Magalu Kubernetes Engine

Construindo uma Plataforma Gerenciada de Kubernetes

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Estudante de Psicologia

@jonatasbaldin

Como a gente desenvolve uma plataforma de Kubernetes gerenciada
dentro de uma nuvem pública?

```
mgc kubernetes cluster create \
--name meu-cluster \
--node-pools '[{"flavor": "BV4-8-40", "name":"nodepool01", "replicas": 1}]'
```

meu-cluster

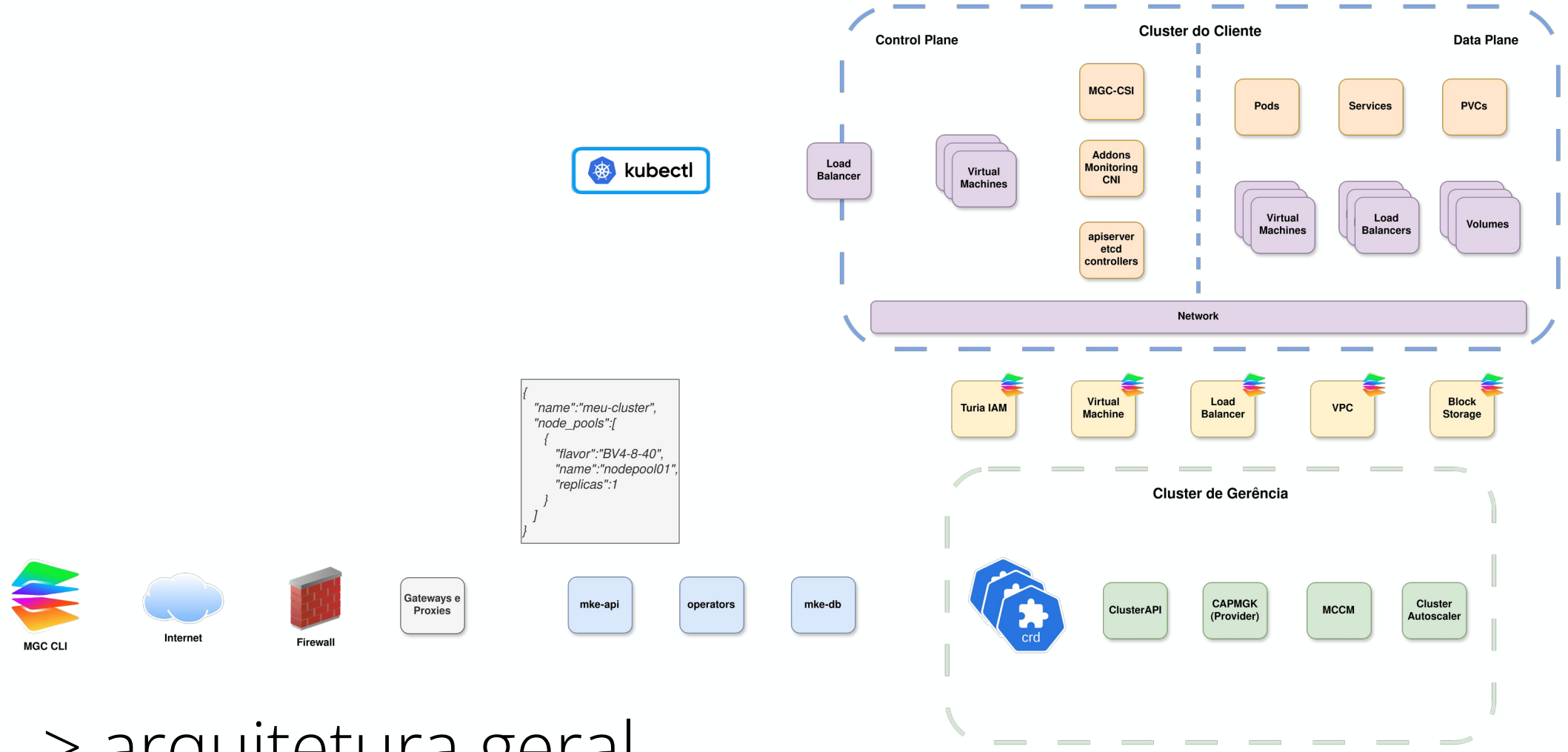
Geral | Node Pools

Informações básicas

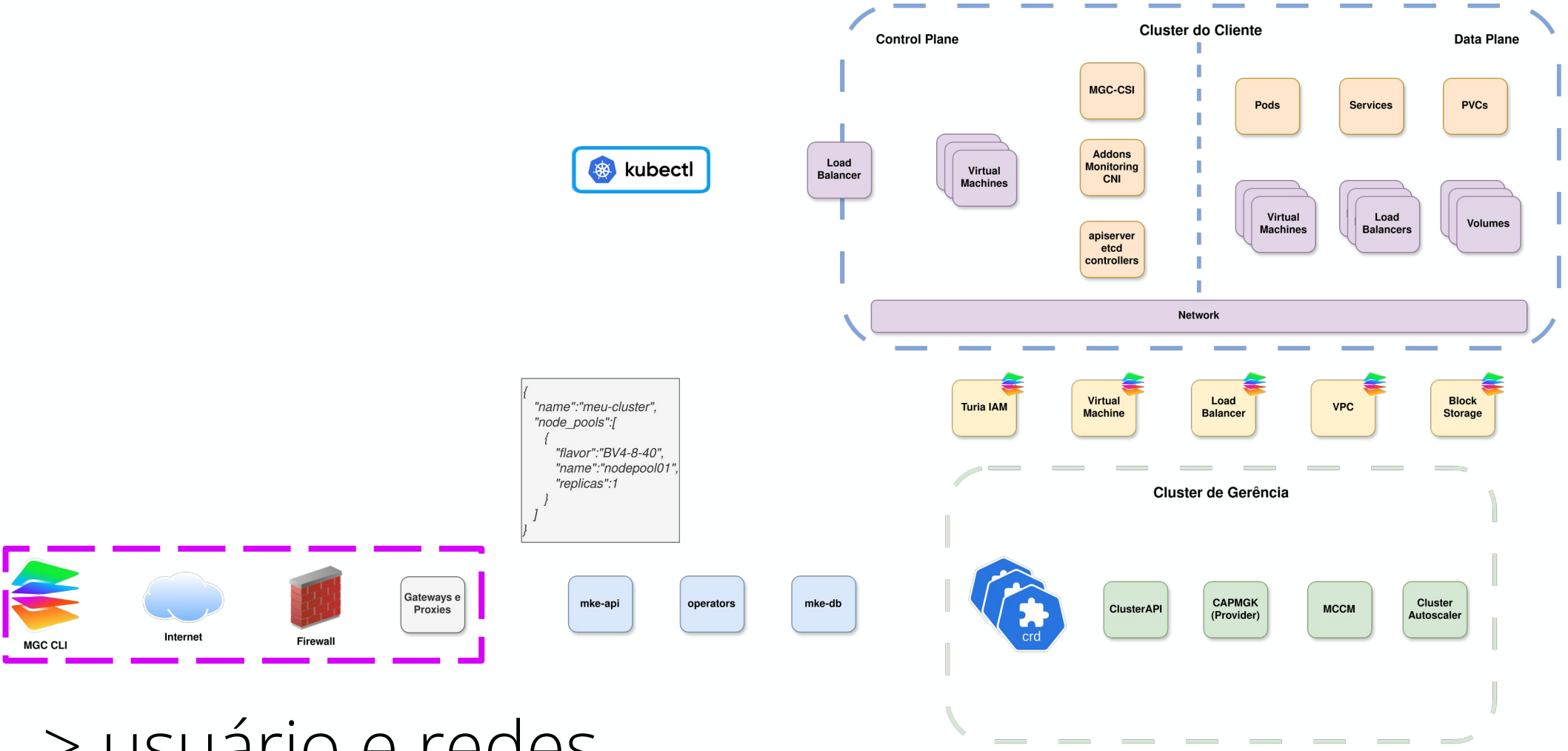
Versão	Plataforma	Região	Criado em
v1.34.2	v3.0.0	br-se1	10 de fev. de 2026, 16:29

Node Pools	Nodes	Arquivo de configuração
1	1	Download

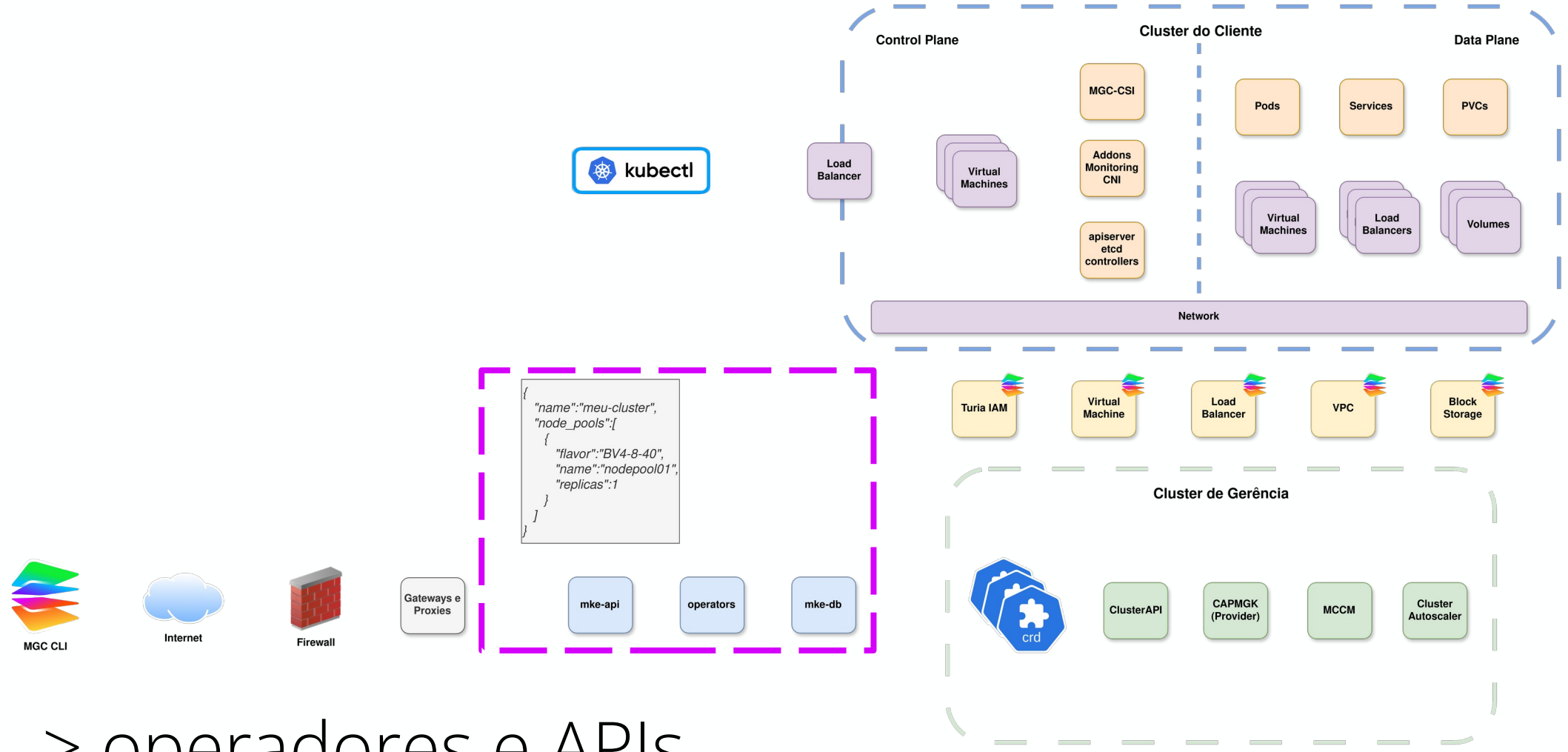
```
$ kubectl get pod

NAME                     READY   STATUS      RESTARTS   AGE
nginx-744759846b-vcpbz   1/1     Running     0          2d3h
```



