure.

### Important

When you register a domain with Amazon Route 53, we automatically create a hosted zone for the domain to make it easier for you to use Amazon Route 53 as the DNS service provider for your new domain. This hosted zone is where you store information about how to route traffic for your domain, for example, to an Amazon EC2 instance or a CloudFront distribution. We charge a small monthly fee for the hosted zone in addition to the annual charge for the domain registration. If you don't want to use your domain right now, you can delete the hosted zone; if you delete it within 12 hours of registering the domain, there won't be any charge for the hosted zone on your AWS bill. We also charge a small fee for the DNS queries that we receive for your domain. For more information, see [Amazon Route 53 Pricing](#).

Note that you can't use AWS credits to pay the fee for registering a new domain with Amazon Route 53.

### To register a new domain using Amazon Route 53

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. If you're new to Amazon Route 53, under **Domain Registration**, choose **Get Started Now**.  
  
If you're already using Amazon Route 53, in the navigation pane, choose **Registered Domains**.
3. Choose **Register Domain**.
4. Enter the domain name that you want to register, and choose **Check** to find out whether the domain name is available.

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

5. If the domain is available, choose **Add to cart**. The domain name appears in your shopping cart.

The **Related domain suggestions** list shows other domains that you might want to register instead of your first choice (if it's not available) or in addition to your first choice. Choose **Add to cart** for each additional domain that you want to register, up to a maximum of five domains.

6. In the shopping cart, choose the number of years that you want to register the domain for.
7. To register more domains, repeat steps 4 through 6.
8. Choose **Continue**.
9. On the **Contact Details for Your *n* Domains** page, enter contact information for the domain registrant, administrator, and technical contacts. The values that you enter here are applied to all of the domains that you're registering.

By default, we use the same information for all three contacts. If you want to enter different information for one or more contacts, change the value of **My Registrant, Administrative, and Technical Contacts are all the same** to **No**.

If you're registering more than one domain, we use the same contact information for all of the domains.

For more information, see [Values that You Specify When You Register a Domain \(p. 31\)](#).

10. For some top-level domains (TLDs), we're required to collect additional information. For these TLDs, enter the applicable values after the **Postal/Zip Code** field.
11. Choose whether you want to hide your contact information from WHOIS queries. For more information, see the following topics:

- [Enabling or Disabling Privacy Protection for Contact Information for a Domain \(p. 39\)](#)
- [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#)

12. Choose **Continue**.

13. For [generic TLDs](#), if you specified an email address for the registrant contact that has never been used to register a domain with Amazon Route 53, you need to verify that the address is valid.

If the registry requires verification and if you can verify the address during domain registration, the console displays a **Verify the Email Address for the Registrant Contact** section:

- If the section doesn't appear, skip to step 14.
- If the section appears and the status is **email-address is verified**, skip to step 14.
- If the section appears and the value is Registrant email not verified, continue with this step.

Perform the following steps:

- a. Choose **Send verification email**. We send a verification email from one of the following email addresses:
  - **noreply@registrar.amazon.com** – for TLDs registered by Amazon Registrar.
  - **noreply@domainnameverification.net** – for TLDs registered by our registrar associate, Gandi. To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

#### **Important**

The registrant contact must follow the instructions in the email to verify that the email was received, or we must suspend the domain as required by ICANN. When a domain is suspended, it's not accessible on the internet.

- b. When you receive the verification email, choose the link in the email that verifies that the email address is valid. If you don't receive the email immediately, perform the following troubleshooting steps:
    - Choose **Back** and verify that the email address for the registrant contact is the correct one.
    - Check your junk email folder.
  - c. Return to the Amazon Route 53 console. If the status doesn't automatically update to say **email-address is verified**, choose **Refresh status**.
14. Review the information that you entered, read the terms of service, and select the check box to confirm that you've read the terms of service.
  15. Choose **Complete Purchase**.

If the registry requires us to verify the email address for the registrant contact but doesn't allow us to verify earlier in the process, we send a verification email from one of the following email addresses:

- **noreply@registrar.amazon.com** – for TLDs registered by Amazon Registrar.

- **noreply@domainnameverification.net** – for TLDs registered by our registrar associate, Gandi. To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

When you receive the verification email, choose the link in the email that verifies that the email address is valid. If you don't receive the email immediately, perform the following troubleshooting steps:

- Choose **Back** and verify that the email address for the registrant contact is the correct one.
- Check your junk email folder.

### Important

The registrant contact must follow the instructions in the email to confirm that the email was received, or we must suspend the domain as required by ICANN. When a domain is suspended, it's not accessible on the internet.

For all TLDs, you'll receive an email when your domain registration has been approved. To determine the current status of your request, see [Viewing the Status of a Domain Registration \(p. 35\)](#).

16. When domain registration is complete, your next step depends on whether you want to use Amazon Route 53 or another DNS service as the DNS service for the domain:
  - **Amazon Route 53** – In the hosted zone that Amazon Route 53 created when you registered the domain, create resource record sets to tell Amazon Route 53 how you want to route traffic for the domain and subdomains.

For example, when someone enters your domain name in a browser and that query is forwarded to Amazon Route 53, do you want Amazon Route 53 to respond to the query with the IP address of a web server in your data center or with the name of an ELB load balancer?

For more information, see [Working with Resource Record Sets \(p. 231\)](#).

### Important

If you create resource record sets in a hosted zone other than the one that Amazon Route 53 creates automatically, you must update the name servers for the domain to use the name servers for the new hosted zone.

- **Another DNS service** – Configure your new domain to route DNS queries to the other DNS service. Perform the procedure [To update the name servers for your domain when you want to use another DNS service \(p. 30\)](#).

## To update the name servers for your domain when you want to use another DNS service

1. Use the process that is provided by your DNS service to get the name servers for the domain.
2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Registered Domains**.
4. Choose the name of the domain that you want to configure to use another DNS service.
5. Choose **Add/Edit Name Servers**.
6. Change the names of the name servers to the name servers that you got from your DNS service in step 1.
7. Choose **Update**.
8. (Optional) Delete the hosted zone that Amazon Route 53 created automatically when you registered your domain. This prevents you from being charged for a hosted zone that you aren't using.
  - a. In the navigation pane, choose **Hosted Zones**.

- b. Select the radio button for the hosted zone that has the same name as your domain.
- c. Choose **Delete Hosted Zone**.
- d. Choose **Confirm** to confirm that you want to delete the hosted zone.

## Values that You Specify When You Register a Domain

When you register a domain or transfer domain registration to Amazon Route 53, you specify the values that are described in this topic.

### Note

If you're registering more than one domain, Amazon Route 53 uses the values that you specify for all of the domains that are in your shopping cart.

You can also change values for a domain that is currently registered with Amazon Route 53. Note the following:

- If you change contact information for the domain, we send an email notification to the registrant contact about the change. This email comes from `route53-dev-admin@amazon.com`. For most changes, the registrant contact is not required to respond.
- For changes to contact information that also constitute a change in ownership, we send the registrant contact an additional email. ICANN requires that the registrant contact confirm receiving the email. For more information, see **First Name**, **Last Name** and **Organization** later in this section.

For more information about changing settings for an existing domain, see [Updating Settings for a Domain \(p. 35\)](#).

### My Registrant, Administrative, and Technical contacts are all the same

Specifies whether you want to use the same contact information for the registrant of the domain, the administrative contact, and the technical contact.

### Contact Type

Category for this contact. If you choose an option other than **Person**, you must enter an organization name.

For some TLDs, the privacy protection available depends on the value that you choose for **Contact Type**. For the privacy protection settings for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

### First Name, Last Name

The first and last names of the contact.

When the contact type is **Person** and you change the **First Name** and/or **Last Name** fields for the registrant contact, you change the owner of the domain. ICANN requires that we email the registrant contact to get approval. The email comes from one of the following email addresses:

TLDs	Email address that approval email comes from
TLDs registered by Amazon Registrar	<code>noreply@registrar.amazon.com</code>
<code>.fr</code>	<code>nic@nic.fr</code> (The email is sent both to the current registrant contact and the new registrant contact.)

TLDs	Email address that approval email comes from
All others	noreply@domainnameverification.net

To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

**Important**

The registrant contact must follow the instructions in the email to confirm that the email was received, or we must suspend the domain as required by ICANN. When a domain is suspended, it's not accessible on the internet.

If you change the email address of the registrant contact, this email is sent to the former email address and the new email address for the registrant contact.

Some TLD registrars charge a fee for changing the domain owner. When you change one of these values, the Amazon Route 53 console displays a message that tells you whether there is a fee.

**Organization**

The organization that is associated with the contact, if any. For the registrant and administrative contacts, this is typically the organization that is registering the domain. For the technical contact, this might be the organization that manages the domain.

When the contact type is any value except **Person** and you change the **Organization** field for the registrant contact, you change the owner of the domain. ICANN requires that we email the registrant contact to get approval. The email comes from one of the following email addresses:

TLDs	Email address that approval email comes from
TLDs registered by Amazon Registrar	noreply@registrar.amazon.com
.fr	nic@nic.fr (The email is sent both to the current registrant contact and the new registrant contact.)
All others	noreply@domainnameverification.net

To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

If you change the email address of the registrant contact, this email is sent to the former email address and the new email address for the registrant contact.

Some TLD registrars charge a fee for changing the domain owner. When you change the value of **Organization**, the Amazon Route 53 console displays a message that tells you whether there is a fee.

**Email**

The email address for the contact.

If you change the email address for the registrant contact, we send a notification email to the former email address and the new email address. This email comes from route53-dev-admin@amazon.com.

**Phone**

The phone number for the contact:

- If you're entering a phone number for locations in the United States or Canada, enter **1** in the first field and the 10-digit area code and phone number in the second field.
- If you're entering a phone number for any other location, enter the country code in the first field, and enter the rest of the phone number in the second field. For a list of phone country codes, see the Wikipedia article [List of country calling codes](#).

#### Address 1

The street address for the contact.

#### Address 2

Additional address information for the contact, for example, apartment number or mail stop.

#### Country

The country for the contact.

#### State

The state or province for the contact, if any.

#### City

The city for the contact.

#### Postal/Zip code

The postal or zip code for the contact.

#### Fields for selected top-level domains

Some top-level domains require that you specify additional values.

#### Privacy Protection

Whether you want to conceal your contact information from WHOIS queries. If you select **Hide contact information**, WHOIS ("who is") queries will return contact information for the registrar or the value "Protected by policy."

If you select **Don't hide contact information**, you'll get more email spam at the email address that you specified.

Anyone can send a WHOIS query for a domain and get back all of the contact information for that domain. The WHOIS command is available in many operating systems, and it's also available as a web application on many websites.

##### Important

Although there are legitimate users for the contact information associated with your domain, the most common users are spammers, who target domain contacts with unwanted email and bogus offers. In general, we recommend that you choose **Hide contact information** for **Privacy Protection**.

For more information, see the following topics:

- [Enabling or Disabling Privacy Protection for Contact Information for a Domain](#) (p. 39)
- [Domains That You Can Register with Amazon Route 53](#) (p. 68)

#### Auto Renew (Only available when editing domain settings)

Whether you want Amazon Route 53 to automatically renew the domain before it expires. The registration fee is charged to your AWS account. For more information, see [Renewing Registration for a Domain](#) (p. 43).



**Important**

If you disable automatic renewal, registration for the domain will not be renewed when the expiration date passes, and you might lose control of the domain name.

The period during which you can renew a domain name varies by top-level domain (TLD). For an overview about renewing domains, see [Renewing Registration for a Domain \(p. 43\)](#). For information about extending domain registration for a specified number of years, see [Extending the Registration Period for a Domain \(p. 41\)](#).

## Values that Amazon Route 53 Returns When You Register a Domain

When you register your domain with Amazon Route 53, Amazon Route 53 returns the following values in addition to the values that you specified.

**Registered on**

The date on which the domain was originally registered with Amazon Route 53.

**Expires on**

The date and time on which the current registration period expires, in Greenwich Mean Time (GMT).

The registration period is typically one year, although the registries for some top-level domains (TLDs) have longer registration periods. For the registration and renewal period for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

For most TLDs, you can extend the registration period by up to ten years. For more information, see [Extending the Registration Period for a Domain \(p. 41\)](#).

**Domain name status code**

The current status of the domain.

ICANN, the organization that maintains a central database of domain names, has developed a set of domain name status codes (also known as EPP status codes) that tell you the status of a variety of operations on a domain name, for example, registering a domain name, transferring a domain name to another registrar, renewing the registration for a domain name, and so on. All registrars use this same set of status codes.

For a current list of domain name status codes and an explanation of what each code means, go to the [ICANN website](#) and search for **epp status codes**. (Search on the ICANN website; web searches sometimes return an old version of the document.)

**Transfer lock**

Whether the domain is locked to reduce the possibility of someone transferring your domain to another registrar without your permission. If the domain is locked, the value of **Transfer Lock** is **Enabled**. If the domain is not locked, the value is **Disabled**.

**Auto renew**

Whether Amazon Route 53 will automatically renew the registration for this domain shortly before the expiration date.

**Authorization code**

The code that is required if you want to transfer registration of this domain to another registrar. An authorization code is only generated when you request it. For information about transferring

a domain to another registrar, see [Transferring a Domain from Amazon Route 53 to Another Registrar](#) (p. 58).

#### Name servers

The Amazon Route 53 servers that respond to DNS queries for this domain. We recommend that you don't delete Amazon Route 53 name servers.

For information about adding, changing, or deleting name servers, see [Adding or Changing Name Servers and Glue Records for a Domain](#) (p. 42).

## Viewing the Status of a Domain Registration

ICANN, the organization that maintains a central database of domain names, has developed a set of domain name status codes (also known as EPP status codes) that tell you the status of a variety of operations, for example, registering a domain name, transferring a domain name to another registrar, renewing the registration for a domain name, and so on. All registrars use this same set of status codes.

To view the status code for your domains, perform the following procedure.

#### To view the status of a domain

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of your domain.
4. For the current status of your domain, see the value of the **Domain name status** field.

For a current list of domain name status codes and an explanation of what each code means, go to the [ICANN website](#) and search for **epp status codes**. (Search on the ICANN website; web searches sometimes return an old version of the document.)

## Updating Settings for a Domain

For information about updating settings for a domain, see the applicable topic.

#### Topics

- [Updating Contact Information and Ownership for a Domain](#) (p. 35)
- [Enabling or Disabling Privacy Protection for Contact Information for a Domain](#) (p. 39)
- [Enabling or Disabling Automatic Renewal for a Domain](#) (p. 40)
- [Locking a Domain to Prevent Unauthorized Transfer to Another Registrar](#) (p. 41)
- [Extending the Registration Period for a Domain](#) (p. 41)
- [Adding or Changing Name Servers and Glue Records for a Domain](#) (p. 42)

## Updating Contact Information and Ownership for a Domain

For the administrative and technical contacts for a domain, you can change all contact information without having to authorize the changes. For more information, see [Updating Contact Information for a Domain](#) (p. 36).

For the registrant contact, you can change most values without having to authorize the changes. However, for some TLDs, changing the owner of a domain or changing the email address of the registrant contact requires authorization. For more information, see the applicable topic.

#### Topics

- [Who Is the Owner of a Domain? \(p. 36\)](#)
- [Updating Contact Information for a Domain \(p. 36\)](#)
- [Changing the Owner of a Domain When the Registry Requires a Change of Domain Ownership Form \(p. 37\)](#)
- [Updating the Email Address for a Domain When You Can't Access Email at the Old Address \(p. 38\)](#)

## Who Is the Owner of a Domain?

When the contact type is **Person** and you change the **First Name** or **Last Name** fields for the registrant contact, you change the owner of the domain.

When the contact type is any value except **Person** and you change **Organization**, you change the owner of the domain.

Note the following about changing the owner of a domain:

- For some TLDs, when you change the owner of a domain, we send an authorization email to the email address for the registrant contact. The registrant contact must follow the instructions in the email to authorize the change.
- For some TLDs, you need to fill out a Change of Domain Ownership Form and provide proof of identity so that an Amazon Route 53 support engineer can update the values for you. If the TLD for your domain requires a Change of Domain Ownership form, the console displays a message that links to a form for opening a support case. For more information, see [Changing the Owner of a Domain When the Registry Requires a Change of Domain Ownership Form \(p. 37\)](#).

## Updating Contact Information for a Domain

To update contact information for a domain, perform the following procedure.

#### To update contact information for a domain

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of the domain that you want to update contact information for.
4. Choose **Edit Contacts**.
5. Update the applicable values. For more information, see [Values that You Specify When You Register a Domain \(p. 31\)](#).

Depending on the TLD for your domain and the values that you're changing, the console might display the following message:

"To change the registrant name or organization, open a case."

If you see that message, skip the rest of this procedure and see [Changing the Owner of a Domain When the Registry Requires a Change of Domain Ownership Form \(p. 37\)](#) for more information.

6. Choose **Save**.
7. If you changed the following values, we send you an email that asks for your authorization:

### Domain owner

If you change the owner of the domain, as described in [Who Is the Owner of a Domain? \(p. 36\)](#), we send email to the registrant contact for the domain.

### Email address for the registrant contact (only for some TLDs)

For some TLDs, if you change the email address for the registrant contact, we send an email to the old and the new email address for the registrant contact. Someone at both email addresses must follow the instructions in the email to authorize the change.

#### Important

If you get an authorization email at your new email address and you don't have access to the old email address, open a support case. For more information, see [Updating the Email Address for a Domain When You Can't Access Email at the Old Address \(p. 38\)](#).

If we don't receive authorization for the change within 3 to 15 days, depending on the top-level domain, we must cancel the request as required by ICANN.

The email comes from one of the following email addresses.

TLDs	Email address that authorization email comes from
.fr	nic@nic.fr
All others	One of the following email addresses: <ul style="list-style-type: none"><li>noreply@registrar.amazon.com</li><li>noreply@domainnameverification.net</li></ul>

## Changing the Owner of a Domain When the Registry Requires a Change of Domain Ownership Form

If the Amazon Route 53 console displays the following message when you try to change contact information, the registry for your TLD requires that you fill out a Change of Domain Ownership form:

"To change the registrant name or organization, open a case."

Perform the following procedure to request the ownership change. When your ownership has been verified, an AWS customer support engineer will change contact information for you.

### To change the owner of a domain when the registry requires a Change of Domain Ownership form

1. Download the [Change of Domain Ownership Form](#).
2. Fill out the form.
3. If a legal entity is listed as the registrant name or organization, gather the following information:
  - Proof that the organization that the domain is registered to exists.
  - Proof that you're authorized to act on the organization's behalf. This document must be a certified legal document that contains both the name of the organization and your name as a signing officer (for example, CEO, President, or Executive Director).
4. Scan the Change of Domain Ownership form and the required proof, if applicable. Save the scanned documents in a common format, such as a .pdf file or a .png file.

5. Using the AWS account that the domain is currently registered to, sign in to the [AWS Support Center](#).

**Important**

You must sign in by using the root account that the domain is currently registered to. If you sign in by using an IAM user or any other account, we can't update the domain owner. This requirement prevents unauthorized users from changing the owner of a domain.

6. Specify the following values:

**Regarding**

Accept the default value of **Account and Billing Support**.

**Service**

Accept the default value of **Billing**.

**Category**

Accept the default value of **Domain name registration issue**.

**Subject**

Specify **Change the owner of a domain**

**Description**

Provide the following information:

- Domain that you want to change the owner for
- Account ID of the AWS account that the domain is registered to

**Add attachment**

Upload the documents that you scanned in step 4.

**Contact method**

Specify a contact method and enter the applicable values.

7. Choose **Submit**.

A customer support engineer reviews the information that you provided and updates the settings. The engineer will either contact you when the update is finished or contact you for more information.

## Updating the Email Address for a Domain When You Can't Access Email at the Old Address

When you change the email address for the registrant contact for a domain, the registries for some TLDs require us to get authorization from the registrant contact at the old email address and at the new email address. If you receive an authorization email at the new email address, your TLD requires us to get authorization from both email addresses. If you no longer have access to the old email address, perform the following procedure.

**Note**

You can use this procedure only if the domain is already registered with Amazon Route 53. If you're transferring a domain to Amazon Route 53 and you can't access email at the email address for the registrant contact, you must work with the current registrar to update the email address.

1. Download the [Change of Registrant Email Form](#).
2. Fill out the form.

3. If a legal entity is listed as the registrant name or organization, gather the following information:
  - Proof that the organization that the domain is registered to exists.
  - Proof that you're authorized to act on the organization's behalf. This document must be a certified legal document that contains both the name of the organization and your name as a signing officer (for example, CEO, President, or Executive Director).
4. Scan the Change of Registrant Email form and the required proof, if applicable. Save the scanned documents in a common format, such as a .pdf file or a .png file.
5. Using the AWS account that the domain is currently registered to, sign in to the [AWS Support Center](#).

**Important**

You must sign in by using the root account that the domain is currently registered to. If you sign in by using an IAM user or any other account, we can't update the email address. This requirement prevents unauthorized users from changing the contact information for a domain.

6. Specify the following values:

**Regarding**

Accept the default value of **Account and Billing Support**.

**Service**

Accept the default value of **Billing**.

**Category**

Accept the default value of **Domain name registration issue**.

**Subject**

Specify **Change the email address for a domain**

**Description**

Provide the following information:

- Domain that you want to change the email address for
- Account ID of the AWS account that the domain is registered to

**Add attachment**

Upload the documents that you scanned in step 4.

**Contact method**

Specify a contact method and enter the applicable values.

7. Choose **Submit**.

A customer support engineer reviews the information that you provided and updates the settings. The engineer will either contact you when the update is finished or contact you for more information.

## Enabling or Disabling Privacy Protection for Contact Information for a Domain

When you register a domain with Amazon Route 53, we enable privacy protection by default for all the contacts for the domain. This typically hides most of your contact information from WHOIS ("Who is") queries and reduces the amount of spam that you receive. Your contact information is replaced either with contact information for the registrar or with the phrase "Protected by policy."

### Important

You can hide contact information only when the domain is locked to prevent transfers. If you're transferring the domain to or from Amazon Route 53, you must disable privacy protection, so your contact information is visible in WHOIS queries. You can re-enable privacy protection when the transfer is complete.

You can choose to disable privacy protection for some or all contacts for a domain. If you do, anyone can send a WHOIS query for the domain and, for most top-level domains (TLDs), get all the contact information that you provided when you registered the domain, including name, address, phone number, and email address. The WHOIS command is widely available; it's included in many operating systems, and it's also available as a web application on many websites.

The information that you can hide from WHOIS queries depends on two main factors:

#### The registry for the top level domain

Some TLD registries hide all contact information automatically, some allow you to choose to hide all contact information, some allow you to hide only some information, and some do not allow you to hide any information. For example, most registries allow you to hide your address, phone number, and email address. Only a few also allow you to hide your name.

#### The registrar

When you register a domain with Amazon Route 53 or transfer a domain to Amazon Route 53, the registrar for the domain is either Amazon Registrar or our registrar associate, Gandi. Amazon Registrar and Gandi hide different information by default:

- **Amazon Registrar** – By default, all of your contact information is hidden.
- **Gandi** – By default, all of your contact information is hidden except first and last name, and organization name. However, regulations for the TLD registry take precedence.

To find out what information is hidden for the TLD for your domain, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

When you want to enable or disable privacy protection for a domain that you registered using Amazon Route 53, perform the following procedure.

#### To enable or disable privacy protection for contact information for domain

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of the domain that you want to enable or disable privacy protection for.
4. Choose **Edit Contacts**.
5. For each type of contact, choose whether to hide contact information.
6. Choose **Save**.

## Enabling or Disabling Automatic Renewal for a Domain

When you want to change whether Amazon Route 53 automatically renews registration for a domain shortly before the expiration date, or you want to see the current setting for automatic renewal, perform the following procedure.

Note that you can't use AWS credits to pay the fee for renewing registration for a domain.

### To enable or disable automatic renewal for a domain

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of the domain that you want to update.
4. Choose **Enable** (to turn on automatic renewal) or **Disable** (to turn off automatic renewal).
5. Choose **Save**.

## Locking a Domain to Prevent Unauthorized Transfer to Another Registrar

If you want to prevent someone from transferring your domain to another registrar without your permission, perform the following procedure. You can also use the procedure to disable the lock if you want to transfer a domain to another registrar.

### To lock a domain to prevent unauthorized transfer to another registrar

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of the domain that you want to update.
4. Choose **Enable** (to lock the domain) or **Disable** (to unlock the domain).
5. Choose **Save**.

## Extending the Registration Period for a Domain

When you register a domain with Amazon Route 53 or you transfer domain registration to Amazon Route 53, we configure the domain to renew automatically. The automatic renewal period is typically one year, although the registries for some top-level domains (TLDs) have longer renewal periods.

All generic TLDs and many country-code TLDs let you extend domain registration for longer periods, typically up to ten years in one-year increments. To determine whether you can extend the registration period for your domain, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#). If longer registration periods are allowed, perform the following procedure.

#### Note

Some TLD registries have restrictions on when you can renew or extend a domain registration, for example, the last two months before the domain expires. Even if the registry allows extending the registration period for a domain, they might not allow it at the current number of days before the domain expires.

Note that you can't use AWS credits to pay the fee for extending the registration period for a domain.

### To extend the registration period for your domain

1. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of the domain for which you want to extend the registration period.

The **Expires on** field lists the current expiration date for the domain. If the registry for the TLD allows extending the registration period, an **extend** link appears on the right side of the expiration date.



4. Choose **extend**.
5. In the **Extend registration for** list, choose the number of years that you want to extend the registration for.

The list shows all the current options based on the current expiration date and the maximum registration period allowed by the registry for this domain. The **New expiration date** field shows the expiration date with that number of years applied.

6. Choose **Extend domain registration**.

When we receive confirmation from the registry that they've updated your expiration date, we send you an email to confirm that we've changed the expiration date.

## Adding or Changing Name Servers and Glue Records for a Domain

In general, you don't need to change the name servers that Amazon Route 53 assigned to your domain and to the corresponding hosted zone when you registered the domain. If you do need to add or change name servers, perform the following procedure. You can also use this procedure to specify glue records (IP addresses) when you're configuring white label name servers—name servers that have the same domain name as the hosted zone. For more information about configuring white label name servers (also known as vanity name servers or private name servers), see [Configuring White Label Name Servers](#) (p. 219).

### Important

If you change name servers to the wrong values, specify the wrong IP addresses in glue records, or delete one or more name servers without specifying new ones, your website or application might become unavailable on the internet.

### To add or change name servers and glue records for a domain

1. *.fi domains only* – Order an authorization key from the Finnish Communications Regulatory Authority, the registry for .fi domains. You use the authorization key later in this process. For more information, see [Ordering of authorization key](#) on the Finnish Communications Regulatory Authority website.

### Important

The Finnish Communications Regulatory Authority mails the authorization key to you, which can take two weeks or more. Do not continue with this procedure until you have the key.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Registered Domains**.
4. Choose the name of the domain for which you want to edit settings.
5. Choose **Add/Edit Name Servers**.
6. *.fi domains only* – In the **Authorization Key** field, type the authorization key that you got in step 1.
7. In the **Edit Name Servers** dialog box, you can do the following:
  - Add one or more name servers.
  - Replace the name of an existing name server.
  - Add glue records or change the IP addresses in glue records. If you add a name server or change the name of a name server and specify a name that is a subdomain of the domain that you're updating (for example, ns1.example.com in the domain example.com), Amazon Route 53 prompts you to specify one or more IP addresses for the name server. These IP addresses are known as glue records.

You can enter addresses in IPv4 or IPv6 format. If a name server has multiple IP addresses, type each address on a separate line.

- Delete a name server. Choose the x icon on the right side of the field for that name server.

8. Choose **Update**.

## Renewing Registration for a Domain

When you register a domain with Amazon Route 53 or you transfer domain registration to Amazon Route 53, we configure the domain to renew automatically. The automatic renewal period is typically one year, although the registries for some top-level domains (TLDs) have longer renewal periods. For the registration and renewal period for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

### Note

You can't use AWS credits to pay the fee for renewing registration for a domain.

For most top-level domains (TLDs), you can change the expiration date for a domain. For more information, see [Extending the Registration Period for a Domain \(p. 41\)](#).

### Important

If you turn off automatic renewal, be aware of the following effects on your domain:

- Some TLD registries delete domains even before the expiration date if you don't renew early enough. We strongly recommend that you leave automatic renewal enabled if you want to keep a domain name.
- We also strongly recommend that you don't plan to re-register a domain after it has expired. Some registrars allow others to register domains immediately after the domains expire, so you might not be able to re-register before the domain is taken by someone else.
- Some registries charge a large premium to restore expired domains.
- On or near the expiration date, the domain becomes unavailable on the internet.

To determine whether automatic renewal is enabled for your domain, see [Enabling or Disabling Automatic Renewal for a Domain \(p. 40\)](#).

If automatic renewal is enabled, here's what happens:

#### 45 days before expiration

We send an email to the registrant contact that tells you that automatic renewal is currently enabled and gives instructions about how to disable it. Keep your registrant contact email address current so you don't miss this email.

#### 35 or 30 days before expiration

For all domains except .com.ar, .com.br, and .jp domains, we renew domain registration 35 days before the expiration date so we have time to resolve any issues with your renewal before the domain name expires.

The registries for .com.ar, .com.br, and .jp domains require that we renew the domains no more than 30 days before expiration. You'll get a renewal email from Gandi, our registrar associate, 30 days before expiration, which is the same day that we renew your domain if you have automatic renewal enabled.

### Note

When we renew your domain, we send you an email to let you know that we renewed it. If the renewal failed, we send you an email to explain why it failed.

If automatic renewal is disabled, here's what happens as the expiration date for a domain name approaches:

#### 45 days before expiration

We send an email to the registrant contact for the domain that tells you that automatic renewal is currently disabled and gives instructions about how to enable it. Keep your registrant contact email address current so you don't miss this email.

#### 30 days and 7 days before expiration

If automatic renewal is disabled for the domain, ICANN, the governing body for domain registration, requires the registrar to send you an email. The email comes from one of the following email addresses:

- **noreply@registrar.amazon.com** – For domains for which the registrar is Amazon Registrar.
- **noreply@domainnameverification.net** – For domains for which the registrar is our registrar associate, Gandi.

To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).

If you enable automatic renewal less than 30 days before expiration, and the renewal period has not passed, we renew the domain within 24 hours.

#### Important

Some TLD registries stop allowing renewals as much as 25 days before the expiration date, and many don't allow renewal after the expiration date. In addition, processing a renewal can take up to a day. If you delay too long before enabling automatic renewal, the domain might expire before renewal can be processed, and you might lose the domain. If the expiration date is approaching, we recommend that you manually extend the expiration date for the domain. For more information, see [Extending the Registration Period for a Domain](#) (p. 41).

For more information about renewal periods, go to the "Renewal, restoration, and deletion times" table on the [Renewing a Domain Name](#) page on the Gandi website.

#### After the expiration date

Most domains are held by the registrar for a brief time after expiration, so you might be able to renew an expired domain after the expiration date, but we strongly recommend that you keep automatic renewal enabled if you want to keep your domain. For information about trying to renew a domain after the expiration date, see [Restoring an Expired Domain](#) (p. 44).

If your domain expires but late renewal is allowed for the domain, you can renew the domain for the standard renewal price. To determine whether a domain is still within the late-renewal period, perform the procedure in the [Extending the Registration Period for a Domain](#) (p. 41) section. If the domain is still listed, it's within the late-renewal period.

For information about the renewal period for each TLD, see the "Renewal, restoration, and deletion times" table on the [Renewing a Domain Name](#) page on the Gandi website. Note that the list includes some TLDs that Amazon Route 53 doesn't support.

## Restoring an Expired Domain

If you don't renew a domain before the end of the late-renewal period or if you accidentally delete the domain, some registries for top-level domains (TLDs) allow you to restore the domain before it becomes available for others to register.

When a domain is deleted or it passes the end of the late-renewal period, it no longer appears in the Amazon Route 53 console.

### Important

The price for restoring a domain is typically higher and sometimes much higher than the price for registering or renewing a domain. For the current price for restoring a domain, see the "Restoration Price" column in [Amazon Route 53 Pricing for Domain Registration](#).

### To try to restore domain registration when a domain is deleted or the late-renewal period has expired

1. Determine whether the TLD registry for the domain supports restoring domains and, if so, the period during which restoration is allowed.
  - a. Go to the "Renewal, restoration, and deletion times" table on the [Renewing a Domain Name](#) page on the Gandi website.
  - b. Find the TLD for your domain, and review the values in the **Restoration possible** column.

### Important

We forward restoration requests to Gandi, which processes the requests during business hours Monday through Friday. Gandi is based in Paris, where the time is UTC/GMT +1 hour. As a result, depending on when you submit your request, in rare cases it can take a week or more for a request to be processed.

2. Using the AWS account that the domain was registered to, sign in to the [AWS Support Center](#).
3. Specify the following values:

#### Regarding

Accept the default value of **Account and Billing Support**.

#### Service

Accept the default value of **Billing**.

#### Category

Accept the default value of **Domain name registration issue**.

#### Subject

Type **Restore an expired domain** or **Restore a deleted domain**.

#### Description

Provide the following information:

- The domain that you want to restore
- The account ID of the AWS account that the domain was registered to

#### Contact method

Specify a contact method and, if you choose **Phone**, enter the applicable values.

4. Choose **Submit**.
5. When we learn whether we were able to restore your domain, a customer support representative will contact you. In addition, if we were able to restore your domain, the domain will reappear in the console with the new expiration date.

## Transferring Domains

You can transfer domain registration from another registrar to Amazon Route 53, from one AWS account to another, or from Amazon Route 53 to another registrar.

#### Topics

- [Transferring Registration for a Domain to Amazon Route 53 \(p. 46\)](#)
- [Viewing the Status of a Domain Transfer \(p. 55\)](#)
- [How Transferring a Domain to Amazon Route 53 Affects the Expiration Date for Your Domain Registration \(p. 56\)](#)
- [Transferring a Domain to a Different AWS Account \(p. 57\)](#)
- [Transferring a Domain from Amazon Route 53 to Another Registrar \(p. 58\)](#)

## Transferring Registration for a Domain to Amazon Route 53

To transfer the registration for a domain to Amazon Route 53, carefully follow the procedures in this topic.

### **Important**

If you skip a step, your domain might become unavailable on the internet.

Note the following:

### **Expiration date**

For information about how transferring your domain affects the current expiration date, see [How Transferring a Domain to Amazon Route 53 Affects the Expiration Date for Your Domain Registration \(p. 56\)](#).

### **Transfer fee**

When you transfer a domain to Amazon Route 53, the transfer fee that we apply to your AWS account depends on the top-level domain, such as .com or .org. For more information, see [Amazon Route 53 Pricing](#).

You can't use AWS credits to pay the fee, if any, for transferring a domain to Amazon Route 53.

#### Topics

- [Transfer Requirements for Top-Level Domains \(p. 46\)](#)
- [Step 1: Confirm that Amazon Route 53 Supports the Top-Level Domain \(p. 47\)](#)
- [Step 2: Transfer Your DNS Service to Amazon Route 53 or Another DNS Service Provider \(p. 47\)](#)
- [Step 3: Change Settings with the Current Registrar \(p. 48\)](#)
- [Step 4: Get the Names of Your Name Servers \(p. 49\)](#)
- [Step 5: Request the Transfer \(p. 49\)](#)
- [Step 6: Click the Link in the Authorization Email \(p. 53\)](#)
- [Step 7: Update the Domain Configuration \(p. 54\)](#)

## Transfer Requirements for Top-Level Domains

Registries for top-level domains (TLDs), such as .com or .org, have requirements for transferring domains. Requirements vary among TLDs, but the following requirements are typical:

- The domain must have been registered with the current registrar at least 60 days ago.
- If the registration for a domain name expired and had to be restored, it must have been restored at least 60 days ago.

- If registration for the domain was transferred, the transfer to the current registrar must have been at least 60 days ago.
- The domain cannot have any of the following domain name status codes:
  - pendingDelete
  - pendingTransfer
  - redemptionPeriod
  - clientTransferProhibited
- The registries for some top-level domains don't allow transfers until changes are complete, such as changes to the domain owner.

For a current list of domain name status codes and an explanation of what each code means, go to the [website for ICANN](#), and search for "EPP status codes". (Search on the ICANN website; web searches sometimes return an old version of the document.)

**Note**

ICANN is the organization that establishes policies governing registration and transfer of domain names.

## Step 1: Confirm that Amazon Route 53 Supports the Top-Level Domain

See [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#). If the top-level domain for the domain that you want to transfer is on the list, you can transfer the domain to Amazon Route 53.

If a TLD is not on the list, you can't currently transfer the domain registration to Amazon Route 53. We occasionally add support more TLDs to the list, so check back to see if we've added support for your domain. You can also submit a request for support for your TLD on the [Amazon Route 53 Domain Registration](#) forum.

## Step 2: Transfer Your DNS Service to Amazon Route 53 or Another DNS Service Provider

If the registrar for your domain is also the DNS service provider for the domain, transfer your DNS service to Amazon Route 53 or another DNS service provider *before* you continue with the process to transfer the domain registration.

### Why transfer DNS first?

Some registrars provide free DNS service when you purchase a domain registration. When you transfer the registration, the previous registrar will not renew your domain registration and might disable DNS service for the domain as soon as they receive a request from Amazon Route 53 to transfer the domain. For more information, see [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 209\)](#).

**Important**

If the registrar for your domain is also the DNS service provider for the domain and you don't transfer DNS service to another provider, your website, email, and the web applications associated with the domain might become unavailable.

### Transferring DNS service when you're using DNSSEC

Amazon Route 53 supports DNSSEC for domain registration but does not support DNSSEC for DNS service. If you want to continue using DNSSEC for the domain that you're transferring, you need to choose a DNS service provider that does support DNSSEC. You can't transfer a domain registration while DNSSEC is configured, so don't configure DNSSEC with the new DNS service provider until after the transfer is complete.

## Step 3: Change Settings with the Current Registrar

Using the method provided by your current registrar, perform the following tasks for each domain that you want to transfer:

### Confirm that the email for the registrant contact for your domain is up to date

We'll send email to that email address to request authorization for the transfer. You need to click a link in the email to authorize the transfer. If you don't click the link, we must cancel the transfer.

### Unlock the domain so it can be transferred

ICANN, the governing body for domain registrations, requires that you unlock your domain before you transfer it.

### Disable privacy protection for the domain

To request authorization for the transfer, we send an email to the email address for the registrant contact that is listed in the WHOIS database. If privacy protection is turned on, we can't get your email address.

#### Note

You can choose whether to re-enable privacy protection when you request the transfer to Amazon Route 53 later in the process. For more information, see [Enabling or Disabling Privacy Protection for Contact Information for a Domain](#) (p. 39).

### Confirm that the domain status allows you to transfer the domain

For more information, see [Transfer Requirements for Top-Level Domains](#) (p. 46).

### Disable DNSSEC for the domain

If you're transferring DNS service to another provider and you're using DNSSEC, you need to either delete public keys for the domain or configure DNSSEC with the new provider:

- **If you're transferring DNS service to a provider that does not support DNSSEC** – Delete public keys for the domain.
- **If you're transferring DNS service to a provider that supports DNSSEC** – Configure DNSSEC with the new DNS service provider. You don't need to delete public keys for the domain.
- **If you aren't transferring DNS service** – You don't need to delete public keys for the domain.

### Get an authorization code

An authorization code from the current registrar authorizes us to request that registration for the domain be transferred to Amazon Route 53. You'll enter this code in the Amazon Route 53 console later in the process.

Some top-level domains have additional requirements:

#### **.uk, .co.uk, .me.uk, and .org.uk domains**

If you're transferring a .uk, .co.uk, .me.uk, or .org.uk domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the IPS tag for the domain to **GANDI**, all uppercase. (An IPS tag is required by Nominet, the registry for .uk domain names.) If your registrar will not change the value of the IPS tag, [contact Nominet](#).

#### **.jp domains**

If you're transferring a .jp domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the AGNT code to **AGNT-1744**, all uppercase.

#### **.ru domains**

If you're transferring a .ru domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by RU-Center, the registry for .ru domains, to update

the **Partner Handle** for the domain to **5427/NIC-REG**. For more information, see the [Registrar's or Registrant's Transfer](#) page on the RU-Center website.

## Step 4: Get the Names of Your Name Servers

If you're using Amazon Route 53 as your DNS service or you're continuing to use the existing DNS service, we'll get the names of the name servers for you automatically later in the process. Skip to [Step 5: Request the Transfer](#) (p. 49).

If you want to change the DNS service to a provider other than Amazon Route 53 at the same time that you're transferring the domain to Amazon Route 53, use the procedure provided by the DNS service provider to get the names of the name servers for each domain that you want to transfer.

### Important

If the registrar for your domain is also the DNS service provider for the domain, transfer your DNS service to Amazon Route 53 or another DNS service provider *before* you continue with the process to transfer the domain registration.

If you transfer DNS service at the same time that you transfer domain registration, your website, email, and the web applications associated with the domain might become unavailable. For more information, see [Step 2: Transfer Your DNS Service to Amazon Route 53 or Another DNS Service Provider](#) (p. 47).

## Step 5: Request the Transfer

To transfer domain registration from the current registrar to Amazon Route 53, use the Amazon Route 53 console to request the transfer. Amazon Route 53 handles the communication with the current registrar for the domain.

The procedure that you use depends on whether you want to transfer up to five domains or more than five domains:

- [To transfer domain registration to Amazon Route 53 for up to five domains](#) (p. 49)
- [To transfer domain registration to Amazon Route 53 for more than five domains](#) (p. 52)

### Important

If you use the procedure to transfer more than five domains, Amazon Route 53 automatically configures the transferred domains to use the current DNS service for all the domains that you're transferring. If the registrar for your domain is also the DNS service provider for the domain and you don't transfer DNS service to another provider, your website, email, and the web applications associated with the domain might become unavailable. For more information, see [Step 2: Transfer Your DNS Service to Amazon Route 53 or Another DNS Service Provider](#) (p. 47).

### To transfer domain registration to Amazon Route 53 for up to five domains

1. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose **Transfer Domain**.
4. Enter the name of the domain for which you want to transfer registration to Amazon Route 53, and choose **Check**.
5. If the domain registration is available for transfer, choose **Add to cart**.

If the domain registration is not available for transfer, the Amazon Route 53 console lists the reasons. Contact your registrar for information about how to resolve the issues that prevent you from transferring the registration.

6. If you want to transfer other domain registrations, repeat steps 4 and 5.



7. When you've added all the domain registrations that you want to transfer, choose **Continue**.
8. For each domain name that you want to transfer, enter the applicable values:

#### Authorization code

Enter the authorization code that you got from your current registrar in [Step 3: Change Settings with the Current Registrar \(p. 48\)](#).

#### Name server options

Choose the applicable option:

- **Continue to use the name servers provided by the current registrar or DNS service** – If the current registrar for the domain is currently providing DNS service, we recommend that you transfer DNS service to another DNS service provider before you transfer the domain.

##### Important

Some registrars stop providing DNS service as soon as you request a transfer to another registrar. If the current registrar disables DNS service, your domain will become unavailable on the internet.

- **Import name servers from a Route 53 hosted zone that has the same name as the domain** – When you select this option, the console displays a list of the hosted zones that have the same name as the domain. Choose the hosted zone that you want to use for routing traffic for the domain.
- **Specify new name servers to replace the current registrar's name servers (not recommended)** – If you're using a DNS service other than Amazon Route 53 for this domain, type the names of the name servers that you got in [Step 4: Get the Names of Your Name Servers \(p. 49\)](#).

##### Important

We don't recommend choosing this option because transferring DNS service from one DNS service provider to another can take up to two days. The current registrar might stop providing DNS service as soon as you request a transfer to another registrar. If the current registrar disables DNS service, your domain will become unavailable on the internet until the change to another DNS service provider takes effect.

#### Name servers

If you chose the option **Specify new name servers to replace the current registrar's name servers**, type the names of the name servers that you got from the DNS service for the domain in [Step 4: Get the Names of Your Name Servers \(p. 49\)](#). By default, the **Name server** fields display the names of the current name servers for the domain.

#### Glue records

If the name of a name server is a subdomain of the domain that you're transferring (such as ns1.example.com in the domain example.com), enter one or more IP addresses for each name server. You can enter addresses in IPv4 or IPv6 format. If a name server has multiple IP addresses, type each address on a separate line.

9. On the **Contact Details for Your *n* Domains** page, enter contact information for the domain registrant, administrator, and technical contact. The values that you enter here are applied to all the domains that you're transferring.

By default, we use the same information for all three contacts. If you want to enter different information for one or more contacts, change the value of **My Registrant, Administrative, and Technical contacts are all the same** to **No**.

For more information, see [Values that You Specify When You Register a Domain \(p. 31\)](#).

10. For some TLDs, we're required to collect additional information. For these TLDs, enter the applicable values after the **Postal/Zip Code** field.

11. If the value of **Contact Type** is **Person**, choose whether you want to hide your contact information from WHOIS queries. For more information, see [Enabling or Disabling Privacy Protection for Contact Information for a Domain](#) (p. 39).
12. Choose **Continue**.
13. Review the information you entered, read the terms of service, and select the check box to confirm that you've read the terms of service.
14. Choose **Complete Purchase**.

We confirm that the domain is eligible for transfer, and we send an email to the registrant contact for the domain to request authorization to transfer the domain.

In addition, if you changed the following values, we send you a separate email that asks for your authorization:

**Domain owner**

If you change the owner of the domain, as described in [Who Is the Owner of a Domain?](#) (p. 36), we send email to the registrant contact for the domain.

**Email address for the registrant contact (only for some TLDs)**

For some TLDs, if you change the email address for the registrant contact, we send an email to the old and the new email address for the registrant contact. Someone at both email addresses must follow the instructions in the email to authorize the change.

**Important**

If you get an authorization email at your new email address and you don't have access to the old email address, open a support case. For more information, see [Updating the Email Address for a Domain When You Can't Access Email at the Old Address](#) (p. 38).

For changes to the domain owner or the email address for the registrant contact, if we don't receive authorization for the change within 3 to 15 days, depending on the top-level domain, we must cancel the request as required by ICANN.

All email comes from one of the following email addresses.

TLDs	Email Address That Authorization Email Comes From
.com.au and .net.au	no-reply@ispapi.net  The email contains a link to <a href="https://approve.domainadmin.com">https://approve.domainadmin.com</a> .
.fr	nic@nic.fr, if you're changing the registrant contact for a .fr domain name at the same time that you're transferring the domain. (The email is sent both to the current registrant contact and the new registrant contact.)
All others	One of the following email addresses: <ul style="list-style-type: none"><li>• noreply@registrar.amazon.com</li><li>• noreply@domainnameverification.net</li></ul>

To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).

## To transfer domain registration to Amazon Route 53 for more than five domains

1. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose **Transfer Domain**.
4. On the **Transfer domain to Route 53** page, choose **Transfer multiple domains to Route 53**.
5. For each domain that you want to transfer, type the domain name and the authorization code in the following format. Note the comma between the domain name and the authorization code:

```
domain-name-1,authorization-code-1  
domain-name-2,authorization-code-2
```

If an authorization code isn't required for a domain, omit the comma, too:

```
domain-name-3
```

6. When you've entered all the domains that you want to transfer, choose **Continue**.
7. The **Check domain transferability** page lists the domains that you entered on the previous page and whether each domain can be transferred. You have the following options:

### If all domains are transferable

Choose **Add transferable domains to cart**.

### If one or more domains are untransferable and you want to transfer them

Review [Transfer Requirements for Top-Level Domains \(p. 46\)](#) to confirm that each untransferable domain meets the transfer requirements. If you don't find any obvious problems, contact the current registrar to determine why the domain can't be transferred to Amazon Route 53.

After you make any changes so that domains are transferable (for example, disabling privacy protection), choose **Check transferability**, and Amazon Route 53 will repeat the transferability check.

### If one or more domains are untransferable and you don't want to transfer them

Choose **Add transferable domains to cart**.

8. Choose **Continue**.
9. On the **Contact Details for Your *n* Domains** page, enter contact information for the domain registrant, administrator, and technical contact. The values that you enter here are applied to all the domains that you're transferring.

By default, we use the same information for all three contacts. If you want to enter different information for one or more contacts, change the value of **My Registrant, Administrative, and Technical contacts are all the same** to **No**.

For more information, see [Values that You Specify When You Register a Domain \(p. 31\)](#).

10. For some TLDs, we're required to collect additional information. For these TLDs, enter the applicable values after the **Postal/Zip Code** field.
11. If the value of **Contact Type** is **Person**, choose whether you want to hide your contact information from WHOIS queries. For more information, see [Enabling or Disabling Privacy Protection for Contact Information for a Domain \(p. 39\)](#).
12. Choose **Continue**.
13. Review the information you entered, read the terms of service, and select the check box to confirm that you've read the terms of service.

#### 14. Choose **Complete Purchase**.

We confirm that the domain is eligible for transfer, and we send an email to the registrant contact for the domain to request authorization to transfer the domain.

In addition, if you changed the following values, we send you a separate email that asks for your authorization:

##### **Domain owner**

If you change the owner of the domain, as described in [Who Is the Owner of a Domain? \(p. 36\)](#), we send email to the registrant contact for the domain.

##### **Email address for the registrant contact (only for some TLDs)**

For some TLDs, if you change the email address for the registrant contact, we send an email to the old and the new email address for the registrant contact. Someone at both email addresses must follow the instructions in the email to authorize the change.

##### **Important**

If you get an authorization email at your new email address and you don't have access to the old email address, open a support case. For more information, see [Updating the Email Address for a Domain When You Can't Access Email at the Old Address \(p. 38\)](#).

For changes to the domain owner or the email address for the registrant contact, if we don't receive authorization for the change within 3 to 15 days, depending on the top-level domain, we must cancel the request as required by ICANN.

All email comes from one of the following email addresses.

TLDs	Email Address That Authorization Email Comes From
.com.au and .net.au	no-reply@ispapi.net  The email contains a link to <a href="https://approve.domainadmin.com">https://approve.domainadmin.com</a> .
.fr	nic@nic.fr, if you're changing the registrant contact for a .fr domain name at the same time that you're transferring the domain. (The email is sent both to the current registrant contact and the new registrant contact.)
All others	One of the following email addresses: <ul style="list-style-type: none"><li>• noreply@registrar.amazon.com</li><li>• noreply@domainnameverification.net</li></ul>

To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

## Step 6: Click the Link in the Authorization Email

Soon after you request the transfer, we send an email to the registrant contact for the domain to get authorization for the transfer:

- If you're the registrant contact for the domain, follow the instructions in the email to authorize the transfer.

- If someone else is the registrant contact, ask that person to follow the instructions in the email to authorize the transfer.

### **Important**

We wait up to five days for the registrant contact to authorize the transfer. If the registrant contact doesn't respond within five days, we cancel the transfer operation and send an email to the registrant contact about the cancellation.

If the registrant contact authorizes the transfer, we start to work with your current registrar to transfer your domain. This step might take up to ten days, depending on the TLD for your domain:

- [Generic Top-Level Domains \(p. 68\)](#) – take up to seven days
- [Geographic Top-Level Domains \(p. 181\)](#) (also known as country code top-level domains) – take up to ten days

If your current registrar doesn't reply to our transfer request, which is common among registrars, the transfer happens automatically. If your current registrar rejects the transfer request, we send an email notification to the current registrant contact. The registrant needs to contact the current registrar and resolve the issues with the transfer.

When your domain transfer has been approved, we send another email to the registrant contact. For more information about the process, see [Viewing the Status of a Domain Transfer \(p. 55\)](#).

We charge your AWS account for the domain transfer as soon as the transfer is complete. For a list of charges by TLD, see [Amazon Route 53 Pricing for Domain Registration](#).

### **Note**

This is a one-time charge, so the charge doesn't appear in your CloudWatch billing metrics. For more information about CloudWatch metrics, see [Using Amazon CloudWatch Metrics](#) in the *Amazon CloudWatch User Guide*.

## **Step 7: Update the Domain Configuration**

After the transfer is complete, you can optionally change the following settings:

### **Transfer lock**

To transfer the domain to Amazon Route 53, you had to disable the transfer lock. If you want to re-enable the lock to prevent unauthorized transfers, see [Locking a Domain to Prevent Unauthorized Transfer to Another Registrar \(p. 41\)](#).

### **Automatic renewal**

We configure the transferred domain to automatically renew as the expiration date approaches. For information about how to change this setting, see [Enabling or Disabling Automatic Renewal for a Domain \(p. 40\)](#).

### **Extended registration period**

By default, Amazon Route 53 renews the domain annually. If you want to register the domain for a longer period, see [Extending the Registration Period for a Domain \(p. 41\)](#).

### **DNSSEC**

For information about configuring DNSSEC for the domain, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Viewing the Status of a Domain Transfer

After you initiate the transfer of a domain from another domain registrar to Amazon Route 53, you can track the status on the **Registered Domains** page of the Amazon Route 53 console. The **Status** column includes a brief description of the current step. The following list includes the text in the console and a more detailed description of each step.

### Note

When you submit a transfer request, the initial status is **Domain transfer request submitted**, which indicates that we've received your request.

### Determining whether the domain meets transfer requirements (step 1 of 14)

We're confirming that your domain's status is eligible for transfer. You must unlock your domain, and the domain can't have any of the following status codes when you submit the transfer request:

- clientTransferProhibited
- pendingDelete
- pendingTransfer
- redemptionPeriod

### Verifying WHOIS information (step 2 of 14)

We sent a WHOIS query for your domain to determine whether you've disabled the privacy protection for the domain. If privacy protection is still enabled with your current registrar, we won't be able to access the information we need to transfer the domain.

### Sent email to registrant contact to get transfer authorization (step 3 of 14)

We've sent an email to the registrant contact for the domain to confirm that the transfer was requested by an authorized contact of the domain.

### Verifying transfer with current registrar (step 4 of 14)

We've sent a request to the current registrar for the domain to initiate the transfer.

### Awaiting authorization from registrant contact (step 5 of 14)

We sent email to the registrant contact for the domain (see step 3 of 14), and we're waiting for the registrant contact to click a link in the email to authorize the transfer. If you didn't receive the email for some reason, see [Resending Authorization and Confirmation Emails \(p. 60\)](#).

### Contacted current registrar to request transfer (step 6 of 14)

We're working with the current registrar for the domain to finalize the transfer.

### Waiting for the current registrar to complete the transfer (step 7 of 14)

Your current registrar is confirming that your domain meets the requirements for being transferred. This step might take up to ten days, depending on the TLD for your domain:

- [Generic Top-Level Domains \(p. 68\)](#) – take up to seven days
- [Geographic Top-Level Domains \(p. 181\)](#) (also known as country code top-level domains) – take up to ten days

For most registrars, the process is entirely automated and can't be accelerated. Some registrars send you an email that asks you to approve the transfer; if your registrar sends this confirmation email, the transfer process might be much faster than seven to ten days.

For information about reasons that a registrar might reject the transfer, see [Transfer Requirements for Top-Level Domains \(p. 46\)](#).

### Confirming with the registrant contact that the contact initiated the transfer (step 8 of 14)

Some TLD registries send the registrant contact another email to confirm that the domain transfer was requested by an authorized user.

#### **Synchronizing name servers with the registry (step 9 of 14)**

This step occurs only if the name servers that you provided as part of the transfer request are different from the name servers that are listed with the current registrar. We'll try to update your name servers to the new name servers that you provided.

#### **Synchronizing settings with the registry (step 10 of 14)**

We're verifying that the transfer has completed successfully, and we're synchronizing your domain-related data with our registrar associate.

#### **Sending updated contact information to the registry (step 11 of 14)**

If you changed the ownership of the domain when you requested the transfer, we're trying to make this change. However, most registries don't allow a transfer of ownership as part of the domain transfer process.

#### **Finalizing the transfer to Route 53 (step 12 of 14)**

We're confirming that the transfer process was successful.

#### **Finalizing transfer (step 13 of 14)**

We're setting up your domain in Amazon Route 53.

#### **Transfer Complete (step 14 of 14)**

Your transfer has been successfully completed.

## How Transferring a Domain to Amazon Route 53 Affects the Expiration Date for Your Domain Registration

When you transfer a domain between registrars, some TLD registries let you keep the same expiration date for your domain, some registries add a year to the expiration date, and some registries change the expiration date to one year after the transfer date.

### **Note**

For most TLDs, you can extend the registration period for a domain by up to ten years after you transfer it to Amazon Route 53. For more information, see [Extending the Registration Period for a Domain \(p. 41\)](#).

## Generic TLDs

When you transfer a domain that has a generic TLD (for example, .com) to Amazon Route 53, the new expiration date for the domain is the expiration date with your previous registrar plus one year.

## Geographic TLDs

When you transfer a domain that has a geographic TLD (for example, .co.uk) to Amazon Route 53, the new expiration date for the domain depends on the TLD. Find your TLD in the following table to determine how transferring your domain affects the expiration date.

Continent	Geographic TLDs and the Effect of Transferring a Domain on the Expiration Date
Africa	.co.za – The expiration date remains the same.
Americas	.cl, .com.ar, .com.br – The expiration date remains the same.

Continent	Geographic TLDs and the Effect of Transferring a Domain on the Expiration Date
	.ca, .co, .mx, .us – One year is added to the old expiration date.
Asia/Oceania	.co.nz, .com.au, .com.sg, .jp, .net.au, .net.nz, .org.nz, .ru, .sg – The expiration date remains the same.  .in – One year is added to the old expiration date.
Europe	.ch, .co.uk, .de, .es, .fi, .me.uk, .org.uk, .se – The expiration date remains the same.  .berlin, .eu, .io, .me, .ruhr, .wien – One year is added to the old expiration date.  .be, .fr, .it, .nl – The new expiration date is one year after the date of transfer.

## Transferring a Domain to a Different AWS Account

If you registered a domain using one AWS account and you want to transfer the domain to another AWS account, you can do so simply by contacting the AWS Support Center and requesting the transfer.

When you transfer domain registration between AWS accounts, Amazon Route 53 does not transfer the hosted zone for your domain. If domain registration is associated with one account and the corresponding hosted zone is associated with another account, neither domain registration nor DNS functionality is affected. The only effect is that you'll need to sign into the Amazon Route 53 console using one account to see the domain, and sign in using the other account to see the hosted zone.

### Important

If you want to transfer the hosted zone to another account, you must manually create the new hosted zone, create resource record sets in the new hosted zone, and update your domain with the name servers for the new hosted zone.

To transfer registration for a domain from one AWS account to another, perform the following procedure.

### To transfer a domain to a different AWS account

1. Using the AWS account that the domain is currently registered to, sign in to the [AWS Support Center](#).

### Important

You must sign in by using the root account that the domain is currently registered to. If you sign in by using an IAM user or any other account, we can't perform the transfer. This requirement prevents unauthorized users from transferring domains to other AWS accounts.

2. Specify the following values:

### Regarding

Accept the default value of **Account and Billing Support**.

### Service

Accept the default value of **Billing**.

### Category

Accept the default value of **Domain name registration issue**.



**Subject**

Specify **Transfer a domain to another AWS account**.

**Description**

Provide the following information:

- Domain that you want to transfer
- Account ID of the AWS account that the domain is currently registered to
- Account ID of the AWS account that you want to transfer domain registration to

**Contact method**

Specify a contact method and, if you choose **Phone**, enter the applicable values.

3. Choose **Submit**.

## Transferring a Domain from Amazon Route 53 to Another Registrar

When you transfer a domain from Amazon Route 53 to another registrar, you get some information from Amazon Route 53 and provide it to the new registrar. The new registrar will do the rest.

**Important**

If you're currently using Amazon Route 53 as your DNS service provider and you also want to transfer DNS service to another provider, be aware that the following Amazon Route 53 features don't have direct parallels with features provided by other DNS service providers. You'll need to work with the new DNS service provider to determine how to achieve comparable functionality:

- Alias resource record sets
- Weighted resource record sets
- Latency resource record sets
- Failover resource record sets
- Geo resource record sets

Usually, you can transfer registration of a domain name to another registrar without much trouble. Requirements vary among TLDs, but the following requirements are typical:

- You must have registered the domain with the current registrar at least 60 days ago.
- If the registration for a domain name expired and had to be restored, it must have been restored at least 60 days ago.
- You must have transferred registration for the domain to the current registrar at least 60 days ago.
- The domain cannot have any of the following domain name status codes:
  - pendingDelete
  - pendingTransfer
  - redemptionPeriod
  - clientTransferProhibited

For a current list of domain name status codes and an explanation of what each code means, go to the [ICANN website](#) and search for **epp status codes**. (Search on the ICANN website; web searches sometimes return an old version of the document.)

## To transfer a domain from Amazon Route 53 to another registrar

1. *.fi domains only* – If you're transferring a .fi domain to another registrar, order an authorization key from the Finnish Communications Regulatory Authority, the registry for .fi domains. You use the authorization key later in this process. For more information, see [Ordering of authorization key](#) on the Finnish Communications Regulatory Authority website.

### Important

The Finnish Communications Regulatory Authority mails the authorization key to you, which can take two weeks or more. Do not continue with this procedure until you have the key.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Registered Domains**.
4. Choose the name of the domain that you want to transfer to another registrar.
5. On the **Your Domains > domain name** page, check the value of **Domain name status**. If it is one of the following values, you can't currently transfer the domain:
  - pendingDelete
  - pendingTransfer
  - redemptionPeriod
  - clientTransferProhibited

For a current list of domain name status codes and an explanation of what each code means, go to the [ICANN website](#) and search for **epp status codes**. (Search on the ICANN website; web searches sometimes return an old version of the document.)

6. If the value of **Transfer lock** is **Enabled**, choose **Disable**.
7. Choose **Edit contacts**.
8. On the **Edit Contact Details for domain name** page, for **Privacy Protection**, select **Don't hide contact information** for all contacts.

In addition, update the contact information so the new registrar can contact you.

9. Choose **Save**.
10. *All domains except .co.uk, .me.uk, .org.uk, and .fi domains* – On the **Your Domains > domain name** page, at **Authorization Code**, choose **Generate** and make note of the authorization code. You'll provide this value to your registrar later in this procedure.

*.co.uk, .me.uk, and .org.uk domains* – Change the IPS tag to the value for the new registrar:

- a. Go to the [Find a Registrar](#) page on the Nominet website, and find the IPS tag for the new registrar. (Nominet is the registry for .co.uk, .me.uk, and .org.uk domains.)
- b. On the **Your Domains > domain name** page, at **IPS Tag**, choose **Change IPS Tag**, and specify the value that you got in step a.
- c. Choose **Update**.

*.fi domains* – Skip this step.

11. If you're not currently using Amazon Route 53 as the DNS service provider for your domain, skip to step 13.

If you are currently using Amazon Route 53 as the DNS service provider for the domain, perform the following steps:

- a. Choose **Hosted Zones**.

- b. Double-click the name of the hosted zone for your domain. The domain and the hosted zone have the same name.
- c. *If you want to continue using Amazon Route 53 as the DNS service provider for the domain:* Find the NS record for the hosted zone, and make note of the names of the four name servers. These names all begin with **ns-**.

*If you do not want to continue using Amazon Route 53 as the DNS service provider for the domain:* Make note of the settings for all of your resource record sets except the NS and SOA records. For Amazon Route 53-specific features such as alias resource record sets, you'll need to work with your new DNS service provider to determine how to achieve comparable functionality.

12. If you're transferring DNS service to another provider, use the methods that are provided by the new DNS service to create a hosted zone and resource record sets to reproduce the functionality of your Amazon Route 53 resource record sets.
13. Using the process that is provided by the new registrar, request a transfer of the domain.

*All domains except .co.uk, .me.uk, .org.uk, and .fi domains* – You'll be prompted to enter the authorization code that you got from the Amazon Route 53 console in step 10 of this procedure.

If you still want to use Amazon Route 53 as your DNS service provider, specify the names of the Amazon Route 53 name servers that you got in step 11. If you want to use another DNS service provider, specify the names of the name servers that the new provider gave you when you created a new hosted zone in step 12.

*.fi domains* – Go to the Finnish Communications Regulatory Authority website and request a transfer. For more information, see the procedure "Domain name transfer made by domain name holder" on the [Transfer of domain name to new holder](#) page.

## Resending Authorization and Confirmation Emails

For several operations related to domain registration, ICANN requires that we get authorization from the registrant contact for the domain or confirmation that the email address for the registrant contact is valid. To get authorization or confirmation, we send an email that contains a link. You have between 3 and 15 days to click the link, depending on the operation and the top-level domain. After that time, the link stops working.

If you don't click the link in the email in the allotted amount of time, ICANN generally requires that we suspend the domain or cancel the operation, depending on what you were trying to do:

### Register a domain

We suspend the domain, so that it's not accessible on the internet. To resend the confirmation email, see [To resend the confirmation email for a domain registration \(p. 61\)](#).

### Transfer a domain to Amazon Route 53

We cancel the transfer. To resend the authorization email, see [To resend the authorization email for a domain transfer \(p. 62\)](#).

### Change the name or email address of the registrant contact for the domain (the owner)

We cancel the change. To resend the authorization email, see [To resend the authorization email to update the registrant contact or delete a domain \(p. 63\)](#).

### Delete a domain

We cancel the deletion request. To resend the authorization email, see [To resend the authorization email to update the registrant contact or delete a domain \(p. 63\)](#).

### Transfer a domain from Amazon Route 53 to another registrar

The transfer proceeds. Although you don't need to respond to an email from Amazon Route 53, you must respond to an email from the new registrar, or the new registrar must cancel the transfer.

#### Topics

- [Updating Your Email Address \(p. 61\)](#)
- [Resending Emails \(p. 61\)](#)

## Updating Your Email Address

We always send confirmation and authorization emails to the email address for the registrant contact for a domain. For some TLDs, we're required to send email to the old and new email addresses for the registrant contact in the following cases:

- You're changing the email address for a domain that is already registered with Amazon Route 53
- You're changing the email address for a domain that you're transferring to Amazon Route 53

If you don't have access to the email address that is currently associated with the registrant contact for your domain (or to the old email address, if you're changing the email address for the registrant contact), see [Updating the Email Address for a Domain When You Can't Access Email at the Old Address \(p. 38\)](#).

## Resending Emails

Use the applicable procedure to resend confirmation or authorization emails.

- [To resend the confirmation email for a domain registration \(p. 61\)](#)
- [To resend the authorization email for a domain transfer \(p. 62\)](#)
- [To resend the authorization email to update the registrant contact or delete a domain \(p. 63\)](#)

### To resend the confirmation email for a domain registration

1. Check the email address for the registrant contact and, if necessary, update it. For more information, see [Updating Contact Information and Ownership for a Domain \(p. 35\)](#).
2. Check the spam folder in your email application for an email from one of the following email addresses.

If too much time has passed, the link won't work any longer, but you'll know where to look for the confirmation email when we send you another one.

TLDs	Email Address That the Approval or Confirmation Email Comes From
.fr	nic@nic.fr
All others	One of the following email addresses: <ul style="list-style-type: none"><li>• noreply@registrar.amazon.com</li><li>• noreply@domainnameverification.net</li></ul>

3. Use the Amazon Route 53 console to resend the confirmation email:
  - a. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.

- b. In the navigation pane, choose **Registered domains**.
- c. Choose the name of the domain that you want to resend the email for.
- d. In the warning box with the heading "Your domain might be suspended," choose **Send email again**.

**Note**

If there's no warning box, you already confirmed that the email address for the registrant contact is valid.

**To resend the authorization email for a domain transfer**

1. Use the method provided by the current domain registrar to confirm that privacy protection for the domain is disabled. If not, disable it.

We send the authorization email to the email address that the current registrar saved in the WHOIS database. When privacy protection is enabled, that email address typically is obfuscated. The current registrar might not forward to your actual email address the email that Amazon Route 53 sends to the email address in the WHOIS database.

2. Check the email address for the registrant contact and, if necessary, update it. Use the method provided by the current registrar for the domain.
3. Check the spam folder in your email application for an email from one of the following email addresses.

If too much time has passed, the link won't work any longer, but you'll know where to look for the authorization email when we send you another one.

TLDs	Email Address That the Approval or Confirmation Email Comes From
.com.au and .net.au	no-reply@ispapi.net  The email contains a link to <a href="https://approve.domainadmin.com">https://approve.domainadmin.com</a> .
.fr	nic@nic.fr
All others	One of the following email addresses: <ul style="list-style-type: none"><li>• noreply@registrar.amazon.com</li><li>• noreply@domainnameverification.net</li></ul>

4. If the transfer is no longer in process (if we already canceled it because too much time has passed), request the transfer again, and we'll send you another authorization email.

**Note**

For the first 15 days after you request a transfer, you can determine the status of the transfer by checking the **Alerts** table on the **Dashboard** page in the Amazon Route 53 console. After 15 days, use the AWS CLI to get the status. For more information, see [route53domains](#) in the *AWS Command Line Interface Reference*.

If the transfer is still in progress, perform the following steps to resend the authorization email.

- a. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
- b. In the **Alerts** table, find the domain that you want to transfer.
- c. In the **Status** column for that domain, choose **Resend email**.

### To resend the authorization email to update the registrant contact or delete a domain

1. Check the email address for the registrant contact and, if necessary, update it. For more information, see [Updating Contact Information and Ownership for a Domain \(p. 35\)](#).
2. Check the spam folder in your email application for an email from one of the following email addresses.

If too much time has passed, the link won't work any longer, but you'll know where to look for the authorization email when we send you another one.

TLDs	Email Address That the Authorization Email Comes From
.fr	nic@nic.fr
All others	One of the following email addresses: <ul style="list-style-type: none"><li>• noreply@registrar.amazon.com</li><li>• noreply@domainnameverification.net</li></ul>

3. Cancel the change or deletion. You have two options:
  - You can wait for the 3 to 15 day waiting period to pass, after which we automatically cancel the requested operation.
  - Alternatively, you can contact AWS Support and ask them to cancel the operation.
4. After the change or deletion is canceled, you can change the contact information or delete the domain again, and we'll send you another authorization email.

## Configuring DNSSEC for a Domain

Attackers sometimes hijack traffic to internet endpoints such as web servers by intercepting DNS queries and returning their own IP addresses to DNS resolvers in place of the actual IP addresses for those endpoints. Users are then routed to the IP addresses provided by the attackers in the spoofed response, for example, to fake websites.

You can protect your domain from this type of attack, known as DNS spoofing or a man-in-the-middle attack, by configuring Domain Name System Security Extensions (DNSSEC), a protocol for securing DNS traffic.

### Important

Amazon Route 53 supports DNSSEC for domain registration but does not support DNSSEC for DNS service. If you want to configure DNSSEC for a domain that is registered with Amazon Route 53, you must use another DNS service provider.

