

Воспроизводимые окружения на **bare-metal** при помощи **Talos Linux** и **Cozystack**

ГЕОРГ ГААЛ

CTO & Founder of Ænix

Кто я?



Георг Гаал

CTO & Founder of Ænix

 george.gaal@aenix.io

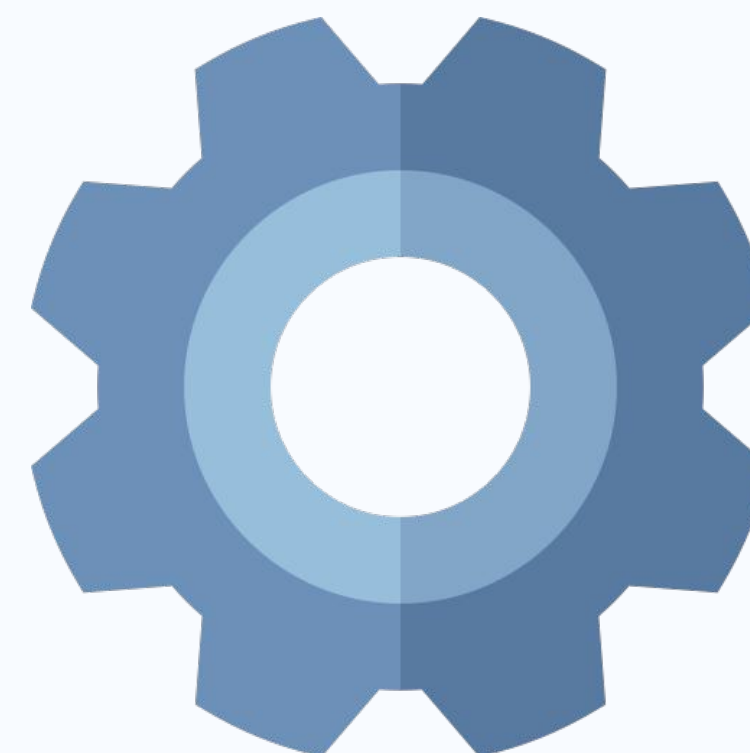
- 10+ лет в IT
- Из них не менее 7 - в крупных enterprise / fintech
- Начинал карьеру с низов
- Спикер крупнейших международных конференций и образовательных проектов
- Стараюсь дружить dev, ops и sec



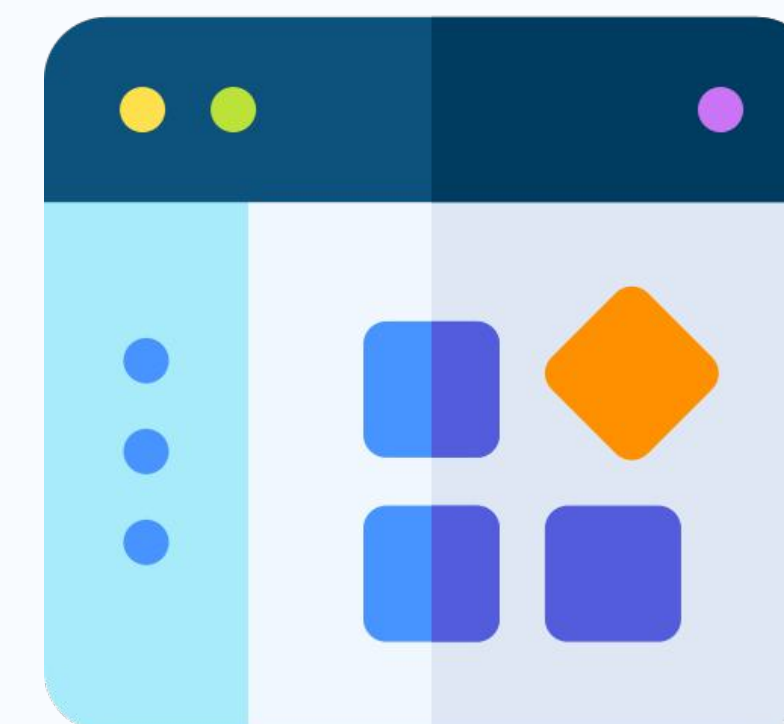
K8s на железе



Железо и ОС

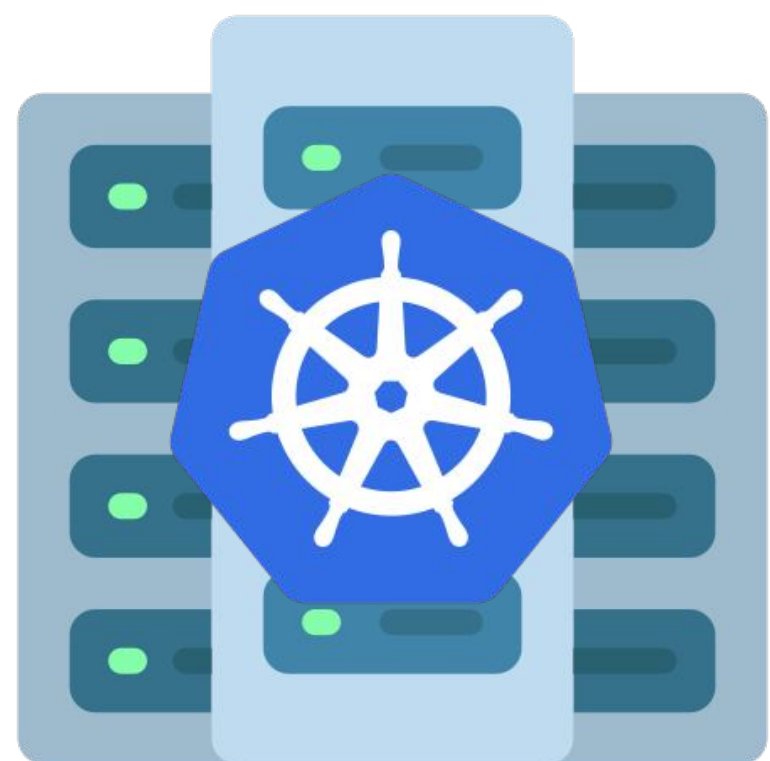


Системные
компоненты



Пользовательские
приложения

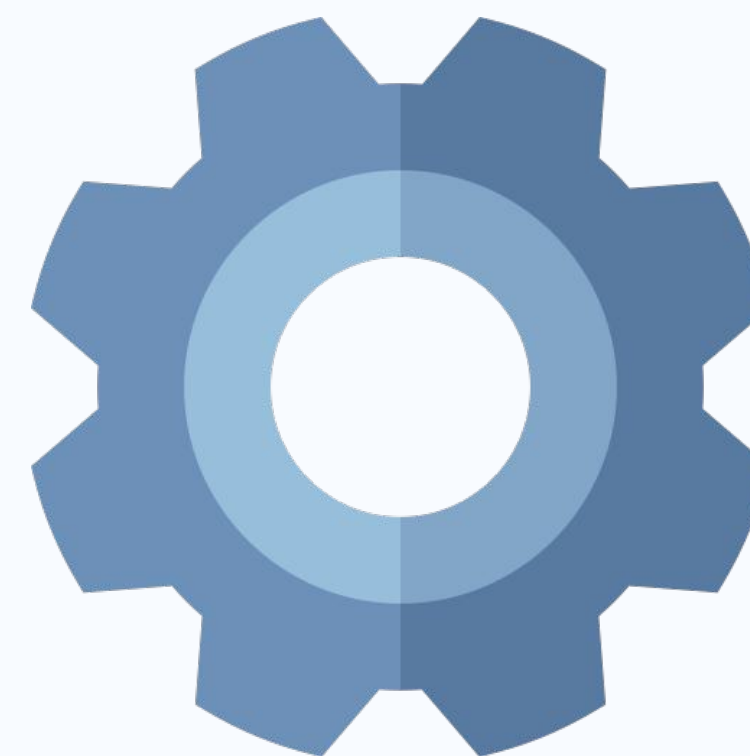
 **ПЛАТФОРМА**



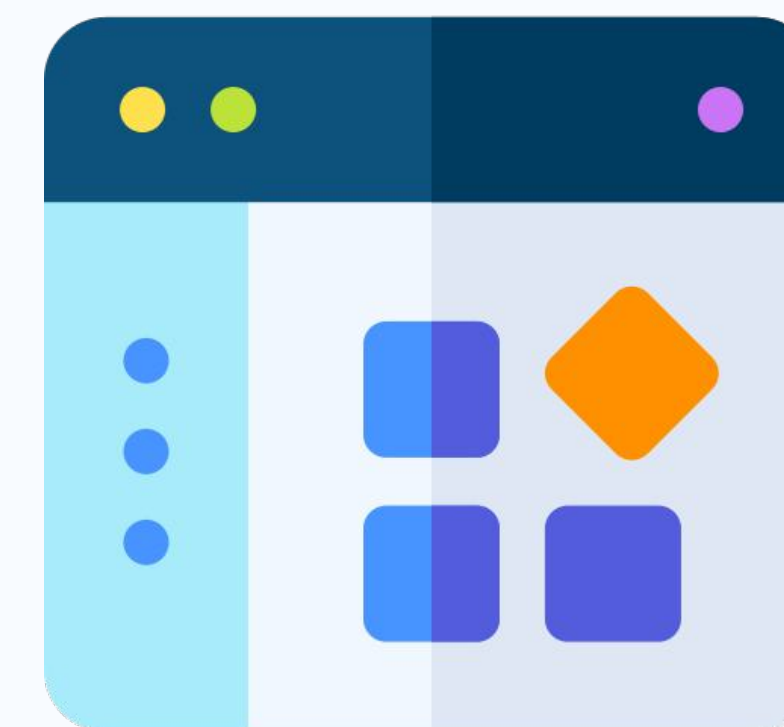
K8s на железе



Железо и ОС



Системные
компоненты



Пользовательские
приложения

 ПЛАТФОРМА

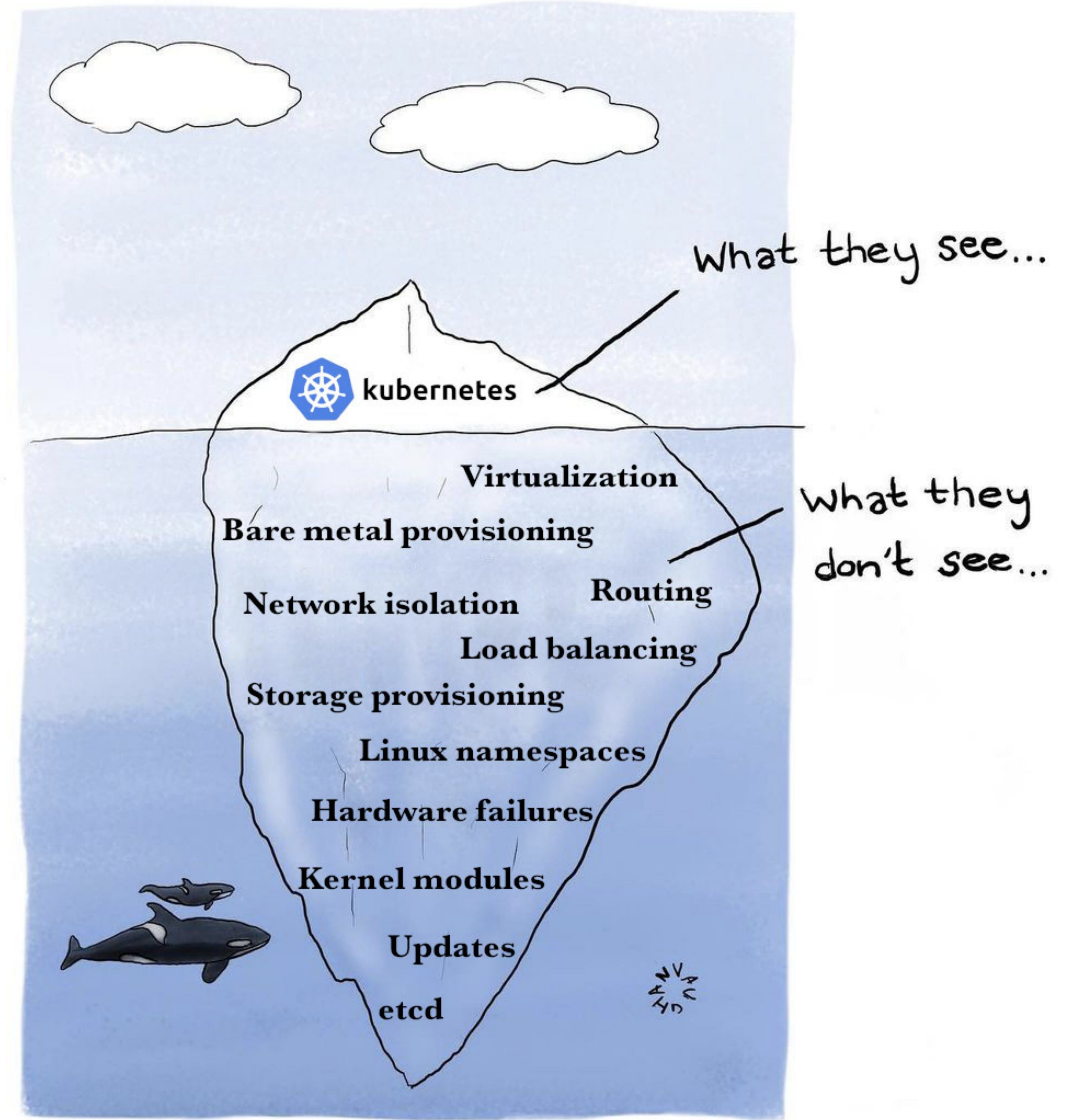


Kubernetes в облаке?



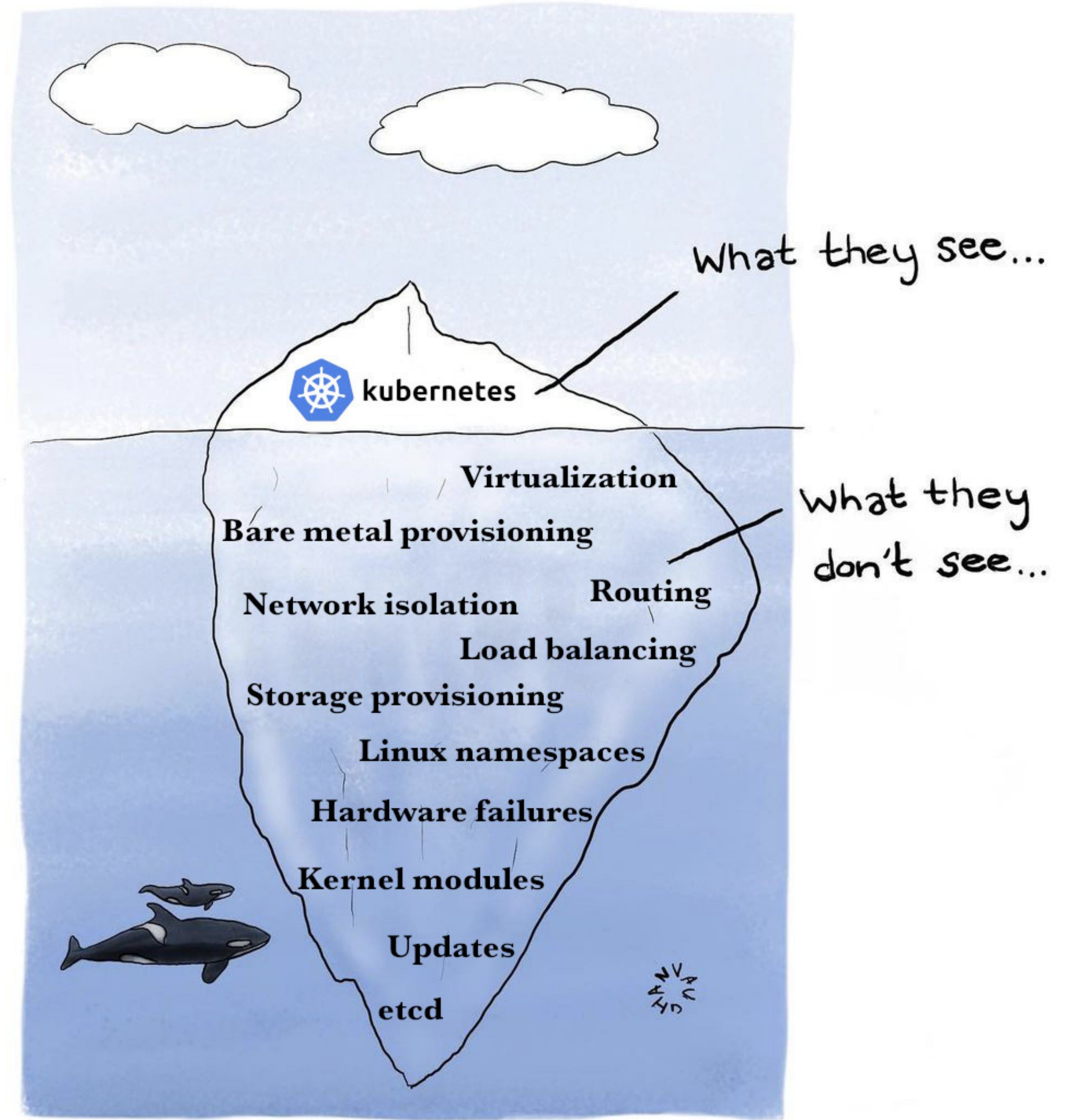
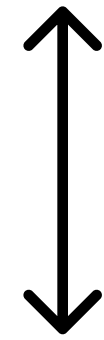
There is no cloud
It's just someone else's computer

Введение



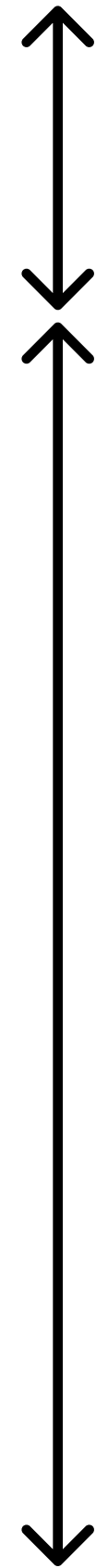
Введение

kubernetes

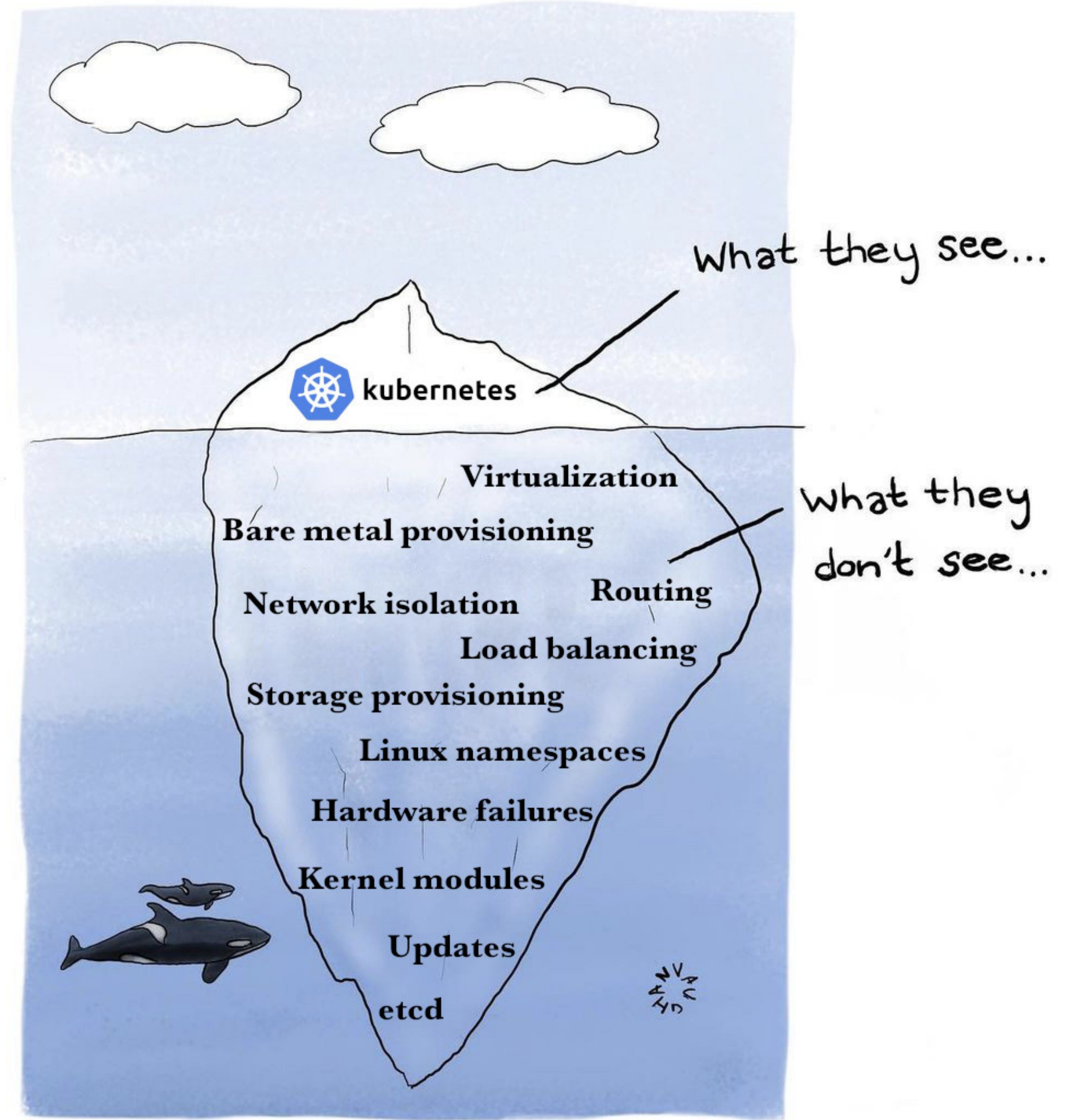


Введение

kubernetes



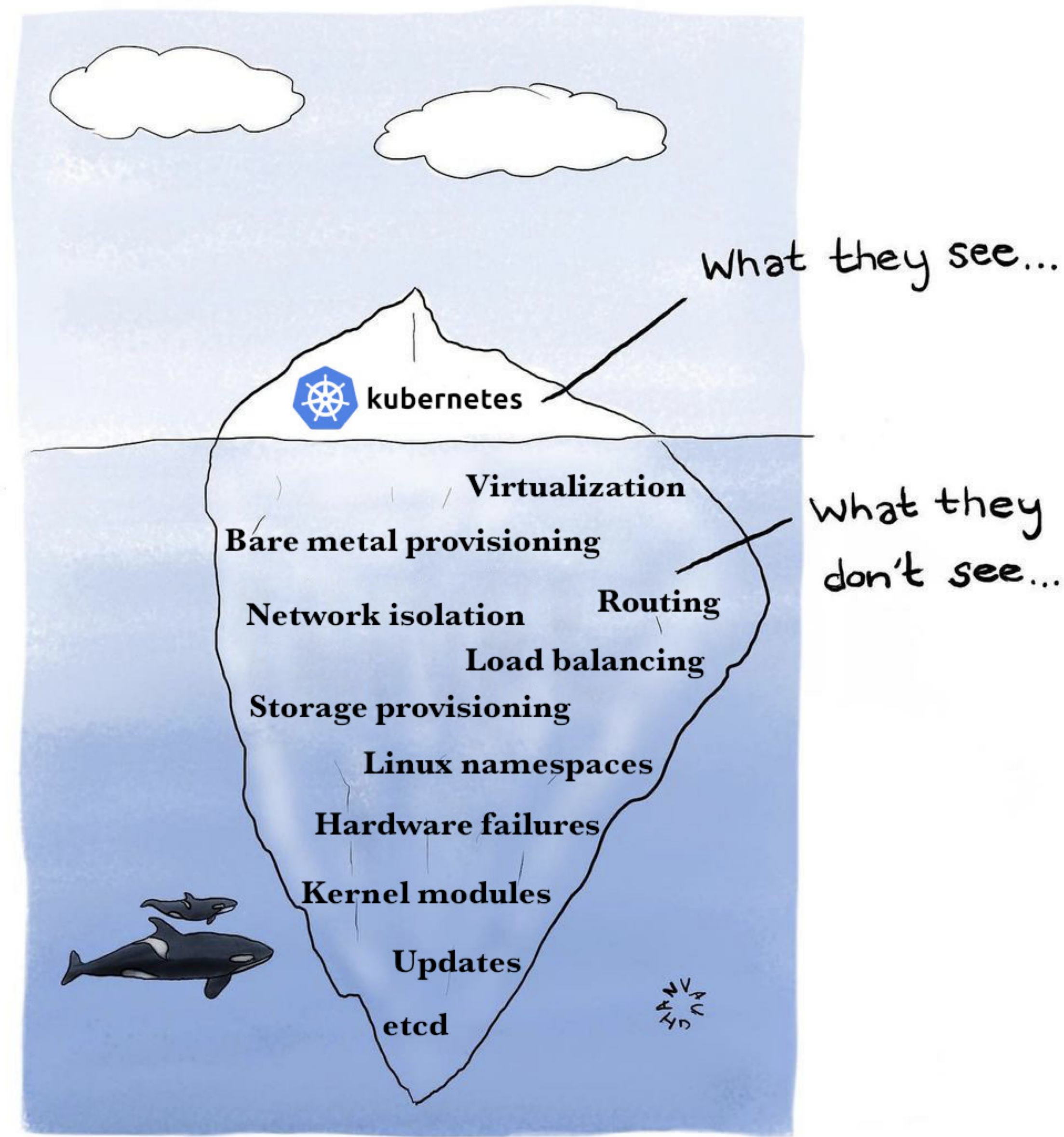
bare-metal

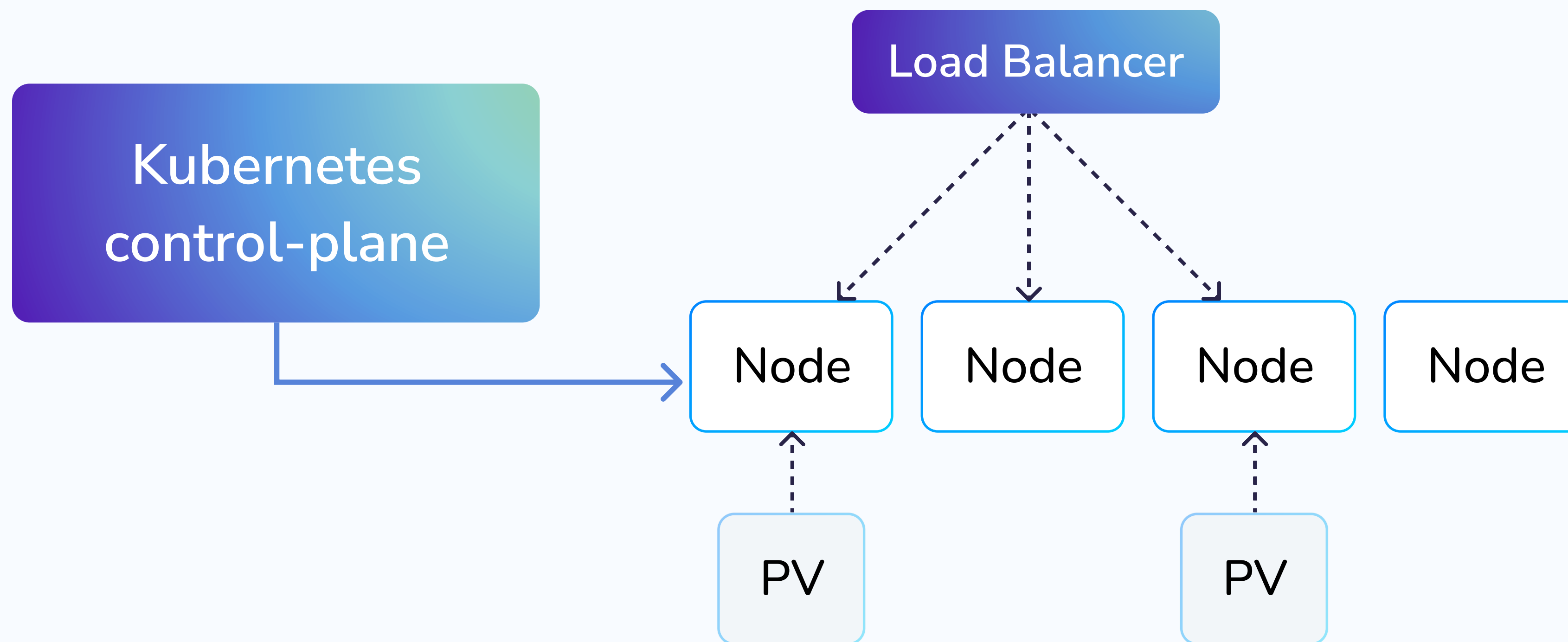


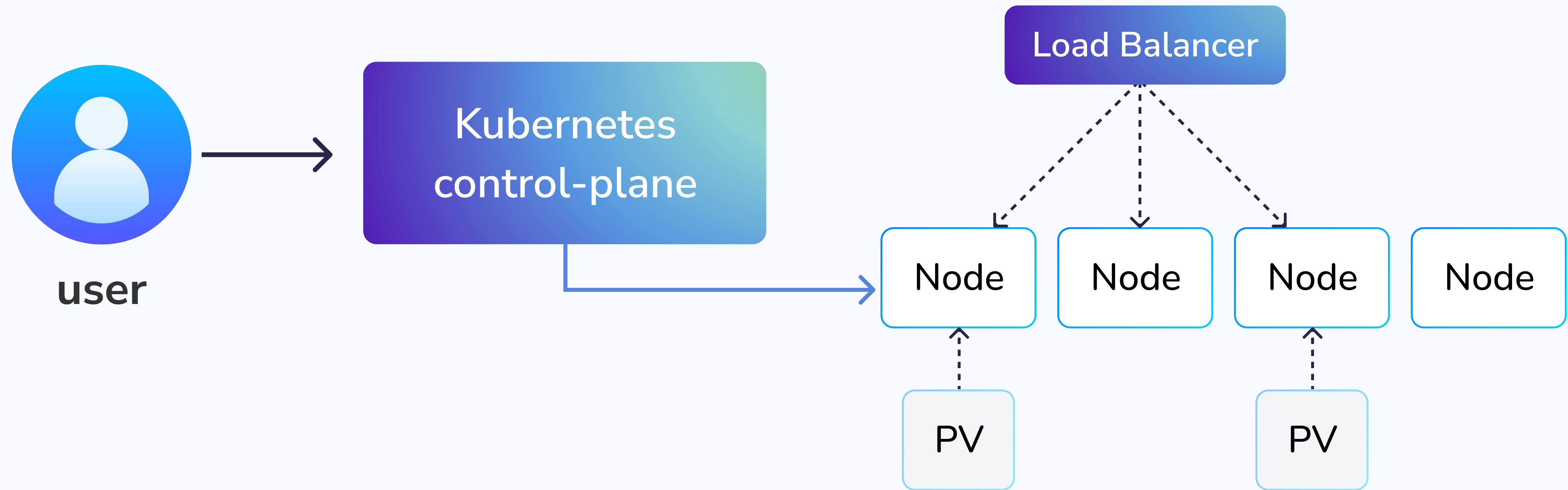
kubernetes

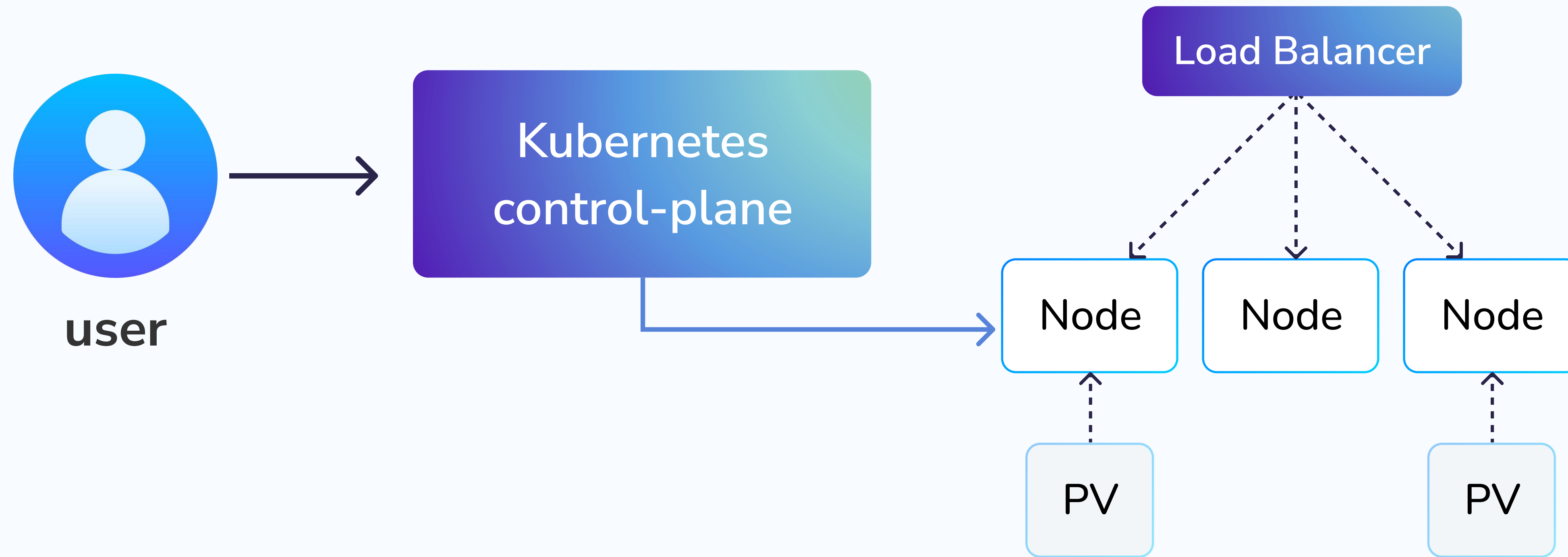


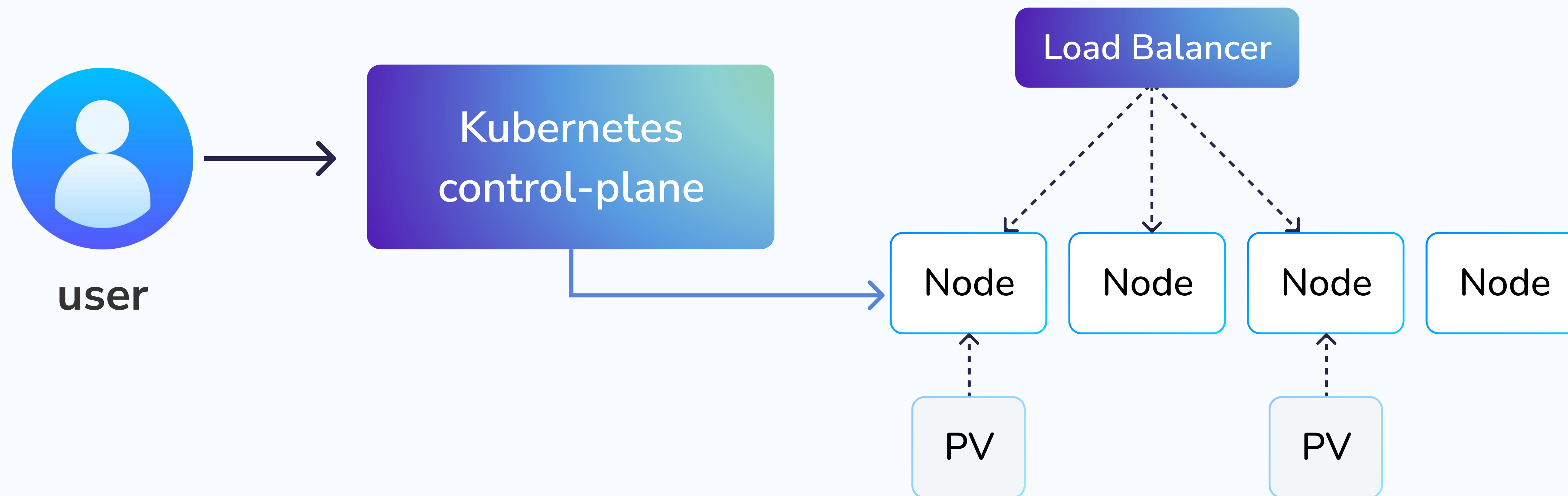
bare-metal

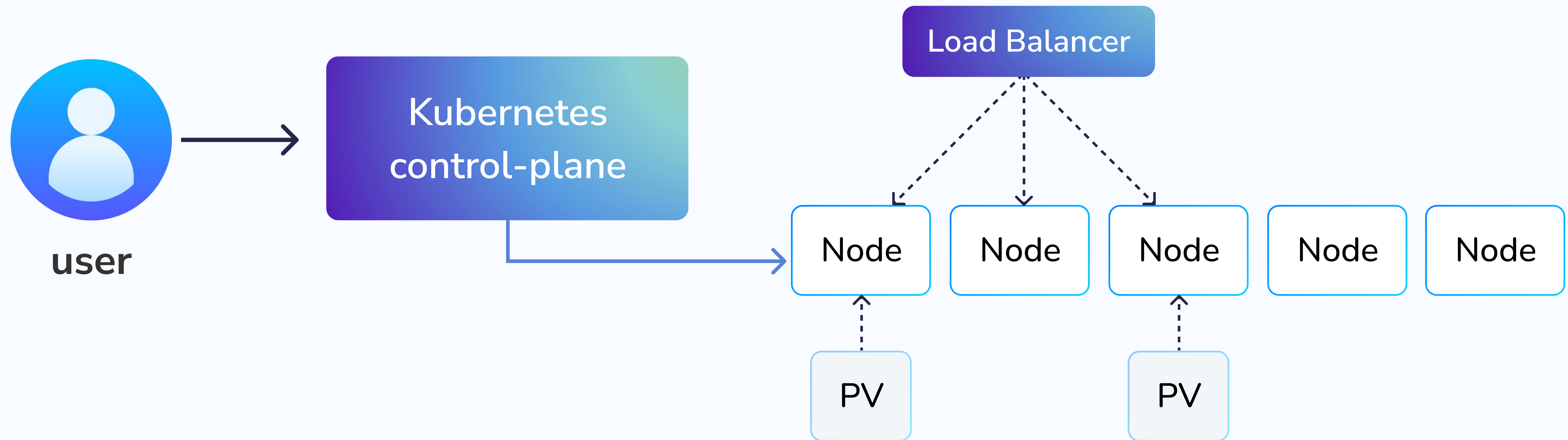








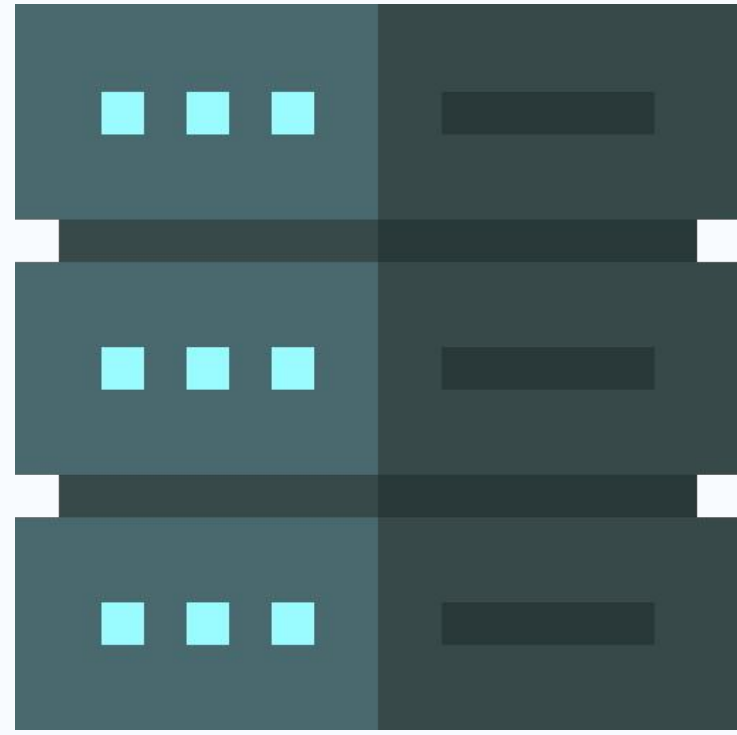
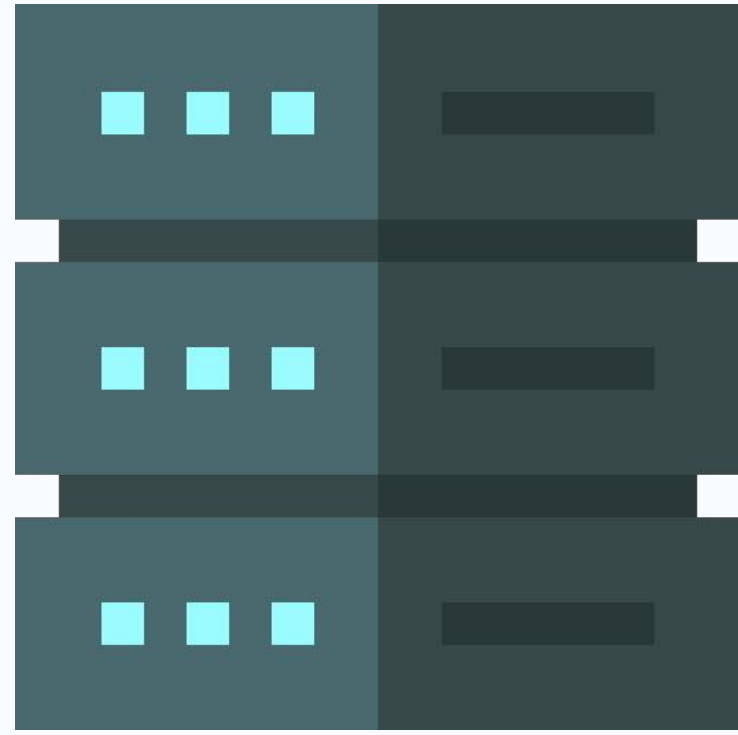
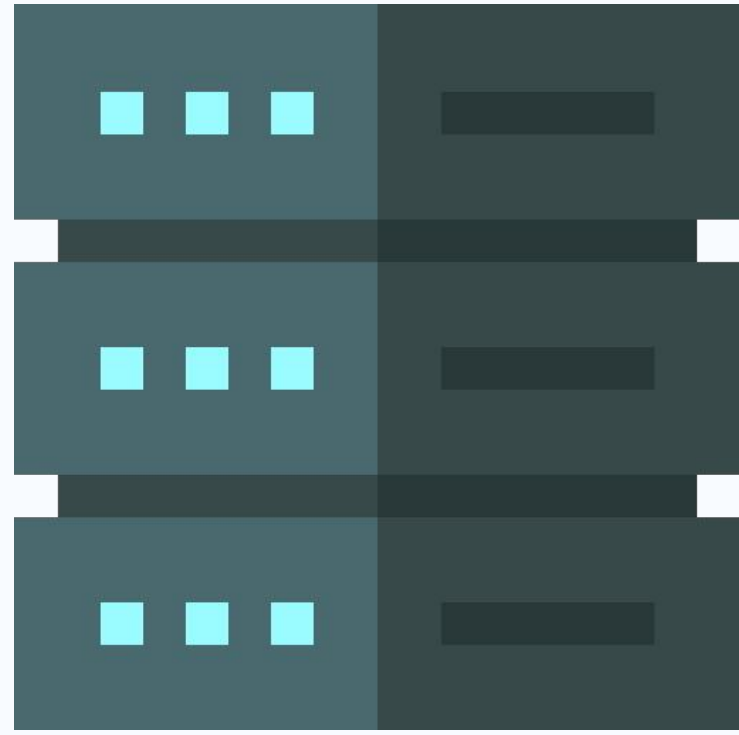


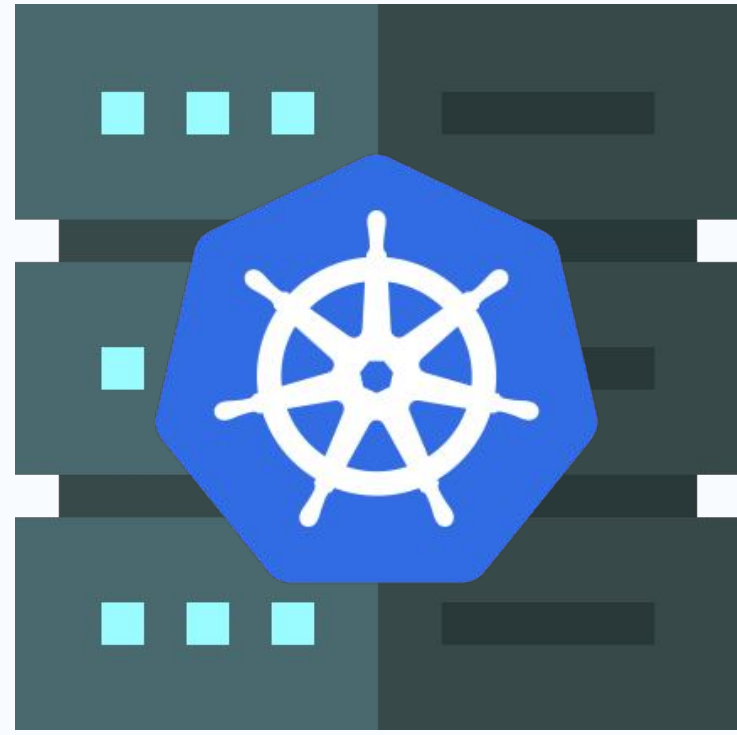
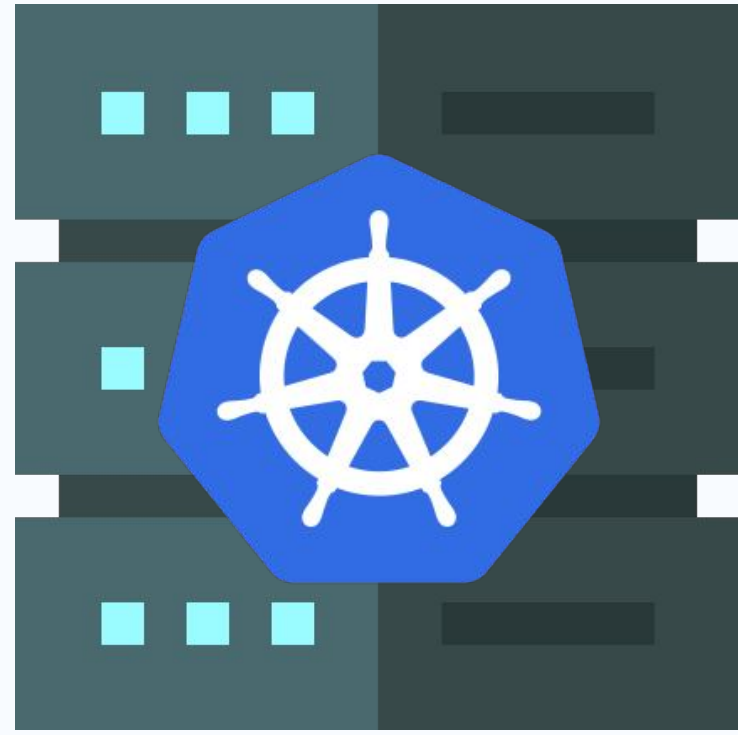
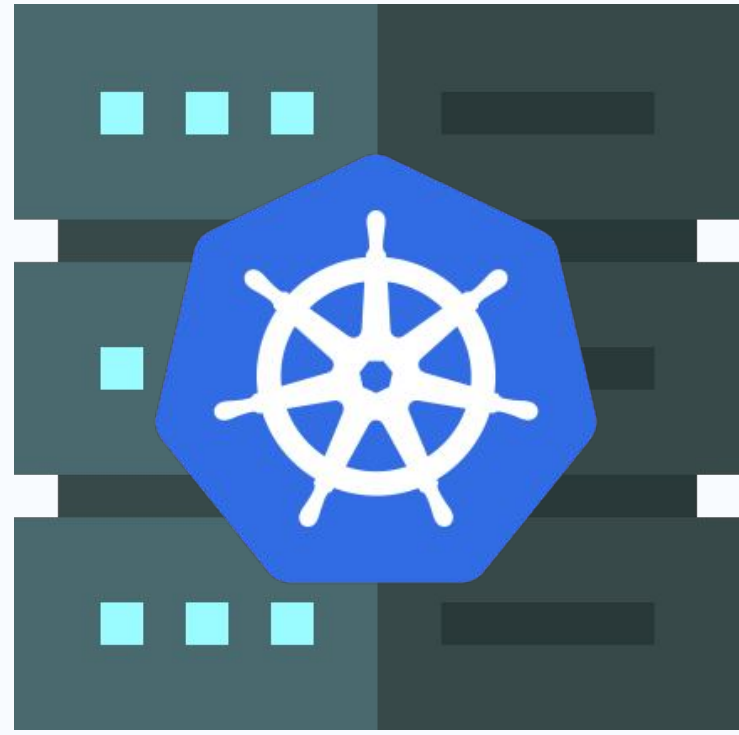


Как приготовить свое облако?

