

# Pulumi Modules

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## VPC Module

1. Create *vpc* folder.
  2. Inside *vpc* folder, create ***init.py*** file.
  3. Import the following in the file:
    - from .main import vpc
  4. Now, inside *vpc* folder create *main.py* file.
  5. Import the following:
    - pulumi\_aws as aws
  6. Define a class named *vpc*.
  7. Inside *vpc* class, define the ***init*** constructor & inside it call the following functions:
    - aws.ec2.Vpc()
    - aws.get\_availability\_zones()
    - for public
      - aws.ec2.InternetGateway()
      - aws.ec2.RouteTable()
      - aws.ec2.Subnet()
      - aws.ec2.RouteTableAssociation()
    - for private
      - aws.ec2.RouteTable()
      - aws.ec2.Subnet()
      - aws.ec2.RouteTableAssociation()
  8. Click [code](#) for reference.
  9. Now we have completed defining the **VPC Module**.
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## S3 Module

1. Create *s3* folder.
  2. Inside *s3* folder, create ***init.py*** file.
  3. Import the following in the file:
    - from .main import s3
  4. Now, inside *s3* folder create *main.py* file.
  5. Import the following:
    - pulumi\_aws as aws
  6. Define a class named *s3*.
  7. Inside *s3* class, define the ***init*** constructor & inside it call the following functions:
    - aws.s3.BucketV2()
    - aws.s3.BucketVersioningV2()
  8. Click [code](#) for reference.
  9. Now we have completed defining the **S3 Module**.
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## RDS Module

1. Create *rds* folder.
  2. Inside *rds* folder, create ***init.py*** file.
  3. Import the following in the file:
    - from .main import rds
  4. Now, inside *rds* folder, create *data.py* file and import the following:
    - import pulumi\_aws as aws
  5. Call the following function:
    - aws.ec2.get\_ami()
  6. Click [code](#) for reference.
  7. Now, inside *rds* folder create *main.py* file.
  8. Import the following:
    - pulumi
    - pulumi\_aws as aws
    - from . import data
  9. Define a class named *rds*.
  10. Inside *rds* class, define the ***init*** constructor & inside it call the following functions:
    - for database
      - aws.rds.SubnetGroup()
      - aws.ec2.SecurityGroup()
      - aws.ec2.SecurityGroupIngressArgs()
      - aws.ec2.SecurityGroupEgressArgs()
      - aws.rds.Instance()
    - for bastion-host
      - aws.ec2.SecurityGroup()
      - aws.ec2.SecurityGroupIngressArgs()
      - aws.ec2.SecurityGroupEgressArgs()
      - aws.ec2.KeyPair()
      - aws.ec2.Instance()
  11. Export the following outputs:
    - DB\_HOST
    - bastion-host-ip
  12. Click [code](#) for reference.
  13. Now we have completed defining the **RDS Module**.
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## Load Balancer Module

1. Create *load\_balancer* folder.
2. Inside *load\_balancer* folder, create ***init.py*** file.
3. Import the following in the file:
  - from .main import load\_balancer
4. Now, inside *load\_balancer* folder create *main.py* file.
5. Import the following:
  - pulumi
  - pulumi\_aws as aws
6. Define a class named *load\_balancer*.
7. Inside *load\_balancer* class, define the ***init*** constructor & inside it call the following functions:

- `aws.ec2.SecurityGroup()`
- `aws.lb.LoadBalancer()`
- `aws.lb.TargetGroup()`
- `aws.lb.Listener()`

8. Export the following output:
    - `url`
  9. Click [code](#) for reference.
  10. Now we have completed defining the **Load Balancer Module**.
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## ECS Module

1. Create `ecs` folder.
  2. Inside `ecs` folder, create ***init.py*** file.
  3. Import the following in the file:
    - `from .main import ecs`
  4. Now, inside `ecs` folder, create `data.py` file and import the following:
    - `import pulumi_aws as aws`
  5. Define the following:
    - `ecs_task_role_policy_document`
  6. Click [code](#) for reference.
  7. Now, inside `ecs` folder create `main.py` file.
  8. Import the following:
    - `pulumi`
    - `pulumi_aws as aws`
    - `from . import data`
    - `import json`
  9. Define a class named `ecs`.
  10. Inside `ecs` class, define the ***init*** constructor & inside it call the following functions:
    - `aws.ecs.Cluster()`
    - `aws.iam.Role()`
    - `aws.iam.RolePolicyAttachment()`
    - `aws.ecs.TaskDefinition()`
    - `aws.ecs.Service()`
  11. Click [code](#) for reference.
  12. Now we have completed defining the **ECS Module**.
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## EKS Module

1. Create `eks` folder.
2. Inside `eks` folder, create ***init.py*** file.
3. Import the following in the file:
  - `from .main import eks`
4. Now, inside `eks` folder, create `data.py` file and import the following:
  - `import pulumi_aws as aws`
5. Define the following:

- eks\_cluster\_role\_policy\_document
  - eks\_node\_group\_role\_policy\_document
6. Click [code](#) for reference.
7. Now, inside *eks* folder create *main.py* file.
8. Import the following:
- pulumi\_aws as aws
  - from . import data
  - import json
9. Define a class named *eks*.
10. Inside *eks* class, define the ***init*** constructor & inside it call the following functions:
- for eks-cluster
    - aws.iam.Role
    - aws.iam.RolePolicyAttachment()
    - aws.ec2.SecurityGroup()
    - aws.ec2.SecurityGroupIngressArgs()
    - aws.eks.Cluster()
    - aws.eks.ClusterVpcConfigArgs()
  - for eks-node-groups
    - aws.iam.Role()
    - aws.iam.RolePolicyAttachment()
    - aws.iam.RolePolicyAttachment()
    - aws.iam.RolePolicyAttachment()
    - aws.eks.NodeGroup()
    - aws.eks.NodeGroupScalingConfigArgs()
11. Click [code](#) for reference.
12. Now we have completed defining the **EKS Module**.
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