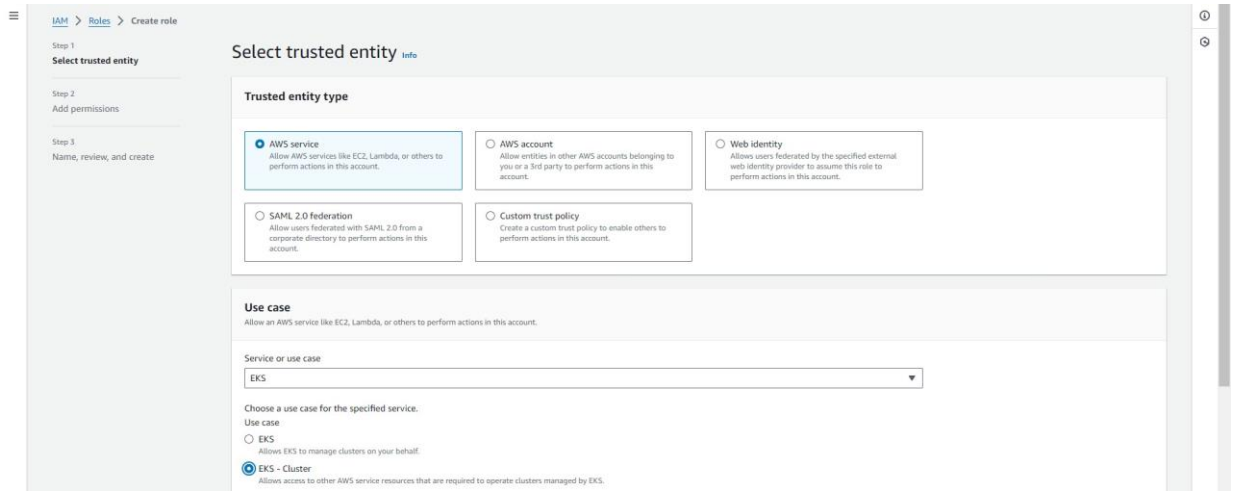
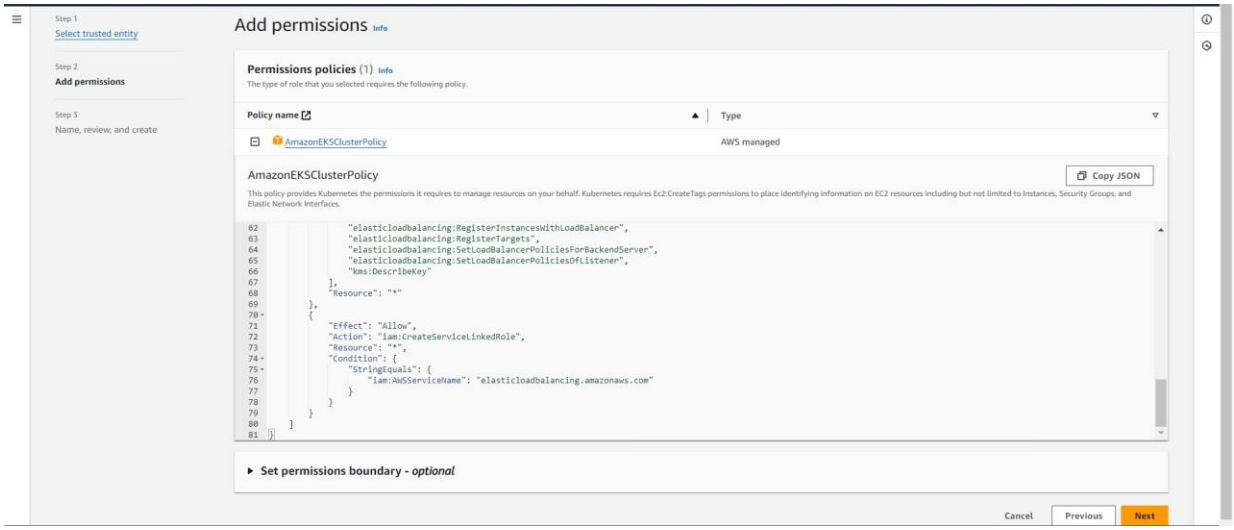
# Creating an Amazon EKS (Elastic Kubernetes Service) cluster

## 1. Set Up IAM Roles for EKS:

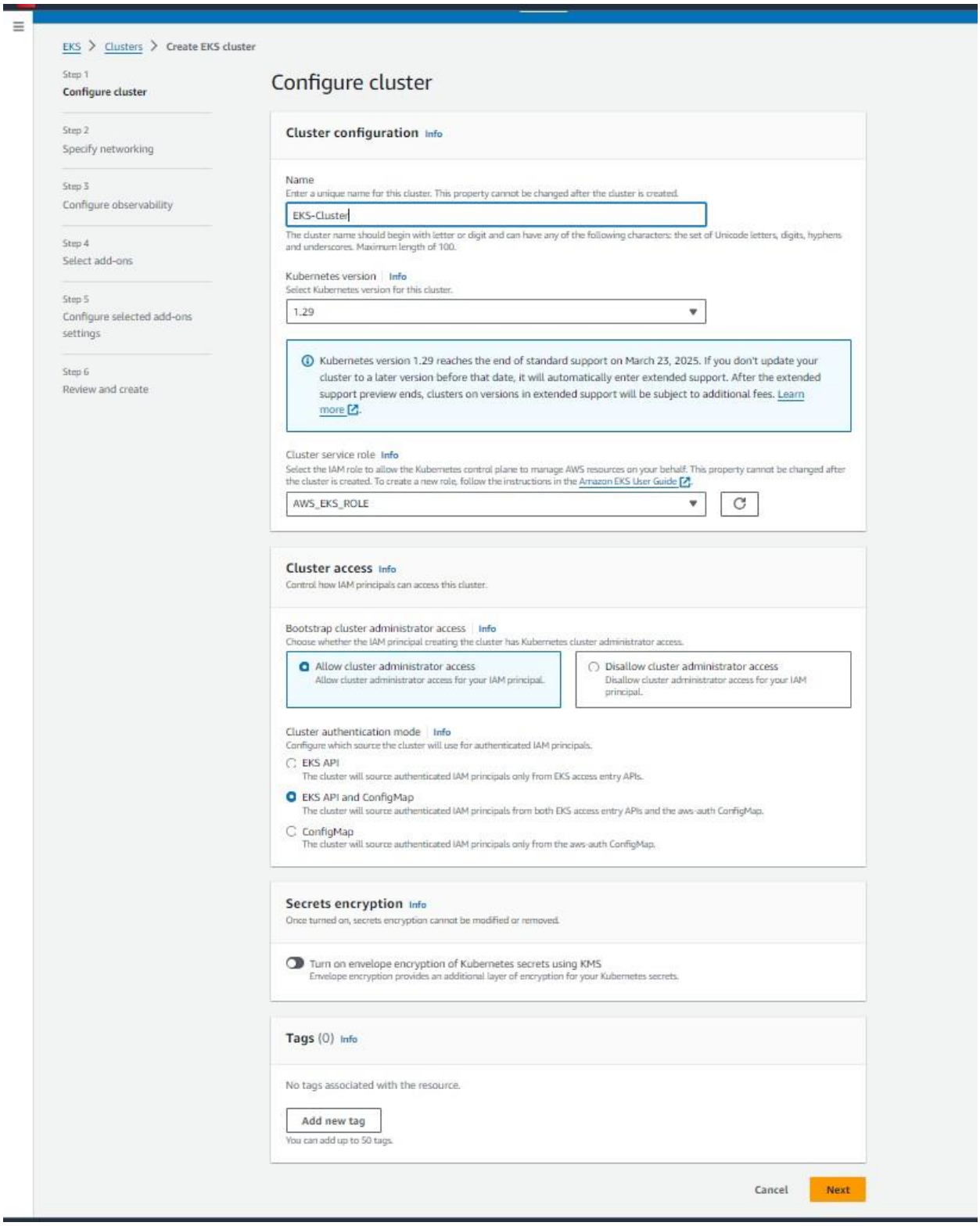
a. Go to aws IAM Service and create a new role for eks.