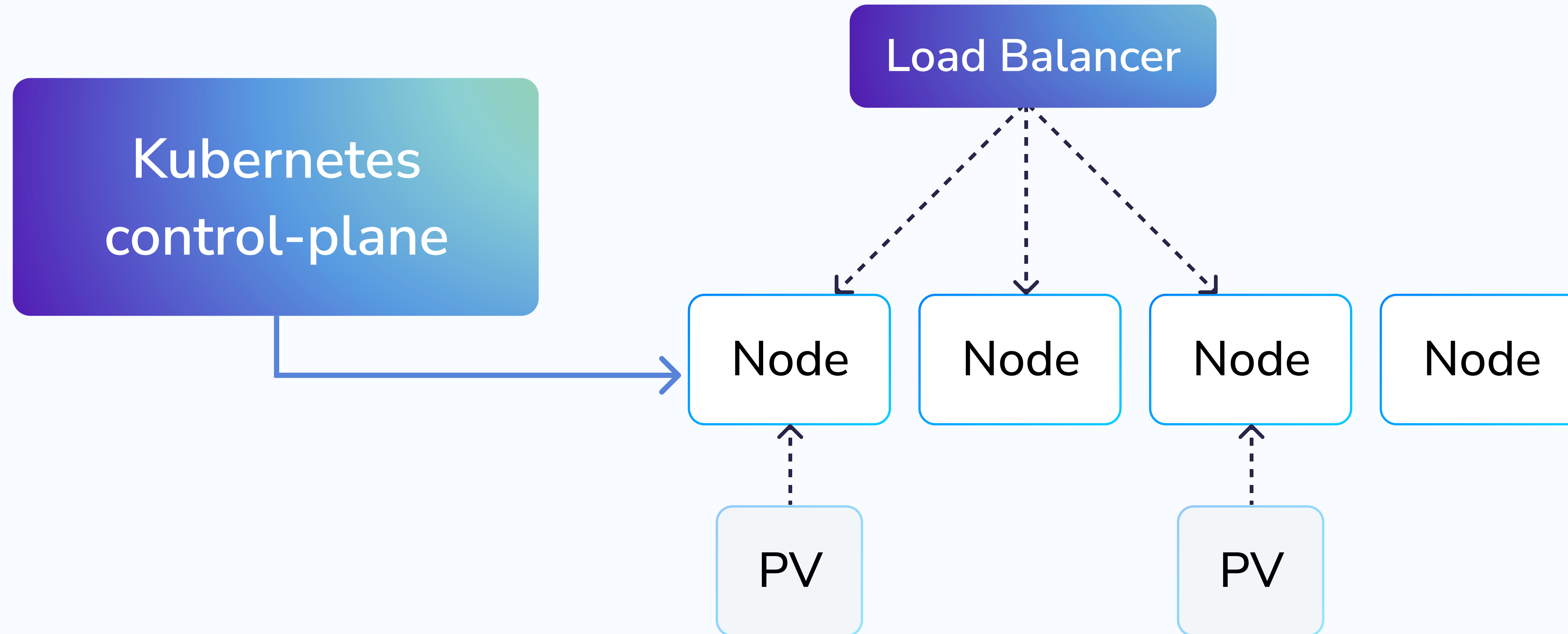
Вариант 1:

Kubernetes на bare-metal

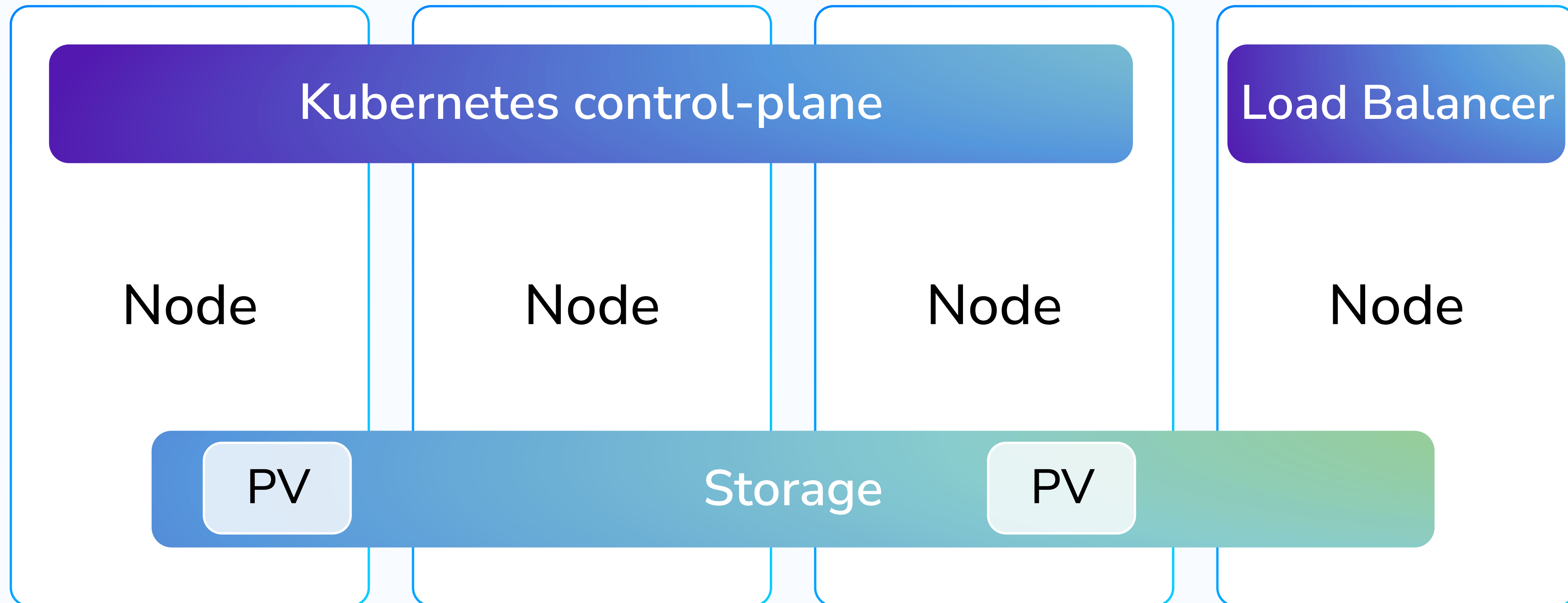




Ожидания:

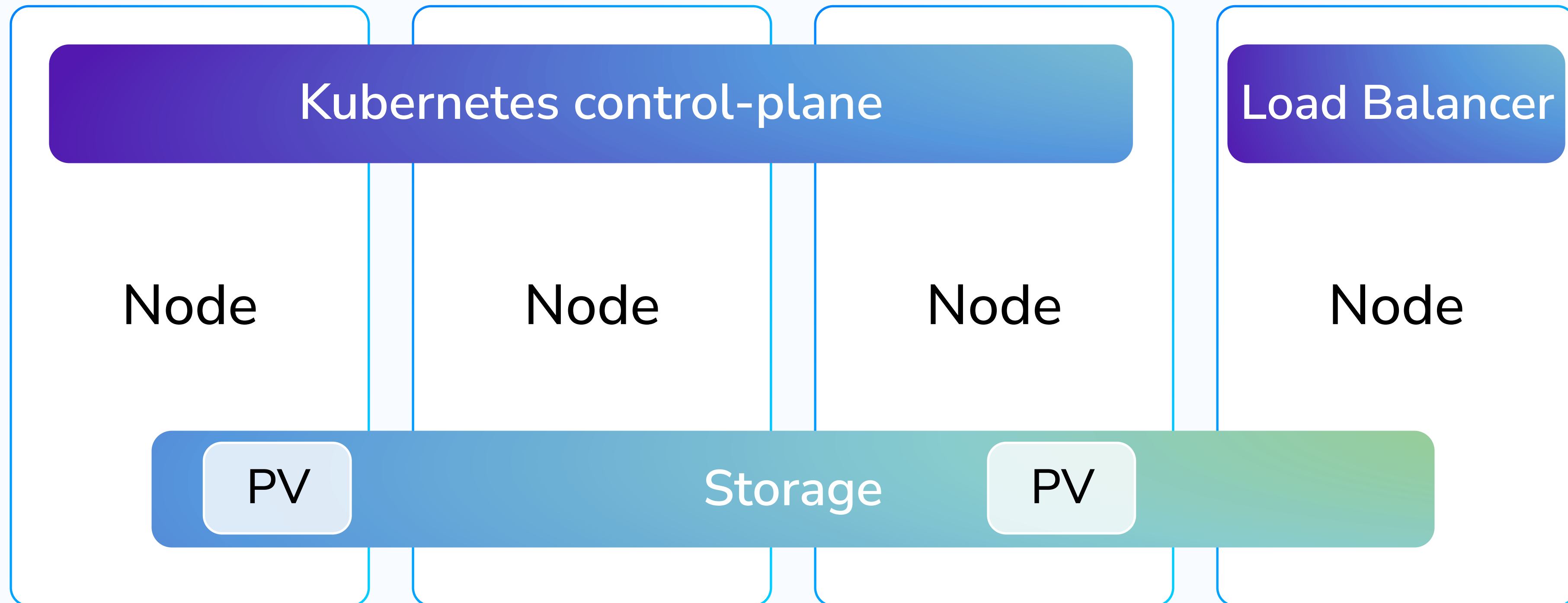


Действительность:



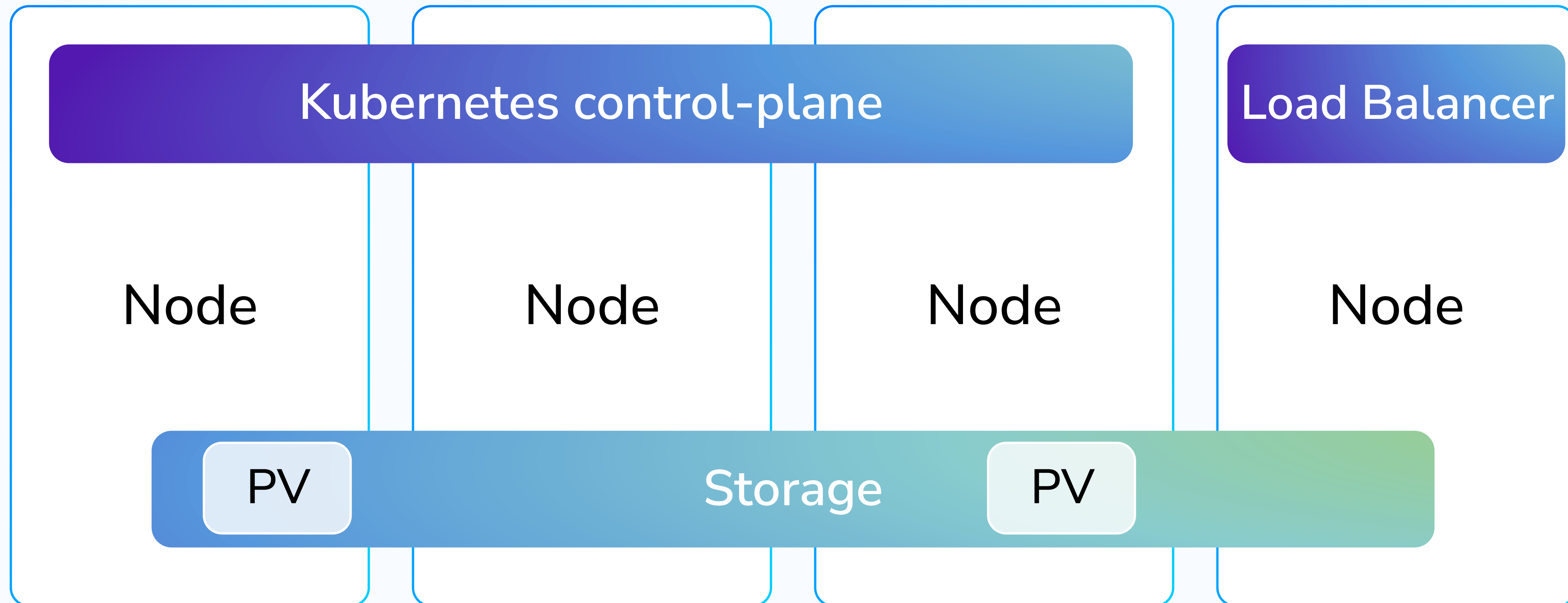
Действительность:

- удобное управление



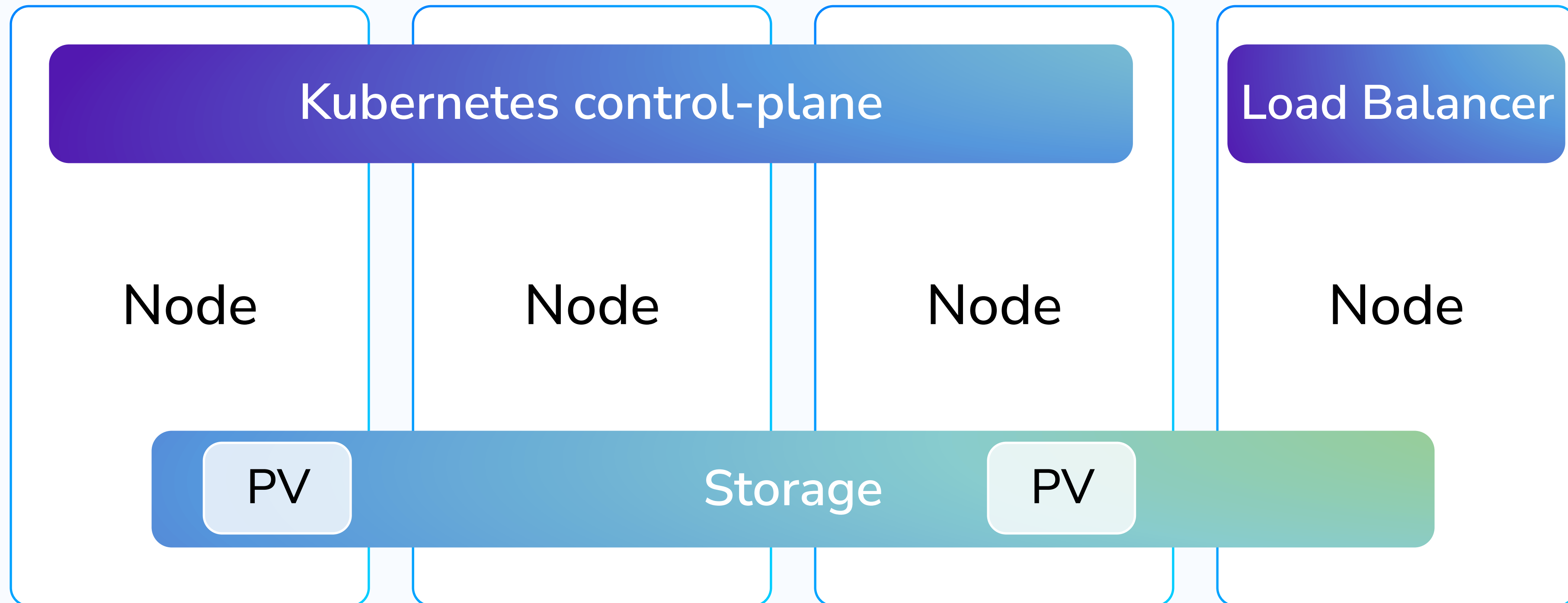
Действительность:

- удобное управление
- безболезненные обновления



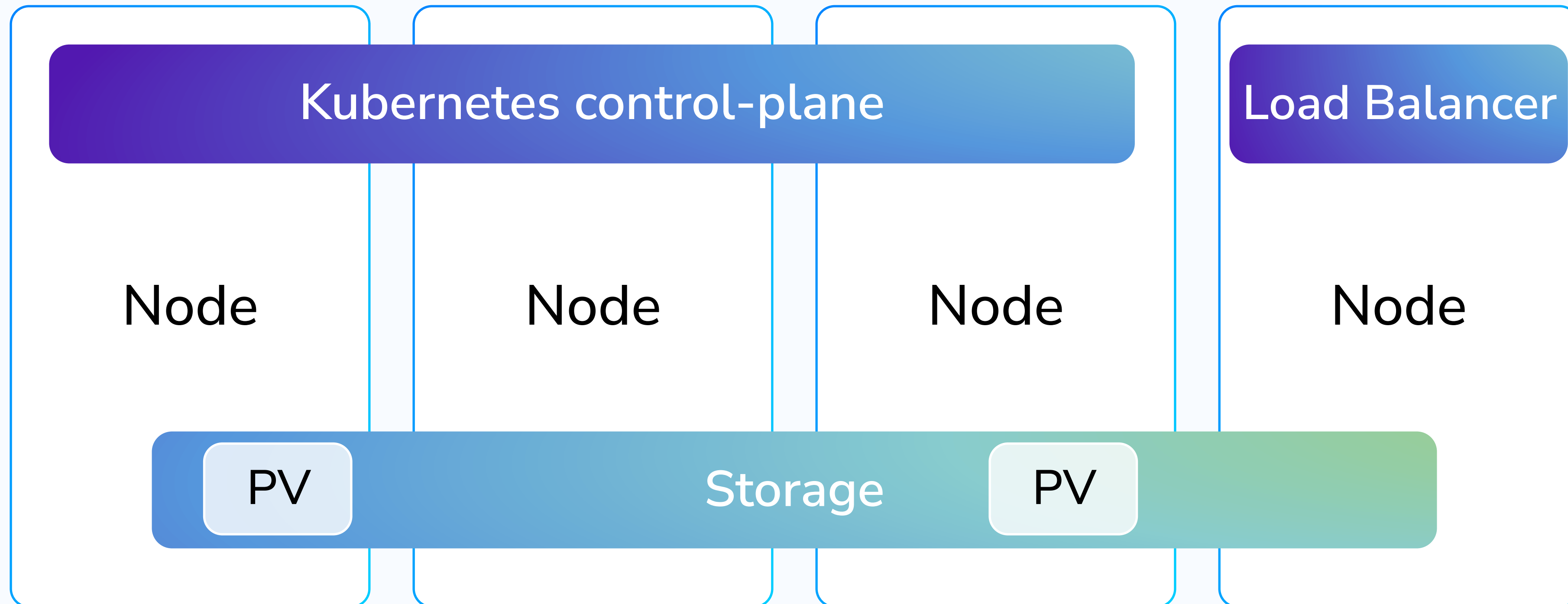
Действительность:

- удобное управление
- безболезненные обновления
- автомасштабирование



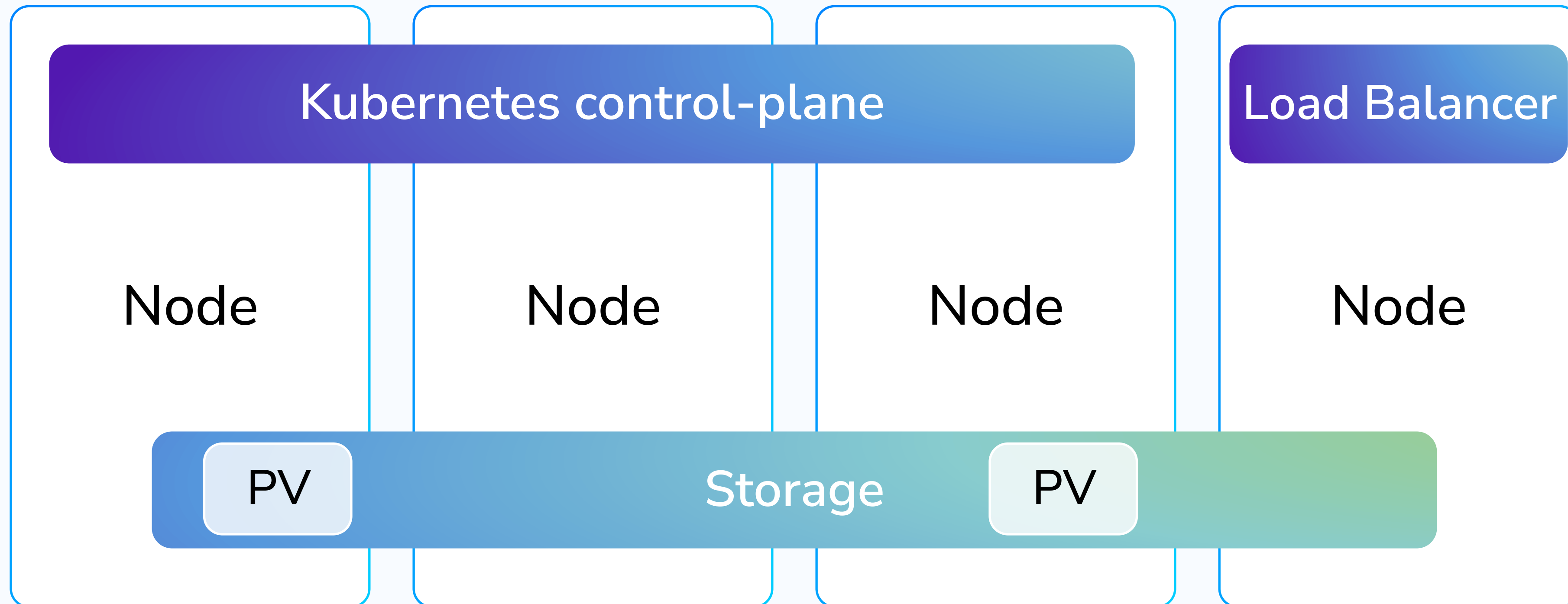
Действительность:

- удобное управление
- безболезненные обновления
- автомасштабирование
- мульти-тенантность



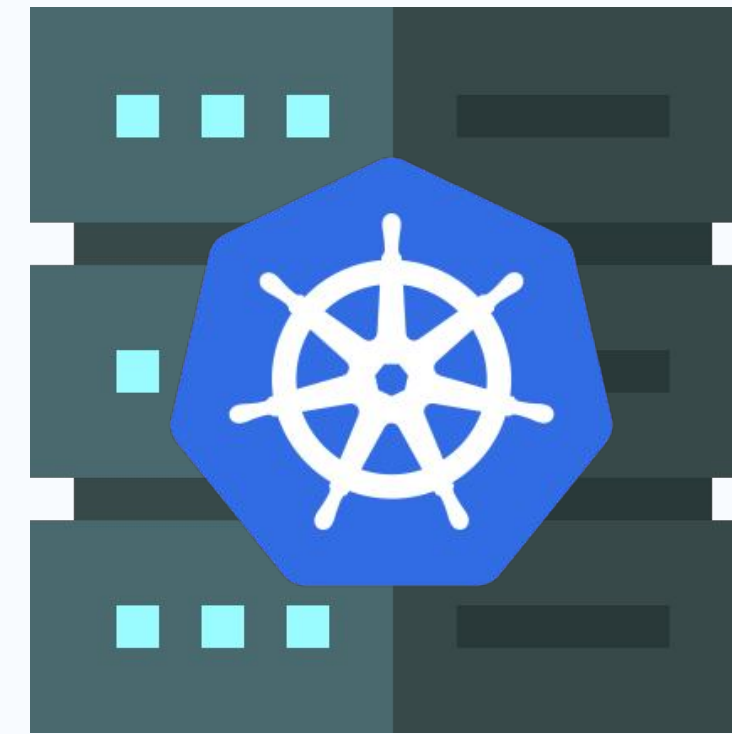
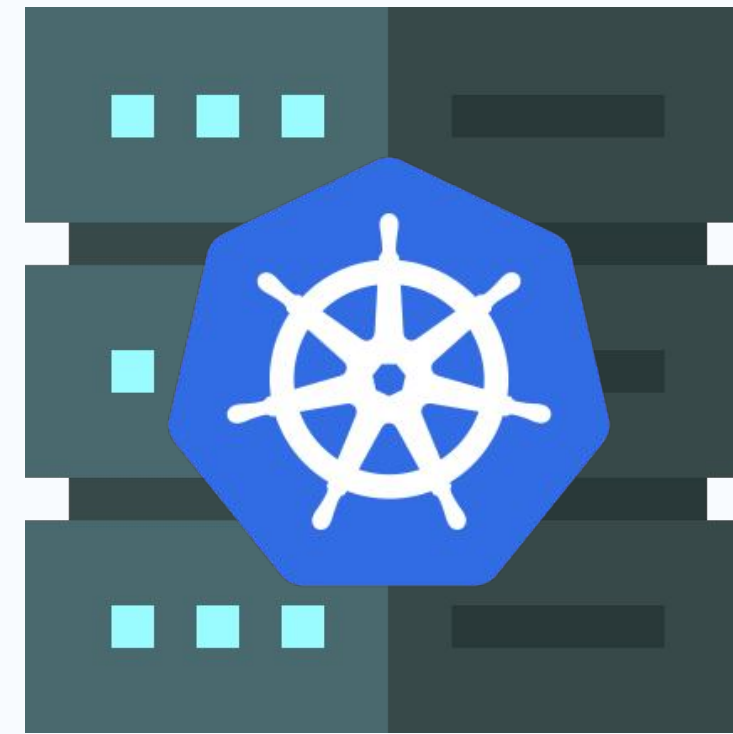
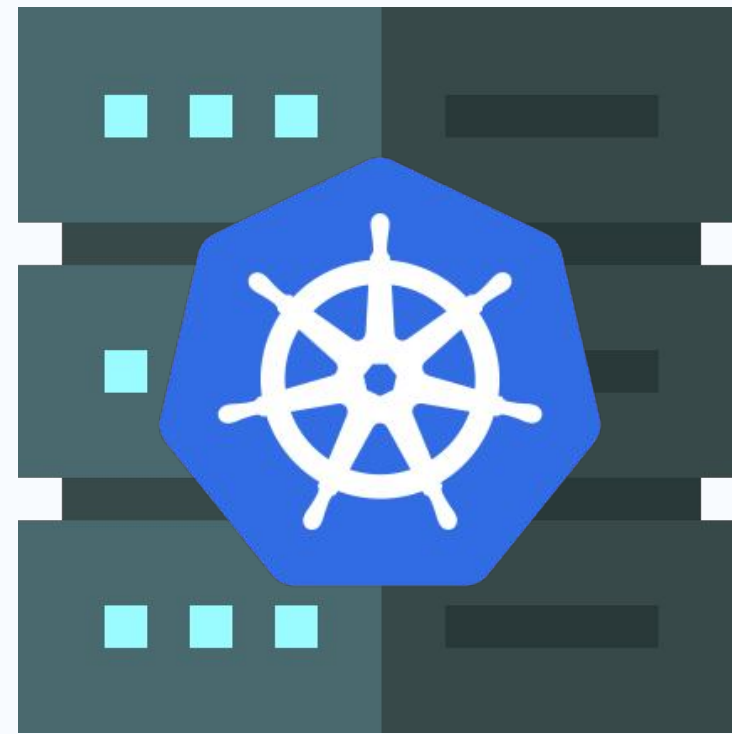
Действительность:

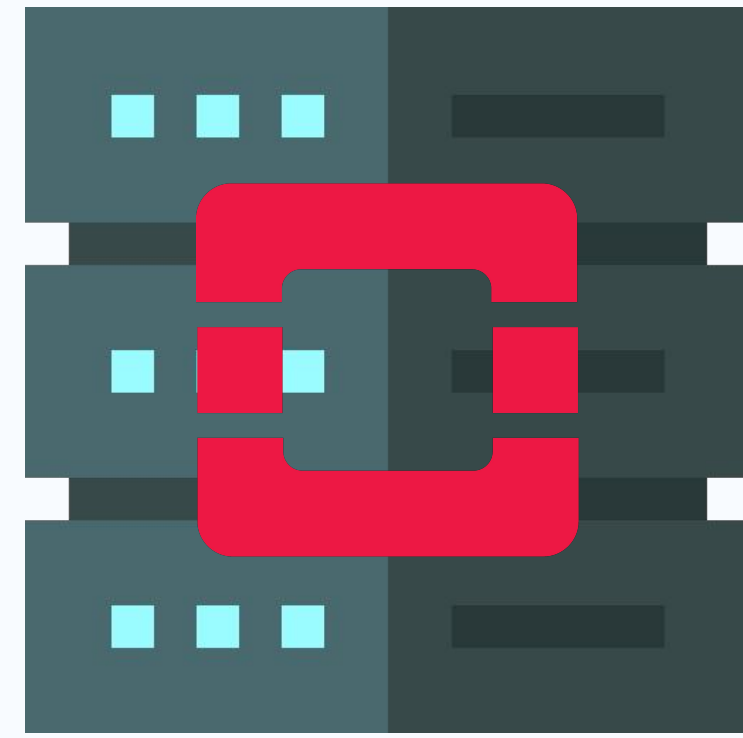
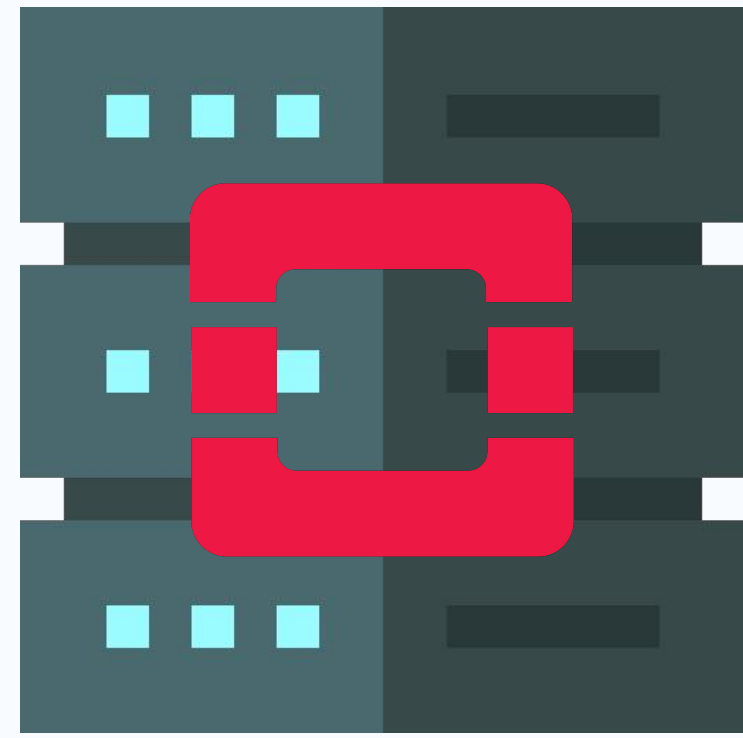
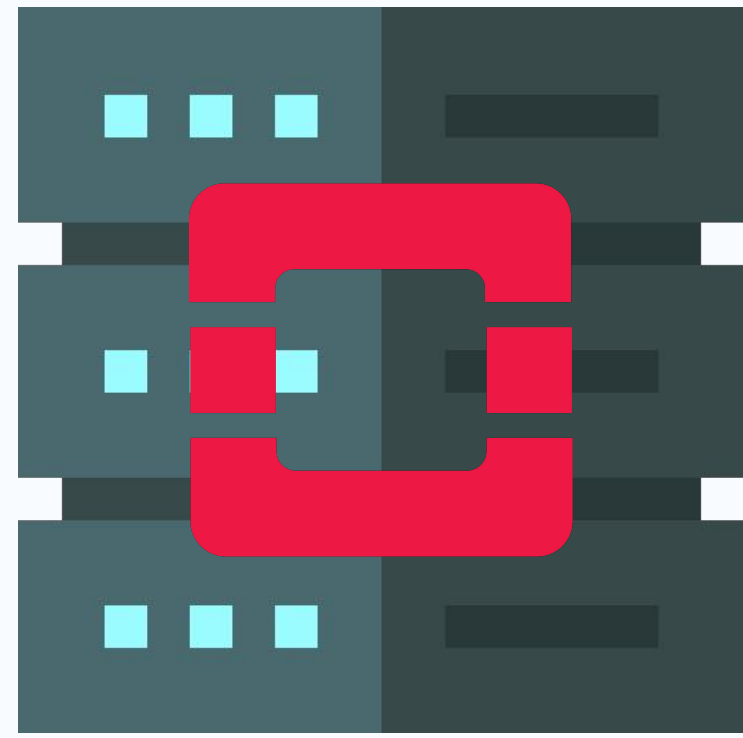
- удобное управление
- безболезненные обновления
- автомасштабирование
- мульти-тенантность

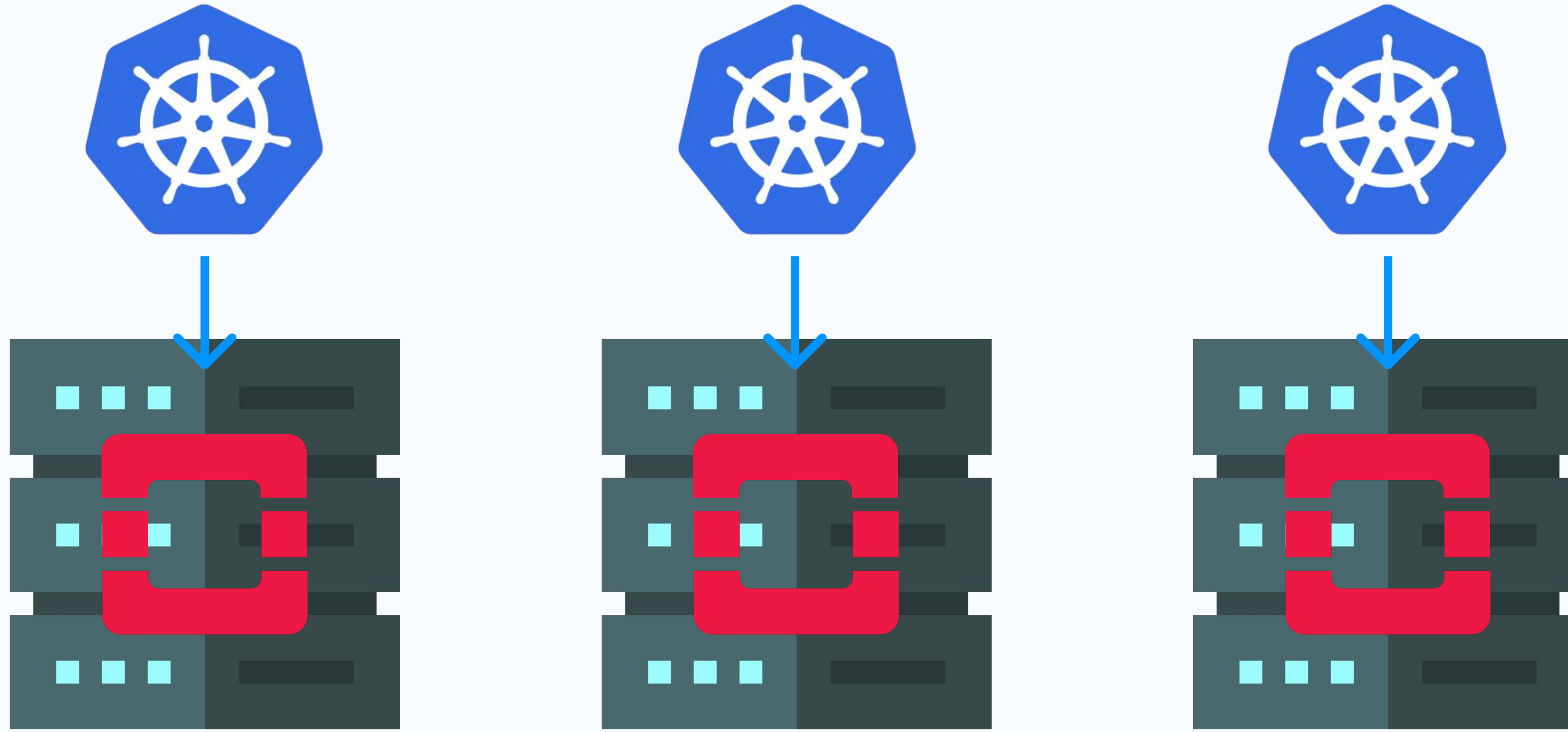


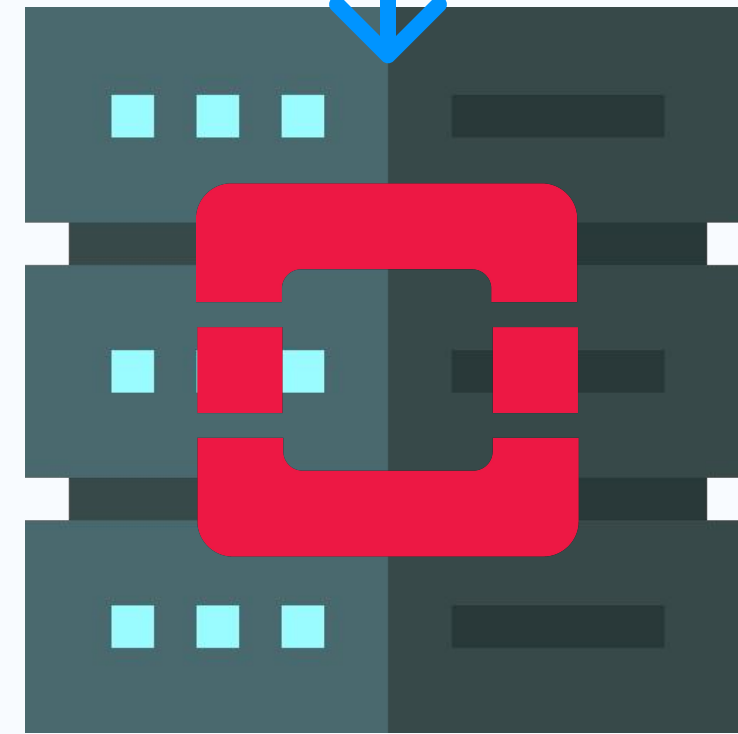
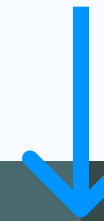
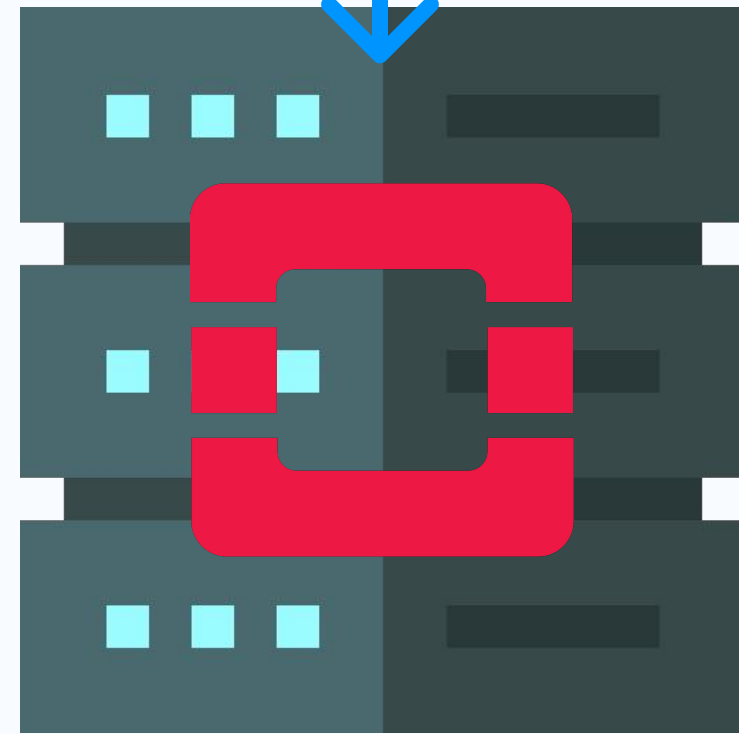
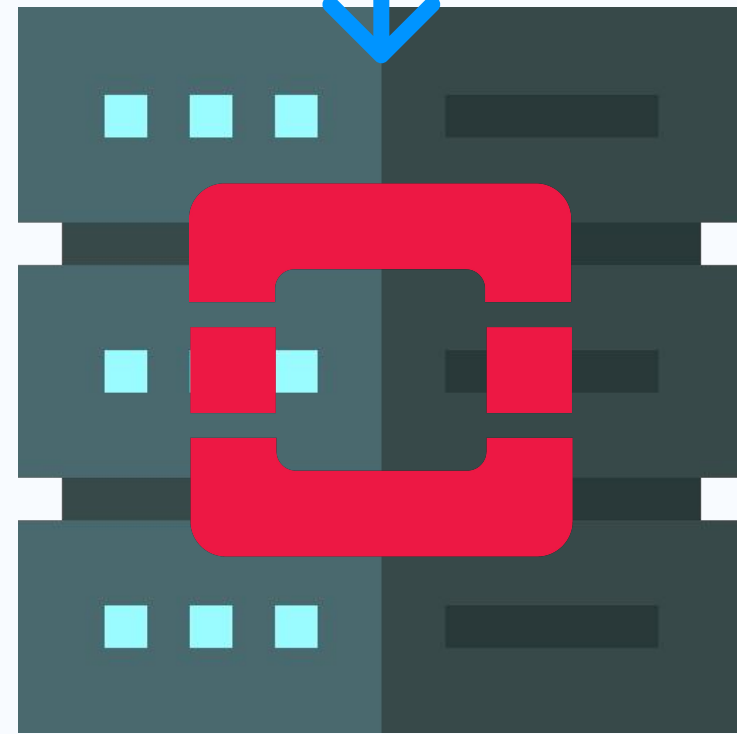
Вариант 2:

Kubernetes в частном облаке



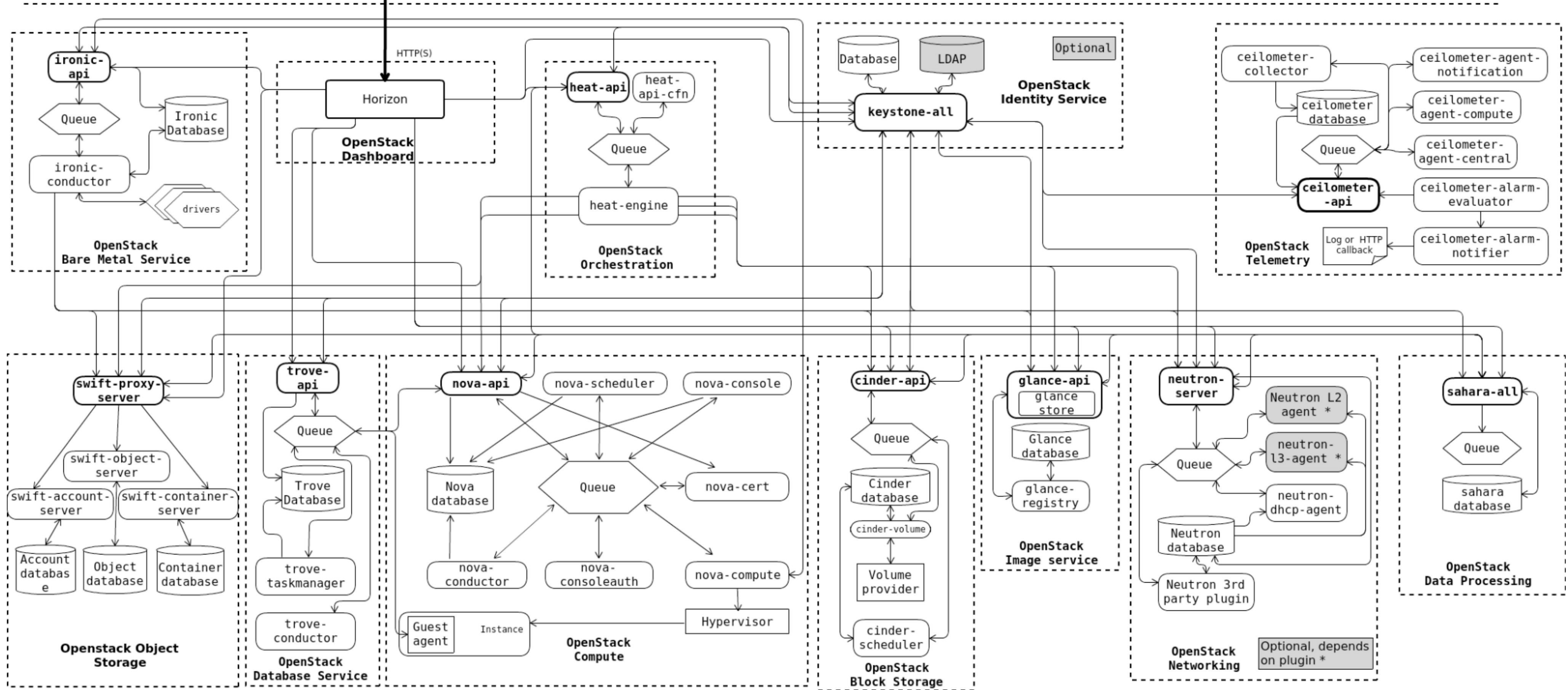






Кто отвечает за это ?