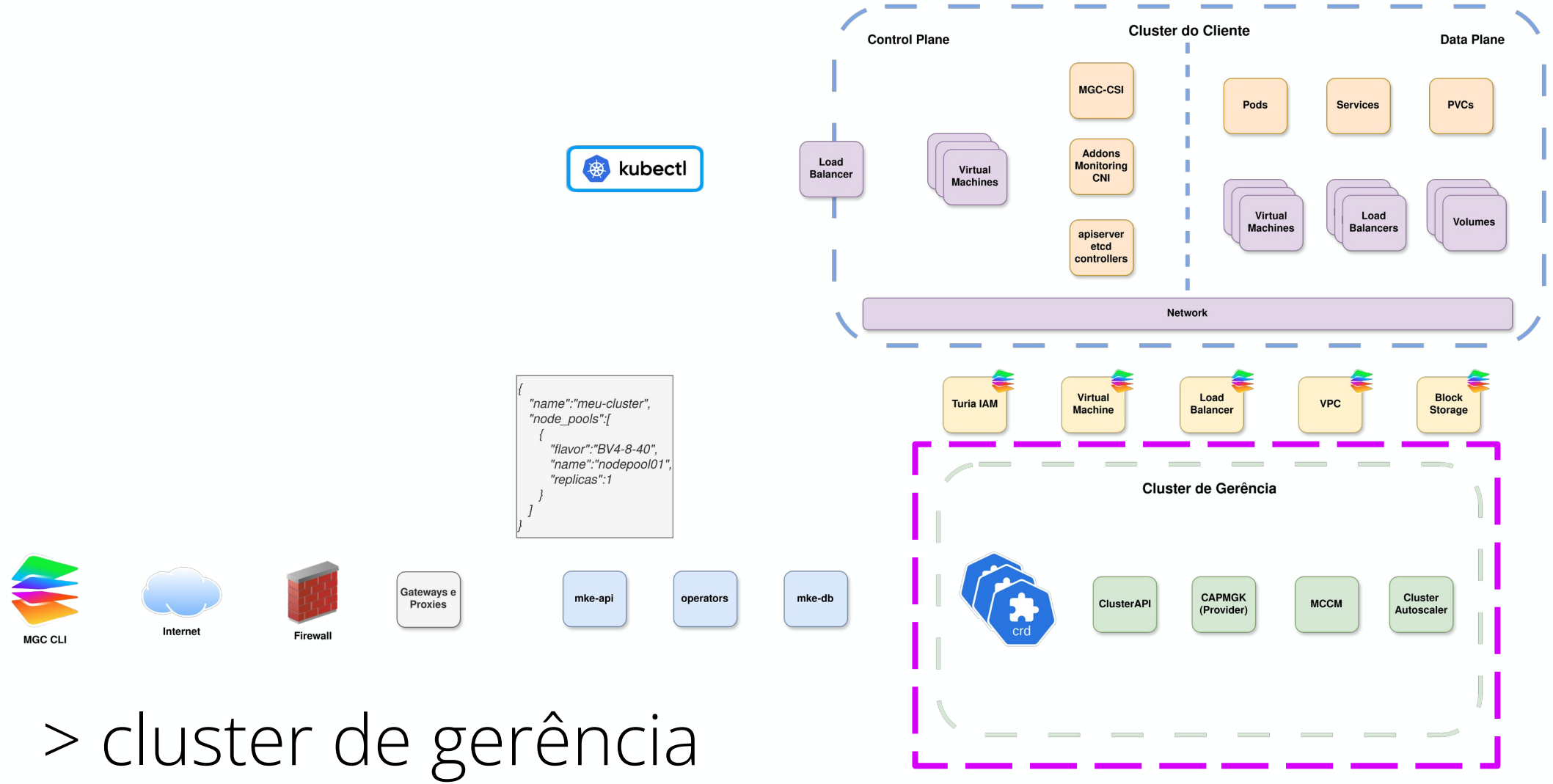
> arquitetura geral



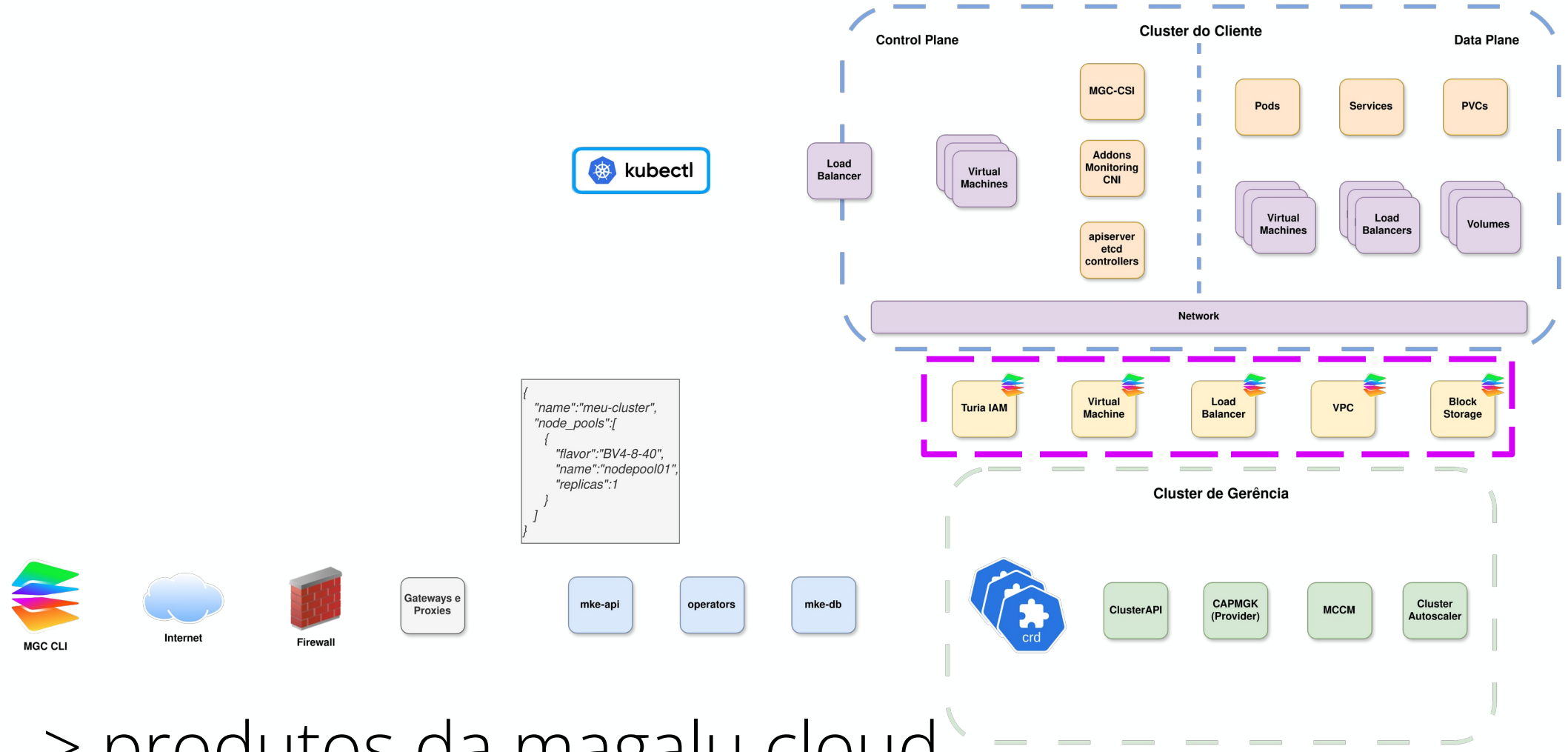
> usuário e redes



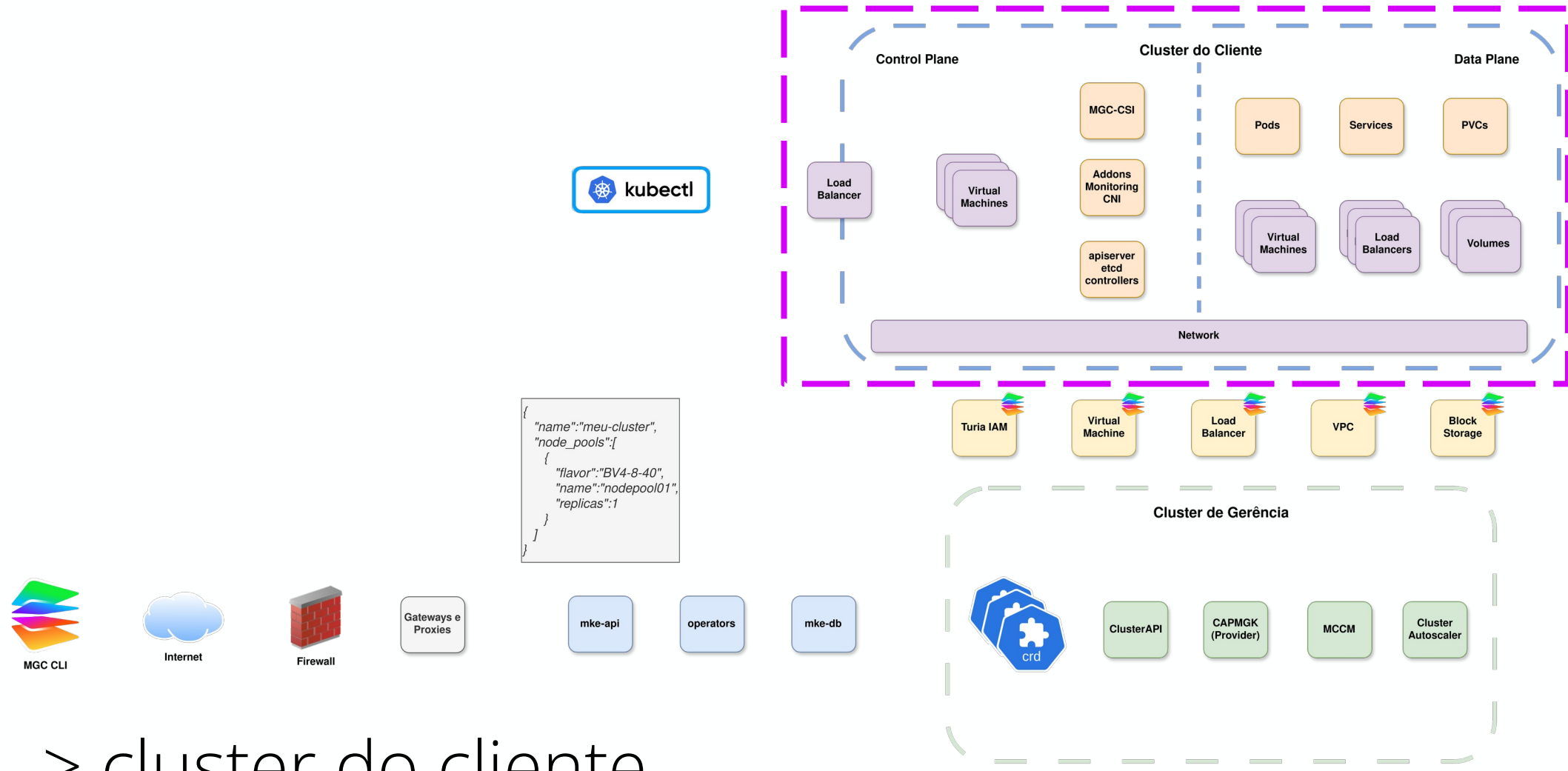
> operadores e APIs



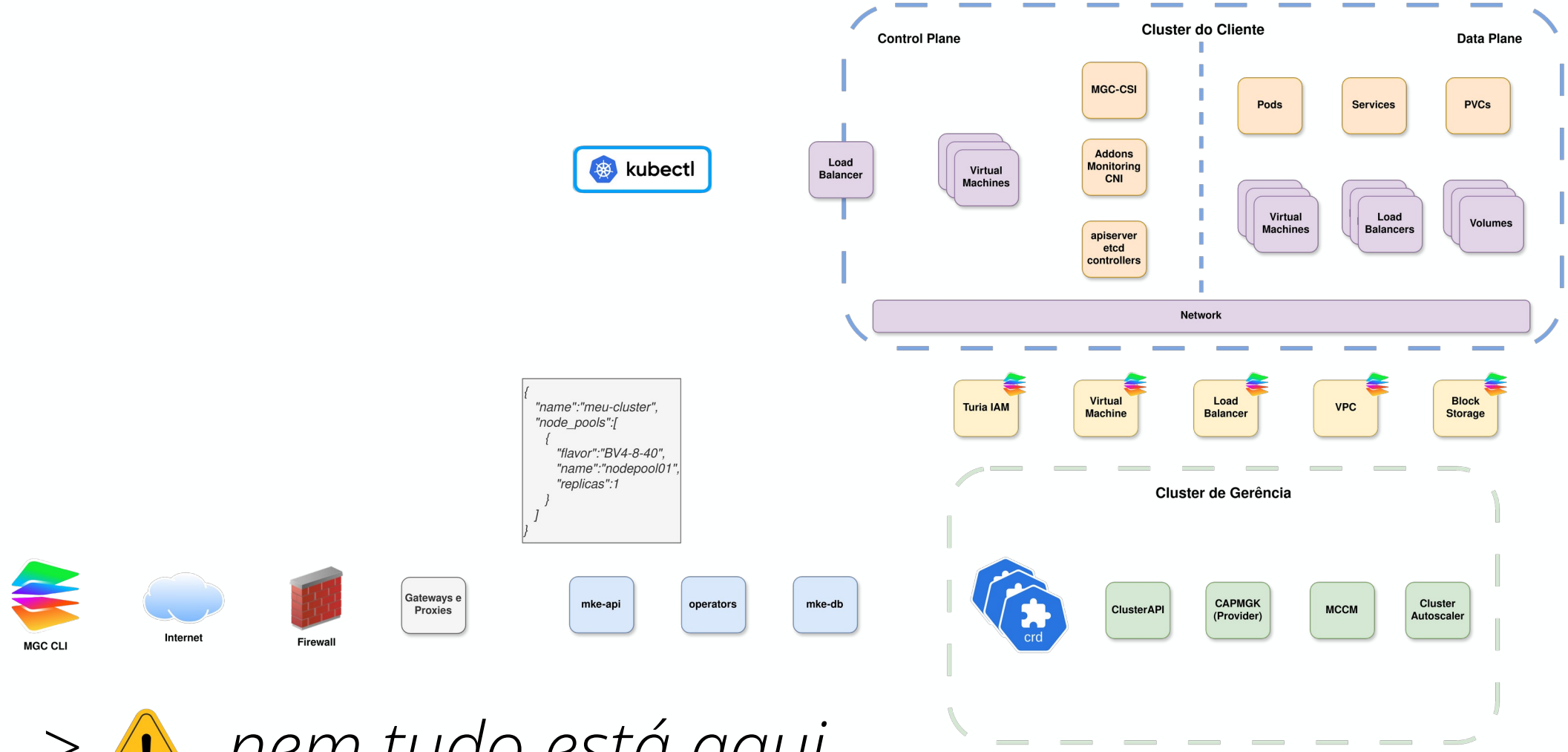
> cluster de gerência



> produtos da magalu cloud



> cluster do cliente



> ⚠ *nem tudo está aqui*

```
mgc kubernetes cluster create \
--name meu-cluster \
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```
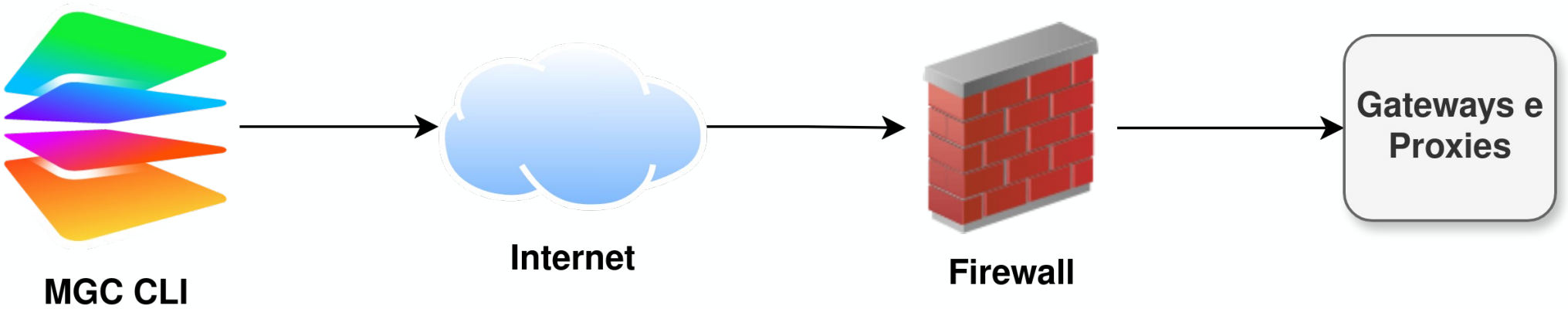
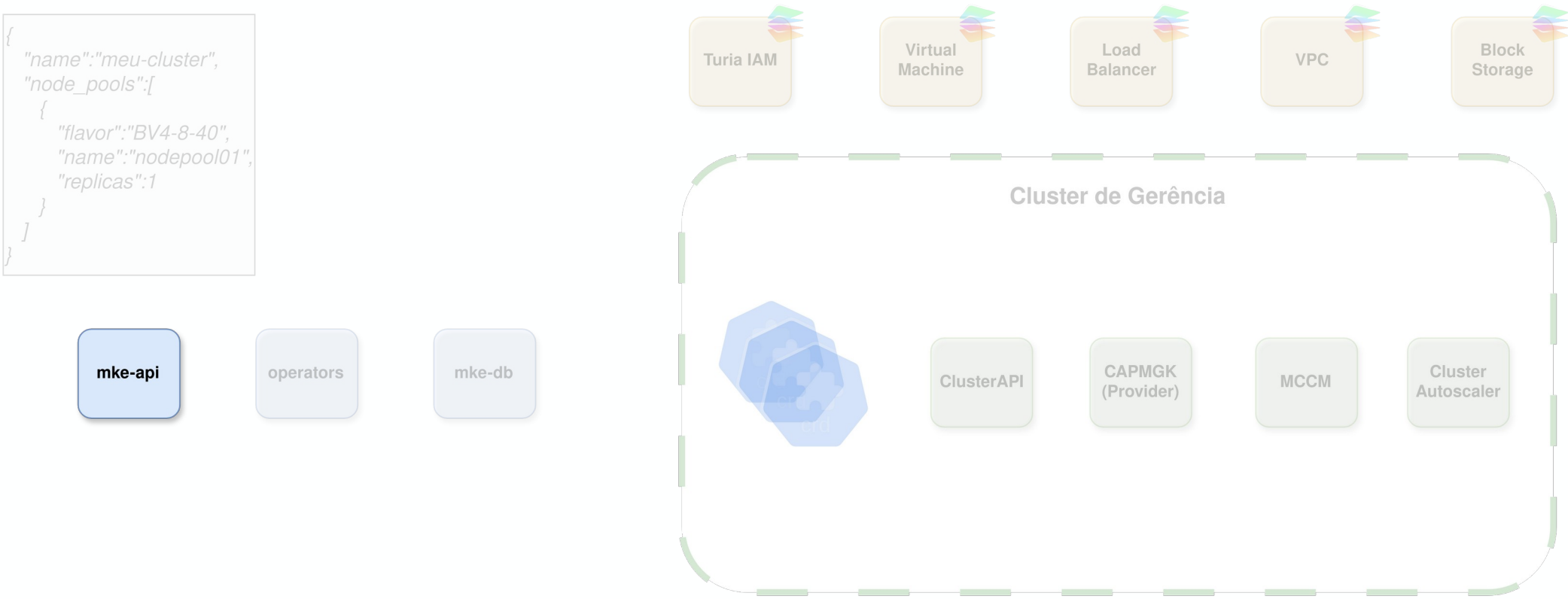
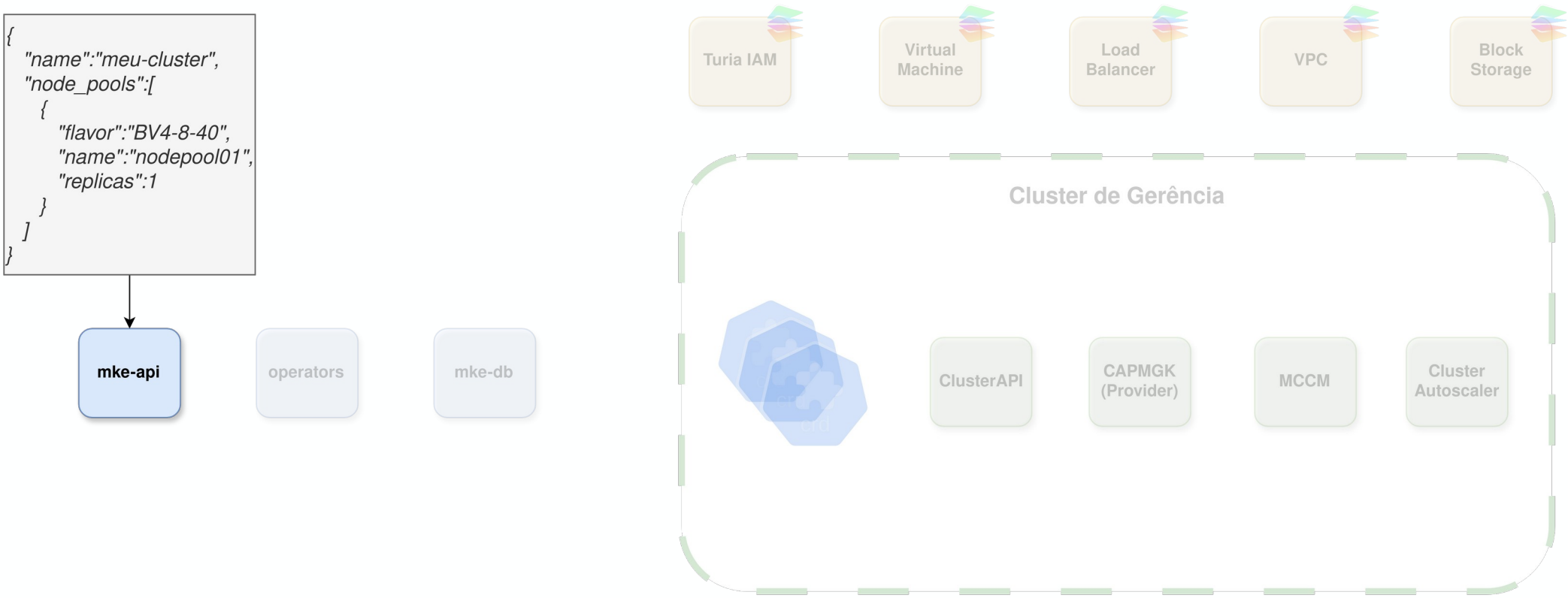



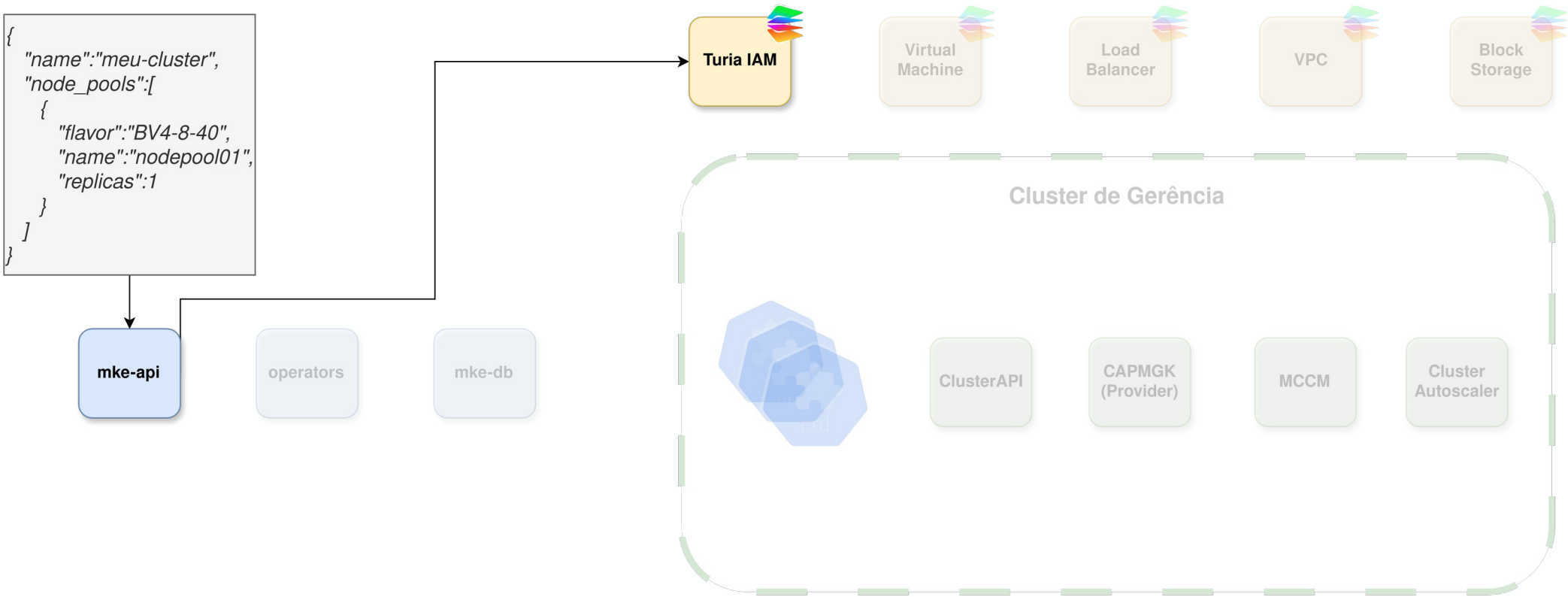
> a primeira travessia



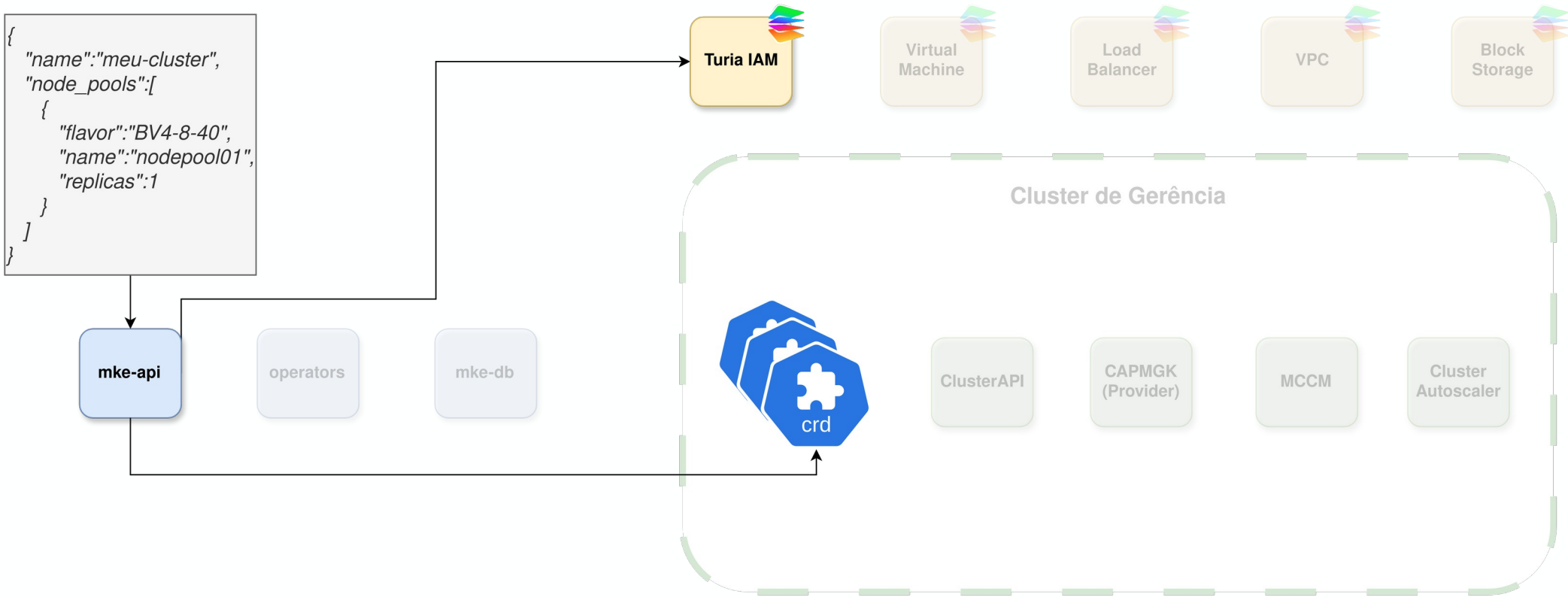
> mke-api, nosso ponto de entrada



> realiza as validações da requisição



> configura as permissões necessárias



> cria Recursos *internos* no Cluster de Gerência

Recursos (CRDs) Internos

Cluster

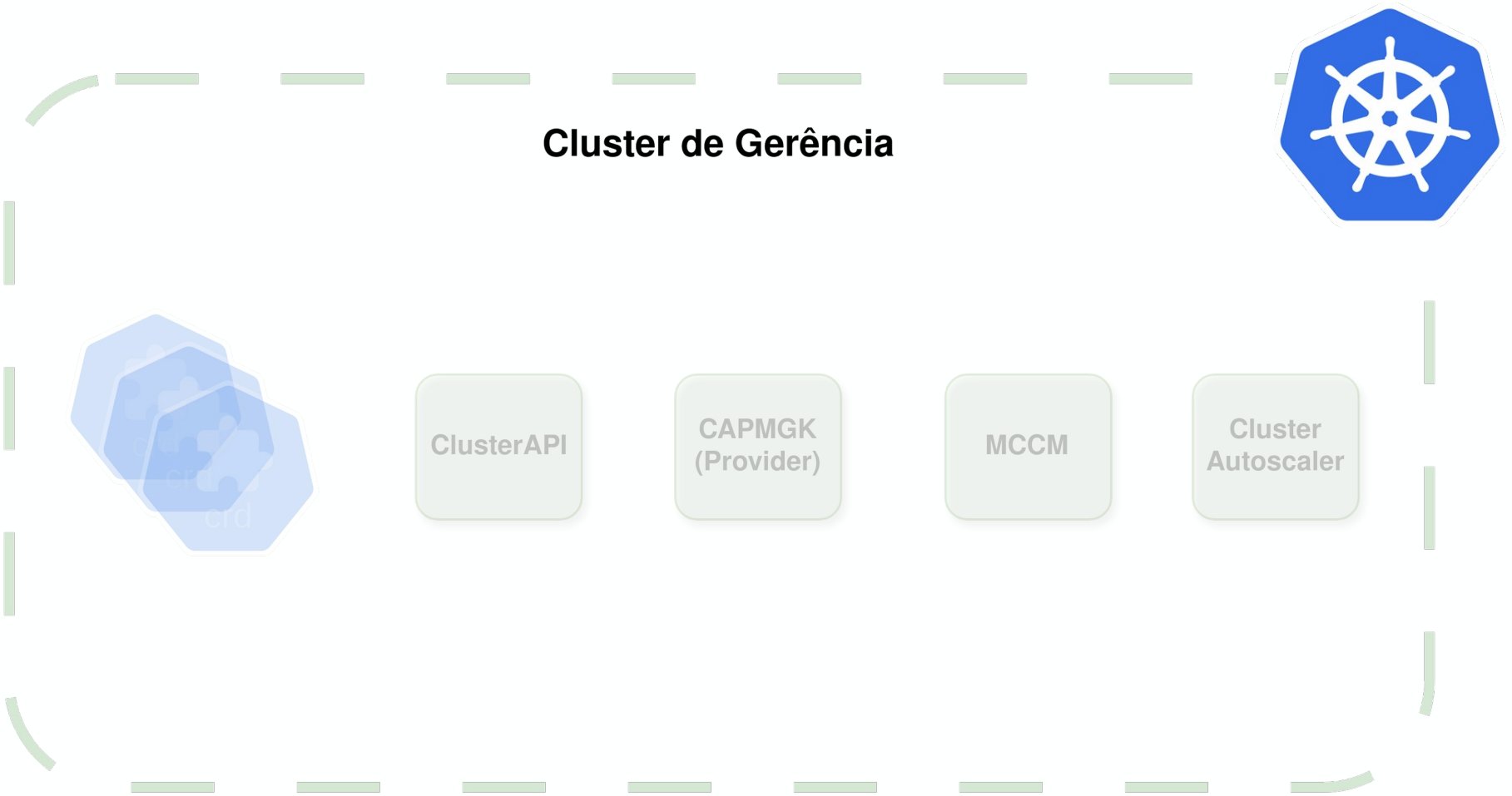
NodePool

Addons

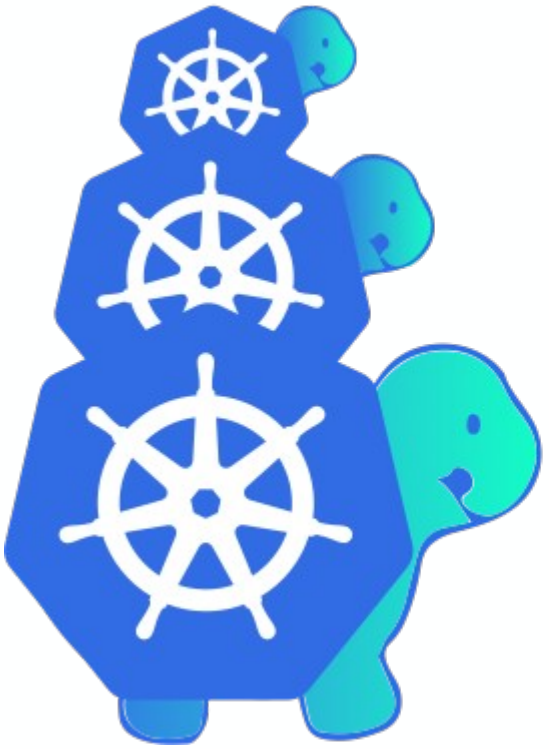
y mucho más

