ICT & Infra S3 AO-Week14: Kubernetes

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Version 1.0

Class: CB01

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Introduction

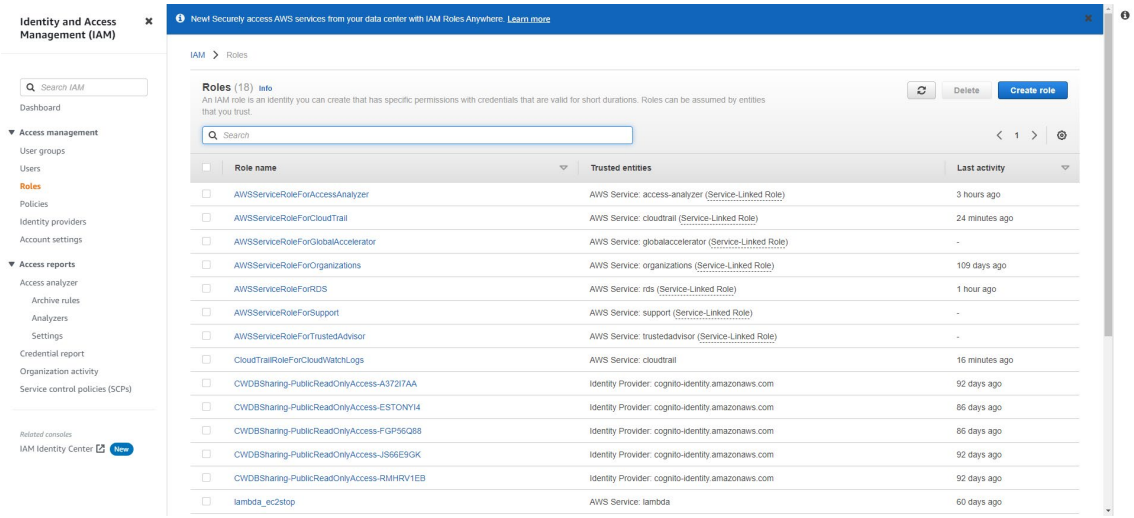
In week 14 you got an introduction to Kubernetes. Before executing the HW assignment, complete the "Learn Kubernetes Basics" tutorial at https://kubernetes.io/docs/tutorials/kubernetes-basics/ Links to an external site. Try to read the tutorial and understand the commands you are executing. This will give you basic knowledge about Kubernetes.

Assignment 1: Create initial AWS Route53 setup.

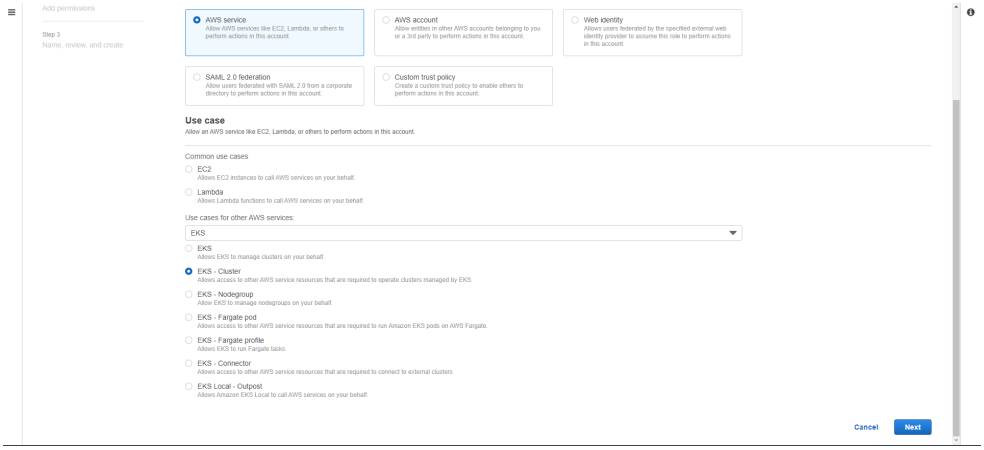
- Deploy your own app (from S2 or S3) to the EKS Fargate cluster
- Enable Kubernetes Auto Scaling
- Test the deployment (can be done in week 15)
- Describe and submit here your results (can be done in week 15)
- (!) Remove the service/cluster if it will not be used anymore

Solution:

We must first create a new role in IAM.



we select the EKS use case and next



We will add the details

Role details

Role name
Enter a meaningful name to identify this role.

heikoeks

Maximum 64 characters. Use alphanumeric and '+=,.@-_' characters.