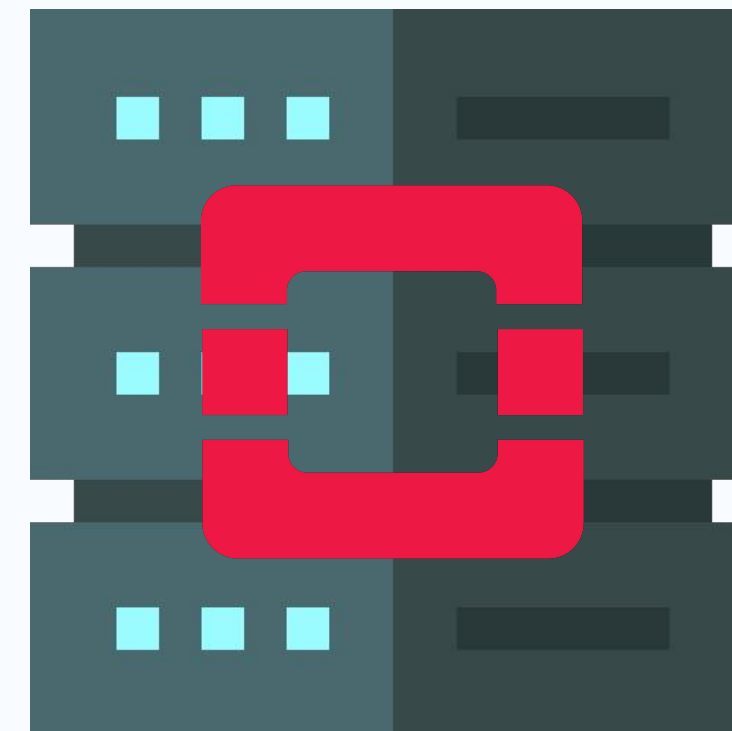
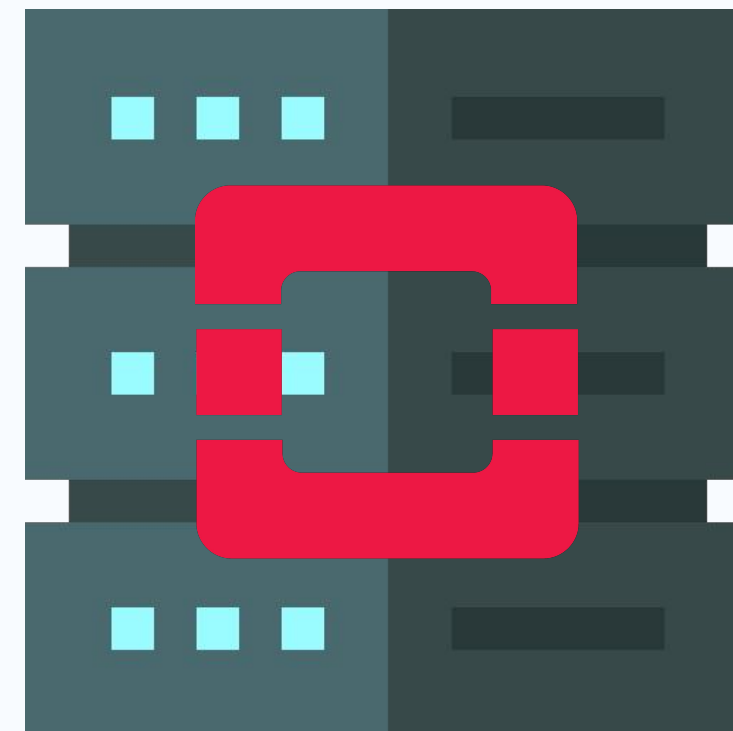
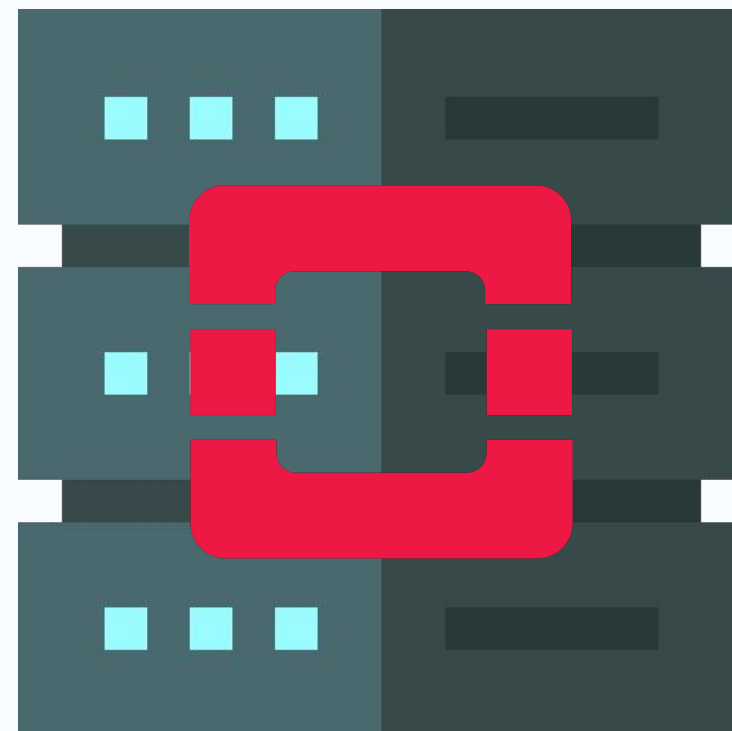
- CLI clients(nova, cinder, neutron and so on)
- Cloud management tools
- GUI tools

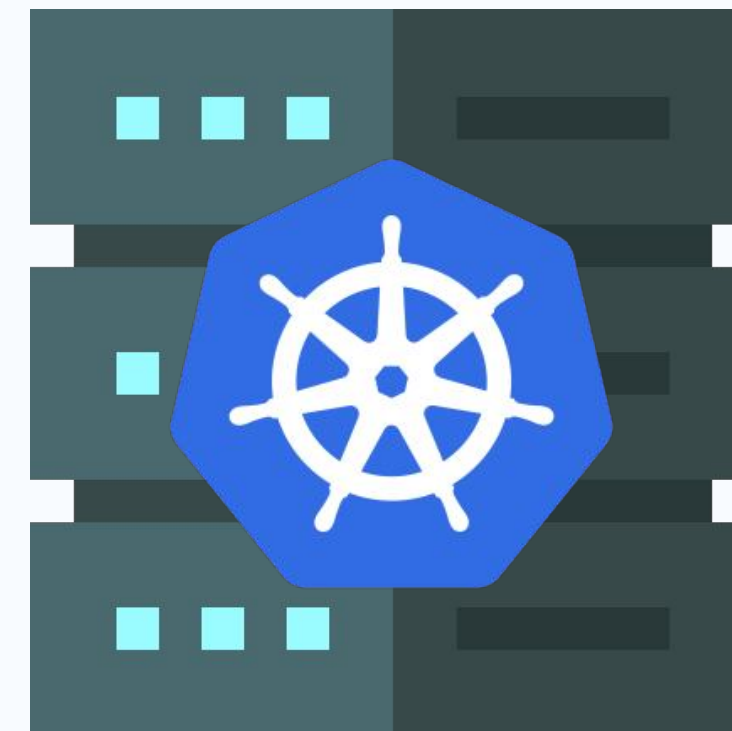
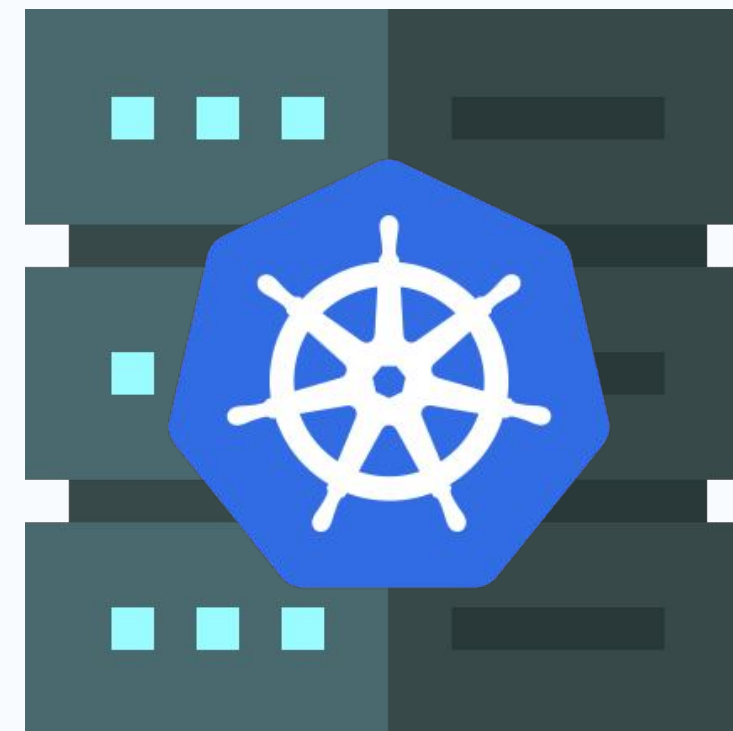
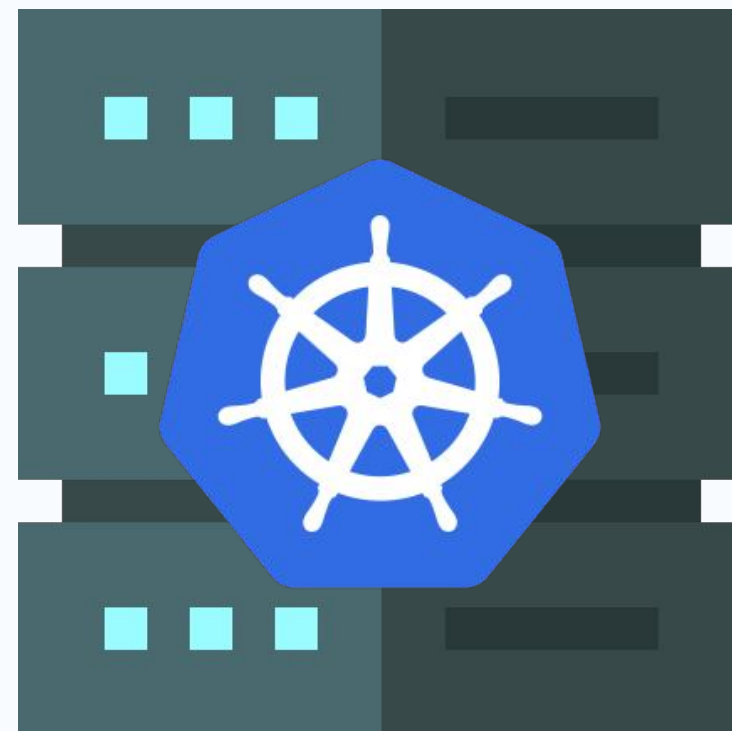


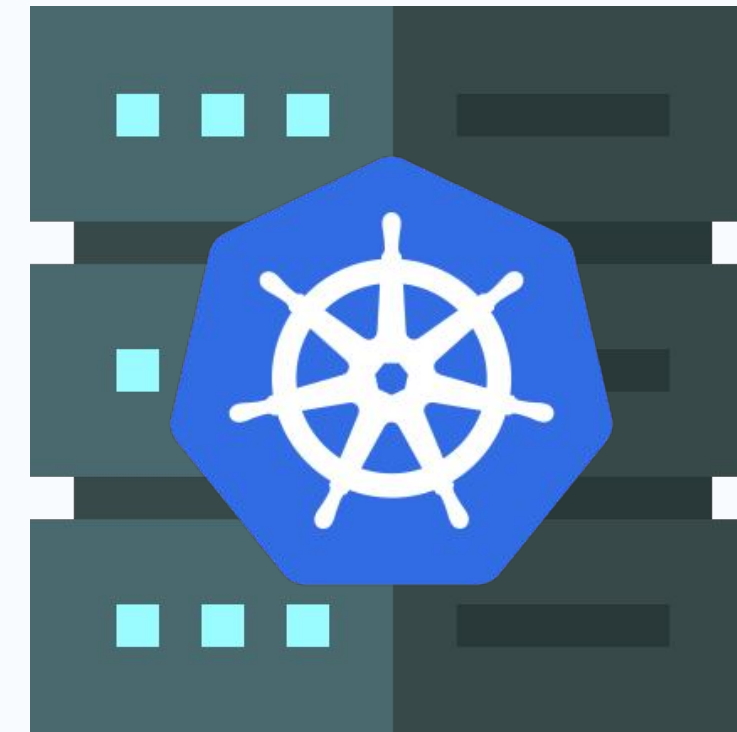
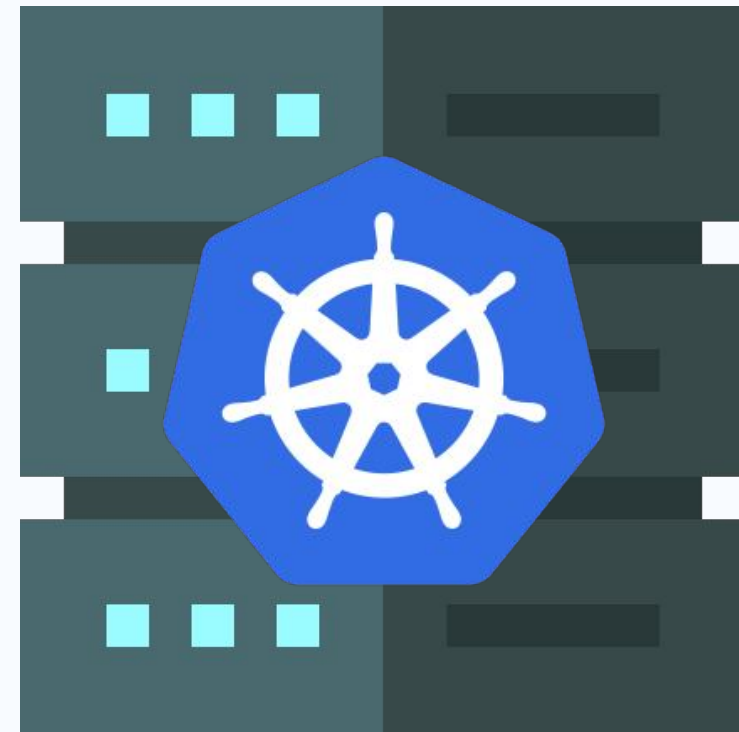
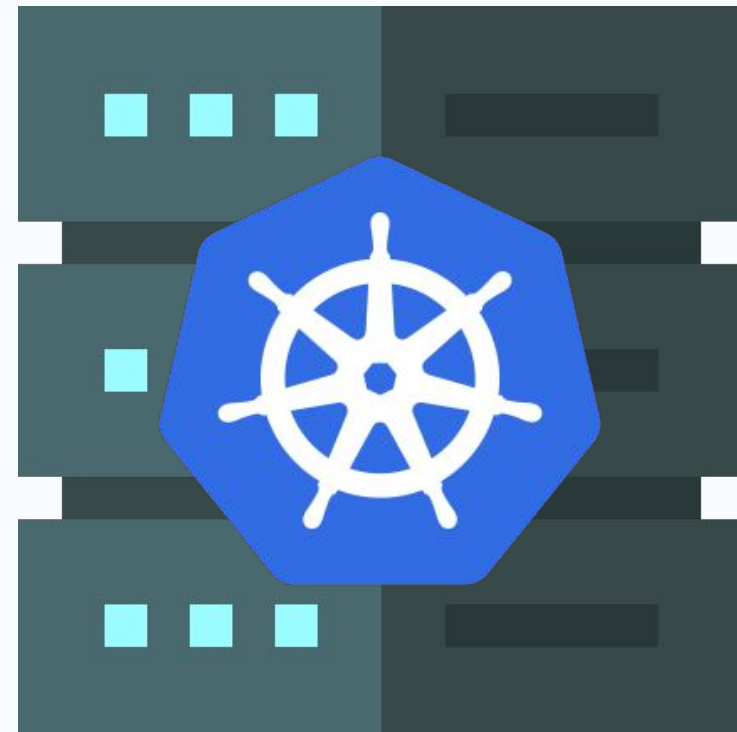


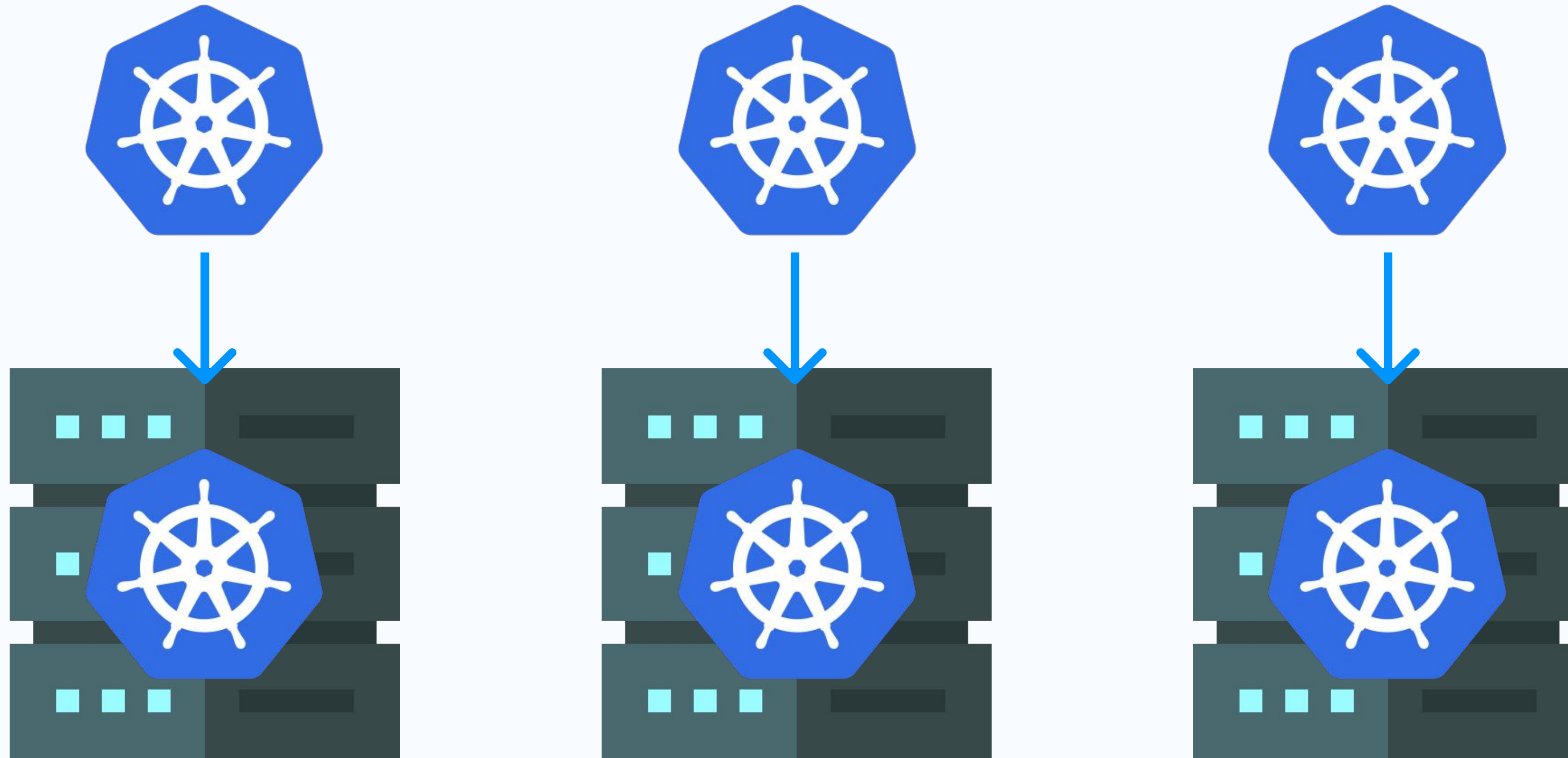
Вариант 3:

Матрешка - Kubernetes in Kubernetes!

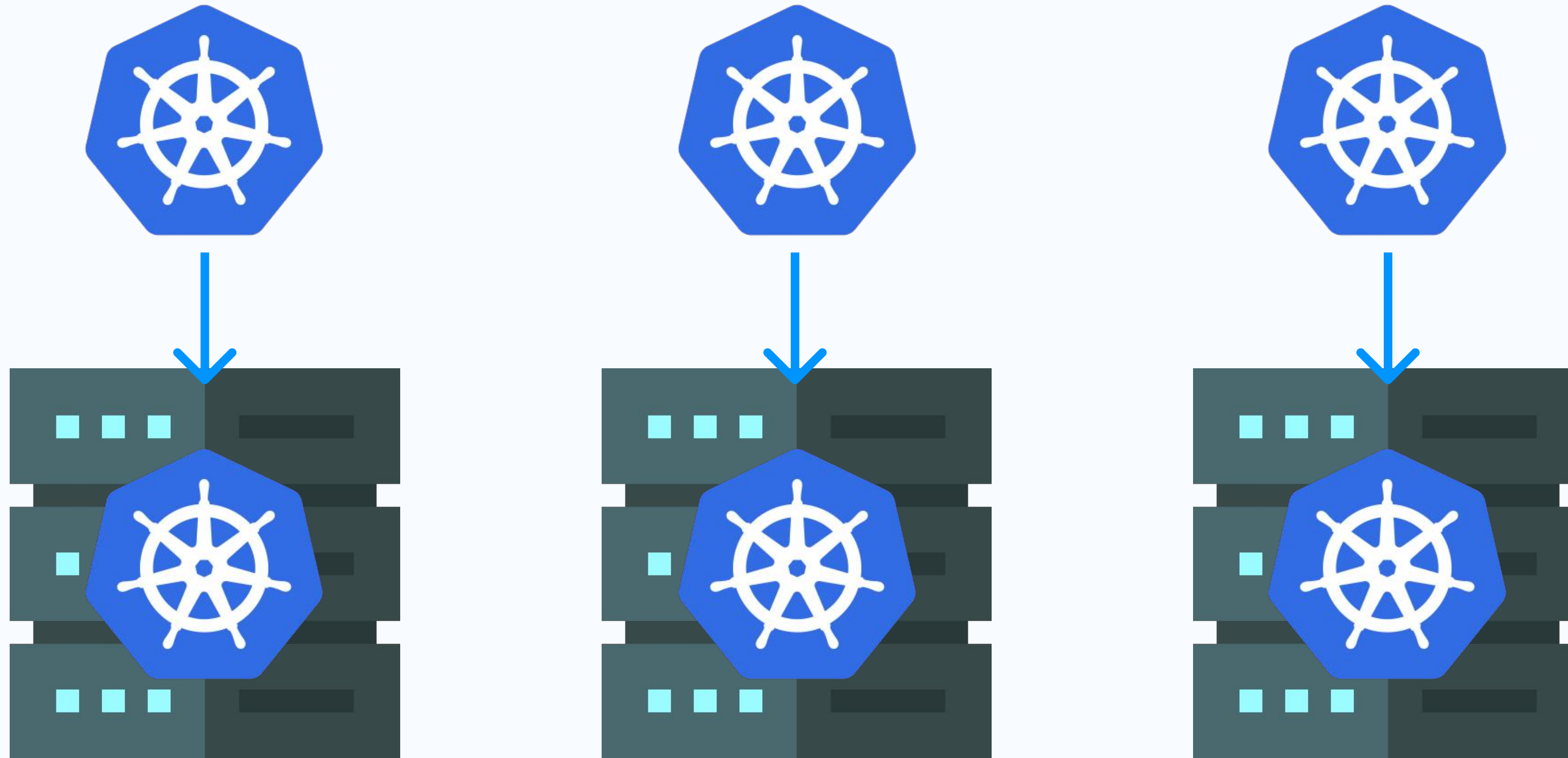








Управляющий кластер

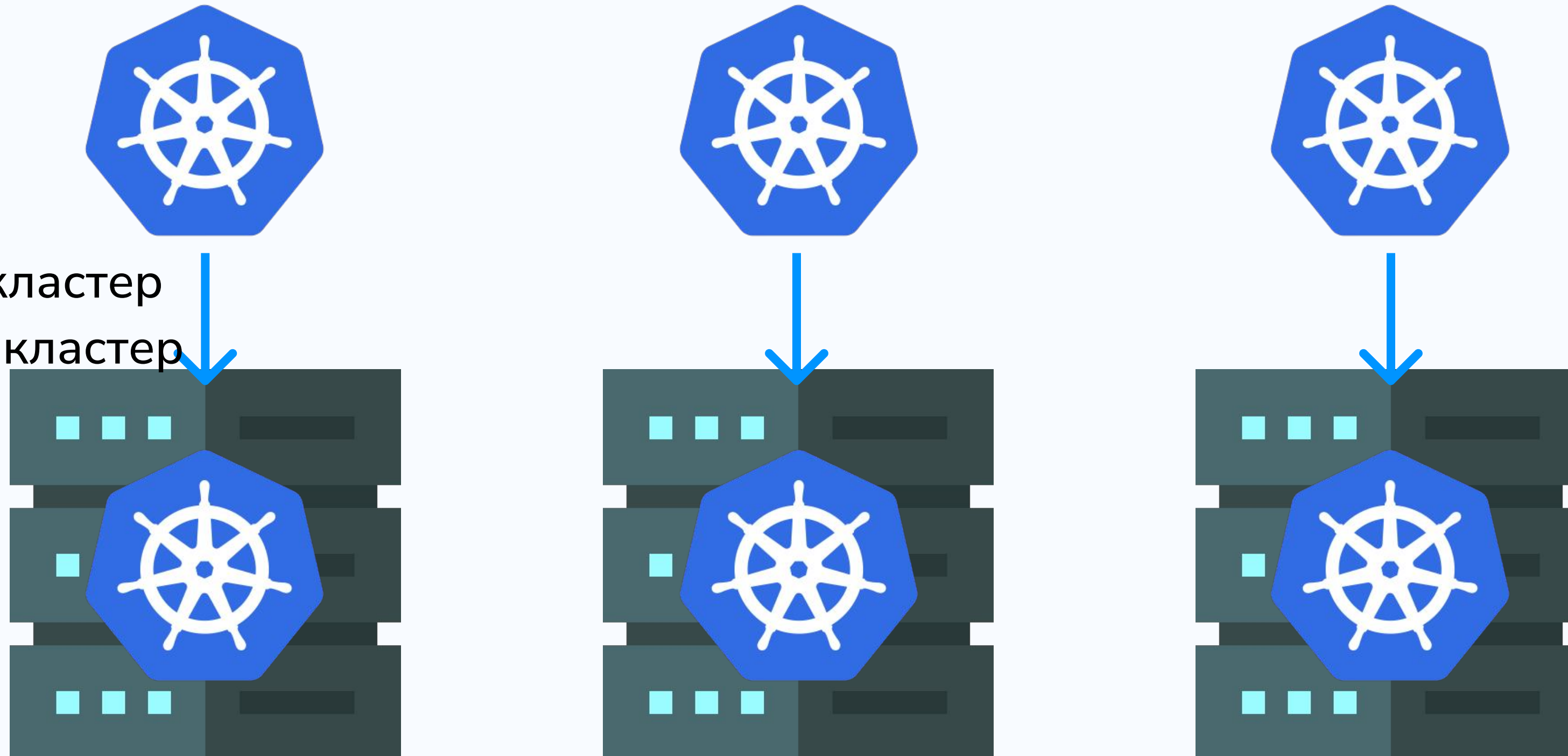


Тенант кластер

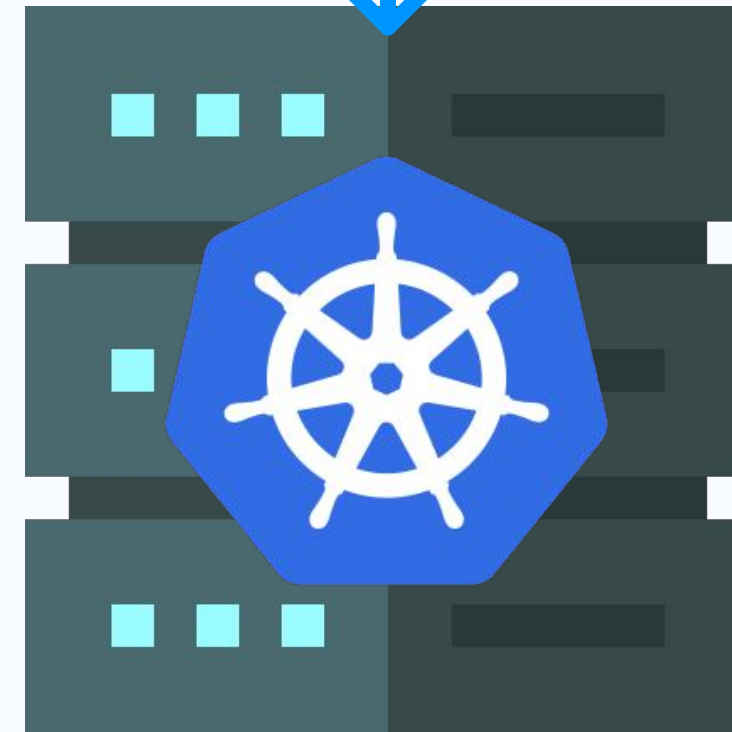
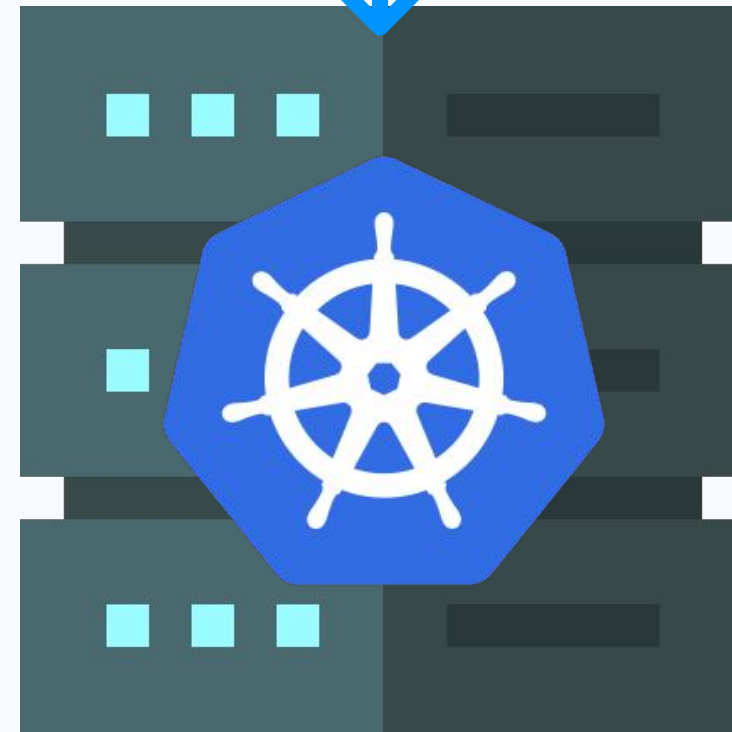
Еще можно называть:

- пользовательский кластер
- листовый (узловой) кластер

Управляющий кластер



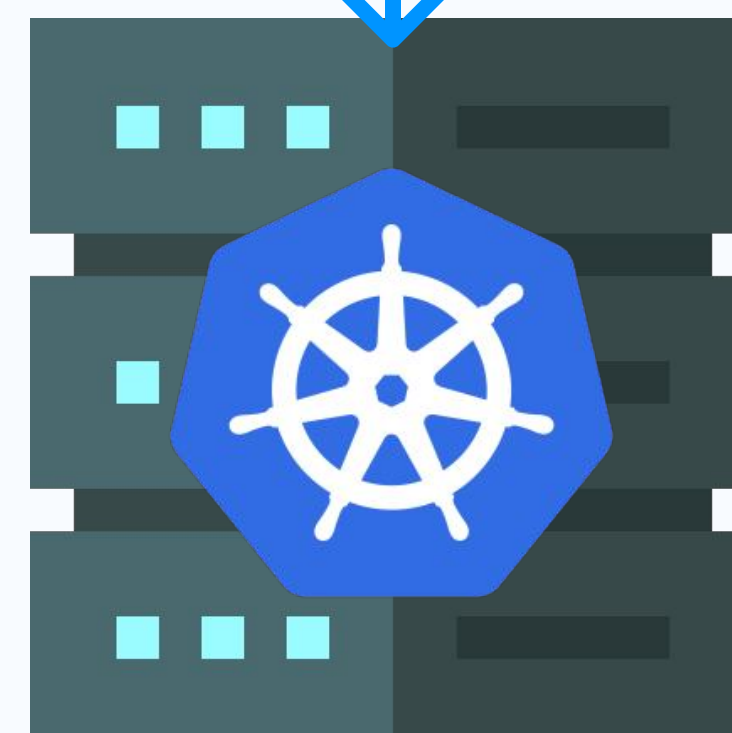
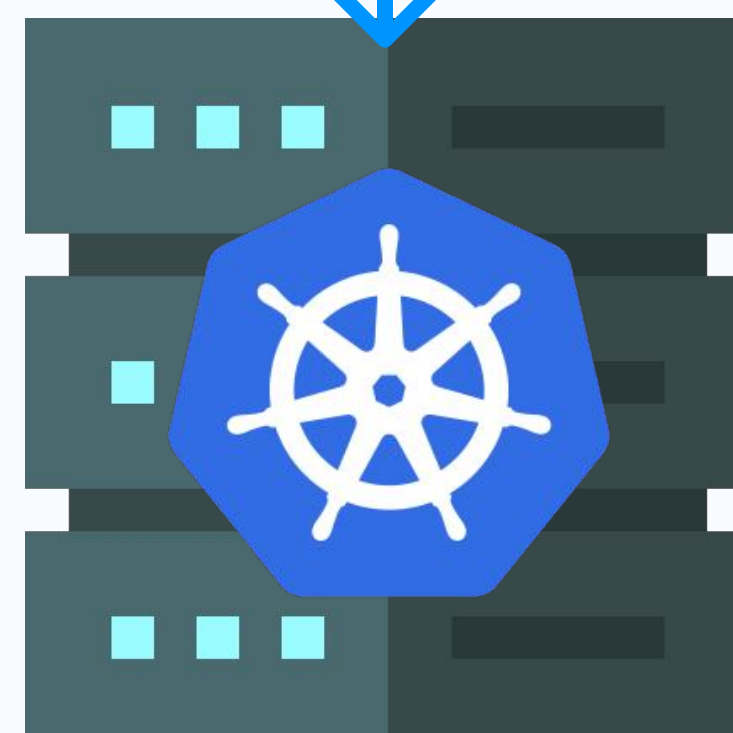
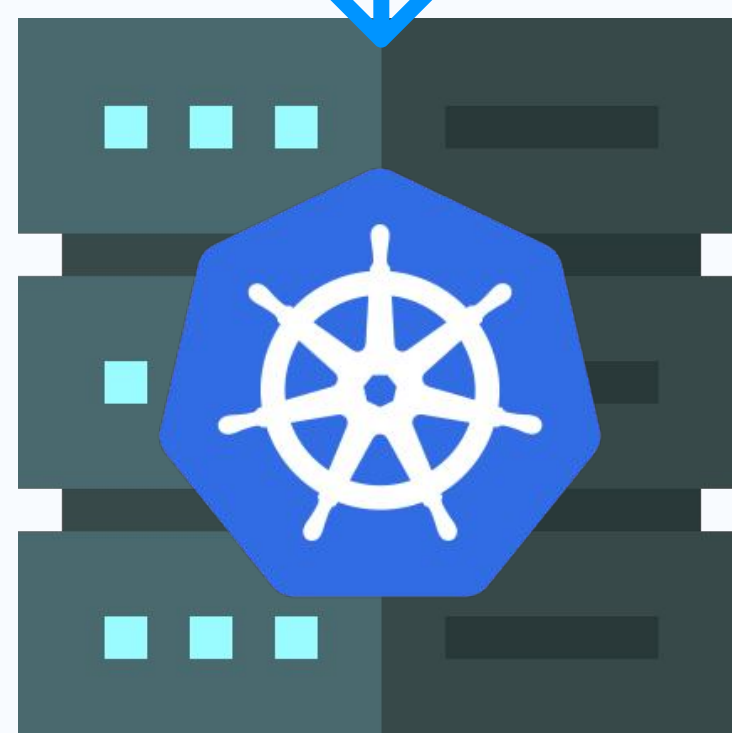
Тенант кластер



Управляющий кластер

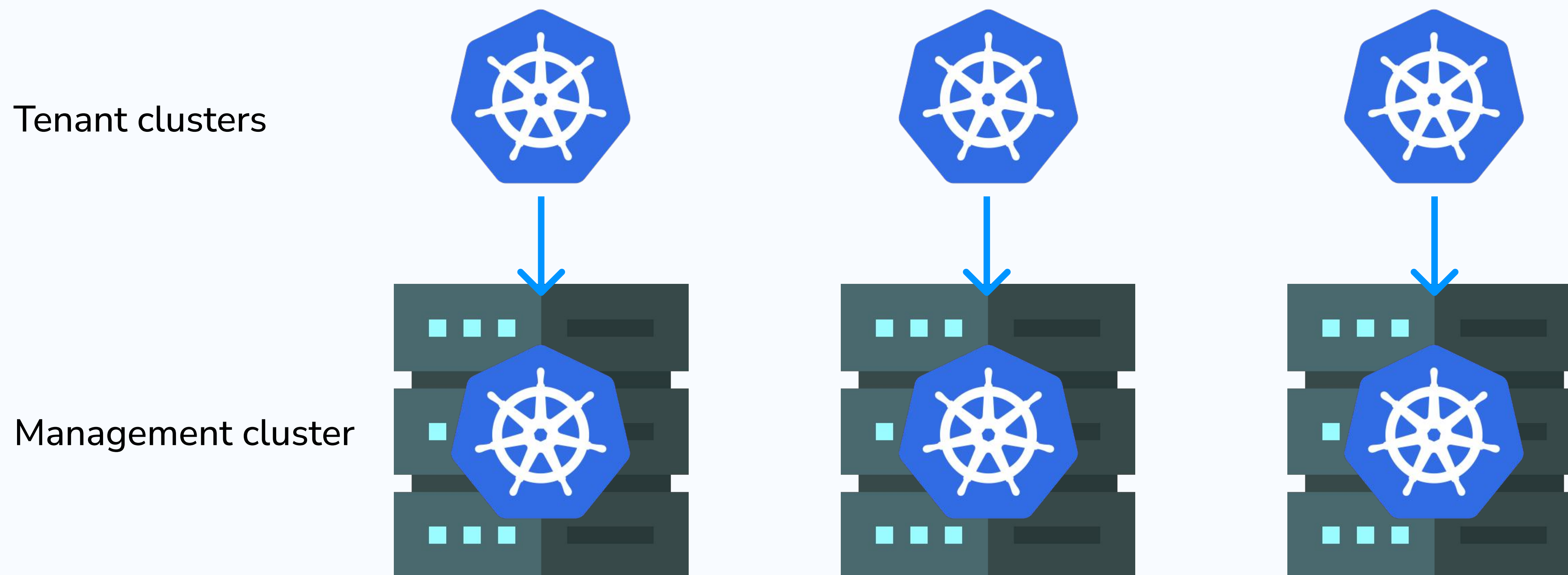
- единое окружение

Тенант кластер



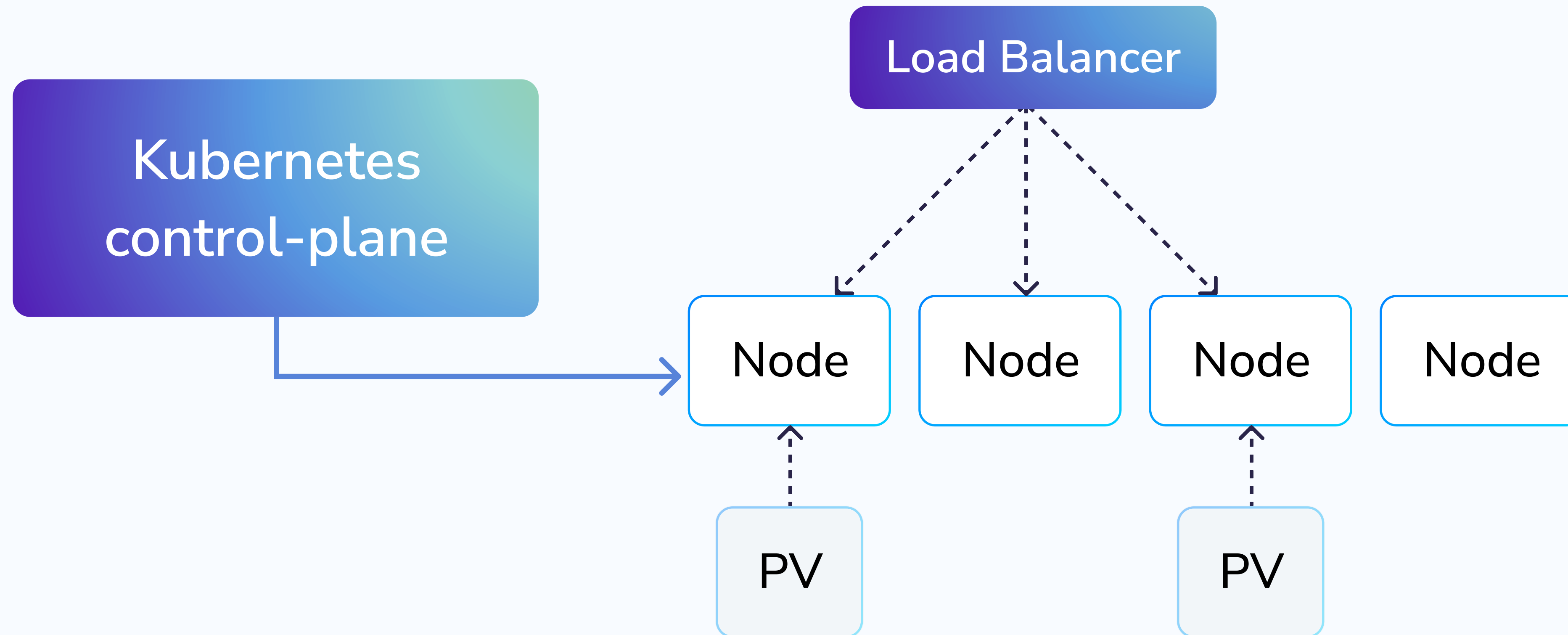
Управляющий кластер

- единое окружение
- единый способ управления

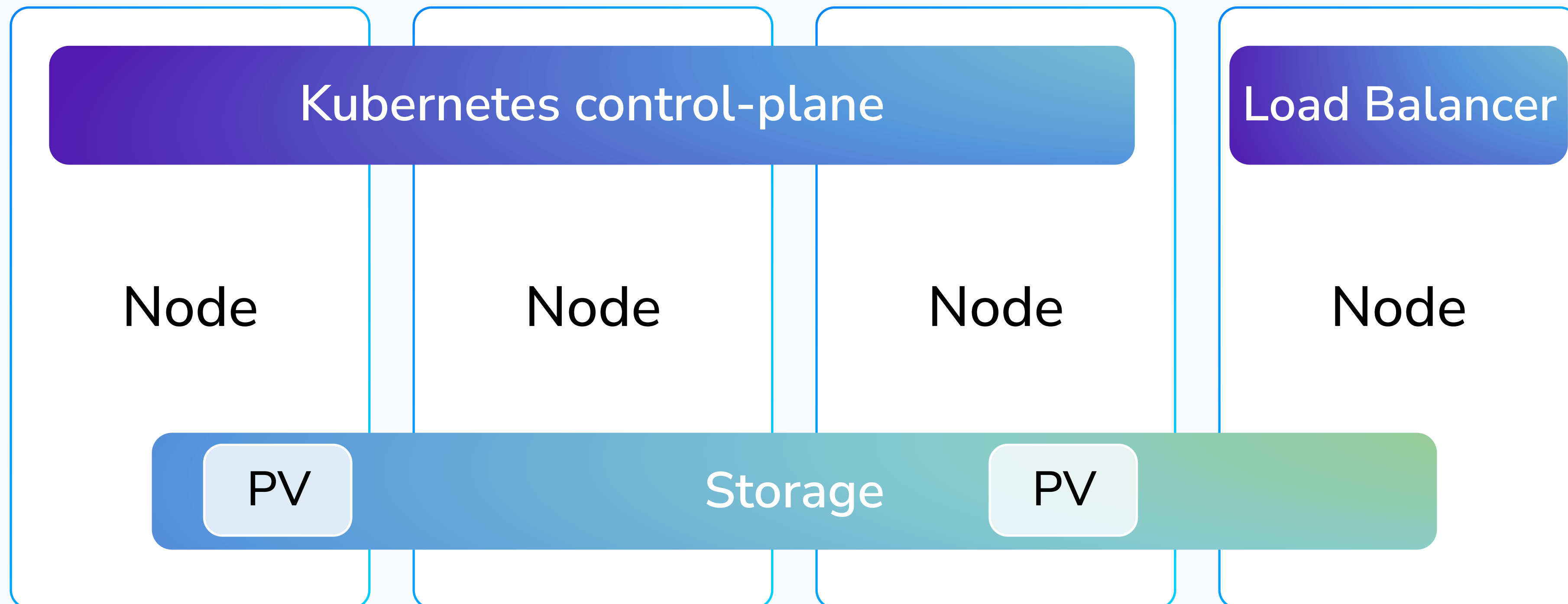


- единое окружение
- единый способ управления
- мульти-тенантность

Тенант кластер:

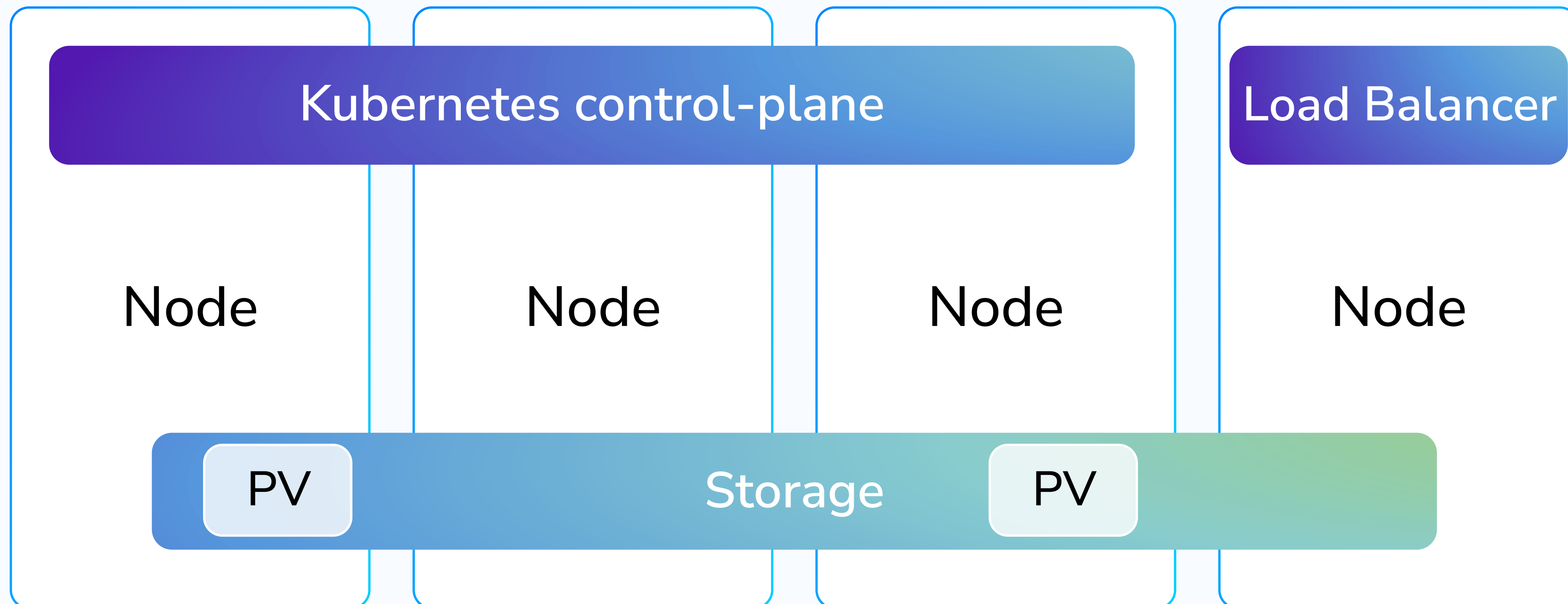


Управляющий кластер:



Управляющий кластер:

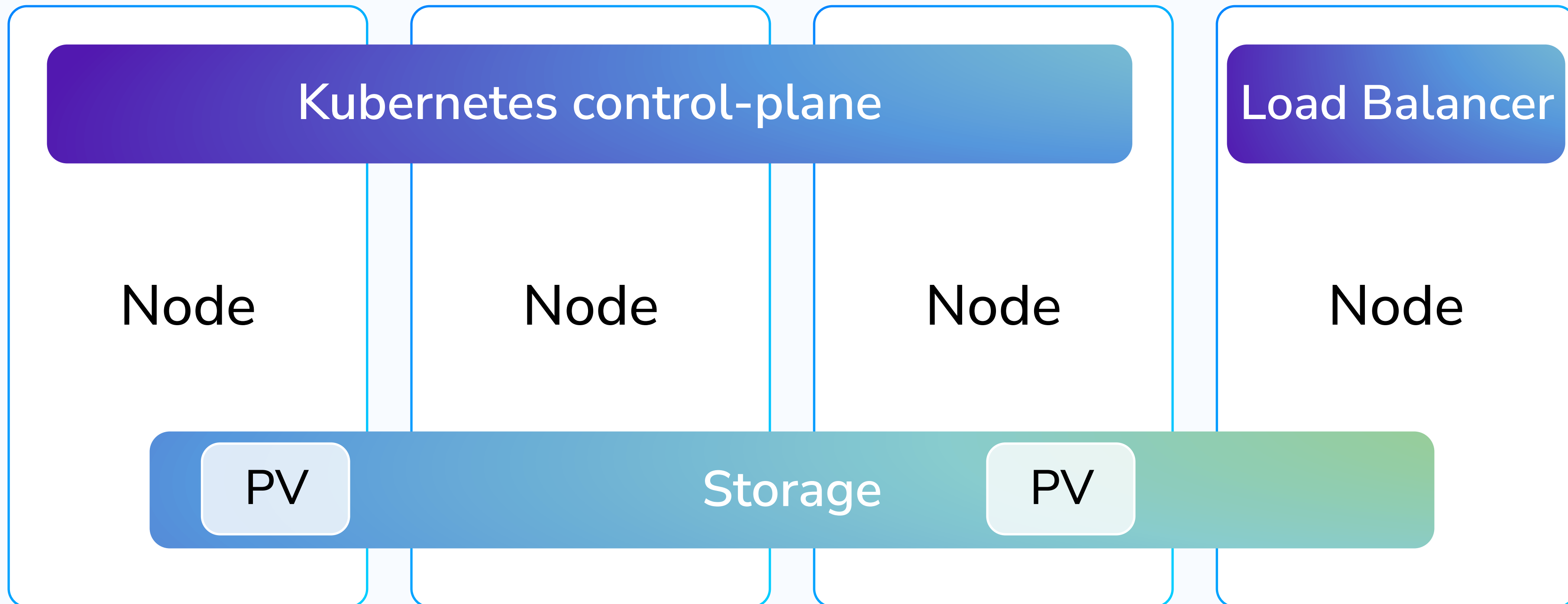
Предоставляет инфраструктурные сервисы :



Управляющий кластер:

Предоставляет инфраструктурные сервисы :

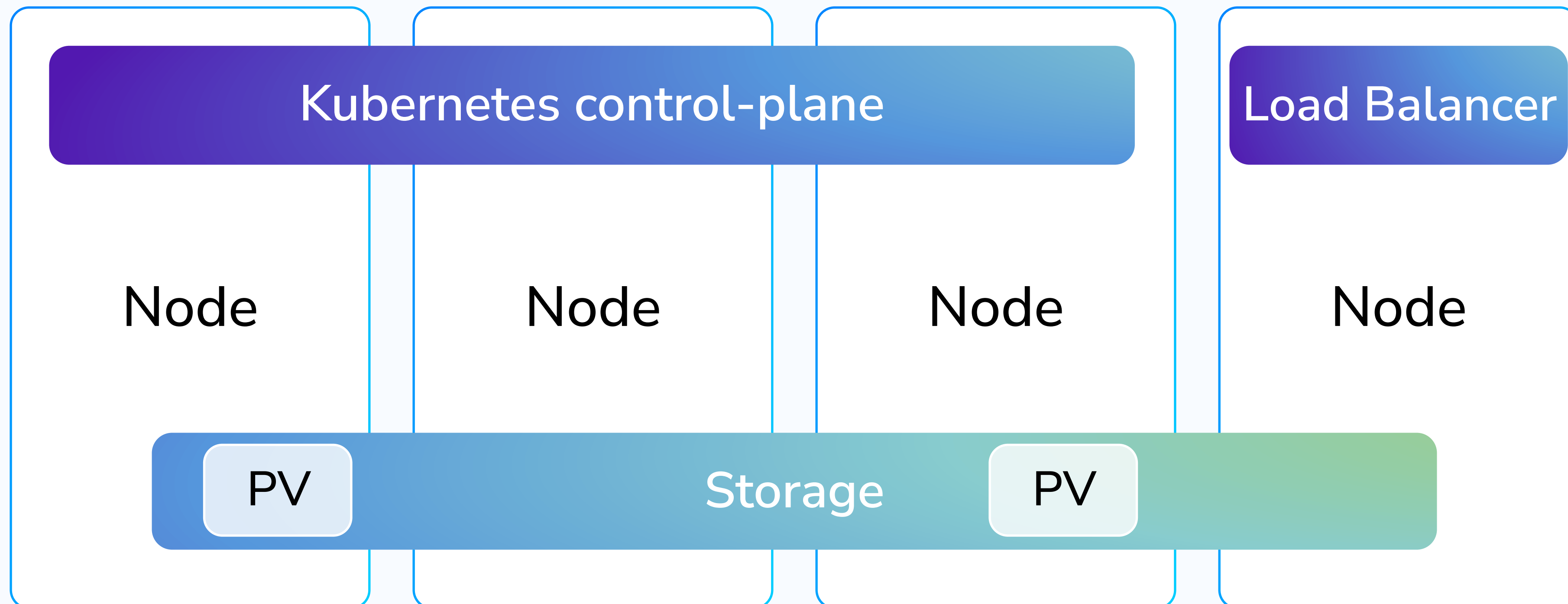
- виртуальные машины



Управляющий кластер:

Предоставляет инфраструктурные сервисы :

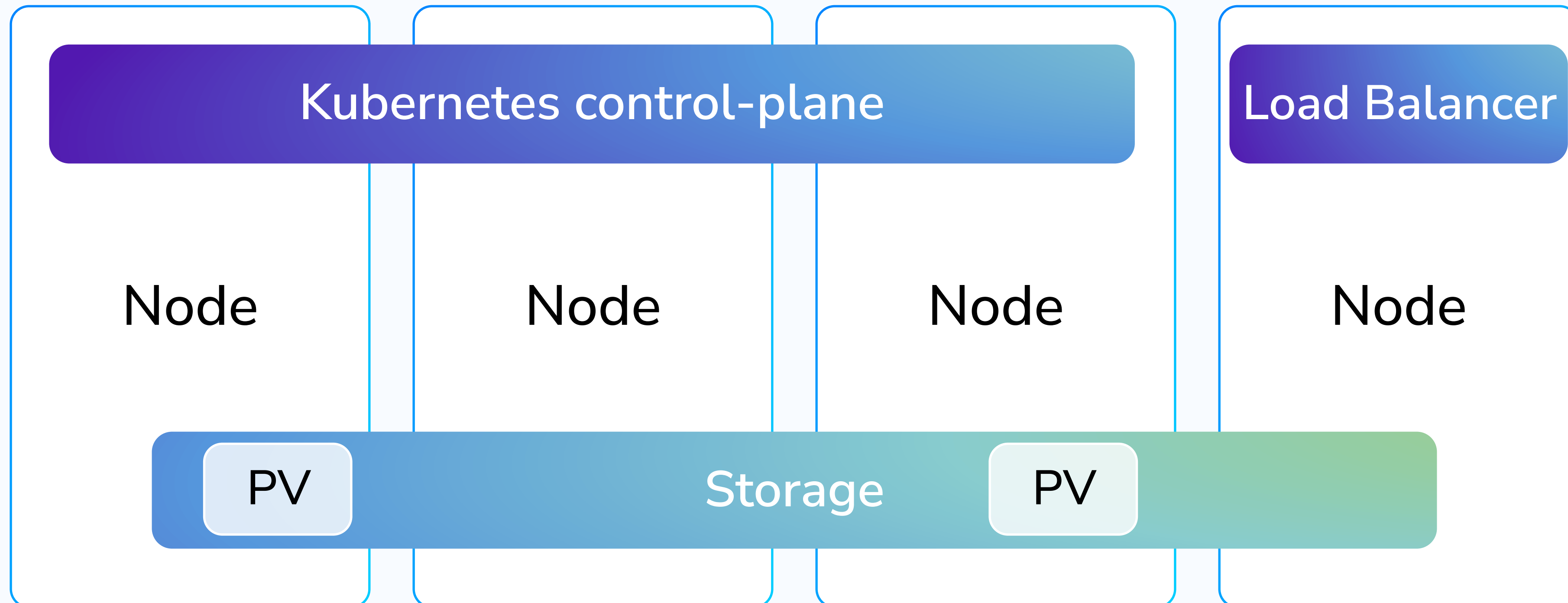
- виртуальные машины
- кластера kubernetes



Управляющий кластер:

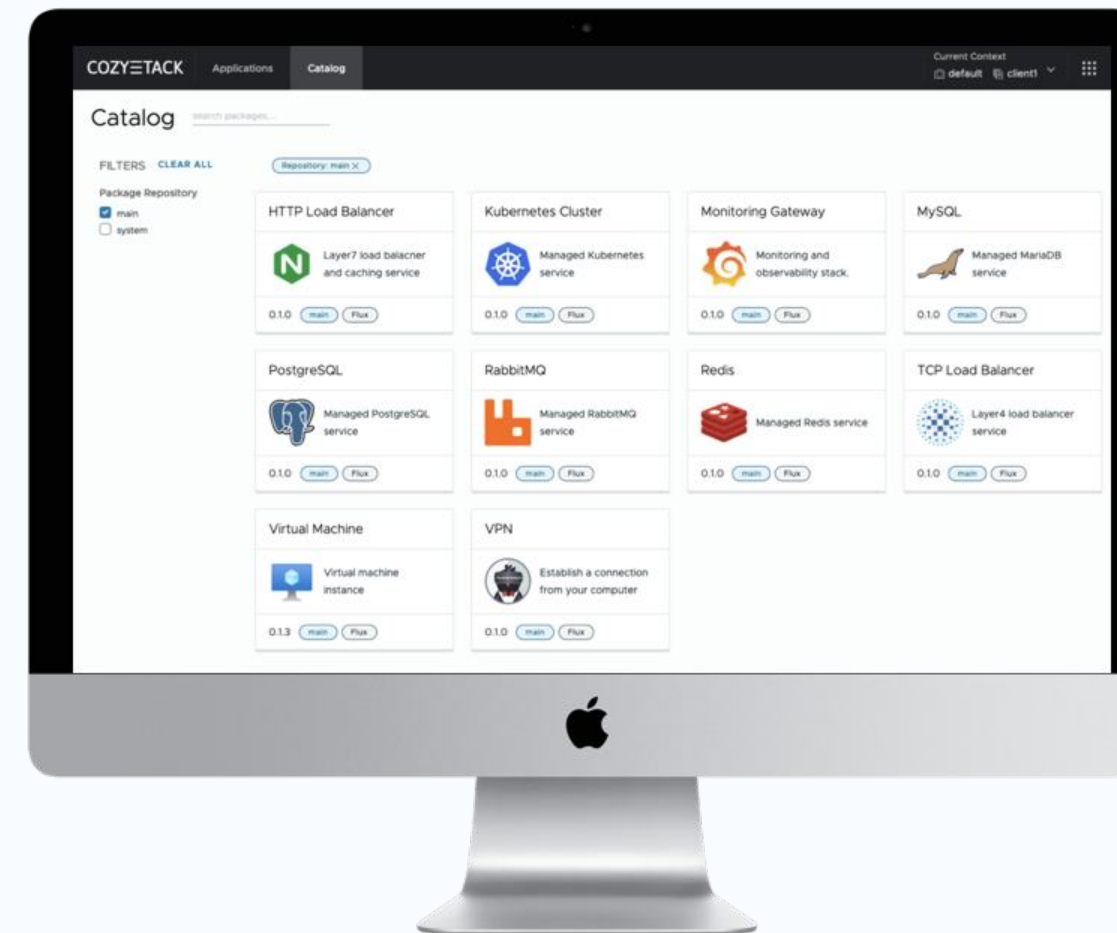
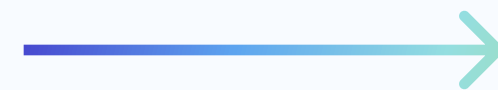
Предоставляет инфраструктурные сервисы :

- виртуальные машины
- кластера kubernetes
- СУБД
- прочие сервисы (кэши, S3...)

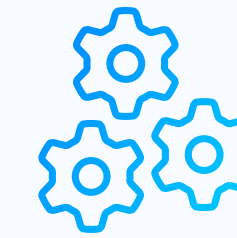


Платформа

Cozystack с легкостью превращает грудку серверов в умную систему с простым REST API для запуска кластеров Kubernetes, баз данных (DBaaS), виртуальных машин, балансировщиков нагрузки, HTTP-кэшей и других сервисов.



Monitoring



API



Kubernetes















Catalog

search packages...

FILTERS

Package Type

Helm Charts via Flux

<p>clickhouse</p>  <p>Managed ClickHouse service</p> <p>0.2.0 coystack-apps Flux</p>	<p>http-cache</p>  <p>Layer7 load balancer and caching service</p> <p>0.1.0 coystack-apps Flux</p>	<p>kafka</p>  <p>Managed Kafka service</p> <p>0.1.0 coystack-apps Flux</p>	<p>kubernetes</p>  <p>Managed Kubernetes service</p> <p>0.2.0 coystack-apps Flux</p>
<p>mysql</p>  <p>Managed MariaDB service</p> <p>0.3.0 coystack-apps Flux</p>	<p>postgres</p>  <p>Managed PostgreSQL service</p> <p>0.2.0 coystack-apps Flux</p>	<p>rabbitmq</p>  <p>Managed RabbitMQ service</p> <p>0.2.0 coystack-apps Flux</p>	<p>redis</p>  <p>Managed Redis service</p> <p>0.2.0 coystack-apps Flux</p>
<p>tcp-balancer</p>  <p>Layer4 load balancer service</p> <p>0.2.0 coystack-apps Flux</p>	<p>tenant</p>  <p>Additional tenant namespace</p> <p>1.0.0 coystack-apps Flux</p>	<p>virtual-machine</p>  <p>Virtual machine instance</p> <p>0.1.5 coystack-apps Flux</p>	<p>vpn</p>  <p>Managed VPN service</p> <p>0.2.0 coystack-apps Flux</p>

Развертывание приложения через дашборд

COZYETACK Applications Catalog Current Context default tenant-test0

virtual-machine Helm Chart via Flux Package Version 0.2.0 / App Version 1.16.1

App Version 1.16.1

Package Version 0.2.0

Name: A descriptive name for this application

Visual editor | YAML editor

PAGE 1 OF 1 Search Type to search by key...

+	Key	Type	Description	Default Value	Current Value
	external	boolean	external	false	<input type="checkbox"/> false
	running	boolean	running	true	<input checked="" type="checkbox"/> true
	password	string	password	hackme
	image	string	image	ubuntu	ubuntu
	disk	string	disk	5Gi	5Gi
-	resources	object	resources		
	resources/cpu	number	cpu	1	1
	resources/memory	string	memory	1024M	1024M

PAGE 1 OF 1 Page size Show 10

The unsaved changes will automatically be applied before deploying or when visualizing the diff view. You can also [save the changes manually](#).

DEPLOY 0.2.0 RESTORE DEFAULTS

```
external: false
running: true
password: hackme
image: ubuntu
disk: 5Gi
resources:
  cpu: 1
  memory: 1024M
```

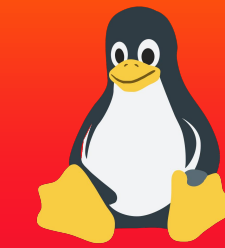
COZYETACK

Layer 1



COZYETACK

Layer 1



COZYETACK

Layer 1

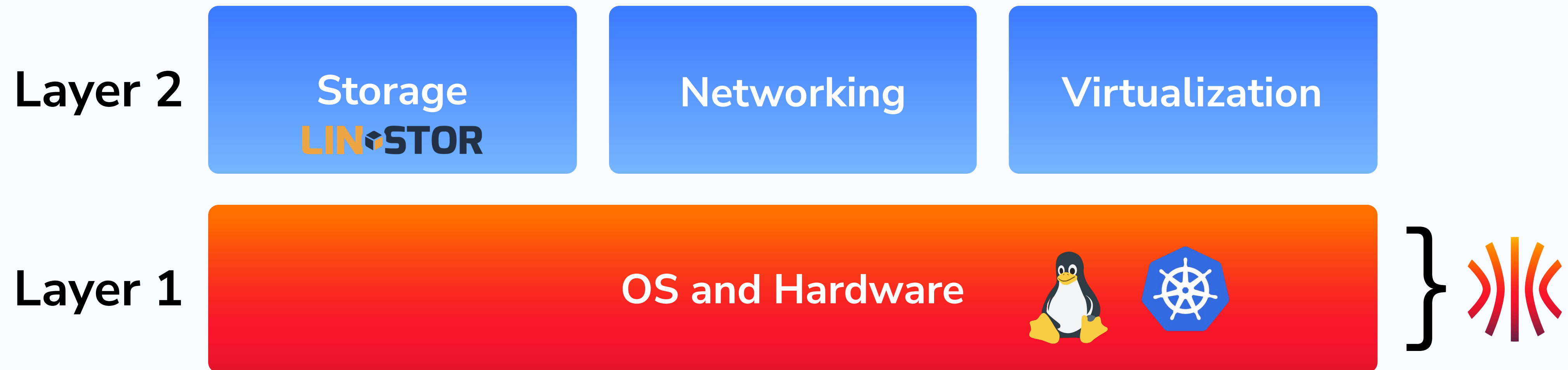
OS and Hardware



COZYETACK



COZYETACK



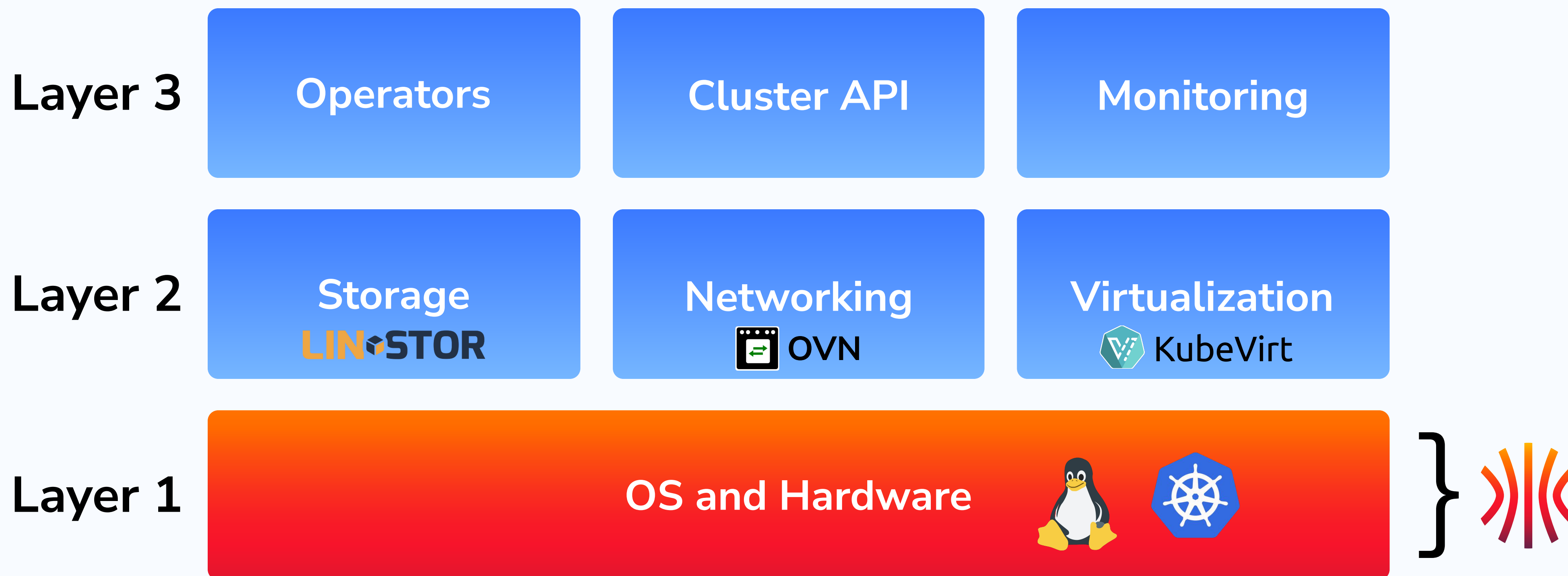
COZYETACK



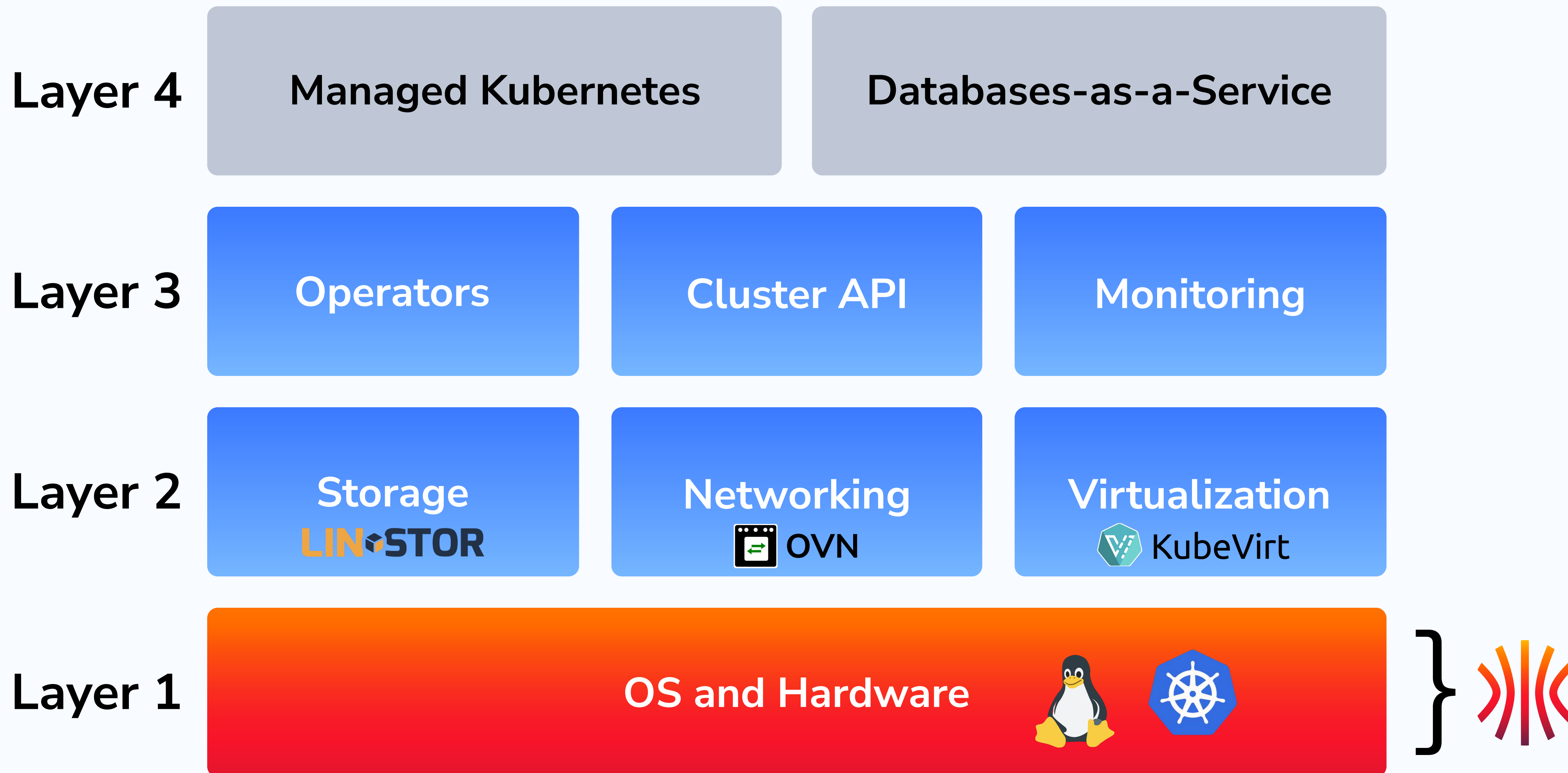
COZYETACK



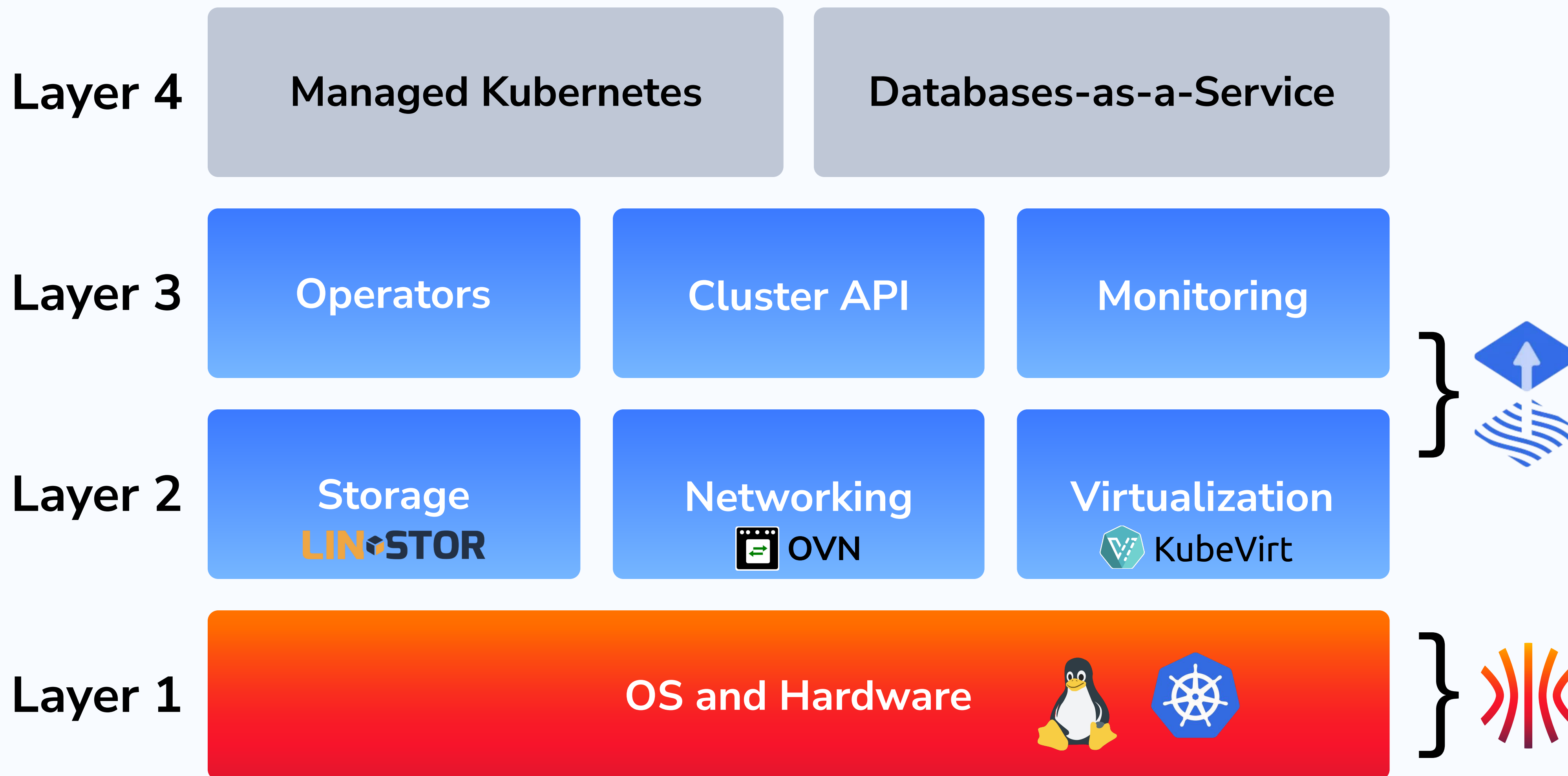
COZYETACK



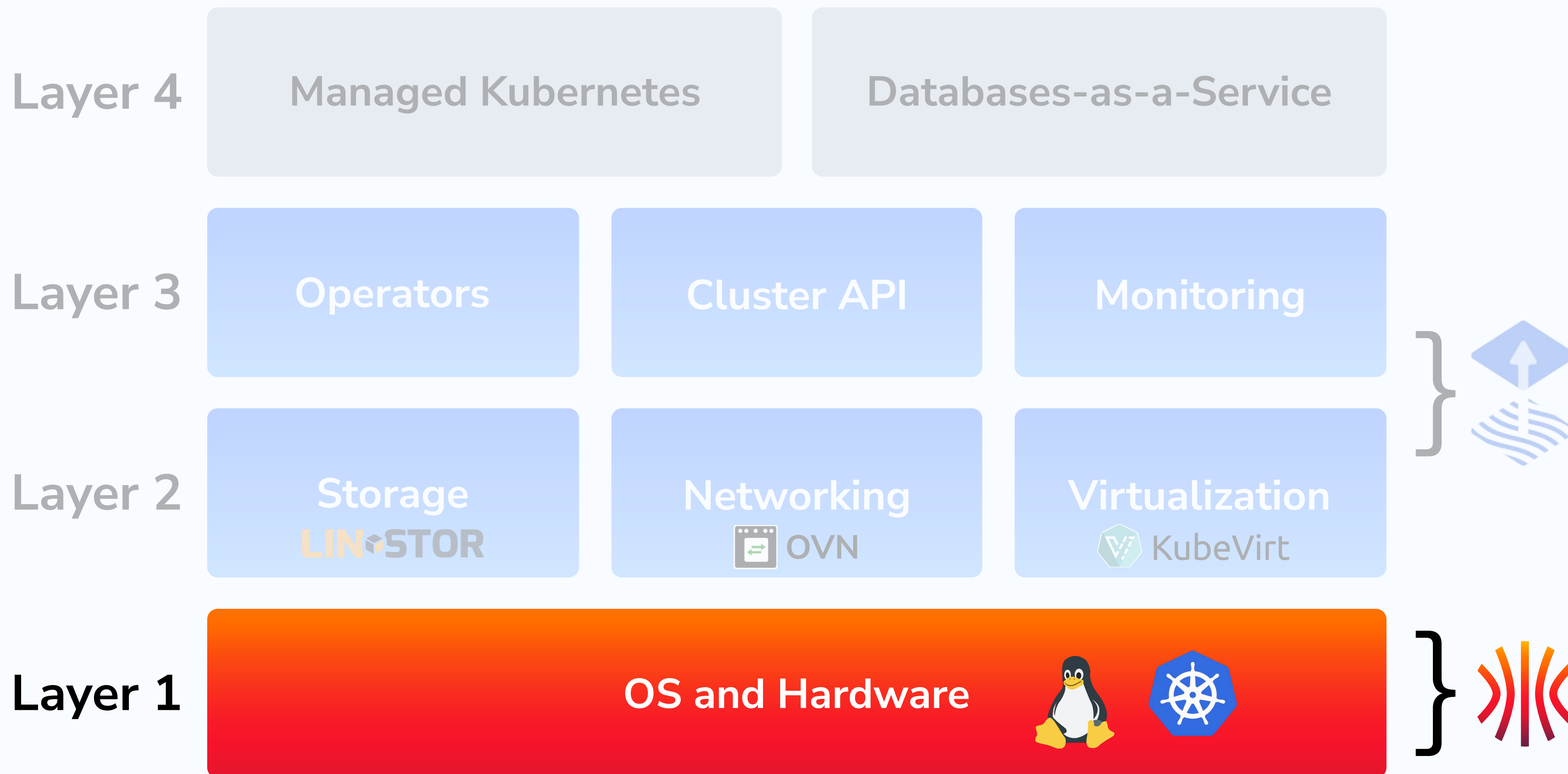
COZYETACK



COZYETACK



COZYETACK

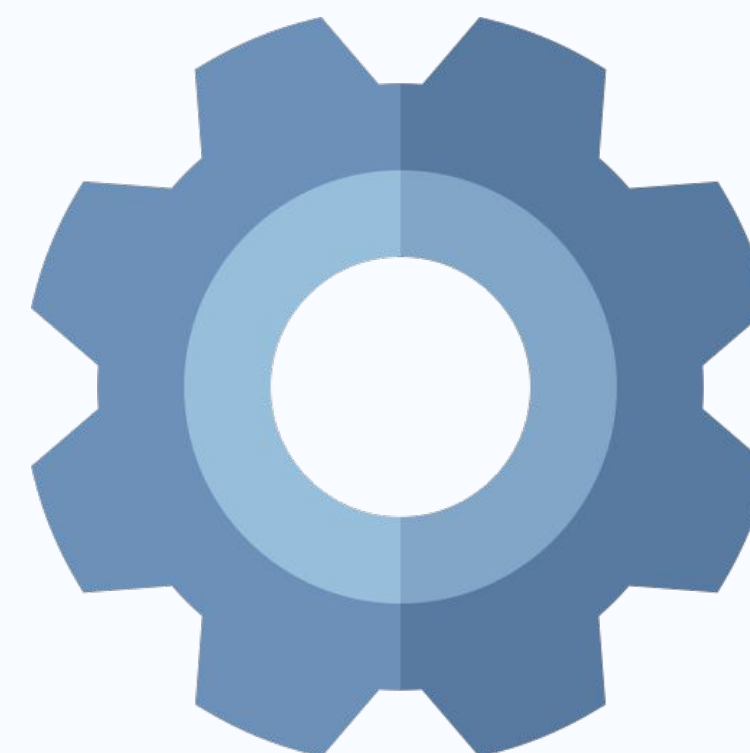




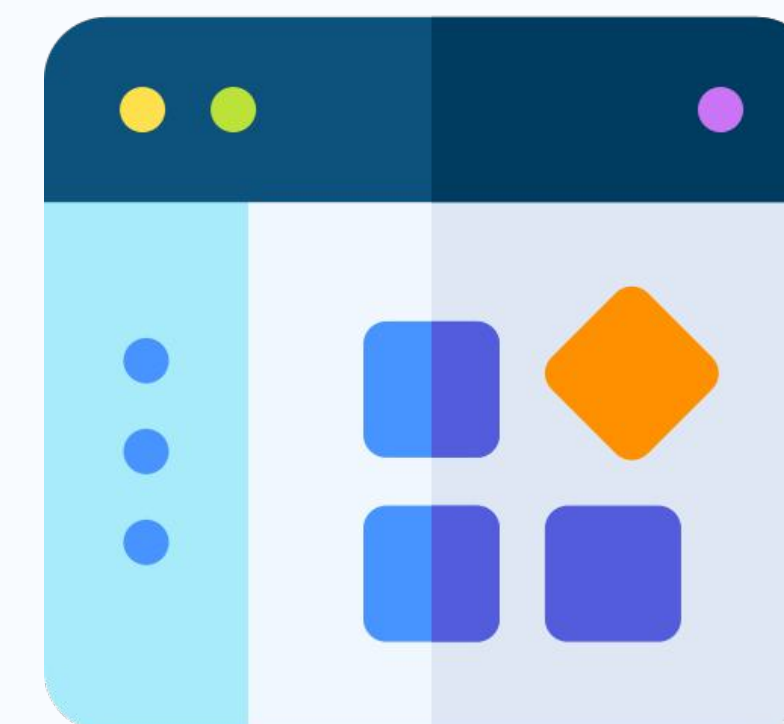
К8s на железе



Железо и ОС



Системные
компоненты



Пользовательские
приложения

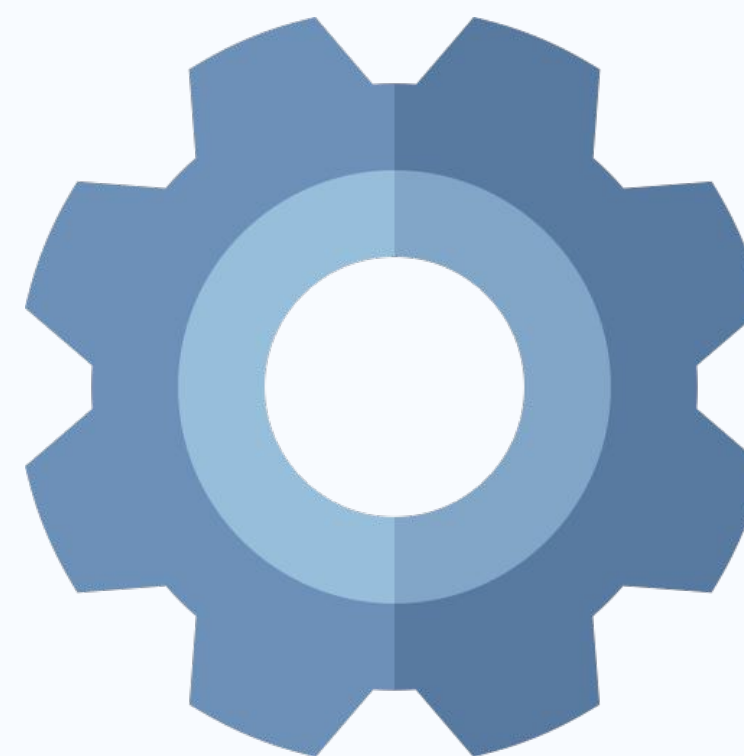
 **ПЛАТФОРМА**



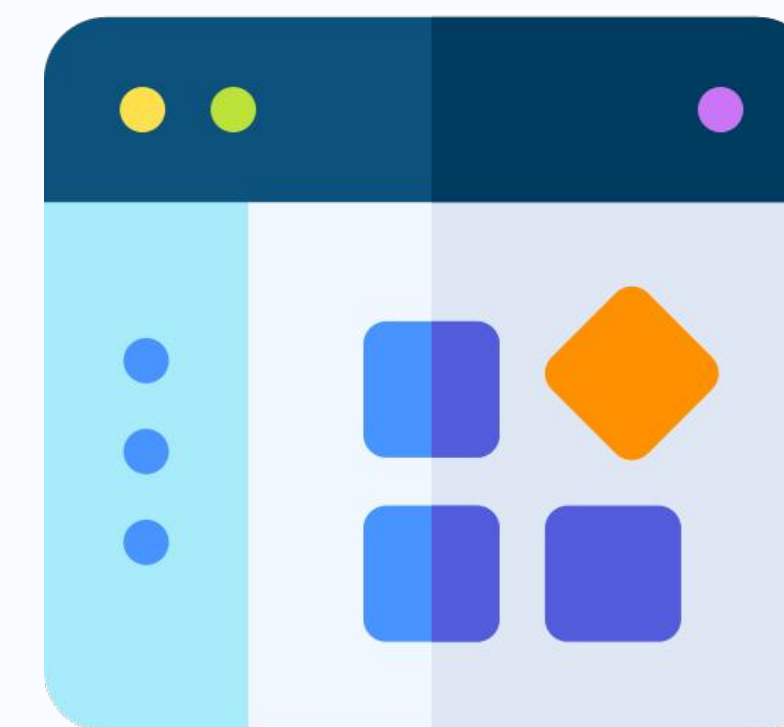
K8s на железе



Железо и ОС



Системные
компоненты



Пользовательские
приложения

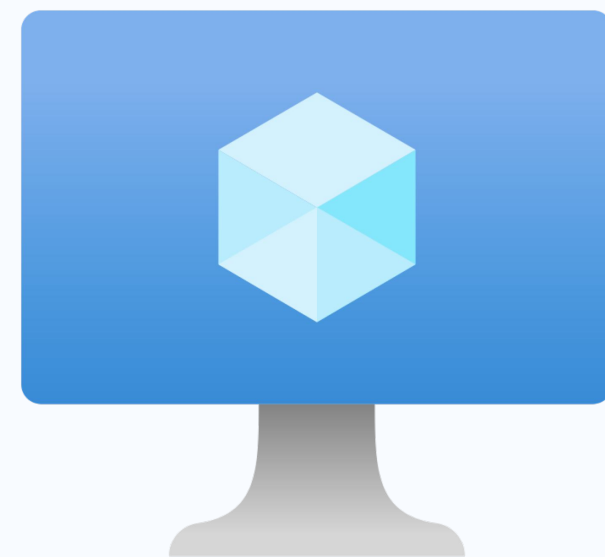
 ПЛАТФОРМА

Уже есть инфраструктура

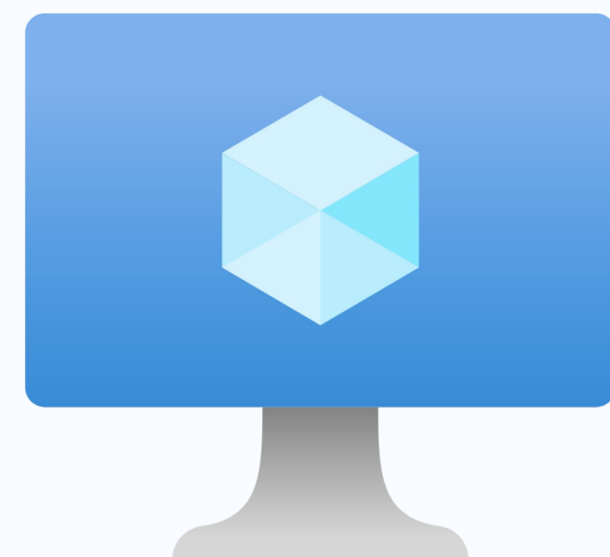
Уже есть инфраструктура



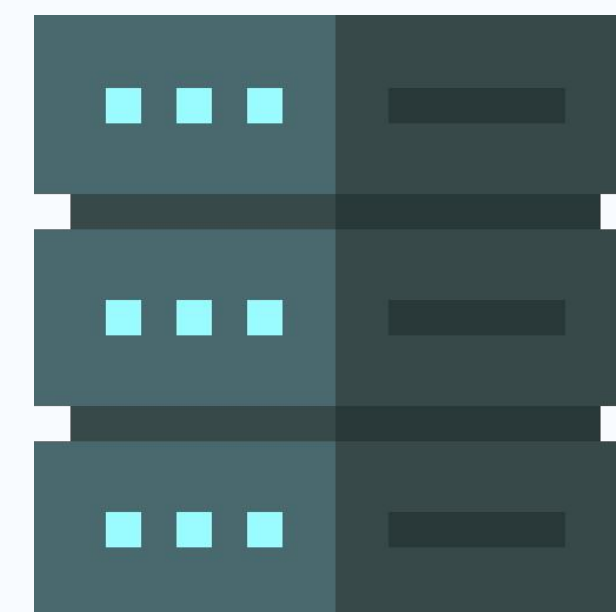
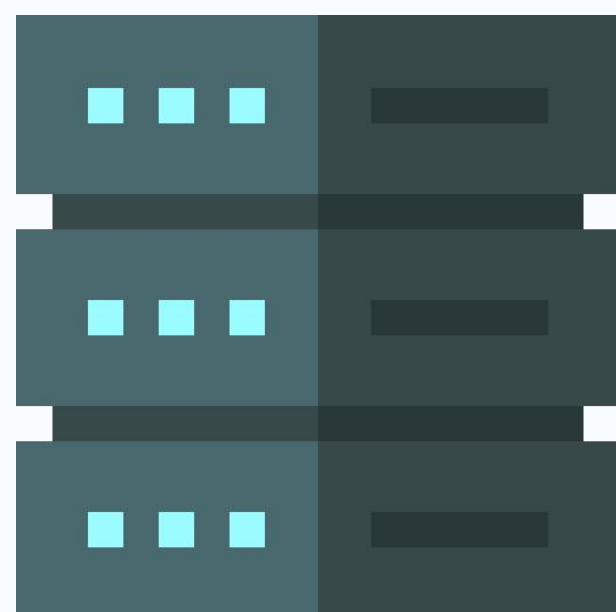
Уже есть инфраструктура



Уже есть инфраструктура



Уже есть инфраструктура



Предсобранные образа Talos Linux:

Предсобранные образа Talos Linux:

72

▼ Bare Metal Platforms

Digital Rebar

Equinix Metal

ISO

Matchbox

Network Configuration

PXE

SecureBoot

Предсобранные образа Talos Linux:

73

▼ Bare Metal Platforms

- Digital Rebar
- Equinix Metal
- ISO
- Matchbox
- Network Configuration
- PXE
- SecureBoot

▼ Virtualized Platforms

- Hyper-V
- KVM
- Proxmox
- Vagrant & Libvirt
- VMware
- Xen

Предсобранные образа Talos Linux:

74

▼ Bare Metal Platforms

- Digital Rebar
- Equinix Metal
- ISO
- Matchbox
- Network Configuration
- PXE
- SecureBoot

▼ Virtualized Platforms

- Hyper-V
- KVM
- Proxmox
- Vagrant & Libvirt
- VMware
- Xen

▼ Cloud Platforms

- AWS
- Azure
- DigitalOcean
- Exoscale
- GCP
- Hetzner
- Nocloud
- Openstack
- Oracle
- Scaleway
- UpCloud
- Vultr

Предсобранные образа Talos Linux:

75

▼ Bare Metal Platforms

- Digital Rebar
- Equinix Metal
- ISO
- Matchbox
- Network Configuration
- PXE
- SecureBoot

▼ Virtualized Platforms

- Hyper-V
- KVM
- Proxmox
- Vagrant & Libvirt
- VMware
- Xen

▼ Cloud Platforms

- AWS
- Azure
- DigitalOcean
- Exoscale
- GCP
- Hetzner
- Nocloud
- Openstack
- Oracle
- Scaleway
- UpCloud
- Vultr

▼ Local Platforms

- Docker

Предсобранные образа Talos Linux:

76

▼ Bare Metal Platforms

- Digital Rebar
- Equinix Metal
- ISO
- Matchbox
- Network Configuration
- PXE
- SecureBoot

▼ Virtualized Platforms

- Hyper-V
- KVM
- Proxmox
- Vagrant & Libvirt
- VMware
- Xen

▼ Cloud Platforms

- AWS
- Azure
- DigitalOcean
- Exoscale
- GCP
- Hetzner
- Nocloud
- Openstack
- Oracle
- Scaleway
- UpCloud
- Vultr

