

25. ROUTE

53

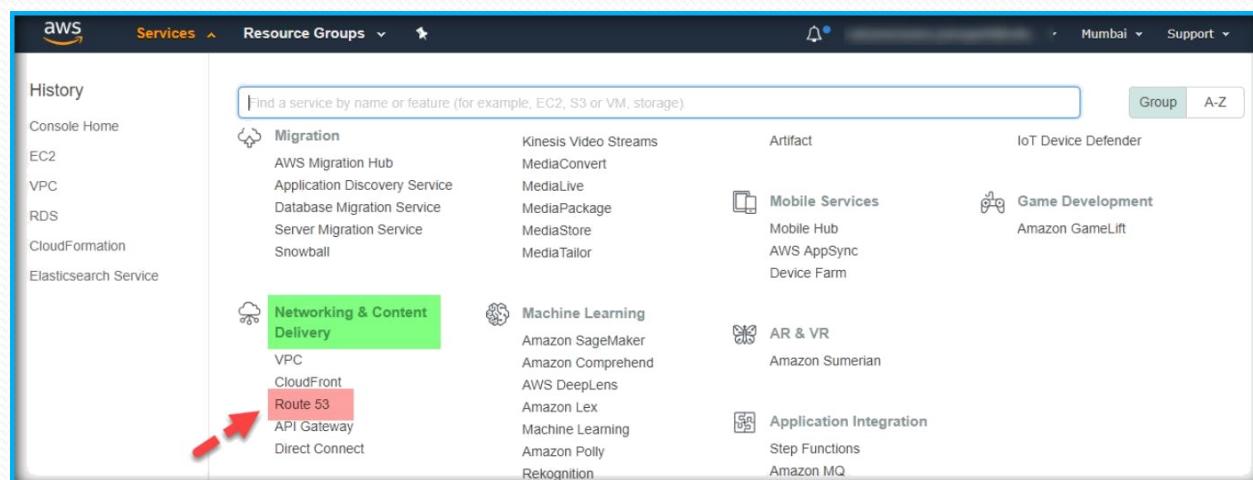
Amazon Route 53 is a highly available and scalable cloud Domain Name System (DNS) web service.

It is designed to give developers and businesses an extremely reliable and cost-effective way to route end users to Internet applications by translating names like wwwexample.com into the numeric IP addresses like 192.0.2.1 that computers use to connect to each other.

Amazon Route 53 effectively connects user requests to infrastructure running in AWS - such as Amazon EC2 instances, Elastic Load Balancing load balancers, or Amazon S3 buckets - and can also be used to route users to infrastructure outside of AWS.

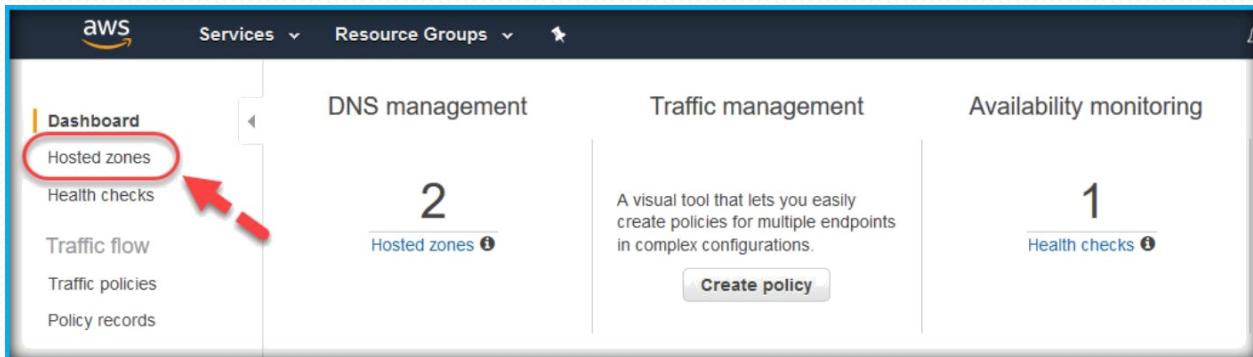
You can use Amazon Route 53 to configure DNS health checks to route traffic to healthy endpoints or to independently monitor the health of your application and its endpoints.

After logged into AWS console, choose Route 53 under Networking section on AWS Console page.

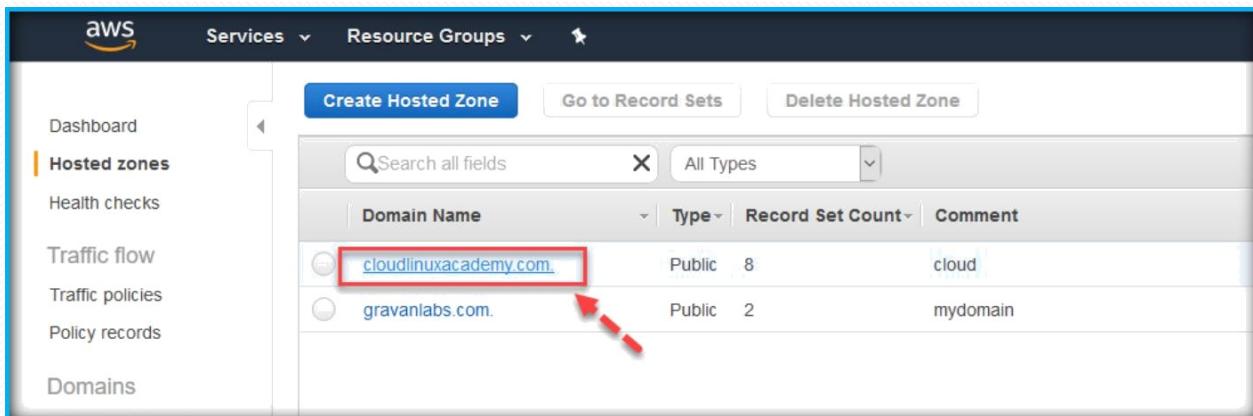


DOMAIN RECORD CREATION

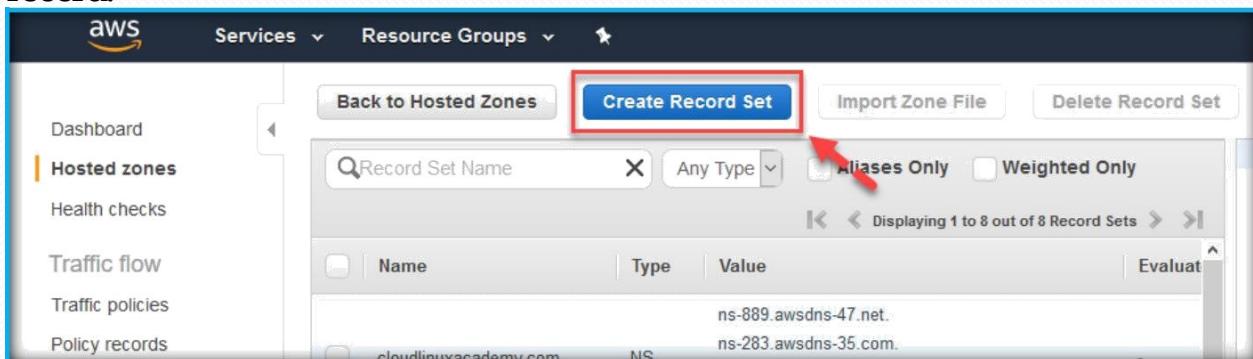
Once you are on the Route 53 dashboard, choose Hosted Zones under Dashboard.



