Seguindo a referência 1a Cluster Kubernetes usando minikube (REFERÊNCIA 1) é necessário instalar o minikube antes
https://minikube.sigs.k8s.io/docs/tutorials/multi_node/#hello-svc.yaml
https://kubernetes.io/docs/tasks/run-application/horizontal-pod-autoscale-walkthrough/

#1 - Habilitando as métricas
minikube addons enable metrics-server

```
renato@renato-Vostro-5470:~$ minikube addons enable metrics-server
💡  metrics-server is an addon maintained by Kubernetes. For any concerns contact minikube on GitHub.
You can view the list of minikube maintainers at: https://github.com/kubernetes/minikube/blob/master/OWNERS
    ▪ Using image registry.k8s.io/metrics-server/metrics-server:v0.7.1
🌟  The 'metrics-server' addon is enabled
```

#2 - criação do arquivo com o php-apache
nano php-apache.yaml

o arquivo php-apache.yaml tem o seguinte conteúdo:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: php-apache
spec:
  selector:
        matchLabels:
        run: php-apache
  template:
        metadata:
        labels:
        run: php-apache
        spec:
        containers:
        - name: php-apache
        image: registry.k8s.io/hpa-example
        ports:
        - containerPort: 80
        resources:
        limits:
        cpu: 500m
        requests:
        cpu: 200m
---
apiVersion: v1
kind: Service
metadata:
  name: php-apache
  labels:
        run: php-apache
spec:
```

```
 ports:
 - port: 80
 selector:
       run: php-apache
```

#3 - Demonstração do Horizontal Pod Autoscaler com a implementação de um exemplo de imagem:

```
kubectl apply -f https://k8s.io/examples/application/php-apache.yaml
```

```
renato@renato-Vostro-5470:~$ nano php-apache.yaml
renato@renato-Vostro-5470:~$ kubectl apply -f https://k8s.io/examples/application/php-apache.yaml
deployment.apps/php-apache created
service/php-apache created
renato@renato-Vostro-5470:~$
```

#4 - criação do Horizontal Pod Autoscaler o controlador HPA aumentará e diminuirá o número de réplicas para manter uma utilização média da CPU em todos os pods de 50%

```
kubectl autoscale deployment php-apache --cpu-percent=50 --min=1 --max=10
```

```
renato@renato-Vostro-5470:~$ kubectl autoscale deployment php-apache --cpu-percent=50 --min=1 --max=10
horizontalpodautoscaler.autoscaling/php-apache autoscaled
renato@renato-Vostro-5470:~$
```

#5 - verificação do status do Horizontal Pod Autoscaler

```
kubectl get hpa
```

```
renato@renato-Vostro-5470:~$ kubectl get hpa
NAME         REFERENCE                TARGETS    MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache    cpu: 0%/50%   1         10        1          34s
renato@renato-Vostro-5470:~$
```

#6 - Aumentando a carga de trabalho

```
^Crenato@renato-Vostro-5470:~$ kubectl run -i --tty load-generator --rm --image=busybox:1.28 --restart=Never -- /bin/sh -c "while sleep 0.01;
do wget -q -O- http://php-apache; done"
If you don't see a command prompt, try pressing enter.
OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!
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```

#7 - Monitoramento

```
renato@renato-Vostro-5470: ~                                    renato@renato-Vostro-5470: ~
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache --watch
NAME         REFERENCE               TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        1          2m41s
php-apache   Deployment/php-apache   cpu: 90%/50%   1         10        1          2m46s
php-apache   Deployment/php-apache   cpu: 90%/50%   1         10        2          3m1s
php-apache   Deployment/php-apache   cpu: 48%/50%   1         10        2          3m46s
php-apache   Deployment/php-apache   cpu: 133%/50%   1         10        2          4m46s
php-apache   Deployment/php-apache   cpu: 133%/50%   1         10        4          5m1s
php-apache   Deployment/php-apache   cpu: 133%/50%   1         10        6          5m16s
php-apache   Deployment/php-apache   cpu: 70%/50%   1         10        6          5m47s
```

```
^Crenato@renato-Vostro-5470:~$ kubectl run -i --tty load-generator --rm --image=busybox:1.28 --restart=Never -- /bin/sh -c "while sleep 0.01;
do wget -q -O- http://php-apache; done"
If you don't see a command prompt, try pressing enter.
OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!
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OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!^Cpod "load-generator" deleted
pod default/load-generator terminated (Error)
renato@renato-Vostro-5470:~$
```

#8 - Finalização das requisições e o número de réplicas volta ao normal que é 1 e baixa utilização da cpu

```
renato@renato-Vostro-5470: ~                                    renato@renato-Vostro-5470: ~
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache --watch
NAME         REFERENCE               TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        1          2m41s
php-apache   Deployment/php-apache   cpu: 90%/50%   1         10        1          2m46s
php-apache   Deployment/php-apache   cpu: 90%/50%   1         10        2          3m1s
php-apache   Deployment/php-apache   cpu: 48%/50%   1         10        2          3m46s
php-apache   Deployment/php-apache   cpu: 133%/50%   1         10        2          4m46s
php-apache   Deployment/php-apache   cpu: 133%/50%   1         10        4          5m1s
php-apache   Deployment/php-apache   cpu: 133%/50%   1         10        6          5m16s
php-apache   Deployment/php-apache   cpu: 70%/50%   1         10        6          5m47s
php-apache   Deployment/php-apache   cpu: 50%/50%   1         10        6          6m47s
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        6          7m47s
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        6          12m
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        1          12m
```

```
renato@renato-Vostro-5470:~$ kubectl get deployment php-apache
NAME         READY   UP-TO-DATE   AVAILABLE   AGE
php-apache   1/1     1            1           42m
renato@renato-Vostro-5470:~$
```

Seguindo a referência 1b Cluster AWS EKS (REFERÊNCIA 2).
https://docs.aws.amazon.com/eks/latest/userguide/horizontal-pod-autoscaler.html

