

Terraform Backend

A backend defines where Terraform stores its **state** data files.

The primary function of a backend is to store the state created by Terraform runs after provisioning our resources. This gives Terraform a single place to look up what the expectation of our resources is from the last time we applied.

How to save terraform state file?

1. Saving Locally - If you are the only developer working with Terraform and managing your infrastructure then you do not have to do anything special terraform apply command will generate terraform state file for your workspace and save it inside your working directory.

2. Saving Remotely - If you are working in a team where multiple developers writing the terraform code to manage the infrastructure then it is highly recommended to store terraform files remotely(AWS S3 Bucket) on a central location so that with every infrastructure change your terraform state file is up to date and in sync with other.

Terraform Backend Initialization

Terraform backend should be configured like any other configuration in the configuration file and when you run the terraform init, Backend will be created.

For example, we are going to configure the AWS S3 as a Terraform backend.

```
1 terraform {  
2   backend "s3" {  
3     bucket = "terraform-s3-bucket-name"  
4     key    = "s3 key path"  
5     region = "us-west-1"  
6   }  
7 }  
8
```

Advantages of using Remote Backend

Using a remote backend has several advantages, such as:

1. Centralized storage of the state file, which enables collaboration between team members working on the same project.
2. Versioning of state files, which allows you to manage and track changes to your infrastructure over time.
3. History of changes, which can help with troubleshooting and auditing.
4. Features like remote state locking prevent conflicts and ensure consistency.

Lab Session....