# What are we going to see in this session?

- Providers
- Resource
- Data
- Provisioner
- Terraform state
- Output
- Terraform work flow

# Providers

- Providers are responsible for understanding and take care of API interactions and expose required resources.

- As mentioned earlier TF supports many providers some samples are

- AWS

```
provider "aws" {

}
```

- Azure

```
provider "azurerm" {

}
```

- VMware

```
provider "vsphere" {

}
```

# Resources

After establishing the connection to providers what are we going to do? "We are going to utilize there resources"

In modern cloud world, someone will have these resource ready and you can utilize it on demand.

" Hence resources means infrastructure components"

```
resource "aws_instance" "my_first_machine" {
 ami = "xxxxx"
 instance_type = "t2.micro"
}
```

# Data

Information's fetched from providers are data here.

Example :
If you want to fetch images ID information available for your AWS account. [AMI ID are data here]

Fetched data can be used elsewhere in Terraform scripts when required.

# Provisioner

Using Provisioner you can do changes in instances.

Common uses cases are :
Copying some files to remote servers.
Executing script on newly created instances.
Inject bootstrapping to instances.
Clean up some thing before machine is destroyed

# Terraform State

Terraform state stores status of your managed infrastructure & configuration.

This state is used by Terraform to map real world resources to your configuration, keep track of meta data and to improve performance of large scale infrastructure.

Terraform state is generally stored in a file locally named as "terraform.tfstate" but it can be also stored elsewhere which can work better in team environment..

# Output

Shows values that are highlighted after terraform applies.
This output is also maintained in terraform state file.

Example:

```
output "ami_id" {
  value = "${aws_instance.web.ami_id}"
```

# Terraform work flow

Write  : Author your code of how your infrastructure should be.
Plan   : Preview changes before apply
Apply : Provision your infrastructure.

# End of this topic !

Any questions?