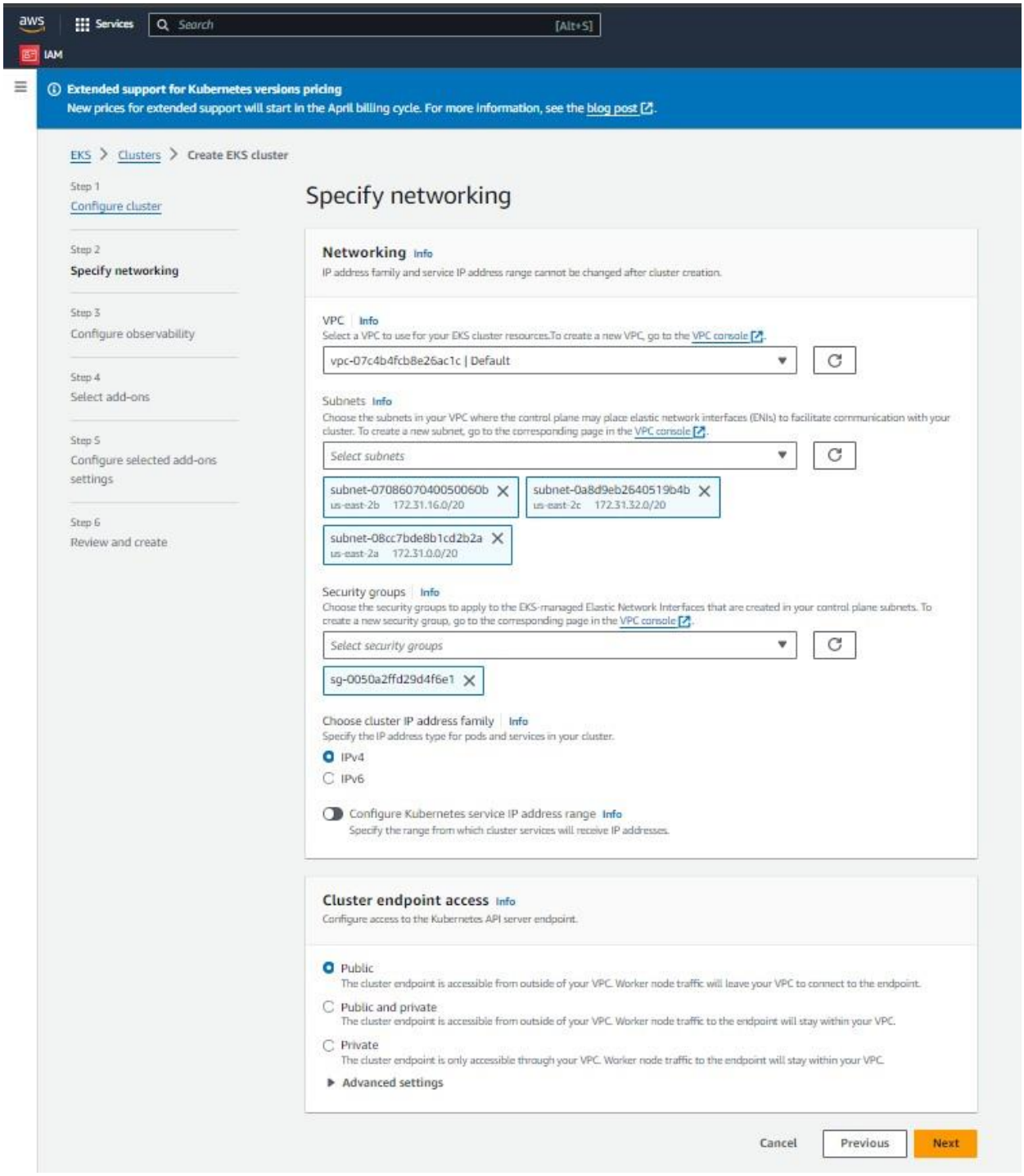


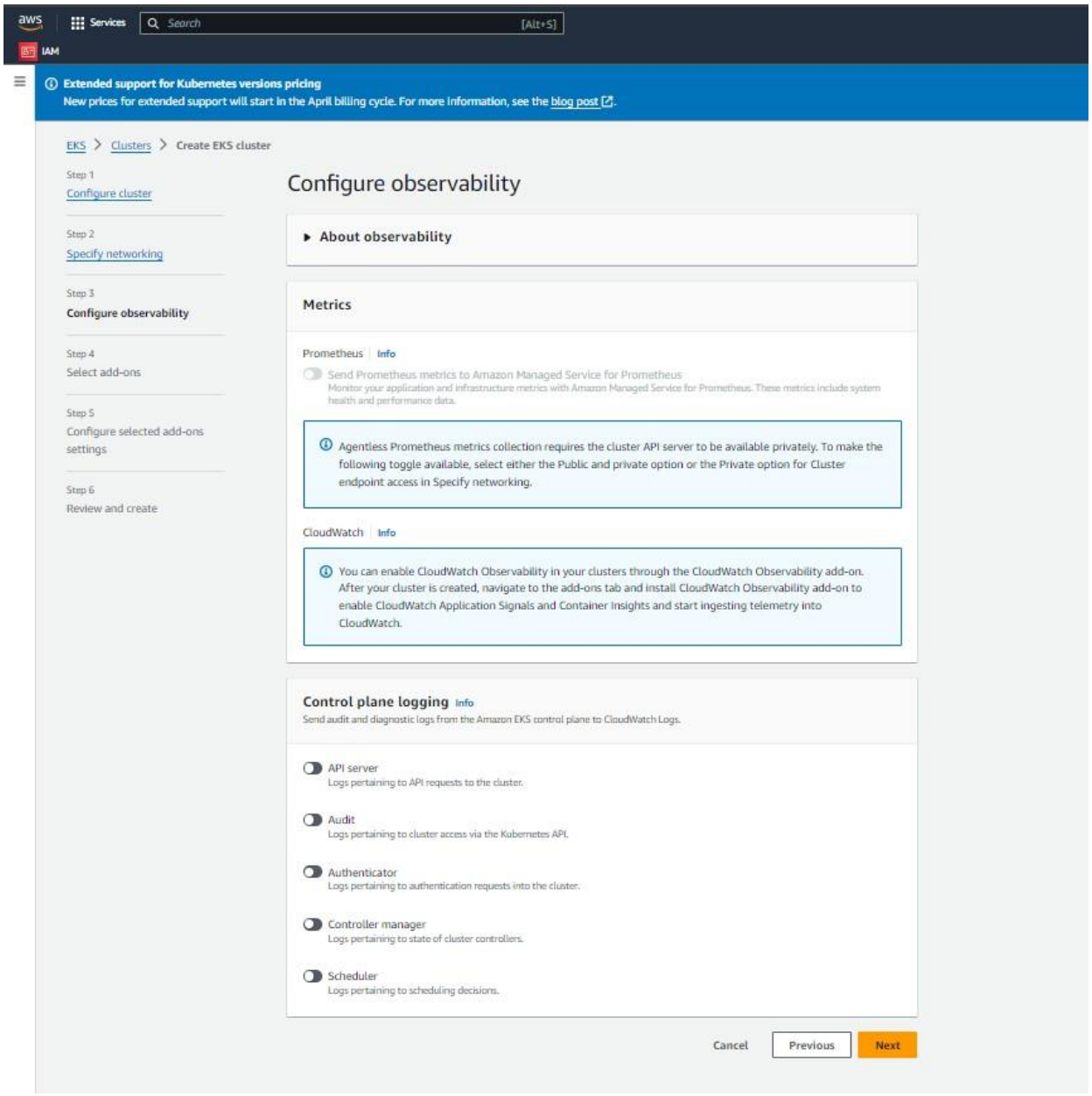



**2. Create an EKS Cluster:**

- Open the Amazon EKS console.
- Click on "Create cluster" and choose the "AWS Management Console" method.