▼ Local Platforms

- Docker

Предсобранные образа Talos Linux:

▼ Bare Metal Platforms

Digital Rebar

Equinix Metal

ISO

Matchbox

Network Configuration

PXE

SecureBoot

▼ Virtualized Platforms

Hyper-V

KVM

Proxmox

Vagrant & Libvirt

VMware

Xen

▼ Cloud Platforms

AWS

Azure

DigitalOcean

Exoscale

GCP

Hetzner

Nocloud

Openstack

Oracle

Scaleway

UpCloud

Vultr

▼ Local Platforms

Docker

Предсобранные образа Talos Linux:

78

▼ Bare Metal Platforms

- Digital Rebar
- Equinix Metal
- ISO
- Matchbox
- Network Configuration
- PXE
- SecureBoot

▼ Virtualized Platforms

- Hyper-V
- KVM
- Proxmox
- Vagrant & Libvirt
- VMware
- Xen

▼ Cloud Platforms

- AWS
- Azure
- DigitalOcean
- Exoscale
- GCP
- Hetzner
- Nocloud
- Openstack
- Oracle
- Scaleway
- UpCloud
- Vultr

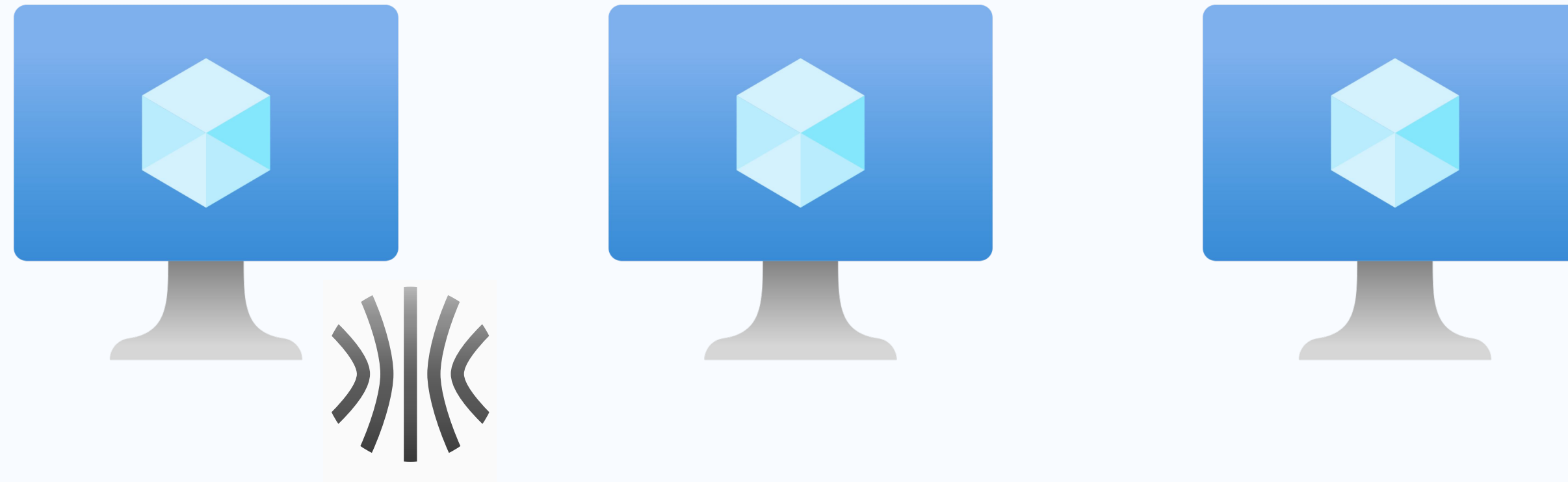
▼ Local Platforms

- Docker

Для первоначального запуска нужно просто загрузить образ Talos 79



Для первоначального запуска нужно просто загрузить образ Talos 80

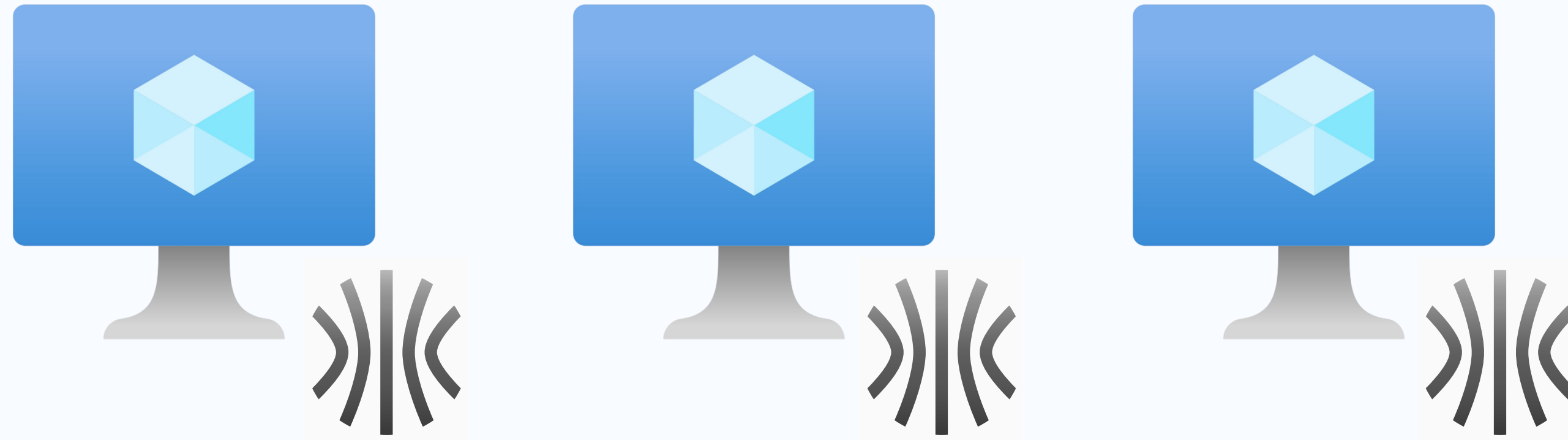


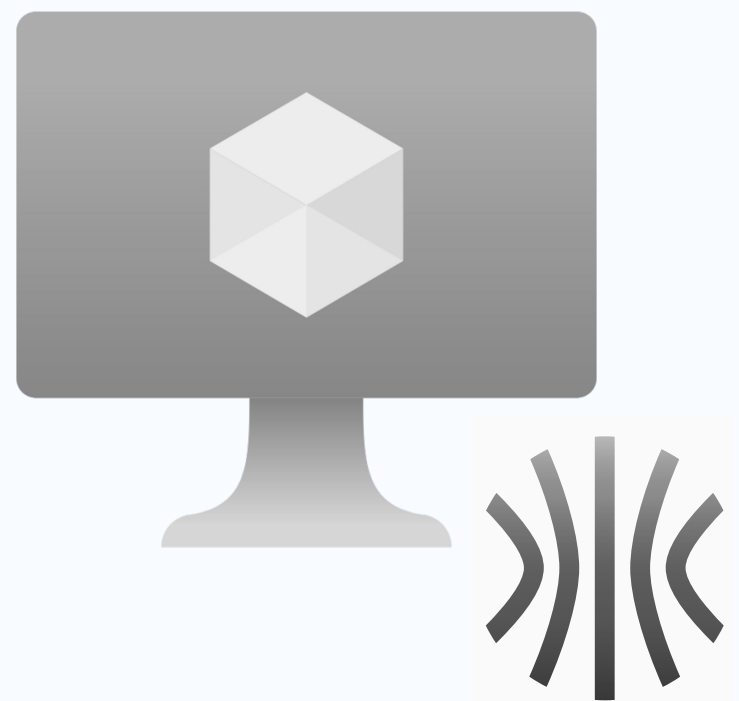
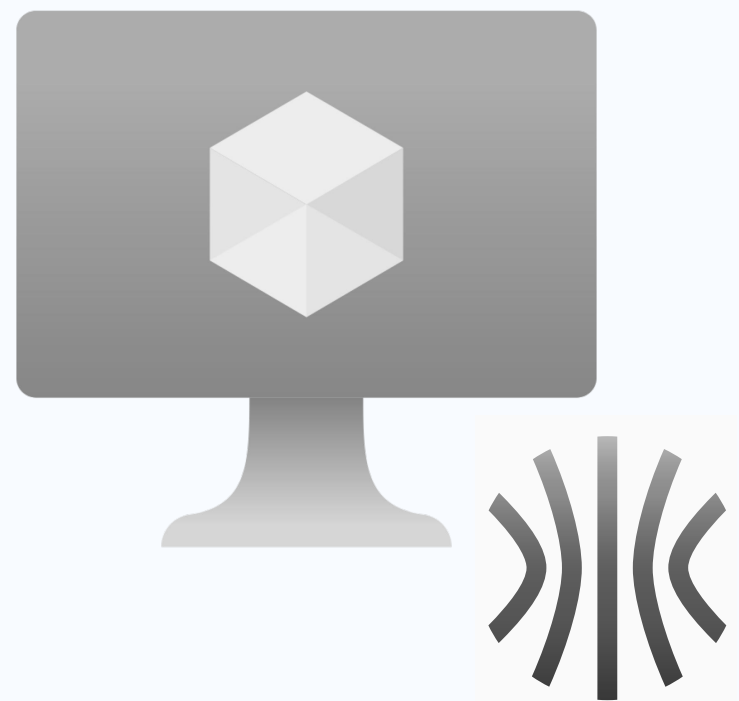
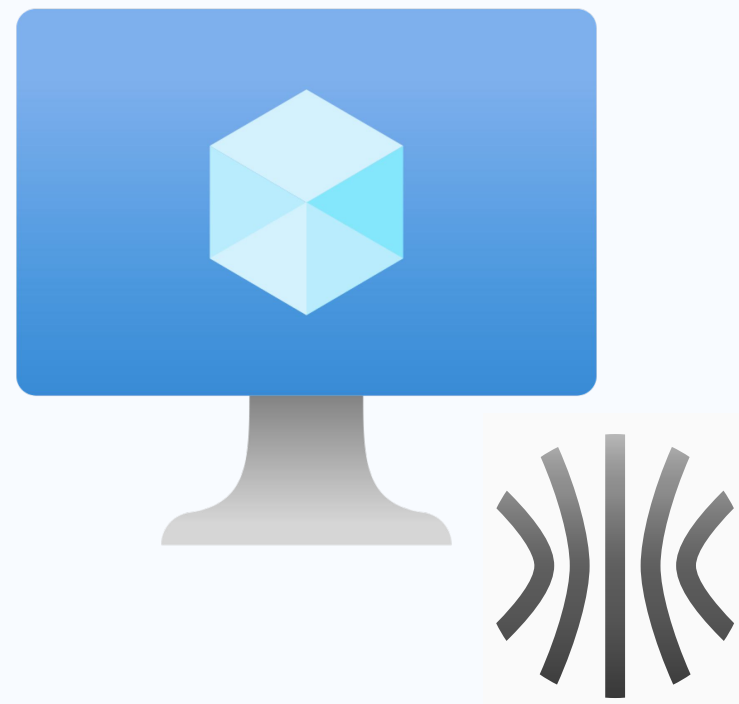
Для первоначального запуска нужно просто загрузить образ Talos

81



Для первоначального запуска нужно просто загрузить образ Talos 82





```
machine:
```

```
  type: control-plane
```

```
  ca: { crt: "" key: "" }
```

```
  certSANs:
```

```
    - 127.0.0.1
```

```
    - cluster1.example.org
```

```
  network:
```

```
    interfaces:
```

```
      - interface: eth0
```

```
        vip: 192.168.100.10
```

```
  install:
```

```
    disk: /dev/sda
```

```
cluster:
```

```
  controlPlane:
```

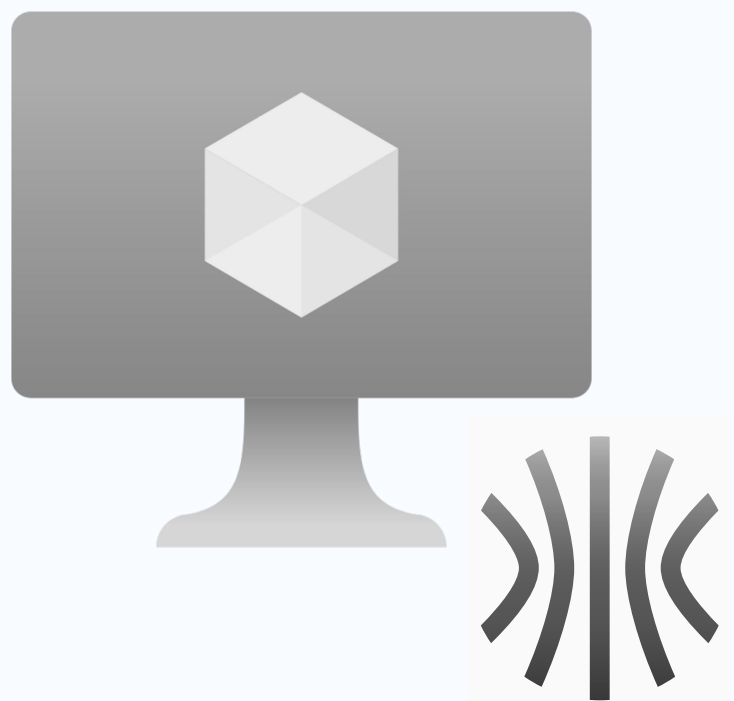
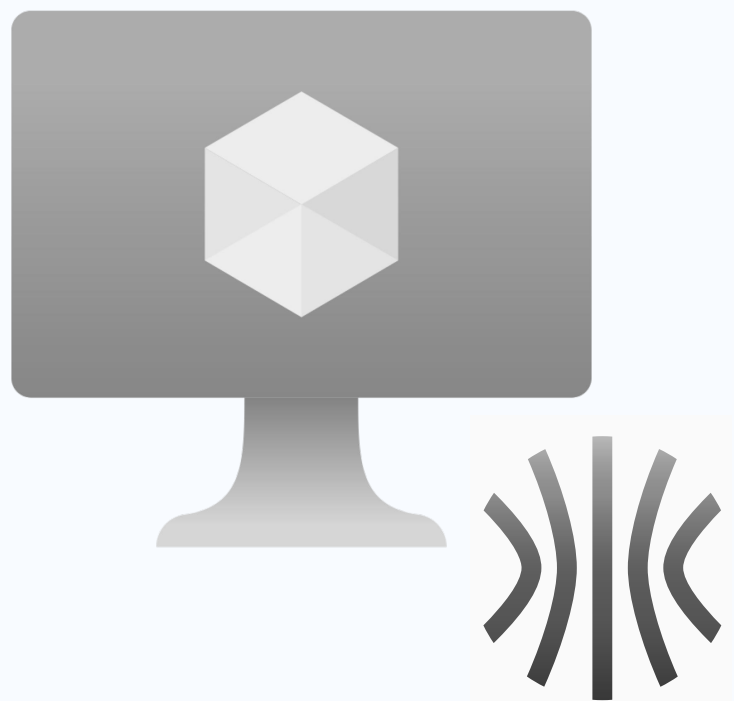
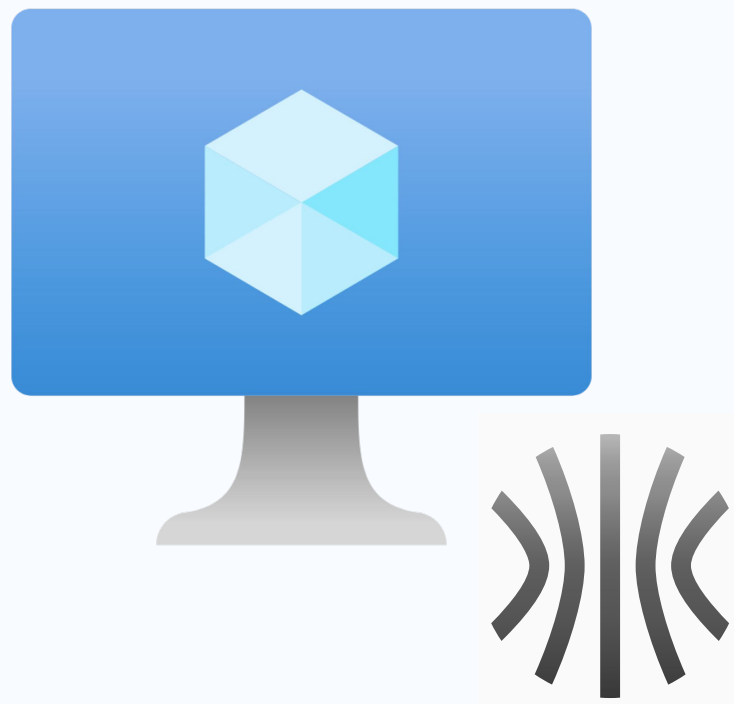
```
    endpoint: https://192.168.100.10:6443
```

```
  ca: { crt: "" key: "" }
```

```
  apiServer: {}
```

```
  etcd: {}
```

```
  extraManifests: {}
```



machine:

type: control-plane

ca: { crt: "" key: "" }

certSANs:

- 127.0.0.1

- cluster1.example.org

network:

interfaces:

- interface: eth0

vip: 192.168.100.10

install:

disk: /dev/sda

cluster:

controlPlane:

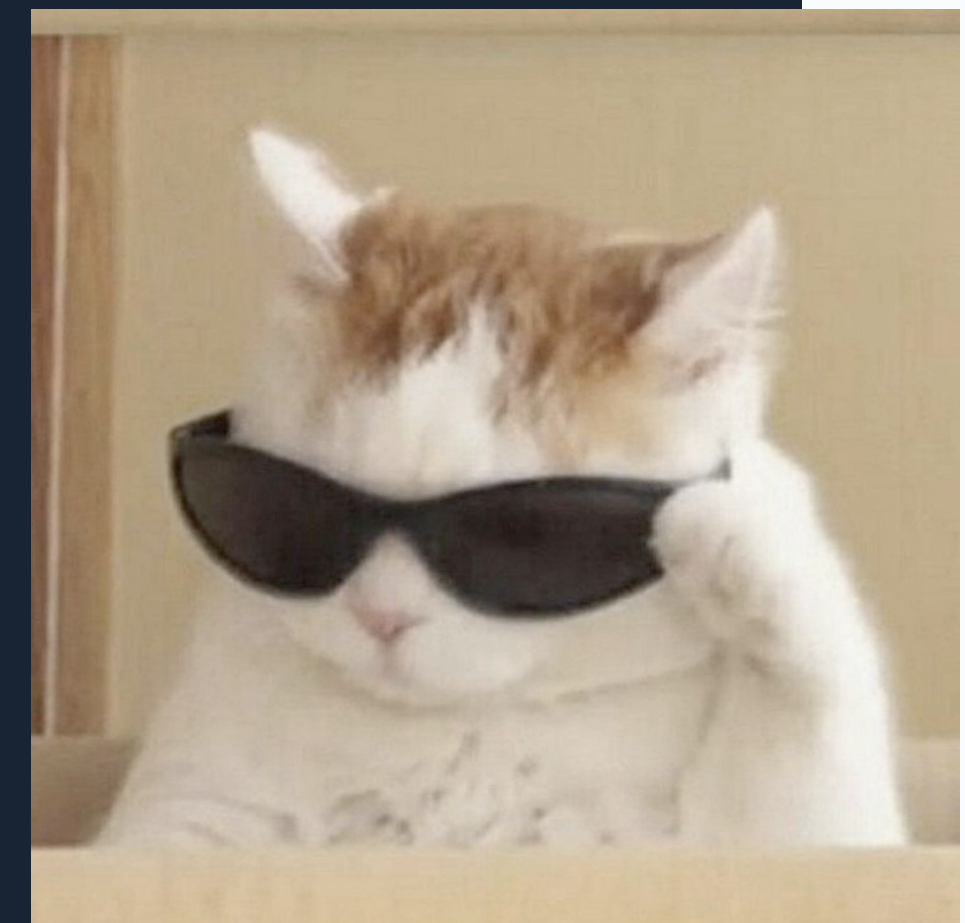
endpoint: https://192.168.100.10:6443

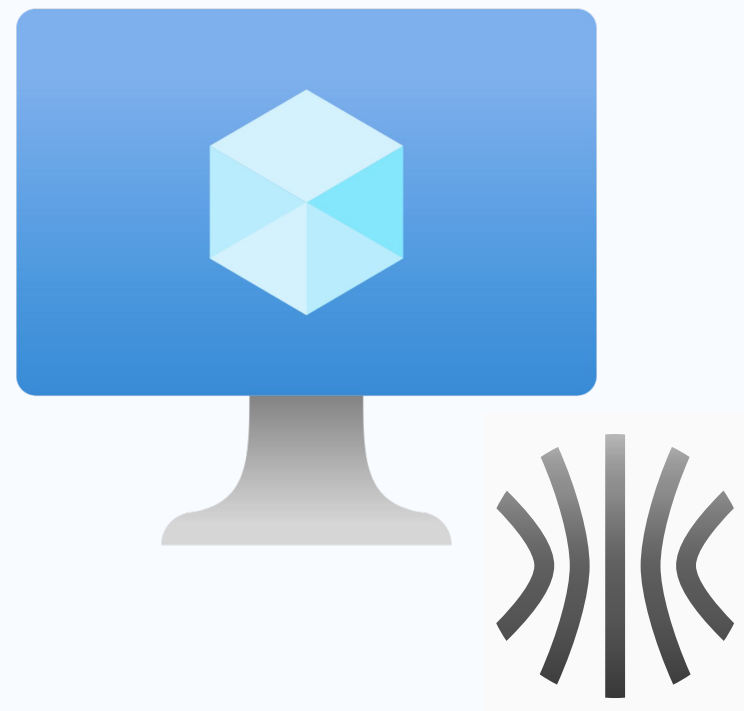
ca: { crt: "" key: "" }

apiServer: {}

etcd: {}

extraManifests: {}





```
machine:
```

```
  type: control-plane
```

```
  ca: { crt: "" key: "" }
```

```
  certSANs:
```

```
    - 127.0.0.1
```

```
    - cluster1.example.org
```

```
  network:
```

```
    interfaces:
```

```
      - interface: eth0
```

```
        vip: 192.168.100.10
```

```
  install:
```

```
    disk: /dev/sda
```

```
cluster:
```

```
  controlPlane:
```

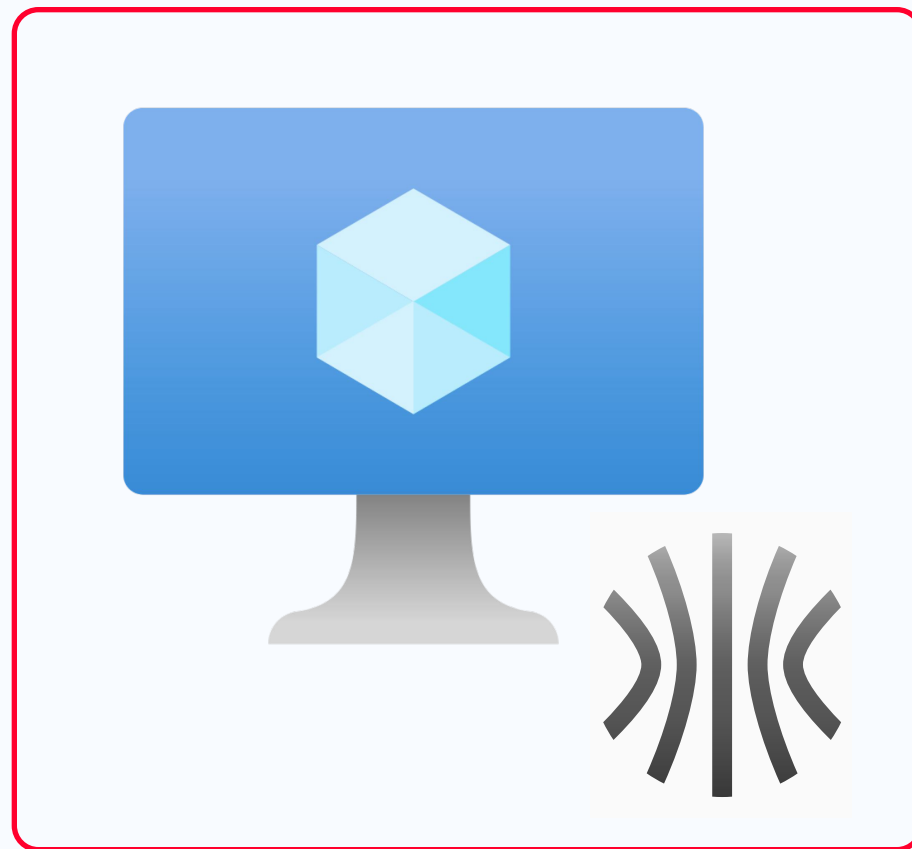
```
    endpoint: https://192.168.100.10:6443
```

```
  ca: { crt: "" key: "" }
```

```
  apiServer: {}
```

```
  etcd: {}
```

```
  extraManifests: {}
```



machine:

type: control-plane

ca: { crt: "" key: "" }

certSANs:

- 127.0.0.1

- cluster1.example.org

network:

interfaces:

- interface: eth0

vip: 192.168.100.10

install:

disk: /dev/sda

cluster:

controlPlane:

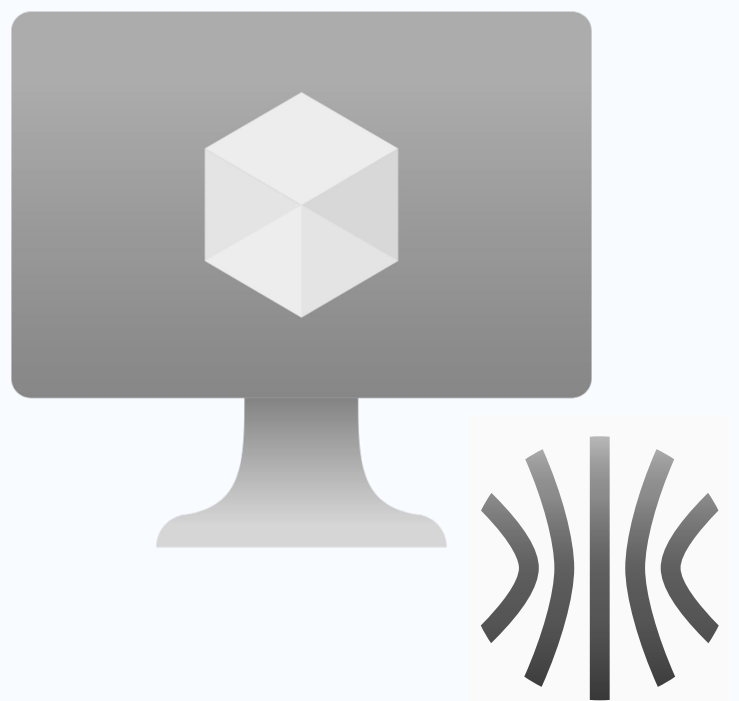
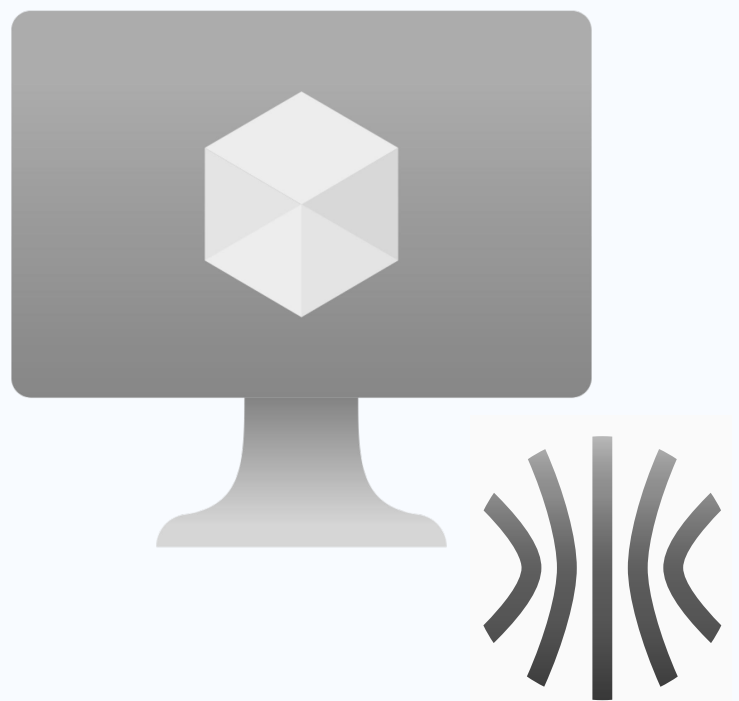
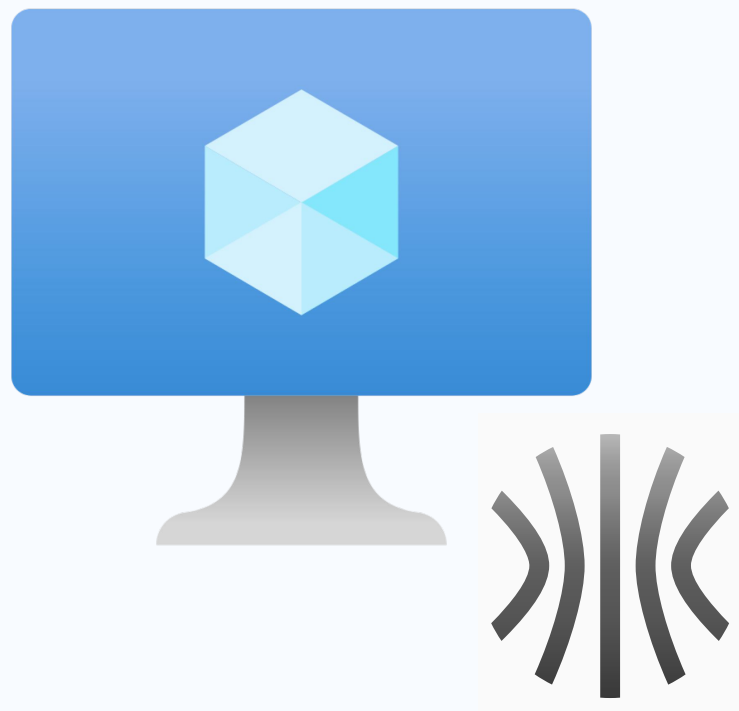
endpoint: https://192.168.100.10:6443

ca: { crt: "" key: "" }

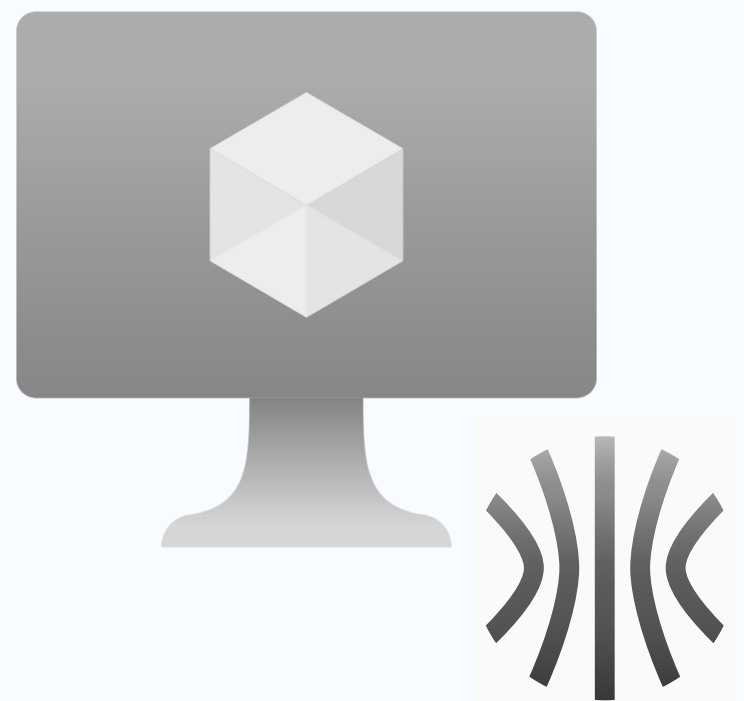
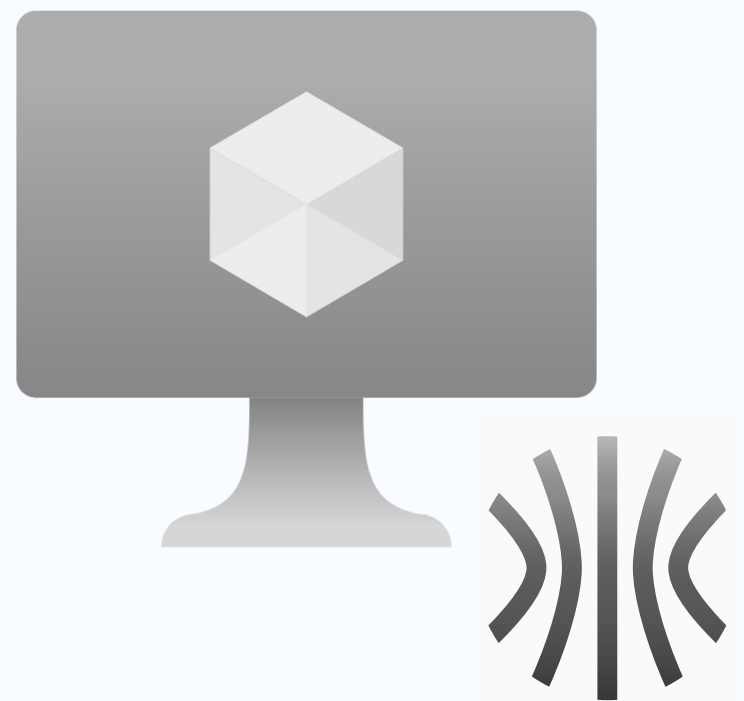
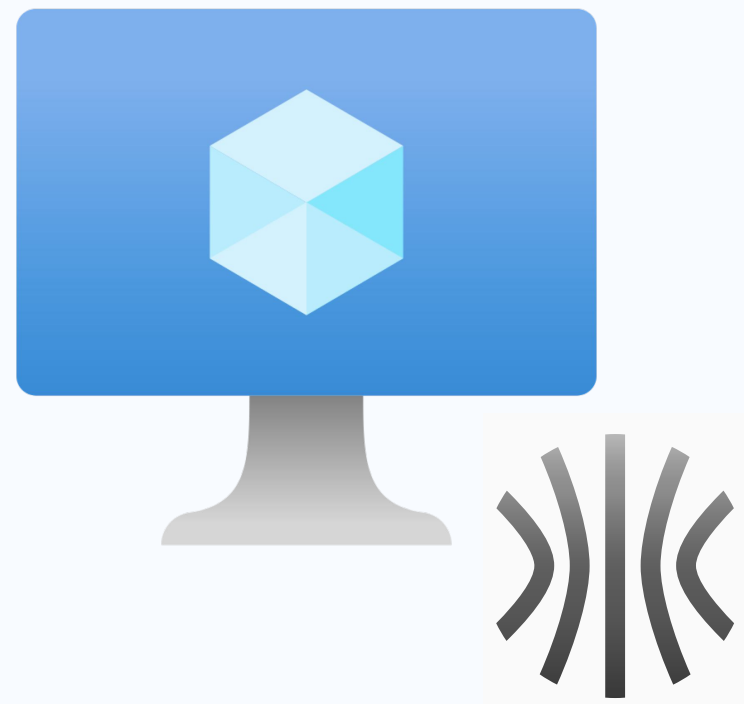
apiServer: {}

etcd: {}

extraManifests: {}



```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
cluster:  
  controlPlane:  
    endpoint: https://192.168.100.10:6443  
  ca: { crt: "" key: "" }  
  apiServer: {}  
  etcd: {}  
  extraManifests: {}
```



```
machine:
```

```
  type: control-plane
```

```
  ca: { crt: "" key: "" }
```

```
  certSANs:
```

```
    - 127.0.0.1
```

```
    - cluster1.example.org
```

```
  network:
```

```
    interfaces:
```

```
      - interface: eth0
```

```
        vip: 192.168.100.10
```

```
  install:
```

```
    disk: /dev/sda
```

```
cluster:
```

```
  controlPlane:
```

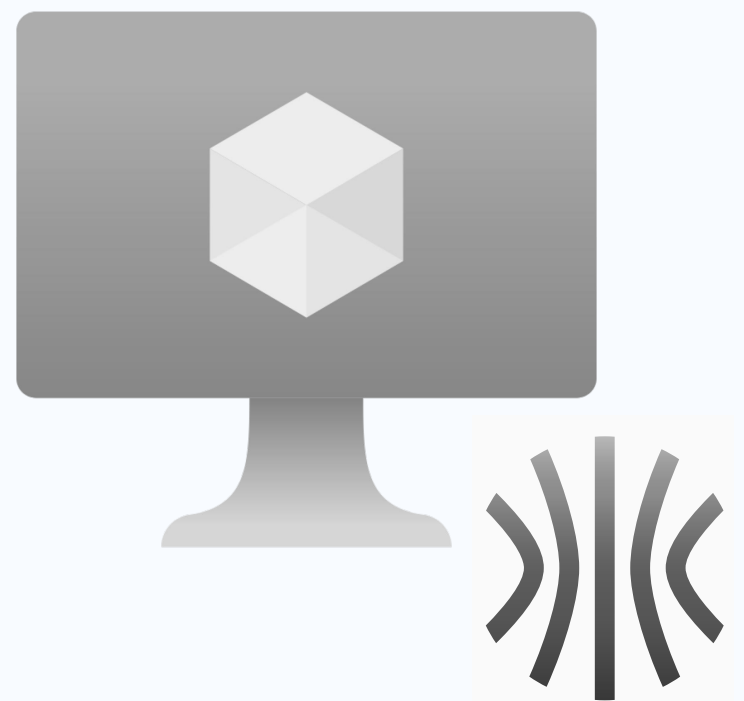
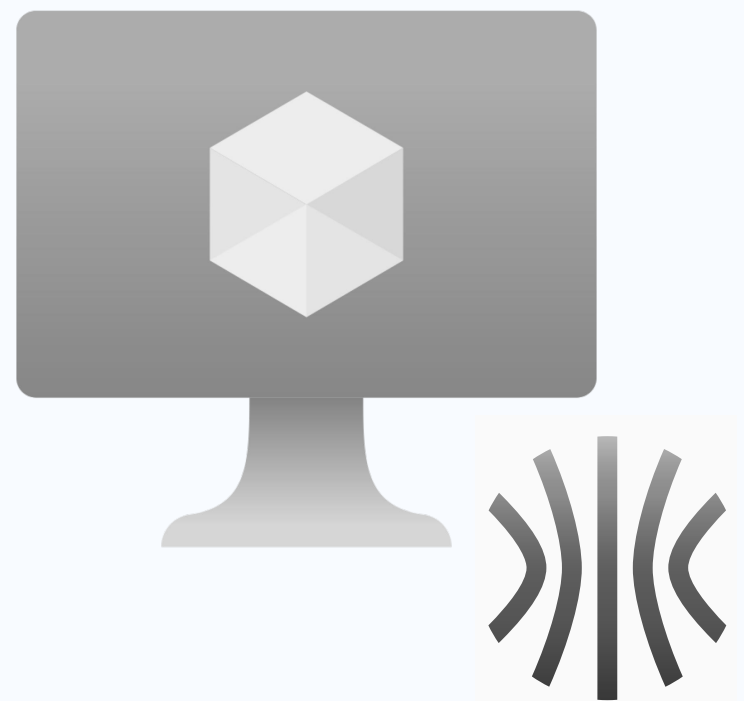
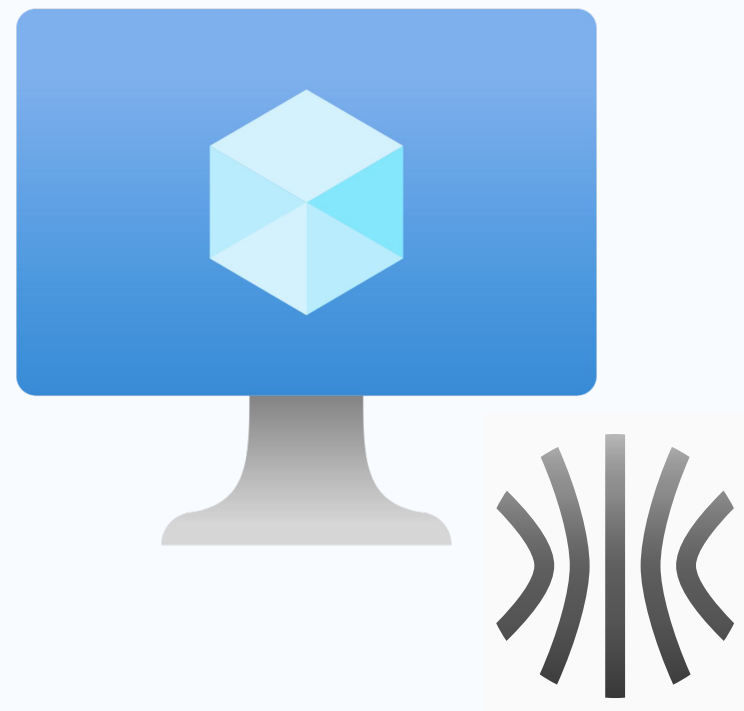
```
    endpoint: https://192.168.100.10:6443
```

```
  ca: { crt: "" key: "" }
```

```
  apiServer: {}
```

```
  etcd: {}
```

```
  extraManifests: {}
```

```
machine:
```

```
  type: control-plane
```

```
  ca: { crt: "" key: "" }
```

```
  certSANs:
```

```
    - 127.0.0.1
```

```
    - cluster1.example.org
```

```
  network:
```

```
    interfaces:
```

```
      - interface: eth0
```

```
        vip: 192.168.100.10
```

```
  install:
```

```
    disk: /dev/sda
```

```
cluster:
```

```
  controlPlane:
```

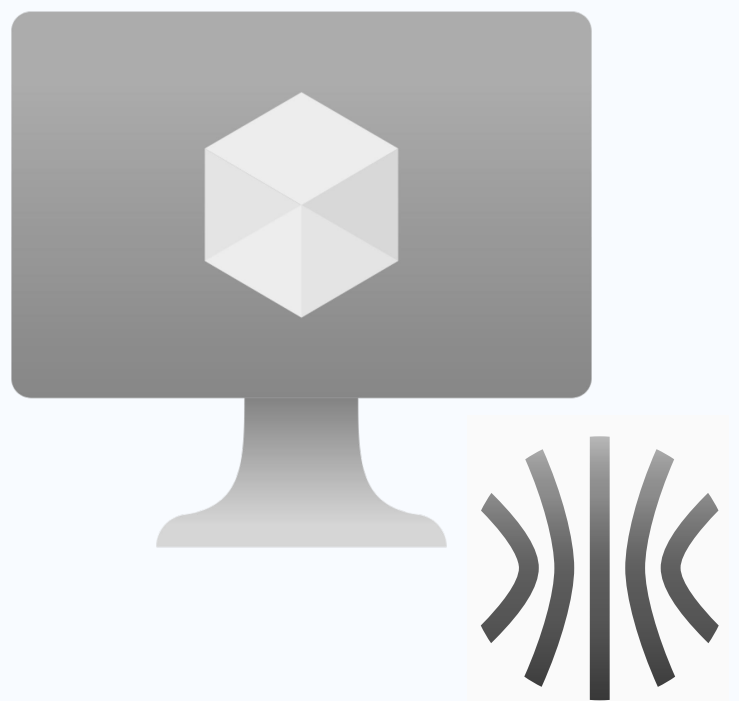
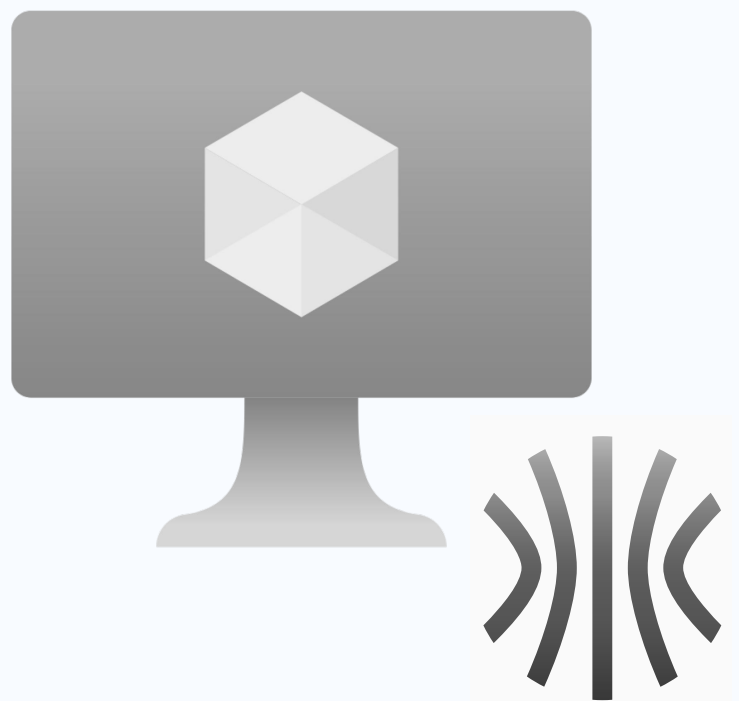
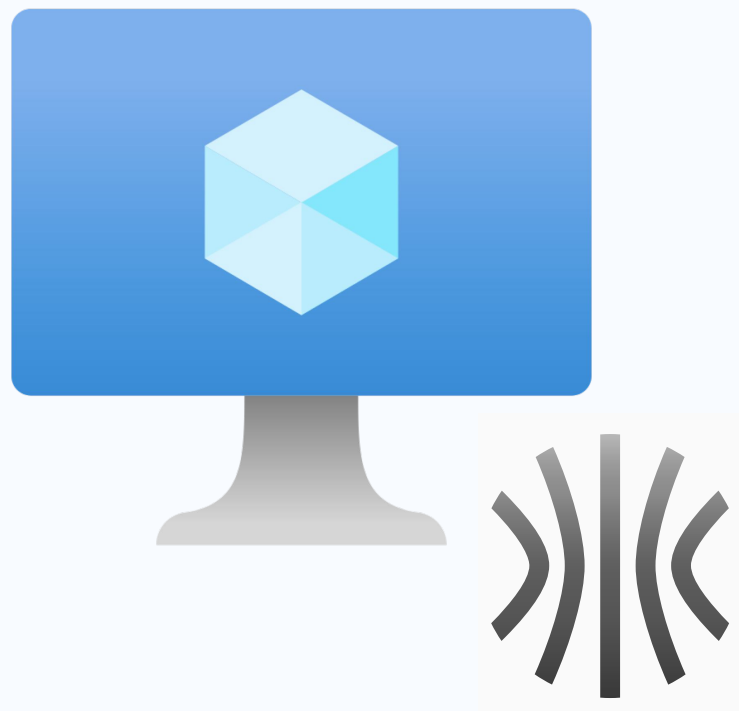
```
    endpoint: https://192.168.100.10:6443
```

```
  ca: { crt: "" key: "" }
```

