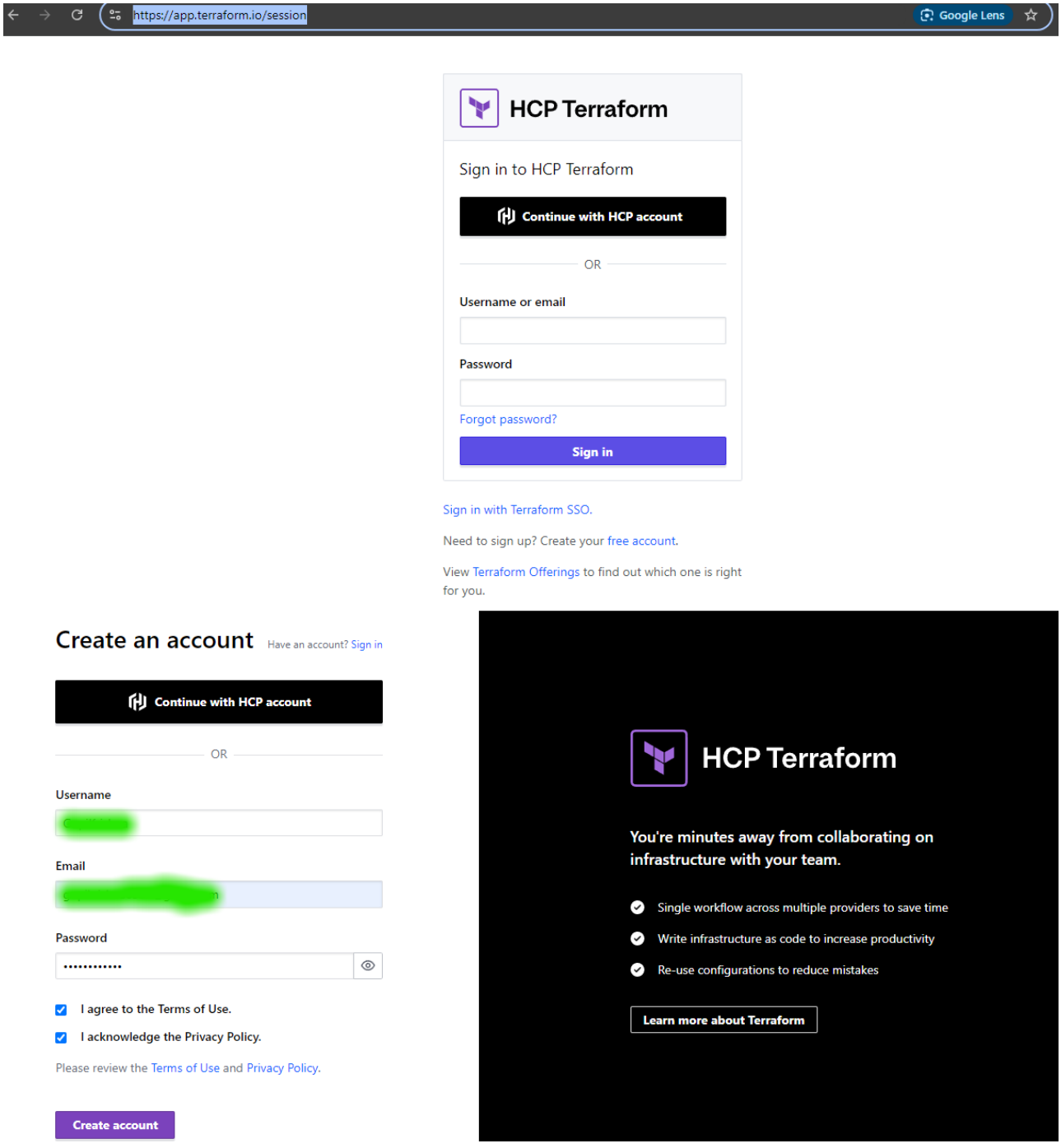
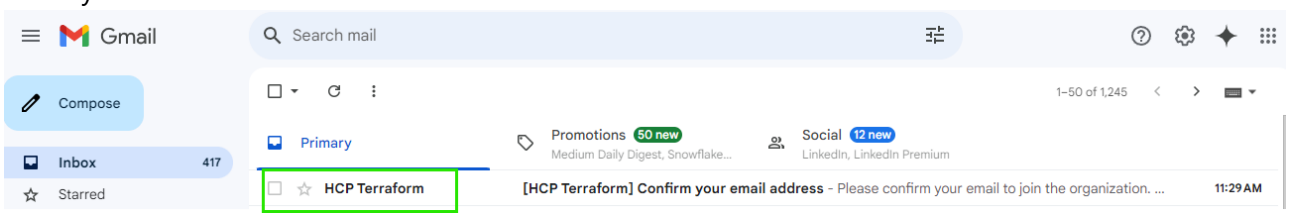
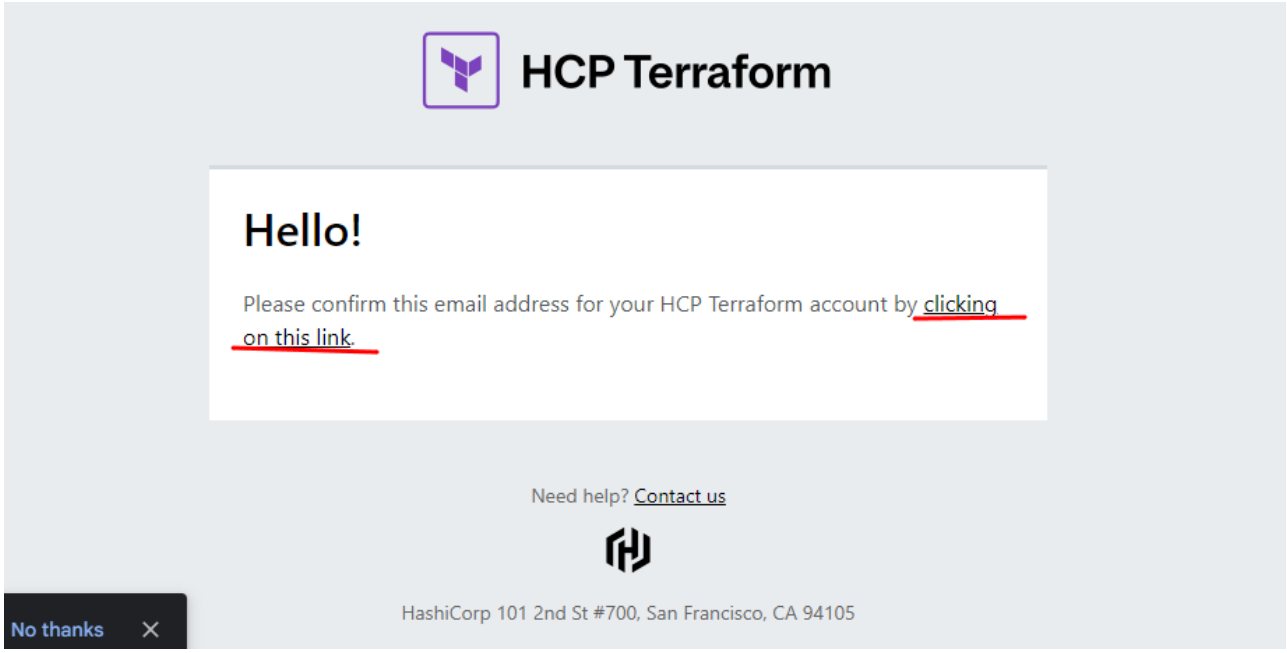
Terraform Cloud Account

- Create a Terraform account Refer Here

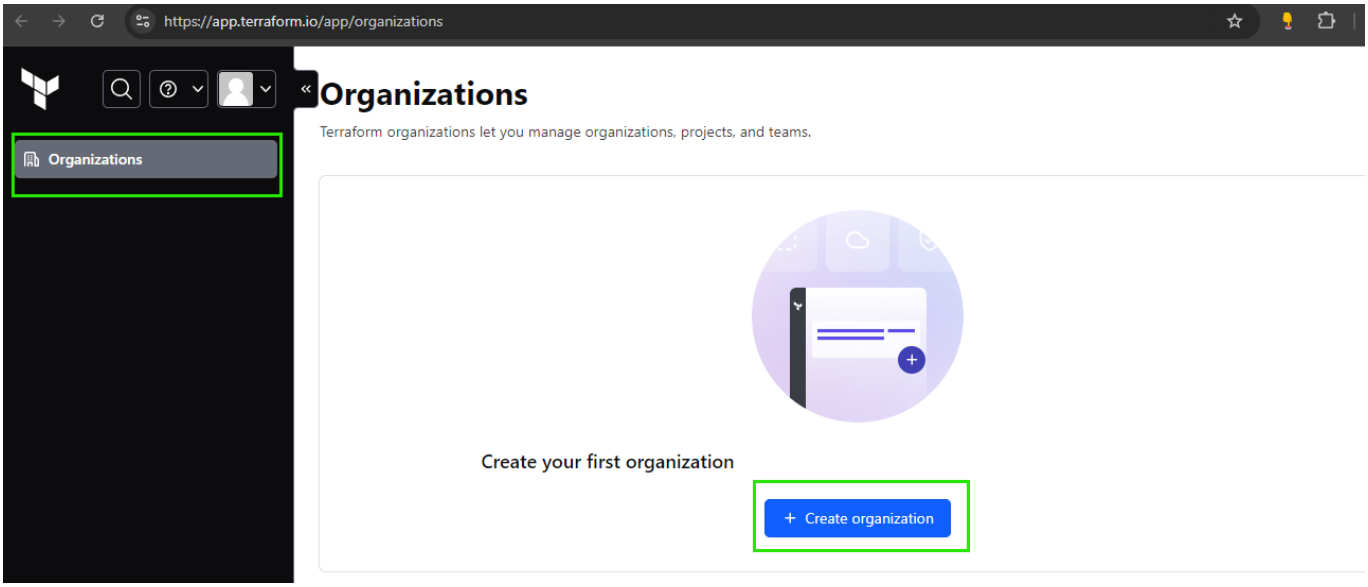


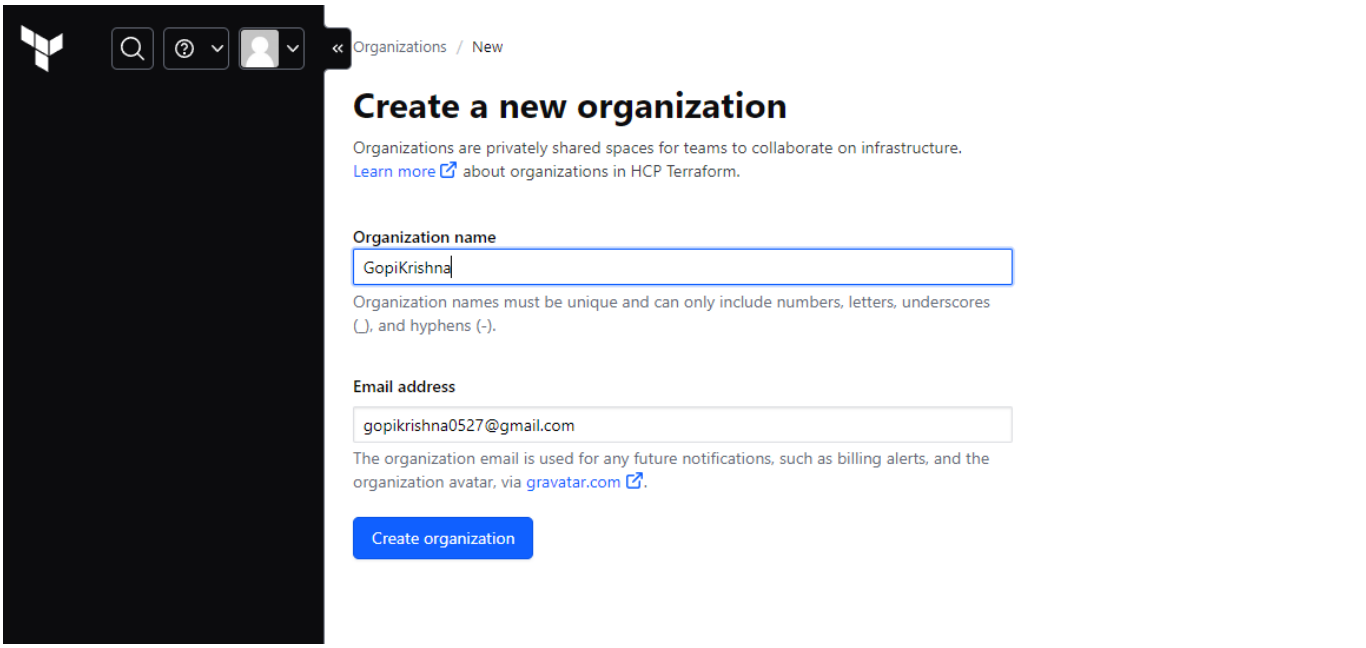
- Go to your mail and select the mail received from HCP

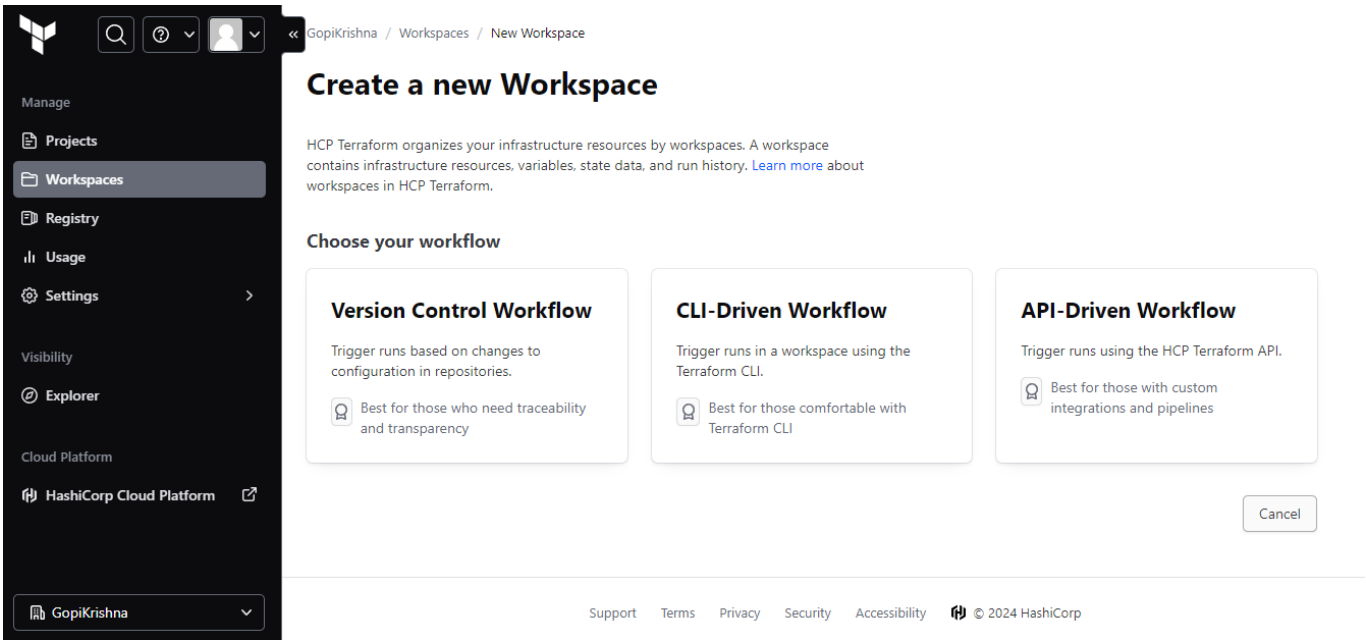




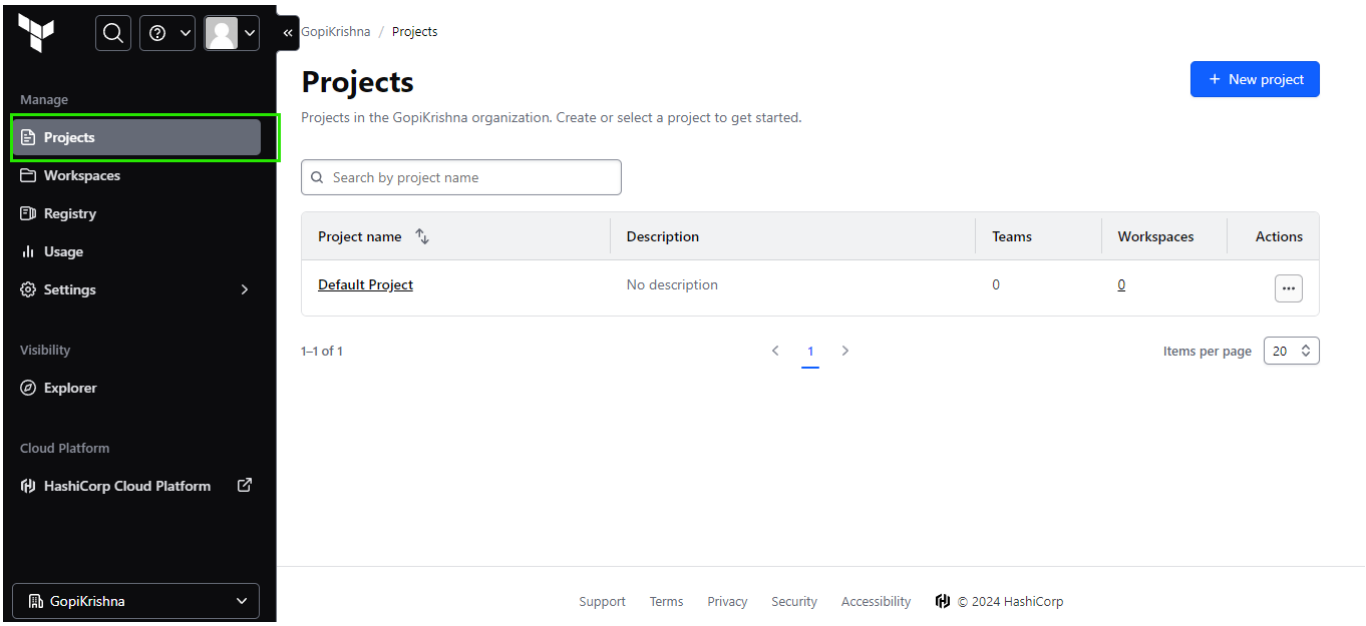
- Create an Organization shown in the below images

