Creating the EKS Cluster

```
1  cd ~/environment/tfekscode/cluster
```

Initialize Terraform:

```
1  terraform init
```

```
Initializing the backend...

** OUTPUT TRUNCATED FOR BREVITY  as similar to previous examples **
```

Validate the Terraform code

```
1  terraform validate
```

```
Success! The configuration is valid.
```

Plan the deployment:

```
terraform plan -out tfplan
```

```
data.aws_ssm_parameter.cicd-vpc: Reading...
data.aws_ssm_parameter.eks-cidr: Reading...

** OUTPUT TRUNCATED FOR BREVITY **

data.aws_ssm_parameter.tf-eks-keyarn: Read complete after 0s [id=/workshop/tf-eks/keyar
data.aws_kms_key.ekskey: Read complete after 0s [id=3c922c67-3466-4ba6-98a7-052be67d4be
data.aws_caller_identity.current: Read complete after 0s [id=440018911661]

Terraform used the selected providers to generate the following execution plan. Resourc
  + create

Terraform will perform the following actions:

  # aws_eks_addon.vpc-cni will be created
  + resource "aws_eks_addon" "vpc-cni" {
      + addon_name           = "vpc-cni"
      + addon_version        = "v1.12.1-eksbuild.1"
      + arn                  = (known after apply)
      + cluster_name         = (sensitive value)
      + configuration_values = jsonencode(
            {
              + env = {
                  + AWS_VPC_K8S_CNI_CUSTOM_NETWORK_CFG = "true"
                }
            }
        )
      + created_at           = (known after apply)
      + id                   = (known after apply)
      + modified_at          = (known after apply)
      + preserve             = true
      + resolve_conflicts    = "OVERWRITE"
      + tags_all             = (known after apply)
```

```
    }


** OUTPUT TRUNCATED FOR BREVITY **


  # aws_ssm_parameter.oidc_provider_arn will be created
  + resource "aws_ssm_parameter" "oidc_provider_arn" {
      + arn            = (known after apply)
      + data_type      = (known after apply)
      + description    = "The EKS cluster oidc arn"
      + id             = (known after apply)
      + insecure_value = (known after apply)
      + key_id         = (known after apply)
      + name           = "/workshop/tf-eks/oidc_provider_arn"
      + tags           = {
          + "workshop" = "tf-eks-workshop"
        }
      + tags_all       = {
          + "workshop" = "tf-eks-workshop"
        }
      + tier           = (known after apply)
      + type           = "String"
      + value          = (sensitive value)
      + version        = (known after apply)
    }

  # null_resource.gen_cluster_auth will be created
  + resource "null_resource" "gen_cluster_auth" {
      + id       = (known after apply)
      + triggers = {}
    }

Plan: 10 to add, 0 to change, 0 to destroy.
```

You can see from the plan the following resources will be created

- An EKS Cluster
- Configure the cluster with an OIDC provider and add support for ISRA (IAM Roles for Service Accounts)
- A null resource which runs a small script to test connectivity to EKS with nmap and write the local .kubeconfig file

Build the environment:

```
terraform apply tfplan
```

** THE OUTPUT IS TRUNCATED FOR BREVITY INDICATED WITH '....' **

```
aws_eks_cluster.cluster: Creating...
aws_eks_cluster.cluster: Still creating... [10s elapsed]
....
aws_eks_cluster.cluster: Still creating... [10m10s elapsed]
aws_eks_cluster.cluster: Provisioning with 'local-exec'...
aws_eks_cluster.cluster (local-exec): Executing: ["/bin/sh" "-c" "until curl --output /
aws_eks_cluster.cluster: Creation complete after 10m11s [id=mycluster1]
aws_ssm_parameter.ca: Creating...
aws_ssm_parameter.cluster-name: Creating...
aws_ssm_parameter.cluster-sg: Creating...
aws_eks_identity_provider_config.oidc: Creating...
aws_ssm_parameter.endpoint: Creating...
aws_eks_addon.vpc-cni: Creating...
aws_security_group_rule.eks-add-clustersg: Creating...
aws_ssm_parameter.endpoint: Creation complete after 0s [id=/workshop/tf-eks/endpoint]
aws_ssm_parameter.cluster-sg: Creation complete after 0s [id=/workshop/tf-eks/cluster-s
aws_ssm_parameter.ca: Creation complete after 0s [id=/workshop/tf-eks/ca]
aws_ssm_parameter.cluster-name: Creation complete after 0s [id=/workshop/tf-eks/eks-clu
aws_security_group_rule.eks-add-clustersg: Creation complete after 0s [id=sgrule-176315
aws_eks_addon.vpc-cni: Still creating... [10s elapsed]
aws_eks_identity_provider_config.oidc: Still creating... [10s elapsed]
aws_eks_addon.vpc-cni: Still creating... [20s elapsed]
....
```

```
aws_eks_addon.vpc-cni: Still creating... [2m30s elapsed]
aws_eks_identity_provider_config.oidc: Still creating... [2m30s elapsed]
aws_eks_addon.vpc-cni: Creation complete after 2m36s [id=mycluster1:vpc-cni]
null_resource.gen_cluster_auth: Creating...
null_resource.gen_cluster_auth: Provisioning with 'local-exec'...
null_resource.gen_cluster_auth (local-exec): (output suppressed due to sensitive value
....
null_resource.gen_cluster_auth (local-exec): (output suppressed due to sensitive value
aws_eks_identity_provider_config.oidc: Still creating... [2m40s elapsed]
null_resource.gen_cluster_auth (local-exec): (output suppressed due to sensitive value
....
null_resource.gen_cluster_auth (local-exec): (output suppressed due to sensitive value
null_resource.gen_cluster_auth: Creation complete after 6s [id=4595653272837574562]
aws_eks_identity_provider_config.oidc: Still creating... [2m50s elapsed]
....
aws_eks_identity_provider_config.oidc: Still creating... [6m40s elapsed]
aws_eks_identity_provider_config.oidc: Creation complete after 6m40s [id=mycluster1:myc
aws_ssm_parameter.oidc_provider_arn: Creating...
aws_ssm_parameter.oidc_provider_arn: Creation complete after 0s [id=/workshop/tf-eks/oi

Apply complete! Resources: 10 added, 0 changed, 0 destroyed.
```