

Terraform final tasks

1) Create VPC

The screenshot shows the Terraform code in the main.tf file and the AWS VPC dashboard. The Terraform code defines an AWS VPC resource named "rakesh-vpc" with a CIDR block of "20.0.0.0/16" and a tag "my terraform vpc". The AWS VPC dashboard shows a list of VPCs, including "my terraform vpc" with ID "vpc-06796a8f013946ea1".

```
main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id
1 #create vpc
2 resource "aws_vpc" "rakesh-vpc" {
3     cidr_block = "20.0.0.0/16"
4     tags = {
5         Name = "my terraform vpc"
6     }
7 }
8
```

VPC dashboard Your VPCs (3) Info

Name	VPC ID	State	Block Public...	IPv4 CIDR
default-vpc	vpc-0f2c7d986c9654f78	Available	Off	172.31.0.0/16
custmor-site-site-vpc	vpc-0f3bbca110560718d	Available	Off	10.1.0.0/16
my terraform vpc	vpc-06796a8f013946ea1	Available	Off	20.0.0.0/16

2) Create Internet gateway

The screenshot shows the Terraform code in the main.tf file and the AWS Internet gateways dashboard. The Terraform code defines an AWS Internet Gateway resource named "rakesh-IGW" with a VPC ID of "aws_vpc.rakesh-vpc.id" and a tag "rakesh-IGW". The AWS Internet gateways dashboard shows a list of Internet gateways, including "rakesh-IGW" with ID "igw-085574a922bc8a1ba".

```
main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id
8
9 #create IGW
10 resource "aws_internet_gateway" "rakesh-IGW" {
11     vpc_id = aws_vpc.rakesh-vpc.id
12     tags = {
13         Name = "rakesh-IGW"
14     }
15 }
16
17 #create custom route table
18 resource "aws_route_table" "rakesh_rt" {
19     vpc_id = aws_vpc.rakesh-vpc.id
20     routes = [
21         {
22             destination_cidr_block = "0.0.0.0/0"
23             gateway_id = aws_internet_gateway.rakesh-IGW.id
24             origin = "Gateway"
25         }
26     ]
27 }
28
```

VPC dashboard Internet gateways (4) Info

Name	Internet gateway ID	State	VPC ID
my-igw-1	igw-010126ec85c89c34b	Detached	-
-	igw-01e9363e42b56e852	Attached	vpc-0f2c7d986c9654f78 default-vpc
rakesh-IGW	igw-085574a922bc8a1ba	Attached	vpc-06796a8f013946ea1 my terraform...
custmor-igw	igw-0b42af6b10bdac38	Attached	vpc-0f3bbca110560718d custmor-site...

3) Create Custom Route Table

EXPLORER

TERRAFORM_VS

.terraform

.terraform.lock.hcl

main.tf1

terraform.tfstate

terraform.tfstate.back...

main.tf

main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id

```
10 resource "aws_internet_gateway" "rakesh-IGW" {
15 }
16
17 #create custom route table
18 resource "aws_route_table" "rakesh_rt" {
19     vpc_id = aws_vpc.rakesh-vpc.id
20     #route = [
21         #{
22             #cidr_block = "0.0.0.0/0"
23             #gateway_id = aws_internet_gateway.rakesh-IGW.id
24         }
25     ]
26     tags = {
27         Name = "rakesh-rt"
28     }
29 }
```

VPC dashboard

Route tables (9) Info

Last updated 1 minute ago

Actions

Create route table

Find resources by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	my-pub	rtb-0cdb8be3cb51d607d	-	-	Yes
<input type="checkbox"/>	mt-jenkins	rtb-0a79e69f67b260cb2	subnet-055993eaae2bf9c...	-	No
<input type="checkbox"/>	my-root	rtb-000e4c03c9b4760b5	subnet-09edbfda812c34...	-	No
<input type="checkbox"/>	my-defal-rt	rtb-04546f4bca80dc962	subnet-026d526737b431...	-	No
<input type="checkbox"/>	rakesh-rt	rtb-0aaaa4ffece975f37	subnet-066365da161f54...	-	No