aws
Services
Search
[Alt+S]
IAM
Extended support for Kubernetes versions pricing
New prices for extended support will start in the April billing cycle. For more information, see the blog post.
EKS > Clusters > Create EKS cluster
Step 1
Configure cluster
Step 2
Specify networking
Step 3
Configure observability
Step 4
Select add-ons
Step 5
Configure selected add-ons settings
Step 6
Review and create
Specify networking
Networking Info
IP address family and service IP address range cannot be changed after cluster creation.
VPC Info
Select a VPC to use for your EKS cluster resources.To create a new VPC, go to the VPC console.
vpc-07c4b4fcb8e26ac1c | Default
Subnets Info
Choose the subnets in your VPC where the control plane may place elastic network interfaces (ENIs) to facilitate communication with your cluster. To create a new subnet, go to the corresponding page in the VPC console.
Select subnets
subnet-0708607040050060b
us-east-2b 172.31.16.0/20
subnet-0a8d9eb2640519b4b
us-east-2c 172.31.32.0/20
subnet-08cc7bde8b1cd2b2a
us-east-2a 172.31.0.0/20
Security groups Info
Choose the security groups to apply to the EKS-managed Elastic Network Interfaces that are created in your control plane subnets. To create a new security group, go to the corresponding page in the VPC console.
Select security groups
sg-0050a2ffd29d4f6e1
Choose cluster IP address family Info
Specify the IP address type for pods and services in your cluster.
IPv4
IPv6
Configure Kubernetes service IP address range Info
Specify the range from which cluster services will receive IP addresses.
Cluster endpoint access Info
Configure access to the Kubernetes API server endpoint.
Public
The cluster endpoint is accessible from outside of your VPC. Worker node traffic will leave your VPC to connect to the endpoint.