Description
Add a short explanation for this role.

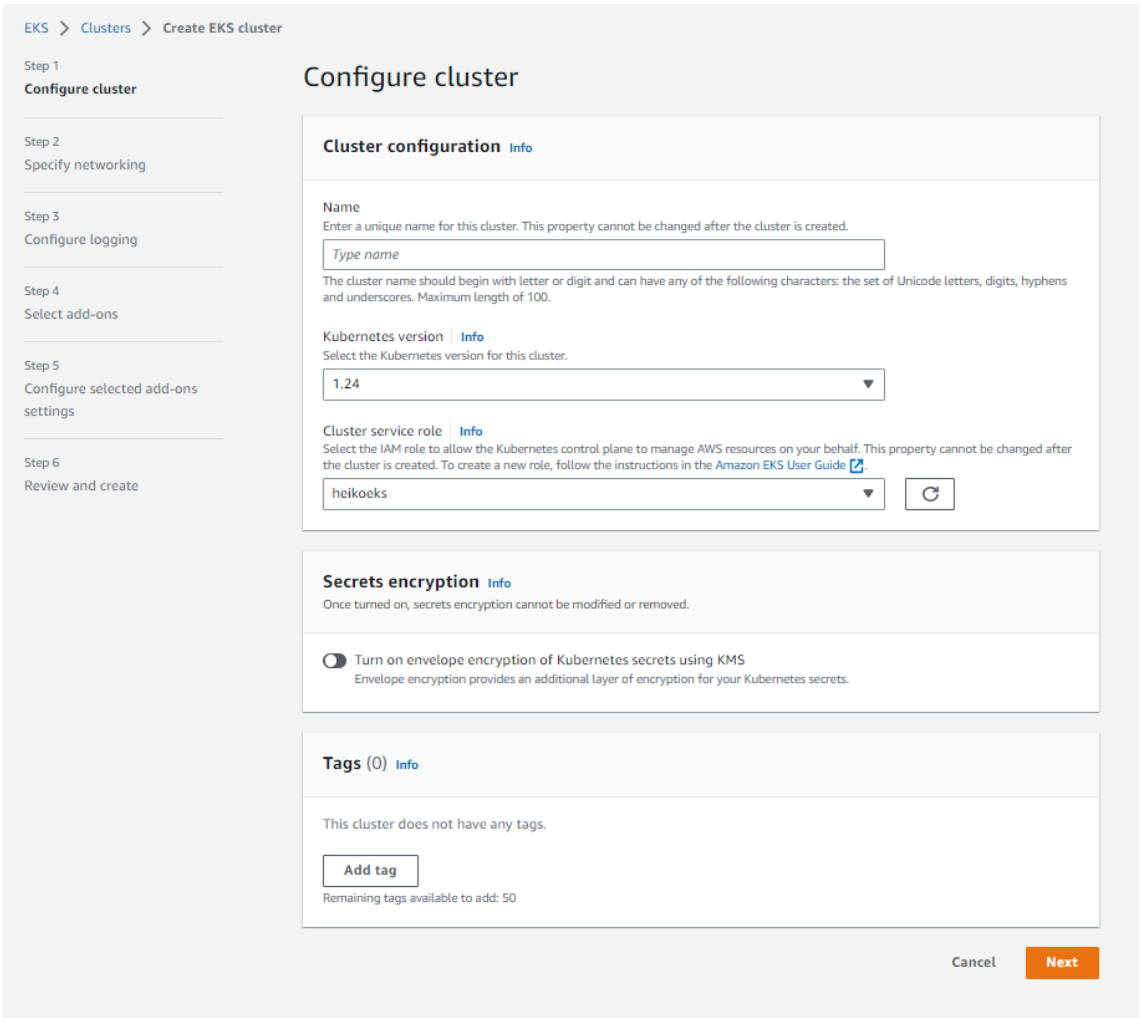
Allows access to other AWS service resources that are required to operate clusters managed by EKS. Amazon EKS - Cluster role

Maximum 1000 characters. Use alphanumeric and '+=,.@-_' characters.