Choose the domain name by click on the name of the any domain, to go inside the domain to create records.



Click on create record set to create a new record.



Once you click on the create record set, a dialog box for creating record will open at the left side of the page like below.

The screenshot shows the AWS Route 53 console under the 'Hosted zones' section. On the left, a sidebar lists various management options. The main area displays a table of existing DNS records for the domain 'cloudlinuxacademy.com'. A modal window titled 'Create Record Set' is open on the right, allowing the creation of a new record. The 'Name' field is populated with 'cloudlinuxacademy.com.', 'Type' is set to 'A - IPv4 address', and the 'Value' field contains the IP address '52.204.131.33'. A red box highlights the 'Create' button at the bottom of the modal.

In the record creation menu, specify the record name and specify IP Address in the Value text field, then click on Create button to create the record.

This screenshot is identical to the previous one, showing the 'Create Record Set' dialog. However, the 'Value' field now contains the IP address '192.0.1.35', indicating that a new record has been successfully created. A green box highlights the 'Create' button at the bottom of the modal.

Once record created, we can be able to see the record in the records list.

The screenshot shows the AWS Route 53 'Hosted zones' interface. On the left sidebar, 'Hosted zones' is selected. The main area displays a table of DNS records for the domain 'cloulinuxacademy.com'. A red box highlights the first record in the list:

Record Set Name	Type	Value
cloudlinuxacademy.com.	NS	ns-889.awsdns-47.net. ns-283.awsdns-36.com ns-1828.awsdns-36.co.uk. ns-1241.awsdns-27.org
cloudlinuxacademy.com.	SOA	ns-889.awsdns-47.net. awsdns-hostmaster.amazonaws.com.
app.cloudlinuxacademy.com.	CNAME	ec2-35-154-57-181.ap-south-1.compute.amazonaws.com.
prod.cloudlinuxacademy.com.	A	192.0.1.35
test.cloudlinuxacademy.com.	A	52.66.158.144
test.cloudlinuxacademy.com.	A	35.154.166.147
test.cloudlinuxacademy.com.	A	52.204.131.33
web.cloudlinuxacademy.com.	A	36.164.166.147 52.56.158.144

CREATING HEALTH CHECKS IN ROUTE 53

Once you are in Route 53 dashboard choose Health Checks from left pane.

The screenshot shows the AWS Route 53 'Dashboard' interface. On the left sidebar, 'Health checks' is highlighted with a red box and a red arrow points to it from the bottom-left. The main area has three tabs: 'DNS management' (selected), 'Traffic management', and 'Traffic flow'. A pink box highlights the 'Choose Health Checks' button. Below it, there's a summary: '1 Hosted zones' with an info icon. To the right, there's a section about traffic policies and a 'Create policy' button.

On the next page, click on Create Health check.

Welcome to Route 53 health checks

Route 53 health checks monitor the health and performance of your application's servers, or endpoints, from either a domain name or an IP address and a port to create HTTP, HTTPS, and TCP health checks.

Create health check

On next page specify following fields.

Specify a name for health check under name text field. Choose one option from the what to monitor.

In the monitor an endpoint selects either IP or Domain, specify protocol from the drop down list, Specify the IP address or Domain name, Specify the port to check for.

Then click on Next to continue.

Configure health check

Route 53 health checks let you track the health status of your resources, such as web servers or mail servers, and take action when an outage occurs.

Name 

What to monitor Endpoint Status of other health checks (calculated health check) State of CloudWatch alarm

Monitor an endpoint

Multiple Route 53 health checkers will try to establish a TCP connection with the following resource to determine whether it's healthy.
[Learn more](#)

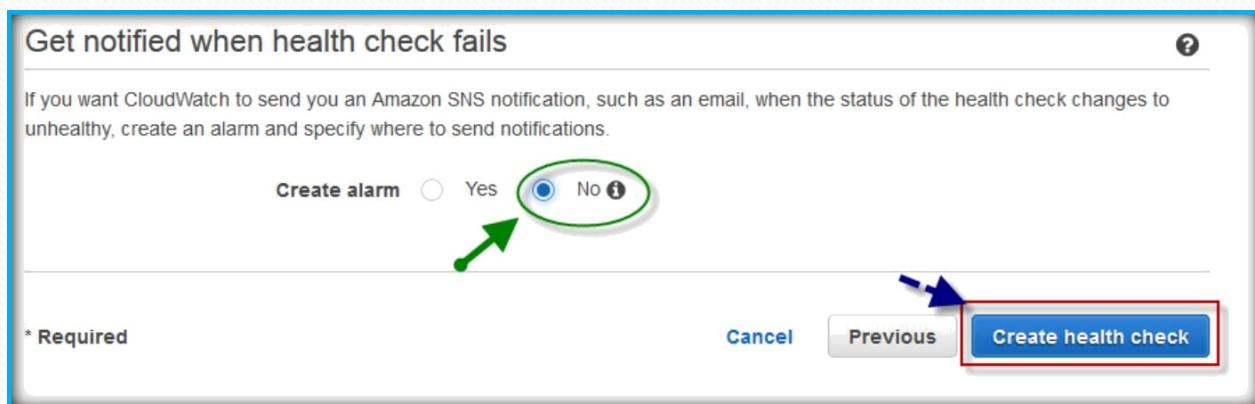
Specify endpoint by IP address Domain name