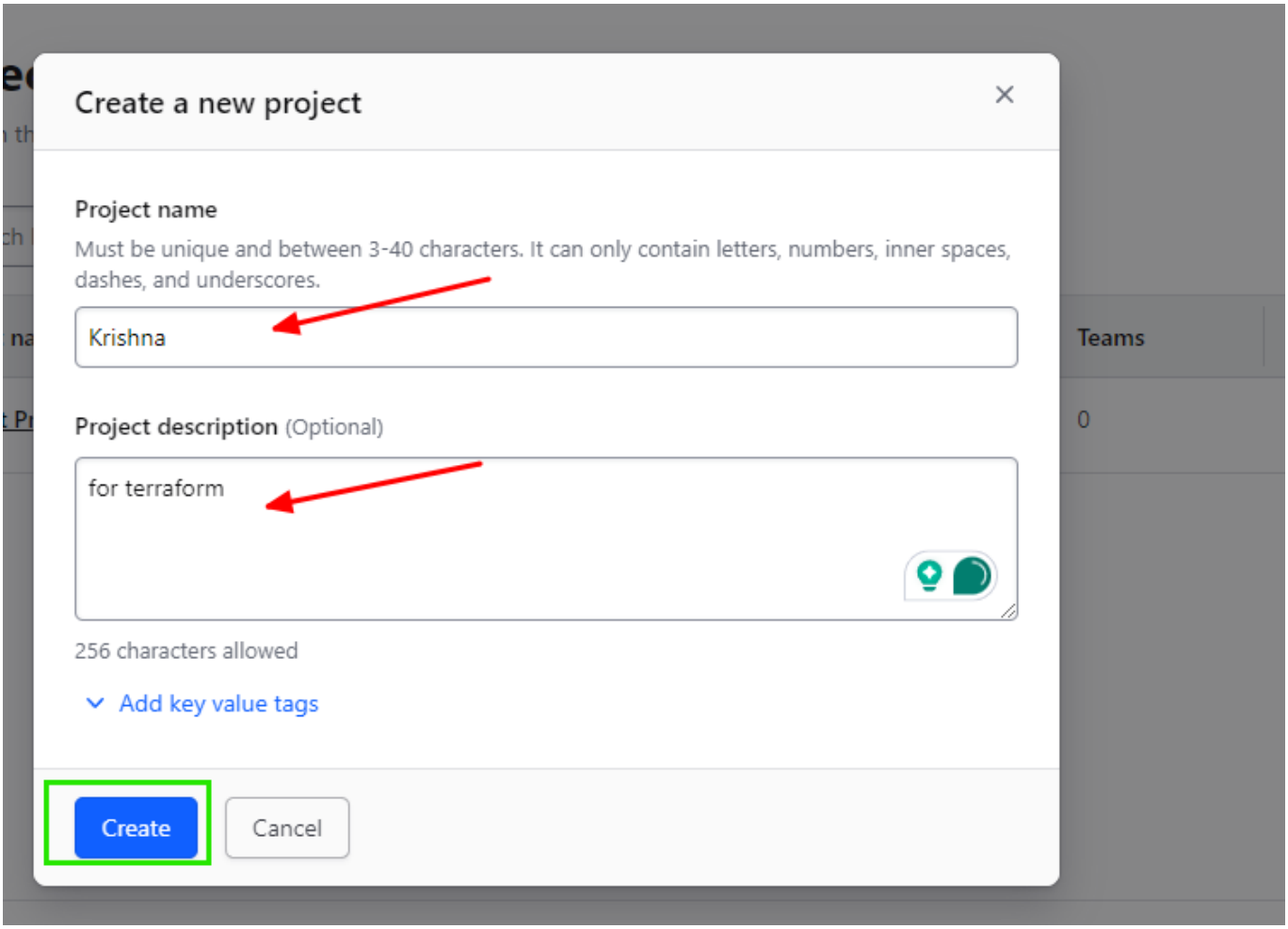




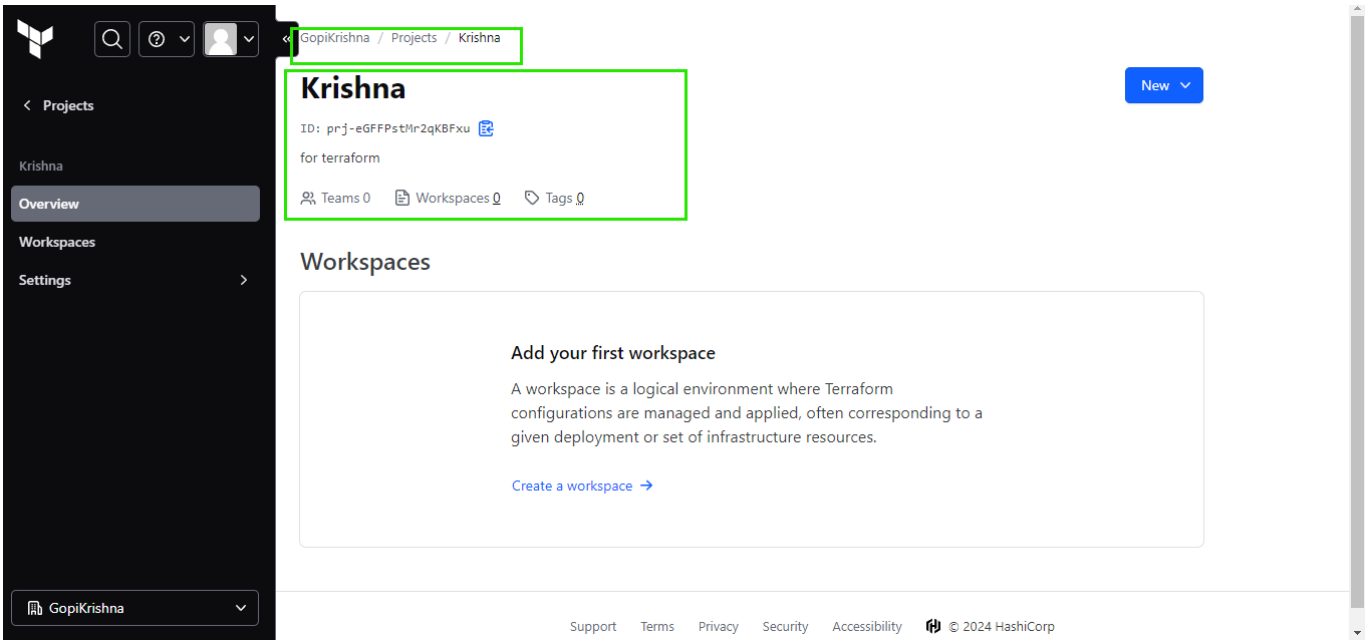


- Create a Project



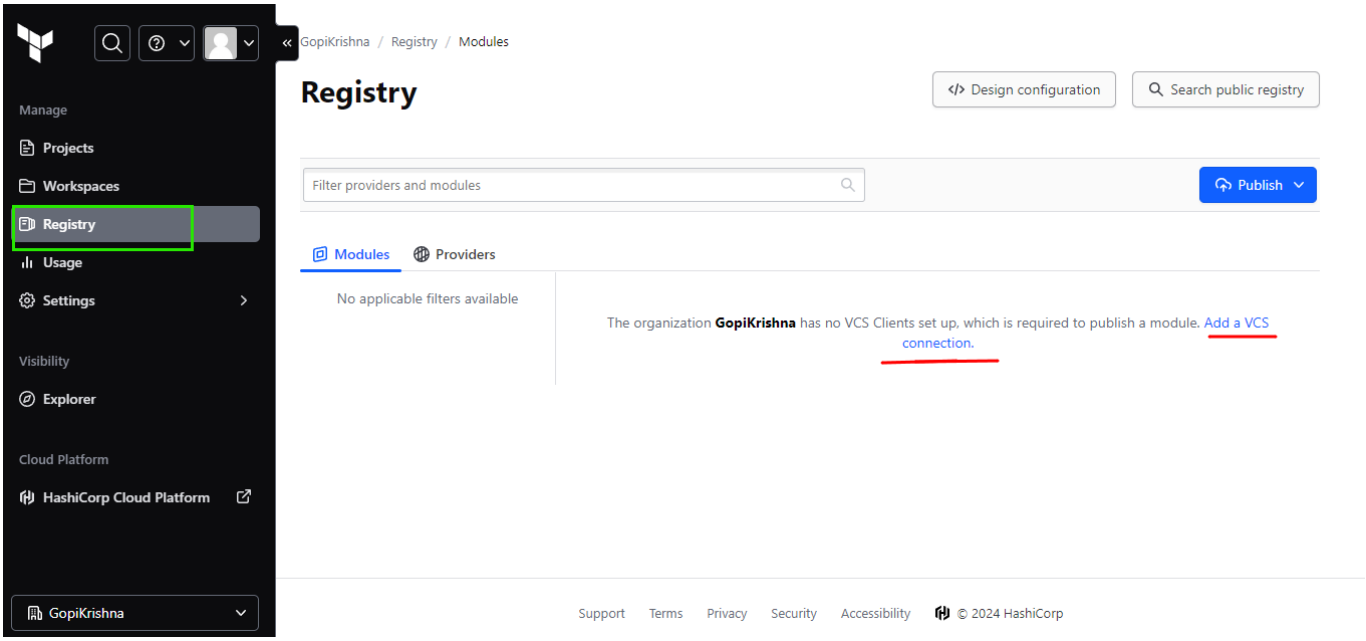


- Once the Project is created shows like this

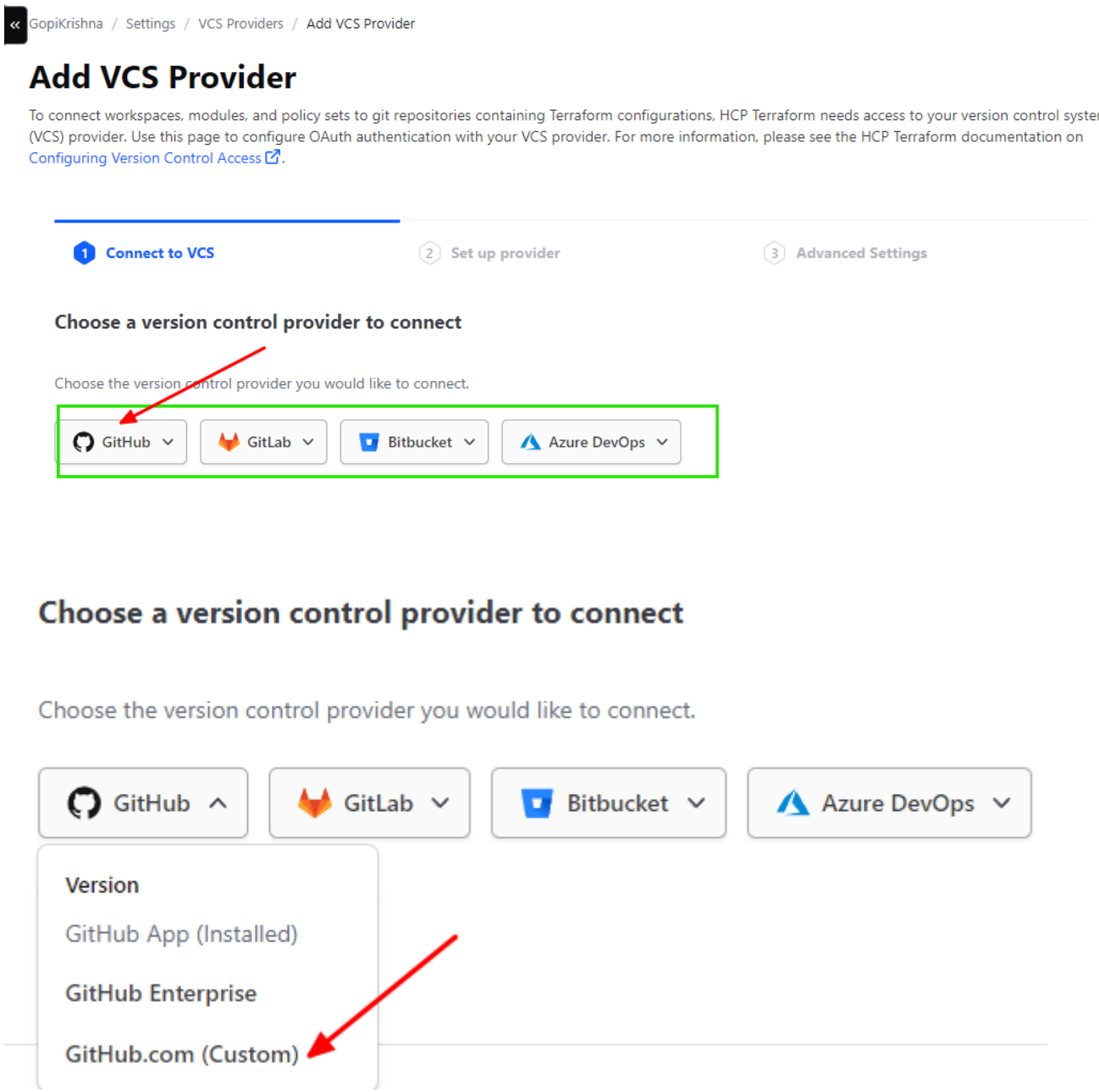


Connect to Registry

- Go Registry ==> Click on Add a VCS connection



- Select the Version control system provider where the terraform files are available



- Register your git hub account to Terraform Cloud, Follow the steps

Connect to VCS | 2 Set up provider | 3 Advanced Settings

Set up provider

For additional information about connecting to GitHub.com to HCP Terraform, please read our documentation.

1. On GitHub, register a new OAuth Application.

Enter the following information:

Application name

HCP Terraform (GopiKrishna)