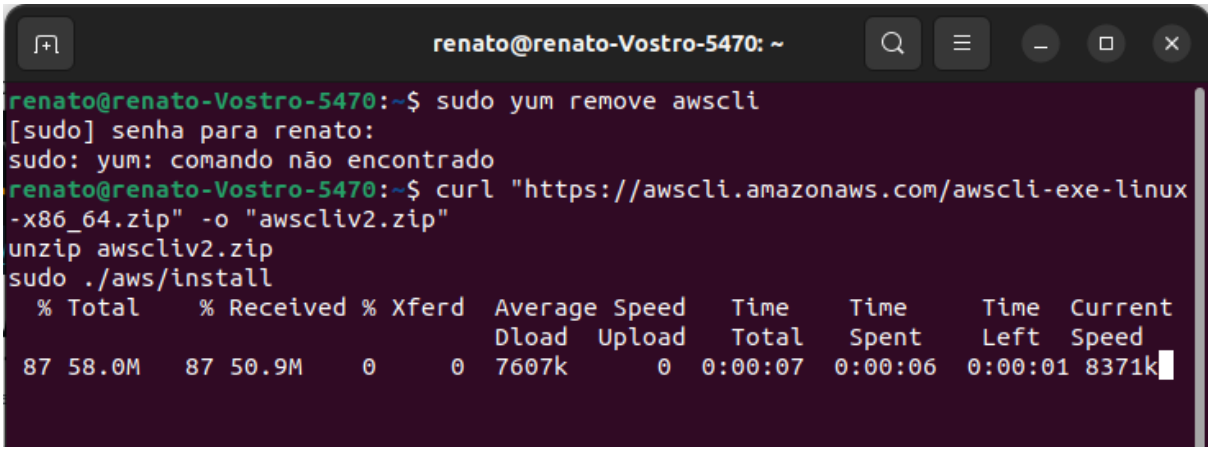
https://docs.aws.amazon.com/eks/latest/userguide/getting-started.html
https://docs.aws.amazon.com/eks/latest/userguide/getting-started-console.html

Os requisitos para iniciar o cluster AWS EKS são:

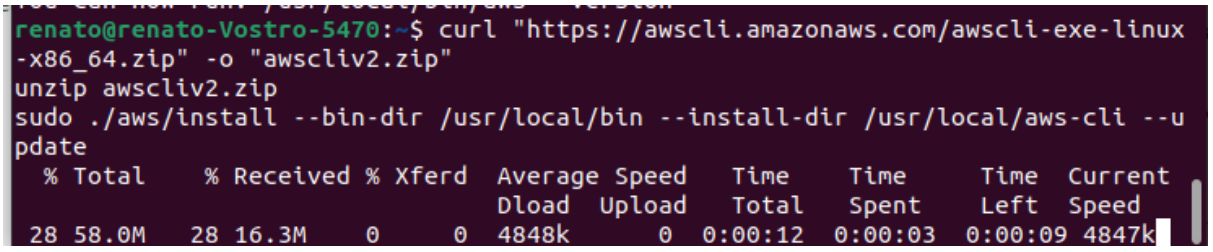
AWS CLI;
kubectl
Required IAM permissions

https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html

#1 - Para instalar o AWS CLI os seguintes comandos foram executados:
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
unzip awscliv2.zip sudo ./aws/install

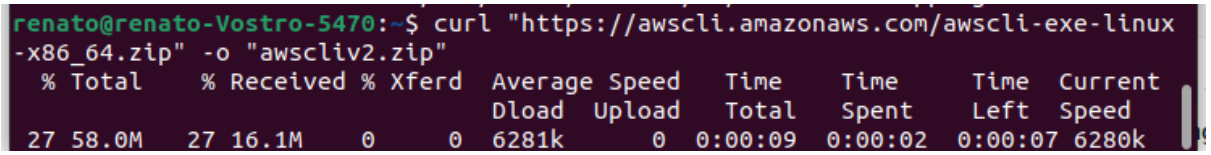


#2 Para atualizar a instalação
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
unzip awscliv2.zip
sudo ./aws/install --bin-dir /usr/local/bin --install-dir /usr/local/aws-cli --update

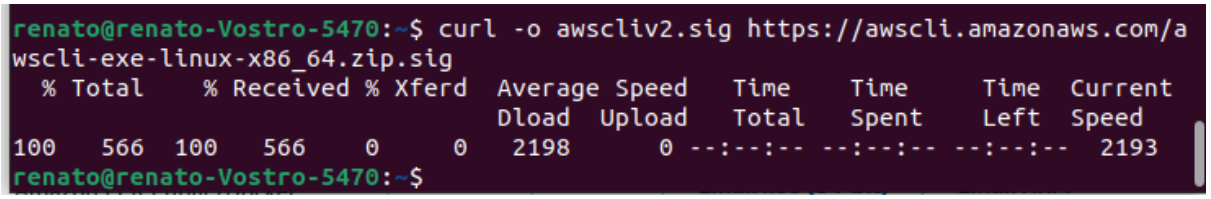


#3 As opções do comando de exemplo a seguir gravam o arquivo baixado no diretório atual com o nome local awscliv2.zip

curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"



#4 Para a última versão do AWS CLI
curl -o awscliv2.sig https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip.sig



#5 Para criar o arquivo de chave pública utilizei o comando nano awscliv2.pub e colei o conteúdo da chave:
-----BEGIN PGP PUBLIC KEY BLOCK-----