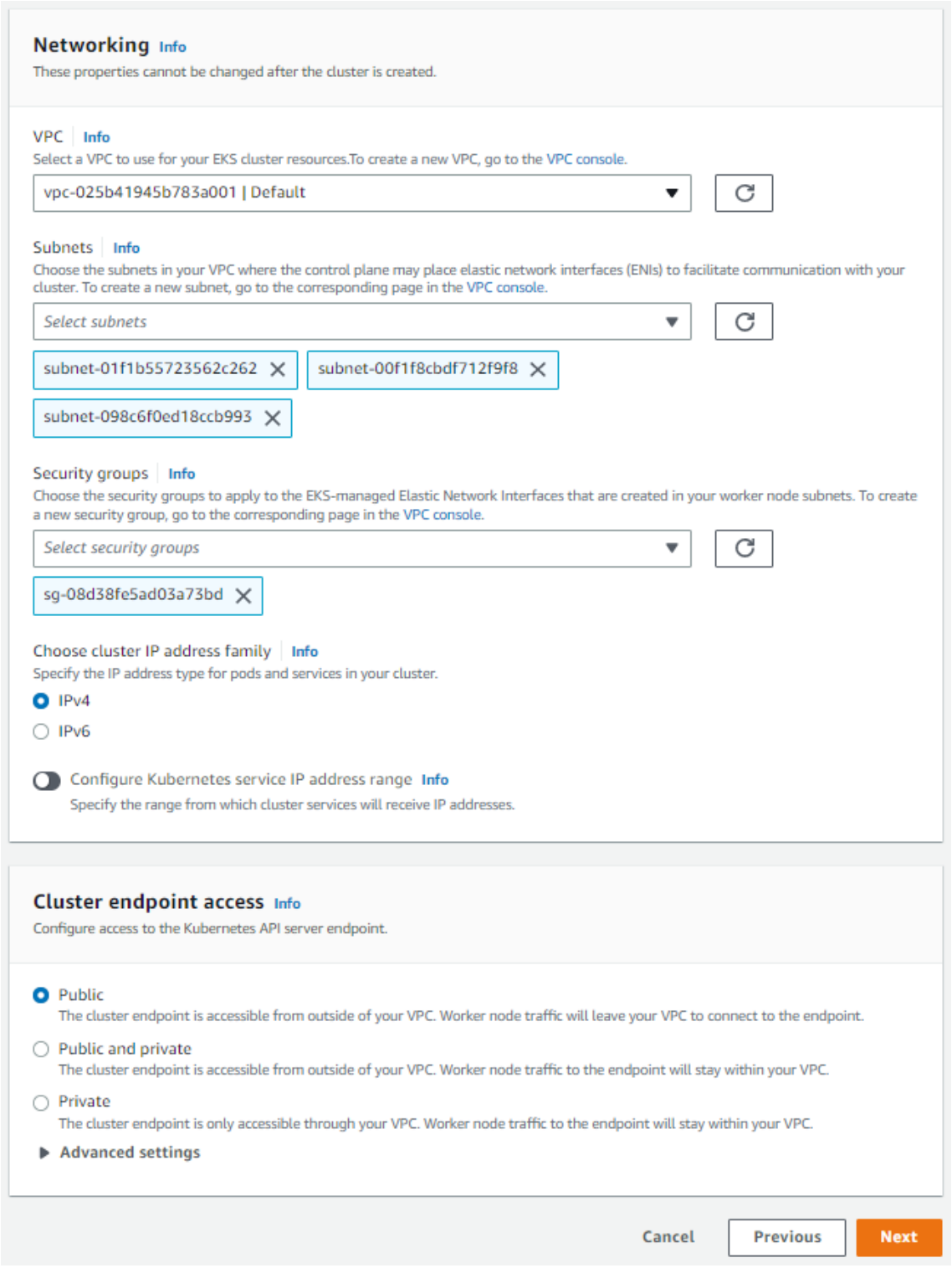
Step 1: Select trusted entities

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Principal": {
                "Service": [
                    "eks.amazonaws.com"
                ]
            },
            "Action": "sts:AssumeRole"
        }
    ]
}
```