Public and private
The cluster endpoint is accessible from outside of your VPC. Worker node traffic to the endpoint will stay within your VPC.
Private
The cluster endpoint is only accessible through your VPC. Worker node traffic to the endpoint will stay within your VPC.
Advanced settings
Cancel
Previous
Next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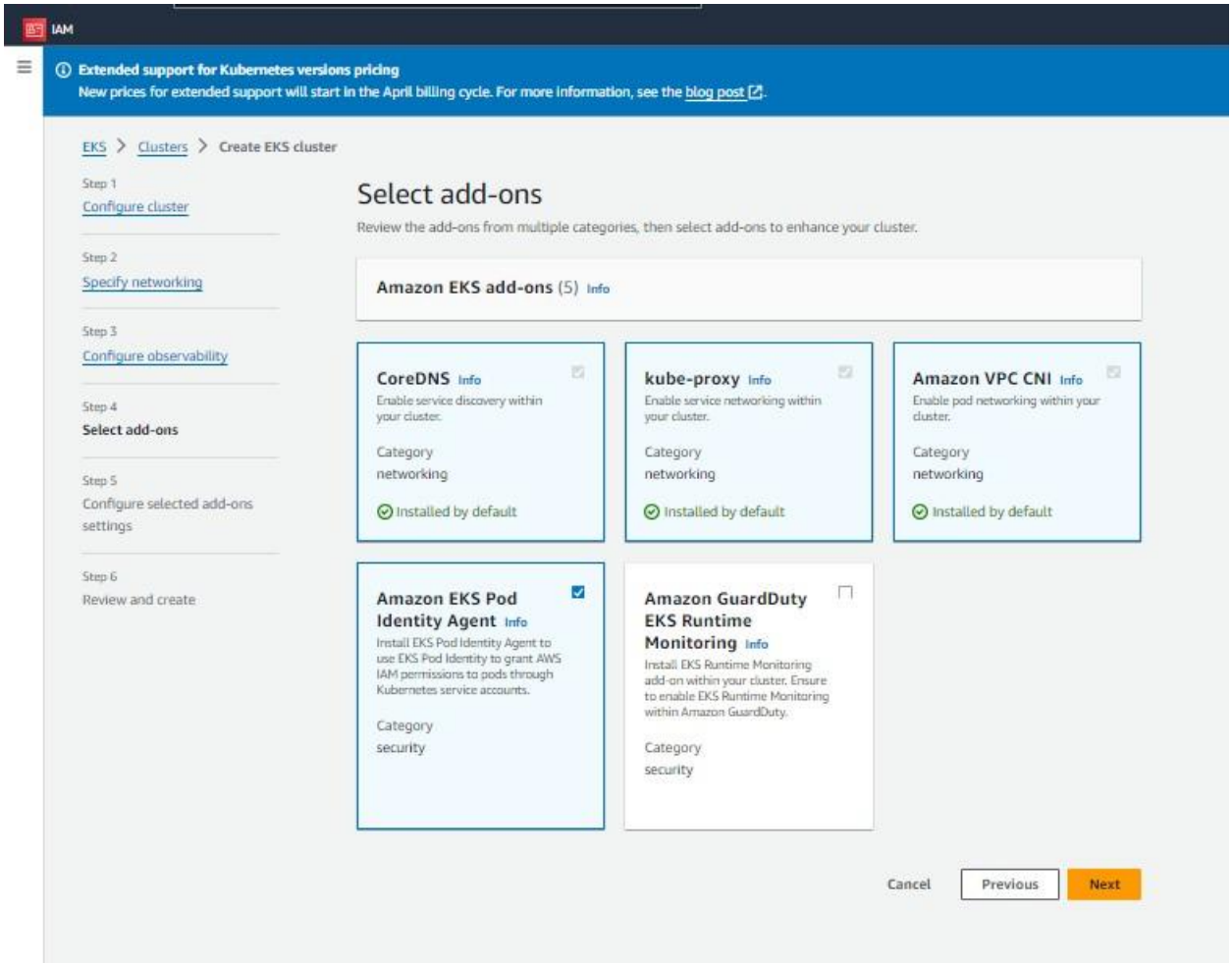
Configure observability
About observability
Metrics
Prometheus Info
Send Prometheus metrics to Amazon Managed Service for Prometheus
Monitor your application and infrastructure metrics with Amazon Managed Service for Prometheus. These metrics include system health and performance data.
Agentless Prometheus metrics collection requires the cluster API server to be available privately. To make the following toggle available, select either the Public and private option or the Private option for Cluster endpoint access in Specify networking.
CloudWatch Info
You can enable CloudWatch Observability in your clusters through the CloudWatch Observability add-on. After your cluster is created, navigate to the add-ons tab and install CloudWatch Observability add-on to enable CloudWatch Application Signals and Container Insights and start ingesting telemetry into CloudWatch.
Control plane logging Info
Send audit and diagnostic logs from the Amazon EKS control plane to CloudWatch Logs.
API server
Logs pertaining to API requests to the cluster.
Audit
Logs pertaining to cluster access via the Kubernetes API.
Authenticator
Logs pertaining to authentication requests into the cluster.
Controller manager
Logs pertaining to state of cluster controllers.
Scheduler
Logs pertaining to scheduling decisions.
Cancel
Previous
Next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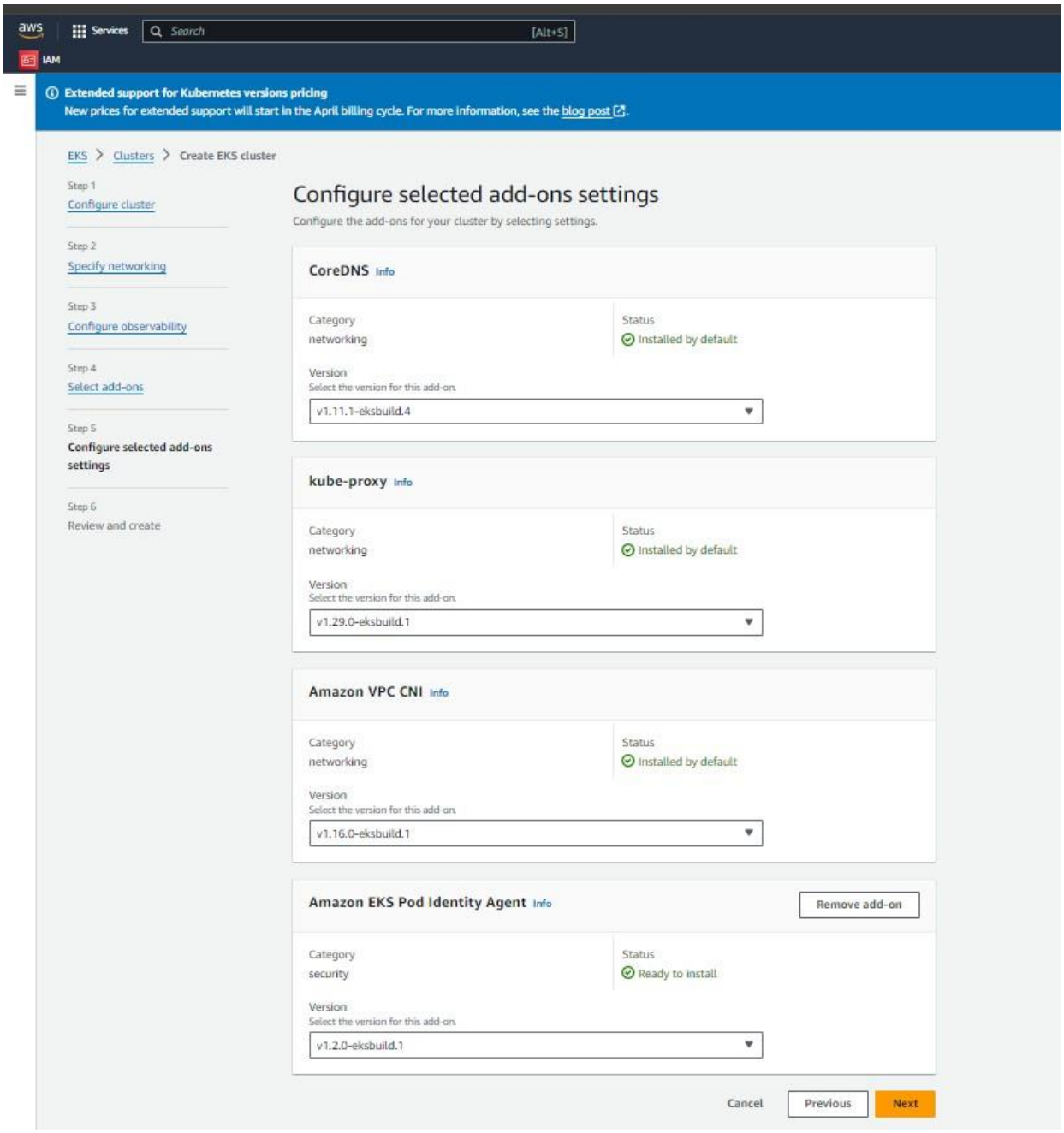