Protocol 

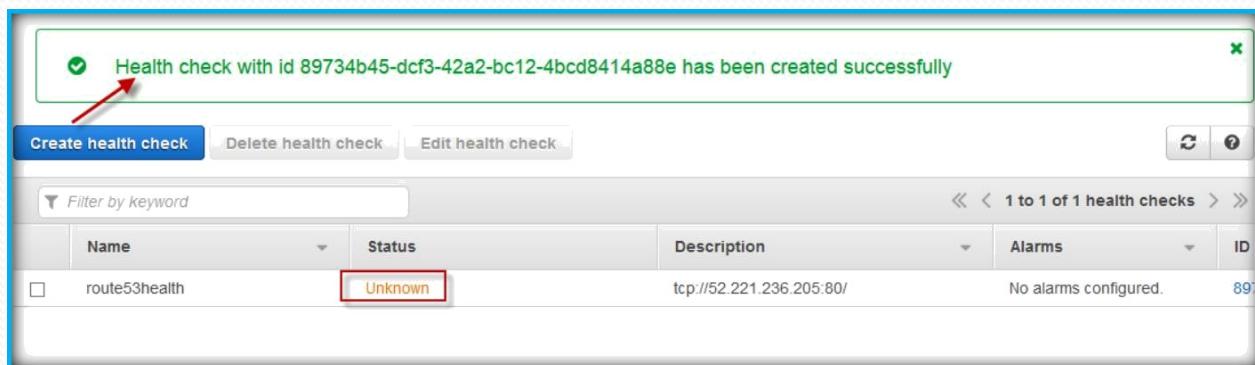
IP address * 

Port * 

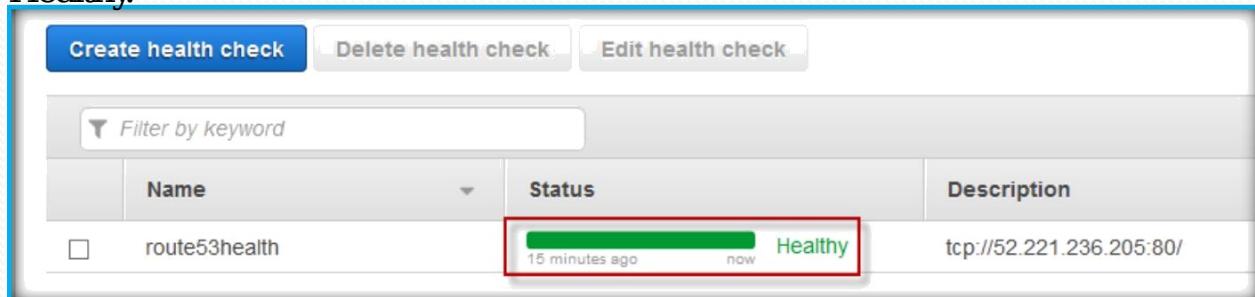
In next window, select notification need to send or not. Then click on Create Health Check.



Once you click on Create health check, it will prompt the successful creation of health check and status will be unknown as it needs to verify.



Once checked status will show as Healthy.



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:

1. Simple Routing Policy
2. Weighted Routing Policy
3. Latency Routing Policy
4. Failover Routing Policy (Public Hosted Zones Only)
5. Geolocation Routing Policy

Simple Routing Policy:

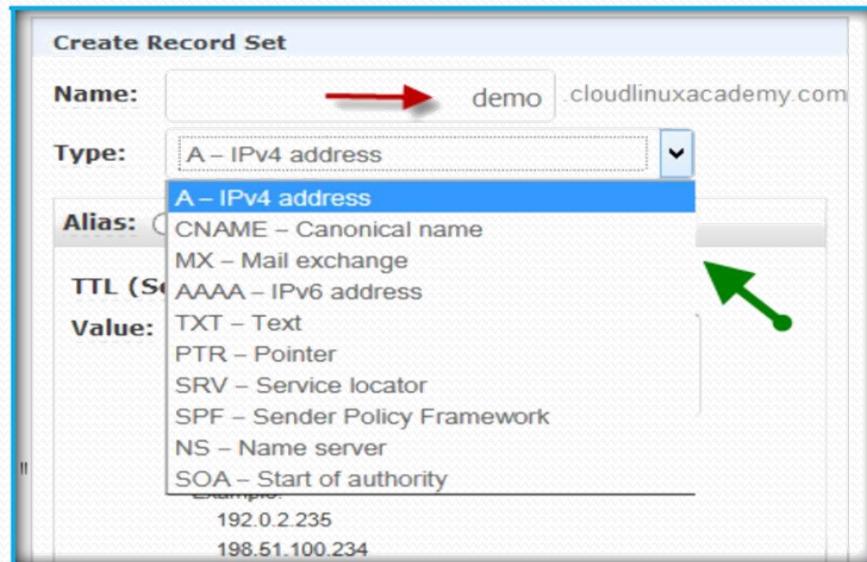
Use a simple routing policy when you have a single resource that performs a given function for your domain, for example, one web server that serves content for the example.com website. In this case, Amazon Route 53 responds to DNS queries based only on the values in the resource record set, for example,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

CREATE SIMPLE ROUTING POLICY

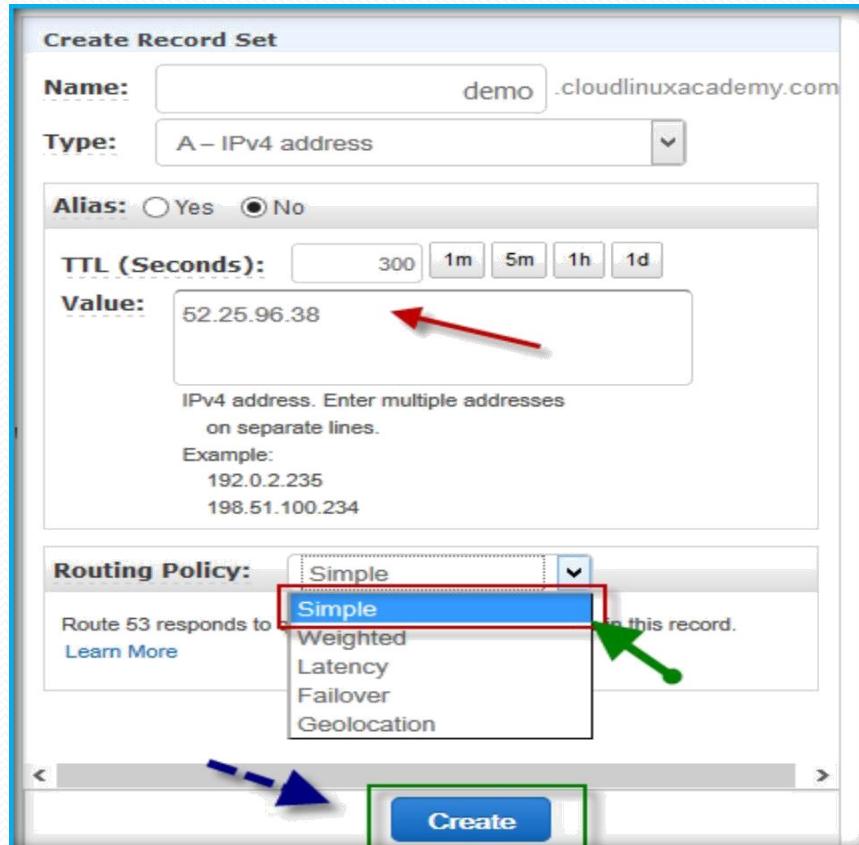
After logged in to AWS console, open your domain hosted zone under Route 53. Then click on Create Record Set to create a new one.

