

100 Days of DevOps — Day 32-Introduction to NAT Gateway

Welcome to Day 32 of 100 Days of DevOps, Focus for today is NAT Gateway

What is NAT Gateway

NAT gateway enables instance in Private Subnet to connect to the internet or other AWS services but prevent the internet from initiating a connection with those instances.

How NAT works

- NAT device has an Elastic IP address and is connected to the Internet through an internet gateway.
- When we connect an instance in a private subnet through the NAT device, which routes traffic from the instance to the internet gateway and routes any response to the instance
- NAT maps multiple private IPv4 addresses to a single public IPv4 address.

NAT gateway doesn't support IPv6 traffic for that you need to use Egress only gateway.

NOTE: IPv6 traffic is separate from IPv4 traffic, route table must include separate routes for IPv6 traffic.

More info

Comparison of NAT Instances and NAT Gateways — Amazon Virtual Private Cloud

Compare NAT gateways and NAT instances.

docs.aws.amazon.com



To create a NAT gateway

Go to VPC Dashboard → NAT Gateways → Create NAT gateways

NAT Gateways > Create NAT Gateway

Create NAT Gateway

Create a NAT gateway and assign it an Elastic IP address. [Learn more.](#)

Subnet*

subnet-0874607096805045





Elastic IP Allocation ID*

ipalloc-04897f46d510c006f





* Required

Cancel

Create a NAT Gateway

- Make sure you select the Public Subnet in your custom VPC
- For NAT gateway to work, it needs Elastic IP

NOTE: NAT Gateway creation will take 10–15 min

- Once the NAT gateway is available, add it to your default Route table

Route Tables > Edit routes

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
0.0.0.0/0	nat-0786452e0abafab202	active	No

Add route

* Required

Cancel

Save routes

The advantage of NAT Gateway

- NAT gateway is highly available but we need it per availability zone.
- Can scale up to 45Gbps
- Managed by AWS

Limitation of NAT Gateway

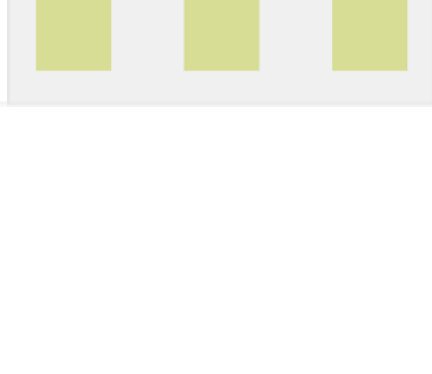
- You can associate exactly one Elastic IP address with a NAT gateway. You cannot disassociate an Elastic IP address from a NAT gateway after it's created. To use a different Elastic IP address for your NAT gateway, you must create a new NAT gateway with the required address, update your route tables, and then delete the existing NAT gateway if it's no longer required.
- You cannot associate a security group with a NAT gateway. You can use security groups for your instances in the private subnets to control the traffic to and from those instances.
- You can use a network ACL to control the traffic to and from the subnet in which the NAT gateway is located. The network ACL applies to the NAT gateway's traffic

Most of the code is the same as VPC Code

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github.com



- Some additions

```
1 #Adding Elastic IP for NAT gateway
2
3 resource "aws_eip" "test_eip" {
4   vpc = true
5 }
6
7 #Adding NAT Gateway
8
9 resource "aws_nat_gateway" "test_nat_gw" {
10  allocation_id = "${aws_eip.test_eip.id}"
11  subnet_id    = "${aws_subnet.public_subnet.0.id}"
12 }
```

nat_gateway.tf hosted with  by GitHub

view raw

As well as we need to tell associate NAT gateway to Private Route Table

```
1 # Private Route Table
2
3 resource "aws_default_route_table" "private_route" {
4   default_route_table_id = "${aws_vpc.main.default_route_table_id}"
5   route {
6     nat_gateway_id = "${aws_nat_gateway.test_nat_gw.id}"
7     cidr_block     = "0.0.0.0/0"
8   }
9
10  tags {
11    Name = "my-private-route-table"
12  }
13 }
```

private_route_table_nat.tf hosted with  by GitHub


view raw

Complete Teraform Code

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Looking forward from you guys to join this journey and spend a minimum an hour every day for the next 100 days on DevOps work and post your progress using any of the below medium.

- Twitter: [@100daysofdevops](#) OR [@lakhera2015](#)
- Facebook: <https://www.facebook.com/groups/795382630808645/>
- Medium: <https://medium.com/@devopslearning>
- Slack: <https://devops-myworld.slack.com/messages/CF41EFG49/>
- GitHub Link:<https://github.com/100daysofdevops>

Reference

100 Days of DevOps — Day 0

D-day is just one day away and finally, this is a continuation of the post(I posted a month earlier)

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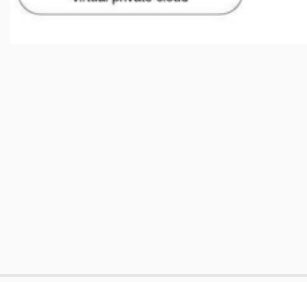
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Mar 13, 2019

100 Days of DevOps — Day 31-Introduction to VPC Peering

Welcome to Day 31 of 100 Days of DevOps, Focus for today is VPC Peering
What is VPC Peering? Let say two VPC want to communicate with each...



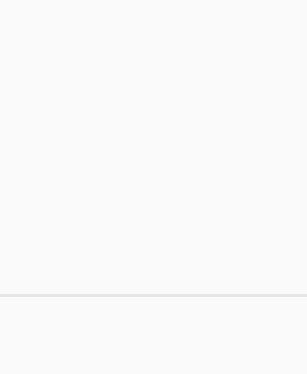
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100 Days of DevOps — Day 30-Introduction to AWS CLI

Welcome to Day 30 of 100 Days of DevOps, Focus for today is AWS CLI
What is AWS CLI? The AWS Command Line Interface (AWS CLI) is a unified tool that provides a consistent interface for interacting with all parts of...

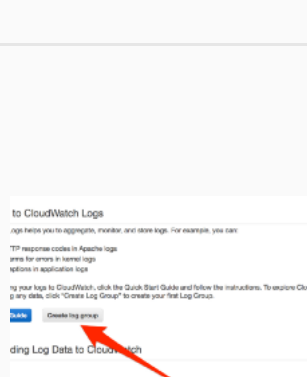


 9 min read 

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100 Days of DevOps — Day 29- Introduction to RDS — MySQL

Welcome to Day 29 of 100 Days of DevOps, Focus for today is RDS What is AWS RDS? Amazon Relational Database Service (Amazon RDS) is a web...

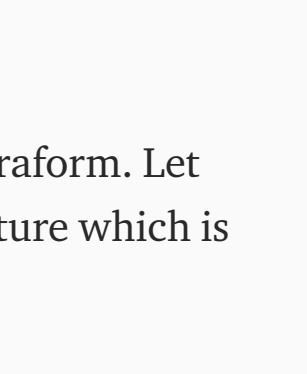


 4 min read 

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100 Days of DevOps — Day 28- Introduction to VPC Flow Logs

Welcome to Day 28 of 100 Days of DevOps, Focus for today is VPC Flow logs
What are VPC Flow logs? It comprised of IP traffic information These...



 4 min read 

Mar 9, 2019

100 Days of DevOps — Day 27- Introduction to Packer

Welcome to Day 27 of 100 Days of DevOps, In the last few weeks we focussed on terraform. Let continue our journey and one thing I want to stress in building any Cloud Infrastructure which is really critical is AMI and to automate the process of AMI creation we can...

 9 min read 

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