Select add-ons
Step 5
Configure selected add-ons settings
Step 6
Review and create
Select add-ons
Review the add-ons from multiple categories, then select add-ons to enhance your cluster.
Amazon EKS add-ons (5) Info
CoreDNS Info
Enable service discovery within your cluster.
Category
networking
Installed by default
kube-proxy Info
Enable service networking within your cluster.
Category
networking
Installed by default
Amazon VPC CNI Info
Enable pod networking within your cluster.
Category
networking
Installed by default
Amazon EKS Pod Identity Agent Info
Install EKS Pod Identity Agent to use EKS Pod Identity to grant AWS IAM permissions to pods through Kubernetes service accounts.
Category
security
Amazon GuardDuty EKS Runtime Monitoring Info
Install EKS Runtime Monitoring add-on within your cluster. Ensure to enable EKS Runtime Monitoring within Amazon GuardDuty.
Category
security
Cancel
Previous
Next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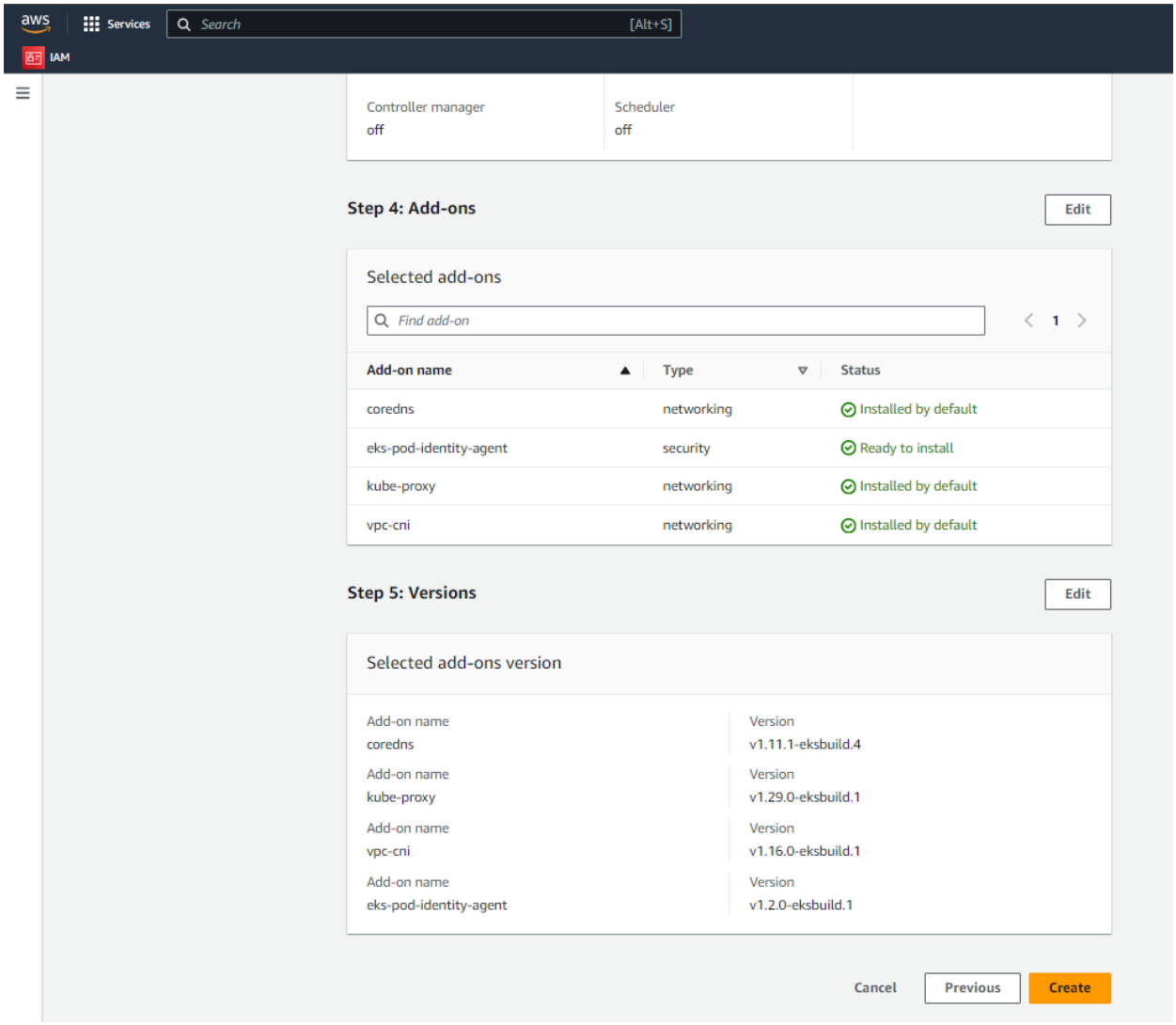
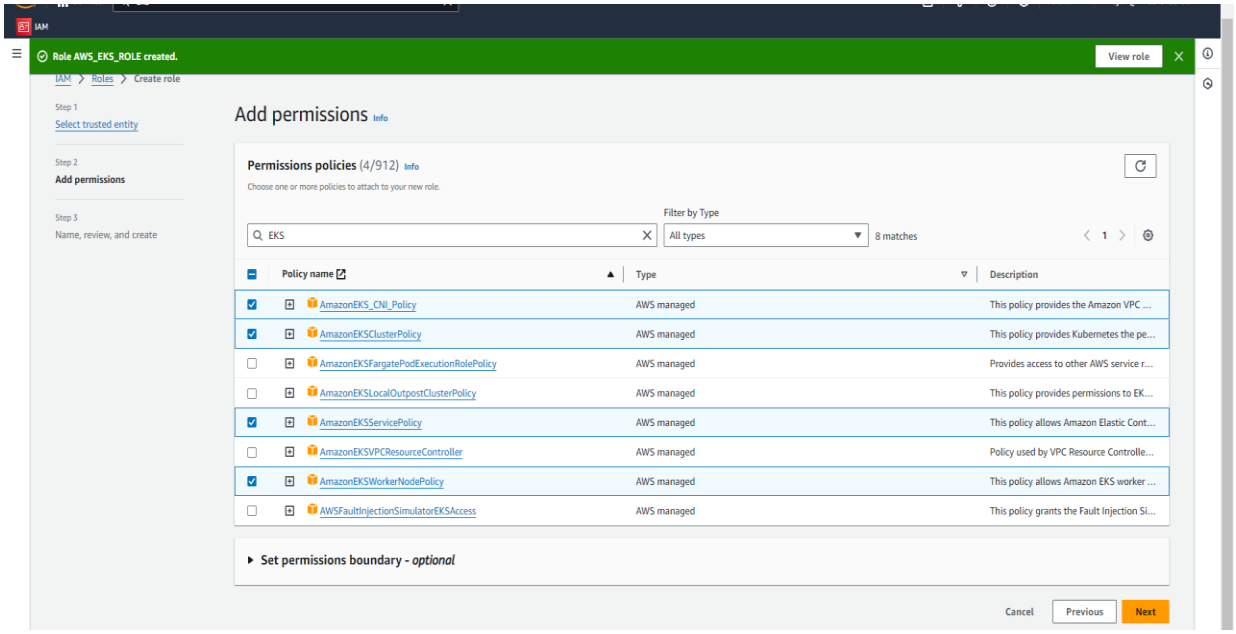
Configure selected add-ons settings
Step 6
Review and create
Configure selected add-ons settings
Configure the add-ons for your cluster by selecting settings.
CoreDNS Info
Category
networking
Status
Installed by default
Version
Select the version for this add-on.
v1.11.1-eksbuild.4
kube-proxy Info
Category
networking
Status
Installed by default
Version
Select the version for this add-on.
v1.29.0-eksbuild.1
Amazon VPC CNI Info
Category
networking
Status
Installed by default
Version
Select the version for this add-on.
v1.16.0-eksbuild.1
Amazon EKS Pod Identity Agent Info
Remove add-on
Category
security
Status
Ready to install
Version
Select the version for this add-on.
v1.2.0-eksbuild.1
Cancel
Previous
Next