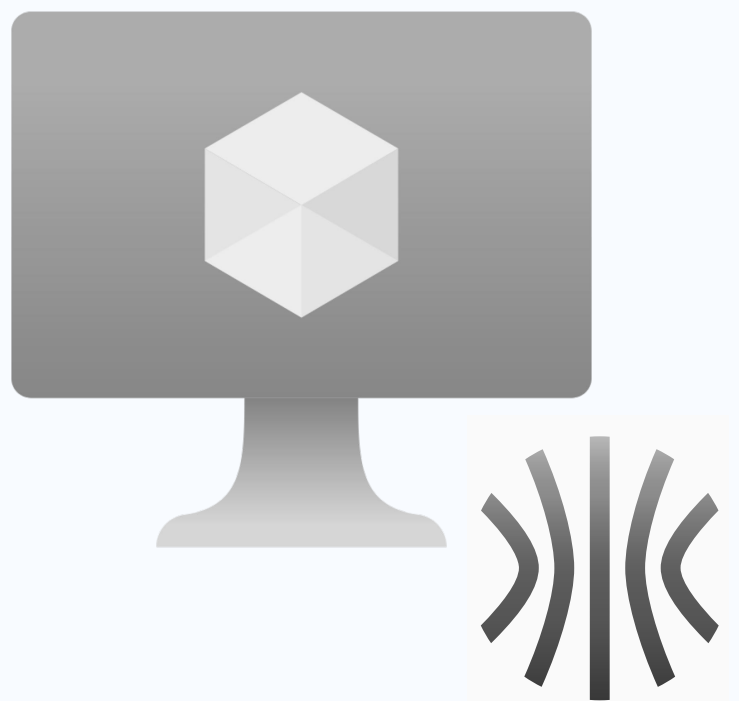
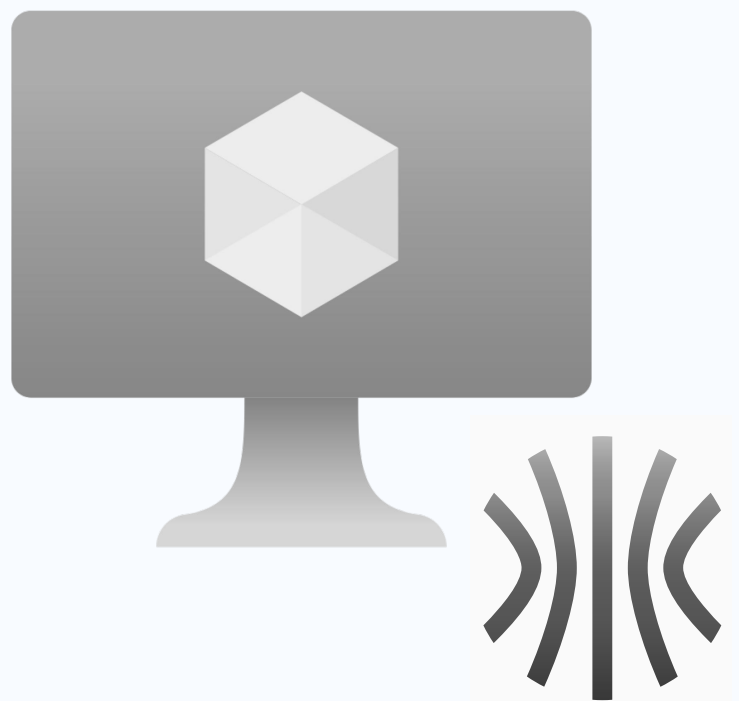
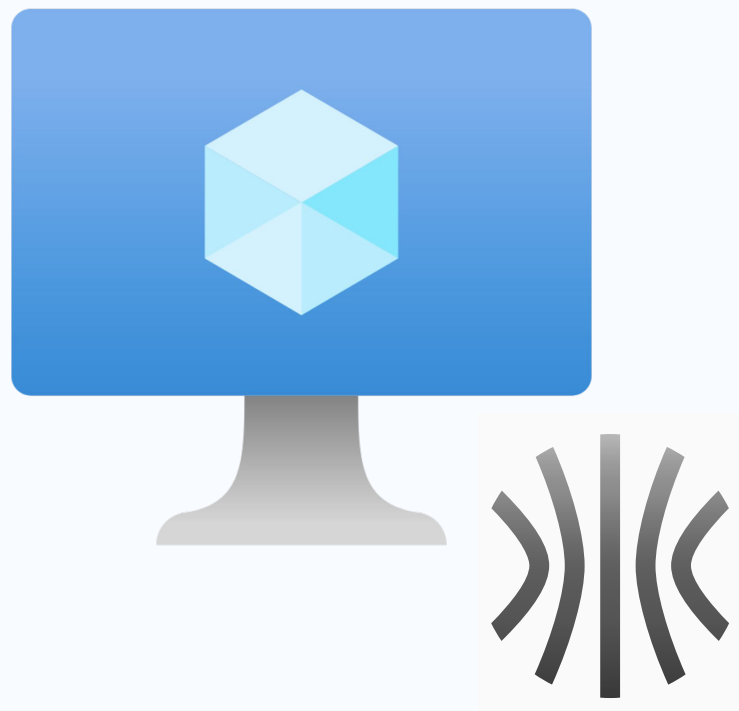
```
  apiServer: {}
```

```
  etcd: {}
```

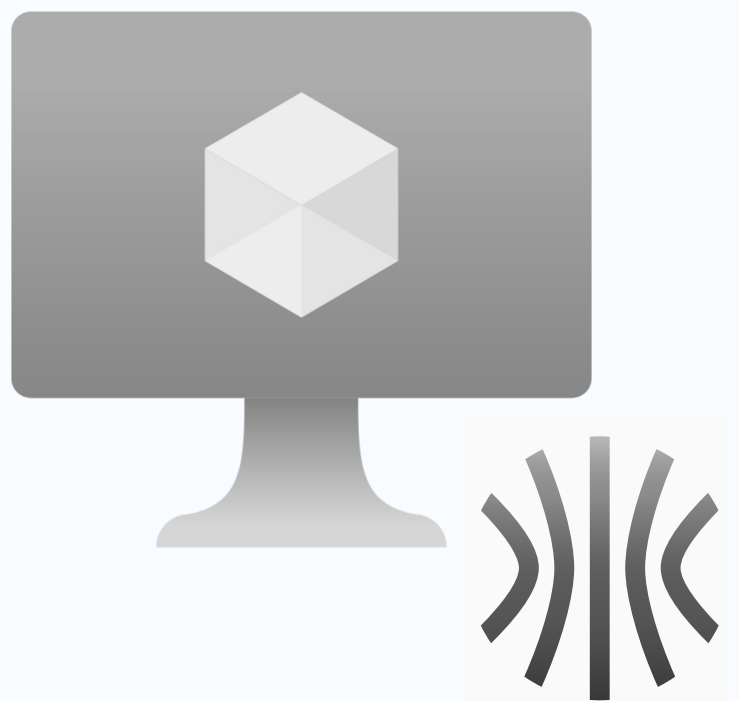
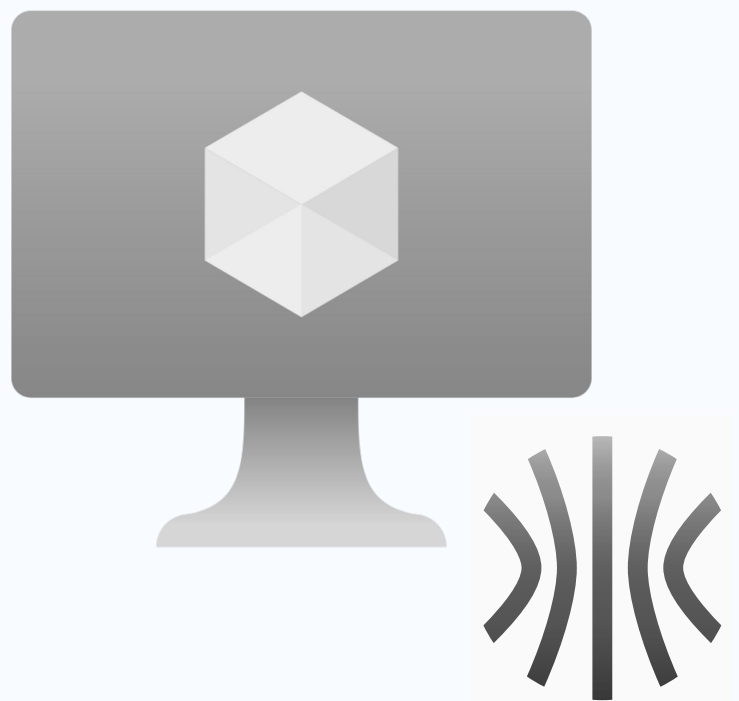
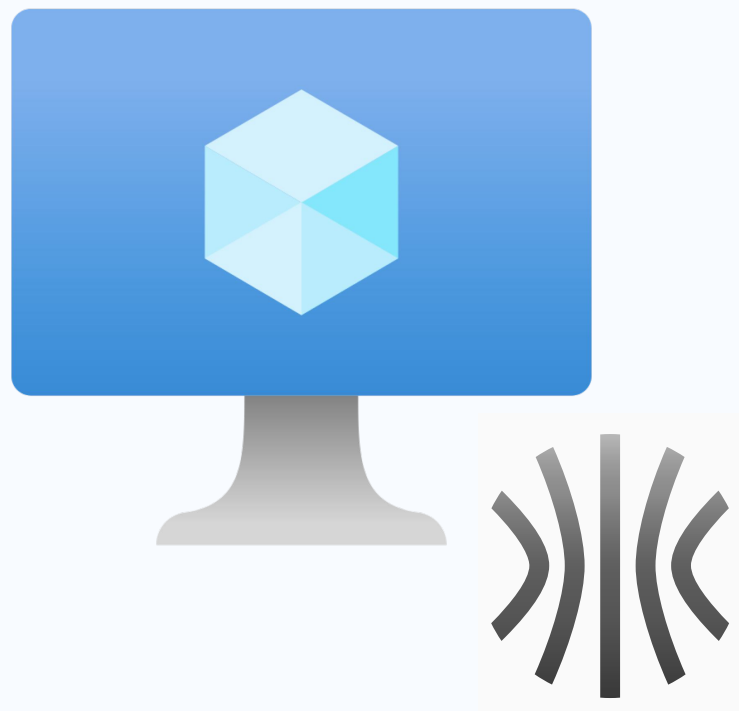
```
  extraManifests: {}
```



```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
cluster:  
  controlPlane:  
    endpoint: https://192.168.100.10:6443  
  ca: { crt: "" key: "" }  
  apiServer: {}  
  etcd: {}  
  extraManifests: {}
```



```
machine:
  type: control-plane
  ca: { crt: "" key: "" }
  certSANs:
    - 127.0.0.1
    - cluster1.example.org
  network:
    interfaces:
      - interface: eth0
        vip: 192.168.100.10
    install:
      disk: /dev/sda
  cluster:
    controlPlane:
      endpoint: https://192.168.100.10:6443
    ca: { crt: "" key: "" }
    apiServer: {}
    etcd: {}
    extraManifests: {}
```



```
machine:
```

```
  type: control-plane
```

```
  ca: { crt: "" key: "" }
```

```
  certSANs:
```

```
    - 127.0.0.1
```

```
    - cluster1.example.org
```

```
  network:
```

```
    interfaces:
```

```
      - interface: eth0
```

```
        vip: 192.168.100.10
```

```
  install:
```

```
    disk: /dev/sda
```

```
cluster:
```

```
  controlPlane:
```

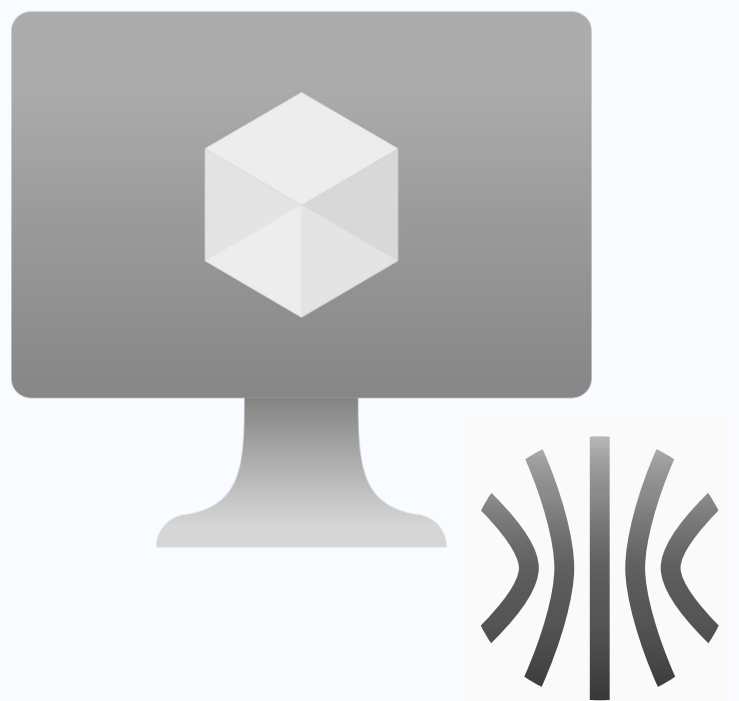
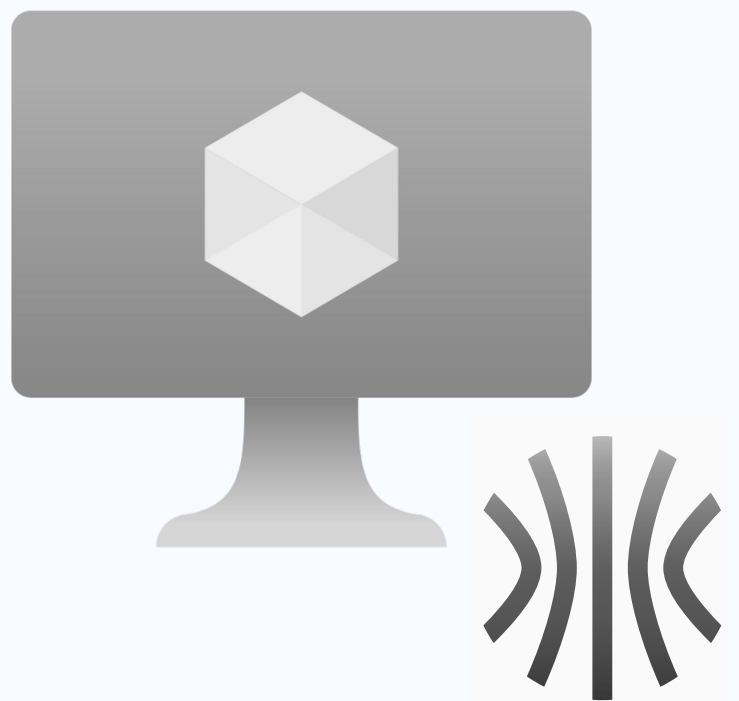
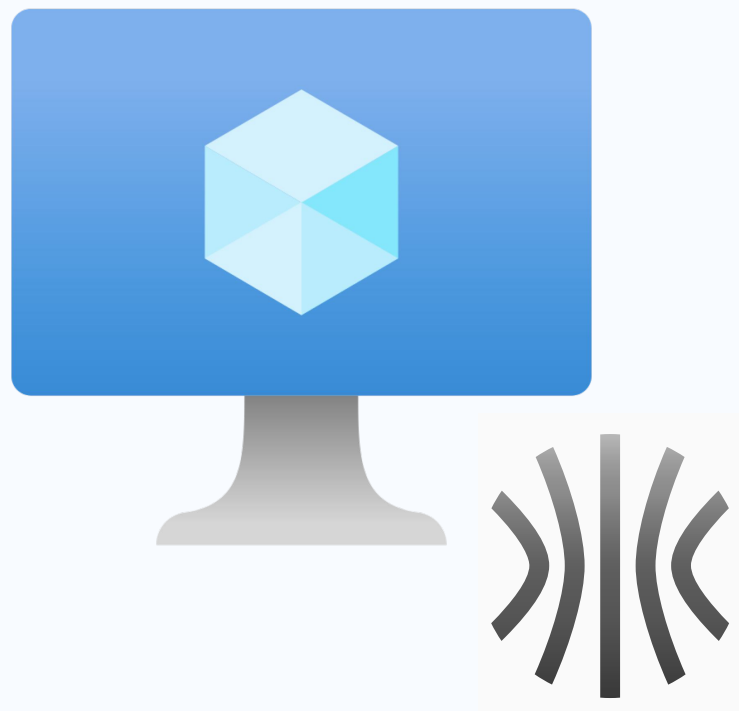
```
    endpoint: https://192.168.100.10:6443
```

```
  ca: { crt: "" key: "" }
```

```
  apiServer: {}
```

```
  etcd: {}
```

```
  extraManifests: {}
```



```
machine:
```

```
  type: control-plane
```

```
  ca: { crt: "" key: "" }
```

```
  certSANs:
```

```
    - 127.0.0.1
```

```
    - cluster1.example.org
```

```
network:
```

```
  interfaces:
```

```
    - interface: eth0
```

```
      vip: 192.168.100.10
```

```
install:
```

```
  disk: /dev/sda
```

```
cluster:
```

```
  controlPlane:
```

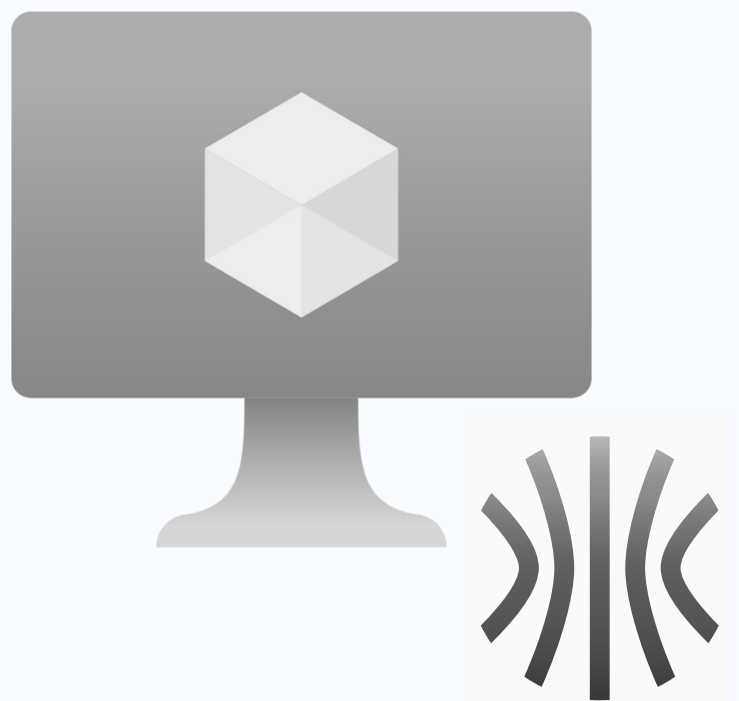
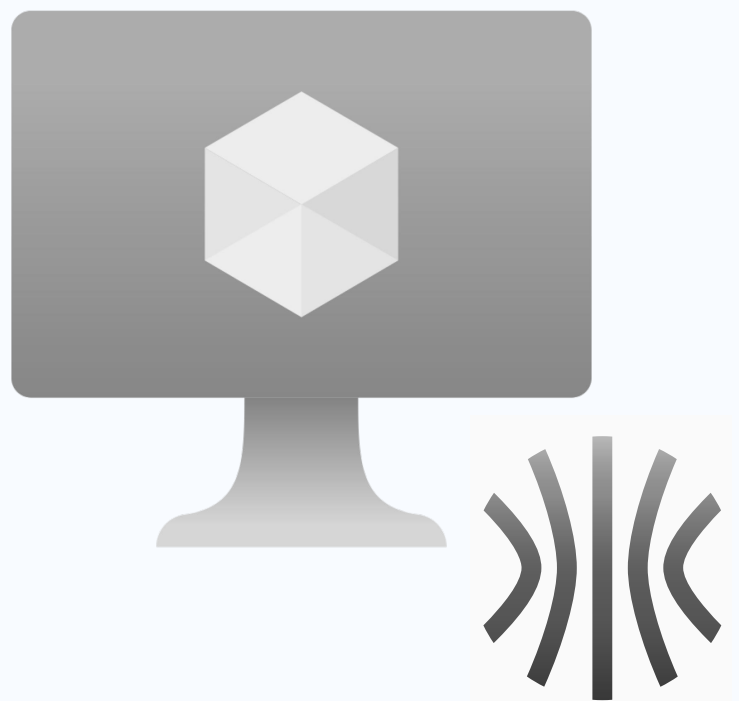
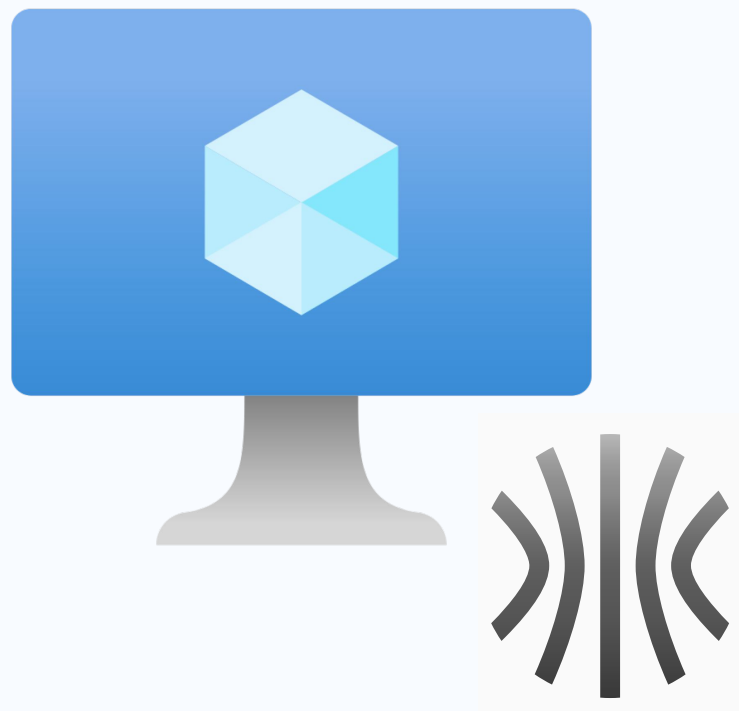
```
    endpoint: https://192.168.100.10:6443
```

```
  ca: { crt: "" key: "" }
```

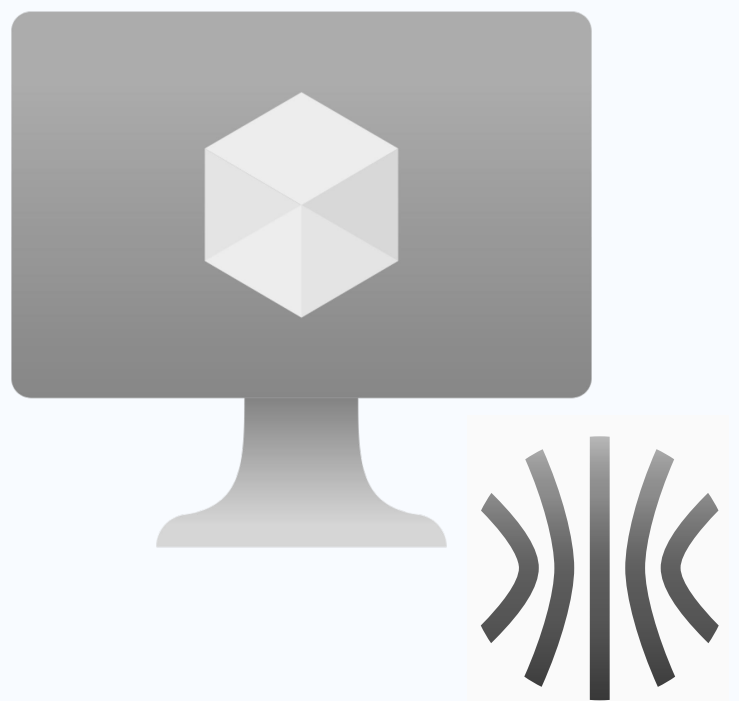
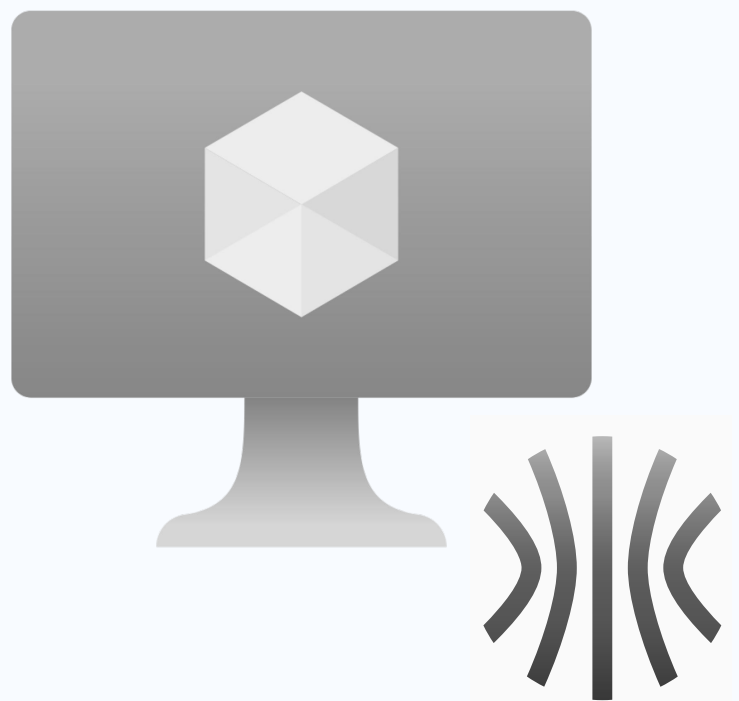
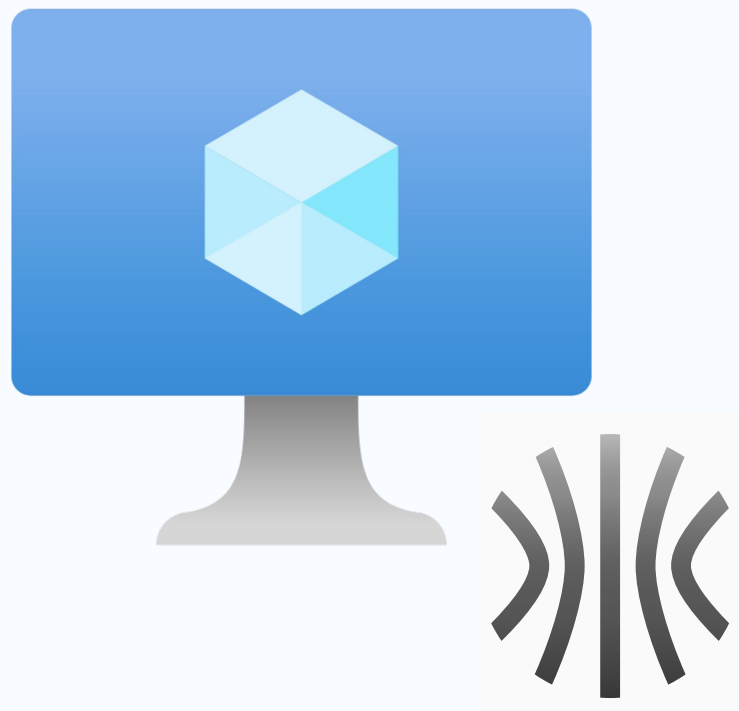
```
  apiServer: {}
```

```
  etcd: {}
```

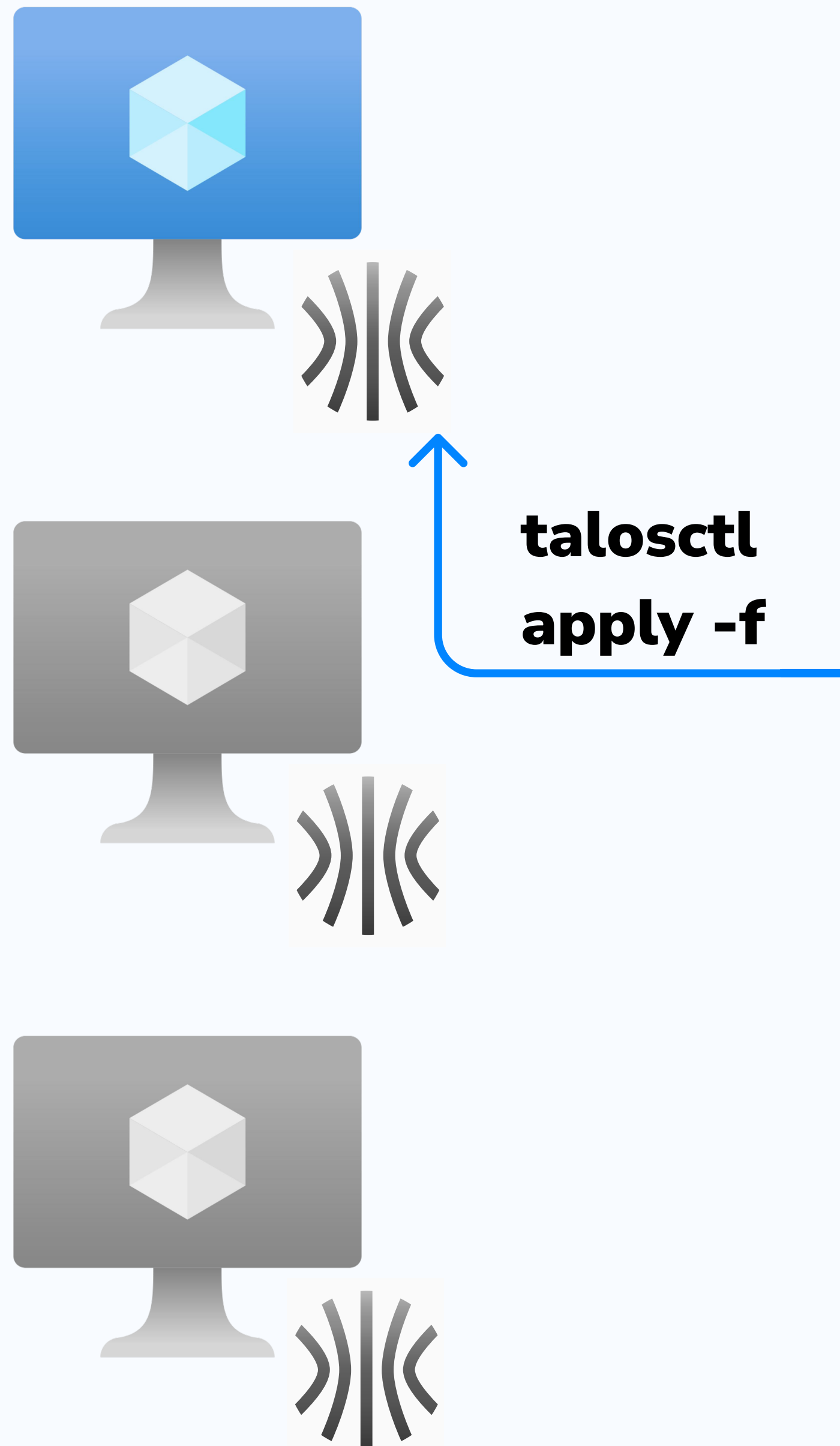
```
  extraManifests: {}
```



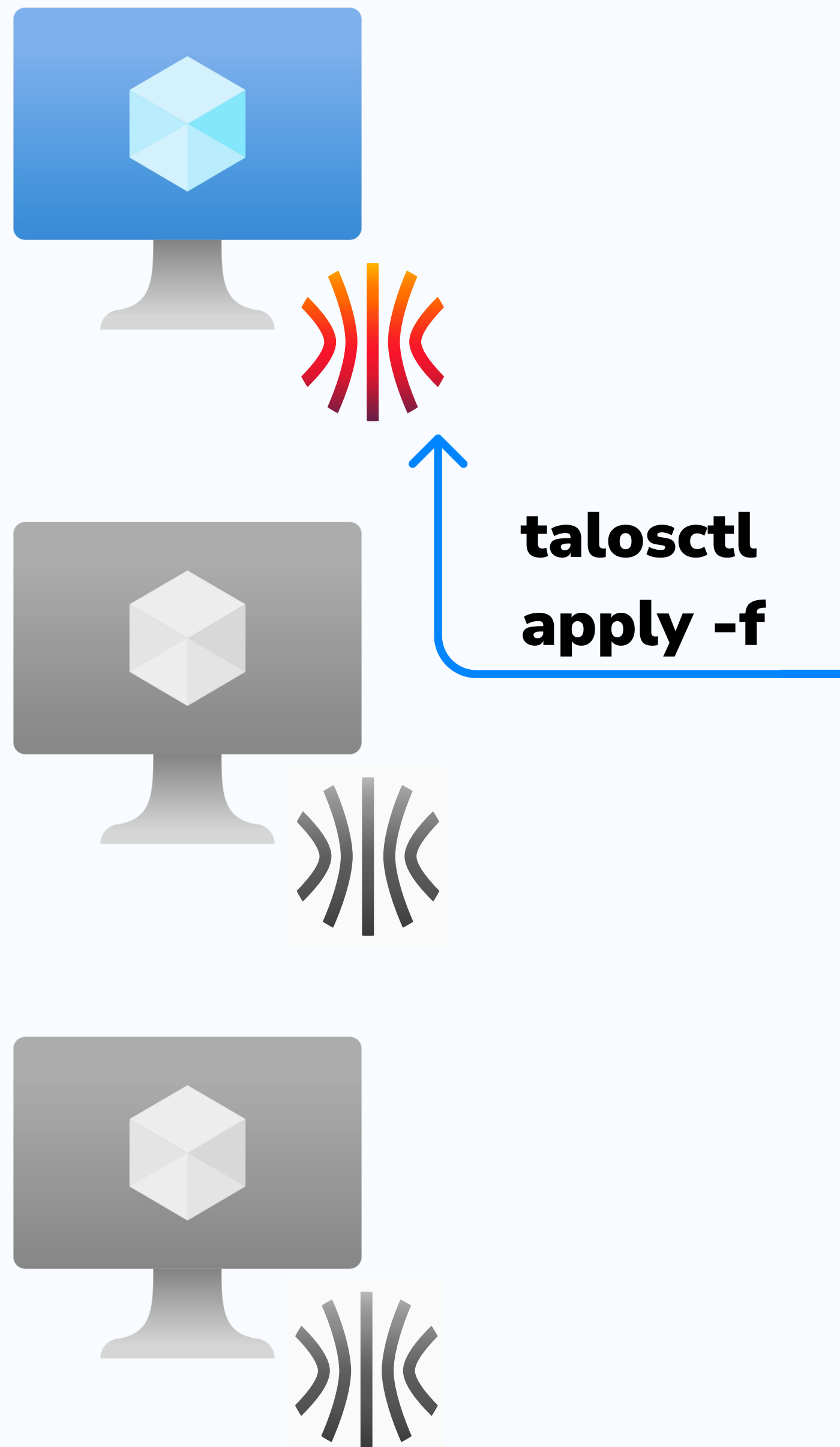
```
machine:
  type: control-plane
  ca: { crt: "" key: "" }
  certSANs:
    - 127.0.0.1
    - cluster1.example.org
  network:
    interfaces:
      - interface: eth0
        vip: 192.168.100.10
  install:
    disk: /dev/sda
  cluster:
    controlPlane:
      endpoint: https://192.168.100.10:6443
    ca: { crt: "" key: "" }
    apiServer: {}
    etcd: {}
    extraManifests: {}
```



```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
cluster:  
  controlPlane:  
    endpoint: https://192.168.100.10:6443  
  ca: { crt: "" key: "" }  
  apiServer: {}  
  etcd: {}  
  extraManifests: {}
```

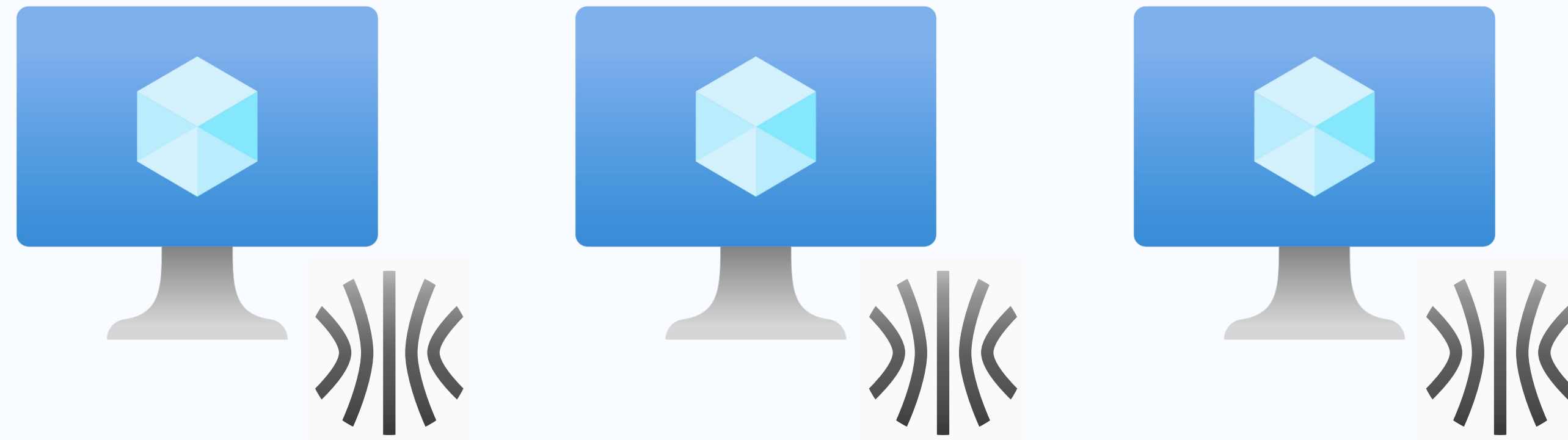


```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```

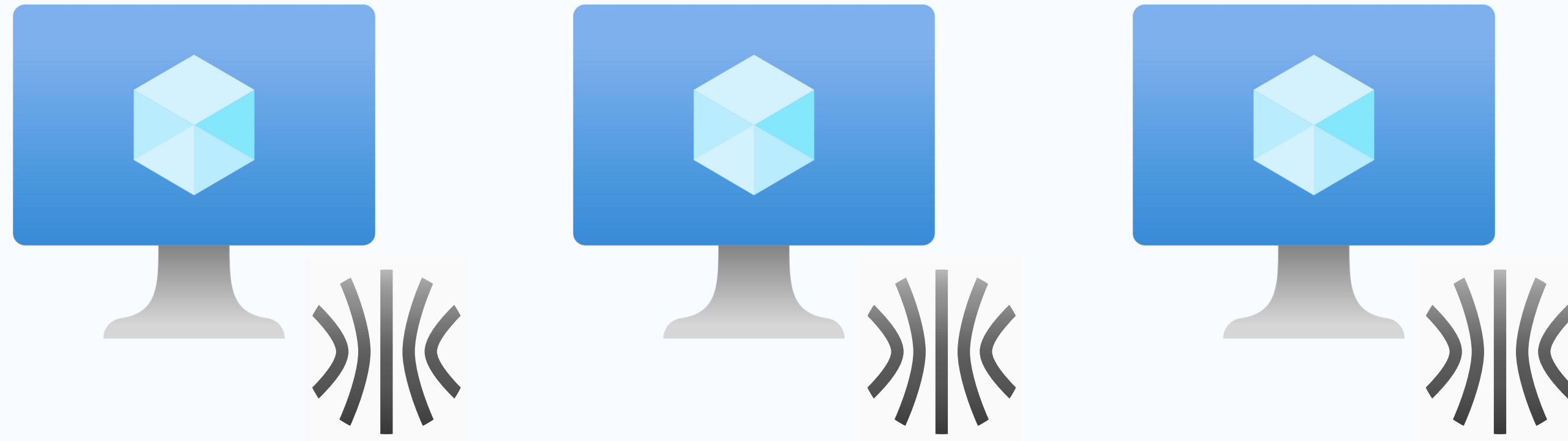



```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```

Первоначальный запуск кластера

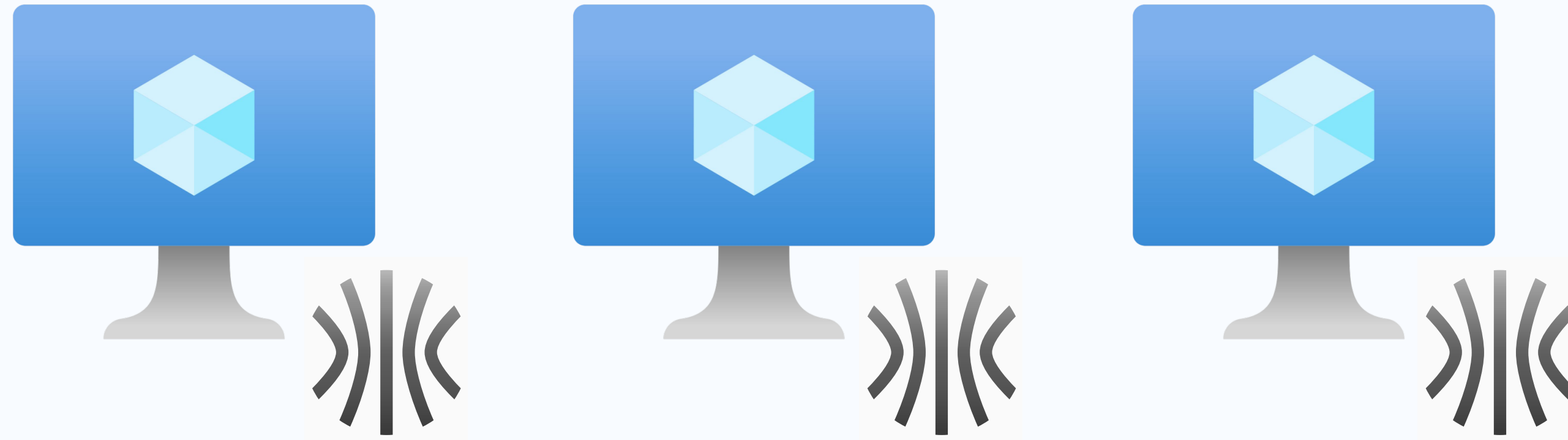


Первоначальный запуск кластера



```
talosctl gen secrets -o secrets.yaml
```

Первоначальный запуск кластера



```
talosctl gen secrets -o secrets.yaml
```



secrets.yaml

Первоначальный запуск кластера

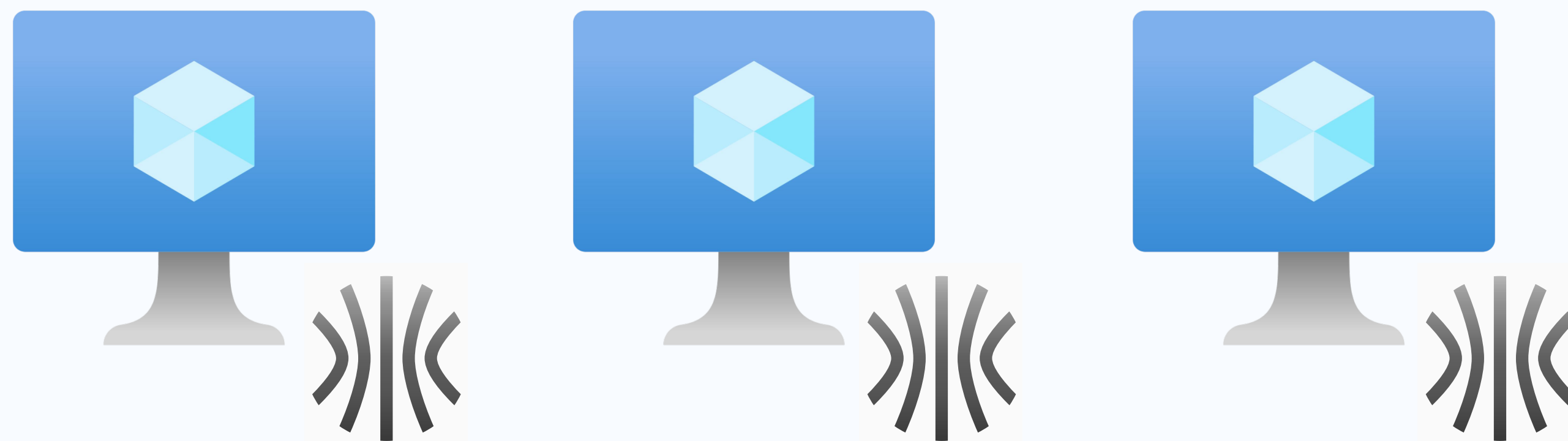


```
talosctl gen secrets -o secrets.yaml
```



