
Amazon Route 53

Developer Guide

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Amazon Route 53: Developer Guide

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What Is Amazon Route 53?

Amazon Route 53 performs three main functions:

- **Domain registration** – Amazon Route 53 lets you register domain names such as example.com.
- **Domain Name System (DNS) service** – Amazon Route 53 translates friendly domains names like www.example.com into IP addresses like 192.0.2.1. Amazon Route 53 responds to DNS queries using a global network of authoritative DNS servers, which reduces latency.
- **Health checking** – Amazon Route 53 sends automated requests over the Internet to your application to verify that it's reachable, available, and functional.

You can use any combination of these functions. For example, you can use Amazon Route 53 as both your registrar and your DNS service, or you can use Amazon Route 53 as the DNS service for a domain that you registered with another domain registrar.

Domain Registration

If you want to create a website, 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. For more information, see [Registering Domain Names Using Amazon Route 53 \(p. 13\)](#).

If you already registered a domain name with another registrar, you can optionally transfer the domain registration to Amazon Route 53. This isn't required to use Amazon Route 53 as your DNS service or to configure health checking for your resources. For more information, see [Transferring Registration for a Domain to Amazon Route 53 \(p. 22\)](#).

Amazon Route 53 supports domain registration for a wide variety of generic top-level domains (such as .com or .org) and geographic top-level domains (such as .be or .us). For a complete list of supported top-level domains, see [Domains that You Can Register with Amazon Route 53 \(p. 30\)](#).

DNS Service

Amazon Route 53 is an authoritative DNS service, meaning that it routes Internet traffic to your website by translating friendly domain names like www.example.com into the 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 request is forwarded to the nearest Amazon Route 53 DNS server in a global

network of authoritative DNS servers. Amazon Route 53 responds with the IP address that you specified. For a list of the locations of Amazon Route 53 DNS servers, see **The Amazon Route 53 Global Network** section on the [Amazon Route 53 Product Details](#) page.

If you register a new domain name with Amazon Route 53, we automatically configure Amazon Route 53 as the DNS service for the domain, and we create a hosted zone for your domain. You add resource record sets to the hosted zone, which define how you want Amazon Route 53 to respond to DNS queries for your domain—for example, with the IP address for a web server, the IP address for the nearest CloudFront edge location, or the IP address for an Elastic Load Balancing load balancer. For more information, see [Working with Resource Record Sets \(p. 75\)](#).

If you registered your domain with another domain registrar, that registrar is likely providing the DNS service for your domain. You can transfer DNS service to Amazon Route 53, either with or without transferring registration for the domain. For information about transferring DNS service to Amazon Route 53, see [Configuring Amazon Route 53 as Your DNS Service \(p. 46\)](#).

If you're using Amazon CloudFront, Amazon S3, or Elastic Load Balancing, you can configure Amazon Route 53 to route Internet traffic to those resources. There's no charge for the DNS queries that Amazon Route 53 routes to CloudFront, Amazon S3, or Elastic Load Balancing. For information about routing queries to a variety of AWS resources, including Amazon EC2 instances, Amazon RDS databases, and Amazon WorkMail, see [Routing Queries to AWS Resources \(p. 56\)](#).

Health Checking

Amazon Route 53 health checks monitor the health of your resources such as web servers and email servers. You can configure CloudWatch alarms for your health checks, so that you receive notification when a resource becomes unavailable. You can also configure Amazon Route 53 to route Internet traffic away from resources that are unavailable. For more information about using Amazon Route 53 to monitor the health of your resources, see [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Hosted Zones

A hosted zone is a collection of resource record sets hosted by Amazon Route 53. Like a traditional DNS zone file, a hosted zone represents a collection of resource record sets that are managed together under a single domain name. Each hosted zone has its own metadata and configuration information.

The resource record sets contained in a hosted zone must share the same suffix. For example, the `example.com` hosted zone can contain resource record sets for `www.example.com` and `www.aws.example.com` subdomains, but cannot contain resource record sets for a `www.example.ca` subdomain.

You can use the Amazon Route 53 console or API to create, list, modify, and delete hosted zones and their resource record sets. The following table describes the actions you can perform on an Amazon Route 53 hosted zone and provides links to how-to and reference topics.

Action	Using the Amazon Route 53 Console	Using the Amazon Route 53 API
Create a hosted zone	See Creating a Public Hosted Zone (p. 62) .	See POST CreateHostedZone in the <i>Amazon Route 53 API Reference</i> .
Get information about the name servers for your hosted zone	See Getting the Name Servers for a Public Hosted Zone (p. 63) .	See GET GetHostedZone in the <i>Amazon Route 53 API Reference</i> .

Action	Using the Amazon Route 53 Console	Using the Amazon Route 53 API
Delete a hosted zone	See Deleting a Public Hosted Zone (p. 64).	See DELETE DeleteHostedZone in the <i>Amazon Route 53 API Reference</i> .
List your hosted zones	See Listing Public Hosted Zones (p. 64).	See GET ListHostedZones in the <i>Amazon Route 53 API Reference</i> .

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. 3)
- [Formatting Domain Names for Hosted Zones and Resource Record Sets](#) (p. 3)
- [Formatting Internationalized Domain Names](#) (p. 4)

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. 4).

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 \(p. 4\)](#).

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 \(p. 30\)](#). TLDs that don't support IDNs are noted.

Supported DNS Resource 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 \(p. 5\)](#)
- [AAAA Format \(p. 5\)](#)
- [CNAME Format \(p. 5\)](#)
- [MX Format \(p. 6\)](#)
- [NS Format \(p. 6\)](#)
- [PTR Format \(p. 6\)](#)
- [SOA Format \(p. 6\)](#)
- [SPF Format \(p. 7\)](#)
- [SRV Format \(p. 7\)](#)
- [TXT Format \(p. 7\)](#)

A Format

An A record `value` element must take the format of an IPv4 address in dotted decimal notation.

Example

```
<Value>192.0.2.1</Value>
```

AAAA Format

An AAAA record `value` element must take the format of an IPv6 address, in colon-separated hexadecimal format.

Example

```
<Value>2001:0db8:85a3:0:0:8a2e:0370:7334</Value>
```

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 ELB 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 \(p. 79\)](#).

Example

```
<Value>hostname.example.com</Value>
```

MX Format

An MX record `value` element consists of two fields: a decimal number that represents the priority of the MX record, and the domain name of a mail host, for example, `mail.example.com`.

Example

```
<Value>10 mail.example.com</Value>
```

NS Format

An NS record `value` element is the same format as a domain name.

Example

```
<Value>ns-1.example.com</Value>
```

PTR Format

A PTR record `value` element is the same format as a domain name.

Example

```
<Value>hostname.example.com</Value>
```

SOA Format

An SOA record `value` element consists of seven fields. The first two fields are formatted as domain names and represent the primary authority for the zone and the contact details for the zone administrator, respectively. The remaining five fields are decimal numbers representing the zone serial number, refresh time, retry time, expire time, and minimum time to live (TTL), respectively.

Example

```
<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

```
<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

```
<Value>10 5 80 hostname.example.com</Value>
```

TXT Format

A TXT record `value` element is a space separated list of double-quoted strings. A single string cannot exceed 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 escaping it.

Example

```
<Value>"this is a string" "a string with a \" quote in it" "a string with a  
\100 strange character in it"</Value>
```