### Topics

- [Overview of How DNSSEC Protects Your Domain \(p. 63\)](#)
- [Prerequisites and Limits for Configuring DNSSEC for a Domain \(p. 65\)](#)
- [Adding Public Keys for a Domain \(p. 65\)](#)
- [Deleting Public Keys for a Domain \(p. 66\)](#)

## Overview of How DNSSEC Protects Your Domain

When you configure DNSSEC for your domain, a DNS resolver establishes a chain of trust for responses from intermediate resolvers. The chain of trust begins with the TLD registry for the domain (your

domain's parent zone) and ends with the authoritative name servers at your DNS service provider. Not all DNS resolvers support DNSSEC; resolvers that don't support DNSSEC don't perform any signature or authenticity validation.

Here's how you configure DNSSEC for domains registered with Amazon Route 53 to protect your internet hosts from DNS spoofing, simplified for clarity:

1. Use the method provided by your DNS service provider to *sign* the resource record sets in your hosted zone with the *private key* in an asymmetric key pair.

**Important**

Amazon Route 53 supports DNSSEC for domain registration but does not support DNSSEC for DNS service. If you want to configure DNSSEC for a domain that is registered with Amazon Route 53, you must use another DNS service provider.

2. Provide the *public key* from the key pair to your domain registrar, and specify the algorithm that was used to generate the key pair. The domain registrar forwards the public key and the algorithm to the registry for the top-level domain (TLD).

For information about how to perform this step for domains that you registered with Amazon Route 53, see [Adding Public Keys for a Domain \(p. 65\)](#).

After you configure DNSSEC, here's how it protects your domain from DNS spoofing:

1. Submit a DNS query, for example, by browsing to a website or by sending an email message.
2. The request is routed to a DNS resolver. Resolvers are responsible for returning the appropriate value to clients based on the request, for example, the IP address for the host that is running a web server or an email server.
3. If the IP address is cached on the DNS resolver (because someone else has already submitted the same DNS query, and the resolver already got the value), the resolver returns the IP address to the client that submitted the request. The client then uses the IP address to access the host.

If the IP address isn't cached on the DNS resolver, the resolver sends a request to the parent zone for your domain, at the TLD registry, which returns two values:

- The Delegation Signer (DS) record, which is a public key that corresponds with the private key that was used to sign the resource record set.
  - The IP addresses of the authoritative name servers for your domain.
4. The DNS resolver sends the original request to another DNS resolver. If that resolver doesn't have the IP address, it repeats the process until a resolver sends the request to a name server at your DNS service provider. The name server returns two values:
    - The resource record set for the domain, such as example.com. Typically this contains the IP address of a host.
    - The signature for the resource record set, which you created when you configured DNSSEC.
  5. The DNS resolver uses the public key that you provided to the domain registrar (and the registrar forwarded to the TLD registry) to do to things:
    - Establish a chain of trust.
    - Verify that the signed response from the DNS service provider is legitimate and hasn't been replaced with a bad response from an attacker.
  6. If the response is authentic, the resolver returns the value to the client that submitted the request.

If the response can't be verified, the resolver returns an error to the user.

If the TLD registry for the domain doesn't have the public key for the domain, the resolver responds to the DNS query by using the response that it got from the DNS service provider.

## Prerequisites and Limits for Configuring DNSSEC for a Domain

To configure DNSSEC for a domain, your domain and DNS service provider must meet the following prerequisites:

- The registry for the TLD must support DNSSEC. To determine whether the registry for your TLD supports DNSSEC, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).
- The DNS service provider for the domain must support DNSSEC.

### Important

Amazon Route 53 supports DNSSEC for domain registration but does not support DNSSEC for DNS service. If you want to configure DNSSEC for a domain that is registered with Amazon Route 53, you must use another DNS service provider.

- You must configure DNSSEC with the DNS service provider for your domain before you add public keys for the domain to Amazon Route 53.
- The number of public keys that you can add to a domain depends on the TLD for the domain:
  - **.com and .net domains** – up to thirteen keys
  - **All other domains** – up to four keys

## Adding Public Keys for a Domain

When you're rotating keys or you're enabling DNSSEC for a domain, perform the following procedure after you configure DNSSEC with the DNS service provider for the domain.

### To add public keys for a domain

1. If you haven't already configured DNSSEC with your DNS service provider, use the method provided by your service provider to configure DNSSEC.
2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Registered domains**.
4. Choose the name of the domain that you want to add keys for.
5. At the **DNSSEC status** field, choose **Manage keys**.
6. Specify the following values:

#### Key type

Choose whether you want to upload a key-signing key (KSK) or a zone-signing key (ZSK).

#### Algorithm

Choose the algorithm that you used to sign the resource record sets for the hosted zone.

#### Public key

Specify the public key from the asymmetric key pair that you used to configure DNSSEC with your DNS service provider.

7. Choose **Add**.

### Note

You can only add one public key at a time. If you need to add more keys, wait until you receive a confirmation email from Amazon Route 53.



8. When Amazon Route 53 receives a response from the registry, we send an email to the registrant contact for the domain. The email either confirms that the public key has been added to the domain at the registry or explains why the key couldn't be added.

## Deleting Public Keys for a Domain

When you're rotating keys or you're disabling DNSSEC for the domain, delete public keys using the following procedure before you disable DNSSEC with your DNS service provider. We recommend that you wait for up to three days to delete public keys after you rotate keys or disable DNSSEC with your DNS service provider. Note the following:

- If you're rotating public keys, we recommend that you wait for up to three days after you add the new public keys to delete the old public keys.
- If you're disabling DNSSEC, delete public keys for the domain first. We recommend that you wait for up to three days before you disable DNSSEC with the DNS service for the domain.

### Important

If DNSSEC is enabled for the domain and you disable DNSSEC with the DNS service, DNS resolvers that support DNSSEC will return a `SERVFAIL` error to clients, and the clients won't be able to access the endpoints that are associated with the domain.

### To delete public keys for a domain

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered domains**.
3. Choose the name of the domain that you want to delete keys from.
4. At the **DNSSEC status** field, choose **Manage keys**.
5. Find the key that you want to delete, and choose **Delete**.

### Note

You can only delete one public key at a time. If you need to delete more keys, wait until you receive a confirmation email from Amazon Route 53.

6. When Amazon Route 53 receives a response from the registry, we send an email to the registrant contact for the domain. The email either confirms that the public key has been deleted from the domain at the registry or explains why the key couldn't be deleted.

## Deleting a Domain Name Registration

For most top-level domains (TLDs), you can delete the registration if you no longer want it. Registries for some TLDs don't allow you to delete a domain name registration; instead, you must wait for it to expire. To determine whether you can delete the registration for your domain, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

If the registry allows you to delete the registration, perform the procedure in this topic. If the registry doesn't allow you to delete a domain name registration, disable automatic renewal of domain registration for this domain. When the **Expires on** date passes, Amazon Route 53 will automatically delete the registration for the domain. For information about how to change the automatic renewal setting, see [Enabling or Disabling Automatic Renewal for a Domain \(p. 40\)](#).

### Important

If you delete a domain name registration before the registration was scheduled to expire, we will not refund the registration fee.

### To delete a domain name registration

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of your domain.
4. Choose **Delete Domain**.
5. If the registry for your TLD allows deleting a domain name registration, choose **Delete Domain**.

We send an email to the registrant for the domain to verify that the registrant wants to delete the domain. (This is an ICANN requirement.) The email comes from one of the following email addresses:

- [noreply@registrar.amazon.com](mailto:noreply@registrar.amazon.com) – for TLDs registered by Amazon Registrar.
- [noreply@domainnameverification.net](mailto:noreply@domainnameverification.net) – for TLDs registered by our registrar associate, Gandi.

To determine who the registrar is for your TLD, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).

#### Important

The registrant contact must follow the instructions in the email, or we must cancel the deletion request as required by ICANN.

You'll receive another email when your domain has been deleted. To determine the current status of your request, see [Viewing the Status of a Domain Registration](#) (p. 35).

## Downloading a Domain Billing Report

AWS invoices don't include the domain name for domain registration charges. If you manage multiple domains and you want to view charges by domain for a specified time period, you can download a domain billing report. This report includes all charges that apply to domain registration, including the following:

- Registering a domain
- Renewing registration for a domain
- Transferring a domain to Amazon Route 53
- Changing the owner of a domain (for some TLDs, this operation is free)

The billing report, in CSV format, includes the following values:

- The AWS invoice ID that the charge appears on.
- The operation (REGISTER\_DOMAIN, RENEW\_DOMAIN, TRANSFER\_IN\_DOMAIN, or CHANGE\_DOMAIN\_OWNER).
- The name of the domain.
- The charge for the operation in US dollars.
- The date and time in ISO 8601 format, for example, 2016-03-03T19:20:25.177Z. For more information about ISO 8601 format, see the Wikipedia article [ISO 8601](#).

### To download a domain billing report

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.

2. In the navigation pane, choose **Registered Domains**.
3. Choose **Domain billing report**.
4. Choose the date range for the report, and then choose **Download domain report**.
5. Follow the prompts to open the report or to save it.

## Domains That You Can Register with Amazon Route 53

The following lists of generic and geographic top-level domains show the top-level domains (TLDs) that you can use to register domains with Amazon Route 53. We continue to add support for more TLDs, and we decide which TLDs to add based in part on customer feedback. To suggest a TLD that you'd like us to add, enter a comment on the [Amazon Route 53 Domain Registration forum](#).

### Registering Domains with Amazon Route 53

You can register a domain with Amazon Route 53 if the TLD is included on the following lists. If the TLD isn't included, you can't register the domain with Amazon Route 53.

### Transferring Domains to Amazon Route 53

You can transfer a domain to Amazon Route 53 if the TLD is included on the following lists. If the TLD isn't included, you can't transfer the domain to Amazon Route 53.

For most TLDs, you need to get an authorization code from the current registrar to transfer a domain. To determine whether you need an authorization code, see the "Authorization code required for transfer to Amazon Route 53" section for your TLD.

### Using Amazon Route 53 as Your DNS Service

You can use Amazon Route 53 as the DNS service for any domain, even if the TLD for the domain isn't included on the following lists. For more information about Amazon Route 53 as a DNS service, see [How Internet Traffic Is Routed to Your Website or Web Application \(p. 2\)](#). For information about how to transfer DNS service for your domain to Amazon Route 53, see [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 209\)](#).

### Topics

- [Generic Top-Level Domains \(p. 68\)](#)
- [Geographic Top-Level Domains \(p. 181\)](#)

## Generic Top-Level Domains

*Generic top-level domains* (gTLDs) are global extensions that are used and recognized around the world, such as .com, .net, and .org. They also include specialty domains such as .bike, .condos, and .marketing.

Not all gTLDs support internationalized domain names (IDNs). The following list indicates whether each gTLD supports IDNs. For more information about internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

A | B | C | D | E | F | G | H | I, J | K | L | M | N | O | P | Q | R | S | T | U | V | W, X, Y, Z

### A

.ac, .academy, .accountants, .adult, .agency, .apartments, .associates, .auction, .audio

## **.ac**

See [.ac](#) (Ascension Island).

## **.academy**

Used by educational institutions such as schools and universities. Also used by recruiters, advisors, advertisers, students, teachers, and administrators who are affiliated with educational institutions.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.accountants**

Used by businesses, groups, and individuals affiliated with the accounting profession.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.adult**

Used for websites that host adults-only content.

### **Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.agency**

Used by any businesses or groups that identify as agencies.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.apartments**

Used by real estate agents, landlords, and renters.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .associates

Used by businesses and firms that include the term "associates" in their titles. Also used by any groups or agencies that want to indicate the professional nature of their organizations.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .auction

Used for events related to auctions and auction-based buying and selling.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Chinese, French, German, Spanish, and Latin.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## **.audio**

### **Important**

You can no longer use Amazon Route 53 to register new .audio domains or transfer .audio domains to Amazon Route 53. We'll continue to support .audio domains that are already registered with Amazon Route 53.

Used by the audiovisual industry and anyone interested in broadcasting, sound equipment, audio production, and audio streaming.

### **Registration and renewal period**

One to ten years.

### **Privacy protection**

Not supported.

### **Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **B**

[.band](#), [.bargains](#), [.bike](#), [.bingo](#), [.biz](#), [.black](#), [.blue](#), [.boutique](#), [.builders](#), [.business](#), [.buzz](#)

## **.band**

Used for sharing information about musical bands and band events. Also used by musicians to connect with their fan base and sell band-related merchandise.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for Chinese, French, German, Spanish, and Latin.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.bargains**

Used for information about sales and promotions.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.bike**

Used by businesses or groups that cater to cyclists, such as bike stores, motorcycle dealerships, and repair shops.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.bingo**

Used for online gaming websites or for sharing information about the game of bingo.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name



### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .biz

Used for business or commercial use.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .black

Used by those who like the color black or those who want to associate the color black with their business or brand.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .blue

Used by those who like the color blue or those who want to associate the color blue with their business or brand.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .boutique

Used for information about boutiques and small specialty shops.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .builders

Used by companies and individuals affiliated with the construction industry.

### Registration and renewal period

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.business**

Used by any kind of business. Can be used as an alternative to the .biz extension.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.buzz**

Used for information about the latest news and events.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

# C

[.cab](#), [.cafe](#), [.camera](#), [.camp](#), [.capital](#), [.cards](#), [.care](#), [.careers](#), [.cash](#), [.casino](#), [.catering](#), [.cc](#), [.center](#), [.ceo](#), [.chat](#), [.cheap](#), [.church](#), [.city](#), [.claims](#), [.cleaning](#), [.click](#), [.clinic](#), [.clothing](#), [.cloud](#), [.club](#), [.coach](#), [.codes](#), [.coffee](#), [.college](#), [.com](#), [.community](#), [.company](#), [.computer](#), [.condos](#), [.construction](#), [.consulting](#), [.contractors](#), [.cool](#), [.coupons](#), [.credit](#), [.creditcard](#), [.cruises](#)

## .cab

Used by companies and individuals affiliated with the taxicab industry.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .cafe

Used by cafe businesses and those who have an interest in cafe culture.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for Chinese, French, German, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.camera**

Used by photography enthusiasts and anyone who wants to share photos.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.camp**

Used by parks and recreation departments, summer camps, writers' workshops, fitness camps, and camping enthusiasts.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.capital**

Used as a general category that describes any kind of capital, such as financial capital or the capital of a city.

#### **Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.cards**

Used by businesses that specialize in cards such as ecards, printed greeting cards, business cards, and playing cards. Also ideal for gamers who want to discuss the rules and strategies of card games.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.care**

Used by businesses or agencies in the care-giving field. Also used by charitable organizations.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .careers

Used for information about job recruitment.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .cash

Used by any organization, group, or individual engaged in money-related activities.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .casino

Used by the gambling industry or by gamers who want to share information about gambling and casino games.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .catering

Used by catering businesses or those who share information about food-related events.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .cc

See [.cc](#) (Cocos (Keeling) Islands).

### .center

Used as a generic extension for everything from research organizations to community centers.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name



**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.ceo**

Used for information about CEOs and their equals.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for German.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.chat**

Used by any kind of online chat website.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.cheap**

Used by e-commerce websites to promote and sell inexpensive products.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.church**

Used by churches of any size or denomination to connect with their congregations and to publish information about church-related events and activities.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.city**

Used to provide information about specific cities, such as points of interest, top local spots to visit, or neighborhood activities.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.claims**

Used by companies that handle insurance claims or provide legal services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.cleaning**

Used by businesses or individuals that provide cleaning services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .click

Used by businesses that want to associate the action of clicking with their websites, for example, clicking products on a website to purchase them.

### Registration and renewal period

One to ten years.

### Privacy protection

Not supported.

### Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .clinic

Used by the health care industry and by medical professionals.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .clothing

Used by those in the fashion industry, including retailers, department stores, designers, tailors, and outlets.

### Registration and renewal period

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.cloud**

Used as a general extension, but ideal for companies that provide cloud computing technologies and services.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.club**

Used by any type of club or organization.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Spanish and Japanese.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .coach

Used by anyone with an interest in coaching, such as sports professionals, lifestyle coaches, or corporate trainers.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .codes

Used as a generic extension for all kinds of code, such as codes of conduct, building codes, or programming code.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .coffee

Used by those in the coffee industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.college**

Used by educational institutions such as schools and universities. Also used by recruiters, advisors, advertisers, students, teachers, and administrators who are affiliated with educational institutions.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Arabic, simplified and traditional Chinese, Cyrillic, Greek, Hebrew, Japanese, and Thai.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.com**

Used for commercial websites. It is the most popular extension on the internet.

**Registration and renewal period**

One to ten years.

**Privacy protection**

All information is hidden.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is Amazon Registrar, Inc.

**.community**

Used by any type of community, club, organization, or special interest group.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.company**

Used as a generic extension for companies of all kinds.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.



## **.computer**

Used as a generic extension for information about computers.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.condos**

Used by individuals and businesses associated with condominiums.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.construction**

Used by those in the construction industry, such as builders and contractors.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .consulting

Used by consultants and others who are affiliated with the consulting industry.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .contractors

Used by contractors, such as contractors in the construction industry.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .cool

Used by organizations and groups who want to associate their brand with the latest trends.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .coupons

Used by retailers and manufacturers that provide online coupons and coupon codes.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .credit

Used by the credit industry.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.creditcard**

Used by companies or banks that issue credit cards.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.cruises**

Used by the voyage industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## D

[.dance](#), [.dating](#), [.deals](#), [.delivery](#), [.democrat](#), [.dental](#), [.diamonds](#), [.diet](#), [.digital](#), [.direct](#), [.directory](#), [.discount](#), [.dog](#), [.domains](#)

### **.dance**

Used by dancers, dance instructors, and dance schools.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.dating**

Used for dating websites.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## **.deals**

Used to provide information about online bargains and sales.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.delivery**

Used by companies that deliver any kind of merchandise or service.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.democrat**

Used for information about the Democratic Party. Also used by officials running for elected office, elected officials, political enthusiasts, consultants, and advisors.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .dental

Used by dental professionals and dental suppliers.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .diamonds

Used by diamond enthusiasts and those in the diamond industry, including sellers, resellers, and merchandisers.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .diet

#### Important

You can no longer use Amazon Route 53 to register new .diet domains or transfer .diet domains to Amazon Route 53. We'll continue to support .diet domains that are already registered with Amazon Route 53.

Used by health and fitness professionals.

#### Registration and renewal period

One to ten years.

#### Privacy protection

Not supported.

#### Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .digital

Used for anything and everything digital, but ideal for technology businesses.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .direct

Used as a general extension, but ideal for those who sell products directly to customers through an e-commerce website.



#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .directory

Used by the media sector.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .discount

Used for discount websites and businesses that slash prices.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.dog**

Used by dog lovers and those who provide canine services and products.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.domains**

Used for information about domain names.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## E

[.education](#), [.email](#), [.energy](#), [.engineering](#), [.enterprises](#), [.equipment](#), [.estate](#), [.events](#), [.exchange](#), [.expert](#), [.exposed](#), [.express](#)

### **.education**

Used for information about education.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.email**

Used for information about promoting email.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.energy**

Used as a general extension, but ideal for those in the energy or energy conservation fields.

#### **Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.engineering**

Used by engineering firms and professionals.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.enterprises**

Used for information about enterprises and businesses.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .equipment

Used for information about equipment, equipment retailers or manufacturers, and rental shops.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .estate

Used for information about housing and the housing sector.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .events

Used for information about events of all kinds.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.exchange**

Used for any type of exchange: the stock exchange, the exchange of goods, or even the simple exchange of information.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.expert**

Used by those who have specialized knowledge in a variety of fields.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.exposed**

Used as a generic extension for a variety of subjects, including photography, tabloids, and investigative journalism.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.express**

Used as a general extension, but ideal for those who want to emphasize the speedy delivery of good or services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## F

[.fail](#), [.farm](#), [.finance](#), [.financial](#), [.fish](#), [.fitness](#), [.flights](#), [.florist](#), [.flowers](#), [.fm](#), [.football](#), [.forsale](#), [.foundation](#), [.fund](#), [.furniture](#), [.futbol](#), [.fyi](#)

### **.fail**

Used by anyone who has made mistakes, but ideal for publishing humorous "fail" blunders and bloopers.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.farm**

Used by those in the farming industry, such as farmers and agricultural engineers.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.finance**

Used by the financial sector.



**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.financial**

Used by the financial sector.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.fish**

Used as a general extension, but ideal for websites related to fish and fishing.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.fitness**

Used to promote fitness and fitness services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.flights**

Used by travel agents, airlines, and anyone affiliated with the travel industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.florist**

Used by florists.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.flowers**

### **Important**

You can no longer use Amazon Route 53 to register new .flowers domains or transfer .flowers domains to Amazon Route 53. We'll continue to support .flowers domains that are already registered with Amazon Route 53.

Used for anything related to flowers, such as online flower sales or information about flower growing and breeding.

### **Registration and renewal period**

One to ten years.

### **Privacy protection**

Not supported.

### **Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.fm**

See [.fm](#) (Federated States of Micronesia).

## **.football**

Used by anyone involved in the sport of football.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .forsale

Used for selling goods and services.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .foundation

Used by non-profit organizations, charities, and other kinds of foundations.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.fund**

Used as a general extension for anything related to funding.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.furniture**

Used by furniture makers and sellers and anyone affiliated with the furniture industry.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.futbol**

Used for information about soccer (futbol).

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Not supported.

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.fyi**

Used as a general extension, but ideal for sharing information of all kinds. "FYI" is an acronym for "for your information."

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **G**

[.gallery](#), [.gift](#), [.gifts](#), [.glass](#), [.global](#), [.gold](#), [.golf](#), [.graphics](#), [.gratis](#), [.green](#), [.gripe](#), [.guide](#), [.guitars](#), [.guru](#)

## **.gallery**

Used by owners of art galleries.

### **Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.gift**

Used by businesses or organizations that sell gifts or provide gift-related services.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.gifts**

Used by businesses or organizations that sell gifts or provide gift-related services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .glass

Used by those in the glass industry, such as glass cutters and window installers.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .global

Used by businesses or groups with an international market or vision.

#### Registration and renewal period

One to ten years.

#### Privacy protection

Not supported.

#### Internationalized domain names

Supported for Arabic, Belarusian, Bosnian, Bulgarian, Chinese (Simplified) Chinese (Traditional), Danish, German, Hindi, Hungarian, Icelandic, Korean, Latvian, Lithuanian, Macedonian, Montenegrin, Polish, Russian, Serbian, Spanish, Swedish, and Ukrainian.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .gold

Used as a general extension, but ideal for companies that purchase or sell gold or gold-related products.

#### Registration and renewal period

One to ten years.



**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.golf**

Used for websites devoted to the game of golf.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.graphics**

Used by those in the graphics industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .gratis

Used for websites that offer free products, such as promotional items, downloads, or coupons. "Gratis" is a Spanish word that means "free."

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .green

Used for websites devoted to conservation, ecology, the environment, and the green lifestyle.

## Registration and renewal period

One to ten years.

## Privacy protection

Not supported.

## Internationalized domain names

Not supported.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .gripe

Used for sharing complaints and criticism.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.guide**

Used as a general extension, but ideal for websites that focus on travel destinations, services, and products.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.guitars****Important**

You can no longer use Amazon Route 53 to register new .guitars domains or transfer .guitars domains to Amazon Route 53. We'll continue to support .guitars domains that are already registered with Amazon Route 53.

Used by guitar enthusiasts.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

### Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .guru

Used by those who want to share their knowledge about a variety of subjects.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## H

[.haus](#), [.healthcare](#), [.help](#), [.hiv](#), [.hockey](#), [.holdings](#), [.holiday](#), [.host](#), [.hosting](#), [.house](#)

## .haus

Used by real estate and construction industries. "Haus" is a German word that means "house."

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .healthcare

Used by the healthcare sector.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .help

Used as a general extension, but ideal for websites that provide online help and information.

## Registration and renewal period

One to ten years.

## Privacy protection

Not supported.

## Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .hiv

Used for websites devoted to the fight against HIV.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.hockey**

Used for websites devoted to the game of hockey.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.holdings**

Used by financial advisors, stockbrokers, and those who work with investments.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.holiday**

Used by those in the travel industry and individuals and businesses involved in party planning and special occasions.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.host**

Used by companies that provide web hosting platforms and services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.hosting**

### **Important**

You can no longer use Amazon Route 53 to register new .hosting domains or transfer .hosting domains to Amazon Route 53. We'll continue to support .hosting domains that are already registered with Amazon Route 53.

Used for hosting websites or by those in the hosting industry.

### **Registration and renewal period**

One to ten years.

### **Privacy protection**

Not supported.

### **Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.house**

Used by real estate agents and buyers and sellers of houses.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **I, J**

[.im](#), [.immo](#), [.immobilien](#), [.industries](#), [.info](#), [.ink](#), [.institute](#), [.insure](#), [.international](#), [.investments](#), [.io](#), [.irish](#), [.jewelry](#), [.juegos](#)



## **.im**

See [.im](#) (Isle of Man).

## **.immo**

Used by the real estate sector.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.immobilien**

Used for information about real estate.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Not supported.

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.industries**

Used by any business or commercial enterprise that wants to identify as an industry.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.info**

Used for the dissemination of information.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.ink**

Used by tattoo enthusiasts or any industry related to ink, such as printing and publishing industries.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Arabic and Latin.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .institute

Used by any organization or group, especially research and educational organizations.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .insure

Used by insurance companies and insurance brokers.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .international

Used by businesses that have international chains, individuals who travel internationally, or charity organizations with an international influence.

#### Registration and renewal period

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.investments**

Used as a general extension, but ideal for promoting investment opportunities.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.io**

See [.io](#) (British Indian Ocean Territory).

**.irish**

Used for promoting Irish culture and organizations.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.jewelry**

Used by jewelry sellers and buyers.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.juegos**

**Important**

You can no longer use Amazon Route 53 to register new .juegos domains or transfer .juegos domains to Amazon Route 53. We'll continue to support .juegos domains that are already registered with Amazon Route 53.

Used for gaming websites of all kinds. "Juegos" is a Spanish word that means "games."

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## K

[.kaufen](#), [.kim](#), [.kitchen](#), [.kiwi](#)

### **.kaufen**

Used for information about e-commerce.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.kim**

Used by people whose name or surname is Kim.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.kitchen**

Used by kitchen retailers, cooks, food bloggers, and anyone in the food industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.kiwi**

Used by companies and individuals who want to support New Zealand kiwi culture. It is also used as a platform for charitable aid in the reconstruction of Christchurch, damaged by earthquakes in 2010 and 2011.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Maori.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**L**

[.land](#), [.lease](#), [.legal](#), [.lgbt](#), [.life](#), [.lighting](#), [.limited](#), [.limo](#), [.link](#), [.live](#), [.loan](#), [.loans](#), [.lol](#)

**.land**

Used by farmers, real estate agents, commercial developers, and anyone with an interest in property.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.lease**

Used by realtors, landlords, and renters.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.legal**

Used by members of the legal profession.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).



### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .lgbt

Used by the community of lesbian, gay, bisexual, and transgender people.

#### Registration and renewal period

One to ten years.

#### Privacy protection

Not supported.

#### Internationalized domain names

Not supported.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .life

Used as a general extension, and suitable for a wide range of businesses, groups, and individuals.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .lighting

Used by photographers, designers, architects, engineers, and others with an interest in lighting.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.limited**

Used as a general extension, and suitable for a wide range of businesses, groups, and individuals.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.limo**

Used by chauffeurs, limousine companies, and car rental agencies.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .link

Used for information about the creation of online shortcut links.

### Registration and renewal period

One to ten years.

### Privacy protection

Not supported.

### Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .live

Used as a general extension, and suitable for a wide range of businesses, groups, and individuals.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .loan

Used by lenders, borrowers, and credit professionals.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Danish, German, Norwegian, and Swedish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.loans**

Used by lenders, borrowers, and credit professionals.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.lol**

Used for humor and comedy websites. "LOL" is an acronym for "laugh out loud."

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Cyrillic, French, German, Italian, Portuguese, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## M

[.maison](#), [.management](#), [.marketing](#), [.mba](#), [.media](#), [.memorial](#), [.mobi](#), [.moda](#), [.money](#), [.mortgage](#), [.movie](#)

### **.maison**

Used by the real estate sector.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.management**

Used for information about the business world and company management.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.marketing**

Used by the marketing sector for a variety of purposes.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.mba**

Used for websites that provide information about the master's degree in business administration (MBA).

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.media**

Used by the media and entertainment sectors.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.memorial**

Used by commemorative organizations dedicated to honoring events and people.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.mobi**

Used by companies and individuals who want to have their websites accessible on mobile phones.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.moda**

Used for information about fashion.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.money**

Used for websites that focus on money and money-related activities.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.mortgage**

Used by the mortgage industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes



## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .movie

Used for websites that provide information about movies and movie-making. Suitable for both professionals and fans.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Chinese, French, German, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

# N

[.name](#), [.net](#), [.network](#), [.news](#), [.ninja](#)

## .name

Used by anyone who wants to create a personalized web presence.

## Registration and renewal period

One to ten years.

## Restrictions

Verisign, the registry for .name TLDs, allows you to register both second-level domains (*name.name*) and third-level domains (*firstname.lastname.name*). Amazon Route 53 supports only second-level domains, both for registering domains and for transferring existing domains to Amazon Route 53.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.net**

Used for all types of websites. The .net extension is an abbreviation of network.

**Registration and renewal period**

One to ten years.

**Privacy protection**

All information is hidden.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is Amazon Registrar, Inc.

**.network**

Used by those in the network industry or those who want to build connections through networking.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.news**

Used for distributing any newsworthy information such as current events or information related to journalism and communication.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.ninja**

Used by individuals and businesses who want to associate themselves with the abilities of a ninja.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **O**

[.onl](#), [.online](#), [.org](#)

## **.onl**

The .onl extension is an abbreviation for "online," and it is also the short term in Spanish for non-profit organization.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Arabic, Belarussian, Bosnian, Bulgarian, Chinese (Simplified and Traditional), Danish, German, Hindi, Hungarian, Icelandic, Korean, Lithuanian, Latvian, Macedonian, Polish, Russian, Serbian, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.online**

The .onl extension is an abbreviation for "online," and it is also the short term in Spanish for non-profit organization.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.org**

Used by all kinds of organizations.

**Registration and renewal period**

One to ten years.

**Privacy protection**

All information is hidden.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is Amazon Registrar, Inc.

## P

[.partners](#), [.parts](#), [.photo](#), [.photography](#), [.photos](#), [.pics](#), [.pictures](#), [.pink](#), [.pizza](#), [.place](#), [.plumbing](#), [.plus](#), [.poker](#), [.porn](#), [.pro](#), [.productions](#), [.properties](#), [.property](#), [.pub](#)

**.partners**

Used by law firms, investors, and a variety of companies. Also used for social websites that build relationships.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.parts**

Used as a general extension, but ideal for parts manufacturers, sellers, and buyers.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .photo

Used by photographers and anyone interested in photos.

## Registration and renewal period

One to ten years.

## Privacy protection

Not supported.

## Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .photography

Used by photographers and anyone interested in photos.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .photos

Used by photographers and anyone interested in photos.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.pics**

Used by photographers and anyone interested in photos.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.pictures**

Used by anyone interested in photography, art, and media.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .pink

Used by those who like the color pink or those who want to associate the color pink with their business or brand.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .pizza

Used by pizza restaurants and pizza lovers.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .place

Used as a general extension, but ideal for the home and travel sectors.



**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.plumbing**

Used by those in the plumbing industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.plus**

Used as a general extension, but ideal for plus-size clothing, add-on software, or any product that offers "extra" features or dimensions.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.poker**

Used by poker players and gaming websites.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.porn**

Used for adults-only websites.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.pro**

Used by licensed and credentialed professionals and professional organizations.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

Not supported.

### **Internationalized domain names**

Not supported.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.productions**

Used by studios and production houses that make commercials, radio ads, and music videos.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.properties**

Used for information about any type of property, including real estate or intellectual property. Also used by those who have houses, buildings, or land to sell, lease, or rent.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .property

### Important

You can no longer use Amazon Route 53 to register new .property domains or transfer .property domains to Amazon Route 53. We'll continue to support .property domains that are already registered with Amazon Route 53.

Used for information about any type of property, including real estate or intellectual property. Also used by those who have houses, buildings, or land to sell, lease, or rent.

### Registration and renewal period

One to ten years.

### Privacy protection

Not supported.

### Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .pub

Used by those in the publication, advertising, or brewing business.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## Q

[.qpon](#)

### **.qpon**

Used for coupons and promo codes.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## R

[.recipes](#), [.red](#), [.reise](#), [.reisen](#), [.rentals](#), [.repair](#), [.report](#), [.republican](#), [.restaurant](#), [.reviews](#), [.rich](#), [.rip](#), [.rocks](#),  
[.run](#)

### **.recipes**

Used by those with recipes to share.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .red

Used by those who like the color red or those who want to associate the color red with their business or brand.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .reise

Used for websites related to travels or journeys. "Reise" is a German word that means "rise," "arise," or "set out on a journey."

## Registration and renewal period

One to ten years.

## Privacy protection

Not supported.

## Internationalized domain names

Supported for Chinese, French, German, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .reisen

Used for websites related to travels or journeys. "Reisen" is a German word that means "to arise" or "to set out on a journey."

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .rentals

Used for all types of rentals.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .repair

Used by repair services or by those who want to teach others how to repair all kinds of items.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.report**

Used as a general extension, but ideal for information about business reports, community publications, book reports, or news reporting.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.republican**

Used for information about the Republican Party. Also used by officials running for elected office, elected officials, political enthusiasts, consultants, and advisors.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).



### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .restaurant

Used by the restaurant industry.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .reviews

Used by those who want give their opinions and read the comments of others.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .rich

Used for information about wealthy people, including celebrities from the worlds of industry, art, fashion, sports, and entertainment. Also used by providers of luxury services and brands.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Arabic, Belarussian, Bosnian, Bulgarian, Chinese (Simplified and Traditional), Danish, German, Hindi, Hungarian, Icelandic, Korean, Lithuanian, Latvian, Macedonian, Polish, Russian, Serbian, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.rip**

Used for websites dedicated to death and memorials. "RIP" is an acronym for "rest in peace."

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.rocks**

Used as a general extension, but ideal for anyone who "rocks": musicians, geologists, jewelers, climbers, and more.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, Latin, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .run

Used as a general extension, but ideal for the fitness and sports industry.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Chinese, French, German, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

# S

[.sale](#), [.sarl](#), [.school](#), [.schule](#), [.services](#), [.sex](#), [.sexy](#), [.shiksha](#), [.shoes](#), [.show](#), [.singles](#), [.soccer](#), [.social](#), [.solar](#), [.solutions](#), [.studio](#), [.style](#), [.sucks](#), [.supplies](#), [.supply](#), [.support](#), [.surgery](#), [.systems](#)

## .sale

Used by e-commerce websites.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .sarl

Used by limited liability companies typically located in France. "SARL" is an acronym for Société à Responsabilité Limitée.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .school

Used for information about education, educational institutions, and school-related activities.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .schule

Used for information about German-based education, educational institutions, and school-related activities. "Schule" is a German word that means "school."

### Registration and renewal period

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.services**

Used for websites that focus on services of any kind.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.sex**

Used for adults-only content.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .sexy

Used for sexual content. Also used for describing the most popular and exciting brands, products, information, and websites.

## Registration and renewal period

One to ten years.

## Privacy protection

Not supported.

## Internationalized domain names

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .shiksha

Used by educational institutions. "Shiksha" is an Indian term for school.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .shoes

Used by shoe retailers, designers, manufacturers, or fashion bloggers.

## Registration and renewal period

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.show**

Used as a general extension, but ideal for the entertainment industry.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.singles**

Used by dating services, resorts, and other businesses that cater to those who want to make a connection.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .soccer

Used for websites dedicated to the game of soccer.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Chinese, French, German, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .social

Used for information about social media, forums, and online conversations.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .solar

Used for information about the solar system or solar energy.



#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .solutions

Used by consultants, do-it-yourself services, and advisors of all kinds.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .studio

Used as a general extension, but ideal for those in the real estate, art, or entertainment industries.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.style**

Used as a general extension, but ideal for websites dedicated to the latest trends, especially trends in fashion, design, architecture, and art.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.sucks**

Used as a general extension, but ideal for those who want to share negative experiences or warn others about scams, frauds, or faulty products.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.supplies**

Used by businesses that sell goods online.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.supply**

Used by businesses that sell goods online.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.support**

Used by businesses, groups, or charities that offer any kind of support, including customer, product, or system support or emotional, financial, or spiritual support.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.surgery**

Used for information about surgery, medicine, and healthcare.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.systems**

Used primarily by the technology industry and those who offer technology services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## T

[.tattoo](#), [.tax](#), [.taxi](#), [.team](#), [.technology](#), [.tennis](#), [.theater](#), [.tienda](#), [.tips](#), [.tires](#), [.today](#), [.tools](#), [.tours](#), [.town](#), [.toys](#), [.trade](#), [.training](#), [.tv](#)

### **.tattoo**

Used by tattoo enthusiasts and the tattoo industry.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection**

Not supported.

#### **Internationalized domain names**

Supported for Cyrillic (primarily Russian), French, German, Italian, Portuguese, and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Not supported.

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.tax**

Used for information about taxes, tax preparation, and tax law.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

### **.taxi**

Used by cab, chauffeur, and shuttle companies.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .team

Used by any business or organization that wants to identify as a team.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .technology

Used by technology enthusiasts and those dedicated to technology in companies, services, and manufacturers.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.tennis**

Used for information related to the game of tennis.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.theater**

Used for websites dedicated to theaters, plays, and musicals.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Chinese, French, German, and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.tienda**

Used by retail businesses that want to connect with Spanish-speaking consumers.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.tips**

Used by those who want to share their knowledge and advice on virtually any topic.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### **Internationalized domain names**

Supported for French and Spanish.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.tires**

Used by manufacturers, distributors, or buyers of tires.

### **Registration and renewal period**

One to ten years.

### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name



**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.today**

Used for information about current events, news, weather, entertainment, and more.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.tools**

Used for information about any kind of tool.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .tours

Used as a general extension, but ideal for travel companies.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .town

Used to promote a city's locale, culture, and community.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .toys

Used by the toy industry.

#### Registration and renewal period

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.trade**

Used as a general extension, but ideal for commerce websites or trading services.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for Danish, German, Norwegian, and Swedish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.training**

Used by trainers, coaches, and educators.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .tv

Used for information about television and media.

## Registration and renewal period

One to ten years.

## Restrictions

Domain names that are at least three letters long (such as aaa.tv) are generally open to the public. Wwww.tv, the registry for .tv domains, reserves two-letter domain names. You can't register two-letter domains with or transfer them to Amazon Route 53. For more information about .tv domain names, see the [.tv page](#) on the Verisign website.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Not supported.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

# U

## .university, .uno

## .university

Used by universities and other educational organizations.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .uno

Used for information about the Hispanic, Portuguese, and Italian communities.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

# V

[.vacations](#), [.vegas](#), [.ventures](#), [.vg](#), [.viajes](#), [.video](#), [.villas](#), [.vision](#), [.voyage](#)

## .vacations

Used by the travel and tourism industry.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .vegas

Used to promote the city of Las Vegas and the Las Vegas lifestyle.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .ventures

Used by entrepreneurs, startups, venture capitalists, investment banks, and financiers.

### Registration and renewal period

One to ten years.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Supported for French and Spanish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .vg

See [.vg](#) (British Virgin Islands).

### .viajes

Used by travel agencies, tour operators, travel blogs, tour companies, rental services, travel bloggers, and travel retailers.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .video

Used by media and video industries.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for Chinese, French, German, Latin, and Spanish.

#### Authorization code required for transfer to Amazon Route 53

Yes

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### .villas

Used by real estate agents and property owners who have villas to sell, rent, or lease.

#### Registration and renewal period

One to ten years.

#### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### Internationalized domain names

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.vision**

Used as a general extension, but ideal for vision specialists such as optometrists and ophthalmologists.

**Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.voyage**

Used by travel agencies, tour operators, travel blogs, tour companies, rental services, travel bloggers, and travel retailers.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.



## W,X,Y,Z

[.watch](#), [.website](#), [.wiki](#), [.works](#), [.world](#), [.wtf](#), [.xyz](#), [.zone](#)

### **.watch**

Used for information about streaming websites, web TVs, video, or watches.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Supported for French and Spanish.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.website**

Used for information about website development, promotion, improvements, and experiences.

#### **Registration and renewal period**

One to ten years.

#### **Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

#### **Internationalized domain names**

Not supported.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.wiki**

Used for information about online documentation.

#### **Registration and renewal period**

One to ten years.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Arabic and Latin.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.works**

Used by businesses, organizations, and individuals for information about work, job, and employment services. This extension can be used as an alternative to the .com, .net, or .org extensions.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.world**

Used by anyone who wants to provide information about global subjects.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .wtf

Used by anyone who wants to identify with the popular (but profane) acronym "WTF."

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported for French and Spanish.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .xyz

Used as a general extension for any purpose.

## Registration and renewal period

One to ten years.

## Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

## Internationalized domain names

Supported.

## Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .zone

Used for information about any kind of zone, including time zones, climate zones, and sports zones.

**Registration and renewal period**

One to ten years.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported for French and Spanish.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## Geographic Top-Level Domains

The following domain extensions are grouped by geography and include official country-specific extensions, known as *country code top-level domains* (ccTLDs). Examples include .be (Belgium), .in (India), and .mx (Mexico). The rules for registration of ccTLDs vary by country. Some countries are unrestricted, meaning that anyone in the world can register, while others have certain restrictions, such as residency.

Not all ccTLDs support internationalized domain names (IDNs). The following list indicates whether each ccTLD supports IDNs. For more information about internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

**Geographic Regions**

- [Africa \(p. 181\)](#)
- [Americas \(p. 183\)](#)
- [Asia/Oceania \(p. 188\)](#)
- [Europe \(p. 196\)](#)

## Africa

[.ac](#), [.co.za](#), [.sh](#)

**.ac (Ascension Island)**

Also used as a generic TLD that is popular for those in academia.

**Registration and renewal period**

One year.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.co.za (South Africa)**

**Registration and renewal period**

One year.

**Restrictions**

Only second-level domains are available for the .za extension. Amazon Route 53 supports the second-level domain .co.za.

Open to the public, with some restrictions:

- Registration is open to identifiable legal entities (individuals and legal persons).
- The domain name must pass a zone check during the registration process.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

No

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.sh (Saint Helena)**

**Registration and renewal period**

One year.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Supported.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## Americas

[.ca](#), [.cl](#), [.co](#), [.com.ar](#), [.com.br](#), [com.mx](#), [.mx](#), [.us](#), [.vc](#), [.vg](#)

### .ca (Canada)

#### Confirmation email from the TLD registry

When you register a .ca domain, you will receive an email with a link to the acceptance procedure of the registrant agreement. You must complete the procedure within seven days or your domain will not be registered.

#### Registration and renewal period

One to ten years.

#### Restrictions

Open to the public, with some restrictions:

- Registration is open to individuals or organizations connected to Canada, as described by the Canadian Presence Requirements for Registrants.
- Registrant contact: You must provide the full and exact legal name of the owner of the domain.
- Admin and tech contacts: You must specify **Person** as the contact type and provide contact information for individuals living in Canada.
- You must select one of the following legal types during the registration process:
  - CCO represents a corporation.
  - CCT represents a Canadian citizen.
  - RES represents a Canadian resident.
  - GOV represents a government entity.
  - EDU represents an educational entity.
  - ASS represents an unincorporated association.
  - HOP represents a hospital.
  - PRT represents a partnership.
  - TDM represents a trademark.
  - TRD represents a trade union.
  - PLT represents a political party.
  - LAM represents libraries, archives, and museums.
  - TRS represents a trust.
  - ABO represents Aboriginal Peoples.
  - INB represents Indian Band.
  - LGR represents legal representative.
  - OMK represents an official mark (protected by the Trademarks Act).

- MAJ represents Her Majesty the Queen.

**Privacy protection**

- **Person** – For all contacts, contact name, address, phone number, fax number, and email address are hidden.
- **Company, association, or public body** – Not supported.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**Deletion of domain registration**

The registry for .ca domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

**.cl (Chile)**

**Important**

You can no longer use Amazon Route 53 to register new .cl domains or transfer .cl domains to Amazon Route 53. We'll continue to support .cl domains that are already registered with Amazon Route 53.

**Renewal period**

Two years.

**Privacy protection**

Determined by the registry.

**Authorization code required for transfer to Amazon Route 53**

No

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.co (Colombia)**

**Registration and renewal period**

One to five years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address

- **Not hidden** – contact name and organization name

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.com.ar (Argentina)**

**Important**

You can no longer use Amazon Route 53 to register new .com.ar domains or transfer .com.ar domains to Amazon Route 53. We'll continue to support .com.ar domains that are already registered with Amazon Route 53.

**Renewal period**

One year.

**Privacy protection**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

No

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.com.br (Brazil)**

**Important**

You can no longer use Amazon Route 53 to register new .com.br domains or transfer .com.br domains to Amazon Route 53. We'll continue to support .com.br domains that are already registered with Amazon Route 53.

**Renewal period**

One year.

**Privacy protection**

Determined by the registry.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.



**com.mx (Mexico)**

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.mx (Mexico)**

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.us (United States)**

**Registration and renewal period**

One to ten years.

**Restrictions**

The registry for .us domains doesn't allow domain names that contain any of the seven words identified in the "Appendix to Opinion of the Court" of [Federal Communications Commission v. Pacifica Foundation No. 77-528](#).

Open to the public, with one restriction:

- The .us extension is for websites or activities that are located in the United States of America.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.vc (Saint Vincent and the Grenadines)**

Also used as a generic TLD, often by those involved in venture capital financing, varsity colleges, and so on.

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.vg (British Virgin Islands)**

Also used as a generic TLD, often by organizations involved in video gaming.

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## Asia/Oceania

[.cc](#), [.co.nz](#), [.com.au](#), [.com.sg](#), [.fm](#), [.in](#), [.jp](#), [.io](#), [.net.au](#), [.net.nz](#), [.org.nz](#), [.qa](#), [.ru](#), [.sg](#)

**.cc (Cocos (Keeling) Islands)**

Also used as a generic TLD, often by organizations with "cc" in their names, such as consulting companies, cloud computing companies, or cycling clubs. The extension is a popular alternative to ".com."

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.co.nz (New Zealand)**

**Registration and renewal period**

One to ten years.

**Restrictions**

You can register the following second-level domains with Amazon Route 53: [.co.nz](#), [.net.nz](#), and [.org.nz](#). You can't register [.nz](#) (first-level) domains with Amazon Route 53 or transfer [.nz](#) domains to Amazon Route 53.

Open to the public, with some restrictions:

- Individuals must be at least 18.
- Organizations must be registered.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.com.au (Australia)**

**Confirmation email from the TLD registry**

Our registrar partner, Gandi, resells .com.au domains through the Australian company TPP Wholesale. When you transfer a domain name to Amazon Route 53, tppwholesale.com.au sends an email to the registrant contact for the domain to verify contact information or to authorize transfer requests.

**Registration and renewal period**

Two years.

**Restrictions**

Only second-level domains are available. Amazon Route 53 supports the second-level domains .com.au and net.au.

Open to the public, with some restrictions:

- The .com.au and .net.au domains are open to legal persons, partnerships, or sole traders registered in Australia; to foreign companies licensed to trade in Australia; and to owners or applicants of an Australian-registered trademark.
- Your domain name must be identical to your name (as registered with the relevant Australian authorities) or to your trademark (or to the abbreviation or acronym for your trademark).
- The domain name should indicate your activity. For example, it should indicate a product that you sell or a service that you provide.
- During the registration process, you must provide the following information:
  - Your registration type: ABN (Australian Business Number), ACN (Australian Company Number), or TM (Trademark) if the domain name corresponds to your trademark.
  - Your ID number, which can be a Medicare card number, a tax file number (TFN), a state driver's license number, or an Australian Business Number (ABN).
  - Your state or province.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**Deletion of domain registration**

The registry for .com.au domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

**.com.sg (Republic of Singapore)**

**Important**

You can no longer use Amazon Route 53 to register new .com.sg domains or transfer .com.sg domains to Amazon Route 53. We'll continue to support .com.sg domains that are already registered with Amazon Route 53.

**Renewal period**

One year.

**Deletion of domain registration**

The registry for .com.sg domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

**Privacy protection**

Determined by the registry.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.fm (Federated States of Micronesia)**

Also used as a generic TLD, often by organizations involved in online media and broadcasting.

**Registration and renewal period**

One to five years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.in (India)**

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Not supported.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.jp (Japan)**

**Registration and renewal period**

One year.

**Restrictions**

Open to the public, with one restriction:

- Only individuals or companies in Japan can register a .jp domain name.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Supported for Japanese.

**Authorization code required for transfer to Amazon Route 53**

If you're transferring a .jp domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the AGNT code to **AGNT-1744**, all uppercase.

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.io (British Indian Ocean Territory)**

Also used as a generic TLD, often by computer-related organizations such as online services, browser-based games, and startup companies.

### **Registration and renewal period**

One year.

### **Restrictions**

Open to the public, with no restrictions.

### **Privacy protection**

Determined by the registry.

### **Internationalized domain names**

Supported.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **Deletion of domain registration**

The registry for .io domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

## **.net.au (Australia)**

### **Confirmation email from the TLD registry**

Our registrar partner, Gandi, resells .net.au domains through the Australian company TPP Wholesale. When you transfer a domain name to Amazon Route 53, tppwholesale.com.au sends an email to the registrant contact for the domain to verify contact information or to authorize transfer requests.

### **Registration and renewal period**

Two years.

### **Restrictions**

Only second-level domains are available. Amazon Route 53 supports the second-level domains .com.au and net.au.

Open to the public, with some restrictions:

- The .com.au and .net.au domains are open to legal persons, trading, partnerships, or sole traders registered in Australia; to foreign companies licensed to trade in Australia; and to owners or applicants of an Australian-registered trademark.
- Your domain name must be identical to your name, as registered with the relevant Australian authorities or to your trademark (or to the abbreviation or acronym).
- The domain name should indicate your activity. For example, it should indicate a product that you sell or a service that you provide.
- During the registration process, you must indicate the following:

- Your registration type: ABN (Australian Business Number), ACN (Australian Company Number), or TM (Trademark) if the domain name corresponds to your trademark.
- Your ID number, which can be a Medicare card number, a tax file number (TFN), a state driver's license number, or an Australian Business Number (ABN).
- Your state or province.

**Privacy protection (applies to all contact types: person, company, association, and public body)**

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**Deletion of domain registration**

The registry for .net.au domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

**.net.nz (New Zealand)**

**Registration and renewal period**

One to ten years.

**Restrictions**

You can register the following second-level domains with Amazon Route 53: .co.nz, .net.nz, and .org.nz. You can't register .nz (first-level) domains with Amazon Route 53 or transfer .nz domains to Amazon Route 53.

Open to the public, with some restrictions:

- Individuals must be at least 18.
- Organizations must be registered.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.



## **.org.nz (New Zealand)**

### **Registration and renewal period**

One to ten years.

### **Restrictions**

You can register the following second-level domains with Amazon Route 53: .co.nz, .net.nz, and .org.nz. You can't register .nz (first-level) domains with Amazon Route 53 or transfer .nz domains to Amazon Route 53.

Open to the public, with some restrictions:

- Individuals must be at least 18.
- Organizations must be registered.

### **Privacy protection**

Not supported.

### **Internationalized domain names**

Supported.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Not supported.

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.qa (Qatar)**

### **Important**

You can no longer use Amazon Route 53 to register new .qa domains or transfer .qa domains to Amazon Route 53. We'll continue to support .qa domains that are already registered with Amazon Route 53.

### **Renewal period**

One to five years.

### **Privacy protection**

Determined by the registry.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Not supported.

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.ru (Russian Federation)**

### **Important**

You can no longer use Amazon Route 53 to register new .ru domains or transfer .ru domains to Amazon Route 53. We'll continue to support .ru domains that are already registered with Amazon Route 53.

### Registration and renewal period

One year.

### Restrictions

Open to the public, with some restrictions:

- Individuals might need to provide a passport number or government-issued ID number.
- Foreign companies might need to provide a company ID or company registration.

### Privacy protection

Determined by the registry.

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

If you're transferring a .ru domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by RU-Center, the registry for .ru domains, to update the **Partner Handle** for the domain to **5427/NIC-REG**. For more information, see the [Registrar's or Registrant's Transfer](#) page on the RU-Center website.

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### Deletion of domain registration

The registry for .ru domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

## .sg (Republic of Singapore)

### Important

You can no longer use Amazon Route 53 to register new .sg domains or transfer .sg domains to Amazon Route 53. We'll continue to support .sg domains that are already registered with Amazon Route 53.

### Renewal period

One year.

### Privacy protection

Determined by the registry.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Not supported.

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

### Deletion of domain registration

The registry for .sg domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

## Europe

[.be](#), [.berlin](#), [.ch](#), [.co.uk](#), [.de](#), [.es](#), [.eu](#), [.fi](#), [.fr](#), [.gg](#), [.im](#), [.it](#), [.me](#), [.me.uk](#), [.nl](#), [.org.uk](#), [.ruhr](#), [.se](#), [.uk](#), [.wien](#)

### **.be (Belgium)**

#### **Registration and renewal period**

One year.

#### **Restrictions**

Open to the public, with no restrictions.

#### **Privacy protection**

Determined by the registry.

#### **Internationalized domain names**

Supported.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **.berlin (city of Berlin in Germany)**

#### **Registration and renewal period**

One to ten years.

#### **Restrictions**

Open to the public, with some restrictions:

- The owner, administrative, or technical contact must provide an address in Berlin, and the administrative contact must be an individual.
- You must activate and use your .berlin domain within 12 months following its registration (applies to a website, redirection, or email address).
- If you publish a website under your .berlin domain, or if your .berlin domain redirects to another website, the content of the website must be related to Berlin.

#### **Privacy protection**

Not supported.

#### **Internationalized domain names**

Supported for Latin and Cyrillic.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

#### **DNSSEC**

Not supported.

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.ch (Switzerland)**

### **Registration and renewal period**

One year.

### **Restrictions**

Open to the public, with no restrictions.

### **Privacy protection**

Determined by the registry.

### **Internationalized domain names**

Supported.

### **Authorization code required for transfer to Amazon Route 53**

Yes

### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.co.uk (United Kingdom)**

### **Registration and renewal period**

One to ten years.

### **Restrictions**

Open to the public, with no restrictions.

### **Registration priority**

If you registered a .co.uk, .me.uk, or .org.uk domain on or before October 28, 2013, you have priority for registering the corresponding .uk domain until June 10, 2019.

#### **Note**

You cannot register a .uk domain (such as example.uk) for which someone else has already registered a .co.uk, .me.uk, or .org.uk domain (such as example.co.uk) until the priority period has expired.

If different registrants have registered the same name with .co.uk, .me.uk, and .org.uk TLDs (such as example.co.uk, example.me.uk, and example.org.uk), priority for registering the .uk domain name is in the following order:

- The registrant of the .co.uk domain
- The registrant of the .org.uk domain
- The registrant of the .me.uk domain

If you registered a .co.uk domain between October 29, 2013 and June 10, 2014, you have priority for registering the corresponding .uk domain until June 10, 2019 unless someone else registered the corresponding .org.uk or .me.uk domain on or before October 28, 2013.

For more information, see [.uk Rights FAQs](#).

If you want the .uk domain for a .co.uk, .me.uk, or .org.uk that you already own, use the Amazon Route 53 console or API, the AWS CLI, or the SDKs to register the .uk domain as you would any

other domain. If someone else has a higher priority on an existing .co.uk, .me.uk, or .org.uk domain, we'll notify you by email. The email will contain the following text:

```
ErrorState at registrar: 2201 : Authorization error (V334 Your request for domain
'domain name' has failed because the 'account name' for the registrant does not
fully match any registrant which has rights for this domain)
```

#### Privacy protection

Determined by the registry.

#### Internationalized domain names

Not supported.

#### Authorization code required for transfer to Amazon Route 53

If you're transferring a .co.uk domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the IPS tag for the domain to **GANDI**, all uppercase. (An IPS tag is required by Nominet, the registry for .uk domain names.) If your registrar will not change the value of the IPS tag, [contact Nominet](#).

##### Note

When you register a .co.uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

#### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### Registrar

The registrar for this TLD is our registrar associate, Gandi.

#### Deletion of domain registration

The registry for .co.uk domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

### .de (Germany)

#### Registration and renewal period

One year.

#### Restrictions

Open to the public, with some restrictions:

- You must reside in Germany or have an administrative contact (physical person) who resides in Germany and has an address other than a P.O. box.
- During registration, the DNS (A, MX, and CNAME) of the domain name must be correctly configured so that it can pass the registry's zone check. Three servers of two different C classes are required.

#### Privacy protection

Determined by the registry.

#### Internationalized domain names

Supported.

#### Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .es (Spain)

### Domain purchase or transfer

#### Important

You currently can purchase new .es domain names or transfer .es domains to Amazon Route 53 if the contact type for the registrant contact is **Person**. You can't purchase or transfer .es domains if the contact type for the registrant contact is **Company**, **Association**, or **Public Body**.

### Registration and renewal period

One to five years.

### Restrictions

Open to the public, for those who have an interest in or connection with Spain.

### Privacy protection

Determined by the registry.

### Internationalized domain names

Supported.

### Authorization code required for transfer to Amazon Route 53

No

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .eu (European Union)

### Registration and renewal period

One to ten years.

### Restrictions

Open to the public, with one restriction:

- You must provide a valid postal address in one of the 27 member-states of the European Union. A local presence is required.

### Privacy protection

Determined by the registry.

### Internationalized domain names

Supported.

### Authorization code required for transfer to Amazon Route 53

Yes

## **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

## **.fi (Finland)**

### **Registration and renewal period**

One year.

### **Restrictions**

Open to the public, with some restrictions:

- The .fi extension is available to individuals who have a domicile in Finland and have a Finnish identity number, and legal persons or private entrepreneurs registered in Finland.
- You must provide the following information during registration:
  - Whether or not the contact is based on a physical or moral person in Finland.
  - The identifier of the register where the name is recorded, if based on a moral person's name.
  - The number of the record in the register where the name is recorded, if based on a moral person's name.
  - The identification number for a moral person in Finland.
  - The identification number for a physical person in Finland.

### **Privacy protection**

Determined by the registry.

### **Internationalized domain names**

Supported.

### **Authorization code required for transfer to Amazon Route 53**

Yes

## **DNSSEC**

Not supported.

## **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

### **Deletion of domain registration**

The registry for .fi domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

## **.fr (France)**

### **Registration and renewal period**

One year.

### **Restrictions**

Open to the public, with some restrictions:

- Individuals must be at least 18 and must provide their date-of-birth.
- Organizations must be located in the European Economic Area or in Switzerland.

- Organizations should fill out all company identification fields (VAT number, SIREN, WALDEC, DUNS, and so on), as this will facilitate any verification that AFNIC might perform at a later date.
- The same eligibility conditions apply to the administrative contact.
- Names and terms are subject to an AFNIC prior review (Naming Charter Article 2.4) and to the following additional conditions:
  - Domain names previously reserved or prohibited are open to applicants that justify a legitimate right and act in good faith.
  - Names beginning with ville, mairie, agglom, cc, cg, and cr are subject to AFNIC naming conventions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.gg (Guernsey)**

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.im (Isle of Man)**

Also used as a generic TLD, often by instant messaging services or for individuals who want to develop an "I am" personal brand.

**Registration and renewal period**

One year.



**Restrictions**

Open to the public, with no restrictions.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Not supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.it (Italy)**

**Registration and renewal period**

One year.

**Restrictions**

Open to the public, with some restrictions:

- Individuals or organizations must have a registered address in the European Union.
- If your country of origin is Italy, you must enter a fiscal code. If your country of origin is within the European Union, you must enter an identity document number (ID number).
- If you specify **Company**, **Association**, or **Public body** for the contact type, a VAT number (a value-added tax identification number) is required.
- Name servers for your domain must pass a DNS check. If your domain name does not comply with the technical requirements, and you do not correct it within 30 days, your domain name will be deleted by the registry. We don't issue refunds for domains that are deleted because they don't meet technical requirements.

**Privacy protection**

Determined by the registry.

**Internationalized domain names**

Supported.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.me (Montenegro)**

**Registration and renewal period**

One to ten years.

## Restrictions

Domain names that are at least three letters long (such as `aaa.me`) are generally open to the public. Domain.me, the registry for `.me` domains, considers two-letter domain names and some longer domain names to be premium domain names. You can't register premium `.me` domains with or transfer them to Amazon Route 53. For more information about premium `.me` domain names, see the [domain.me](https://domain.me) website.

### Privacy protection (applies to all contact types: person, company, association, and public body)

- **Hidden** – address, phone number, fax number, and email address
- **Not hidden** – contact name and organization name

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .me.uk (United Kingdom)

### Registration and renewal period

One to ten years.

## Restrictions

Open to the public, with no restrictions.

### Registration priority

If you registered a `.co.uk`, `.me.uk`, or `.org.uk` domain on or before October 28, 2013, you have priority for registering the corresponding `.uk` domain until June 10, 2019.

#### Note

You cannot register a `.uk` domain (such as `example.uk`) for which someone else has already registered a `.co.uk`, `.me.uk`, or `.org.uk` domain (such as `example.co.uk`) until the priority period has expired.

If different registrants have registered the same name with `.co.uk`, `.me.uk`, and `.org.uk` TLDs (such as `example.co.uk`, `example.me.uk`, and `example.org.uk`), priority for registering the `.uk` domain name is in the following order:

- The registrant of the `.co.uk` domain
- The registrant of the `.org.uk` domain
- The registrant of the `.me.uk` domain

If you registered a `.co.uk` domain between October 29, 2013 and June 10, 2014, you have priority for registering the corresponding `.uk` domain until June 10, 2019 unless someone else registered the corresponding `.org.uk` or `.me.uk` domain on or before October 28, 2013.

For more information, see [.uk Rights FAQs](#).

If you want the `.uk` domain for a `.co.uk`, `.me.uk`, or `.org.uk` that you already own, use the Amazon Route 53 console or API, the AWS CLI, or the SDKs to register the `.uk` domain as you would any

other domain. If someone else has a higher priority on an existing .co.uk, .me.uk, or .org.uk domain, we'll notify you by email. The email will contain the following text:

```
ErrorState at registrar: 2201 : Authorization error (V334 Your request for domain  
'domain name' has failed because the 'account name' for the registrant does not  
fully match any registrant which has rights for this domain)
```

#### **Privacy protection**

Determined by the registry.

#### **Internationalized domain names**

Not supported.

#### **Authorization code required for transfer to Amazon Route 53**

If you're transferring a .me.uk domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the IPS tag for the domain to **GANDI**, all uppercase. (An IPS tag is required by Nominet, the registry for .uk domain names.) If your registrar will not change the value of the IPS tag, [contact Nominet](#).

##### **Note**

When you register a .me.uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

#### **DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

#### **Registrar**

The registrar for this TLD is our registrar associate, Gandi.

#### **Deletion of domain registration**

The registry for .me.uk domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

### **.nl (the Netherlands)**

#### **Registration and renewal period**

One year.

#### **Restrictions**

Open to the public, with some restrictions:

- The owner or the administrative contact must provide a valid address in the Netherlands. A local presence is required.
- If you do not have a valid address in the Netherlands, the Registry SIDN will provide you with a domicile address, as per the Domicile Address Procedure.

#### **Privacy protection**

Determined by the registry.

#### **Internationalized domain names**

Not supported.

#### **Authorization code required for transfer to Amazon Route 53**

Yes

## DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

## Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .org.uk (United Kingdom)

### Registration and renewal period

One to ten years.

### Restrictions

Open to the public, with no restrictions.

### Registration priority

If you registered a .co.uk, .me.uk, or .org.uk domain on or before October 28, 2013, you have priority for registering the corresponding .uk domain until June 10, 2019.

#### Note

You cannot register a .uk domain (such as example.uk) for which someone else has already registered a .co.uk, .me.uk, or .org.uk domain (such as example.co.uk) until the priority period has expired.

If different registrants have registered the same name with .co.uk, .me.uk, and .org.uk TLDs (such as example.co.uk, example.me.uk, and example.org.uk), priority for registering the .uk domain name is in the following order:

- The registrant of the .co.uk domain
- The registrant of the .org.uk domain
- The registrant of the .me.uk domain

If you registered a .co.uk domain between October 29, 2013 and June 10, 2014, you have priority for registering the corresponding .uk domain until June 10, 2019 unless someone else registered the corresponding .org.uk or .me.uk domain on or before October 28, 2013.

For more information, see [.uk Rights FAQs](#).

If you want the .uk domain for a .co.uk, .me.uk, or .org.uk that you already own, use the Amazon Route 53 console or API, the AWS CLI, or the SDKs to register the .uk domain as you would any other domain. If someone else has a higher priority on an existing .co.uk, .me.uk, or .org.uk domain, we'll notify you by email. The email will contain the following text:

```
ErrorState at registrar: 2201 : Authorization error (V334 Your request for domain
'domain name' has failed because the 'account name' for the registrant does not
fully match any registrant which has rights for this domain)
```

### Privacy protection

Determined by the registry.

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

If you're transferring a .org.uk domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the IPS tag for the domain to **GANDI**, all uppercase. (An IPS tag is required

by Nominet, the registry for .uk domain names.) If your registrar will not change the value of the IPS tag, [contact Nominet](#).

**Note**

When you register a .org.uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**Deletion of domain registration**

The registry for .org.uk domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

**.ruhr (Ruhr region, western part of Germany)**

The .ruhr extension is for the Ruhr region (western part of Germany).

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with one restriction:

- The administrative contact must be an individual who has an address in Germany.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported (ä, ö, ü, ß).

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**.se (Sweden)**

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with some restrictions:

- If you are located in Sweden, you must provide a valid Swedish ID number.
- If you are located outside of Sweden, you must enter a valid ID number such as a tax ID number.

**Privacy protection**

Determined by the registry.

### Internationalized domain names

Supported for Latin, Swedish, and Yiddish.

### Authorization code required for transfer to Amazon Route 53

Yes

### DNSSEC

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

### Registrar

The registrar for this TLD is our registrar associate, Gandi.

## .uk (United Kingdom)

### Registration and renewal period

One to ten years.

### Restrictions

Open to the public, with no restrictions.

### Registration priority

If you registered a .co.uk domain before June 10, 2014 or a .me.uk or .org.uk domain before October 29, 2013, you have priority for registering the corresponding .uk domain for five years.

#### Note

You cannot register a .uk domain (such as example.uk) for which someone else has already registered a .co.uk, .me.uk, or .org.uk domain (such as example.co.uk) until the priority period has expired.

If different registrants have registered the same name with .co.uk, .me.uk, and .org.uk TLDs (such as example.co.uk, example.me.uk, and example.org.uk), priority for registering the .uk domain name is in the following order:

- The registrant of the .co.uk domain
- The registrant of the .org.uk domain
- The registrant of the .me.uk domain

If you want the .uk domain for a .co.uk, .me.uk, or .org.uk that you already own, use the Amazon Route 53 console or API, the AWS CLI, or the SDKs to register the .uk domain as you would any other domain. If someone else has a higher priority on an existing .co.uk, .me.uk, or .org.uk domain, we'll notify you by email. The email will contain the following text:

```
ErrorState at registrar: 2201 : Authorization error (V334 Your request for domain
'domain name' has failed because the 'account name' for the registrant does not
fully match any registrant which has rights for this domain)
```

### Privacy protection

Determined by the registry.

### Internationalized domain names

Not supported.

### Authorization code required for transfer to Amazon Route 53

If you're transferring a uk domain to Amazon Route 53, you don't need to get an authorization code. Instead, use the method provided by your current domain registrar to update the value of the IPS tag for the domain to **GANDI**, all uppercase. (An IPS tag is required by Nominet, the

registry for .uk domain names.) If your registrar will not change the value of the IPS tag, [contact Nominet](#).

**Note**

When you register a .uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

**DNSSEC**

Supported for domain registration. For more information, see [Configuring DNSSEC for a Domain \(p. 63\)](#).

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

**Deletion of domain registration**

The registry for .uk domains doesn't allow you to delete domain registrations. Instead, you must disable automatic renewal and wait for the domain to expire. For more information, see [Deleting a Domain Name Registration \(p. 66\)](#).

**.wien (city of Vienna in Austria)**

**Registration and renewal period**

One to ten years.

**Restrictions**

Open to the public, with some restrictions:

- You must show an economic, cultural, tourist, historical, social, or other affinity with the city of Vienna in Austria.
- The .wien domain names must be used in connection with the above conditions, throughout the term of registration.

**Privacy protection**

Not supported.

**Internationalized domain names**

Supported for Latin.

**Authorization code required for transfer to Amazon Route 53**

Yes

**DNSSEC**

Not supported.

**Registrar**

The registrar for this TLD is our registrar associate, Gandi.

# Configuring Amazon Route 53 as Your DNS Service

You can use Amazon Route 53 as the DNS service for your domain, such as `example.com`. When Amazon Route 53 is your DNS service, it routes internet traffic to your website by translating friendly domain names like `www.example.com` into numeric IP addresses, like `192.0.2.1`, that computers use to connect to each other. When someone enters your domain name in a browser or sends you email, a DNS query is forwarded to Amazon Route 53, which responds with the appropriate value, for example, the IP address for the web server for `example.com`.

In this chapter, we explain how to configure Amazon Route 53 to route your internet traffic to the right places. We also explain how to migrate DNS service to Amazon Route 53 if you're currently using another DNS service.

## Topics

- [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 209\)](#)
- [Working with Public Hosted Zones \(p. 213\)](#)
- [Working with Private Hosted Zones \(p. 225\)](#)
- [Working with Resource Record Sets \(p. 231\)](#)
- [Using Traffic Flow to Route DNS Traffic \(p. 301\)](#)
- [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain \(p. 313\)](#)
- [DNS Constraints and Behaviors \(p. 318\)](#)

## Migrating DNS Service for an Existing Domain to Amazon Route 53

You can migrate an existing domain from another DNS service to Amazon Route 53 as the DNS service.

## Topics



- [Step 1: Create a Hosted Zone \(p. 210\)](#)
- [Step 2: Get Your Current DNS Configuration from Your DNS Service Provider \(p. 210\)](#)
- [Step 3: Create Resource Record Sets \(p. 211\)](#)
- [Step 4: Check the Status of Your Changes \(API Only\) \(p. 211\)](#)
- [Step 5: Update Your Registrar's Name Servers \(p. 211\)](#)
- [Step 6: Wait 48 Hours for Your Changes to Take Effect \(p. 212\)](#)

## Step 1: Create a Hosted Zone

To migrate a domain from your existing DNS service, start by creating an Amazon Route 53 hosted zone. Amazon Route 53 stores information about your domain in the hosted zone.

### Important

You can create a hosted zone only for a domain that you have permission to administer. Typically, this means that you own the domain, but you may also be developing an application for the domain registrant.