```yaml
apiVersion: mke.magalu.cloud/v1
kind: MGCCluster
metadata:
  name: meu-cluster
spec:
  cni: calico
  kubernetesVersion: v1.30.10
  podsCIDR: 192.168.0.0/16
  servicesCIDR: 10.96.0.0/12
  region: br-se1
  ...
status:
  conditions:
  - lastTransitionTime: "2026-03-06T17:48:35Z"
    status: "True"
    type: ClusterReady
  ...
```

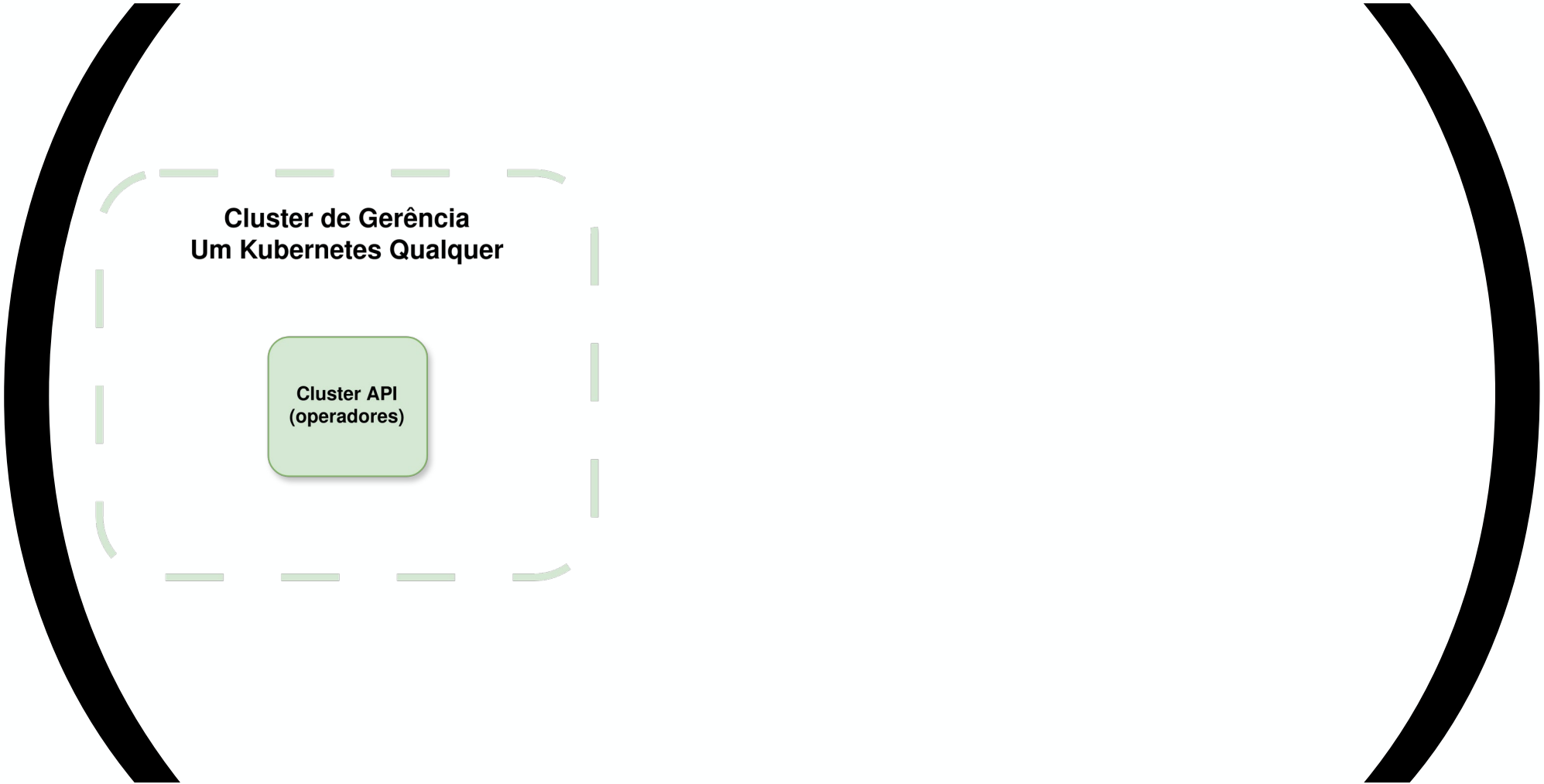
```yaml
apiVersion: mke.magalu.cloud/v1
kind: MGCNodePool
metadata:
  name: nodepool01
spec:
  clusterRef:
    name: meu-cluster
  initialReplicas: 1
  kubernetesVersion: v1.30.10
  machineType: BV4-8-40
  ...
status:
  message: ready
  phase: Running
  ...
```

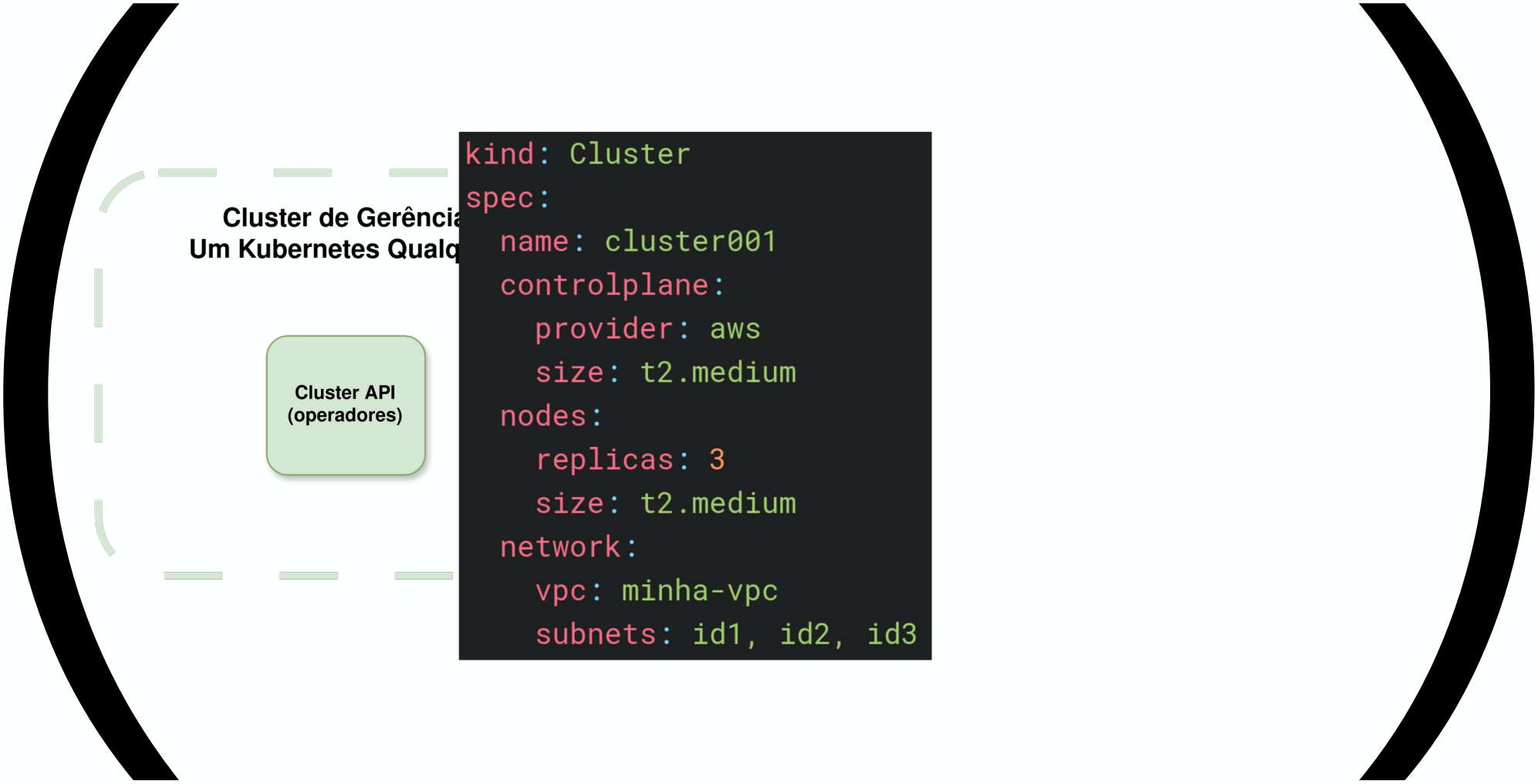


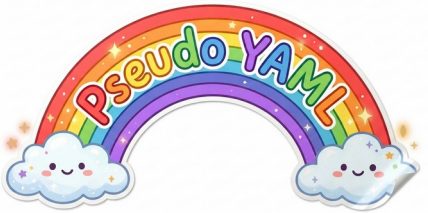
> *Cluster de Gerência?*



Cluster API


Cluster de Gerência
Um Kubernetes Qualquer
Cluster API
(operadores)


Cluster de Gerência
Um Kubernetes Qualq
Cluster API
(operadores)
kind: Cluster
spec:
name: cluster001
controlplane:
provider: aws
size: t2.medium
nodes:
replicas: 3
size: t2.medium
network:
vpc: minha-vpc
subnets: id1, id2, id3



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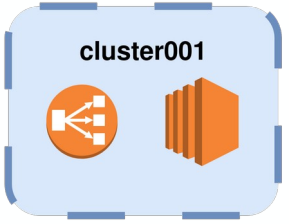
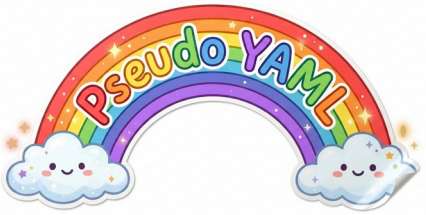
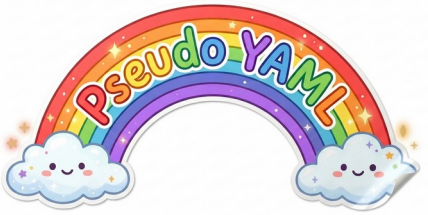




Cluster de Gerência
Um Kubernetes Qualq

Cluster API
(operadores)

```yaml
kind: Cluster
sp
  kind: Cluster
  spec:
    name: cluster002
    controlplane:
      provider: aws
      size: t2.medium
    nodes:
      replicas: 3
      size: t2.medium
    network:
      vpc: minha-vpc
      subnets: id1, id2, id3
```



Cluster de Gerência
Um Kubernetes Qualq

Cluster API
(operadores)

```yaml
kind: Cluster
sp
  kind: Cluster
  spec:
    name: cluster002
    controlplane:
      provider: aws
      size: t2.medium
    nodes:
      replicas: 3
      size: t2.medium
    network:
      vpc: minha-vpc
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```
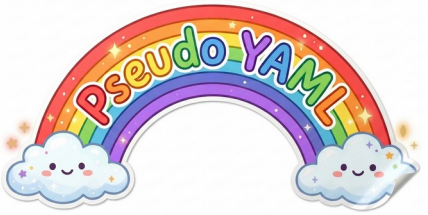
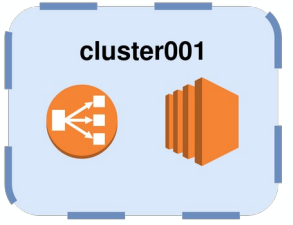
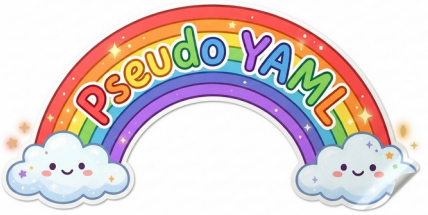



Cluster de Gerência
Um Kubernetes Qualq

Cluster API
(operadores)

```yaml
kind: Cluster
sp
  kind: Cluster
  sp
    kind: Cluster
    spec:
      name: cluster003
      controlplane:
        provider: gcp
        size: e2-medium
      nodes:
        replicas: 3
        size: e2-medium
      network:
        vpc: minha-vpc
        subnets: id1, id2, id3
```

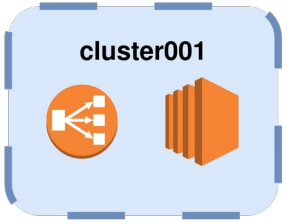


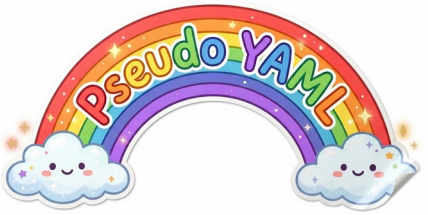


Cluster de Gerência
Um Kubernetes Qualq

Cluster API
(operadores)

```yaml
kind: Cluster
spec:
  name: cluster003
  controlplane:
    provider: gcp
    size: e2-medium
  nodes:
    replicas: 3
    size: e2-medium
  network:
    vpc: minha-vpc
    subnets: id1, id2, id3
```





Cluster de Gerência
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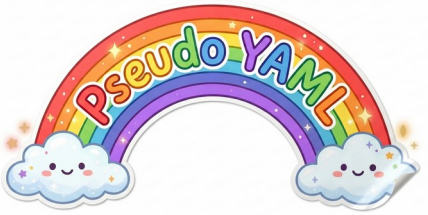

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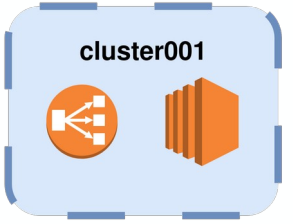
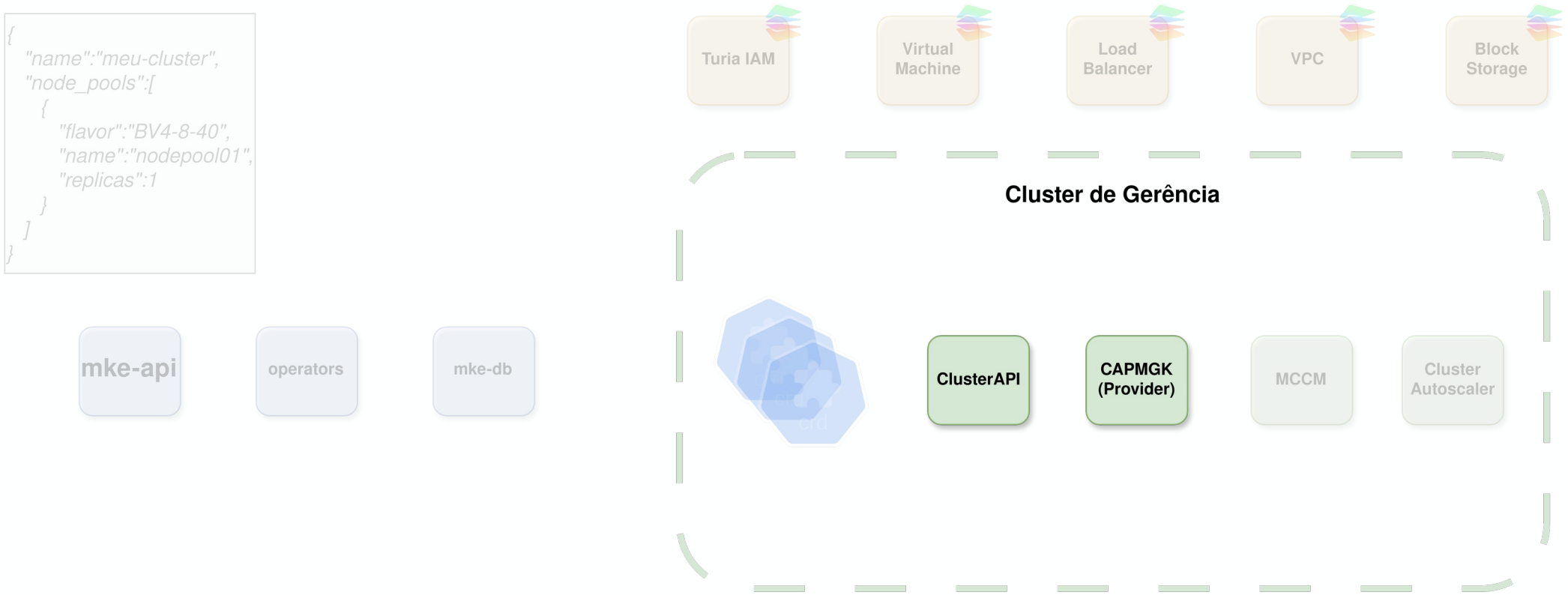
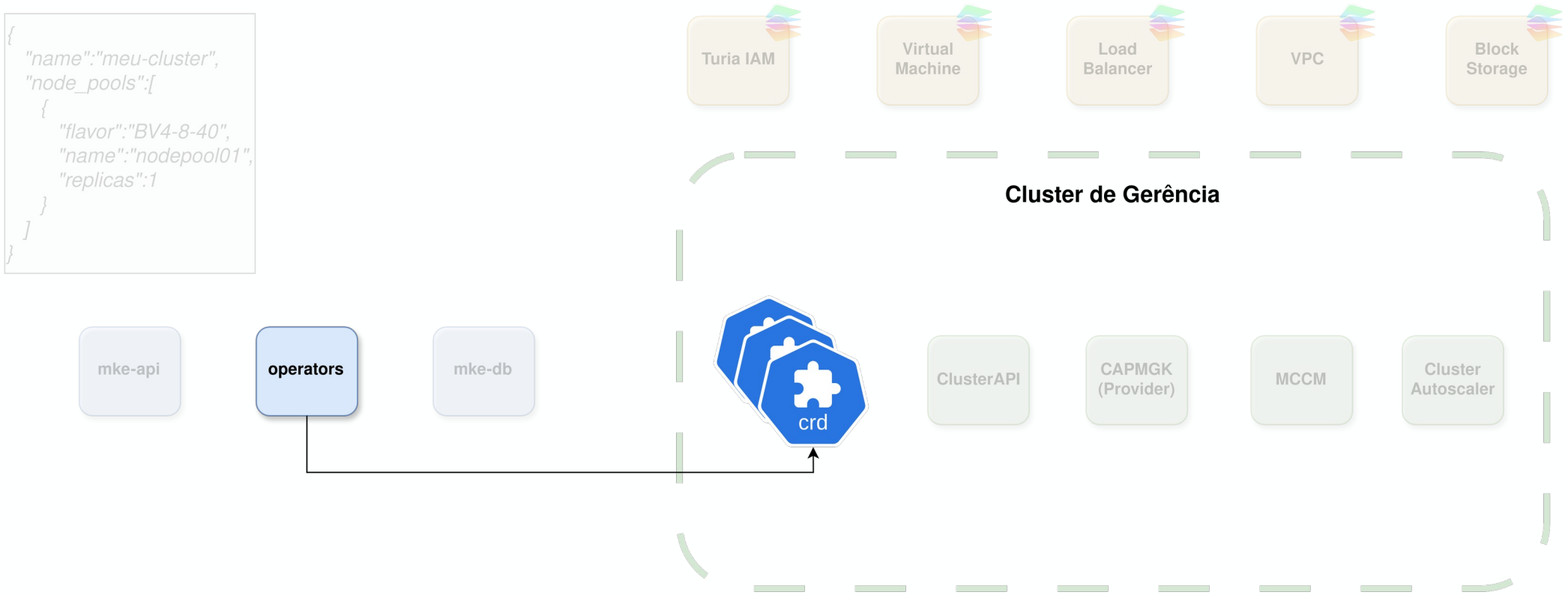
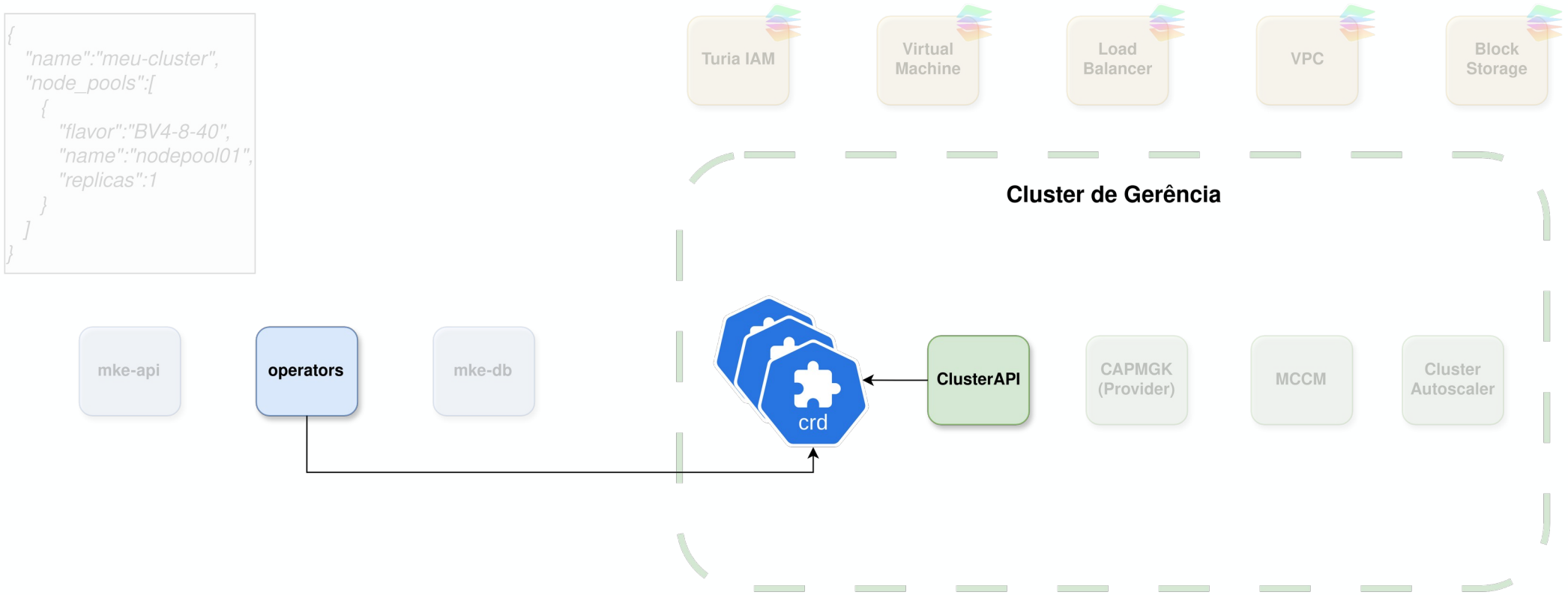




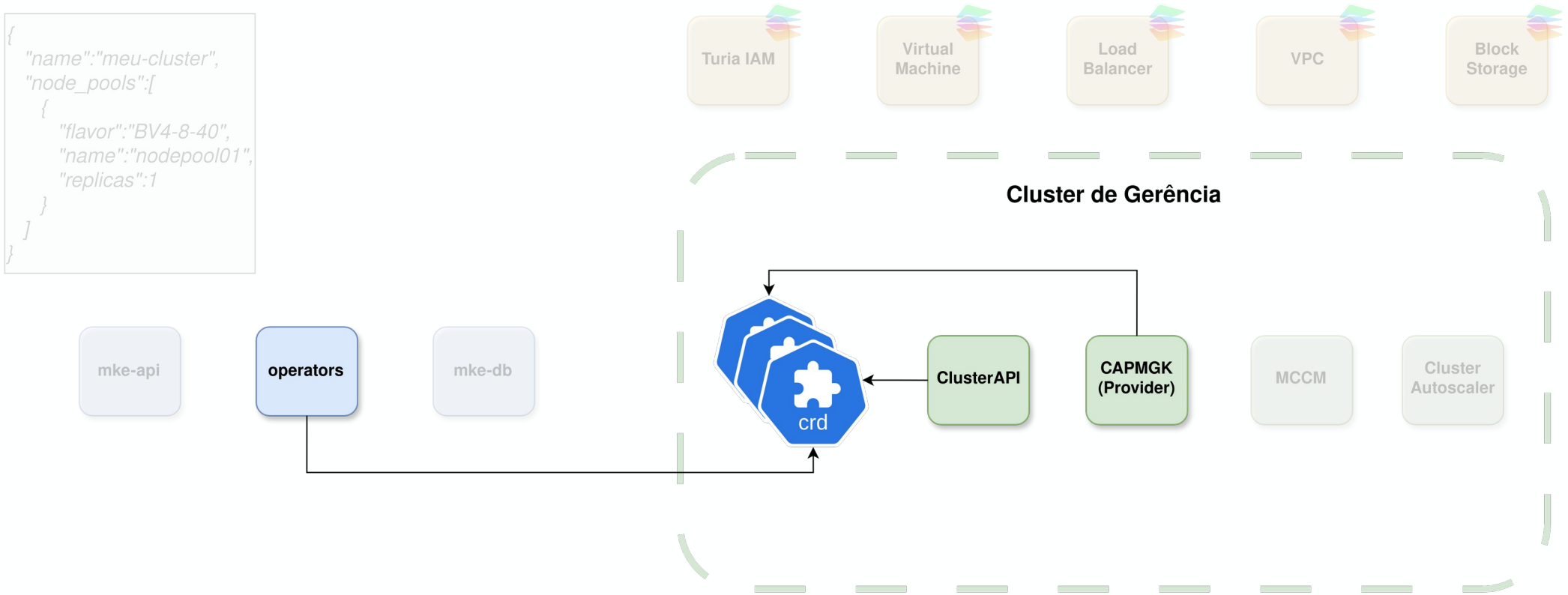
> Cluster API + nosso próprio *Provider*