The screenshot shows the 'Create Record Set' interface. At the top, there are three buttons: 'Back to Hosted Zones', 'Create Record Set' (which is highlighted with a red box and has an arrow pointing to it), and 'Import Zone File'. Below these are fields for 'Record Set Name' (with a search icon) and 'Type' (set to 'Any Type'). To the right of these fields is a dropdown menu labeled 'Choose Create Record Set' with options like 'Simple Only' and 'Weighted Only'. At the bottom, there's a table with columns for 'Name', 'Type', and 'Value', and a 'Evaluate' button.

Then specify record name in name text field, choose record type from Type drop down list under Create record set dashboard on right side of the page.



Then specify value (either IP or Name) in Value text field, make sure Routing Policy is selected as simple from Routing Policy drop down list. Then once finished click on Create to create a record.

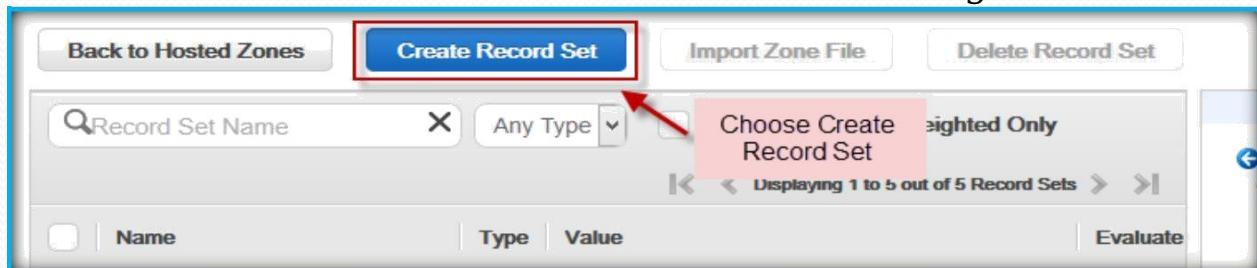


Weighted Routing Policy:

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, one quarter to one server and three quarters to the other).

CREATE WEIGHTED ROUTING POLICY

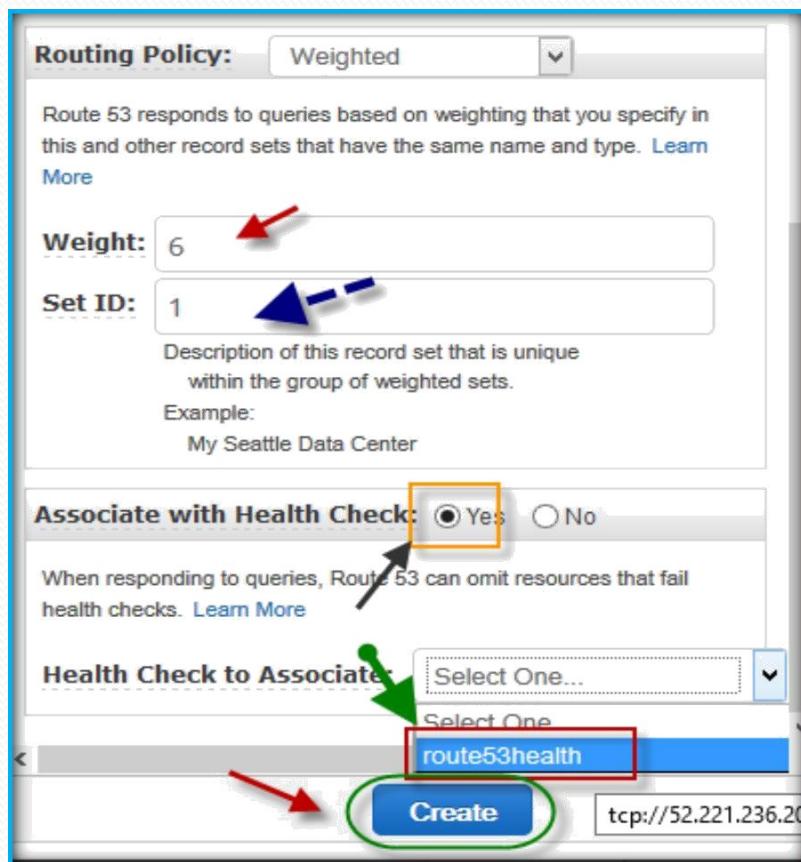
After logged in to AWS console, open your domain hosted zone under Route 53. Then click on Create Record Set to create a new first weighted record.



Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Weighted as routing policy from routing drop down list under Create record set dashboard on right side of the page.

The screenshot shows the 'Create Record Set' dialog box. It has fields for 'Name' (set to 'www'), 'Type' (set to 'A - IPv4 address'), 'Alias' (radio button set to 'No'), 'TTL (Seconds)' (set to 60), 'Value' (containing the IP address '52.221.236.205'), and 'Routing Policy' (set to 'Weighted'). Below the 'Value' field, there is a note: 'IPv4 address. Enter multiple addresses on separate lines.' and an example: '192.0.2.235
198.51.100.234'. At the bottom, there is a note: 'Route 53 responds to queries based on weighting that you specify in this and other record sets that have the same name and type.'.

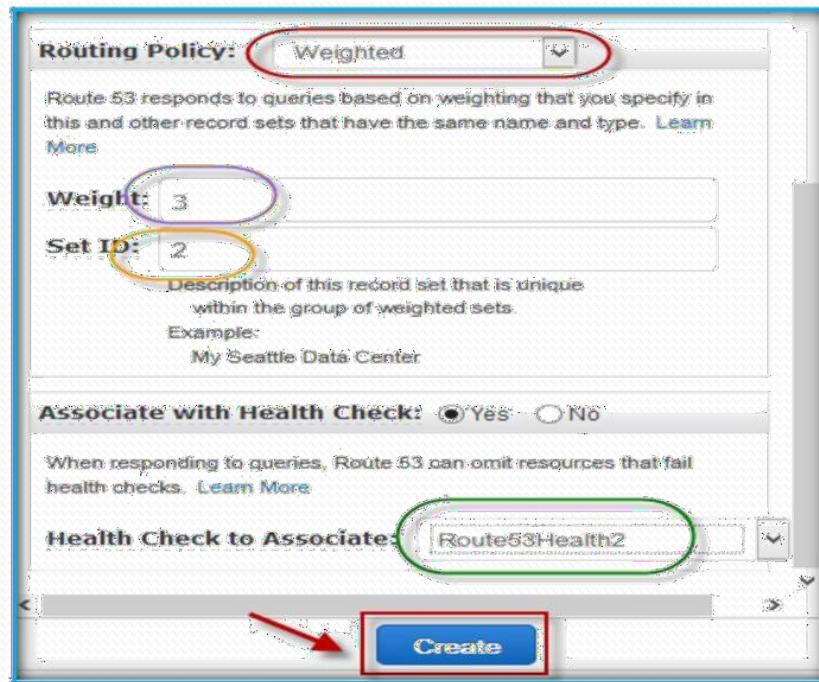
In the Routing policy section below, specify weight and Set ID. Then choose yes to associate with health check which we created, select health check from the drop down list, after specifying all options click on Create to create a record.