When you create a hosted zone, Amazon Route 53 automatically creates four name server (NS) records and a start of authority (SOA) record for the zone. The NS records identify the name servers that you give to your registrar or your DNS service so that queries are routed to Amazon Route 53 name servers. For more information about NS and SOA records, see [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone \(p. 224\)](#).

To create a hosted zone using the Amazon Route 53 console, perform the following procedure. To create a hosted zone using the Amazon Route 53 API, use the `CreateHostedZone` action. For more information, see [CreateHostedZone](#) in the *Amazon Route 53 API Reference*.

### To create a hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. If you're new to Amazon Route 53, choose **Get Started Now** under **DNS Management**.

If you're already using Amazon Route 53, choose **Hosted Zones** in the **navigation** pane.

3. Choose **Create Hosted Zone**.
4. In the **Create Hosted Zone** pane, enter a domain name and, optionally, a comment. For more information about a setting, pause the mouse pointer over its label to see a tool tip.

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

5. Choose **Create**.

## Step 2: Get Your Current DNS Configuration from Your DNS Service Provider

To simplify the process of migrating an existing domain to Amazon Route 53, get the current DNS configuration for the domain from the DNS service provider that is currently servicing the domain. You can use this information as a basis for configuring Amazon Route 53 as your DNS service.

What you ask for and the format that it comes in depends on which company you're currently using as your DNS service provider. Ideally, they'll give you a zone file, which contains information about all of the

resource record sets in your current configuration. (Resource record sets tell DNS how you want traffic to be routed for your domains and subdomains. For example, when someone enters your domain name in a web browser, do you want traffic to be routed to a web server in your data center, to an Amazon EC2 instance, to a CloudFront distribution, or to some other location?) If you can get a zone file from your current DNS service provider, you can import your existing DNS configuration into your Amazon Route 53 hosted zone, which greatly simplifies the process of creating resource record sets. Try asking customer support for your current DNS service provider how to get a *zone file* or a *records list*.

Records that you are likely to migrate include:

- A (Address) records, which associate a domain name (example.com) with the IP address of the home page for the domain (192.0.2.3)
- Mail server (MX) records
- CNAME records, which reroute queries for one domain name (www.example.com) to another domain name (example.com)
- Other A records, CNAME records, or other supported DNS record types. For a list of supported record types, see [Supported DNS Record Types \(p. 237\)](#).

## Step 3: Create Resource Record Sets

Using the resource record sets that you got from your current DNS service provider as a starting point, create corresponding resource record sets in the Amazon Route 53 hosted zone. The resource record sets that you create in Amazon Route 53 will become the resource record sets that DNS uses after you update your current DNS service's name server records, as explained in [Step 5: Update Your Registrar's Name Servers \(p. 211\)](#), later in the process.

### Important

Do not create additional name server (NS) or start of authority (SOA) records in the Amazon Route 53 hosted zone, and do not delete the existing NS and SOA records.

To create resource record sets using the Amazon Route 53 console, see [Working with Resource Record Sets \(p. 231\)](#). To create resource record sets using the Amazon Route 53 API, use `ChangeResourceRecordSets`. For more information, see [ChangeResourceRecordSets](#) in the [Amazon Route 53 API Reference](#).

## Step 4: Check the Status of Your Changes (API Only)

Creating a new hosted zone and changing resource record sets take time to propagate to the Amazon Route 53 DNS servers. If you used [ChangeResourceRecordSets](#) to create your resource record sets, you can use the `GetChange` action to determine whether your changes have propagated. (`ChangeResourceRecordSets` returns a value for `ChangeId`, which you can include in a subsequent `GetChange` request. `ChangeId` is not available if you created the resource record sets by using the console.) For more information, see [GET GetChange](#) in the [Amazon Route 53 API Reference](#).

### Note

Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

## Step 5: Update Your Registrar's Name Servers

After your changes to Amazon Route 53 resource record sets have propagated to Amazon Route 53 DNS servers (see [Step 4: Check the Status of Your Changes \(API Only\) \(p. 211\)](#)), update your registrar's name server (NS) records to refer to the Amazon Route 53 name servers. Perform the following procedure.

1. If the registrar has a method to change the TTL settings for their name servers, we recommend that you reset the settings to 900 seconds. This limits the time during which client requests will try

to resolve domain names using obsolete name servers. You'll need to wait for the duration of the previous TTL for resolvers and clients to stop caching the DNS records with their previous values. A common default setting is 172800 seconds (two days). After the TTL settings expire, you can safely delete the records that are stored at the previous provider and make changes only to Amazon Route 53.

2. In the Amazon Route 53 console, get the name servers for your Amazon Route 53 hosted zone:
  - a. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
  - b. In the navigation pane, click **Hosted Zones**.
  - c. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.
  - d. In the right pane, make note of the four servers listed for **Name Servers**.

Alternatively, you can use the `GetHostedZone` action. For more information, see [GetHostedZone](#) in the *Amazon Route 53 API Reference*.

3. Using the method provided by the registrar for the domain, replace the name servers in the registrar's NS records with the four Amazon Route 53 name servers that you got in step 2.

#### Note

Some registrars only allow you to specify name servers using IP addresses; they don't allow you to specify fully qualified domain names. If your registrar requires using IP addresses, you can get the IP addresses for your name servers using the `dig` utility (for Mac, Unix, or Linux) or the `nslookup` utility (for Windows). We rarely change the IP addresses of name servers; if we need to change IP addresses, we'll notify you in advance.

Depending on the TTL settings for the name servers for the parent domain, the propagation of your changes to DNS resolvers can take 48 hours or more. During this time, DNS resolvers might still answer requests with the name servers for the registrar. In addition, client computers might continue to have the previous name servers for the domain in their cache.

To learn more about working with your hosted zone, see the following related topics.

#### Related Topics

- [Getting the Name Servers for a Public Hosted Zone \(p. 214\)](#)
- [Listing Public Hosted Zones \(p. 215\)](#)
- [Deleting a Public Hosted Zone \(p. 215\)](#)
- [Listing Resource Record Sets \(p. 301\)](#)

## Step 6: Wait 48 Hours for Your Changes to Take Effect

You might have to wait a day or two before Amazon Route 53 becomes the DNS service for your domain name. If you've been using the domain name, DNS resolvers have cached the registrar's NS records for your domain. NS records are cached for the period specified by the TTL (time to live) in the records, which commonly is 86400 to 172800 seconds (one to two days). Until the TTL expires, DNS resolvers that have cached the registrar's NS records will continue to respond to queries for your domain with the name servers in those NS records. After the TTL expires for a resolver, the resolver submits another query for the NS records for your domain, and your registrar responds with your Amazon Route 53 NS records.

#### Note

If you don't remember the TTL for your registrar's NS records, you can still find it until the TTL expires. Use a tool like `dig` or `nslookup` to query DNS for the NS records of your domain.

# Working with Public Hosted Zones

A public hosted zone is a container that holds information about how you want to route traffic on the internet for a domain, such as `example.com`, and its subdomains (`apex.example.com`, `acme.example.com`). After you create a public hosted zone, you create resource record sets that determine how the Domain Name System (DNS) responds to queries for your domain and subdomains. For example, if you have one or more email addresses associated with your domain (`john@example.com`), you'll create an MX record in your hosted zone so that email is sent to the email server for your domain. For more information about resource record sets, see [Working with Resource Record Sets \(p. 231\)](#).

This topic explains how to use the Amazon Route 53 console to create, list, and delete public hosted zones. For information about using the Amazon Route 53 API to perform these operations, see the [Amazon Route 53 API Reference](#).

You can also use an Amazon Route 53 *private* hosted zone to route traffic within one or more Amazon Virtual Private Clouds. For more information, see [Working with Private Hosted Zones \(p. 225\)](#).

## Topics

- [Creating a Public Hosted Zone \(p. 213\)](#)
- [Getting the Name Servers for a Public Hosted Zone \(p. 214\)](#)
- [Listing Public Hosted Zones \(p. 215\)](#)
- [Deleting a Public Hosted Zone \(p. 215\)](#)
- [Checking DNS Responses from Amazon Route 53 \(p. 216\)](#)
- [Configuring White Label Name Servers \(p. 219\)](#)
- [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone \(p. 224\)](#)

## Creating a Public Hosted Zone

A hosted zone is a collection of resource record sets for a specified domain. You create a hosted zone for a domain (such as `example.com`), and then you create resource record sets to tell the Domain Name System how you want traffic to be routed for that domain.

When you create a hosted zone, Amazon Route 53 automatically creates a name server (NS) record and a start of authority (SOA) record for the zone. The NS record identifies the four name servers that you give to your registrar or your DNS service so that DNS queries are routed to Amazon Route 53 name servers. For more information about NS and SOA records, see [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone \(p. 224\)](#).

After you update the settings with your domain registrar to include the Amazon Route 53 name servers, Amazon Route 53 responds to DNS queries for the hosted zone even if you don't have a functioning website. For example, Amazon Route 53 responds with information about your hosted zone whenever someone enters your domain name in a web browser.

By default, Amazon Route 53 assigns a unique set of four name servers (known collectively as a delegation set) to each hosted zone that you create. If you want to create a large number of hosted zones, you can use the Amazon Route 53 API to create a reusable delegation set. Then when you create hosted zones by using the Amazon Route 53 API, you can assign the same reusable delegation set—the same four name servers—to each hosted zone. (You can't specify a reusable delegation set when you created a hosted zone by using the Amazon Route 53 console.) Reusable delegation sets simplify migrating DNS service to Amazon Route 53 because you can instruct your domain name registrar to use the same four name servers for all of the domains for which you want Amazon Route 53 to be the

DNS service. For more information about reusable delegation sets, see [Amazon Route 53 API Actions by Function](#) in the *Amazon Route 53 API Reference*. For information about creating hosted zones by using the Amazon Route 53 API, see [CreateHostedZone](#).

You can create more than one hosted zone with the same name and add different resource record sets to each hosted zone. Amazon Route 53 assigns four name servers to every hosted zone, and the name servers are different for each of them. When you update your registrar's name server records, be careful to use the Amazon Route 53 name servers for the correct hosted zone—the one that contains the resource record sets that you want Amazon Route 53 to use when responding to queries for your domain. Amazon Route 53 never returns values for resource record sets in other hosted zones that have the same name.

### To create a hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. If you're new to Amazon Route 53, choose **Get Started Now** under **DNS Management**.

If you're already using Amazon Route 53, choose **Hosted Zones** in the **navigation** pane.

3. Choose **Create Hosted Zone**.
4. In the **Create Hosted Zone** pane, enter a domain name and, optionally, a comment. For more information about a setting, pause the mouse pointer over its label to see a tool tip.

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format](#) (p. 319).

5. Choose **Create**.

## Getting the Name Servers for a Public Hosted Zone

If you're currently using another DNS service and you want to migrate to Amazon Route 53, you begin by creating a hosted zone. Amazon Route 53 automatically assigns four name servers to your hosted zone. To ensure that the Domain Name System routes queries for your domain to the Amazon Route 53 name servers, update your registrar's or your DNS service's NS records for the domain to replace the current name servers with the names of the four Amazon Route 53 name servers for your hosted zone. The method that you use to update the NS records depends on which registrar or DNS service you're using. For more information about migrating your DNS service to Amazon Route 53, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain](#) (p. 313).

### Note

Some registrars only allow you to specify name servers using IP addresses; they don't allow you to specify fully qualified domain names. If your registrar requires using IP addresses, you can get the IP addresses for your name servers using the `dig` utility (for Mac, Unix, or Linux) or the `nslookup` utility (for Windows). We rarely change the IP addresses of name servers; if we need to change IP addresses, we'll notify you in advance.

The following procedure explains how to get the name servers for a hosted zone using the Amazon Route 53 console. For information about how to get name servers using the Amazon Route 53 API, see [GetHostedZone](#) in the *Amazon Route 53 API Reference*.

### To get the name servers for a hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, click **Hosted Zones**.
3. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.

4. In the right pane, make note of the four servers listed for **Name Servers**.

## Listing Public Hosted Zones

You can use the Amazon Route 53 console to list all of the hosted zones that you created with the current AWS account. For information about how to list hosted zones using the Amazon Route 53 API, see [ListHostedZones](#) in the *Amazon Route 53 API Reference*.

### To list the public hosted zones associated with an AWS account using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the Amazon Route 53 console, the **Hosted Zones** page automatically displays a list of the hosted zones that are associated with the AWS account that you are currently signed in with.

## Deleting a Public Hosted Zone

The following procedure explains how to delete a hosted zone using the Amazon Route 53 console. For information about how to delete a hosted zone using the Amazon Route 53 API, see [DeleteHostedZone](#) in the *Amazon Route 53 API Reference*.

### Important

If the name servers for the hosted zone are associated with a domain and if you want to make the domain unavailable on the internet, we recommend that you delete the name servers from the domain to prevent future DNS queries from possibly being misrouted. If the domain is registered with Amazon Route 53, see [Adding or Changing Name Servers and Glue Records for a Domain](#) (p. 42). If the domain is registered with another registrar, use the method provided by the registrar to delete name servers for the domain.

Some domain registries don't allow you to remove all of the name servers for a domain. If the registry for your domain requires one or more name servers, we recommend that you delete the hosted zone only if you transfer DNS service to another service provider, and you replace the name servers for the domain with name servers from the new provider.

You can delete a hosted zone only if there are no resource record sets other than the default SOA and NS records. If your hosted zone contains other resource record sets, you must delete them before you can delete your hosted zone. This prevents you from accidentally deleting a hosted zone that still contains resource record sets.

### To delete a public hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. Confirm that the hosted zone that you want to delete contains only an NS and an SOA resource record set. If it contains additional resource record sets, delete them:
  - a. Choose the name of the hosted zone that you want to delete.
  - b. On the Record Sets page, if the list of resource record sets includes any resource record sets for which the value of the **Type** column is something other than NS or SOA, choose the row, and choose **Delete Record Set**.

To select multiple, consecutive resource record sets, choose the first row, press and hold the **Shift** key, and choose the last row. To select multiple, non-consecutive resource record sets, choose the first row, press and hold the **Ctrl** key, and choose the remaining rows.

**Note**

If you created any NS records for subdomains in the hosted zone, delete those records, too.

- c. Choose **Back to Hosted Zones**.
3. On the **Hosted Zones** page, choose the row for the hosted zone that you want to delete.
4. Choose **Delete Hosted Zone**.
5. Choose **OK** to confirm.
6. If you want to make the domain unavailable on the internet, we recommend that you delete the name servers from the domain to prevent future DNS queries from possibly being misrouted.

If the domain is registered with Amazon Route 53, see [Adding or Changing Name Servers and Glue Records for a Domain](#) (p. 42). If the domain is registered with another registrar, use the method provided by the registrar to delete name servers for the domain.

## Checking DNS Responses from Amazon Route 53

If you created an Amazon Route 53 hosted zone for your domain, you can use the DNS checking tool in the console to see how Amazon Route 53 will respond to DNS queries if you configure your domain to use Amazon Route 53 as your DNS service. For geolocation and latency resource record sets, you can also simulate queries from a particular DNS resolver and/or client IP address to find out what response Amazon Route 53 would return.

**Important**

The DNS checking tool does not indicate whether Amazon Route 53 is currently the DNS service for your domain. Responses from the tool are based only on the settings in your hosted zone, not on responses from the Domain Name System.

The DNS checking tool works only for public hosted zones.

**Topics**

- [Using the Checking Tool to See How Amazon Route 53 Responds to DNS Queries](#) (p. 216)
- [Using the Checking Tool to Simulate Queries from Specific IP Addresses \(Geolocation and Latency Resource Record Sets Only\)](#) (p. 217)

## Using the Checking Tool to See How Amazon Route 53 Responds to DNS Queries

You can use the tool to see what response Amazon Route 53 returns in response to a DNS query for a resource record set.

**To use the checking tool to see how Amazon Route 53 responds to DNS queries**

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. On the **Hosted Zones** page, choose the name of a hosted zone. The console displays the list of resource record sets for that hosted zone.
4. To go directly to the **Check response from Route 53** page, choose **Test record set**.

To go to the **Check response from Route 53** page for a specific resource record set, choose the check box for that resource record set and choose **Test record set**.



5. If you chose **Test record set** without first choosing a resource record set, specify the name and type of the resource record set.
6. Choose **Get Response**.
7. The **Response returned by Route 53** section includes the following values:

#### DNS query sent to Route 53

The query, in [BIND format](#), that the checking tool sent to Amazon Route 53. This is the same format that a web application would use to send a query. The three values are typically the name of the resource record set, **IN** (for internet), and the type of the resource record set.

#### DNS response code

A code that indicates whether the query was valid or not. The most common response code is **NOERROR**, meaning that the query was valid. If the response is not valid, Amazon Route 53 returns a response code that explains why not. For a list of possible response codes, see [DNS RCODES](#) on the IANA website.

#### Protocol

The protocol that Amazon Route 53 used to respond to the query, either **UDP** or **TCP**.

#### Response returned by Route 53

The value that Amazon Route 53 would return to a web application. The value is one of the following:

- For non-alias resource record sets, the response contains the value or values in the resource record set.
- For multiple resource record sets that have the same name and type, which includes weighted, latency, geolocation, and failover, the response contains the value from the appropriate resource record set, based on the request.
- For alias resource record sets that refer to AWS resources other than another resource record set, the response contains an IP address or a domain name for the AWS resource, depending on the type of resource.
- For alias resource record sets that refer to other resource record sets, the response contains the value or values from the referenced resource record set.

## Using the Checking Tool to Simulate Queries from Specific IP Addresses (Geolocation and Latency Resource Record Sets Only)

If you have created latency or geolocation resource record sets, you can use the checking tool to simulate queries from the IP address for a DNS resolver and a client.

### To use the checking tool to simulate queries from specified IP addresses

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. On the **Hosted Zones** page, choose the name of a hosted zone. The console displays the list of resource record sets for that hosted zone.
4. To go directly to the **Check response from Route 53** page, choose **Test record set**.

To go to the **Check response from Route 53** page for a specific resource record set, choose the check box for that resource record set and choose **Test record set**.

5. If you chose **Test record set** without first choosing a resource record set, specify the name and type of the resource record set.



6. Specify the applicable values:

**Resolver IP address**

Specify an IPv4 or IPv6 address to simulate the location of the DNS resolver that a client uses to make requests. This is useful for testing latency and geolocation resource record sets. If you omit this value, the tool uses the IP address of a DNS resolver in the AWS US East (N. Virginia) Region (us-east-1).

**EDNS0 client subnet IP**

If the resolver supports EDNS0, type the client subnet IP for an IP address in the applicable geographic location, for example, **192.0.2.0** or **2001:db8:85a3::8a2e:370:7334**.

**Subnet mask**

If you specify an IP address for **EDNS0 client subnet IP**, you can optionally specify the number of bits of the IP address that you want the checking tool to include in the DNS query. For example, if you specify **192.0.2.44** for **EDNS0 client subnet IP** and **24** for **Subnet mask**, the checking tool will simulate a query from **192.0.2.0/24**. The default value is 24 bits for IPv4 addresses and 64 bits for IPv6 addresses.

7. Choose **Get Response**.
8. The **Response returned by Route 53** section includes the following values:

**DNS query sent to Route 53**

The query, in [BIND format](#), that the checking tool sent to Amazon Route 53. This is the same format that a web application would use to send a query. The three values are typically the name of the resource record set, **IN** (for internet), and the type of the resource record set.

**DNS response code**

A code that indicates whether the query was valid or not. The most common response code is **NOERROR**, meaning that the query was valid. If the response is not valid, Amazon Route 53 returns a response code that explains why not. For a list of possible response codes, see [DNS RCODES](#) on the IANA website.

**Protocol**

The protocol that Amazon Route 53 used to respond to the query, either **UDP** or **TCP**.

**Response returned by Route 53**

The value that Amazon Route 53 would return to a web application. The value is one of the following:

- For non-alias resource record sets, the response contains the value or values in the resource record set.
- For multiple resource record sets that have the same name and type, which includes weighted, latency, geolocation, and failover, the response contains the value from the appropriate resource record set, based on the request.
- For alias resource record sets that refer to AWS resources other than another resource record set, the response contains an IP address or a domain name for the AWS resource, depending on the type of resource.
- For alias resource record sets that refer to other resource record sets, the response contains the value or values from the referenced resource record set.

## Configuring White Label Name Servers

Each Amazon Route 53 hosted zone is associated with four name servers, known collectively as a delegation set. By default, the name servers have names like ns-2048.awsdns-64.com. If you want the domain name of your name servers to be the same as the domain name of your hosted zone, for example, ns1.example.com, you can configure white label name servers, also known as vanity name servers or private name servers.

The following steps explain how to configure one set of four white label name servers that you can reuse for multiple domains. For example, suppose you own the domains example.com, example.org, and example.net. With these steps, you can configure white label name servers for example.com and reuse them for example.org and example.net.

### Topics

- [Step 1: Create an Amazon Route 53 reusable delegation set \(p. 219\)](#)
- [Step 2: Create or recreate Amazon Route 53 hosted zones \(p. 219\)](#)
- [Step 3: Recreate resource record sets for your hosted zones \(p. 220\)](#)
- [Step 4: Get IP addresses \(p. 220\)](#)
- [Step 5: Create resource record sets for white label name servers \(p. 221\)](#)
- [Step 6: Update NS and SOA records \(p. 222\)](#)
- [Step 7: Create glue records and change the registrar's name servers \(p. 223\)](#)
- [Step 8: Monitor traffic for the website or application \(p. 223\)](#)
- [Step 9: Change TTLs back to their original values \(p. 223\)](#)
- [Step 10: \(Optional\) Contact recursive DNS services \(p. 224\)](#)

## Step 1: Create an Amazon Route 53 reusable delegation set

To create a reusable delegation set, you can use the Amazon Route 53 API, the AWS CLI, or one of the AWS SDKs. For more information, see the following documentation:

- **Amazon Route 53 API** – See [CreateReusableDelegationSet](#) in the *Amazon Route 53 API Reference*
- **AWS CLI** – See [create-reusable-delegation-set](#) in the *AWS Command Line Interface Reference*
- **AWS SDKs** See the applicable SDK documentation on the [AWS Documentation](#) page

## Step 2: Create or recreate Amazon Route 53 hosted zones

Create or recreate Amazon Route 53 hosted zones:

- **If you aren't currently using Amazon Route 53 as the DNS service for the domains for which you want to use white label name servers** – Create the hosted zones and specify the reusable delegation set that you created in the previous step with each hosted zone. For more information, see [CreateHostedZone](#) in the *Amazon Route 53 API Reference*.
- **If you are using Amazon Route 53 as the DNS service for the domains for which you want to use white label name servers** – You must recreate the hosted zones for which you want to use white label name servers, and specify the reusable delegation set that you created in the previous step for each hosted zone.

### Important

You cannot change the name servers that are associated with an existing hosted zone. You can associate a reusable delegation set with a hosted zone only when you create the hosted zone.

When you create the hosted zones and before you try to access the resources for the corresponding domains, change the following TTL values for each hosted zone:

- Change the TTL for the NS record for the hosted zone to 60 seconds or less.
- Change the minimum TTL for the SOA record for the hosted zone to 60 seconds or less. This is the last value in the SOA record.

Changing the minimum TTL to 60 seconds or less will temporarily increase your bill because DNS resolvers will send more queries to Amazon Route 53. (You change the TTL back to a higher value later in the process.) However, if you accidentally give your registrar the wrong IP addresses for your white label name servers, your website will become unavailable and remain unavailable for the duration of the TTL after you correct the problem. By setting a low TTL, you reduce the amount of time that your website is unavailable.

For more information about creating hosted zones and specifying a reusable delegation set for the name servers for the hosted zones, see [CreateHostedZone](#) in the *Amazon Route 53 API Reference*.

### Step 3: Recreate resource record sets for your hosted zones

Create resource record sets in the hosted zones that you created in Step 2:

- **If you're migrating DNS service for your domains to Amazon Route 53** – You might be able to create resource record sets by importing information about your existing resource record sets. For more information, see [Creating Resource Record Sets By Importing a Zone File \(p. 298\)](#).
- **If you're replacing existing hosted zones so that you can use white label name servers** – In the new hosted zones, recreate the resource record sets that appear in your current hosted zones. Amazon Route 53 doesn't provide a method of exporting resource record sets from a hosted zone, but some third-party vendors do. You can then use the Amazon Route 53 import feature to import non-alias resource record sets for which the routing policy is simple. There is no way to export and re-import alias resource record sets or resource record sets for which the routing policy is anything other than simple.

For information about creating resource record sets by using the Amazon Route 53 API, see [CreateHostedZone](#) in the *Amazon Route 53 API Reference*. For information about creating resource record sets by using the Amazon Route 53 console, see [Working with Resource Record Sets \(p. 231\)](#).

### Step 4: Get IP addresses

Get the IPv4 and IPv6 addresses of the name servers in the reusable delegation set, and fill in the following table.

Name of a name server in your reusable delegation set (example: ns-2048.awsdns-64.com)	IPv4 and IPv6 addresses	Name that you want to assign to the white label name server (example: ns1.example.com)
	IPv4:  IPv6:	
	IPv4:  IPv6:	
	IPv4:	

Name of a name server in your reusable delegation set (example: ns-2048.awsdns-64.com)	IPv4 and IPv6 addresses	Name that you want to assign to the white label name server (example: ns1.example.com)
	IPv6:	
	IPv4:	
	IPv6:	

For example, suppose the four name servers for your reusable delegation set are:

- ns-2048.awsdns-64.com
- ns-2049.awsdns-65.net
- ns-2050.awsdns-66.org
- ns-2051.awsdns-67.co.uk

Here are the Linux and Windows commands that you'd run to get the IP addresses for the first of your four name servers:

#### dig commands for Linux

```
% dig A ns-2048.awsdns-64.com +short
192.0.2.117
```

```
% dig AAAA ns-2048.awsdns-64.com +short
2001:db8:85a3::8a2e:370:7334
```

#### nslookup command for Windows

```
c:\> nslookup ns-2048.awsdns-64.com
Non-authoritative answer:
Name:     ns-2048.awsdns-64.com
Addresses: 2001:db8:85a3::8a2e:370:7334
           192.0.2.117
```

## Step 5: Create resource record sets for white label name servers

In the hosted zone that has the same name (such as example.com) as the domain name of the white label name servers (such as ns1.example.com), create eight resource record sets:

- One A record for each white label name server
- One AAAA record for each white label name server

#### Important

If you're using the same white label name servers for two or more hosted zones, do not perform this step for the other hosted zones.

For each resource record set, specify the following values. Refer to the table that you filled in for the previous step:

**Name**

The name that you want to assign to one of your white label name servers, for example, ns1.example.com. For the prefix (ns1 in this example), you can use any value that is valid in a domain name.

**Type**

Specify **A** when you're creating resource record sets for the IPv4 addresses.

Specify **AAAA** when you're creating resource record sets for the IPv6 addresses.

**Alias**

Specify **No**.

**TTL**

This value is the amount of time that DNS resolvers cache the information in this resource record set before forwarding another DNS query to Amazon Route 53. We recommend that you specify an initial value of 60 seconds or less, so that you can recover quickly if you accidentally specify incorrect values in these resource record sets.

**Value**

The IPv4 or IPv6 address of one of the Amazon Route 53 name servers in your reusable delegation set.

**Important**

If you specify the wrong IP addresses when you created resource record sets for your white label name servers, your website or web application will become unavailable on the internet when you perform subsequent steps. Even if you correct the IP addresses immediately, your website or web application will remain unavailable for the duration of the TTL.

**Routing Policy**

Specify **Simple**.

## Step 6: Update NS and SOA records

Update SOA and NS records in the hosted zones that you want to use white label name servers for. Perform Step 6 through Step 8 for one hosted zone and the corresponding domain at a time, then repeat for another hosted zone and domain.

**Important**

Start with the Amazon Route 53 hosted zone that has the same domain name (such as example.com) as the white label name servers (such as ns1.example.com).

1. Update the SOA record by replacing the name of the Amazon Route 53 name server with the name of one of your white label name servers

**Example**

Replace the name of the Amazon Route 53 name server:

```
ns-2048.awsdns-64.net. hostmaster.example.com. 1 7200 900 1209600 60
```

with the name of one of your white label name servers:

```
ns1.example.com. hostmaster.example.com. 1 7200 900 1209600 60
```

**Note**

You changed the last value, the minimum time to live (TTL), in [Step 2: Create or recreate Amazon Route 53 hosted zones \(p. 219\)](#).

For information about updating resource record sets by using the Amazon Route 53 console, see [Editing Resource Record Sets \(p. 300\)](#).

2. In the NS record, make note of the names of the current name servers for the domain, so you can revert to these name servers if necessary.
3. Update the NS record. Replace the name of the Amazon Route 53 name servers with the names of your four white label name servers, for example, `ns1.example.com`, `ns2.example.com`, `ns3.example.com`, and `ns4.example.com`.

## Step 7: Create glue records and change the registrar's name servers

Use the method provided by the registrar to create glue records and change the registrar's name servers:

1. Add glue records:
  - **If you're updating the domain that has the same domain name as the white label name servers** – Create four glue records for which the names and IP addresses match the values that you got in step 4. Include both the IPv4 and the IPv6 address for a white label name server in the corresponding glue record, for example:  
  
`ns1.example.com` – IP addresses = 192.0.2.117 and 2001:db8:85a3::8a2e:370:7334  
  
Registrars use a variety of terminology for glue records. You might also see this referred as registering new name servers or something similar.
  - **If you're updating another domain** – Skip to step 2 in this procedure.
2. Change the name servers for the domain to the names of your white label name servers.

If you're using Amazon Route 53 as your DNS service, see [Adding or Changing Name Servers and Glue Records for a Domain \(p. 42\)](#).

## Step 8: Monitor traffic for the website or application

Monitor the traffic for the website or application for which you created glue records and changed name servers in Step 7:

- **If the traffic stops** – Use the method provided by the registrar to change the name servers for the domain back to the previous Amazon Route 53 name servers. These are the name servers that you made note of in step 6b. Then determine what went wrong.
- **If the traffic is unaffected** – Repeat Step 6 through Step 8 for the rest of the hosted zones for which you want to use the same white label name servers.

## Step 9: Change TTLs back to their original values

For all of the hosted zones that are now using white label name servers, change the following values:

- Change the TTL for the NS record for the hosted zone to a more typical value for NS records, for example, 172800 seconds (two days). This will reduce the number of DNS queries that DNS resolvers forward to Amazon Route 53, which will reduce your Amazon Route 53 bill.
- Change the minimum TTL for the SOA record for the hosted zone to a more typical value for SOA records, for example, 900 seconds. This is the last value in the SOA record.

## Step 10: (Optional) Contact recursive DNS services

*Optional* If you're using Amazon Route 53 geolocation routing, contact the recursive DNS services that support the edns-client-subnet extension of EDNS0, and give them the names of your white label name servers. This ensures that these DNS services will continue to route DNS queries to the optimal Amazon Route 53 location based on the approximate geographical location that the query came from.

For a list of the recursive DNS services that support edns-client-subnet, see [A Faster Internet: Participants](#). For more information about how edns-client-subnet works, see [A Faster Internet: How It Works](#).

## NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone

For each public hosted zone that you create, Amazon Route 53 automatically creates a name server (NS) resource record set and a start of authority (SOA) resource record set. Don't change these records.

### Topics

- [The Name Server \(NS\) Resource Record Set \(p. 224\)](#)
- [The Start of Authority \(SOA\) Resource Record Set \(p. 225\)](#)

## The Name Server (NS) Resource Record Set

Amazon Route 53 automatically creates a name server (NS) resource record set that has the same name as your hosted zone. It lists the four name servers that are the authoritative name servers for your hosted zone. Do not add, change, or delete name servers in this resource record set.

The following examples show the format for the names of Amazon Route 53 name servers (these are examples only; don't use them when you're updating your registrar's name server records):

- *ns-2048.awsdns-64.com*
- *ns-2049.awsdns-65.net*
- *ns-2050.awsdns-66.org*
- *ns-2051.awsdns-67.co.uk*

To get the list of name servers for your hosted zone:

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, click **Hosted Zones**.
3. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.
4. In the right pane, make note of the four servers listed for **Name Servers**.

Alternatively, you can use the `GetHostedZone` action. For more information, see [GetHostedZone](#) in the *Amazon Route 53 API Reference*.

After you create a hosted zone, update your registrar's or your DNS service's name server records, as applicable, to refer to the Amazon Route 53 name servers:

- If you migrated an existing domain to Amazon Route 53, see [Step 5: Update Your Registrar's Name Servers \(p. 211\)](#).

- If you created a subdomain that uses Amazon Route 53 without migrating the parent domain, see [Updating Your DNS Service with Name Server Records for the Subdomain \(p. 314\)](#).
- If you migrated a subdomain to Amazon Route 53 without migrating the parent domain, see [Updating Your DNS Service with Name Server Records for the Subdomain \(p. 317\)](#).

**Note**

Some registrars only allow you to specify name servers using IP addresses; they don't allow you to specify fully qualified domain names. If your registrar requires that you use IP addresses, you can get the IP addresses for your name servers using the `dig` utility (for Mac, Unix, or Linux) or the `nslookup` utility (for Windows). We rarely change the IP addresses of name servers; if we need to change IP addresses, we'll notify you in advance.

## The Start of Authority (SOA) Resource Record Set

The start of authority (SOA) resource record set identifies the base DNS information about the domain, for example:

```
ns-2048.awsdns-64.net. hostmaster.example.com. 1 7200 900 1209600 86400
```

The elements of the SOA record include:

- The host that created the SOA record, for example, `ns-2048.awsdns-64.net`.
- The email address of the administrator in a format with the `@` symbol replaced by a period, for example, `hostmaster.example.com`. The default value is an `amazon.com` email address that is not monitored.
- A revision number to increment when you change the zone file and distribute changes to secondary DNS servers, for example `1`.
- A refresh time in seconds that secondary DNS servers wait before querying the primary DNS server's SOA record to check for changes, for example `7200`.
- The retry interval in seconds that a secondary server waits before retrying a failed zone transfer, for example `900` (15 minutes). Normally, the retry time is less than the refresh time.
- The expire time in seconds that a secondary server will keep trying to complete a zone transfer, for example `1209600` (two weeks). If this time expires prior to a successful zone transfer, the secondary server will expire its zone file. This means that the secondary server will stop answering queries because it considers its data too old to be reliable.
- The minimum time to live (TTL). This value helps define the length of time that an `NXDOMAIN` result, which indicates that a domain does not exist, should be cached by a DNS resolver. Caching this negative result is referred to as negative caching. The duration of negative caching is the lesser of the SOA record's TTL or the value of the minimum TTL field. The default minimum TTL on Amazon Route 53 SOA records is 900 seconds. To change the TTL for resource record sets, including SOA resource record sets, you can use the Amazon Route 53 console. For more information, see [Editing Resource Record Sets \(p. 300\)](#). You can also use the `ChangeResourceRecordSets` API. For more information, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

## Working with Private Hosted Zones

A private hosted zone is a container that holds information about how you want to route traffic for a domain and its subdomains within one or more Amazon Virtual Private Clouds (Amazon VPCs). To begin, you create a private hosted zone and specify the Amazon VPCs that you want to associate with the hosted zone. You then create resource record sets that determine how Amazon Route 53 responds to queries for your domain and subdomains within and among your Amazon VPCs. For example, if you



have a web server associated with your domain, you'll create an A record in your hosted zone so browser queries for example.com are routed to your web server. For more information about resource record sets, see [Working with Resource Record Sets \(p. 231\)](#). For information about the Amazon VPC requirements for using private hosted zones, see [Using Private Hosted Zones](#) in the *Amazon VPC User Guide*.

Note the following about using private hosted zones:

### Amazon VPC Settings

To use private hosted zones, you must set the following Amazon VPC settings to `true`:

- `enableDnsHostnames`
- `enableDnsSupport`

For more information, see [Updating DNS Support for Your VPC](#) in the *Amazon VPC User Guide*.

### Amazon Route 53 Health Checks

In a private hosted zone, you can associate Amazon Route 53 health checks only with failover resource record sets. For more information, see [Configuring Failover in a Private Hosted Zone \(p. 364\)](#).

### Supported Routing Policies for Resource Record Sets in a Private Hosted Zone

You can use the following routing policies when you create resource record sets in a private hosted zone:

- Simple
- Failover
- Weighted

You can't create resource record sets in a private hosted zone using geolocation or latency routing policies.

### Split-View DNS

You can use Amazon Route 53 to configure split-view DNS, also known as split-horizon DNS. If you want to maintain internal and external versions of the same website or application (for example, for testing changes before you make them public), you can configure public and private hosted zones to return different internal and external IP addresses for the same domain name. Just create a public hosted zone and a private hosted zone that have the same domain name, and create the same subdomains in both hosted zones.

### Associating an Amazon VPC with More than One Private Hosted Zone

You can associate a VPC with more than one private hosted zone, but the namespaces must not overlap. For example, you cannot associate a VPC with hosted zones for both example.com and acme.example.com because both namespaces end with example.com.

### Public and Private Hosted Zones that Have Overlapping Name Spaces

When you have private and public hosted zones that have overlapping name spaces, such as example.com and accounting.example.com, and users are logged into an EC2 instance in an Amazon VPC that you have associated with the private hosted zone, here's how Amazon EC2 handles DNS queries:

1. Amazon EC2 evaluates whether the name of the private hosted zone matches the domain name in the request, such as accounting.example.com. A match is defined as either of the following:
  - An identical match
  - The name of the private hosted zone is a parent of the domain name in the request. For example, suppose the domain name in the request is the following:

**seattle.accounting.example.com**

The following hosted zones match because they're parents of `seattle.accounting.example.com`:

- **accounting.example.com**
- **example.com**

If there's no matching private hosted zone, then Amazon EC2 forwards the request to a public DNS resolver, and your request is resolved as a regular DNS query.

2. If there's a private hosted zone name that matches the domain name in the request, the hosted zone is searched for a resource record set that matches the domain name and DNS type in the request, such as an A record for `accounting.example.com`.

**Note**

If there's a matching private hosted zone but there's no resource record set that matches the domain name and type in the request, Amazon EC2 doesn't forward the request to a public DNS resolver. Instead, it returns NXDOMAIN to the client.

### Delegating Responsibility for a Subdomain

You cannot create NS records in a private hosted zone to delegate responsibility for a subdomain.

### Custom DNS Servers

If you have configured custom DNS servers on Amazon EC2 instances in your VPC, you must configure those DNS servers to route your private DNS queries to the IP address of the Amazon-provided DNS servers for your VPC. This IP address is the IP address at the base of the VPC network range "plus two." For example, if the CIDR range for your VPC is 10.0.0.0/16, the IP address of the DNS server is 10.0.0.2.

If you're using custom DNS servers that are outside of your VPC and you want to use private DNS, you must reconfigure to use custom DNS servers on Amazon EC2 instances within your VPC. For more information, see [Amazon DNS Server](#) in the *Amazon VPC User Guide*.

If you have integrated your on-premises network with one or more Amazon VPC virtual networks and you want your on-premises network to resolve domain names in private hosted zones, you can create a Simple AD directory. Simple AD provides IP addresses that you can use to submit DNS queries from your on-premises network to your private hosted zone. For more information, see [Getting Started with Simple AD](#) in the *AWS Directory Service Administration Guide*.

### Required IAM Permissions

To create private hosted zones, you need to grant IAM permissions for Amazon EC2 actions in addition to permissions for Amazon Route 53 actions. For more information, see [Required Permissions for Actions on Private Hosted Zones \(p. 400\)](#).

This topic explains how to use the Amazon Route 53 console to create, list, and delete private hosted zones. For information about using the Amazon Route 53 API to perform these operations, see the [Amazon Route 53 API Reference](#).

You can also use an Amazon Route 53 *public* hosted zone to route traffic for your domain on the internet. For more information, see [Working with Public Hosted Zones \(p. 213\)](#).

### Topics

- [Creating a Private Hosted Zone \(p. 228\)](#)
- [Listing Private Hosted Zones \(p. 229\)](#)
- [Associating More Amazon VPCs with a Private Hosted Zone \(p. 229\)](#)
- [Associating an Amazon VPC and a Private Hosted Zone That You Created with Different AWS Accounts \(p. 230\)](#)
- [Disassociating Amazon VPCs from a Private Hosted Zone \(p. 230\)](#)

- [Deleting a Private Hosted Zone \(p. 231\)](#)

## Creating a Private Hosted Zone

A private hosted zone is a container for resource record sets for a domain that you host in one or more Amazon virtual private clouds (VPCs). You create a hosted zone for a domain (such as example.com), and then you create resource record sets to tell Amazon Route 53 how you want traffic to be routed for that domain within and among your VPCs.

### Important

When you create a private hosted zone, you must associate a VPC with the hosted zone, and the VPC that you specify must have been created by using the same account that you're using to create the hosted zone. After you create the hosted zone, you can associate additional VPCs with it, including VPCs that you created by using a different AWS account.

To associate VPCs that you created by using one account with a private hosted zone that you created by using a different account, you must authorize the association and then make the association programmatically. For more information, see [Associating an Amazon VPC and a Private Hosted Zone That You Created with Different AWS Accounts \(p. 230\)](#).

For information about creating a private hosted zone by using the Amazon Route 53 API, see the [Amazon Route 53 API Reference](#).

### To create a private hosted zone using the Amazon Route 53 console

1. For each VPC that you want to associate with the Amazon Route 53 hosted zone, change the following VPC settings to `true`:

- `enableDnsHostnames`
- `enableDnsSupport`

For more information, see [Updating DNS Support for Your VPC](#) in the *Amazon VPC User Guide*.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. If you're new to Amazon Route 53, choose **Get Started Now** under **DNS Management**.

If you're already using Amazon Route 53, choose **Hosted Zones** in the navigation pane.

4. Choose **Create Hosted Zone**.
5. In the **Create Private Hosted Zone** pane, enter a domain name and, optionally, a comment.

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

6. In the **Type** list, choose **Private Hosted Zone for Amazon VPC**.
7. In the **VPC ID** list, choose the VPC that you want to associate with the hosted zone.

If you want to associate more than one VPC with the hosted zone, you can add VPCs after you create the hosted zone.

### Note

If the console displays the following message, you're trying to associate a VPC with this hosted zone that has already been associated with another hosted zone that has an overlapping name space, such as example.com and retail.example.com:  
"A conflicting domain is already associated with the given VPC or Delegation Set."

8. Choose **Create**.
9. To associate more VPCs with the new hosted zone, perform the following steps:

- a. Choose **Back to Hosted Zones**.
- b. Choose the radio button for the hosted zone.
- c. In the right pane, in **VPC ID**, choose another VPC that you want to associate with the hosted zone.
- d. Choose **Associate New VPC**.
- e. Repeat steps c and d until you have associated all of the VPCs that you want to with the hosted zone.

## Listing Private Hosted Zones

You can use the Amazon Route 53 console to list all of the hosted zones that you created with the current AWS account. For information about how to list hosted zones using the Amazon Route 53 API, see [ListHostedZones](#) in the *Amazon Route 53 API Reference*.

### To list the hosted zones associated with an AWS account

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.

The **Hosted Zones** page automatically displays a list of all of the hosted zones that were created using the current AWS account. The **Type** column indicates whether a hosted zone is private or public. Choose the column heading to group all private hosted zones and all public hosted zones.

## Associating More Amazon VPCs with a Private Hosted Zone

You can use the Amazon Route 53 console to associate more VPCs with a private hosted zone if you created the hosted zone and the VPCs by using the same AWS account.

### Important

If you want to associate VPCs that you created by using one account with a private hosted zone that you created by using a different account, you first must authorize the association. In addition, you can't use the AWS console either to authorize the association or associate the VPCs with the hosted zone. For more information, see [Associating an Amazon VPC and a Private Hosted Zone That You Created with Different AWS Accounts](#) (p. 230).

For information about how to associate more VPCs with a private hosted zone using the Amazon Route 53 API, see [AssociateVPCWithHostedZone](#) in the *Amazon Route 53 API Reference*.

### To associate additional VPCs with a private hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the radio button for the private hosted zone that you want to associate more VPCs with.
4. In the right pane, in **VPC ID**, choose the ID of the VPC that you want to associate with this hosted zone.
5. Choose **Associate New VPC**.
6. To associate more VPCs with this hosted zone, repeat steps 4 and 5.

## Associating an Amazon VPC and a Private Hosted Zone That You Created with Different AWS Accounts

If you want to associate a VPC that you created with one AWS account with a private hosted zone that you created with a different account, perform the following procedure:

### To associate an Amazon VPC and a private hosted zone that you created with different AWS accounts

1. Using the account that created the hosted zone, authorize the association of the VPC with the private hosted zone by using one of the following methods:
  - **AWS SDK or AWS Tools for Windows PowerShell** – See the applicable documentation on the [AWS Documentation](#) page
  - **AWS CLI** – See the [route53](#) page in the *AWS Command Line Interface Reference*
  - **Amazon Route 53 API** – See [CreateVPCAssociationAuthorization](#) in the *Amazon Route 53 API Reference*

Note the following:

- If you want to associate multiple VPCs that you created with one account with a hosted zone that you created with a different account, you must submit one authorization request for each VPC.
  - When you authorize the association, you must specify the hosted zone ID, so the private hosted zone must already exist.
  - You can't use the Amazon Route 53 console either to authorize the association of a VPC with a private hosted zone or to make the association.
2. Using the account that created the VPC, associate the VPC with the hosted zone. As with authorizing the association, you can use the AWS SDK, Tools for Windows PowerShell, the AWS CLI, or the Amazon Route 53 API. If you're using the API, use the [AssociateVPCWithHostedZone](#) action.
  3. *Optional but recommended* – Delete the authorization to associate the VPC with the hosted zone. Deleting the authorization does not affect the association, it just prevents you from reassociating the VPC with the hosted zone in the future. If you want to reassociate the VPC with the hosted zone, you'll need to repeat steps 1 and 2 of this procedure.

#### Note

For the limit on the number of authorizations that you can create, see [Limits on Entities](#) (p. 424).

## Disassociating Amazon VPCs from a Private Hosted Zone

You can use the Amazon Route 53 console to disassociate VPCs from a private hosted zone. For information about how to disassociate VPCs from a private hosted zone using the Amazon Route 53 API, see [DisassociateVPCFromHostedZone](#) in the *Amazon Route 53 API Reference*.

### To disassociate VPCs from a private hosted zone

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the private hosted zone that you want to disassociate one or more VPCs from.

4. In the right pane, choose the **x** icon next to the VPC that you want to disassociate from this hosted zone.
5. Choose **Disassociate** to confirm.

## Deleting a Private Hosted Zone

The following procedure explains how to delete a private hosted zone using the Amazon Route 53 console. For information about how to delete a private hosted zone using the Amazon Route 53 API, see [DeleteHostedZone](#) in the *Amazon Route 53 API Reference*.

You can delete a private hosted zone only if there are no resource record sets other than the default SOA and NS records. If your hosted zone contains other resource record sets, you must delete them before you can delete your hosted zone. This prevents you from accidentally deleting a hosted zone that still contains resource record sets.

### To delete a private hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. Confirm that the hosted zone that you want to delete contains only an NS and an SOA resource record set. If it contains additional resource record sets, delete them:
  - a. Choose the name of the hosted zone that you want to delete.
  - b. On the Record Sets page, if the list of resource record sets includes any resource record sets for which the value of the **Type** column is something other than **NS** or **SOA**, choose the row, and choose **Delete Record Set**.

To select multiple, consecutive resource record sets, choose the first row, press and hold the **Shift** key, and choose the last row. To select multiple, non-consecutive resource record sets, choose the first row, press and hold the **Ctrl** key, and choose the remaining rows.
  - c. Choose **Back to Hosted Zones**.
3. On the Hosted Zones page, choose the row for the hosted zone that you want to delete.
4. Choose **Delete Hosted Zone**.
5. Choose **Confirm**.

## Working with Resource Record Sets

After you create a hosted zone for your domain, such as example.com, you create resource record sets to tell the Domain Name System (DNS) how you want traffic to be routed for that domain.

For example, you might create resource record sets that cause DNS to do the following:

- Route internet traffic for example.com to the IP address of a host in your data center.
- Route email for that domain (ichiro@example.com) to a mail server (mail.example.com).
- Route traffic for a subdomain called operations.tokyo.example.com to the IP address of a different host.

Each resource record set includes the name of a domain or a subdomain, a record type (for example, a resource record set with a type of MX routes email), and other information applicable to the record type (for MX records, the host name of one or more mail servers and a priority for each server). For information about the different types of resource records, see [DNS Domain Name Format \(p. 319\)](#).

The name of each resource record set in a hosted zone must end with the name of the hosted zone. For example, the example.com hosted zone can contain resource record sets for www.example.com and accounting.tokyo.example.com subdomains, but cannot contain resource record sets for a www.example.ca subdomain.

**Note**

To create resource record sets for complex routing configurations, you can also use the traffic flow visual editor and save the configuration as a traffic policy. You can then associate the traffic policy with one or more domain names (such as example.com) or subdomain names (such as www.example.com), in the same hosted zone or in multiple hosted zones. In addition, you can roll back the updates if the new configuration isn't performing as you expected it to. For more information, see [Using Traffic Flow to Route DNS Traffic \(p. 301\)](#).

Amazon Route 53 doesn't charge for the resource record sets that you add to a hosted zone. For information about limits on the number of resource record sets that you can create in a hosted zone, see [Limits \(p. 423\)](#).

Topics

- [Choosing a Routing Policy \(p. 232\)](#)
- [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#)
- [Supported DNS Record Types \(p. 237\)](#)
- [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 244\)](#)
- [Values That You Specify When You Create or Edit Amazon Route 53 Records \(p. 246\)](#)
- [Creating Resource Record Sets By Importing a Zone File \(p. 298\)](#)
- [Editing Resource Record Sets \(p. 300\)](#)
- [Deleting Resource Record Sets \(p. 300\)](#)
- [Listing Resource Record Sets \(p. 301\)](#)

## Choosing a Routing Policy

When you create a resource record set, 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 when you want to configure active-passive failover.
- **Geolocation routing policy** – Use when you want to route traffic based on the location of your users.
- **Geoproximity routing policy** – Use when you want to route traffic based on the location of your resources and, optionally, shift traffic from one resources in one location to resources in another.
- **Latency routing policy** – Use when you have resources in multiple locations and you want to route traffic to the resource that provides the best latency.
- **Multivalue answer routing policy** – Use when you want Amazon Route 53 to respond to DNS queries with up to eight healthy records selected at random.
- **Weighted routing policy** – Use to route traffic to multiple resources in proportions that you specify.

Topics

- [Failover Routing \(p. 233\)](#)
- [Geolocation Routing \(p. 233\)](#)
- [Geoproximity Routing \(Traffic Flow Only\) \(p. 233\)](#)
- [Latency-based Routing \(p. 234\)](#)
- [Multivalue Answer Routing \(p. 235\)](#)



- [Weighted Routing \(p. 235\)](#)

## Failover Routing

Failover routing lets you route traffic to a resource when the resource is healthy or to a different resource when the first resource is unhealthy. The primary and secondary resource record sets can route traffic to anything from an Amazon S3 bucket that is configured as a website to a complex tree of records. For more information, see [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Records \(p. 367\)](#) and [Configuring Failover in a Private Hosted Zone \(p. 364\)](#).

## Geolocation Routing

Geolocation routing lets you choose the resources that serve your traffic based on the geographic location of your users, meaning the location that DNS queries originate from. For example, you might want all queries from Europe to be routed to an ELB load balancer in the Frankfurt region.

When you use geolocation routing, you can localize your content and present some or all of your website in the language of your users. You can also use geolocation routing to restrict distribution of content to only the locations in which you have distribution rights. Another possible use is for balancing load across endpoints in a predictable, easy-to-manage way, so that each user location is consistently routed to the same endpoint.

You can specify geographic locations by continent, by country, or by state in the United States. If you create separate records for overlapping geographic regions—for example, one record for North America and one for Canada—priority goes to the smallest geographic region. This allows you to route some queries for a continent to one resource and to route queries for selected countries on that continent to a different resource. (For a list of the countries on each continent, see [Location \(p. 266\)](#).)

Geolocation works by mapping IP addresses to locations. However, some IP addresses aren't mapped to geographic locations, so even if you create geolocation resource record sets that cover all seven continents, Amazon Route 53 will receive some DNS queries from locations that it can't identify. You can create a default record that handles both queries from IP addresses that aren't mapped to any location and queries that come from locations that you haven't created geolocation records for. If you don't create a default record, Amazon Route 53 returns a "no answer" response for queries from those locations.

To improve the accuracy of geolocation routing, Amazon Route 53 supports the `edns-client-subnet` extension of EDNS0. (EDNS0 adds several optional extensions to the DNS protocol.) Amazon Route 53 can use `edns-client-subnet` only when DNS resolvers support it:

- When a browser or other viewer uses a DNS resolver that does not support `edns-client-subnet`, Amazon Route 53 uses the source IP address of the DNS resolver to approximate the location of the user and responds to geolocation queries with the DNS record for the resolver's location.
- When a browser or other viewer uses a DNS resolver that does support `edns-client-subnet`, the DNS resolver sends Amazon Route 53 a truncated version of the user's IP address. Amazon Route 53 determines the location of the user based on the truncated IP address rather than the source IP address of the DNS resolver; this typically provides a more accurate estimate of the user's location. Amazon Route 53 then responds to geolocation queries with the DNS record for the user's location.

For more information about `edns-client-subnet`, see the IETF draft [Client Subnet in DNS Requests](#).

## Geoproximity Routing (Traffic Flow Only)

Geoproximity routing lets Amazon Route 53 route traffic to your resources based on the geographic location of your resources. You can also optionally choose to route more traffic or less to a given resource by specifying a value, known as a *bias*, that expands or shrinks the size of the geographic region from which traffic is routed to a resource.



To use geoproximity routing, you must use Amazon Route 53 [traffic flow](#). You create geoproximity rules for your resources and specify one of the following values for each rule:

- If you're using AWS resources, the AWS Region that you created the resource in
- If you're using non-AWS resources, the latitude and longitude of the resource

To optionally expand the size of the geographic region from which Amazon Route 53 routes traffic to a resource, specify a positive integer from 1 to 99 for the bias. Amazon Route 53 shrinks the size of adjacent regions. When you specify a negative bias of -1 to -99, the opposite is true. The effect of changing the bias for your resources depends on a number of factors, including the following:

- The number of resources that you have.
- How close the resources are to one another.
- The number of users that you have near the border area between geographic regions. For example, if you have resources in Boston and Washington, DC and you have a lot of users in New York City, which is roughly equidistant between your resources, a small change in bias could result in a large swing in traffic from resources in Boston to resources in DC or vice versa.

We recommend that you change the bias in small increments to prevent overwhelming your resources due to an unanticipated swing in traffic.

## Latency-based Routing

If your application is hosted in multiple Amazon EC2 regions, you can improve performance for your users by serving their requests from the Amazon EC2 region that provides the lowest latency.

To use latency-based routing, you create latency records for your resources in multiple EC2 Regions. When Amazon Route 53 receives a DNS query for your domain or subdomain (example.com or apex.example.com), it determines which Amazon EC2 regions you've created latency records for, determines which region gives the user the lowest latency, and then selects a latency record for that region. Amazon Route 53 responds with the value from the selected record, such as the IP address for a web server.

For example, suppose you have ELB load balancers in the US West (Oregon) Region and in the Asia Pacific (Singapore) Region. You created a latency record for each load balancer. Here's what happens when a user in London enters the name of your domain in a browser:

1. DNS routes the request to an Amazon Route 53 name server.
2. Amazon Route 53 refers to its data on latency between London and the Singapore region and between London and the Oregon region.
3. If latency is lower between the London and Oregon regions, Amazon Route 53 responds to the query with the IP address for the Oregon load balancer. If latency is lower between London and the Singapore region, Amazon Route 53 responds with the IP address for the Singapore load balancer in Singapore.

Latency between hosts on the internet can change over time as a result of changes in network connectivity and routing. Latency-based routing is based on latency measurements performed over a period of time, and the measurements reflect these changes. A request that is routed to the Oregon region this week might be routed to the Singapore region next week.

### Note

When a browser or other viewer uses a DNS resolver that supports the edns-client-subnet extension of EDNS0, the DNS resolver sends Amazon Route 53 a truncated version of the user's IP address. If you configure latency-based routing, Amazon Route 53 considers this value when routing traffic to your resources.

## Multivalue Answer Routing

Multivalue answer routing lets you configure Amazon Route 53 to return multiple values, such as IP addresses for your web servers, in response to DNS queries. You can specify multiple values for almost any record, but multivalue answer routing also lets you check the health of each resource, so Amazon Route 53 returns only values for healthy resources. It's not a substitute for a load balancer, but the ability to return multiple health-checkable IP addresses is a way to use DNS to improve availability and load balancing.

To route traffic approximately randomly to multiple resources, such as web servers, you create one multivalue answer record for each resource and, optionally, associate an Amazon Route 53 health check with each record. Amazon Route 53 responds to DNS queries with up to eight healthy records and gives different answers to different DNS resolvers. If a web server becomes unavailable after a resolver caches a response, client software can try another IP address in the response.

Note the following:

- If you associate a health check with a multivalue answer records, Amazon Route 53 responds to DNS queries with the corresponding IP address only when the health check is healthy.
- If you don't associate a health check with a multivalue answer record, Amazon Route 53 always considers the record to be healthy.
- If you have eight or fewer healthy records, Amazon Route 53 responds to all DNS queries with all the healthy records.
- When all records are unhealthy, Amazon Route 53 responds to DNS queries with up to eight unhealthy records.

## Weighted Routing

Weighted routing lets you associate multiple resources with a single domain name (example.com) or subdomain name (acme.example.com) and choose how much traffic is routed to each resource. This can be useful for a variety of purposes, including load balancing and testing new versions of software.

To configure weighted routing, you create resource record sets that have the same name and type for each of your resources. You assign each record a relative weight that corresponds with how much traffic you want to send to each resource. Amazon Route 53 sends traffic to a resource based on the weight that you assign to the record as a proportion of the total weight for all records in the group:

$$\frac{\text{Weight for a specified record}}{\text{Sum of the weights for all records}}$$

For example, if you want to send a tiny portion of your traffic to one resource and the rest to another resource, you might specify weights of 1 and 255. The resource with a weight of 1 gets 1/256th of the traffic (1/1+255), and the other resource gets 255/256ths (255/1+255). You can gradually change the balance by changing the weights. If you want to stop sending traffic to a resource, you can change the weight for that record to 0.

## Choosing Between Alias and Non-Alias Resource Record Sets

While ordinary Amazon Route 53 resource record sets are standard DNS resource record sets, *alias resource record sets* provide an Amazon Route 53–specific extension to DNS functionality. Instead of an IP address or a domain name, an alias resource record set contains a pointer to a CloudFront distribution, an Elastic Beanstalk environment, an ELB Classic, Application, or Network Load Balancer, an Amazon S3 bucket that is configured as a static website, or another Amazon Route 53 resource record set in the

same hosted zone. When Amazon Route 53 receives a DNS query that matches the name and type in an alias resource record set, Amazon Route 53 follows the pointer and responds with the applicable value:

- **An alternate domain name for a CloudFront distribution** – Amazon Route 53 responds as if the query had asked for the CloudFront distribution by using the CloudFront domain name, such as `d111111abcdef8.cloudfront.net`.

**Note**

You can't create alias resource record sets for CloudFront distributions in a private hosted zone.

- **An Elastic Beanstalk environment** – Amazon Route 53 responds to each request with one or more IP addresses for the environment.
- **An ELB load balancer** – Amazon Route 53 responds to each request with one or more IP addresses for the load balancer.
- **An Amazon S3 bucket that is configured as a static website** – Amazon Route 53 responds to each request with one IP address for the Amazon S3 bucket.
- **Another Amazon Route 53 resource record set in the same hosted zone** – Amazon Route 53 responds as if the query had asked for the resource record set that is referenced by the pointer.

If an alias resource record set points to a CloudFront distribution, an Elastic Beanstalk environment, an ELB load balancer, or an Amazon S3 bucket, you cannot set the time to live (TTL); Amazon Route 53 uses the CloudFront, Elastic Beanstalk, Elastic Load Balancing, or Amazon S3 TTLs. If an alias resource record set points to another resource record set in the same hosted zone, Amazon Route 53 uses the TTL of the resource record set that the alias resource record set points to. For more information about the current TTL value for Elastic Load Balancing, go to [Request Routing](#) in the *Elastic Load Balancing User Guide* and search for "ttl".

Alias resource record sets can save you time because Amazon Route 53 automatically recognizes changes in the resource record sets that the alias resource record set refers to. For example, suppose an alias resource record set for `example.com` points to an ELB load balancer at `lb1-1234.us-east-2.elb.amazonaws.com`. If the IP address of the load balancer changes, Amazon Route 53 will automatically reflect those changes in DNS answers for `example.com` without any changes to the hosted zone that contains resource record sets for `example.com`.

For information about creating resource record sets by using the Amazon Route 53 console, see [Creating Resource Record Sets by Using the Amazon Route 53 Console](#) (p. 244). For information about the values that you specify for alias resource record sets, see the applicable topic in [Values That You Specify When You Create or Edit Amazon Route 53 Records](#) (p. 246):

- [Values for Alias Resource Record Sets](#) (p. 249)
- [Values for Weighted Alias Resource Record Sets](#) (p. 293)
- [Values for Latency Alias Resource Record Sets](#) (p. 280)
- [Values for Failover Alias Resource Record Sets](#) (p. 258)
- [Values for Geolocation Alias Resource Record Sets](#) (p. 269)

Alias resource records sets are similar to CNAME records, but there are some important differences:

CNAME Records	Alias Records
Amazon Route 53 charges for CNAME queries.	Amazon Route 53 doesn't charge for alias queries to CloudFront distributions, Elastic Beanstalk environments, ELB load balancers, or Amazon S3 buckets. For more information, see <a href="#">Amazon Route 53 Pricing</a> .

CNAME Records	Alias Records
You can't create a CNAME record at the top node of a DNS namespace, also known as the <i>zone apex</i> . For example, if you register the DNS name example.com, the zone apex is example.com.	You can create an alias resource record set at the zone apex.  <b>Note</b> If you create an alias record that routes traffic to another record in the same hosted zone, and if the record that you're routing traffic to has a type of CNAME, you can't create an alias record at the zone apex. This is because the alias record must have the same type as the record you're routing traffic to, and creating a CNAME record for the zone apex isn't supported even for an alias record.
A CNAME record redirects queries for a domain name regardless of record type.	Amazon Route 53 follows the pointer in an alias resource record set only when the record type also matches.
A CNAME record can point to any DNS record hosted anywhere, including to the resource record set that Amazon Route 53 automatically creates when you create a policy record. For more information, see <a href="#">Using Traffic Flow to Route DNS Traffic</a> (p. 301).	An alias resource record set can only point to a CloudFront distribution, an Elastic Beanstalk environment, an ELB load balancer, an Amazon S3 bucket that is configured as a static website, or another resource record set in the same Amazon Route 53 hosted zone in which you're creating the alias resource record set. However, you can't create an alias that points to the resource record set that Amazon Route 53 creates when you create a policy record.
A CNAME record is visible in the answer section of a reply from an Amazon Route 53 DNS server.	An alias resource record set is only visible in the Amazon Route 53 console or the Amazon Route 53 API.
A CNAME record is followed by a recursive resolver.	An alias resource record set is only followed inside Amazon Route 53. This means that both the alias resource record set and its target must exist in Amazon Route 53.

## Supported DNS Record Types

Amazon Route 53 supports the DNS resource record types that are listed in this section. Each record type also includes an example of how to format the `value` element when you are accessing Amazon Route 53 using the API.

### Note

For resource record types that include a domain name, enter a fully qualified domain name, for example, `www.example.com`. The trailing dot is optional; Amazon Route 53 assumes that the domain name is fully qualified. This means that Amazon Route 53 treats `www.example.com` (without a trailing dot) and `www.example.com.` (with a trailing dot) as identical.

### Topics

- [A Format](#) (p. 238)
- [AAAA Format](#) (p. 238)
- [CAA Format](#) (p. 238)

- [CNAME Format \(p. 240\)](#)
- [MX Format \(p. 241\)](#)
- [NAPTR Format \(p. 241\)](#)
- [NS Format \(p. 242\)](#)
- [PTR Format \(p. 243\)](#)
- [SOA Format \(p. 243\)](#)
- [SPF Format \(p. 243\)](#)
- [SRV Format \(p. 244\)](#)
- [TXT Format \(p. 244\)](#)

## A Format

The value for an A record is an IPv4 address in dotted decimal notation.

### Example for the Amazon Route 53 console

```
192.0.2.1
```

### Example for the Amazon Route 53 API

```
<Value>192.0.2.1</Value>
```

## AAAA Format

The value for a AAAA record is an IPv6 address in colon-separated hexadecimal format.

### Example for the Amazon Route 53 console

```
2001:0db8:85a3:0:0:8a2e:0370:7334
```

### Example for the Amazon Route 53 API

```
<Value>2001:0db8:85a3:0:0:8a2e:0370:7334</Value>
```

## CAA Format

A CAA record lets you specify which certificate authorities (CAs) are allowed to issue certificates for a domain or subdomain. Creating a CAA record helps to prevent the wrong CAs from issuing certificates for your domains. A CAA record isn't a substitute for the security requirements that are specified by your certificate authority, such as the requirement to validate that you're the owner of a domain.

You can use CAA records to specify the following:

- Which certificate authorities (CAs) can issue SSL/TLS certificates, if any
- The email address or URL to contact when a CA issues a certificate for the domain or subdomain

In both the Amazon Route 53 console and the Amazon Route 53 API, the **Value** element for a CAA record includes three space-separated values.

### Note

We recommend that you consult with your CA to determine what values to specify for a CAA record.

### flags

The value of **flags** can be one of the following:

- **0** – Always specify **0** unless you specify a value for **tag** that is unsupported by some CAs
- **128** – If the value of **tag** is unsupported by a CA, the CA should not issue a certificate for the domain or subdomain

### tag

The value of **tag** can be one of the following:

#### issue

Indicates that the CA specified by **value** is authorized to issue a certificate for the domain or subdomain that has the same name as the current record.

#### issuewild

Indicates that the CA specified by **value** is authorized to issue a wildcard certificate for the domain or subdomain that has the same name as the current record. A wildcard certificate applies to the domain or subdomain and all of its subdomains.

#### iodef

Indicates that you want the CA to contact the URL or email address that you specify in **value** if the CA receives an invalid request for a certificate.

#### another value

If the CA supports values for **tag** other than **issue**, **issuewild**, and **iodef**, the tag that you authorize the CA to use. If the value of **flags** is **128**, the CA won't issue a certificate if the CA doesn't support the value that you specify for **tag**.

### value

The value of **value** depends on the value of **tag**. Enclose the value in quotation marks ("").

#### Note

Some CAs allow or require additional values for **value**. Specify additional values as name-value pairs, and separate them with semicolons (;), for example:

```
0 issue "ca.example.net; account=123456"
```

#### When tag is issue

One of the following values:

- The domain of a CA that can issue a certificate for this domain or subdomain, for example, **ca.example.net**
- **;** (semicolon), which indicates that no CA should issue a certificate for this domain or subdomain

In the following example, the CA with the domain name **ca.example.net** is authorized to issue a certificate for the domain or subdomain that has the same name as the current record:

**"ca.example.net"**

In the following example, no CA is allowed to issue certificates for the domain that has the same name as the current record:

**","**

#### When tag is issuewild

The same as when **tag** is **issue**, except that the settings apply to wildcard certificates.

#### When tag is iodef

The URL or email address that you want the CA to notify if the CA receives an invalid request for a certificate. Use the applicable format:

**"mailto:email-address"**

**"http://URL"**

**"https://URL"**

#### When tag is another value

Specify the applicable value that corresponds with the value of **tag**.

#### Example for the Amazon Route 53 console

```
0 issue "ca.example.net"
0 iodef "mailto:admin@example.com"
```

#### Example for the Amazon Route 53 API

```
<ResourceRecord>
  <Value>0 issue "ca.example.net"</Value>
  <Value>0 iodef "mailto:admin@example.com"</Value>
</ResourceRecord>
```

## CNAME Format

A CNAME `Value` element is the same format as a domain name.

#### Important

The DNS protocol does not allow you to create a CNAME record for the top node of a DNS namespace, also known as the zone apex. For example, if you register the DNS name `example.com`, the zone apex is `example.com`. You cannot create a CNAME record for `example.com`, but you can create CNAME records for `www.example.com`, `newproduct.example.com`, and so on.

In addition, if you create a CNAME record for a subdomain, you cannot create any other resource record sets for that subdomain. For example, if you create a CNAME for `www.example.com`, you cannot create any other resource record sets for which the value of the Name field is `www.example.com`.

Amazon Route 53 also supports alias resource record sets, which allow you to route queries to a CloudFront distribution, an Elastic Beanstalk environment, an ELB Classic, Application, or Network Load Balancer, an Amazon S3 bucket that is configured as a static website, or another Amazon Route 53 resource record set. Aliases are similar in some ways to the CNAME resource record type; however, you can create an alias for the zone apex. For more information, see [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#).

#### Example for the Amazon Route 53 console

```
hostname.example.com
```

#### Example for the Amazon Route 53 API

```
<Value>hostname.example.com</Value>
```

## MX Format

Each value for an MX resource record set actually contains two values:

- An integer that represents the priority for an email server
- The domain name of the email server

If you specify only one server, the priority can be any integer between 0 and 65535. If you specify multiple servers, the value that you specify for the priority indicates which email server you want email to be routed to first, second, and so on. For example, if you have two email servers and you specify values of 10 and 20 for the priority, email always goes to the server with a priority of 10 unless it's unavailable. If you specify values of 10 and 10, email is routed to the two servers approximately equally.

### Example for the Amazon Route 53 console

```
10 mail.example.com
```

### Example for the Amazon Route 53 API

```
<Value>10 mail.example.com</Value>
```

## NAPTR Format

A Name Authority Pointer (NAPTR) is a type of resource record set that is used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For example, one common use is to convert phone numbers into SIP URIs.

The `Value` element for an NAPTR resource record set consists of six space-separated values:

### Order

When you specify more than one record, the sequence that you want the DDDS application to evaluate records in. Valid values: 0-65535.

### Preference

When you specify two or more records that have the same **Order**, your preference for the sequence that those records are evaluated in. For example, if two records have an **Order** of 1, the DDDS application first evaluates the record that has the lower **Preference**. Valid values: 0-65535.

### Flags

A setting that is specific to DDDS applications. Values currently defined in [RFC 3404](#) are uppercase- and lowercase letters "A", "P", "S", and "U", and the empty string, "". Enclose **Flags** in quotation marks.

### Service

A setting that is specific to DDDS applications. Enclose **Service** in quotation marks.