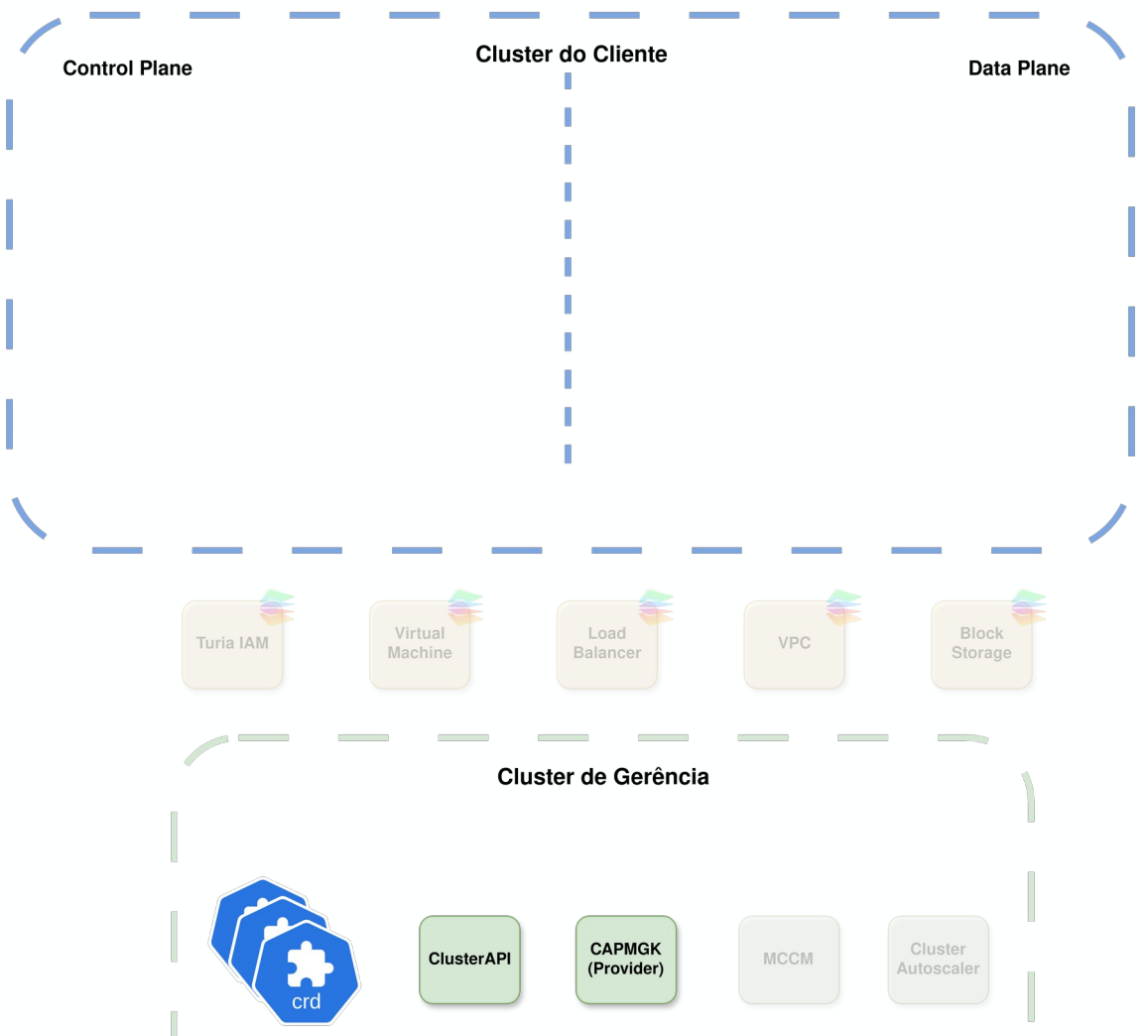
> operador cria recursos Cluster API/Provider



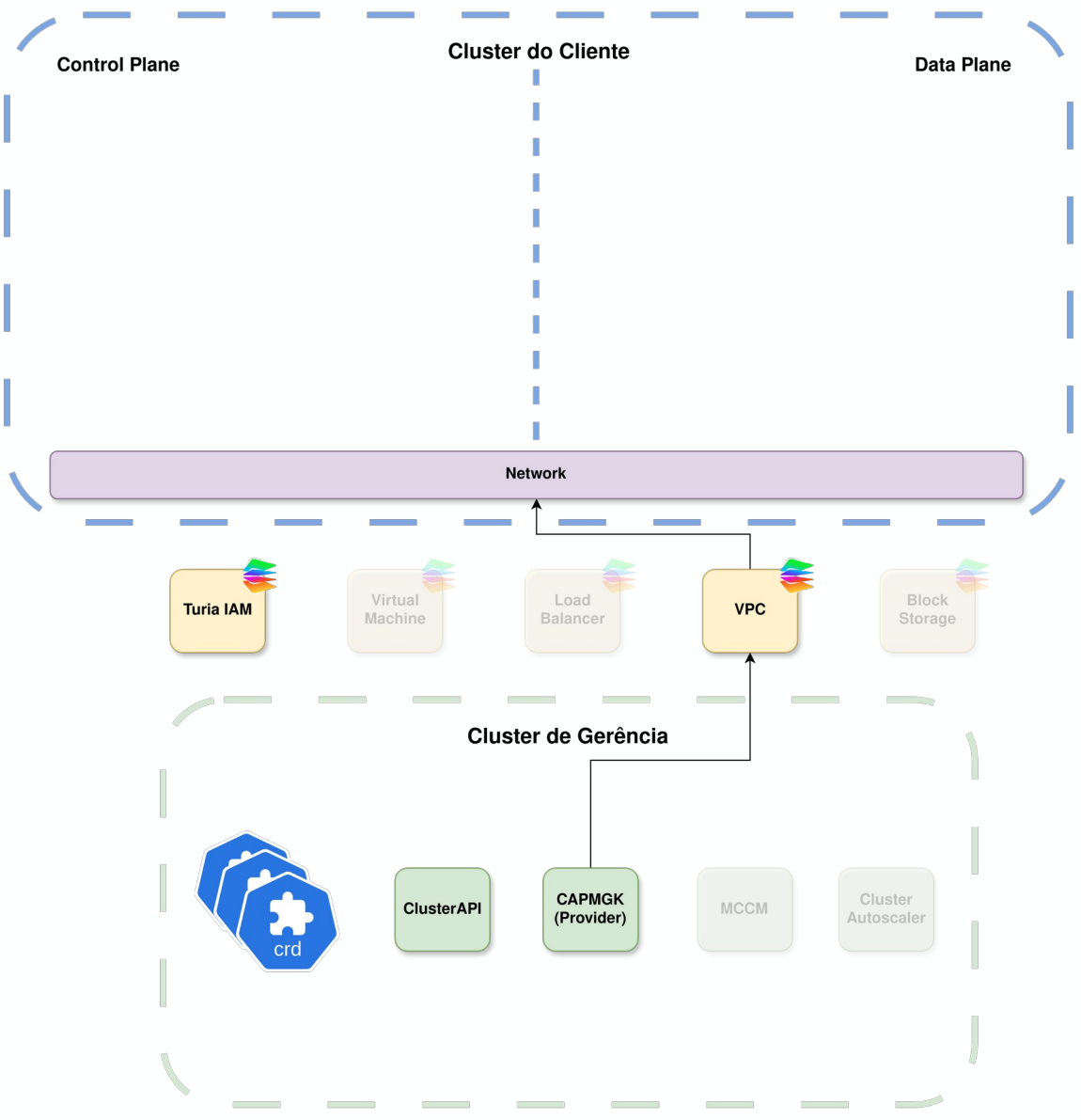
> Cluster API faz suas maracutaias

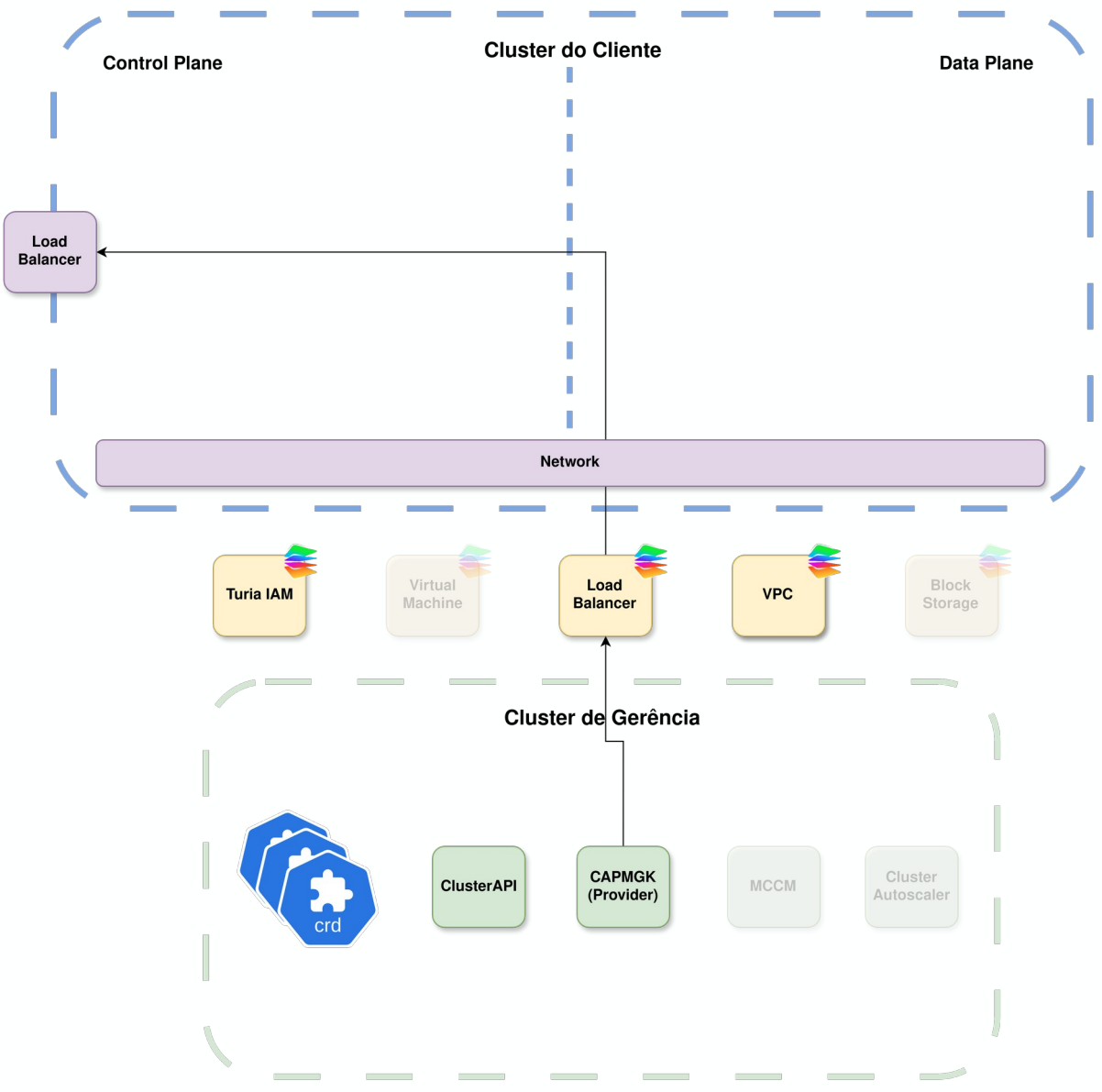


> nosso Provider começa seu trabalho...



> de criar toda a infraestrutura para o Cluster!