secrets.yaml

Первоначальный запуск кластера

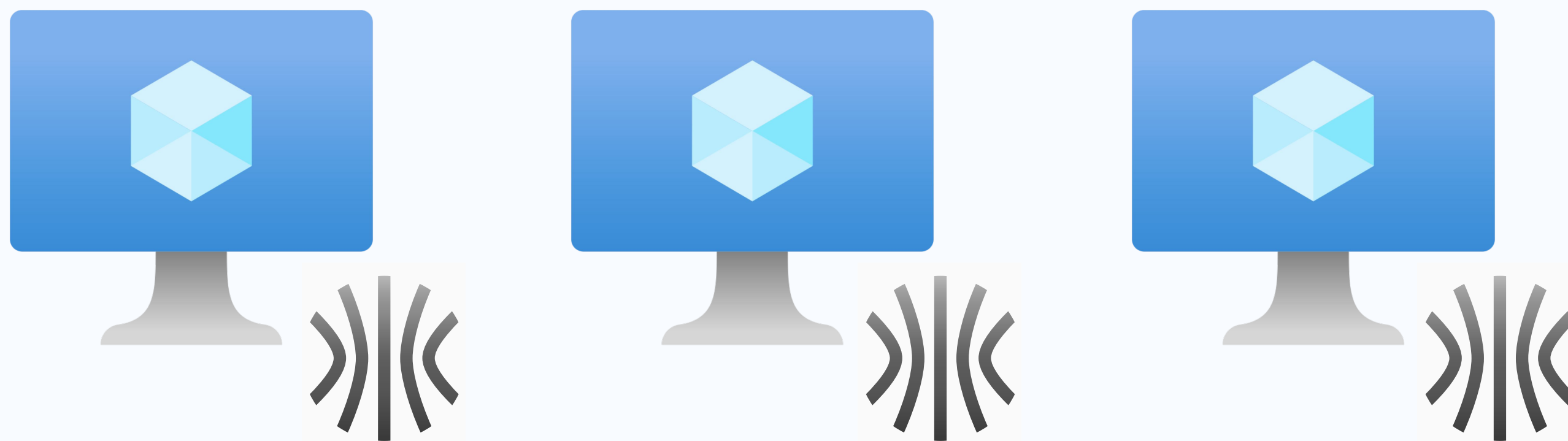


`talosctl gen secrets -o secrets.yaml`



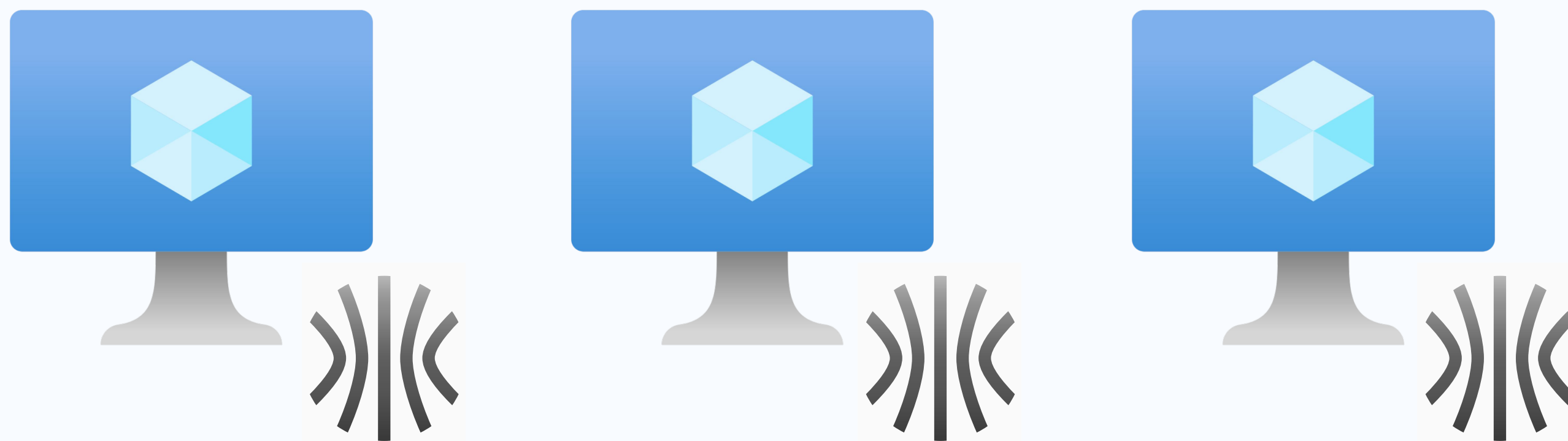
`secrets.yaml`

Первоначальный запуск кластера



secrets.yaml

Первоначальный запуск кластера

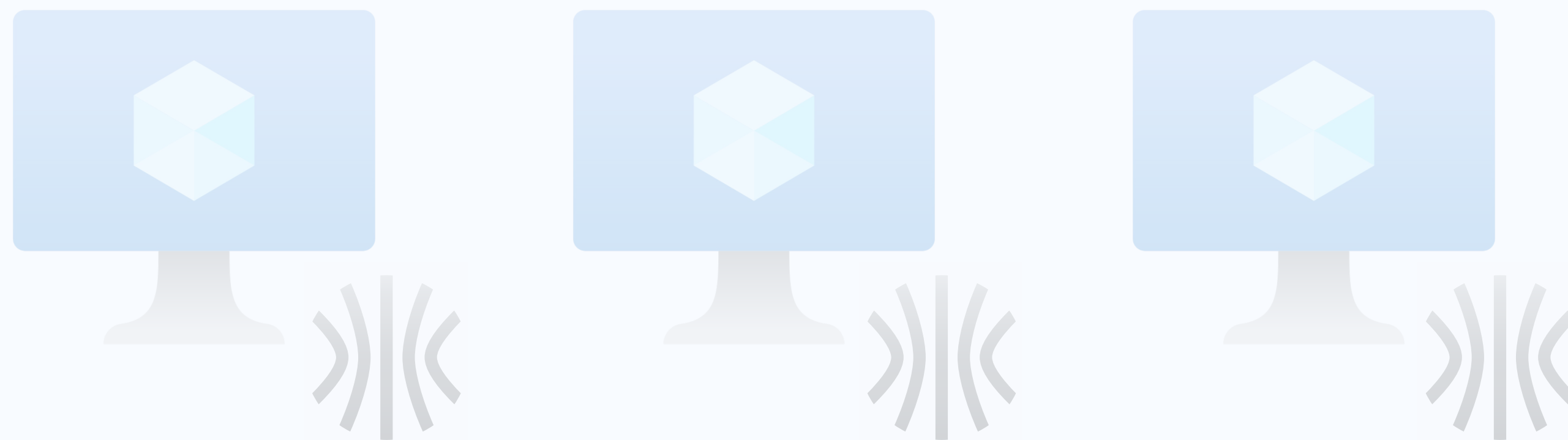


```
talosctl gen config --with-secrets secrets.yaml
```



secrets.yaml

Первоначальный запуск кластера

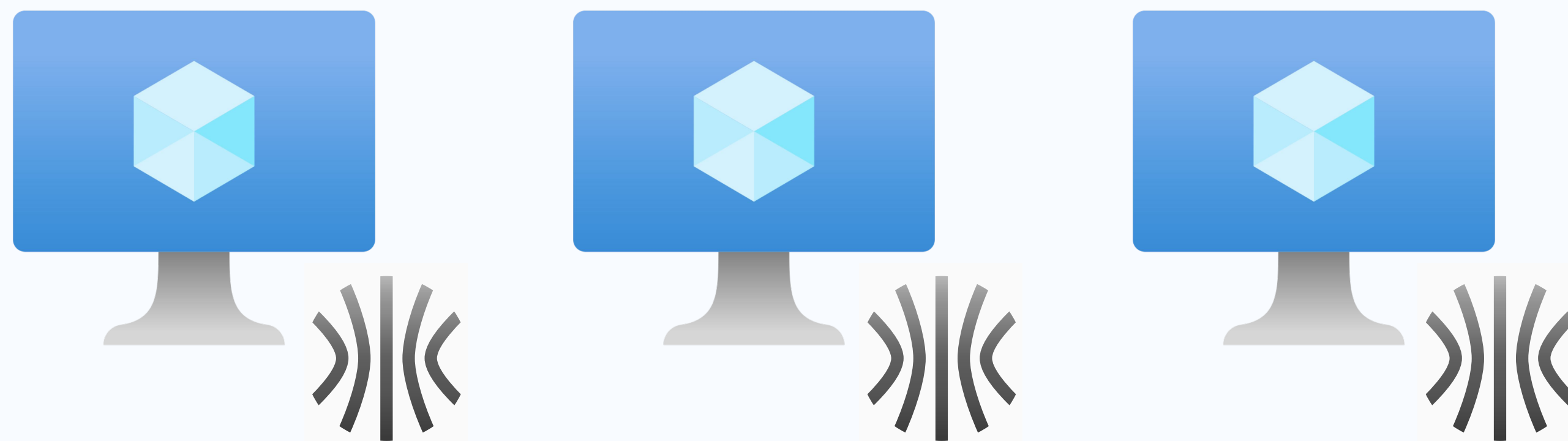


```
talosctl gen config --with-secrets secrets.yaml
```



secrets.yaml

Первоначальный запуск кластера



`talosctl gen config --with-secrets secrets.yaml`



secrets.yaml



talosconfig



control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl gen config --with-secrets secrets.yaml`



secrets.yaml



talosconfig

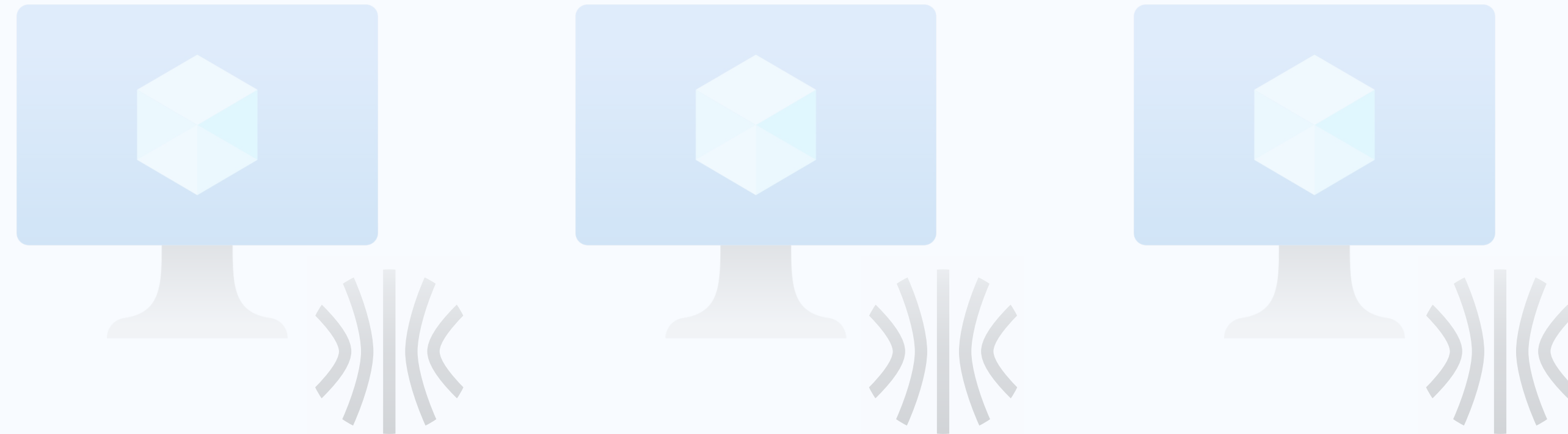


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl gen config --with-secrets secrets.yaml`



secrets.yaml



talosconfig

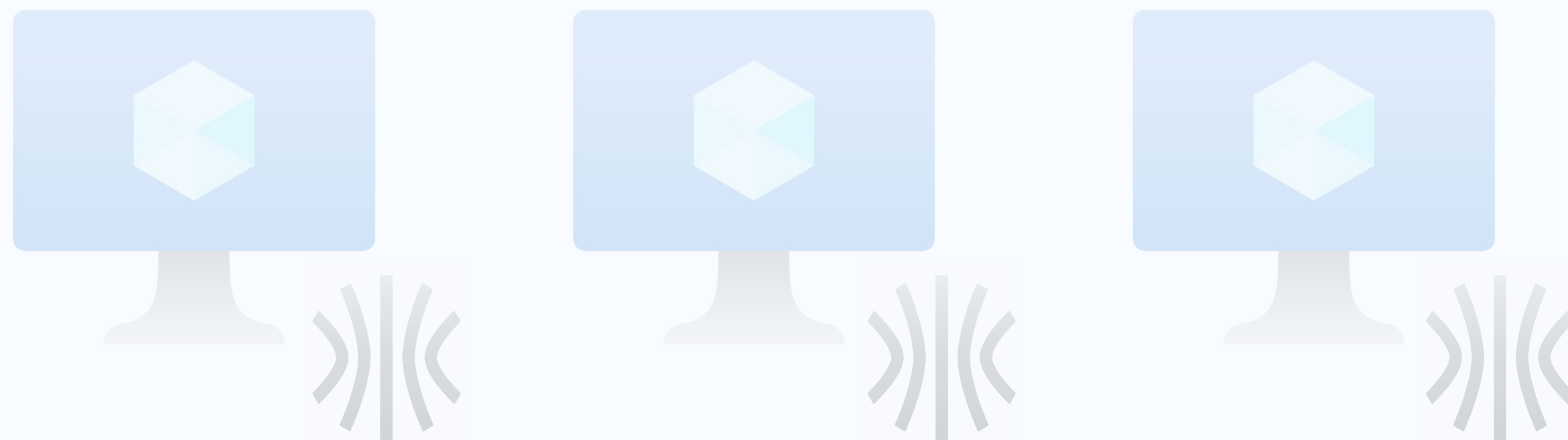


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl gen config --with-secrets secrets.yaml`



secrets.yaml



talosconfig

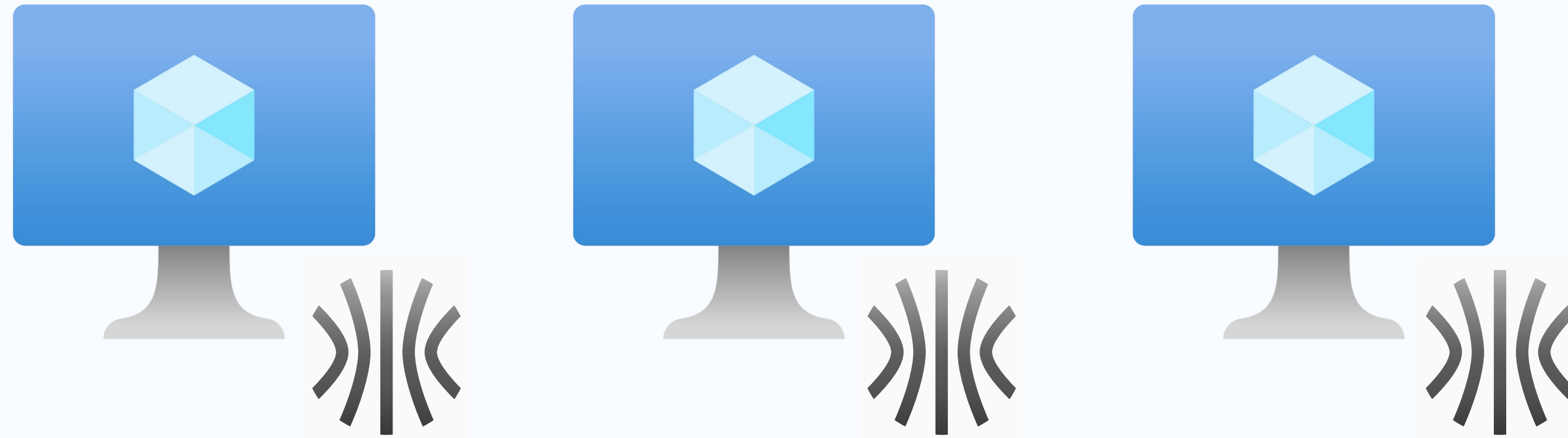


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl gen config --with-secrets secrets.yaml`



`secrets.yaml`



`talosconfig`

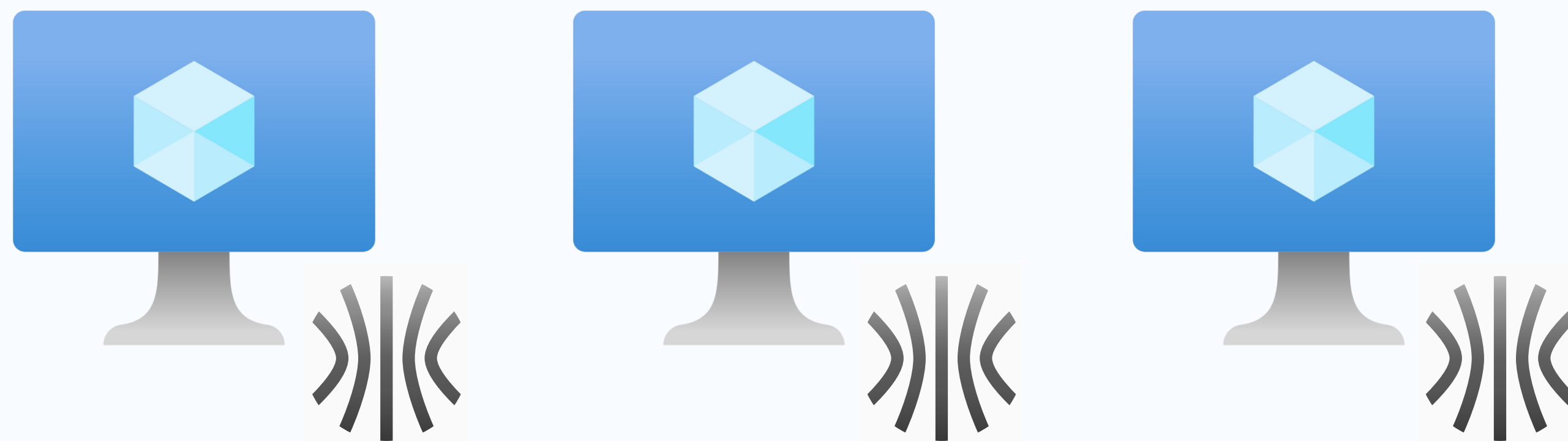


`control-plane.yaml`



`worker.yaml`

Первоначальный запуск кластера



secrets.yaml



talosconfig

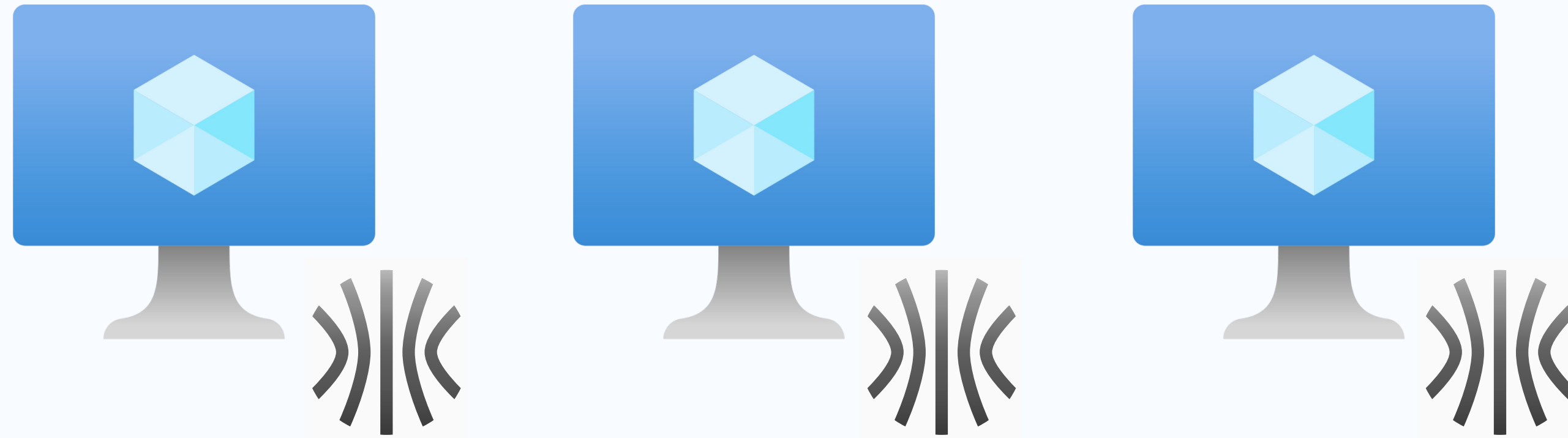


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl apply -f control-plane.yaml -n vm1`



secrets.yaml



talosconfig

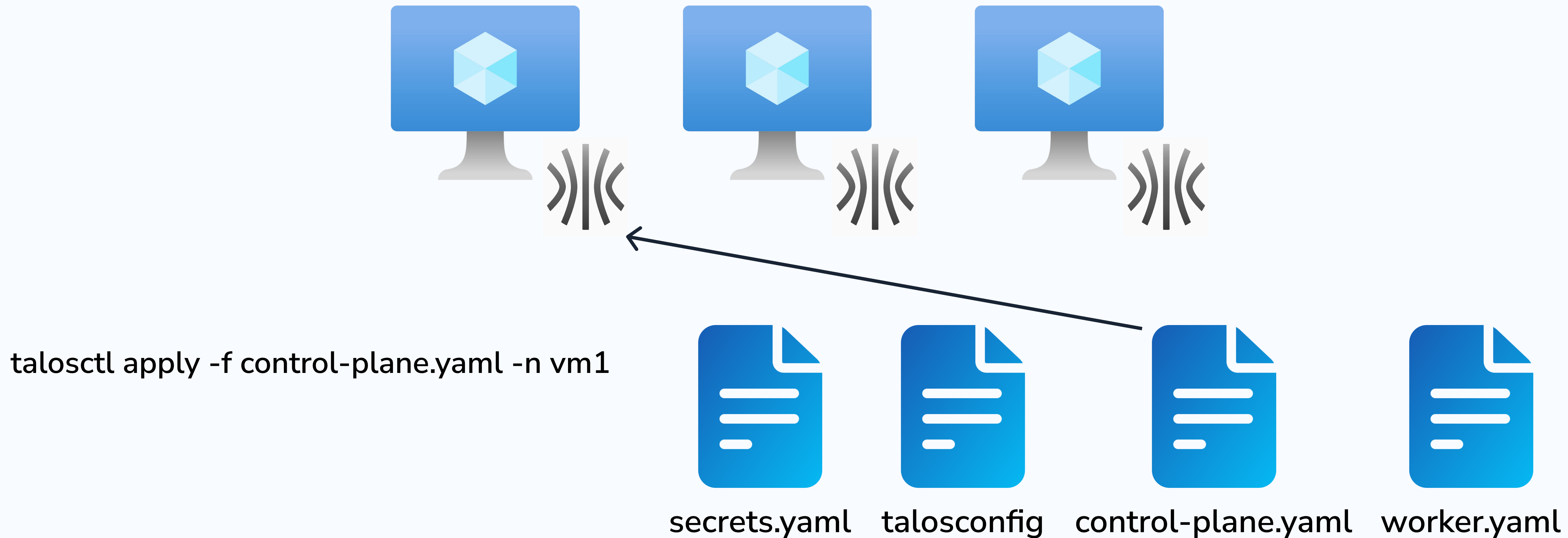


control-plane.yaml

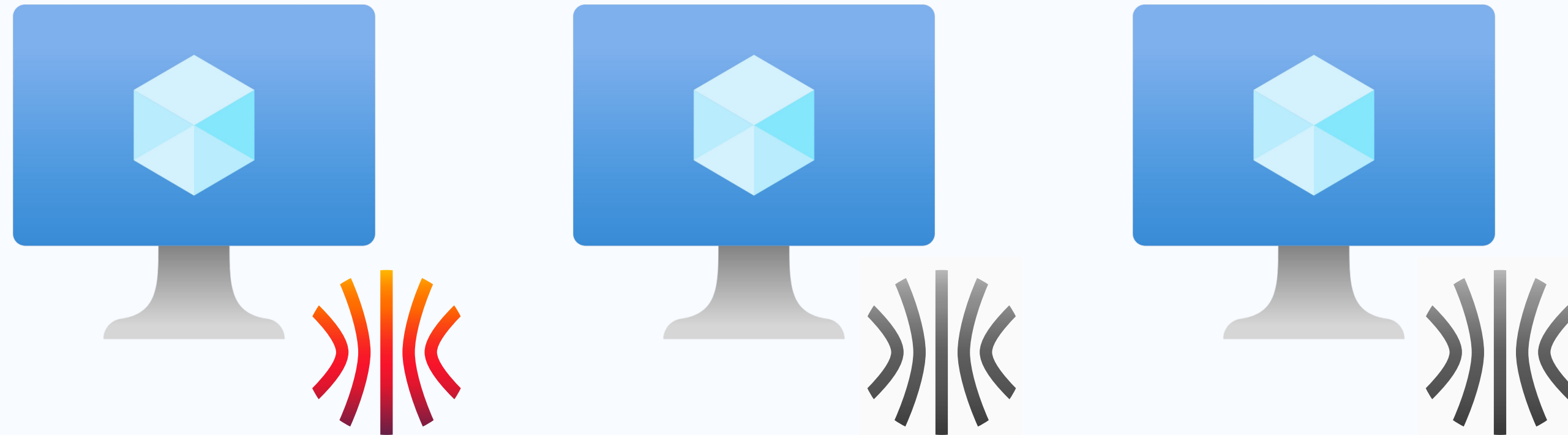


worker.yaml

Первоначальный запуск кластера



Первоначальный запуск кластера



```
talosctl apply -f control-plane.yaml -n vm1
```



secrets.yaml



talosconfig

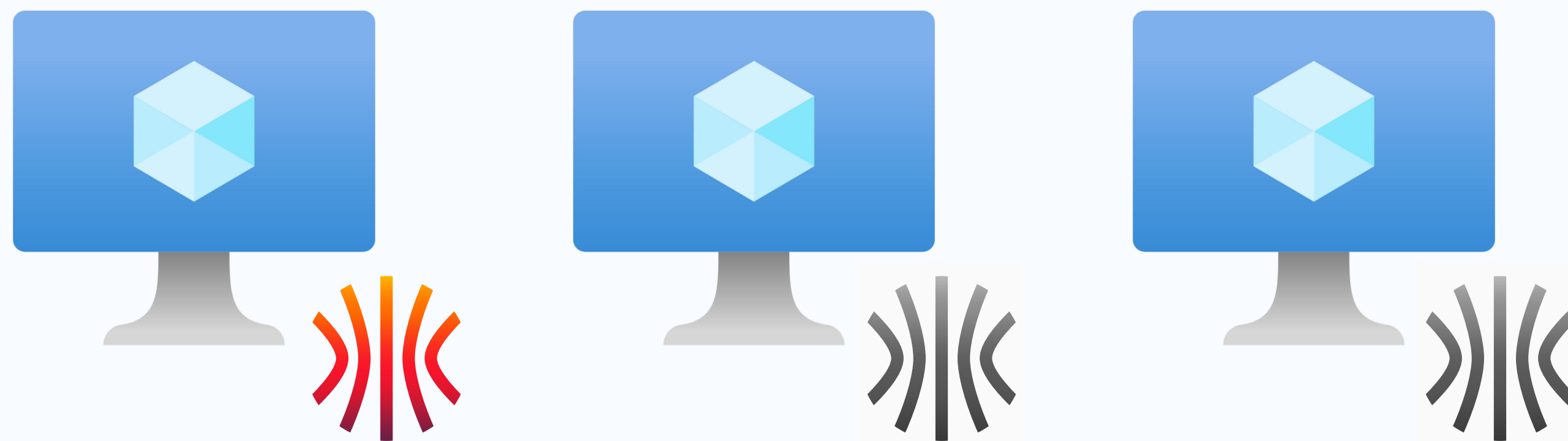


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



secrets.yaml



talosconfig

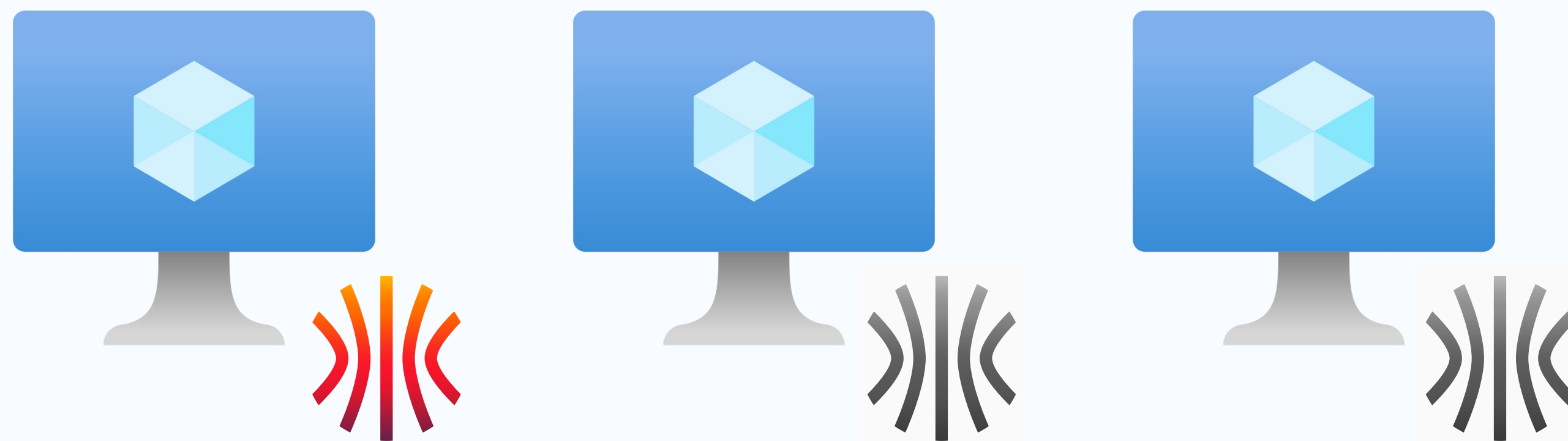


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl apply -f control-plane.yaml -n vm2`



secrets.yaml



talosconfig

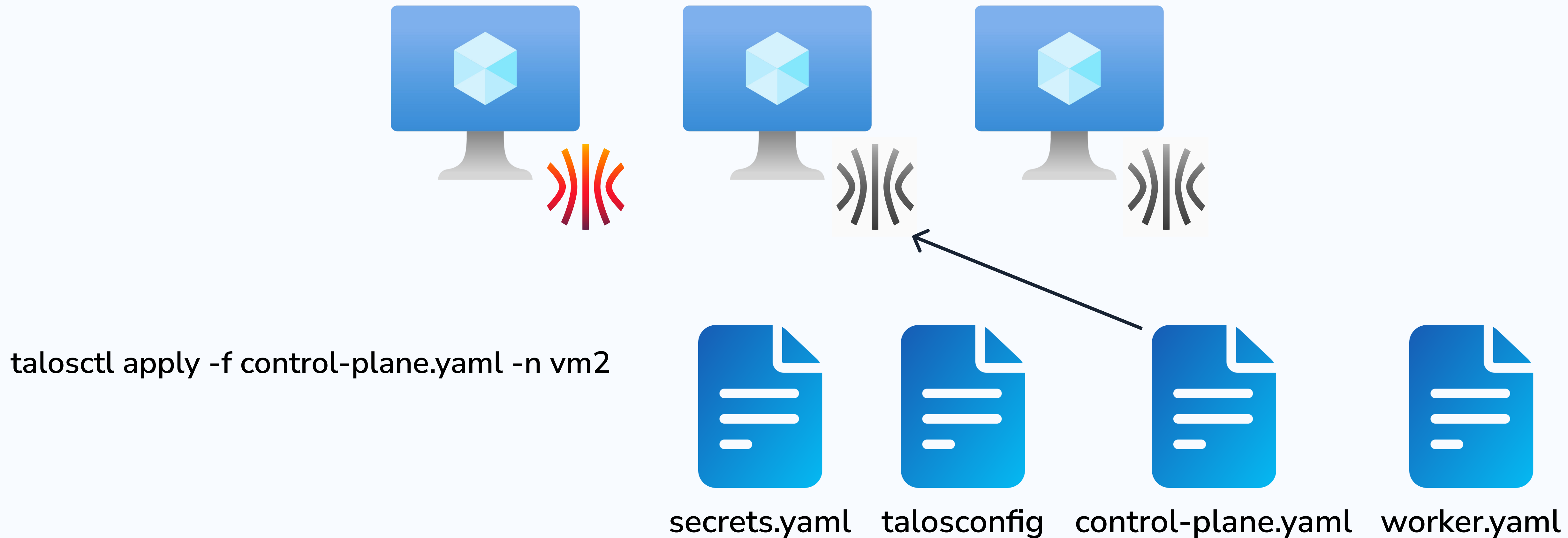


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



Первоначальный запуск кластера



`talosctl apply -f control-plane.yaml -n vm2`



secrets.yaml



talosconfig



control-plane.yaml



worker.yaml

Первоначальный запуск кластера



secrets.yaml



talosconfig



control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl apply -f control-plane.yaml -n vm3`



secrets.yaml



talosconfig

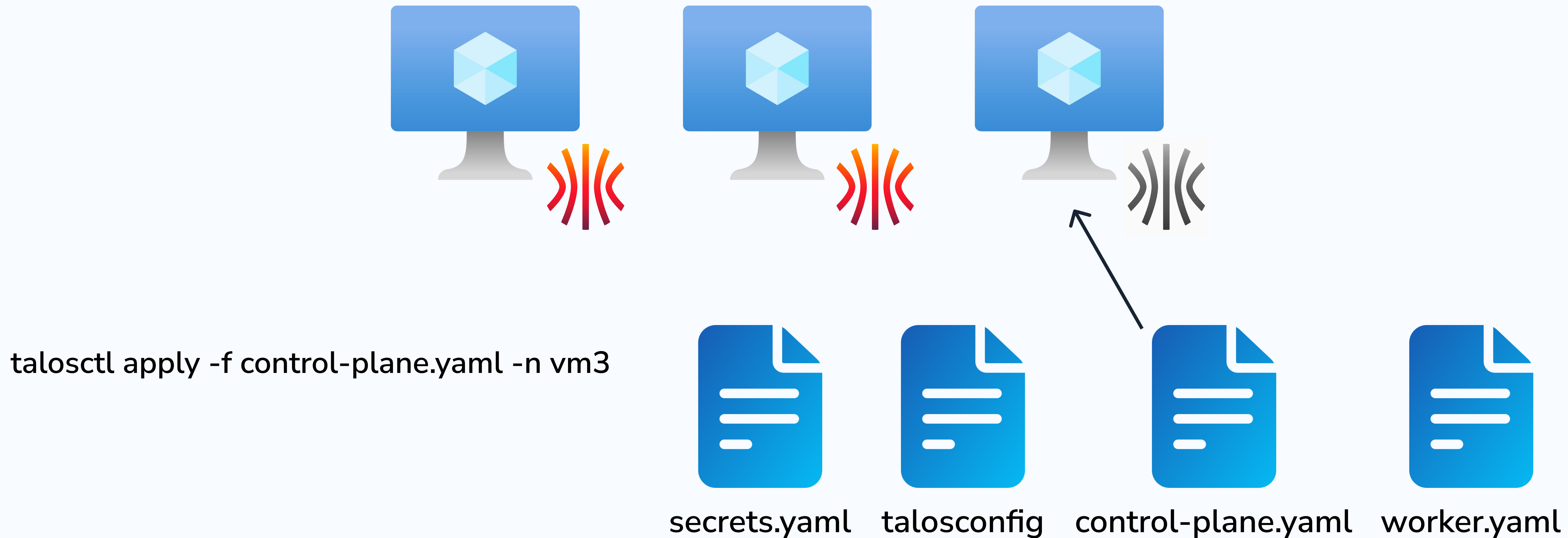


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



Первоначальный запуск кластера



```
talosctl apply -f control-plane.yaml -n vm3
```