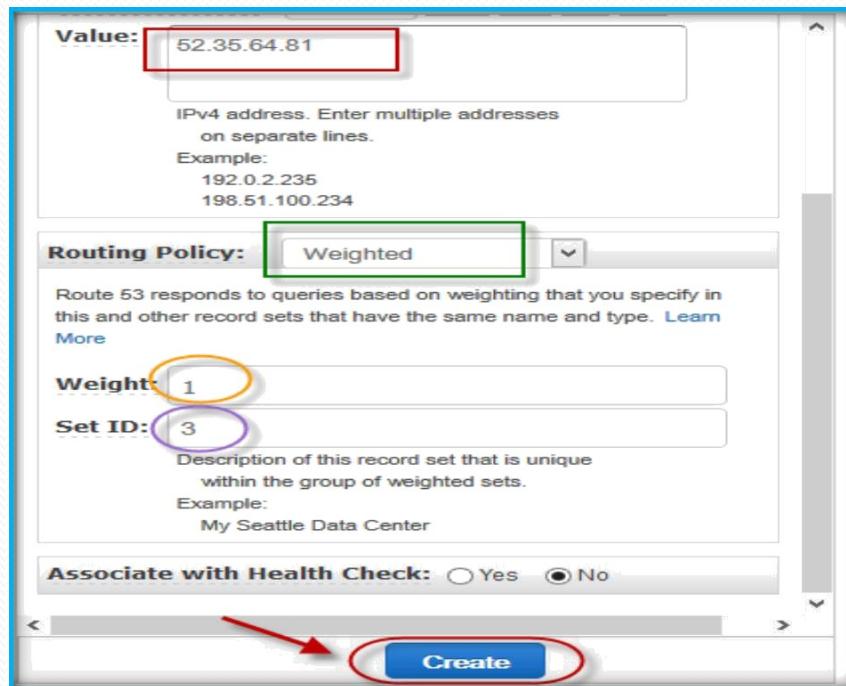
First create a health check for this server as well.

Then create the same www record with same record Type as A provide another server IP address in the Value text field and choose Routing policy as Weighted.

Under Weighted policy specify Weight as 3 and Set ID as 2 as it is second server. Then choose health check which created for this and click create to create record.



Then create the same www record with same record Type as A provide another server IP address in the Value text field and choose Routing policy as Weighted. Under Weighted policy specify Weight as 1 and Set ID as 3 as it is third server. Then click on create to create record.



Once created you can see same record name and type of record pointed to different servers IP Addresses.

<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	54.169.154.168
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	54.169.148.176
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	52.35.64.81

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.

CREATE LATENCY ROUTING POLICY

After logged in to AWS console, open your domain hosted zone under Route 53. Then click on Create Record Set to create a new first latency record.

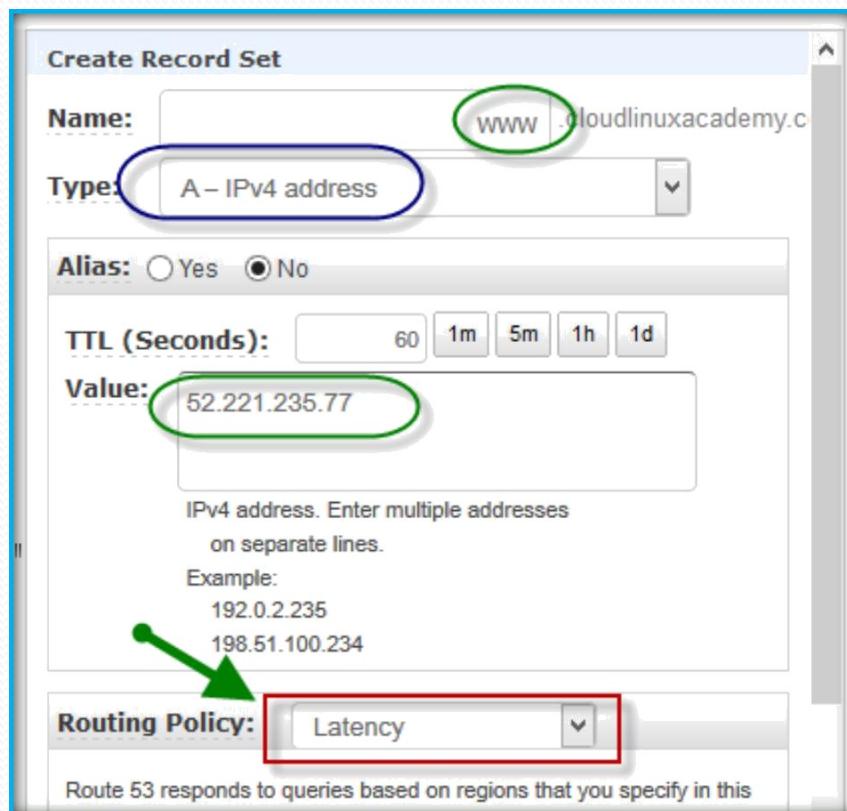
Back to Hosted Zones **Create Record Set** Import Zone File Delete Record Set