Select a route table

4) Create Subnet

EXPLORER

main.tf 1 x

main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id

```
29 }
30 #create sub net
31 resource "aws_subnet" "rakesh-subnet" {
32     vpc_id = aws_vpc.rakesh-vpc.id
33     cidr_block = "20.0.0.0/24"
34     availability_zone = "us-east-1a"
35     tags = {
36         Name = "rakesh-subnet"
37     }
38 }
39
40
```

Subnets (7) Info

Last updated 1 minute ago

Find resources by attribute or tag

<input type="checkbox"/>	Name	Subnet ID	State	VPC	Block P
<input type="checkbox"/>	-	subnet-076ce22843145fc2d	Available	vpc-0f2c7d986c9654f78 defa...	Off
<input type="checkbox"/>	custmor-site-site-subnet	subnet-0bf8ac43e7a331f30	Available	vpc-0f3bbca110560718d cust...	Off
<input type="checkbox"/>	-	subnet-055993eaae2bf9ced	Available	vpc-0f2c7d986c9654f78 defa...	Off
<input type="checkbox"/>	-	subnet-06bc455471fc5dacc	Available	vpc-0f2c7d986c9654f78 defa...	Off
<input type="checkbox"/>	rakesh-subnet	subnet-066365da161f542d9	Available	vpc-06796a8f013946ea1 my t...	Off

Select a subnet

5) Associate subnet with Route Table

EXPLORER

main.tf 1 x

main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id

```
39
40
41 #Associate subnet with Route Table
42 resource "aws_route_table_association" "rakesh-subnet" {
43     subnet_id = aws_subnet.rakesh-subnet.id
44     route_table_id = aws_route_table.rakesh_rt.id
45 }
46 #Create Security Group to allow port 22, 80, 443
```

EC2 VPC IAM S3 Athena CloudTrail CloudWatch

VPC dashboard ×

EC2 Global View

Filter by VPC ▾

Virtual private cloud

- Your VPCs
- Subnets
- Route tables**
- Internet gateways
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- NAT gateways

Route tables (1/9) Info Last updated 3 minutes ago Actions ▾ Create route table

	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	my-pub	rtb-0cdb8be3cb51d607d	–	–	Yes
<input type="checkbox"/>	mt-jenkins	rtb-0a79e69f67b260cb2	subnet-055993eaae2bf9c...	–	No
<input type="checkbox"/>	my-root	rtb-000e4c03c9b4760b5	subnet-09edbfda812c34...	–	No
<input type="checkbox"/>	my-defal-rt	rtb-04546f4bca80dc962	subnet-026d526737b431...	–	No
<input checked="" type="checkbox"/>	rakesh-rt	rtb-0aaaa4ffce975f37	subnet-066365da161f54...	–	No

Explicit subnet associations (1) Edit subnet associations

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
rakesh-subnet	subnet-066365da161f542d9	20.0.0.0/24	–

Subnets without explicit associations (0) Edit subnet associations

6) Create Security Group to allow port 22.80,443

```
main.tf 1 x
main.tf > resource "aws_route_table" "rakesh_rt" { vpc_id
46 #Create Security Group to allow port 22,80,443
47 resource "aws_security_group" "rakesh-sg" {
48   name = "using security group terraform"
49   description = "Security group to allow SSH, HTTP, and HTTPS traffic"
50   vpc_id = aws_vpc.rakesh-vpc.id
51   ingress {
52     description = "TLS form VPC"
53     from_port = 443
54     to_port = 443
55     protocol = "tcp"
56     cidr_blocks = ["0.0.0.0/0"]
57   }
58   ingress {
59     description = "SSH"
60     from_port = 22
61     to_port = 22
62     protocol = "tcp"
63     cidr_blocks = ["0.0.0.0/0"]
64   }
}

Warning: Argument is deprecated
with aws_s3_bucket.terraform_backend,
on main.tf line 115, in resource "aws_s3_bucket" "terraform_backend":
115:   acl = "private"
Use the aws_s3_bucket_acl resource instead

Apply complete! Resources: 11 added, 0 changed, 0 destroyed.
PS C:\Users\nani\OneDrive\Desktop\Terraform_vsx>
```