For more information, see the applicable RFCs:

- **URI DDDS application** – <https://tools.ietf.org/html/rfc3404#section-4.4>
- **S-NAPTR DDDS application** – <https://tools.ietf.org/html/rfc3958#section-6.5>
- **U-NAPTR DDDS application** – <https://tools.ietf.org/html/rfc4848#section-4.5>

### Regexp

A regular expression that the DDDS application uses to convert an input value into an output value. For example, an IP phone system might use a regular expression to convert a phone number that



is entered by a user into a SIP URI. Enclose **Regexp** in quotation marks. Specify either a value for **Regexp** or a value for **Replacement**, but not both.

The regular expression can include any of the following printable ASCII characters:

- a-z
- 0-9
- - (hyphen)
- (space)
- ! # \$ % & ' ( ) \* + , - / : ; < = > ? @ [ ] ^ \_ ` { | } ~ .
- " (quotation mark). To include a literal quote in a string, precede it with a \ character: \".
- \ (backslash). To include a backslash in a string, precede it with a \ character: \\\.

Specify all other values, such as internationalized domain names, in octal format.

For the syntax for **Regexp**, see [RFC 3402, section 3.2, Substitution Expression Syntax](#)

### Replacement

The fully qualified domain name (FQDN) of the next domain name that you want the DDDS application to submit a DNS query for. The DDDS application replaces the input value with the value that you specify for **Replacement**, if any. Specify either a value for **Regexp** or a value for **Replacement**, but not both. If you specify a value for **Regexp**, specify a dot (.) for **Replacement**.

The domain name can include a-z, 0-9, and - (hyphen).

For more information about DDDS applications and about NAPTR records, see the following RFCs:

- [RFC 3401](#)
- [RFC 3402](#)
- [RFC 3403](#)
- [RFC 3404](#)

### Example for the Amazon Route 53 console

```
100 50 "u" "E2U+sip" "!^(\++441632960083)$!sip:\\1@example.com!" .
100 51 "u" "E2U+h323" "!^\\++441632960083$h323:operator@example.com!" .
100 52 "u" "E2U+email:mailto" "!^.*$!mailto:info@example.com!" .
```

### Example for the Amazon Route 53 API

```
<ResourceRecord>
  <Value>100 50 "u" "E2U+sip" "!^(\++441632960083)$!sip:\\1@example.com!" .</Value>
  <Value>100 51 "u" "E2U+h323" "!^\\++441632960083$h323:operator@example.com!" .</Value>
  <Value>100 52 "u" "E2U+email:mailto" "!^.*$!mailto:info@example.com!" .</Value>
</ResourceRecord>
```

## NS Format

An NS record identifies the name servers for the hosted zone. The value for an NS record is the domain name of a name server. For more information about NS records, see [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone \(p. 224\)](#). For information about configuring white label name servers, see [Configuring White Label Name Servers \(p. 219\)](#).

### Example for the Amazon Route 53 console

```
ns-1.example.com
```

#### Example for the Amazon Route 53 API

```
<Value>ns-1.example.com</Value>
```

## PTR Format

A PTR record `value` element is the same format as a domain name.

#### Example for the Amazon Route 53 console

```
hostname.example.com
```

#### Example for the Amazon Route 53 API

```
<Value>hostname.example.com</Value>
```

## SOA Format

A start of authority (SOA) record provides information about a domain and the corresponding Amazon Route 53 hosted zone. For information about the fields in an SOA record, see [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone \(p. 224\)](#).

#### Example for the Amazon Route 53 console

```
ns-2048.awsdns-64.net hostmaster.awsdns.com 1 1 1 1 60
```

#### Example for the Amazon Route 53 API

```
<Value>ns-2048.awsdns-64.net hostmaster.awsdns.com 1 1 1 1 60</Value>
```

## SPF Format

SPF records were formerly used to verify the identity of the sender of email messages. However, we no longer recommend that you create resource record sets for which the record type is SPF. RFC 7208, *Sender Policy Framework (SPF) for Authorizing Use of Domains in Email, Version 1*, has been updated to say, "...[I]ts existence and mechanism defined in [RFC4408] have led to some interoperability issues. Accordingly, its use is no longer appropriate for SPF version 1; implementations are not to use it." In RFC 7208, see section 14.1, [The SPF DNS Record Type](#).

Instead of an SPF record, we recommend that you create a TXT record that contains the applicable value. For more information about valid values, see [Sender Policy Framework, SPF Record Syntax](#).

#### Example for the Amazon Route 53 console

```
"v=spf1 ip4:192.168.0.1/16 -all"
```

#### Example for the Amazon Route 53 API

```
<Value>"v=spf1 ip4:192.168.0.1/16 -all"</Value>
```

## SRV Format

An SRV record `value` element consists of four space-separated values. The first three values are decimal numbers representing priority, weight, and port. The fourth value is a domain name. For information about SRV record format, refer to the applicable documentation.

### Example for the Amazon Route 53 console

```
10 5 80 hostname.example.com
```

### Example for the Amazon Route 53 API

```
<Value>10 5 80 hostname.example.com</Value>
```

## TXT Format

A TXT record contains a space-separated list of double-quoted strings. A single string include a maximum of 255 characters. In addition to the characters that are permitted unescaped in domain names, space is allowed in TXT strings. All other octet values must be quoted in octal form. Unlike domain names, case is preserved in character strings, meaning that `Ab` is not the same as `aB`. You can include a literal quote in a string by preceding it with a `\` character.

### Example for the Amazon Route 53 console

```
"This string includes \"quotation marks\"." "The last character in this string is an  
accented e specified in octal format: \351"
```

### Example for the Amazon Route 53 API

```
<Value>"This string includes \"quotation marks\"." "The last character in this string is an  
accented e specified in octal format: \351"</Value>
```

## Creating Resource Record Sets by Using the Amazon Route 53 Console

The following procedure explains how to create resource record sets using the Amazon Route 53 console. For information about how to create resource record sets using the Amazon Route 53 API, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

### Note

To create resource record sets for complex routing configurations, you can also use the traffic flow visual editor and save the configuration as a traffic policy. You can then associate the traffic policy with one or more domain names (such as `example.com`) or subdomain names (such as `www.example.com`), in the same hosted zone or in multiple hosted zones. In addition, you can roll back the updates if the new configuration isn't performing as you expected it to. For more information, see [Using Traffic Flow to Route DNS Traffic \(p. 301\)](#).

### To create a resource record set using the Amazon Route 53 console

1. If you're not creating an alias resource record set, go to step 2.

Also go to step 2 if you're creating an alias resource record set that routes DNS traffic to a CloudFront distribution, an Elastic Beanstalk environment, an Amazon S3 bucket, or another Amazon Route 53 resource record set.

If you're creating an alias resource record set that routes traffic to an Elastic Load Balancing Classic, Application, or Network Load Balancer, and if you created your Amazon Route 53 hosted zone and your load balancer using different accounts, perform the procedure [Getting the DNS Name for an ELB Load Balancer](#) (p. 245) to get the DNS name for the load balancer.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. If you already have a hosted zone for your domain, skip to step 4. If you don't, perform the following steps:
  - a. Click **Create Hosted Zone**.
  - b. For **Domain Name**, enter the name of your domain.
  - c. *Optional:* For **Comment**, enter a comment about the hosted zone.
  - d. Click **Create**.
4. On the **Hosted Zones** page, choose the name of the hosted zone in which you want to create resource record sets.
5. Click **Create Record Set**.
6. Enter the applicable values. For more information, see the topic for the kind of resource record set that you want to create:
  - [Values for Basic Resource Record Sets](#) (p. 246)
  - [Values for Alias Resource Record Sets](#) (p. 249)
  - [Values for Failover Resource Record Sets](#) (p. 254)
  - [Values for Failover Alias Resource Record Sets](#) (p. 258)
  - [Values for Geolocation Resource Record Sets](#) (p. 264)
  - [Values for Geolocation Alias Resource Record Sets](#) (p. 269)
  - [Values for Latency Resource Record Sets](#) (p. 276)
  - [Values for Latency Alias Resource Record Sets](#) (p. 280)
  - [Values for Multivalue Answer Resource Record Sets](#) (p. 286)
  - [Values for Weighted Resource Record Sets](#) (p. 289)
  - [Values for Weighted Alias Resource Record Sets](#) (p. 293)
7. Click **Create**.

**Note**

Your new resource record sets take time to propagate to the Amazon Route 53 DNS servers. Currently, the only way to verify that changes have propagated is to use the [GetChange](#) API action. Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

8. If you're creating multiple resource record sets, repeat steps 5 through 7.

### Getting the DNS Name for an ELB Load Balancer

1. Sign in to the AWS Management Console using the AWS account that was used to create the Classic, Application, or Network Load Balancer that you want to create an alias resource record set for.
2. Open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>.
3. In the navigation pane, click **Load Balancers**.
4. In the list of load balancers, select the load balancer for which you want to create an alias resource record set.
5. On the **Description** tab, get the value of **DNS name**.
6. If you want to create alias resource record sets for other ELB load balancers, repeat steps 4 and 5.
7. Sign out of the AWS Management Console.

8. Sign in to the AWS Management Console again using the AWS account that you used to create the Amazon Route 53 hosted zone.
9. Return to step 3 of the procedure [Creating Resource Record Sets by Using the Amazon Route 53 Console](#) (p. 244).

## Values That You Specify When You Create or Edit Amazon Route 53 Records

When you create resource record sets using the Amazon Route 53 console, the values that you specify depend on the routing policy that you want to use and on whether you're creating alias resource record sets, which route traffic to AWS resources.

### Topics

- [Values for Basic Resource Record Sets](#) (p. 246)
- [Values for Alias Resource Record Sets](#) (p. 249)
- [Values for Failover Resource Record Sets](#) (p. 254)
- [Values for Failover Alias Resource Record Sets](#) (p. 258)
- [Values for Geolocation Resource Record Sets](#) (p. 264)
- [Values for Geolocation Alias Resource Record Sets](#) (p. 269)
- [Values for Latency Resource Record Sets](#) (p. 276)
- [Values for Latency Alias Resource Record Sets](#) (p. 280)
- [Values for Multivalue Answer Resource Record Sets](#) (p. 286)
- [Values for Weighted Resource Record Sets](#) (p. 289)
- [Values for Weighted Alias Resource Record Sets](#) (p. 293)

## Values for Basic Resource Record Sets

When you create basic resource record sets, you specify the following values:

### Topics

- [Name](#) (p. 246)
- [Type](#) (p. 247)
- [Alias](#) (p. 247)
- [TTL \(Time to Live\)](#) (p. 247)
- [Value](#) (p. 247)
- [Routing Policy](#) (p. 248)

### Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

#### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

#### Important

You can't use the \* wildcard for resource records sets that have a type of **NS**.

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the value for **Type** based on how you want Amazon Route 53 to respond to DNS queries.

## Alias

Select **No**.

## TTL (Time to Live)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record set (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

If you're associating this resource record set with a health check, we recommend that you specify a TTL of 60 seconds or less so clients respond quickly to changes in health status.

## Value

Enter a value that is appropriate for the value of **Type**. For all types except **CNAME**, you can enter more than one value. Enter each value on a separate line.

### A — IPv4 address

An IP address in IPv4 format, for example, **192.0.2.235**.

### AAAA — IPv6 address

An IP address in IPv6 format, for example, **2001:0db8:85a3:0:0:8a2e:0370:7334**.

### CAA — Certificate Authority Authorization

Three space-separated values that control which certificate authorities are allowed to issue certificates or wildcard certificates for the domain or subdomain that is specified by **Name**. You can use CAA records to specify the following:

- Which certificate authorities (CAs) can issue SSL/TLS certificates, if any
- The email address or URL to contact when a CA issues a certificate for the domain or subdomain

### CNAME — Canonical name

The fully qualified domain name (for example, *www.example.com*) that you want Amazon Route 53 to return in response to DNS queries for this resource record set. A trailing dot is optional; Amazon

Route 53 assumes that the domain name is fully qualified. This means that Amazon Route 53 treats *www.example.com* (without a trailing dot) and *www.example.com.* (with a trailing dot) as identical.

**MX — Mail exchange**

A priority and a domain name that specifies a mail server, for example, **10 mailserver.example.com.**

**NAPTR — Name Authority Pointer**

Six space-separated settings that are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For more information, see [NAPTR Format \(p. 241\)](#).

**NS — Name server**

The domain name of a name server, for example, **ns1.example.com.**

**PTR — Pointer**

The domain name that you want Amazon Route 53 to return.

**SOA — Start of Authority**

Basic DNS information about the domain. For more information, see [The Start of Authority \(SOA\) Resource Record Set \(p. 225\)](#).

**SPF — Sender Policy Framework**

An SPF record enclosed in quotation marks, for example, **"v=spf1 ip4:192.168.0.1/16-all"**. SPF records are not recommended. For more information, see [Supported DNS Record Types \(p. 237\)](#).

**SRV — Service locator**

An SRV record. For information about SRV record format, refer to the applicable documentation. The format of an SRV record is:

**[priority] [weight] [port] [server host name]**

For example:

**1 10 5269 xmpp-server.example.com.**

**TXT — Text**

A text record. Enclose text in quotation marks, for example, **"Sample Text Entry"**.

## Routing Policy

Select **Simple**.

## Values for Alias Resource Record Sets

When you create alias resource record sets, you specify the following values:

### Topics

- [Name \(p. 249\)](#)
- [Type \(p. 249\)](#)
- [Alias \(p. 250\)](#)
- [Alias Target \(p. 250\)](#)
- [Alias Hosted Zone ID \(p. 252\)](#)
- [Routing Policy \(p. 252\)](#)
- [Evaluate Target Health \(p. 252\)](#)

### Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

#### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Aliases to CloudFront distributions and Amazon S3 buckets

The value that you specify depends in part on the AWS resource that you're routing traffic to:

- **CloudFront distribution** – Your distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.
- **Amazon S3 bucket** – The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In addition, you must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

### Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).



Select the applicable value based on the AWS resource that you're routing traffic to:

**CloudFront distribution**

Select **A — IPv4 address**.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

**Elastic Beanstalk environment that has regionalized subdomains**

Select **A — IPv4 address**

**ELB load balancer**

Select **A — IPv4 address** or **AAAA — IPv6 address**

**Amazon S3 bucket**

Select **A — IPv4 address**

**Another resource record set in this hosted zone**

Select the type of the resource record set that you're creating the alias for. All types are supported except **NS** and **SOA**.

## Alias

Select **Yes**.

## Alias Target

The value that you specify depends on the AWS resource that you're routing traffic to.

**CloudFront Distributions**

**Note**

You can't create alias resource record sets for CloudFront distributions in a private hosted zone.

For CloudFront distributions, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your CloudFront distribution** – Choose **Alias Target** and choose a distribution from the list. If you have a lot of distributions, you can type the first few characters of the domain name for your distribution to filter the list.

If your distribution doesn't appear in the list, note the following:

- The name of this resource record set must match an alternate domain name in your distribution.
- If you just added an alternate domain name to your distribution, it may take 15 minutes for your changes to propagate to all CloudFront edge locations. Until changes have propagated, Amazon Route 53 can't know about the new alternate domain name.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your distribution** – Enter the CloudFront domain name for the distribution, such as **d111111abcdef8.cloudfront.net**.

If you used one AWS account to create the current hosted zone and a different account to create a distribution, the distribution will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your distributions, the **Alias Targets** list shows **No Targets Available** under **CloudFront Distributions**.

### Important

Do not route queries to a CloudFront distribution that has not propagated to all edge locations, or your users won't be able to access the applicable content.

Your CloudFront distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

### Elastic Beanstalk environments that have regionalized subdomains

For Elastic Beanstalk environments that have regionalized subdomains, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Choose **Alias Target**, and then choose an environment from the list. If you have a lot of environments, you can type the first few characters of the CNAME attribute for the environment to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Enter the CNAME attribute for the Elastic Beanstalk environment.

### ELB Load Balancers

For ELB load balancers, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your load balancer** – Choose **Alias Target** and choose a load balancer from the list. If you have a lot of load balancers, you can type the first few characters of the DNS name to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your load balancer** – Enter the value that you got in the procedure [Getting the DNS Name for an ELB Load Balancer](#) (p. 245).

If you used one AWS account to create the current hosted zone and a different account to create a load balancer, the load balancer will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your load balancers, the **Alias Targets** list shows **No Targets Available** under **Elastic Load Balancers**.

In either case, the console prepends **dualstack.** to the DNS name. When a client, such as a web browser, requests the IP address for your domain name (example.com) or subdomain name (www.example.com), the client can request an IPv4 address (an A record), an IPv6 address (a AAAA record), or both IPv4 and IPv6 addresses (in separate requests). The **dualstack.** designation allows Amazon Route 53 to respond with the appropriate IP address for your load balancer based on which IP address format the client requested.

### Amazon S3 Buckets

For Amazon S3 buckets that are configured as website endpoints, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Choose **Alias Target** and choose a bucket from the list. If you have a lot of buckets, you can type the first few characters of the DNS name to filter the list.

The value of **Alias Target** changes to the Amazon S3 website endpoint for your bucket.

- **If you used different accounts to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Type the name of the region that you created your S3 bucket in. Use the value that appears in the **Website Endpoint** column in the [Amazon Simple Storage Service Website Endpoints](#) table in the *AWS Regions and Endpoints* chapter of the *Amazon Web Services General Reference*.

If you used AWS accounts other than the current account to create your Amazon S3 buckets, the bucket won't appear in the **Alias Targets** list.

You must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your Amazon S3 bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In a group of weighted alias, latency alias, failover alias, or geolocation alias resource record sets, you can create only one resource record set that routes queries to an Amazon S3 bucket because the name of the resource record set must match the name of the bucket and bucket names must be globally unique.

#### Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, choose **Alias Target** and choose the applicable resource record set. If you have a lot of resource record sets, you can type the first few characters of the name to filter the list.

If the hosted zone contains only the default NS and SOA resource record sets, the **Alias Targets** list shows **No Targets Available**.

### Alias Hosted Zone ID

This value appears automatically based on the value that you selected or entered for **Alias Target**.

### Routing Policy

Select **Simple**.

### Evaluate Target Health

Select **Yes** if you want Amazon Route 53 to determine whether to respond to DNS queries using this resource record set by checking the health of the resource specified by **Alias Target**.

Note the following:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **Elastic Beanstalk environments that have regionalized endpoints** – If you specify an Elastic Beanstalk environment in **Alias Target** and the environment contains an ELB load balancer, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. (An environment automatically contains an ELB load balancer if it includes more than one Amazon EC2 instance.) If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other available resources that are healthy, if any.

If the environment contains a single Amazon EC2 instance, there are no special requirements.

- **ELB load balancers** – If you specify an ELB load balancer in **Alias Target**, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other resources.

When you create a load balancer, you configure settings for Elastic Load Balancing health checks; they're not Amazon Route 53 health checks, but they perform a similar function. Do not create

Amazon Route 53 health checks for the Amazon EC2 instances that you register with an ELB load balancer.

For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 358).

- **S3 buckets** – There are no special requirements for setting **Evaluate Target Health** to **Yes** when the alias target is an S3 bucket.
- **Other resource record sets** – If the AWS resource that you specify in **Alias Target** is a resource record set or a group of resource record sets (for example, a group of weighted resource record sets) but is not another alias resource record set, we recommend that you associate a health check with all of the resource record sets in the alias target. For more information, see [What Happens When You Omit Health Checks?](#) (p. 361).

We recommend that you set **Evaluate Target Health** to **Yes** only when you have enough idle capacity to handle the failure of one or more endpoints.

## Values for Failover Resource Record Sets

When you create failover resource record sets, you specify the following values:

### Note

For information about creating failover resource record sets in a private hosted zone, see [Configuring Failover in a Private Hosted Zone](#) in the *Amazon Route 53 Developer Guide*.

### Topics

- [Name \(p. 254\)](#)
- [Type \(p. 254\)](#)
- [Alias \(p. 254\)](#)
- [TTL \(Time to Live\) \(p. 255\)](#)
- [Value \(p. 255\)](#)
- [Routing Policy \(p. 256\)](#)
- [Failover Record Type \(p. 256\)](#)
- [Set ID \(p. 256\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 256\)](#)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for both of the resource record sets in the group of failover resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select any value except **NS** or **SOA**. Select the same value for both the primary and secondary failover resource record sets.

## Alias

Select **No**.

## TTL (Time to Live)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record set (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

If you're associating this resource record set with a health check, we recommend that you specify a TTL of 60 seconds or less so clients respond quickly to changes in health status.

## Value

Enter a value that is appropriate for the value of **Type**. For all types except **CNAME**, you can enter more than one value. Enter each value on a separate line.

### A — IPv4 address

An IP address in IPv4 format, for example, **192.0.2.235**.

### AAAA — IPv6 address

An IP address in IPv6 format, for example, **2001:0db8:85a3:0:0:8a2e:0370:7334**.

### CAA — Certificate Authority Authorization

Three space-separated values that control which certificate authorities are allowed to issue certificates or wildcard certificates for the domain or subdomain that is specified by **Name**. You can use CAA records to specify the following:

- Which certificate authorities (CAs) can issue SSL/TLS certificates, if any
- The email address or URL to contact when a CA issues a certificate for the domain or subdomain

### CNAME — Canonical name

The fully qualified domain name (for example, *www.example.com*) that you want Amazon Route 53 to return in response to DNS queries for this resource record set. A trailing dot is optional; Amazon Route 53 assumes that the domain name is fully qualified. This means that Amazon Route 53 treats *www.example.com* (without a trailing dot) and *www.example.com.* (with a trailing dot) as identical.

### MX — Mail exchange

A priority and a domain name that specifies a mail server, for example, **10 mailserver.example.com**.

### NAPTR — Name Authority Pointer

Six space-separated settings that are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For more information, see [NAPTR Format \(p. 241\)](#).

### PTR — Pointer

The domain name that you want Amazon Route 53 to return.

### SPF — Sender Policy Framework

An SPF record enclosed in quotation marks, for example, **"v=spf1 ip4:192.168.0.1/16-all"**. SPF records are not recommended. For more information, see [Supported DNS Record Types \(p. 237\)](#).

### SRV — Service locator

An SRV record. For information about SRV record format, refer to the applicable documentation. The format of an SRV record is:

**[priority] [weight] [port] [server host name]**

For example:

**1 10 5269 xmpp-server.example.com.**

#### **TXT — Text**

A text record. Enclose text in quotation marks, for example, **"Sample Text Entry"**.

## Routing Policy

Select **Failover**.

### Failover Record Type

Choose the applicable value for this resource record set. For failover to function correctly, you must create one primary and one secondary failover resource record set.

You can't create non-failover resource record sets that have the same values for **Name** and **Type** as failover resource record sets.

### Set ID

Enter a value that uniquely identifies the primary and secondary resource record sets.

### Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

**Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).



## Values for Failover Alias Resource Record Sets

When you create failover alias resource record sets, you specify the following values:

### Note

For information about creating failover resource record sets in a private hosted zone, see [Configuring Failover in a Private Hosted Zone](#) in the *Amazon Route 53 Developer Guide*.

### Topics

- [Name](#) (p. 258)
- [Type](#) (p. 259)
- [Alias](#) (p. 259)
- [Alias Target](#) (p. 259)
- [Alias Hosted Zone ID](#) (p. 261)
- [Routing Policy](#) (p. 261)
- [Failover Record Type](#) (p. 261)
- [Set ID](#) (p. 262)
- [Evaluate Target Health](#) (p. 262)
- [Associate with Health Check/Health Check to Associate](#) (p. 262)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for both of the resource record sets in the group of failover resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Aliases to CloudFront distributions and Amazon S3 buckets

The value that you specify depends in part on the AWS resource that you're routing traffic to:

- **CloudFront distribution** – Your distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.
- **Amazon S3 bucket** – The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In addition, you must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format](#) (p. 319).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the applicable value based on the AWS resource that you're routing traffic to:

### CloudFront distribution

Select **A — IPv4 address**.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

### Elastic Beanstalk environment that has regionalized subdomains

Select **A — IPv4 address**

### ELB load balancer

Select **A — IPv4 address** or **AAAA — IPv6 address**

### Amazon S3 bucket

Select **A — IPv4 address**

### Another resource record set in this hosted zone

Select the type of the resource record set that you're creating the alias for. All types are supported except **NS** and **SOA**.

Select any value except **NS** or **SOA**. Select the same value for both the primary and secondary failover resource record sets.

## Alias

Select **Yes**.

### Note

When you create primary and secondary failover resource record sets, you can optionally create one failover and one failover *alias* resource record set that have the same values for **Name** and **Type**. If you mix failover and failover alias resource record sets, either one can be the primary resource record set.

## Alias Target

The value that you specify depends on the AWS resource that you're routing traffic to.

### CloudFront Distributions

#### Note

You can't create alias resource record sets for CloudFront distributions in a private hosted zone.

For CloudFront distributions, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your CloudFront distribution** – Choose **Alias Target** and choose a distribution from the list. If you

have a lot of distributions, you can type the first few characters of the domain name for your distribution to filter the list.

If your distribution doesn't appear in the list, note the following:

- The name of this resource record set must match an alternate domain name in your distribution.
- If you just added an alternate domain name to your distribution, it may take 15 minutes for your changes to propagate to all CloudFront edge locations. Until changes have propagated, Amazon Route 53 can't know about the new alternate domain name.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your distribution** – Enter the CloudFront domain name for the distribution, such as **d111111abcdef8.cloudfront.net**.

If you used one AWS account to create the current hosted zone and a different account to create a distribution, the distribution will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your distributions, the **Alias Targets** list shows **No Targets Available** under **CloudFront Distributions**.

#### **Important**

Do not route queries to a CloudFront distribution that has not propagated to all edge locations, or your users won't be able to access the applicable content.

Your CloudFront distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

### **Elastic Beanstalk environments that have regionalized subdomains**

For Elastic Beanstalk environments that have regionalized subdomains, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Choose **Alias Target**, and then choose an environment from the list. If you have a lot of environments, you can type the first few characters of the CNAME attribute for the environment to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Enter the CNAME attribute for the Elastic Beanstalk environment.

### **ELB Load Balancers**

For ELB load balancers, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your load balancer** – Choose **Alias Target** and choose a load balancer from the list. If you have a lot of load balancers, you can type the first few characters of the DNS name to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your load balancer** – Enter the value that you got in the procedure [Getting the DNS Name for an ELB Load Balancer](#) (p. 245).

If you used one AWS account to create the current hosted zone and a different account to create a load balancer, the load balancer will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your load balancers, the **Alias Targets** list shows **No Targets Available** under **Elastic Load Balancers**.

In either case, the console prepends **dualstack.** to the DNS name. When a client, such as a web browser, requests the IP address for your domain name (example.com) or subdomain name (www.example.com), the client can request an IPv4 address (an A record), an IPv6 address (a AAAA record), or both IPv4 and IPv6 addresses (in separate requests). The **dualstack.** designation allows Amazon Route 53 to respond with the appropriate IP address for your load balancer based on which IP address format the client requested.

### Amazon S3 Buckets

For Amazon S3 buckets that are configured as website endpoints, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Choose **Alias Target** and choose a bucket from the list. If you have a lot of buckets, you can type the first few characters of the DNS name to filter the list.

The value of **Alias Target** changes to the Amazon S3 website endpoint for your bucket.

- **If you used different accounts to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Type the name of the region that you created your S3 bucket in. Use the value that appears in the **Website Endpoint** column in the [Amazon Simple Storage Service Website Endpoints](#) table in the *AWS Regions and Endpoints* chapter of the *Amazon Web Services General Reference*.

If you used AWS accounts other than the current account to create your Amazon S3 buckets, the bucket won't appear in the **Alias Targets** list.

You must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your Amazon S3 bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In a group of weighted alias, latency alias, failover alias, or geolocation alias resource record sets, you can create only one resource record set that routes queries to an Amazon S3 bucket because the name of the resource record set must match the name of the bucket and bucket names must be globally unique.

### Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, choose **Alias Target** and choose the applicable resource record set. If you have a lot of resource record sets, you can type the first few characters of the name to filter the list.

If the hosted zone contains only the default NS and SOA resource record sets, the **Alias Targets** list shows **No Targets Available**.

## Alias Hosted Zone ID

This value appears automatically based on the value that you selected or entered for **Alias Target**.

## Routing Policy

Select **Failover**.

## Failover Record Type

Choose the applicable value for this resource record set. For failover to function correctly, you must create one primary and one secondary failover resource record set.

You can't create non-failover resource record sets that have the same values for **Name** and **Type** as failover resource record sets.

## Set ID

Enter a value that uniquely identifies the primary and secondary resource record sets.

## Evaluate Target Health

Select **Yes** if you want Amazon Route 53 to determine whether to respond to DNS queries using this resource record set by checking the health of the resource specified by **Alias Target**.

Note the following:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **Elastic Beanstalk environments that have regionalized endpoints** – If you specify an Elastic Beanstalk environment in **Alias Target** and the environment contains an ELB load balancer, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. (An environment automatically contains an ELB load balancer if it includes more than one Amazon EC2 instance.) If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other available resources that are healthy, if any.

If the environment contains a single Amazon EC2 instance, there are no special requirements.

- **ELB load balancers** – If you specify an ELB load balancer in **Alias Target**, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other resources.

When you create a load balancer, you configure settings for Elastic Load Balancing health checks; they're not Amazon Route 53 health checks, but they perform a similar function. Do not create Amazon Route 53 health checks for the Amazon EC2 instances that you register with an ELB load balancer.

For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 358).

- **S3 buckets** – There are no special requirements for setting **Evaluate Target Health** to **Yes** when the alias target is an S3 bucket.
- **Other resource record sets** – If the AWS resource that you specify in **Alias Target** is a resource record set or a group of resource record sets (for example, a group of weighted resource record sets) but is not another alias resource record set, we recommend that you associate a health check with all of the resource record sets in the alias target. For more information, see [What Happens When You Omit Health Checks?](#) (p. 361).

We recommend that you set **Evaluate Target Health** to **Yes** only when you have enough idle capacity to handle the failure of one or more endpoints.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

#### **Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Geolocation Resource Record Sets

When you create geolocation resource record sets, you specify the following values:

### Note

Creating geolocation resource record sets in private hosted zones is not supported.

### Topics

- [Name \(p. 264\)](#)
- [Type \(p. 264\)](#)
- [Alias \(p. 264\)](#)
- [TTL \(Time to Live\) \(p. 265\)](#)
- [Value \(p. 265\)](#)
- [Routing Policy \(p. 266\)](#)
- [Location \(p. 266\)](#)
- [Sublocation \(p. 267\)](#)
- [Set ID \(p. 267\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 267\)](#)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for all of the resource record sets in the group of geolocation resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the same value for all of the resource record sets in the group of geolocation resource record sets.

## Alias

Select **No**.

## TTL (Time to Live)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record set (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

If you're associating this resource record set with a health check, we recommend that you specify a TTL of 60 seconds or less so clients respond quickly to changes in health status.

## Value

Enter a value that is appropriate for the value of **Type**. For all types except **CNAME**, you can enter more than one value. Enter each value on a separate line.

### A — IPv4 address

An IP address in IPv4 format, for example, **192.0.2.235**.

### AAAA — IPv6 address

An IP address in IPv6 format, for example, **2001:0db8:85a3:0:0:8a2e:0370:7334**.

### CAA — Certificate Authority Authorization

Three space-separated values that control which certificate authorities are allowed to issue certificates or wildcard certificates for the domain or subdomain that is specified by **Name**. You can use CAA records to specify the following:

- Which certificate authorities (CAs) can issue SSL/TLS certificates, if any
- The email address or URL to contact when a CA issues a certificate for the domain or subdomain

### CNAME — Canonical name

The fully qualified domain name (for example, *www.example.com*) that you want Amazon Route 53 to return in response to DNS queries for this resource record set. A trailing dot is optional; Amazon Route 53 assumes that the domain name is fully qualified. This means that Amazon Route 53 treats *www.example.com* (without a trailing dot) and *www.example.com.* (with a trailing dot) as identical.

### MX — Mail exchange

A priority and a domain name that specifies a mail server, for example, **10 mailserver.example.com**.

### NAPTR — Name Authority Pointer

Six space-separated settings that are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For more information, see [NAPTR Format \(p. 241\)](#).

### PTR — Pointer

The domain name that you want Amazon Route 53 to return.

### SPF — Sender Policy Framework

An SPF record enclosed in quotation marks, for example, **"v=spf1 ip4:192.168.0.1/16-all"**. SPF records are not recommended. For more information, see [Supported DNS Record Types \(p. 237\)](#).

### SRV — Service locator

An SRV record. For information about SRV record format, refer to the applicable documentation. The format of an SRV record is:



**[priority] [weight] [port] [server host name]**

For example:

**1 10 5269 xmpp-server.example.com.**

#### **TXT — Text**

A text record. Enclose text in quotation marks, for example, **"Sample Text Entry"**.

## Routing Policy

Select **Geolocation**.

### Location

When you configure Amazon Route 53 to respond to DNS queries based on the location that the queries originated from, select the continent or country for which you want Amazon Route 53 to respond with the settings in this resource record set. If you want Amazon Route 53 to respond to DNS queries for individual states in the United States, select **United States** from the **Location** list, and then select the state from the **Sublocation** list.

#### **Important**

We recommend that you create one geolocation resource record set that has a value of **Default** for **Location**. This covers geographic locations that you haven't created resource record sets for and IP addresses that Amazon Route 53 can't identify a location for.

You can't create non-geolocation resource record sets that have the same values for **Name** and **Type** as geolocation resource record sets.

For more information, see [Geolocation Routing \(p. 233\)](#).

Here are the countries that Amazon Route 53 associates with each continent. The country codes are from ISO 3166. For more information, see the Wikipedia article [ISO 3166-1 alpha-2](#):

#### **Africa (AF)**

AO, BF, BI, BJ, BW, CD, CF, CG, CI, CM, CV, DJ, DZ, EG, ER, ET, GA, GH, GM, GN, GQ, GW, KE, KM, LR, LS, LY, MA, MG, ML, MR, MU, MW, MZ, NA, NE, NG, RE, RW, SC, SD, SH, SL, SN, SO, SS, ST, SZ, TD, TG, TN, TZ, UG, YT, ZA, ZM, ZW

#### **Antarctica (AN)**

AQ, GS, TF

#### **Asia (AS)**

AE, AF, AM, AZ, BD, BH, BN, BT, CC, CN, GE, HK, ID, IL, IN, IO, IQ, IR, JO, JP, KG, KH, KP, KR, KW, KZ, LA, LB, LK, MM, MN, MO, MV, MY, NP, OM, PH, PK, PS, QA, SA, SG, SY, TH, TJ, TM, TR, TW, UZ, VN, YE

#### **Europe (EU)**

AD, AL, AT, AX, BA, BE, BG, BY, CH, CY, CZ, DE, DK, EE, ES, FI, FO, FR, GB, GG, GI, GR, HR, HU, IE, IM, IS, IT, JE, LI, LT, LU, LV, MC, MD, ME, MK, MT, NL, NO, PL, PT, RO, RS, RU, SE, SI, SJ, SK, SM, UA, VA, XK

#### **North America (NA)**

AG, AI, AW, BB, BL, BM, BQ, BS, BZ, CA, CR, CU, CW, DM, DO, GD, GL, GP, GT, HN, HT, JM, KN, KY, LC, MF, MQ, MS, MX, NI, PA, PM, PR, SV, SX, TC, TT, US, VC, VG, VI

#### **Oceania (OC)**

AS, AU, CK, FJ, FM, GU, KI, MH, MP, NC, NF, NR, NU, NZ, PF, PG, PN, PW, SB, TK, TL, TO, TV, UM, VU, WF, WS

## South America (SA)

AR, BO, BR, CL, CO, EC, FK, GF, GY, PE, PY, SR, UY, VE

### Note

Amazon Route 53 doesn't support creating geolocation resource record sets for the following countries: Bouvet Island (BV), Christmas Island (CX), Western Sahara (EH), and Heard Island and McDonald Islands (HM). No data is available about IP addresses for these countries.

## Sublocation

When you configure Amazon Route 53 to respond to DNS queries based on the state of the United States that the queries originated from, select the state from the **Sublocations** list. United States territories (for example, Puerto Rico) are listed as countries in the **Location** list.

### Important

Some IP addresses are associated with the United States, but not with an individual state. If you create resource record sets for all of the states in the United States, we recommend that you also create a resource record set for the United States to route queries for these unassociated IP addresses. If you don't create a resource record set for the United States, Amazon Route 53 responds to DNS queries from unassociated United States IP addresses with settings from the default geolocation resource record set (if you created one) or with a "no answer" response.

## Set ID

Enter a value that uniquely identifies this resource record set in the group of geolocation resource record sets.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations

**(Location is Default).** If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

**Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Geolocation Alias Resource Record Sets

When you create geolocation alias resource record sets, you specify the following values:

### Note

Creating geolocation alias resource record sets in private hosted zones is not supported.

### Topics

- [Name \(p. 269\)](#)
- [Type \(p. 270\)](#)
- [Alias \(p. 270\)](#)
- [Alias Target \(p. 270\)](#)
- [Alias Hosted Zone ID \(p. 272\)](#)
- [Routing Policy \(p. 272\)](#)
- [Location \(p. 272\)](#)
- [Sublocation \(p. 273\)](#)
- [Set ID \(p. 274\)](#)
- [Evaluate Target Health \(p. 274\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 274\)](#)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for all of the resource record sets in the group of geolocation resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Aliases to CloudFront distributions and Amazon S3 buckets

The value that you specify depends in part on the AWS resource that you're routing traffic to:

- **CloudFront distribution** – Your distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.
- **Amazon S3 bucket** – The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In addition, you must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the applicable value based on the AWS resource that you're routing traffic to:

### CloudFront distribution

Select **A — IPv4 address**.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

### Elastic Beanstalk environment that has regionalized subdomains

Select **A — IPv4 address**

### ELB load balancer

Select **A — IPv4 address** or **AAAA — IPv6 address**

### Amazon S3 bucket

Select **A — IPv4 address**

### Another resource record set in this hosted zone

Select the type of the resource record set that you're creating the alias for. All types are supported except **NS** and **SOA**.

Select the same value for all of the resource record sets in the group of geolocation resource record sets.

## Alias

Select **Yes**.

## Alias Target

The value that you specify depends on the AWS resource that you're routing traffic to.

### CloudFront Distributions

#### Note

You can't create alias resource record sets for CloudFront distributions in a private hosted zone.

For CloudFront distributions, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your CloudFront distribution** – Choose **Alias Target** and choose a distribution from the list. If you have a lot of distributions, you can type the first few characters of the domain name for your distribution to filter the list.

If your distribution doesn't appear in the list, note the following:

- The name of this resource record set must match an alternate domain name in your distribution.

- If you just added an alternate domain name to your distribution, it may take 15 minutes for your changes to propagate to all CloudFront edge locations. Until changes have propagated, Amazon Route 53 can't know about the new alternate domain name.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your distribution** – Enter the CloudFront domain name for the distribution, such as **d111111abcdef8.cloudfront.net**.

If you used one AWS account to create the current hosted zone and a different account to create a distribution, the distribution will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your distributions, the **Alias Targets** list shows **No Targets Available** under **CloudFront Distributions**.

#### **Important**

Do not route queries to a CloudFront distribution that has not propagated to all edge locations, or your users won't be able to access the applicable content.

Your CloudFront distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address for Type**, and one with a value of **AAAA — IPv6 address**.

### **Elastic Beanstalk environments that have regionalized subdomains**

For Elastic Beanstalk environments that have regionalized subdomains, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Choose **Alias Target**, and then choose an environment from the list. If you have a lot of environments, you can type the first few characters of the CNAME attribute for the environment to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Enter the CNAME attribute for the Elastic Beanstalk environment.

### **ELB Load Balancers**

For ELB load balancers, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your load balancer** – Choose **Alias Target** and choose a load balancer from the list. If you have a lot of load balancers, you can type the first few characters of the DNS name to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your load balancer** – Enter the value that you got in the procedure [Getting the DNS Name for an ELB Load Balancer](#) (p. 245).

If you used one AWS account to create the current hosted zone and a different account to create a load balancer, the load balancer will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your load balancers, the **Alias Targets** list shows **No Targets Available** under **Elastic Load Balancers**.

In either case, the console prepends **dualstack.** to the DNS name. When a client, such as a web browser, requests the IP address for your domain name (example.com) or subdomain name (www.example.com), the client can request an IPv4 address (an A record), an IPv6 address (a AAAA record), or both IPv4 and IPv6 addresses (in separate requests). The **dualstack.** designation allows

Amazon Route 53 to respond with the appropriate IP address for your load balancer based on which IP address format the client requested.

### Amazon S3 Buckets

For Amazon S3 buckets that are configured as website endpoints, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Choose **Alias Target** and choose a bucket from the list. If you have a lot of buckets, you can type the first few characters of the DNS name to filter the list.

The value of **Alias Target** changes to the Amazon S3 website endpoint for your bucket.

- **If you used different accounts to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Type the name of the region that you created your S3 bucket in. Use the value that appears in the **Website Endpoint** column in the [Amazon Simple Storage Service Website Endpoints](#) table in the *AWS Regions and Endpoints* chapter of the *Amazon Web Services General Reference*.

If you used AWS accounts other than the current account to create your Amazon S3 buckets, the bucket won't appear in the **Alias Targets** list.

You must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your Amazon S3 bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In a group of weighted alias, latency alias, failover alias, or geolocation alias resource record sets, you can create only one resource record set that routes queries to an Amazon S3 bucket because the name of the resource record set must match the name of the bucket and bucket names must be globally unique.

### Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, choose **Alias Target** and choose the applicable resource record set. If you have a lot of resource record sets, you can type the first few characters of the name to filter the list.

If the hosted zone contains only the default NS and SOA resource record sets, the **Alias Targets** list shows **No Targets Available**.

## Alias Hosted Zone ID

This value appears automatically based on the value that you selected or entered for **Alias Target**.

## Routing Policy

Select **Geolocation**.

### Note

Creating geolocation alias resource record sets in a private hosted zone is unsupported.

## Location

When you configure Amazon Route 53 to respond to DNS queries based on the location that the queries originated from, select the continent or country for which you want Amazon Route 53 to respond with the settings in this resource record set. If you want Amazon Route 53 to respond to DNS queries for individual states in the United States, select **United States** from the **Location** list, and then select the state from the **Sublocation** list.

### Important

We recommend that you create one geolocation resource record set that has a value of **Default** for **Location**. This covers geographic locations that you haven't created resource record sets for and IP addresses that Amazon Route 53 can't identify a location for.

You can't create non-geolocation resource record sets that have the same values for **Name** and **Type** as geolocation resource record sets.

For more information, see [Geolocation Routing \(p. 233\)](#).

Here are the countries that Amazon Route 53 associates with each continent. The country codes are from ISO 3166. For more information, see the Wikipedia article [ISO 3166-1 alpha-2](#):

#### Africa (AF)

AO, BF, BI, BJ, BW, CD, CF, CG, CI, CM, CV, DJ, DZ, EG, ER, ET, GA, GH, GM, GN, GQ, GW, KE, KM, LR, LS, LY, MA, MG, ML, MR, MU, MW, MZ, NA, NE, NG, RE, RW, SC, SD, SH, SL, SN, SO, SS, ST, SZ, TD, TG, TN, TZ, UG, YT, ZA, ZM, ZW

#### Antarctica (AN)

AQ, GS, TF

#### Asia (AS)

AE, AF, AM, AZ, BD, BH, BN, BT, CC, CN, GE, HK, ID, IL, IN, IO, IQ, IR, JO, JP, KG, KH, KP, KR, KW, KZ, LA, LB, LK, MM, MN, MO, MV, MY, NP, OM, PH, PK, PS, QA, SA, SG, SY, TH, TJ, TM, TR, TW, UZ, VN, YE

#### Europe (EU)

AD, AL, AT, AX, BA, BE, BG, BY, CH, CY, CZ, DE, DK, EE, ES, FI, FO, FR, GB, GG, GI, GR, HR, HU, IE, IM, IS, IT, JE, LI, LT, LU, LV, MC, MD, ME, MK, MT, NL, NO, PL, PT, RO, RS, RU, SE, SI, SJ, SK, SM, UA, VA, XK

#### North America (NA)

AG, AI, AW, BB, BL, BM, BQ, BS, BZ, CA, CR, CU, CW, DM, DO, GD, GL, GP, GT, HN, HT, JM, KN, KY, LC, MF, MQ, MS, MX, NI, PA, PM, PR, SV, SX, TC, TT, US, VC, VG, VI

#### Oceania (OC)

AS, AU, CK, FJ, FM, GU, KI, MH, MP, NC, NF, NR, NU, NZ, PF, PG, PN, PW, SB, TK, TL, TO, TV, UM, VU, WF, WS

#### South America (SA)

AR, BO, BR, CL, CO, EC, FK, GF, GY, PE, PY, SR, UY, VE

### Note

Amazon Route 53 doesn't support creating geolocation resource record sets for the following countries: Bouvet Island (BV), Christmas Island (CX), Western Sahara (EH), and Heard Island and McDonald Islands (HM). No data is available about IP addresses for these countries.

## Sublocation

When you configure Amazon Route 53 to respond to DNS queries based on the state of the United States that the queries originated from, select the state from the **Sublocations** list. United States territories (for example, Puerto Rico) are listed as countries in the **Location** list.

### Important

Some IP addresses are associated with the United States, but not with an individual state. If you create resource record sets for all of the states in the United States, we recommend that you also create a resource record set for the United States to route queries for these unassociated IP addresses. If you don't create a resource record set for the United States, Amazon Route 53



responds to DNS queries from unassociated United States IP addresses with settings from the default geolocation resource record set (if you created one) or with a "no answer" response.

## Set ID

Enter a value that uniquely identifies this resource record set in the group of geolocation resource record sets.

## Evaluate Target Health

Select **Yes** if you want Amazon Route 53 to determine whether to respond to DNS queries using this resource record set by checking the health of the resource specified by **Alias Target**.

Note the following:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **Elastic Beanstalk environments that have regionalized endpoints** – If you specify an Elastic Beanstalk environment in **Alias Target** and the environment contains an ELB load balancer, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. (An environment automatically contains an ELB load balancer if it includes more than one Amazon EC2 instance.) If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other available resources that are healthy, if any.

If the environment contains a single Amazon EC2 instance, there are no special requirements.

- **ELB load balancers** – If you specify an ELB load balancer in **Alias Target**, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other resources.

When you create a load balancer, you configure settings for Elastic Load Balancing health checks; they're not Amazon Route 53 health checks, but they perform a similar function. Do not create Amazon Route 53 health checks for the Amazon EC2 instances that you register with an ELB load balancer.

For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 358).

- **S3 buckets** – There are no special requirements for setting **Evaluate Target Health** to **Yes** when the alias target is an S3 bucket.
- **Other resource record sets** – If the AWS resource that you specify in **Alias Target** is a resource record set or a group of resource record sets (for example, a group of weighted resource record sets) but is not another alias resource record set, we recommend that you associate a health check with all of the resource record sets in the alias target. For more information, see [What Happens When You Omit Health Checks?](#) (p. 361).

We recommend that you set **Evaluate Target Health** to **Yes** only when you have enough idle capacity to handle the failure of one or more endpoints.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check

for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

#### **Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Latency Resource Record Sets

When you create latency resource record sets, you specify the following values:

### Note

Creating latency resource record sets in private hosted zones is not supported.

### Topics

- [Name \(p. 276\)](#)
- [Type \(p. 276\)](#)
- [Alias \(p. 276\)](#)
- [TTL \(Time to Live\) \(p. 277\)](#)
- [Value \(p. 277\)](#)
- [Routing Policy \(p. 278\)](#)
- [Region \(p. 278\)](#)
- [Set ID \(p. 278\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 278\)](#)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for all of the resource record sets in the group of latency resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the value for **Type** based on how you want Amazon Route 53 to respond to DNS queries.

Select the same value for all of the resource record sets in the group of latency resource record sets.

## Alias

Select **No**.

## TTL (Time to Live)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record set (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

If you're associating this resource record set with a health check, we recommend that you specify a TTL of 60 seconds or less so clients respond quickly to changes in health status.

## Value

Enter a value that is appropriate for the value of **Type**. For all types except **CNAME**, you can enter more than one value. Enter each value on a separate line.

### A — IPv4 address

An IP address in IPv4 format, for example, **192.0.2.235**.

### AAAA — IPv6 address

An IP address in IPv6 format, for example, **2001:0db8:85a3:0:0:8a2e:0370:7334**.

### CAA — Certificate Authority Authorization

Three space-separated values that control which certificate authorities are allowed to issue certificates or wildcard certificates for the domain or subdomain that is specified by **Name**. You can use CAA records to specify the following:

- Which certificate authorities (CAs) can issue SSL/TLS certificates, if any
- The email address or URL to contact when a CA issues a certificate for the domain or subdomain

### CNAME — Canonical name

The fully qualified domain name (for example, *www.example.com*) that you want Amazon Route 53 to return in response to DNS queries for this resource record set. A trailing dot is optional; Amazon Route 53 assumes that the domain name is fully qualified. This means that Amazon Route 53 treats *www.example.com* (without a trailing dot) and *www.example.com.* (with a trailing dot) as identical.

### MX — Mail exchange

A priority and a domain name that specifies a mail server, for example, **10 mailserver.example.com**.

### NAPTR — Name Authority Pointer

Six space-separated settings that are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For more information, see [NAPTR Format \(p. 241\)](#).

### PTR — Pointer

The domain name that you want Amazon Route 53 to return.

### SPF — Sender Policy Framework

An SPF record enclosed in quotation marks, for example, **"v=spf1 ip4:192.168.0.1/16-all"**. SPF records are not recommended. For more information, see [Supported DNS Record Types \(p. 237\)](#).

### SRV — Service locator

An SRV record. For information about SRV record format, refer to the applicable documentation. The format of an SRV record is:

**[priority] [weight] [port] [server host name]**

For example:

**1 10 5269 xmpp-server.example.com.**

#### **TXT — Text**

A text record. Enclose text in quotation marks, for example, **"Sample Text Entry"**.

## Routing Policy

Select **Latency**.

### Region

The Amazon EC2 region where the resource that you specified in this resource record set resides. Amazon Route 53 recommends an Amazon EC2 region based on other values that you've specified. We recommend that you not change this value.

Note the following:

- You can only create one latency resource record set for each Amazon EC2 region.
- You aren't required to create latency resource record sets for all Amazon EC2 regions. Amazon Route 53 chooses the region with the best latency from among the regions that you create latency resource record sets for.
- You can't create non-latency resource record sets that have the same values for **Name** and **Type** as latency resource record sets.
- If you create a record tagged with the region **cn-north-1**, Amazon Route 53 always responds to queries from within China using this resource record set, regardless of the latency.

For more information about using latency resource record sets, see [Latency-based Routing \(p. 234\)](#).

### Set ID

Enter a value that uniquely identifies this resource record set in the group of latency resource record sets.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.

- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

**Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Latency Alias Resource Record Sets

When you create latency alias resource record sets, you specify the following values:

### Note

Creating latency alias resource record sets in private hosted zones is not supported.

### Topics

- [Name \(p. 280\)](#)
- [Type \(p. 281\)](#)
- [Alias \(p. 281\)](#)
- [Alias Target \(p. 281\)](#)
- [Alias Hosted Zone ID \(p. 283\)](#)
- [Routing Policy \(p. 283\)](#)
- [Region \(p. 283\)](#)
- [Set ID \(p. 284\)](#)
- [Evaluate Target Health \(p. 284\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 285\)](#)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for all of the resource record sets in the group of latency resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Aliases to CloudFront distributions and Amazon S3 buckets

The value that you specify depends in part on the AWS resource that you're routing traffic to:

- **CloudFront distribution** – Your distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.
- **Amazon S3 bucket** – The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In addition, you must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the applicable value based on the AWS resource that you're routing traffic to:

### CloudFront distribution

Select **A — IPv4 address**.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

### Elastic Beanstalk environment that has regionalized subdomains

Select **A — IPv4 address**

### ELB load balancer

Select **A — IPv4 address** or **AAAA — IPv6 address**

### Amazon S3 bucket

Select **A — IPv4 address**

### Another resource record set in this hosted zone

Select the type of the resource record set that you're creating the alias for. All types are supported except **NS** and **SOA**.

Select the same value for all of the resource record sets in the group of latency resource record sets.

## Alias

Select **Yes**.

## Alias Target

The value that you specify depends on the AWS resource that you're routing traffic to.

### CloudFront Distributions

#### Note

You can't create alias resource record sets for CloudFront distributions in a private hosted zone.

For CloudFront distributions, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your CloudFront distribution** – Choose **Alias Target** and choose a distribution from the list. If you have a lot of distributions, you can type the first few characters of the domain name for your distribution to filter the list.

If your distribution doesn't appear in the list, note the following:

- The name of this resource record set must match an alternate domain name in your distribution.



- If you just added an alternate domain name to your distribution, it may take 15 minutes for your changes to propagate to all CloudFront edge locations. Until changes have propagated, Amazon Route 53 can't know about the new alternate domain name.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your distribution** – Enter the CloudFront domain name for the distribution, such as **d111111abcdef8.cloudfront.net**.

If you used one AWS account to create the current hosted zone and a different account to create a distribution, the distribution will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your distributions, the **Alias Targets** list shows **No Targets Available** under **CloudFront Distributions**.

#### **Important**

Do not route queries to a CloudFront distribution that has not propagated to all edge locations, or your users won't be able to access the applicable content.

Your CloudFront distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address for Type**, and one with a value of **AAAA — IPv6 address**.

#### **Elastic Beanstalk environments that have regionalized subdomains**

For Elastic Beanstalk environments that have regionalized subdomains, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Choose **Alias Target**, and then choose an environment from the list. If you have a lot of environments, you can type the first few characters of the CNAME attribute for the environment to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Enter the CNAME attribute for the Elastic Beanstalk environment.

#### **ELB Load Balancers**

For ELB load balancers, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your load balancer** – Choose **Alias Target** and choose a load balancer from the list. If you have a lot of load balancers, you can type the first few characters of the DNS name to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your load balancer** – Enter the value that you got in the procedure [Getting the DNS Name for an ELB Load Balancer](#) (p. 245).

If you used one AWS account to create the current hosted zone and a different account to create a load balancer, the load balancer will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your load balancers, the **Alias Targets** list shows **No Targets Available** under **Elastic Load Balancers**.

In either case, the console prepends **dualstack.** to the DNS name. When a client, such as a web browser, requests the IP address for your domain name (example.com) or subdomain name (www.example.com), the client can request an IPv4 address (an A record), an IPv6 address (a AAAA record), or both IPv4 and IPv6 addresses (in separate requests). The **dualstack.** designation allows

Amazon Route 53 to respond with the appropriate IP address for your load balancer based on which IP address format the client requested.

### Amazon S3 Buckets

For Amazon S3 buckets that are configured as website endpoints, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Choose **Alias Target** and choose a bucket from the list. If you have a lot of buckets, you can type the first few characters of the DNS name to filter the list.

The value of **Alias Target** changes to the Amazon S3 website endpoint for your bucket.

- **If you used different accounts to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Type the name of the region that you created your S3 bucket in. Use the value that appears in the **Website Endpoint** column in the [Amazon Simple Storage Service Website Endpoints](#) table in the *AWS Regions and Endpoints* chapter of the *Amazon Web Services General Reference*.

If you used AWS accounts other than the current account to create your Amazon S3 buckets, the bucket won't appear in the **Alias Targets** list.

You must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your Amazon S3 bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In a group of weighted alias, latency alias, failover alias, or geolocation alias resource record sets, you can create only one resource record set that routes queries to an Amazon S3 bucket because the name of the resource record set must match the name of the bucket and bucket names must be globally unique.

### Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, choose **Alias Target** and choose the applicable resource record set. If you have a lot of resource record sets, you can type the first few characters of the name to filter the list.

If the hosted zone contains only the default NS and SOA resource record sets, the **Alias Targets** list shows **No Targets Available**.

## Alias Hosted Zone ID

This value appears automatically based on the value that you selected or entered for **Alias Target**.

## Routing Policy

Select **Latency**.

### Note

Creating latency alias resource record sets in a private hosted zone is unsupported.

## Region

The Amazon EC2 region where the resource that you specified in this resource record set resides. Amazon Route 53 recommends an Amazon EC2 region based on other values that you've specified. We recommend that you not change this value.

Note the following:

- You can only create one latency resource record set for each Amazon EC2 region.
- You aren't required to create latency resource record sets for all Amazon EC2 regions. Amazon Route 53 chooses the region with the best latency from among the regions that you create latency resource record sets for.
- You can't create non-latency resource record sets that have the same values for **Name** and **Type** as latency resource record sets.
- If you create a record tagged with the region **cn-north-1**, Amazon Route 53 always responds to queries from within China using this resource record set, regardless of the latency.

For more information about using latency resource record sets, see [Latency-based Routing \(p. 234\)](#).

## Set ID

Enter a value that uniquely identifies this resource record set in the group of latency resource record sets.

## Evaluate Target Health

Select **Yes** if you want Amazon Route 53 to determine whether to respond to DNS queries using this resource record set by checking the health of the resource specified by **Alias Target**.

Note the following:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **Elastic Beanstalk environments that have regionalized endpoints** – If you specify an Elastic Beanstalk environment in **Alias Target** and the environment contains an ELB load balancer, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. (An environment automatically contains an ELB load balancer if it includes more than one Amazon EC2 instance.) If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other available resources that are healthy, if any.

If the environment contains a single Amazon EC2 instance, there are no special requirements.

- **ELB load balancers** – If you specify an ELB load balancer in **Alias Target**, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other resources.

When you create a load balancer, you configure settings for Elastic Load Balancing health checks; they're not Amazon Route 53 health checks, but they perform a similar function. Do not create Amazon Route 53 health checks for the Amazon EC2 instances that you register with an ELB load balancer.

For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations \(p. 358\)](#).

- **S3 buckets** – There are no special requirements for setting **Evaluate Target Health** to **Yes** when the alias target is an S3 bucket.
- **Other resource record sets** – If the AWS resource that you specify in **Alias Target** is a resource record set or a group of resource record sets (for example, a group of weighted resource record sets) but is not another alias resource record set, we recommend that you associate a health check with all of the resource record sets in the alias target. For more information, see [What Happens When You Omit Health Checks? \(p. 361\)](#).

We recommend that you set **Evaluate Target Health** to **Yes** only when you have enough idle capacity to handle the failure of one or more endpoints.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location is Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

### Important

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Multivalue Answer Resource Record Sets

When you create multivalue answer resource record sets, you specify the following values:

### Note

Creating multivalue answer alias resource record sets is not supported.

### Topics

- [Name \(p. 286\)](#)
- [Type \(p. 286\)](#)
- [Alias \(p. 286\)](#)
- [TTL \(Time to Live\) \(p. 286\)](#)
- [Value \(p. 287\)](#)
- [Routing Policy \(p. 287\)](#)
- [Set ID \(p. 288\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 288\)](#)

## Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select any value except **NS** or **CNAME**.

Select the same value for all of the resource record sets in the group of multivalue answer resource record sets.

## Alias

Select **No**.

## TTL (Time to Live)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record set (for example, a new IP address) to

take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

If you're associating this resource record set with a health check, we recommend that you specify a TTL of 60 seconds or less so clients respond quickly to changes in health status.

## Value

Enter a value that is appropriate for the value of **Type**. If you enter more than one value, enter each value on a separate line.

### A — IPv4 address

An IP address in IPv4 format, for example, **192.0.2.235**.

### AAAA — IPv6 address

An IP address in IPv6 format, for example, **2001:0db8:85a3:0:0:8a2e:0370:7334**.

### MX — Mail exchange

A priority and a domain name that specifies a mail server, for example, **10 mailserver.example.com**.

### NAPTR — Name Authority Pointer

Six space-separated settings that are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For more information, see [NAPTR Format \(p. 241\)](#).

### NS — Name server

The domain name of a name server, for example, **ns1.example.com**.

### PTR — Pointer

The domain name that you want Amazon Route 53 to return.

### SOA — Start of Authority

Basic DNS information about the domain. For more information, see [The Start of Authority \(SOA\) Resource Record Set \(p. 225\)](#).

### SPF — Sender Policy Framework

An SPF record enclosed in quotation marks, for example, **"v=spf1 ip4:192.168.0.1/16-all"**. SPF records are not recommended. For more information, see [Supported DNS Record Types \(p. 237\)](#).

### SRV — Service locator

An SRV record. For information about SRV record format, refer to the applicable documentation. The format of an SRV record is:

**[priority] [weight] [port] [server host name]**

For example:

**1 10 5269 xmpp-server.example.com.**

### TXT — Text

A text record. Enclose text in quotation marks, for example, **"Sample Text Entry"**.

## Routing Policy

Select **Multivalue answer**.

## Set ID

Enter a value that uniquely identifies this resource record set in the group of multivalue answer resource record sets.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

### Important

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Weighted Resource Record Sets

When you create weighted resource record sets, you specify the following values:

### Topics

- [Name \(p. 289\)](#)
- [Type \(p. 289\)](#)
- [Alias \(p. 289\)](#)
- [TTL \(Time to Live\) \(p. 289\)](#)
- [Value \(p. 290\)](#)
- [Routing Policy \(p. 291\)](#)
- [Weight \(p. 291\)](#)
- [Set ID \(p. 291\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 291\)](#)

### Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

#### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for all of the resource record sets in the group of weighted resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

### Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the same value for all of the resource record sets in the group of weighted resource record sets.

### Alias

Select **No**.

### TTL (Time to Live)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less



often. However, it takes longer for changes to the resource record set (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

If you're associating this resource record set with a health check, we recommend that you specify a TTL of 60 seconds or less so clients respond quickly to changes in health status.

You must specify the same value for **TTL** for all of the resource record sets in this group of weighted resource record sets.

If a group of weighted resource record sets includes one or more weighted alias resource record sets that are routing traffic to an ELB load balancer, we recommend that you specify a TTL of 60 seconds for all of the non-alias weighted resource record sets that have the same name and type. Values other than 60 seconds (the TTL for load balancers) will change the effect of the values that you specify for **Weight**.

## Value

Enter a value that is appropriate for the value of **Type**. For all types except **CNAME**, you can enter more than one value. Enter each value on a separate line.

### A — IPv4 address

An IP address in IPv4 format, for example, **192.0.2.235**.

### AAAA — IPv6 address

An IP address in IPv6 format, for example, **2001:0db8:85a3:0:0:8a2e:0370:7334**.

### CAA — Certificate Authority Authorization

Three space-separated values that control which certificate authorities are allowed to issue certificates or wildcard certificates for the domain or subdomain that is specified by **Name**. You can use CAA records to specify the following:

- Which certificate authorities (CAs) can issue SSL/TLS certificates, if any
- The email address or URL to contact when a CA issues a certificate for the domain or subdomain

### CNAME — Canonical name

The fully qualified domain name (for example, *www.example.com*) that you want Amazon Route 53 to return in response to DNS queries for this resource record set. A trailing dot is optional; Amazon Route 53 assumes that the domain name is fully qualified. This means that Amazon Route 53 treats *www.example.com* (without a trailing dot) and *www.example.com.* (with a trailing dot) as identical.

### MX — Mail exchange

A priority and a domain name that specifies a mail server, for example, **10 mailserver.example.com**.

### NAPTR — Name Authority Pointer

Six space-separated settings that are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For more information, see [NAPTR Format \(p. 241\)](#).

### PTR — Pointer

The domain name that you want Amazon Route 53 to return.

### SPF — Sender Policy Framework

An SPF record enclosed in quotation marks, for example, **"v=spf1 ip4:192.168.0.1/16-all"**. SPF records are not recommended. For more information, see [Supported DNS Record Types \(p. 237\)](#).

### SRV — Service locator

An SRV record. For information about SRV record format, refer to the applicable documentation. The format of an SRV record is:

**[priority] [weight] [port] [server host name]**

For example:

**1 10 5269 xmpp-server.example.com.**

#### **TXT — Text**

A text record. Enclose text in quotation marks, for example, **"Sample Text Entry"**.

## Routing Policy

Select **Weighted**.

### Weight

A value that determines the proportion of DNS queries that Amazon Route 53 responds to using the current resource record set. Amazon Route 53 calculates the sum of the weights for the resource record sets that have the same combination of DNS name and type. Amazon Route 53 then responds to queries based on the ratio of a resource's weight to the total.

You can't create non-weighted resource record sets that have the same values for **Name** and **Type** as weighted resource record sets.

Enter an integer between 0 and 255. To disable routing to a resource, set **Weight** to 0. If you set **Weight** to 0 for all of the resource record sets in the group, traffic is routed to all resources with equal probability. This ensures that you don't accidentally disable routing for a group of weighted resource record sets.

The effect of setting **Weight** to 0 is different when you associate health checks with weighted resource record sets. For more information, see [Configuring Active-Active or Active-Passive Failover by Using Amazon Route 53 Weighted and Weighted Alias Records](#) (p. 365).

### Set ID

Enter a value that uniquely identifies this resource record set in the group of weighted resource record sets.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:

- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.

- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

**Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Values for Weighted Alias Resource Record Sets

When you create weighted alias resource record sets, you specify the following values:

### Topics

- [Name \(p. 293\)](#)
- [Type \(p. 294\)](#)
- [Alias \(p. 294\)](#)
- [Alias Target \(p. 294\)](#)
- [Alias Hosted Zone ID \(p. 296\)](#)
- [Routing Policy \(p. 296\)](#)
- [Weight \(p. 296\)](#)
- [Set ID \(p. 296\)](#)
- [Evaluate Target Health \(p. 297\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 297\)](#)

### Name

Enter the name of the domain or subdomain that you want to route traffic for. The default value is the name of the hosted zone.

#### Note

If you're creating a resource record set that has the same name as the hosted zone, don't enter a value (for example, an @ symbol) in the **Name** field.

Enter the same name for all of the resource record sets in the group of weighted resource record sets.

### CNAME resource record sets

If you're creating a resource record set that has a value of **CNAME** for **Type**, the name of the resource record set can't be the same as the name of the hosted zone.

### Aliases to CloudFront distributions and Amazon S3 buckets

The value that you specify depends in part on the AWS resource that you're routing traffic to:

- **CloudFront distribution** – Your distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.
- **Amazon S3 bucket** – The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In addition, you must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

### Special characters

For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format \(p. 319\)](#).

### Wildcard characters

You can use an asterisk (\*) character in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. For more information, see [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#).

## Type

The DNS record type. For more information, see [Supported DNS Record Types \(p. 237\)](#).

Select the applicable value based on the AWS resource that you're routing traffic to:

### CloudFront distribution

Select **A — IPv4 address**.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

### Elastic Beanstalk environment that has regionalized subdomains

Select **A — IPv4 address**

### ELB load balancer

Select **A — IPv4 address** or **AAAA — IPv6 address**

### Amazon S3 bucket

Select **A — IPv4 address**

### Another resource record set in this hosted zone

Select the type of the resource record set that you're creating the alias for. All types are supported except **NS** and **SOA**.

Select the same value for all of the resource record sets in the group of weighted resource record sets.

## Alias

Select **Yes**.

## Alias Target

The value that you specify depends on the AWS resource that you're routing traffic to.

### CloudFront Distributions

#### Note

You can't create alias resource record sets for CloudFront distributions in a private hosted zone.

For CloudFront distributions, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your CloudFront distribution** – Choose **Alias Target** and choose a distribution from the list. If you have a lot of distributions, you can type the first few characters of the domain name for your distribution to filter the list.

If your distribution doesn't appear in the list, note the following:

- The name of this resource record set must match an alternate domain name in your distribution.
- If you just added an alternate domain name to your distribution, it may take 15 minutes for your changes to propagate to all CloudFront edge locations. Until changes have propagated, Amazon Route 53 can't know about the new alternate domain name.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your distribution** – Enter the CloudFront domain name for the distribution, such as **d111111abcdef8.cloudfront.net**.

If you used one AWS account to create the current hosted zone and a different account to create a distribution, the distribution will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your distributions, the **Alias Targets** list shows **No Targets Available** under **CloudFront Distributions**.

#### Important

Do not route queries to a CloudFront distribution that has not propagated to all edge locations, or your users won't be able to access the applicable content.

Your CloudFront distribution must include an alternate domain name that matches the name of the resource record set. For example, if the name of the resource record set is **acme.example.com**, your CloudFront distribution must include **acme.example.com** as one of the alternate domain names. For more information, see [Using Alternate Domain Names \(CNAMEs\)](#) in the *Amazon CloudFront Developer Guide*.

If IPv6 is enabled for the distribution, create two resource record sets, one with a value of **A — IPv4 address** for **Type**, and one with a value of **AAAA — IPv6 address**.

#### Elastic Beanstalk environments that have regionalized subdomains

For Elastic Beanstalk environments that have regionalized subdomains, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Choose **Alias Target**, and then choose an environment from the list. If you have a lot of environments, you can type the first few characters of the CNAME attribute for the environment to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your Elastic Beanstalk environment** – Enter the CNAME attribute for the Elastic Beanstalk environment.

#### ELB Load Balancers

For ELB load balancers, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your load balancer** – Choose **Alias Target** and choose a load balancer from the list. If you have a lot of load balancers, you can type the first few characters of the DNS name to filter the list.
- **If you used different accounts to create your Amazon Route 53 hosted zone and your load balancer** – Enter the value that you got in the procedure [Getting the DNS Name for an ELB Load Balancer](#) (p. 245).

If you used one AWS account to create the current hosted zone and a different account to create a load balancer, the load balancer will not appear in the **Alias Targets** list.

If you used one account to create the current hosted zone and one or more different accounts to create all of your load balancers, the **Alias Targets** list shows **No Targets Available** under **Elastic Load Balancers**.

In either case, the console prepends **dualstack.** to the DNS name. When a client, such as a web browser, requests the IP address for your domain name (example.com) or subdomain name (www.example.com), the client can request an IPv4 address (an A record), an IPv6 address (a AAAA record), or both IPv4 and IPv6 addresses (in separate requests). The **dualstack.** designation allows Amazon Route 53 to respond with the appropriate IP address for your load balancer based on which IP address format the client requested.

#### Amazon S3 Buckets

For Amazon S3 buckets that are configured as website endpoints, do one of the following:

- **If you used the same account to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Choose **Alias Target** and choose a bucket from the list. If you have a lot of buckets, you can type the first few characters of the DNS name to filter the list.

The value of **Alias Target** changes to the Amazon S3 website endpoint for your bucket.

- **If you used different accounts to create your Amazon Route 53 hosted zone and your Amazon S3 bucket** – Type the name of the region that you created your S3 bucket in. Use the value that appears in the **Website Endpoint** column in the [Amazon Simple Storage Service Website Endpoints](#) table in the *AWS Regions and Endpoints* chapter of the *Amazon Web Services General Reference*.

If you used AWS accounts other than the current account to create your Amazon S3 buckets, the bucket won't appear in the **Alias Targets** list.

You must configure the bucket for website hosting. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

The name of the resource record set must match the name of your Amazon S3 bucket. For example, if the name of your Amazon S3 bucket is **acme.example.com**, the name of this resource record set must also be **acme.example.com**.

In a group of weighted alias, latency alias, failover alias, or geolocation alias resource record sets, you can create only one resource record set that routes queries to an Amazon S3 bucket because the name of the resource record set must match the name of the bucket and bucket names must be globally unique.

#### Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, choose **Alias Target** and choose the applicable resource record set. If you have a lot of resource record sets, you can type the first few characters of the name to filter the list.

If the hosted zone contains only the default NS and SOA resource record sets, the **Alias Targets** list shows **No Targets Available**.

### Alias Hosted Zone ID

This value appears automatically based on the value that you selected or entered for **Alias Target**.

### Routing Policy

Select **Weighted**.

### Weight

A value that determines the proportion of DNS queries that Amazon Route 53 responds to using the current resource record set. Amazon Route 53 calculates the sum of the weights for the resource record sets that have the same combination of DNS name and type. Amazon Route 53 then responds to queries based on the ratio of a resource's weight to the total.

You can't create non-weighted resource record sets that have the same values for **Name** and **Type** as weighted resource record sets.

Enter an integer between 0 and 255. To disable routing to a resource, set **Weight** to 0. If you set **Weight** to 0 for all of the resource record sets in the group, traffic is routed to all resources with equal probability. This ensures that you don't accidentally disable routing for a group of weighted resource record sets.

The effect of setting **Weight** to 0 is different when you associate health checks with weighted resource record sets. For more information, see [Configuring Active-Active or Active-Passive Failover by Using Amazon Route 53 Weighted and Weighted Alias Records](#) (p. 365).

### Set ID

Enter a value that uniquely identifies this resource record set in the group of weighted resource record sets.

## Evaluate Target Health

Select **Yes** if you want Amazon Route 53 to determine whether to respond to DNS queries using this resource record set by checking the health of the resource specified by **Alias Target**.

Note the following:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **Elastic Beanstalk environments that have regionalized endpoints** – If you specify an Elastic Beanstalk environment in **Alias Target** and the environment contains an ELB load balancer, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. (An environment automatically contains an ELB load balancer if it includes more than one Amazon EC2 instance.) If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other available resources that are healthy, if any.

If the environment contains a single Amazon EC2 instance, there are no special requirements.

- **ELB load balancers** – If you specify an ELB load balancer in **Alias Target**, Elastic Load Balancing routes queries only to the healthy Amazon EC2 instances that are registered with the load balancer. If you set **Evaluate Target Health** to **Yes** and either no Amazon EC2 instances are healthy or the load balancer itself is unhealthy, Amazon Route 53 routes queries to other resources.

When you create a load balancer, you configure settings for Elastic Load Balancing health checks; they're not Amazon Route 53 health checks, but they perform a similar function. Do not create Amazon Route 53 health checks for the Amazon EC2 instances that you register with an ELB load balancer.

For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 358).

- **S3 buckets** – There are no special requirements for setting **Evaluate Target Health** to **Yes** when the alias target is an S3 bucket.
- **Other resource record sets** – If the AWS resource that you specify in **Alias Target** is a resource record set or a group of resource record sets (for example, a group of weighted resource record sets) but is not another alias resource record set, we recommend that you associate a health check with all of the resource record sets in the alias target. For more information, see [What Happens When You Omit Health Checks?](#) (p. 361).

We recommend that you set **Evaluate Target Health** to **Yes** only when you have enough idle capacity to handle the failure of one or more endpoints.

## Associate with Health Check/Health Check to Associate

Select **Yes** if you want Amazon Route 53 to check the health of a specified endpoint and to respond to DNS queries using this resource record set only when the endpoint is healthy. Then select the health check that you want Amazon Route 53 to perform for this resource record set.

Amazon Route 53 doesn't check the health of the endpoint specified in the resource record set, for example, the endpoint specified by the IP address in the **Value** field. When you select a health check for a resource record set, Amazon Route 53 checks the health of the endpoint that you specified in the health check. For information about how Amazon Route 53 determines whether an endpoint is healthy, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).

Associating a health check with a resource record set is useful only when Amazon Route 53 is choosing between two or more resource record sets to respond to a DNS query, and you want Amazon Route 53 to base the choice in part on the status of a health check. Use health checks only in the following configurations:



- You're checking the health of all of the resource record sets in a group of failover, geolocation, latency, multivalue, or weighted resource record sets, and you specify health check IDs for all the resource record sets. If the health check for a resource record set specifies an endpoint that is not healthy, Amazon Route 53 stops responding to queries using the value for that resource record set.
- You select **Yes** for **Evaluate Target Health** for an alias resource record set or the resource record sets in a group of failover alias, geolocation alias, latency alias, or weighted alias resource record set. If the alias resource record sets reference non-alias resource record sets in the same hosted zone, you must also specify health checks for the referenced resource record sets.

For geolocation resource record sets, if an endpoint is unhealthy, Amazon Route 53 looks for a resource record set for the larger, associated geographic region. For example, suppose you have resource record sets for a state in the United States, for the United States, for North America, and for all locations (**Location** is **Default**). If the endpoint for the state resource record set is unhealthy, Amazon Route 53 checks the resource record sets for the United States, for North America, and for all locations, in that order, until it finds a resource record set that has a healthy endpoint.

If your health checks specify the endpoint only by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain Name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the resource record sets (`example.com`).

**Important**

In this configuration, if you create a health check for which the value of **Domain Name** matches the name of the resource record sets and then associate the health check with those resource record sets, health check results will be unpredictable.

For more information about checking the health of endpoints, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## Creating Resource Record Sets By Importing a Zone File

If you're migrating from another DNS service provider, and if your current DNS service provider lets you export your current DNS settings to a zone file, you can quickly create all of the resource record sets for an Amazon Route 53 hosted zone by importing a zone file.

**Note**

A zone file uses a standard format known as BIND to represent resource record sets in a text format. For information about the format of a zone file, see the Wikipedia entry [Zone file](#). Additional information is available in [RFC 1034, Domain Names—Concepts and Facilities](#) section 3.6.1, and [RFC 1035, Domain Names—Implementation and Specification](#) section 5.

If you want to create resource record sets by importing a zone file, note the following:

- The zone file must be in RFC-compliant format.
- The hosted zone must be empty except for the default NS and SOA records.
- The domain name of the resource record sets in the zone file must match the name of the hosted zone.
- Amazon Route 53 supports the `$ORIGIN` and `$TTL` keywords. If the zone file includes `$GENERATE` or `$INCLUDE` keywords, the import fails and Amazon Route 53 returns an error.
- When you import the zone file, Amazon Route 53 ignores the SOA record in the zone file. Amazon Route 53 also ignores any NS records that have the same name as the hosted zone.
- You can import a maximum of 1000 resource record sets. If you need to import more than 1000 records, you might be able to use the [BIND to Amazon Route 53 Conversion Tool](#).

- When the name of a resource record set in the zone file includes a trailing dot (`example.com.`), the import process interprets the name as a fully qualified domain name and creates an Amazon Route 53 resource record set with that name.

When the name of a resource record set in the zone file does not include a trailing dot (`www`), the import process concatenates that name with the domain name in the zone file (`example.com`) and creates an Amazon Route 53 resource record set with the concatenated name (`www.example.com`).

If you use the GoDaddy export process to create a zone file, you might need to edit the zone file to add a trailing dot to MX resource record sets before you import the zone file into your hosted zone. The export process currently doesn't add a trailing dot to the fully qualified domain names of MX resource record sets, so the Amazon Route 53 import process adds the domain name to the name of the resource record set. For example, suppose you're importing resource record sets into the hosted zone `example.com` and the name of an MX record in the zone file is `mail.example.com`, with no trailing dot. The Amazon Route 53 import process creates an MX resource record set named `mail.example.com.example.com`.

### Important

For CNAME, MX, PTR, and SRV resource record sets, this behavior also applies to the domain name that is included in the RDATA value. For example, suppose you have a zone file for `example.com`. If a CNAME resource record set in the zone file (`support`, without a trailing dot) has an RDATA value of `www.example.com` (also without a trailing dot), the import process creates an Amazon Route 53 resource record set with the name `support.example.com` that routes traffic to `www.example.com.example.com`. Before you import your zone file, review RDATA values and update as applicable.

Amazon Route 53 doesn't support exporting resource record sets to a zone file.

### To create resource record sets by importing a zone file

1. Get a zone file from the DNS service provider that is currently servicing the domain. The process and terminology vary from one service provider to another. Refer to your provider's interface and documentation for information about exporting or saving your records in a zone file or a BIND file.

If the process isn't obvious, try asking your current DNS provider's customer support for your *records list* or *zone file* information.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. On the **Hosted Zones** page, create a new hosted zone:
  - a. Click **Create Hosted Zone**.
  - b. Enter the name of your domain and, optionally, a comment. Note that the comment can't be edited later.
  - c. Click **Create**.
4. On the **Hosted Zones** page, double-click the name of your new hosted zone.
5. Click **Import Zone File**.
6. In the **Import Zone File** pane, paste the contents of your zone file into the **Zone File** text box.
7. Click **Import**.

### Note

Depending on the number of resource record sets in your zone file, you might have to wait a few minutes for the resource record sets to be created.

8. If you're using another DNS service for the domain (which is common if you registered the domain with another registrar), migrate DNS service to Amazon Route 53. When that step is complete, your registrar will start to identify Amazon Route 53 as your DNS service in response to DNS queries for your domain, and the queries will start being sent to Amazon Route 53 DNS servers. (Typically,

there's a day or two of delay before DNS queries start being routed to Amazon Route 53 because information about your previous DNS service is cached on DNS resolvers for that long.) For more information, see [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 209\)](#).

## Editing Resource Record Sets

The following procedure explains how to edit resource record sets using the Amazon Route 53 console. For information about how to edit resource record sets using the Amazon Route 53 API, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

### Note

Your changes to resource record sets take time to propagate to the Amazon Route 53 DNS servers. Currently, the only way to verify that changes have propagated is to use the [GetChange](#) API action. Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

### To edit resource record sets using the Amazon Route 53 console

1. If you're not editing alias resource record sets, skip to step 2.

If you're editing alias resource record sets that route traffic to ELB Classic, Application, or Network Load Balancers, and if you created your Amazon Route 53 hosted zone and your load balancer using different accounts, perform the procedure [Getting the DNS Name for an ELB Load Balancer \(p. 245\)](#) to get the DNS name for the load balancer.

If you're editing alias resource record sets for any other AWS resource, skip to step 2.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. On the **Hosted Zones** page, double-click the row for the hosted zone in which you want to edit resource record sets.
4. Double-click the row for the resource record set that you want to edit.
5. Enter the applicable values. For more information, see [Values That You Specify When You Create or Edit Amazon Route 53 Records \(p. 246\)](#).
6. Click **Save Record Set**.
7. If you're editing multiple resource record sets, repeat steps 4 through 6.

## Deleting Resource Record Sets

The following procedure explains how to delete resource record sets using the Amazon Route 53 console. For information about how to delete resource record sets using the Amazon Route 53 API, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

### Note

Your changes to resource record sets take time to propagate to the Amazon Route 53 DNS servers. Currently, the only way to verify that changes have propagated is to use the [GetChange](#) API action. Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

### To delete resource record sets

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. On the Hosted Zones page, double-click the row for the hosted zone that contains resource record sets that you want to delete.

3. In the list of resource record sets, select the resource record set that you want to delete.

To select multiple, consecutive resource record sets, click the first row, hold the **Shift** key, and click the last row. To select multiple, nonconsecutive resource record sets, click the first row, hold the **Ctrl** key, and click additional rows.

You cannot delete the resource record sets that have a value of **NS** or **SOA** for **Type**.

4. Click **Delete Record Set**.
5. Click **OK** to confirm.

## Listing Resource Record Sets

The following procedure explains how to use the Amazon Route 53 console to list the resource record sets in a hosted zone. For information about how to list resource record sets using the Amazon Route 53 API, see [ListResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

### To list resource record sets

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. On the **Hosted Zones** page, double-click the name of a hosted zone to see its Record Sets page.

To display only selected resource record sets, enter the applicable search criteria above the list of resource record sets:

- To display the resource record sets that have specific values in either the **Name** or **Value** field, enter a value in the **Search** field. For example, to display the resource record sets that have an IP address beginning with **192.0**, type that value in the **Search** field.
- To display only the resource record sets that have the same DNS record type, select the type in the drop down list.
- To display only alias resource record sets, select **Aliases Only**.
- To display only weighted resource record sets, select **Weighted Only**.

## Using Traffic Flow to Route DNS Traffic

If you use multiple resources, such as web servers, in multiple locations, it can be a challenge to create resource record sets for a complex configuration that uses a combination of Amazon Route 53 routing policies—failover, geolocation, latency, multivalue answer, and weighted. You can create resource record sets one at a time, but it's hard to keep track of the relationships among the resource record sets when you're reviewing the settings in a table in the console.

If you're using the Amazon Route 53 console, Amazon Route 53 traffic flow provides a visual editor that helps you create complex trees in a fraction of the time with a fraction of the effort. You can save the configuration as a *traffic policy* and then associate the traffic policy with one or more domain names (such as `example.com`) or subdomain names (such as `www.example.com`), in the same hosted zone or in multiple hosted zones. (You can only use traffic flow to create configurations for public hosted zones.) You can also use the visual editor to quickly find resources that you need to update and apply the updates to one or more DNS names such as `www.example.com`. In addition, you can roll back the updates if the new configuration isn't performing as you expected it to.

For example, using the traffic flow visual editor, you can easily create a configuration in which you use geolocation routing to route all users from one country to a single endpoint and then use latency routing to route all other users to AWS regions based on the latency between your users and those regions.

You might also use failover routing to route users to a primary ELB load balancer within each region when the load balancer is functioning or to a secondary load balancer when the primary load balancer is unhealthy or is offline for maintenance.

Here's an overview of how traffic flow works:

1. You use the visual editor to create a traffic policy. A traffic policy includes information about the routing configuration that you want to create: the routing policies that you want to use and the resources that you want to route DNS traffic to, such as the IP address of each EC2 instance and the domain name of each ELB load balancer. You can also associate health checks with your endpoints so that Amazon Route 53 routes traffic only to healthy resources. (Traffic flow also lets you route traffic to non-AWS resources.)
2. You create a *policy record*. This is where you specify the hosted zone (such as example.com) in which you want to create the configuration that you defined in your traffic policy. It's also where you specify the DNS name (such as www.example.com) that you want to associate the configuration with. You can create more than one policy record in the same hosted zone or in different hosted zones by using the same traffic policy.

When you create a policy record, Amazon Route 53 creates a tree of resource record sets. The root resource record set appears in the list of resource record sets for your hosted zone. The root resource record set has the DNS name that you specified when you created the policy record. Amazon Route 53 also creates resource record sets for the entire rest of the tree, but it hides them from the list of resource record sets for your hosted zone.

3. When a user browses to www.example.com, Amazon Route 53 responds to the query based on the configuration in the traffic policy that you used to create the policy record.

#### Topics

- [Creating and Managing Traffic Policies \(p. 302\)](#)
- [Creating and Managing Policy Records \(p. 311\)](#)

## Creating and Managing Traffic Policies

#### Topics

- [Creating a Traffic Policy \(p. 302\)](#)
- [Values that You Specify When You Create a Traffic Policy \(p. 303\)](#)
- [Creating Additional Versions of a Traffic Policy \(p. 307\)](#)
- [Creating a Traffic Policy by Importing a JSON Document \(p. 308\)](#)
- [Viewing Traffic Policy Versions and the Associated Policy Records \(p. 309\)](#)
- [Deleting Traffic Policy Versions and Traffic Policies \(p. 310\)](#)

## Creating a Traffic Policy

To create a traffic policy, perform the following procedure.

#### To create a traffic policy

1. Design your configuration. For information about how complex DNS routing configurations work, see [Configuring DNS Failover \(p. 356\)](#) in [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).
2. Based on the design for your configuration, create the health checks that you want to use for your endpoints.

3. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
4. In the navigation pane, choose **Traffic policies**.
5. Choose **Create traffic policy**.
6. On the **Name policy** page, specify the applicable values. For more information, see [Values that You Specify When You Create a Traffic Policy \(p. 303\)](#).
7. Choose **Next**.
8. On the *policy name* page, specify the applicable values. For more information, see [Values that You Specify When You Create a Traffic Policy \(p. 303\)](#).

You can delete rules, endpoints, and branches of a traffic policy in the following ways:

- To delete a rule or an endpoint, click the **x** in the upper-right corner of the box.

**Important**

If you delete a rule that has child rules and endpoints, Amazon Route 53 also deletes all of the children.

- If you connect two rules to the same child rule or endpoint and you want to delete one of the connections, pause your cursor on the connection that you want to delete, and click the **x** for that connection.
9. Choose **Next**.
  10. *Optional:* Specify the settings to create one or more policy records in one hosted zone by using the new traffic policy. For more information, see [Values that You Specify When You Create or Update a Policy Record \(p. 311\)](#). You can also create policy records later, either in the same hosted zone or in additional hosted zones.

If you don't want to create policy records now, choose **Skip this step**, and the console displays the list of traffic policies and policy records that you have created by using the current AWS account.

11. If you specified settings for policy records in the preceding step, choose **Create policy record**.

## Values that You Specify When You Create a Traffic Policy

When you create a traffic policy, you specify the following values.

- the section called "Policy name"
- the section called "Version"
- the section called "Version description"
- the section called "DNS type"
- the section called "Connect to"
- the section called "Value type"
- the section called "Value"

### Policy name

Enter a name that describes the traffic policy. This value appears in the list of traffic policies in the console. You can't change the name of a traffic policy after you create it.

### Version

This value is assigned automatically by Amazon Route 53 when you create a traffic policy or a new version of an existing policy.

## Version description

Enter a description that applies to this version of the traffic policy. This value appears in the list of traffic policy versions in the console.

## DNS type

Choose the DNS type that you want Amazon Route 53 to assign to all of the resource record sets when you create a policy record by using this traffic policy version. For a list of supported types, see [Supported DNS Record Types \(p. 237\)](#).

### Important

If you're creating a new version of an existing traffic policy, you can change the DNS type. However, you can't edit a policy record and choose a traffic policy version that has a DNS type that is different from the traffic policy version that you used to create the policy record. For example, if you created a policy record by using a traffic policy version that has a **DNS type** of A, you can't edit the policy record and choose a traffic policy version that has any other value for **DNS type**.

If you want to route traffic to the following AWS resources, choose the applicable value:

- **CloudFront distribution** – Choose **A: IP address in IPv4 format**.
- **ELB load balancer** – Choose either **A: IP address in IPv4 format** or **AAAA: IP address in IPv6 format**.
- **Amazon S3 bucket configured as a website endpoint**: Choose **A: IP address in IPv4 format**.

## Connect to

Choose the applicable rule or endpoint based on the design for your configuration.

### Failover rule

Choose this option when you want to configure active-passive failover, in which one resource takes all traffic when it's available and the other resource takes all traffic when the first resource isn't available.

For more information, see [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Records \(p. 367\)](#).

### Geolocation rule

Choose this option when you want Amazon Route 53 to respond to DNS queries based on the location of your users.

For more information, see [Geolocation Routing \(p. 233\)](#).

When you choose **Geolocation rule**, you also choose the country or the state in the United States that requests originate from.

### Latency rule

Choose this option when you have resources in multiple Amazon EC2 data centers that perform the same function, and you want Amazon Route 53 to respond to DNS queries with the resources that provide the best latency.

When you choose **Latency rule**, you also choose an AWS Region.

For more information, see [Latency-based Routing \(p. 234\)](#).

### Geoproximity rule

Choose this option when you want Amazon Route 53 to respond to DNS queries based on the location of your resources and optionally on a bias that you specify. The bias allows you to send more traffic to a resource or more traffic away from a resource.

When you choose **Geoproximity rule**, enter the following values:

#### Endpoint location

Choose the applicable value:

- **Custom (enter coordinates)** – If your endpoint is not an AWS resource, choose **Custom (enter coordinates)**.
- **An AWS Region** – If your endpoint is an AWS resource, choose the AWS Region that you created the resource in.

#### Coordinates

If you chose **Custom (enter coordinates)** for **Endpoint location**, enter the latitude and longitude of the location of the resource. Note the following:

- Latitude represents the location south (negative) or north (positive) of the equator. Valid values are -90 degrees to 90 degrees.
- Longitude represents the location west (negative) or east (positive) of the prime meridian. Valid values are -180 degrees to 180 degrees.
- You can get latitude and longitude from some online mapping applications. For example, in Google Maps, the URL for a location specifies the latitude and longitude:

`https://www.google.com/maps/@47.6086111,-122.3409953,20z`

- You can enter up to two decimals of precision, for example, **47.63**. If you specify a value with greater precision, Amazon Route 53 truncates the value to two places after the decimal. For latitude and for longitude at the equator, 0.01 degree is approximately 0.69 miles.

#### Bias

Specify a value for **Bias** if you want to route more traffic to an endpoint from nearby endpoints (positive values) or route less traffic to an endpoint (negative values). The range of valid values is -99 to 99; the default value is 0.

#### Important

The value of **Bias** is relative, based on the location of other resources, rather than absolute, based on distance. As a result, the effect of a change is difficult to predict. For example, depending on where your resources are, changing the bias from 10 to 15 can mean the difference between adding or subtracting a significant amount of traffic from the New York City metropolitan area. We recommend that you change the bias in small increments and evaluate the results, and then make additional changes if appropriate.

For more information, see [Geoproximity Routing \(Traffic Flow Only\) \(p. 233\)](#).

### Multivalued answer rule

Choose this option when you want Amazon Route 53 to respond to DNS queries with up to eight healthy answers selected approximately at random.

For more information, see [Multivalued Answer Routing \(p. 235\)](#).

### Weighted rule

Choose this option when you have multiple resources that perform the same function (for example, web servers that serve the same website) and you want Amazon Route 53 to route traffic to those resources in proportions that you specify (for example, 1/3rd to one server and 2/3rds to the other).

When you choose **Weighted rule**, type the weight that you want to apply to this rule.



For more information, see [Weighted Routing \(p. 235\)](#).

#### Endpoint

Choose this option to specify the resource, such as a CloudFront distribution or an ELB load balancer, that you want to route DNS queries to.

#### Existing rule

Choose this option when you want to route DNS queries to an existing rule in this traffic policy. For example, you might create two or more geolocation rules that route queries for different countries to the same failover rule. The failover rule might then routes queries to two ELB load balancers.

This option isn't available if the traffic policy doesn't include any rules.

#### Existing endpoint

Choose this option when you want to route DNS queries to an existing endpoint. For example, if you have two failover rules, you might want to route DNS queries for both **On failover** (secondary) options to the same ELB load balancer.

This option isn't available if the traffic policy doesn't include any endpoints.

## Value type

Choose the applicable option:

#### CloudFront distribution

Choose this option if you want to route traffic to a CloudFront distribution. The option is available only if you chose **A: IP address in IPv4 format** for **DNS type**.

#### ELB load balancer

Choose this option if you want to route traffic to an ELB load balancer. The option is available only if you chose either **A: IP address in IPv4 format** or **AAAA: IP address in IPv6 format** for **DNS type**.

#### S3 website endpoint

Choose this option if you want to route traffic to an Amazon S3 bucket that is configured as a website endpoint. The option is available only if you chose **A: IP address in IPv4 format** for **DNS type**.

#### Type *DNS type* value

Choose this option if you want Amazon Route 53 to respond to DNS queries using the value in the **Value** field. For example, if you chose **A** for the value of **DNS type** when you created this traffic policy, this option in the **Value type** list will be **Type A value**. This requires that you enter an IP address in IPv4 format in the **Value** field. Amazon Route 53 will respond to DNS queries that are routed to this endpoint with the IP address in the **Value** field.

## Value

Choose or type a value based on the option that you chose for **Value type**:

#### CloudFront distribution

Choose a CloudFront distribution from the list of distributions that are associated with the current AWS account.

#### ELB load balancer

Choose an ELB load balancer from the list of ELB load balancers that are associated with the current AWS account.

### S3 website endpoint

Choose an Amazon S3 bucket from the list of Amazon S3 buckets that are configured as website endpoints and that are associated with the current AWS account.

#### Important

When you create a policy record based on this traffic policy, the bucket that you choose here must match the domain name (such as `www.example.com`) that you specify for [Policy record DNS name](#) in the policy record. If **Value** and **Policy record DNS name** don't match, Amazon S3 won't respond to DNS queries for the domain name.

### Type *DNS type* value

Enter a value that corresponds with the value that you specified for **DNS type** when you started this traffic policy. For example, if you chose **MX** for **DNS type**, type two values: the priority that you want to assign to a mail server and the domain name of the mail server, such as `10 sydney.mail.example.com`.

For more information about supported DNS types, see [Supported DNS Record Types \(p. 237\)](#).

## Creating Additional Versions of a Traffic Policy

When you edit a traffic policy, Amazon Route 53 automatically creates another version of the traffic policy and retains the previous versions unless you choose to delete them. The new version has the same name as the traffic policy that you're editing; it's distinguished from the original version by a version number that Amazon Route 53 increments automatically. You can base the new version of a traffic policy on any existing version of a traffic policy that has the same name.

Amazon Route 53 doesn't reuse version numbers for new versions of a given traffic policy. For example, if you create three versions of **MyTrafficPolicy**, delete the last two versions, and then create another version, the new version is version 4. By retaining the previous versions, Amazon Route 53 ensures that you can roll back to a previous configuration if a new configuration doesn't route traffic as you wanted it to.

To create a new traffic policy version, perform the following procedure.

### To create another version of a traffic policy

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Traffic policies**.
3. Choose the name of the traffic policy that you want to create a new version of.
4. In the **Traffic policy versions** table at the top of the page, select the check box for the traffic policy version that you want to use as a basis for the new traffic policy version.
5. Choose **Edit policy as new version**.
6. On the **Update description** page, type a description for the new traffic policy version. We recommend that you specify a description that distinguishes this version from other versions of the same traffic policy. When you create a new policy record, the value that you specify appears in the list of available versions for this traffic policy.
7. Choose **Next**.
8. Update the configuration as applicable. For more information, see [Values that You Specify When You Create a Traffic Policy \(p. 303\)](#).

You can delete rules, endpoints, and branches of a traffic policy in the following ways:

- To delete a rule or an endpoint, click the **x** in the upper-right corner of the box.

### Important

If you delete a rule that has child rules and endpoints, Amazon Route 53 also deletes all of the children.

- If you connect two rules to the same child rule or endpoint and you want to delete one of the connections, pause your cursor on the connection that you want to delete, and click the **x** for that connection.
9. When you're finished editing, choose **Save as new version**.
  10. *Optional:* Specify the settings to create one or more policy records in one hosted zone by using the new traffic policy version. For more information, see [Values that You Specify When You Create or Update a Policy Record \(p. 311\)](#). You can also create policy records later, either in the same hosted zone or in additional hosted zones.

If you don't want to create policy records now, choose **Skip this step**, and the console displays the list of traffic policies and policy records that you have created by using the current AWS account.

11. If you specified settings for policy records in the preceding step, choose **Create policy record**.

## Creating a Traffic Policy by Importing a JSON Document

You can create a new traffic policy or a new version of an existing traffic policy by importing a document in JSON format that describes all of the endpoints and rules that you want to include in the traffic policy. For information about the format of the JSON document and several examples that you can copy and revise, see [Traffic Policy Document Format](#) in the *Amazon Route 53 API Reference*.

The easiest way to get the JSON-formatted document for an existing traffic policy version is to use the `get-traffic-policy` command in the AWS CLI. For more information, see [get-traffic-policy](#) in the *AWS Command Line Interface Reference*.

### To create a traffic policy by importing a JSON document

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. To create a new traffic policy by importing a JSON document, perform the following steps:
  - a. In the navigation pane, choose **Traffic policies**.
  - b. Choose **Create traffic policy**.
  - c. On the **Name policy** page, specify the applicable values. For more information, see [Values that You Specify When You Create a Traffic Policy \(p. 303\)](#).
  - d. Skip to step 4.
3. To create a new version of an existing traffic policy by importing a JSON document, perform the following steps:
  - a. In the navigation pane, choose **Traffic policies**.
  - b. Choose the name of the traffic policy that you want to base the new version on.
  - c. In the **Traffic policy versions** table, select the check box for the version that you want to base the new version on.
  - d. Choose **Edit policy as new version**.
  - e. On the **Update description** page, type a description for the new version.
  - f. Skip to step 4.
4. Choose **Next**.
5. Choose **Import traffic policy**.
6. Type a new traffic policy, paste an example traffic policy, or paste an existing traffic policy.

7. Choose **Import traffic policy**.

## Viewing Traffic Policy Versions and the Associated Policy Records

You can view all of the versions that you've created for a traffic policy as well as all of the policy records that you've created by using each of the versions of the traffic policy.

### To view traffic policy versions and the associated policy records

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Traffic policies**.
3. Choose the name of a traffic policy.
4. The top table lists all of the versions that you've created of a traffic policy. The table includes the following information:

#### Version number

The number of each version of a traffic policy that you've created. If you choose the version number, the console displays the configuration for that version.

#### Number of policy records

The number of policy records that you've created by using this traffic policy version.

#### DNS type

The DNS type that you specified when you created the traffic policy version.

#### Version description

The description that you specified when you created the traffic policy version.

5. The bottom table lists all of the policy records that you've created by using the traffic policy versions in the top table. The table includes the following information:

#### Policy record DNS name

The DNS names that you've associated the traffic policy with.

#### Status

Possible values include the following:

##### Applied

Amazon Route 53 has finished creating or updating a policy record and the corresponding resource record sets.

##### Creating

Amazon Route 53 is creating the resource record sets for a new policy record.

##### Updating

You have updated a policy record and Amazon Route 53 is in the process of creating a new group of resource record sets that will replace the existing group of resource record sets for the specified DNS name.

##### Deleting

Amazon Route 53 is in the process of deleting a policy record and the associated resource record sets.

### Failed

Amazon Route 53 wasn't able to create or update the policy record and the associated resource record sets.

### Version used

Indicates the version of the traffic policy that you used to create the policy record.

### DNS type

The DNS type of all of the resource record sets that Amazon Route 53 created for this policy record. When you edit a policy record, you must specify a traffic policy version that has the same DNS type as the DNS type for the policy record that you're editing.

### TTL (in seconds)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record sets (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

## Deleting Traffic Policy Versions and Traffic Policies

To delete a traffic policy, you must delete all of the versions (including the original) that you've created for the traffic policy. In addition, to delete a traffic policy version, you must delete all of the policy records that you created by using the traffic policy version.

### Important

If you delete policy records that Amazon Route 53 is using to respond to DNS queries, Amazon Route 53 will stop responding to queries for the corresponding DNS names. For example, if Amazon Route 53 is using the policy record for `www.example.com` to respond to DNS queries for `www.example.com` and you delete the policy record, your users will not be able to access your website or web application by using the domain name `www.example.com`.

To delete traffic policy versions and, optionally, a traffic policy, perform the following procedure:

### To delete traffic policy versions and a traffic policy

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Traffic policies**.
3. Choose the name of the traffic policy for which you want to delete traffic policy versions and that, optionally, you want to delete completely.
4. If the traffic policy versions that you want to delete in the top table appear in the **Version used** column in the bottom table, select the check boxes for the corresponding policy records in the bottom table.

For example, if you want to delete version 3 of a traffic policy but you created one of the policy records in the bottom table by using version 3, select the check box for that policy record.

5. Choose **Delete policy records**.
6. Choose the refresh button for the bottom table to refresh the display until the policy records that you deleted no longer appear in the table.
7. In the top table, select the check boxes for the traffic policy versions that you want to delete.
8. Choose **Delete version**.

9. If you deleted all traffic policy versions in the preceding step and you want to delete the traffic policy, too, choose the refresh button for the top table to refresh the display until the table is empty.
10. In the navigation pane, choose **Traffic policies**.
11. In the list of traffic policies, select the check box for the traffic policy that you want to delete.
12. Choose **Delete traffic policy**.

## Creating and Managing Policy Records

You create policy records to apply the configuration that you created in a traffic policy to one or more domain names or subdomain names.

### Topics

- [Creating Policy Records \(p. 311\)](#)
- [Values that You Specify When You Create or Update a Policy Record \(p. 311\)](#)
- [Updating Policy Records \(p. 312\)](#)
- [Deleting Policy Records \(p. 312\)](#)

## Creating Policy Records

To create a policy record, perform the following procedure.

### Important

For each policy record that you create, you incur a monthly charge. If you later delete the policy record, the charge is prorated. For more information, see [Amazon Route 53 Pricing](#).

### To create a policy record

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Policy records**.
3. On the **Policy records** page, choose **Create policy records**.
4. On the **Create policy records** page, specify the applicable values. For more information, see [Values that You Specify When You Create or Update a Policy Record \(p. 311\)](#).
5. Choose **Create policy records**.
6. If you want to create policy records in another hosted zone, repeat steps 3 through 5.

## Values that You Specify When You Create or Update a Policy Record

When you create or update a policy record, you specify the following values

- [Traffic policy](#)
- [Version](#)
- [Hosted zone](#)
- [Policy record DNS name](#)
- [TTL](#)

### Traffic policy

Choose the traffic policy whose configuration you want to use for this policy record.

### Version

Choose the version of the traffic policy whose configuration you want to use for this policy record.

If you're updating an existing policy record, you must choose a version for which the DNS type matches the current DNS type of the policy record. For example, if the DNS type of the policy record is **A**, you must choose a version for which the DNS type is **A**.

### Hosted zone

Choose the hosted zone in which you want to create a policy record by using the specified traffic policy and version. You can't change the value of **Hosted zone** after you create a policy record.

### Policy record DNS name

When you're creating a policy record, type the domain name or subdomain name for which you want Amazon Route 53 to respond to DNS queries by using the configuration in the specified traffic policy and version.

To use the same configuration for more than one domain name or subdomain name in the specified hosted zone, choose **Add another policy record**, and enter the applicable domain name or subdomain name and TTL.

You can't change the value of **Policy record DNS name** after you create a policy record.

### TTL (in seconds)

Type the amount of time, in seconds, that you want DNS recursive resolvers to cache information about this resource record set. If you specify a longer value (for example, 172800 seconds, or two days), you pay less for Amazon Route 53 service because recursive resolvers send requests to Amazon Route 53 less often. However, it takes longer for changes to the resource record sets (for example, a new IP address) to take effect because recursive resolvers use the values in their cache for longer periods instead of asking Amazon Route 53 for the latest information.

## Updating Policy Records

To update the settings in a policy record, perform the following procedure.

### To update a policy record

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Policy records**.
3. On the **Policy records** page, select the check box for the policy record that you want to update, and choose **Edit policy record**.
4. On the **Edit policy record** page, specify the applicable values. For more information, see [Values that You Specify When You Create or Update a Policy Record \(p. 311\)](#).
5. Choose **Edit policy record**.
6. If you want to update another policy record, repeat steps 3 through 5.

## Deleting Policy Records

To delete policy records, perform the following procedure.

### Important

If you delete policy records that Amazon Route 53 is using to respond to DNS queries, Amazon Route 53 will stop responding to queries for the corresponding DNS names. For example, if Amazon Route 53 is using the policy record for `www.example.com` to respond to DNS queries

for `www.example.com` and you delete the policy record, your users will not be able to access your website or web application by using the domain name `www.example.com`.

#### To delete a policy record

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Policy records**.
3. On the **Policy records** page, select the check boxes for the policy records that you want to delete, and choose **Delete policy record**.

## Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain

You can use Amazon Route 53 as the DNS service for a new subdomain or an existing subdomain and still use another DNS service for the parent domain. For more information, see the applicable topic.

#### Topics

- [Creating a Subdomain That Uses Amazon Route 53 as the DNS Service without Migrating the Parent Domain \(p. 313\)](#)
- [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain \(p. 315\)](#)

## Creating a Subdomain That Uses Amazon Route 53 as the DNS Service without Migrating the Parent Domain

You can create a subdomain that uses Amazon Route 53 as the DNS service without migrating the parent domain from another DNS service.

The process has four basic steps:

1. [Create an Amazon Route 53 hosted zone for the subdomain \(p. 313\)](#).
2. [Add resource record sets \(p. 314\)](#) for the new subdomain to your Amazon Route 53 hosted zone.
3. *API only:* [Confirm that your changes have propagated \(p. 314\)](#) to all Amazon Route 53 DNS servers.

#### Note

Currently, the only way to verify that changes have propagated is to use the [GetChange](#) API action. Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

4. [Update the DNS service for the parent domain by adding name server records for the subdomain \(p. 314\)](#).

## Creating a Hosted Zone for the New Subdomain

When you want to use Amazon Route 53 as the DNS service for a new subdomain without migrating the parent domain, you start by creating a hosted zone for the subdomain. Amazon Route 53 stores information about your subdomain in the hosted zone.

When you create a hosted zone, Amazon Route 53 automatically creates four name server (NS) records and a start of authority (SOA) record for the zone. The NS records identify the name servers that you



give to your registrar or your DNS service so that queries are routed to Amazon Route 53 name servers. For more information about NS and SOA records, see [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone](#) (p. 224).

To create a hosted zone using the Amazon Route 53 console, perform the following procedure. To create a hosted zone using the Amazon Route 53 API, use the `CreateHostedZone` action. For more information, see [CreateHostedZone](#) in the *Amazon Route 53 API Reference*.

### To create a hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. If you're new to Amazon Route 53, choose **Get Started Now** under **DNS Management**.  
  
If you're already using Amazon Route 53, choose **Hosted Zones** in the **navigation** pane.
3. In the right pane, enter the name of the subdomain, such as **apex.example.com**. You can also enter an optional comment. For more information about a field, see the tool tip for the field.  
  
For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format](#) (p. 319).
4. Below the right pane, choose **Create Hosted Zone**.

## Creating Resource Record Sets

You can create resource record sets using either the Amazon Route 53 console or the Amazon Route 53 API. The resource record sets that you create in Amazon Route 53 will become the resource record sets that DNS uses after you delegate responsibility for the subdomain to Amazon Route 53, as explained in [Updating Your DNS Service with Name Server Records for the Subdomain](#) (p. 314), later in the process.

### Important

Do not create additional name server (NS) or start of authority (SOA) records in the Amazon Route 53 hosted zone, and do not delete the existing NS and SOA records.

To create resource record sets using the Amazon Route 53 console, see [Working with Resource Record Sets](#) (p. 231). To create resource record sets using the Amazon Route 53 API, use `ChangeResourceRecordSets`. For more information, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

## Checking the Status of Your Changes (API Only)

Creating a new hosted zone and changing resource record sets take time to propagate to the Amazon Route 53 DNS servers. If you used [ChangeResourceRecordSets](#) to create your resource record sets, you can use the `GetChange` action to determine whether your changes have propagated. (`ChangeResourceRecordSets` returns a value for `ChangeId`, which you can include in a subsequent `GetChange` request. `ChangeId` is not available if you created the resource record sets by using the console.) For more information, see [GET GetChange](#) in the *Amazon Route 53 API Reference*.

### Note

Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

## Updating Your DNS Service with Name Server Records for the Subdomain

After your changes to Amazon Route 53 resource record sets have propagated (see [Checking the Status of Your Changes \(API Only\)](#) (p. 314)), update the DNS service for the parent domain by adding NS records for the subdomain. This is known as delegating responsibility for the subdomain to Amazon Route 53. For example, if the parent domain `example.com` is hosted with another DNS service and you

created the subdomain `test.example.com` in Amazon Route 53, you must update the DNS service for `example.com` with new NS records for `test.example.com`.

Perform the following procedure.

1. Using the method provided by your DNS service, back up the zone file for the parent domain.
2. In the Amazon Route 53 console, get the name servers for your Amazon Route 53 hosted zone:
  - a. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
  - b. In the navigation pane, click **Hosted Zones**.
  - c. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.
  - d. In the right pane, make note of the four servers listed for **Name Servers**.

Alternatively, you can use the `GetHostedZone` action. For more information, see [GetHostedZone](#) in the *Amazon Route 53 API Reference*.

3. Using the method provided by the DNS service of the parent domain, add NS records for the subdomain to the zone file for the parent domain. In these NS records, specify the four Amazon Route 53 name servers that are associated with the hosted zone that you created in Step 1.

### Important

Do not add a start of authority (SOA) record to the zone file for the parent domain. Because the subdomain will use Amazon Route 53, the DNS service for the parent domain is not the authority for the subdomain.

If your DNS service automatically added an SOA record for the subdomain, delete the record for the subdomain. However, do not delete the SOA record for the parent domain.

## Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain

You can migrate a subdomain to use Amazon Route 53 as the DNS service without migrating the parent domain from another DNS service.

The process has four basic steps:

1. [Create an Amazon Route 53 hosted zone for the subdomain \(p. 315\)](#).
2. [Get the current DNS configuration from the current DNS service provider for the parent domain \(p. 316\)](#).
3. [Add resource record sets \(p. 316\)](#) for the subdomain to your Amazon Route 53 hosted zone.
4. *API only:* [Confirm that your changes have propagated \(p. 317\)](#) to all Amazon Route 53 DNS servers.

### Note

Currently, the only way to verify that changes have propagated is to use the [GetChange](#) API action. Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

5. [Update the DNS configuration with the DNS service provider for the parent domain by adding name server records for the subdomain \(p. 317\)](#).

## Creating a Hosted Zone for the Subdomain

If you want to migrate a subdomain from another DNS service to Amazon Route 53 but you don't want to migrate the parent domain, start by creating a hosted zone for the subdomain. Amazon Route 53 stores information about your subdomain in the hosted zone.

When you create a hosted zone, Amazon Route 53 automatically creates four name server (NS) records and a start of authority (SOA) record for the zone. The NS records identify the name servers that you give to your registrar or your DNS service so that queries are routed to Amazon Route 53 name servers. For more information about NS and SOA records, see [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone](#) (p. 224).

To create a hosted zone using the Amazon Route 53 console, perform the following procedure. To create a hosted zone using the Amazon Route 53 API, use the `CreateHostedZone` action. For more information, see [CreateHostedZone](#) in the *Amazon Route 53 API Reference*.

### To create a hosted zone using the Amazon Route 53 console

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. If you're new to Amazon Route 53, choose **Get Started Now** under **DNS Management**.  
  
If you're already using Amazon Route 53, choose **Hosted Zones** in the **navigation** pane.
3. In the right pane, enter the name of the subdomain, such as **apex.example.com**. You can also enter an optional comment. For more information about a field, see the tool tip for the field.  
  
For information about how to specify characters other than a-z, 0-9, and - (hyphen) and how to specify internationalized domain names, see [DNS Domain Name Format](#) (p. 319).
4. Below the right pane, choose **Create Hosted Zone**.

## Getting Your Current DNS Configuration from Your DNS Service Provider

To simplify the process of migrating an existing subdomain to Amazon Route 53, get the current DNS configuration for the domain from the DNS service provider that is currently servicing the domain. You can use this information as a basis for configuring Amazon Route 53 as the DNS service for the subdomain.

What you ask for and the format that it comes in depends on which company you're currently using as your DNS service provider. Ideally, they'll give you a zone file, which contains information about all of the resource record sets in your current configuration. (Resource record sets tell DNS how you want traffic to be routed for your domains and subdomains. For example, when someone enters your domain name in a web browser, do you want traffic to be routed to a web server in your data center, to an Amazon EC2 instance, to a CloudFront distribution, or to some other location?) If you can get a zone file from your current DNS service provider, you can edit the zone file to remove the resource record sets that you don't want to migrate to Amazon Route 53. Then you can import the remaining resource record sets into your Amazon Route 53 hosted zone, which greatly simplifies the process. Try asking customer support for your current DNS service provider how to get a *zone file* or a *records list*.

## Creating Resource Record Sets

Using the resource record sets that you got from your current DNS service provider as a starting point, create corresponding resource record sets in the Amazon Route 53 hosted zone that you created for the subdomain. The resource record sets that you create in Amazon Route 53 will become the resource record sets that DNS uses after you delegate responsibility for the subdomain to Amazon Route 53, as explained in [Updating Your DNS Service with Name Server Records for the Subdomain](#) (p. 317), later in the process.

### Important

Do not create additional name server (NS) or start of authority (SOA) records in the Amazon Route 53 hosted zone, and do not delete the existing NS and SOA records.

To create resource record sets using the Amazon Route 53 console, see [Working with Resource Record Sets \(p. 231\)](#). To create resource record sets using the Amazon Route 53 API, use `ChangeResourceRecordSets`. For more information, see `ChangeResourceRecordSets` in the *Amazon Route 53 API Reference*.

## Checking the Status of Your Changes (API Only)

Creating a new hosted zone and changing resource record sets take time to propagate to the Amazon Route 53 DNS servers. If you used `ChangeResourceRecordSets` to create your resource record sets, you can use the `GetChange` action to determine whether your changes have propagated. (`ChangeResourceRecordSets` returns a value for `ChangeId`, which you can include in a subsequent `GetChange` request. `ChangeId` is not available if you created the resource record sets by using the console.) For more information, see [GET GetChange](#) in the *Amazon Route 53 API Reference*.

### Note

Changes generally propagate to all Amazon Route 53 name servers within 60 seconds.

## Updating Your DNS Service with Name Server Records for the Subdomain

After your changes to Amazon Route 53 resource record sets have propagated (see [Checking the Status of Your Changes \(API Only\) \(p. 317\)](#)), update the DNS service for the parent domain by adding NS records for the subdomain. This is known as delegating responsibility for the subdomain to Amazon Route 53. For example, suppose the parent domain `example.com` is hosted with another DNS service and you're migrating the subdomain `test.example.com` to Amazon Route 53. You must create a hosted zone for `test.example.com` and update the DNS service for `example.com` with the NS records that Amazon Route 53 assigned to the new hosted zone for `test.example.com`.

Perform the following procedure.

1. Using the method provided by your DNS service, back up the zone file for the parent domain.
2. If the previous DNS service provider for the domain has a method to change the TTL settings for their name servers, we recommend that you change the settings to 900 seconds. This limits the time during which client requests will try to resolve domain names using obsolete name servers. If the current TTL is 172800 seconds (two days), which is a common default setting, you still need to wait two days for resolvers and clients to stop caching DNS records using the previous TTL. After the TTL settings expire, you can safely delete the records that are stored at the previous provider and make changes only to Amazon Route 53.
3. In the Amazon Route 53 console, get the name servers for your Amazon Route 53 hosted zone:
  - a. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
  - b. In the navigation pane, click **Hosted Zones**.
  - c. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.
  - d. In the right pane, make note of the four servers listed for **Name Servers**.

Alternatively, you can use the `GetHostedZone` action. For more information, see [GetHostedZone](#) in the *Amazon Route 53 API Reference*.

4. Using the method provided by the DNS service of the parent domain, add NS records for the subdomain to the zone file for the parent domain. Give the NS records the same name as the subdomain. For the values in the NS records, specify the four Amazon Route 53 name servers that are associated with the hosted zone that you created in Step 2. Note that different DNS services use different terminology. You might need to contact technical support for your DNS service to learn how to perform this step.

**Important**

Do not add a start of authority (SOA) record to the zone file for the parent domain. Because the subdomain will use Amazon Route 53, the DNS service for the parent domain is not the authority for the subdomain.

If your DNS service automatically added an SOA record for the subdomain, delete the record for the subdomain. However, do not delete the SOA record for the parent domain.

Depending on the TTL settings for the name servers for the parent domain, the propagation of your changes to DNS resolvers can take 48 hours or more. During this period, DNS resolvers may still answer requests with the name servers for the DNS service of the parent domain. In addition, client computers may continue to have the previous name servers for the subdomain in their cache.

5. After the registrar's TTL settings for the domain expire (see Step 2), delete the following resource record sets from the zone file for the parent domain:
  - The resource record sets that you added to Amazon Route 53 as described in [Creating Resource Record Sets \(p. 316\)](#).
  - Your DNS service's NS records. When you are finished deleting NS records, the only NS records in the zone file will be the ones that you created in Step 4.

## DNS Constraints and Behaviors

DNS messaging is subject to factors that affect how you create and use hosted zones and resource record sets. This section explains these factors.

### Maximum Response Size

To comply with DNS standards, responses sent over UDP are limited to 512 bytes in size. Responses exceeding 512 bytes are truncated and the resolver must re-issue the request over TCP. If the resolver supports EDNS0 (as defined in [RFC 2671](#)), and advertises the EDNS0 option to Amazon Route 53, Amazon Route 53 permits responses up to 4096 bytes over UDP, without truncation.

### Authoritative Section Processing

For successful queries, Amazon Route 53 appends name server (NS) resource record sets for the relevant hosted zone to the Authority section of the DNS response. For names that are not found (NXDOMAIN responses), Amazon Route 53 appends the start of authority (SOA) resource record set (as defined in [RFC 1035](#)) for the relevant hosted zone to the Authority section of the DNS response.

### Additional Section Processing

Amazon Route 53 appends resource record sets to the Additional section. If the records are known and appropriate, the service appends A or AAAA resource record sets for any target of an MX, CNAME, NS, or SRV record cited in the Answer section. For more information about these DNS record types, see [Supported DNS Record Types \(p. 237\)](#).

# DNS Domain Name Format

Domain names (including the names of domains, hosted zones, and resource record sets) consist of a series of labels separated by dots. Each label can be up to 63 bytes long. The total length of a domain name cannot exceed 255 bytes, including the dots. Amazon Route 53 supports any valid domain name.

Naming requirements depend on whether you're registering a domain name or you're specifying the name of a hosted zone or a resource record set. See the applicable topic.

## Topics

- [Formatting Domain Names for Domain Name Registration \(p. 319\)](#)
- [Formatting Domain Names for Hosted Zones and Resource Record Sets \(p. 319\)](#)
- [Using an Asterisk \(\\*\) in the Names of Hosted Zones and Resource Record Sets \(p. 320\)](#)
- [Formatting Internationalized Domain Names \(p. 320\)](#)

## Formatting Domain Names for Domain Name Registration

For domain name registration, a domain name can contain only the characters a-z, 0-9, and – (hyphen). You can't specify a hyphen at the beginning or end of a label.

For information about how to register an internationalized domain name (IDN), see [Formatting Internationalized Domain Names \(p. 320\)](#).

## Formatting Domain Names for Hosted Zones and Resource Record Sets

For hosted zones and resource record sets, the domain name can include any of the following printable ASCII characters (excluding spaces):

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

Amazon Route 53 stores alphabetic characters as lowercase letters (a-z), regardless of how you specify them: as uppercase letters, lowercase letters, or the corresponding letters in escape codes.

If your domain name contains any of the following characters, you must specify the characters by using escape codes in the format `\three-digit octal code`:

- Characters 000 to 040 octal (0 to 32 decimal, 0x00 to 0x20 hexadecimal)
- Characters 177 to 377 octal (127 to 255 decimal, 0x7F to 0xFF hexadecimal)
- . (period), character 056 octal (46 decimal, 0x2E hexadecimal), when used as a character in a domain name. When using . as a delimiter between labels, you do not need to use an escape code.

For example, to create a hosted zone for `exämple.com`, you specify `ex\344mple.com`.

If the domain name includes any characters other than a to z, 0 to 9, - (hyphen), or \_ (underscore), Amazon Route 53 API actions return the characters as escape codes. This is true whether you specify the characters as characters or as escape codes when you create the entity. The Amazon Route 53 console displays the characters as characters, not as escape codes.

For a list of ASCII characters the corresponding octal codes, do an internet search on "ascii table".

To specify an internationalized domain name (IDN), convert the name to Punycode. For more information, see [Formatting Internationalized Domain Names \(p. 320\)](#).

## Using an Asterisk (\*) in the Names of Hosted Zones and Resource Record Sets

You can create hosted zones that include \* in the name. Note the following:

- You can't include an \* in the leftmost label in a domain name. For example, \*.example.com is not allowed.
- If you include \* in other positions, DNS treats it as an \* character (ASCII 42), not as a wildcard.

You can also create resource record sets that include \* in the name. DNS treats the \* character either as a wildcard or as the \* character (ASCII 42), depending on where it appears in the name. Note the following restrictions on using \* as a wildcard in the name of resource record sets:

- The \* must replace the leftmost label in a domain name, for example, \*.example.com. It can't replace any of the middle labels, for example, marketing\*.example.com.
- The \* must replace the entire label. For example, you can't specify \*prod.example.com or prod\*.example.com.
- You can't use the \* as a wildcard for resource records sets that have a type of NS.

For resource record sets, if you include \* in any position other than the leftmost label in a domain name, DNS treats it as an \* character (ASCII 42), not as a wildcard.

## Formatting Internationalized Domain Names

When you register a new domain name or create hosted zones and resource record sets, you can specify characters in other alphabets (for example, Cyrillic or Arabic) and characters in Chinese, Japanese, or

Korean. Amazon Route 53 stores these internationalized domain names (IDNs) in Punycode, which represents Unicode characters as ASCII strings.

The following example shows the Punycode representation of the internationalized domain name 中国asia:

```
xn--fiqs8s.asia
```

When you enter an IDN in the address bar of a modern browser, the browser converts it to Punycode before submitting a DNS query or making an HTTP request.

How you enter an IDN depends on what you're creating (domain names, hosted zones, or resource record sets), and how you're creating it (API, SDK, or Amazon Route 53 console):

- If you're using the Amazon Route 53 API or one of the AWS SDKs, you can programmatically convert a Unicode value to Punycode. For example, if you're using Java, you can convert a Unicode value to Punycode by using the **toASCII** method of the `java.net.IDN` library.
- If you're using the Amazon Route 53 console to register a domain name, you can paste the name, including Unicode characters, into the name field, and the console converts the value to Punycode before saving it.
- If you're using the Amazon Route 53 console to create hosted zones or resource record sets, you need to convert the domain name to Punycode before you enter the name in the applicable **Name** field. For information about online converters, perform an internet search on "punycode converter".

If you're registering a domain name, note that not all top-level domains (TLDs) support IDNs. For a list of TLDs supported by Amazon Route 53, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#). TLDs that don't support IDNs are noted.



# Routing Internet Traffic to Your AWS Resources

You can use Amazon Route 53 to route traffic to a variety of AWS resources.

- [Routing Traffic to an Amazon CloudFront Web Distribution by Using Your Domain Name \(p. 322\)](#)
- [Routing Traffic to an Amazon EC2 Instance \(p. 324\)](#)
- [Routing Traffic to an AWS Elastic Beanstalk Environment \(p. 326\)](#)
- [Routing Traffic to an ELB Load Balancer \(p. 329\)](#)
- [Opening Connections to an Amazon RDS Database Instance Using Your Domain Name \(p. 331\)](#)
- [Routing Traffic to a Website that Is Hosted in an Amazon S3 Bucket \(p. 333\)](#)
- [Routing Traffic to Amazon WorkMail \(p. 334\)](#)

## Routing Traffic to an Amazon CloudFront Web Distribution by Using Your Domain Name

If you want to speed up delivery of your web content, you can use Amazon CloudFront, the AWS content delivery network (CDN). CloudFront can deliver your entire website—including dynamic, static, streaming, and interactive content—by using a global network of edge locations. Requests for your content are automatically routed to the edge location that gives your users the lowest latency.

### Note

You can route traffic to a CloudFront distribution only for public hosted zones.

To use CloudFront to distribute your content, you create a web distribution and specify settings such as the Amazon S3 bucket or HTTP server that you want CloudFront to get your content from, whether you want only selected users to have access to your content, and whether you want to require users to use HTTPS.

When you create a web distribution, CloudFront assigns a domain name to the distribution, such as `d111111abcdef8.cloudfront.net`. You can use this domain name in the URLs for your content, for example:

```
http://d111111abcdef8.cloudfront.net/logo.jpg
```

Alternatively, you might prefer to use your own domain name in URLs, for example:

`http://example.com/logo.jpg`

If you want to use your own domain name, use Amazon Route 53 to create an [alias resource record set](#) that points to your CloudFront distribution. An alias resource record set is an Amazon Route 53 extension to DNS. It's similar to a CNAME resource record set, but you can create an alias resource record set both for the root domain, such as `example.com`, and for subdomains, such as `www.example.com`. (You can create CNAME resource record sets only for subdomains.) When Amazon Route 53 receives a DNS query that matches the name and type of an alias resource record set, Amazon Route 53 responds with the domain name that is associated with your distribution.

**Note**

Amazon Route 53 doesn't charge for alias queries to CloudFront distributions or other AWS resources.

## Prerequisites

Before you get started, you need the following:

- A CloudFront web distribution. The distribution must include an alternate domain name that matches the domain name that you want to use for your URLs instead of the domain name that CloudFront assigned to your distribution.

For example, if you want the URLs for your content to contain the domain name **example.com**, the **Alternate Domain Name** field for the distribution must include **example.com**.

For more information about creating a web distribution, see [Task List for Creating a Web Distribution](#) in the *Amazon CloudFront Developer Guide*.

- A registered domain name. You can use Amazon Route 53 as your domain registrar, or you can use a different registrar.
- Amazon Route 53 as the DNS service for the domain. If you register your domain name by using Amazon Route 53, we automatically configure Amazon Route 53 as the DNS service for the domain.

For information about migrating DNS service to Amazon Route 53, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain](#) (p. 313).

## Configuring Amazon Route 53 to Route Traffic to a CloudFront Web Distribution

To configure Amazon Route 53 to route traffic to a CloudFront web distribution, perform the following procedure.

**Note**

Changes generally propagate to all Amazon Route 53 servers within 60 seconds. When propagation is done, you'll be able to route traffic to your CloudFront distribution by using the name of the alias resource record set that you create in this procedure.

### To route traffic to a CloudFront web distribution

1. Get the domain name that CloudFront assigned to your web distribution, and determine whether IPv6 is enabled:
  - a. Sign in to the AWS Management Console and open the CloudFront console at <https://console.aws.amazon.com/cloudfront/>.
  - b. Choose the name of the distribution that you want to route traffic to.
  - c. On the **General** tab, get the value of the **Domain Name** field.

- d. Check the **IPv6** field to see whether IPv6 is enabled for the distribution. If IPv6 is enabled, you'll need to create two alias resource record sets for the distribution, one to route IPv4 traffic to the distribution, and one to route IPv6 traffic.

For more information, see [Enable IPv6](#) in the topic [Values that You Specify When You Create or Update a Web Distribution](#) in the *Amazon CloudFront Developer Guide*.

2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Hosted Zones**.
4. Choose the name of the hosted zone for the domain that you want to use to route traffic to your CloudFront distribution.
5. Choose **Create Record Set**.
6. Specify the following values:

**Name**

Type the domain name that you want to use to route traffic to your CloudFront distribution. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use **acme.example.com** to route traffic to your distribution, type **acme**.

**Type**

Choose **A – IPv4 address**.

If IPv6 is enabled for the distribution and you're creating a second resource record set, choose **AAAA – IPv6 address**.

**Alias**

Choose **Yes**.

**Alias Target**

In the **CloudFront distributions** section, choose the name that CloudFront assigned to the distribution when you created it. This is the value that you got in step 1.

**Routing Policy**

Accept the default value of **Simple**.

**Evaluate Target Health**

Accept the default value of **No**.

7. Choose **Create**.
8. If IPv6 is enabled for the distribution, repeat steps 5 through 7. Specify the same settings except for the **Type** field, as explained in step 6.

## Routing Traffic to an Amazon EC2 Instance

Amazon EC2 provides scalable computing capacity in the AWS cloud. You can launch an EC2 virtual computing environment (an instance) using a preconfigured template (an Amazon Machine Image, or AMI). When you launch an EC2 instance, EC2 automatically installs the operating system (Linux or Microsoft Windows) and additional software included in the AMI, such as web server or database software.

If you're hosting a website or running a web application on an EC2 instance, you can route traffic for your domain, such as example.com, to your server by using Amazon Route 53.

## Prerequisites

Before you get started, you need the following:

- An Amazon EC2 instance. For information about launching an EC2 instance, see the following documentation:
  - **Linux** – See [Getting Started with Amazon EC2 Linux Instances](#) in the *Amazon EC2 User Guide for Linux Instances*
  - **Microsoft Windows** – See [Getting Started with Amazon EC2 Windows Instances](#) in the *Amazon EC2 User Guide for Windows Instances*

### Important

We recommend that you also create an [Elastic IP address](#) and associate it with your EC2 instance. An Elastic IP address ensures that the IP address of your Amazon EC2 instance will never change.

- A registered domain name. You can use Amazon Route 53 as your domain registrar, or you can use a different registrar.
- Amazon Route 53 as the DNS service for the domain. If you register your domain name by using Amazon Route 53, we automatically configure Amazon Route 53 as the DNS service for the domain.

For information about migrating DNS service to Amazon Route 53, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain](#) (p. 313).

## Configuring Amazon Route 53 to Route Traffic to an Amazon EC2 Instance

To configure Amazon Route 53 to route traffic to an EC2 instance, perform the following procedure.

### To route traffic to an Amazon EC2 instance

1. Get the IP address for the Amazon EC2 instance:
  - a. Sign in to the AWS Management Console and open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>.
  - b. In the regions list in the upper right corner of the console, choose the region that you launched the instance in.
  - c. In the navigation pane, choose **Instances**.
  - d. In the table, choose the instance that you want to route traffic to.
  - e. In the bottom pane, on the **Description** tab, get the value of **Elastic IPs**.

If you didn't associate an Elastic IP with the instance, get the value of **Public IP**.

2. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Hosted Zones**.
4. Choose the name of the hosted zone for the domain name that you want to use to route traffic to your EC2 instance.
5. Choose **Create Record Set**.
6. Specify the following values:

#### Name

Type the domain name that you want to use to route traffic to your EC2 instance. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use acme.example.com to route traffic to your EC2 instance, type **acme**.

**Type**

Choose **A – IPv4 address**.

**Alias**

Choose **No**.

**TTL (Seconds)**

Accept the default value of **300**.

**Value**

Type the IP address that you got in step 1.

**Routing Policy**

Accept the default value, **Simple**.

7. Choose **Create**.

Changes generally propagate to all Amazon Route 53 servers within 60 seconds. When propagation is done, you'll be able to route traffic to your EC2 instance by using the name of the resource record set that you created in this procedure.

## Routing Traffic to an AWS Elastic Beanstalk Environment

If you're using AWS Elastic Beanstalk to deploy and manage applications in the AWS Cloud, you can use Amazon Route 53 to route DNS traffic for your domain, such as example.com, to a new or an existing Elastic Beanstalk environment.

To route DNS traffic to an Elastic Beanstalk environment, see the procedures in the following topics.

**Note**

These procedures assume that you're already using Amazon Route 53 as the DNS service for your domain. If you're using another DNS service, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain \(p. 313\)](#) for information about migrating your DNS service to Amazon Route 53.

**Topics**

- [Deploying an Application into an Elastic Beanstalk Environment \(p. 326\)](#)
- [Getting the Domain Name for Your Elastic Beanstalk Environment \(p. 327\)](#)
- [Creating an Amazon Route 53 Resource Record Set that Routes Traffic to Your Elastic Beanstalk Environment \(p. 327\)](#)

## Deploying an Application into an Elastic Beanstalk Environment

If you already have an Elastic Beanstalk environment that you want to route traffic to, skip to [Getting the Domain Name for Your Elastic Beanstalk Environment \(p. 327\)](#).

**To create an application and deploy it into an Elastic Beanstalk environment**

- For information about creating an application and deploying it to an Elastic Beanstalk environment, see [Getting Started Using Elastic Beanstalk](#) in the *AWS Elastic Beanstalk Developer Guide*.

## Getting the Domain Name for Your Elastic Beanstalk Environment

If you already know the domain name for your Elastic Beanstalk environment, skip to [Creating an Amazon Route 53 Resource Record Set that Routes Traffic to Your Elastic Beanstalk Environment](#) (p. 327).

**To get the domain name for your Elastic Beanstalk environment**

1. Sign in to the AWS Management Console and open the Elastic Beanstalk console at <https://console.aws.amazon.com/elasticbeanstalk/>.
2. In the list of applications, find the application that you want to route traffic to, and get the value of **URL**.

## Creating an Amazon Route 53 Resource Record Set that Routes Traffic to Your Elastic Beanstalk Environment

An Amazon Route 53 resource record set contains the settings that control how traffic is routed to your Elastic Beanstalk environment. You create either a *CNAME resource record set* or an *alias resource record set*, depending on whether the domain name for the environment includes the region, such as **us-east-2**, in which you deployed the environment. New environments include the region in the domain name; environments that were created before early 2016 do not. For a comparison of CNAME and alias resource record sets, see [Choosing Between Alias and Non-Alias Resource Record Sets](#) (p. 235).

**If the domain name does not include the region**

You must create a *CNAME resource record set*. You can't create a CNAME resource record set for the root domain name. For example, if your domain name is `example.com`, you can create a resource record set that routes traffic for `acme.example.com` to your Elastic Beanstalk environment, but you can't create a resource record set that routes traffic for `example.com` to your Elastic Beanstalk environment.

See the procedure [To create a CNAME resource record set to route traffic to an Elastic Beanstalk environment](#) (p. 328).

**If the domain name includes the region**

You can create an alias resource record set. An alias resource record set is specific to Amazon Route 53 and has two significant advantages over CNAME resource record sets:

- You can create alias resource record sets for the root domain name or for subdomains. For example, if your domain name is `example.com`, you can create a resource record set that routes requests for `example.com` or for `acme.example.com` to your Elastic Beanstalk environment.
- Amazon Route 53 doesn't charge for requests that use an alias resource record set to route traffic.

See the procedure [To create an Amazon Route 53 alias resource record set to route traffic to an Elastic Beanstalk environment](#) (p. 328).

### To create a CNAME resource record set to route traffic to an Elastic Beanstalk environment

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the name of the hosted zone that you want to use to route traffic to your Elastic Beanstalk environment.
4. Choose **Create Record Set**.
5. Specify the following values:

#### Name

Type the domain name that you want to use to route traffic to your Elastic Beanstalk environment. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use acme.example.com to route traffic to your environment, type **acme**.

#### Important

You can't create a CNAME record that has the same name as the hosted zone.

#### Type

Choose **CNAME – Canonical name**.

#### Alias

Choose **No**.

#### TTL (Seconds)

Accept the default value of **300**.

#### Value

Type the domain name of the environment that you want to route traffic to. This is the value that you get when you perform the procedure in the topic [Getting the Domain Name for Your Elastic Beanstalk Environment](#) (p. 327).

#### Routing Policy

Accept the default value, **Simple**.

6. Choose **Create**.

Changes generally propagate to all Amazon Route 53 servers within 60 seconds.

### To create an Amazon Route 53 alias resource record set to route traffic to an Elastic Beanstalk environment

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the name of the hosted zone that you want to use to route traffic to your Elastic Beanstalk environment.
4. Choose **Create Record Set**.
5. Specify the following values:

### Name

Type the domain name that you want to use to route traffic to your Elastic Beanstalk environment. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use acme.example.com to route traffic to your environment, type **acme**.

### Type

Accept the default, **A – Ipv4 address**.

### Alias

Choose **Yes**.

### Alias Target

Click in the field, and choose the domain name of the environment that you want to route traffic to. This is the value that you get when you perform the procedure in the topic [Getting the Domain Name for Your Elastic Beanstalk Environment](#) (p. 327).

### Alias Hosted Zone ID

This value appears automatically based on the environment that you choose for **Alias Target**.

### Routing Policy

Accept the default value, **Simple**.

### Evaluate Target Health

Accept the default value, **No**.

### 6. Choose **Create**.

Changes generally propagate to all Amazon Route 53 servers within 60 seconds. When propagation is done, you'll be able to route traffic to your Elastic Beanstalk environment by using the name of the alias resource record set that you create in this procedure.

## Routing Traffic to an ELB Load Balancer

If you host a website on multiple Amazon EC2 instances, you can distribute traffic to your website across the instances by using an Elastic Load Balancing (ELB) load balancer. The ELB service automatically scales the load balancer as traffic to your website changes over time. The load balancer also can monitor the health of its registered instances and route domain traffic only to healthy instances.

To route domain traffic to an ELB load balancer, use Amazon Route 53 to create an [alias resource record set](#) that points to your load balancer. An alias resource record set is an Amazon Route 53 extension to DNS. It's similar to a CNAME resource record set, but you can create an alias resource record set both for the root domain, such as example.com, and for subdomains, such as www.example.com. (You can create CNAME resource record sets only for subdomains.)

### Note

Amazon Route 53 doesn't charge for alias queries to ELB load balancers or other AWS resources.

## Prerequisites

Before you get started, you need the following:



- An ELB load balancer. You can use an ELB Classic, Application, or Network Load Balancer. For information about creating a load balancer, see [Getting Started with Elastic Load Balancing](#) in the *Elastic Load Balancing User Guide*.

Give the load balancer a name that will help you remember what it's for later. The name that you specify when you create a load balancer is the name that you'll choose when you create an alias resource record set in the Amazon Route 53 console.

- A registered domain name. You can use Amazon Route 53 as your domain registrar, or you can use a different registrar.
- Amazon Route 53 as the DNS service for the domain. If you register your domain name by using Amazon Route 53, we automatically configure Amazon Route 53 as the DNS service for the domain.

For information about migrating DNS service to Amazon Route 53, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain](#) (p. 313).

## Configuring Amazon Route 53 to Route Traffic to an ELB Load Balancer

To configure Amazon Route 53 to route traffic to an ELB load balancer, perform the following procedure.

### To route traffic to an ELB load balancer

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the name of the hosted zone that has the domain name that you want to use to route traffic to your load balancer.
4. Choose **Create Record Set**.
5. Specify the following values:

#### Name

Type the domain name that you want to use to route traffic to your ELB load balancer. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use acme.example.com to route traffic to your load balancer, type **acme**.

#### Type

Choose **A – IPv4 address**.

#### Alias

Choose **Yes**.

#### Alias Target

Find the applicable category in the list (**ELB Application Load Balancers**, **ELB Classic Load Balancers**, or **ELB Network Load Balancers**), and then choose the name that you assigned to the load balancer when you created it.

#### Routing Policy

Accept the default value of **Simple**.

#### Evaluate Target Health

If you aren't using Amazon Route 53 health checks, accept the default value of **No**.

If you are using health checks and you want to route traffic based on the health of your resources, choose **Yes**. For more information about checking the health of your resources, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

6. Choose **Create**.

Changes generally propagate to all Amazon Route 53 servers within 60 seconds. When propagation is done, you'll be able to route traffic to your load balancer by using the name of the alias resource record set that you created in this procedure.

## Opening Connections to an Amazon RDS Database Instance Using Your Domain Name

If you use an Amazon RDS database instance for data storage for your web application, the domain name that is assigned to your DB instance is a long, partially random, alphanumeric string, for example:

```
myexampledb.a1b2c3d4wxyz.us-west-2.rds.amazonaws.com
```

Whenever you open a connection to your Amazon RDS DB instance, you must specify the domain name in your application code.

If you want to use a domain name that's easier to remember, you can use your own domain name instead. To do this, you can use Amazon Route 53 to create a [CNAME resource record set](#) that associates your domain name with the domain name of your DB instance.

For example, you could create a CNAME resource record set to map `productdata.example.com` to the domain name `myexampledb.a1b2c3d4wxyz.us-west-2.rds.amazonaws.com`. After you create the CNAME record, you can use `productdata.example.com` in your application code whenever you open a connection to your Amazon RDS DB instance.