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"
```

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 Resource Record Types \(p. 4\)](#).

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 you configure and the number of queries that Amazon Route 53 answers. For more information, see [Amazon Route 53 Pricing](#).

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 between the users in the account
- Assign unique security credentials to each user
- Granularly control users access to services and resources
- Get a single AWS bill for all users in the AWS Account

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 information about using Amazon Route 53 with IAM, see [Using IAM to Control Access to Amazon Route 53 Resources \(p. 158\)](#).

For general information about IAM, go to:

- [Identity and Access Management \(IAM\)](#)
- [IAM Getting Started Guide](#)
- [Using IAM](#)

Getting Started with Amazon Route 53

Getting started with Amazon Route 53 is easy: create an AWS account if you don't already have one, register a domain, and create some resource record sets, all in the Amazon Route 53 console. For a detailed explanation of the process, see [Registering a New Domain \(p. 14\)](#).

Note

If you want to migrate an existing domain or subdomain to use Amazon Route 53 as the DNS service, see [Configuring Amazon Route 53 as Your DNS Service \(p. 46\)](#).

You can access Amazon Route 53 using the Amazon Route 53 console, the Amazon Route 53 API, AWS SDKs, or the AWS command-line interface. For more information, see the applicable topic.

Topics

- [The Amazon Route 53 Console \(p. 10\)](#)
- [The Amazon Route 53 API \(p. 11\)](#)
- [AWS SDKs that Support Amazon Route 53 \(p. 11\)](#)
- [AWS Command Line Interface Support for Amazon Route 53 \(p. 11\)](#)
- [AWS Tools for Windows PowerShell Support for Amazon Route 53 \(p. 12\)](#)

The Amazon Route 53 Console

You can use the Amazon Route 53 console to create, delete, and list Amazon Route 53 hosted zones, resource record sets, and health checks.

Note

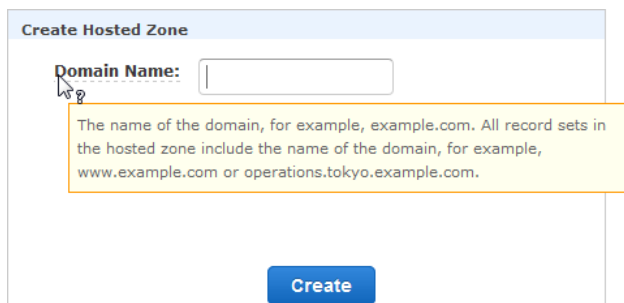
Some ad-blocking plugins for web browsers interfere with Amazon Route 53 console operations, which can cause the console to behave unpredictably. If you installed an ad-blocking plugin for your browser, we recommend that you add the URL for the Amazon Route 53 console, <https://console.aws.amazon.com/route53/home>,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


To access the Amazon Route 53 console

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

To display help for the Amazon Route 53 console

- To display help for a field, move the cursor over the field name.



- To display help for the current page in the console, click the help icon,  in the upper right corner of the Amazon Route 53 console.

The Amazon Route 53 API

The Amazon Route 53 API is a REST API that you can use to create, delete, and list Amazon Route 53 hosted zones and resource record sets. (When using the API, you change a resource record set by deleting the existing one and creating a new one.) For information about the Amazon Route 53 API, see the [Amazon Route 53 API Reference](#). For information about how to use the API, including how to authenticate REST requests, see [Making API Requests](#) in the *Amazon Route 53 API Reference*.

AWS SDKs that Support Amazon Route 53

The following AWS SDKs include a client for Amazon Route 53:

- AWS SDK for Java version 1.2.13 and later. For more information, see [AWS SDK for Java](#).
- AWS SDK for .NET version 1.4.1 and later. For more information, see [AWS SDK for .NET](#).
- AWS SDK for PHP version 2.0.3 and later. For more information, see [AWS SDK for PHP](#).
- AWS SDK for Python version 2.0 and later. For more information, see [boto on github](#).
- AWS SDK for Ruby version 1.6.0 and later. For more information, see [AWS SDK for Ruby](#).

AWS Command Line Interface Support for Amazon Route 53

The AWS command line interface (AWS CLI) supports Amazon Route 53. For information about getting set up to use the AWS CLI, see the [AWS Command Line Interface User Guide](#). For information about AWS CLI commands for Amazon Route 53, see [route53 Available Commands](#) in the *AWS Command Line Interface Reference*.

AWS Tools for Windows PowerShell Support for Amazon Route 53

AWS Tools for Windows PowerShell supports Amazon Route 53. For more information, see [AWS Tools for Windows PowerShell Documentation](#).

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 use the Amazon Route 53 API or one of the AWS SDKs. For more information about API actions for domain registration, see [Actions on Domain Registrations](#) in the *Amazon Route 53 API Reference*. For a list of the AWS SDKs that support Amazon Route 53 and for links to the corresponding SDK pages on the AWS website, see [AWS SDKs that Support Amazon Route 53](#) (p. 11).

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.

Topics

- [Registering and Updating Domains](#) (p. 13)
- [Privacy Protection for Contact Information](#) (p. 21)
- [Transferring Domains](#) (p. 21)
- [Getting a Domain Name Unsuspended](#) (p. 29)
- [Deleting a Domain Name Registration](#) (p. 30)
- [Domains that You Can Register with Amazon Route 53](#) (p. 30)

Registering and Updating Domains

For information about registering new domains and updating the settings in existing domains, see the applicable topic.

Topics

- [Registering a New Domain \(p. 14\)](#)
- [Values that You Specify When You Register a Domain or Edit Domain Settings \(p. 16\)](#)
- [Values that Amazon Route 53 Returns When You Register or Update a Domain \(p. 18\)](#)
- [Viewing the Status of a Domain Registration \(p. 18\)](#)
- [Adding Resource Record Sets for a New Domain \(p. 19\)](#)
- [Editing Contact Information and Other Settings for a Domain \(p. 19\)](#)
- [Adding or Changing Name Servers and Adding or Changing Glue Records \(p. 20\)](#)

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 about Amazon Route 53 pricing, see [Amazon Route 53 Pricing](#).

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, choose **Get Started Now** under **Domain Registration**.
If you're already using Amazon Route 53, choose **Registered Domains** in the navigation pane.
3. Click **Register Domain**.
4. Enter the domain name that you want to register, and click **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 \(p. 3\)](#).

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

The **Availability of popular TLDs** 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. Click **Add to Cart** for each additional domain that you want to register, up to a maximum of five domains.

6. Click **Continue**.
7. 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 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 or Edit Domain Settings \(p. 16\)](#).

8. 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.
9. Click **Continue**.
10. Review the information you entered, read the terms of service, and check the check box to confirm that you've read the terms of service.
11. Click **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 `noreply@domainnameverification.net`.

Important

You must follow the instructions in the email to verify that you received it, or your domain names will be suspended.

We'll send you 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 \(p. 18\)](#).

12. 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** – Create resource record sets to tell Amazon Route 53 how you want to route traffic for the domain. For more information, see [Adding Resource Record Sets for a New Domain \(p. 19\)](#).
 - **Another DNS service** – Configure your new domain to route DNS queries to the other DNS service. Perform the next procedure, [To update the name servers for your domain when you want to use another DNS service \(p. 15\)](#).

If you want to use another DNS service provider for your new domain, perform the following procedure to configure Amazon Route 53 to route DNS queries for the domain to your DNS service.

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. Choose 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 or Edit Domain Settings

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

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.

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.

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, and you can't set **Privacy Protection** to **Yes**.

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:

- **noreply@domainnameverification.net** – for all TLDs except `.com.au` and `.net.au`
- **domains@tppwholesale.com.au** – for `.com.au` and `.net.au` domain names
- **nic@nic.fr** – if you're changing the registrant contact for a `.fr` domain name. The email is sent both to the current registrant contact and the new registrant contact.

Important

The registrant contact must follow the instructions in the email to confirm that the email was received, or the domain name will be suspended.

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:

- **noreply@domainnameverification.net** – for all TLDs except `.com.au`, `.net.au`, and `.fr`
- **domains@tppwholesale.com.au** – for `.com.au` and `.net.au` domain names

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.

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Values that You Specify When You Register a Domain or Edit Domain Settings

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. See CountryCode.org for a list of phone country codes, for example, **423** for Liechtenstein.

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.

City

The city for the contact.

State

The state or province for the contact, if any.

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 **Yes**, WHOIS ("who is") queries will return contact information for our registrar partner, Gandi, instead of the contact information that you enter. If you select **No**, 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 **Yes** for **Privacy Protection**. If **Contact type** is any value except **Person**, you can't conceal your contact information.

For more information, see [Privacy Protection for Contact Information \(p. 21\)](#).

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.

Caution

Amazon Route 53 doesn't have a manual renewal process, so if you disable automatic renewal, registration for the domain will not be renewed when the expiration date passes, and you will lose control of the domain name.

The period during which you can renew a domain name varies by top-level domain (TLD). For a list of TLDs and their renewal policies, see [Renewal, restoration, and deletion times](#) on the website for our registrar partner, Gandi. Amazon Route 53 requires that you renew before the end of the renewal period that is listed on the Gandi website so we can complete processing the renewal before the deadline.

Values that Amazon Route 53 Returns When You Register or Update 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.

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 AWS 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 \(p. 27\)](#).

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 [Editing Contact Information and Other Settings for a Domain \(p. 19\)](#).

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, click **Registered Domains**.
3. Click 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.)

Adding Resource Record Sets for a New Domain

As soon as you receive email confirmation that we successfully registered the domain for you, you can start to create resource record sets for the domain. These resource record sets tell Amazon Route 53 how you want to route queries for your domain. For example, when someone enters your domain name in a browser and that query makes its way 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?

When you register your domain with Amazon Route 53, we automatically create a hosted zone for the new domain. This hosted zone, which has the same name as your domain, is the container in which Amazon Route 53 will store the resource record sets for your domain. For more information about how to create resource record sets, see [Working with Resource Record Sets \(p. 75\)](#).

Editing Contact Information and Other Settings for a Domain

When you want to edit settings for a domain that you registered using Amazon Route 53, perform the following procedure.

To edit contact information and other settings 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, click **Registered Domains**.
3. Click the name of the domain for which you want to edit settings.
4. Edit the applicable values:

Edit Contacts

To edit contact information, including the privacy-protection setting for a contact, click **Edit Contacts**. For more information, see [Values that You Specify When You Register a Domain or Edit Domain Settings \(p. 16\)](#).

Transfer Lock

To change whether the domain is locked to prevent an unauthorized transfer to another registrar, click **Enable** (to lock the domain) or **Disable** (to unlock the domain).

Auto Renew

To change whether Amazon Route 53 automatically renews the registration for your domain before the expiration date, click **Enable** (to turn on automatic renewal) or **Disable** (to turn off automatic renewal).

Add/Edit Name Servers

To edit name servers, click **Add/edit name servers** and enter the applicable values. Then click **Update**. For more information about editing name servers, see [Adding or Changing Name Servers and Adding or Changing Glue Records \(p. 20\)](#).

5. When you're finished, click **Save**.

If you changed contact information, we send an email to the registrant for the domain to verify that you wanted to make the changes. (This is an ICANN requirement.) The email comes from one of the following email addresses:

- **noreply@domainnameverification.net** – for all TLDs except .com.au, .net.au, and .fr
- **domains@tppwholesale.com.au** – for .com.au and .net.au domain names
- **nic@nic.fr** – for .fr domain names. The email is sent both to the current registrant contact and the new registrant contact.

Important

You must click the link in the email within 15 days, or we must suspend the domain as required by ICANN. When a domain is suspended, it's not accessible on the Internet.

Adding or Changing Name Servers and Adding or Changing Glue Records

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 \(p. 65\)](#).

Caution

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

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 **Registered Domains**.
3. Click the name of the domain for which you want to edit settings.
4. Click **Add/Edit Name Servers**.
5. 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.
 - Delete a name server. Click the x icon on the right side of the field for that name server.

6. Click **Update**.

Privacy Protection for Contact Information

When you register a domain with Amazon Route 53, we automatically enable privacy protection, which typically hides most of your contact information from WHOIS queries and reduces the amount of spam that you receive. If privacy protection is disabled, anyone can send a WHOIS query for a domain and, for most top-level domains, get all of the contact information that you specified when you registered the domain, including your 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.
- **Contact type** – If the contact type is **Person**, you typically can hide some or all of your contact information. If the contact type is some other value, you must provide an organization name, and you can't hide contact information for that organization.

If you choose to hide your contact information for a domain that you're registering with Amazon Route 53, the values that can be hidden are replaced either with contact information for Gandi, our registrar partner, or with the value "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 another registrar, contact information for the domain must be available.

Proxy Services and Privacy Services

ICANN, the governing body for domain name registration, distinguishes between two types of registrar services for protecting your contact information:

- **Proxy services** – Registrars that offer proxy services are allowed to hide all of your contact information, including your name. These services actually own your domain, which allows them to substitute their contact information for yours when submitting that information to the registry for a TLD.
- **Privacy services** – Registrars that offer privacy services, including Gandi, the registrar partner for Amazon Route 53, can hide most of your contact information except for your name and organization. You own your domain, so your ability to hide contact information depends on the rules for the TLD registry.

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. See the applicable topic.

Topics

- [Transferring Registration for a Domain to Amazon Route 53 \(p. 22\)](#)
- [Viewing the Status of a Domain Transfer \(p. 25\)](#)

- [How Transferring a Domain to Amazon Route 53 Affects the Expiration Date for Your Domain Registration](#) (p. 26)
- [Transferring a Domain to a Different AWS Account](#) (p. 27)
- [Transferring a Domain from Amazon Route 53 to Another Registrar](#) (p. 27)

Transferring Registration for a Domain to Amazon Route 53

When you transfer a domain name from another registrar to Amazon Route 53, you need to get some information from your current registrar and enter it in the Amazon Route 53 console. Amazon Route 53 and our registrar partner, Gandi, do the rest.

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. 26). By default, Amazon Route 53 automatically renews registration for the domain. For information about changing this setting, see [Editing Contact Information and Other Settings for a Domain](#) (p. 19).

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. For more information, see [Amazon Route 53 Pricing](#).

Transfer Requirements for Top-Level Domains

Registries for top-level domains (such as .com) have requirements for transferring domains. 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
- Some registries block transfers until changes, such as ownership changes, are complete.

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.)

Transferring a Domain to Amazon Route 53

To transfer a domain to Amazon Route 53, perform the following procedure.

To transfer a domain to Amazon Route 53 from another registrar

1. Confirm that Amazon Route 53 supports the top-level domain (for example, .com or .org) for the domain name that you want to transfer. For more information, see [Domains that You Can Register with Amazon Route 53](#) (p. 30). If your top-level domain isn't on the list, you can't currently transfer the domain name to Amazon Route 53.

2. If the registrar for your domain is also the DNS service provider for the domain, we highly recommend that you consider transferring your DNS service to Amazon Route 53 or another DNS service provider before you transfer your registration. 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 could end your DNS service at any time. For more information, see [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 46\)](#).

Caution

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.

3. Using the method provided by your current registrar, perform the following tasks for each domain that you want to transfer:
 - Unlock the domain so it can be transferred.
 - Disable privacy protection for the domain. This makes your contact information visible to WHOIS queries.
 - Confirm that the email for the registrant for your domain is up to date. That's the email address at which we'll contact you with information about the progress of the transfer.
 - Confirm that the domain status allows you to transfer the domain. For more information, see [Transfer Requirements for Top-Level Domains \(p. 22\)](#).
 - Get an authorization code, which 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.

.co.uk, .me.uk, and .org.uk domains – If you're transferring a .co.uk, .me.uk, or .org.uk domain to Amazon Route 53, you don't need to specify 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 specify 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.

4. If you're already using Amazon Route 53 as the DNS service provider for the domains that you want to transfer, get the names of the Amazon Route 53 name servers for each of the corresponding hosted zones. For more information, see [Getting the Name Servers for a Public Hosted Zone \(p. 63\)](#). Then skip to the next step.

If you want to continue using another DNS service provider for the domains that you're transferring, use the method provided by your current DNS service provider to get the names of the name servers for each domain that you want to transfer.

5. Open the Amazon Route 53 console at <https://console.aws.amazon.com/route53/>.
6. In the navigation pane, click **Registered Domains**.
7. Click **Transfer Domain**.
8. Enter the name of the domain for which you want to transfer registration to Amazon Route 53, and click **Check**.
9. If the domain is available for transfer, click **Add to Cart**.

If the domain 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 your domain.

10. If you want to transfer other domains, repeat steps 8 and 9.
11. When you've added all of the domains that you want to transfer, click **Continue**.

12. 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 of this procedure.

Name Servers

Enter the names of the name servers that you got from the DNS service for the domain in step 4 of this procedure. If you're using Amazon Route 53 as your DNS service provider, enter all four of the name servers that Amazon Route 53 assigned to the hosted zone for your domain.

13. 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 of 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 or Edit Domain Settings \(p. 16\)](#).

14. 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.
15. Click **Continue**.
16. Review the information you entered, read the terms of service, and check the check box to confirm that you've read the terms of service.
17. Click **Complete Purchase**.

We confirm that the domain is eligible for transfer, and we send the registrant for the domain an email to confirm that the registrant requested the transfer. The email comes from one of the following email addresses:

- **noreply@domainnameverification.net** – for all TLDs except .com.au and .net.au
- **domains@tppwholesale.com.au** – for .com.au and .net.au domain names
- **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.

Important

You must follow the instructions in the email to verify that you received it, or your domain names will be suspended.

We then start to work with your current registrar to transfer your domain. If your current registrar doesn't reply to our transfer request, which is common among registrars, the transfer happens automatically after five to seven days. If your current registrar rejects the transfer request for some reason, we'll email the current registrant so you can contact your current registrar and resolve their issues with the transfer.

When your domain transfer has been approved, we'll send another email to the registrant contact. For more information about the process, see [Viewing the Status of a Domain Transfer \(p. 25\)](#).

We charge your AWS account for the domain transfer as soon as the transfer is complete. This is a one-time charge, so the charge doesn't appear in your CloudWatch billing metrics. For a list of charges by TLD, see [Amazon Route 53 Pricing for Domain Registration](#).

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.

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're waiting for the registrant contact of the domain to authorize the transfer (see step 3). If the registrant contact does not receive the email, confirm that the current registrar for the domain has the correct email address for the registrant contact.

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. 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:
 - clientTransferProhibited
 - pendingDelete
 - pendingTransfer
 - redemptionPeriod

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 you provided different name servers as part of the transfer request than the name servers 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 partner.

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 to another registrar, 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.

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 Affect 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. .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:

- The domain that you want to transfer
- The account ID of the AWS account that the domain is currently registered to
- The 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. Click **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

Typically 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 **epb 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. 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 **Registered Domains**.
3. Click the name of the domain that you want to transfer to another registrar.
4. 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 **epb status codes**. (Search on the ICANN website; web searches sometimes return an old version of the document.)

5. If the value of **Transfer lock** is **Enabled**, click **Disable**.
6. Click **Edit contacts**.
7. On the **Edit Contact Details for domain name** page, change **Privacy Protection** to **No** for all contacts.

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

8. Click **Save**.
9. On the **Your Domains > domain name** page, at **Authorization Code**, click **Generate** and make note of the authorization code. You'll provide this value to your registrar later in this procedure.
10. Click **OK** to close the dialog box.
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. Click **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, create a hosted zone and resource record sets to reproduce the functionality of your Amazon Route 53 resource record sets.
13. Using the process provided by the new registrar, request that the domain be transferred. You'll be prompted to enter the authorization code that you got from the Amazon Route 53 console in step 9.

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.

Getting a Domain Name Unsuspended

When you register a domain with Amazon Route 53 or transfer a domain from another registrar to Amazon Route 53, we send you a confirmation email. This email includes instructions about how to verify that we have a valid email address for the registrant contact. The email comes from `noreply@domainnameverification.net`.

If you don't respond to the email within 15 days—for example, because the email ended up in your junk email folder—ICANN requires us to suspend the domain, meaning that it's no longer available on the Internet. To get the domain unsuspended, perform the following procedure to request another copy of the email, and follow the instructions in the email.

To get a domain unsuspended

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 **Registered Domains**.
3. Click the name of the domain that you want to get unsuspended.
4. On the **Registered Domains > domain-name** page, click **Send Email Again**.

Important

If the domain was suspended for abuse, the **Send Email Again** button isn't available. You must open a case with the [AWS Support Center](#). Accept the default values for **Regarding**, **Service**, and **Category**, and enter the applicable information for **Subject**, **Description**, and **Contact Method**.

5. Follow the instructions in the email.

Typically, after you respond to the email, the domain is unsuspended in less than 30 minutes, but it can take up to two hours.

Deleting a Domain Name Registration

If you no longer want to have a domain name registered to you, you can delete the registration. Perform the following procedure.

Important

If you delete a domain name registration, our registrar partner, Gandi, might retain the rights to the domain for a brief time, which allows you to change your mind. However, if you decide to reacquire the domain name, there might be a substantial charge, depending on the top-level domain. If you delete a domain name registration before the registration was scheduled to expire, we will not refund the registration fee.

The registries for some TLDs don't allow you to delete a domain name registration. To determine whether you can delete the registration for your domain, see [Domains that You Can Register with Amazon Route 53 \(p. 30\)](#).

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, click **Registered Domains**.
3. Click the name of your domain.
4. Click **Delete Domain**.
5. If the registry for your TLD allows deleting a domain name registration, click **Delete Domain**.

If the registry doesn't allow deleting a domain name registration, disable automatic renewal of domain registration for this domain. For the **Auto Renew** option, if the current value is **Enabled**, click **Disable**. When the **Expires on** date passes, Amazon Route 53 will automatically delete the registration for the domain.

Domains that You Can Register with Amazon Route 53

The following lists show the top-level domains (TLDs) for which you can register domains with Amazon Route 53.

Topics

- [Generic Top-Level Domains \(p. 31\)](#)
- [Geographic Domains \(p. 38\)](#)

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). In the following list, gTLDs that don't support IDNs are noted. For more information about internationalized domain names, see [DNS Domain Name Format](#) (p. 3).

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

A

[.academy](#), [.agency](#)

.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.

.agency

Used by any businesses or groups that identify as agencies.

B

[.bargains](#), [.bike](#), [.biz](#), [.blue](#), [.boutique](#), [.builders](#), [.buzz](#)

.bargains

Used for information about sales and promotions.

.bike

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

.biz

Used for business or commercial use.

Internationalized domain names are not supported for .biz domains.

.blue

Used by those who like the color blue or those who want to associate the color blue with their business or brand.

.boutique

Used for information about boutiques and small specialty shops.

.builders

Used by companies and individuals affiliated with the construction industry.

.buzz

Used for information about the latest news and events.

C

[.cab](#), [.camera](#), [.camp](#), [.careers](#), [.center](#), [.ceo](#), [.cheap](#), [.clothing](#), [.club](#), [.codes](#), [.coffee](#), [.com](#), [.company](#), [.computer](#), [.condos](#), [.construction](#), [.contractors](#), [.cool](#), [.cruises](#)

.cab

Used by companies and individuals affiliated with the taxicab industry.

.camera

Used by photography enthusiasts and anyone who wants to share photos.

.camp

Used by parks and recreation departments, summer camps, writers' workshops, fitness camps, and camping enthusiasts.

.careers

Used for information about job recruitment.

.center

Used as a generic extension for everything from research organizations to community centers.

.ceo

Used for information about CEOs and their equals.

.cheap

Used by e-commerce websites to promote and sell inexpensive products.

.clothing

Used by those in the fashion industry, including retailers, department stores, designers, tailors, and outlets.

.club

Used by any type of club or organization.

.codes

Used as a generic extension for all kinds of code, such as codes of conduct, building codes, or programming code.

.coffee

Used by those in the coffee industry.

.com

Used by commercial sites. It is the most popular extension on the Internet.

.company

Used as a generic extension for companies of all kinds.

.computer

Used as a generic extension for information about computers.

.condos

Used by individuals and businesses associated with condominiums.

.construction

Used by those in the construction industry, such as builders and contractors.

.contractors

Used by contractors, such as contractors in the construction industry.

.cool

Used by organizations and groups who want to associate their brand with the latest trends.

.cruises

Used by the voyage industry.

D

[.dance](#), [.dating](#), [.democrat](#), [.diamonds](#), [.directory](#), [.domains](#)

.dance

Used by dancers, dance instructors, and dance schools.

.dating

Used by dating sites.

.democrat

Used for information about the Democratic Party. Also used by officials running for elected office, elected officials, political enthusiasts, consultants, and advisors.

.diamonds

Used by diamond enthusiasts and those in the diamond industry, including sellers, resellers, and merchandizers.

.directory

Used by the media sector.

.domains

Used for information about domain names.

E