Name	Security group ID	Security group name	VPC ID
-	sg-01ace8b474158cdf	default	vpc-06796a8f013946ea1
-	sg-011a45086195f05ee	launch-wizard-2	vpc-0f2c7d986c9654f78
-	sg-04d49b4aa0cffb56f	using security group terraform	vpc-06796a8f013946ea1
-	en-021f801crah0e76e2d	customer-cite-security	vpc-0f3bba110560718d

VPC > Security Groups > sg-04d49b4aa0cffb56f - using security group terraform > Edit inbound rules

Edit inbound rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0673b7d41e252018e	SSH	TCP	22	Cust...	SSH
sgr-00ec2fb047f140554	HTTP	TCP	80	Cust...	http access
sgr-03d988606211cc365	All traffic	All	All	Cust...	

7) Create a network interface with an ip in the subnet that was created in step 4

The image shows a Terraform configuration file and the AWS Management Console. The Terraform code defines an AWS route table and an Ubuntu server instance. The AWS console shows the instance is running.

Terraform Configuration:

```
main.tf 1 x
main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id
96
97 #create aws ubuntu server
98 resource "aws_instance" "ubuntu-server-1" {
99     ami = "ami-0e2c8caa4b6378d8c"
100     instance_type = "t2.micro"
101     subnet_id = aws_subnet.rakesh-subnet.id
102     user_data = <<-EOF
103         #!bin/bash
104         sudo apt update -y
105         sudo apt install apache2 -y
106         sudo systemctl start apache2
107         sudo systemctl enable apache2
108         echo "<h1>Welcome to My Web Server</h1>" > /var/www/html/index.html
109     EOF
110
111 }
```

AWS Management Console:

EC2 > Security Groups > sg-04d49b4aa0c9fb56f - using security group terraform

Instances (1/1) Info

Find Instance by attribute or tag (case-sensitive) All states

Instance state = running Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
	i-0a242e93fe4d76339	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a

i-0a242e93fe4d76339

Configure s3 as backend and dynamo db locking for multi user execution

```
EXPLORER
main.tf 1 x
main.tf > resource "aws_route_table" "rakesh_rt" > vpc_id
98 resource "aws_instance" "ubuntu-server-1" {
110
111 }
112 #create s3 bucket
113 resource "aws_s3_bucket" "terraform_backend" {
114 bucket = "rakesh-s3-bucket-118"
115 acl = "private"
116 }
117 #create dynamo DB
118 resource "aws_dynamodb_table" "dynamodb-terraform-1-statelock" {
119 name = "terraform-state-1-lock-dynamo"
120 hash_key = "LockID"
121 read_capacity = 20
122 write_capacity = 20
123 attribute {
124 name = "LockID"
125 type = "S"
126 }
127 }
```

Amazon S3

General purpose buckets (6) [Info](#) [All AWS Regions](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)

Buckets are containers for data stored in S3.

Find buckets by name

	Name	AWS Region	IAM Access Analyzer	Creation date
<input type="radio"/>	rakeshpagdimarri.shop	Europe (Paris) eu-west-3	View analyzer for eu-west-3	(UTC+05:30)
<input type="radio"/>	load-logs-1	US East (N. Virginia) us-east-1	View analyzer for us-east-1	November 20, 2024, 17:55:52 (UTC+05:30)
<input type="radio"/>	my-s3-naresh	US East (N. Virginia) us-east-1	View analyzer for us-east-1	November 26, 2024, 15:54:03 (UTC+05:30)
<input type="radio"/>	rakesh-s3-bucket-1	US East (N. Virginia) us-east-1	View analyzer for us-east-1	December 9, 2024, 18:18:58 (UTC+05:30)
<input checked="" type="radio"/>	rakesh-s3-bucket-118	US East (N. Virginia) us-east-1	View analyzer for us-east-1	December 10, 2024, 18:20:39 (UTC+05:30)

DynamoDB > Tables

Tables (2) [Info](#) [Actions](#) [Delete](#) [Create table](#)

Find tables Any tag key Any tag value 2 matches < 1 >

	Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion prote
<input type="checkbox"/>	terraform-state-1-lock-dynamo	Active	LockID (S)	-	0	0	Off
<input type="checkbox"/>	terraform-state-lock-dynamo	Active	LockID (S)	-	0	0	Off