

AWS Terraform Modules

Create the **aws-modules** directory.

VPC Module

Let's start with the VPC module.

1. Create *vpc* folder inside the above-created directory.
 2. Inside *vpc* folder create *main.tf* file.
 3. Define the following resources:
 - `aws_vpc`
 - for public
 - `aws_subnet`
 - `aws_internet_gateway`
 - `aws_route_table`
 - `aws_route`
 - `aws_route_table_association`
 - for private
 - `aws_subnet`
 - `aws_route_table`
 - `aws_route_table_association`
 4. Click [code](#) for reference.
 5. Now the *main.tf* file definition for VPC has been created.
 6. Now we will create *variables.tf* file inside *vpc* folder for declaring variables.
 7. Declare the following variables:
 - `vpc-properties`
 8. Click [code](#) for reference.
 9. We have completed declaring variables for the *VPC module*.
 10. Now we will declare outputs for the *VPC module*.
 11. Create *outputs.tf* file and add the following outputs:
 - `vpc-id`
 - `vpc-private-subnets`
 - `vpc-public-subnets`
 12. Click [code](#) for reference.
 13. Now we have completed defining the **VPC Module**.
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S3 Module

We will use S3 to store and access .env files for ecs containers.

1. Create *s3* folder inside the *aws-modules* directory.
2. Inside it, create *main.tf* file & define the following resources:
 - `aws_s3_bucket`
 - `aws_s3_bucket_versioning`

3. Click [code](#) for reference.
 4. We have completed defining *main.tf* file.
 5. Now create *variables.tf* file & declare the following variables:
 - s3-properties
 6. Click [code](#) for reference:
 7. The *variables.tf* file has been declared.
 8. Now create *outputs.tf* file, inside it define the following outputs:
 - s3-bucket-id
 9. Click [code](#) for reference.
 10. We have completed defining the **S3 Module**.
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RDS Module

For database, we will use MySQL RDS.

1. Create *rds* folder inside the *aws-modules* directory.
2. Inside *rds* folder, create *data.tf* file.
3. Define the following data:
 - aws_ami
4. Click [code](#) for reference.
5. We have completed defining the *data.tf* file.
6. Now create *main.tf* file & define the following resources:
 - for database
 - aws_db_subnet_group
 - aws_security_group
 - aws_db_instance
 - for bastion
 - aws_security_group
 - aws_key_pair
7. Click [code](#) for reference.
8. The definition of *main.tf* file is completed.
9. Now we will create *variables.tf* file & inside it declare the following variables:
 - database-properties
 - bastion-properties
 - vpc-id
 - vpc-public-subnets
 - vpc-private-subnets
10. Click [code](#) for reference.
11. The *variables.tf* file have been declared.
12. Now we will define the outputs.
13. Create *outputs.tf* file.
14. Inside the *outputs.tf* file, define the following outputs:
 - DB_HOST
 - bastion-host-ip
15. Click [code](#) for reference.
16. We have completed defining the **RDS Module**.

ECR Module

Let's start with the ECR Module

1. Create *ecr* folder inside the above-created *aws-modules* directory.
 2. Inside *ecr* folder, create *main.tf* file.
 3. In *main.tf* file, define the following resources:
 - `aws_ecr_repository`
 4. Click [code](#) for reference.
 5. The definition of *main.tf* file is complete.
 6. Now we will create *variables.tf* file and declare the following variables:
 - `ecr-repository-name`
 7. Click [code](#) for reference.
 8. The declaration of *variables.tf* file is completed.
 9. Now we will create *outputs.tf* file and define the following output:
 - `repository-url`
 10. Click [code](#) for reference.
 11. The definition of *outputs.tf* file is complete.
 12. We have completed defining the **ECR Module**.
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Load Balancer Module

Let's start with the Load Balancer Module

1. Create *load-balancer* folder.
 2. Inside *load-balancer* folder, create *main.tf* file & declare the following resources:
 - `aws_security_group`
 - `aws_lb`
 - `aws_lb_target_group`
 - `aws_lb_listener`
 3. Click [code](#) for reference.
 4. The *main.tf* file for Load Balancer Module has been defined.
 5. Now we will define *variables.tf* file.
 6. Create *variables.tf* file & declare the following variables:
 - `load-balancer-properties`
 - `vpc-id`
 - `vpc-public-subnets`
 7. Click [code](#) for reference.
 8. The *variable.tf* file for Load Balancer Module has been defined.
 9. Now we will define *outputs.tf* file.
 10. Create *outputs.tf* file & define the following outputs:
 - `load-balancer-sg-id`
 - `load-balancer-tg-arn`
 11. Click [code](#) for reference.
 12. We have completed defining the **Load Balancer Module**.
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ECS Module

Let's start with the ECS Module

1. Create *ecs* folder in *aws-modules* directory.
 2. Inside *ecs* folder, create *data.tf* file.
 3. In *data.tf* file, define the following data:
 - `aws_iam_policy_document`
 4. Click [code](#) for reference.
 5. Definition of *data.tf* file is completed.
 6. Now we will define *main.tf* file.
 7. Inside *ecs* folder create *main.tf* file & define the following resources:
 - for cluster
 - `aws_ecs_cluster`
 - for task
 - `aws_iam_role`
 - `aws_iam_role_policy_attachment`
 - `aws_ecs_task_definition`
 - for service
 - `aws_security_group`
 - `aws_ecs_service`
 8. Click [code](#) for reference.
 9. The *main.tf* file for ECS has been defined.
 10. Now we will define *variables.tf* file.
 11. Create *variables.tf* file & declare the following variables:
 - `ecs-properties`
 - `ecs-container-definition`
 - `vpc-id`
 - `vpc-public-subnets`
 - `load-balancer-sg-id`
 - `load-balancer-tg-arn`
 12. Click [code](#) for reference.
 13. We have completed defining the **ECS Module**.
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EKS Module

Let's start with the EKS Module

1. Create *eks* folder in the above-created *aws-modules* directory.
2. Inside *eks* folder create *data.tf* file.
3. In *data.tf* file, define the following data:
 - `aws_iam_policy_document`
4. Click [code](#) for reference.
5. Definition of *data.tf* file is completed.
6. Now we will define *main.tf* file.
7. Inside *eks* folder create *main.tf* file & define the following resources:
 - for cluster

- `aws_iam_role`
- `aws_iam_role_policy_attachment`
- `aws_eks_cluster`
- for node
 - `aws_iam_role`
 - `aws_iam_role_policy_attachment`
 - `aws_iam_role_policy_attachment`
 - `aws_iam_role_policy_attachment`
 - `aws_eks_node_group`

8. Click [code](#) for reference.

9. The *main.tf* file for EKS has been defined.

10. Now we will define variables.tf file.

11. Create *variables.tf* file inside *eks* folder & declare the following variables:

- `eks-properties`
- `vpc-public-subnets`

12. Click [code](#) for reference.

13. We have completed defining the **EKS Module**.