Control Plane
Cluster do Cliente
Data Plane
Network
Turia IAM
Virtual Machine
Load Balancer
VPC
Block Storage
Cluster de Gerência
crd
ClusterAPI
CAPMGK (Provider)
MCCM
Cluster Autoscaler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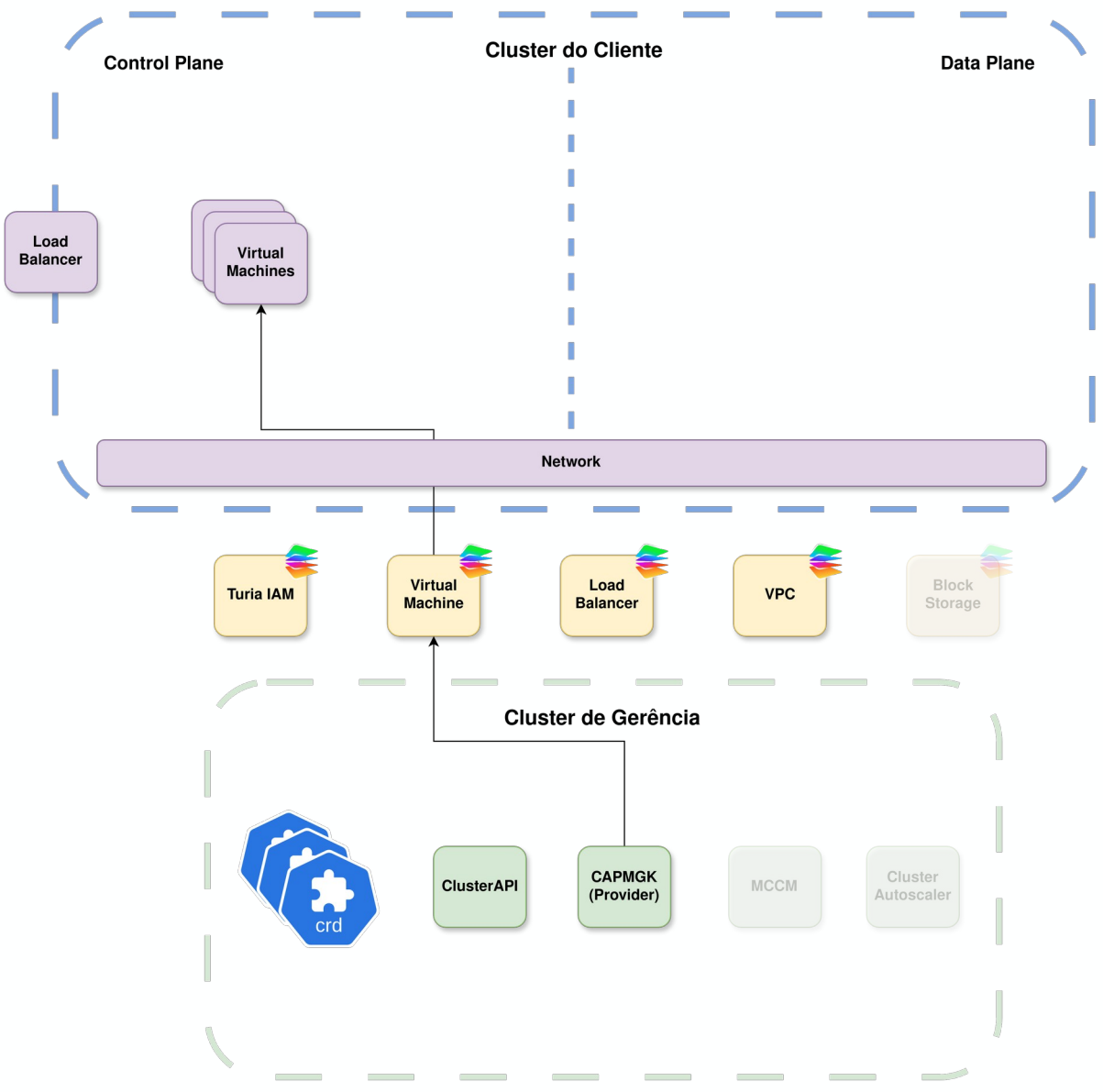
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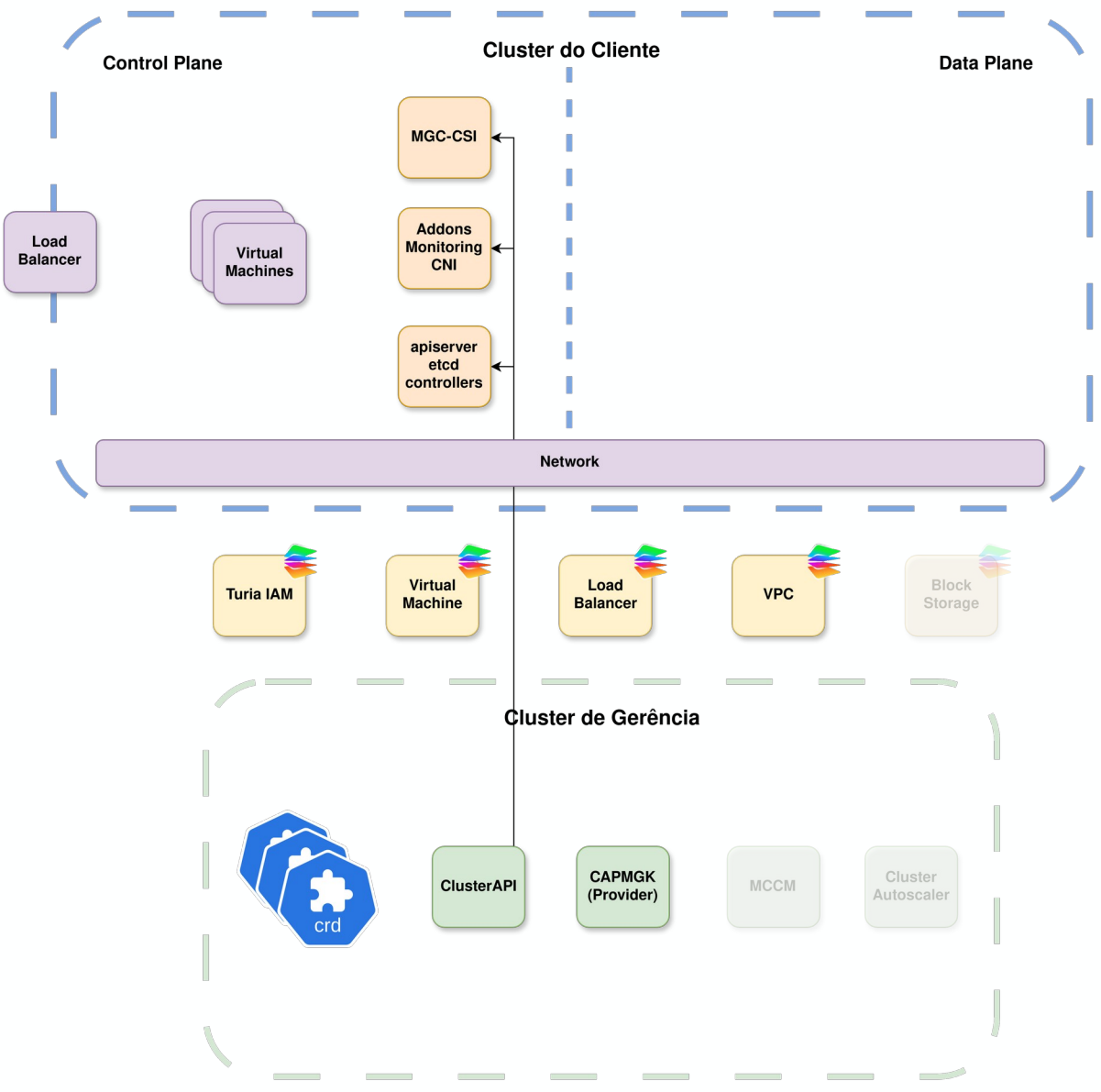
Cluster do Cliente
Control Plane
Data Plane
MGC-CSI
Load Balancer
Virtual Machines
Addons Monitoring CNI
apiserver etcd controllers
Network
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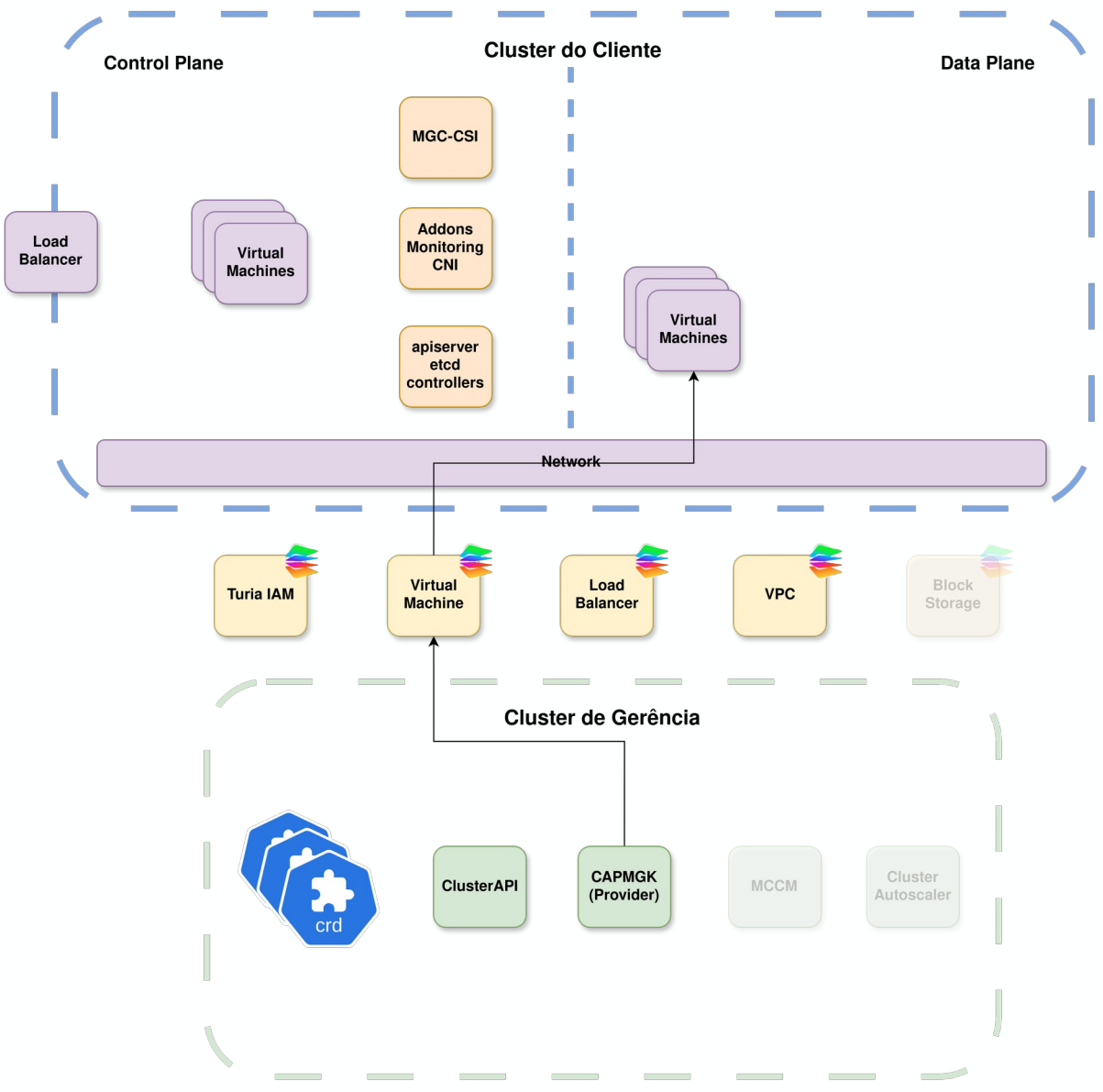
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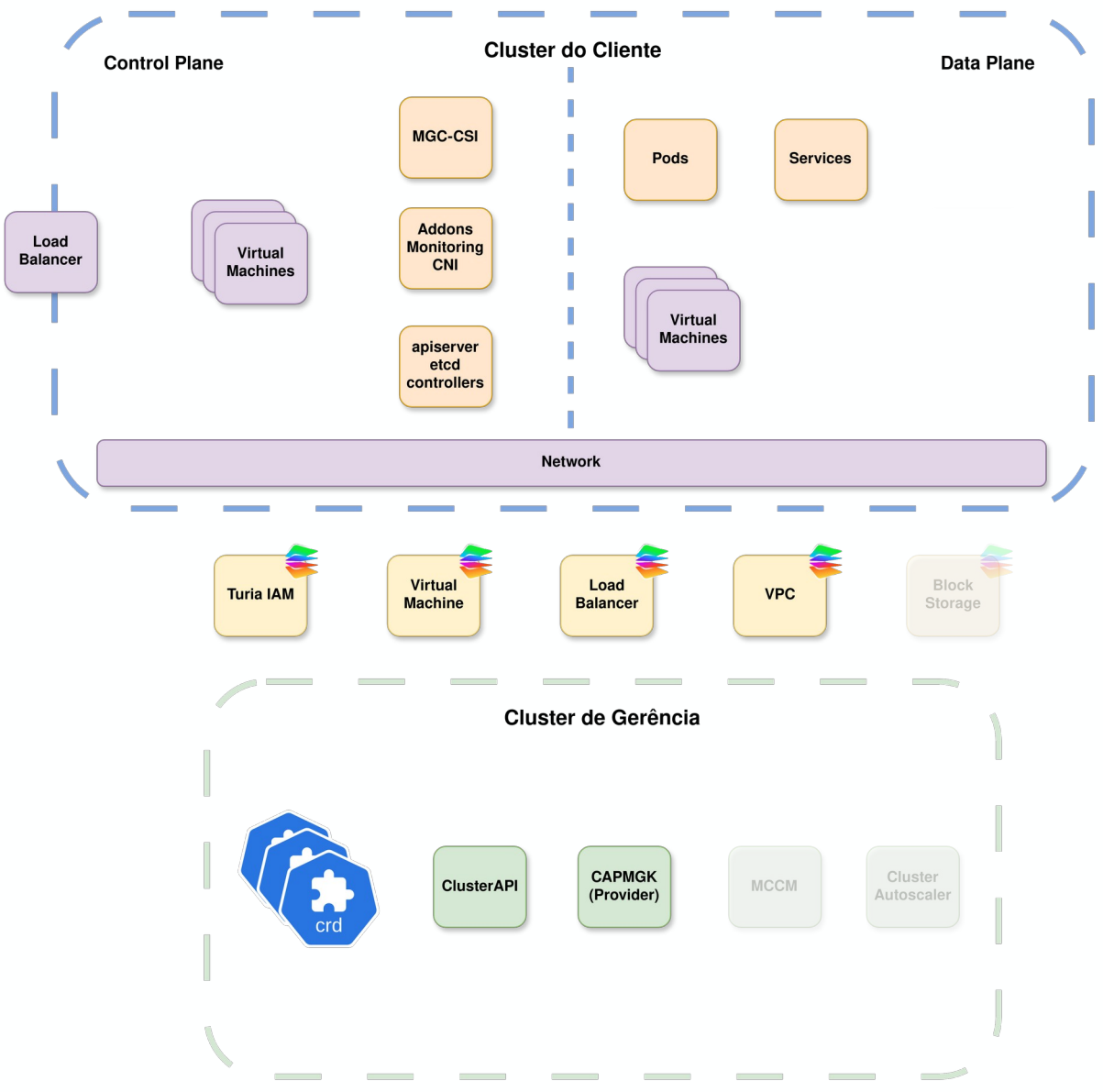
Cluster do Cliente
Control Plane
Data Plane
MGC-CSI
Pods
Services
Load Balancer
Virtual Machines
Addons Monitoring CNI
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Control Plane
Cluster do Cliente
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AEEEEEEEE
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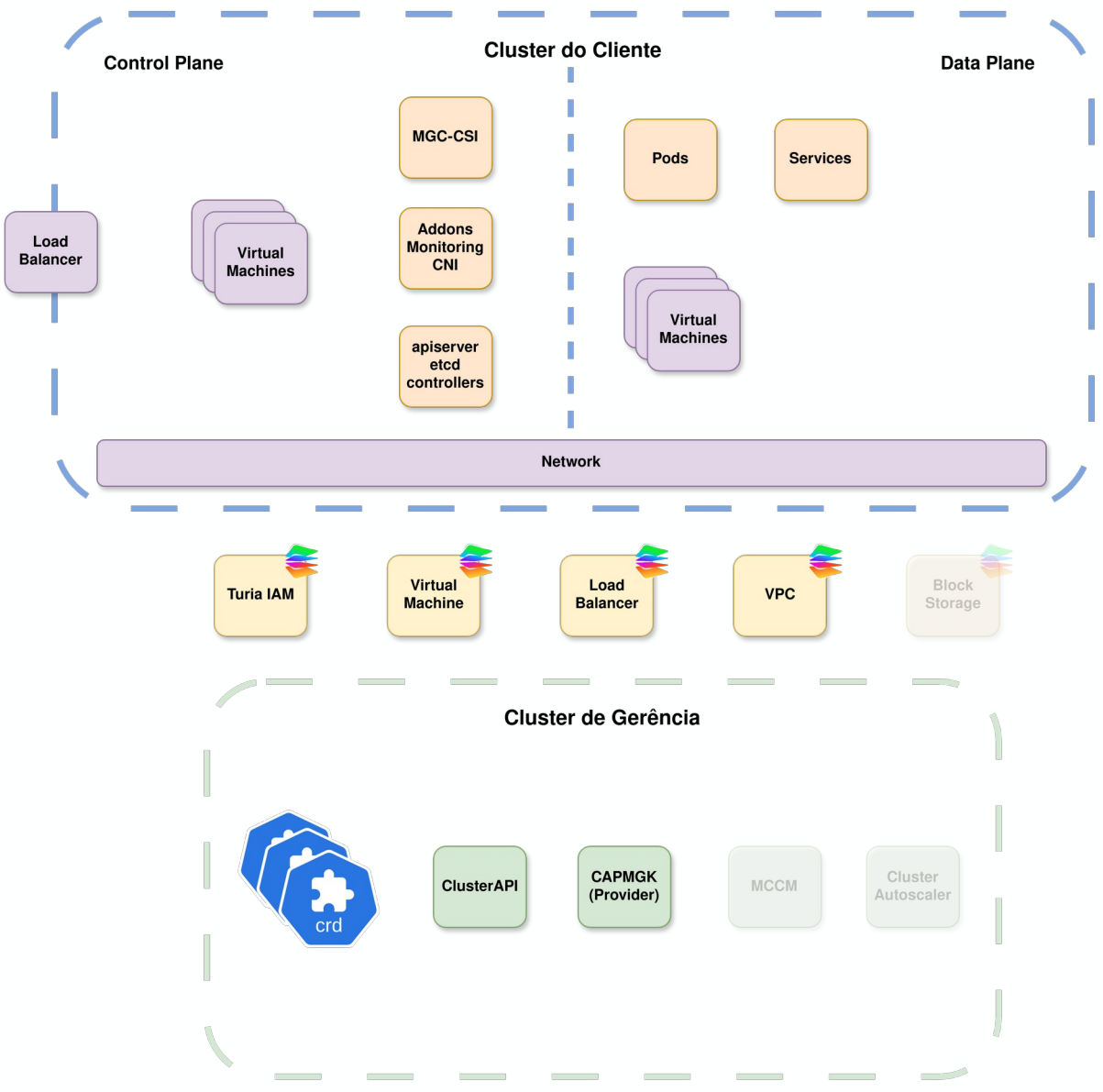
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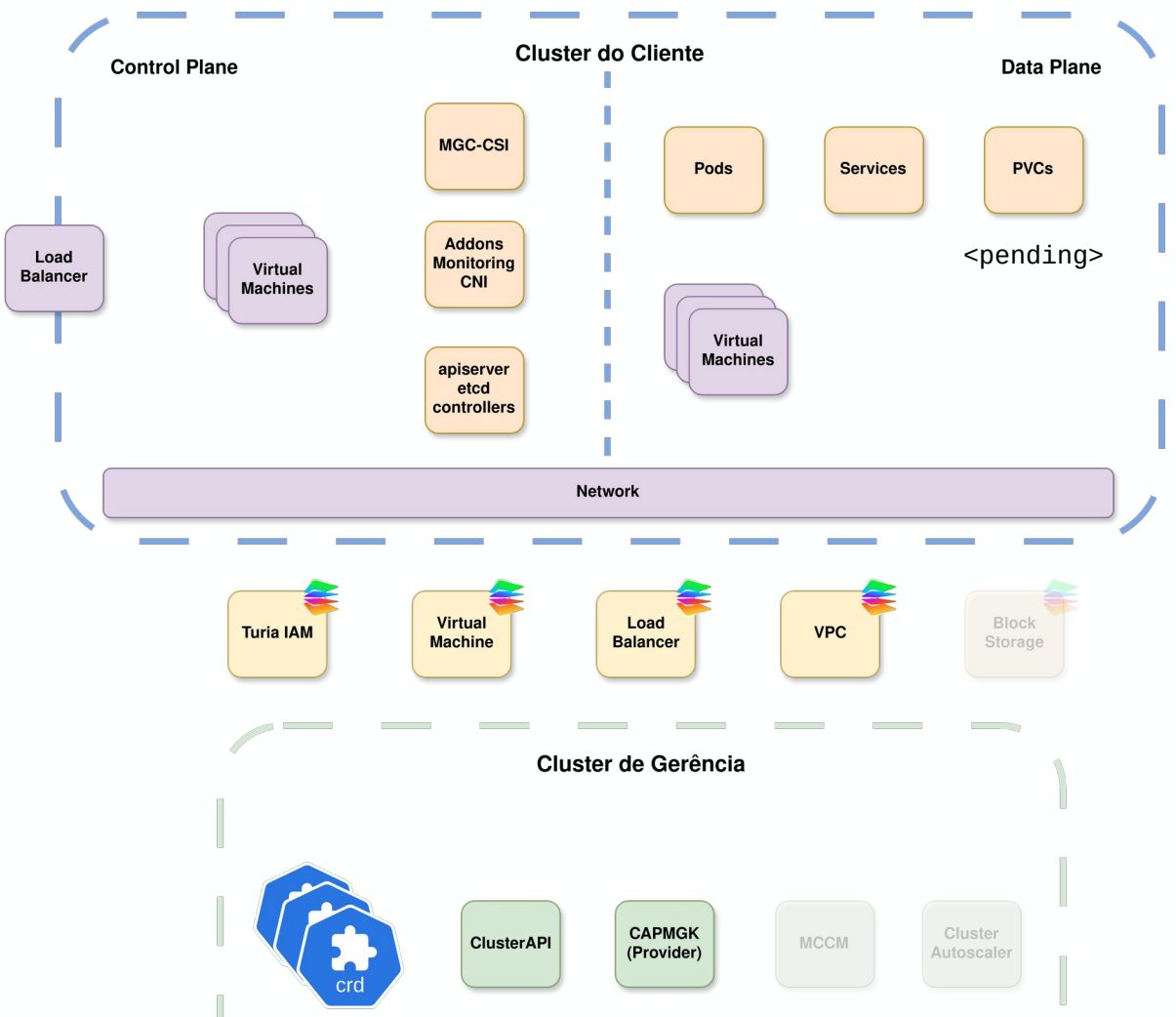
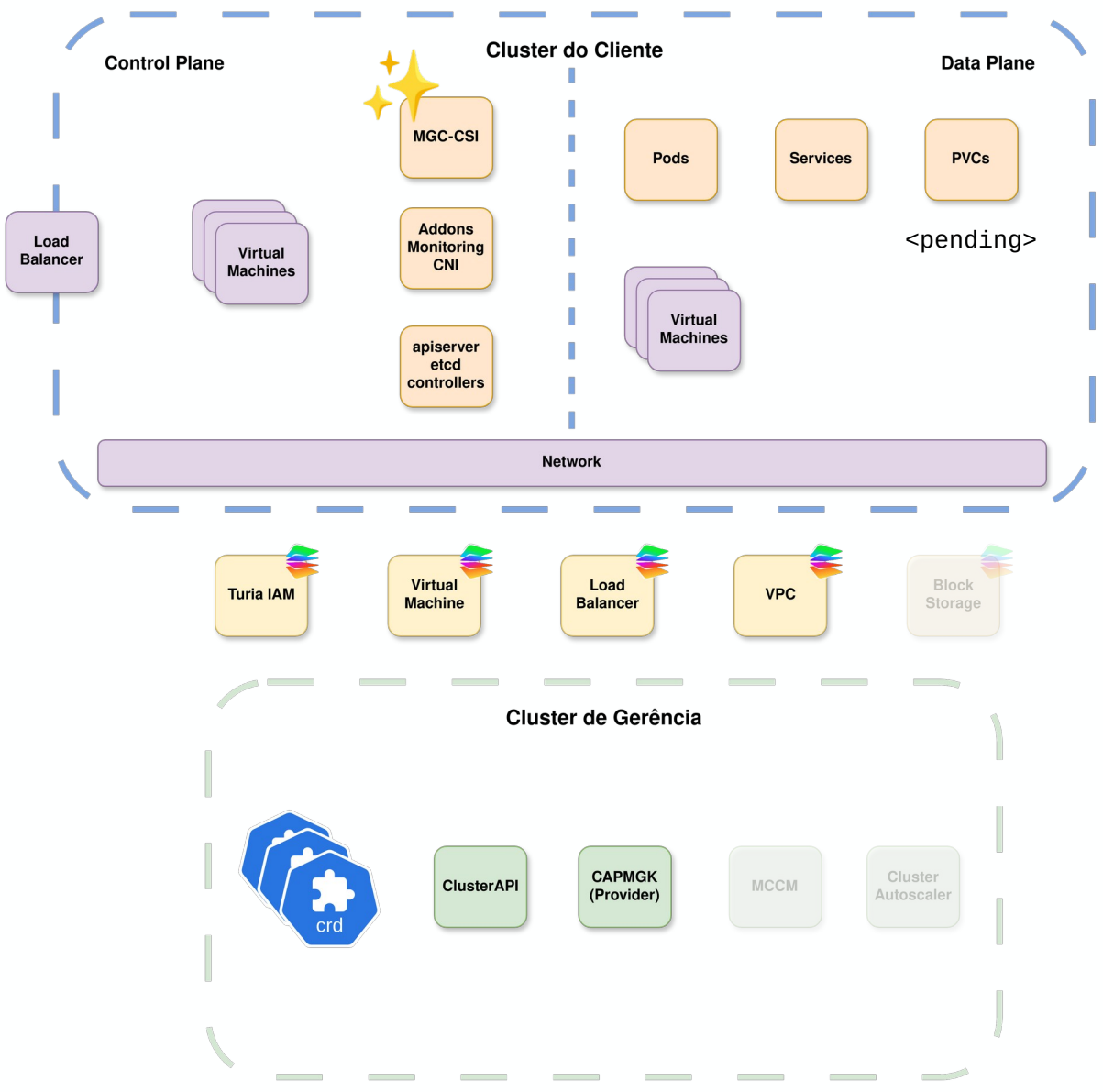


> e se você precisar de um PVC?


Cluster do Cliente
Control Plane
Data Plane
MGC-CSI
Pods
Services
PVCs
Load Balancer
Virtual Machines
Addons Monitoring CNI
<pending>
Virtual Machines
apiserver etcd controllers
Network
Turia IAM
Virtual Machine
Load Balancer
VPC
Block Storage
Cluster de Gerência
crd
ClusterAPI
CAPMGK (Provider)
MCCM
Cluster Autoscaler

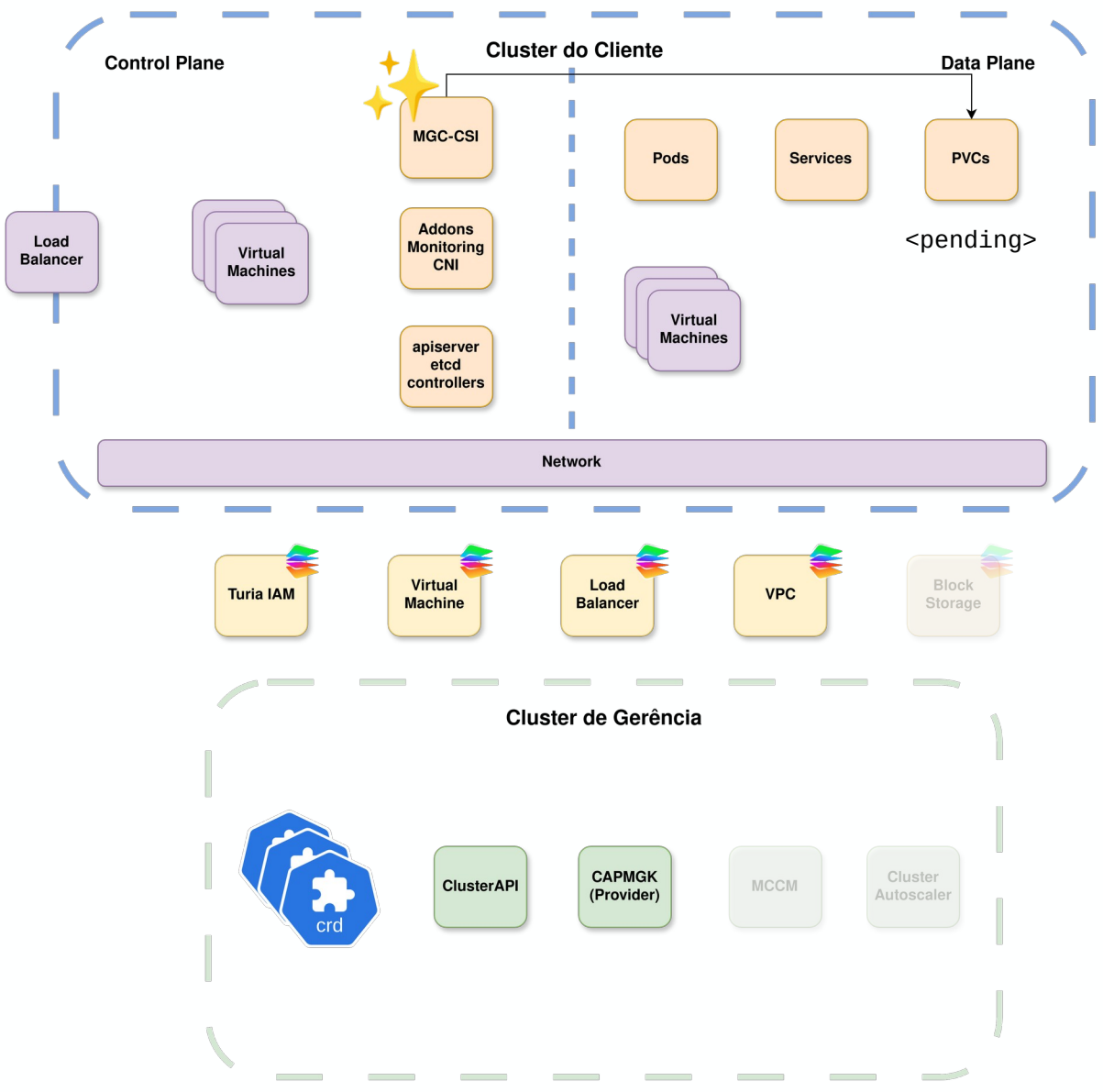
Magalu CSI (Container Storage Interface)