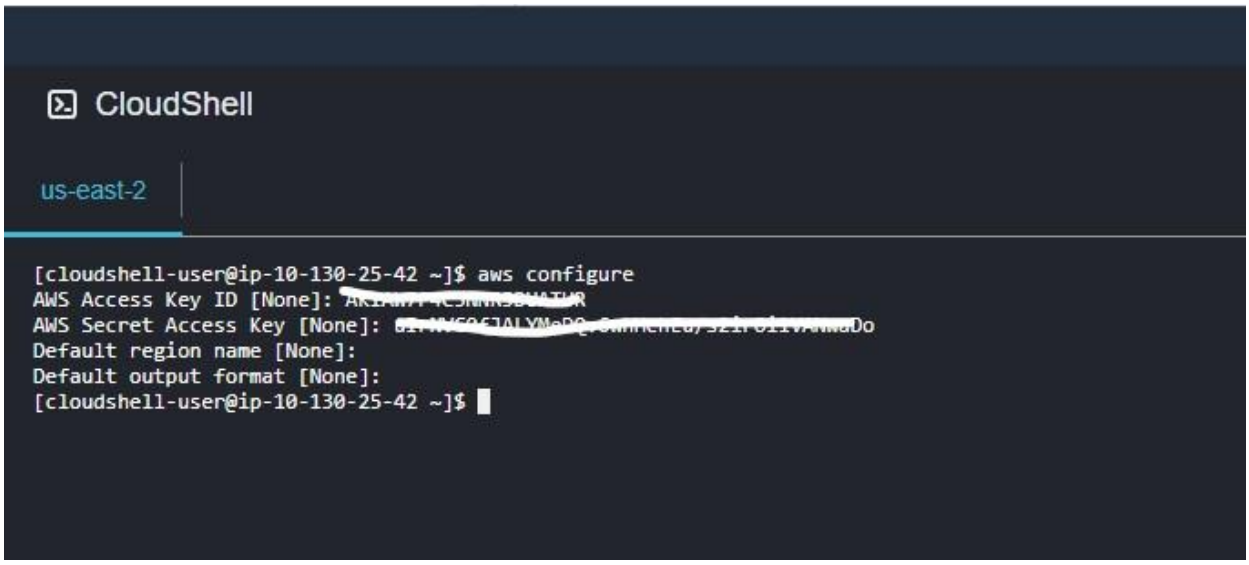



## 3. Set Up IAM Roles for EC2:



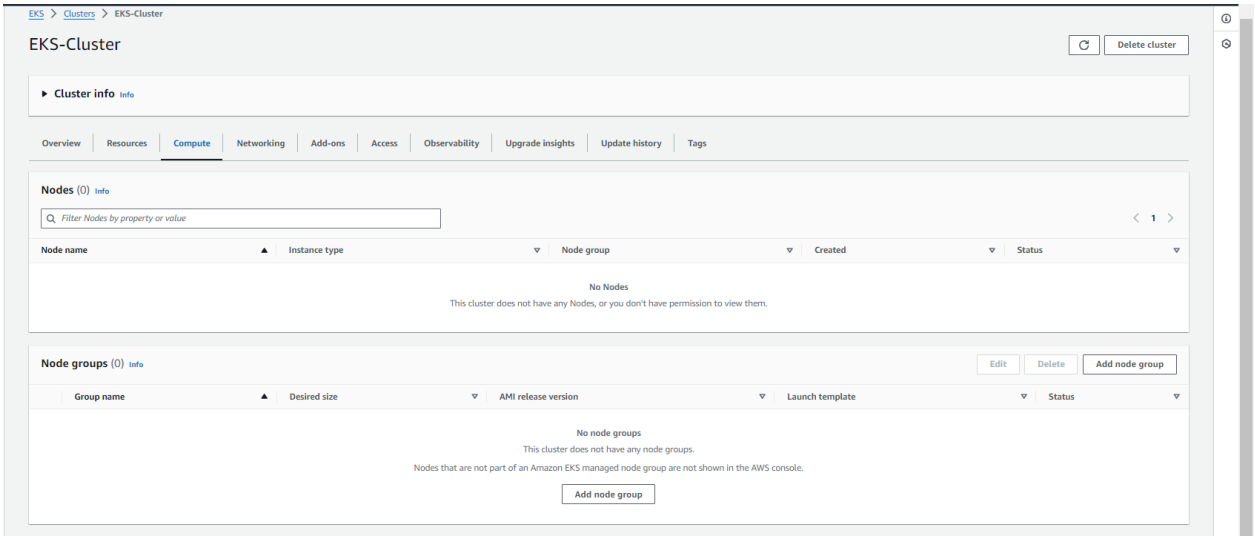

**4. Configure the AWS Cloudshell:**

Open aws Cloud shell.