mQINBF2Cr7UBEADJZHcgusOJl7ENSyumXh85z0TRV0xJorM2B/JL0kHOyigQluUG
ZMLhENaG0bYatdrKP+3H91lvK050pXwnO/R7fB/FSTouki4ciIx5OuLlnJZIxSzx
PqGl0mkxImLNbGWoi6Lto0LYxqHN2iQtzlwTVmq9733zd3XfcXrZ3+LblHAgEt5G
TfNxEKJ8soPLyWmwDH6HWCnjZ/aIQRBTIQ05uVeEoYxSh6wOai7ss/KveoSNBbYz
gbdzoqI2Y8cgH2nbfgp3DSasaLZEdCSsIsK1u05CinE7k2qZ7KgKAUIcT/cR/grk
C6VwsnDU0OUCideXcQ8WeHutqvgZH1JgKDbznoIzeQHJD238GEu+eKhRHcz8/jeG
94zkcgJOz3KbZGYMiTh277Fvj9zzvZsbMBCedV1BTg3TqgvdX4bdkhf5cH+7NtWO
lrFj6UwAsGukBTAOxC0l/dnSmZhJ7Z1KmEWilro/gOrjtOxqRQutIlqG22TaqoPG
fYVN+en3Zwbt97kcgZDwqbuykNt64oZWc4XKCa3mprEGC3IbJTBFqglXmZ7l9ywG
EEUJYOIb2XrSuPWml39beWdKM8kzr1OjnlOm6+lpTRCBfo0wa9F8YZRhHPAkwKkX
XDeOGpWRj4ohOx0d2GWkyV5xyN14p2tQOCdOODmz80yUTgRpPVQUtOEhXQARAQAB
tCFBV1MgQ0xJIFRlYW0gPGF3cy1jbGlAYW1hem9uLmNvbT6JAlQEEwEIAD4CGwMF
CwkIBwIGFQoJCAsCBBYCAwECHgECF4AWIQT7Xbd/1cEYuAURraimMQrMRnJHXAUC
ZqFYbwUJCv/cOgAKCRCmMQrMRnJHXKYuEAC+wtZ611qQtOl0t5spM9SWZuszbcyA
0xBAJq2pncnp6wdCOkuAPu4/R3UCIoD2C49MkLj9Y0Yvue8CCF6OIJ8L+fKBv2DI
yWZGmHL0p9wa/X8NCKQrKxK1gq5PuCzi3f3SqwfbZuZGeK/ubnmtttWXpUtuU/Iz
VR0u/0sAy3j4uTGKh2cX7XnZbSqgJhUk9H324mIJiSwzvw1Ker6xtH/LwdBeJCck
bVBdh3LZis4zuD4IZeBO1vRvjot3Oq4xadUv5RSPATg7T1kivrtLCnwvqc6L4LnF
0OkNysk94L3LQSHyQW2kQS1cVwr+yGUSiSp+VvMbAobAapmMJWP6e/dKyAUGIX6+
2waLdbBs2U7MXznx/2ayCLPH7qCY9cenbdj5JhG9ibVvFWqqhSo22B/URQE/CMrG
+3xXwtHEBoMyWEATr1tWwn2yyQGbkUGANneSDFiTFeoQvKNyyCFTFO1F2XKCcuDs
19nj34PE2TJilTG2QRlMr4D0NgwLLAMg2Los1CK6nXWnImYHKuaKS9LVaCoC8vu7
lRBik1NX6SjrQnftk0M9dY+s0ZbAN1gbdjZ8H3qlbl/4TxMdr87m8LP4FZIIo261
Eycv34pVkCePZiP+dgamEiQJ7IL4ZArio9mv6HbDGV6mLY45+l6/0EzCwkI5IyIf
BfWC9s/USgxchg==
=ptgS
-----END PGP PUBLIC KEY BLOCK-----

Import the AWS CLI public key com o comando ***gpg --import awscliv2.pub***

```
renato@renato-Vostro-5470:~$ nano awscliv2.pub
renato@renato-Vostro-5470:~$ gpg --import public-key-file-name
gpg: can't open 'public-key-file-name': Arquivo ou diretório inexistente
gpg: Número total processado: 0
renato@renato-Vostro-5470:~$ gpg --import awscliv2.pub
gpg: chave A6310ACC4672475C: "AWS CLI Team <aws-cli@amazon.com>" 1 nova assinatura
gpg: Número total processado: 1
gpg:         novas assinaturas: 1
renato@renato-Vostro-5470:~$
```

#6 Verificando a assinatura
gpg --verify awscliv2.sig awscliv2.zip

```
renato@renato-Vostro-5470:~$ gpg --verify awscliv2.sig awscliv2.zip
gpg: Assinatura feita ter 30 jul 2024 15:20:01 -03
gpg:                usando RSA chave FB5DB77FD5C118B80511ADA8A6310ACC4672475C
gpg: Assinatura correta de "AWS CLI Team <aws-cli@amazon.com>" [desconhecido]
gpg: AVISO: Esta chave não está certificada com uma assinatura confiável!
gpg:          Não há indicação de que a assinatura pertence ao dono.
Impressão digital da chave primária: FB5D B77F D5C1 18B8 0511  ADA8 A631 0ACC 4672 475C
renato@renato-Vostro-5470:~$
```

#7 Descompactar o instalador
unzip awscliv2.zip

```
renato@renato-Vostro-5470:~$ unzip awscliv2.zip
Archive:  awscliv2.zip
replace aws/THIRD_PARTY_LICENSES? [y]es, [n]o, [A]ll, [N]one, [r]ename: A
  inflating: aws/THIRD_PARTY_LICENSES
  inflating: aws/install
  inflating: aws/README.md
  inflating: aws/dist/aws
  inflating: aws/dist/aws_completer
```

#8 Executando o programa de instalação
sudo ./aws/install

Para atualizar a instalação atual da AWS CLI
sudo ./aws/install --bin-dir /usr/local/bin --install-dir /usr/local/aws-cli --update

```
renato@renato-Vostro-5470:~$ sudo ./aws/install
[sudo] senha para renato:
Found preexisting AWS CLI installation: /usr/local/aws-cli/v2/current. Please rerun install sc
ript with --update flag.
renato@renato-Vostro-5470:~$ sudo ./aws/install --bin-dir /usr/local/bin --install-dir /usr/lo
cal/aws-cli --update
Found same AWS CLI version: /usr/local/aws-cli/v2/2.17.20. Skipping install.
renato@renato-Vostro-5470:~$ which aws
/usr/local/bin/aws
renato@renato-Vostro-5470:~$
```

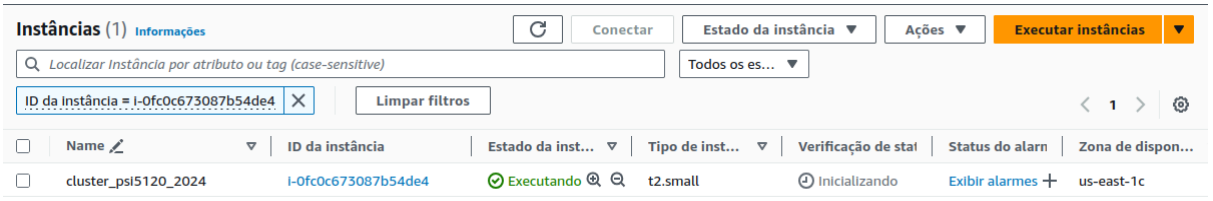
#9 - Confirmando a instalação
aws --version

```
renato@renato-Vostro-5470:~$ ls -l /usr/local/bin/aws
lrwxrwxrwx 1 root root 37 jul 31 15:37 /usr/local/bin/aws -> /usr/local/aws-cli/v2/current/bin
/aws
renato@renato-Vostro-5470:~$ aws --version
aws-cli/2.17.20 Python/3.11.9 Linux/6.5.0-41-generic exe/x86_64.ubuntu.22
renato@renato-Vostro-5470:~$
```