não é série

Criar Volumes

Anexar/Desanexar Volumes

Montar/Desmontar Volumes


Control Plane
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Services
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Addons Monitoring CNI
<pending>
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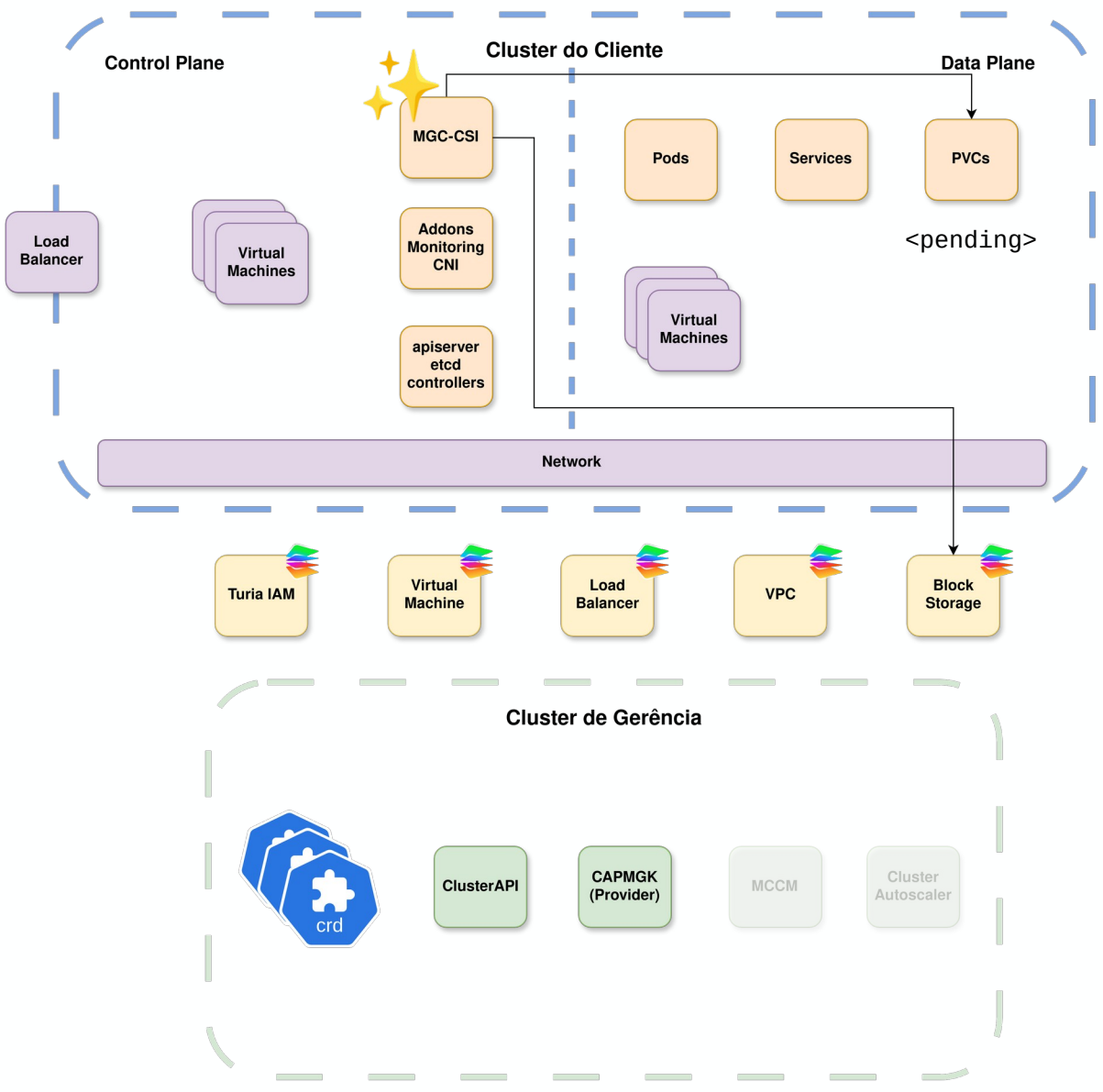
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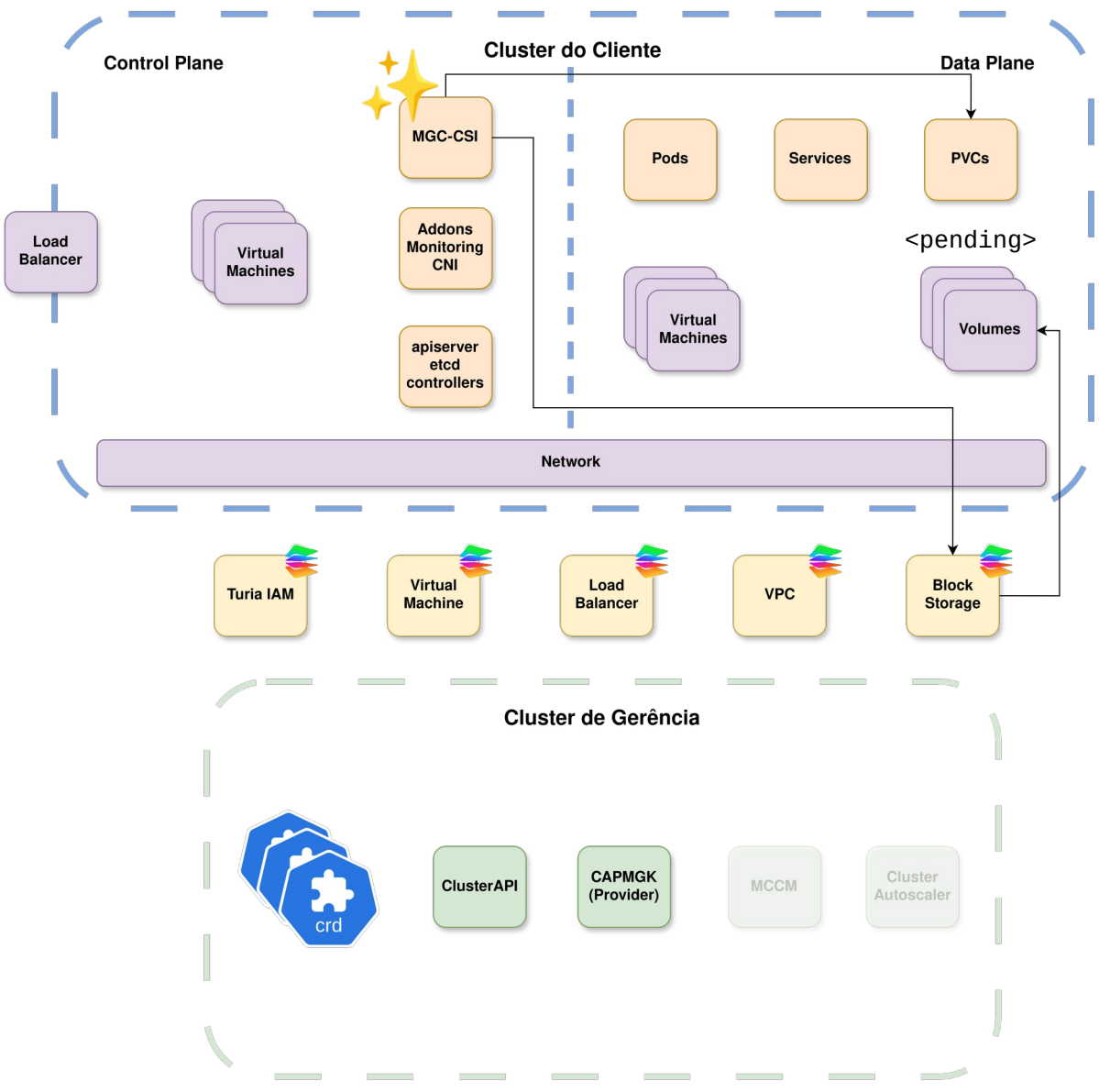
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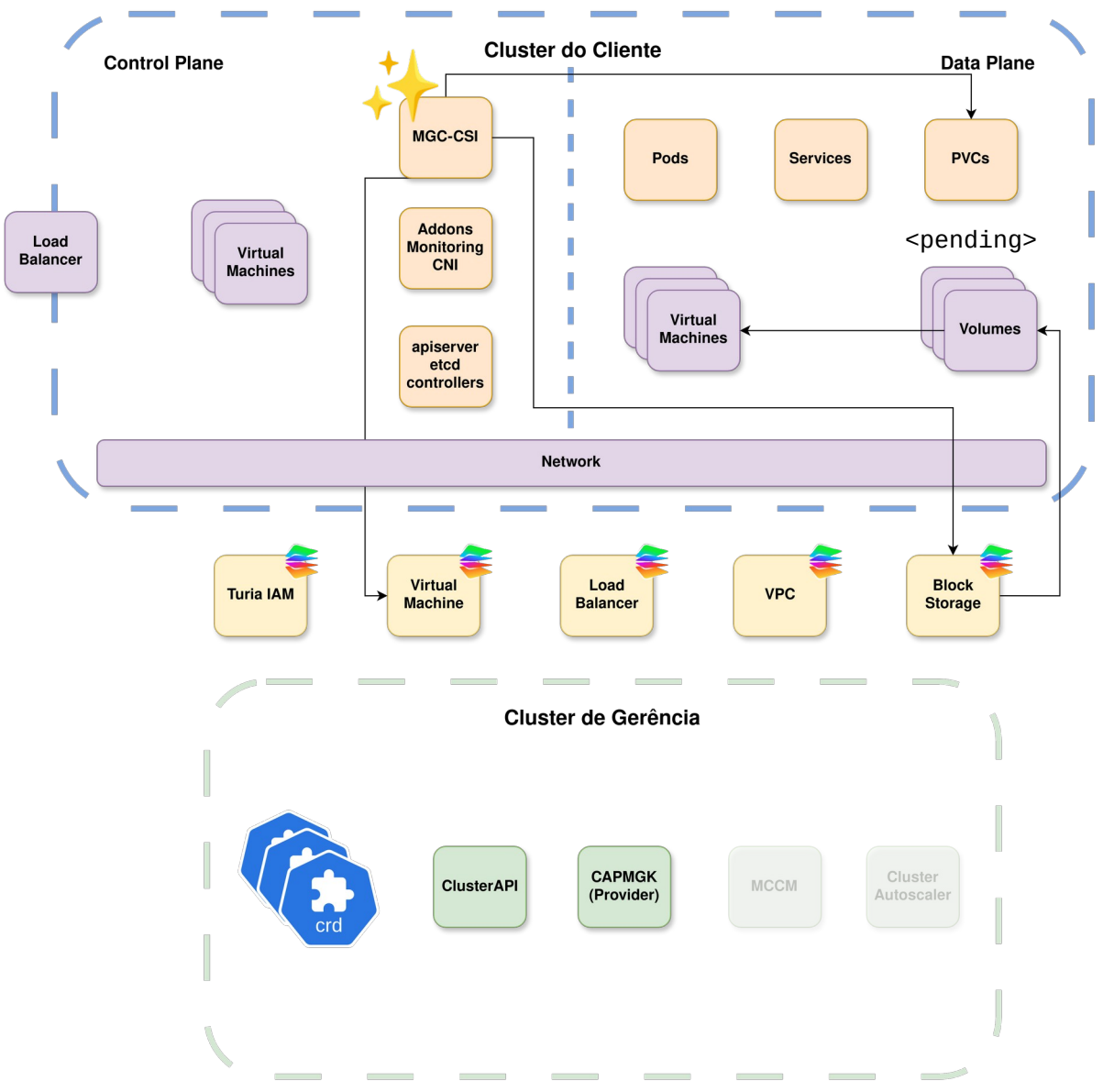
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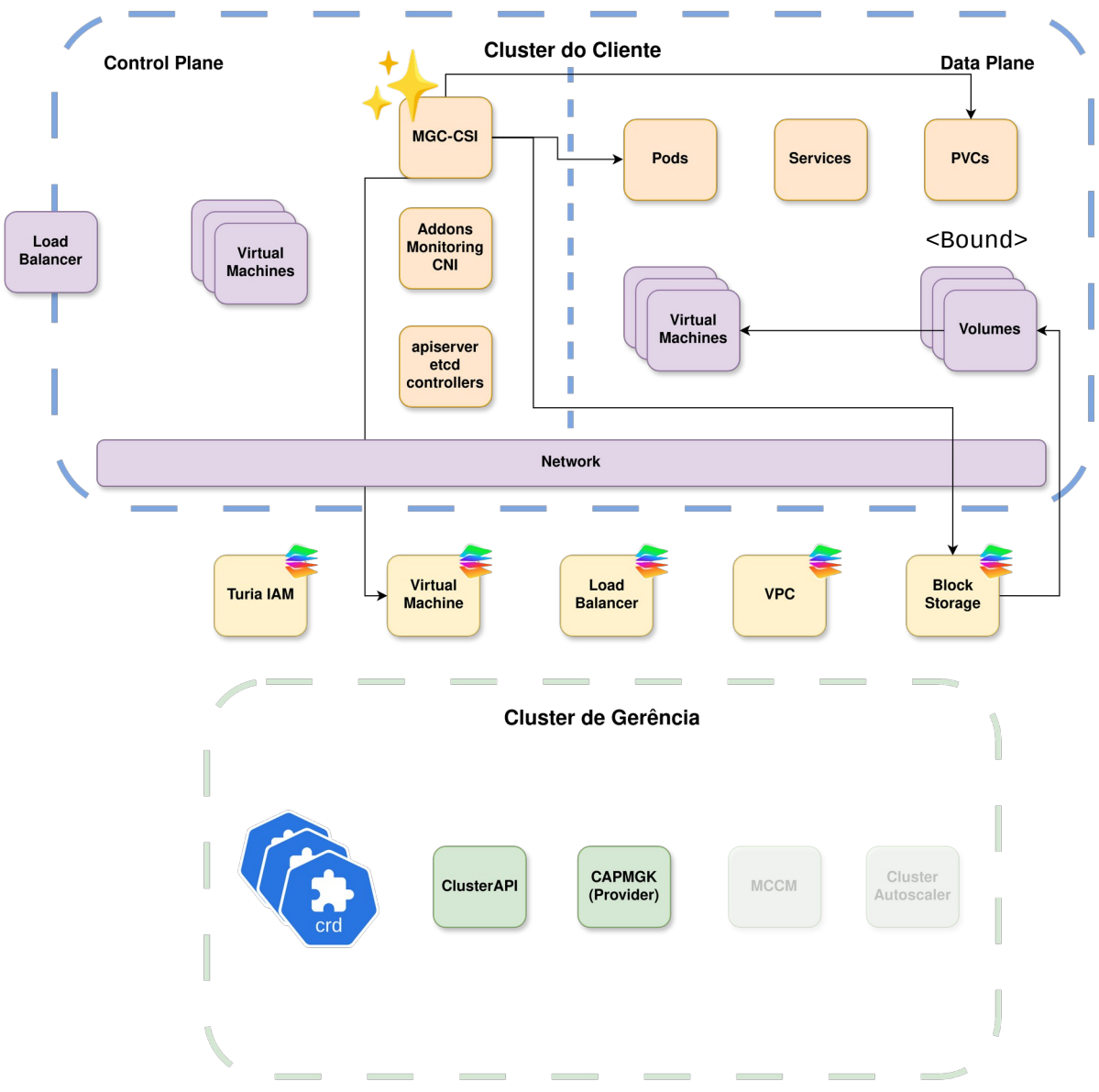
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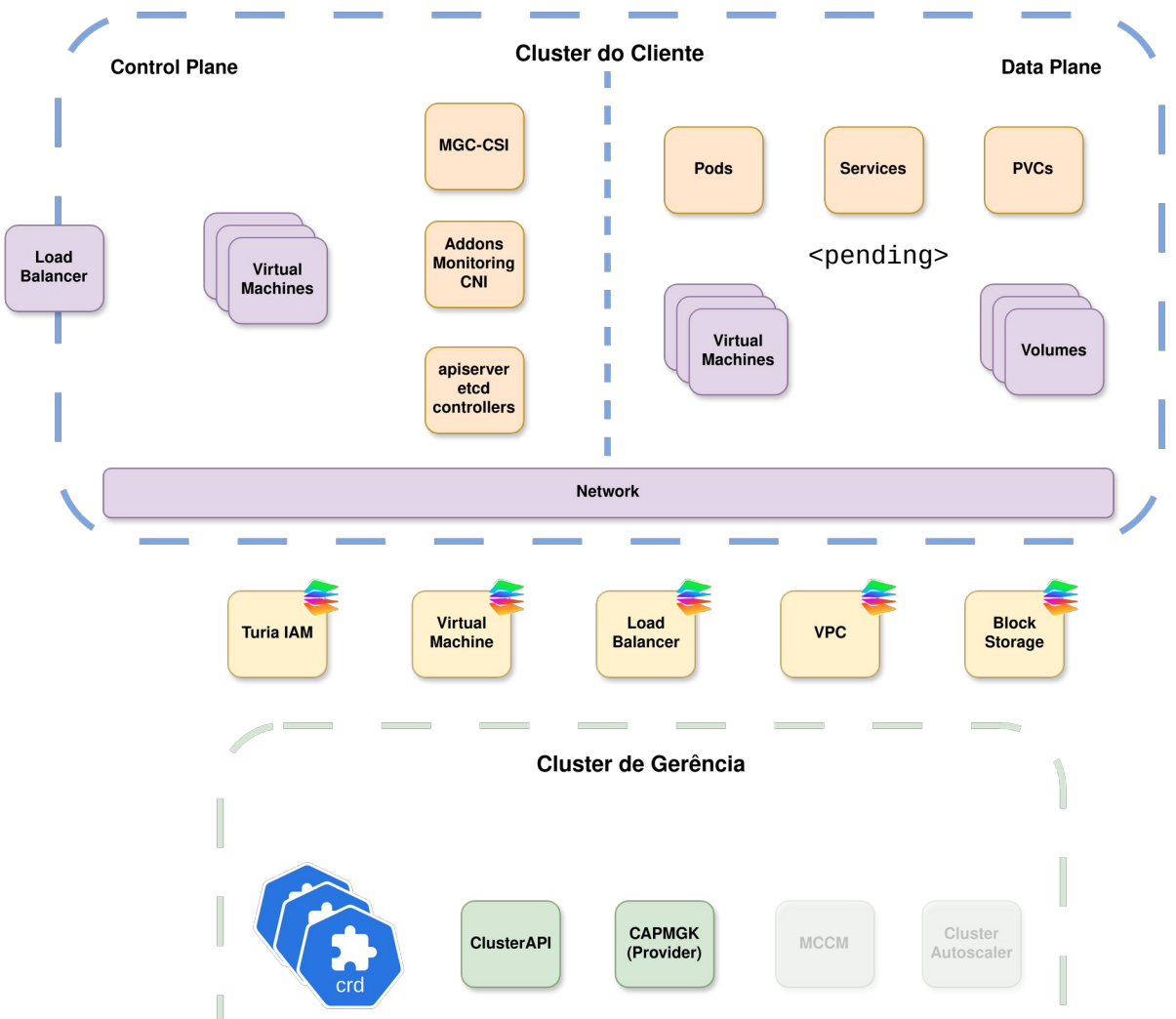
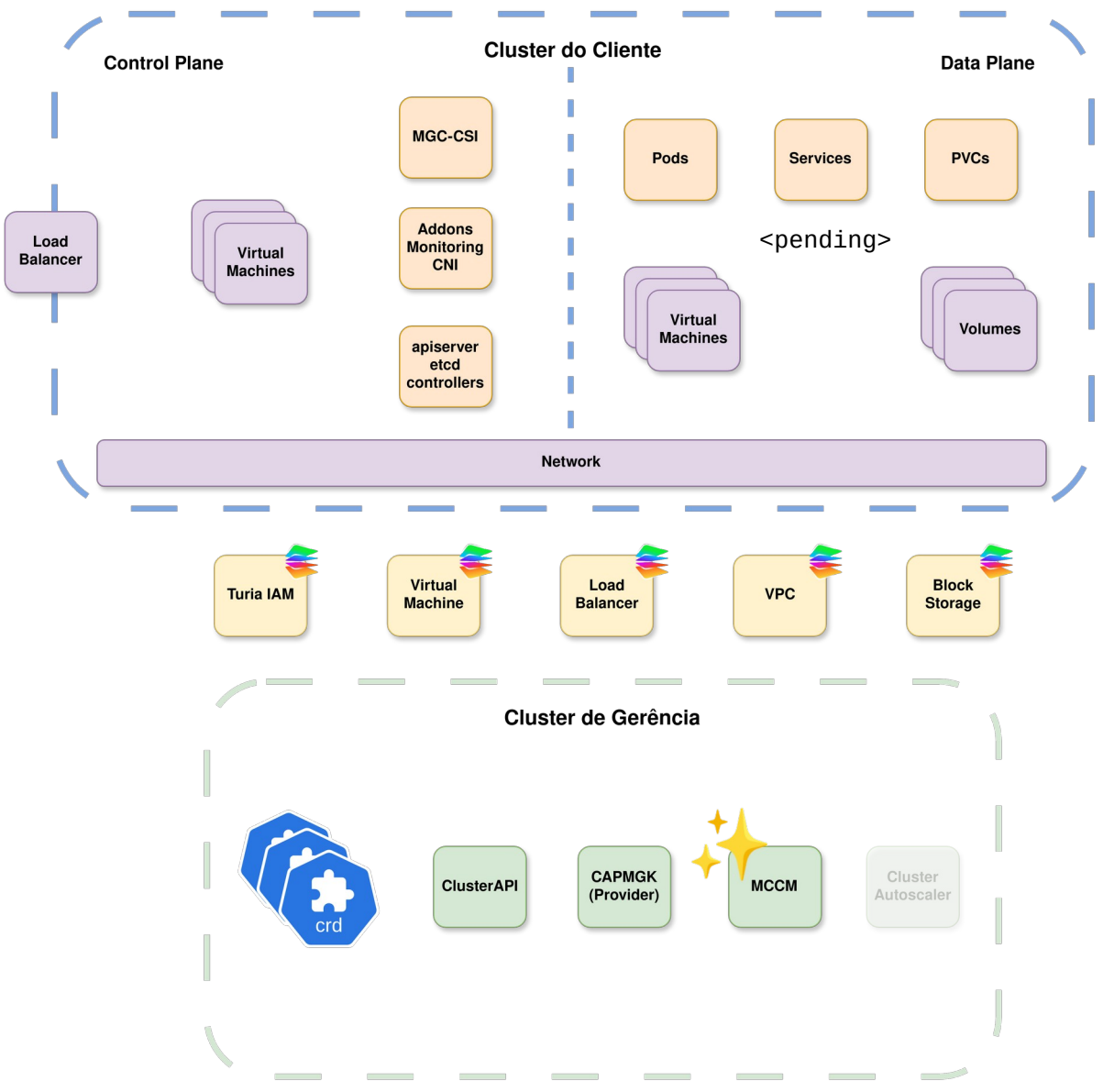


> e se você criar um Service LoadBalancer?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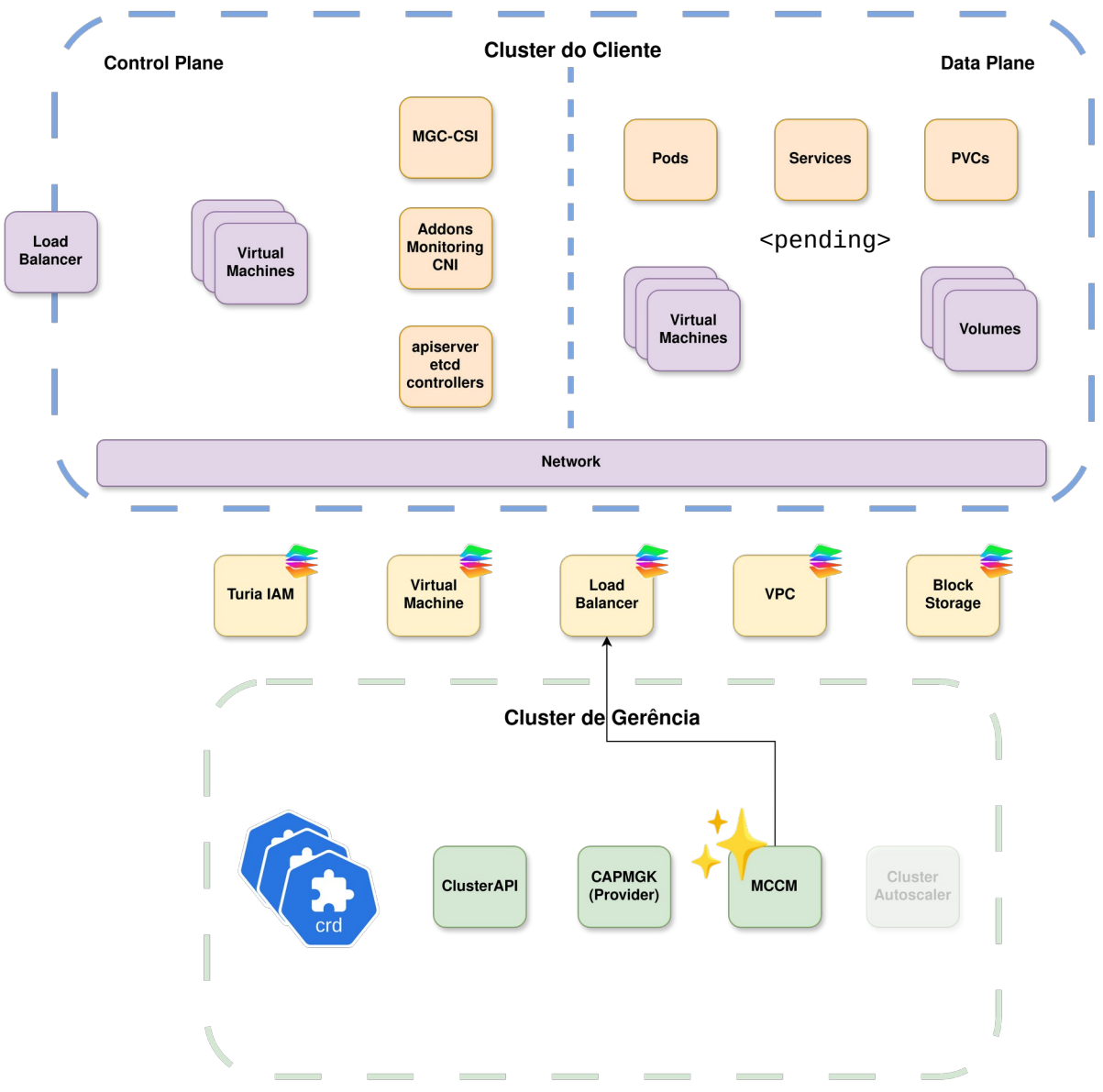
Magalu CCM (Cloud Controller Manager)

deixa o Kubernetes e a MGC mais juntinhos

Vincula Nodes (Kubernetes) à VMs (MGC)