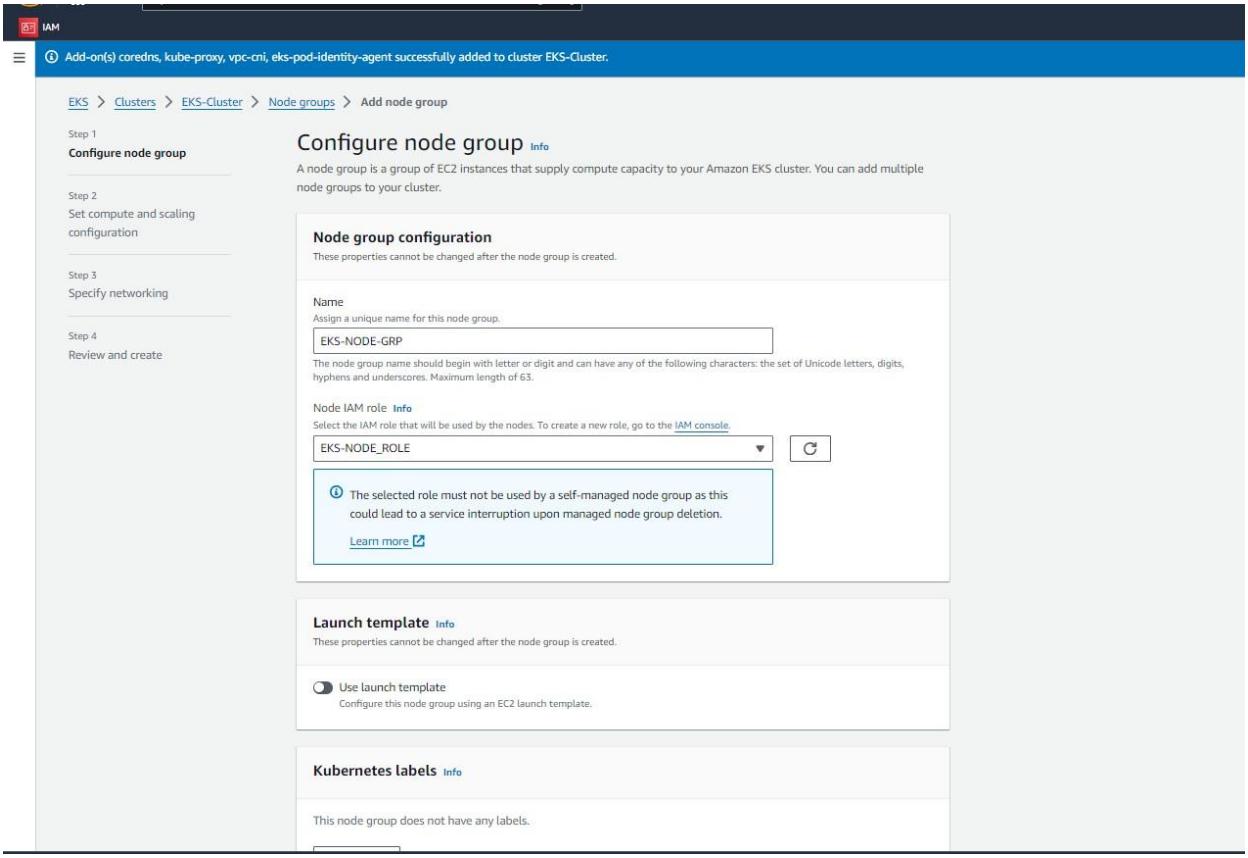



**5. Add Worker Nodes:**

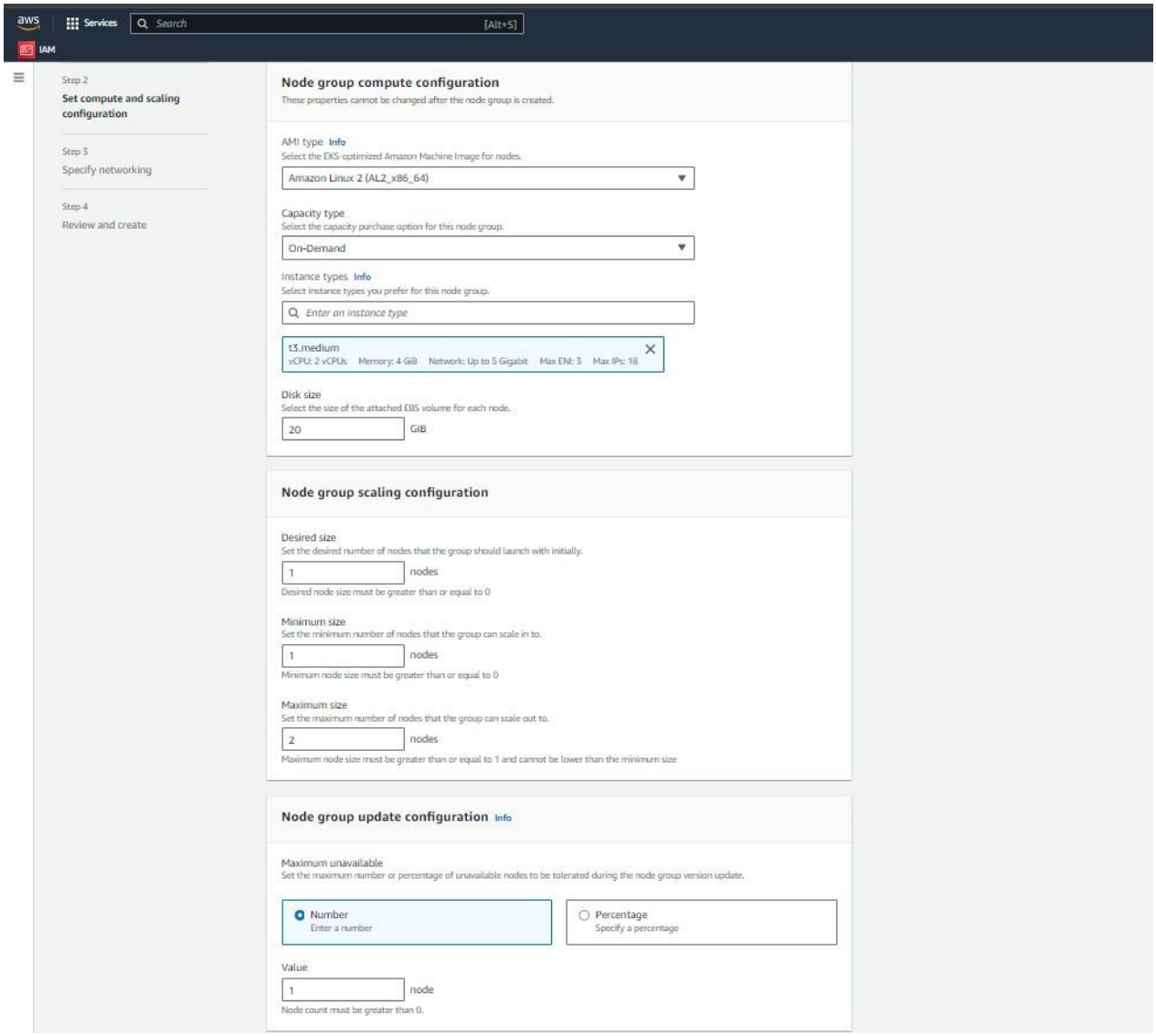
- In the AWS EKS console select your cluster.
- In Cluster go to compute service.



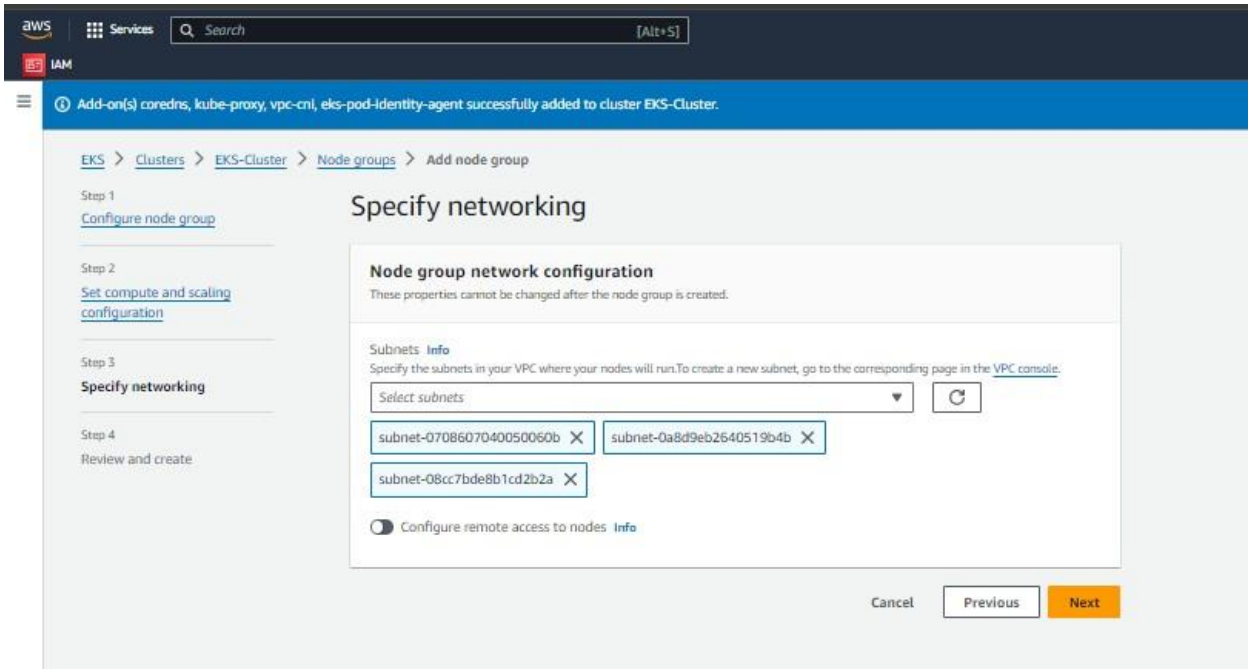

- Click on “Add Node Group”
- Select the “NAME” & “IAM ROLE”



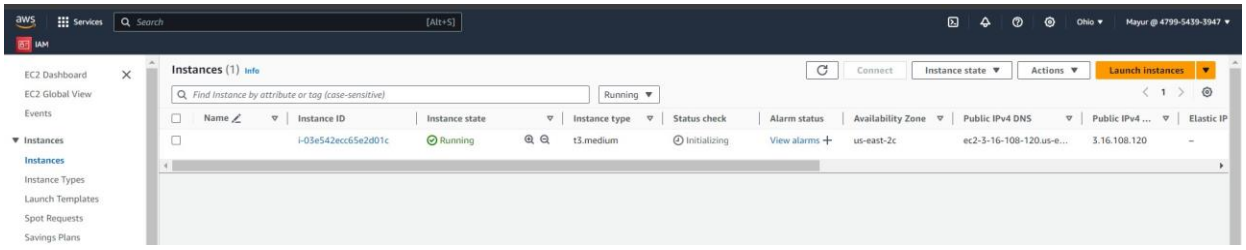

- Click on Next
- Select the values for the node configuration a below




- Click on next
- Select the subnets




- Click on “next” and then ‘’Create’’
- Go to the EC2 AWS console & Check whether your node is running or not.




## 6. Verify the Cluster:

- Open Cloudshell and execute the following commands.

```
# aws eks --region <region> update-kubeconfig --name <cluster-name>

# kubectl cluster-info
```