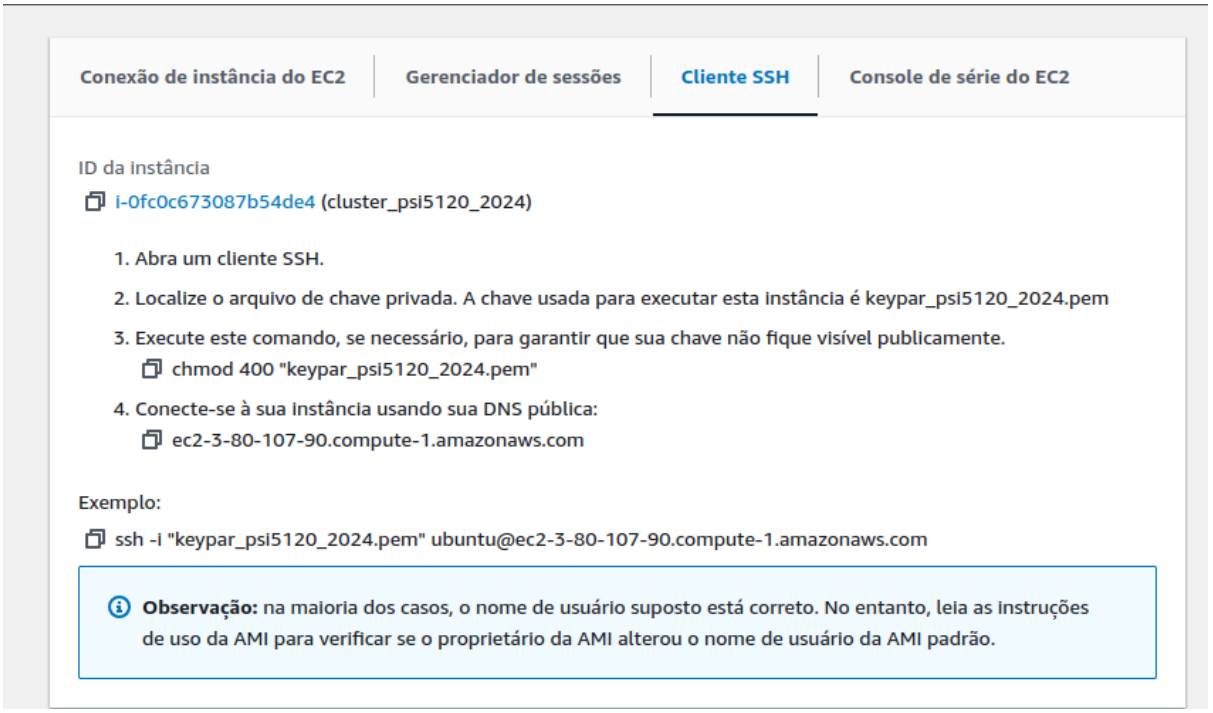
https://docs.aws.amazon.com/eks/latest/userguide/install-kubectl.html
#10 - Verificando a versão do kubectl

```
renato@renato-Vostro-5470:~$ kubectl version --client
Client Version: v1.30.3
Kustomize Version: v5.0.4-0.20230601165947-6ce0bf390ce3
renato@renato-Vostro-5470:~$
```

#11 - Instância criada de acordo com aula 6 do professor Sérgio:



#12 - Mudando a permissão do arquivo:

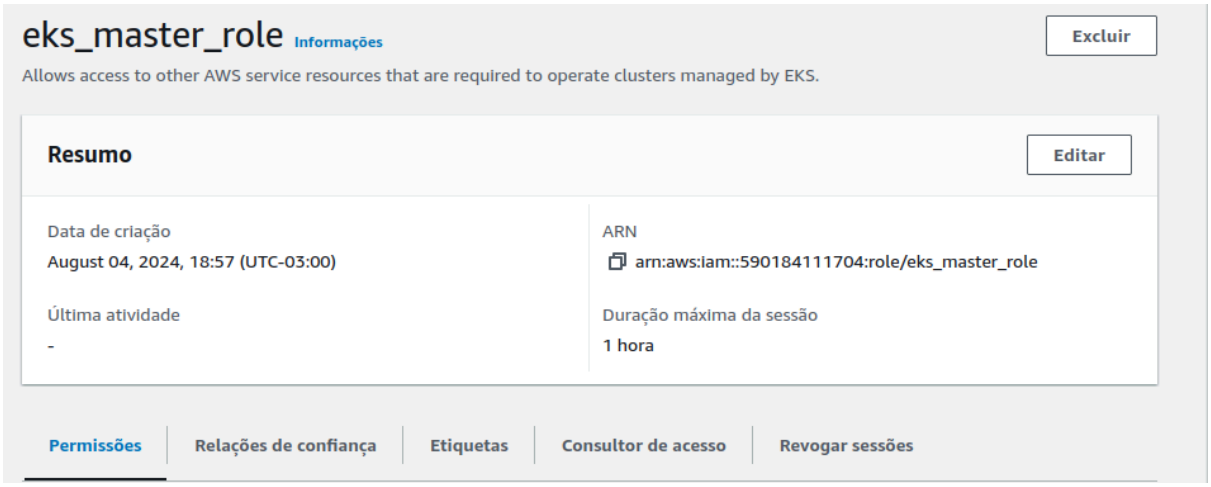


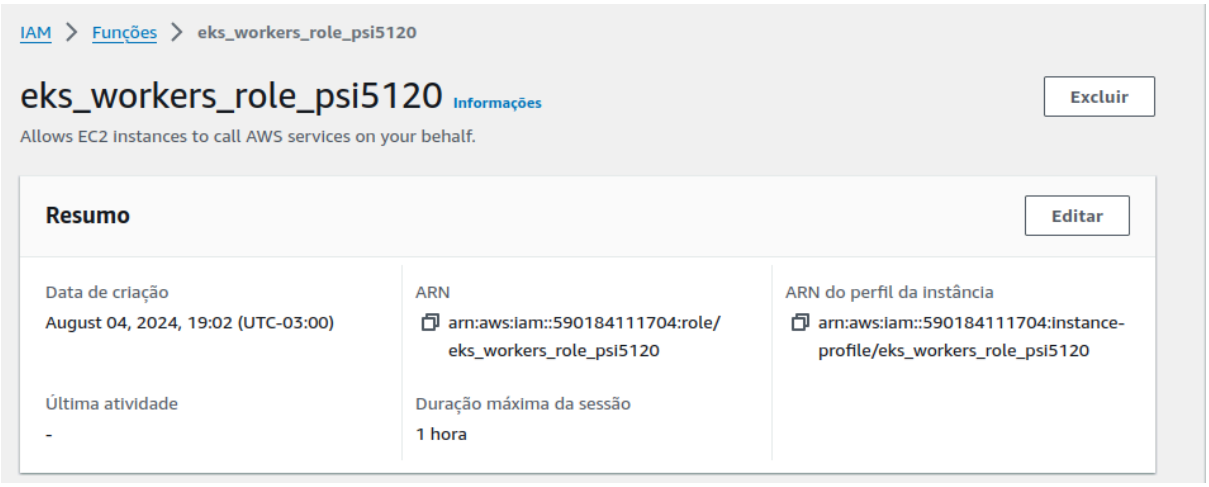
```
renato@renato-Vostro-5470:~/Downloads$ chmod 400 "keypar_psi5120_2024.pem"
renato@renato-Vostro-5470:~/Downloads$
```