In addition to letting you use a name that's easier to remember, the CNAME resource record set makes it easier for you to replace one DB instance with another. Instead of updating all of your code with the domain name of a new DB instance, you can just change the domain name of the DB instance in the CNAME resource record set.

**Note**

You must use a CNAME resource record set to associate a domain name with an Amazon RDS DB instance. Amazon Route 53 doesn't support using other types of resource record sets for this purpose. For more information, see [Working with Resource Record Sets \(p. 231\)](#).

## Prerequisites

Before you get started, you need the following:

- An Amazon RDS DB instance.
- A registered domain name. (You don't need to use Amazon Route 53 as the domain registrar.)
- Amazon Route 53 as the DNS service for the domain. To use the procedures in this topic, Amazon Route 53 must be your DNS service provider, but you can also create a CNAME resource record set with another DNS service provider.

For more information, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain \(p. 313\)](#).

## Configuring Amazon Route 53 So You Can Use Your Domain Name to Open Connections

To configure Amazon Route 53 so you can use your domain name to open connections to an Amazon RDS database instance, perform the following procedures. First you get the domain name that is associated with your DB instance, and then you create a CNAME resource record set that maps your domain name to the domain name of your DB instance.

### Getting the domain name for your Amazon RDS DB instance

1. Sign in to the AWS Management Console and open the Amazon RDS console at <https://console.aws.amazon.com/rds/>.
2. In the regions list in the upper-right corner of the console, change to the region where you created the DB instance that you want to open connections to.
3. In the navigation pane, choose **Instances**.
4. In the table, expand the DB instance that you want to open connections to.
5. Get the value of **Endpoint**.

### Creating a CNAME resource record set

1. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the name of the hosted zone that has the domain name that you want to use to open connections to your DB instance.
4. Choose **Create Record Set**.
5. Specify the following values:

#### Name

Type the domain name that you want to use to open connections to your DB instance. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use acme.example.com to open connections to your DB instance, type **acme**.

#### Important

You can't create a CNAME record that has the same name as the hosted zone.

#### Type

Choose **CNAME – Canonical name**.

#### Alias

Choose **No**.

#### TTL (Seconds)

Accept the default value of **300**.

#### Value

Type the domain name of the DB instance that you want to open connections to. This is the value that you got when you performed the procedure [Getting the domain name for your Amazon RDS DB instance](#) (p. 332).

#### Routing Policy

Accept the default value of **Simple**.

6. Choose **Create**.

Changes generally propagate to all Amazon Route 53 servers within 60 seconds. When propagation is complete, you'll be able to open connections to your DB instance by using the name of the CNAME resource record set that you created in this procedure.

## Routing Traffic to a Website that Is Hosted in an Amazon S3 Bucket

Amazon Simple Storage Service (Amazon S3) provides secure, durable, highly scalable [cloud storage](#). You can configure an S3 bucket to host a static website that can include web pages and client-side scripts. (S3 doesn't support server-side scripting.)

To route domain traffic to an S3 bucket, use Amazon Route 53 to create an [alias resource record set](#) that points to your bucket. An alias resource record set is an Amazon Route 53 extension to DNS. It's similar to a CNAME resource record set, except you can create an alias resource record set both for the root domain, such as example.com, and for subdomains, such as www.example.com. You can create CNAME resource record sets only for subdomains.

**Note**

Amazon Route 53 doesn't charge for alias queries to S3 buckets or other AWS resources.

### Prerequisites

Before you get started, you need the following. If you're new to Amazon Route 53 or S3, see [Getting Started with Amazon Route 53 \(p. 17\)](#), which guides you through the entire process, including registering a domain name, and creating and configuring an S3 bucket.

- An S3 bucket that is configured to host a static website. For more information, see [Configure a Bucket for Website Hosting](#) in the *Amazon Simple Storage Service Developer Guide*.

**Important**

The bucket must have the same name as your domain or subdomain. For example, if you want to use the subdomain acme.example.com, the name of the bucket must be acme.example.com.

You can route traffic for a domain and its subdomains, such as example.com and www.example.com, to a single bucket. Create a bucket for the domain and each subdomain, and configure all but one of the buckets to redirect traffic to the remaining bucket. For more information, see [Getting Started with Amazon Route 53 \(p. 17\)](#).

- A registered domain name. You can use Amazon Route 53 as your domain registrar, or you can use a different registrar.
- Amazon Route 53 as the DNS service for the domain. If you register your domain name by using Amazon Route 53, we automatically configure Amazon Route 53 as the DNS service for the domain.

For information about migrating DNS service to Amazon Route 53, see [Using Amazon Route 53 as the DNS Service for Subdomains Without Migrating the Parent Domain \(p. 313\)](#).

## Configuring Amazon Route 53 to Route Traffic to an S3 Bucket

To configure Amazon Route 53 to route traffic to an S3 bucket that is configured to host a static website, perform the following procedure.

### To route traffic to an S3 bucket

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. Choose the name of the hosted zone that has the domain name that you want to use to route traffic to your S3 bucket.
4. Choose **Create Record Set**.
5. Specify the following values:

#### Name

Type the domain name that you want to use to route traffic to your S3 bucket. The default value is the name of the hosted zone.

For example, if the name of the hosted zone is example.com and you want to use acme.example.com to route traffic to your bucket, type **acme**.

#### Type

Choose **A – IPv4 address**.

#### Alias

Choose **Yes**.

#### Alias Target

In the **S3 website endpoints** section of the list, choose the bucket that has the same name that you specified for **Name**.

#### Routing Policy

Accept the default value of **Simple**.

#### Evaluate Target Health

Accept the default value of **No**.

6. Choose **Create**.

Changes generally propagate to all Amazon Route 53 servers within 60 seconds. When propagation is done, you'll be able to route traffic to your S3 bucket by using the name of the alias resource record set that you created in this procedure.

## Routing Traffic to Amazon WorkMail

If you're using Amazon WorkMail for your business email and you're using Amazon Route 53 as your DNS service, you can use Amazon Route 53 to route traffic to your Amazon WorkMail email domain. The name of your Amazon Route 53 hosted zone (such as example.com) must match the name of an Amazon WorkMail domain.

#### Note

You can route traffic to an Amazon WorkMail domain only for public hosted zones.

To route traffic to Amazon WorkMail, perform the following four procedures.

### To configure Amazon Route 53 as your DNS service and add an Amazon WorkMail organization and email domain

1. If you haven't registered the domain name that you want to use in your email addresses (such as john@example.com), register the domain now so you know that the domain is available. For more information, see [Registering a New Domain](#) (p. 28).

If Amazon Route 53 is not the DNS service for the email domain that you added to Amazon WorkMail, migrate DNS service for the domain to Amazon Route 53. For more information, see the applicable topic:

- [Creating a Subdomain That Uses Amazon Route 53 as the DNS Service without Migrating the Parent Domain](#) (p. 313)
  - [Migrating DNS Service for an Existing Domain to Amazon Route 53](#) (p. 209)
  - [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain](#) (p. 315)
2. Add an Amazon WorkMail organization and email domain. For more information, see [Getting Started for New Users](#) in the *Amazon WorkMail Administrator Guide*.

### To create an Amazon Route 53 TXT resource record set for Amazon WorkMail

1. In the navigation pane of the Amazon WorkMail console, choose **Domains**.
2. Choose the name of the email domain, such as example.com, that you want to use to route traffic to Amazon WorkMail.
3. Open another browser tab, and open the [Amazon Route 53 console](#).
4. In the Amazon Route 53 console, do the following:
  - a. In the navigation pane, choose **Hosted Zones**.
  - b. Choose the name of the hosted zone that you want to use for your Amazon WorkMail email domain.
5. In the Amazon WorkMail console, in the section **Step 1: Verify domain ownership**, go to the **Hostname** column, and copy the part of the value that precedes your email domain name.

For example, if your Amazon WorkMail email domain is **example.com** and the value of **Hostname** is **\_amazonses.example.com**, copy **\_amazonses**.

6. In the Amazon Route 53 console, do the following:
  - a. Choose **Create Record Set**.
  - b. For **Name**, paste the value that you copied in step 5.
  - c. For **Type**, choose **TXT – Text**.
7. In the Amazon WorkMail console, for the TXT record, copy the value of the **Value** column, including the quotation marks.
8. In the Amazon Route 53 console, do the following:
  - a. For **Value**, paste the value that you copied in step 7.  
  
Don't change any other settings.
  - b. Choose **Create**.

### To create an Amazon Route 53 MX resource record set for Amazon WorkMail

1. In the Amazon WorkMail console, in the section **Step 2: Finalize domain setup**, go to the row that has a **Record type** of **MX**, and copy the value of the **Value** column.

2. In the Amazon Route 53 console, do the following:
  - a. Choose **Create Record Set**.
  - b. For **Value**, paste the value that you copied in step 1.
  - c. For **Type**, choose **MX – Mail Exchange**.  
  
Don't change any other settings.
  - d. Choose **Create**.

**To create four Amazon Route 53 CNAME resource record sets for Amazon WorkMail**

1. In the Amazon WorkMail console, in the section **Step 2: Finalize domain setup**, go to the first row that has a **Record type** of **CNAME**. In the **Hostname** column, copy the part of the value that precedes your email domain name.  
  
For example, if your Amazon WorkMail email domain is **example.com** and the value of **Hostname** is **autodiscover.example.com**, copy **autodiscover**.
2. In the Amazon Route 53 console, do the following:
  - a. Choose **Create Record Set**.
  - b. For **Name**, paste the value that you copied in step 1.
  - c. For **Type**, choose **CNAME – Canonical Name**.
3. In the Amazon WorkMail console, in the first row that has a **Record type** of **CNAME**, copy the value of the **Value** column.
4. In the Amazon Route 53 console, do the following:
  - a. For **Value**, paste the value that you copied in step 3.  
  
Don't change any other settings.
  - b. Choose **Create**.
5. Repeat steps 1 through 4 for the remaining CNAME records that are listed in the Amazon WorkMail console.

# Creating Amazon Route 53 Health Checks and Configuring DNS Failover

Amazon Route 53 health checks monitor the health and performance of your web applications, web servers, and other resources. Each health check that you create can monitor one of the following:

- The health of a specified resource, such as a web server
- The status of an Amazon CloudWatch alarm
- The status of other health checks

For an overview of the three types of health checks, see [Types of Amazon Route 53 Health Checks \(p. 338\)](#). For information about creating health checks, see [Creating and Updating Health Checks \(p. 339\)](#).

After you create a health check, you can get the status of the health check, get notifications when the status changes, and configure DNS failover:

## Getting health check status and notifications

You can view the current and recent status of your health checks on the Amazon Route 53 console. You can also work with health checks programmatically through one of the AWS SDKs, the AWS Command Line Interface, AWS Tools for Windows PowerShell, or the Amazon Route 53 API.

If you want to receive a notification when the status of a health check changes, you can configure an Amazon CloudWatch alarm for each health check.

For information about viewing health check status and receiving notifications, see [Monitoring Health Check Status and Getting Notifications \(p. 349\)](#).

## Configuring DNS failover

If you have multiple resources that perform the same function, you can configure DNS failover so that Amazon Route 53 will route your traffic from an unhealthy resource to a healthy resource. For example, if you have two web servers and one web server becomes unhealthy, Amazon Route 53 can route traffic to the other web server. For more information, see [Configuring DNS Failover \(p. 356\)](#).

Topics



- [Types of Amazon Route 53 Health Checks \(p. 338\)](#)
- [Creating, Updating, and Deleting Health Checks \(p. 338\)](#)
- [Monitoring Health Check Status and Getting Notifications \(p. 349\)](#)
- [Configuring DNS Failover \(p. 356\)](#)
- [Naming and Tagging Health Checks \(p. 368\)](#)
- [Using Health Checks with Amazon Route 53 API Versions Earlier than 2012-12-12 \(p. 370\)](#)

## Types of Amazon Route 53 Health Checks

You can create three types of Amazon Route 53 health checks:

### Health checks that monitor an endpoint

You can configure a health check that monitors an endpoint that you specify either by IP address or by domain name. At regular intervals that you specify, Amazon Route 53 submits automated requests over the internet to your application, server, or other resource to verify that it's reachable, available and functional. Optionally, you can configure the health check to make requests similar to those that your users make, such as requesting a web page from a specific URL.

### Health checks that monitor CloudWatch alarms

You can create CloudWatch alarms that monitor the status of CloudWatch metrics, such as the number of throttled read events for a Amazon DynamoDB database or the number of Elastic Load Balancing hosts that are considered healthy. After you create an alarm, you can create a health check that monitors the same data stream that CloudWatch monitors for the alarm.

To improve resiliency and availability, Amazon Route 53 doesn't wait for the CloudWatch alarm to go into the `ALARM` state. The status of a health check changes from healthy to unhealthy based on the data stream and on the criteria in the CloudWatch alarm. The status of a health check can change from healthy to unhealthy even before the state of the corresponding alarm has changed to `ALARM` in CloudWatch.

### Health checks that monitor other health checks

You can create a health check that monitors whether Amazon Route 53 considers other health checks healthy or unhealthy. One situation where this might be useful is when you have multiple resources that perform the same function, such as multiple web servers, and your chief concern is whether some minimum number of your resources are healthy. You can create a health check for each resource without configuring notification for those health checks. Then you can create a health check that monitors the status of the other health checks and that notifies you only when the number of available web resources drops below a specified threshold.

## Creating, Updating, and Deleting Health Checks

The procedures in the following topics explain how to create, update, and delete Amazon Route 53 health checks.

### Important

If you're updating or deleting health checks that are associated with records, review the tasks in [Updating or Deleting Health Checks when DNS Failover Is Configured \(p. 347\)](#) before you proceed.

### Topics

- [Creating and Updating Health Checks \(p. 339\)](#)

- [Updating Health Checks When You Change CloudWatch Alarm Settings \(Health Checks that Monitor a CloudWatch Alarm Only\)](#) (p. 346)
- [Deleting Health Checks](#) (p. 347)
- [Updating or Deleting Health Checks when DNS Failover Is Configured](#) (p. 347)
- [Configuring Router and Firewall Rules for Amazon Route 53 Health Checks](#) (p. 348)
- [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348)

## Creating and Updating Health Checks

The following procedure describes how to create and update health checks using the Amazon Route 53 console.

For information about creating health checks using the API, see [CreateHealthCheck](#) in the *Amazon Route 53 API Reference*. For information about updating health checks using the API, see [UpdateHealthCheck](#), also in the *Amazon Route 53 API Reference*.

### Note

Health checks are supported starting with the 2012-12-12 version of the Amazon Route 53 API.

### To create or update a health check using the Amazon Route 53 console

1. If you're updating health checks that are associated with records, perform the recommended tasks in [Updating or Deleting Health Checks when DNS Failover Is Configured](#) (p. 347).
2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Health Checks**.
4. If you want to update an existing health check, select the health check, and then choose **Edit Health Check**.

If you want to create a health check, choose **Create Health Check**. For more information about each setting, move the mouse pointer over a label to see its tooltip.

5. Enter the applicable values. Note that some values can't be changed after you create a health check. For more information, see [Values that You Specify When You Create or Update Health Checks](#) (p. 339).
6. Choose **Create Health Check**.
7. Associate the health check with one or more Amazon Route 53 records. For information about creating and updating records, see [Working with Resource Record Sets](#) (p. 231).

## Values that You Specify When You Create or Update Health Checks

When you create or update health checks, you specify the applicable values. Note that you can't change some values after you create a health check.

### Topics

- [Monitoring an Endpoint](#) (p. 340)
- [Monitoring Other Health Checks \(Calculated Health Checks\)](#) (p. 342)
- [Monitoring a CloudWatch Alarm](#) (p. 343)
- [Advanced Configuration \("Monitor an endpoint" Only\)](#) (p. 344)
- [Get Notified When a Health Check Fails](#) (p. 345)
- [Values that Amazon Route 53 Displays](#) (p. 346)

## Name

Optional, but recommended: The name that you want to assign to the health check. If you specify a value for **Name**, Amazon Route 53 adds a tag to the health check, assigns the value **Name** to the tag key, and assigns the value that you specify to the tag value. The value of the **Name** tag appears in the list of health checks in the Amazon Route 53 console, which lets you easily distinguish health checks from one another.

For more information about tagging and health checks, see [Naming and Tagging Health Checks \(p. 368\)](#).

## What to monitor

Whether you want this health check to monitor an endpoint or the status of other health checks:

- **Endpoint** – Amazon Route 53 monitors the health of an endpoint that you specify. You can specify the endpoint by providing either a domain name or an IP address and a port.

### Note

If you specify a non-AWS endpoint, an additional charge applies. For more information, including a definition of AWS endpoints, see Health Checks on the [Amazon Route 53 Pricing](#) page.

- **Status of other health checks (calculated health check)** – Amazon Route 53 determines whether this health check is healthy based on the status of other health checks that you specify. You also specify how many of the health checks need to be healthy for this health check to be considered healthy.
- **State of CloudWatch alarm** – Amazon Route 53 determines whether this health check is healthy based on the alarm state of a CloudWatch alarm.

## Monitoring an Endpoint

If you want this health check to monitor an endpoint, specify the following values:

- [Specify endpoint by](#)
- [Protocol](#)
- [IP address](#)
- [Host name](#)
- [Port](#)
- [Domain name](#)
- [Path](#)

## Specify endpoint by

Whether you want to specify the endpoint using an IP address or using a domain name.

After you create a health check, you can't change the value of **Specify endpoint by**.

## Protocol

The method that you want Amazon Route 53 to use to check the health of your endpoint:

- **HTTP** – Amazon Route 53 tries to establish a TCP connection. If successful, Amazon Route 53 submits an HTTP request and waits for an HTTP status code of 200 or greater and less than 400.
- **HTTPS** – Amazon Route 53 tries to establish a TCP connection. If successful, Amazon Route 53 submits an HTTPS request and waits for an HTTP status code of 200 or greater and less than 400.

### Important

If you choose **HTTPS**, the endpoint must support TLS v1.0 or later.

If you choose **HTTPS** for the value of **Protocol**, an additional charge applies. For more information, see [Amazon Route 53 Pricing](#).

- **TCP** – Amazon Route 53 tries to establish a TCP connection.

For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).

After you create a health check, you can't change the value of **Protocol**.

#### IP address ("Specify endpoint by IP address" Only)

The IPv4 or IPv6 address of the endpoint on which you want Amazon Route 53 to perform health checks, if you chose **Specify endpoint by IP address**.

Amazon Route 53 cannot check the health of endpoints for which the IP address is in local, private, nonroutable, or multicast ranges. For more information about IP addresses that you can't create health checks for, see the following documents:

- [RFC 5735, Special Use IPv4 Addresses](#)
- [RFC 6598, IANA-Reserved IPv4 Prefix for Shared Address Space](#).
- [RFC 5156, Special-Use IPv6 Addresses](#)

If the endpoint is an Amazon EC2 instance, we recommend that you create an Elastic IP address, associate it with your Amazon EC2 instance, and specify the Elastic IP address. This ensures that the IP address of your instance will never change. For more information, see [Elastic IP Addresses \(EIP\)](#) in the *Amazon EC2 User Guide for Linux Instances*.

#### Note

If you specify a non-AWS endpoint, an additional charge applies. For more information, including a definition of AWS endpoints, see Health Checks on the [Amazon Route 53 Pricing](#) page.

#### Host name ("Specify endpoint by IP address" Only, HTTP and HTTPS Protocols Only)

The value that you want Amazon Route 53 to pass in the `Host` header in HTTP and HTTPS health checks. This is typically the fully qualified DNS name of the website on which you want Amazon Route 53 to perform health checks. When Amazon Route 53 checks the health of an endpoint, here is how it constructs the `Host` header:

- If you specify a value of **80** for **Port** and **HTTP** for **Protocol**, Amazon Route 53 passes to the endpoint a `Host` header that contains the value of **Host name**.
- If you specify a value of **443** for **Port** and **HTTPS** for **Protocol**, Amazon Route 53 passes to the endpoint a `Host` header that contains the value of **Host name**.
- If you specify another value for **Port** and either **HTTP** or **HTTPS** for **Protocol**, Amazon Route 53 passes to the endpoint a `Host` header that contains the value `Host name:Port`.

If you choose to specify the endpoint by IP address and you don't specify a value for **Host name**, Amazon Route 53 substitutes the value of **IP address** in the `Host` header in each of the preceding cases.

#### Port

The port on the endpoint on which you want Amazon Route 53 to perform health checks.

#### Domain name ("Specify endpoint by domain name" Only, All Protocols)

The domain name of the endpoint on which you want Amazon Route 53 to perform health checks, if you choose **Specify endpoint by domain name**.

If you choose to specify the endpoint by domain name, Amazon Route 53 sends a DNS query to resolve the domain name that you specify in **Domain name** at the interval you specify in **Request**

**interval.** Using an IP address that DNS returns, Amazon Route 53 then checks the health of the endpoint.

**Note**

If you specify the endpoint by domain name, Amazon Route 53 uses only IPv4 to send health checks to the endpoint. If there's no record with a type of A for the name that you specify for **Domain name**, the health check fails with a "DNS resolution failed" error.

If you want to check the health of failover, geolocation, geoproximity, latency, multivalued, or weighted records, and you choose to specify the endpoint by domain name, we recommend that you create a separate health check for each endpoint. For example, create a health check for each HTTP server that is serving content for `www.example.com`. For the value of **Domain name**, specify the domain name of the server (such as `us-east-2-www.example.com`), not the name of the records (`www.example.com`).

**Important**

In this configuration, if you create a health check for which the value of **Domain name** matches the name of the records and then associate the health check with those records, health check results will be unpredictable.

In addition, if the value of Protocol is HTTP or HTTPS, Amazon Route 53 passes the value of **Domain name** in the `Host` header as described in **Host name**, earlier in this list. If the value of **Protocol** is TCP, Amazon Route 53 doesn't pass a `Host` header.

**Note**

If you specify a non-AWS endpoint, an additional charge applies. For more information, including a definition of AWS endpoints, see Health Checks on the [Amazon Route 53 Pricing](#) page.

**Path (HTTP and HTTPS Protocols Only)**

The path that you want Amazon Route 53 to request when performing health checks. The path can be any value for which your endpoint will return an HTTP status code of `2xx` or `3xx` when the endpoint is healthy, such as the file `/docs/route53-health-check.html`. Amazon Route 53 automatically adds a leading `/` character.

## Monitoring Other Health Checks (Calculated Health Checks)

If you want this health check to monitor the status of other health checks, specify the following values:

- [Health checks to monitor](#)
- [Report healthy when](#)
- [Invert health check status](#)

**Health checks to monitor**

The health checks that you want Amazon Route 53 to monitor to determine the health of this health check.

You can add up to 256 health checks to **Health checks to monitor**. To remove a health check from the list, choose the **x** at the right end of the highlight for that health check.

**Note**

You can't configure a calculated health check to monitor the health of other calculated health checks.

**Report healthy when**

The calculation that you want Amazon Route 53 to perform to determine whether this health check is healthy:

- **Report healthy when at least x of y selected health checks are healthy** – Amazon Route 53 considers this health check to be healthy when the specified number of health checks that you added to **Health checks to monitor** are healthy. Note the following:
  - If you specify a number greater than the number of health checks in **Health checks to monitor**, Amazon Route 53 always considers this health check to be unhealthy.
  - If you specify **0**, Amazon Route 53 always considers this health check to be healthy.
- **Report healthy when all health checks are healthy (AND)** – Amazon Route 53 considers this health check to be healthy only when all of the health checks that you added to **Health checks to monitor** are healthy.
- **Report healthy when one or more health checks are healthy (OR)** – Amazon Route 53 considers this health check to be healthy when at least one of the health checks that you added to **Health checks to monitor** is healthy.

#### Invert health check status

Choose whether you want Amazon Route 53 to invert the status of a health check. If you choose this option, Amazon Route 53 considers health checks to be unhealthy when the status is healthy and vice versa.

## Monitoring a CloudWatch Alarm

If you want this health check to monitor the alarm state of a CloudWatch alarm, specify the following values:

- [CloudWatch alarm](#)
- [Health check status](#)
- [Invert health check status](#)

#### CloudWatch alarm

Choose the CloudWatch alarm that you want Amazon Route 53 to use to determine whether this health check is healthy.

If you want to create a new alarm, perform the following steps:

1. Choose **create**, and the CloudWatch console appears in a new browser tab.
2. Enter the applicable values. For more information, see [Create an alarm](#) in the *Amazon CloudWatch User Guide*.
3. Return to the browser tab that the Amazon Route 53 console appears in.
4. Choose the refresh button next to the **CloudWatch alarm** list.
5. Choose the new alarm from the list.

#### Important

If you change settings for the CloudWatch alarm after you create a health check, you must update the health check. For more information, see [Updating Health Checks When You Change CloudWatch Alarm Settings \(Health Checks that Monitor a CloudWatch Alarm Only\)](#) (p. 346).

#### Health check status

Choose the status of the health check when CloudWatch has insufficient data to determine the state of the alarm that you chose in **CloudWatch alarm**. If you choose to use the last known status, Amazon Route 53 uses the status of the health check from the last time CloudWatch had sufficient data to determine the alarm state. For new health checks that have no last known status, the default status for the health check is healthy.

### Invert health check status

Choose whether you want Amazon Route 53 to invert the status of a health check. If you choose this option, Amazon Route 53 considers health checks to be unhealthy when the status is healthy and vice versa.

## Advanced Configuration ("Monitor an endpoint" Only)

If you choose the option to monitor an endpoint, you can also specify the following settings:

- [Request interval](#)
- [Failure threshold](#)
- [String matching](#)
- [Search string](#)
- [Latency graphs](#)
- [Enable SNI](#)
- [Health checker regions](#)
- [Invert health check status](#)

### Request interval

The number of seconds between the time that each Amazon Route 53 health checker gets a response from your endpoint and the time that it sends the next health check request. If you choose an interval of 30 seconds, each of the Amazon Route 53 health checkers in data centers around the world will send your endpoint a health check request every 30 seconds. On average, your endpoint will receive a health check request about every two seconds. If you choose an interval of 10 seconds, the endpoint will receive a request more than once per second.

Note that Amazon Route 53 health checkers in different data centers don't coordinate with one another, so you'll sometimes see several requests per second regardless of the interval you chose, followed by a few seconds with no health checks at all.

After you create a health check, you can't change the value of **Request interval**.

#### Note

If you choose **Fast (10 seconds)** for the value of **Request interval**, an additional charge applies. For more information, see [Amazon Route 53 Pricing](#).

### Failure threshold

The number of consecutive health checks that an endpoint must pass or fail for Amazon Route 53 to change the current status of the endpoint from unhealthy to healthy or vice versa. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

### String matching (HTTP and HTTPS Only)

Whether you want Amazon Route 53 to determine the health of an endpoint by submitting an HTTP or HTTPS request to the endpoint and searching the response body for a specified string. If the response body contains the value that you specify in **Search string**, Amazon Route 53 considers the endpoint healthy. If not, or if the endpoint doesn't respond, Amazon Route 53 considers the endpoint unhealthy. The search string must appear entirely within the first 5,120 bytes of the response body.

After you create a health check, you can't change the value of **String matching**.

#### Note

If you choose **Yes** for the value of **String matching**, an additional charge applies. For more information, see [Amazon Route 53 Pricing](#).

### Search string (Only When "String matching" Is Enabled)

The string that you want Amazon Route 53 to search for in the body of the response from your endpoint. The maximum length is 255 characters.

Amazon Route 53 considers case when searching for **Search string** in the response body.

### Latency graphs

Choose whether you want Amazon Route 53 to measure the latency between health checkers in multiple AWS regions and your endpoint and to display Amazon CloudWatch latency graphs on the **Latency** tab on the **Health checks** page in the Amazon Route 53 console. If Amazon Route 53 health checkers can't connect to the endpoint, Amazon Route 53 can't display latency graphs for that endpoint.

After you create a health check, you can't change the value of **Latency measurements**.

#### Note

If you configure Amazon Route 53 to measure the latency between health checkers and your endpoint, an additional charge applies. For more information, see [Amazon Route 53 Pricing](#).

### Enable SNI (HTTPS Only)

Specify whether you want Amazon Route 53 to send the host name to the endpoint in the `client_hello` message during TLS negotiation. This allows the endpoint to respond to the HTTPS request with the applicable SSL/TLS certificate.

Some endpoints require that HTTPS requests include the host name in the `client_hello` message. If you don't enable SNI, the status of the health check will be `SSL alert handshake_failure`. A health check can also have that status for other reasons. If SNI is enabled and you're still getting the error, check the SSL/TLS configuration on your endpoint and confirm that your certificate is valid.

Note the following requirements:

- The endpoint must support SNI.
- The SSL/TLS certificate on your endpoint includes a domain name in the `Common Name` field and possibly several more in the `Subject Alternative Names` field. One of the domain names in the certificate must match the value that you specify for **Host name**.

### Health checker regions

Choose whether you want Amazon Route 53 to check the health of the endpoint by using health checkers in the recommended regions or by using health checkers in regions that you specify.

If you update a health check to remove a region that has been performing health checks, Amazon Route 53 will briefly continue to perform checks from that region to ensure that some health checkers are always checking the endpoint (for example, if you replace three regions with four different regions).

If you choose **Customize**, choose the **x** for a region to remove it. Click the space at the bottom of the list to add a region back to the list. You must specify at least three regions.

### Invert health check status

Choose whether you want Amazon Route 53 to invert the status of a health check. If you choose this option, Amazon Route 53 considers health checks to be unhealthy when the status is healthy and vice versa.

## Get Notified When a Health Check Fails

Use the following options to configure email notification when a health check fails:



- [Create alarm](#)
- [Send notification to](#)
- [Topic name](#)
- [Recipient email addresses](#)

#### Create alarm (Only When Creating Health Checks)

Specify whether you want to create a default CloudWatch alarm. If you choose **Yes**, CloudWatch sends you an Amazon SNS notification when the status of this endpoint changes to unhealthy and Amazon Route 53 considers the endpoint unhealthy for one minute.

If you want to create an alarm for an existing health check or you want to receive notifications when Amazon Route 53 considers the endpoint unhealthy for more or less than one minute (the default value), select **No**, and add an alarm after you create the health check. For more information, see [Monitoring Health Checks Using CloudWatch \(p. 351\)](#).

#### Send notification to (Only When Creating an Alarm)

Specify whether you want CloudWatch to send notifications to an existing Amazon SNS topic or to a new one:

- **Existing SNS topic** – Select the name of the topic from the list
- **New SNS topic** – Enter a name for the topic in **Topic name**, and enter the email addresses that you want to send notifications to in **Recipients**

#### Topic name (Only When Creating a New SNS Topic)

If you specified **New SNS Topic**, enter the name of the new topic.

#### Recipient email addresses (Only When Creating a New SNS Topic)

If you specified **New SNS topic**, enter the email addresses that you want to send notifications to. Separate multiple names with commas (,), semicolons (;), or spaces.

## Values that Amazon Route 53 Displays

The **Create Health Check** page displays the following values based on the values that you entered:

#### URL

Either the full URL (for HTTP or HTTPS health checks) or the IP address and port (for TCP health checks) to which Amazon Route 53 will send requests when performing health checks.

#### Health Check Type

Either **Basic** or **Basic + additional options** based on the settings that you specified for this health check. For information about pricing for the additional options, see [Amazon Route 53 Pricing](#).

## Updating Health Checks When You Change CloudWatch Alarm Settings (Health Checks that Monitor a CloudWatch Alarm Only)

If you create an Amazon Route 53 health check that monitors the status of a CloudWatch alarm and then you update the settings in the CloudWatch alarm, Amazon Route 53 doesn't automatically update the alarm settings in the health check. If you want the health check to start using the new alarm settings, you need to update the health check.

**Note**

To update a health check programmatically, you can use the `UpdateHealthCheck` API. Just specify the current values for `AlarmIdentifier` and `Region`, and Amazon Route 53 will get the latest settings from CloudWatch. For more information, see [UpdateHealthCheck](#) in the *Amazon Route 53 API Reference*.

**To update a health check with new CloudWatch alarm settings**

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. Select the check box for the health check that you want to update.
4. Choose **Edit health check**.

A note explains that the CloudWatch alarm for the health check has changed. The **Details** field shows the new alarm settings.

5. Choose **Save**.

## Deleting Health Checks

To delete health checks, perform the following procedure.

**To delete a health check using the Amazon Route 53 console**

1. If you're deleting health checks that are associated with records, perform the recommended tasks in [Updating or Deleting Health Checks when DNS Failover Is Configured](#) (p. 347).
2. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
3. In the navigation pane, choose **Health Checks**.
4. In the right pane, select the health check that you want to delete.
5. Choose **Delete Health Check**.
6. Choose **Yes, Delete** to confirm.

## Updating or Deleting Health Checks when DNS Failover Is Configured

When you want to update or delete health checks that are associated with records, or you want to change records that have associated health checks, you must consider how your changes affect routing of DNS queries and your DNS failover configuration.

**Important**

Amazon Route 53 does not prevent you from deleting a health check even if the health check is associated with one or more records. If you delete a health check and you don't update the associated records, the future status of the health check cannot be predicted and might change. This will affect the routing of DNS queries for your DNS failover configuration.

To update or delete health checks that are already associated with records, we recommend that you perform the following tasks:

1. Identify the records that are associated with the health checks. To identify the records that are associated with a health check, you must do one of the following:

- Review the records in each hosted zone using the Amazon Route 53 console. For more information, see [Listing Resource Record Sets](#) (p. 301).
  - Run the `ListResourceRecordSets` API action on each hosted zone and review the response. For more information, see [ListResourceRecordSets](#) in the *Amazon Route 53 API Reference*.
2. Assess the change in behavior that will result from updating or deleting health checks, or from updating records, and determine which changes to make. For more information, see the following topics:
    - [What Happens When You Omit Health Checks?](#) (p. 361)
    - [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Records](#) (p. 367)
  3. Change health checks and records as applicable. For more information, see the following topics:
    - [Creating and Updating Health Checks](#) (p. 339)
    - [Editing Resource Record Sets](#) (p. 300)
  4. Delete the health checks that you're no longer using, if any. For more information about deleting health checks using the console, see [Deleting Health Checks](#) (p. 347). For information about using the Amazon Route 53 API, see [DeleteHealthCheck](#) in the *Amazon Route 53 API Reference*.

## Configuring Router and Firewall Rules for Amazon Route 53 Health Checks

When Amazon Route 53 checks the health of an endpoint, it sends an HTTP, HTTPS, or TCP request to the IP address and port that you specified when you created the health check. For a health check to succeed, your router and firewall rules must allow inbound traffic from the IP addresses that the Amazon Route 53 health checkers use. (In Amazon EC2, security groups act as firewalls. For more information, see [Amazon EC2 Security Groups](#) in the *Amazon EC2 User Guide for Linux Instances*.) For the current list of IP addresses for Amazon Route 53 health checkers, for Amazon Route 53 name servers, and for other AWS services, see [IP Address Ranges of Amazon Route 53 Servers](#) (p. 387).

## How Amazon Route 53 Determines Whether an Endpoint Is Healthy

Amazon Route 53 determines whether the endpoint associated with a health check is healthy based on response time and on the number of failed or passed health checks:

- **HTTP and HTTPS health checks** – Amazon Route 53 must be able to establish a TCP connection with the endpoint within four seconds. In addition, the endpoint must respond with an HTTP status code of 200 or greater and less than 400 within two seconds after connecting.
- **TCP health checks** – Amazon Route 53 must be able to establish a TCP connection with the endpoint within ten seconds.
- **HTTP and HTTPS health checks with string matching** – As with HTTP and HTTPS health checks, Amazon Route 53 must be able to establish a TCP connection with the endpoint within four seconds, and the endpoint must respond with an HTTP status code of 200 or greater and less than 400 within two seconds after connecting.

After an Amazon Route 53 health checker receives the HTTP status code, it must receive the response body from the endpoint within the next two seconds. Amazon Route 53 searches the response body for a string that you specify. The string must appear entirely in the first 5120 bytes of the response body or the endpoint fails the health check. If you're using the Amazon Route 53 console, you specify

the string in the **Search String** field. If you're using the Amazon Route 53 API, you specify the string in the `SearchString` element when you create the health check.

- **Calculated health checks** – For health checks that monitor the status of other health checks, Amazon Route 53 adds up the number of health checks that Amazon Route 53 health checkers consider to be healthy. It then compares that number with the number of child health checks that must be healthy for the status of the health check to be considered healthy.
- **Health checks based on the state of CloudWatch alarms** – If the state of a CloudWatch alarm is **OK**, the health check is considered healthy. If the state is **Alarm**, the health check is considered unhealthy. If CloudWatch doesn't have sufficient data to determine whether the state is **OK** or **Alarm**, the health check status depends on the setting for **Health check status**: healthy, unhealthy, or last known status. (In the Amazon Route 53 API, this setting is `InsufficientDataHealthStatus`.)

For more information, see [Creating, Updating, and Deleting Health Checks \(p. 338\)](#).

When you create a health check, here's what happens:

1. Amazon Route 53 propagates the health check configuration to the servers that perform health checks in AWS data centers around the world.
2. A health-checking application (a health checker) in each data center sends a request to the endpoint that you specify at the request interval that you specify: every 10 seconds or every 30 seconds. The request interval is the number of seconds between the time that Amazon Route 53 gets a response from your endpoint and the time that it sends the next health-check request.
3. When the endpoint either passes or fails a consecutive number of health checks that you specify (the failure threshold), Amazon Route 53 updates the health status of the endpoint. Thereafter, the health status of an endpoint changes from healthy to unhealthy (or vice versa) after it fails (or passes) the same number of consecutive checks.
4. Each Amazon Route 53 health checker propagates the results of its health checks to Amazon Route 53 DNS servers worldwide. If more than 18% of available health checkers report that an endpoint is healthy, Amazon Route 53 responds to queries using the associated records when applicable. If 18% of health checkers or fewer report that an endpoint is healthy, Amazon Route 53 typically does not respond to queries using the associated records. The 18% value might change in a future release.

## Monitoring Health Check Status and Getting Notifications

You monitor the status of your health checks on the Amazon Route 53 console. You can also set CloudWatch alarms and get automated notifications when the status of your health check status changes.

### Topics

- [Viewing Health Check Status and the Reason for Health Check Failures \(p. 349\)](#)
- [Monitoring the Latency Between Health Checkers and Your Endpoint \(p. 350\)](#)
- [Monitoring Health Checks Using CloudWatch \(p. 351\)](#)

## Viewing Health Check Status and the Reason for Health Check Failures

On the Amazon Route 53 console, you can view the status (healthy or unhealthy) of your health checks as reported by Amazon Route 53 health checkers. For all health checks except calculated health checks,

you can also view the reason for the last health check failure, for example, health checkers were unable to establish a connection with the endpoint.

### To view the status and last failure reason for a health check (console)

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. For an overview of the status of all of your health checks—healthy or unhealthy—view the **Status** column. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).
4. For all health checks except calculated health checks, you can view the status of the Amazon Route 53 health checkers that are checking the health of a specified endpoint. Select the health check.
5. In the bottom pane, choose the **Health Checkers** tab.

#### Note

New health checks must propagate to Amazon Route 53 health checkers before the health check status and last failure reason appear in the **Status** column. Until propagation has finished, the message in that column explains that no status is available.

6. Choose whether you want to view the current status of the health check, or view the date and time of the last failure and the reason for the failure. The table on the **Status** tab includes the following values:

#### Health checker IP

The IP address of the Amazon Route 53 health checker that performed the health check.

#### Last checked

The date and time of the health check or the date and time of the last failure, depending on the option that you select at the top of the **Status** tab.

#### Status

Either the current status of the health check or the reason for the last health check failure, depending on the option that you select at the top of the **Status** tab.

## Monitoring the Latency Between Health Checkers and Your Endpoint

When you create a health check, if you choose to monitor the status of an endpoint (not the status of other health checks) and you choose the **Latency graphs** option, you can view the following values on CloudWatch graphs on the Amazon Route 53 console:

- The average time, in milliseconds, that it took Amazon Route 53 health checkers to establish a TCP connection with the endpoint
- The average time, in milliseconds, that it took Amazon Route 53 health checkers to receive the first byte of the response to an HTTP or HTTPS request
- The average time, in milliseconds, that it took Amazon Route 53 health checkers to complete the SSL handshake

#### Note

You can't enable latency monitoring for existing health checks.

### To view the latency between Amazon Route 53 health checkers and your endpoint (console)

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. Select the rows for the applicable health checks. You can view latency data only for health checks that monitor the status of an endpoint and for which the **Latency graphs** option is enabled.
4. In the bottom pane, choose the **Latency** tab.
5. Choose the time range and the geographic region for which you want to display latency graphs.

The graphs display the status for the specified time range:

#### TCP connection time (HTTP and TCP only)

The average time, in milliseconds, that it took Amazon Route 53 health checkers in the selected geographic region to establish a TCP connection with the endpoint.

#### Time to first byte (HTTP and HTTPS only)

The average time, in milliseconds, that it took Amazon Route 53 health checkers in the selected geographic region to receive the first byte of the response to an HTTP or HTTPS request.

#### Time to complete SSL handshake (HTTPS only)

The average time, in milliseconds, that it took Amazon Route 53 health checkers in the selected geographic region to complete the SSL handshake.

#### Note

If you select more than one health check, the graph displays a separate color-coded line for each health check.

6. To view a larger graph and specify different settings, click the graph. You can change the following settings:

#### Statistic

Changes the calculation that CloudWatch performs on the data.


#### Time range

Displays the status of a health check over a different period, for example, overnight or last week.

#### Period

Changes the interval between data points in the graph.

Note the following:

- If you just created a health check, you might need to wait for a few minutes for data to appear in the graph and for the health check metric to appear in the list of available metrics.
- The graph doesn't refresh itself automatically. To update the display, choose the refresh  icon.
- If health checks are failing for some reason, such as a connection timeout, Amazon Route 53 can't measure latency, and latency data will be missing from the graph for the affected period.

## Monitoring Health Checks Using CloudWatch

Amazon Route 53 health checks integrate with CloudWatch metrics so that you can do the following:

- Verify that a health check is properly configured.
- Review the status of a health check over a specified period of time.
- Configure CloudWatch to send an Amazon Simple Notification Service (Amazon SNS) alert when the status of a health check is unhealthy. Note that several minutes might elapse between the time that a health check fails and the time that you receive the associated Amazon SNS notification.

CloudWatch metrics are retained for two weeks.

For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

- [To view the status of a health check \(console\) \(p. 352\)](#)
- [To receive an Amazon SNS notification when a health check status is unhealthy \(console\) \(p. 353\)](#)
- [To view CloudWatch alarm status and edit alarms for Amazon Route 53 \(console\) \(p. 355\)](#)
- [To view Amazon Route 53 metrics on the CloudWatch console \(p. 355\)](#)

### To view the status of a health check (console)

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. Choose the rows for the applicable health checks.
4. In the bottom pane, choose the **Monitoring** tab.

The two graphs display the status for the last hour in one-minute intervals:

#### Health check status

The graph shows the Amazon Route 53 assessment of endpoint health. **1** indicates healthy and **0** indicates unhealthy.

#### Health checkers that report the endpoint healthy (%)

For all health checks except calculated health checks, the graph shows the percentage of Amazon Route 53 health checkers that consider the selected endpoint to be healthy.

#### Number of healthy child health checks

For calculated health checks only, the graph shows the number of child health checks for which the status is healthy.

#### Note

If you selected more than one health check, the graph displays a separate color-coded line for each health check.

5. To view a larger graph and specify different settings, click the graph. You can change the following settings:

#### Statistic

Changes the calculation that CloudWatch performs on the data.


#### Time range

Displays the status of a health check over a different period, for example, overnight or last week.

#### Period

Changes the interval between data points in the graph.

Note the following:

- If you just created a health check, you might need to wait for a few minutes for data to appear in the graph and for the health check metric to appear in the list of available metrics.
- The graph doesn't refresh itself automatically. To update the display, choose the refresh  icon.

### To receive an Amazon SNS notification when a health check status is unhealthy (console)

1. In the navigation pane of the Amazon Route 53 console, choose **Health Checks**.
2. Choose the row for the applicable health check.
3. In the bottom pane, choose the **Alarms** tab.

The table lists the alarms that you've already created for this health check.

4. Choose **Create Alarm**.
5. Specify the following values:

#### Alarm name

Type the name that you want to see in the **Name** column in the table.

#### Alarm description

(Optional) Type a description of the alarm.

#### Send notification

Choose whether you want Amazon Route 53 to send you notification if the status of this health check triggers an alarm.

#### Notification target (Only when "Send notification" is "Yes")

If you want CloudWatch to send notification to an existing Amazon SNS topic, choose the topic from the list.

If you want CloudWatch to send notification but not to an existing Amazon SNS topic, do one of the following:

- **If you want CloudWatch to send email notification** – Choose **New SNS topic** and continue with this procedure.
- **If you want CloudWatch to send notification by another method** – Open a new browser tab, go to the Amazon SNS console, and create the new topic. Then return to the Amazon Route 53 console, choose the name of the new topic from the **Notification target** list, and continue with this procedure.

#### Topic name (Only when you choose to create a new Amazon SNS topic)

Type a name for the new Amazon SNS topic.

#### Recipient email addresses (Only when you choose to create a new Amazon SNS topic)

Type the email address that you want Amazon Route 53 to send an Amazon SNS notification to when a health check triggers an alarm.

#### Alarm target

Choose the value that you want Amazon Route 53 to evaluate for this health check:

- **Health check status** – Amazon Route 53 health checkers report that the health check is healthy or unhealthy



- **Health checkers that report the endpoint healthy (%)** (all health checks except calculated health checks) – The percentage of Amazon Route 53 health checkers that report that the status of the health check is healthy
- **Number of healthy child health checks** (calculated health checks only) – The number of child health checks in a calculated health check that report that the status of the health check is healthy
- **TCP connection time** (HTTP and TCP health checks only) – The time in milliseconds that it took Amazon Route 53 health checkers to establish a TCP connection with the endpoint
- **Time to complete SSL handshake** (HTTPS health checks only) – The time in milliseconds that it took Amazon Route 53 health checkers to complete the SSL handshake
- **Time to first byte** (HTTP and HTTPS health checks only) – The time in milliseconds that it took Amazon Route 53 health checkers to receive the first byte of the response to an HTTP or HTTPS request

#### Alarm target

For the alarm targets that are based on latency (**TCP connection time**, **Time to complete SSL handshake**, **Time to first byte**), choose whether you want CloudWatch to calculate latency for Amazon Route 53 health checkers in a specific region or for all regions (**Global**).

Note that if you choose a region, Amazon Route 53 measures latency only twice per minute, and the number of samples will be smaller than if you choose all regions. As a result, outlying values are more likely. To prevent spurious alarm notifications, we recommend that you specify a larger number of consecutive periods that the health check must fail before CloudWatch sends you a notification.

#### Fulfill condition

Use the following settings to determine when CloudWatch should trigger an alarm:

Alarm Target	Recommended Condition	Description
Health check status	<b>Minimum</b> < 1	Amazon Route 53 health checkers report when the endpoint is unhealthy.
Health checkers that report the endpoint healthy (%)	<b>Average</b> < <i>desired percentage</i>	For health checks other than calculated health checks, Amazon Route 53 considers the status of a health check to be unhealthy when less than 18% of health checkers report that the status is healthy.
Number of healthy child health checks	<b>Minimum</b> < <i>desired number of healthy child health checks</i>	The <b>Minimum</b> statistic returns the most conservative value and represents the worst-case scenario.
TCP connection time	<b>Average</b> > <i>desired time in milliseconds</i>	<b>Average</b> is a more consistent value than other statistics.
Time to complete SSL handshake	<b>Average</b> > <i>desired time in milliseconds</i>	<b>Average</b> is a more consistent value than other statistics.
Time to first byte	<b>Average</b> > <i>desired time in milliseconds</i>	<b>Average</b> is a more consistent value than other statistics.

**For at least *x* consecutive periods of *y* minutes/hours/day**

Specify how many consecutive time periods that the specified value must meet the criteria before Amazon Route 53 sends notification. Then specify the length of the time period.

6. When you choose **Create**, Amazon SNS sends you an email with information about the new Amazon SNS topic.
7. In the email, choose **Confirm subscription**. You must confirm your subscription to begin receiving CloudWatch notifications.

**To view CloudWatch alarm status and edit alarms for Amazon Route 53 (console)**

1. In the navigation pane of the Amazon Route 53 console, choose **Health Checks**.
2. Choose the row for any health check.
3. In the details pane (following *x* **Health Checks Selected**), choose the right caret (▶) icon.

The **CloudWatch Alarms** list contains all of the Amazon Route 53 alarms that you have created using the current AWS account.

The **State** column shows the current status of each alarm:

**OK**

CloudWatch has accumulated enough statistics from Amazon Route 53 health checks to determine that the endpoint doesn't meet the alarm threshold.

**INSUFFICIENT DATA**

CloudWatch hasn't accumulated enough statistics to determine whether the endpoint meets the alarm threshold. This is the initial state of a new alarm.

**ALARM**

CloudWatch has accumulated enough statistics from Amazon Route 53 health checks to determine that the endpoint meets the alarm threshold and to send notification to the specified email address.

4. To view or edit settings for an alarm, choose the name of the alarm.
5. To view an alarm in the CloudWatch console, which provides more detailed information about the alarm (for example, a history of updates to the alarm and changes in status), choose **View** in the **More Options** column for the alarm.
6. To view all of the CloudWatch alarms that you have created using the current AWS account, including alarms for other AWS services, choose **View All CloudWatch Alarms**.
7. To view all of the available CloudWatch metrics, including metrics that aren't currently being used by the current AWS account, choose **View All CloudWatch Metrics**.

**To view Amazon Route 53 metrics on the CloudWatch console**

1. Sign in to the AWS Management Console and open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. Change the current region to **US East (N. Virginia)**. Amazon Route 53 metrics are not available if you select any other region as the current region.
3. In the navigation pane, choose **Metrics**.
4. On the **All metrics** tab, choose **Route 53**.
5. Choose **Health Check Metrics**.

## Configuring DNS Failover

When you have more than one resource performing the same function—for example, more than one HTTP server or mail server—you can configure Amazon Route 53 to check the health of your resources and respond to DNS queries using only the healthy resources. For example, suppose your website, `example.com`, is hosted on 10 servers, two each in five data centers around the world. You can configure Amazon Route 53 to check the health of those servers and to respond to DNS queries for `example.com` using only the servers that are currently healthy.

You can set up a variety of failover configurations using Amazon Route 53 alias, failover, geolocation, geoproximity, latency, multivalue, and weighted records:

- **Active-active failover:** Use this failover configuration when you want all of your resources to be available the majority of the time. When a resource becomes unavailable, Amazon Route 53 can detect that it's unhealthy and stop including it when responding to queries.
- **Active-passive failover:** Use this failover configuration when you want a primary group of resources to be available the majority of the time and you want a secondary group of resources to be on standby in case all of the primary resources become unavailable. When responding to queries, Amazon Route 53 includes only the healthy primary resources. If all of the primary resources are unhealthy, Amazon Route 53 begins to include only the healthy secondary resources in response to DNS queries.
- **Active-active-passive and other mixed configurations:** You can combine alias and non-alias records to produce a variety of Amazon Route 53 behaviors.

Amazon Route 53 can check the health of your resources in both simple and complex configurations:

- In all configurations, you create a group of records that all have the same name and type, for example, a group of weighted records for `example.com` for which the type is A. You then configure Amazon Route 53 to check the health of the corresponding resources. Amazon Route 53 responds to DNS queries based on the health of your resources. For more information, see [How Health Checks Work in Simple Amazon Route 53 Configurations \(p. 356\)](#).
- In more complex configurations, you use a combination of alias records, such as weighted alias and failover alias records, to create a tree of records. As with a simple configuration, you configure Amazon Route 53 to check the health of your resources. However, you can also configure the alias records to respond to the status of alias targets and to skip to another branch in the tree if all of the alias targets in one branch are unhealthy. Complex configurations give you more control over how Amazon Route 53 responds to your requests. For example, you might use latency-based routing to select a region close to a user and use an ELB Classic, Application, or Network Load Balancer within each region to protect against the failure of a single endpoint or an availability zone. For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations \(p. 358\)](#).

## How Health Checks Work in Simple Amazon Route 53 Configurations

When you have two or more resources that perform the same function, such as two or more web servers for `example.com`, you can use health checks to route traffic only to the healthy resources. To use health checks in this simple configuration, you create a health check and a record for each resource, and you associate one health check with each record. The health check regularly evaluates the status of the resource to see whether it's healthy.

When Amazon Route 53 receives a DNS query for `example.com`, it chooses one of the records and checks the status of the health check. If the health check says the resource is healthy, Amazon Route 53 uses that record to route traffic to the corresponding resource. If the health check says the resource is unhealthy, Amazon Route 53 chooses a different record and repeats the process.

Here's an overview of how you configure Amazon Route 53 to check the health of your resources in this simple configuration and how Amazon Route 53 responds to queries based on the health of your resources:

1. You identify the resources whose health you want Amazon Route 53 to monitor. For example, you might want to monitor all of the HTTP servers that respond to requests for example.com.
2. You create health checks for your resources. A health check tells Amazon Route 53 how to send requests to the endpoint whose health you want to check: which protocol to use (HTTP, HTTPS, or TCP), which IP address and port to use, and, for HTTP/HTTPS health checks, a domain name and path.

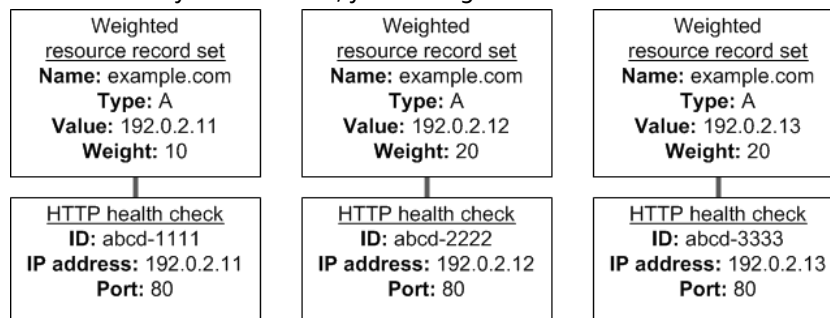
A common configuration is to create one health check for each resource and to use the same IP address for the health check endpoint as for the resource. If the IP address for your HTTP server is 192.0.2.117, you create a health check for which the IP address is 192.0.2.117.

#### Note

Amazon Route 53 cannot check the health of endpoints for which the IP address is in local, private, nonroutable, or multicast ranges. For more information about IP addresses for which you cannot create health checks, see [RFC 5735, Special Use IPv4 Addresses](#) and [RFC 6598, IANA-Reserved IPv4 Prefix for Shared Address Space](#).

For more information about creating health checks by using the Amazon Route 53 console, see [Creating, Updating, and Deleting Health Checks \(p. 338\)](#). For information about creating health checks by using the Route 53 API, see [CreateHealthCheck](#) in the *Amazon Route 53 API Reference*.

3. You might need to configure router and firewall rules so that Amazon Route 53 can send regular requests to the endpoints that you specified in your health checks. For more information, see [Configuring Router and Firewall Rules for Amazon Route 53 Health Checks \(p. 348\)](#).
4. You create a group of records for your resources, for example, a group of weighted records that all have a type of A. You associate the health checks that you created in step 2 with the corresponding records. When you're finished, your configuration looks similar to the following diagram:



For more information about creating records by using the Amazon Route 53 console, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 244\)](#). For information about creating records by using the Amazon Route 53 API, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

5. Amazon Route 53 periodically sends a request to each endpoint that you specified when you created your health checks; it doesn't perform the health check when it receives a DNS query. Based on the responses, Amazon Route 53 decides whether the endpoints are healthy and uses that information to determine how to respond to queries. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 348\)](#).

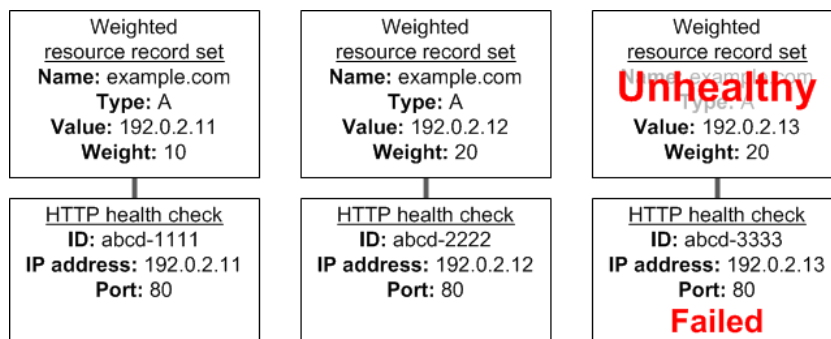
#### Important

Amazon Route 53 doesn't check the health of the resource specified in the record, such as the IP address specified in an A record for example.com. When you associate a health check with a record, Amazon Route 53 begins to check the health of the endpoint that you specified in the health check.

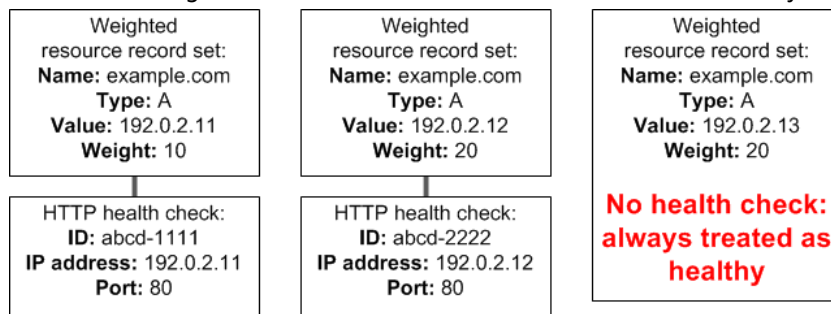
6. Here's what happens when Amazon Route 53 receives a query for example.com:
- Amazon Route 53 chooses a record based on the routing policy. In this case, it chooses a record based on weight.
  - It determines the current health of the selected record by checking the status of the health check for that record.
  - If the selected record is unhealthy, it repeats the process of choosing a record based on the routing policy. This time, the unhealthy record isn't considered.
  - It responds to the query with the selected healthy record.

The following example shows a group of weighted records in which the third record is unhealthy. Initially, Amazon Route 53 selects a record based on the weights of all three records. If it happens to select the unhealthy record the first time, Amazon Route 53 selects another record, but this time it omits the weight of the third record from the calculation:

- When Amazon Route 53 initially selects from among all three records, it responds to requests using the first record about 20% of the time,  $10/(10 + 20 + 20)$ .
- When Amazon Route 53 determines that the third record is unhealthy, it responds to requests using the first record about 33% of the time,  $10/(10 + 20)$ .



If you omit a health check from one or more records in a group of records, Amazon Route 53 treats those records as healthy. Amazon Route 53 has no basis for determining the health of the corresponding resource and might choose a record for which the resource is unhealthy.

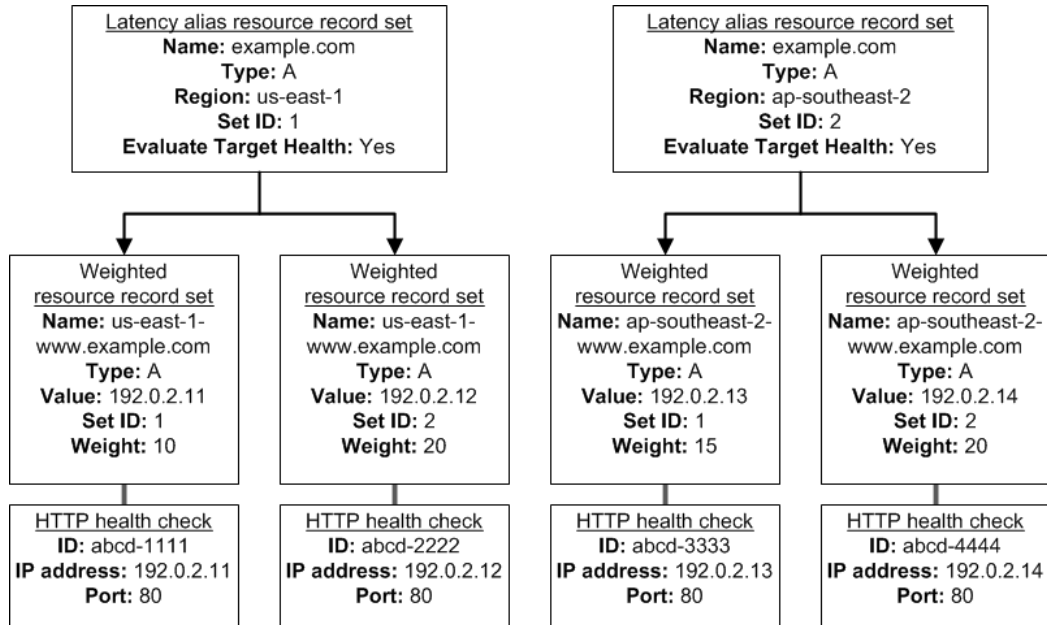


## How Health Checks Work in Complex Amazon Route 53 Configurations

Checking the health of resources in complex configurations works much the same way as in simple configurations. However, in complex configurations, you use a combination of alias records (such as weighted alias and failover alias) and nonalias records to build a decision tree that gives you greater

control over how Amazon Route 53 responds to requests. For more information, see [How Health Checks Work in Simple Amazon Route 53 Configurations](#) (p. 356).

For example, you might use latency alias records to select a region close to a user and use weighted records for two or more resources within each region to protect against the failure of a single endpoint or an Availability Zone. The following diagram shows this configuration.



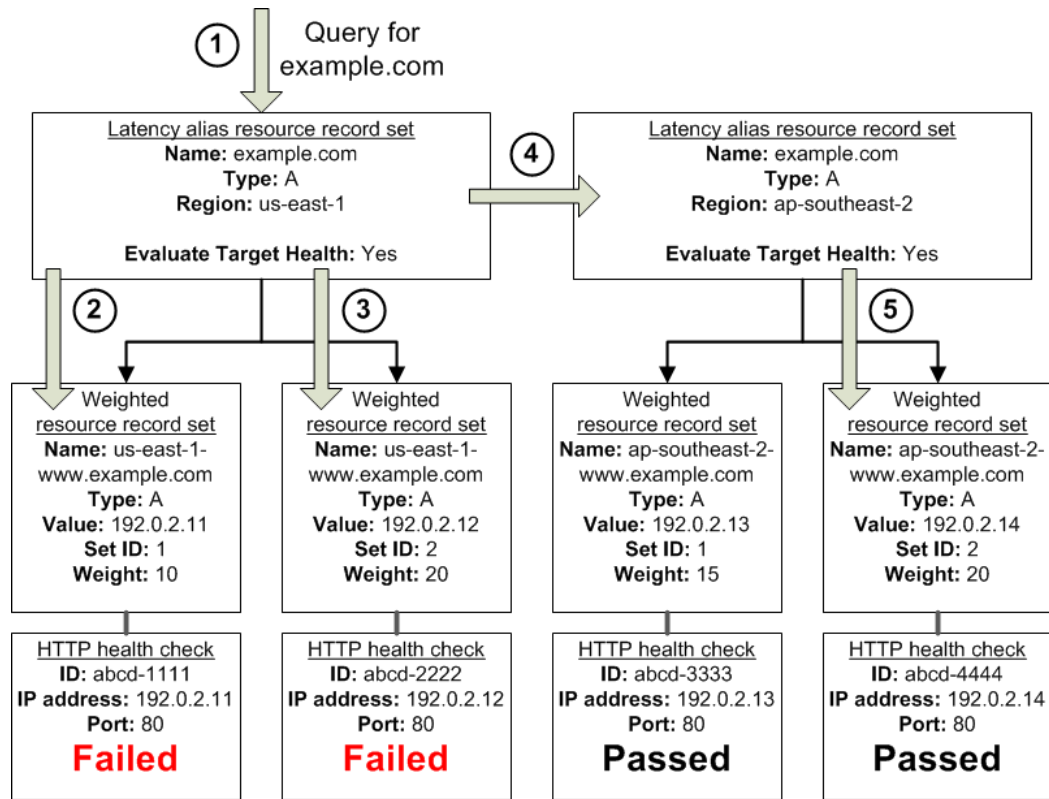
Here's how Amazon EC2 and Amazon Route 53 are configured:

- You have Amazon EC2 instances in two regions, us-east-1 and ap-southeast-2. You want Amazon Route 53 to respond to queries by using the records in the region that provides the lowest latency for your customers, so you create a latency alias record for each region. (You create the latency alias records after you create records for the individual Amazon EC2 instances.)
- Within each region, you have two Amazon EC2 instances. You create a weighted record for each instance. The name and the type are the same for both of the weighted records in each region.

When you have multiple resources in a region, you can create weighted or failover records for your resources. You can also create even more complex configurations by creating weighted alias or failover alias records that, in turn, refer to multiple resources.

- Each weighted record has an associated health check. The IP address for each health check matches the IP address for the corresponding record. This isn't required, but it's the most common configuration.
- For both latency alias records, you set the value of **Evaluate Target Health** to **Yes**.

You use the **Evaluate Target Health** setting for each latency alias record to make Amazon Route 53 evaluate the health of the alias targets—the weighted records—and respond accordingly.



The preceding diagram illustrates the following sequence of events:

1. Amazon Route 53 receives a query for example.com. Based on the latency for the user making the request, Amazon Route 53 selects the latency alias record for the us-east-1 region.
2. Amazon Route 53 selects a weighted record based on weight. **Evaluate Target Health** is **Yes** for the latency alias record, so Amazon Route 53 checks the health of the selected weighted record.
3. The health check failed, so Amazon Route 53 chooses another weighted record based on weight and checks its health. That record also is unhealthy.
4. Amazon Route 53 backs out of that branch of the tree, looks for the latency alias record with the next-best latency, and chooses the record for ap-southeast-2.
5. Amazon Route 53 again selects a record based on weight, and then checks the health of the selected record. The health check passed, so Amazon Route 53 returns the applicable value in response to the query.

#### Topics

- [What Happens When You Associate a Health Check with an Alias Record?](#) (p. 360)
- [What Happens When You Omit Health Checks?](#) (p. 361)
- [What Happens When You Set Evaluate Target Health to No?](#) (p. 362)

## What Happens When You Associate a Health Check with an Alias Record?

You can associate a health check with an alias record instead of or in addition to setting the value of **Evaluate Target Health** to **Yes**. However, it's generally more useful if Amazon Route 53 responds to

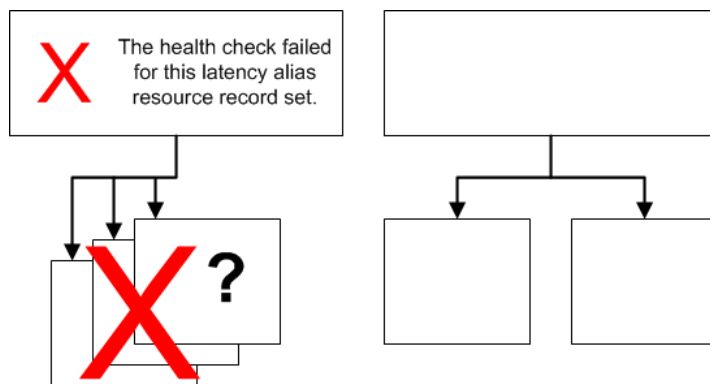


queries based on the health of the underlying resources—the HTTP servers, database servers, and other resources that your alias records refer to. For example, suppose the following configuration:

- You assign a health check to a latency alias record for which the alias target is a group of weighted records.
- You set the value of **Evaluate Target Health** to **Yes** for the latency alias record.

In this configuration, both of the following must be true before Amazon Route 53 will return the applicable value for a weighted record:

- The health check associated with the latency alias record must pass.
- At least one weighted record must be considered healthy, either because it's associated with a health check that passes or because it's not associated with a health check. In the latter case, Amazon Route 53 always considers the weighted record healthy.

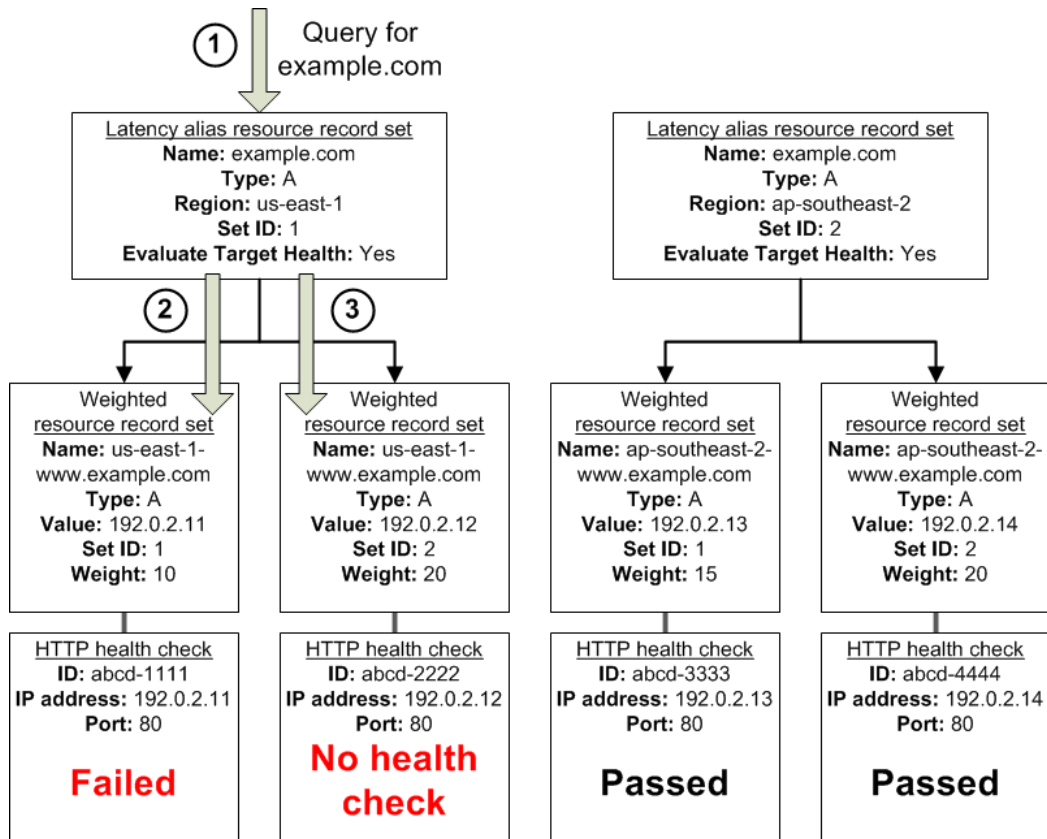


If the health check for the latency alias record fails, Amazon Route 53 stops responding to queries using any of the weighted records in the alias target, even if they're all healthy. Amazon Route 53 doesn't know the status of the weighted records because it never looks past the failed health check on the alias record.