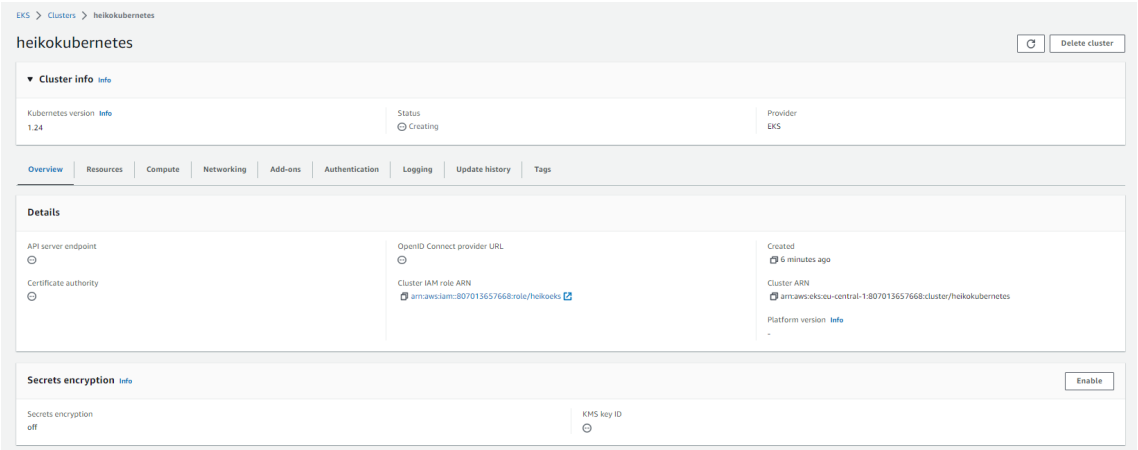
and in the eks section we will add a new cluster and add the new role we have created.



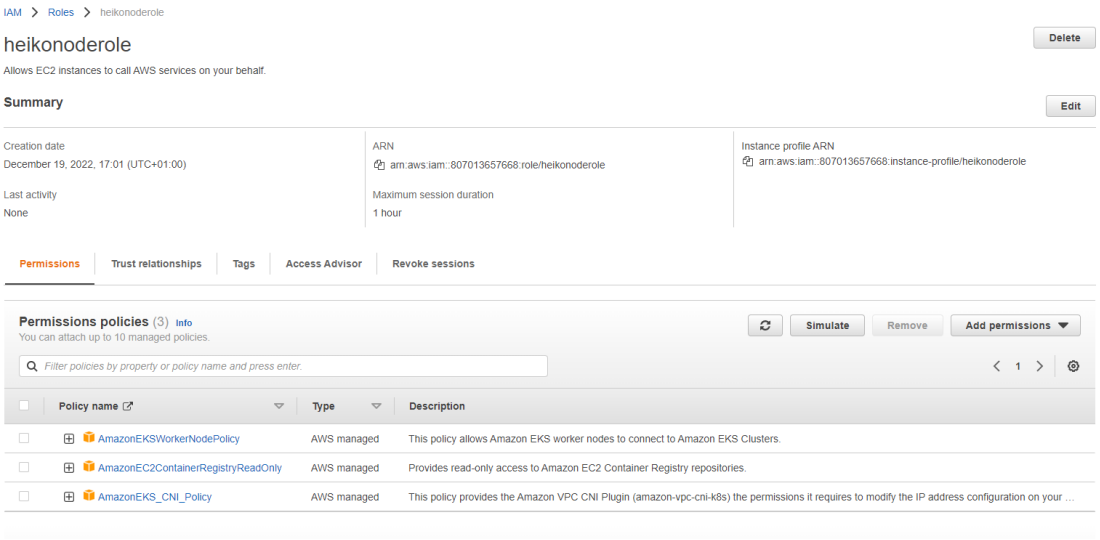
Later, we will configure the networking section where our cluster will run.



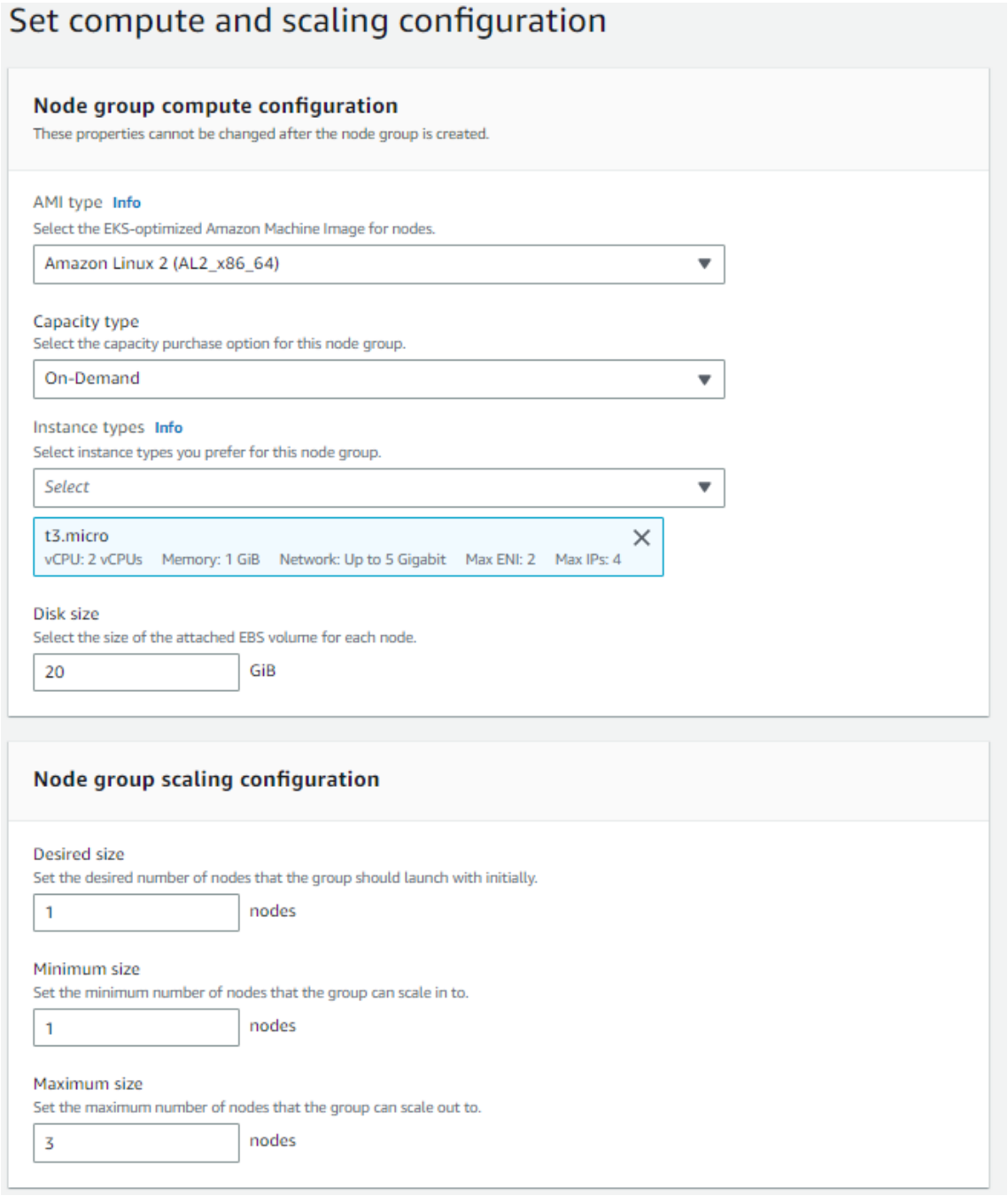