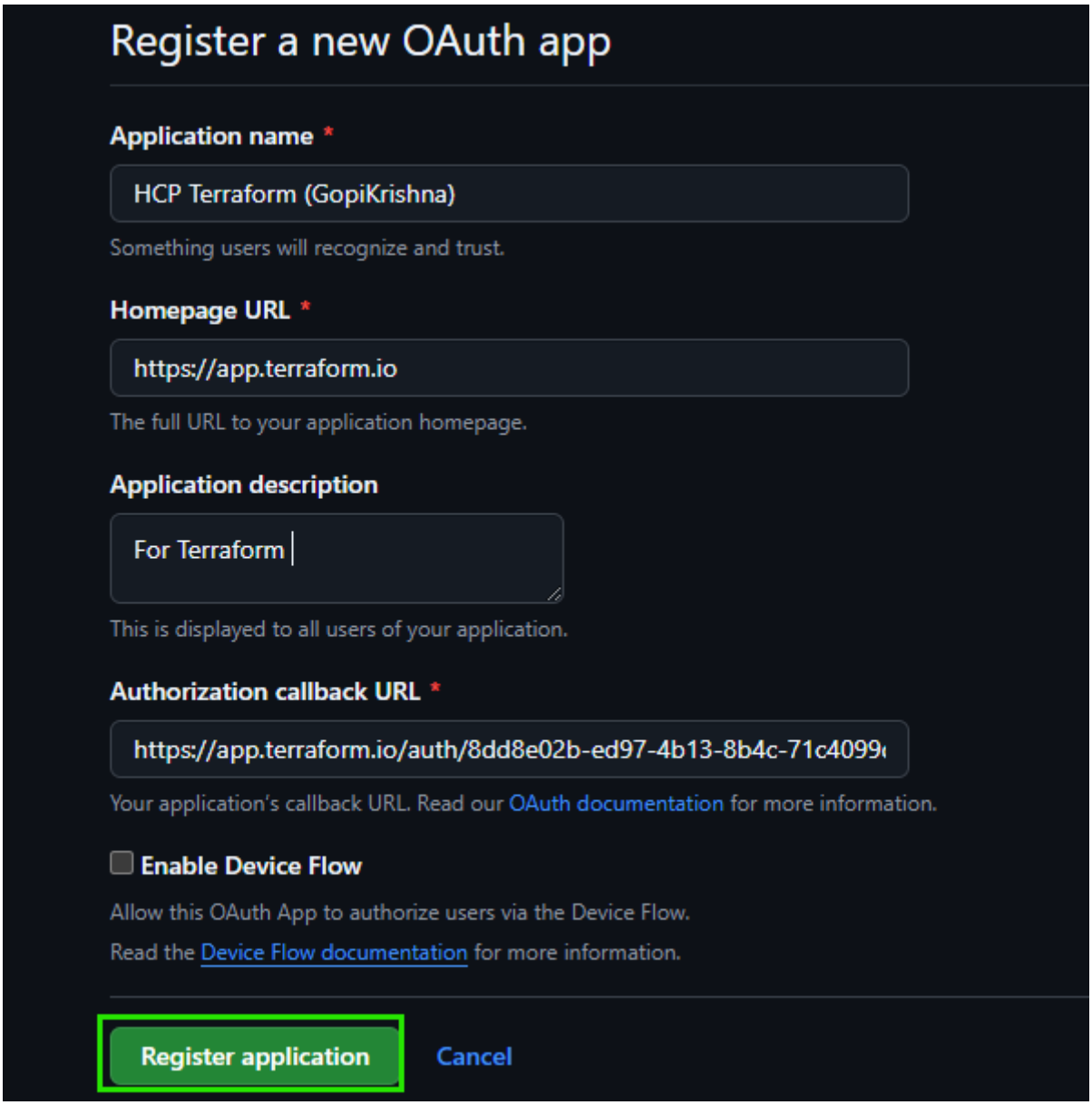
Homepage URL

https://app.terraform.io

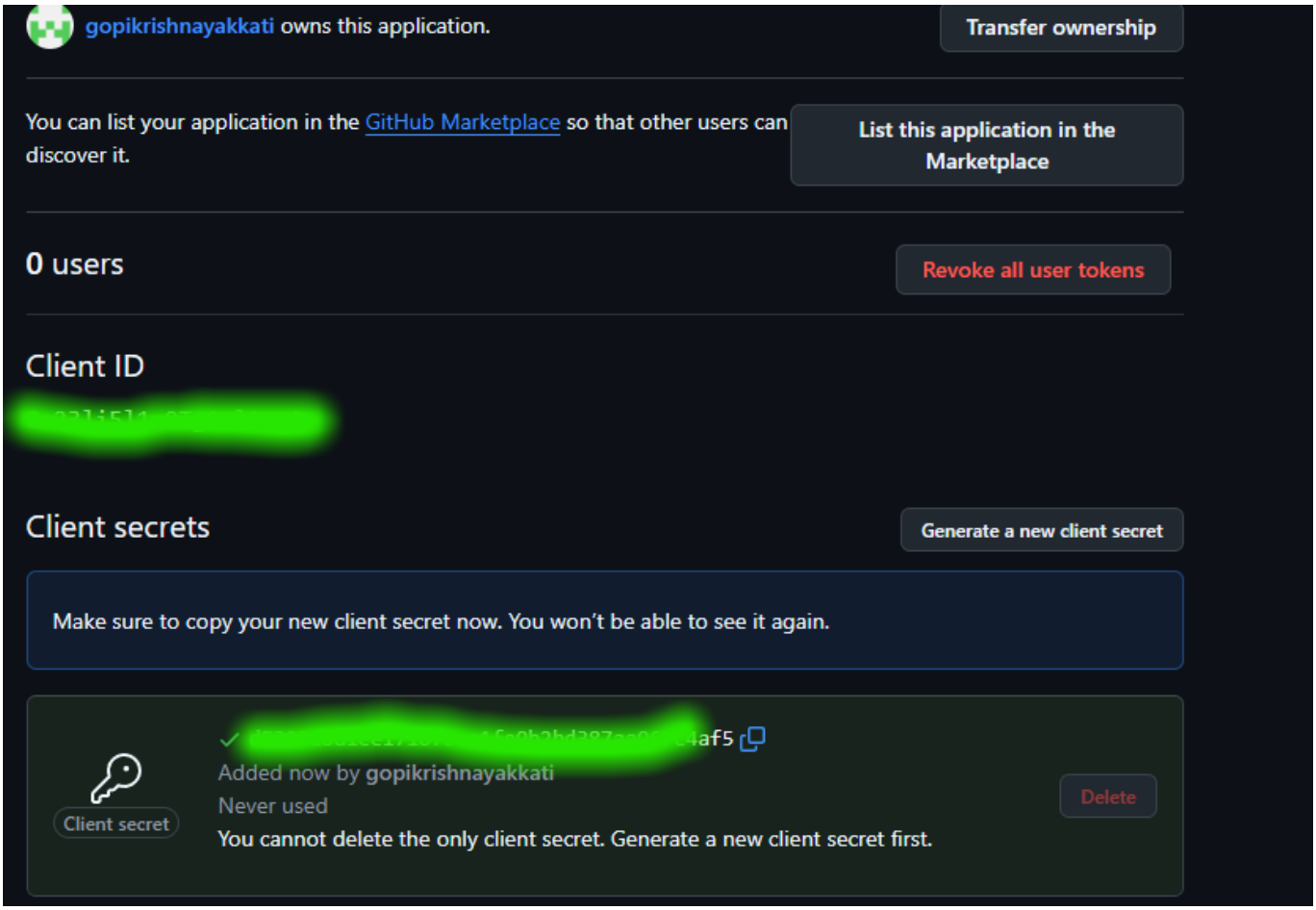
Authorization callback URL

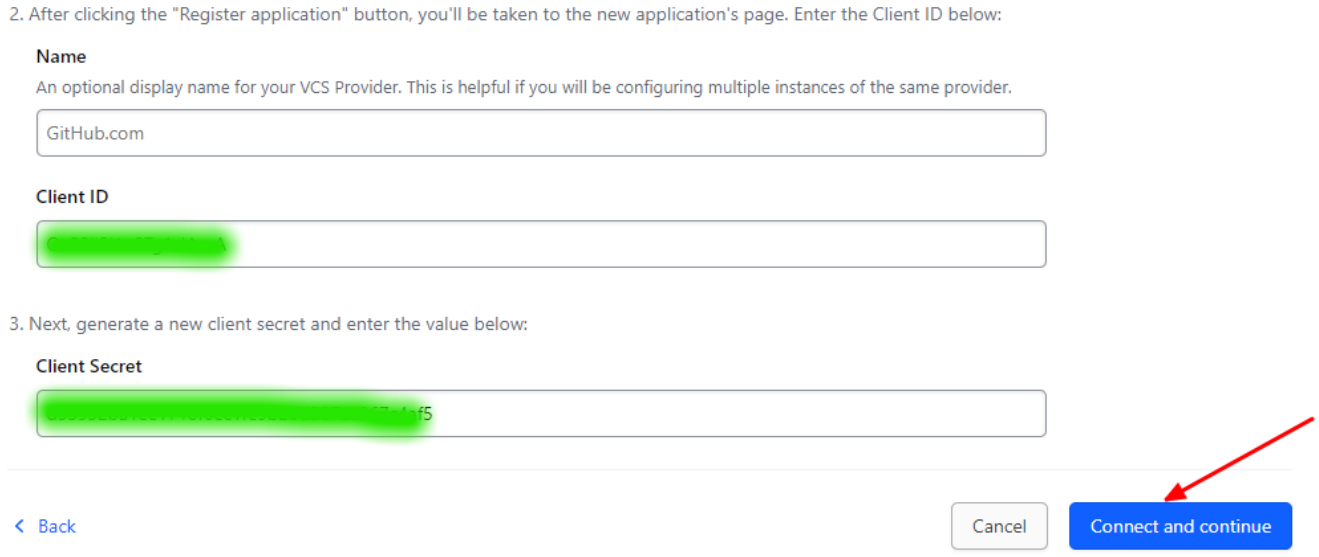
https://app.terraform.io/auth/8dd8e02b-ed97-4b13-8b4c-71c4099d05ed/callback

2. After clicking the "Register application" button, you'll be taken to the new application's page. Enter the Client ID below:

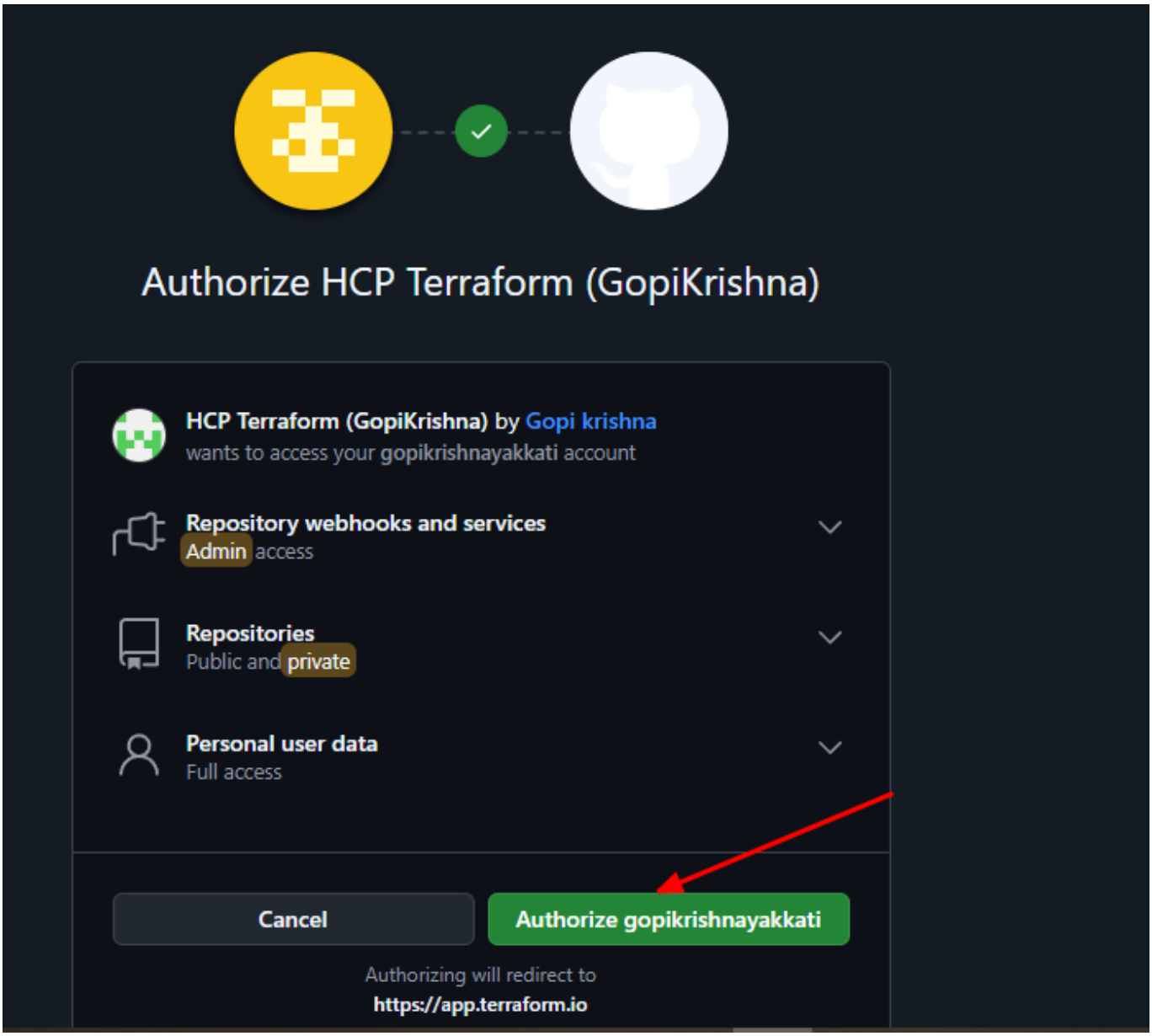


- Give your client ID and client secrets to Terraform





- Give Repository permission for Terraform cloud



- The Page redirected to Terraform Cloud and skip and finish

For additional information about connecting to GitHub.com to HCP Terraform, please read our documentation. On a secure workstation, create an SSH keypair that HCP Terraform can use to connect to GitHub.com The exact command depends on your OS, but is usually something like:

```
ssh-keygen -t rsa -m PEM -f "/Users/<NAME>/.ssh/service_terraform" -C "service_terraform_enterprise"
```

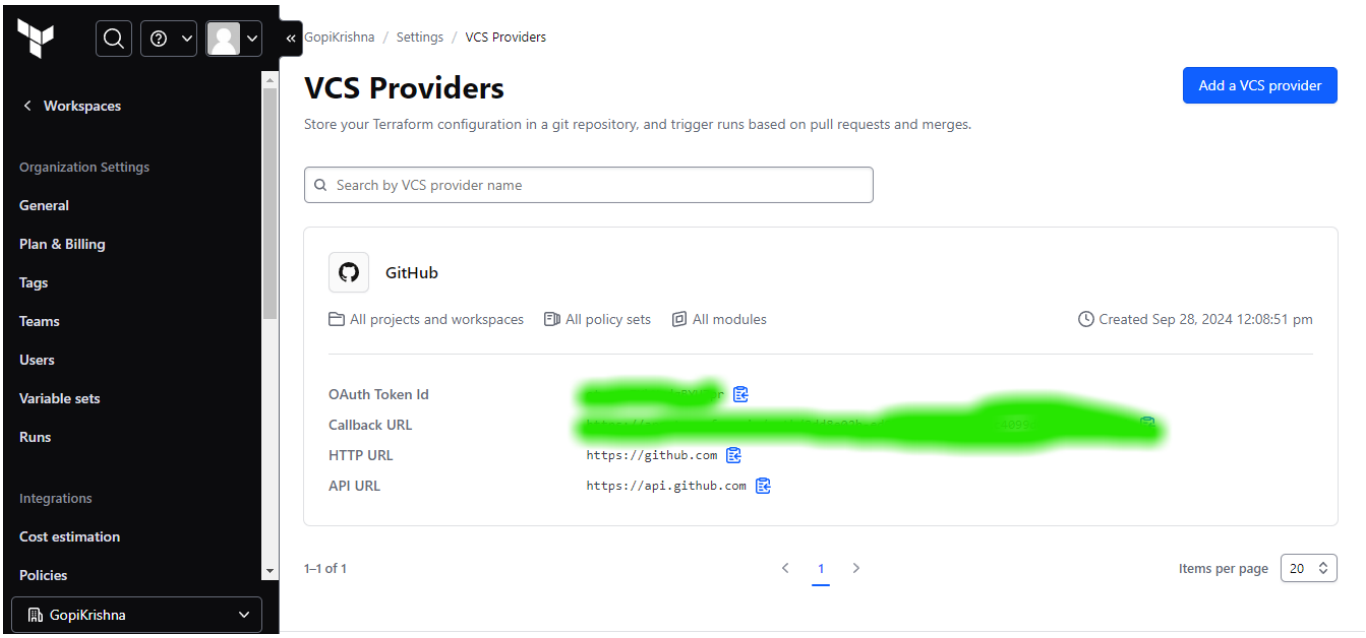
This creates a `service_terraform` file with the private key, and a `service_terraform.pub` file with the public key. This SSH key must have an empty passphrase. HCP Terraform cannot use SSH keys that require a passphrase. While logged into the GitHub.com account you want HCP Terraform to act as, navigate to the SSH Key settings page, add a new SSH key, and paste the value of the SSH public key you just created.

Private SSH key

-----BEGIN RSA PRIVATE KEY-----

Add SSH key

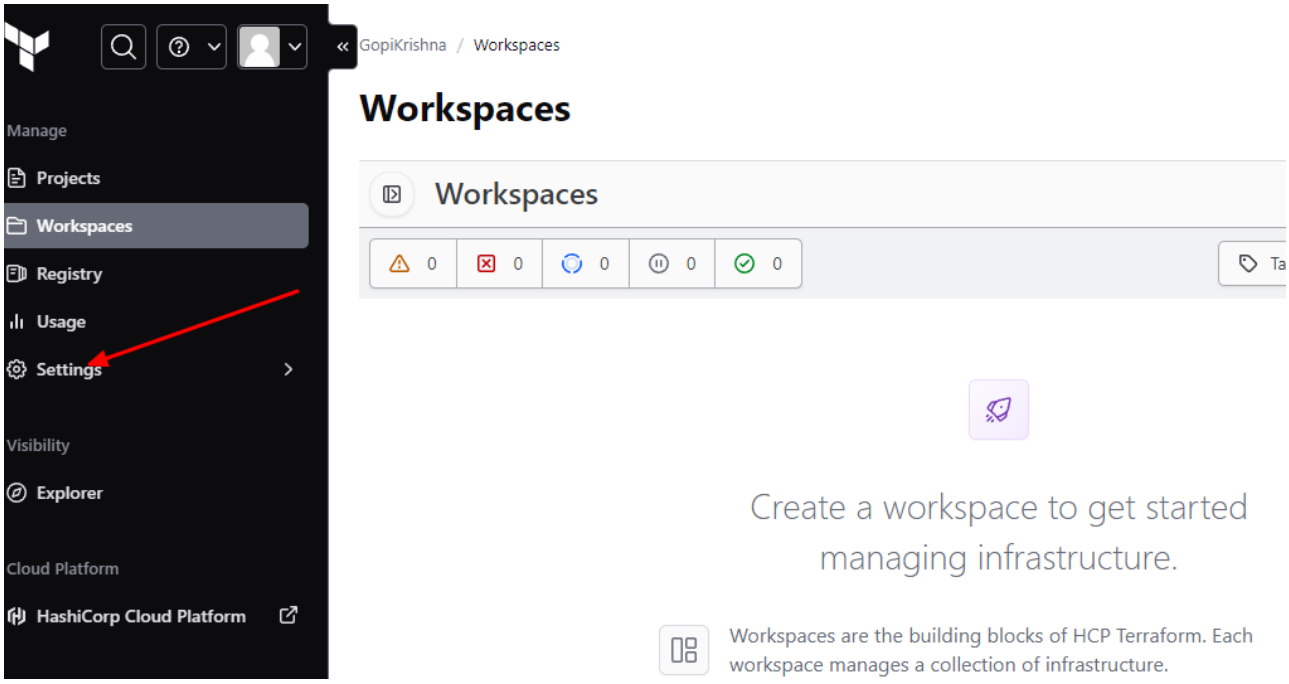
Skip and finish



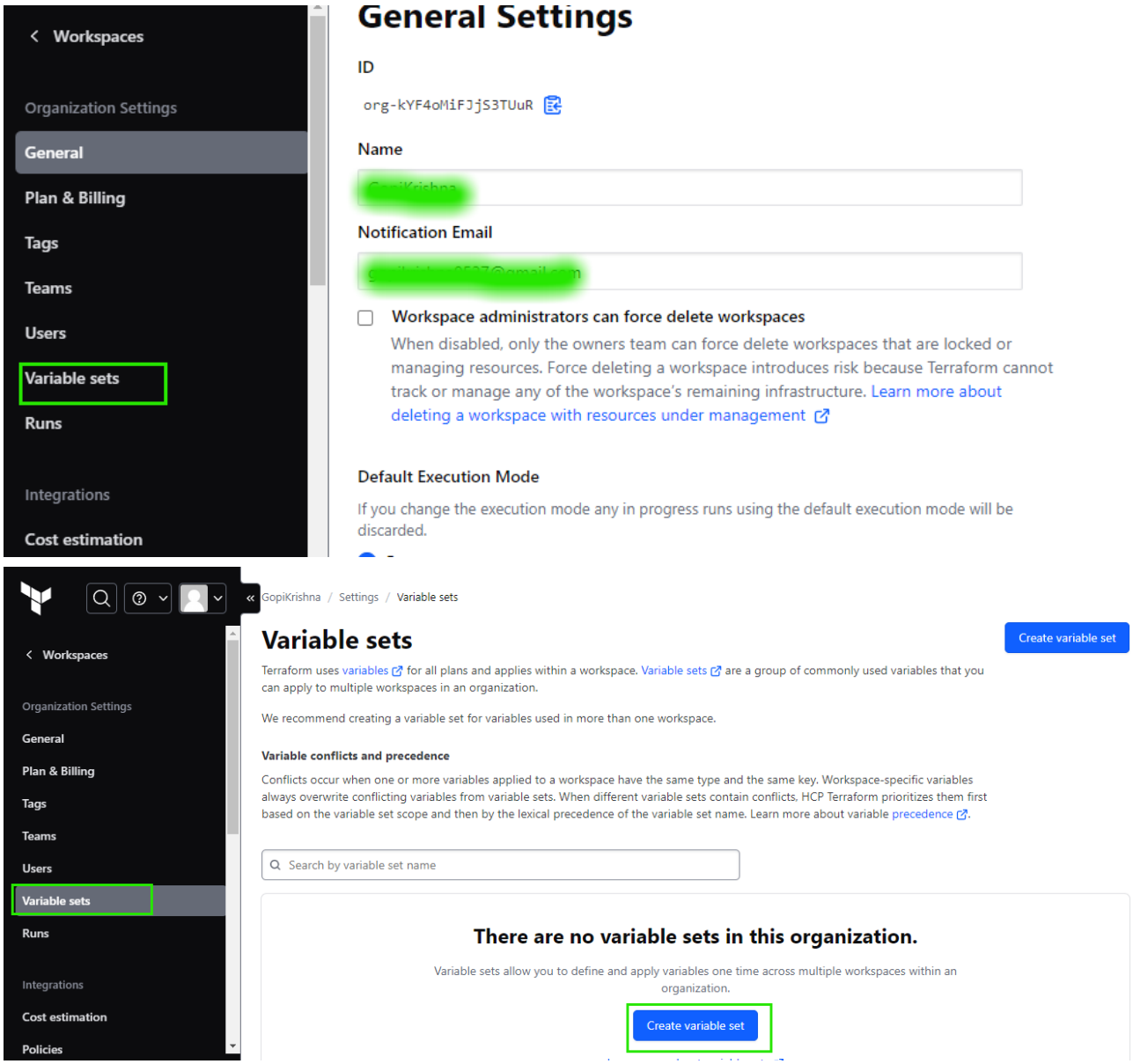
- VCS Connection Is Established

Adding AWS Credentials to Terraform cloud (Access Key & Secret key)

- Select the settings



- click on variable sets and create a variable set



Create a new variable set

Variable sets allow you to define and apply variables one time across multiple workspaces within an organization.