## What Happens When You Omit Health Checks?

In a complex configuration, it's important to associate health checks with all of the non-alias records. Let's return to the preceding example, but assume that a health check is missing on one of the weighted records in the us-east-1 region:



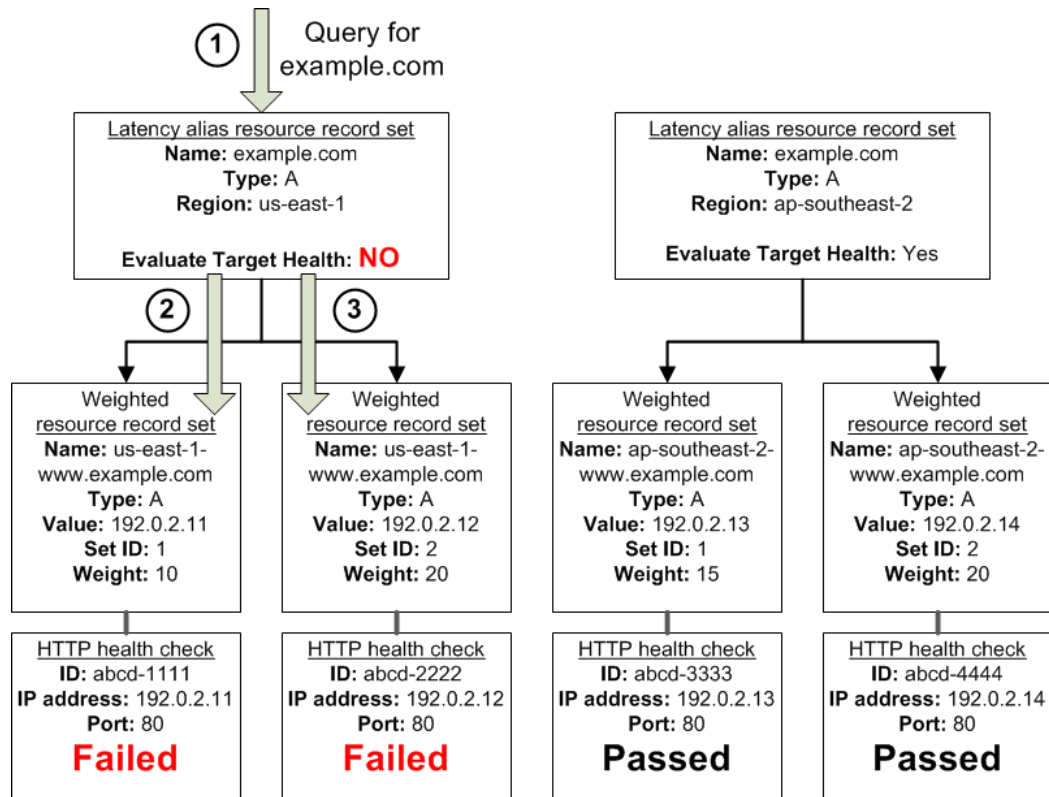


Here's what happens when you omit a health check on a non-alias record in this configuration:

1. Amazon Route 53 receives a query for `example.com`. Based on the latency for the user making the request, Amazon Route 53 selects the latency alias record for the `us-east-1` region.
2. Amazon Route 53 looks up the alias target for the latency alias record, and checks the status of the corresponding health checks. The health check for one weighted record failed, so that record is omitted from consideration.
3. The other weighted record in the alias target for the `us-east-1` region has no health check. The corresponding resource might or might not be healthy, but without a health check, Amazon Route 53 has no way to know. Amazon Route 53 assumes that the resource is healthy and returns the applicable value in response to the query.

## What Happens When You Set Evaluate Target Health to No?

In general, you also want to set **Evaluate Target Health** to **Yes** for all of the alias records. In the following example, all of the weighted records have associated health checks, but **Evaluate Target Health** is set to **No** for the latency alias record for the `us-east-1` region:



Here's what happens when you set **Evaluate Target Health** to **No** for an alias record in this configuration:

1. Amazon Route 53 receives a query for example.com. Based on the latency for the user making the request, Amazon Route 53 selects the latency alias record for the us-east-1 region.
2. Amazon Route 53 determines what the alias target is for the latency alias record, and checks the corresponding health checks. They're both failing.
3. Because the value of **Evaluate Target Health** is **No** for the latency alias record for the us-east-1 region, Amazon Route 53 must choose one record in this branch instead of backing out of the branch and looking for a healthy record in the ap-southeast-2 region.

## Task List for Configuring DNS Failover

To use Amazon Route 53 to configure DNS failover, perform the following tasks:

1. Draw a complete diagram of your configuration, and indicate which type of record you're creating (weighted alias, failover, weighted, and so on) for each node:
  - In a simple configuration, your diagram won't include any alias records.
  - In a complex configuration, your diagram will include a combination of alias records (such as weighted alias and failover alias) and non-alias records in a multi-level tree like the examples in the topic [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 358).
2. Create health checks for each Amazon EC2 server and each non-AWS resource, such as an email server running in your data center, that you want to include in your configuration. You'll associate these health checks with your non-alias records.

For more information, see [Creating, Updating, and Deleting Health Checks](#) (p. 338).

3. Create all of the non-alias records in your diagram, and associate the health checks that you created in step 2 with the applicable records.

You can associate health checks with records by using the Amazon Route 53 console or the Amazon Route 53 API. For more information, see the applicable documentation:

- **Using the Amazon Route 53 console:** See [Working with Resource Record Sets \(p. 231\)](#).
- **Using the Amazon Route 53 API:** See [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

#### Note

To quickly and easily create records for complex routing configurations and associate the records with health checks, you can use the traffic flow visual editor and save the configuration as a traffic policy. You can then associate the traffic policy with one or more domain names (such as `example.com`) or subdomain names (such as `www.example.com`), in the same hosted zone or in multiple hosted zones. In addition, you can roll back the updates if the new configuration isn't performing as you expected it to. For more information, see [Using Traffic Flow to Route DNS Traffic \(p. 301\)](#).

If you're configuring DNS failover in a simple configuration, with no alias records, skip the remaining tasks.

4. Starting at the bottom of the tree diagram that you created in step 1, create the alias records (such as weighted alias and failover alias records) for which the alias target is one of the records that you created in step 3. If you want Amazon Route 53 to try another branch of the tree when all of the non-alias records are unhealthy in a branch of your tree, set the value of **Evaluate Target Health** to **Yes** for each of your alias records.
5. If your tree diagram includes nodes for which you have not yet created alias records, create the remaining alias records, working from the bottom of the tree toward the top.

Remember that you cannot create an alias record if the alias target record doesn't exist yet.

## Configuring Failover in a Private Hosted Zone

If you're creating failover records in a private hosted zone, note the following:

- Amazon Route 53 health checkers are outside the VPC. To check the health of an endpoint within a VPC by IP address, you must assign a public IP address to the instance in the VPC.
- You can configure a health checker to check the health of an external resource that the instance relies on, such as a database server.
- You can create a CloudWatch metric, associate an alarm with the metric, and then create a health check that is based on the state of the alarm. For example, you might create a CloudWatch metric that checks the status of the EC2 `StatusCheckFailed` metric, add an alarm to the metric, and then create a health check that is based on the state of the alarm. For information about creating CloudWatch metrics and alarms by using the CloudWatch console, see the [Amazon CloudWatch User Guide](#).

For more information, see the following topics:

- [Working with Private Hosted Zones \(p. 225\)](#)
- [Creating and Updating Health Checks \(p. 339\)](#)
- [Working with Resource Record Sets \(p. 231\)](#)

## Options for Configuring Amazon Route 53 Active-Active and Active-Passive Failover

You can configure Amazon Route 53 failover in a variety of ways by using different combinations of Amazon Route 53 records. The following sections give a brief overview of how you can configure simple active-active and active-passive failover. You can also create more complex configurations by combining types of records in a larger tree. For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 358).

### Topics

- [Configuring Active-Active or Active-Passive Failover by Using Amazon Route 53 Weighted and Weighted Alias Records](#) (p. 365)
- [Configuring Active-Active Failover by Using Amazon Route 53 Latency and Latency Alias Records](#) (p. 366)
- [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Records](#) (p. 367)

## Configuring Active-Active or Active-Passive Failover by Using Amazon Route 53 Weighted and Weighted Alias Records

If you add health checks to all of the records in a group of weighted records, and you assign nonzero weights to all of the records, the Amazon Route 53 behavior results in an active-active failover configuration. Any resource can be returned at any time in response to a DNS query unless it's unhealthy.

Here's how Amazon Route 53 chooses a healthy record:

1. Amazon Route 53 selects a weighted record based on the weights that you've assigned to the records that have the same name and type.
2. Amazon Route 53 checks the current status of the health check that you associated with that record. (Amazon Route 53 periodically checks the health of the endpoint that is specified in a health check; it doesn't perform the health check when the DNS query arrives.)
3. If the health check endpoint is healthy, Amazon Route 53 responds to the query with the applicable value from the record, such as an IP address.

If the health check endpoint is not healthy, Amazon Route 53 selects another weighted record and repeats the process until it finds a record for which the health check endpoint is healthy.

If you add health checks to all of the records in a group of weighted records, but you give nonzero weights to some records and zero weights to others, the Amazon Route 53 behavior results in an active-passive failover configuration. (If you want an active-passive failover configuration, we recommend that you use failover records. For more information, see [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Records](#) (p. 367).) Health checks in this configuration work the same as in the active-active configuration—when all records have nonzero weights—with the following exceptions:

- Amazon Route 53 initially considers only the nonzero weighted records, if any.
- If all of the records that have a weight greater than 0 are unhealthy, then Amazon Route 53 considers the zero-weighted records.

If a record in a group of weighted records doesn't have an associated health check, Amazon Route 53 always considers it healthy and always includes it among possible responses to a query.

If none of the records in the group of weighted records are healthy, Amazon Route 53 needs to return something in response to DNS queries, but it has no basis for choosing one record over another. In this circumstance, Amazon Route 53 considers all of the records in the group to be healthy and selects one based on their assigned weights, omitting the records that have a weight of 0.

You can also use weighted alias records to configure active-active or active-passive failover. Weighting works the same way as with weighted records, but the health of a weighted alias record depends on the health of the alias target or targets. For example, suppose the alias target for a weighted alias record is a group of weighted records that all have nonzero weights. As long as at least one of the weighted records is healthy, Amazon Route 53 considers the weighted alias record to be healthy. If none of the weighted records is healthy, Amazon Route 53 considers the weighted alias record to be unhealthy. Amazon Route 53 stops considering records in that branch of the tree until at least one weighted record becomes healthy again.

For more information about weighted records, see [Weighted Routing \(p. 235\)](#).

## Configuring Active-Active Failover by Using Amazon Route 53 Latency and Latency Alias Records

If you add health checks to all of the records in a group of latency records, the Amazon Route 53 behavior results in an active-active failover configuration.

Amazon Route 53 considers the health and the latency of the records when choosing the record with which to respond to DNS queries:

1. Amazon Route 53 selects a latency record based on the latency between your users and the Amazon EC2 regions in which you have resources.
2. Amazon Route 53 checks the current status of the health check that you associated with that record. (Amazon Route 53 periodically checks the health of the endpoint that is specified in a health check; it doesn't perform the health check when the DNS query arrives.)
3. If the health check endpoint is healthy, Amazon Route 53 responds to the query with the applicable value from the record, for example, an IP address.

If the health check endpoint is not healthy, Amazon Route 53 selects the latency record with the next-best latency and repeats the process until it finds a record for which the health check endpoint is healthy.

If a record in a group of latency records doesn't have a health check, Amazon Route 53 always considers it healthy and always includes it among possible responses to a query.

If none of the records in a latency record are healthy, Amazon Route 53 needs to return something in response to DNS queries, but it has no basis for choosing one record over another. In this circumstance, Amazon Route 53 considers all of these records healthy and selects a record based on the latency between the user and each region.

You can also use latency alias records to configure active-active failover. Assuming that you set **Evaluate Target Health** to true for all of your latency alias records, the health of a latency alias record depends on the health of the alias target or targets. For example, suppose the alias target for a latency alias record is a group of weighted records that all have nonzero weights. As long as at least one of the weighted records is healthy, Amazon Route 53 considers the latency alias record to be healthy. If none of the weighted records is healthy, Amazon Route 53 considers the latency alias record to be unhealthy. Amazon Route 53 stops considering records for that region (in that branch of the tree) until at least one weighted record becomes healthy again. For a more detailed explanation of this configuration, see [How Health Checks Work in Complex Amazon Route 53 Configurations \(p. 358\)](#).

For more information about latency records, see [Latency-based Routing \(p. 234\)](#).

## Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Records

You can create an active-passive failover configuration by using failover records. You create a primary and a secondary failover record that have the same name and type, and you associate a health check with each. The primary and secondary failover records can refer to anything from an Amazon S3 bucket that is configured as a website to a complex tree of records. When all of the resources that are referenced by the primary failover record are unhealthy, Amazon Route 53 automatically begins responding to queries by using the resources that are referenced by the secondary failover record.

For example, you might create a pair of failover records for `example.com`. After the configuration is complete, Amazon Route 53 responds to queries for `example.com` based on the health of the endpoints that you associated with the primary and secondary records. If you associate health checks with both the primary and secondary failover records, here's how Amazon Route 53 responds to requests:

- If Amazon Route 53 considers the primary record healthy (if the health check endpoint is healthy), Amazon Route 53 returns only the primary record in response to a DNS query.
- If Amazon Route 53 considers the primary record unhealthy and the secondary record healthy, Amazon Route 53 returns the secondary record instead.
- If Amazon Route 53 considers both the primary and secondary records unhealthy, Amazon Route 53 returns the primary record.

When you're configuring the secondary record, adding a health check is optional. If you omit the health check for the secondary record, and if the health check endpoint for the primary record is unhealthy, Amazon Route 53 always responds to DNS queries by using the secondary record. This is true even if the secondary is unhealthy. When there is no health check on the secondary record, Amazon Route 53 doesn't know that the associated resource is unhealthy and always assumes that it's healthy.

Use *failover* records when you have two resources and you want one of the resources to handle all requests whenever it's available. For example, you might have two HTTP servers running on Amazon EC2 servers in different regions, and you want Amazon Route 53 to respond to queries with the IP address of the HTTP server in the US West (Oregon) region whenever that server is available. You specify that server in the primary failover record, and you specify the server in the US West (N. California) region in the secondary failover record.

Use *failover alias* records when you have two *groups* of records (for example, groups of weighted or latency records), and you want Amazon Route 53 to respond to queries using resources in the primary group as long as at least one of those resources is available. If health checks for all of the resources in the primary group are failing, Amazon Route 53 will begin to respond to queries using resources in the secondary group.

You can also combine a failover record and a failover alias record. Either record, the primary or the secondary, can be the failover alias record. For example, you might create a failover record for a single HTTP server, and create a failover alias record for an Amazon S3 bucket that is configured as a website; in this configuration, the Amazon S3 bucket might only display a message saying that your website is unavailable.

You can create failover and failover alias records using the Amazon Route 53 console or the Amazon Route 53 API. For information about using the console, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 244\)](#). For information about using the Amazon Route 53 API, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

## How Amazon Route 53 Averts Failover Problems

The failover algorithms implemented by Amazon Route 53 are designed not only to route traffic to endpoints that are healthy, but also to avoid making disaster scenarios worse due to misconfigured health checks and applications, endpoint overloads, and partition failures.

### How Amazon Route 53 Averts Cascading Failures

As a first defense against cascading failures, each request routing algorithm (such as weighted and failover) has a mode of last resort. In this special mode, when all records are considered unhealthy, the Amazon Route 53 algorithm reverts to considering all records healthy.

For example, if all instances of an application, on several hosts, are rejecting health check requests, Amazon Route 53 DNS servers will choose an answer anyway and return it rather than returning no DNS answer or returning an NXDOMAIN (non-existent domain) response. An application can respond to users but still fail health checks, so this provides some protection against misconfiguration.

Similarly, if an application is overloaded, and one out of three endpoints fails its health checks, so that it's excluded from Amazon Route 53 DNS responses, Amazon Route 53 distributes responses between the two remaining endpoints. If the remaining endpoints are unable to handle the additional load and they fail, Amazon Route 53 reverts to distributing requests to all three endpoints.

### How Amazon Route 53 Handles Internet Partitions

Although uncommon, there are occasionally significant internet partitions, meaning that large geographic regions can't communicate with one another over the internet. During these partitions, Amazon Route 53 locations might reach different conclusions about the health status of an endpoint and might differ from the status reported to CloudWatch. Amazon Route 53 health checkers in each AWS region are constantly sending health check statuses to all Amazon Route 53 locations. During internet partitions, each Amazon Route 53 location might have access only to a partial set of these statuses, usually from its closest regions.

For example, during an internet partition that affects connectivity to and from South America, the Amazon Route 53 DNS servers in the Amazon Route 53 South America (São Paulo) location might have good access to the health check endpoints in the South America (São Paulo) AWS region, but poor access to endpoints elsewhere. At the same time, Amazon Route 53 in US East (Ohio) might have poor access to health check endpoints in the South America (São Paulo) region, and conclude that the corresponding records are unhealthy.

Partitions such as these can give rise to situations where Amazon Route 53 locations make different conclusions about the health status of endpoints, based on their local visibility of those endpoints. This is why each Amazon Route 53 location considers an endpoint healthy when only a portion of reachable health checkers consider it healthy.

## Naming and Tagging Health Checks

You can add tags to Amazon Route 53 health checks, which lets you give each health check a name that is more comprehensible than the health check ID. These are the same tags that AWS Billing and Cost Management provides for organizing your AWS bill to reflect your own cost structure. For more information about using tags for cost allocation, see [Use Cost Allocation Tags for Custom Billing Reports](#) in the *AWS Billing and Cost Management User Guide*.

Each tag consists of a key (the name of the tag) and a value, both of which you define. When you add tags to a health check, we recommend that you add one tag for which the key is **Name** and the value is the name that you want to give to the health check. The value of the **Name** tag appears in the list of health checks in the Amazon Route 53 console, which lets you readily distinguish health checks from one



another. You can view other tags in the console, but you need to select a health check to see tags other than the **Name** tag.

For more information about tags, see the following topics:

- To add, edit, or delete the **Name** tag when you add or edit health checks in the Amazon Route 53 console, see [Creating, Updating, and Deleting Health Checks \(p. 338\)](#).
- To add, edit, or delete tags for health checks and hosted zones by using the Amazon Route 53 API, see [ChangeTagsForResource](#) in the *Amazon Route 53 API Reference*.
- For an overview of tagging Amazon Route 53 resources, see [Tagging Amazon Route 53 Resources \(p. 416\)](#).

## Tag Restrictions

The following basic restrictions apply to tags:

- Maximum number of tags per resource – 10
- Maximum **Key** length – 128 Unicode characters
- Maximum **Value** length – 256 Unicode characters
- Valid values for **Key** and **Value** – uppercase and lowercase letters in the UTF-8 character set, numbers, space, and the following characters: `_ . : / = + -` and `@`
- Tag keys and values are case sensitive
- Don't use the `aws:` prefix for either keys or values; it's reserved for AWS use

## Adding, Editing, and Deleting Tags for Health Checks

The following procedures show you how to use tags for your health checks in the Amazon Route 53 console.

### To add tags to health checks

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. Select a health check, or select multiple health checks if you want to add the same tag to more than one health check.
4. In the bottom pane, choose the **Tags** tab, and then choose **Add/Edit Tags**.
5. In the **Add/Edit Tags** dialog box, enter a name for the tag in the **Key** field, and enter a value in the **Value** field.
6. Choose **Apply changes**.

### To edit tags for health checks

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. Select a health check.

If you select multiple health checks that share the same tag, you cannot edit the value for all the tags simultaneously. Note, however, that you can edit the value of a tag that appears in multiple health checks if you select health checks that have the tag and at least one that doesn't.



For example, suppose you select multiple health checks that have a **Cost Center** tag and one that doesn't. You choose the option to add a tag, and you specify **Cost Center** for the key and **777** for the value. For the selected health checks that already have a **Cost Center** tag, Amazon Route 53 changes the value to **777**. For the one health check that doesn't have a **Cost Center** tag, Amazon Route 53 adds one and sets the value to **777**.

4. In the bottom pane, choose the **Tags** tab, and then choose **Add/Edit Tags**.
5. In the **Add/Edit Tags** dialog box, edit the value.
6. Choose **Save**.

#### To delete tags for health checks

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Health Checks**.
3. Select a health check, or select multiple health checks if you want to delete the same tag from more than one health check.
4. In the bottom pane, choose the **Tags** tab, and then choose **Add/Edit Tags**.
5. In the **Add/Edit Tags** dialog box, choose the **x** next to the tag that you want to delete.
6. Choose **Save**.

## Using Health Checks with Amazon Route 53 API Versions Earlier than 2012-12-12

Health checks are supported starting with the 2012-12-12 version of the Amazon Route 53 API. If a hosted zone contains records for which health checks are configured, we recommend that you use only the 2012-12-12 API or later. Note the following restrictions on using health checks with earlier API versions.

- The `ChangeResourceRecordSets` action cannot create or delete records that include the `EvaluateTargetHealth`, `Failover`, or `HealthCheckId` elements.
- The `ListResourceRecordSets` action can list records that include these elements, but the elements are not included in the output. Instead, the `value` element of the response contains a message that says the record includes an unsupported attribute.

# Troubleshooting Amazon Route 53

The topics in this chapter can help you troubleshoot problems with your domain registration and DNS configuration.

## Topics

- [My domain is unavailable on the internet \(p. 371\)](#)
- [My domain is suspended \(status is ClientHold\) \(p. 374\)](#)
- [Transferring my domain to Amazon Route 53 failed \(p. 376\)](#)
- [I changed DNS settings, but they haven't taken effect \(p. 377\)](#)
- [My browser displays a "Server not found" error \(p. 379\)](#)
- [I can't route traffic to an Amazon S3 bucket that's configured for website hosting \(p. 380\)](#)
- [I was billed twice for the same hosted zone \(p. 380\)](#)

## My domain is unavailable on the internet

Here are the most common reasons that your domain is not available on the internet.

## Topics

- [You registered a new domain, but you didn't click the link in the confirmation email \(p. 371\)](#)
- [You transferred domain registration to Amazon Route 53, but you didn't transfer DNS service \(p. 372\)](#)
- [You transferred domain registration and specified the wrong name servers in the domain settings \(p. 373\)](#)
- [You transferred DNS service first, but you didn't wait long enough before transferring domain registration \(p. 374\)](#)
- [Your domain has been suspended \(p. 374\)](#)

## You registered a new domain, but you didn't click the link in the confirmation email

When you register a new domain, ICANN requires that we get confirmation that the email address for the registrant contact is valid. To get confirmation, we send an email that contains a link. (If you don't

respond to the first email, we resend the same email up to two more times.) You have between 3 and 15 days to click the link, depending on the top-level domain. After that time, the link stops working.

If you don't click the link in the email in the allotted amount of time, ICANN requires that we suspend the domain. For information about how to resend the confirmation email to the registrant contact, see [Resending Authorization and Confirmation Emails \(p. 60\)](#).

## You transferred domain registration to Amazon Route 53, but you didn't transfer DNS service

If your previous registrar offered free DNS service with domain registration, the registrar might have stopped providing DNS service when you transferred domain registration to Amazon Route 53. Perform the following procedure to determine whether this is the problem and, if so, to resolve it.

### To restore DNS service if your previous registrar canceled it after you transferred domain registration to Amazon Route 53

1. Contact your previous registrar and confirm that they canceled DNS service for your domain. If so, here are the three quickest ways to restore DNS service for the domain, in order of desirability:
  - If the previous registrar provides paid DNS service, ask them to restore DNS service using the old DNS records and name servers for your domain.
  - If the previous registrar doesn't provide paid DNS service without domain registration, ask whether you can transfer domain registration back to them and have them restore DNS service using the old DNS records and name servers for your domain.
  - If you can transfer domain registration back to the previous registrar but they don't have your DNS records any longer, ask whether you can transfer domain registration back to them and get the same set of name servers that were formerly assigned to the domain. If this is possible, you'll have to recreate your old DNS records yourself. However, as soon as you do that, your domain will become available again.

If your previous registrar can't help with any of these options, continue with step 2.

#### **Important**

If you can't restore DNS service using the name servers that you specified when you transferred your domain to Amazon Route 53, it can take up to two days after you complete the remaining steps in this procedure for your domain to become available again on the internet. DNS resolvers typically cache the names of the name servers for a domain for 24 to 48 hours, and it will take that long before all DNS resolvers get the names of the new name servers.

2. Choose a new DNS service, for example, Amazon Route 53.
3. Using the method provided by the new DNS service, create a hosted zone and resource record sets:
  - a. Create a hosted zone that has the same name as your domain, such as example.com.
  - b. Use the zone file that you got from the previous registrar to create resource record sets.

If you chose Amazon Route 53 as your new DNS service, you can create resource record sets by importing the zone file. For more information, see [Creating Resource Record Sets By Importing a Zone File \(p. 298\)](#).

4. Get the name servers for the new hosted zone. If you chose Amazon Route 53 as the DNS service, see [Getting the Name Servers for a Public Hosted Zone \(p. 214\)](#).
5. Change the name servers for your domain to the name servers that you got in step 4. For more information, see [Adding or Changing Name Servers and Glue Records for a Domain \(p. 42\)](#).

## You transferred domain registration and specified the wrong name servers in the domain settings

When you transfer domain registration to Amazon Route 53, one of the settings that you specify for the domain is the set of name servers that will respond to DNS queries for the domain. These name servers come from the hosted zone that has the same name as the domain. The hosted zone contains information about how you want to route traffic for the domain, such as the IP address of a web server for `www.example.com`.

You might have accidentally specified the name servers for the wrong hosted zone, which is especially easy if you have more than one hosted zone that has the same name as the domain. To confirm that the domain is using the name servers for the correct hosted zone and, if necessary, update the name servers for the domain, perform the following procedures.

### Important

If you specified the wrong name server records when you transferred the domain to Amazon Route 53, it can take up to two days after you correct the name servers for the domain before DNS service is fully restored. This is because DNS resolvers across the internet typically request the name servers only once every two days and cache the answer.

### To get the name servers for your hosted zone

1. If you're using another DNS service for the domain, use the method provided by the DNS service to get the name servers for the hosted zone. Then skip to the next procedure.

If you're using Amazon Route 53 as the DNS service for the domain, sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.

2. In the navigation pane, choose **Hosted Zones**.
3. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.

### Important

If you have more than one hosted zone with the same name, make sure you're getting the name servers for the correct hosted zone.

4. In the right pane, make note of the four servers listed for **Name Servers**.

### To confirm that the domain is using the correct name servers

1. If you're using another DNS service for the domain, sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.

If you're using Amazon Route 53, skip to the next step.

2. In the navigation pane, choose **Registered Domains**.
3. Choose the name of the domain for which you want to edit settings.
4. Choose **Add or Edit Name Servers**.
5. Compare the list of name servers that you got in the previous procedure with the name servers that are listed in the **Edit Name Servers for *domain name*** dialog box.
6. If the name servers listed here don't match the name servers that you got in the previous procedure, change the name servers here, and then choose **Update**.

## You transferred DNS service first, but you didn't wait long enough before transferring domain registration

When you transferred DNS service to Amazon Route 53 or another DNS service, you updated the configuration for your domain with the domain registrar to use the name servers for the new DNS service.

DNS resolvers, which respond to requests for your domain, commonly cache the names of name servers for 24 to 48 hours. If you change the DNS service for a domain and replace the name servers from one DNS service with the name servers for another DNS service, it can take up to 48 hours before DNS resolvers start using the new name servers and, therefore, the new DNS service.

Here's how transferring your DNS service and then transferring your domain too soon after can cause your domain to become unavailable on the internet:

1. You transferred DNS service for your domain.
2. You transferred your domain to Amazon Route 53 before DNS resolvers started to use the name servers for your new DNS service.
3. Your previous registrar canceled DNS service for your domain as soon as the domain was transferred to Amazon Route 53.
4. DNS resolvers are still routing queries to your old DNS service, but there are no longer any records that tell how to route your traffic.

When caching expires for the name servers for the old DNS service, DNS will start to use your new DNS service. Unfortunately, there is no way to accelerate this process.

## Your domain has been suspended

Your domain might be unavailable on the internet because we had to suspend it. For more information, see [My domain is suspended \(status is ClientHold\)](#) (p. 374).

## My domain is suspended (status is ClientHold)

If Amazon Route 53 suspends your domain, the domain becomes unavailable on the internet. You can use either of the following methods to determine whether a domain has been suspended:

- On the **Registered domains** page of the Amazon Route 53 console, find the domain name in the **Alerts** table at the bottom of the page. If the value of the **Status** column is **clientHold**, the domain has been suspended.
- Send a WHOIS query for the domain. If the value of **Domain Status** is **clientHold**, the domain has been suspended. The WHOIS command is available in many operating systems, and it's also available as a web application on many websites.

In addition, when we suspend a domain, we generally send an email to the email address for the registrant contact for the domain. However, if the domain was suspended based on a court order, the court might not let us notify the registrant contact.

To make a domain available on the internet again, you must get it unsuspended. Here are the reasons that a domain can be suspended and how you get it unsuspended.

Topics

- [You registered a new domain, but you didn't click the link in the confirmation email \(p. 375\)](#)
- [You disabled automatic renewal for the domain, and the domain expired \(p. 375\)](#)
- [We couldn't process your payment for automatic domain renewal, and the domain expired \(p. 375\)](#)
- [We suspended the domain for a violation of the AWS Acceptable Use Policy \(p. 376\)](#)
- [We suspended the domain because of a court order \(p. 376\)](#)

## You registered a new domain, but you didn't click the link in the confirmation email

When you register a domain with AWS, ICANN requires that we get confirmation that the email address for the registrant contact is valid. To get confirmation, we send an email that contains a link. You have between 3 and 15 days to click the link, depending on the top-level domain. After that time, the link stops working.

### Note

If you don't respond to the first email, we resend the email up to two more times. If you have already registered one or more domains with Amazon Route 53 and used the same email address for the registrant contact, we don't send a confirmation email.

If you don't click the link in the email in the allotted amount of time, ICANN requires that we suspend the domain. For information about how to resend the confirmation email to the registrant contact, see [Resending Authorization and Confirmation Emails \(p. 60\)](#). When you confirm that the email address is valid, we automatically unsuspend the domain.

## You disabled automatic renewal for the domain, and the domain expired

When automatic renewal is enabled for a domain (the default value for a new or transferred domain), we automatically renew registration for the domain shortly before the expiration date. If you disable automatic renewal, we send three reminder emails that the domain registration is about to expire to the email address for the registrant contact. We start to send these emails 45 days before the domain expires.

If you disable automatic renewal for the domain and you don't manually extend the registration period for the domain, we generally suspend the domain on the expiration date. Note that the registries for some domains delete the domain even before the expiration date.

For information about how to renew an expired domain, see [Renewing Registration for a Domain \(p. 43\)](#).

## We couldn't process your payment for automatic domain renewal, and the domain expired

If automatic renewal is enabled for a domain but we weren't able to process your payment (for example, because your credit card expired), we send several emails to the email address for the registrant contact for the domain. If we don't receive payment, we generally suspend the domain on the expiration date. Note that the registries for some domains delete the domain even before the expiration date.

For information about how to renew an expired domain, see [Renewing Registration for a Domain \(p. 43\)](#).

## We suspended the domain for a violation of the AWS Acceptable Use Policy

If we suspend a domain for a violation of the [AWS Acceptable Use Policy](#), we send an email notification to the registrant contact for the domain. (We don't send a notification email if the AWS account is already suspended for fraud.)

To contest a suspension, send an email to [registrar-abuse@amazon.com](mailto:registrar-abuse@amazon.com).

## We suspended the domain because of a court order

If a domain is suspended as a result of a court order, we can't unsuspend the domain until the court order has been lifted. To contest the validity of a court order, send an email to [registrar-abuse@amazon.com](mailto:registrar-abuse@amazon.com) and attach the applicable documents.

## Transferring my domain to Amazon Route 53 failed

Here are some common reasons that transferring a domain to Amazon Route 53 fails.

### Topics

- [You didn't click the link in the authorization email](#) (p. 376)
- [The authorization code that you got from the current registrar is invalid](#) (p. 376)
- ["Parameters in request are not valid" error when trying to transfer a .es domain to Amazon Route 53](#) (p. 377)

## You didn't click the link in the authorization email

When you transfer domain registration to Amazon Route 53, we're required by ICANN, the governing body for domain registration, to get authorization for the transfer from the registrant contact for the domain. To get authorization, we send you an email that contains a link. You have between 5 and 15 days to click the link, depending on the top-level domain. After that time, the link stops working.

If you don't click the link in the email in the allotted amount of time, ICANN requires that we cancel the transfer. For information about how to resend the authorization email to the registrant contact, see [Resending Authorization and Confirmation Emails](#) (p. 60).

## The authorization code that you got from the current registrar is invalid

If you request the transfer of a domain to Amazon Route 53 and you don't receive the authorization email, check [the status page in the Amazon Route 53 console](#). If the status page shows that the transfer authorization code that you got from your registrar is not valid, perform the following steps:

1. Contact the current registrar for the domain and request a new authorization code. Confirm the following:
  - How long the new authorization code will remain active. You must request a domain transfer before the code expires.

- The new authorization code is different from the invalid code. If not, ask the current registrar to refresh the authorization code.
2. Submit another request to transfer the domain. For more information, see [Step 5: Request the Transfer \(p. 49\)](#) in the topic "Transferring Registration for a Domain to Amazon Route 53."

## "Parameters in request are not valid" error when trying to transfer a .es domain to Amazon Route 53

Amazon Route 53 returns a "Parameters in request are not valid" error when you try to transfer a .es domain to Amazon Route 53 and the contact type of the registrant contact is **Company**. To complete the transfer, open a case with AWS Support:

1. Sign in to the [AWS Support Center](#).
2. Specify the following values:

### Regarding

Accept the default value of **Account and Billing Support**.

### Service

Accept the default value of **Billing**.

### Category

Accept the default value of **Domain name registration issue**.

### Subject

Specify **Parameters in request are not valid error**.

### Description

Specify the name of the domain that you want to transfer.

### Contact method

Specify a contact method and enter the applicable values.

3. Choose **Submit**.

## I changed DNS settings, but they haven't taken effect

If you changed DNS settings, here are some common reasons that the changes haven't taken effect yet.

### Topics

- [You transferred DNS service to Amazon Route 53 in the last 48 hours, so DNS is still using your previous DNS service \(p. 378\)](#)
- [You recently transferred DNS service to Amazon Route 53, but you didn't update the name servers with the domain registrar \(p. 378\)](#)
- [DNS resolvers still are using the old settings for the resource record set \(p. 379\)](#)



## You transferred DNS service to Amazon Route 53 in the last 48 hours, so DNS is still using your previous DNS service

When you transferred DNS service to Amazon Route 53, you used the method provided by the registrar for your domain to replace the name servers for the previous DNS service with the four name servers for Amazon Route 53.

### Note

If you aren't sure you did this part, see [You recently transferred DNS service to Amazon Route 53, but you didn't update the name servers with the domain registrar \(p. 378\)](#).

Domain registrars typically use a TTL (time to live) of 24 to 48 hours for name servers. This means that when a DNS resolver gets the name servers for your domain, it uses that information for up to 48 hours before it submits another request for the current name servers for the domain. If you transferred DNS service to Amazon Route 53 in the last 48 hours and then changed DNS settings, some DNS resolvers are still using your old DNS service to route traffic for the domain.

## You recently transferred DNS service to Amazon Route 53, but you didn't update the name servers with the domain registrar

The registrar for your domain has a variety of information about the domain, including the name servers for the DNS service for the domain. Typically, the domain registrar is also your DNS service, so the name servers that are associated with your domain belong to the registrar. These name servers tell DNS where to get information about how you want traffic for your domain to be routed, for example, to the IP address of a web server for your domain.

When you transfer DNS service to Amazon Route 53, you need to use the method that is provided by your domain registrar to change the name servers that are associated with your domain. You're usually replacing the name servers that are provided by the registrar with the four Amazon Route 53 name servers that are associated with the hosted zone that you created for the domain.

If you created a new hosted zone and resource record sets for your domain and specified different settings than you used for the previous DNS service, and if DNS is still routing traffic to the old resources, it's possible that you didn't update the name servers with the domain registrar. To determine whether the registrar is using the name servers for your Amazon Route 53 hosted zone and, if necessary, to update the name servers for the domain, perform the following procedure:

### To get the name servers for your hosted zone and update the name server setting with the domain registrar

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted Zones**.
3. On the **Hosted Zones** page, choose the radio button (not the name) for the hosted zone.

#### Important

If you have more than one hosted zone with the same name, make sure you're getting the name servers for the correct hosted zone.

4. In the right pane, make note of the four servers listed for **Name Servers**.
5. Using the method provided by the registrar for the domain, display the list of name servers for the domain.

6. If the name servers for the domain match the name servers that you got in step 4, then the domain configuration is correct.

If the name servers for the domain don't match the name servers that you got in step 4, update the domain to use the Amazon Route 53 name servers.

### Important

When you change the name servers for the domain to the name servers from your Amazon Route 53 hosted zone, it can take up to two days for the change to take effect and for Amazon Route 53 to become your DNS service. This is because DNS resolvers across the internet typically request the name servers only once every two days and cache the answer.

## DNS resolvers still are using the old settings for the resource record set

If you changed the settings in a resource record set but your traffic is still being routed to the old resource, such as a web server for your website, one possible cause is that DNS still has the previous settings cached. Each resource record set has a TTL (time to live) value that specifies how long, in seconds, that you want DNS resolvers to cache the information in the resource record set, such as the IP address for a web server. Until the amount of time that is specified by the TTL passes, DNS resolvers will continue to return the old value in response to DNS queries. If you want to know what the TTL is for a resource record set, perform the following procedure.

### Note

For alias resource record sets, the TTL is determined by the AWS resource that the resource record set routes traffic to. For more information, see [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#).

### To view the TTL for a resource record set

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. On the **Hosted Zones** page, choose the name of the hosted zone that includes the resource record set.
3. In the list of resource record sets, find the resource record set that you want the TTL value for, and check the value of the **TTL** column.

### Note

Changing the TTL now won't make your change take effect faster. DNS resolvers already have the value cached, and they won't get the new setting until the amount of time that was specified by the old setting passes.

## My browser displays a "Server not found" error

If your browser displays a "Server not found" error when you try to browse to a domain (example.com) or a subdomain (www.example.com), here are some common explanations.

### Topics

- [You didn't create a resource record set for the domain or subdomain name \(p. 380\)](#)
- [You created a resource record set but specified the wrong value \(p. 380\)](#)
- [The resource that you're routing traffic to is unavailable \(p. 380\)](#)

## You didn't create a resource record set for the domain or subdomain name

If you don't create a resource record set for the domain or subdomain, then DNS doesn't know where to route traffic when someone enters that name in a browser. For more information, see [Working with Resource Record Sets](#) (p. 231).

## You created a resource record set but specified the wrong value

When you create a resource record set, it's easy to specify the wrong value, such as the IP address for a web server or the domain name that CloudFront assigned to your web distribution. If the resource record set exists but you're still getting a "Server not found" error, we recommend that you confirm that the value is correct.

## The resource that you're routing traffic to is unavailable

If a resource record set specifies a resource such as a web server that's unavailable, a browser will return a "Server not found" error. We recommend that you check the status of the resource that you're routing traffic to.

## I can't route traffic to an Amazon S3 bucket that's configured for website hosting

When you configure an Amazon S3 bucket for website hosting, you must give the bucket the same name as the resource record set that you want to use to route traffic to the bucket. For example, if you want to route traffic for example.com to an S3 bucket that is configured for website hosting, the name of the bucket must be example.com.

If you want to route traffic to an S3 bucket that is configured for website hosting but the name of the bucket doesn't appear in the **Alias Target** list in the Amazon Route 53 console, or if you're trying to create an alias resource record set programmatically and you're getting an `InvalidInput` error from the Amazon Route 53 API, one of the AWS SDKs, the AWS CLI, or AWS Tools for Windows PowerShell, check the following:

- The name of the bucket exactly matches the name of the resource record set, such as example.com or www.example.com.
- The S3 bucket is correctly configured for website hosting. For more information, see [Hosting a Static Website on Amazon S3](#) in the *Amazon Simple Storage Service Developer Guide*.

## I was billed twice for the same hosted zone

We don't bill you if you delete a hosted zone within 12 hours after you create it. After 12 hours, we immediately charge the standard monthly fee for a hosted zone. The monthly charge for a hosted zone is not prorated for partial months. (The same charge applies for the hosted zone that we automatically create when you register a domain.)

If you create a hosted zone on the last day of the month (for example, January 31), the charge for January might appear on the February invoice, along with the charge for February. Note that Amazon Route 53 uses Coordinated Universal Time (UTC) as the time zone to determine when a hosted zone was created.

# Logging DNS Queries

You can configure Amazon Route 53 to log information about the queries that Amazon Route 53 receives, such as the following:

- The domain or subdomain that was requested
- The date and time of the request
- The DNS record type (such as A or AAAA)
- The Amazon Route 53 edge location that responded to the DNS query
- The DNS response code, such as `NoError` or `ServFail`

When you configure query logging, Amazon Route 53 starts to send logs to CloudWatch Logs. You use CloudWatch Logs tools to access the query logs.

Query logs contain only the queries that DNS resolvers forward to Amazon Route 53. If a DNS resolver has already cached the response to a query (such as the IP address for a load balancer for `example.com`), the resolver will continue to return the cached response without forwarding the query to Amazon Route 53 until the TTL for the corresponding record expires.

Depending on how many DNS queries are submitted for a domain name (`example.com`) or subdomain name (`www.example.com`), which resolvers your users are using, and the TTL for the record, query logs might contain information about only one query out of every several thousand queries that are submitted to DNS resolvers. For more information about how DNS works, see [How Internet Traffic Is Routed to Your Website or Web Application](#) (p. 2).

## Topics

- [Configuring Logging for DNS Queries](#) (p. 382)
- [Using Amazon CloudWatch to Access DNS Query Logs](#) (p. 384)
- [Changing the Retention Period for Logs and Exporting Logs to Amazon S3](#) (p. 385)
- [Stopping Query Logging](#) (p. 385)
- [Format of DNS Query Logs](#) (p. 385)

## Configuring Logging for DNS Queries

To start logging DNS queries for a specified hosted zone, you perform the following tasks in the Amazon Route 53 console:

- Choose the CloudWatch Logs log group that you want Amazon Route 53 to publish logs to, or create a new log group.

**Note**

The log group must be in the US East (N. Virginia) Region.

- Choose to use existing CloudWatch Logs resource policies or create a new one. Amazon Route 53 needs permission to publish logs to a log group, and resource policies grant the required permissions.
- Create a query logging configuration.

**Note**

If users are submitting DNS queries for your domain, you should start to see queries in the logs within a few minutes after you create the query logging configuration.

### To configure logging for DNS queries

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted zones**.
3. Choose the radio button (not the name) for the hosted zone that you want to configure logging for.
4. In the **Hosted zone details** pane, choose **Configure query logging**.
5. Choose whether you want Amazon Route 53 to publish logs to an existing CloudWatch Logs log group or to a new log group.
6. Either type a name for the new log group or choose an existing log group from the list.

**Important**

If you want to configure logging for multiple hosted zones, we recommend that you use a consistent prefix for every log group, for example:

`/aws/route53/hosted-zone-name`

On the next page of the wizard, you'll choose a CloudWatch Logs resource policy, which grants permission to Amazon Route 53 to publish logs to the log group. For each resource policy, you must specify the log groups that it applies to. There's a limit (currently 10) on the number of resource policies that you can create for an AWS account. If you use a consistent prefix for the names of your log groups, then you can use one resource policy for all of your Amazon Route 53 hosted zones. For example, if your log group names all begin with `/aws/route53/`, you can create a resource policy that applies to `/aws/route53/*`. Then you can use the resource policy for the log groups for all of your hosted zones.

7. Choose **Next**.
8. Choose whether to use existing CloudWatch Logs resource policies or create a new one.

**Note**

Amazon Route 53 can use the permissions in any existing resource policy. When you choose to use existing resource policies, you don't need to choose a specific resource policy.

9. If you chose to use existing resource policies, perform the following steps. If you chose to create a new resource policy, skip to step 10.
  - a. Choose **Test** to determine whether any of your existing resource policies grant the permissions that Amazon Route 53 needs to publish logs to the log group that you chose or created on the previous page.
  - b. If the test fails, do one of the following:
    - Choose the option to create a new resource policy, and skip to step 10.
    - Choose **Edit** for one of the existing resource policies, and change the value of **Log groups that the resource policy applies to**. Specify either the name of a log group (such as `/aws/route53/example.com`) or a value that includes the current log group (such as `/aws/`

**route53/\***). You can use the wildcard character (\*) to replace 0 or more characters in the name of the log group.

To view the settings for a resource policy, choose the arrow on the left side of the resource policy name.

- c. Continue to edit **Log groups that the resource policy applies to** and retest until the test passes.
  - d. Skip to step 11.
10. If you chose to create a resource policy, perform the following steps:
- a. For **Resource policy name**, type a name for the resource policy.
  - b. For **Log groups that the resource policy applies to**, type a value that includes the log group that you chose or created on the previous page. The name of that log group is at the top of the current page.

You can include the wildcard character (\*) to replace 0 or more characters in the name of the log group, for example, `/aws/route53/*`.

- c. Choose **Create policy and test permissions** to determine whether the new resource policy or any of your existing resource policies grant the permissions that Amazon Route 53 needs to publish logs to the log group that you chose or created on the previous page.
- d. If the test fails, choose **Edit** for one of the existing resource policies, and change the value of **Log groups that the resource policy applies to**. Specify either the name of a log group (such as `/aws/route53/example.com`) or a value that includes the current log group (such as `/aws/route53/*`). You can use the wildcard character (\*) to replace 0 or more characters in the name of the log group.

To view the settings for a resource policy, choose the arrow on the left side of the resource policy name.

- e. Continue to edit **Log groups that the resource policy applies to** and retest until the test passes.
  - f. Continue with step 11.
11. Choose **Create query logging config**.

## Using Amazon CloudWatch to Access DNS Query Logs

Amazon Route 53 sends query logs directly to CloudWatch Logs; the logs are never accessible through Amazon Route 53. Instead, you use CloudWatch Logs to view logs in near real-time, search and filter data, and export logs to Amazon S3.

Amazon Route 53 creates one CloudWatch Logs log stream for each Amazon Route 53 edge location that responds to DNS queries for the specified hosted zone and sends query logs to the applicable log stream. The format for the name of each log stream is `hosted-zone-id/edge-location-ID`, for example, `Z1D633PJN98FT9/DFW3`.

Each edge location is identified by a three-letter code and an arbitrarily assigned number, for example, DFW3. The three-letter code typically corresponds with the International Air Transport Association airport code for an airport near the edge location. (These abbreviations might change in the future.) For a list of edge locations, see "The Amazon Route 53 Global Network" on the [Amazon Route 53 Product Details](#) page.

For more information, see the applicable documentation:

- [Amazon CloudWatch Logs User Guide](#)
- [Amazon CloudWatch Logs API Reference](#)

- [CloudWatch Logs section of the AWS Command Line Interface Reference](#)
- [Format of DNS Query Logs \(p. 385\)](#)

## Changing the Retention Period for Logs and Exporting Logs to Amazon S3

By default, CloudWatch Logs stores query logs indefinitely. You can optionally specify a retention period so that CloudWatch Logs deletes logs that are older than the retention period. For more information, see [Change Log Data Retention in CloudWatch Logs](#) in the *Amazon CloudWatch User Guide*.

If you want to retain log data but you don't need CloudWatch Logs tools to view and analyze the data, you can export logs to Amazon S3, which can reduce your storage costs. For more information, see [Exporting Log Data to Amazon S3](#).

For information about pricing, see the applicable pricing page:

- "Amazon CloudWatch Logs" on the [CloudWatch Pricing](#) page
- [Amazon S3 Pricing](#)

### Note

When you configure Amazon Route 53 to log DNS queries, you don't incur any Amazon Route 53 charges.

## Stopping Query Logging

If you want Amazon Route 53 to stop sending query logs to CloudWatch Logs, perform the following procedure to delete the query logging configuration.

### To delete a query logging configuration

1. Sign in to the AWS Management Console and open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
2. In the navigation pane, choose **Hosted zones**.
3. Choose the radio button (not the name) for the hosted zone that you want to delete the query logging configuration for.
4. In the **Hosted zone details** pane, under **Query logging**, choose **Delete**.
5. Choose **Delete** to confirm.

## Format of DNS Query Logs

Each log file contains one log entry for each DNS query that Amazon Route 53 received from DNS resolvers in the corresponding edge location. Each log entry includes the following values:

### Log format version

The version number of this query log. If we add fields to the log or change the format of existing fields, we'll increment this value.



**Query timestamp**

The date and time that Amazon Route 53 responded to the request, in ISO 8601 format and Coordinated Universal Time (UTC), for example, `2017-03-16T19:20:25.177Z`.

For information about ISO 8601 format, see the Wikipedia article [ISO 8601](#). For information about UTC, see the Wikipedia article [Coordinated Universal Time](#).

**Hosted zone ID**

The ID of the hosted zone that is associated with all the DNS queries in this log.

**Query name**

The domain or subdomain that was specified in the request.

**Query type**

Either the DNS record type that was specified in the request, or `ANY`. For information about the types that Amazon Route 53 supports, see [Supported DNS Record Types \(p. 237\)](#).

**Response code**

The DNS response code that Amazon Route 53 returned in response to the DNS query.

**Layer 4 protocol**

The protocol that was used to submit the query, either `TCP` or `UDP`.

**Amazon Route 53 edge location**

The Amazon Route 53 edge location that responded to the query. Each edge location is identified by a three-letter code and an arbitrary number, for example, `DFW3`. The three-letter code typically corresponds with the International Air Transport Association airport code for an airport near the edge location. (These abbreviations might change in the future.)

For a list of edge locations, see "The Amazon Route 53 Global Network" on the [Amazon Route 53 Product Detail](#) page.

**Resolver IP address**

The IP address of the DNS resolver that submitted the request to Amazon Route 53.

**EDNS client subnet**

A partial IP address for the client that the request originated from, if available from the DNS resolver.

For more information, see the IETF draft [Client Subnet in DNS Requests](#).

# IP Address Ranges of Amazon Route 53 Servers

Amazon Web Services (AWS) publishes its current IP address ranges in JSON format. To view the current ranges, download [ip-ranges.json](#). For more information, see [AWS IP Address Ranges](#) in the *Amazon Web Services General Reference*.

To find the IP address ranges that are associated with Amazon Route 53 name servers, search ip-ranges.json for the following string:

```
"service": "ROUTE53"
```

To find the IP address ranges that are associated with Amazon Route 53 health checkers, search ip-ranges.json for the following string:

```
"service": "ROUTE53_HEALTHCHECKS"
```

# Authentication and Access Control for Amazon Route 53

To perform any operation on Amazon Route 53 resources, such as registering a domain or updating a resource record set, AWS Identity and Access Management (IAM) requires you to authenticate that you're an approved AWS user. If you're using the Amazon Route 53 console, you authenticate your identity by providing your AWS user name and a password. If you're accessing Amazon Route 53 programmatically, your application authenticates your identity for you by using access keys or by signing requests.

After you authenticate your identity, IAM controls your access to AWS by verifying that you have permissions to perform operations and to access resources. If you are an account administrator, you can use IAM to control the access of other users to the resources that are associated with your account.

This chapter explains how to use [IAM](#) and Amazon Route 53 to help secure your resources.

## Topics

- [Authentication \(p. 388\)](#)
- [Access Control \(p. 389\)](#)

## Authentication

You can access AWS as any of the following types of identities:

- **AWS account root user** – When you first create an AWS account, you begin with a single sign-in identity that has complete access to all AWS services and resources in the account. This identity is called the AWS account *root user* and is accessed by signing in with the email address and password that you used to create the account. We strongly recommend that you do not use the root user for your everyday tasks, even the administrative ones. Instead, adhere to the [best practice of using the root user only to create your first IAM user](#). Then securely lock away the root user credentials and use them to perform only a few account and service management tasks.

- **IAM user** – An [IAM user](#) is an identity within your AWS account that has specific custom permissions (for example, permissions to create a hosted zone in Amazon Route 53). You can use an IAM user name and password to sign in to secure AWS webpages like the [AWS Management Console](#), [AWS Discussion Forums](#), or the [AWS Support Center](#).

In addition to a user name and password, you can also generate [access keys](#) for each user. You can use these keys when you access AWS services programmatically, either through [one of the several SDKs](#) or by using the [AWS Command Line Interface \(CLI\)](#). The SDK and CLI tools use the access keys to cryptographically sign your request. If you don't use AWS tools, you must sign the request yourself. Amazon Route 53 supports *Signature Version 4*, a protocol for authenticating inbound API requests. For more information about authenticating requests, see [Signature Version 4 Signing Process](#) in the *AWS General Reference*.

- **IAM role** – An [IAM role](#) is an IAM identity that you can create in your account that has specific permissions. It is similar to an *IAM user*, but it is not associated with a specific person. An IAM role enables you to obtain temporary access keys that can be used to access AWS services and resources. IAM roles with temporary credentials are useful in the following situations:
  - **Federated user access** – Instead of creating an IAM user, you can use existing user identities from AWS Directory Service, your enterprise user directory, or a web identity provider. These are known as *federated users*. AWS assigns a role to a federated user when access is requested through an [identity provider](#). For more information about federated users, see [Federated Users and Roles](#) in the *IAM User Guide*.
  - **AWS service access** – You can use an IAM role in your account to grant an AWS service permissions to access your account's resources. For example, you can create a role that allows Amazon Redshift to access an Amazon S3 bucket on your behalf and then load data from that bucket into an Amazon Redshift cluster. For more information, see [Creating a Role to Delegate Permissions to an AWS Service](#) in the *IAM User Guide*.
  - **Applications running on Amazon EC2** – You can use an IAM role to manage temporary credentials for applications that are running on an EC2 instance and making AWS API requests. This is preferable to storing access keys within the EC2 instance. To assign an AWS role to an EC2 instance and make it available to all of its applications, you create an instance profile that is attached to the instance. An instance profile contains the role and enables programs that are running on the EC2 instance to get temporary credentials. For more information, see [Using Roles for Applications on Amazon EC2](#) in the *IAM User Guide*.

## Access Control

To create, update, delete, or list Amazon Route 53 resources, you need permissions to perform the operation, and you need permission to access the corresponding resources. In addition, to perform the operation programmatically, you need valid access keys.

The following sections describe how to manage permissions for Amazon Route 53. We recommend that you read the overview first.

- [Overview of Managing Access Permissions to Your Amazon Route 53 Resources](#) (p. 390)
- [Using Identity-Based Policies \(IAM Policies\) for Amazon Route 53](#) (p. 393)

- [Amazon Route 53 API Permissions: Actions, Resources, and Conditions Reference \(p. 398\)](#)

## Overview of Managing Access Permissions to Your Amazon Route 53 Resources

Every AWS resource is owned by an AWS account, and permissions to create or access a resource are governed by permissions policies.

### Note

An *account administrator* (or administrator user) is a user that has administrator privileges. For more information about administrators, see [IAM Best Practices](#) in the *IAM User Guide*.

When you grant permissions, you decide who gets the permissions, the resources they get permissions for, and the actions that they get permissions to perform.

### Topics

- [ARNs for Amazon Route 53 Resources \(p. 390\)](#)
- [Understanding Resource Ownership \(p. 391\)](#)
- [Managing Access to Resources \(p. 391\)](#)
- [Specifying Policy Elements: Resources, Actions, Effects, and Principals \(p. 393\)](#)
- [Specifying Conditions in a Policy \(p. 393\)](#)

## ARNs for Amazon Route 53 Resources

Amazon Route 53 supports a variety of resource types for DNS, health checking, and domain registration. Most of these resources have unique Amazon Resource Names (ARNs). In a policy, you use an ARN to identify the resource that the policy applies to.

The following table shows the resource types and their ARN formats.

Resource Type	ARN Format
Health Checks	*
Hosted Zones	*
Traffic Policies	*
Traffic Policy Instances	*
Reusable Delegation Sets	*
Status of a Resource Record Set Change Batch (API only)	*

### Note

Not all Amazon Route 53 resources support permissions. You can't grant or deny access to the following resources:

- Domains
- Individual resource record sets
- Tags for domains

- Tags for health checks
- Tags for hosted zones

Amazon Route 53 provides API actions to work with each of these types of resources. For more information, see the [Amazon Route 53 API Reference](#). For a list of actions and the ARN that you specify to grant or deny permission to use each action, see [Amazon Route 53 API Permissions: Actions, Resources, and Conditions Reference](#) (p. 398).

## Understanding Resource Ownership

An AWS account owns the resources that are created in the account, regardless of who created the resources. Specifically, the resource owner is the AWS account of the principal entity (that is, the root account, an IAM user, or an IAM role) that authenticates the resource creation request.

The following examples illustrate how this works:

- If you use the root account credentials of your AWS account to create a hosted zone, your AWS account is the owner of the resource.
- If you create an IAM user in your AWS account and grant permissions to create a hosted zone to that user, the user can create a hosted zone. However, your AWS account, to which the user belongs, owns the hosted zone resource.
- If you create an IAM role in your AWS account with permissions to create a hosted zone, anyone who can assume the role can create a hosted zone. Your AWS account, to which the role belongs, owns the hosted zone resource.

## Managing Access to Resources

A *permissions policy* specifies who has access to what. This section explains the options for creating permissions policies for Amazon Route 53. For general information about IAM policy syntax and descriptions, see the [AWS IAM Policy Reference](#) in the *IAM User Guide*.

Policies attached to an IAM identity are referred to as *identity-based* policies (IAM policies), and policies attached to a resource are referred to as *resource-based* policies. Amazon Route 53 supports only identity-based policies (IAM policies).

### Topics

- [Identity-Based Policies \(IAM Policies\)](#) (p. 391)
- [Resource-Based Policies](#) (p. 392)

## Identity-Based Policies (IAM Policies)

You can attach policies to IAM identities. For example, you can do the following:

- **Attach a permissions policy to a user or a group in your account** – An account administrator can use a permissions policy that is associated with a particular user to grant permissions for that user to create Amazon Route 53 resources.
- **Attach a permissions policy to a role (grant cross-account permissions)** – You can grant permission to perform Amazon Route 53 actions to a user that was created by another AWS account. To do so, you attach a permissions policy to an IAM role, and then you allow the user in the other account to assume the role. The following example explains how this works for two AWS accounts, account A and account B:
  1. Account A administrator creates an IAM role and attaches to the role a permissions policy that grants permissions to create or access resources that are owned by account A.

2. Account A administrator attaches a trust policy to the role. The trust policy identifies account B as the principal that can assume the role.
3. Account B administrator can then delegate permissions to assume the role to users or groups in Account B. This allows users in account B to create or access resources in account A.

For more information about how to delegate permissions to users in another AWS account, see [Access Management](#) in the *IAM User Guide*.

The following example policy allows a user to perform the `CreateHostedZone` action to create a public hosted zone for any AWS account:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53:CreateHostedZone"
      ],
      "Resource": "*"
    }
  ]
}
```

If you want the policy to also apply to private hosted zones, you need to grant permissions to use the Amazon Route 53 `AssociateVPCWithHostedZone` action and two Amazon EC2 actions, `DescribeVpcs` and `DescribeRegion`, as shown in the following example:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53:CreateHostedZone",
        "route53:AssociateVPCWithHostedZone"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeVpcs",
        "ec2:DescribeRegion"
      ],
      "Resource": "*"
    }
  ]
}
```

For more information about attaching policies to identities for Amazon Route 53, see [Using Identity-Based Policies \(IAM Policies\) for Amazon Route 53 \(p. 393\)](#). For more information about users, groups, roles, and permissions, see [Identities \(Users, Groups, and Roles\)](#) in the *IAM User Guide*.

## Resource-Based Policies

Other services, such as Amazon S3, also support attaching permissions policies to resources. For example, you can attach a policy to an S3 bucket to manage access permissions to that bucket. Amazon Route 53 doesn't support attaching policies to resources.

## Specifying Policy Elements: Resources, Actions, Effects, and Principals

Amazon Route 53 includes API actions (see the [Amazon Route 53 API Reference](#)) that you can use on each Amazon Route 53 resource (see [ARNs for Amazon Route 53 Resources](#) (p. 390)). You can grant a user or a federated user permissions to perform any or all of these actions. Note that some API actions, such as registering a domain, require permissions to perform more than one action.

The following are the basic policy elements:

- **Resource** – You use an Amazon Resource Name (ARN) to identify the resource that the policy applies to. For more information, see [ARNs for Amazon Route 53 Resources](#) (p. 390).
- **Action** – You use action keywords to identify resource operations that you want to allow or deny. For example, depending on the specified `Effect`, the `route53:CreateHostedZone` permission allows or denies a user the ability to perform the Amazon Route 53 `CreateHostedZone` action.
- **Effect** – You specify the effect, either allow or deny, when a user tries to perform the action on the specified resource. If you don't explicitly grant access to an action, access is implicitly denied. You can also explicitly deny access to a resource, which you might do to make sure that a user cannot access it, even if a different policy grants access.
- **Principal** – In identity-based policies (IAM policies), the user that the policy is attached to is the implicit principal. For resource-based policies, you specify the user, account, service, or other entity that you want to receive permissions (applies to resource-based policies only). Amazon Route 53 doesn't support resource-based policies.

For more information about IAM policy syntax and descriptions, see the [AWS IAM Policy Reference](#) in the *IAM User Guide*.

For a list showing all of the Amazon Route 53 API operations and the resources that they apply to, see [Amazon Route 53 API Permissions: Actions, Resources, and Conditions Reference](#) (p. 398).

## Specifying Conditions in a Policy

When you grant permissions, you can use the IAM policy language to specify when a policy should take effect. For example, you might want a policy to be applied only after a specific date. For more information about specifying conditions in a policy language, see [Condition](#) in the *IAM User Guide*.

To express conditions, you use predefined condition keys. There are no condition keys specific to Amazon Route 53. However, there are AWS wide condition keys that you can use as needed. For a complete list of AWS wide keys, see [Available Keys for Conditions](#) in the *IAM User Guide*.

## Using Identity-Based Policies (IAM Policies) for Amazon Route 53

This topic provides examples of identity-based policies that demonstrate how an account administrator can attach permissions policies to IAM identities (users, groups, and roles) and thereby grant permissions to perform operations on Amazon Route 53 resources.

### Important

We recommend that you first review the introductory topics that explain the basic concepts and options to manage access to your Amazon Route 53 resources. For more information, see [Overview of Managing Access Permissions to Your Amazon Route 53 Resources](#) (p. 390).



## Topics

- [Permissions Required to Use the Amazon Route 53 Console \(p. 395\)](#)
- [AWS Managed \(Predefined\) Policies for Amazon Route 53 \(p. 396\)](#)
- [Customer Managed Policy Examples \(p. 397\)](#)

The following example shows a permissions policy. The `sid`, or statement ID, is optional:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid" : "AllowPublicHostedZonePermissions",
      "Effect": "Allow",
      "Action": [
        "route53:CreateHostedZone",
        "route53:UpdateHostedZoneComment",
        "route53:GetHostedZone",
        "route53:ListHostedZones",
        "route53>DeleteHostedZone",
        "route53:ChangeResourceRecordSets",
        "route53:ListResourceRecordSets",
        "route53:GetHostedZoneCount",
        "route53:ListHostedZonesByName"
      ],
      "Resource": "*"
    },
    {
      "Sid" : "AllowHealthCheckPermissions",
      "Effect": "Allow",
      "Action": [
        "route53:CreateHealthCheck",
        "route53:UpdateHealthCheck",
        "route53:GetHealthCheck",
        "route53:ListHealthChecks",
        "route53>DeleteHealthCheck",
        "route53:GetCheckerIpRanges",
        "route53:GetHealthCheckCount",
        "route53:GetHealthCheckStatus",
        "route53:GetHealthCheckLastFailureReason"
      ],
      "Resource": "*"
    }
  ]
}
```

The policy includes two statements:

- The first statement grants permissions to the actions that are required to create and manage public hosted zones and their resource record sets. The wildcard character (\*) in the Amazon Resource Name (ARN) grants access to all the hosted zones that are owned by the current AWS account.
- The second statement grants permissions to all the actions that are required to create and manage health checks.

For a list of actions and the ARN that you specify to grant or deny permission to use each action, see [Amazon Route 53 API Permissions: Actions, Resources, and Conditions Reference \(p. 398\)](#).

## Permissions Required to Use the Amazon Route 53 Console

To grant full access to the Amazon Route 53 console, you grant the permissions in the following permissions policy:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53:*",
        "route53domains:*",
        "cloudfront:ListDistributions",
        "elasticloadbalancing:DescribeLoadBalancers",
        "elasticbeanstalk:DescribeEnvironments",
        "s3:ListBucket",
        "s3:GetBucketLocation",
        "s3:GetBucketWebsite",
        "ec2:DescribeVpcs",
        "ec2:DescribeRegions",
        "sns:ListTopics",
        "sns:ListSubscriptionsByTopic",
        "sns:CreateTopic",
        "cloudwatch:DescribeAlarms",
        "cloudwatch:PutMetricAlarm",
        "cloudwatch:DeleteAlarms",
        "cloudwatch:GetMetricStatistics"
      ],
      "Resource": "*"
    }
  ]
}
```

Here's why the permissions are required:

### **route53:\***

Lets you perform all Amazon Route 53 actions *except* the following:

- Create and update alias resource record sets for which the value of **Alias Target** is a CloudFront distribution, an Elastic Load Balancing load balancer, an Elastic Beanstalk environment, or an Amazon S3 bucket. (With these permissions, you can create alias resource records sets for which the value of **Alias Target** is another resource record set in the same hosted zone.)
- Work with private hosted zones.
- Work with domains.
- Create, delete, and view CloudWatch alarms.
- Render CloudWatch metrics in the Amazon Route 53 console.

### **route53domains:\***

Lets you work with domains.

#### **Important**

If you list `route53` actions individually, you must include `route53:CreateHostedZone` to work with domains. When you register a domain, a hosted zone is created at the same time, so a policy that includes permissions to register domains also requires permission to create hosted zones.

For domain registration, Amazon Route 53 doesn't support granting or denying permissions to individual resources.

**cloudfront:ListDistributions**

Lets you create and update alias resource record sets for which the value of **Alias Target** is a CloudFront distribution.

These permissions aren't required if you aren't using the Amazon Route 53 console. Amazon Route 53 uses it only to get a list of distributions to display in the console.

**elasticloadbalancing:DescribeLoadBalancers**

Lets you create and update alias resource record sets for which the value of **Alias Target** is an ELB load balancer.

These permissions aren't required if you aren't using the Amazon Route 53 console. Amazon Route 53 uses it only to get a list of load balancers to display in the console.

**elasticbeanstalk:DescribeEnvironments**

Lets you create and update alias resource record sets for which the value of **Alias Target** is an Elastic Beanstalk environment.

These permissions aren't required if you aren't using the Amazon Route 53 console. Amazon Route 53 uses it only to get a list of environments to display in the console.

**s3:ListBucket, s3:GetBucketLocation, and s3:GetBucketWebsite**

Let you create and update alias resource record sets for which the value of **Alias Target** is an Amazon S3 bucket. (You can create an alias to an Amazon S3 bucket only if the bucket is configured as a website endpoint; `s3:GetBucketWebsite` gets the required configuration information.)

These permissions aren't required if you aren't using the Amazon Route 53 console. Amazon Route 53 uses it only to get a list of buckets to display in the console.

**ec2:DescribeVpcs and ec2:DescribeRegions**

Let you work with private hosted zones.

**sns:ListTopics, sns:ListSubscriptionsByTopic, sns:CreateTopic, cloudwatch:DescribeAlarms, cloudwatch:PutMetricAlarm, cloudwatch:DeleteAlarms**

Let you create, delete, and view CloudWatch alarms.

**cloudwatch:GetMetricStatistics**

Lets you create CloudWatch metric health checks.

These permissions aren't required if you aren't using the Amazon Route 53 console. Amazon Route 53 uses it only to get statistics to display in the console.

## AWS Managed (Predefined) Policies for Amazon Route 53

AWS addresses many common use cases by providing standalone IAM policies that are created and administered by AWS. These AWS managed policies grant necessary permissions for common use cases so that you can avoid having to investigate what permissions are needed. For more information, see [AWS Managed Policies](#) in the *IAM User Guide*. For Amazon Route 53, IAM provides four managed policies:

- **AmazonRoute53FullAccess** – Grants full access to Amazon Route 53 resources.
- **AmazonRoute53ReadOnlyAccess** – Grants read-only access to Amazon Route 53 resources.

- **AmazonRoute53DomainsFullAccess** – Grants full access to Amazon Route 53 domain registration resources.
- **AmazonRoute53DomainsReadOnlyAccess** – Grants read-only access to Amazon Route 53 domain registration resources.

#### Note

You can review these permissions policies by signing in to the IAM console and searching for specific policies there. You can also create your own custom IAM policies to allow permissions for Amazon Route 53 API operations. You can attach these custom policies to the IAM users or groups that require those permissions.

## Customer Managed Policy Examples

You can create your own custom IAM policies to allow permissions for Amazon Route 53 actions. You can attach these custom policies to the IAM users or groups that require the specified permissions. These policies work when you are using the Amazon Route 53 API, the AWS SDKs, or the AWS CLI. The following examples show permissions for several common use cases. For the policy that grants a user full access to Amazon Route 53, see [Permissions Required to Use the Amazon Route 53 Console \(p. 395\)](#).

#### Examples

- [Example 1: Allow Read Access to All Hosted Zones \(p. 397\)](#)
- [Example 2: Allow Creation and Deletion of Hosted Zones \(p. 397\)](#)
- [Example 3: Allow Full Access to All Domains \(Public Hosted Zones Only\) \(p. 398\)](#)

### Example 1: Allow Read Access to All Hosted Zones

The following permissions policy grants the user permissions to list all hosted zones and view all the resource record sets in a hosted zone.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53:GetHostedZone",
        "route53:ListResourceRecordSets"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": ["route53:ListHostedZones"],
      "Resource": "*"
    }
  ]
}
```

### Example 2: Allow Creation and Deletion of Hosted Zones

The following permissions policy allows users to create and delete hosted zones, and to track the progress of the change.

```
{
  "Version": "2012-10-17",
```

```
"Statement":[
  {
    "Effect":"Allow",
    "Action":["route53:CreateHostedZone"],
    "Resource":"*"
  },
  {
    "Effect":"Allow",
    "Action":["route53:DeleteHostedZone"],
    "Resource":"*"
  },
  {
    "Effect":"Allow",
    "Action":["route53:GetChange"],
    "Resource":"*"
  }
]
```

### Example 3: Allow Full Access to All Domains (Public Hosted Zones Only)

The following permissions policy allows users to perform all actions on domain registrations, including permissions to register domains and create hosted zones.