[.education](#), [.email](#), [.enterprises](#), [.equipment](#), [.estate](#), [.events](#), [.expert](#), [.exposed](#)

.education

Used for information about education.

.email

Used for information about promoting email.

.enterprises

Used for information about enterprises and businesses.

.equipment

Used for information about equipment, equipment retailers or manufacturers, and rental shops.

.estate

Used for information about housing and the housing sector.

.events

Used for information about events of all kinds.

.expert

Used by those who have specialized knowledge in a variety of fields.

.exposed

Used as a generic extension for a variety of subjects, including photography, tabloids, and investigative journalism.

F

[.farm](#), [.flights](#), [.florist](#), [.foundation](#), [.futbol](#)

.farm

Used by those in the farming industry, such as farmers and agricultural engineers.

.flights

Used by travel agents, airlines, and anyone affiliated with the travel industry.

.florist

Used by florists.

.foundation

Used by non-profit organizations, charities, and other kinds of foundations.

.futbol

Used for information about soccer (futbol).

G

[.gallery](#), [.gift](#), [.glass](#), [.graphics](#), [.guitars](#), [.guru](#)

.gallery

Used by owners of art galleries.

.gift

Used for information about gifts.

.glass

Used by those in the glass industry, such as glass cutters and window installers.

.graphics

Used by those in the graphics industry.

.guitars

Used by guitar enthusiasts.

.guru

Used by those who want to share their knowledge about a variety of subjects.

H

[.holdings](#), [.holiday](#), [.house](#)

.holdings

Used by financial advisors, stockbrokers, and those who work with investments.

.holiday

Used by those in the travel industry and individuals and businesses involved in party planning and special occasions.

.house

Used by real estate agents and buyers and sellers of houses.

I,J

[.immobilien](#), [.info](#), [.ink](#), [.institute](#), [.international](#)

.immobilien

Used for information about real estate.

.info

Used for the dissemination of information.

Internationalized domain names are not supported for .info domains.

.ink

Used by tattoo enthusiasts or any industry related to ink, such as printing and publishing industries.

.institute

Used by any organization or group, especially research and educational organizations.

.international

Used by businesses that have international chains, individuals who travel internationally, or charity organizations with an international influence.

K

[.kaufen](#), [.kim](#), [.kitchen](#), [.kiwi](#)

.kaufen

Used for information about e-commerce.

.kim

Used by people whose name or surname is Kim.

Internationalized domain names are not supported for .kim domains.

.kitchen

Used by kitchen retailers, cooks, food bloggers, and anyone in the food industry.

.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.

L

[.land](#), [.lighting](#), [.limo](#), [.link](#)

.land

Used by farmers, real estate agents, commercial developers, and anyone with an interest in property.

.lighting

Used by photographers, designers, architects, engineers, and others with an interest in lighting.

.limo

Used by chauffeurs, limousine companies, and car rental agencies.

.link

Used for information about the creation of online shortcut links.

M

[.maison](#), [.management](#), [.marketing](#), [.mobi](#), [.moda](#)

.maison

Used by the real estate sector.

.management

Used for information about the business world and company management.

.marketing

Used by the marketing sector for a variety of purposes.

.mobi

Used by companies and individuals who want to have their websites accessible on mobile phones.

Internationalized domain names are not supported for .mobi domains.

.moda

Used for information about fashion.

N

[.net](#), [.ninja](#)

.net

Used for all types of sites. The .net extension is an abbreviation of network.

.ninja

Used by individuals and businesses who want to associate themselves with the abilities of a ninja.

O

[.onl](#), [.org](#)

.onl

The .onl extension is an abbreviation for "online," and it is also the short term in Spanish for non-profit organization.

.org

Used by all kinds of organizations.

Internationalized domain names are not supported for .org domains.

P

[.partners](#), [.photo](#), [.photography](#), [.photos](#), [.pics](#), [.pink](#), [.plumbing](#), [.productions](#), [.properties](#), [.pub](#)

.partners

Used by law firms, investors, and a variety of companies. Also used by social sites that build relationships.

.photo

Used by photographers and anyone interested in photos.

.photography

Used by photographers and anyone interested in photos.

.photos

Used by photographers and anyone interested in photos.

.pics

Used by photographers and anyone interested in photos.

.pink

Used by those who like the color pink or those who want to associate the color pink with their business or brand.

Internationalized domain names are not supported for .pink domains.

.plumbing

Used by those in the plumbing sector.

.productions

Used by studios and production houses that make commercials, radio ads, and music videos.

.properties

Used by those who have houses, buildings, or land to sell, lease, or rent.

.pub

Used by those in the publication, advertising, or brewing business.

Q

[.qpon](#)

.qpon

Used for coupons and promo codes.

R

[.recipes](#), [.red](#), [.rentals](#), [.repair](#), [.reviews](#)

.recipes

Used by those with recipes to share.

.red

Used by those who like the color red or those who want to associate the color red with their business or brand.

Internationalized domain names are not supported for .red domains.

.rentals

Used for all types of rentals.

.repair

Used by repair services or by those who want to teach others how to repair all kinds of items.

.reviews

Used by those who want give their opinions and read the comments of others.

S

[.sexy](#), [.shiksha](#), [.shoes](#), [.singles](#), [.social](#), [.solar](#), [.solutions](#), [.support](#), [.systems](#)

.sexy

Used for sexual content. Also used for describing the most popular and exciting brands, products, information, and websites.

.shiksha

The term *shiksha* is an Indian term for school. The .shiksha extension is used by educational institutions.

Internationalized domain names are not supported for .shiksha domains.

.shoes

Used by shoe retailers, designers, manufacturers, or fashion bloggers.

.singles

Used by dating services, resorts, and other businesses that cater to those who want to make a connection.

.social

Used for information about social media, forums, and online conversations.

.solar

Used for information about the solar system or solar energy.

.solutions

Used by consultants, do-it-yourself services, and advisors of all kinds.

.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.

.systems

Used primarily by the technology industry and those who offer technology services.

T

[.tattoo](#), [.technology](#), [.tienda](#), [.tips](#), [.today](#), [.training](#), [.tv](#)

.tattoo

Used by tattoo enthusiasts and the tattoo industry.

.technology

Used by technology enthusiasts and those dedicated to technology in companies, services, and manufacturers.

.tienda

Used by retail businesses that want to connect with Spanish-speaking consumers.

.tips

Used by those who want to share their knowledge and advice on virtually any topic.

.today

Used for information about current events, news, weather, entertainment, and more.

.training

Used by trainers, coaches, and educators.

.tv

Used for information about television and media.

U

[.uno](#)

.uno

Used for information about the Hispanic, Portuguese, and Italian communities.

V

[.vacations](#), [.ventures](#), [.viajes](#), [.villas](#), [.voyage](#)

.vacations

Used by the travel and tourism industry.

.ventures

Used by entrepreneurs, startups, venture capitalists, investment banks, and financiers.

.viajes

Used by travel agencies, tour operators, travel blogs, tour companies, rental services, travel bloggers, and travel retailers.

.villas

Used by real estate agents and property owners who have villas to sell, rent, or lease.

.voyage

Used by travel agencies, tour operators, travel blogs, tour companies, rental services, travel bloggers, and travel retailers.

W,X,Y,Z

[.watch](#), [.wiki](#), [.works](#), [.zone](#)

.watch

Used for information about streaming websites, web TVs, video, or watches.

.wiki

Used for information about online documentation.

.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.

.zone

Used for information about any kind of zone, including time zones, climate zones, and sports zones.

Geographic 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). In the following list, ccTLDs that don't support IDNs are noted. For more information about internationalized domain names, see [DNS Domain Name Format \(p. 3\)](#).

Geographic Regions

- [Africa \(p. 39\)](#)
- [Americas \(p. 39\)](#)
- [Asia/Oceania \(p. 40\)](#)
- [Europe \(p. 43\)](#)

Africa

[.co.za](#)

.co.za (South Africa)

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.

Americas

[.ca](#), [.cl](#), [.co](#), [.com.ar](#), [.com.br](#), [.mx](#), [.us](#)

.ca (Canada)

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.
- 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.

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 \(p. 30\)](#).

.cl (Chile)

Open to the public, with some restrictions:

- The .cl extension is open to individuals who are present or a resident of Chile and to companies that are duly authorized to perform business in Chile.
- A local administrative contract is required for persons who do not reside in Chile.

Internationalized domain names are not supported for .cl domains.

.co (Colombia)

Open to the public, with no restrictions.

.com.ar (Argentina)

Only second-level domains are available. Amazon Route 53 supports the second-level domain .com.ar. This domain is open to the public, with some restrictions:

- A local presence is required.
- During the registration process, you must provide your ID number. For individuals, this might be your passport number, national ID, or driver's license number. Companies and organizations can provide their tax ID or VAT number.

.com.br (Brazil)

Only second-level domains are available. Amazon Route 53 supports the second-level domain .com.br. This domain is open to the public, with some restrictions:

- The .com.br is open to individuals and companies that are legally located or established in Brazil.

.mx (Mexico)

Open to the public, with no restrictions.

Internationalized domain names are not supported for .mx domains.

.us (United States)

Open to the public, with some restrictions:

- The .us extension is for websites or activities that are located in the United States of America.

Internationalized domain names are not supported for .us domains.

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](#).

Asia/Oceania

[.co.nz](#), [.com.au](#), [.com.sg](#), [.in](#), [.jp](#), [.io](#), [.net.au](#), [.net.nz](#), [.org.nz](#), [.ru](#), [.sg](#)

.co.nz (New Zealand)

Only second-level domains are available. Amazon Route 53 supports the following second-level domains: .co.nz, .net.nz, and .org.nz. These domains are open to the public, with some restrictions:

- Individuals must be at least 18.
- Organizations must be registered.

.com.au (Australia)

Only second-level domains are available. Amazon Route 53 supports the second-level domains .com.au and net.au. These domains are 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), RBN (Registered Business 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.

Our registrar partner, Gandi, resells .com.au domains through the Australian company TPP Wholesale. When you register a .com.au domain name with Amazon Route 53 or 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.

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 \(p. 30\)](#).

.com.sg (Republic of Singapore)

Amazon Route 53 supports the .sg extension plus a second-level domain, .com.sg. These domains are open to the public, with some restrictions:

- A Singapore presence is required. You must provide the national identification number of the registrant. In Singapore, a National Registration Identity Card (NRIC) is issued to Singapore citizens and permanent residents.

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 \(p. 30\)](#).

.in (India)

Open to the public, with no restrictions.

Internationalized domain names are not supported for .in domains.

.jp (Japan)

Open to the public, with some restrictions:

- Only individuals or companies in Japan can register a .jp domain name.

To transfer a .jp domain to Amazon Route 53, use the method provided by your current domain registrar to update the value of the AGNT code for the domain to **AGNT-1744**, all uppercase.

.io (British Indian Ocean Territory)

Open to the public, with no restrictions.

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 \(p. 30\)](#).

.net.au (Australia)

Only second-level domains are available. Amazon Route 53 supports the second-level domains .com.au and net.au. These domains are 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), RBN (Business Registration 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.

Our registrar partner, Gandi, resells .net.au domains through the Australian company TPP Wholesale. When you register a .net.au domain name with Amazon Route 53 or 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.

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 \(p. 30\)](#).

.net.nz (New Zealand)

Only second-level domains are available. Amazon Route 53 supports the following second-level domains: .co.nz, .net.nz, and .org.nz. These domains are open to the public, with some restrictions:

- Individuals must be at least 18.
- Organizations must be registered.

.org.nz (New Zealand)

Only second-level domains are available. Amazon Route 53 supports the following second-level domains: .co.nz, .net.nz, and .org.nz. These domains are open to the public, with some restrictions:

- Individuals must be at least 18.
- Organizations must be registered.

.ru (Russian Federation)

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.

Internationalized domain names are not supported for .ru domains.

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 \(p. 30\)](#).

.sg (Republic of Singapore)

Amazon Route 53 supports the .sg extension plus a second-level domain, .com.sg. These domains are open to the public, with some restrictions:

- The administrative contact must have a valid postal address in Singapore.

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 \(p. 30\)](#).

Europe

.be, .berlin, .ch, .co.uk, .de, .es, .eu, .fi, .fr, .it, .me, .me.uk, .nl, .org.uk, .ruhr, .se, .wien

.be (Belgium)

Open to the public, with no restrictions.

.berlin (city of Berlin in Germany)

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.

.ch (Switzerland)

Open to the public, with no restrictions.

.co.uk (United Kingdom)

Open to the public, with no restrictions. To transfer a .co.uk domain to Amazon Route 53, use the method provided by your current domain registrar to update the value of the Internet Provider Security (IPS) tag for the domain to **GANDI**, all uppercase. (An IPS tag, also known as a registrar tag, is required by Nominet, the registry for .co.uk domain names.) When you register a .co.uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

Internationalized domain names are not supported for .co.uk domains.

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. 30).

.de (Germany)

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.

.es (Spain)

Open to the public, for those who have an interest in or connection with Spain.

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**.

.eu (European Union)

Open to the public, with some restrictions:

- You must provide a valid postal address in one of the 27 member-states of the European Union. A local presence is required.

.fi (Finland)

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.

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 \(p. 30\)](#).

.fr (France)

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, agglo, cc, cg, and cr are subject to AFNIC naming conventions.

.it (Italy)

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).
- You might need to enter a VAT number (a value-added tax identification number), depending on whether you are registering as an individual or as a company.
- Your domain name 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.

.me (Montenegro)

Open to the public, with no restrictions.

Internationalized domain names are not supported for .me domains.

.me.uk (United Kingdom)

Open to the public, with no restrictions. To transfer a .me.uk domain to Amazon Route 53, use the method provided by your current domain registrar to update the value of the Internet Provider Security (IPS) tag for the domain to **GANDI**, all uppercase. (An IPS tag, also known as a registrar tag, is required by Nominet, the registry for .me.uk domain names.) When you register a .me.uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

Internationalized domain names are not supported for .me.uk domains.

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 \(p. 30\)](#).

.nl (the Netherlands)

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.

Internationalized domain names are not supported for .nl domains.

.org.uk (United Kingdom)

Open to the public, with no restrictions. To transfer a .org.uk domain to Amazon Route 53, use the method provided by your current domain registrar to update the value of the Internet Provider Security (IPS) tag for the domain to **GANDI**, all uppercase. (An IPS tag, also known as a registrar tag, is required by Nominet, the registry for .org.uk domain names.) When you register a .org.uk domain, Amazon Route 53 automatically sets the IPS tag for the domain to **GANDI**.

Internationalized domain names are not supported for .org.uk domains.

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 \(p. 30\)](#).

.ruhr (Ruhr region, western part of Germany)

The .ruhr extension is for the Ruhr region (western part of Germany). Open to the public, with some restrictions:

- The administrative contact must be an individual who has an address in Germany.

.se (Sweden)

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.

.wien (city of Vienna in Austria)

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.

Configuring Amazon Route 53 as Your DNS Service

You can use Amazon Route 53 as the DNS service for any registered domain name. When you register a domain with Amazon Route 53, Amazon Route 53 is automatically configured as the DNS service for the domain. You can also migrate DNS service for existing domains or subdomains to Amazon Route 53. For more information, see the applicable topic:

Topics

- [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 46\)](#)
- [Creating a Subdomain That Uses Amazon Route 53 as the DNS Service without Migrating the Parent Domain \(p. 50\)](#)
- [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain \(p. 52\)](#)

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.

This process has six basic steps:

1. [Create a Amazon Route 53 hosted zone \(p. 47\)](#) for your domain.
2. [Get the current DNS configuration from your current DNS service provider \(p. 47\)](#).
3. [Add resource record sets \(p. 48\)](#) to your Amazon Route 53 hosted zone.
4. *API only:* [Confirm that your changes have propagated \(p. 48\)](#) 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

5. [Update your registrar's name server records \(p. 48\)](#).
6. [Wait for your changes to take effect \(p. 49\)](#).

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.

Creating 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.

Note

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. 69).

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 [POST 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. 3).

5. Choose **Create**.

Getting 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 Resource Record Types \(p. 4\)](#).

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. 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 [Updating Your Registrar's Name Servers \(p. 48\)](#), later in the process.

Caution

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 \(p. 75\)](#). To create resource record sets using the Amazon Route 53 API, use `ChangeResourceRecordSets`. For more information, see [POST 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 [POST 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

Updating Your Registrar's Name Servers

After your changes to Amazon Route 53 resource record sets have propagated to the Amazon Route 53 DNS servers (see [Checking the Status of Your Changes \(API Only\) \(p. 48\)](#)), 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 will 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 were returned when you submitted the `GetHostedZone` request in the previous step.

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 period, DNS resolvers may still answer requests with the name servers for the registrar. In addition, client computers may 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 \(p. 63\)](#)
- [Listing Public Hosted Zones \(p. 64\)](#)
- [Deleting a Public Hosted Zone \(p. 64\)](#)
- [Listing Resource Record Sets \(p. 129\)](#)

Waiting 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.

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 \(p. 50\)](#).
2. [Add resource record sets \(p. 51\)](#) for the new subdomain to your Amazon Route 53 hosted zone.
3. *API only:* [Confirm that your changes have propagated \(p. 51\)](#) 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

4. [Update the DNS service for the parent domain by adding name server records for the subdomain \(p. 51\)](#).

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.

Note

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 \(p. 69\)](#).

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 [POST 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 \(p. 3\)](#).

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 \(p. 51\)](#), later in the process.

Caution

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 \(p. 75\)](#). To create resource record sets using the Amazon Route 53 API, use `ChangeResourceRecordSets`. For more information, see [POST 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 [POST 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

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 \(API Only\) \(p. 51\)](#)), 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](#).

- 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.

Caution

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:

- [Create an Amazon Route 53 hosted zone for the subdomain \(p. 52\).](#)
- [Get the current DNS configuration from the current DNS service provider for the parent domain \(p. 53\).](#)
- [Add resource record sets \(p. 53\)](#) for the subdomain to your Amazon Route 53 hosted zone.
- API only:* [Confirm that your changes have propagated \(p. 53\)](#) 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

- [Update the DNS configuration with the DNS service provider for the parent domain by adding name server records for the subdomain \(p. 54\).](#)

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.

Note

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 \(p. 69\)](#).

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 [POST 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 \(p. 3\)](#).
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 \(p. 54\)](#), later in the process.

Caution

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 \(p. 75\)](#). To create resource record sets using the Amazon Route 53 API, use `ChangeResourceRecordSets`. For more information, see [POST 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 [POST 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

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. 53)), 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're migrating the subdomain `test.example.com` to 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. 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 1. 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.

Caution

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

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Updating Your DNS Service with Name Server Records for the Subdomain

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 \(p. 53\)](#).
 - 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.

Routing Queries to AWS Resources

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

- [Routing Queries to an Amazon CloudFront Distribution \(Public Hosted Zones Only\) \(p. 56\)](#)
- [Routing Queries to an Elastic Load Balancing Load Balancer \(Public Hosted Zones Only\) \(p. 57\)](#)
- [Routing Queries to an Amazon EC2 Instance \(p. 58\)](#)
- [Routing Queries to a Website That Is Hosted in an Amazon S3 Bucket \(Public Hosted Zones Only\) \(p. 58\)](#)
- [Routing Queries to an Amazon Relational Database Service \(Amazon RDS\) Database \(p. 59\)](#)
- [Routing Queries to Amazon WorkMail \(Public Hosted Zones Only\) \(p. 59\)](#)

Routing Queries to an Amazon CloudFront Distribution (Public Hosted Zones Only)

If you're using CloudFront to distribute your content, you can use Amazon Route 53 to route queries to your CloudFront distribution. The name of your Amazon Route 53 hosted zone (such as `example.com`) must match an alternate domain name in the CloudFront distribution. You cannot route queries to the CloudFront domain name for your distribution (such as `d111111abcdef8.cloudfront.net`). The following procedure assumes that you have already registered the applicable domain names.

Note

You can route queries to a CloudFront distribution only for public hosted zones.

To route queries to an Amazon CloudFront distribution

1. Create your CloudFront distribution, and add one or more alternate domain names (`example.com`, `www.example.com`) to the distribution. For more information, see the following topics in the [Amazon CloudFront Developer Guide](#):
 - [Creating Web Distributions](#)
 - [Creating RTMP Distributions](#)
 - [Using Alternate Domain Names](#)
2. If Amazon Route 53 is not the DNS service for one or more of the alternate domain names that you added to your distribution, migrate DNS service for those domains 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 \(p. 50\)](#)
- [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 46\)](#)
- [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain \(p. 52\)](#)

If you want to route queries both for an alternate domain name that is the root domain (example.com) and for one or more subdomains (www.example.com, product-name.example.com) to your CloudFront distribution, you only need to create a hosted zone for the root domain.

If you want to route queries for more than one alternate domain name that is the root domain, for example, the domain name and various misspellings of your domain name (example.com, ex-ample.com), create one hosted zone for each root domain name. You must register each domain name that you want to use.

3. Create one or more alias resource record sets that route queries to your CloudFront distribution:
 - **If you want to route queries both for an alternate domain name that is a root domain (example.com) and for alternate domain names that are subdomains (www.example.com, product.example.com):** Create the following alias resource record sets:
 - Create one alias resource record set for the root domain name.
 - Create one alias resource record set for each subdomain name.

The name of each alias resource record set must match an alternate domain name in the distribution that you want Amazon Route 53 to route queries to.

- **If you want to route queries for more than one alternate domain name that is a root domain (example.com, ex-ample.com):** In each hosted zone that you created in Step 2, create an alias resource record set that has the same name as the hosted zone.

For more information about alias resource record sets in Amazon Route 53, see [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 79\)](#). For information about creating resource record sets, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 80\)](#).

Routing Queries to an Elastic Load Balancing Load Balancer (Public Hosted Zones Only)

If you're hosting a website on Amazon EC2 instances that are registered with a load balancer and you want to use Amazon Route 53 as the DNS service for your domain, follow the steps below.

Note

You can route queries to an ELB load balancer only for public hosted zones.

To route queries to an Elastic Load Balancing load balancer

1. Use Elastic Load Balancing to set up a load balancer. If you're creating multiple alias resource record sets that have the same name and type (for example, weighted or latency alias resource record sets), create one load balancer for each resource record set. For more information about creating a load balancer, go to [Getting Started with Elastic Load Balancing](#) in the *Elastic Load Balancing Developer Guide*.

Tip

Give the load balancer a name that will help you remember what it's for later. The name you specify when you create a load balancer is the name you'll choose when you create an alias resource record sets in Amazon Route 53.

2. Create an Amazon Route 53 hosted zone. For more information, see [Creating a Public Hosted Zone \(p. 62\)](#).
3. Create alias resource record sets in your hosted zone. For more information, see [Working with Resource Record Sets \(p. 75\)](#).

Routing Queries to an Amazon EC2 Instance

If you're hosting a website on an Amazon EC2 server and you want to use Amazon Route 53 as the DNS service for your domain, follow the steps below.

To route queries to an Amazon EC2 instance

1. Launch an Amazon EC2 instance. For more information, see the [Amazon EC2 Getting Started Guide](#).

Note

We recommend that you also create an Elastic IP address and associate it with your Amazon EC2 instance. An Elastic IP address ensures that the IP address of your Amazon EC2 instance will never change.

2. Create an Amazon Route 53 hosted zone. For more information, see [Creating a Public Hosted Zone \(p. 62\)](#).
3. Create a resource record set in your hosted zone. For **Type**, choose **A – Ipv4 address**. For **Value**, specify the Elastic IP address for your Amazon EC2 instance. For more information about creating a resource record set, see [Working with Resource Record Sets \(p. 75\)](#).

Routing Queries to a Website That Is Hosted in an Amazon S3 Bucket (Public Hosted Zones Only)

If you're hosting a website in an Amazon S3 bucket and you want to use Amazon Route 53 as the DNS service for your domain, follow the steps below.

Note

You can route queries to a website that is hosted in an Amazon S3 bucket only for public hosted zones.

To route queries to a website that is hosted in an Amazon S3 bucket

1. Create an Amazon S3 bucket that is configured as a website. For more information, see [Hosting Websites on Amazon S3](#) in the *Amazon Simple Storage Service Developer Guide*.
2. Create a subdomain that uses Amazon Route 53 as the DNS service, or migrate an existing domain or subdomain 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 \(p. 50\)](#)
 - [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 46\)](#)
 - [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain \(p. 52\)](#)

3. Create an alias resource record set that routes queries for your domain name to the Amazon S3 domain name for your bucket. For more information about alias resource record sets, see [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 79\)](#).

Routing Queries to an Amazon Relational Database Service (Amazon RDS) Database

If you're hosting a website in an Amazon RDS database and you want to use Amazon Route 53 as the DNS service for your domain, follow the steps below.

To route queries to an Amazon RDS database

1. Create an Amazon RDS database. For more information, see the [Amazon Relational Database Service User Guide](#).
2. Create a subdomain that uses Amazon Route 53 as the DNS service, or migrate an existing domain or subdomain 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 \(p. 50\)](#)
 - [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 46\)](#)
 - [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain \(p. 52\)](#)
3. Create a CNAME resource record set that routes queries for your domain name to your Amazon RDS database. For the **Value** field in the Amazon Route 53 console or the `value` element in a call to the `POST ChangeResourceRecordSets` API, specify the endpoint that Amazon RDS assigned to your database when you created it, for example:

```
myexampledb.a1b2c3d4wxyz.us-west-2.rds.amazonaws.com
```

Note

You can't create a CNAME record for the top node of a DNS namespace, also known as the *zone apex*. For example, if you register the domain name `example.com`, the zone apex is `example.com`.

For more information about creating resource record sets in Amazon Route 53, see [Working with Resource Record Sets \(p. 75\)](#).

Routing Queries to Amazon WorkMail (Public Hosted Zones Only)

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 queries 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 queries to an Amazon WorkMail domain only for public hosted zones.

To route queries 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 \(p. 14\)](#).

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 \(p. 50\)](#)
- [Migrating DNS Service for an Existing Domain to Amazon Route 53 \(p. 46\)](#)
- [Migrating DNS Service for a Subdomain to Amazon Route 53 without Migrating the Parent Domain \(p. 52\)](#)

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 a 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, for which you want to route queries 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 a 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 for which the value of **Record type** is **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 for which the value of **Record type** is **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 for which the value of the **Record type** column is **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.

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 \(p. 75\)](#).

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 [Actions on Public Hosted Zones](#) in 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 \(p. 71\)](#).

Topics

- [Creating a Public Hosted Zone \(p. 62\)](#)
- [Getting the Name Servers for a Public Hosted Zone \(p. 63\)](#)
- [Listing Public Hosted Zones \(p. 64\)](#)
- [Deleting a Public Hosted Zone \(p. 64\)](#)
- [Configuring White Label Name Servers \(p. 65\)](#)
- [NS and SOA Resource Record Sets that Amazon Route 53 Creates for a Public Hosted Zone \(p. 69\)](#)

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 \(p. 69\)](#).

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 [Actions on Reusable Delegation Sets](#) in the *Amazon Route 53 API Reference*. For information about creating hosted zones by using the Amazon Route 53 API, see [POST 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 \(p. 3\)](#).

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 [Configuring Amazon Route 53 as Your DNS Service \(p. 46\)](#).

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 [GET 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 [GET 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 [DELETE DeleteHostedZone](#) in the *Amazon Route 53 API Reference*.

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. In the Amazon Route 53 console, do one of the following to display the record sets for the hosted zone that you want to delete:
 - Click the row for the hosted zone that you want to delete, and click **Go to Record Sets**.
 - Double-click the row for 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, click the row, and click **Delete Record Set**.

To select multiple, consecutive resource record sets, click the first row, press and hold the **Shift** key, and click the last row. To select multiple, non-consecutive resource record sets, click the first row, press and hold the **Ctrl** key, and click the remaining rows.

Note

If you created any NS records for subdomains in the hosted zone, delete those records, too.

- c. Click **Back to Hosted Zones**.
3. On the Hosted Zones page, click the row for the hosted zone that you want to delete.
4. Click **Delete Hosted Zone**.
5. Click **OK** to confirm.

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 procedure explains 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 this procedure, you can configure white label name servers for example.com and reuse them for example.org and example.net.

To configure white label name servers for your Amazon Route 53 hosted zones

1. Create an Amazon Route 53 reusable delegation set by using the Amazon Route 53 API or one of the AWS SDKs. For more information about using the API, see [POST CreateReusableDelegationSet](#) in the *Amazon Route 53 API Reference*.
2. 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 [POST CreateHostedZone \(Public\)](#) 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.

For more information about creating hosted zones and specifying a reusable delegation set for the name servers for the hosted zones, see [POST CreateHostedZone \(Public\)](#) in the *Amazon Route 53 API Reference*.

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. (This procedure tells you when you can change the TTL to a higher value.) 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.

3. Create resource record sets in the new hosted zones:

- **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 \(p. 127\)](#).
- **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 [POST CreateHostedZone \(Public\)](#) 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 \(p. 75\)](#).

4. Get the IP 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)	IP address	Name that you want to assign to the white label name server (example: ns1.example.com)

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

Run the applicable command for each name server to get the corresponding IP addresses.

dig command for Linux