Configure settings

Name

AWS_Secrets

Description (Optional)

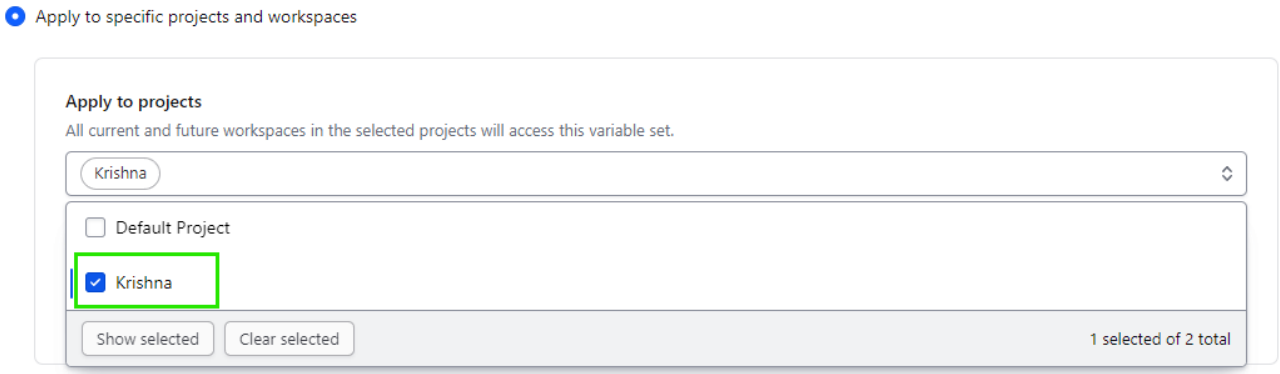
Aws credentials

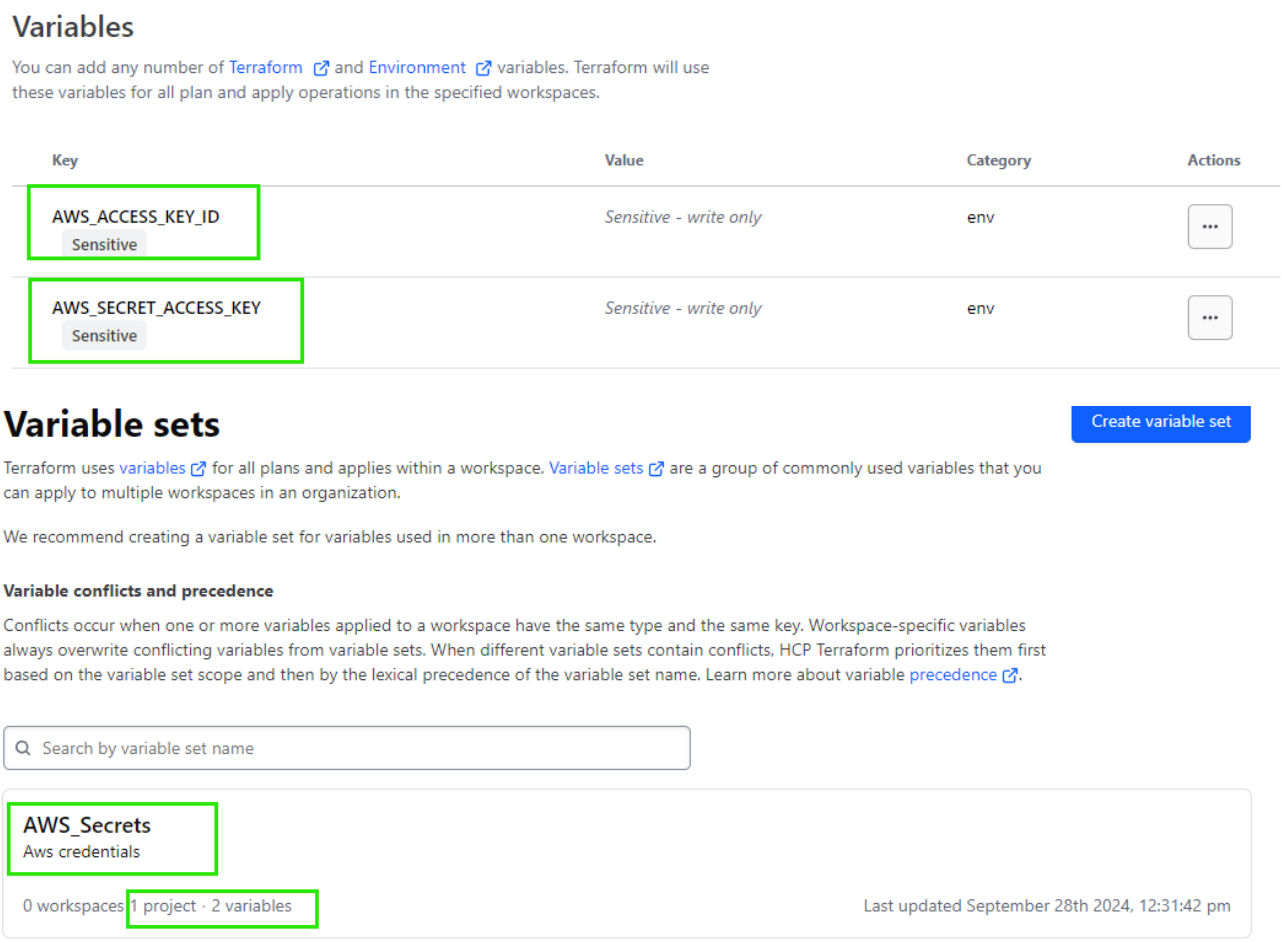
Variable set scope

Apply globally

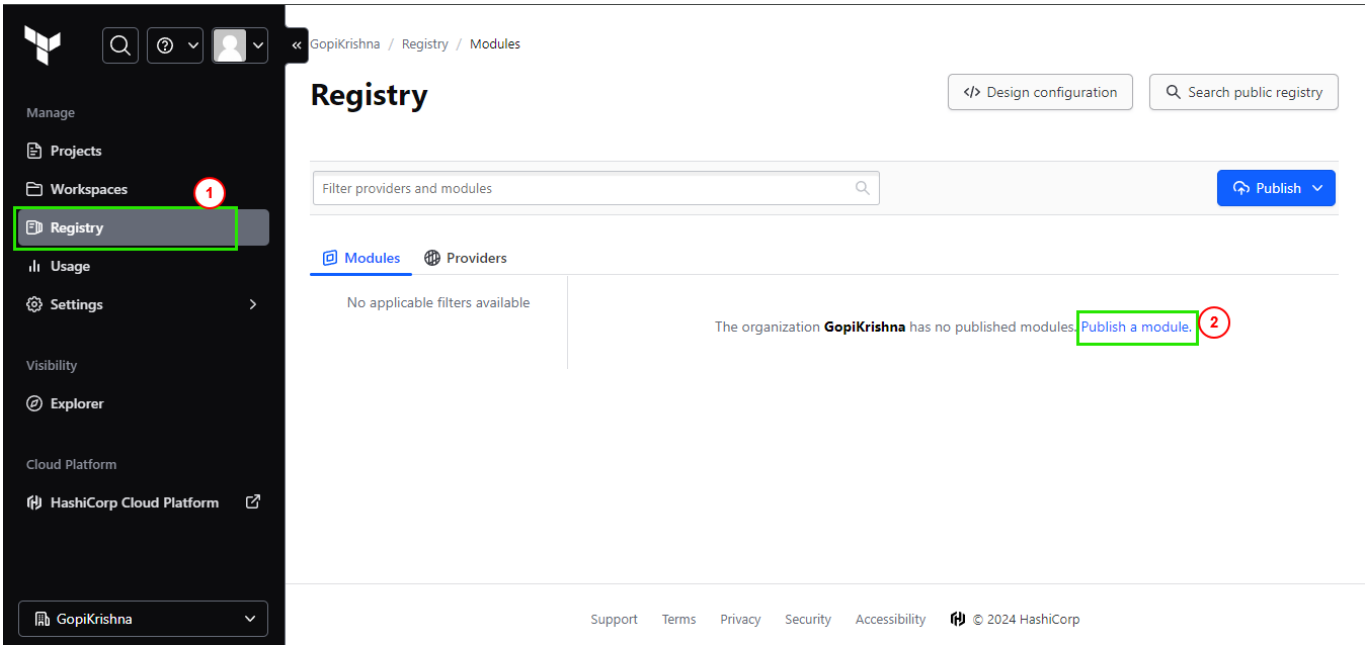
All current and future workspaces in this organization will access this variable set.

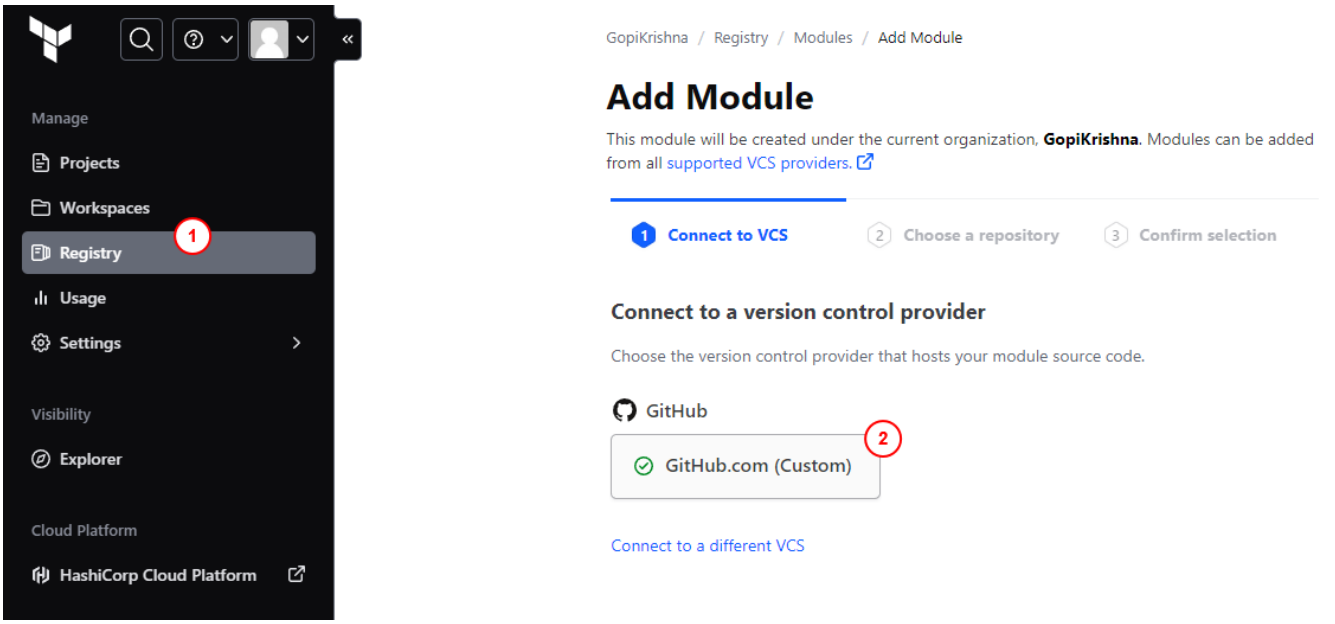
Apply to specific projects and workspaces