Record Set Name Any Type Choose Create Record Set

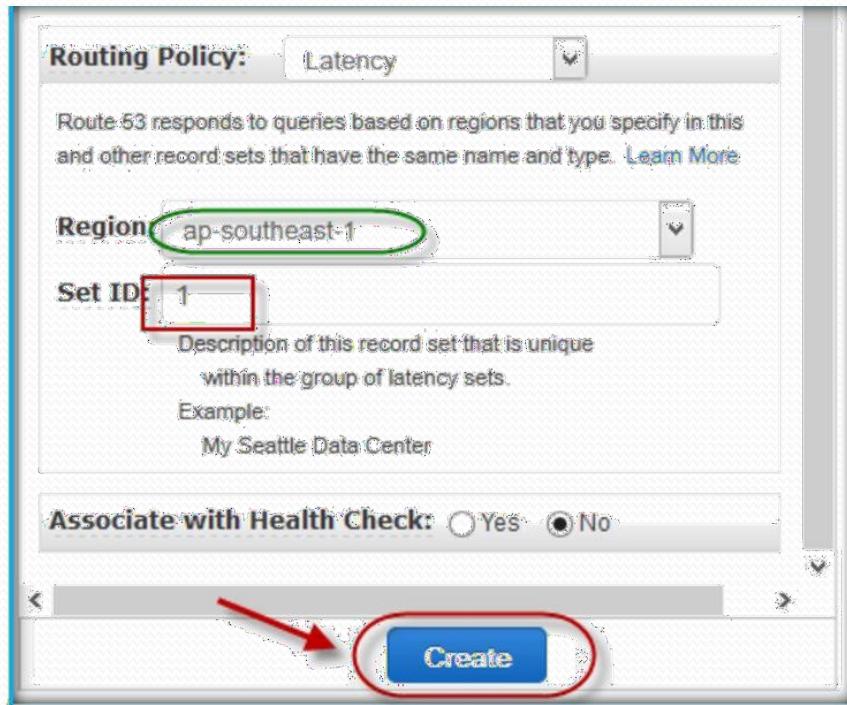
Displaying 1 to 5 out of 5 Record Sets

Name	Type	Value	Evaluate

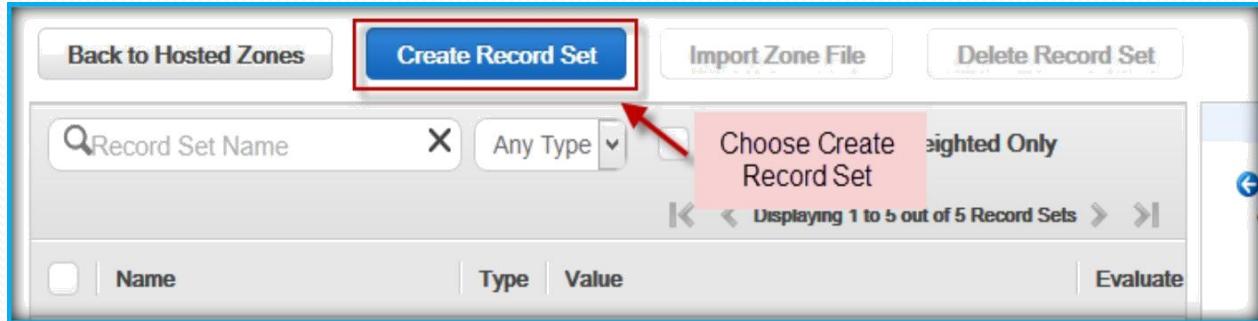
Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Latency as routing policy from routing drop down list under Create record set dashboard on right side of the page.



Under Latency routing policy section, select your server region from region drop down list and specify Set ID then click on Create button.



Now creating another record with same name and type. Click on Create Record Set to create a new second latency record.



Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Latency as routing policy from routing drop down list under Create record set dashboard on right side of the page.

Create Record Set

Name: www.cloudlinuxacademy.cwww cloudlinuxacademy.c

Type: A – IPv4 addressA – IPv4 address

Alias: Yes No

TTL (Seconds): 60

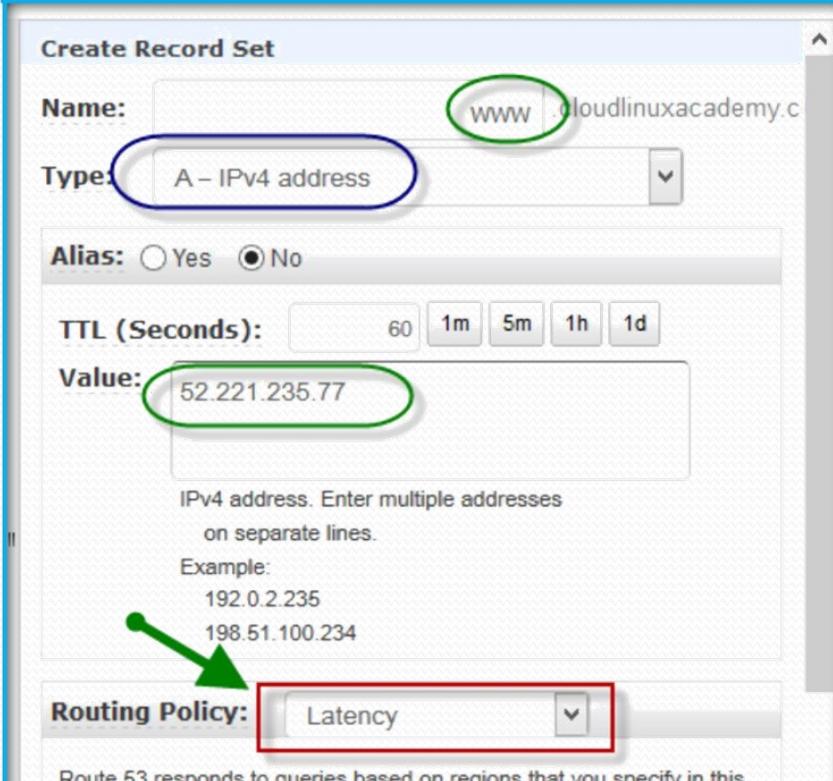
Value: 52.221.235.7752.221.235.77

IPv4 address. Enter multiple addresses on separate lines.

Example:
192.0.2.235
198.51.100.234

Routing Policy: LatencyLatency

Route 53 responds to queries based on regions that you specify in this



Under Latency routing policy section, select your server region from region drop down list and specify Set ID then click on Create button.

Value: 52.33.75.221

IPv4 address. Enter multiple addresses on separate lines.
Example:
192.0.2.235
198.51.100.234

Routing Policy: Latency

Route 53 responds to queries based on regions that you specify in this and other record sets that have the same name and type. [Learn More](#)

Region: us-west-2

Set ID: 2

Description of this record set that is unique within the group of latency sets.
Example:
My Seattle Data Center

Associate with Health Check: Yes No

Create

After completion of creation, you can see same name and type of records will be available under your hosted zone.

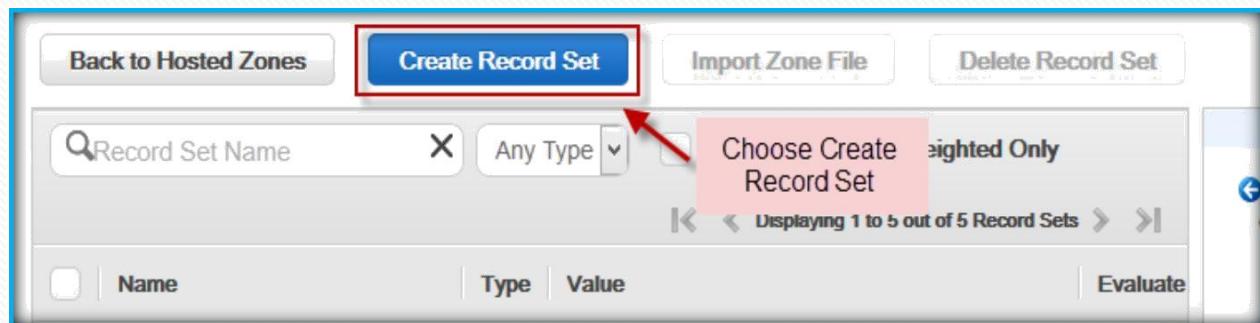
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	52.221.235.77
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	52.33.75.221

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.