Mestre dos Load Balancers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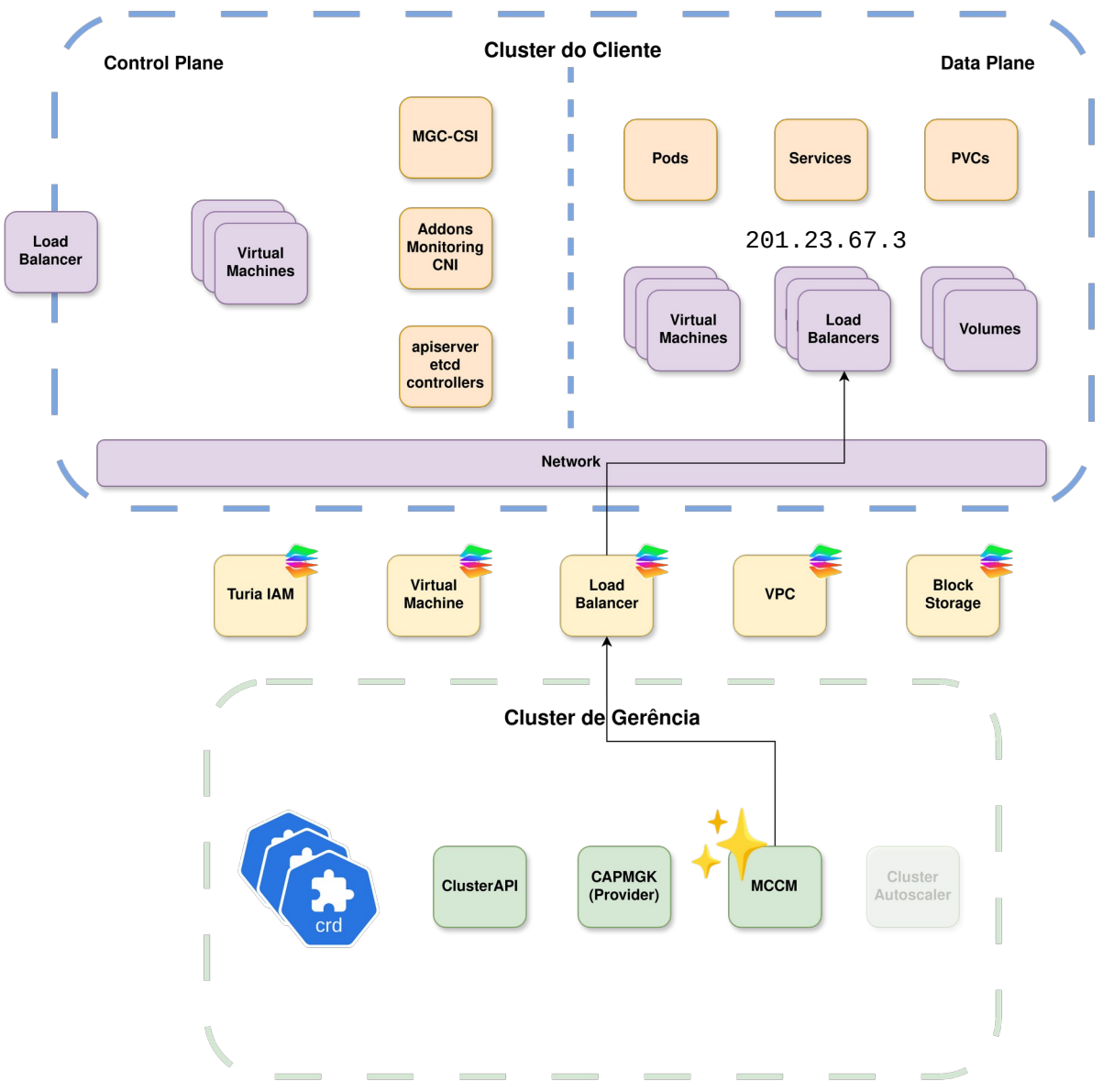
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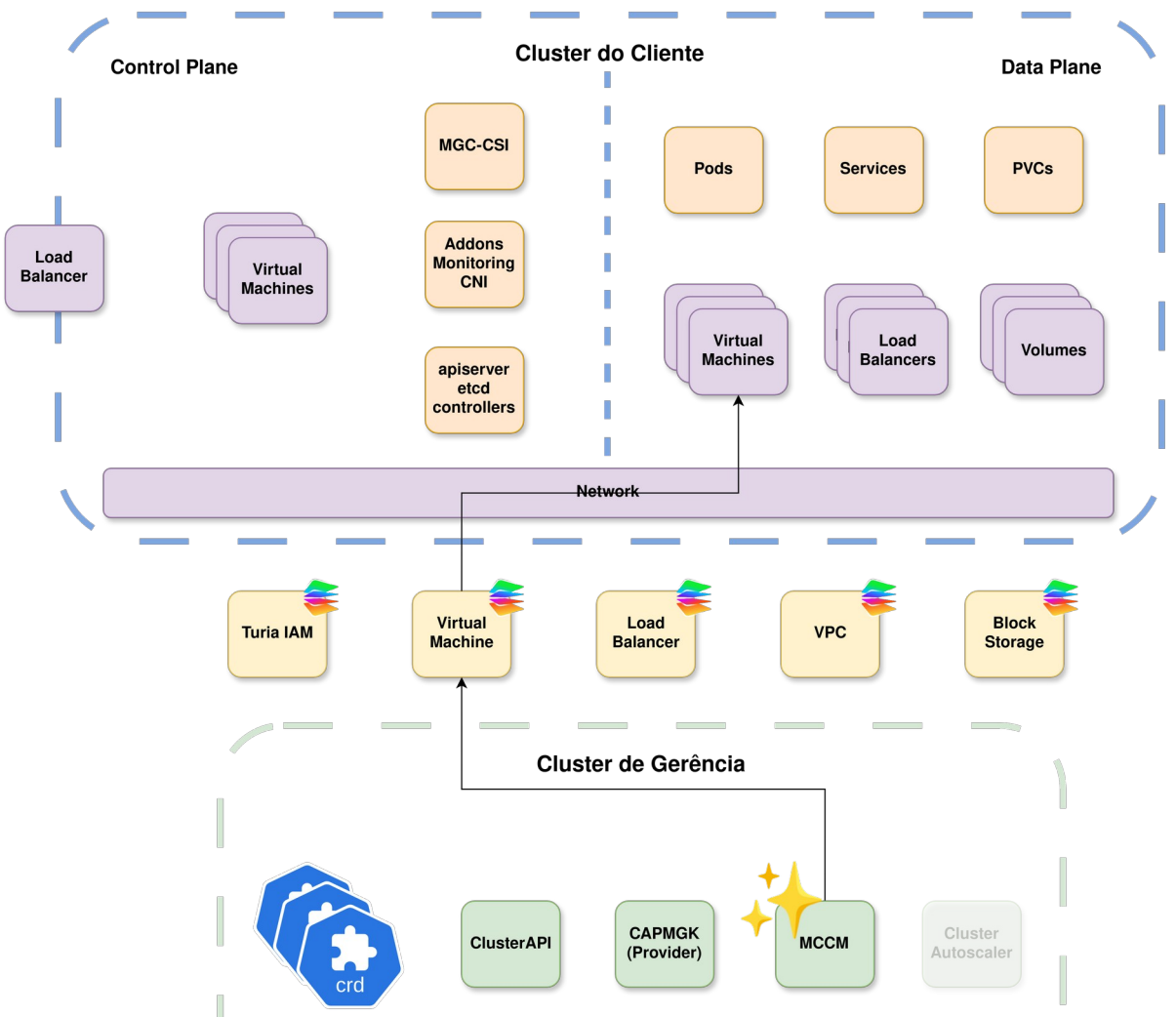
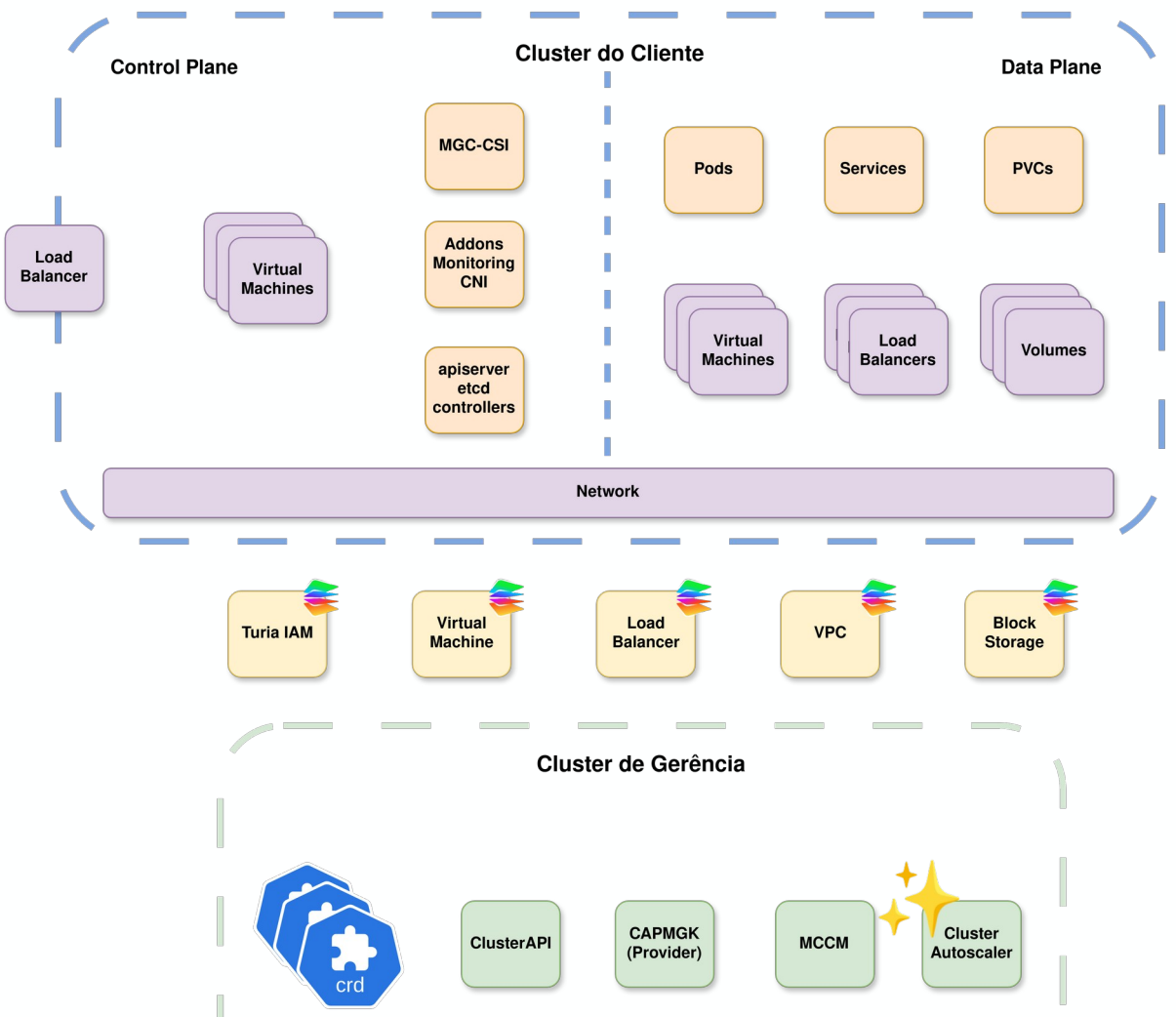


> MCCM também garante a saúde dos Nodes



> e se você precisar de Nodes sob demanda?

Cluster Autoscaler

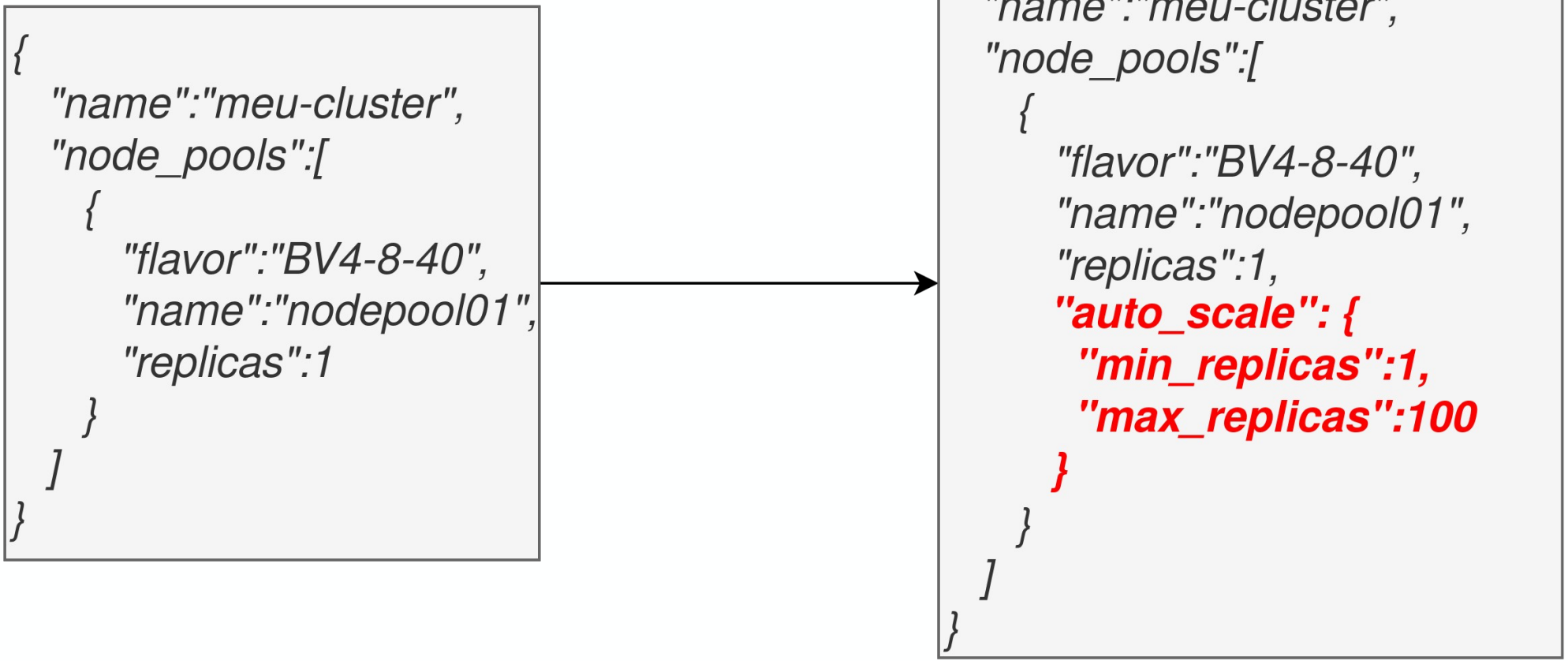
o de cima sobe e o debaixo desce

Escala pra cima

Escala pra baixo

Escala pra zero

Escala para 2000 Nodes


{
"name":"meu-cluster",
"node_pools":[
{
"flavor":"BV4-8-40",
"name":"nodepool01",
"replicas":1
}
]
}
{
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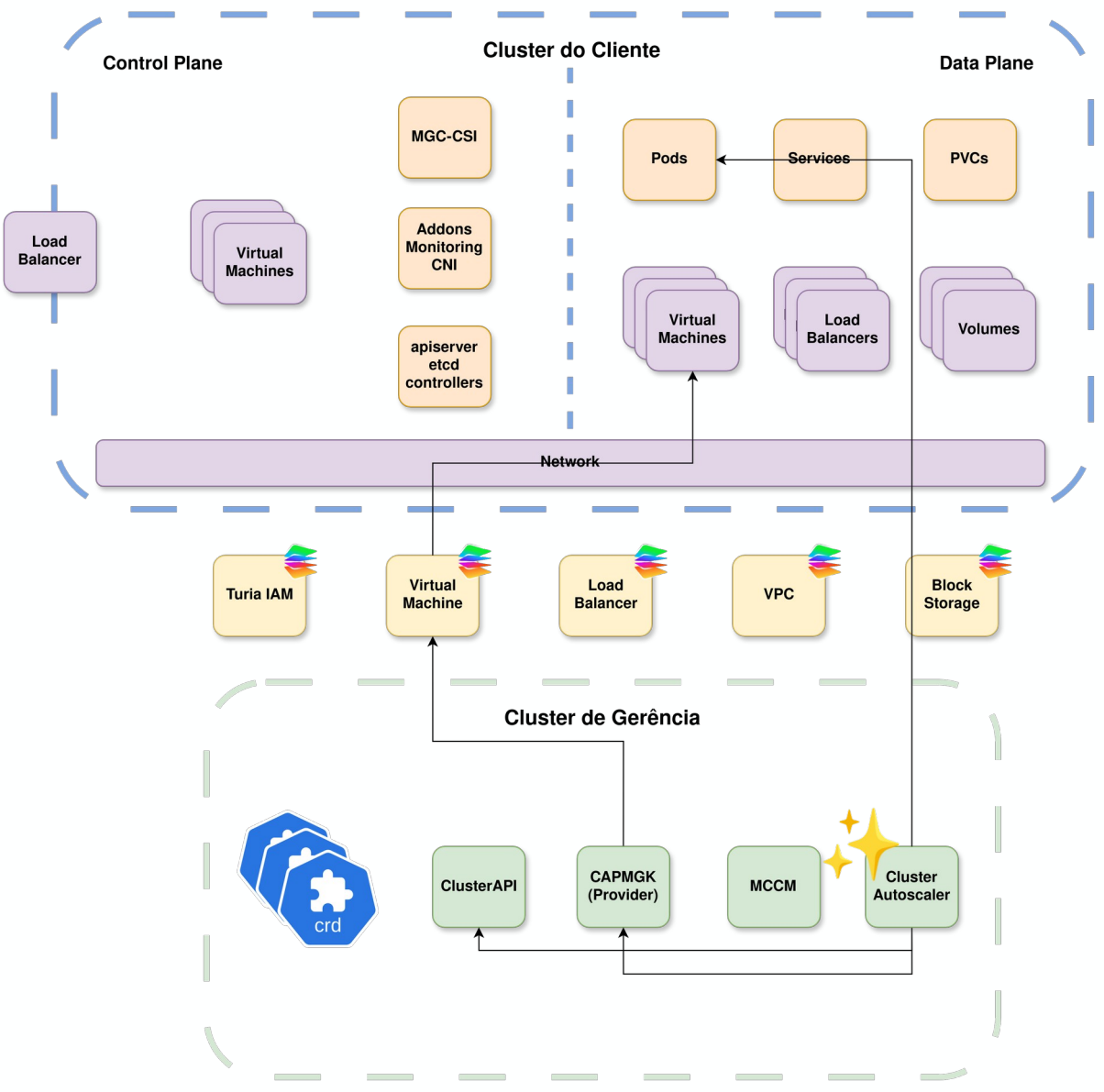
"node_pools":[
{
"flavor":"BV4-8-40",
"name":"nodepool01",
"replicas":1,
"auto_scale": {
"min_replicas":1,
"max_replicas":100
}
}
]
}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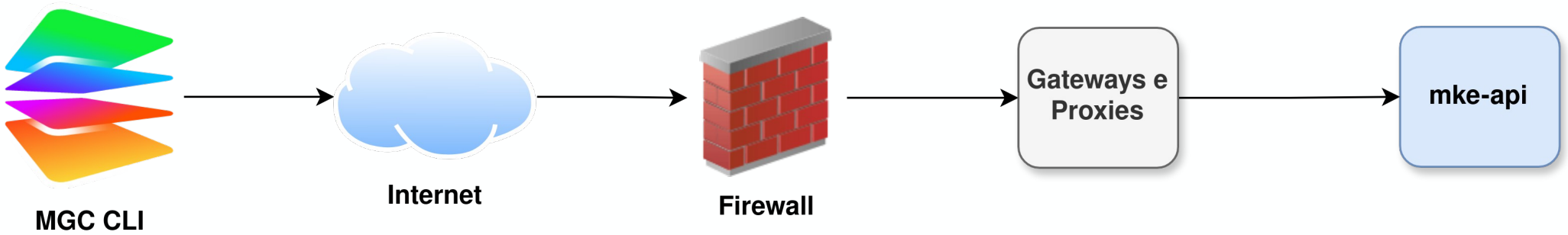
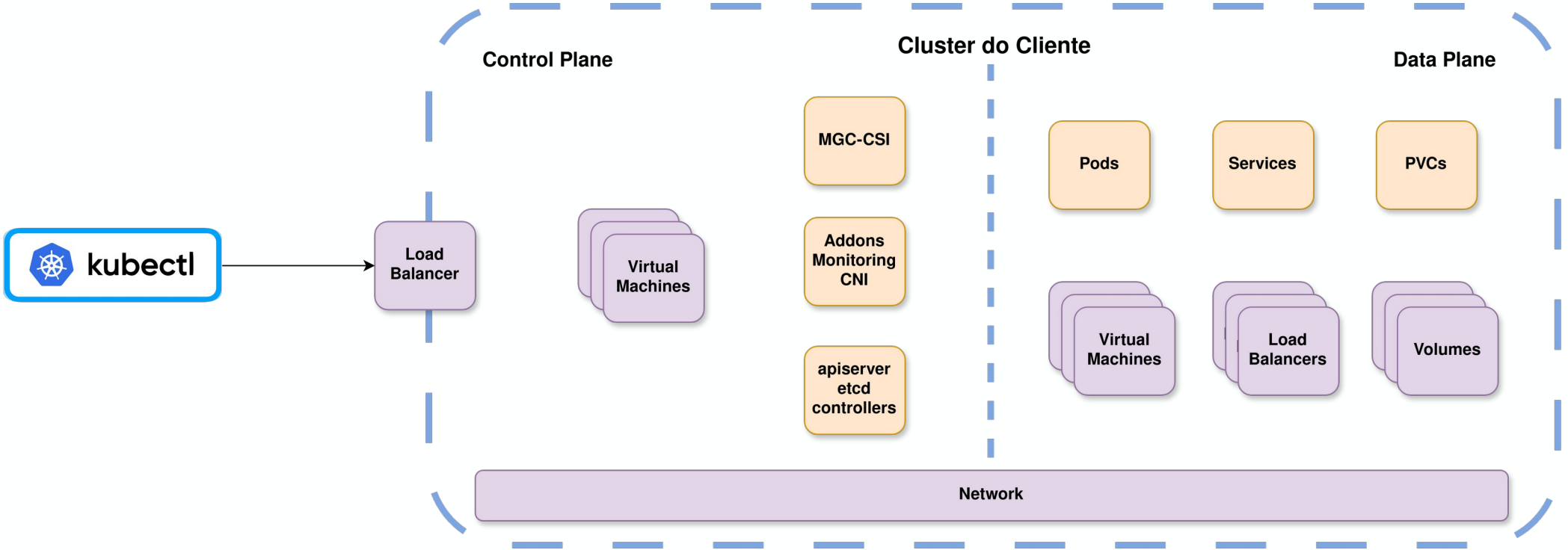
```
mgc kubernetes cluster kubeconfig --raw <cluster-id>
```