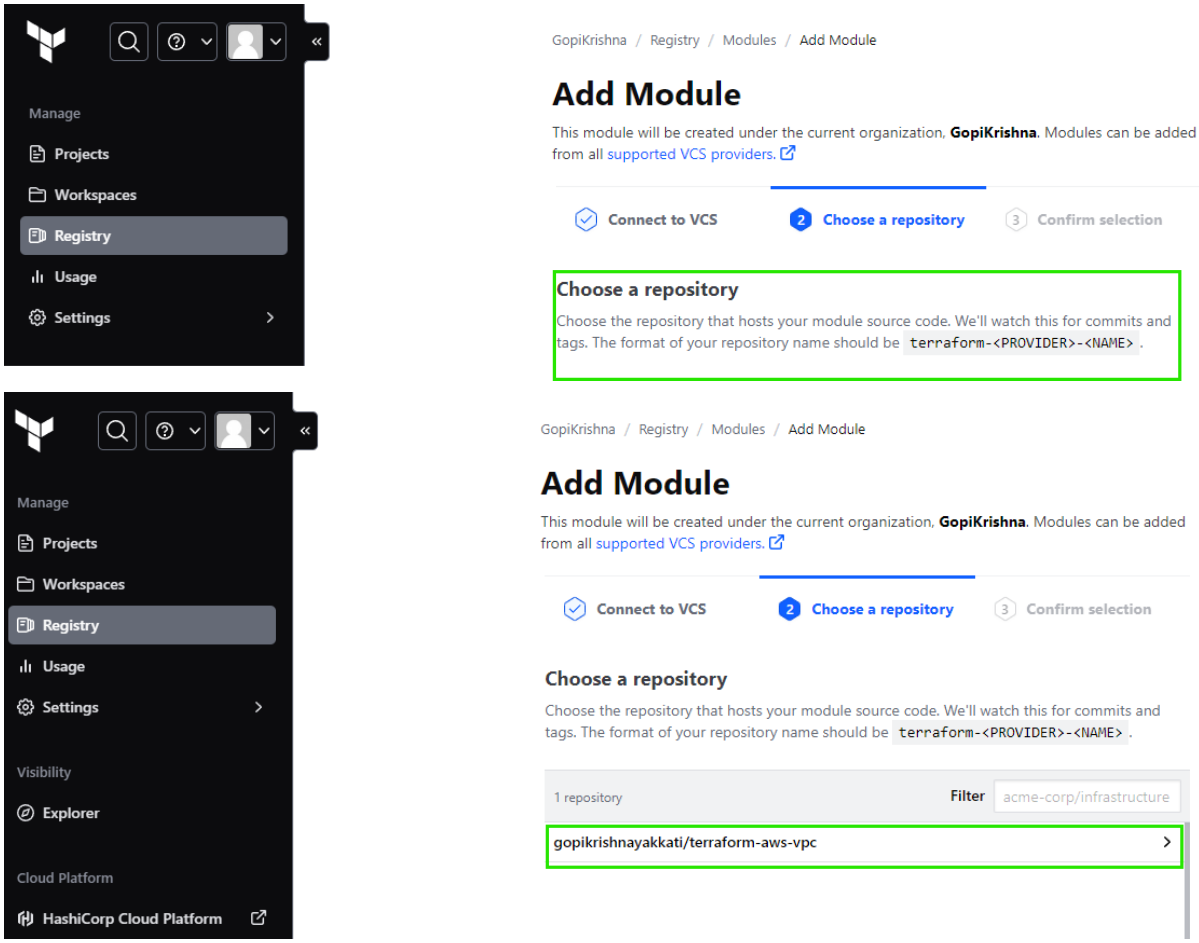
Publish the terraform modules

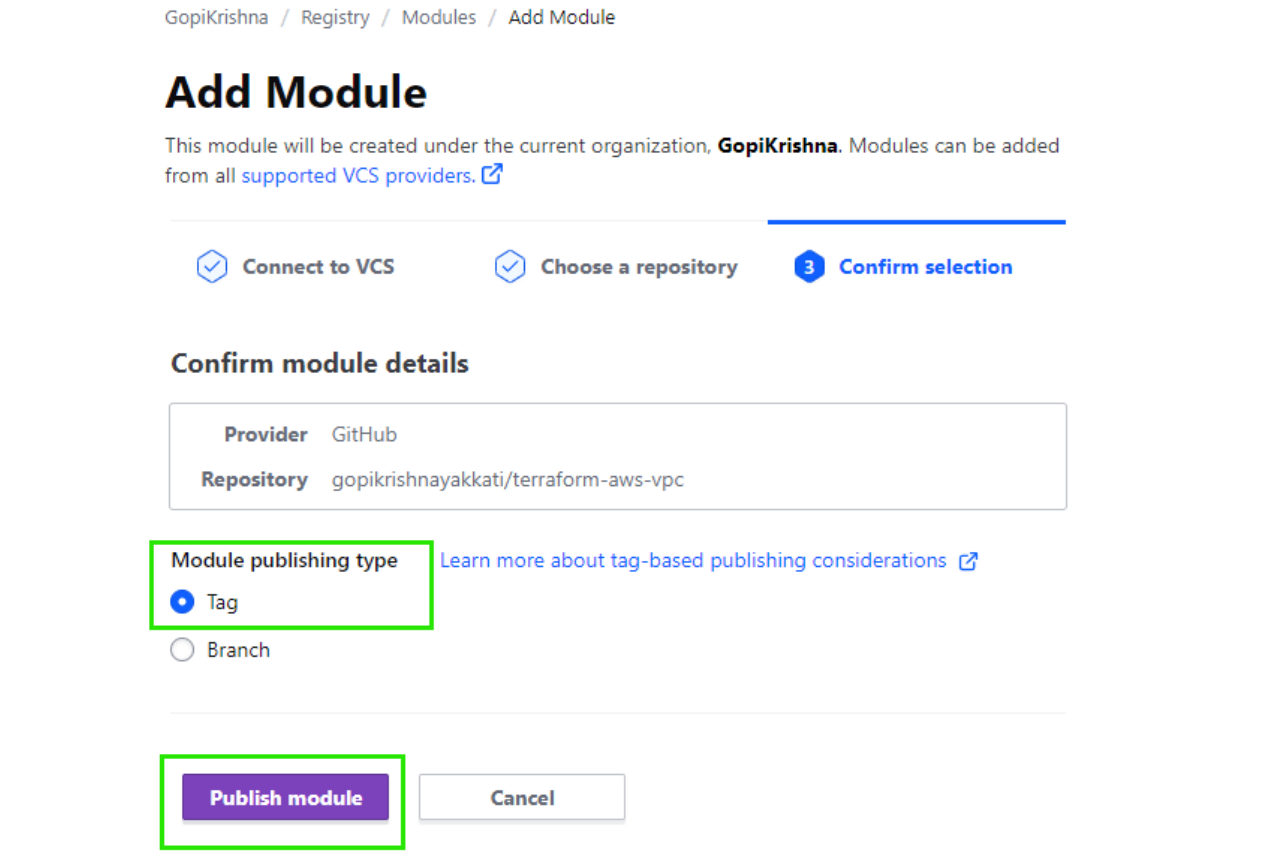


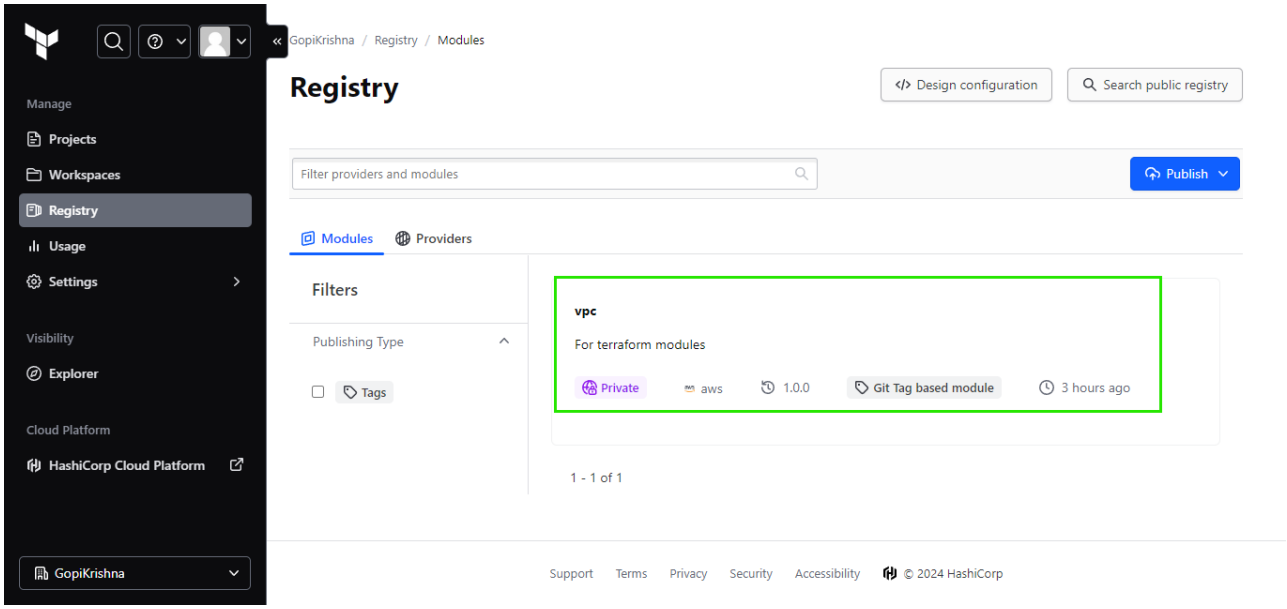


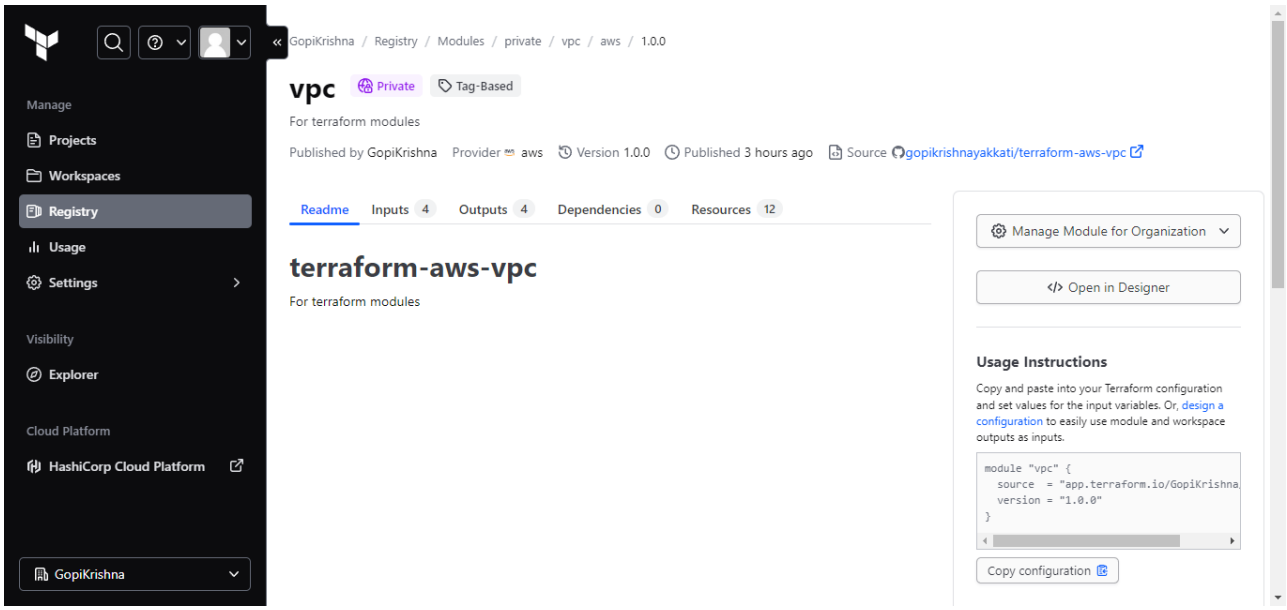
Choose a repository

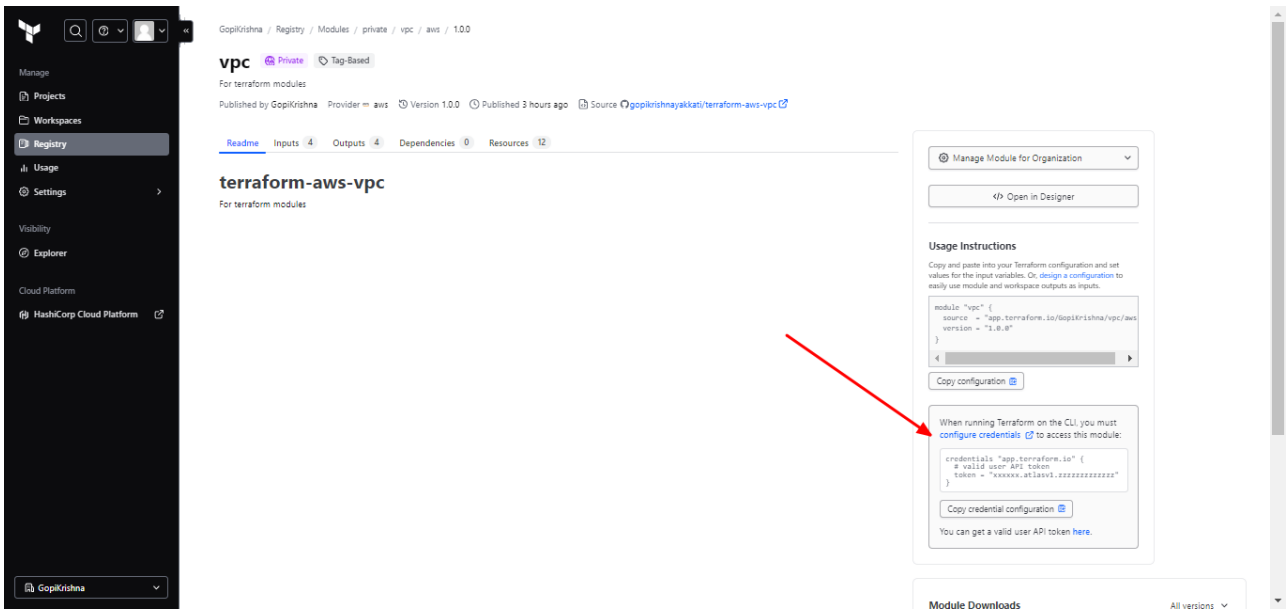
- Choose the repository that hosts your module source code. We'll watch this for commits and tags. The format of your repository name should be terraform--.



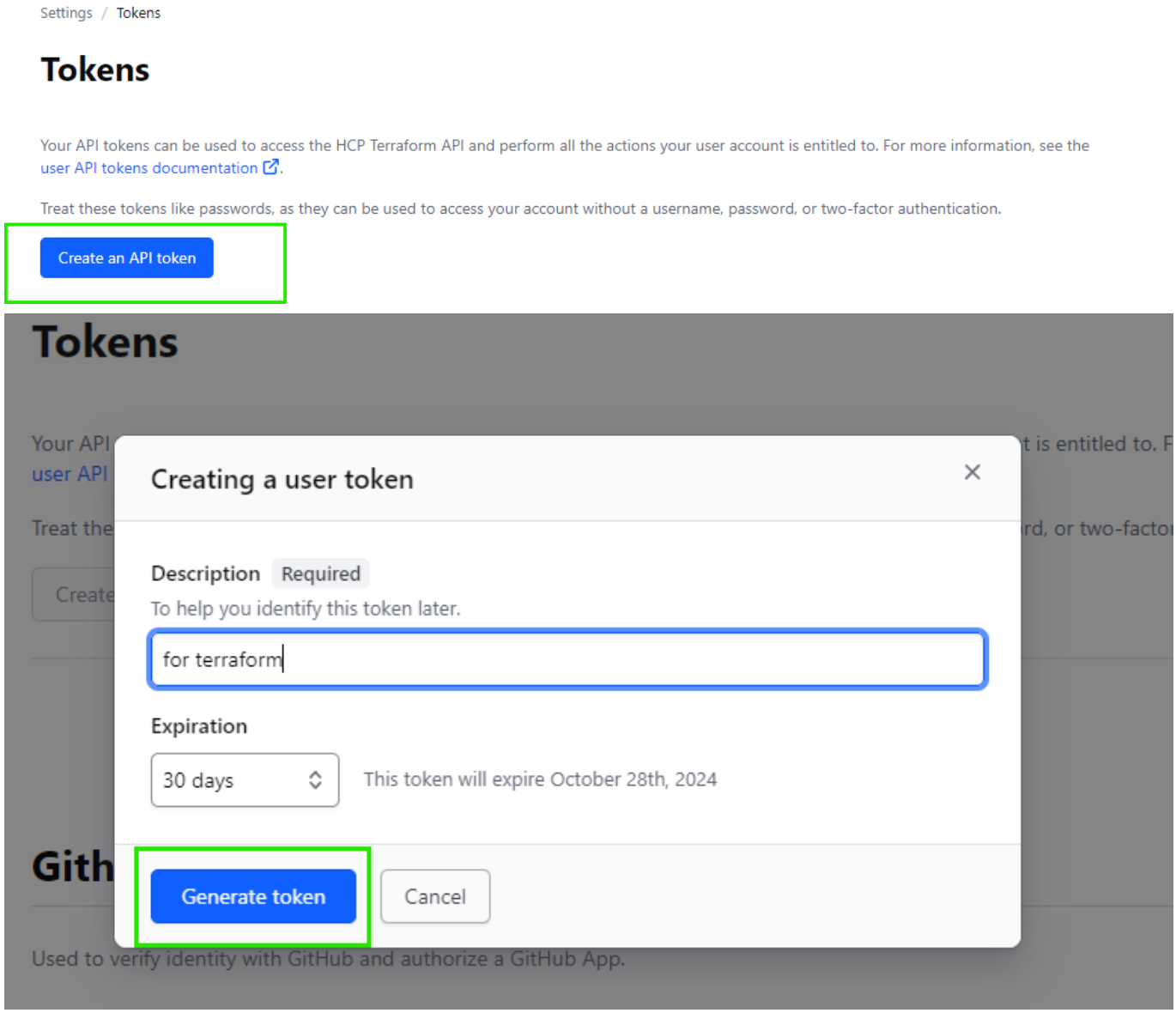

GopiKrishna / Registry / Modules / Add Module
Add Module
This module will be created under the current organization, GopiKrishna. Modules can be added from all supported VCS providers.
Connect to VCS
Choose a repository
3 Confirm selection
Confirm module details
Provider GitHub
Repository gopikrishnayakkati/terraform-aws-vpc
Module publishing type
Learn more about tag-based publishing considerations
Tag
Branch
Publish module
Cancel

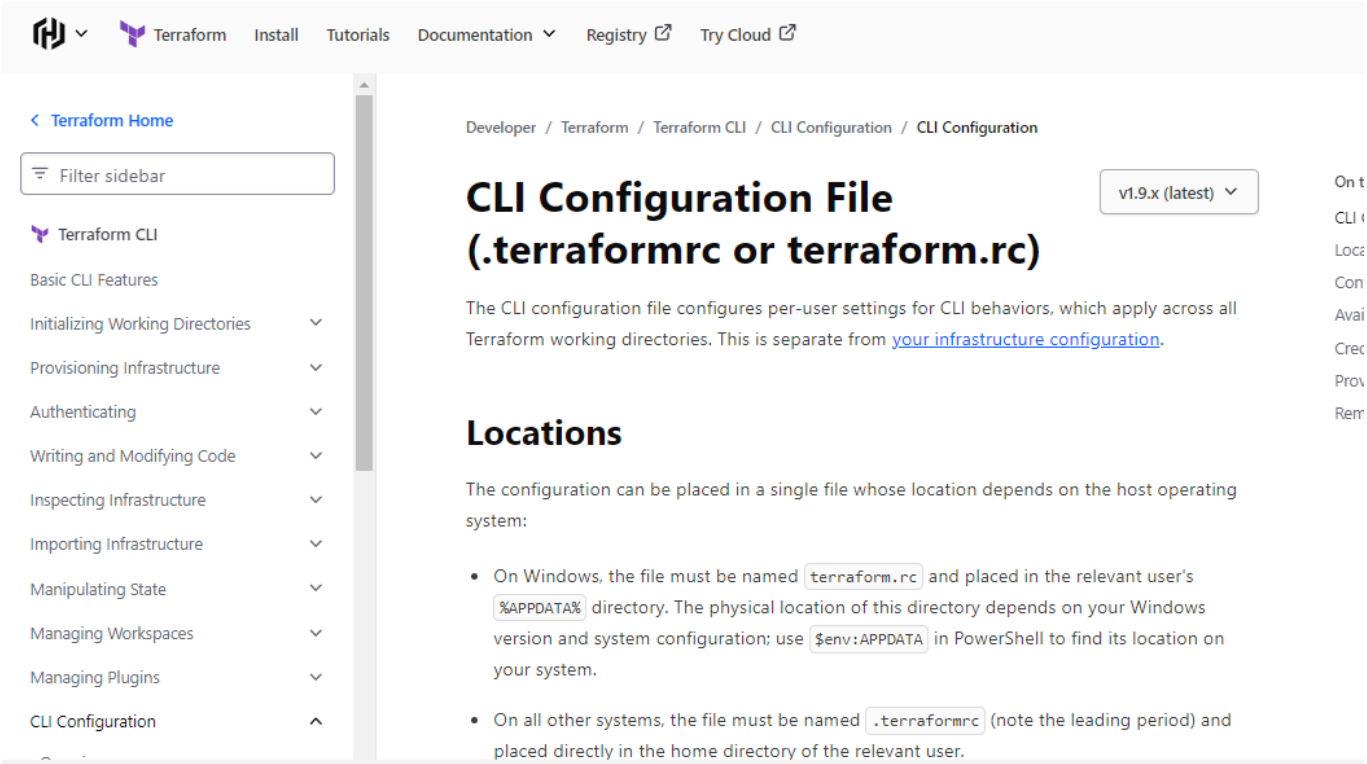

GopiKrishna / Registry / Modules
Registry
Design configuration
Search public registry
Manage
Projects
Workspaces
Registry
Usage
Settings
Visibility
Explorer
Cloud Platform
HashiCorp Cloud Platform
GopiKrishna
Filter providers and modules
Publish
Modules
Providers
Filters
Publishing Type
Tags
vpc
For terraform modules
Private
aws
1.0.0
Git Tag based module
3 hours ago
1 - 1 of 1
Support
Terms
Privacy
Security
Accessibility
© 2024 HashiCorp