#13 - Logar na instância via ssh:

```
renato@renato-Vostro-5470:~/Downloads$ ssh -i "keypar_psi5120_2024.pem" ubuntu@ec2-3-80-107-90.compute-1.amazonaws.com
The authenticity of host 'ec2-3-80-107-90.compute-1.amazonaws.com (3.80.107.90)' can't be established.
ED25519 key fingerprint is SHA256:UOuHWYnDQEX2m3yOdKFKBpFskpVxKxrbp3p4aCP9dXo.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-80-107-90.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1009-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Sun Aug  4 21:44:36 UTC 2024

  System load:  0.0               Processes:             105
  Usage of /:   22.7% of 6.71GB   Users logged in:       0
  Memory usage: 9%                IPv4 address for enX0: 172.31.19.167
  Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-19-167:~$
```

#14 - Criação do perfil (role):





#15 - Criação do cluster eks
https://docs.aws.amazon.com/eks/latest/userguide/horizontal-pod-autoscaler.html

#16 - Adicionar grupos de nós (Workers):

Configurar grupo de nós Informações

Um grupo de nós é um grupo de instâncias do EC2 que fornece capacidade computacional ao seu cluster do Amazon EKS. Você pode adicionar vários grupos de nós ao seu cluster.

Configuração do grupo de nós

Essas propriedades não poderão ser alteradas após a criação do grupo de nós.

Nome

Atribua um nome exclusivo para esse grupo de nós.

eks_node-group_1

O nome do grupo de nós deve começar com letra ou dígito e pode ter qualquer um dos seguintes caracteres: o conjunto de letras Unicode, dígitos, hifens e sublinhados. Tamanho máximo de 63.

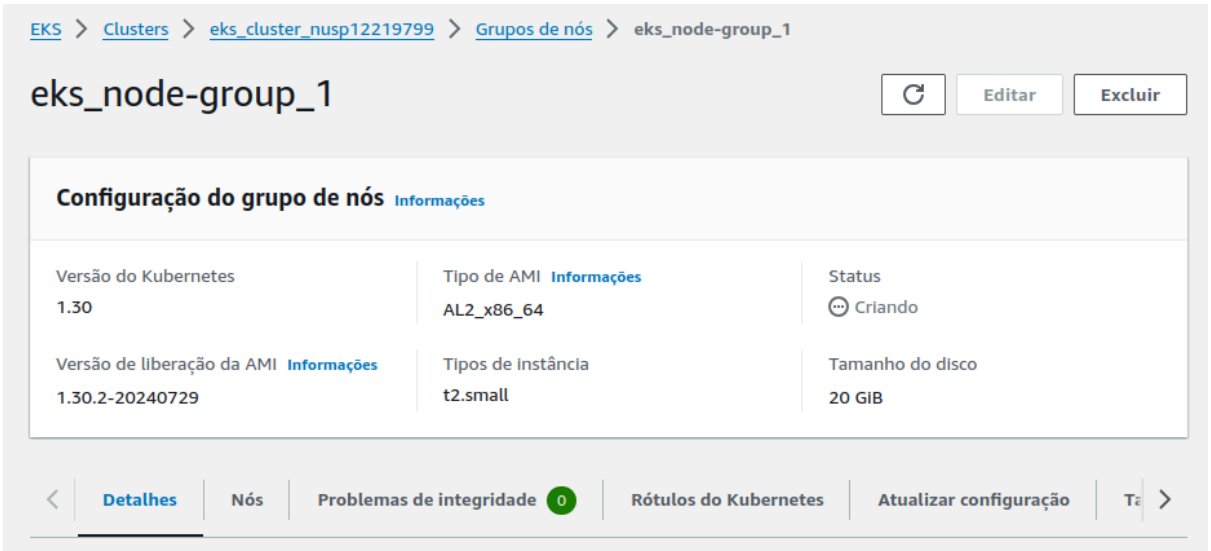
Função do IAM do nó Informações

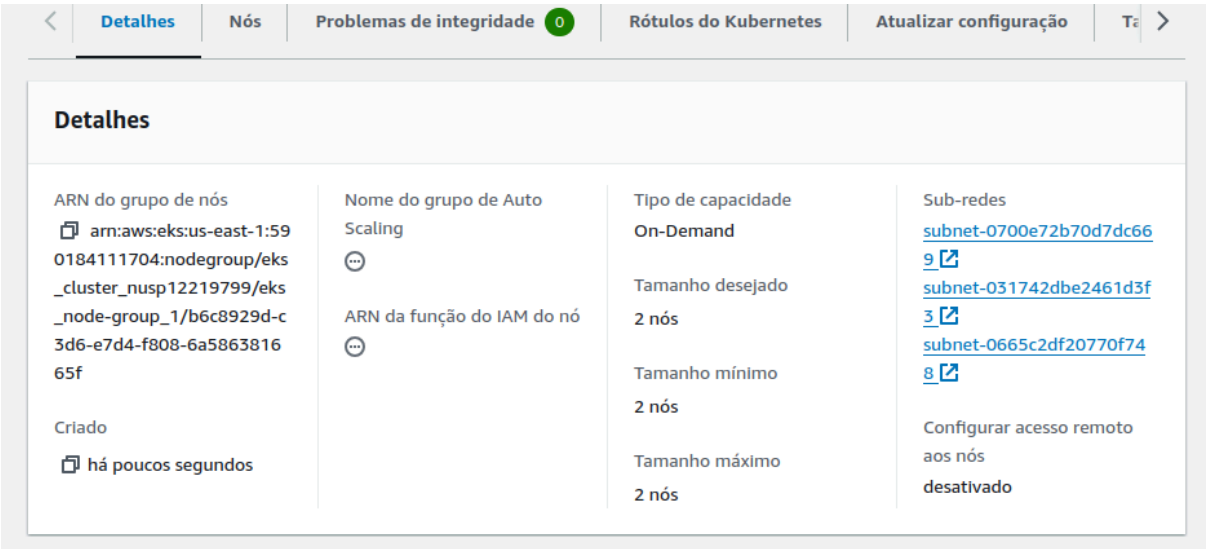
Selecione a função do IAM que será usada pelos nós. Para criar uma nova função, acesse o Console do IAM.