> finalmente, a última travessia



> *kubectl get pod*

kubectl

Data Plane

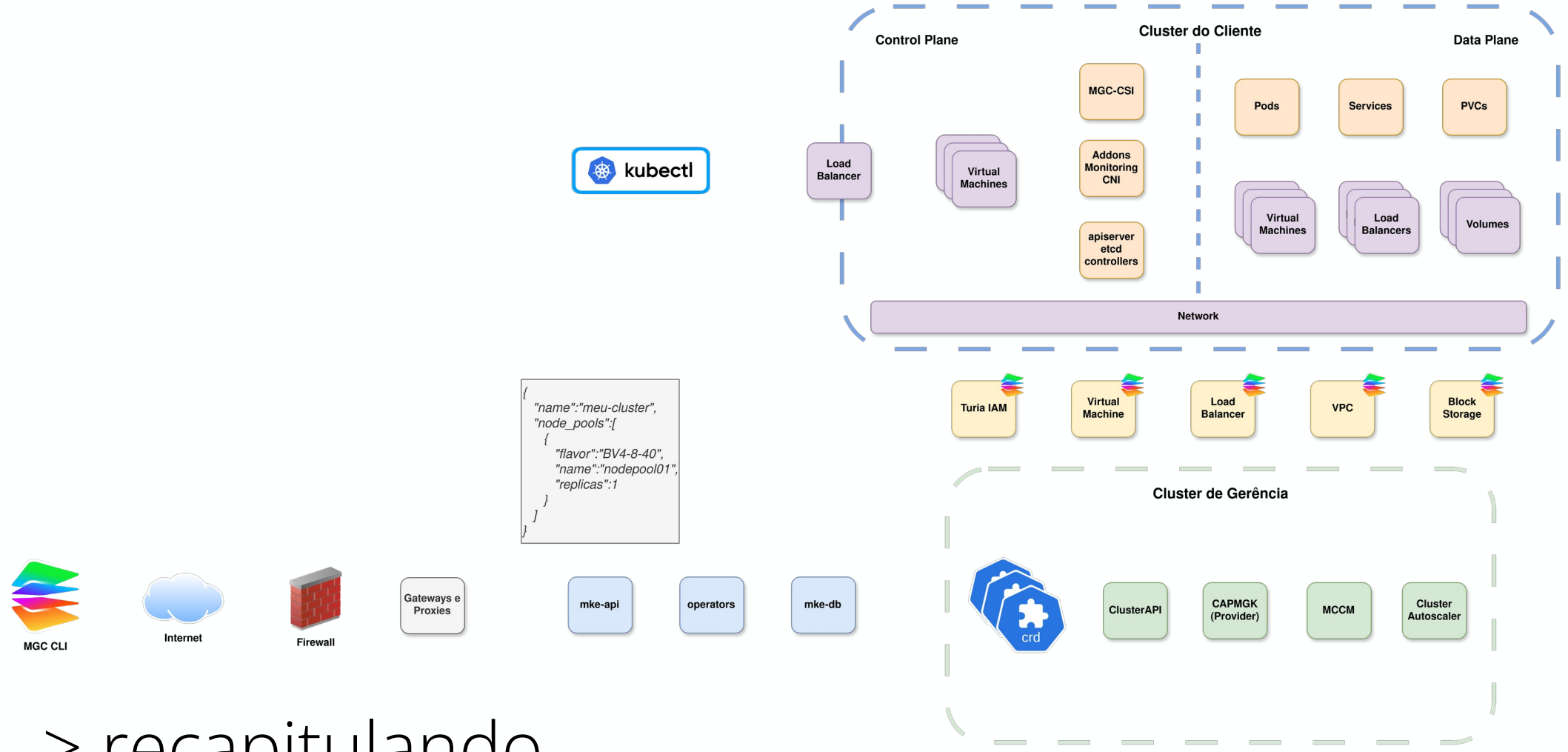
Services

PVCs

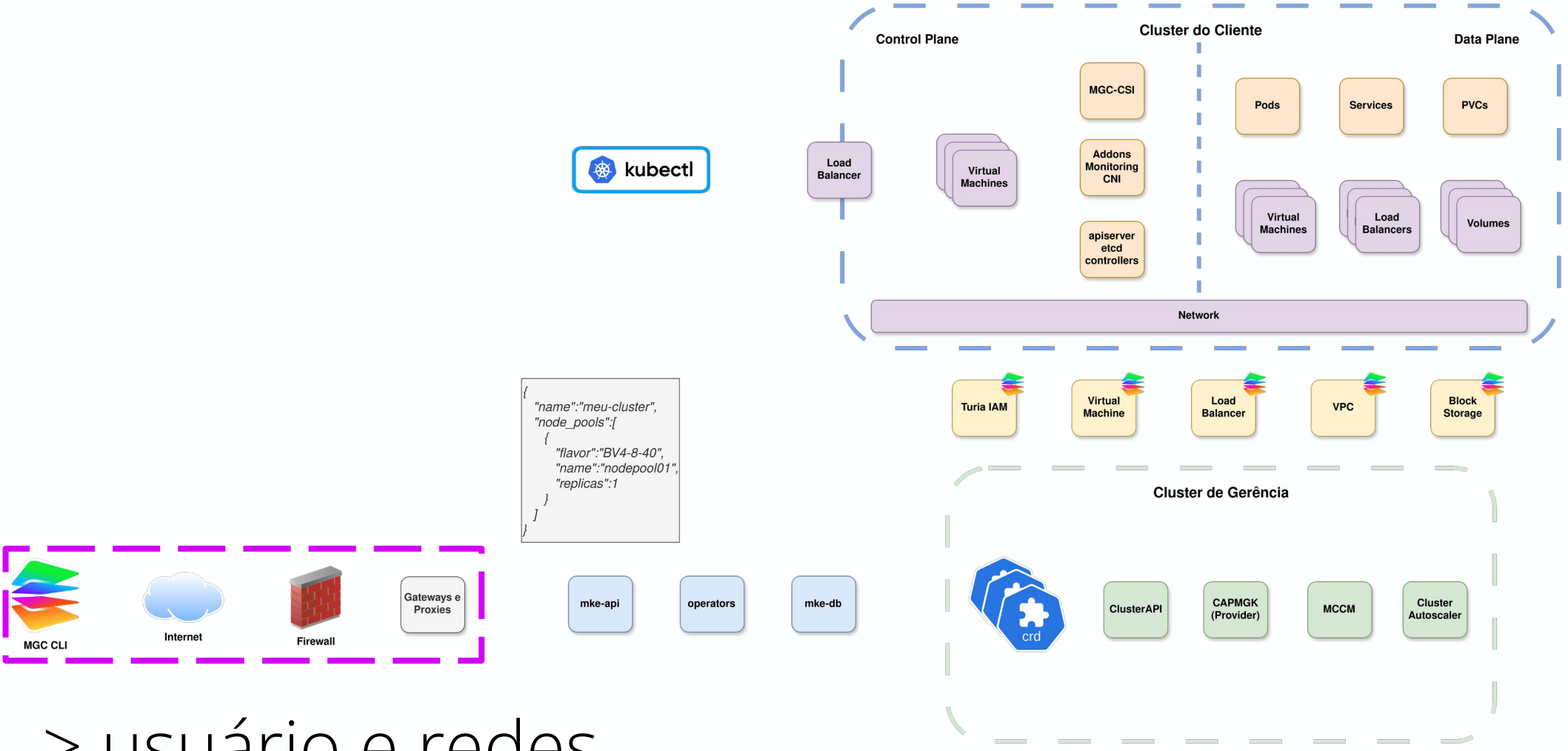
Load Balancers

Volumes

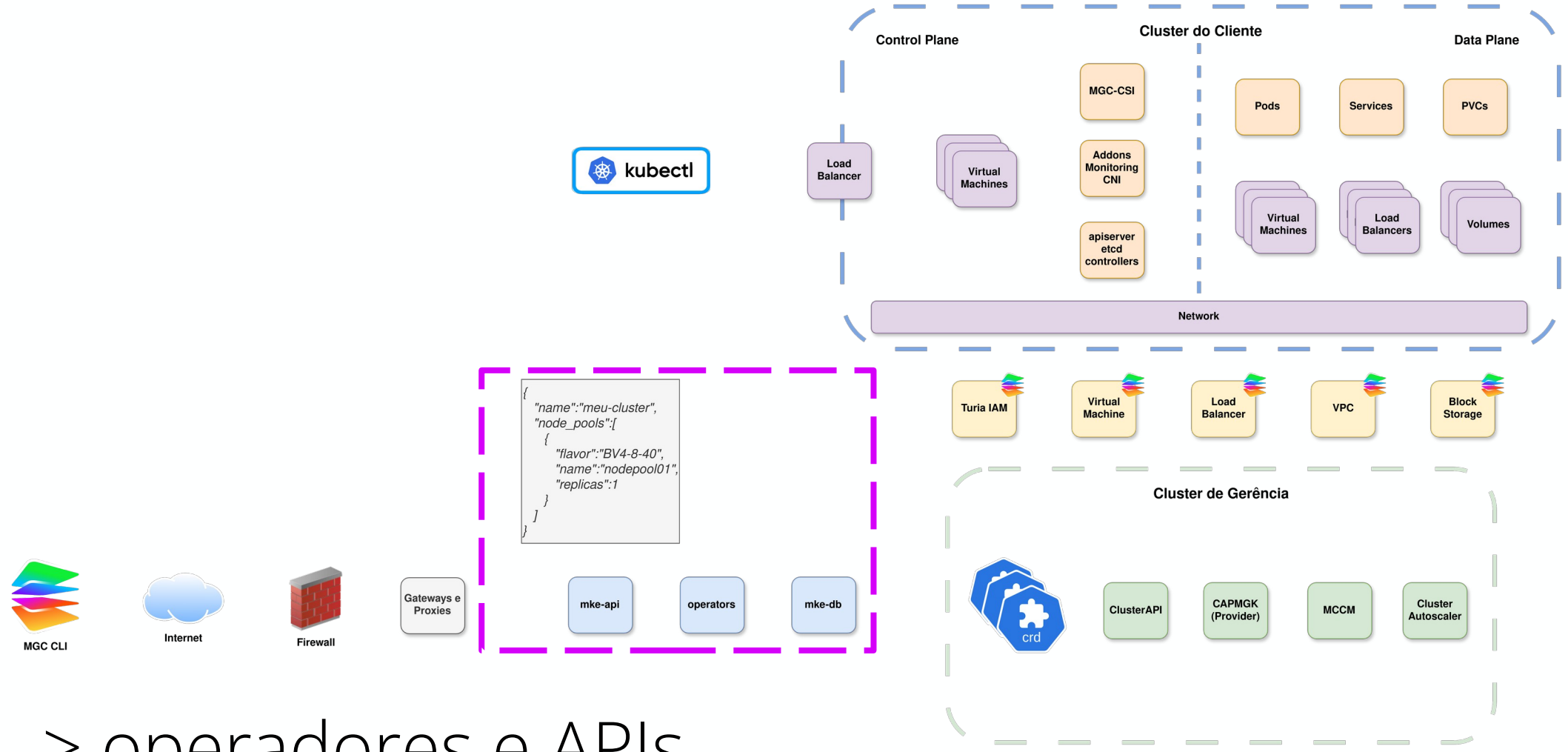
> *kubectl get pod*



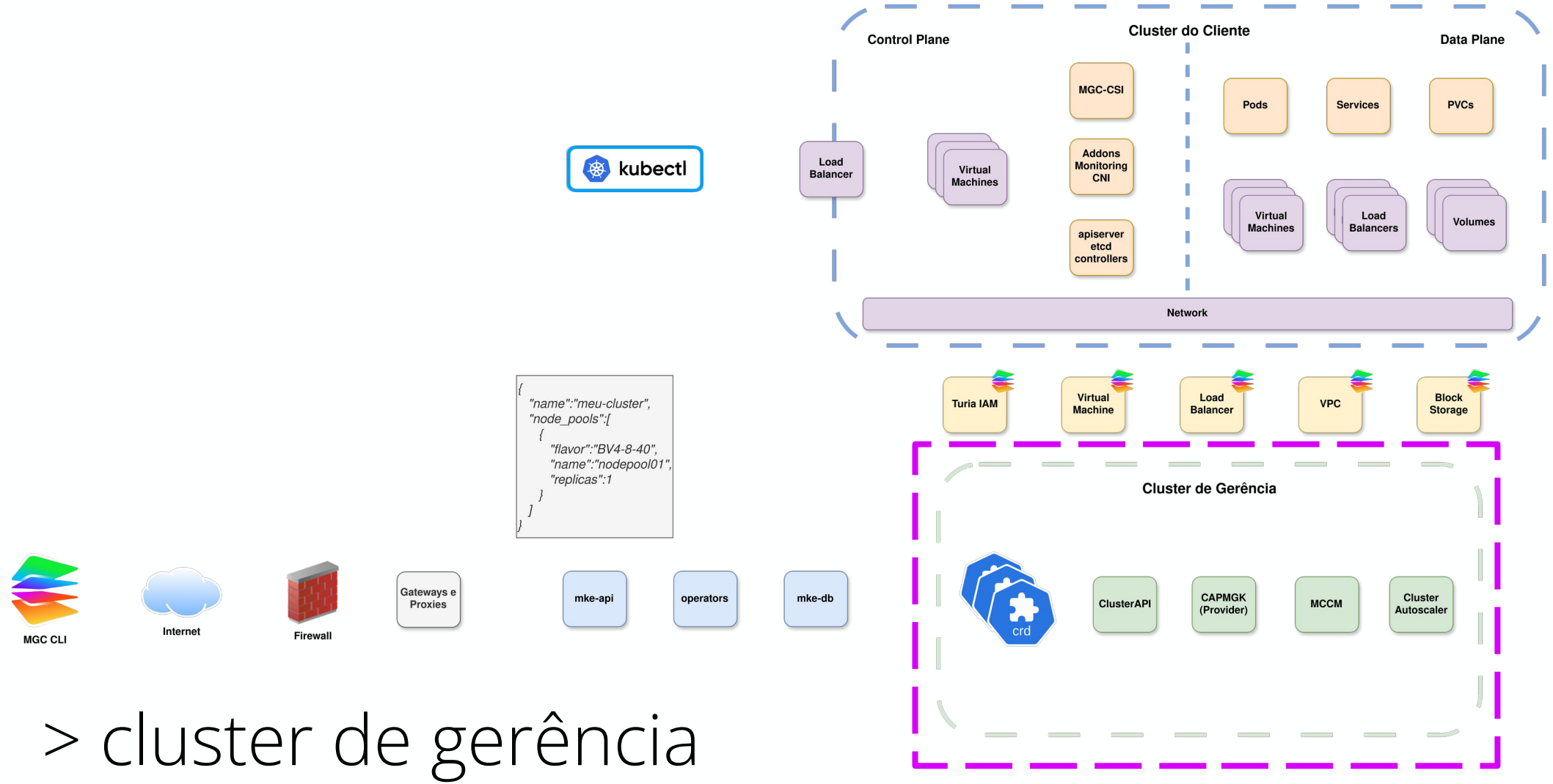
> recapitulando...



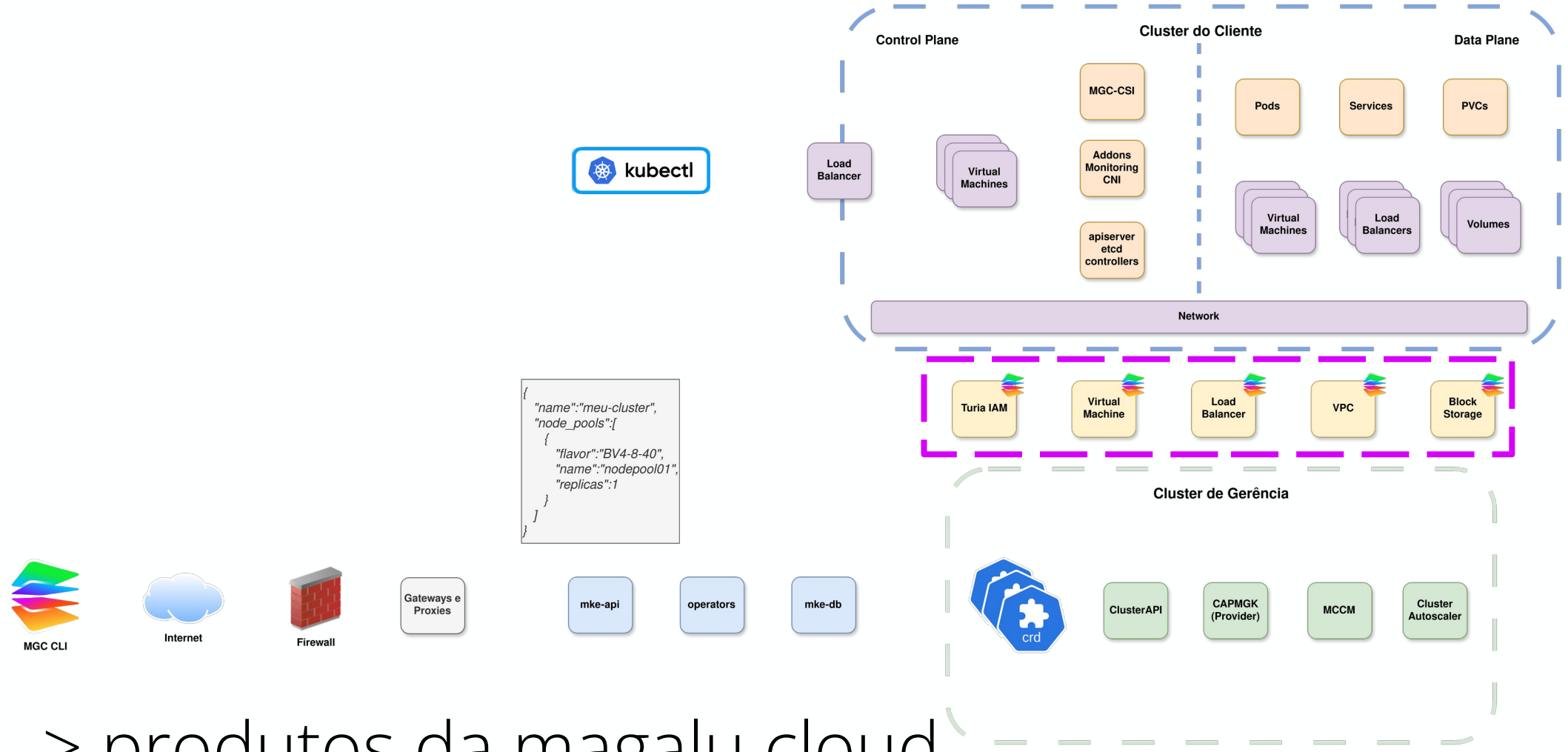
> usuário e redes



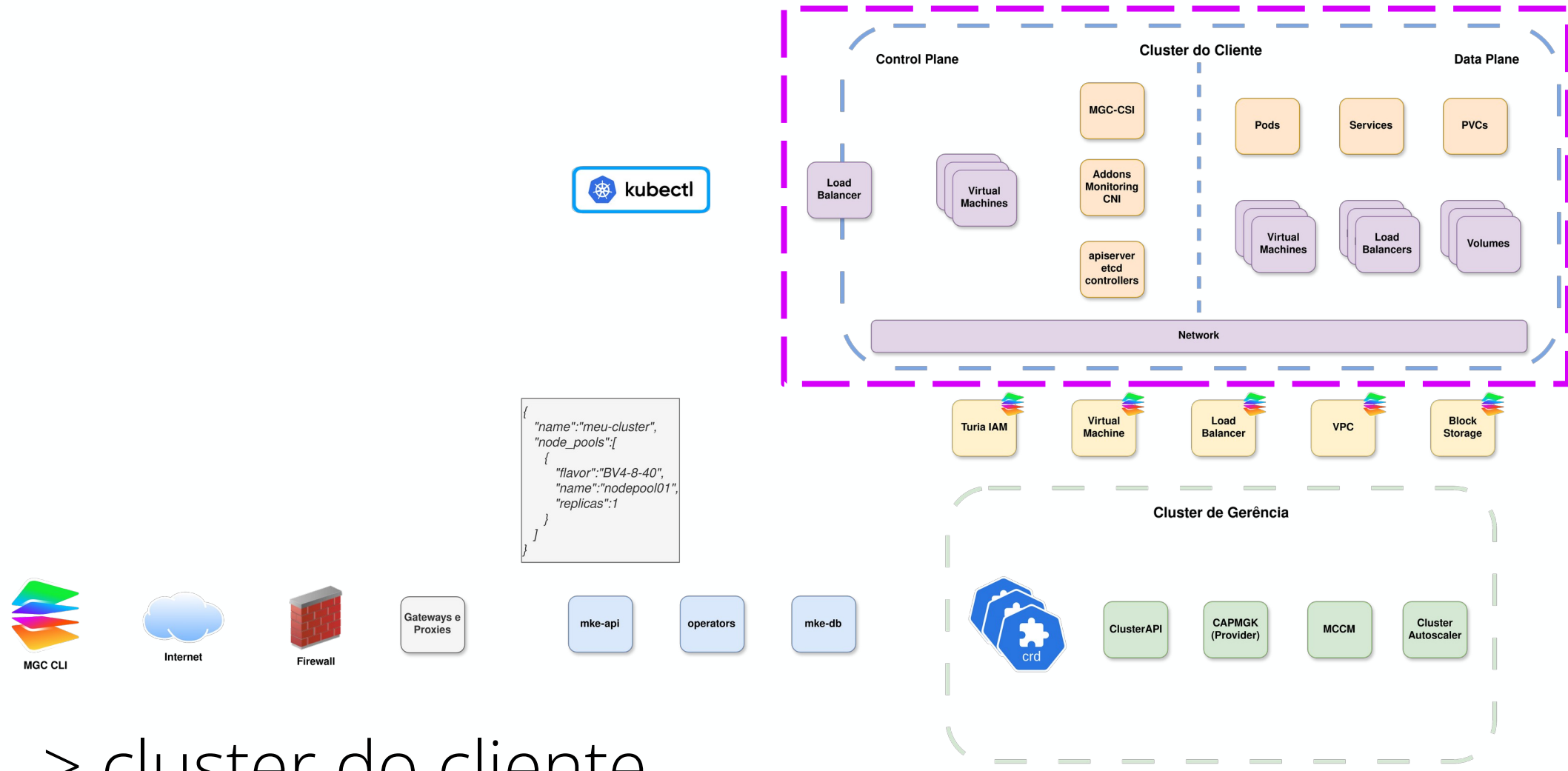
> operadores e APIs



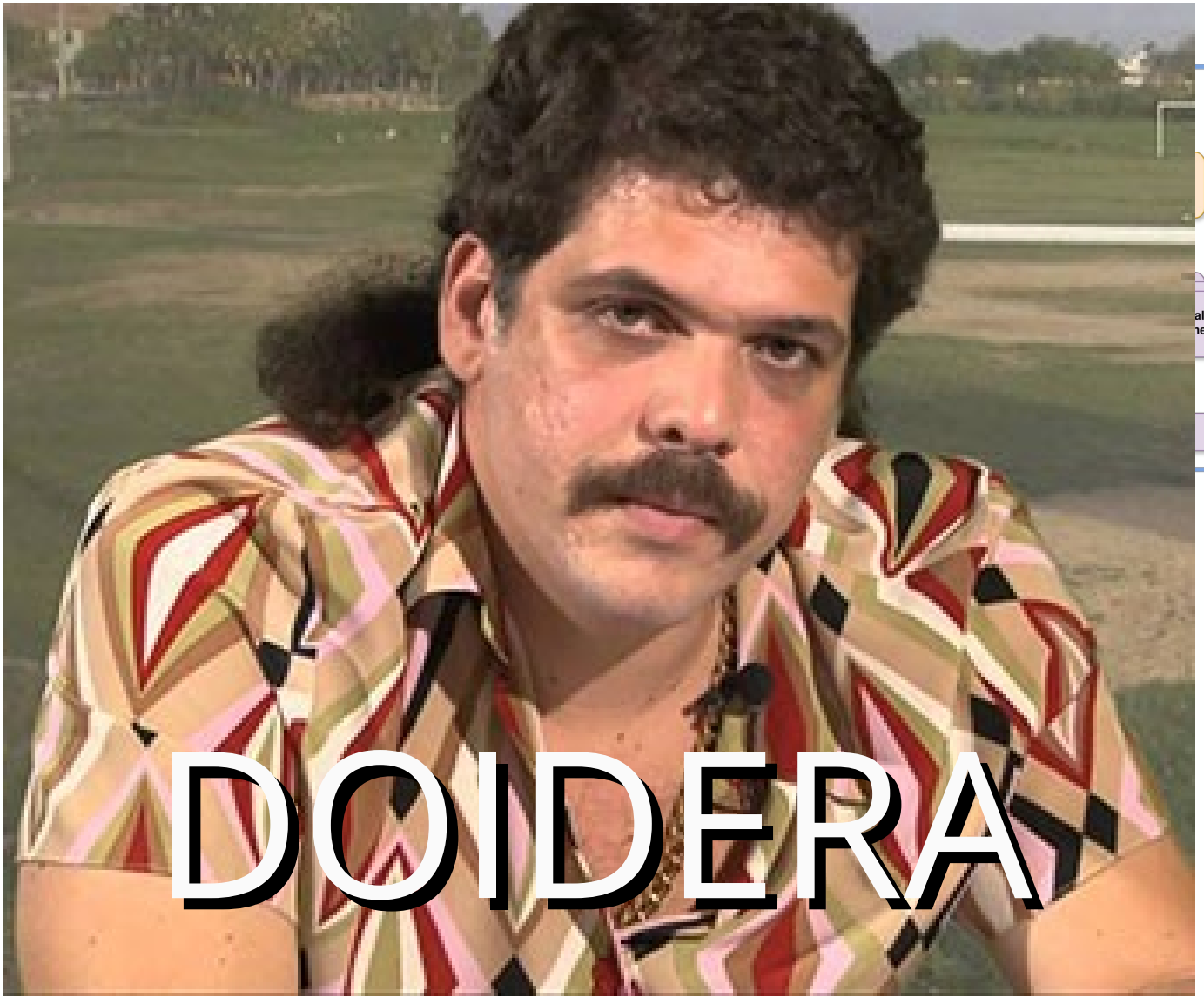
> cluster de gerência



> produtos da magalu cloud



> cluster do cliente



Data Plane

Services

PVCs

Load Balancers

Volumes

VPC

Block Storage

MCCM

Cluster Autoscaler

MGC CLI

Internet

Desafios

não é fácil

Complexidade
Dependemos de todo mundo
Experiência de usuário *simplificada*

Por que utilizar o MKE?

pq sim!

Baixa latência

Valores em reais $

Soberania nacional

Roadmap 2026

não prometo nada

Upgrade de Versão do Kubernetes
Escolha de VPC & Subnets
Volumes RWX
Labels & Taints em Node Pools
y mucho más

Obrigado!

quer trabalhar com essa loucura? fale comigo ;)

@jonatasbaldin | [magalu.cloud]

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