```
{
  "Version": "2012-10-17",
  "Statement":[
    {
      "Effect":"Allow",
      "Action":[
        "route53domains:*",
        "route53:CreateHostedZone"
      ],
      "Resource":"*"
    }
  ]
}
```

When you register a domain, a hosted zone is created at the same time, so a policy that includes permissions to register domains also requires permissions to create hosted zones. (For domain registration, Amazon Route 53 doesn't support granting permissions to individual resources.)

For information about permissions that are required to work with private hosted zones, see [Permissions Required to Use the Amazon Route 53 Console \(p. 395\)](#).

## Amazon Route 53 API Permissions: Actions, Resources, and Conditions Reference

When you are setting up [Access Control \(p. 389\)](#) and writing a permissions policy that you can attach to an IAM identity (identity-based policies), you can use the following lists as a reference. The lists include each Amazon Route 53 API operation, the corresponding actions for which you can grant permissions to perform the action, and the AWS resource for which you can grant the permissions. You specify the actions in the policy's `Action` field, and you specify the resource value in the policy's `Resource` field.

You can use AWS wide condition keys in your Amazon Route 53 policies to express conditions. For a complete list of AWS wide keys, see [Available Keys](#) in the *IAM User Guide*.

**Note**

To specify an action, use the applicable prefix (`route53:` or `route53domains:`) followed by the API operation name (for example, `route53:CreateHostedZone` or `route53domains:RegisterDomain`).

Topics

- [Required Permissions for Actions on Public Hosted Zones \(p. 399\)](#)
- [Required Permissions for Actions on Private Hosted Zones \(p. 400\)](#)
- [Required Permissions for Actions on Reusable Delegation Sets \(p. 400\)](#)
- [Required Permissions for Actions on Resource Record Sets \(p. 401\)](#)
- [Required Permissions for Actions on Traffic Policies \(p. 401\)](#)
- [Required Permissions for Actions on Traffic Policy Instances \(p. 402\)](#)
- [Required Permissions for Actions on Health Checks \(p. 403\)](#)
- [Required Permissions for Actions on Domain Registrations \(p. 404\)](#)
- [Required Permissions for Actions on Tags for Hosted Zones and Health Checks \(p. 406\)](#)
- [Required Permissions for Actions on Tags for Domains \(p. 406\)](#)

## Required Permissions for Actions on Public Hosted Zones

### [CreateHostedZone](#)

Required Permissions (API Action): `route53:CreateHostedZone`

Resources: \*

### [DeleteHostedZone](#)

Required Permissions (API Action): `route53:DeleteHostedZone`

Resources: \*

### [GetHostedZone](#)

Required Permissions (API Action): `route53:GetHostedZone`

Resources: \*

### [GetHostedZoneCount](#)

Required Permissions (API Action): `route53:GetHostedZoneCount`

Resources: \*

### [ListHostedZones](#)

Required Permissions (API Action): `route53:ListHostedZones`

Resources: \*

### [ListHostedZonesByName](#)

Required Permissions (API Action): `route53:ListHostedZonesByName`

Resources: \*

### [UpdateHostedZoneComment](#)

Required Permissions (API Action): `route53:UpdateHostedZoneComment`

Resources: \*

## Required Permissions for Actions on Private Hosted Zones

### CreateHostedZone

Required Permissions (API Action): route53:CreateHostedZone, ec2:DescribeVpcs, ec2:DescribeRegions

Resources: \*, arn:aws:ec2::*optional account id*:\*

### DeleteHostedZone

Required Permissions (API Action): route53>DeleteHostedZone

Resources: \*

### AssociateVPCWithHostedZone

Required Permissions (API Action): route53:AssociateVPCWithHostedZone, ec2:DescribeVpcs

Resources: \*, arn:aws:ec2::*optional account id*:\*

### DisassociateVPCFromHostedZone

Required Permissions (API Action): route53:DisassociateVPCFromHostedZone, ec2:DescribeVpcs

Resources: \*, arn:aws:ec2::*optional account id*:\*

### GetHostedZone

Required Permissions (API Action): route53:GetHostedZone

Resources: \*

### GetHostedZoneCount

Required Permissions (API Action): route53:GetHostedZoneCount

Resources: \*

### ListHostedZones

Required Permissions (API Action): route53>ListHostedZones

Resources: \*

### ListHostedZonesByName

Required Permissions (API Action): route53>ListHostedZonesByName

Resources: \*

### UpdateHostedZoneComment

Required Permissions (API Action): route53:UpdateHostedZoneComment

Resources: \*

## Required Permissions for Actions on Reusable Delegation Sets

### CreateReusableDelegationSet

Required Permissions (API Action): route53>CreateReusableDelegationSet

Resources: \*

#### [DeleteReusableDelegationSet](#)

Required Permissions (API Action): `route53:DeleteReusableDelegationSet`

Resources: \*

#### [GetReusableDelegationSet](#)

Required Permissions (API Action): `route53:GetReusableDelegationSet`

Resources: \*

#### [ListReusableDelegationSets](#)

Required Permissions (API Action): `route53:ListReusableDelegationSets`

Resources: \*

## Required Permissions for Actions on Resource Record Sets

#### [ChangeResourceRecordSets](#)

Required Permissions (API Action): `route53:ChangeResourceRecordSets`

Resources: `arn:aws:route53::hostedzone/hosted zone ID/rrset`

#### [GetChange](#)

Required Permissions (API Action): `route53:GetChange`

Resources: \*

#### [GetGeoLocation](#)

Required Permissions (API Action): None

Resources: None

#### [ListGeoLocations](#)

Required Permissions (API Action): None

Resources: None

#### [ListResourceRecordSets](#)

Required Permissions (API Action): `route53:ListResourceRecordSets`

Resources: \*

## Required Permissions for Actions on Traffic Policies

#### [CreateTrafficPolicy](#)

Required Permissions (API Action): `route53:CreateTrafficPolicy`

Resources: \*

#### [CreateTrafficPolicyVersion](#)

Required Permissions (API Action): `route53:CreateTrafficPolicyVersion`



Resources: \*

#### [DeleteTrafficPolicy](#)

Required Permissions (API Action): `route53:DeleteTrafficPolicy`

Resources: \*

#### [GetTrafficPolicy](#)

Required Permissions (API Action): `route53:GetTrafficPolicy`

Resources: \*

#### [ListTrafficPolicies](#)

Required Permissions (API Action): `route53:ListTrafficPolicies`

Resources: \*

#### [ListTrafficPolicyVersions](#)

Required Permissions (API Action): `route53:ListTrafficPolicyVersions`

Resources: \*

#### [UpdateTrafficPolicyComment](#)

Required Permissions (API Action): `route53:UpdateTrafficPolicyComment`

Resources: \*

## Required Permissions for Actions on Traffic Policy Instances

#### [CreateTrafficPolicyInstance](#)

Required Permissions (API Action): `route53:CreateTrafficPolicyInstance`

Resources: \*

#### [DeleteTrafficPolicyInstance](#)

Required Permissions (API Action): `route53:DeleteTrafficPolicyInstance`

Resources: \*

#### [GetTrafficPolicyInstance](#)

Required Permissions (API Action): `route53:GetTrafficPolicyInstance`

Resources: \*

#### [GetTrafficPolicyInstanceCount](#)

Required Permissions (API Action): `route53:GetTrafficPolicyInstanceCount`

Resources: \*

#### [ListTrafficPolicyInstances](#)

Required Permissions (API Action): `route53:ListTrafficPolicyInstances`

Resources: \*

#### ListTrafficPolicyInstancesByHostedZone

Required Permissions (API Action): `route53:ListTrafficPolicyInstancesByHostedZone`

Resources: \*

#### ListTrafficPolicyInstancesByPolicy

Required Permissions (API Action): `route53:ListTrafficPolicyInstancesByPolicy`

Resources: \*

#### UpdateTrafficPolicyInstance

Required Permissions (API Action): `route53:UpdateTrafficPolicyInstance`

Resources: \*

## Required Permissions for Actions on Health Checks

#### CreateHealthCheck

Required Permissions (API Action): `route53:CreateHealthCheck`

Resources: \*

#### DeleteHealthCheck

Required Permissions (API Action): `route53>DeleteHealthCheck`

Resources: \*

#### GetCheckerIpRanges

Required Permissions (API Action): `route53:GetCheckerIpRanges`

Resources: \*

#### GetHealthCheck

Required Permissions (API Action): `route53:GetHealthCheck`

Resources: \*

#### GetHealthCheckCount

Required Permissions (API Action): `route53:GetHealthCheckCount`

Resources: \*

#### GetHealthCheckLastFailureReason

Required Permissions (API Action): `route53:GetHealthCheckLastFailureReason`

Resources: \*

#### GetHealthCheckStatus

Required Permissions (API Action): `route53:GetHealthCheckStatus`

Resources: \*

#### ListHealthChecks

Required Permissions (API Action): `route53:ListHealthChecks`

Resources: \*

#### [UpdateHealthCheck](#)

Required Permissions (API Action): `route53:UpdateHealthCheck`

Resources: \*

## Required Permissions for Actions on Domain Registrations

#### [AddDnssec](#) (console only)

Required Permissions (API Action): `route53domains:AddDnssec`

Resources: \*

#### [CheckDomainAvailability](#)

Required Permissions (API Action): `route53domains:CheckDomainAvailability`

Resources: \*

#### [DeleteDomain](#) (console only)

Required Permissions (API Action): `route53domains>DeleteDomain`

Resources: \*

#### [DisableDomainAutoRenew](#)

Required Permissions (API Action): `route53domains:ChangeAutoRenew`

Resources: \*

#### [DisableDomainTransferLock](#)

Required Permissions (API Action): `route53domains:DisableDomainTransferLock`

Resources: \*

#### [EnableDomainAutoRenew](#)

Required Permissions (API Action): `route53domains:ChangeAutoRenew`

Resources: \*

#### [EnableDomainTransferLock](#)

Required Permissions (API Action): `route53domains:EnableDomainTransferLock`

Resources: \*

#### [GetContactReachabilityStatus](#)

Required Permissions (API Action): `route53domains:ListDomains`

Resources: \*

#### [GetDomainDetail](#)

Required Permissions (API Action): `route53domains:GetDomainDetail`

Resources: \*

#### [GetDomainSuggestions](#)

Required Permissions (API Action): `route53domains:ListDomains`

Resources: \*

#### [GetOperationDetail](#)

Required Permissions (API Action): `route53domains:GetOperationDetail`

Resources: \*

#### [ListDnssec](#) (console only)

Required Permissions (API Action): `route53domains:ListDnssec`

Resources: \*

#### [ListDomains](#)

Required Permissions (API Action): `route53domains:ListDomains`

Resources: \*

#### [ListOperations](#)

Required Permissions (API Action): `route53domains:ListOperations`

Resources: \*

#### [RegisterDomain](#)

Required Permissions (API Action): `route53domains:RegisterDomain`

Resources: \*

#### [RemoveDnssec](#) (console only)

Required Permissions (API Action): `route53domains:RemoveDnssec`

Resources: \*

#### [RenewDomain](#)

Required Permissions (API Action): `route53domains:RegisterDomain`

Resources: \*

#### [ResendContactReachabilityEmail](#)

Required Permissions (API Action): `route53domains:ListDomains`

Resources: \*

#### [RetrieveDomainAuthCode](#)

Required Permissions (API Action): `route53domains:RetrieveDomainAuthCode`

Resources: \*

#### [TransferDomain](#)

Required Permissions (API Action): `route53domains:TransferDomain`

Resources: \*

#### [UpdateDomainContact](#)

Required Permissions (API Action): `route53domains:UpdateDomainContact`

Resources: \*

#### [UpdateDomainContactPrivacy](#)

Required Permissions (API Action): `route53domains:UpdateDomainContactPrivacy`

Resources: \*

#### [UpdateDomainNameservers](#)

Required Permissions (API Action): `route53domains:UpdateDomainNameservers`

Resources: \*

#### [ViewBilling](#)

Required Permissions (API Action): `route53domains:ViewBilling`

Resources: \*

## Required Permissions for Actions on Tags for Hosted Zones and Health Checks

#### [ChangeTagsForResource](#)

Required Permissions (API Action): `route53:ChangeTagsForResource`

Resources:

- `arn:aws:route53:::healthcheck/*`
- `arn:aws:route53:::hostedzone/*`

#### [ListTagsForResource](#)

Required Permissions (API Action): `route53:ListTagsForResource`

Resources:

- `arn:aws:route53:::healthcheck/*`
- `arn:aws:route53:::hostedzone/*`

#### [ListTagsForResources](#)

Required Permissions (API Action): `route53:ListTagsForResources`

Resources:

- `arn:aws:route53:::healthcheck/*`
- `arn:aws:route53:::hostedzone/*`

## Required Permissions for Actions on Tags for Domains

#### [DeleteTagsForDomain](#)

Required Permissions (API Action): `route53domains:DeleteTagsForDomain`

Resources: \*

#### [ListTagsForDomain](#)

Required Permissions (API Action): `route53domains:ListTagsForDomain`

Resources: \*

[UpdateTagsForDomain](#)

Required Permissions (API Action): `route53domains:UpdateTagsForDomain`

Resources: \*

# Monitoring Amazon Route 53

Monitoring is an important part of maintaining the reliability, availability, and performance of your AWS solutions. You should collect monitoring data from all of the parts of your AWS solution so that you can more easily debug a multi-point failure if one occurs. However, before you start monitoring, you should create a monitoring plan that includes answers to the following questions:

- What are your monitoring goals?
- What resources will you monitor?
- How often will you monitor these resources?
- What monitoring tools will you use?
- Who will perform the monitoring tasks?
- Who should be notified when something goes wrong?

## Topics

- [Monitoring Domain Registrations \(p. 408\)](#)
- [Monitoring Your Resources with Amazon Route 53 Health Checks and Amazon CloudWatch \(p. 409\)](#)
- [Using AWS CloudTrail to Capture Requests Sent to the Amazon Route 53 API \(p. 411\)](#)

## Monitoring Domain Registrations

The Amazon Route 53 dashboard provides detailed information about the status of your domain registrations, including the following:

- Status of new domain registrations
- Status of domain transfers to Amazon Route 53
- List of domains that are approaching the expiration date

We recommend that you periodically check the dashboard in the Amazon Route 53 console, especially after you register a new domain or transfer a domain to Amazon Route 53, to confirm that there are no issues for you to address.

We also recommend that you confirm that the contact information for your domains is up to date. As the expiration date for a domain approaches, we email the registrant contact for the domain with information about when the domain expires and how to renew.

# Monitoring Your Resources with Amazon Route 53 Health Checks and Amazon CloudWatch

You can monitor your resources by creating Amazon Route 53 health checks, which use CloudWatch to collect and process raw data into readable, near real-time metrics. These statistics are recorded for a period of two weeks, so that you can access historical information and gain a better perspective on how your resources are performing. By default, metric data for Amazon Route 53 health checks is automatically sent to CloudWatch at one-minute intervals.

For more information about Amazon Route 53 health checks, see [Monitoring Health Checks Using CloudWatch \(p. 351\)](#). For more information about CloudWatch, see [What Is Amazon CloudWatch?](#) in the *Amazon CloudWatch User Guide*.

## Amazon Route 53 Metrics and Dimensions

When you create a health check, Amazon Route 53 starts to send metrics and dimensions once a minute to CloudWatch about the resource that you specify. The Amazon Route 53 console lets you view the status of your health checks. You can also use the following procedures to view the metrics in the CloudWatch console or view them by using the AWS Command Line Interface (AWS CLI).

### To view metrics using the CloudWatch console

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Metrics**.
3. On the **All Metrics** tab, choose **Route 53**.
4. Choose **Health Check Metrics**.

### To view metrics using the AWS CLI

- At a command prompt, use the following command:

```
aws cloudwatch list-metrics --namespace "AWS/Route53"
```

### Topics

- [Amazon Route 53 Metrics \(p. 409\)](#)
- [Dimensions for Amazon Route 53 Metrics \(p. 410\)](#)

## Amazon Route 53 Metrics

The `AWS/Route53` namespace includes the following metrics.

Metric	Description
ChildHealthCheckHealthyCount	<p>For a calculated health check, the number of health checks that are healthy among the health checks that Amazon Route 53 is monitoring.</p> <p>Valid statistics: Average (recommended), Minimum, Maximum</p> <p>Units: Healthy health checks</p>



Metric	Description
<code>ConnectionTime</code>	<p>The average time, in milliseconds, that it took Amazon Route 53 health checkers to establish a TCP connection with the endpoint. You can view <code>ConnectionTime</code> for a health check either across all regions or for a selected geographic region.</p> <p>Valid statistics: Average (recommended), Minimum, Maximum</p> <p>Units: Milliseconds</p>
<code>HealthCheckPercentageHealthy</code>	<p>The percentage of Amazon Route 53 health checkers that consider the selected endpoint to be healthy. You can view <code>HealthCheckPercentageHealthy</code> only across all regions; data is not available for a selected region.</p> <p>Valid statistics: Average, Minimum, Maximum</p> <p>Units: Percent</p>
<code>HealthCheckStatus</code>	<p>The status of the health check endpoint that CloudWatch is checking. <b>1</b> indicates healthy, and <b>0</b> indicates unhealthy. You can view <code>HealthCheckStatus</code> only across all regions; data is not available for a selected region.</p> <p>Valid statistics: Minimum</p> <p>Units: none</p>
<code>SSLHandshakeTime</code>	<p>The average time, in milliseconds, that it took Amazon Route 53 health checkers to complete the SSL handshake. You can view <code>SSLHandshakeTime</code> for a health check either across all regions or for a selected geographic region.</p> <p>Valid statistics: Average (recommended), Minimum, Maximum</p> <p>Units: Milliseconds</p>
<code>TimeToFirstByte</code>	<p>The average time, in milliseconds, that it took Amazon Route 53 health checkers to receive the first byte of the response to an HTTP or HTTPS request. You can view <code>TimeToFirstByte</code> for a health check either across all regions or for a selected geographic region.</p> <p>Valid statistics: Average (recommended), Minimum, Maximum</p> <p>Units: Milliseconds</p>

## Dimensions for Amazon Route 53 Metrics

Amazon Route 53 metrics use the `AWS/Route53` namespace and provide metrics for `HealthCheckId`. When retrieving metrics, you must supply the `HealthCheckId` dimension.

In addition, for `ConnectionTime`, `SSLHandshakeTime`, and `TimeToFirstByte`, you can optionally specify `Region`. If you omit `Region`, CloudWatch returns metrics across all regions. If you include `Region`, CloudWatch returns metrics only for the specified region.

For more information, see [Monitoring Health Checks Using CloudWatch](#) in the *Amazon Route 53 Developer Guide*.

# Using AWS CloudTrail to Capture Requests Sent to the Amazon Route 53 API

Amazon Route 53 is integrated with AWS CloudTrail, a service that captures information about every request that is sent to the Amazon Route 53 API by your AWS account, including requests that are sent by your IAM users. CloudTrail periodically saves log files of these requests to an Amazon S3 bucket that you specify. CloudTrail captures information about all requests, whether they were made by using the Amazon Route 53 console, the Amazon Route 53 API, the AWS SDKs, the Amazon Route 53 CLI, or another service, such as AWS CloudFormation.

You can use information in the CloudTrail log files to determine which requests were made to Amazon Route 53, the source IP address from which each request was made, who made the request, when it was made, and so on. To learn more about CloudTrail, including how to configure and enable it, see the [AWS CloudTrail User Guide](#).

## Topics

- [Configuring CloudTrail for Amazon Route 53 \(p. 411\)](#)
- [Amazon Route 53 Information in CloudTrail Log Files \(p. 411\)](#)
- [Understanding Amazon Route 53 Log File Entries \(p. 412\)](#)

## Configuring CloudTrail for Amazon Route 53

When you configure CloudTrail to capture information about API requests made by AWS accounts, you start by choosing a region. For Amazon Route 53, you must choose **US East (N. Virginia)** as the region, or you won't get any log entries for Amazon Route 53 API requests.

## Amazon Route 53 Information in CloudTrail Log Files

When you enable CloudTrail, CloudTrail captures every request made to every AWS service that CloudTrail supports. (For a list of supported services, see [Supported Services](#) in the *AWS CloudTrail User Guide*.) The log files aren't organized or sorted by service; each log file might contain records from more than one service. CloudTrail determines when to create a new log file.

Every log file entry contains information about who made the request. The user identity information in the log file helps you determine whether the request was made by a user with root or IAM user credentials, by a user with temporary security credentials, or by another AWS service, such as AWS CloudFormation. For more information, see [userIdentity Element](#) in the *AWS CloudTrail User Guide*.

You can store log files for as long as you want. You can also define Amazon S3 lifecycle rules to archive or delete log files automatically.

By default, your log files are encrypted by using Amazon S3 server-side encryption (SSE).

If you want to review log files as soon as CloudTrail delivers them to your Amazon S3 bucket, you can choose to have CloudTrail publish Amazon SNS notifications when new log files are delivered. For more information, see [Configuring Amazon SNS Notifications](#) in the *AWS CloudTrail User Guide*.

You can also aggregate log files from multiple AWS regions and multiple AWS accounts into a single Amazon S3 bucket. For more information, see [Aggregating CloudTrail Log Files to a Single Amazon S3 Bucket](#) in the *AWS CloudTrail User Guide*.

## Understanding Amazon Route 53 Log File Entries

Each JSON-formatted CloudTrail log file can contain one or more log entries. A log entry represents a single request from any source and includes information about the requested action, including any parameters, the date and time of the action, and so on. The log entries are not guaranteed to be in any particular order; they are not an ordered stack trace of API calls.

### Important

Don't use CloudTrail log entries to reconstruct a hosted zone or to revert a hosted zone to a prior state. Although extremely rare, it is possible that an Amazon Route 53 API request is not successfully recorded in the CloudTrail log. If you try to reproduce a hosted zone and a log entry is missing, the resource record set that you don't create or update could adversely affect the availability of your domain.

The `eventName` element identifies the action that occurred. CloudTrail supports all Amazon Route 53 API actions. The following example shows a CloudTrail log entry that demonstrates four actions:

- Listing the hosted zones that are associated with an AWS account
- Creating a health check
- Creating two resource record sets
- Deleting a hosted zone

```
{
  "Records": [
    {
      "apiVersion": "2013-04-01",
      "awsRegion": "us-east-1",
      "eventID": "1cdbea14-e162-43bb-8853-f9f86d4739ca",
      "eventName": "ListHostedZones",
      "eventSource": "route53.amazonaws.com",
      "eventTime": "2015-01-16T00:41:48Z",
      "eventType": "AwsApiCall",
      "eventVersion": "1.02",
      "recipientAccountId": "444455556666",
      "requestID": "741e0df7-9d18-11e4-b752-f9c6311f3510",
      "requestParameters": null,
      "responseElements": null,
      "sourceIPAddress": "192.0.2.92",
      "userAgent": "Apache-HttpClient/4.3 (java 1.5)",
      "userIdentity": {
        "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
        "accountId": "111122223333",
        "arn": "arn:aws:iam::111122223333:user/smithj",
        "principalId": "A1B2C3D4E5F6G7EXAMPLE",
        "type": "IAMUser",
        "userName": "smithj"
      }
    },
    {
      "apiVersion": "2013-04-01",
      "awsRegion": "us-east-1",
      "eventID": "45ec906a-1325-4f61-b133-3ef1012b0cbc",
      "eventName": "CreateHealthCheck",
      "eventSource": "route53.amazonaws.com",
      "eventTime": "2015-01-16T00:41:57Z",
      "eventType": "AwsApiCall",
      "eventVersion": "1.02",
      "recipientAccountId": "444455556666",
      "requestID": "79915168-9d18-11e4-b752-f9c6311f3510",
      "requestParameters": {
```

```
        "callerReference": "2014-05-06 64832",
        "healthCheckConfig": {
            "ipAddress": "192.0.2.249",
            "port": 80,
            "type": "TCP"
        }
    },
    "responseElements": {
        "healthCheck": {
            "callerReference": "2014-05-06 64847",
            "healthCheckConfig": {
                "failureThreshold": 3,
                "ipAddress": "192.0.2.249",
                "port": 80,
                "requestInterval": 30,
                "type": "TCP"
            },
            "healthCheckVersion": 1,
            "id": "b3c9cbc6-cd18-43bc-93f8-9e557example"
        },
        "location": "https://route53.amazonaws.com/2013-04-01/healthcheck/b3c9cbc6-cd18-43bc-93f8-9e557example"
    },
    "sourceIpAddress": "192.0.2.92",
    "userAgent": "Apache-HttpClient/4.3 (java 1.5)",
    "userIdentity": {
        "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
        "accountId": "111122223333",
        "arn": "arn:aws:iam::111122223333:user/smithj",
        "principalId": "A1B2C3D4E5F6G7EXAMPLE",
        "type": "IAMUser",
        "userName": "smithj"
    }
},
{
    "additionalEventData": {
        "Note": "Do not use to reconstruct hosted zone"
    },
    "apiVersion": "2013-04-01",
    "awsRegion": "us-east-1",
    "eventID": "883b14d9-2f84-4005-8bc5-c7bf0cebc116",
    "eventName": "ChangeResourceRecordSets",
    "eventSource": "route53.amazonaws.com",
    "eventTime": "2015-01-16T00:41:43Z",
    "eventType": "AwsApiCall",
    "eventVersion": "1.02",
    "recipientAccountId": "444455556666",
    "requestID": "7081d4c6-9d18-11e4-b752-f9c6311f3510",
    "requestParameters": {
        "changeBatch": {
            "changes": [
                {
                    "action": "CREATE",
                    "resourceRecordSet": {
                        "name": "prod.example.com.",
                        "resourceRecords": [
                            {
                                "value": "192.0.1.1"
                            },
                            {
                                "value": "192.0.1.2"
                            },
                            {
                                "value": "192.0.1.3"
                            }
                        ]
                    }
                }
            ]
        }
    }
}
```

```
        "value": "192.0.1.4"
      }
    ],
    "ttl": 300,
    "type": "A"
  }
},
{
  "action": "CREATE",
  "resourceRecordSet": {
    "name": "test.example.com.",
    "resourceRecords": [
      {
        "value": "192.0.1.1"
      },
      {
        "value": "192.0.1.2"
      },
      {
        "value": "192.0.1.3"
      },
      {
        "value": "192.0.1.4"
      }
    ],
    "ttl": 300,
    "type": "A"
  }
}
],
"comment": "Adding subdomains"
},
"hostedZoneId": "Z1PA6795UKMFR9"
},
"responseElements": {
  "changeInfo": {
    "comment": "Adding subdomains",
    "id": "/change/C156SRE0X2ZB10",
    "status": "PENDING",
    "submittedAt": "Jan 16, 2015 12:41:43 AM"
  }
},
"sourceIPAddress": "192.0.2.92",
"userAgent": "Apache-HttpClient/4.3 (java 1.5)",
"userIdentity": {
  "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
  "accountId": "111122223333",
  "arn": "arn:aws:iam::111122223333:user/smithj",
  "principalId": "A1B2C3D4E5F6G7EXAMPLE",
  "type": "IAMUser",
  "userName": "smithj"
}
},
{
  "apiVersion": "2013-04-01",
  "awsRegion": "us-east-1",
  "eventID": "0cb87544-ebec-40a9-9812-e9dda1962cb2",
  "eventName": "DeleteHostedZone",
  "eventSource": "route53.amazonaws.com",
  "eventTime": "2015-01-16T00:41:37Z",
  "eventType": "AwsApiCall",
  "eventVersion": "1.02",
  "recipientAccountId": "444455556666",
  "requestID": "6d5d149f-9d18-11e4-b752-f9c6311f3510",
  "requestParameters": {
    "id": "Z1PA6795UKMFR9"
```

```
    },
    "responseElements": {
      "changeInfo": {
        "id": "/change/C1SIJYUYIKVJWP",
        "status": "PENDING",
        "submittedAt": "Jan 16, 2015 12:41:36 AM"
      }
    },
    "sourceIPAddress": "192.0.2.92",
    "userAgent": "Apache-HttpClient/4.3 (java 1.5)",
    "userIdentity": {
      "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
      "accountId": "111122223333",
      "arn": "arn:aws:iam::111122223333:user/smithj",
      "principalId": "A1B2C3D4E5F6G7EXAMPLE",
      "type": "IAMUser",
      "userName": "smithj"
    }
  }
]
}
```

# Tagging Amazon Route 53 Resources

A tag is a label that you assign to an AWS resource. Each tag consists of a *key* and a *value*, both of which you define. For example, the key might be "domain" and the value might be "example.com". You can use tags for a variety of purposes; one common use is to categorize and track your Amazon Route 53 costs. When you apply tags to Amazon Route 53 hosted zones, domains, and health checks, AWS generates a cost allocation report as a comma-separated value (CSV) file with your usage and costs aggregated by your tags. You can apply tags that represent business categories (such as cost centers, application names, or owners) to organize your costs across multiple services. For more information about using tags for cost allocation, see [Use Cost Allocation Tags](#) in the [AWS Billing and Cost Management User Guide](#).

For ease of use and best results, use Tag Editor in the AWS Management Console, which provides a central, unified way to create and manage your tags. For more information, see [Working with Tag Editor](#) in [Getting Started with the AWS Management Console](#). For health checks, you can also apply tags in the Amazon Route 53 console. For more information, see [Naming and Tagging Health Checks \(p. 368\)](#).

You can also apply tags to resources by using the Amazon Route 53 API. For more information, see the actions related to tags in the topic [Amazon Route 53 API Actions by Function](#) in the *Amazon Route 53 API Reference*.

# Tutorials

The following tutorials explain how to use Amazon Route 53 for several use cases related to weighted and latency resource record sets.

## Topics

- [Transitioning to Latency-Based Routing in Amazon Route 53 \(p. 417\)](#)
- [Adding Another Region to Your Latency-Based Routing in Amazon Route 53 \(p. 419\)](#)
- [Using Latency and Weighted Resource Record Sets in Amazon Route 53 to Route Traffic to Multiple Amazon EC2 Instances in a Region \(p. 420\)](#)
- [Managing Over 100 Weighted Resource Record Sets in Amazon Route 53 \(p. 421\)](#)
- [Weighting Fault-Tolerant Multi-Record Answers in Amazon Route 53 \(p. 421\)](#)

## Transitioning to Latency-Based Routing in Amazon Route 53

With latency-based routing, Amazon Route 53 can direct your users to the lowest-latency AWS endpoint available. For example, you might associate a DNS name like `www.example.com` with an ELB Classic, Application, or Network Load Balancer, or with Amazon EC2 instances or Elastic IP addresses that are hosted in the US East (Ohio) and EU (Ireland) regions. The Amazon Route 53 DNS servers decide, based on network conditions of the past couple of weeks, which instances in which regions should serve particular users. A user in London will likely be directed to the EU (Ireland) instance, a user in Chicago will likely be directed to the US East (Ohio) instance, and so on. Amazon Route 53 supports latency-based routing for A, AAAA, TXT, and CNAME resource record sets, as well as aliases to A and AAAA resource record sets.

For a smooth, low-risk transition, you can combine weighted and latency resource record sets to gradually migrate from standard routing to latency-based routing with full control and rollback capability at each stage. Let's consider an example in which `www.example.com` is currently hosted on an Amazon EC2 instance in the US East (Ohio) region. The instance has the Elastic IP address `w.w.w.w`. Suppose you want to continue routing traffic to the US East (Ohio) region when applicable while also beginning to direct users to additional Amazon EC2 instances in the US West (N. California) region (Elastic IP `x.x.x.x`) and in the EU (Ireland) region (Elastic IP `y.y.y.y`). The Amazon Route 53 hosted zone



for `example.com` already has a resource record set for `www.example.com` that has a **Type** of A and a **Value** (an IP address) of `w.w.w.w`.

When you're finished with the following example, you'll have two weighted alias resource record sets:

- You'll convert your existing resource record set for `www.example.com` into a weighted alias resource record set that continues to direct the majority of your traffic to your existing Amazon EC2 instance in the US East (Ohio) region.
- You'll create another weighted alias resource record set that initially directs only a small portion of your traffic to your latency resource record sets, which route traffic to all three regions.

By updating the weights in these weighted alias resource record sets, you can gradually shift from routing traffic only to the US East (Ohio) region to routing traffic to all three regions in which you have Amazon EC2 instances.

### To Transition to Latency-Based Routing

1. Make a copy of the resource record set for `www.example.com`, but use a new domain name, for example, `copy-www.example.com`. Give the new resource record set the same **Type** (A) and **Value** (`w.w.w.w`) as the resource record set for `www.example.com`.
2. Update the existing A record for `www.example.com` to make it a weighted alias resource record set:
  - For the value of **Alias Target**, specify `copy-www.example.com`.
  - For the value of **Weight**, specify 100.

When you're finished with the update, Amazon Route 53 will continue to use this resource record set to route all traffic to the resource that has an IP address of `w.w.w.w`.

3. Create a latency resource record set for each of your Amazon EC2 instances, for example:
  - US East (Ohio), Elastic IP address `w.w.w.w`
  - US West (N. California), Elastic IP address `x.x.x.x`
  - EU (Ireland), Elastic IP address `y.y.y.y`

Give all of the latency resource record sets the same domain name, for example, `www-lbr.example.com` and the same type, A.

When you're finished creating the latency resource record sets, Amazon Route 53 will continue to route traffic using the resource record set that you updated in Step 2.

You can use `www-lbr.example.com` for validation testing, for example, to ensure that each endpoint can accept requests.

4. Let's now add the `www-lbr.example.com` latency resource record set into the `www.example.com` weighted resource record set and begin routing limited traffic to the corresponding Amazon EC2 instances. This means that the Amazon EC2 instance in the US East (Ohio) region will be getting traffic from both weighted resource record sets.

Create another weighted alias resource record set for `www.example.com`:

- For the value of **Alias Target**, specify `www-lbr.example.com`.
- For the value of **Weight**, specify 1.

When you finish and your changes are synchronized to Amazon Route 53 servers, Amazon Route 53 will begin to route a tiny fraction of your traffic (1/101) to the Amazon EC2 instances for which you created latency resource record sets in Step 3.

5. As you develop confidence that your endpoints are adequately scaled for the incoming traffic, adjust the weights accordingly. For example, if you want 10% of your requests to be based on latency-based routing, change the weights to 90 and 10, respectively.

For more information about creating latency resource record sets, see [Creating Resource Record Sets by Using the Amazon Route 53 Console](#) (p. 244).

## Adding Another Region to Your Latency-Based Routing in Amazon Route 53

If you're using latency based routing and you want to add an instance in a new region, you can gradually shift traffic to the new region in the same way that you gradually shifted traffic to latency-based routing in [Transitioning to Latency-Based Routing in Amazon Route 53](#) (p. 417).

For example, suppose you're using latency-based routing to route traffic for `www.example.com`, and you want to add an Amazon EC2 instance in Asia Pacific (Tokyo) to your instances in US East (Ohio), US West (N. California), and EU (Ireland). The following example procedure explains one way that you could add an instance in another region.

For this example, the Amazon Route 53 hosted zone for `example.com` already has a weighted alias resource record set for `www.example.com` that is routing traffic to the latency-based resource record sets for `www-lbr.example.com`:

- US East (Ohio), Elastic IP address `w.w.w.w`
- US West (N. California), Elastic IP address `x.x.x.x`
- EU (Ireland), Elastic IP address `y.y.y.y`

The weighted alias resource record set has a weight of 100. After you transitioned to latency-based routing, assume that you deleted the other weighted resource record set that you used for the transition.

### To Add Another Region to Your Latency-Based Routing in Amazon Route 53

1. Create four new latency-based resource record sets that include the three original regions as well as the new region to which you want to start routing traffic.
  - US East (Ohio), Elastic IP address `w.w.w.w`
  - US West (N. California), Elastic IP address `x.x.x.x`
  - EU (Ireland), Elastic IP address `y.y.y.y`
  - Asia Pacific (Tokyo), Elastic IP address `z.z.z.z`

Give all of the latency resource record sets the same new domain name, for example, `www-lbr-2012-04-30.example.com`, and the same type, `A`.

When you're finished creating the latency resource record sets, Amazon Route 53 will continue to route traffic using the original weighted alias resource record set (`www.example.com`) and latency resource record sets (`www-lbr.example.com`).

You can use the `www-lbr-2012-04-30.example.com` resource record sets for validation testing, for example, to ensure that each endpoint can accept requests.

2. Create a weighted alias resource record set for the new latency resource record sets:

- For the domain name, specify the name for the existing weighted alias resource record set, `www.example.com`.
- For the value of **Alias Target**, specify `www-lbr-2012-04-30.example.com`.
- For the value of **Weight**, specify 1.

When you finish, Amazon Route 53 will begin to route a tiny fraction of your traffic (1/101) to the Amazon EC2 instances for which you created the `www-lbr-2012-04-30.example.com` latency resource record sets in Step 1. The remainder of the traffic will continue to be routed to the `www-lbr.example.com` latency resource record sets, which do not include the Amazon EC2 instance in the Asia Pacific (Tokyo) region.

3. As you develop confidence that your endpoints are adequately scaled for the incoming traffic, adjust the weights accordingly. For example, if you want 10% of your requests to be routed to the latency resource record sets that include the Tokyo region, change the weight for `www-lbr.example.com` from 100 to 90 and the weight for `www-lbr-2012-04-30.example.com` from 1 to 10.

For more information about creating resource record sets, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 244\)](#).

## Using Latency and Weighted Resource Record Sets in Amazon Route 53 to Route Traffic to Multiple Amazon EC2 Instances in a Region

If your application is running on Amazon EC2 instances in two or more Amazon EC2 regions, and if you have more than one Amazon EC2 instance in one or more regions, you can use latency-based routing to route traffic to the correct region and then use weighted resource record sets to route traffic to instances within the region based on weights that you specify.

For example, suppose you have three Amazon EC2 instances with Elastic IP addresses in the US East (Ohio) region and you want to distribute requests across all three IPs evenly for users for whom US East (Ohio) is the appropriate region. Just one Amazon EC2 instance is sufficient in the other regions, although you can apply the same technique to many regions at once.

### To use latency and weighted resource record sets in Amazon Route 53 to route traffic to multiple Amazon EC2 instances in a region

1. Create a group of weighted resource record sets for the Amazon EC2 instances in the region. Note the following:
  - Give each weighted resource record set the same value for **Name** (for example, `us-east.example.com`) and **Type**.
  - For **Value**, specify the value of one of the Elastic IP addresses.
  - If you want to weight the Amazon EC2 instances equally, specify the same value for **Weight**.
  - Specify a unique value for **Set ID** for each resource record set.
2. If you have multiple Amazon EC2 instances in other regions, repeat Step 1 for the other regions. Specify a different value for **Name** in each region.
3. For each region in which you have multiple Amazon EC2 instances (for example, US East (Ohio)), create a latency alias resource record set. For the value of **Alias Target**, specify the value of the **Name** field (for example, `us-east.example.com`) that you assigned to the weighted resource record sets in that region.

4. For each region in which you have one Amazon EC2 instance, create a latency resource record set. For the value of **Name**, specify the same value that you specified for the latency alias resource record sets that you created in Step 3. For **Value**, specify the Elastic IP address of the Amazon EC2 instance in that region.

For more information about creating resource record sets, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 244\)](#).

## Managing Over 100 Weighted Resource Record Sets in Amazon Route 53

Amazon Route 53 lets you configure weighted resource record sets. For a given name and type (for example, `www.example.com`, type A), you can configure up to 100 alternative responses, each with its own weight. When responding to queries for `www.example.com`, Amazon Route 53 DNS servers select a weighted random response to return to DNS resolvers. The value of a weighted resource record set that has a weight of 2 is returned, on average, twice as often as the value of a weighted resource record set that has a weight of 1.

If you need to direct traffic to more than 100 endpoints, one way to achieve this is to use a tree of weighted alias resource record sets and weighted resource record sets. For example, the first "level" of the tree may be up to 100 weighted alias resource record sets, each of which can, in turn, point to up to 100 weighted resource record sets. Amazon Route 53 permits up to three levels of recursion, allowing you to manage up to 1,000,000 unique weighted endpoints.

A simple two-level tree might look like this:

### Weighted alias resource record sets

- `www.example.com` aliases to `www-a.example.com` with a weight of 1
- `www.example.com` aliases to `www-b.example.com` with a weight of 1

### Weighted resource record sets

- `www-a.example.com`, type A, value 192.0.2.1, weight 1
- `www-a.example.com`, type A, value 192.0.2.2, weight 1
- `www-b.example.com`, type A, value 192.0.2.3, weight 1
- `www-b.example.com`, type A, value 192.0.2.4, weight 1

For more information about creating resource record sets, see [Working with Resource Record Sets \(p. 231\)](#).

## Weighting Fault-Tolerant Multi-Record Answers in Amazon Route 53

### Note

Resource record sets that use the multivalue answer routing policy behave in much the same way as the configuration that is documented in this tutorial. The main difference is that the

tutorial configuration lets you specify weights, which can be useful when your endpoints have different capacities. For more information, see [Multivalue Answer Routing \(p. 235\)](#).

An Amazon Route 53 weighted resource record set can only be associated with one record, meaning a combination of one name (for example, `example.com`) and one record type (for example, A). But it is often desirable to weight DNS responses that contain multiple records.

For example, you might have eight Amazon EC2 instances or Elastic IP endpoints for a service. If the clients of that service support connection retries (as all common browsers do), then providing multiple IP addresses in DNS responses provides those clients with alternative endpoints in the event of the failure of any particular endpoint. You can even protect against the failure of an availability zone if you configure responses to contain a mix of IPs hosted in two or more availability zones.

Multi-record answers are also useful when a large number of clients (for example, mobile web applications) share a small set of DNS caches. In this case, multi-record answers allow clients to direct requests to several endpoints even if they receive a common DNS response from the shared cache.

These types of weighted multi-record answers can be achieved by using a combination of resource record sets and weighted alias resource record sets. You can group eight endpoints into two distinct record sets containing four IP addresses each:

`endpoint-a.example.com`, type A, with the following values:

- 192.0.2.1
- 192.0.2.2
- 192.0.2.128
- 192.0.2.129

`endpoint-b.example.com`, type A, with the following values:

- 192.0.2.3
- 192.0.2.4
- 192.0.2.130
- 192.0.2.131

You can then create a weighted alias resource record set that points to each group:

- `www.example.com` aliases to `endpoint-a.example.com`, type A, weight 1
- `www.example.com` aliases to `endpoint-b.example.com`, type A, weight 1

For more information about creating resource record sets, see [Working with Resource Record Sets \(p. 231\)](#).

# Limits

Amazon Route 53 API requests and entities are subject to the following limits.

## Topics

- [Limits on API Requests \(p. 423\)](#)
- [Limits on Entities \(p. 424\)](#)

## Limits on API Requests

Amazon Route 53 API requests are subject to the following limits.

### Number of Elements and Characters in `ChangeResourceRecordSets` Requests

#### **ResourceRecord elements**

A request cannot contain more than 1000 `ResourceRecord` elements. When the value of the `Action` element is `UPSERT`, each `ResourceRecord` element is counted twice.

#### **Maximum number of characters**

The sum of the number of characters (including spaces) in all `Value` elements in a request cannot exceed 32,000 characters. When the value of the `Action` element is `UPSERT`, each character in a `Value` element is counted twice.

## Frequency of Amazon Route 53 API Requests

### **All requests**

Five requests per second per AWS account. If you submit more than five requests per second, Amazon Route 53 returns an HTTP 400 error (`Bad request`). The response header also includes a `Code` element with a value of `Throttling` and a `Message` element with a value of `Rate exceeded`.

#### **ChangeResourceRecordSets requests**

If Amazon Route 53 can't process a request before the next request arrives, it will reject subsequent requests for the same hosted zone and return an HTTP 400 error (`Bad request`). The response header also includes a `Code` element with a value of `PriorRequestNotComplete` and a `Message` element with a value of `The request was rejected because Route 53 was still processing a prior request.`

#### **CreateHealthCheck requests**

You can submit a maximum of 1000 `CreateHealthCheck` requests in a 24-hour period.

## Limits on Entities

Amazon Route 53 entities are subject to the following limits.

Entity	Limit
Hosted zones	500 per AWS account <a href="#">Request a higher limit.</a>
Domains	50 per AWS account <a href="#">Request a higher limit.</a>
Reusable delegation sets	100 per AWS account <a href="#">Request a higher limit.</a>
Hosted zones that can use the same reusable delegation set	100 <a href="#">Request a higher limit.</a>
Amazon VPCs that you can associate with a private hosted zone	100 <a href="#">Request a higher limit.</a>
Authorizations that you can create so you can associate Amazon VPCs that were created by one account with a hosted zone that was created by another account	100
Resource record sets	10,000 per hosted zone <a href="#">Request a higher limit.</a>  For a limit greater than 10,000 resource record sets in a hosted zone, an additional charge applies.
Resource records (values in a resource record set)	100 per resource record set
Weighted and geolocation resource record sets	100 resource record sets that have the same name and type
Health checks	200 active health checks per AWS account <a href="#">Request a higher limit.</a>

Entity	Limit
Traffic flow traffic policies (For more information about Amazon Route 53 traffic flow, see <a href="#">Using Traffic Flow to Route DNS Traffic (p. 301).</a> )	50 per AWS account <a href="#">Request a higher limit.</a>
Traffic flow policy records (referred to as "policy instances" in the Amazon Route 53 API, AWS SDKs, AWS Command Line Interface, and AWS Tools for Windows PowerShell)	5 per AWS account <a href="#">Request a higher limit.</a>
Query log configurations	1 per hosted zone



# Resources for Amazon Route 53

The following related resources can help you as you work with this service.

## Topics

- [AWS Resources](#) (p. 426)
- [Third-Party Tools and Libraries](#) (p. 427)
- [Graphical User Interfaces](#) (p. 428)

## AWS Resources

Several helpful guides, forums, and other resources are available from Amazon Web Services.

- [Amazon Route 53 API Reference](#) – A reference guide that includes the schema location; complete descriptions of the API actions, parameters, and data types; and a list of errors that the service returns.
- [Amazon Route 53 Release Notes](#) – A high-level overview of the current release noting any new features, corrections, and known issues.
- [AWS::Route53::RecordSet Type in the AWS CloudFormation User Guide](#) – A property for using Amazon Route 53 with CloudFormation to create customized DNS names for your AWS CloudFormation stacks.
- [Discussion Forums](#) – A community-based forum for developers to discuss technical questions related to Amazon Route 53.
- [AWS Support Center](#) – This site brings together information about your recent support cases and results from AWS Trusted Advisor and health checks, as well as providing links to discussion forums, technical FAQs, the service health dashboard, and information about AWS support plans.
- [AWS Premium Support Information](#) – The primary web page for information about AWS Premium Support, a one-on-one, fast-response support channel to help you build and run applications on AWS Infrastructure Services.
- [Contact Us](#) – Links for inquiring about your billing or account. For technical questions, use the discussion forums or support links above.
- [Amazon Route 53 product information](#) – The primary web page for information about Amazon Route 53, including features, pricing, and more.
- [Classes & Workshops](#) – Links to role-based and specialty courses as well as self-paced labs to help sharpen your AWS skills and gain practical experience.

- [AWS Developer Tools](#) – Links to developer tools, SDKs, IDE toolkits, and command line tools for developing and managing AWS applications.
- [AWS Whitepapers](#) – Links to a comprehensive list of technical AWS whitepapers, covering topics such as architecture, security, and economics and authored by AWS Solutions Architects or other technical experts.
- [AWS Support Center](#) – The hub for creating and managing your AWS Support cases. Also includes links to other helpful resources, such as forums, technical FAQs, service health status, and AWS Trusted Advisor.
- [AWS Support](#) – The primary web page for information about AWS Support, a one-on-one, fast-response support channel to help you build and run applications in the cloud.
- [Contact Us](#) – A central contact point for inquiries concerning AWS billing, account, events, abuse, and other issues.
- [AWS Site Terms](#) – Detailed information about our copyright and trademark; your account, license, and site access; and other topics.

## Third-Party Tools and Libraries

In addition to AWS resources, you can find a variety of third-party tools and libraries that work with Amazon Route 53.

- [AmazonRoute53AppsScript](#) (via [webos-goodies](#))

Google spreadsheet management of Amazon Route 53.

- [AWS Component for .NET](#) (via [SprightlySoft](#))

SprightlySoft .NET Component for Amazon Web Services with support for REST operations and Amazon Route 53.

- [Boto API download](#) (via [github](#))

Boto Python interface to Amazon Web Services.

- [cli53](#) (via [github](#))

Command line interface for Amazon Route 53.

- [Dasein Cloud API](#)

Java-based API.

- [R53.py](#) (via [github](#))

Maintains a canonical version of your DNS configurations under source control, and calculates the minimum set of changes that are required to change a configuration.

- [RIAForge](#)

ColdFusion based components for managing DNS using Amazon Route 53.

- [RightScripts](#) (via [RightScale](#))

Scripts to configure or update your RightScale server for use with Amazon Route 53.

- [RightScale Support Tutorials](#)

RightScale tutorial for domain setup with Amazon Route 53.

- [route53d](#)

DNS front-end to Amazon Route 53 API (enables incremental zone transfer (IXFR)).

- [Route53Manager](#) (via [github](#))

Web-based interface.

- [Ruby Fog](#) (via [github](#))

The Ruby cloud services library.

- [Valet](#) (via [github](#))

Java API, including a one-way-sync utility for Windows DNS server files.

- [WebService::Amazon::Route53](#) (via [CPAN](#))

Perl interface to Amazon Route 53 API.

## Graphical User Interfaces

The following third-party tools provide graphical user interfaces (GUIs) for working with Amazon Route 53:

- [R53 Fox](#)
- [Ylastic](#)

# Document History

The following entries describe important changes in each release of the Amazon Route 53 documentation.

## Topics

- [2017 Releases \(p. 429\)](#)
- [2016 Releases \(p. 429\)](#)
- [2015 Releases \(p. 432\)](#)
- [2014 Releases \(p. 433\)](#)
- [2013 Releases \(p. 435\)](#)
- [2012 Release \(p. 436\)](#)
- [2011 Releases \(p. 436\)](#)
- [2010 Release \(p. 437\)](#)

## 2017 Releases

### April 10, 2017

When you use the Amazon Route 53 console to transfer a domain registration to Amazon Route 53, you can now choose one of the following options for associating the name servers for the DNS service for the domain with the transferred domain registration:

- Use the name servers for an Amazon Route 53 hosted zone that you choose
- Use the name servers for the current DNS service for the domain
- Use name servers that you specify

Amazon Route 53 automatically associates these name servers with the transferred domain registration.

## 2016 Releases

### November 21, 2016

You can now create health checks that use IPv6 addresses to check the health of endpoints. For more information, see [Creating and Updating Health Checks \(p. 339\)](#).

## November 15, 2016

You can now use an Amazon Route 53 API action to associate an Amazon VPC that you created with one account with a private hosted zone that you created with another account. For more information, see [Associating an Amazon VPC and a Private Hosted Zone That You Created with Different AWS Accounts](#) (p. 230).

## August 30, 2016

With this release, Amazon Route 53 adds the following new features:

- **Name Authority Pointer (NAPTR) resource record sets** – You can now create NAPTR resource record sets, which are used by Dynamic Delegation Discovery System (DDDS) applications to convert one value to another or to replace one value with another. For example, one common use is to convert phone numbers into SIP URIs. For more information, see [NAPTR Format](#) (p. 241).
- **DNS query test tool** – You can now simulate DNS queries for a resource records set and see the value that Amazon Route 53 returns. For geolocation and latency resource record sets, you can also simulate requests from a particular DNS resolver and/or client IP address to find out what response Amazon Route 53 would return to a client with that resolver and/or IP address. For more information, see [Checking DNS Responses from Amazon Route 53](#) (p. 216).

## August 11, 2016

With this release, you can create alias resource record sets that route traffic to ELB Application Load Balancers. The process is the same as for Classic Load Balancers. For more information, see [Alias Target](#) (p. 250).

## August 9, 2016

With this release, Amazon Route 53 adds support for DNSSEC for domain registration. DNSSEC lets you protect your domain from DNS spoofing attacks, which are also known as man-in-the-middle attacks. For more information, see [Configuring DNSSEC for a Domain](#) (p. 63).

## July 7, 2016

You can now manually extend the registration for a domain and register a domain with an initial registration period longer than the minimum registration period specified by the registry. For more information, see [Extending the Registration Period for a Domain](#) (p. 41).

## July 6, 2016

If you're an AISPL customer with a contact address in India, you can now use Amazon Route 53 to register domains. For more information, see [Managing an Account in India](#).

## May 26, 2016

With this release, Amazon Route 53 adds the following new features:

- **Domain billing report** – You can now download a report that lists all domain registration charges, by domain, for a specified time period. The report includes all domain registration operations for which there is a fee, including registering domains, transferring domains to Amazon Route 53, renewing domain registration, and (for some TLDs), changing the owner of a domain. For more information, see the following documentation:
  - **Amazon Route 53 console** – See [Downloading a Domain Billing Report](#) (p. 67)
  - **Amazon Route 53 API** – See [ViewBilling](#) in the *Amazon Route 53 API Reference*.
- **New TLDs** – You can now register domains that have the following TLDs: .college, .consulting, .host, .name, .online, .republican, .rocks, .sucks, .trade, .website, and .uk. For more information, see [Domains That You Can Register with Amazon Route 53](#) (p. 68).
- **New APIs for domain registration** – For operations that require confirmation that the email address for the registrant contact is valid, such as registering a new domain, you can now programmatically determine whether the registrant contact has clicked the link in the confirmation email and, if not, whether the link is still valid. You can also programmatically

request that we send another confirmation email. For more information, see the following documentation in the *Amazon Route 53 API Reference*:

- [GetContactReachabilityStatus](#)
- [ResendContactReachabilityEmail](#)

#### April 5, 2016

With this release, Amazon Route 53 adds the following new features:

- **Health checks based on CloudWatch metrics** – You can now create health checks that are based on the alarm state of any CloudWatch metric. This is useful for checking the health of endpoints that can't be reached by a standard Amazon Route 53 health check, such as instances within an Amazon Virtual Private Cloud (VPC) that have only private IP addresses. For more information, see the following documentation:
  - **Amazon Route 53 console** – See [Monitoring a CloudWatch Alarm \(p. 343\)](#) in the "Values that You Specify When You Create or Update Health Checks" topic.
  - **Amazon Route 53 API** – See [CreateHealthCheck](#) and [UpdateHealthCheck](#) in the *Amazon Route 53 API Reference*.
- **Configurable health check locations** – You can now choose the Amazon Route 53 health checking regions that check the health of your resources, which reduces the load on the endpoint from health checks. This is useful if your customers are concentrated in one or a few geographic regions. For more information, see the following documentation:
  - **Amazon Route 53 console** – See [Health checker regions](#) in the "Values that You Specify When You Create or Update Health Checks" topic.
  - **Amazon Route 53 API** – See the `Regions` element for [CreateHealthCheck](#) and [UpdateHealthCheck](#) in the *Amazon Route 53 API Reference*.
- **Failover in private hosted zones** – You can now create failover and failover alias resource record sets in a private hosted zone. When you combine this feature with metric-based health checks, you can configure DNS failover even for endpoints that have only private IP addresses and can't be reached by using standard Amazon Route 53 health checks. For more information, see the following documentation:
  - **Amazon Route 53 console** – See [Configuring Failover in a Private Hosted Zone \(p. 364\)](#).
  - **Amazon Route 53 API** – See [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.
- **Alias resource record sets in private hosted zones** – In the past, you could create alias resource record sets that route DNS queries only to other Amazon Route 53 resource record sets in the same hosted zone. With this release, you can also create alias resource record sets that route DNS queries to Elastic Beanstalk environments that have regionalized subdomains, Elastic Load Balancing load balancers, and Amazon S3 buckets. (You still can't create alias resource record sets that route DNS queries to a CloudFront distribution.) For more information, see the following documentation:
  - **Amazon Route 53 console** – See [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#).
  - **Amazon Route 53 API** – See [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

#### February 23, 2016

When you create or update HTTPS health checks, you can now configure Amazon Route 53 to send the host name to the endpoint during TLS negotiation. This allows the endpoint to respond to the HTTPS request with the applicable SSL/TLS certificate. For more information, see the description for the [Enable SNI](#) field in the "Values that You Specify When You Create or Update Health Checks" topic. For information about how to enable SNI when you use the API to create or update a health check, see [CreateHealthCheck](#) and [UpdateHealthCheck](#) in the *Amazon Route 53 API Reference*.

#### January 27, 2016

You can now register domains for over 100 additional top-level domains (TLDs) such as .accountants, .band, and .city. For a complete list of supported TLDs, see [Domains That You Can Register with Amazon Route 53 \(p. 68\)](#).

### January 19, 2016

You can now create alias resource record sets that route traffic to Elastic Beanstalk environments. For information about creating resource record sets by using the Amazon Route 53 console, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 244\)](#). For information about using the API to create resource record sets, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

## 2015 Releases

### December 3, 2015

The Amazon Route 53 console now includes a visual editor that lets you quickly create complex routing configurations that use a combination of Amazon Route 53 weighted, latency, failover, and geolocation routing policies. You can then associate the configuration with one or more domain names (such as example.com) or subdomain names (such as www.example.com), in the same hosted zone or in multiple hosted zones. In addition, you can roll back the updates if the new configuration isn't performing as you expected it to. The same functionality is available by using the Amazon Route 53 API, AWS SDKs, the AWS CLI, and AWS Tools for Windows PowerShell. For information about using the visual editor, see [Using Traffic Flow to Route DNS Traffic \(p. 301\)](#). For information about using the API to create traffic flow configurations, see the [Amazon Route 53 API Reference](#).

### October 19, 2015

With this release, Amazon Route 53 adds the following new features:

- **Domain registration for .com and .net domains by Amazon Registrar, Inc.** – Amazon is now an ICANN-accredited registrar for the .com and .net top-level domains (TLDs) through Amazon Registrar, Inc. When you use Amazon Route 53 to register a .com or .net domain, Amazon Registrar will be the registrar of record and will be listed as the "Sponsoring Registrar" in your Whois query results. For information about using Amazon Route 53 to register domains, see [Registering Domain Names Using Amazon Route 53 \(p. 27\)](#).
- **Privacy protection for .com and .net domains** – When you register a .com or .net domain with Amazon Route 53, all of your personal information, including first and last name, is now hidden. First and last name are not hidden for other domains that you register with Amazon Route 53. For more information about privacy protection, see [Enabling or Disabling Privacy Protection for Contact Information for a Domain \(p. 39\)](#).

### September 15, 2015

With this release, Amazon Route 53 adds the following new features:

- **Calculated health checks** – You now can create health checks whose status is determined by the health status of other health checks. For more information, see [Creating and Updating Health Checks \(p. 339\)](#). In addition, see [CreateHealthCheck](#) in the *Amazon Route 53 API Reference*.
- **Latency measurements for health checks** – You now can configure Amazon Route 53 to measure the latency between health checkers and your endpoint. Latency data appears in Amazon CloudWatch graphs in the Amazon Route 53 console. To enable latency measurements for new health checks, see the **Latency measurements** setting under [Advanced Configuration \("Monitor an endpoint" Only\) \(p. 344\)](#) in the topic [Values that You Specify When You Create or Update Health Checks \(p. 339\)](#). (You can't enable latency measurements for existing health checks.) In addition, see **MeasureLatency** in the topic [CreateHealthCheck](#) in the *Amazon Route 53 API Reference*.
- **Updates to the health checks dashboard in the Amazon Route 53 console** – The dashboard for monitoring health checks has been improved in a variety of ways, including CloudWatch graphs for monitoring latency between Amazon Route 53 health checkers and your endpoints. For more information, see [Monitoring Health Check Status and Getting Notifications \(p. 349\)](#).

### March 3, 2015

The *Amazon Route 53 Developer Guide* now explains how to configure white label name servers for Amazon Route 53 hosted zones. For more information, see [Configuring White Label Name Servers](#) (p. 219).

### February 26, 2015

You now can use the Amazon Route 53 API to list the hosted zones that are associated with an AWS account in alphabetical order by name. You can also get a count of the hosted zones that are associated with an account. For more information, see [ListHostedZonesByName](#) and [GetHostedZoneCount](#) in the *Amazon Route 53 API Reference*.

### February 11, 2015

With this release, Amazon Route 53 adds the following new features:

- **Health Check Status** – The health checks page in the Amazon Route 53 console now includes a **Status** column that lets you view the overall status of all of your health checks. For more information, see [Viewing Health Check Status and the Reason for Health Check Failures](#) (p. 349).
- **Integration with AWS CloudTrail** – Amazon Route 53 now works with CloudTrail to capture information about every request that your AWS account (including your IAM users) sends to the Amazon Route 53 API. Integrating Amazon Route 53 and CloudTrail lets you determine which requests were made to the Amazon Route 53 API, the source IP address from which each request was made, who made the request, when it was made, and more. For more information, see [Using AWS CloudTrail to Capture Requests Sent to the Amazon Route 53 API](#) (p. 411).
- **Quick Alarms for Health Checks** – When you create a health check by using the Amazon Route 53 console, you can now simultaneously create an Amazon CloudWatch alarm for the health check and specify who to notify when Amazon Route 53 considers the endpoint unhealthy for one minute. For more information, see [Creating and Updating Health Checks](#) (p. 339).
- **Tagging for Hosted Zones and Domains** – You can now assign tags, which are commonly used for cost allocation, to Amazon Route 53 hosted zones and domains. For more information, see [Tagging Amazon Route 53 Resources](#) (p. 416).

### February 5, 2015

You now can use the Amazon Route 53 console to update contact information for a domain. For more information, see [Values that You Specify When You Register a Domain](#) (p. 31).

### January 22, 2015

You now can specify internationalized domain names when you're registering a new domain name with Amazon Route 53. (Amazon Route 53 already supported internationalized domain names for hosted zones and resource record sets.) For more information, see [DNS Domain Name Format](#) (p. 319).

## 2014 Releases

### November 25, 2014

With this release, you now can edit the comment that you specified for a hosted zone when you created it. In the console, you just click the pencil icon next to the **Comment** field and enter a new value. For more information about changing the comment by using the Amazon Route 53 API, see [UpdateHostedZoneComment](#) in the *Amazon Route 53 API Reference*.

### November 5, 2014

With this release, Amazon Route 53 adds the following new features:

- **Private DNS for Amazon Virtual Private Clouds**—You now can use Amazon Route 53 to manage your internal domain names for Amazon Virtual Private Clouds (VPCs) without exposing DNS data to the public internet. For more information, see [Working with Private Hosted Zones](#) (p. 225).



- **Health check failure reasons**—You can now see the current status of a selected health check, as well as details on why the health check last failed, as reported by each of the Amazon Route 53 health checkers. The status includes the HTTP status code, and failure reasons include information about numerous types of failures, such as string matching failures and response timeouts. For more information, see [Viewing Health Check Status and the Reason for Health Check Failures](#) (p. 349).
- **Reusable delegation sets**—You can now apply the same set of four authoritative name servers, known collectively as a delegation set, to multiple hosted zones that correspond with different domain names. This greatly simplifies the process of migrating DNS service to Amazon Route 53 and managing large numbers of hosted zones. Using reusable delegation sets currently requires that you use the Amazon Route 53 API or an AWS SDK. For more information, see the [Amazon Route 53 API Reference](#).
- **Improved geolocation routing**—We further improved the accuracy of geolocation routing by adding support for the edns-client-subnet extension of EDNS0. For more information, see [Geolocation Routing](#) (p. 233).
- **Support for Signature v4**—You can now sign all Amazon Route 53 API requests using Signature version 4. For more information, see [Signing Amazon Route 53 API Requests](#) in the *Amazon Route 53 API Reference*.

#### July 31, 2014

With this release, you now can do the following:

- Register domain names using Amazon Route 53. For more information, see [Registering Domain Names Using Amazon Route 53](#) (p. 27).
- Configure Amazon Route 53 to respond to DNS queries based on the geographic location that the queries originate from. For more information, see [Geolocation Routing](#) (p. 233).

#### July 2, 2014

With this release, you now can do the following:

- Edit most values in health checks. For more information, see [Creating, Updating, and Deleting Health Checks](#) (p. 338).
- Use the Amazon Route 53 API to get a list of the IP ranges that Amazon Route 53 health checkers use to check the health of your resources. You can use these IP addresses to configure your router and firewall rules to allow health checkers to check the health of your resources. For more information, see [GetCheckerIpRanges](#) in the *Amazon Route 53 API Reference*.
- Assign cost allocation tags to health checks, which also lets you assign a name to health checks. For more information, see [Naming and Tagging Health Checks](#) (p. 368).
- Use the Amazon Route 53 API to get the number of health checks that are associated with your AWS account. For more information, see [GetHealthCheckCount](#) in the *Amazon Route 53 API Reference*.

#### April 30, 2014

With this release, you can now create health checks and use a domain name instead of an IP address to specify the endpoint. This is helpful when an endpoint's IP address either is not fixed or is served by multiple IPs, such as Amazon EC2 or Amazon RDS instances. For more information, see [Creating and Updating Health Checks](#) (p. 339).

In addition, some information about using the Amazon Route 53 API that formerly appeared in the *Amazon Route 53 Developer Guide* has been moved. Now all API documentation appears in the *Amazon Route 53 API Reference*.

#### April 18, 2014

With this release, Amazon Route 53 passes a different value in the `Host` header when the health check **Port** value is **443** and the **Protocol** value is **HTTPS**. During a health check, Amazon Route 53 now passes to the endpoint a `Host` header that contains the value of the **Host Name** field. If

you created the health check by using the `CreateHealthCheck` API action, this is the value of the `FullyQualifiedDomainName` element.

For more information, see [Creating, Updating, and Deleting Health Checks](#) (p. 338).

#### April 9, 2014

With this release, you can now view what percentage of Amazon Route 53 health checkers are currently reporting that an endpoint is healthy.

In addition, behavior of the Health Check Status metric in Amazon CloudWatch now shows only zero (if your endpoint was unhealthy during a given time period) or one (if the endpoint was healthy for that time period). The metric no longer shows values between 0 and 1 reflecting the portion of Amazon Route 53 health checks that are reporting the endpoint as healthy.

For more information, see [Monitoring Health Checks Using CloudWatch](#) (p. 351).

#### February 18, 2014

With this release, Amazon Route 53 adds the following features:

- **Health check failover threshold:** You can now specify how many consecutive health checks an endpoint must fail before Amazon Route 53 considers the endpoint unhealthy, between 1 and 10 consecutive checks. An unhealthy endpoint must pass the same number of checks to be considered healthy. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).
- **Health check request interval:** You can now specify how frequently Amazon Route 53 sends requests to an endpoint to determine whether the endpoint is healthy. Valid settings are 10 seconds and 30 seconds. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).

#### January 30, 2014

With this release, Amazon Route 53 adds the following features:

- **HTTP and HTTPS string-match health checks:** Amazon Route 53 now supports health checks that determine the health of an endpoint based on the appearance of a specified string in the response body. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).
- **HTTPS health checks:** Amazon Route 53 now supports health checks for secure, SSL-only websites. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).
- **UPSERT for the `ChangeResourceRecordSets` API Action:** When creating or changing resource record sets using the `ChangeResourceRecordSets` API action, you can now use the `UPSERT` action either to create a new resource record set if none exists with a given name and type, or to update an existing resource record set. For more information, see [ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

#### January 7, 2014

With this release, Amazon Route 53 adds support for health checks that determine the health of an endpoint based on whether a specified string appears in the response body. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 348).

## 2013 Releases

#### August 14, 2013

With this release, Amazon Route 53 adds support for creating resource record sets by importing a BIND-formatted zone file. For more information, see [Creating Resource Record Sets By Importing a Zone File](#) (p. 298).

In addition, CloudWatch metrics for Amazon Route 53 health checks have been integrated into the Amazon Route 53 console and streamlined. For more information, see [Monitoring Health Checks Using CloudWatch \(p. 351\)](#).

#### **June 26, 2013**

With this release, Amazon Route 53 adds support for integrating health checks with CloudWatch metrics so you can do the following:

- Verify that a health check is properly configured.
- Review the health of a health check endpoint over a specified period of time.
- Configure CloudWatch to send an Amazon Simple Notification Service (Amazon SNS) alert when all Amazon Route 53 health checkers consider your specified endpoint to be unhealthy.

For more information, see [Monitoring Health Checks Using CloudWatch \(p. 351\)](#).

#### **June 11, 2013**

With this release, Amazon Route 53 adds support for creating alias resource record sets that route DNS queries to alternate domain names for Amazon CloudFront distributions. You can use this feature both for alternate domain names at the zone apex (example.com) and alternate domain names for subdomains (www.example.com). For more information, see [Routing Traffic to an Amazon CloudFront Web Distribution by Using Your Domain Name \(p. 322\)](#).

#### **May 30, 2013**

With this release, Amazon Route 53 adds support for evaluating the health of ELB load balancers and the associated Amazon EC2 instances. For more information, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

#### **March 28, 2013**

The documentation about health checks and failover was rewritten to enhance usability. For more information, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

#### **February 11, 2013**

With this release, Amazon Route 53 adds support for failover and health checks. For more information, see [Creating Amazon Route 53 Health Checks and Configuring DNS Failover \(p. 337\)](#).

## 2012 Release

#### **March 21, 2012**

With this release, Amazon Route 53 lets you create latency resource record sets. For more information, see [Latency-based Routing \(p. 234\)](#).

## 2011 Releases

#### **December 21, 2011**

With this release, the Amazon Route 53 console in the AWS Management Console lets you create an alias resource record set by choosing an Elastic Load Balancer from a list instead of manually entering the hosted zone ID and the DNS name of the load balancer. New functionality is documented in the *Amazon Route 53 Developer Guide*.

#### **November 16, 2011**

With this release, you can use the Amazon Route 53 console in the AWS Management Console to create and delete hosted zones, and to create, change, and delete resource record sets. New functionality is documented throughout the *Amazon Route 53 Developer Guide*, as applicable.

**October 18, 2011**

The *Amazon Route 53 Getting Started Guide* was merged into the *Amazon Route 53 Developer Guide*, and the *Developer Guide* was reorganized to enhance usability.

**May 24, 2011**

This release of Amazon Route 53 introduces alias resource record sets, which allow you to create zone apex aliases; weighted resource record sets; a new API (2011-05-05); and a service-level agreement. In addition, after six months in beta, Amazon Route 53 is now generally available. For more information, see the [Amazon Route 53 product page](#) and [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 235\)](#) in the *Amazon Route 53 Developer Guide*.

## 2010 Release

**December 5, 2010**

This is the first release of *Amazon Route 53 Developer Guide*.

# AWS Glossary

For the latest AWS terminology, see the [AWS Glossary](#) in the *AWS General Reference*.