eks_workers_role_psi5120

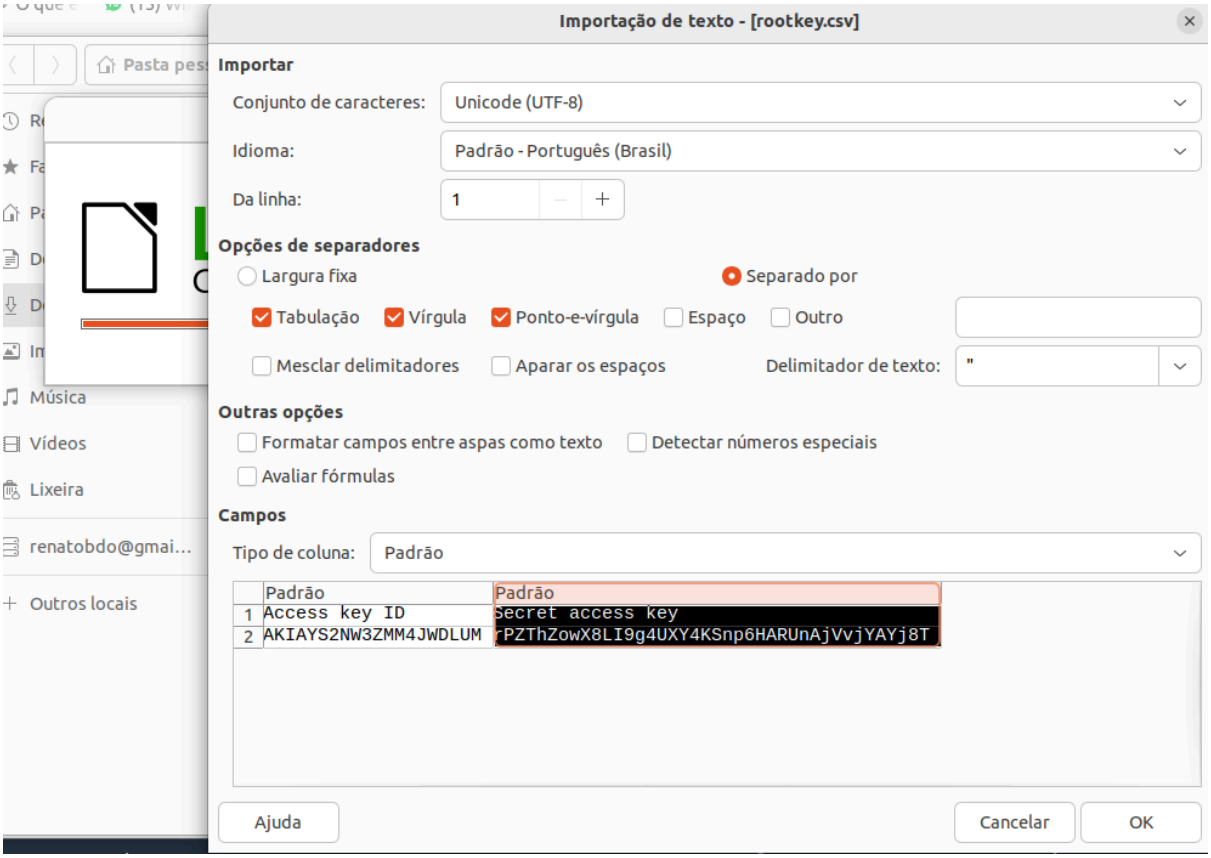
A função selecionada não deve ser usada por um grupo de nós autogerenciado, pois isso pode levar a uma interrupção do serviço após a exclusão do grupo de nós gerenciado.

Criar um perfil no console do IAM

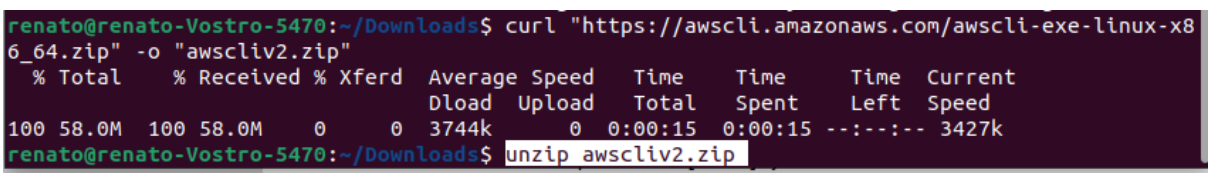


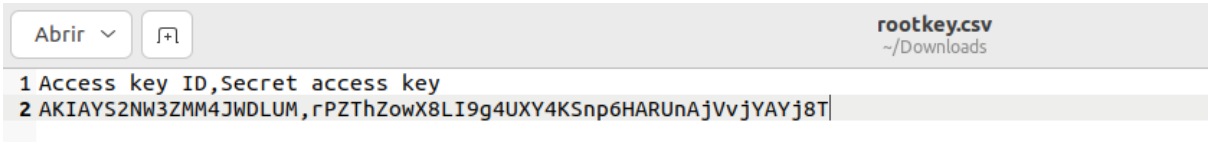


#17 - Geração de chave de acesso. Fiz o download da chave de acesso rootkey.csv:



#18 - Instalação do AWS CLI no linux (ver atividade 6-2.pdf):





#19 - Configuração

```
renato@renato-Vostro-5470:~/Downloads$ aws configure
AWS Access Key ID [None]: AKIAYS2NW3ZMM4JWDLUM
AWS Secret Access Key [None]: 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
Default region name [None]: us-east-1
Default output format [None]: json
```

#20 - Instalação do kubectl

```
renato@renato-Vostro-5470:~/Downloads$ curl -O https://s3.us-west-2.amazonaws.com/amazon-eks/
1.30.0/2024-05-12/bin/linux/amd64/kubectl
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 49.0M  100 49.0M    0     0   270k      0  0:03:06  0:03:06 --:--:--  201k
renato@renato-Vostro-5470:~/Downloads$
```

```
renato@renato-Vostro-5470:~/Downloads$ chmod +x ./kubectl
renato@renato-Vostro-5470:~/Downloads$ mkdir -p $HOME/bin && cp ./kubectl $HOME/bin/kubectl &
& export PATH=$HOME/bin:$PATH
renato@renato-Vostro-5470:~/Downloads$ echo 'export PATH=$HOME/bin:$PATH' >> ~/.bashrc
renato@renato-Vostro-5470:~/Downloads$ kubectl version --client
Client Version: v1.30.0-eks-036c24b
Kustomize Version: v5.0.4-0.20230601165947-6ce0bf390ce3
renato@renato-Vostro-5470:~/Downloads$
```