As we can see, the cluster has been created and we can create the first node to deploy our application in an ec2.



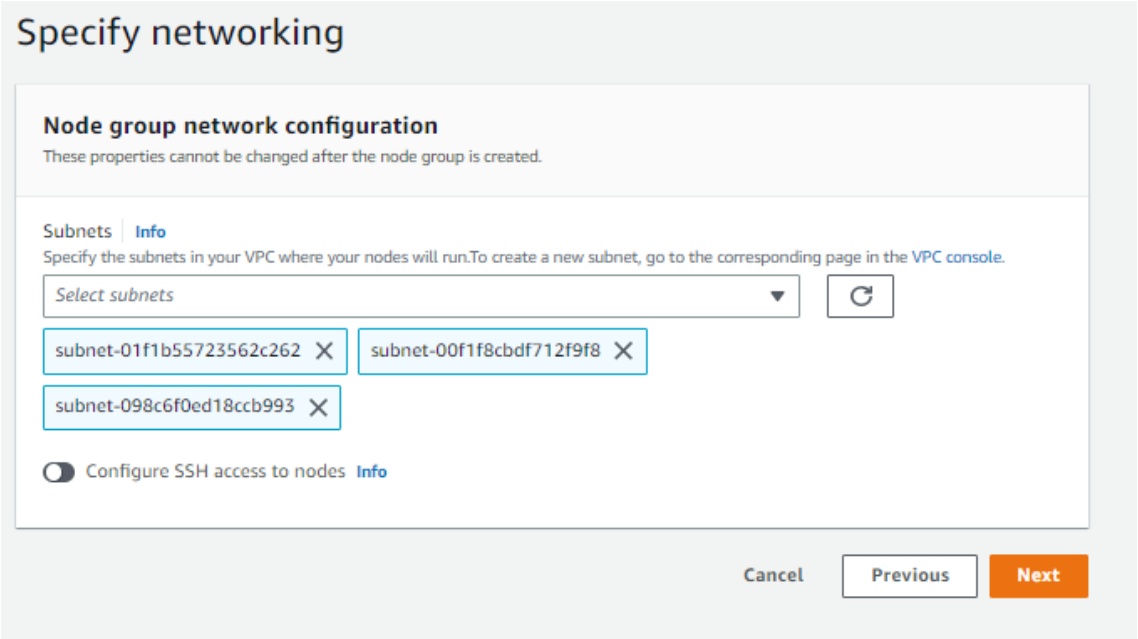
But before creating the node, an IAM with specific permissions must be generated.



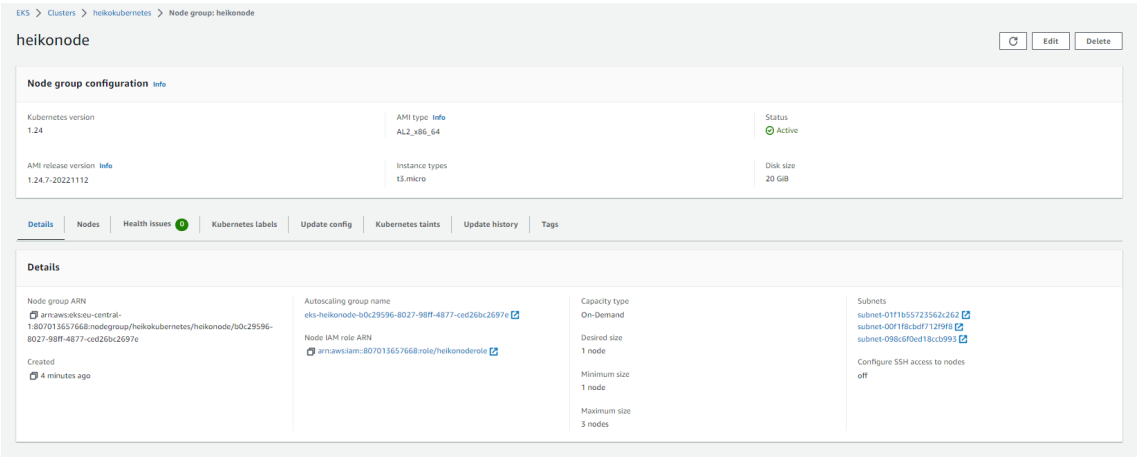
Once created, we add it to the configuration of a new node and configure the automatic scaling.



Later, we select the subnets.



and we have already created a node which as we can see we have set a minimum of one ec2 and a maximum of 3.



Finally, we can check that this node works by going to instances and seeing that one has been created automatically.