```
% dig ns-2048.awsdns-64.com +short
192.0.2.117
```

nslookup command for Windows

```
c:\> nslookup ns-2048.awsdns-64.com
Server: ns-2048.awsdns-64.com
Address: 192.0.2.117
```

5. 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 four resource record sets, one 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**.

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 IP address of one of the Amazon Route 53 name servers in your reusable delegation set.

Caution

If you specify the wrong IP addresses when you created resource record sets for your white label name servers, when you perform subsequent steps your website or web application will become unavailable on the Internet. 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**.

6. Update SOA and NS records in the hosted zones for which you want to use white label name servers. Perform steps 6 through 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).

- a. Update the SOA record. Replace the name of the Amazon Route 53 name server (`ns-2048.awsdns-64.net` in the following example) with the name of one of your white label name servers:

```
ns-2048.awsdns-64.net. hostmaster.example.com. 1 7200 900 1209600 60
```

For information about updating resource record sets by using the Amazon Route 53 console, see [Editing Resource Record Sets \(p. 128\)](#).

- b. 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.
 - c. 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`.
7. Use the method provided by the registrar to create glue records and change the registrar's name servers:

- a. 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 name and IP address match the values that you got in step 4, for example:

```
ns1.example.com – IP address = 192.0.2.117
```

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 7b.

- b. 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 Adding or Changing Glue Records \(p. 20\)](#).

8. Monitor the traffic for the website or application for which you created glue records and changed name servers in the previous step:
 - **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 steps 6 through 8 for the rest of the hosted zones for which you want to use the same white label name servers.
9. 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, 86400 seconds (one day). This is the last value in the SOA record.
10. *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 request 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 \(p. 69\)](#)
- [The Start of Authority \(SOA\) Resource Record Set \(p. 70\)](#)

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 [Updating Your Registrar's Name Servers \(p. 48\)](#).
- 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 \(p. 51\)](#).

- 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 \(p. 54\)](#).

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 \(p. 128\)](#). 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 \(p. 75\)](#). For information about the Amazon VPC requirements for using private hosted zones, see [Using Private Hosted Zones](#) in the *Amazon VPC User Guide*.

Note

You cannot associate Amazon Route 53 health checks with resource record sets in a private hosted zone.

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.

When you have private and public hosted zones, the private hosted zone takes precedence over the public hosted zone when you're logged into an Amazon EC2 instance in an Amazon VPC that you have associated with the private hosted zone. For example, suppose that you have created public and private hosted zones for example.com, and you have created a www.example.com subdomain only for the public hosted zone. When you're logged into an Amazon EC2 instance in a VPC that is associated with the example.com private hosted zone, you can't browse to www.example.com because it exists only in the public hosted zone.

You cannot create NS records in a private hosted zone to delegate responsibility for a subdomain.

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*.

Important

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*.

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 [Actions on Private Hosted Zones](#) in 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. 62).

Topics

- [Creating a Private Hosted Zone](#) (p. 72)
- [Listing Private Hosted Zones](#) (p. 73)
- [Associating More Amazon VPCs with a Private Hosted Zone](#) (p. 73)
- [Disassociating Amazon VPCs from a Private Hosted Zone](#) (p. 73)
- [Deleting a Private Hosted Zone](#) (p. 74)

Creating a Private Hosted Zone

A private hosted zone is a container for resource record sets for a specified domain that you host in one or more Amazon Virtual Private Clouds (Amazon 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 Amazon VPCs.

For information about creating a private hosted zone by using the Amazon Route 53 API, see [POST CreateHostedZone \(Private\)](#) in the *Amazon Route 53 API Reference*.

To create a hosted zone using the Amazon Route 53 console

1. For each Amazon VPC that you want to associate with the Amazon Route 53 hosted zone, change 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*.

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 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. 3).

6. In the **Type** list, choose **Private Hosted Zone for Amazon VPC**.

7. In the **VPC Id** list, choose the Amazon 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. For more information, see [Associating More Amazon VPCs with a Private Hosted Zone](#) (p. 73).

8. Choose **Create**.

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 [GET ListHostedZones \(Public and Private\)](#) in the *Amazon Route 53 API Reference*.

To list the 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 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 Amazon VPCs with a private hosted zone. For information about how to associate more Amazon VPCs with a private hosted zone using the Amazon Route 53 API, see [POST AssociateVPCWithHostedZone](#) in the *Amazon Route 53 API Reference*.

To associated additional Amazon 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. Select the private hosted zone that you want to associate additional Amazon VPCs with.
4. In the right pane, choose **Associate New VPC**.
5. In the dropdown list, select the VPC that you want to associate with this private hosted zone, and choose **Associate**.

Disassociating Amazon VPCs from a Private Hosted Zone

You can use the Amazon Route 53 console to disassociate Amazon VPCs from a private hosted zone. For information about how to disassociate Amazon VPCs from a private hosted zone using the Amazon Route 53 API, see [POST DisassociateVPCFromHostedZone](#) in the *Amazon Route 53 API Reference*.

To disassociate Amazon VPCs from 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. Select the private hosted zone from which you want to disassociate one or more Amazon VPCs.
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 [DELETE DeleteHostedZone \(Private\)](#) 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. In the Amazon Route 53 console, do one of the following to display the record sets for the hosted zone that you want to delete:
 - Choose the row for the hosted zone that you want to delete, and choose **Go to Record Sets**.
 - 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 \(p. 3\)](#).

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.

Topics

- [Choosing a Routing Policy \(p. 76\)](#)
- [Choosing Between Alias and Non-Alias Resource Record Sets \(p. 79\)](#)
- [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 80\)](#)
- [Values that You Specify When You Create or Edit Amazon Route 53 Resource Record Sets \(p. 82\)](#)
- [Creating Resource Record Sets By Importing a Zone File \(p. 127\)](#)
- [Editing Resource Record Sets \(p. 128\)](#)
- [Deleting Resource Record Sets \(p. 129\)](#)
- [Listing Resource Record Sets \(p. 129\)](#)

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 a simple routing policy when you have a single resource that performs a given function for your domain, for example, one web server that serves content for the example.com website. In this case, Amazon Route 53 responds to DNS queries based only on the values in the resource record set, for example, the IP address in an A record.

Weighted Routing Policy

Use the weighted routing policy 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, 40% to one server and 60% to the other). For more information about weighted resource record sets, see [Weighted Routing \(p. 76\)](#).

Latency Routing Policy

Use the latency routing policy 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. For example, you might have web servers for example.com in the Amazon EC2 data centers in Ireland and in Tokyo. When a user browses to example.com, Amazon Route 53 chooses to respond to the DNS query based on which data center gives your user the lowest latency. For more information about latency resource record sets, see [Latency-Based Routing \(p. 77\)](#).

Failover Routing Policy (Public Hosted Zones Only)

Use the failover routing policy 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. Note that you can't create failover resource record sets for private hosted zones. For more information about failover resource record sets, see [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Resource Record Sets \(p. 154\)](#).

Geolocation Routing Policy

Use the geolocation routing policy when you want Amazon Route 53 to respond to DNS queries based on the location of your users. For more information about geolocation resource record sets, see [Geolocation Routing \(p. 78\)](#).

Weighted Routing

Weighted resource record sets let you associate multiple resources with a single DNS name. This can be useful for a variety of purposes, including load balancing and testing new versions of software. To create a group of weighted resource record sets, you create two or more resource record sets that have the same combination of DNS name and type, and you assign each resource record set a unique identifier and a relative weight.

When processing a DNS query, Amazon Route 53 searches for a resource record set or a group of resource record sets that have the specified name and type. For weighted resource record sets, Amazon Route 53 selects one from the group. The probability of any one resource record set being selected depends on its weight as a proportion of the total weight for all resource record sets in the group:

$$\frac{\text{Weight for a given resource record set}}{\text{Sum of the weights for the resource record sets}}$$

For example, suppose you create three resource record sets for www.example.com. The three A records have weights of 1, 1, and 3 (sum = 5). On average, Amazon Route 53 selects each of the first two resource record sets one-fifth of the time, and returns the third resource record set three-fifths of the time.

Latency-Based Routing

If your application is hosted on Amazon EC2 instances in multiple Amazon EC2 regions, you can reduce latency for your users by serving their requests from the Amazon EC2 region for which network latency is lowest. Amazon Route 53 latency-based routing lets you use DNS to route user requests to the Amazon EC2 region that will give your users the fastest response.

To use latency-based routing, you create a latency resource record set for the Amazon EC2 resource in each region that hosts your application. When Amazon Route 53 receives a query for the corresponding domain, it selects the latency resource record set for the Amazon EC2 region that gives the user the lowest latency. Amazon Route 53 then responds with the value associated with that resource record set.

For example, suppose you have ELB load balancers in the US West (Oregon) region and in the Asia Pacific (Singapore) region, and that you've created a latency resource record set in Amazon Route 53 for each load balancer. A user in London enters the name of your domain in a browser, and DNS routes the request to an Amazon Route 53 name server. Amazon Route 53 refers to its data on latency between London and the Singapore region and between London and the Oregon region. If latency is lower between London and the Oregon region, Amazon Route 53 responds to the user's request with the IP address of your load balancer in the Amazon EC2 data center in Oregon. If latency is lower between London and the Singapore region, Amazon Route 53 responds with the IP address of your load balancer in the Amazon EC2 data center in Singapore.



Map courtesy of the University of Texas Libraries, The University of Texas at Austin.

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. For example, if you have load balancers in the Oregon and Singapore Amazon EC2 regions, a request that is routed to the Oregon region this week might be routed to the Singapore region next week if latency from the user to the Singapore region improves.

You can create latency resource record sets for the following:

- Amazon EC2 instances, with or without Elastic IP addresses.
- ELB load balancers, which balance traffic for Amazon EC2 instances.

You can create latency resource record sets using any record type that Amazon Route 53 supports except NS or SOA. For information about supported record types, see [Supported DNS Resource Record Types \(p. 4\)](#).

To create latency resource record sets, perform the following steps:

1. Create the AWS resources for your application:
 - If you want to use ELB load balancers, create one or more load balancers in each Amazon EC2 region in which you want to run your application. For more information, see [Managing Load Balancers](#) in the *Elastic Load Balancing Developer Guide*.

The name you specify when you create a load balancer is the name you'll use when you create a latency resource record set in Amazon Route 53.

- If you want to use Amazon EC2 instances, launch one or more Amazon EC2 instances in each Amazon EC2 region in which you want to run your application. For more information, see [Amazon EC2 Getting Started Guide](#).

Note

We recommend that you assign Elastic IP addresses to your Amazon EC2 instances to ensure that the IP addresses don't change.

2. [Create an Amazon Route 53 hosted zone \(p. 62\)](#).
3. Create latency resource record sets in your hosted zone. For information about how to create resource record sets using the Amazon Route 53 console, see [Creating Resource Record Sets by Using the Amazon Route 53 Console \(p. 80\)](#). For information about how to create latency resource record sets using the Amazon Route 53 API, see [POST ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

Geolocation Routing

Geolocation routing lets you choose the resources that serve your traffic based on the geographic location of your users, meaning the location from which DNS queries originate. For example, you might want all queries from Africa to be routed to a web server with an IP address of 192.0.2.111.

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 resource record sets for overlapping geographic regions—for example, one resource record set for a continent and one for a country on the same continent—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 \(p. 119\)](#).)

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 resource record set that handles both queries from IP addresses that aren't mapped to any location and queries that come from locations for which you haven't created geolocation resource record sets. If you don't create a default resource record set, Amazon Route 53 returns a "no answer" response for queries from those locations.

You cannot create two geolocation resource record sets that specify the same geographic location. You also cannot create geolocation resource record sets that have the same values for **Name** and **Type** as the **Name** and **Type** of non-geolocation resource record sets.

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](#).

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 ELB 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`.
- **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 ELB load balancer, or an Amazon S3 bucket, you cannot set the time to live (TTL); Amazon Route 53 uses the CloudFront, Elastic Load Balancing, or Amazon S3 TTLs. For more information about the current TTL value for Elastic Load Balancing, go to [Configure Custom Domain Name for Your Load Balancer](#) in the *Elastic Load Balancing Developer 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-1.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`.

Note

If you're creating resource record sets for a private hosted zone, you can create alias resource record sets only for Amazon Route 53 resource record sets that are in the same hosted zone. Creating alias resource record sets in a private hosted zone for CloudFront distributions, ELB load balancers, and Amazon S3 buckets is not supported.

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 \(p. 80\)](#). 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 Resource Record Sets](#) (p. 82):

- [Values for Alias Resource Record Sets](#) (p. 89)
- [Values for Weighted Alias Resource Record Sets](#) (p. 93)
- [Values for Latency Alias Resource Record Sets](#) (p. 103)
- [Values for Failover Alias Resource Record Sets \(Public Hosted Zones Only\)](#) (p. 112)
- [Values for Geolocation Alias Resource Record Sets](#) (p. 121)

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, ELB load balancers, or Amazon S3 buckets. For more information, see Amazon Route 53 Pricing .
You cannot 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 <code>example.com</code> , the zone apex is <code>example.com</code> .	You can create an alias resource record set at the zone apex.
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.	An alias resource record set can only point to a CloudFront distribution, 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.
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.

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 [POST ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

To create resource record sets using the Amazon Route 53 console

1. If you're not creating alias resource record sets, skip to step 2.

If you're creating alias resource record sets that route traffic to ELB 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 \(p. 81\)](#) to get the DNS name for the load balancer.

If you're creating 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. 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 \(p. 82\)](#)
 - [Values for Weighted Resource Record Sets \(p. 85\)](#)
 - [Values for Alias Resource Record Sets \(p. 89\)](#)
 - [Values for Weighted Alias Resource Record Sets \(p. 93\)](#)
 - [Values for Latency Resource Record Sets \(p. 99\)](#)
 - [Values for Latency Alias Resource Record Sets \(p. 103\)](#)
 - [Values for Failover Resource Record Sets \(Public Hosted Zones Only\) \(p. 109\)](#)
 - [Values for Failover Alias Resource Record Sets \(Public Hosted Zones Only\) \(p. 112\)](#)
 - [Values for Geolocation Resource Record Sets \(p. 117\)](#)
 - [Values for Geolocation Alias Resource Record Sets \(p. 121\)](#)
7. Click **Create**.
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 load balancer for which you want to create an alias resource record set.
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 DNS name that is labeled **A or AAAA Record**. This domain name begins with **dualstack**.
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. 80).

Values that You Specify When You Create or Edit Amazon Route 53 Resource Record Sets

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. 82)
- [Values for Weighted Resource Record Sets](#) (p. 85)
- [Values for Alias Resource Record Sets](#) (p. 89)
- [Values for Weighted Alias Resource Record Sets](#) (p. 93)
- [Values for Latency Resource Record Sets](#) (p. 99)
- [Values for Latency Alias Resource Record Sets](#) (p. 103)
- [Values for Failover Resource Record Sets \(Public Hosted Zones Only\)](#) (p. 109)
- [Values for Failover Alias Resource Record Sets \(Public Hosted Zones Only\)](#) (p. 112)
- [Values for Geolocation Resource Record Sets](#) (p. 117)
- [Values for Geolocation Alias Resource Record Sets](#) (p. 121)

Values for Basic Resource Record Sets

When you create basic resource record sets, you specify the following values:

Topics

- [Name](#) (p. 82)
- [Type](#) (p. 83)
- [Alias](#) (p. 83)
- [TTL \(Time to Live\)](#) (p. 83)
- [Value](#) (p. 83)
- [Routing Policy](#) (p. 84)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.example.com. Note the following:

- The * must replace the entire label. For example, you can't specify *prod.example.com or prod*.example.com.
- The * can't replace any of the middle labels, for example, marketing*.example.com.
- 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.

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 Resource Record Types \(p. 4\)](#).

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**.

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**.

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 \(p. 70\)](#).

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 Resource Record Types \(p. 4\)](#).

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 Weighted Resource Record Sets

When you create weighted resource record sets, you specify the following values:

Topics

- [Name \(p. 85\)](#)
- [Type \(p. 85\)](#)
- [Alias \(p. 85\)](#)
- [TTL \(Time to Live\) \(p. 85\)](#)
- [Value \(p. 86\)](#)
- [Routing Policy \(p. 86\)](#)
- [Weight \(p. 87\)](#)
- [Set ID \(p. 87\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 87\)](#)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

Enter the same name for all of the resource record sets in the group of weighted resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

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 for which the alias target is 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**.

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**.

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 Resource Record Types](#) (p. 4).

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 Resource Record Sets](#) (p. 152).

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. 137).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Alias Resource Record Sets

When you create alias resource record sets, you specify the following values:

Note

If you're creating resource record sets for a private hosted zone, you can create alias resource record sets only for Amazon Route 53 resource record sets in the same hosted zone. Creating alias resource record sets for CloudFront distributions, ELB load balancers, and Amazon S3 buckets is not supported.

Topics

- [Name](#) (p. 89)
- [Type](#) (p. 90)
- [Alias](#) (p. 90)
- [Alias Target](#) (p. 90)
- [Alias Hosted Zone ID](#) (p. 92)
- [Routing Policy](#) (p. 92)
- [Evaluate Target Health](#) (p. 92)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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. 3).

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

The value that you specify depends in part on the AWS resource for which you're creating an alias resource record set:

CloudFront Distributions

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*.

Amazon S3 Buckets

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 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*.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

Select the applicable value based on the AWS resource for which you're creating a resource record set:

A CloudFront distribution or an Amazon S3 bucket

Select **A** — IPv4 address.

An ELB load balancer

Select **A** — IPv4 address or **AAAA** — IPv6 address.

An Amazon S3 bucket

Select **A** — IPv4 address.

Another resource record set in this hosted zone

Select the type of the resource record set for which you're creating the alias. Select any value except **NS** or **SOA**.

Alias

Select **Yes**.

Alias Target

The value that you specify depends on the AWS resource for which you're creating an alias resource record set.

Note

If you're creating resource record sets for a private hosted zone, you can create alias resource record sets only for Amazon Route 53 resource record sets in the same hosted zone. Creating alias resource record sets for CloudFront distributions, ELB load balancers, and Amazon S3 buckets is not supported.

CloudFront Distributions

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** – Click **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*.

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** – Click **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. 81).

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.

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** – Click **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** – Enter the domain name of the Amazon S3 website endpoint in the following format:

```
s3-website-region.amazonaws.com
```

The *region* value represents the Amazon S3 region in which the bucket is hosted; for example, **us-east-1**.

If you used one AWS account to create the current hosted zone and a different account to create an Amazon S3 bucket, the bucket 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 Amazon S3 buckets, the **Alias Targets** list shows **No Targets Available** under **S3 Website Endpoints**.

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.

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**.

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*.

Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, click **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**.

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 record set specified by **Alias Target**.

Some AWS resources have special requirements:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **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. 145).

- **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. 148).

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 Weighted Alias Resource Record Sets

When you create weighted alias resource record sets, you specify the following values:

Note

If you're creating resource record sets for a private hosted zone, you can create alias resource record sets only for Amazon Route 53 resource record sets in the same hosted zone. Creating alias resource record sets for CloudFront distributions, ELB load balancers, and Amazon S3 buckets is not supported.

Topics

- [Name](#) (p. 93)
- [Type](#) (p. 94)
- [Alias](#) (p. 94)
- [Alias Target](#) (p. 94)
- [Alias Hosted Zone ID](#) (p. 96)
- [Routing Policy](#) (p. 96)
- [Weight](#) (p. 96)
- [Set ID](#) (p. 96)
- [Evaluate Target Health](#) (p. 96)
- [Associate with Health Check/Health Check to Associate](#) (p. 97)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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. 3).

Enter the same name for all of the resource record sets in the group of weighted resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

The value that you specify depends in part on the AWS resource for which you're creating an alias resource record set:

CloudFront Distributions

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*.

Amazon S3 Buckets

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 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*.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

Select the applicable value based on the AWS resource for which you're creating a resource record set:

A CloudFront distribution or an Amazon S3 bucket

Select **A — IPv4 address**.

An ELB load balancer

Select **A — IPv4 address** or **AAAA — IPv6 address**.

An Amazon S3 bucket

Select **A — IPv4 address**.

Another resource record set in this hosted zone

Select the type of the resource record set for which you're creating the alias. Select any value except **NS** or **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 for which you're creating an alias resource record set.

Note

If you're creating resource record sets for a private hosted zone, you can create alias resource record sets only for Amazon Route 53 resource record sets in the same hosted zone. Creating alias resource record sets for CloudFront distributions, ELB load balancers, and Amazon S3 buckets is not supported.

CloudFront Distributions

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** – Click **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*.

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** – Click **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. 81).

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.

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** – Click **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** – Enter the domain name of the Amazon S3 website endpoint in the following format:

```
s3-website-region.amazonaws.com
```

The *region* value represents the Amazon S3 region in which the bucket is hosted; for example, `us-east-1`.

If you used one AWS account to create the current hosted zone and a different account to create an Amazon S3 bucket, the bucket 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 Amazon S3 buckets, the **Alias Targets** list shows **No Targets Available** under **S3 Website Endpoints**.

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.

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**.

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*.

Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, click **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 Resource Record Sets](#) (p. 152).

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 record set specified by **Alias Target**.

Some AWS resources have special requirements:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **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. 145).

- **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. 148).

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. 137).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Latency Resource Record Sets

When you create latency resource record sets, you specify the following values:

Note

You can create latency resource record sets only for public hosted zones.

Topics

- [Name \(p. 99\)](#)
- [Type \(p. 99\)](#)
- [Alias \(p. 99\)](#)
- [TTL \(Time to Live\) \(p. 100\)](#)
- [Value \(p. 100\)](#)
- [Routing Policy \(p. 100\)](#)
- [Region \(p. 101\)](#)
- [Set ID \(p. 101\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 101\)](#)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

Enter the same name for all of the resource record sets in the group of latency resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

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.

You must specify the same value for **TTL** for all of the resource record sets in this group of latency resource record sets.

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**.

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**.

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 Resource Record Types \(p. 4\)](#).

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 for which you create latency resource record sets.
- 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 \(p. 77\)](#).

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 \(p. 137\)](#).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Latency Alias Resource Record Sets

When you create latency alias resource record sets, you specify the following values:

Note

You can create latency resource record sets only for public hosted zones.

Topics

- [Name \(p. 103\)](#)
- [Type \(p. 104\)](#)
- [Alias \(p. 104\)](#)
- [Alias Target \(p. 104\)](#)
- [Alias Hosted Zone ID \(p. 106\)](#)
- [Routing Policy \(p. 106\)](#)
- [Region \(p. 106\)](#)
- [Set ID \(p. 106\)](#)
- [Evaluate Target Health \(p. 106\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 107\)](#)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

Enter the same name for all of the resource record sets in the group of latency resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

The value that you specify depends in part on the AWS resource for which you're creating an alias resource record set:

CloudFront Distributions

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*.

Amazon S3 Buckets

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 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*.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

Select the applicable value based on the AWS resource for which you're creating a resource record set:

A CloudFront distribution or an Amazon S3 bucket

Select **A** — IPv4 address.

An ELB load balancer

Select **A** — IPv4 address or **AAAA** — IPv6 address.

An Amazon S3 bucket

Select **A** — IPv4 address.

Another resource record set in this hosted zone

Select the type of the resource record set for which you're creating the alias. Select any value except **NS** or **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 for which you're creating an alias resource record set.

CloudFront Distributions

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** – Click **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*.

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** – Click **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. 81).

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.

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** – Click **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** – Enter the domain name of the Amazon S3 website endpoint in the following format:

```
s3-website-region.amazonaws.com
```

The *region* value represents the Amazon S3 region in which the bucket is hosted; for example, **us-east-1**.

If you used one AWS account to create the current hosted zone and a different account to create an Amazon S3 bucket, the bucket 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 Amazon S3 buckets, the **Alias Targets** list shows **No Targets Available** under **S3 Website Endpoints**.

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.

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**.

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*.

Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, click **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**.

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 for which you create latency resource record sets.
- 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 \(p. 77\)](#).

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 record set specified by **Alias Target**.

Some AWS resources have special requirements:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **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. 145).

- **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. 148).

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. 137).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Failover Resource Record Sets (Public Hosted Zones Only)

When you create failover resource record sets, you specify the following values:

Note

You can create failover resource record sets only for public hosted zones.

Topics

- [Name \(p. 109\)](#)
- [Type \(p. 109\)](#)
- [Alias \(p. 109\)](#)
- [TTL \(Time to Live\) \(p. 110\)](#)
- [Value \(p. 110\)](#)
- [Routing Policy \(p. 110\)](#)
- [Failover Record Type \(p. 111\)](#)
- [Set ID \(p. 111\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 111\)](#)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

Enter the same name for both of the resource record sets in the group of failover resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

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.

You must specify the same value for **TTL** for the primary and secondary resource record sets.

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**.

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**.

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 Resource Record Types \(p. 4\)](#).

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

Click 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 \(p. 137\)](#).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Failover Alias Resource Record Sets (Public Hosted Zones Only)

When you create failover alias resource record sets, you specify the following values:

Note

You can create failover resource record sets only for public hosted zones.

Topics

- [Name \(p. 112\)](#)
- [Type \(p. 113\)](#)
- [Alias \(p. 113\)](#)
- [Alias Target \(p. 113\)](#)
- [Alias Hosted Zone ID \(p. 115\)](#)
- [TTL \(Time to Live\) \(p. 115\)](#)
- [Routing Policy \(p. 115\)](#)
- [Failover Record Type \(p. 115\)](#)
- [Set ID \(p. 115\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 116\)](#)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

Enter the same name for both of the resource record sets in the group of failover resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

The value that you specify depends in part on the AWS resource for which you're creating an alias resource record set:

CloudFront Distributions

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*.

Amazon S3 Buckets

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 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*.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

Select the applicable value based on the AWS resource for which you're creating a resource record set:

A CloudFront distribution or an Amazon S3 bucket

Select **A** — IPv4 address.

An ELB load balancer

Select **A** — IPv4 address or **AAAA** — IPv6 address.

An Amazon S3 bucket

Select **A** — IPv4 address.

Another resource record set in this hosted zone

Select the type of the resource record set for which you're creating the alias. Select any value except **NS** or **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 for which you're creating an alias resource record set.

CloudFront Distributions

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** – Click **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*.

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** – Click **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. 81).

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.

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** – Click **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** – Enter the domain name of the Amazon S3 website endpoint in the following format:

```
s3-website-region.amazonaws.com
```

The *region* value represents the Amazon S3 region in which the bucket is hosted; for example, `us-east-1`.

If you used one AWS account to create the current hosted zone and a different account to create an Amazon S3 bucket, the bucket 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 Amazon S3 buckets, the **Alias Targets** list shows **No Targets Available** under **S3 Website Endpoints**.

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Values for Failover Alias Resource Record Sets (Public Hosted Zones Only)

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.

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**.

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*.

Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, click **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**.

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 the primary and secondary resource record sets.

Routing Policy

Select **Failover**.

Failover Record Type

Click 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 \(p. 137\)](#).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Geolocation Resource Record Sets

When you create geolocation resource record sets, you specify the following values:

Note

You can create geolocation resource record sets only for public hosted zones.

Topics

- [Name](#) (p. 117)
- [Type](#) (p. 117)
- [Alias](#) (p. 117)
- [TTL \(Time to Live\)](#) (p. 118)
- [Value](#) (p. 118)
- [Routing Policy](#) (p. 118)
- [Location](#) (p. 119)
- [Sublocation](#) (p. 119)
- [Set ID](#) (p. 120)
- [Associate with Health Check/Health Check to Associate](#) (p. 120)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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. 3).

Enter the same name for all of the resource record sets in the group of geolocation resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types](#) (p. 4).

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.

You must specify the same value for **TTL** for all of the resource record sets in this group of geolocation resource record sets.

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**.

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**.

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 Resource Record Types \(p. 4\)](#).

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 from which the queries originated, 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 for which the value of **Location** is **Default** to cover geographic locations for which you haven't created resource record sets and to cover IP addresses for which Amazon Route 53 can't identify a location.

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 \(p. 78\)](#).

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 from which the queries originated, 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 \(p. 137\)](#).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover \(p. 131\)](#).

Values for Geolocation Alias Resource Record Sets

When you create geolocation alias resource record sets, you specify the following values:

Note

You can create geolocation resource record sets only for public hosted zones.

Topics

- [Name \(p. 121\)](#)
- [Type \(p. 122\)](#)
- [Alias \(p. 122\)](#)
- [Alias Target \(p. 122\)](#)
- [Alias Hosted Zone ID \(p. 124\)](#)
- [Routing Policy \(p. 124\)](#)
- [Location \(p. 124\)](#)
- [Sublocation \(p. 125\)](#)
- [Set ID \(p. 125\)](#)
- [Evaluate Target Health \(p. 125\)](#)
- [Associate with Health Check/Health Check to Associate \(p. 126\)](#)

Name

Enter the name of the domain or subdomain for which you're creating the resource record set. The default value is the name of the hosted zone. 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.

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 \(p. 3\)](#).

Enter the same name for all of the resource record sets in the group of geolocation resource record sets.

You can use the * wildcard to replace the leftmost label in a domain name, for example, *.**example.com**. Note the following:

- The * must replace the entire label. For example, you can't specify ***prod.example.com** or **prod*.example.com**.
- The * can't replace any of the middle labels, for example, **marketing*.example.com**.
- 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.

The value that you specify depends in part on the AWS resource for which you're creating an alias resource record set:

CloudFront Distributions

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*.

Amazon S3 Buckets

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 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*.

Type

The DNS record type. For more information, see [Supported DNS Resource Record Types \(p. 4\)](#).

Select the applicable value based on the AWS resource for which you're creating a resource record set:

A CloudFront distribution or an Amazon S3 bucket

Select **A — IPv4 address**.

An ELB load balancer

Select **A — IPv4 address** or **AAAA — IPv6 address**.

An Amazon S3 bucket

Select **A — IPv4 address**.

Another resource record set in this hosted zone

Select the type of the resource record set for which you're creating the alias. Select any value except **NS** or **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 for which you're creating an alias resource record set.

CloudFront Distributions

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** – Click **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*.

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** – Click **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. 81).

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.

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** – Click **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** – Enter the domain name of the Amazon S3 website endpoint in the following format:

```
s3-website-region.amazonaws.com
```

The *region* value represents the Amazon S3 region in which the bucket is hosted; for example, **us-east-1**.

If you used one AWS account to create the current hosted zone and a different account to create an Amazon S3 bucket, the bucket 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 Amazon S3 buckets, the **Alias Targets** list shows **No Targets Available** under **S3 Website Endpoints**.

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.

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**.

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*.

Resource Record Sets in this Hosted Zone

For resource record sets in this hosted zone, click **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**.

Location

When you configure Amazon Route 53 to respond to DNS queries based on the location from which the queries originated, 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 for which the value of **Location** is **Default** to cover geographic locations for which you haven't created resource record sets and to cover IP addresses for which Amazon Route 53 can't identify a location.

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 \(p. 78\)](#).

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 from which the queries originated, 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 record set specified by **Alias Target**.

Some AWS resources have special requirements:

- **CloudFront distributions** – You cannot set **Evaluate Target Health** to **Yes** when the alias target is a CloudFront distribution.
- **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. 145).

- **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. 148).

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. 137).

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 the resource record sets in a weighted, latency, geolocation, or failover resource record set, and you specify health check IDs for all of 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 the resource record sets in an alias, weighted alias, latency alias, geolocation alias, or failover alias resource record set, and you specify health checks for all of the resource record sets that are referenced by the alias 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 for which the endpoint is healthy.

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-1-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 [Amazon Route 53 Health Checks and DNS Failover](#) (p. 131).

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 more information, see [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 may 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 may 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 \(p. 46\)](#).

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 [POST 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

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 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 \(p. 81\)](#) 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 Resource Record Sets \(p. 82\)](#).
 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 [POST 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 in a couple of minutes. In rare circumstances, propagation can take up to 30 minutes.

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 [GET 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**.

Amazon Route 53 Health Checks and DNS Failover

Amazon Route 53 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 sends automated requests over the Internet to your application, server, or other resource to verify that it's reachable, available and functional.

You can configure a health check to make requests similar to those that your users make, such as requesting a web page from a specific URL. You can also view the current and recent status of health checks. If you want to receive a notification when an application or a resource becomes unavailable, you can configure an Amazon CloudWatch alarm for each health check. For information about creating health checks, see [Creating, Updating, and Deleting Health Checks \(p. 131\)](#). For information about viewing health check status and receiving notifications, see [Monitoring Health Check Status and Getting Notifications \(p. 138\)](#).

If you have multiple resources that perform the same function, for example, web servers or email servers, and you want Amazon Route 53 to route traffic only to the resources that are healthy, you can configure DNS failover by associating health checks with your resource record sets. 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, see [Configuring DNS Failover \(p. 142\)](#).

Topics

- [Creating, Updating, and Deleting Health Checks \(p. 131\)](#)
- [Monitoring Health Check Status and Getting Notifications \(p. 138\)](#)
- [Configuring DNS Failover \(p. 142\)](#)
- [Naming and Tagging Health Checks \(p. 155\)](#)
- [Using Health Checks with Amazon Route 53 API Versions Earlier than 2012-12-12 \(p. 157\)](#)

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 resource record sets, review the tasks in [Updating or Deleting Health Checks when DNS Failover Is Configured \(p. 136\)](#) before you proceed.

Topics

- [Creating and Updating Health Checks \(p. 132\)](#)
- [Deleting Health Checks \(p. 135\)](#)
- [Updating or Deleting Health Checks when DNS Failover Is Configured \(p. 136\)](#)
- [Configuring Router and Firewall Rules for Amazon Route 53 Health Checks \(p. 136\)](#)
- [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 137\)](#)

Creating and Updating Health Checks

The following procedure describes how to create and update health checks using the Amazon Route 53 console.

Note

You can't associate Amazon Route 53 health checks with resource record sets in a private hosted zone.

For information about creating health checks using the API, see [POST CreateHealthCheck](#) in the *Amazon Route 53 API Reference*. For information about updating health checks using the API, see [POST 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 resource record sets, perform the recommended tasks in [Updating or Deleting Health Checks when DNS Failover Is Configured \(p. 136\)](#).
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 \(p. 132\)](#).
6. Choose **Create Health Check**.
7. Associate the health check with one or more Amazon Route 53 resource record sets. For information about creating and updating resource record sets, see [Working with Resource Record Sets \(p. 75\)](#).

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 specify some values only when you create a health check.

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 \(p. 155\)](#).

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 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 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.

- **TCP** – Amazon Route 53 tries to establish a TCP connection

For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy \(p. 137\)](#).

After you create a health check, you can't change the value of **Protocol**.

Specify Endpoint By

Whether you want to use an IP address or a domain name to specify the endpoint whose health you want to check.

After you create a health check, you can't change the value of **Specify Endpoint By**.

IP Address

The IPv4 address of the endpoint on which you want Amazon Route 53 to perform health checks, if you choose **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 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](#).

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 for **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*.

Port

The port on the endpoint on which you want Amazon Route 53 to perform health checks.

Host Name (Specify Endpoint by IP Address; HTTP and HTTPS Only)

Note

When you choose to specify the endpoint by IP address, this setting is labeled **Host Name**.

When you choose to specify the endpoint by domain name, this setting is labeled **Domain Name**.

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.

Domain Name (Specify Endpoint by Domain Name, 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 request 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.

If you want to check the health of weighted, latency, geolocation routing, or failover resource record sets, 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-1-www.example.com`), not the name of the resource record sets (`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 resource record sets and then associate the health check with those resource record sets, 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.

Path (HTTP and HTTPS 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.

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. Typically around 15 health checkers are checking the health of the specified endpoint. If you choose an interval of 30 seconds, the endpoint will receive a health check request every two to three seconds. If you choose an interval of 10 seconds, the endpoint will receive a request more than once per second.

After you create a health check, you can't change the value of **Request Interval**.

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 \(p. 137\)](#).

Enable String Matching (HTTP and HTTPS Only)

Whether you want Amazon Route 53 to determine the health of an endpoint by establishing a TCP connection 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 **Enable String Matching**.

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.

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 \(p. 139\)](#).

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:

- **Select Existing SNS Topic** – Select the name of the topic from the list
- **Create 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 **Create New SNS Topic**, enter the name of the new topic.

Recipients (Only When Creating a New SNS Topic)

If you specified **Create New SNS Topic**, enter the email addresses that you want to send notifications to. Separate multiple names with commas (,), semicolons (;), or spaces.

In addition, 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](#).

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 resource record sets, perform the recommended tasks in [Updating or Deleting Health Checks when DNS Failover Is Configured \(p. 136\)](#).
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 resource record sets, or you want to change resource record sets that have associated health checks, you must consider how your changes affect routing of DNS queries and your DNS failover configuration.

Caution

Amazon Route 53 does not prevent you from deleting a health check even if the health check is associated with one or more resource record sets. If you delete a health check and you don't update the associated resource record sets, 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 resource record sets, we recommend that you perform the following tasks:

1. Identify the resource record sets that are associated with the health checks. To identify the resource record sets that are associated with a health check, you must do one of the following:
 - Review the resource record sets in each hosted zone using the Amazon Route 53 console. For more information, see [Listing Resource Record Sets \(p. 129\)](#).
 - Run the `GET ListResourceRecordSets` API action on each hosted zone and review the response. For more information, see [GET 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 resource record sets, and determine which changes to make. For more information, see the following topics:
 - [What Happens When You Omit Health Checks? \(p. 148\)](#)
 - [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Resource Record Sets \(p. 154\)](#)
3. Change health checks and resource record sets as applicable. For more information, see the following topics:
 - [Creating and Updating Health Checks \(p. 132\)](#)
 - [Editing Resource Record Sets \(p. 128\)](#)
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 \(p. 135\)](#). For information about using the Amazon Route 53 API, see [DELETE 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, see **Forum Announcements** at the top of the [Amazon Route 53 forum](#).

You can also get the IP addresses of Amazon Route 53 health checkers using the Amazon Route 53 API. For more information, see [GET GetCheckerIpRanges](#) in the *Amazon Route 53 API Reference*.

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.

For more information, see [Creating, Updating, and Deleting Health Checks \(p. 131\)](#).

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 resource record sets 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 resource record sets. The 18% value might change in a future release.

Monitoring Health Check Status and Getting Notifications

You can monitor the status of your health checks in the Amazon Route 53 console. You can also use CloudWatch to set alarms and get automated notifications when your health check status changes.

Topics

- [Viewing Health Check Status and the Reason for Health Check Failures](#) (p. 138)
- [Monitoring Health Checks Using CloudWatch](#) (p. 139)

Viewing Health Check Status and the Reason for Health Check Failures

You can view the current status of a health check endpoint as reported by each of the Amazon Route 53 health checkers, including a brief explanation of why a health check failed. In addition, for the most recent health check failure, you can view the reason that the health check failed.

To view the status and last failure reason for a health check by 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 **Health Checks**.
3. For a quick view of whether Amazon Route 53 considers a health check endpoint to be healthy, see the **Status** column in the right pane. For more information, see [How Amazon Route 53 Determines Whether an Endpoint Is Healthy](#) (p. 137).
4. For a more detailed view of whether individual Amazon Route 53 health checkers consider a health check endpoint to be healthy, in the right pane, select the health check for which you want to view the status.
5. In the bottom pane, choose the **Health Checkers** tab.

Note

New health checks must propagate to Amazon Route 53 health checkers before health check status and last failure reason appear in the **Status** column. Until propagation has finished, 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 CheckerIP

The IP address of the Amazon Route 53 health checker that performed the health check.

Last Checked/Last Failed

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 Health Checks Using CloudWatch

Amazon Route 53 health checks integrate 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 Amazon Route 53 considers your specified endpoint to be 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 \(p. 137\)](#).

See the applicable procedure:

- [To view the status of a health-check endpoint \(p. 139\)](#)
- [To receive an Amazon Simple Notification Service \(Amazon SNS\) notification for an unhealthy endpoint \(p. 140\)](#)
- [To view CloudWatch alarm status and edit alarms for Amazon Route 53 \(p. 141\)](#)
- [To view Amazon Route 53 metrics in the CloudWatch console \(p. 142\)](#)

To view the status of a health-check endpoint

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.

Two graphs appear in the bottom pane and 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 Reporting Healthy (Percent)

The graph shows the percentage of Amazon Route 53 health checkers that consider the selected endpoint to be healthy.

Note

If you selected more than one health check, the graph displays a separate color-coded line for each health check.

4. To view a larger graph and specify different settings, click the graph. The following settings are meaningful:


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 Simple Notification Service (Amazon SNS) notification for an unhealthy endpoint

1. In the navigation pane of the Amazon Route 53 console, choose **Health Checks**.
2. Choose the row for the applicable health check.
3. Choose **Create Alarm**.
4. Specify the following values:

Send a notification to

If you want to use an existing Amazon SNS topic to notify you if the status of this health check triggers an alarm, select the topic from this list.

If you want to create a new topic, choose **Create Topic**, and enter a name for the new topic in this field.

With these recipients (Only when creating new topics)

If you're creating a new Amazon SNS topic, enter the email address that will receive the Amazon SNS notification when a health check triggers an alarm.

To send notifications to more than one email address, separate the addresses with commas (,) or semi-colons (;).

Whenever *<statistic>* of Health Check Status Is *<operator>* *<value>*

Use the following setting to determine when CloudWatch should trigger an alarm:

Whenever *Minimum of Health Check Status* is *< 1*

This causes CloudWatch to notify you when Amazon Route 53 health checkers report that the endpoint is unhealthy.

For at least *x* consecutive periods of *y* minutes/hours

Specify how many consecutive time periods that the health check status must meet the criteria before CloudWatch sends notification. Then specify the length of the time period.

Create Alarm Cancel

You can use CloudWatch alarms to be notified automatically whenever metric data reaches a level you define. To edit an alarm, first choose whom to notify and then define when the notification should be sent.

Send a notification to: [create topic](#)

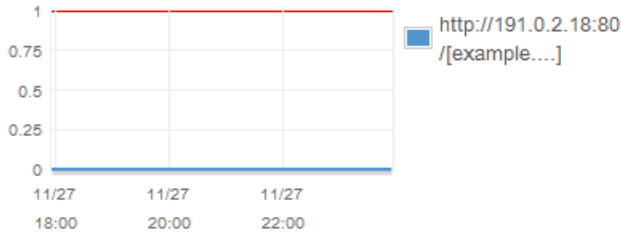
Whenever: of

Is:

For at least: consecutive period(s) of

Name of alarm:

Health Check Status



5. When you choose **Create**, Amazon SNS sends you an email with information about the new Amazon SNS topic.
6. 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

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 in 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 **Route 53**.
4. Under **HealthCheckId**, check the checkboxes for the applicable 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, weighted, latency, geolocation routing, and failover resource record sets:

- **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 resource record sets 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 resource record sets that all have the same name and type, for example, a group of weighted resource record sets 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 \(p. 143\)](#).
- In more complex configurations, you use a combination of alias resource record sets, including weighted alias, latency alias, geolocation alias, and failover alias resource record sets, to create a tree of resource record sets. As with a simple configuration, you configure Amazon Route 53 to check the health of your resources. However, you can also configure the alias resource record sets 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 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. 145).

How Health Checks Work in Simple Amazon Route 53 Configurations

The simplest configuration for which checking the health of your resources is useful is when you have two or more resources that are performing the same function. For example, you might have multiple Amazon EC2 servers running HTTP server software responding to requests for the example.com website. In Amazon Route 53, you create a group of resource record sets that have the same name and type, such as weighted resource record sets or latency resource record sets of type A. You create one resource record set for each resource, and you configure Amazon Route 53 to check the health of the corresponding resource. In this configuration, Amazon Route 53 chooses which resource record set will respond to a DNS query for example.com and bases the choice in part on the health of your resources.

As long as all of the resources are healthy, Amazon Route 53 responds to queries using all of your example.com weighted resource record sets. When a resource becomes unhealthy, Amazon Route 53 responds to queries using only the healthy resource record sets for example.com.

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

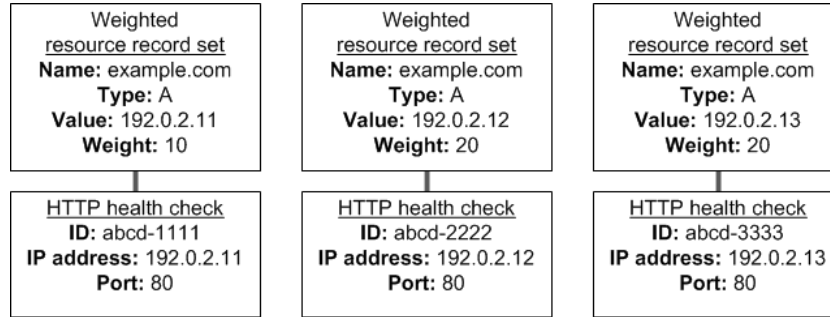
Amazon Route 53 cannot check the health of endpoints for which the IP address is in local, private, nonroutable, or multicast ranges. For more information about IP addresses for which you cannot create health checks, see [RFC 5735, Special Use IPv4 Addresses](#) and [RFC 6598, IANA-Reserved IPv4 Prefix 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. 131). For information about creating health checks by using the Route 53 API, see [POST 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. 136).
4. You create a group of resource record sets for your resources, for example, a group of weighted resource record sets that all have a type of A. You associate the health checks that you created in step 2 with the corresponding resource record sets. When you're finished, your configuration looks similar to the following diagram:

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How Health Checks Work in Simple Amazon Route 53 Configurations



For more 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 \(p. 80\)](#). For information about creating resource record sets by using the Amazon Route 53 API, see [POST 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 \(p. 137\)](#).

Important

Amazon Route 53 doesn't check the health of the resource specified in the resource record set, such as the IP address specified in an A record for example.com. When you associate a health check with a resource record set, Amazon Route 53 begins to check the health of the endpoint that you specified in the health check.

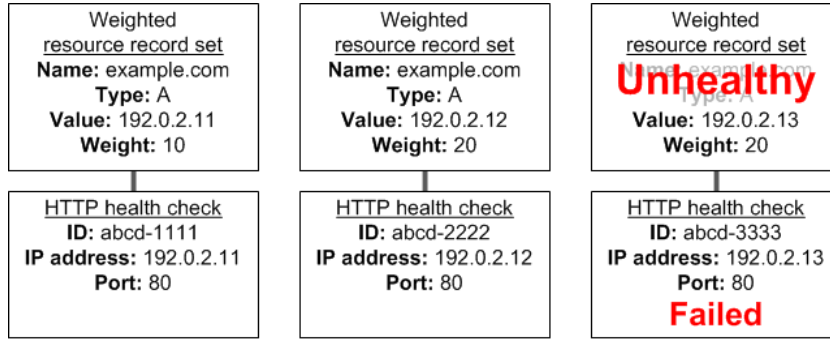
6. Here's what happens when Amazon Route 53 receives a query for example.com:
 - a. Amazon Route 53 chooses a resource record set based on the routing policy. In this case, it chooses a resource record set based on weight.
 - b. It determines the current health of the selected resource record set by checking the status of the health check for that resource record set.
 - c. If the selected resource record set is unhealthy, it repeats the process of choosing a resource record set based on the routing policy. This time, the unhealthy resource record set isn't considered.
 - d. It responds to the query with the selected healthy resource record set.

The following example shows a group of weighted resource record sets in which the third resource record set is unhealthy. Initially, Amazon Route 53 selects a resource record set based on the weights of all three resource record sets. If it happens to select the unhealthy resource record set the first time, Amazon Route 53 selects another resource record set, but this time it omits the weight of the third resource record set from the calculation:

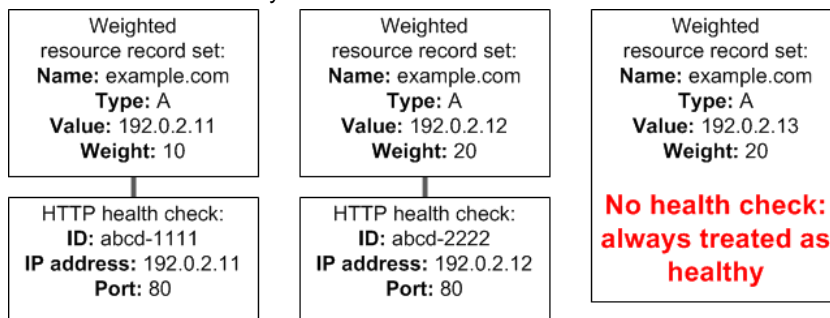
- When Amazon Route 53 initially selects from among all three resource record sets, it responds to requests using the first resource record set about 20% of the time, $10/(10 + 20 + 20)$.
- When Amazon Route 53 determines that the third resource record set is unhealthy, it responds to requests using the first resource record set about 33% of the time, $10/(10 + 20)$.

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How Health Checks Work in Complex Amazon Route 53 Configurations



If you omit a health check from one or more resource record sets in a group of resource record sets, Amazon Route 53 treats those resource record sets as healthy. Amazon Route 53 has no basis for determining the health of the corresponding resource and might choose a resource record set for which the resource is unhealthy.



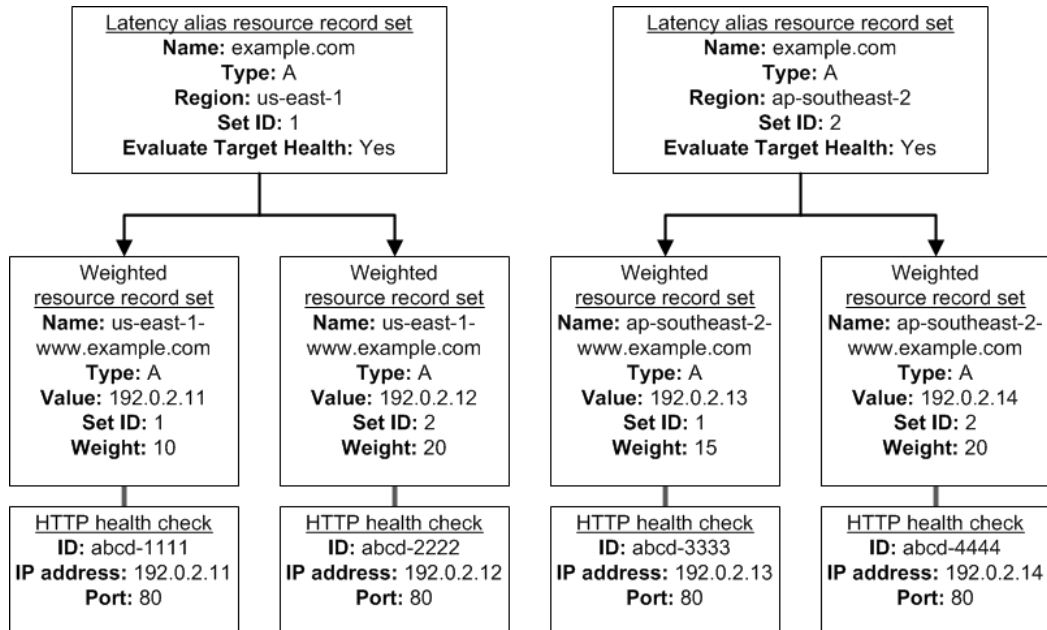
How Health Checks Work in Complex Amazon Route 53 Configurations

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 resource record sets (including weighted alias, latency alias, and failover alias) and nonalias resource record sets 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. 143).

For example, you might use latency alias resource record sets to select a region close to a user and use weighted resource record sets 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.

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How Health Checks Work in Complex Amazon Route 53 Configurations



Here's how Amazon EC2 and Amazon Route 53 are configured:

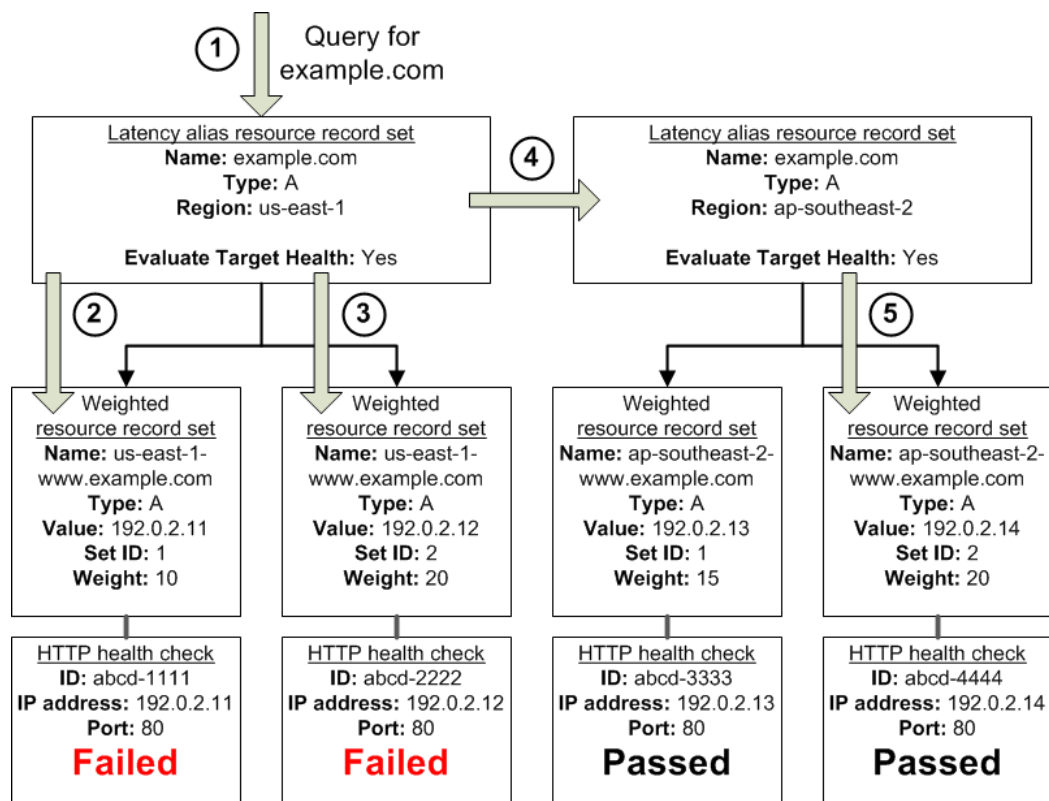
- You have Amazon EC2 instances in two regions, us-east-1 and ap-southeast-2. You want Amazon Route 53 to respond to queries by using the resource record sets in the region that provides the lowest latency for your customers, so you create a latency alias resource record set for each region. (You create the latency alias resource record sets after you create resource record sets for the individual Amazon EC2 instances.)
- Within each region, you have two Amazon EC2 instances. You create a weighted resource record set for each instance. The name and the type are the same for both of the weighted resource record sets in each region.

When you have multiple resources in a region, you can create weighted or failover resource record sets for your resources. You can also create even more complex configurations by creating weighted alias or failover alias resource record sets that, in turn, refer to multiple resources.

- Each weighted resource record set has an associated health check. The IP address for each health check matches the IP address for the corresponding resource record set. This isn't required, but it's the most common configuration.
- For both latency alias resource record sets, you set the value of **Evaluate Target Health** to **Yes**.

You use the **Evaluate Target Health** setting for each latency alias resource record set to make Amazon Route 53 evaluate the health of the alias targets—the weighted resource record sets—and respond accordingly.

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How Health Checks Work in Complex Amazon Route 53 Configurations



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 resource record set for the `us-east-1` region.
2. Amazon Route 53 selects a weighted resource record set based on weight. **Evaluate Target Health** is **Yes** for the latency alias resource record set, so Amazon Route 53 checks the health of the selected weighted resource record set.
3. The health check failed, so Amazon Route 53 chooses another weighted resource record set based on weight and checks its health. That resource record set also is unhealthy.
4. Amazon Route 53 backs out of that branch of the tree, looks for the latency alias resource record set with the next-best latency, and chooses the resource record set for `ap-southeast-2`.
5. Amazon Route 53 again selects a resource record set based on weight, and then checks the health of the selected resource record set. 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 Resource Record Set? \(p. 147\)](#)
- [What Happens When You Omit Health Checks? \(p. 148\)](#)
- [What Happens When You Set Evaluate Target Health to No? \(p. 149\)](#)

What Happens When You Associate a Health Check with an Alias Resource Record Set?

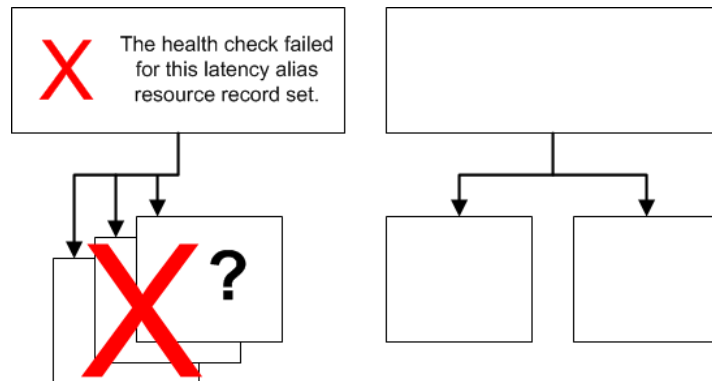
You can associate a health check with an alias resource record set instead of or in addition to setting the value of **Evaluate Target Health** to **Yes**. However, it's generally more useful if Amazon Route 53 responds

to queries based on the health of the underlying resources—the HTTP servers, database servers, and other resources that your alias resource record sets refer to. For example, suppose the following configuration:

- You assign a health check to a latency alias resource record set for which the alias target is a group of weighted resource record sets.
- You set the value of **Evaluate Target Health** to **Yes** for the latency alias resource record set.

In this configuration, both of the following must be true before Amazon Route 53 will return the applicable value for a weighted resource record set:

- The health check associated with the latency alias resource record set must pass.
- At least one weighted resource record set 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 resource record set healthy.

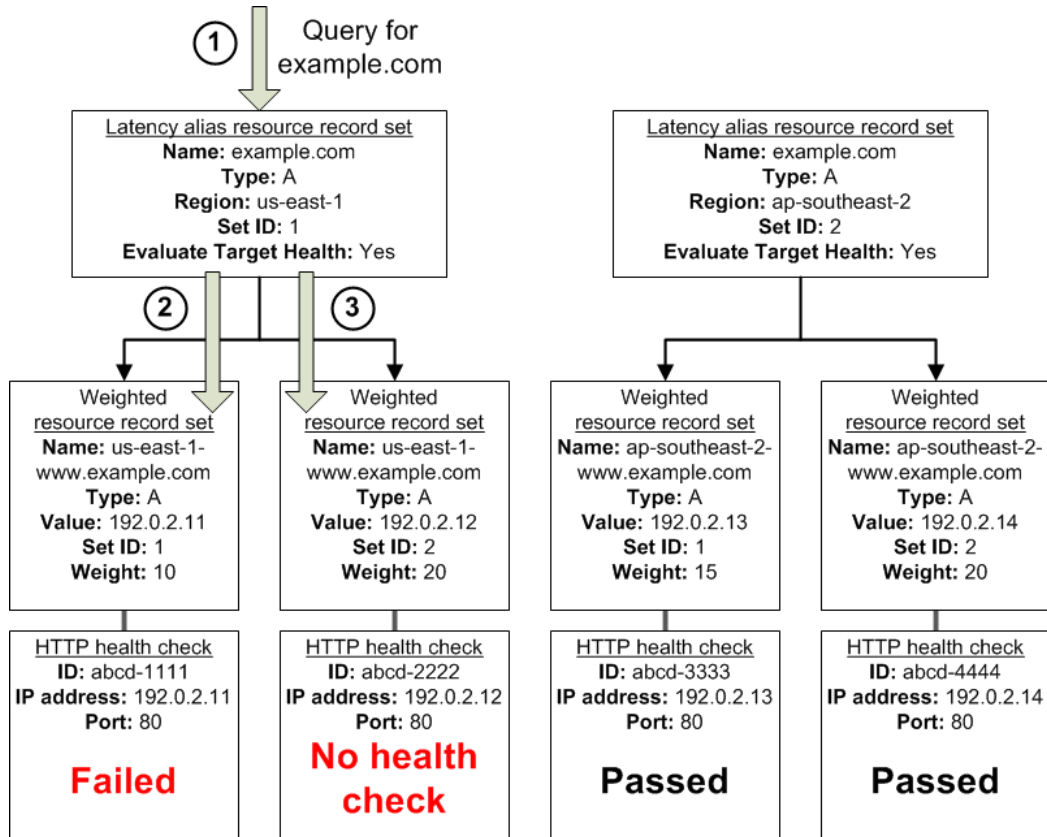


If the health check for the latency alias resource record set fails, Amazon Route 53 stops responding to queries using any of the weighted resource record sets in the alias target, even if they're all healthy. Amazon Route 53 doesn't know the status of the weighted resource record sets because it never looks past the failed health check on the alias resource record set.

What Happens When You Omit Health Checks?

In a complex configuration, it's important to associate health checks with all of the non-alias resource record sets. Let's return to the preceding example, but assume that a health check is missing on one of the weighted resource record sets in the us-east-1 region:

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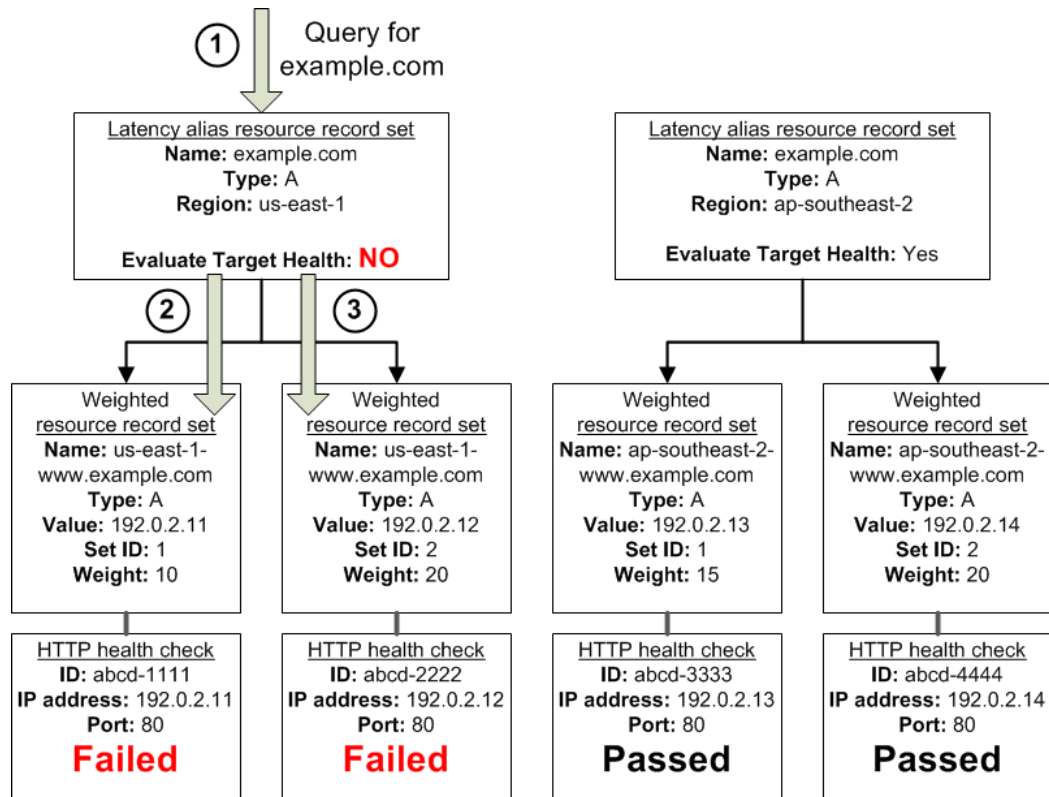


Here's what happens when you omit a health check on a non-alias resource record set in this configuration:

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 resource record set for the us-east-1 region.
2. Amazon Route 53 looks up the alias target for the latency alias resource record set, and checks the status of the corresponding health checks. The health check for one weighted resource record set failed, so that resource record set is omitted from consideration.
3. The other weighted resource record set 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 resource record sets. In the following example, all of the weighted resource record sets have associated health checks, but **Evaluate Target Health** is set to **No** for the latency alias resource record set for the us-east-1 region:



Here's what happens when you set **Evaluate Target Health** to **No** for an alias resource record set 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 resource record set for the `us-east-1` region.
2. Amazon Route 53 determines what the alias target is for the latency alias resource record set, and checks the corresponding health checks. They're both failing.
3. Because the value of **Evaluate Target Health** is **No** for the latency alias resource record set for the `us-east-1` region, Amazon Route 53 must choose one resource record set in this branch instead of backing out of the branch and looking for a healthy resource record set 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 resource record set you're creating (weighted alias, failover, weighted, and so on) for each node:
 - In a simple configuration, your diagram will include only weighted, latency, geolocation, or failover resource record sets; it won't include any alias resource record sets.
 - In a complex configuration, your diagram will include a combination of alias resource record sets (weighted alias, latency alias, geolocation alias, and/or failover alias) and non-alias resource record sets in a multi-level tree like the examples in the topic [How Health Checks Work in Complex Amazon Route 53 Configurations](#) (p. 145).

Note

You can't associate Amazon Route 53 health checks with resource record sets in a private hosted zone.

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 resource record sets.

For more information, see [Creating, Updating, and Deleting Health Checks \(p. 131\)](#).

3. Create all of the non-alias resource record sets in your diagram, and associate the health checks that you created in step 2 with the applicable resource record sets.

You can associate health checks with resource record sets 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 \(p. 75\)](#).
- **Using the Amazon Route 53 API:** See [POST ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

If you're configuring DNS failover in a simple configuration, with no alias resource record sets, skip the remaining tasks.

4. Starting at the bottom of the tree diagram that you created in step 1, create the alias resource record sets (including weighted, latency, geolocation routing, and failover alias resource record sets) for which the alias target is one of the resource record sets 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 resource record sets are unhealthy in a branch of your tree, set the value of **EvaluateTarget Health** to **Yes** for each of your alias resource record sets.
5. If your tree diagram includes nodes for which you have not yet created alias resource record sets, create the remaining alias resource record sets, working from the bottom of the tree toward the top.

Remember that you cannot create an alias resource record set if the alias target resource record set doesn't exist yet.

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 resource record sets. 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 resource record sets in a larger tree. For more information, see [How Health Checks Work in Complex Amazon Route 53 Configurations \(p. 145\)](#).

Topics

- [Configuring Active-Active or Active-Passive Failover by Using Amazon Route 53 Weighted and Weighted Alias Resource Record Sets \(p. 152\)](#)
- [Configuring Active-Active Failover by Using Amazon Route 53 Latency and Latency Alias Resource Record Sets \(p. 153\)](#)
- [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Resource Record Sets \(p. 154\)](#)

Configuring Active-Active or Active-Passive Failover by Using Amazon Route 53 Weighted and Weighted Alias Resource Record Sets

If you add health checks to all of the resource record sets in a group of weighted resource record sets, and you assign nonzero weights to all of the resource record sets, 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.

Important

You can't configure failover in a private hosted zone because you can't associate Amazon Route 53 health checks with resource record sets in a private hosted zone.

Here's how Amazon Route 53 chooses a healthy resource record set:

1. Amazon Route 53 selects a weighted resource record set based on the weights that you've assigned to the resource record sets that have the same name and type.
2. Amazon Route 53 checks the current status of the health check that you associated with that resource record set. (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 resource record set, such as an IP address.

If the health check endpoint is not healthy, Amazon Route 53 selects another weighted resource record set and repeats the process until it finds a resource record set for which the health check endpoint is healthy.

If you add health checks to all of the resource record sets in a group of weighted resource record sets, but you give nonzero weights to some resource record sets 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 resource record sets. For more information, see [Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Resource Record Sets](#) (p. 154).) Health checks in this configuration work the same as in the active-active configuration—when all resource record sets have nonzero weights—with the following exceptions:

- Amazon Route 53 initially considers only the nonzero weighted resource record sets, if any.
- If all of the resource record sets that have a weight greater than 0 are unhealthy, then Amazon Route 53 considers the zero-weighted resource record sets.

If a resource record set in a group of weighted resource record sets 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 resource record sets in the group of weighted resource record sets are healthy, Amazon Route 53 needs to return something in response to DNS queries, but it has no basis for choosing one resource record set over another. In this circumstance, Amazon Route 53 considers all of the resource record sets in the group to be healthy and selects one based on their assigned weights, omitting the resource record sets that have a weight of 0.

You can also use weighted alias resource record sets to configure active-active or active-passive failover. Weighting works the same way as with weighted resource record sets, but the health of a weighted alias resource record set depends on the health of the alias target or targets. For example, suppose the alias target for a weighted alias resource record set is a group of weighted resource record sets that all have nonzero weights. As long as at least one of the weighted resource record sets is healthy, Amazon Route 53 considers the weighted alias resource record set to be healthy. If none of the weighted resource record

sets is healthy, Amazon Route 53 considers the weighted alias resource record set to be unhealthy. Amazon Route 53 stops considering resource record sets in that branch of the tree until at least one weighted resource record set becomes healthy again.

For more information about weighted resource record sets, see [Weighted Routing \(p. 76\)](#).

Configuring Active-Active Failover by Using Amazon Route 53 Latency and Latency Alias Resource Record Sets

If you add health checks to all of the resource record sets in a group of latency resource record sets, the Amazon Route 53 behavior results in an active-active failover configuration.

Important

You can't configure failover in a private hosted zone because you can't associate Amazon Route 53 health checks with resource record sets in a private hosted zone.

Amazon Route 53 considers the health and the latency of the resource record sets when choosing the resource record set with which to respond to DNS queries:

1. Amazon Route 53 selects a latency resource record set 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 resource record set. (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 resource record set, for example, an IP address.

If the health check endpoint is not healthy, Amazon Route 53 selects the latency resource record set with the next-best latency and repeats the process until it finds a resource record set for which the health check endpoint is healthy.

If a resource record set in a group of latency resource record sets 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 resource record sets in a latency resource record set are healthy, Amazon Route 53 needs to return something in response to DNS queries, but it has no basis for choosing one resource record set over another. In this circumstance, Amazon Route 53 considers all of these resource record sets healthy and selects a resource record set based on the latency between the user and each region.

You can also use latency alias resource record sets to configure active-active failover. Assuming that you set **Evaluate Target Health** to true for all of your latency alias resource record sets, the health of a latency alias resource record set depends on the health of the alias target or targets. For example, suppose the alias target for a latency alias resource record set is a group of weighted resource record sets that all have nonzero weights. As long as at least one of the weighted resource record sets is healthy, Amazon Route 53 considers the latency alias resource record set to be healthy. If none of the weighted resource record sets is healthy, Amazon Route 53 considers the latency alias resource record set to be unhealthy. Amazon Route 53 stops considering resource record sets for that region (in that branch of the tree) until at least one weighted resource record set becomes healthy again. For a more detailed explanation of this configuration, see [How Health Checks Work in Complex Amazon Route 53 Configurations \(p. 145\)](#).

For more information about latency resource record sets, see [Latency-Based Routing \(p. 77\)](#).

Configuring Active-Passive Failover by Using Amazon Route 53 Failover and Failover Alias Resource Record Sets

You can create an active-passive failover configuration by using failover resource record sets. You create a primary and a secondary failover resource record set that have the same name and type, and you associate a health check with each. The primary and secondary failover resource record sets can refer to anything from an Amazon S3 bucket that is configured as a website to a complex tree of resource record sets. When all of the resources that are referenced by the primary failover resource record set are unhealthy, Amazon Route 53 automatically begins responding to queries by using the resources that are referenced by the secondary failover resource record set.

Important

You can't configure failover in a private hosted zone because you can't associate Amazon Route 53 health checks with resource record sets in a private hosted zone.

For example, you might create a pair of failover resource record sets 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 resource record sets. If you associate health checks with both the primary and secondary failover resource record sets, here's how Amazon Route 53 responds to requests:

- If Amazon Route 53 considers the primary resource record set healthy (if the health check endpoint is healthy), Amazon Route 53 returns only the primary resource record set in response to a DNS query.
- If Amazon Route 53 considers the primary resource record set unhealthy and the secondary resource record set healthy, Amazon Route 53 returns the secondary resource record set instead.
- If Amazon Route 53 considers both the primary and secondary resource record sets unhealthy, Amazon Route 53 returns the primary resource record set.

When you're configuring the secondary resource record set, adding a health check is optional. If you omit the health check for the secondary resource record set, and if the health check endpoint for the primary resource record set is unhealthy, Amazon Route 53 always responds to DNS queries by using the secondary resource record set. This is true even if the secondary is unhealthy. When there is no health check on the secondary resource record set, Amazon Route 53 doesn't know that the associated resource is unhealthy and always assumes that it's healthy.

Use *failover* resource record sets 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 resource record set, and you specify the server in the US West (N. California) region in the secondary failover resource record set.

Use *failover alias* resource record sets when you have two *groups* of resource record sets (for example, groups of weighted or latency resource record sets), 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 resource record set and a failover alias resource record set. Either resource record set, the primary or the secondary, can be the failover alias resource record set. For example, you might create a failover resource record set for a single HTTP server, and create a failover alias resource record set 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 resource record sets 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 \(p. 80\)](#). For information about using the Amazon Route 53 API, see [POST ChangeResourceRecordSets](#) in the *Amazon Route 53 API Reference*.

Note

You can create failover resource record sets only in public hosted zones.

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 (weighted, latency, geolocation routing, and failover) has a mode of last resort. In this special mode, when all resource record sets are considered unhealthy, the Amazon Route 53 algorithm reverts to considering all resource record sets 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 Sao Paulo location might have good access to the health check endpoints in the sa-east-1 (Sao Paulo) AWS region, but poor access to endpoints elsewhere. At the same time, Amazon Route 53 in us-east-1 (Virginia) might have poor access to health check endpoints in the Sao Paulo region, and conclude that the corresponding resource record sets 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 \(p. 131\)](#).
- To add, edit, or delete tags for health checks and hosted zones by using the Amazon Route 53 API, see [POST ChangeTagsForResource](#) in the *Amazon Route 53 API Reference*.
- For an overview of tagging Amazon Route 53 resources, see [Tagging Amazon Route 53 Resources \(p. 171\)](#).

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 *n* **Health Checks Selected** 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 **Save**.

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 *n* **Health Checks Selected** 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 resource record sets 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 resource record sets that include the `EvaluateTargetHealth`, `Failover`, or `HealthCheckId` elements.
- The `ListResourceRecordSets` action can list resource record sets 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 resource record set includes an unsupported attribute.

Using IAM to Control Access to Amazon Route 53 Resources

Topics

- [Amazon Route 53 ARNs \(p. 158\)](#)
- [Amazon Route 53 Actions \(p. 159\)](#)
- [Amazon Route 53 Keys \(p. 161\)](#)
- [Example IAM Policies for Amazon Route 53 \(p. 161\)](#)

Amazon Route 53 integrates with AWS Identity and Access Management (IAM) so that you can specify which Amazon Route 53 API actions a user can perform on which Amazon Route 53 resources. For example, you can create an IAM policy that gives certain users in your organization permission to update resource record sets of specific hosted zones that your organization owns.

Important

Using Amazon Route 53 with IAM doesn't change how you use Amazon Route 53. There are no changes to Amazon Route 53 actions.

For an example of a policy that covers Amazon Route 53 actions, see [Example IAM Policies for Amazon Route 53 \(p. 161\)](#).

Amazon Route 53 ARNs

You can specify the following Amazon Route 53 resources in an IAM policy:

- Health checks
- Hosted zones
- Reusable delegation sets
- Changes

You can't specify resource record sets or domains in an IAM policy.

Amazon Route 53 Amazon Resource Names (ARNs) have the following general format:

```
arn:aws:route53::resource/ID
```

The value of *resource* is `healthcheck`, `hostedzone`, `delegationset`, or `change`, and *ID* is the ID of the health check, hosted zone, reusable delegation set, or change.

The following are example ARNs for a health check, a hosted zone, a reusable delegation set, and a change:

```
arn:aws:route53::healthcheck/02ec8401-9879-4259-91fa-example94674
arn:aws:route53::hostedzone/Z148QEXAMPLE8V
arn:aws:route53::delegationset/N1PA6795SAMPLE
arn:aws:route53::change/C2RDJ5EXAMPLE2
```

You can use wildcards (*) in place of the ID. For example, the following could specify all hosted zones associated with an AWS account:

```
arn:aws:route53::hostedzone/*
```

For more information about ARNs, see *ARNs* at [IAM ARNs](#) in *Using IAM*.

Amazon Route 53 Actions

To grant or deny permission to perform an Amazon Route 53 operation, specify the name of the corresponding API action in an IAM policy. For example, to grant or deny permission to create hosted zones, add the `CreateHostedZone` API action to an IAM policy. When you specify an action in an IAM policy, you grant or deny permission to the operation regardless of how a user performs it—the Amazon Route 53 console and API, the AWS CLI, all AWS SDKs, and AWS Tools for Windows PowerShell.

For a list of Amazon Route 53 action names, see the [Amazon Route 53 API Reference](#).

Actions on Hosted Zones, Resource Record Sets, Health Checks, and Reusable Delegation Sets

To grant or deny permission to use actions related to hosted zones, resource record sets, health checks, and reusable delegation sets, prefix the action name with the following lowercase string:

```
route53:
```

For example, specify `route53:CreateHostedZone`, `route53:GetChange`, or `route53:*` (for all actions).

If you're working with private hosted zones, the following commands require an additional permission so a user can access Amazon VPCs:

- `CreateHostedZone`
- `AssociateVPCWithHostedZone`

To grant permission to create a private hosted zone or associate an Amazon VPC with a private hosted zone, include the following in the IAM policy:

```
"Action":["ec2:DescribeVpcs"]
```

Actions on Domain Registration

To grant or deny permission to use actions related to domain registration, prefix the action name with the following lowercase string:

```
route53domains:
```

For example, specify `route53domains:CheckDomainAvailability`, `route53domains:RegisterDomain`, or `route53domains:*` (for all domain-registration actions).

When you grant permission to register domains, you must also grant permission to create hosted zones. When you register a domain, Amazon Route 53 automatically creates a hosted zone for the domain.

Actions on Specific Resources

For most actions on hosted zones, health checks, and reusable delegation sets, you can grant or deny permission to act on a resource or a set of resources. In the ARN, you specify either the type of resource and its ID, or the type of resource and `*` for the ID. However, the following actions don't act on specific resources, so policies for these actions must specify `*` for the ID:

Health Checks

- `CreateHealthCheck`
- `GetCheckerIpRanges`
- `GetHealthCheckCount`
- `ListHealthChecks`

Hosted Zones

- `CreateHostedZone`
- `ListHostedZones`

Reusable Delegation Sets

- `CreateReusableDelegationSet`
- `ListReusableDelegationSets`

If you're working with private hosted zones, the following commands require an additional permission so you can access Amazon VPCs:

- `CreateHostedZone`
- `AssociateVPCWithHostedZone`

The IAM policy for user creating private hosted zones or associating Amazon VPCs with a private hosted zone must have at least the following access:

```
"Action": [ "ec2:DescribeVpcs" ]
```

For a list of Amazon Route 53 action names, see the [Amazon Route 53 API Reference](#).

Amazon Route 53 Keys

Amazon Route 53 implements only the following policy keys. For more information about policy keys, see "Available Keys for Conditions" in [IAM Policy Elements Reference](#) in *Using IAM*.

AWS-Wide Policy Keys

- `aws:CurrentTime` (for date/time conditions)
- `aws:EpochTime` (the date in epoch or UNIX time, for use with date/time conditions)
- `aws:SourceIp` (the requester's IP address, for use with IP address conditions)
- `aws:UserAgent` (information about the requester's client application, for use with string conditions)

If you use `aws:SourceIp`, and the request comes from an Amazon EC2 instance, the public IP address of the instance is evaluated to determine whether access is allowed.

Key names are case insensitive. For example, `aws:CurrentTime` is equivalent to `AWS:currenttime`.

Example IAM Policies for Amazon Route 53

This section shows a simple policy for controlling user access to Amazon Route 53.

Important

The value of the `Version` element must be the current version of the IAM policy language. For the current date, see [Version](#) in the "IAM Policy Elements Reference" in *Using IAM*.

Example 1: Allow read access to all hosted zones

This policy allows the group it is attached to (for example, the `AllUsers` group) read access to all of the hosted zones that are associated with the AWS account.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53:GetHostedZone",
        "route53:ListResourceRecordSets"
      ],
      "Resource": "arn:aws:route53::hostedzone/*"
    },
    {
      "Effect": "Allow",
      "Action": ["route53:ListHostedZones"],
      "Resource": "*"
    }
  ]
}
```

Example 2: Allow creation and deletion of hosted zones

This policy allows the group it is attached to (for example, the Managers group) to create and delete hosted zones.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": ["route53:CreateHostedZone"],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": ["route53:DeleteHostedZone"],
      "Resource": "arn:aws:route53::change/*"
    },
    {
      "Effect": "Allow",
      "Action": ["route53:GetChange"],
      "Resource": "arn:aws:route53::change/*"
    }
  ]
}
```

Example 3: Allow changes to resource record sets in a specified hosted zone

This policy allows the group it is attached to (for example, a SysAdmins group) to add, delete, and change resource record sets in a specified hosted zone. It also allows the group to request the status of changes.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": ["route53:ChangeResourceRecordSets"],
      "Resource": "arn:aws:route53::hostedzone/Z148QEXAMPLE8V"
    },
    {
      "Effect": "Allow",
      "Action": ["route53:GetChange"],
      "Resource": "arn:aws:route53::change/*"
    }
  ]
}
```

Example 4: Allow full access to all domains (public hosted zones only)

This policy gives the group that it's attached to (for example, a SysAdmins group) full read and write permissions to all of the domains associated with an AWS account, including permissions to register domains and create hosted zones. When you register a domain, a hosted zone is created at the same time, so a policy that includes permission to register domains also requires permission to create hosted zones. (Amazon Route 53 doesn't support resource-level permissions for domain registration.)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53domains:*",
        "route53:CreateHostedZone"
      ],
      "Resource": "*"
    }
  ]
}
```


Example 5: Allow full access to the Amazon Route 53 console

This policy gives the group that it's attached to (for example, a SysAdmins group) full read and write permissions to all functionality in the Amazon Route 53 console. Here's why each permission is required:

- `route53:*` lets you perform all Amazon Route 53 actions except creating and updating alias resource record sets, working with private hosted zones, and working with domains.
- `cloudfront:ListDistributions`, `elasticloadbalancing:DescribeLoadBalancers`, and `s3:ListBucket` let you create and update alias resource record sets for which the value of **Alias Target** is a CloudFront distribution, an ELB load balancer, or an Amazon S3 bucket, respectively.

These permissions are not required if you're using only the Amazon Route 53 API. Amazon Route 53 uses them only to get lists of distributions, load balancers, and buckets for display in the console.

- `ec2:DescribeVpcs` and `ec2:DescribeRegions` let you work with private hosted zones.
- `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 permission to register domains also requires permission to create hosted zones.

Amazon Route 53 doesn't support resource-level permissions for domain registration.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "route53:*",
        "cloudfront:ListDistributions",
        "elasticloadbalancing:DescribeLoadBalancers",
        "s3:ListBucket",
        "ec2:DescribeVpcs",
        "ec2:DescribeRegions",
        "route53domains:*"
      ],
      "Resource": "*"
    }
  ]
}
```

Using AWS CloudTrail to Capture Requests Sent to the Amazon Route 53 API

Amazon Route 53 is integrated with CloudTrail, an AWS service that captures information about every request that is sent to the Amazon Route 53 API by your AWS account, including 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 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 \(p. 165\)](#)
- [Amazon Route 53 Information in CloudTrail Log Files \(p. 166\)](#)
- [Understanding Amazon Route 53 Log File Entries \(p. 166\)](#)

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-ebee-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. 155).

You can also apply tags to resources by using the Amazon Route 53 API. For more information, see [Tagging Hosted Zones and Health Checks](#) and [Tagging Domains](#) in the *Amazon Route 53 API Reference*.

Amazon Route 53 Tutorials

Topics

- [Transitioning to Latency-Based Routing in Amazon Route 53 \(p. 172\)](#)
- [Adding Another Region to Your Latency-Based Routing in Amazon Route 53 \(p. 174\)](#)
- [Using Latency and Weighted Resource Record Sets in Amazon Route 53 to Route Traffic to Multiple Amazon EC2 Instances in a Region \(p. 175\)](#)
- [Managing Over 100 Weighted Resource Record Sets in Amazon Route 53 \(p. 176\)](#)
- [Weighting Fault-Tolerant Multi-Record Answers in Amazon Route 53 \(p. 176\)](#)

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 may associate a DNS name like `www.example.com` with ELB load balancers or with Amazon EC2 instances or Elastic IP addresses that are hosted in the US East (N. Virginia) 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 (N. Virginia) 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 (N. Virginia) region. The instance has the Elastic IP address `w.w.w.w`. Suppose you want to continue routing traffic to the US East (N. Virginia) 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 (N. Virginia) 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 (N. Virginia) 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 (N. Virginia), 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 (N. Virginia) 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 \(p. 80\)](#).

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. 172).

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 (N. Virginia), 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 (N. Virginia), 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 (N. Virginia), 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

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`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 \(p. 80\)](#).

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 (N. Virginia) region and you want to distribute requests across all three IPs evenly for users for whom US East (N. Virginia) 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 (N. Virginia)), 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 \(p. 80\)](#).

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 \(p. 75\)](#).

Weighting Fault-Tolerant Multi-Record Answers in Amazon Route 53

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.

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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 \(p. 75\)](#).

Amazon Route 53 Limits

Amazon Route 53 API requests are subject to the following limitations.

Request	Limitation
ChangeResourceRecordSets requests	<ul style="list-style-type: none">• A request cannot contain more than 100 <code>Change</code> elements.• A request cannot contain more than 1000 <code>ResourceRecord</code> elements.• The sum of the number of characters (including spaces) in all <code>Value</code> elements in a request cannot exceed 32,000 characters. <p>Note If the value of the <code>Action</code> element in a <code>ChangeResourceRecordSets</code> request is <code>UPSERT</code> and the resource record set already exists, Amazon Route 53 automatically performs a <code>DELETE</code> request and a <code>CREATE</code> request. When Amazon Route 53 calculates the number of characters in the <code>Value</code> elements of a change batch request, it adds the number of characters in the <code>Value</code> element of the resource record set being deleted and the number of characters in the <code>Value</code> element of the resource record set being created.</p>

Request	Limitation
Amazon Route 53 API requests	<ul style="list-style-type: none"> • <i>All requests</i> – 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. • <i>ChangeResourceRecordSets requests</i> – 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. • <i>CreateHealthCheck requests</i> – You can submit a maximum of 1000 CreateHealthCheck requests in a 24-hour period.

Amazon Route 53 entities are subject to the following limitations.

Entity	Limitation
Hosted zones	500 per AWS account. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .
Domains	50 per AWS account. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .
Reusable delegation sets	100 per AWS account. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .
Hosted zones that can use the same reusable delegation set	100. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .
Amazon VPCs that you can associate with a private hosted zone	100. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .
Resource record sets	10,000 per hosted zone. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .
Weighted and geolocation resource record sets	100 resource record sets that have the same name and type.
Resource records	100 per resource record set.

Entity	Limitation
Health checks	50 active health checks per AWS account. You can request a higher limit at https://console.aws.amazon.com/support/home#/case/create?issueType=service-limit-increase&limitType=service-code-route53 .

Resources for Amazon Route 53

The following related resources can help you as you work with this service.

Topics

- [AWS Resources](#) (p. 181)
- [Third-Party Tools and Libraries](#) (p. 182)
- [Graphical User Interfaces](#) (p. 183)

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.
- [AWS Training and Courses](#) – 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 and resources that provide documentation, code samples, release notes, and other information to help you build innovative applications with AWS.
- [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.

- [Amazon Route 53 to BIND Conversion Tool](#)

A BIND zone file describes a DNS zone in a common text-based format. This Perl script converts the XML-formatted text that is returned by the Amazon Route 53 `ListResourceRecordSets` API action to BIND zone file format.

- [Amazon Route 53 Zone Creation Tool](#)

This Perl script generates `CreatedHostedZoneRequest` XML for a given zone origin to create a zone in 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.

- [BIND to Amazon Route 53 Conversion Tool](#)

A BIND zone file describes a DNS zone in a common text-based format. This Perl script converts a BIND zone file to the XML-formatted text that is required by the Amazon Route 53 `ChangeResourceRecordSets` API action to add or remove records from 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.

- [dev.SquareCows.com projects; script download \(via github\)](#)

Python script to transfer a BIND zone to Amazon Route 53.

- [easyRoute53 \(easyDNS\)](#)

GUI tools, registrar services, and zone transfer services.

- [PHP library for Query-based Amazon Route 53 requests](#)

A simple PHP library for interacting with Amazon Route 53.

- [R53.py \(via github\)](#)

Maintains your own canonical version of your DNS configs under source control, and calculates the minimal changeset required to accomplish a DNS change.

- [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:

- [easyRoute53 \(easyDNS\)](#)
- [Nephelai](#)
- [R53 Fox](#)
- [Ylastic](#)

Document History

The following table describes the important changes to the documentation since the last release of Amazon Route 53.

- **API Version:** 2013-04-01
- **Latest documentation update:** March 3, 2015

The following table describes important changes in each release of the *Amazon Route 53 Developer Guide*.

Change	API Version	Description	Release Date
New Documentation	2013-04-01	The <i>Amazon Route 53 Developer Guide</i> 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. 65).	March 3, 2015
New Feature	2013-04-01	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 GET ListHostedZonesByName and GET GetHostedZoneCount in the <i>Amazon Route 53 API Reference</i> .	February 26, 2015

Change	API Version	Description	Release Date
New Features	2013-04-01	<p>With this release, Amazon Route 53 adds the following new features:</p> <ul style="list-style-type: none"> • 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. 138). • 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. 165). • 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. 132). • 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. 171). 	February 11, 2015
New Feature	2013-04-01	<p>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 or Edit Domain Settings (p. 16).</p>	February 5, 2015
New Feature	2013-04-01	<p>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. 3).</p>	January 22, 2015

Change	API Version	Description	Release Date
New Feature	2013-04-01	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 POST UpdateHostedZoneComment in the <i>Amazon Route 53 API Reference</i> .	November 25, 2014
New Features	2013-04-01	<p>With this release, Amazon Route 53 adds the following new features:</p> <ul style="list-style-type: none"> • 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. 71). • 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. 138). • 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 Actions on Reusable Delegation Sets in the <i>Amazon Route 53 API Reference</i>. • 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. 78). • 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 <i>Amazon Route 53 API Reference</i>. 	November 5, 2014

Change	API Version	Description	Release Date
New Features	2013-04-01	<p>With this release, you now can do the following:</p> <ul style="list-style-type: none"> Register domain names using Amazon Route 53. For more information, see Registering Domain Names Using Amazon Route 53 (p. 13). 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. 78). 	July 31, 2014
New Features	2013-04-01	<p>With this release, you now can do the following:</p> <ul style="list-style-type: none"> Edit most values in health checks. For more information, see Creating, Updating, and Deleting Health Checks (p. 131). 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 GET GetCheckerIPRanges in the <i>Amazon Route 53 API Reference</i>. 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. 155). Use the Amazon Route 53 API to get the number of health checks that are associated with your AWS account. For more information, see GET GetHealthCheckCount in the <i>Amazon Route 53 API Reference</i>. 	July 2, 2014
New Feature, Updated Documentation	2013-04-01	<p>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. 132).</p> <p>In addition, some information about using the Amazon Route 53 API that formerly appeared in the <i>Amazon Route 53 Developer Guide</i> has been moved. Now all API documentation appears in the <i>Amazon Route 53 API Reference</i>.</p>	April 30, 2014

Change	API Version	Description	Release Date
Updated Host header value for HTTPS health checks	2013-04-01	<p>With this release, Amazon Route 53 passes a different value in the <code>Host</code> 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 <code>Host</code> header that contains the value of the Host Name field. If you created the health check by using the <code>CreateHealthCheck</code> API action, this is the value of the <code>FullyQualifiedDomainName</code> element.</p> <p>For more information, see Creating, Updating, and Deleting Health Checks (p. 131).</p>	April 18, 2014
New Features	2013-04-01	<p>With this release, you can now view what percentage of Amazon Route 53 health checkers are currently reporting that an endpoint is healthy.</p> <p>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.</p> <p>For more information, see Monitoring Health Checks Using CloudWatch (p. 139).</p>	April 9, 2014
New Features	2013-04-01	<p>With this release, Amazon Route 53 adds the following features:</p> <ul style="list-style-type: none"> • 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. 137). • 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. 137). 	February 18, 2014

Change	API Version	Description	Release Date
New Features	2013-04-01	<p>With this release, Amazon Route 53 adds the following features:</p> <ul style="list-style-type: none"> • 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. 137). • 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. 137). • UPSERT for the ChangeResourceRecordSets API Action: When creating or changing resource record sets using the <code>ChangeResourceRecordSets</code> API action, you can now use the <code>UPSERT</code> 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 POST ChangeResourceRecordSets in the <i>Amazon Route 53 API Reference</i>. 	January 30, 2014
New Feature	2013-04-01	<p>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. 137).</p>	January 7, 2014
New Feature	2012-12-12	<p>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. 127).</p> <p>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. 139).</p>	August 14, 2013

Change	API Version	Description	Release Date
New Feature	2012-12-12	<p>With this release, Amazon Route 53 adds support for integrating health checks with CloudWatch metrics so you can do the following:</p> <ul style="list-style-type: none"> • 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. <p>For more information, see Monitoring Health Checks Using CloudWatch (p. 139).</p>	June 26, 2013
New Feature	2012-12-12	<p>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 Queries to an Amazon CloudFront Distribution (Public Hosted Zones Only) (p. 56).</p>	June 11, 2013
New Feature	2012-12-12	<p>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 Amazon Route 53 Health Checks and DNS Failover (p. 131).</p>	May 30, 2013
Updated Documentation	2012-12-12	<p>The documentation about health checks and failover was rewritten to enhance usability. For more information, see Amazon Route 53 Health Checks and DNS Failover (p. 131).</p>	March 28, 2013
New Feature	2012-12-12	<p>With this release, Amazon Route 53 adds support for failover and health checks. For more information, see Amazon Route 53 Health Checks and DNS Failover (p. 131).</p>	February 11, 2013
New Feature	2012-02-29	<p>With this release, Amazon Route 53 lets you create latency resource record sets. For more information, see Latency-Based Routing (p. 77).</p>	March 21, 2012
New Feature	2011-05-05	<p>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 <i>Amazon Route 53 Developer Guide</i>.</p>	December 21, 2011

Change	API Version	Description	Release Date
New Feature	2011-05-05	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 <i>Amazon Route 53 Developer Guide</i> , as applicable.	November 16, 2011
Updated Documentation	2011-05-05	The <i>Amazon Route 53 Getting Started Guide</i> was merged into the <i>Amazon Route 53 Developer Guide</i> , and the <i>Developer Guide</i> was reorganized to enhance usability.	October 18, 2011
New Feature	2011-05-05	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. 79) in the <i>Amazon Route 53 Developer Guide</i> .	May 24, 2011
Initial Release	2010-10-01	This is the first release of <i>Amazon Route 53 Developer Guide</i> .	December 5, 2010

AWS Glossary

For the latest AWS terminology, see the [AWS Glossary](#) in the *AWS General Reference*.