CREATE FAILOVER ROUTING POLICY

After logged in to AWS console, open your domain hosted zone under Route 53. Then click on Create Record Set to create a new first failover record.

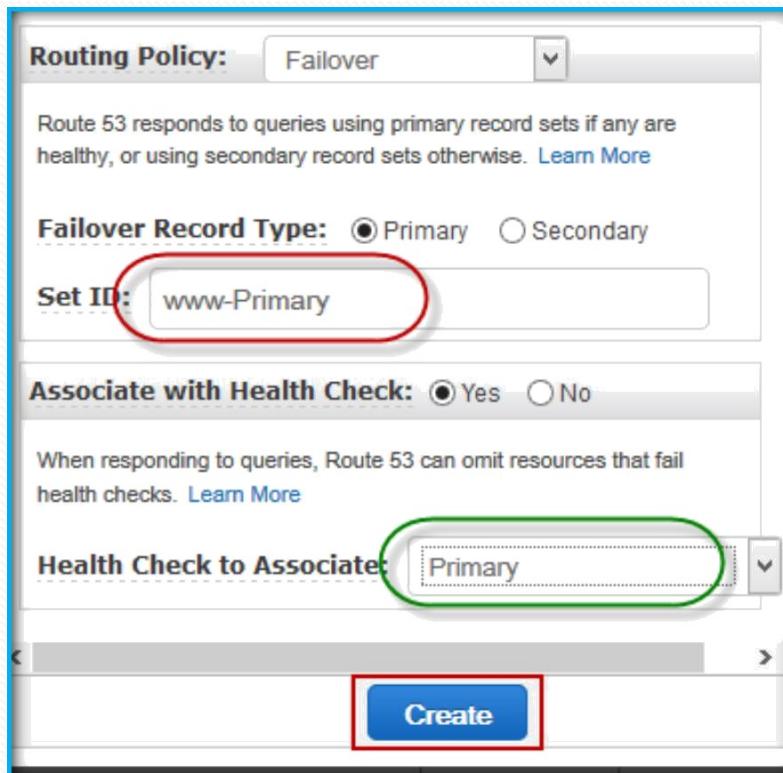


Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Failover as routing policy from routing drop down list under Create record set dashboard on right side of the page.

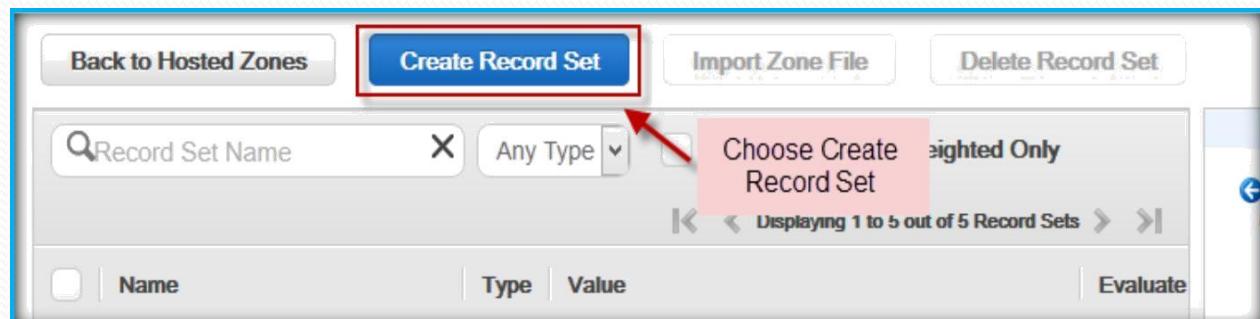
Name:	www
Type:	A - IPv4 address
Alias:	<input type="radio"/> Yes <input checked="" type="radio"/> No
TTL (Seconds):	60 1m 5m 1h 1d
Value:	52.221.235.77
IPv4 address. Enter multiple addresses on separate lines. Example: 192.0.2.235 198.51.100.234	
Routing Policy:	Failover

Under failover routing policy specify failover record type as Primary, specify set ID and choose health check which you created for primary server from Health Check to Associate.

Then click create to create primary record.



Then click on Create Record Set to create a new second failover record.



Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Failover as

routing policy from routing drop down list under Create record set dashboard on right side of the page.

Create Record Set

Name: www.cloudlinuxacademy.c

Type: A - IPv4 address

Alias: Yes No

TTL (Seconds): 60 1m 5m 1h 1d

Value: 52.33.75.221

IPv4 address. Enter multiple addresses on separate lines.
Example:
192.0.2.235
198.51.100.234

Routing Policy: Failover

Route 53 responds to queries using primary record sets if any are

Under failover routing policy specify failover record type as Secondary, specify set ID and choose health check which you created for secondary server from Health Check to Associate.

Then click create to create primary record.

Routing Policy: Failover

Route 53 responds to queries using primary record sets if any are healthy, or using secondary record sets otherwise. [Learn More](#)

Failover Record Type: Primary Secondary

Set ID: www-Secondary

Associate with Health Check: Yes No

When responding to queries, Route 53 can omit resources that fail health checks. [Learn More](#)

Health Check to Associate: Secondary

Create

After completion of creation, you can see same name and type of records will be available under your hosted zone.

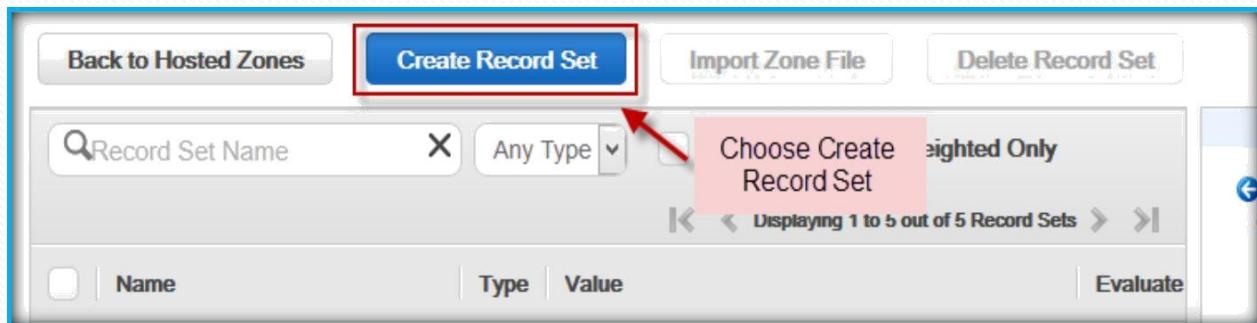
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	52.221.235.77
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	52.33.75.221

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.

CREATE GEOLOCATION ROUTING POLICY

After logged in to AWS console, open your domain hosted zone under Route 53. Then click on Create Record Set to create a new first geolocation record.



Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Geolocation as routing policy from routing drop down list under Create record set dashboard on right side of the page.

A screenshot of the 'Create Record Set' configuration form. It includes fields for Name (with a red arrow pointing to the 'www' input), Type (set to 'A - IPv4 address' with a green arrow pointing to the dropdown), Alias (radio buttons for Yes and No), TTL (Seconds) (set to 60), Value (containing '52.39.104.188' with a blue arrow pointing to it), and Routing Policy (set to 'Geolocation' with an orange oval around the dropdown). A note at the bottom states: 'Route 53 responds to queries based on the locations from which DNS queries originate. We recommend that you create a Default location'.

Under geolocation routing policy specify Location as United States, specify set ID and choose health check which you created for server from Health Check to Associate.

Then click create to create record.

Routing Policy: Geolocation

Route 53 responds to queries based on the locations from which DNS queries originate. We recommend that you create a Default location resource record set [Learn More](#)

Location: United States

Sublocation: Choose a sublocation (optional)

Set ID: 1

Description of this record set that is unique within the group of geolocation sets.
Example:
Route to Seattle data center

Associate with Health Check: Yes No

Create

click on Create Record Set to create a new second geolocation record.

Back to Hosted Zones **Create Record Set** Import Zone File Delete Record Set

Record Set Name Any Type Choose Create Record Set

Displaying 1 to 5 out of 5 Record Sets

Name	Type	Value	Evaluate

Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Geolocation as routing policy from routing drop down list under Create record set dashboard on right side of the page.

Create Record Set

Name: www .cloudlinuxacademy.c →

Type: A – IPv4 address →

Alias: Yes No

TTL (Seconds): 60 1m 5m 1h 1d

Value: 54.179.180.33 →

IPv4 address. Enter multiple addresses on separate lines.
Example:
192.0.2.235
198.51.100.234

Routing Policy: Geolocation →

Route 53 responds to queries based on the locations from which DNS queries originate. We recommend that you create a Default location.

Under geolocation routing policy specify Location as Singapore, specify set ID and choose health check which you created for server from Health Check to Associate.

Then click create to create record.

Routing Policy: Geolocation

Route 53 responds to queries based on the locations from which DNS queries originate. We recommend that you create a Default location resource record set [Learn More](#)

Location: Singapore →

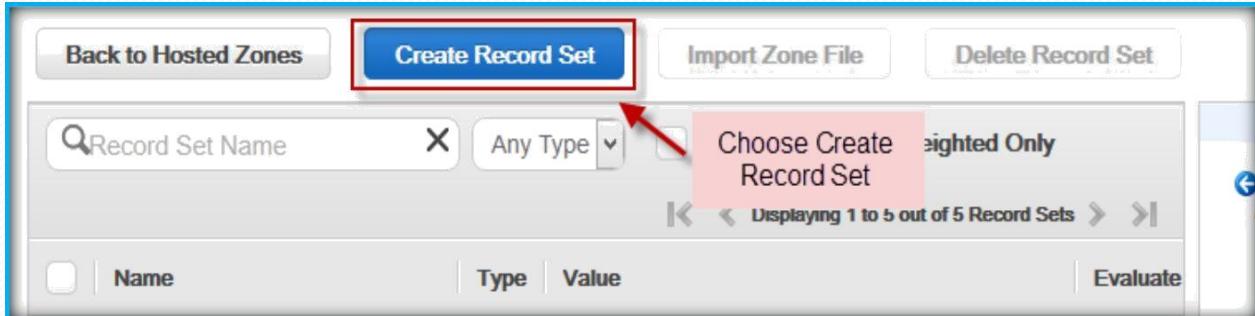
Set ID: 2 →

Description of this record set that is unique within the group of geolocation sets.
Example:
Route to Seattle data center

Associate with Health Check: Yes No

Create →

click on Create Record Set to create a new default geolocation record.



Then specify record name in name text field, choose record type from Type drop down list, specify IP Address or name in value text field, then select Geolocation as routing policy from routing drop down list under Create record set dashboard on right side of the page.

A screenshot of the 'Create Record Set' configuration dialog. It has fields for 'Name' (with a red arrow pointing to it), 'Type' (set to 'A - IPv4 address'), 'Alias' (radio button set to 'No'), 'TTL (Seconds)' (set to 60), 'Value' (containing '54.179.180.33' with a green arrow pointing to it), and 'Routing Policy' (set to 'Geolocation' with a red box around it). Below the 'Value' field is a note about entering multiple addresses on separate lines, with examples provided. A note at the bottom states: 'Route 53 responds to queries based on the locations from which DNS queries originate. We recommend that you create a Default location.'

Under geolocation routing policy specify Location as Default, specify set ID and choose health check which you created for server from Health Check to Associate. Then click create to create record.

Routing Policy: Geolocation

Route 53 responds to queries based on the locations from which DNS queries originate. We recommend that you create a Default location resource record set [Learn More](#)

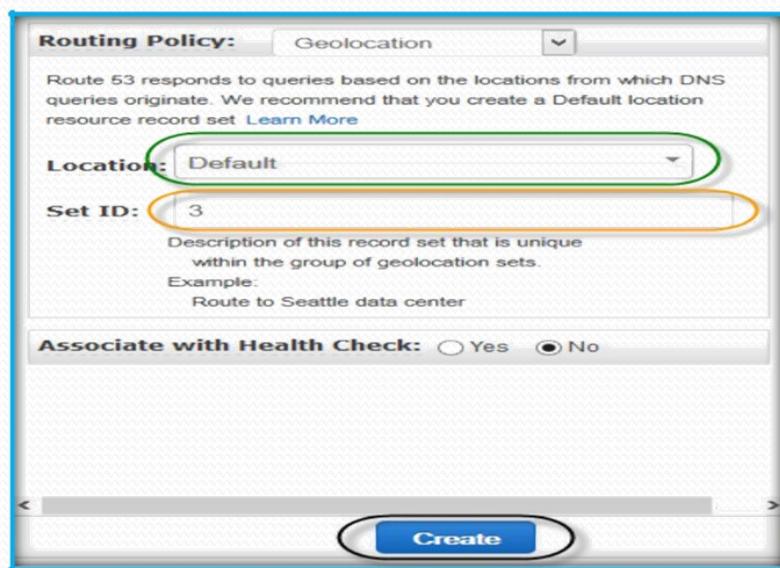
Location: Default

Set ID: 3

Description of this record set that is unique within the group of geolocation sets.
Example:
Route to Seattle data center

Associate with Health Check: Yes No

Create



After completion of creation, you can see same name and type of records will be available under your hosted zone.

<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	52.39.104.188
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	54.179.180.33
<input type="checkbox"/>	www.cloudlinuxacademy.com.	A	54.179.180.33