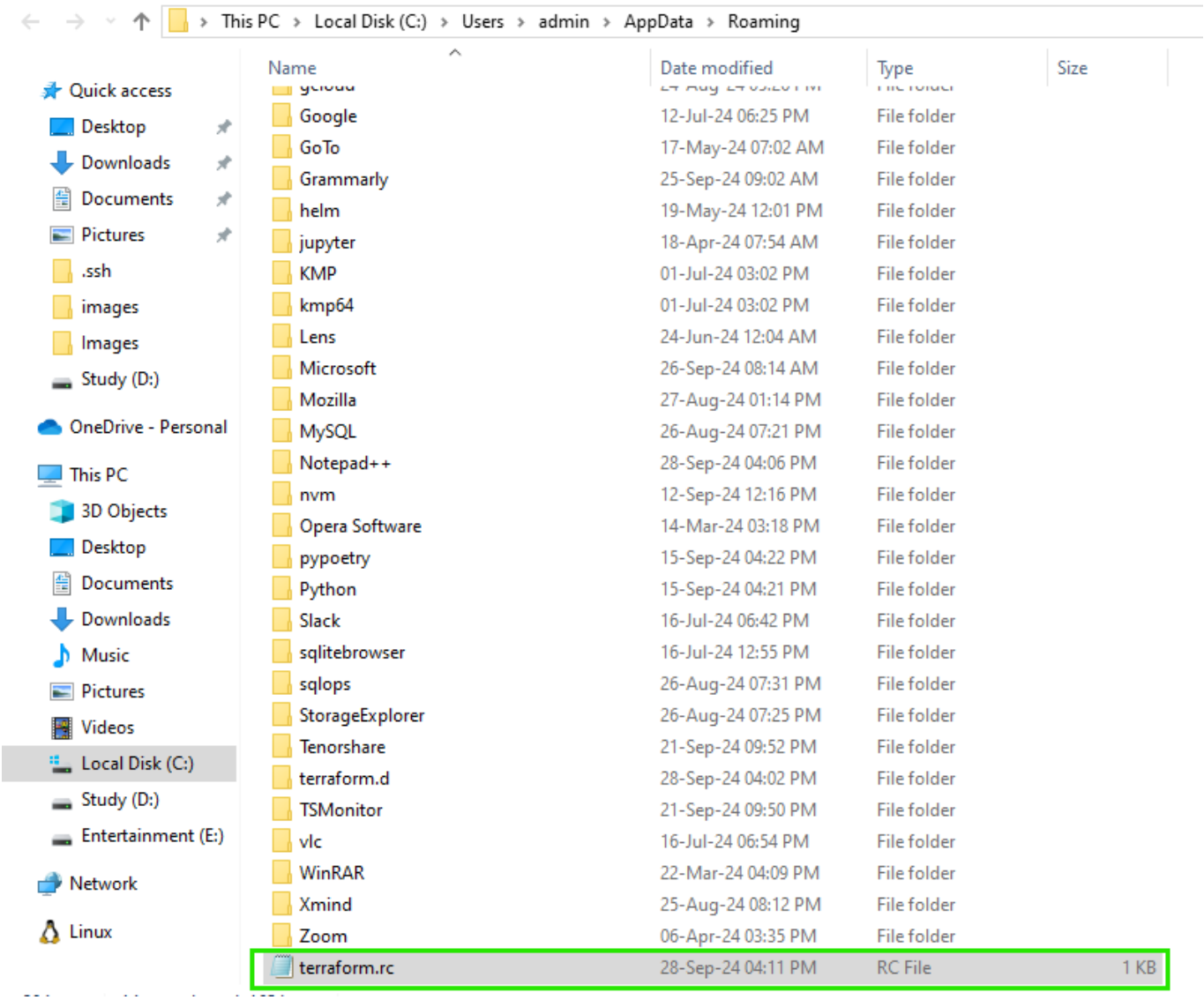




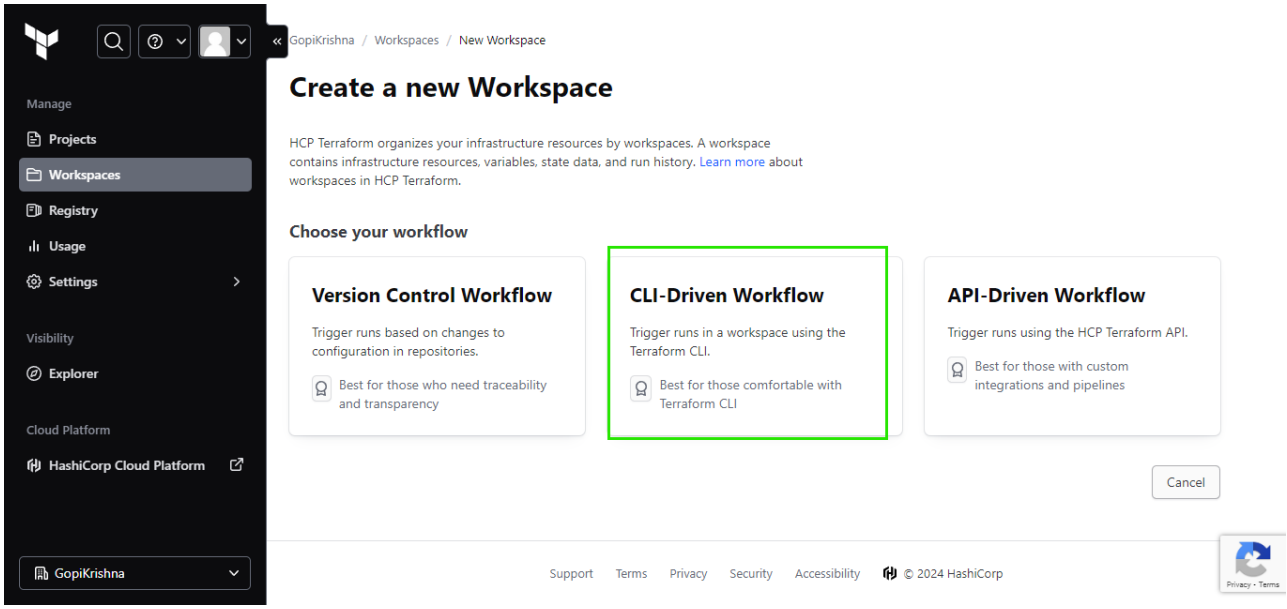
- CLI Configuration File (.terraformrc or terraform.rc) Refer Here

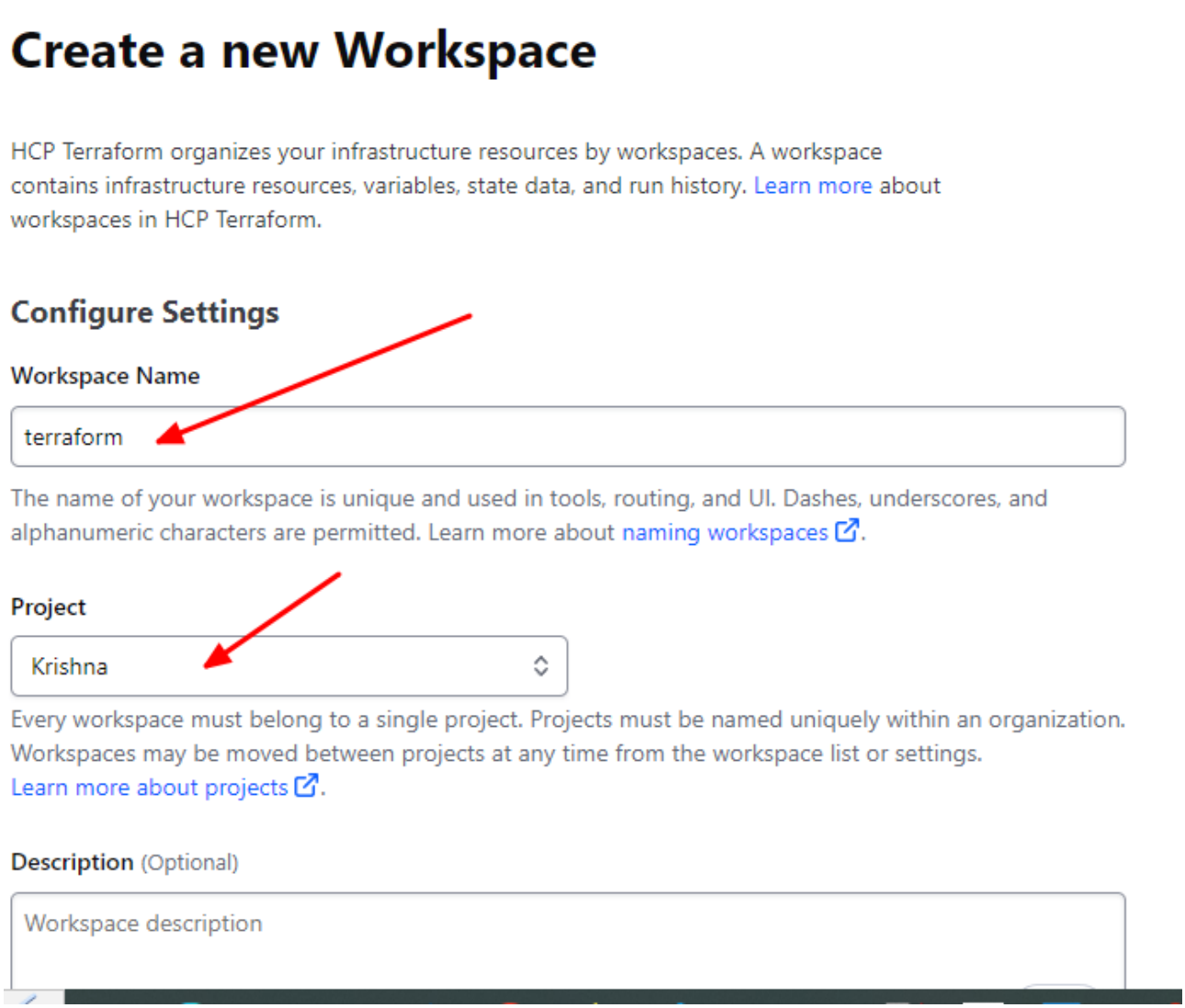

Settings / Tokens
Tokens
Your API tokens can be used to access the HCP Terraform API and perform all the actions your user account is entitled to. For more information, see the user API tokens documentation.
Treat these tokens like passwords, as they can be used to access your account without a username, password, or two-factor authentication.
Create an API token
Creating a user token
Description Required
To help you identify this token later.
for terraform
Expiration
30 days
This token will expire October 28th, 2024
Generate token
Cancel

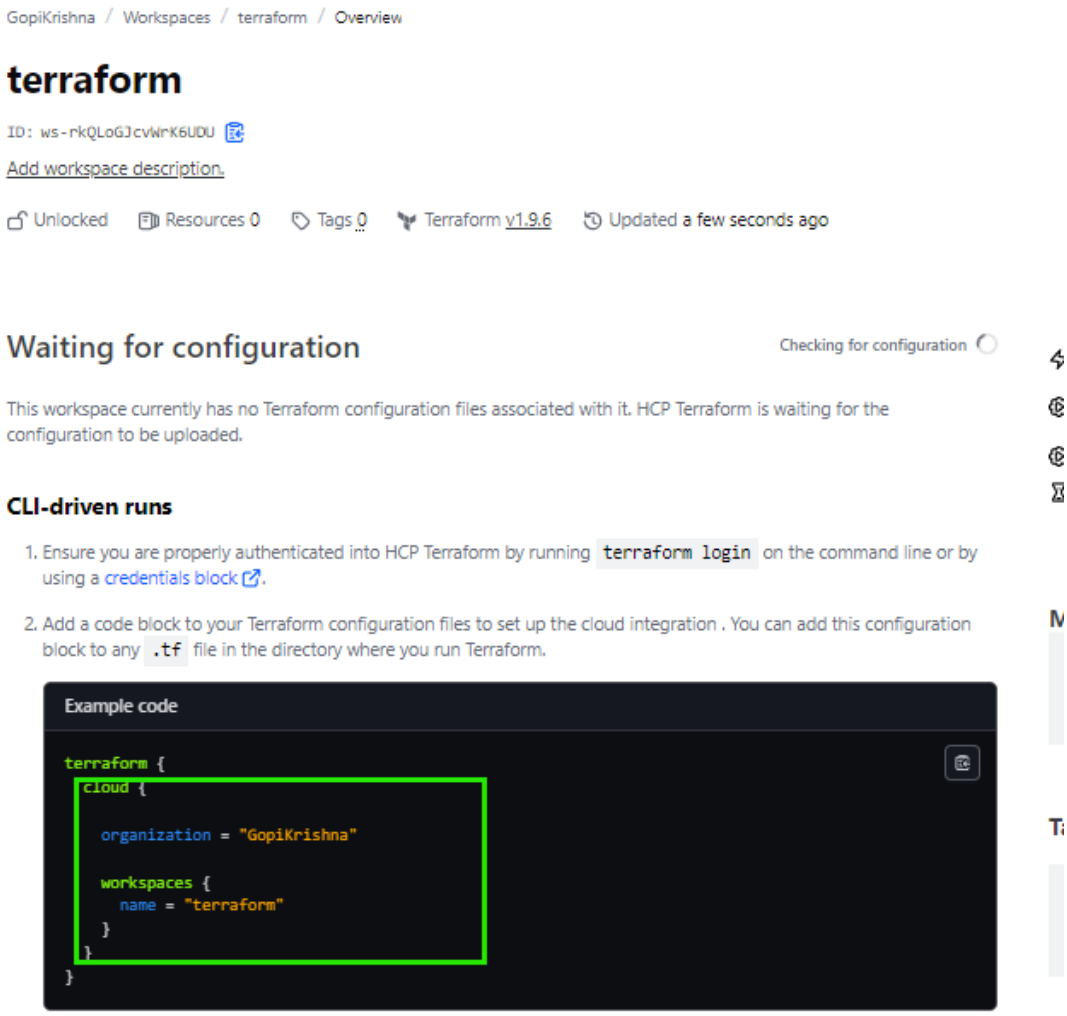

Terraform
Install
Tutorials
Documentation
Registry
Try Cloud
Terraform Home
Filter sidebar
Terraform CLI
Basic CLI Features
Initializing Working Directories
Provisioning Infrastructure
Authenticating
Writing and Modifying Code
Inspecting Infrastructure
Importing Infrastructure
Manipulating State
Managing Workspaces
Managing Plugins
CLI Configuration
Developer / Terraform / Terraform CLI / CLI Configuration / CLI Configuration
CLI Configuration File (.terraformrc or terraform.rc)
v1.9.x (latest)
The CLI configuration file configures per-user settings for CLI behaviors, which apply across all Terraform working directories. This is separate from your infrastructure configuration.
Locations
The configuration can be placed in a single file whose location depends on the host operating system:
On Windows, the file must be named terraform.rc and placed in the relevant user's %APPDATA% directory. The physical location of this directory depends on your Windows version and system configuration; use $env:APPDATA in PowerShell to find its location on your system.
On all other systems, the file must be named .terraformrc (note the leading period) and placed directly in the home directory of the relevant user.


This PC › Local Disk (C:) › Users › admin › AppData › Roaming
Quick access
Desktop
Downloads
Documents
Pictures
.ssh
images
Images
Study (D:)
OneDrive - Personal
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
Study (D:)
Entertainment (E:)
Network
Linux
Name
Date modified
Type
Size
Google 12-Jul-24 06:25 PM File folder
GoTo 17-May-24 07:02 AM File folder
Grammarly 25-Sep-24 09:02 AM File folder
helm 19-May-24 12:01 PM File folder
jupyter 18-Apr-24 07:54 AM File folder
KMP 01-Jul-24 03:02 PM File folder
kmp64 01-Jul-24 03:02 PM File folder
Lens 24-Jun-24 12:04 AM File folder
Microsoft 26-Sep-24 08:14 AM File folder
Mozilla 27-Aug-24 01:14 PM File folder
MySQL 26-Aug-24 07:21 PM File folder
Notepad++ 28-Sep-24 04:06 PM File folder
nvm 12-Sep-24 12:16 PM File folder
Opera Software 14-Mar-24 03:18 PM File folder
pypoetry 15-Sep-24 04:22 PM File folder
Python 15-Sep-24 04:21 PM File folder
Slack 16-Jul-24 06:42 PM File folder
sqlitebrowser 16-Jul-24 12:55 PM File folder
sqlops 26-Aug-24 07:31 PM File folder
StorageExplorer 26-Aug-24 07:25 PM File folder
Tenorshare 21-Sep-24 09:52 PM File folder
terraform.d 28-Sep-24 04:02 PM File folder
TSMonitor 21-Sep-24 09:50 PM File folder
vlc 16-Jul-24 06:54 PM File folder
WinRAR 22-Mar-24 04:09 PM File folder
Xmind 25-Aug-24 08:12 PM File folder
Zoom 06-Apr-24 03:35 PM File folder
terraform.rc 28-Sep-24 04:11 PM RC File 1 KB

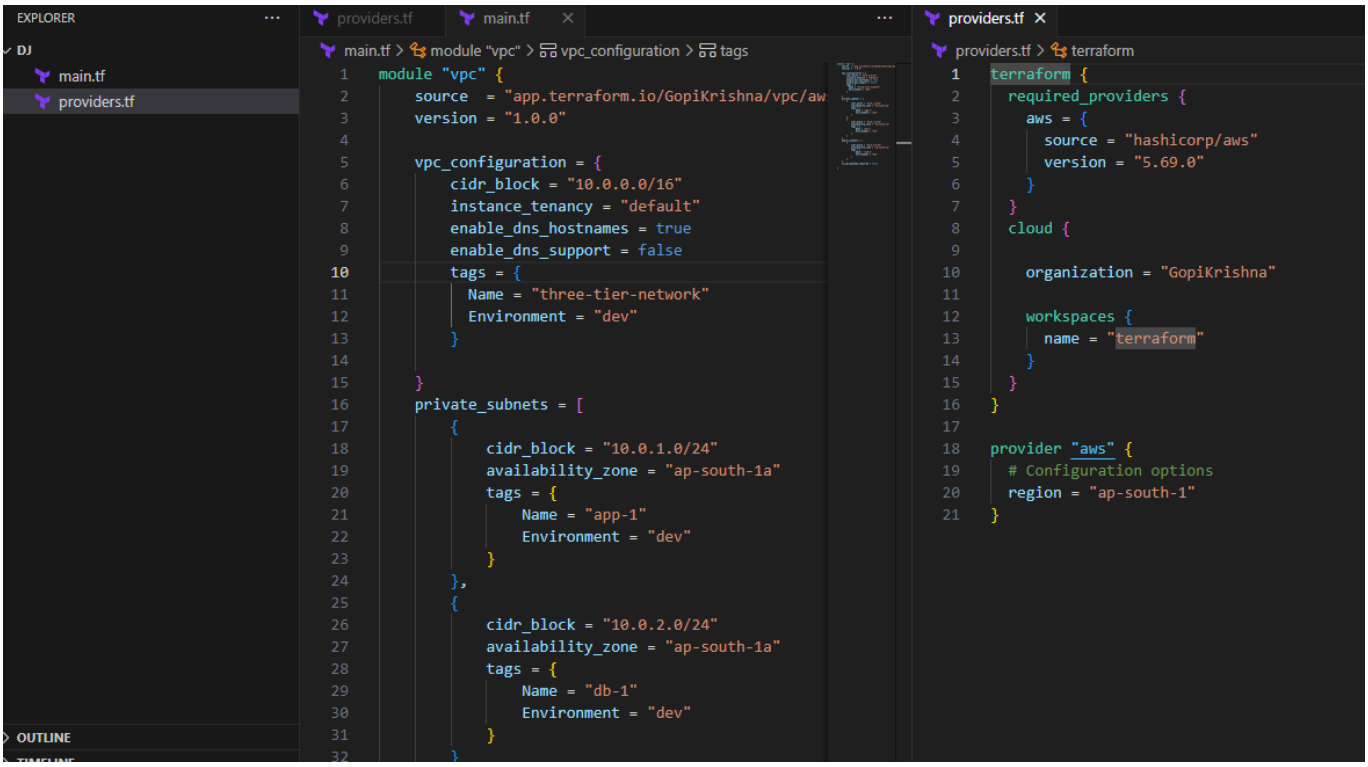
- Create a workspace and select the Project




Create a new Workspace
HCP Terraform organizes your infrastructure resources by workspaces. A workspace contains infrastructure resources, variables, state data, and run history. Learn more about workspaces in HCP Terraform.
Configure Settings
Workspace Name
terraform
The name of your workspace is unique and used in tools, routing, and UI. Dashes, underscores, and alphanumeric characters are permitted. Learn more about naming workspaces.
Project
Krishna
Every workspace must belong to a single project. Projects must be named uniquely within an organization. Workspaces may be moved between projects at any time from the workspace list or settings.
Learn more about projects.
Description (Optional)
Workspace description



- Write a terraform module for creating VPC based on child module



- Providers.tf

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.69.0"
    }
  }
  cloud {

    organization = "GopiKrishna"

    workspaces {
      name = "terraform"
    }
  }
}

provider "aws" {
  # Configuration options
  region = "ap-south-1"
}
```

- main.tf file