#21 - Instalação do eksctl

```
renato@renato-Vostro-5470:~/Downloads$ sudo mv /tmp/eksctl /usr/local/bin
renato@renato-Vostro-5470:~/Downloads$ eksctl version
0.188.0
renato@renato-Vostro-5470:~/Downloads$
```

#22 - Verificação da conta (ver atividade 6.1.pdf)

```
renato@renato-Vostro-5470:~/Downloads$ aws sts get-caller-identity
{
    "UserId": "590184111704",
    "Account": "590184111704",
    "Arn": "arn:aws:iam::590184111704:root"
}
renato@renato-Vostro-5470:~/Downloads$
```

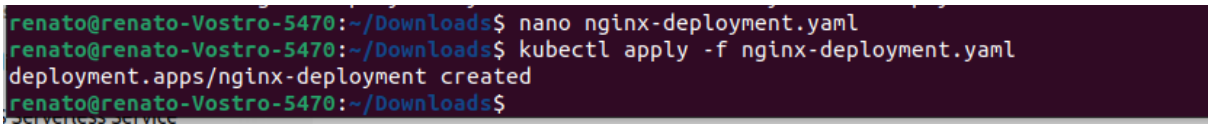
#23 - Atualização do cluster que criei na AWS

```
renato@renato-Vostro-5470:~/Downloads$ aws eks update-kubeconfig --region us-east-1 --name ek
s_cluster_nusp12219799
Added new context arn:aws:eks:us-east-1:590184111704:cluster/eks_cluster_nusp12219799 to /hom
e/renato/.kube/config
renato@renato-Vostro-5470:~/Downloads$
```

#24 - aquivo nginx-deployment.yaml

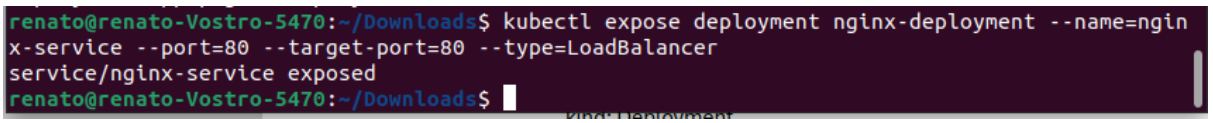
Arquivo com a formatação correta:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
        app: nginx
spec:
  replicas: 1
  selector:
        matchLabels:
        app: nginx
  template:
        metadata:
        labels:
        app: nginx
        spec:
        containers:
        - name: nginx
        image: public.ecr.aws/t1f2w6h8/ekswelcome:v1
        ports:
        - containerPort: 80
```



#25 - Executando o comando abaixo para expor a implantação do Nginx como um serviço LoadBalancer

kubectl expose deployment nginx-deployment --name=nginx-service --port=80 --target-port=80 --type=LoadBalance



#26 - Executando o comando abaixo para recuperar informações sobre o serviço Nginx com LoadBalance

kubectl get service nginx-service

```
renato@renato-Vostro-5470:~/Downloads$ kubectl get service nginx-service
NAME            TYPE           CLUSTER-IP      EXTERNAL-IP
                        PORT(S)        AGE
nginx-service   LoadBalancer   10.100.121.34   a3e5d92625f9e40539e6061dc541ae58-518601609.us-
east-1.elb.amazonaws.com   80:30176/TCP   45s
renato@renato-Vostro-5470:~/Downloads$
```

#27 - Informações do cluster
eksctl get nodegroup --cluster eks_cluster_nusp12219799

```
renato@renato-Vostro-5470:~/Downloads$ eksctl get nodegroup --cluster eks_cluster_nusp12219799
CLUSTER                         NODEGROUP               STATUS  CREATED                 MIN SIZE        MAX SIZE        DESIRED CAPACITY        I
NSTANCE TYPE    IMAGE ID        ASG NAME        TYPE
eks_cluster_nusp12219799        eks_node-group_1        ACTIVE  2024-08-06T01:09:04Z    2       22                      t2.small        AL2_x86_6
4       eks-eks_node-group_1-b6c8929d-c3d6-e7d4-f808-6a586381665f       managed
renato@renato-Vostro-5470:~/Downloads$
```

#28 - Testes
https://docs.aws.amazon.com/eks/latest/userguide/horizontal-pod-autoscaler.html

Primeiro precisei atualizar:
aws eks update-kubeconfig --region us-east-1 --name eks_cluster_nusp12219799

Implementação de uma aplicação de servidor web Apache simples com o comando a seguir.

kubectl apply -f https://k8s.io/examples/application/php-apache.yaml

Crie um recurso Horizontal Pod Autoscaler para a implantação do php-apache:

kubectl autoscale deployment php-apache --cpu-percent=50 --min=1 --max=10
Analisando o escalonador automático com o comando a seguir
kubectl get hpa

```
renato@renato-Vostro-5470:~$ aws eks update-kubeconfig --region us-east-1 --name eks_cluster_nusp12219799
Updated context arn:aws:eks:us-east-1:590184111704:cluster/eks_cluster_nusp12219799 in /home/renato/.kube/config
renato@renato-Vostro-5470:~$ kubectl apply -f https://k8s.io/examples/application/php-apache.yaml
deployment.apps/php-apache created
service/php-apache created
renato@renato-Vostro-5470:~$ kubectl autoscale deployment php-apache --cpu-percent=50 --min=1 --max=10
horizontalpodautoscaler.autoscaling/php-apache autoscaled
renato@renato-Vostro-5470:~$ kubectl get hpa
NAME         REFERENCE               TARGETS              MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: <unknown>/50%   1         10        1          47s
```

#29 - Criando uma carga para o servidor web executando um contêiner
kubectl run -i \
--tty load-generator \
--rm --image=busybox \
--restart=Never \
-- /bin/sh -c "while sleep 0.01; do wget -q -O- http://php-apache; done"