```
#
module "vpc" {
    source  = "app.terraform.io/GopiKrishna/vpc/aws"
    version = "1.0.0"

    vpc_configuration = {
        cidr_block = "10.0.0.0/16"
        instance_tenancy = "default"
        enable_dns_hostnames = true
        enable_dns_support = false
        tags = {
          Name = "three-tier-network"
          Environment = "dev"
        }

    }
    private_subnets = [
        {
            cidr_block = "10.0.1.0/24"
            availability_zone = "ap-south-1a"
            tags = {
                Name = "app-1"
                Environment = "dev"
            }
```

```
        },
        {
            cidr_block = "10.0.2.0/24"
            availability_zone = "ap-south-1a"
            tags = {
                Name = "db-1"
                Environment = "dev"
            }
        }
    ]
    public_subnets = [
        {
            cidr_block = "10.0.0.0/24"
            availability_zone = "ap-south-1a"
            tags = {
                Name = "web-1"
                Environment = "dev"
            }
        }
    ]
    is_nat_gateway_required = false

}
```

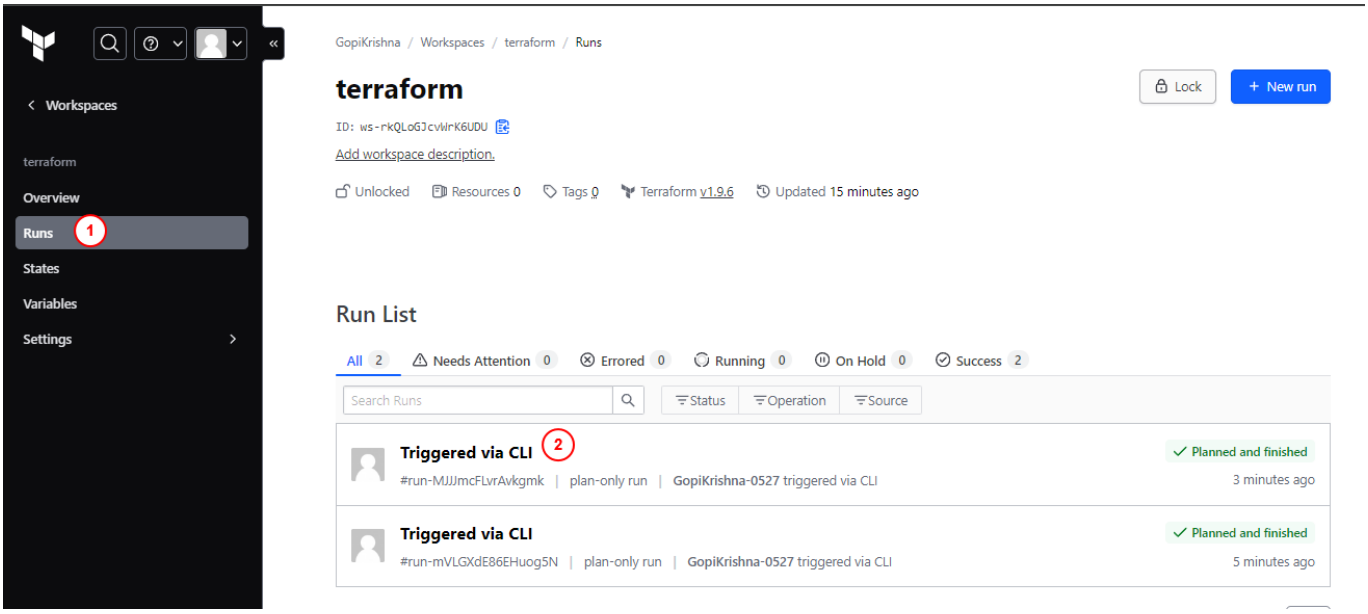
- Now initilize the terraform `terraform init`

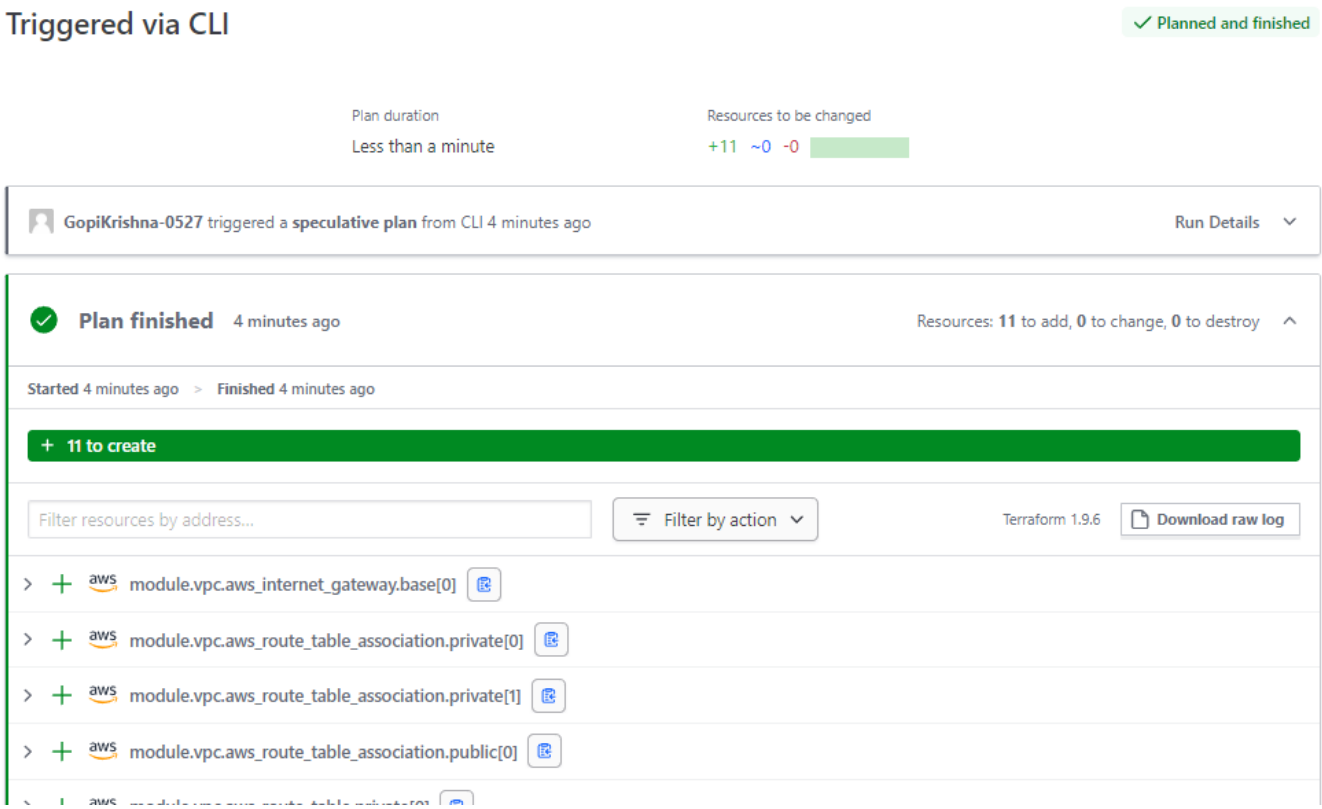
```
PS D:\dj> terraform init
Initializing the backend...
Initializing modules...
Downloading app.terraform.io/GopiKrishna/vpc/aws 1.0.0 for vpc...
- vpc in .terraform\modules\vpc
Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.69.0"...
- Installing hashicorp/aws v5.69.0...
- Installed hashicorp/aws v5.69.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
PS D:\dj>
```

- Now execute the `terraform plan`

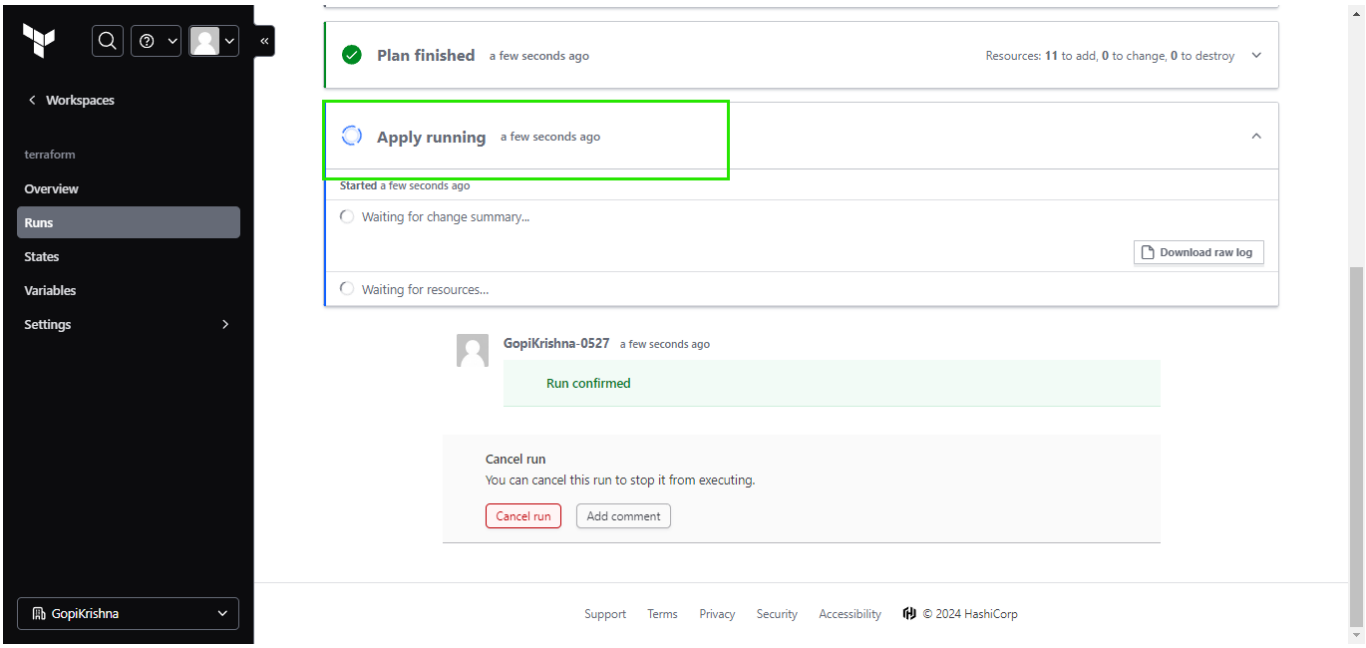
```
PS D:\dj> terraform plan
Running plan in HCP Terraform. Output will stream here. Pressing Ctrl-C
will stop streaming the logs, but will not stop the plan running remotely.

Preparing the remote plan...

To view this run in a browser, visit:
https://app.terraform.io/app/GopiKrishna/terraform/runs/run-MJJJmcFLvrAvkgmk
```

- Open the terraform cloud and see the status

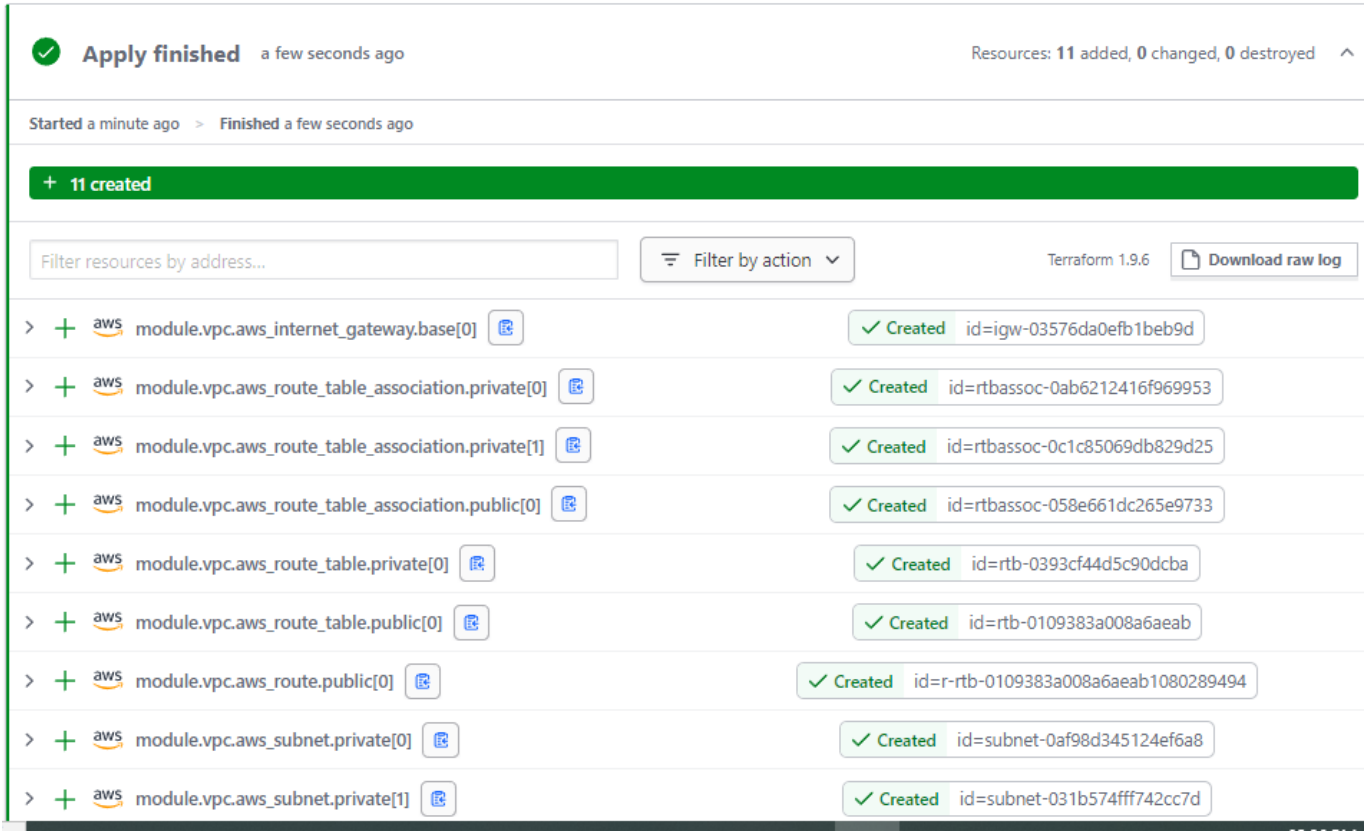




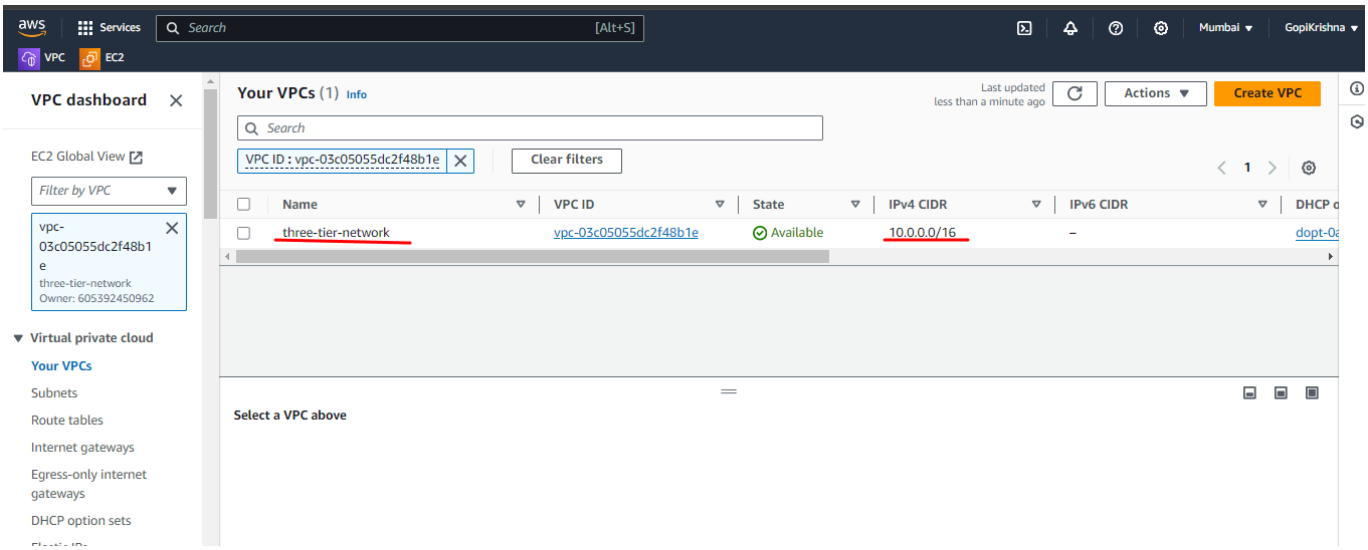
- Now execute the `terraform apply`

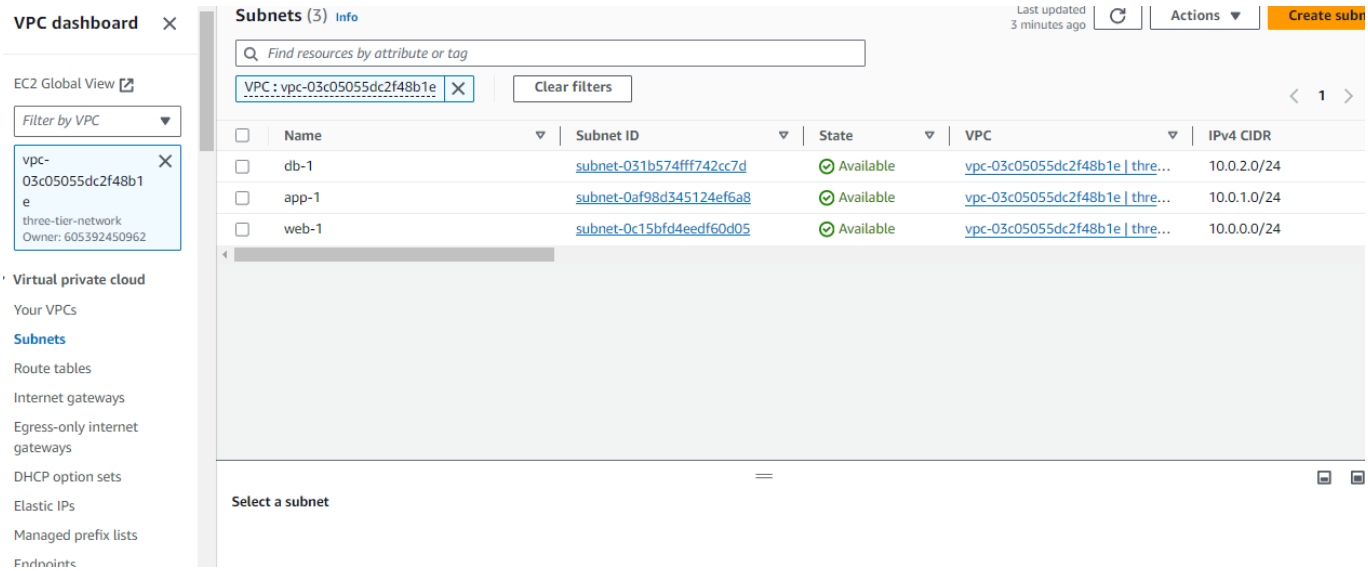