```
renato@renato-Vostro-5470:~$ kubectl run -i \
    --tty load-generator \
    --rm --image=busybox \
    --restart=Never \
    -- /bin/sh -c "while sleep 0.01; do wget -q -O- http://php-apache; done"
If you don't see a command prompt, try pressing enter.
OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!O
K!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK
!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!OK!^Cpod "load-generator
" deleted
pod default/load-generator terminated (Error)
```

#30 - Monitorando o resultado
kubectl get hpa php-apache
Antes de parar o serviço o uso de cpu chega a 211% e 6 replicas. Quando para o serviço com o comando control + C o percentual de uso de cpu cai pra 0% e volta ao normal.

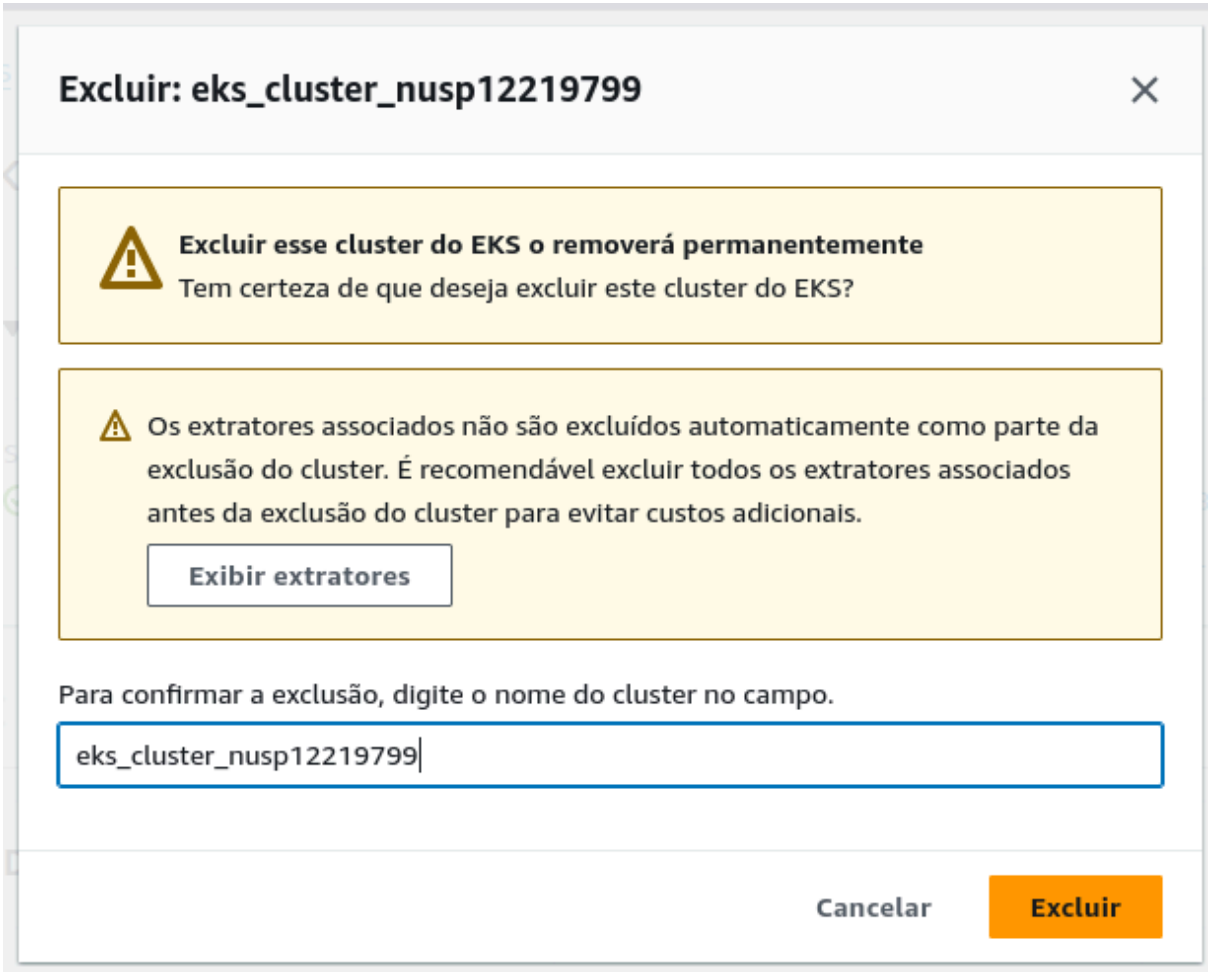
```
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        1          18m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS         MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 211%/50%   1         10        1          18m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS         MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 211%/50%   1         10        1          18m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS         MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 138%/50%   1         10        4          18m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS         MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 138%/50%   1         10        4          18m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 10%/50%   1         10        6          19m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 10%/50%   1         10        6          19m
renato@renato-Vostro-5470:~$ kubectl get hpa php-apache
NAME         REFERENCE                TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
php-apache   Deployment/php-apache   cpu: 0%/50%   1         10        6          19m
```

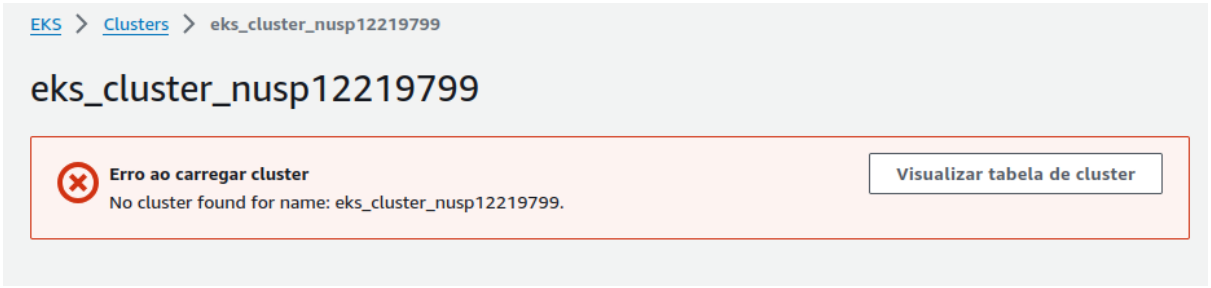
#31 - Finalizando:

kubectl delete deployment.apps/php-apache service/php-apache horizontalpodautoscaler.autoscaling/php-apache

```
renato@renato-Vostro-5470:~$ kubectl delete deployment.apps/php-apache service/php-apache horizontalpodautoscaler.autoscaling/php-apache
deployment.apps "php-apache" deleted
service "php-apache" deleted
horizontalpodautoscaler.autoscaling "php-apache" deleted
```

#32 - Remoção do cluster:


Excluir: eks_cluster_nusp12219799
Excluir esse cluster do EKS o removerá permanentemente
Tem certeza de que deseja excluir este cluster do EKS?
Os extratores associados não são excluídos automaticamente como parte da exclusão do cluster. É recomendável excluir todos os extratores associados antes da exclusão do cluster para evitar custos adicionais.
Exibir extratores
Para confirmar a exclusão, digite o nome do cluster no campo.
eks_cluster_nusp12219799
Cancelar
Excluir


EKS
Clusters
eks_cluster_nusp12219799
eks_cluster_nusp12219799
Erro ao carregar cluster
No cluster found for name: eks_cluster_nusp12219799.
Visualizar tabela de cluster