```
module.vpc.aws_vpc.base: Creation complete after 24s [id=vpc-03c05055dc2f48b1e]
module.vpc.aws_internet_gateway.base[0]: Creating...
module.vpc.aws_subnet.private[1]: Creating...
module.vpc.aws_route_table.private[0]: Creating...
module.vpc.aws_subnet.public[0]: Creating...
module.vpc.aws_route_table.public[0]: Creating...
module.vpc.aws_subnet.private[0]: Creating...
module.vpc.aws_internet_gateway.base[0]: Creation complete after 2s [id=igw-03576da0efb1beb9d]
module.vpc.aws_subnet.private[1]: Creation complete after 2s [id=subnet-031b574fff742cc7d]
module.vpc.aws_subnet.public[0]: Creation complete after 2s [id=subnet-0c15bfd4eedf60d05]
module.vpc.aws_subnet.private[0]: Creation complete after 2s [id=subnet-0af98d345124ef6a8]
module.vpc.aws_route_table.public[0]: Creation complete after 2s [id=rtb-0109383a008a6aeab]
module.vpc.aws_route_table_association.public[0]: Creating...
module.vpc.aws_route.public[0]: Creating...
module.vpc.aws_route_table.private[0]: Creation complete after 2s [id=rtb-0393cf44d5c90dcba]
module.vpc.aws_route_table_association.private[0]: Creating...
module.vpc.aws_route_table_association.private[1]: Creating...
module.vpc.aws_route_table_association.public[0]: Creation complete after 1s [id=rtbassoc-058e661dc265e9733]
module.vpc.aws_route_table_association.private[1]: Creation complete after 1s [id=rtbassoc-0c1c85069db829d25]
module.vpc.aws_route_table_association.private[0]: Creation complete after 1s [id=rtbassoc-0ab6212416f969953]
module.vpc.aws_route.public[0]: Creation complete after 1s [id=r-rtb-0109383a008a6aeab1080289494]

Apply complete! Resources: 11 added, 0 changed, 0 destroyed.
```

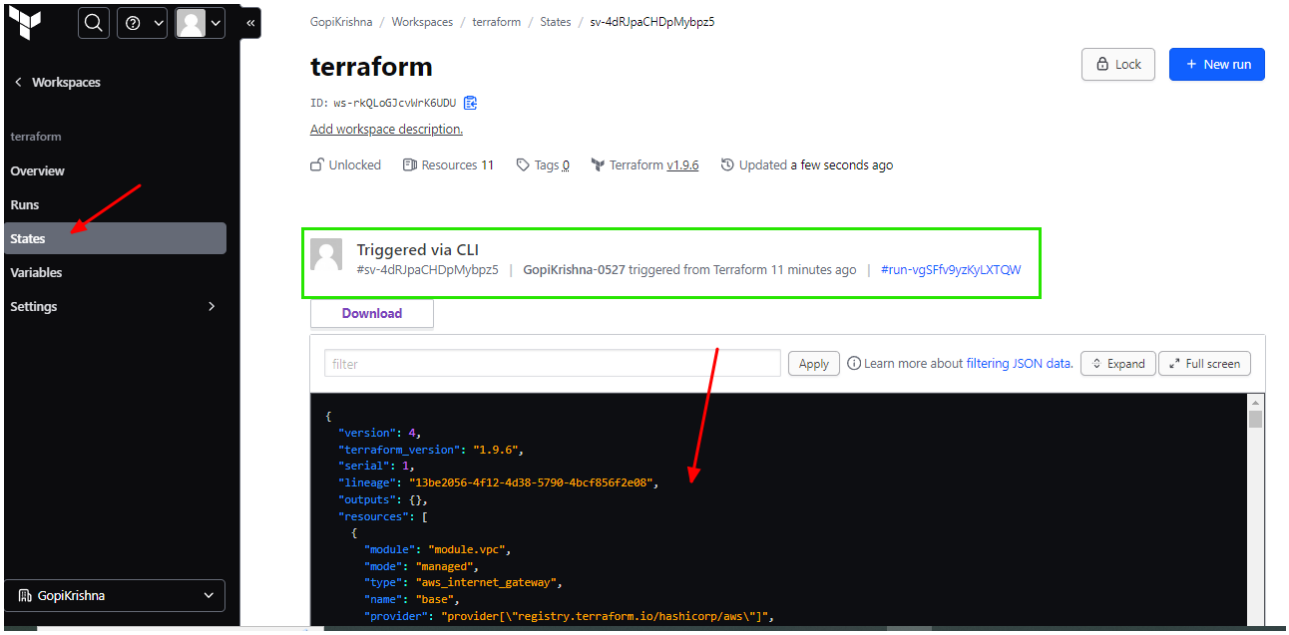


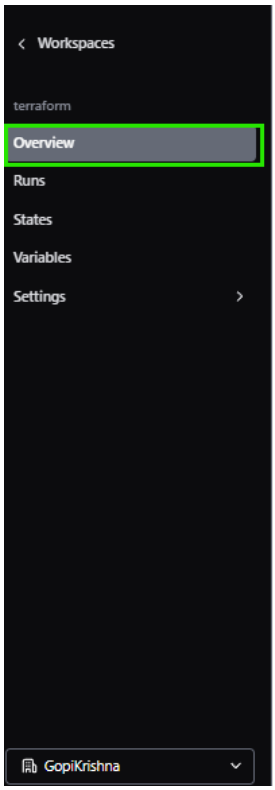
- Check whether the AWS console vpc is created or not

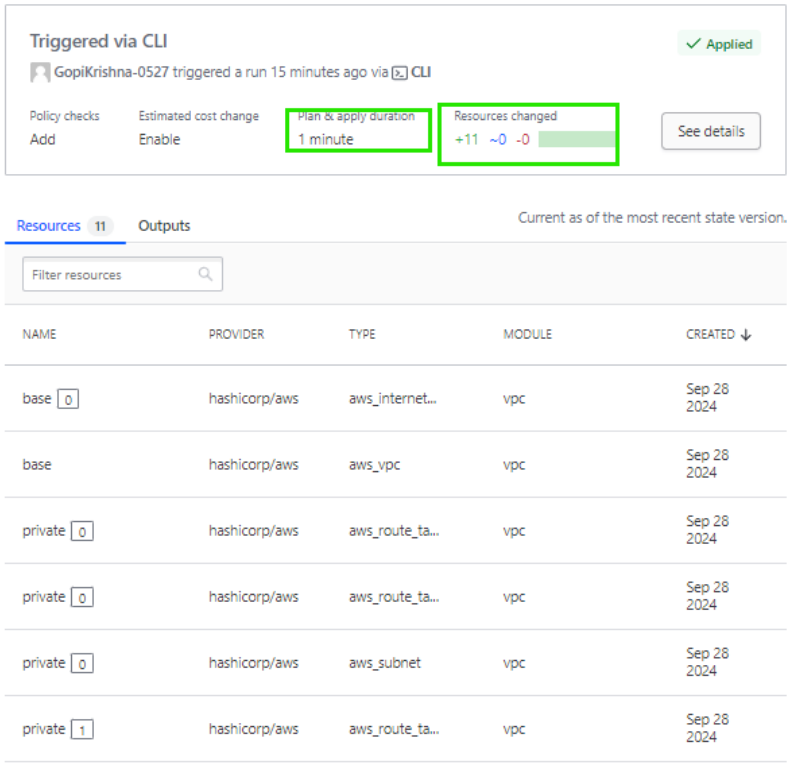




- Check the state file

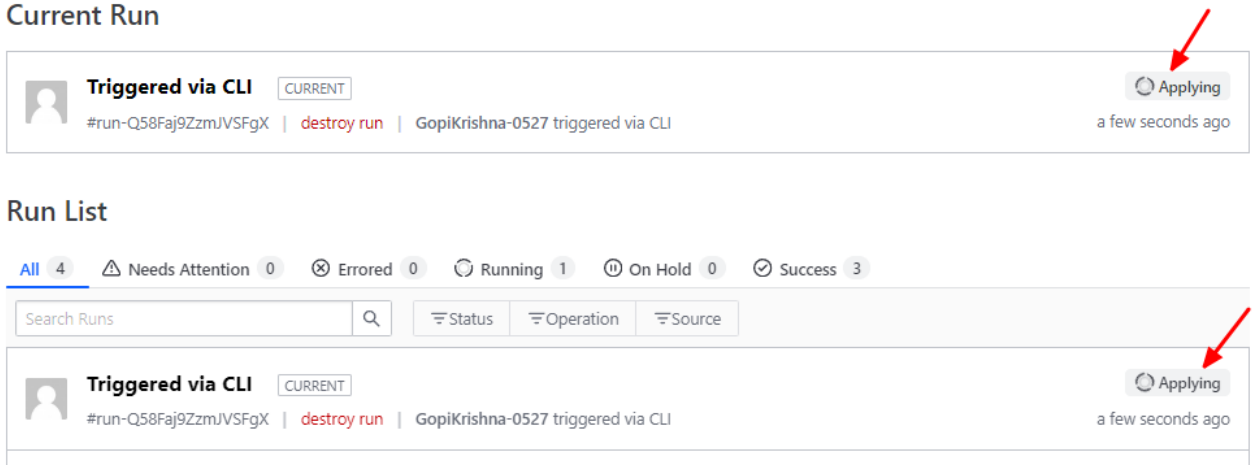




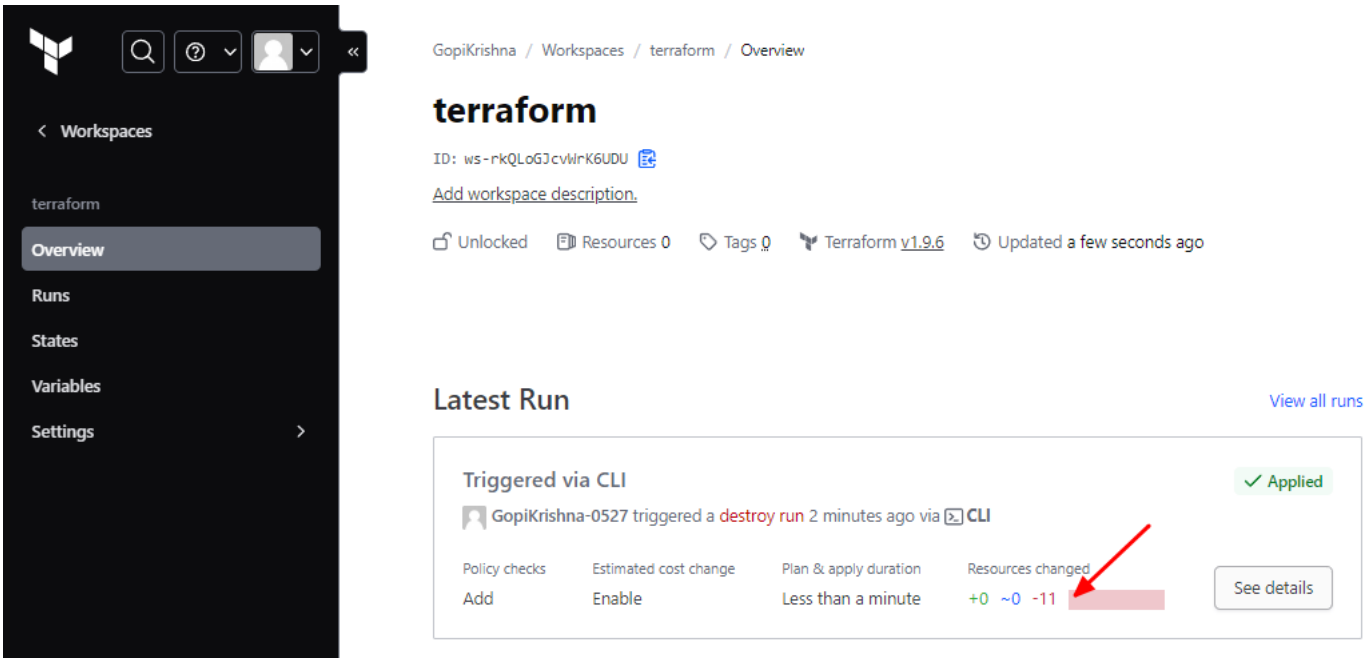


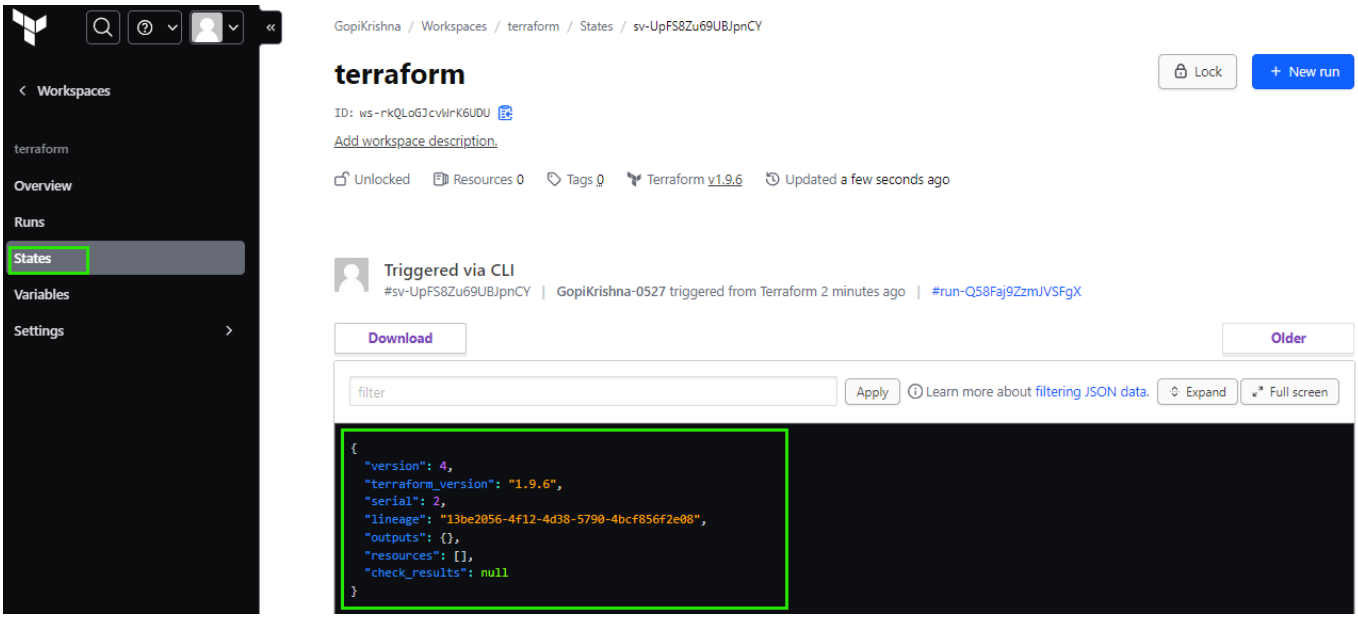
- All resources are created
- Destroy the all resources `terraform destroy`

```
PS D:\dj> terraform destroy
Running apply in HCP Terraform. Output will stream here. Pressing Ctrl-C
will cancel the remote apply if it's still pending. If the apply started it
will stop streaming the logs, but will not stop the apply running remotely.

Preparing the remote apply...

To view this run in a browser, visit:
https://app.terraform.io/app/GopiKrishna/terraform/runs/run-Q58Faj9ZzmJVSFgX
```



```
module.vpc.aws_route_table_association.private[0]: Destroying... [id=rtbassoc-0ab6212416f969
module.vpc.aws_route.public[0]: Destroying... [id=r-rtb-0109383a008a6aeab1080289494]
module.vpc.aws_route_table_association.public[0]: Destroying... [id=rtbassoc-058e661dc265e97
module.vpc.aws_route_table_association.public[0]: Destruction complete after 1s
module.vpc.aws_subnet.public[0]: Destroying... [id=subnet-0c15bfd4eedf60d05]
module.vpc.aws_route_table_association.private[1]: Destruction complete after 1s
module.vpc.aws_route_table_association.private[0]: Destruction complete after 1s
module.vpc.aws_subnet.private[0]: Destroying... [id=subnet-0af98d345124ef6a8]
module.vpc.aws_subnet.private[1]: Destroying... [id=subnet-031b574fff742cc7d]
module.vpc.aws_route_table.private[0]: Destroying... [id=rtb-0393cf44d5c90dcba]
module.vpc.aws_route.public[0]: Destruction complete after 1s
module.vpc.aws_internet_gateway.base[0]: Destroying... [id=igw-03576da0efb1beb9d]
module.vpc.aws_route_table.public[0]: Destroying... [id=rtb-0109383a008a6aeab]
module.vpc.aws_subnet.public[0]: Destruction complete after 0s
module.vpc.aws_subnet.private[0]: Destruction complete after 1s
module.vpc.aws_subnet.private[1]: Destruction complete after 1s
module.vpc.aws_internet_gateway.base[0]: Destruction complete after 1s
module.vpc.aws_route_table.public[0]: Destruction complete after 1s
module.vpc.aws_route_table.private[0]: Destruction complete after 1s
module.vpc.aws_vpc.base: Destroying... [id=vpc-03c05055dc2f48b1e]
module.vpc.aws_vpc.base: Destruction complete after 1s

Apply complete! Resources: 0 added, 0 changed, 11 destroyed.
```




Workspaces
terraform
Overview
Runs
States
Variables
Settings
GopiKrishna / Workspaces / terraform / States / sv-UpFS8Zu69UBJpnCY
terraform
Lock
New run
ID: ws-rkQLoGJcvWrK6UDU
Add workspace description.
Unlocked
Resources 0
Tags 0
Terraform v1.9.6
Updated a few seconds ago
Triggered via CLI
#sv-UpFS8Zu69UBJpnCY | GopiKrishna-0527 triggered from Terraform 2 minutes ago | #run-Q58Faj9ZzmJVSFgX
Download
Older
filter
Apply
Learn more about filtering JSON data.
Expand
Full screen
{
"version": 4,
"terraform_version": "1.9.6",
"serial": 2,
"lineage": "13be2056-4f12-4d38-5790-4bcf856f2e08",
"outputs": {},
"resources": [],
"check_results": null
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