secrets.yaml



talosconfig



control-plane.yaml



worker.yaml

Первоначальный запуск кластера



secrets.yaml



talosconfig



control-plane.yaml



worker.yaml

Первоначальный запуск кластера



`talosctl bootstrap -n vm1`



`secrets.yaml`



`talosconfig`

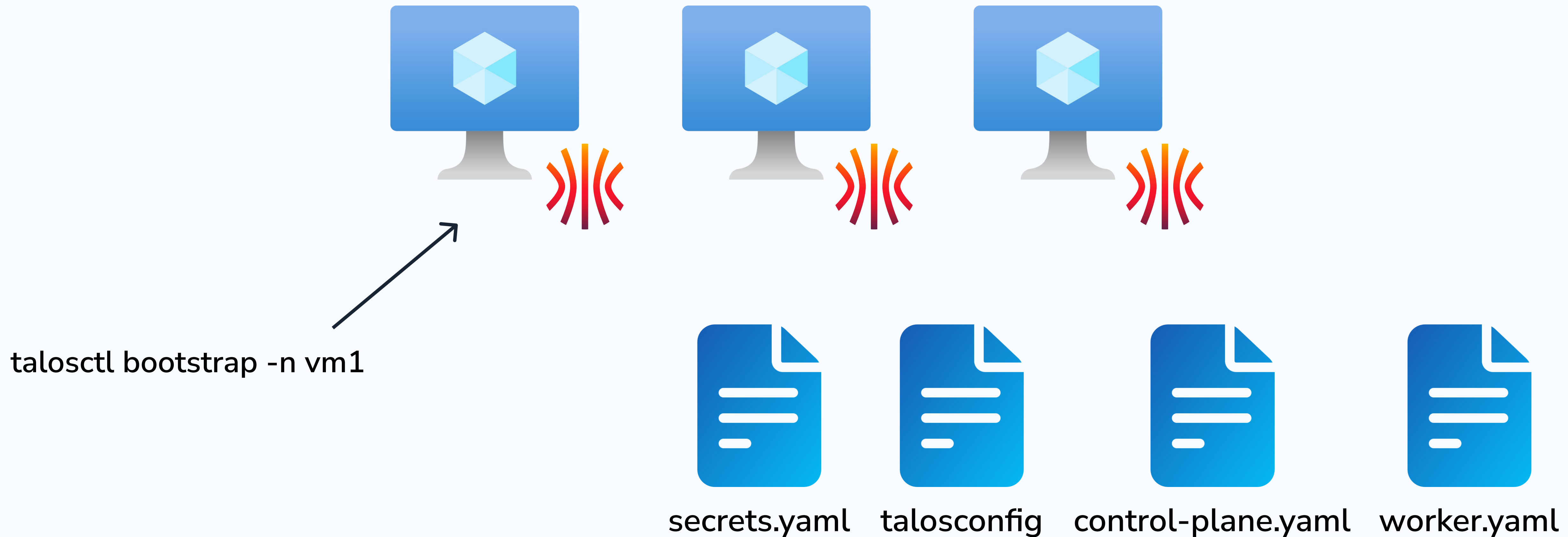


`control-plane.yaml`



`worker.yaml`

Первоначальный запуск кластера



Первоначальный запуск кластера



`talosctl bootstrap -n vm1`



`secrets.yaml`



`talosconfig`



`control-plane.yaml`



`worker.yaml`

Первоначальный запуск кластера



secrets.yaml



talosconfig



control-plane.yaml



worker.yaml

Первоначальный запуск кластера



secrets.yaml



talosconfig

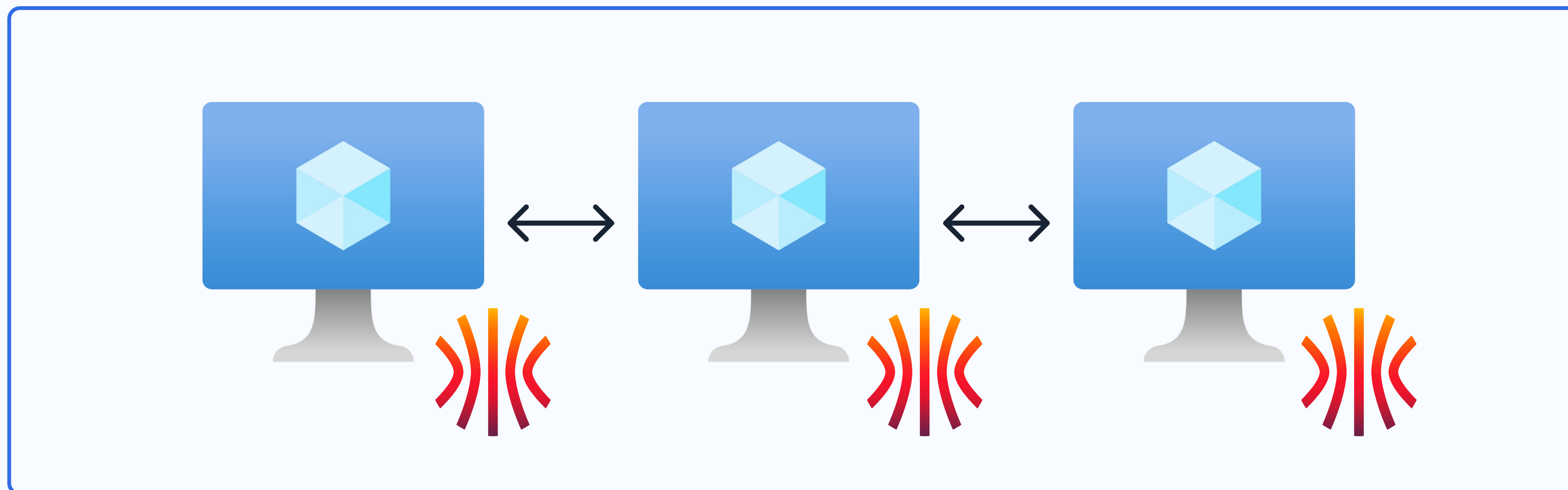


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



secrets.yaml



talosconfig

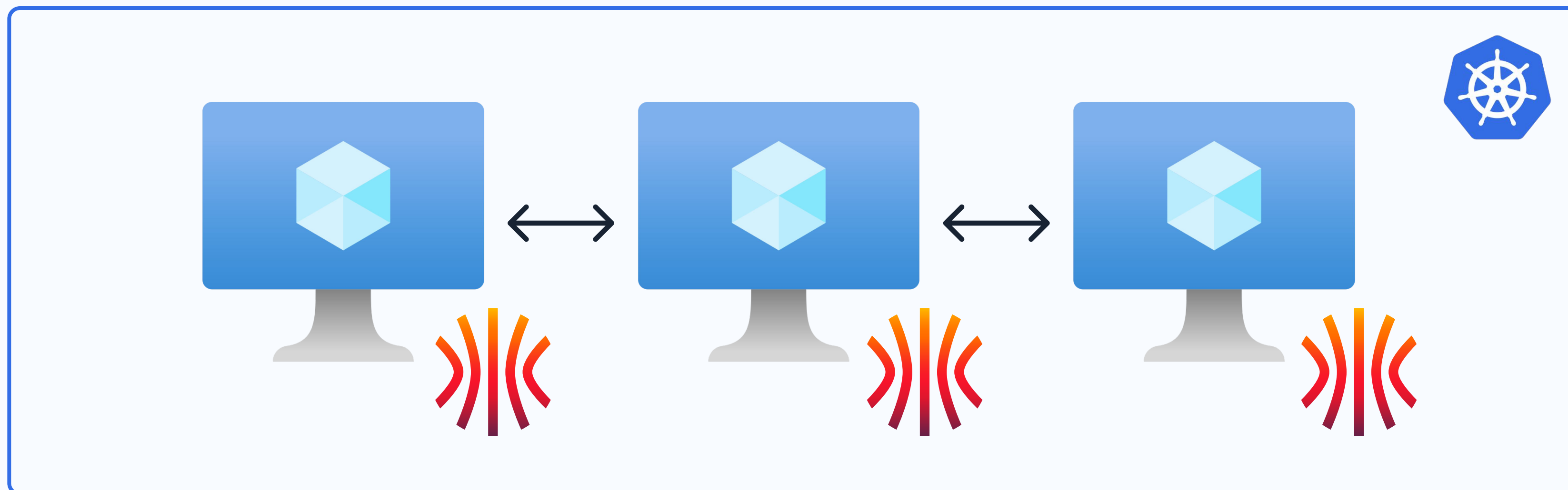


control-plane.yaml



worker.yaml

Первоначальный запуск кластера



secrets.yaml



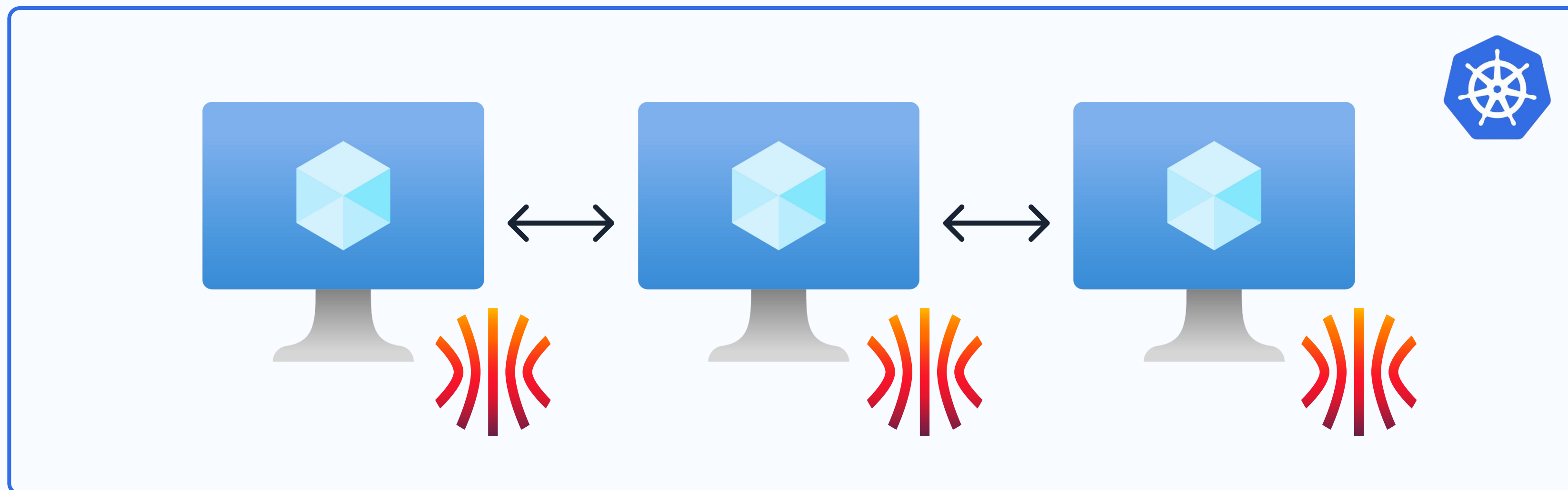
talosconfig



control-plane.yaml



worker.yaml



secrets.yaml



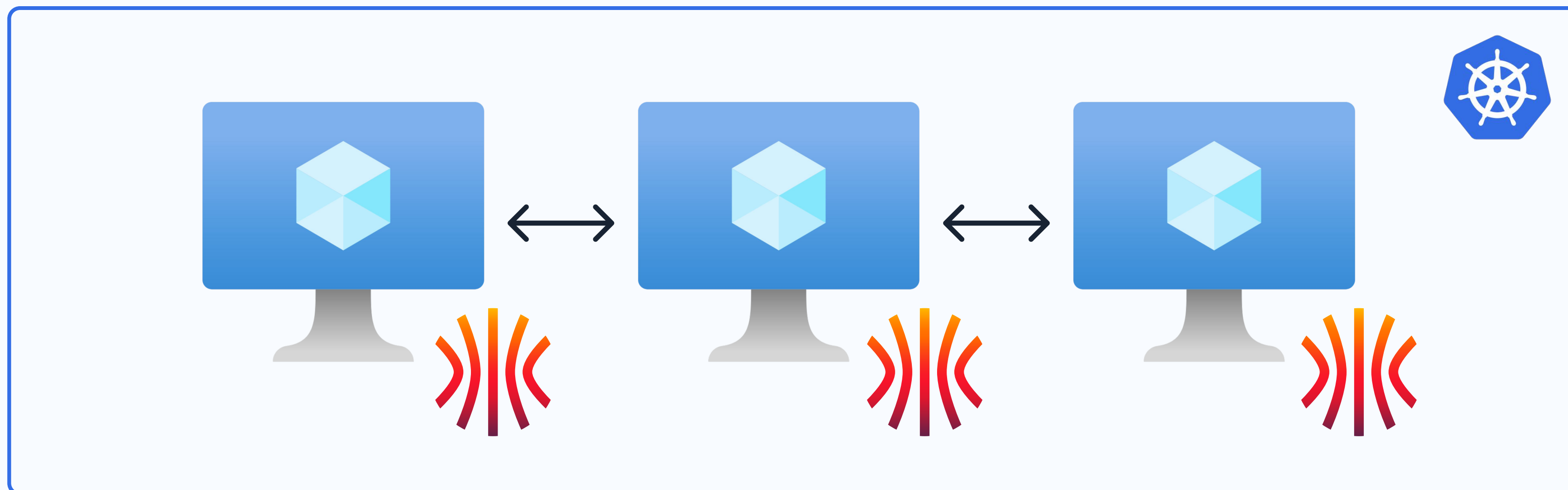
talosconfig



control-plane.yaml



worker.yaml



```
talosctl apply -f control-plane.yaml -n vm1
```



secrets.yaml



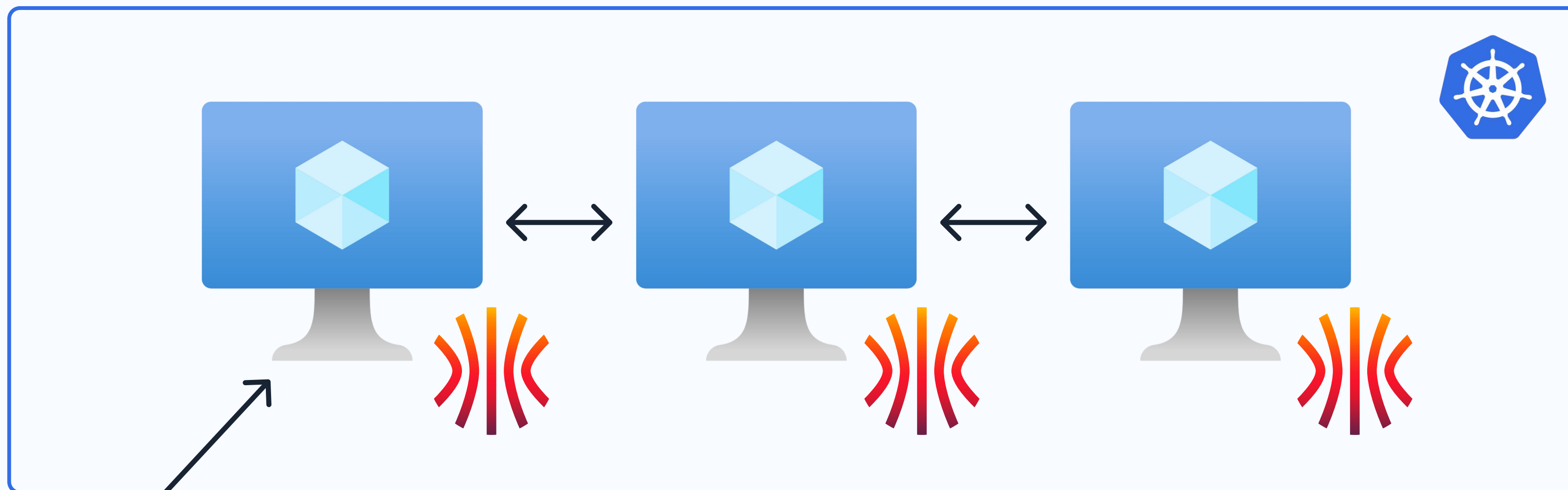
talosconfig



control-plane.yaml



worker.yaml



`talosctl apply -f control-plane.yaml -n vm1`



secrets.yaml



talosconfig

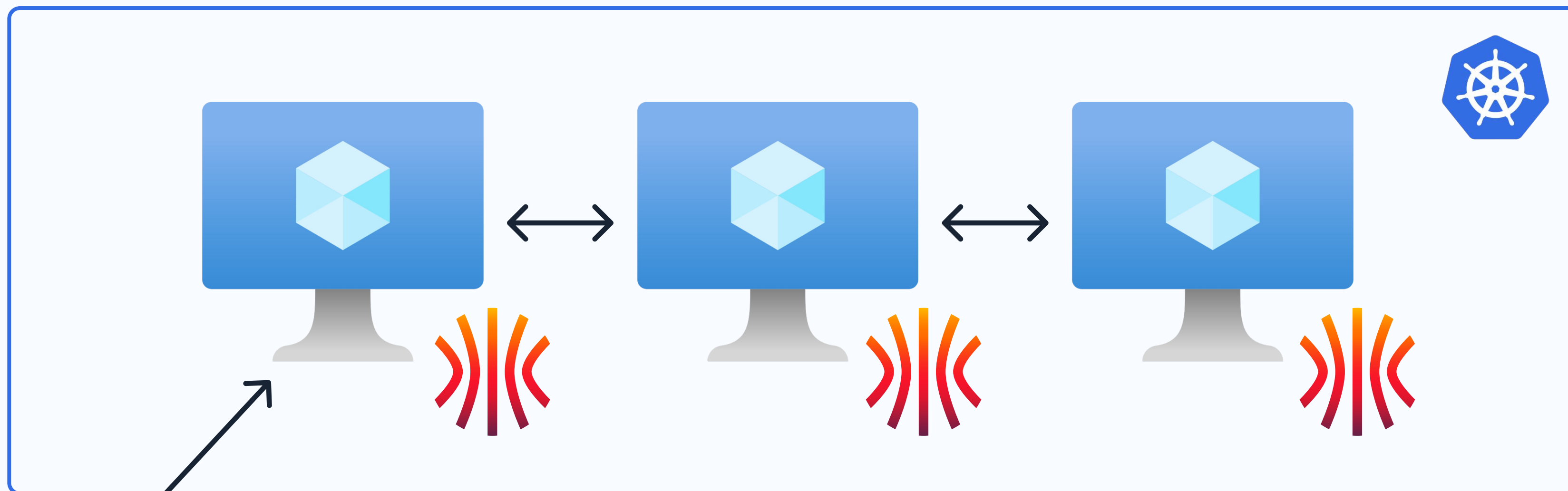


control-plane.yaml



worker.yaml

Обновление узлов кластера



`talosctl upgrade -n vm1`



secrets.yaml



talosconfig

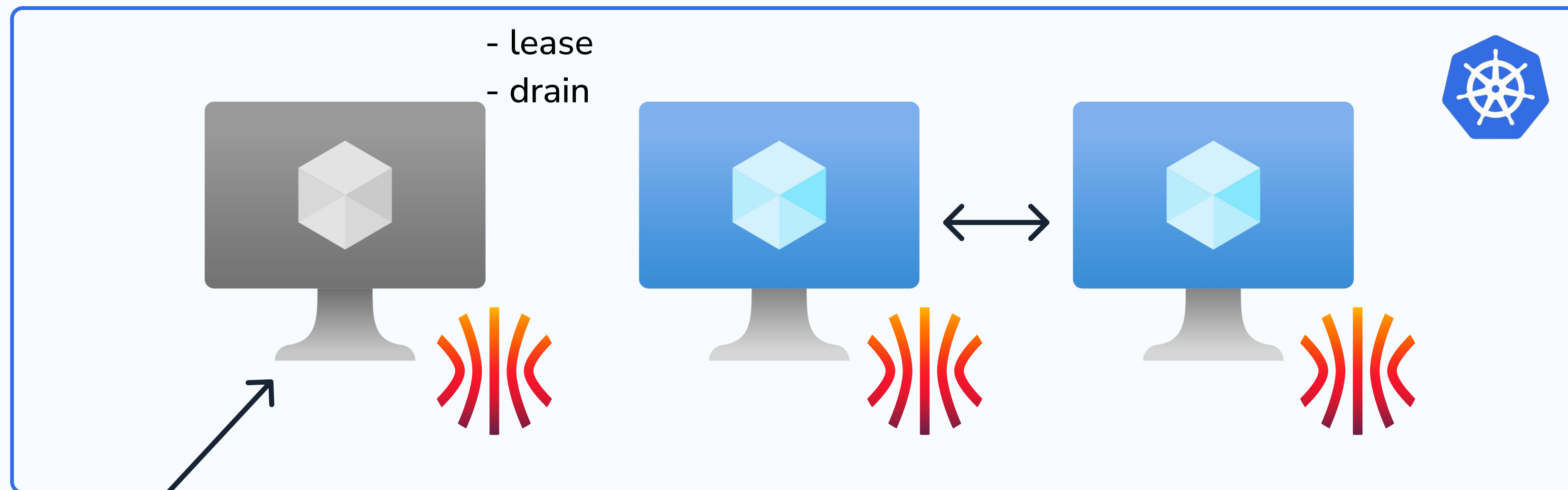


control-plane.yaml



worker.yaml

Обновление узлов кластера



talosctl upgrade -n vm1



secrets.yaml



talosconfig

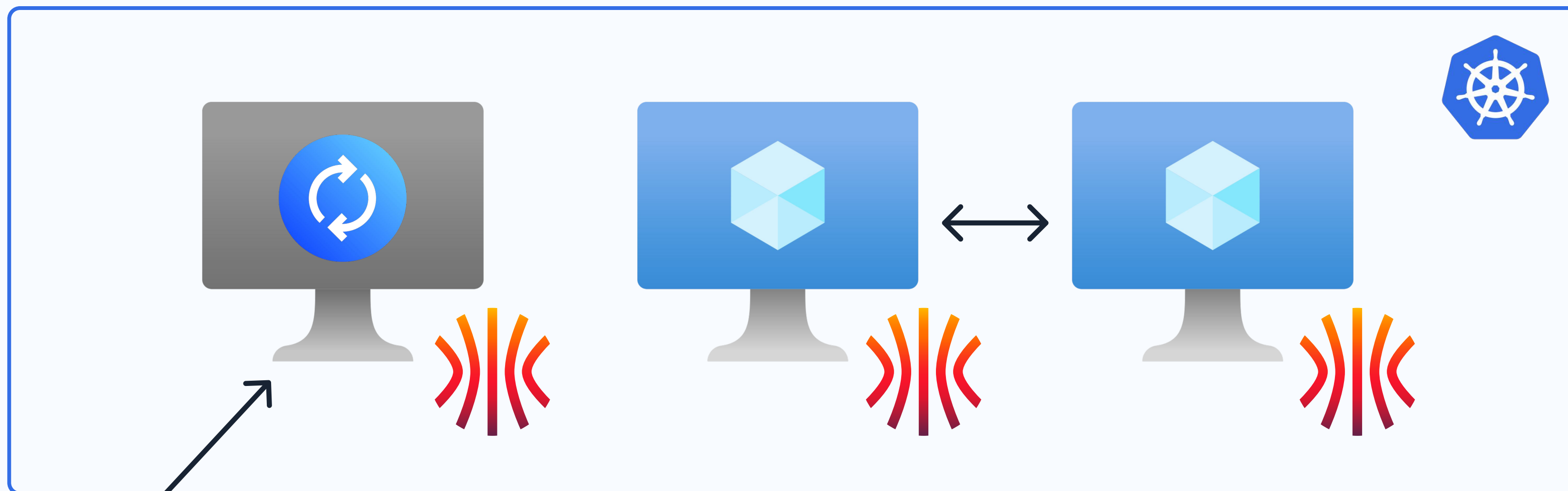


control-plane.yaml



worker.yaml

Обновление узлов кластера



talosctl upgrade -n vm1



secrets.yaml



talosconfig

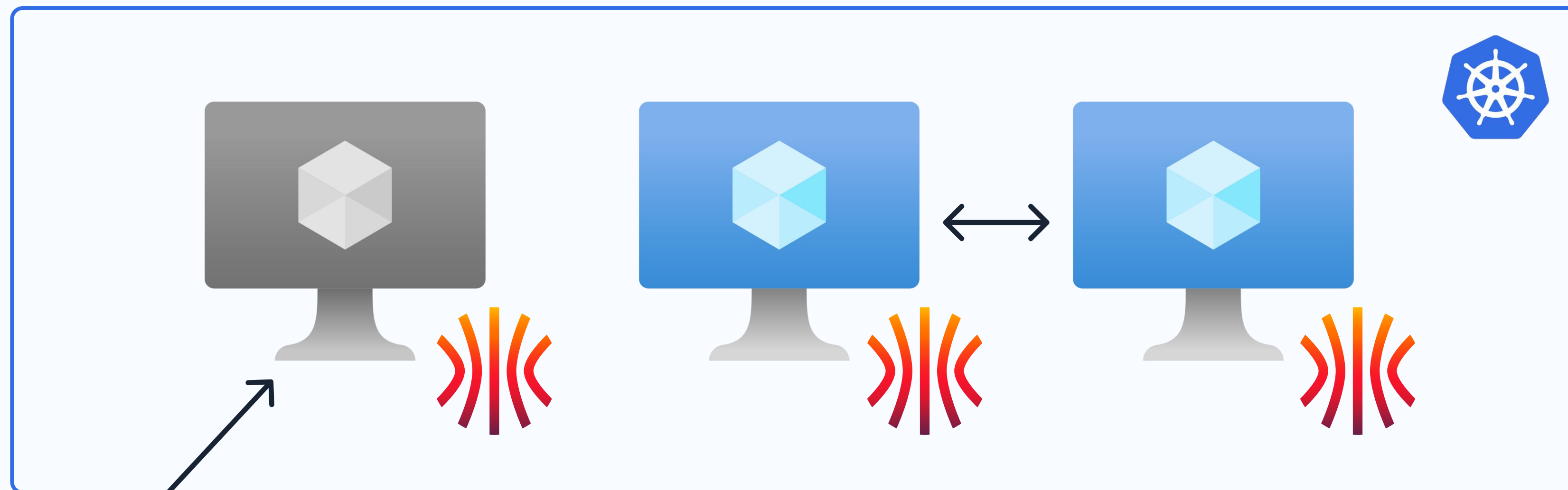


control-plane.yaml



worker.yaml

Обновление узлов кластера



`talosctl upgrade -n vm1`



secrets.yaml



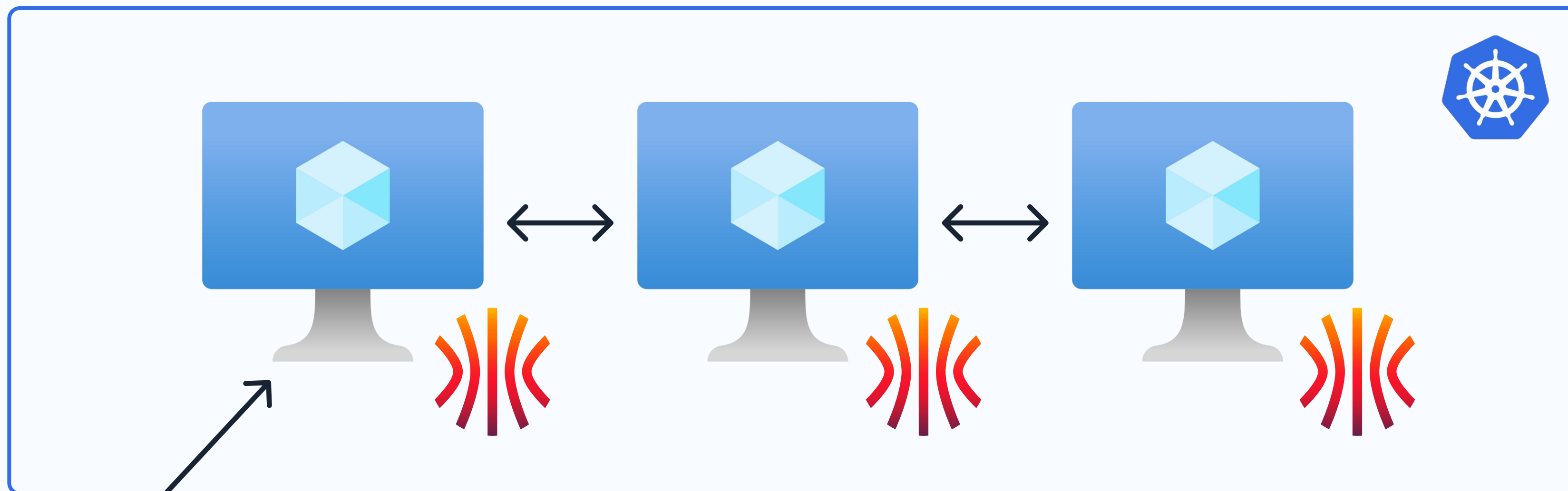
talosconfig



control-plane.yaml



worker.yaml



`talosctl upgrade -n vm1`



secrets.yaml



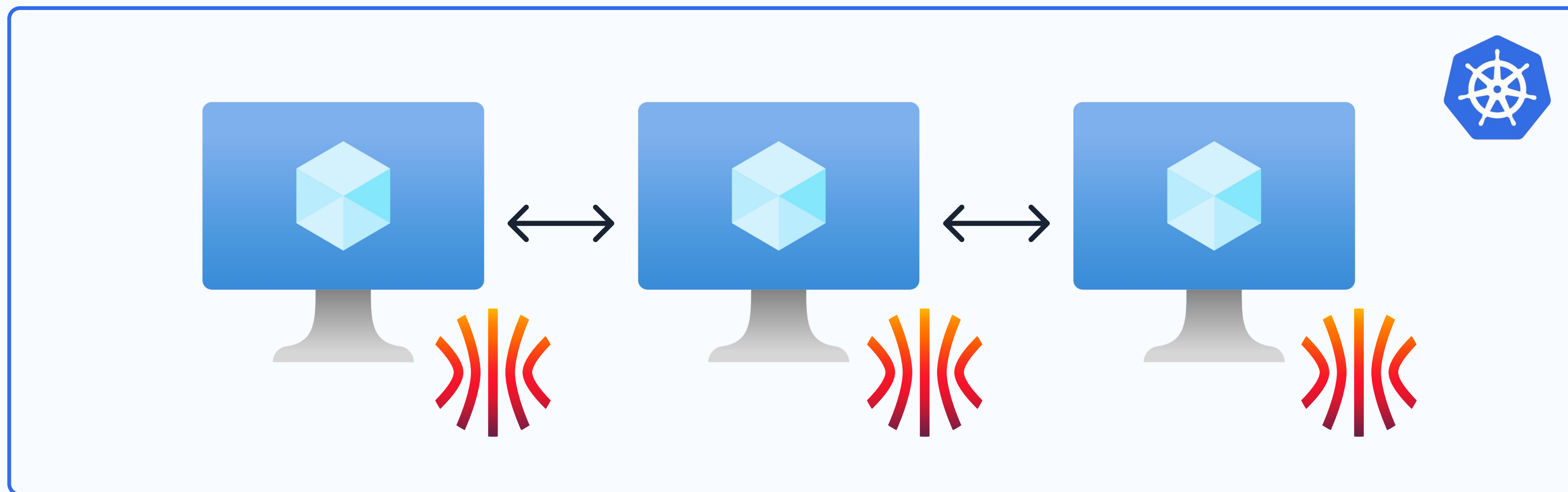
talosconfig



control-plane.yaml



worker.yaml



`talosctl upgrade -n vm1`



secrets.yaml



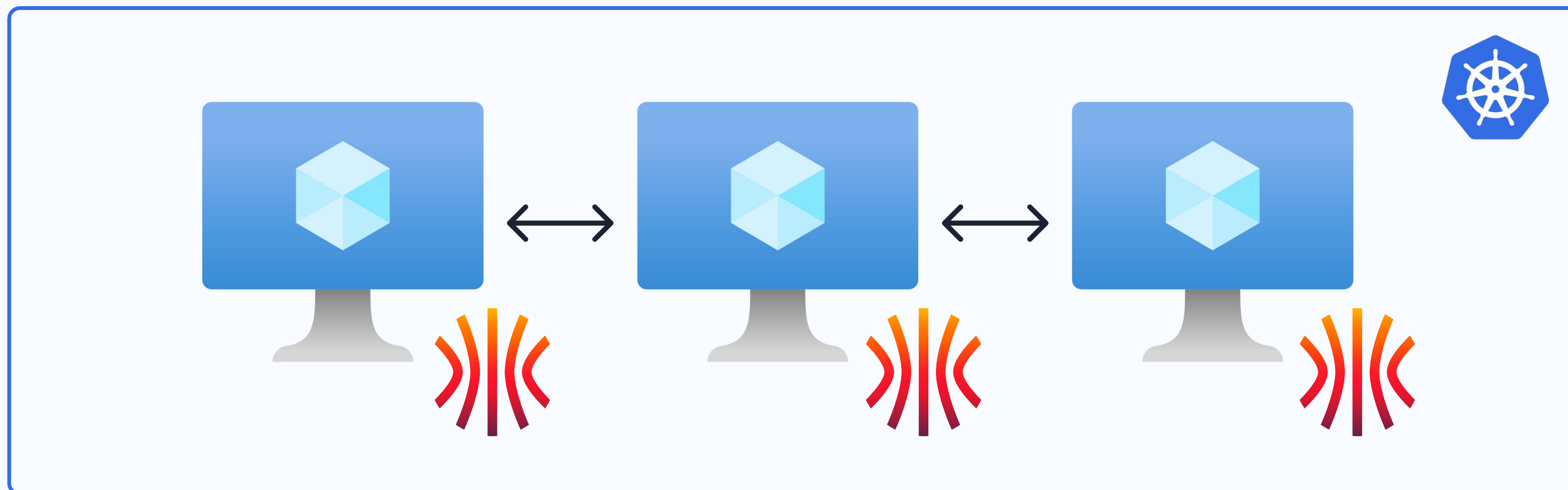
talosconfig



control-plane.yaml



worker.yaml



secrets.yaml



talosconfig

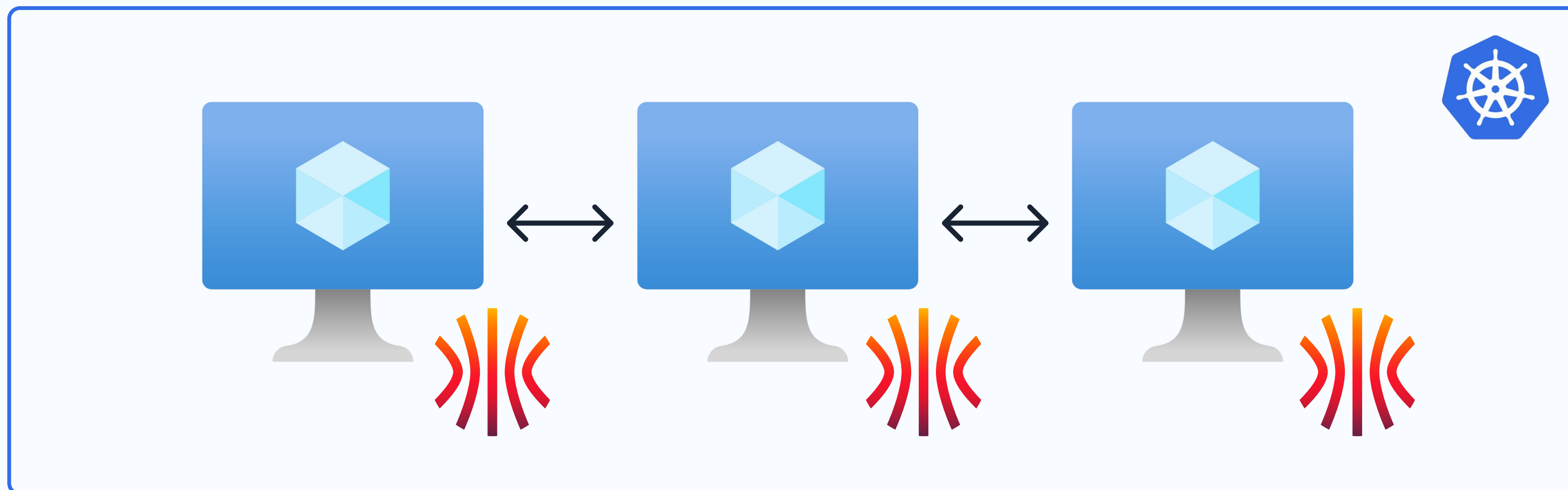


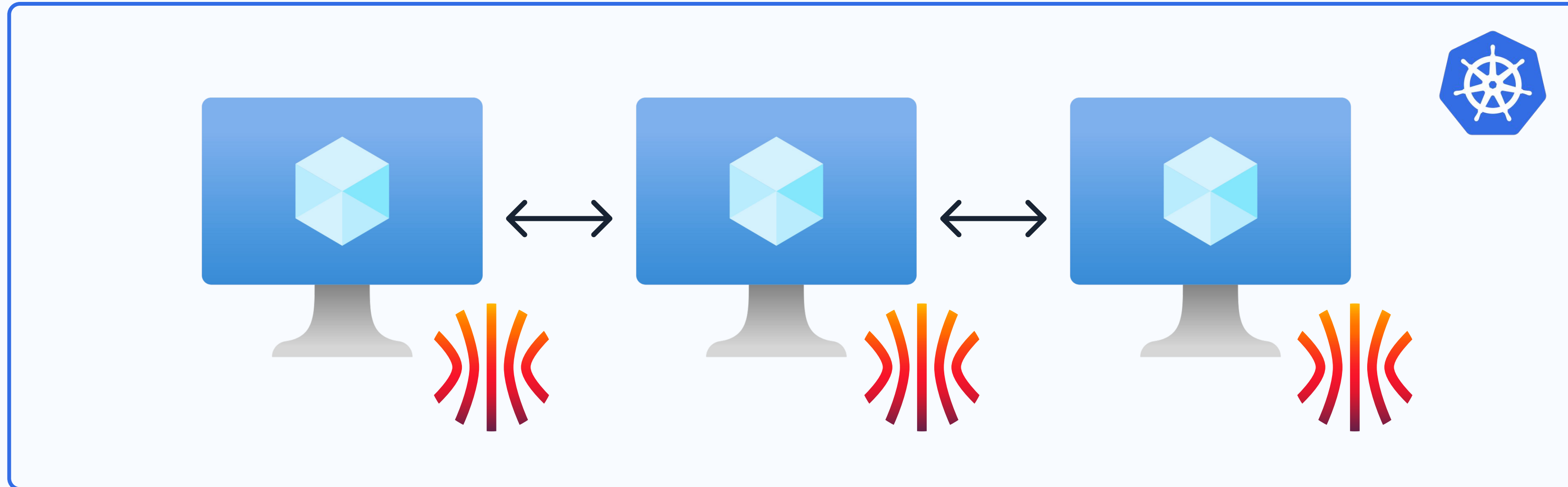
control-plane.yaml



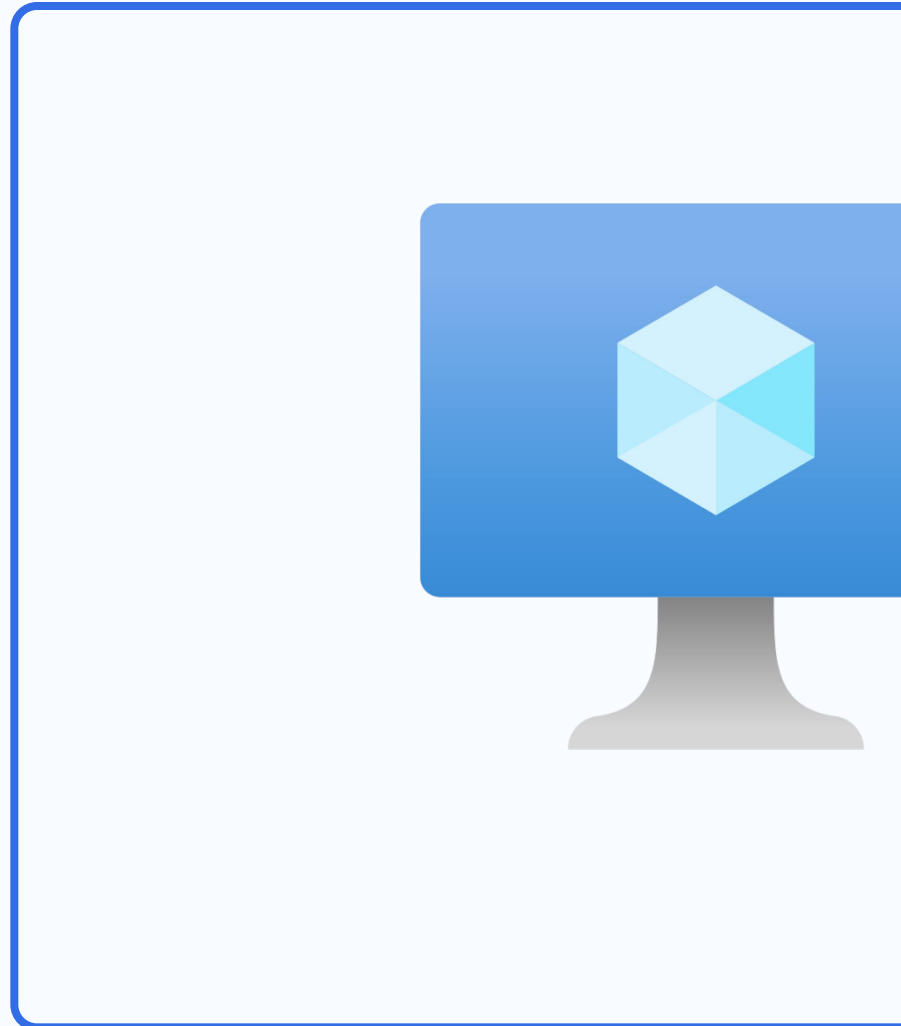
worker.yaml

Обновление узлов кластера



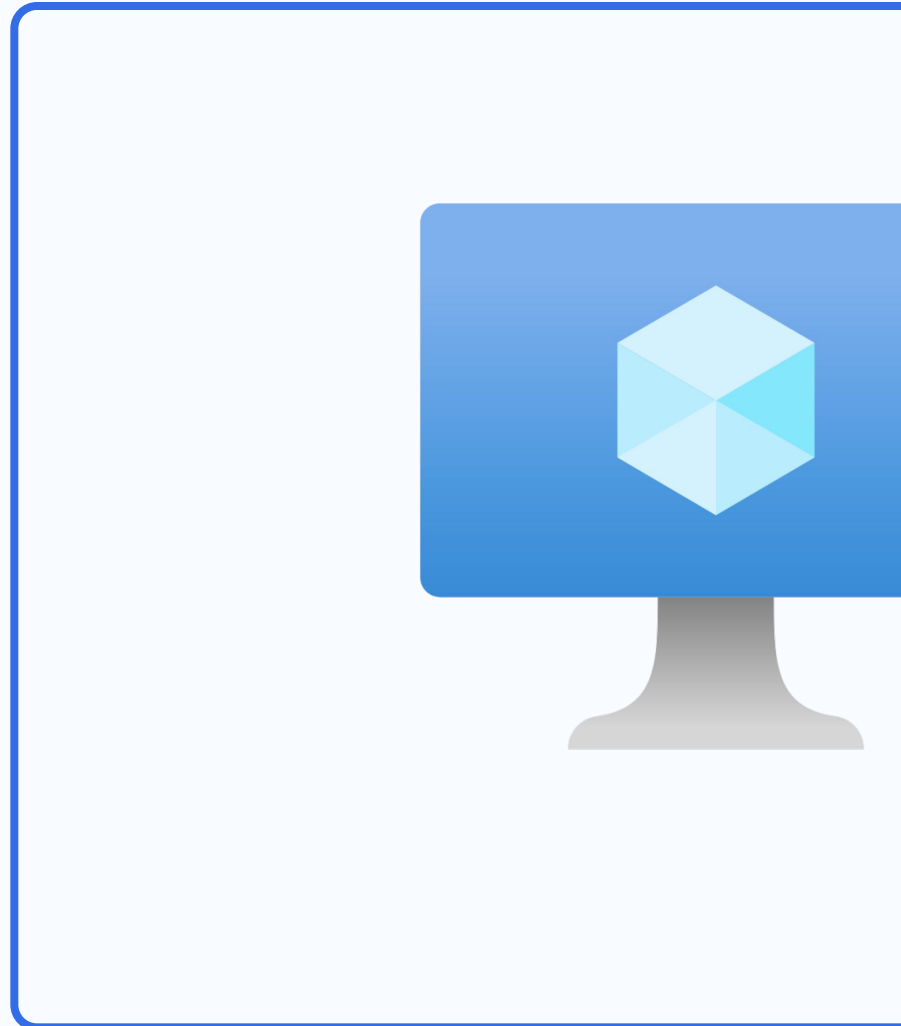


Доступ в кластер



```
machine:
  type: control-plane
  ca: { crt: "" key: "" }
  certSANs:
    - 127.0.0.1
    - cluster1.example.org
  network:
    interfaces:
      - interface: eth0
        vip: 192.168.100.10
  install:
    disk: /dev/sda
  cluster:
    controlPlane:
      endpoint: https://192.168.100.10:6443
    ca: { crt: "" key: "" }
    apiServer: {}
    etcd: {}
    extraManifests: {}
```

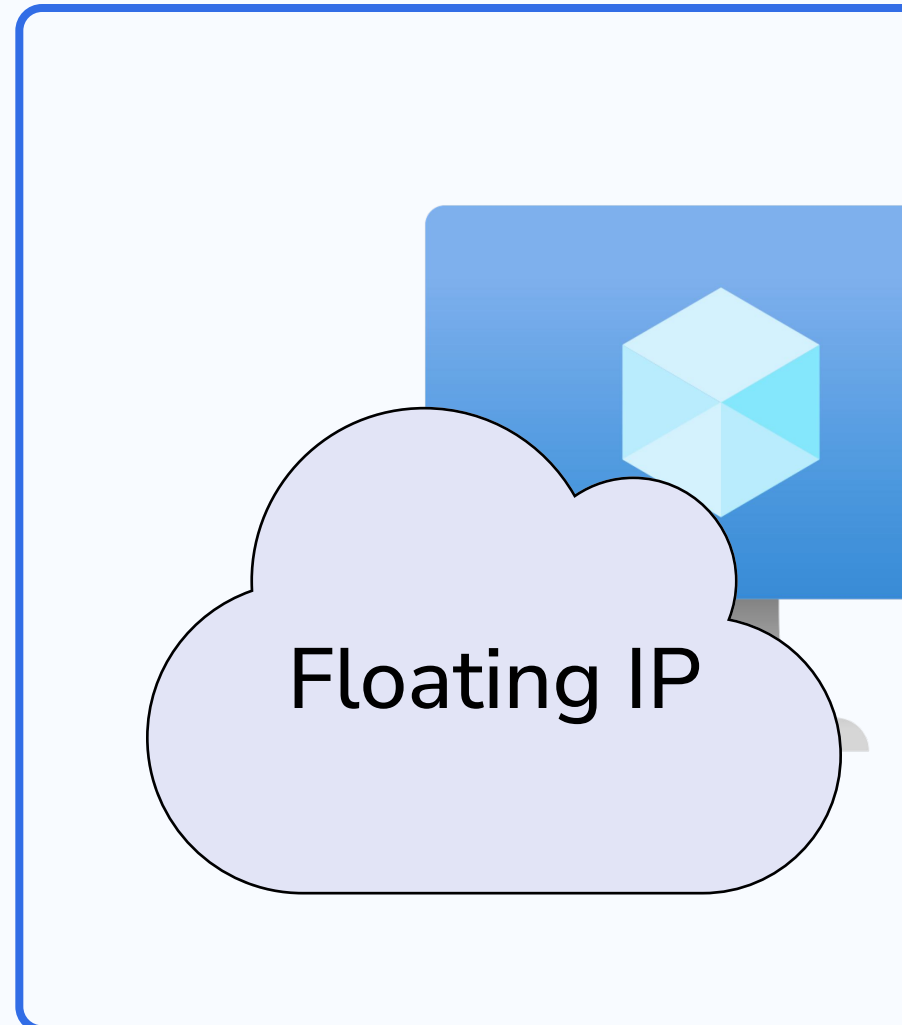
Доступ в кластер



```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```

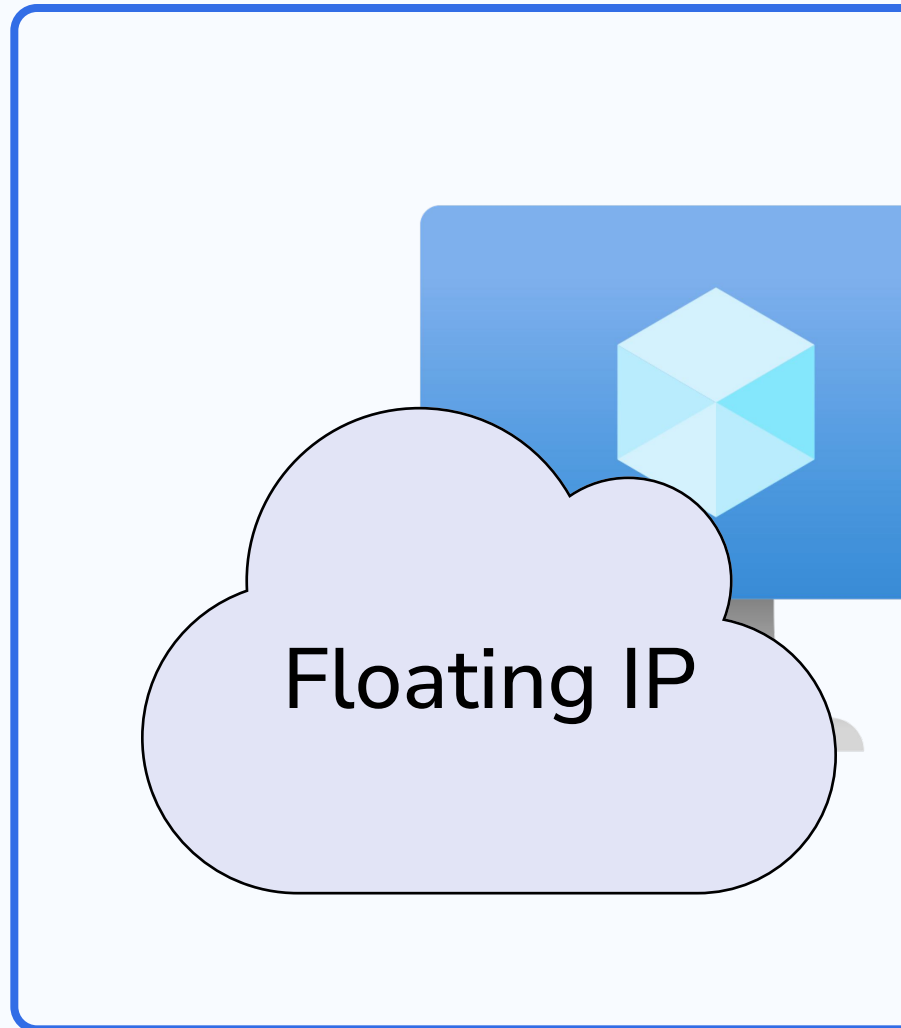

Доступ в кластер

145



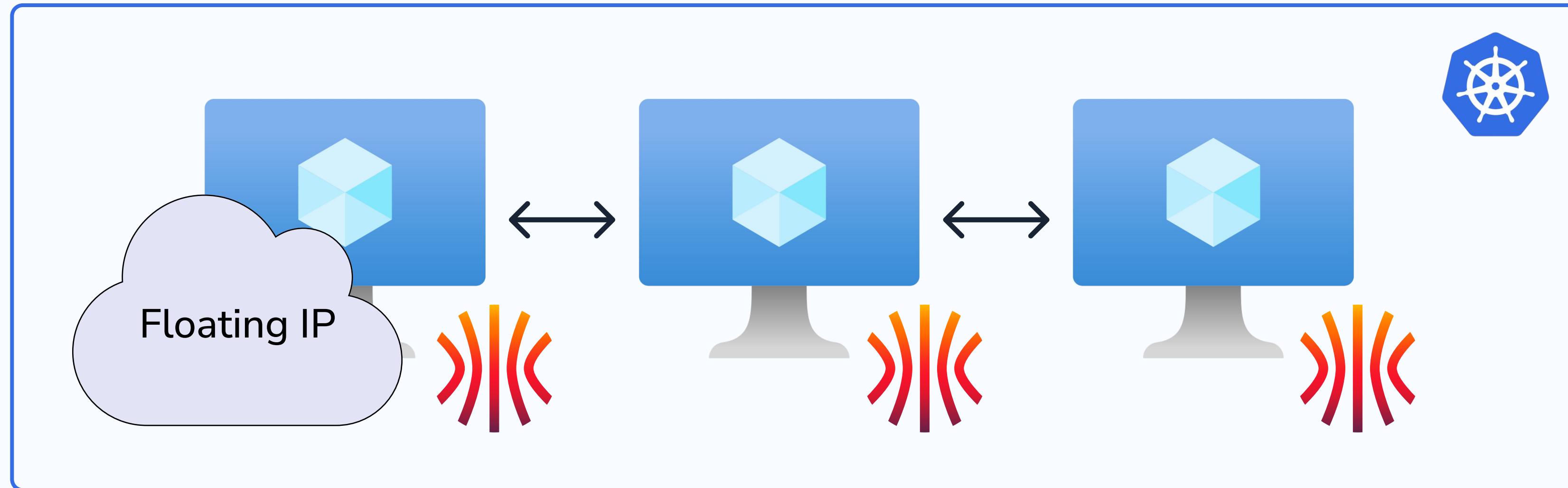
```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```

Доступ в кластер

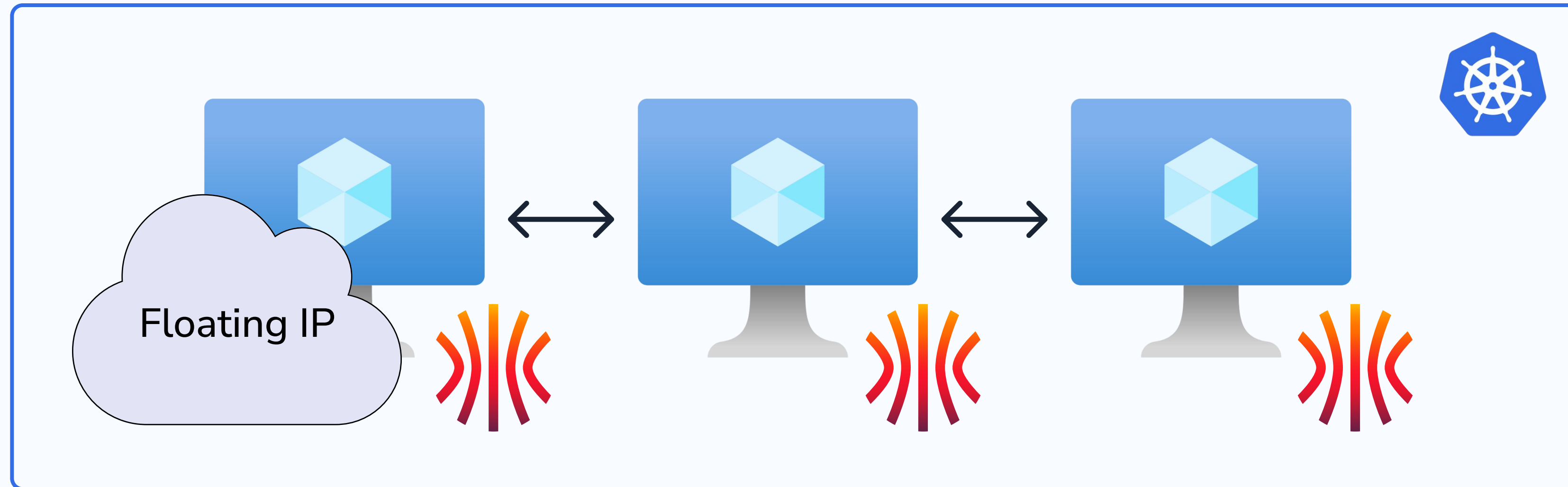


kubeconfig

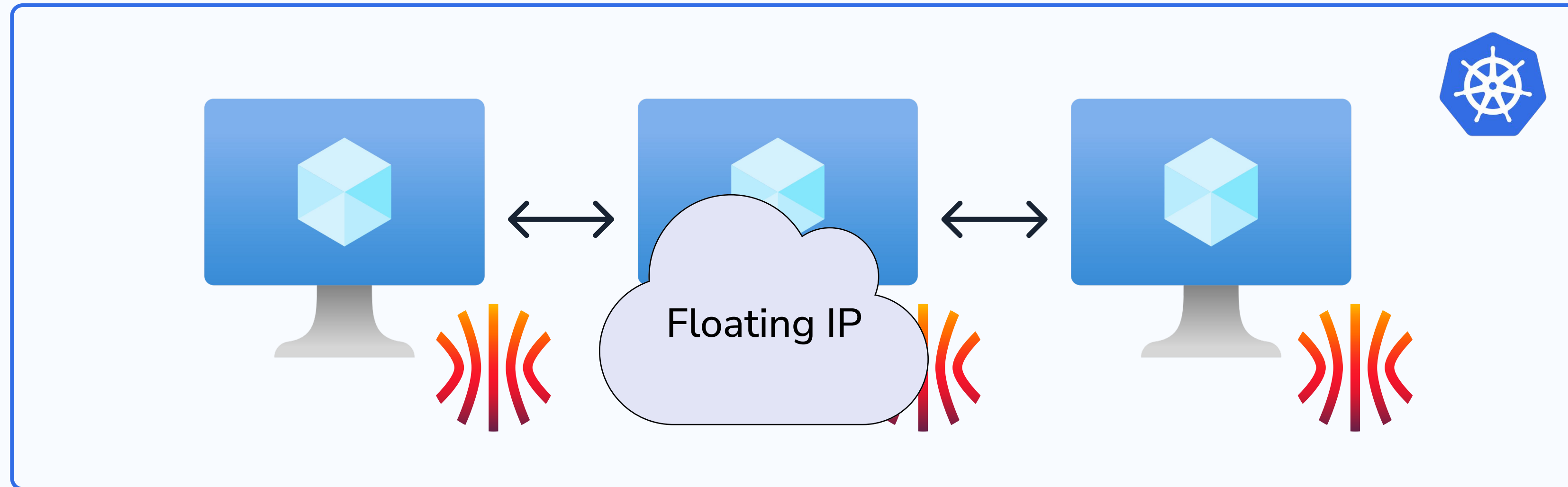
```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```



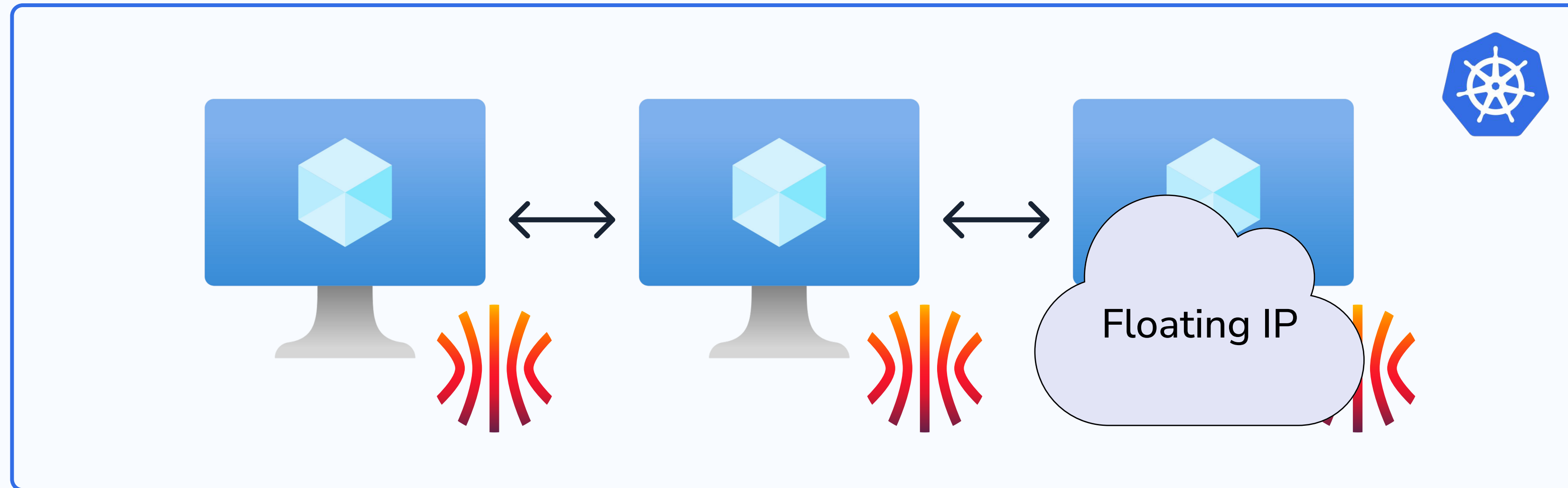
kubeconfig



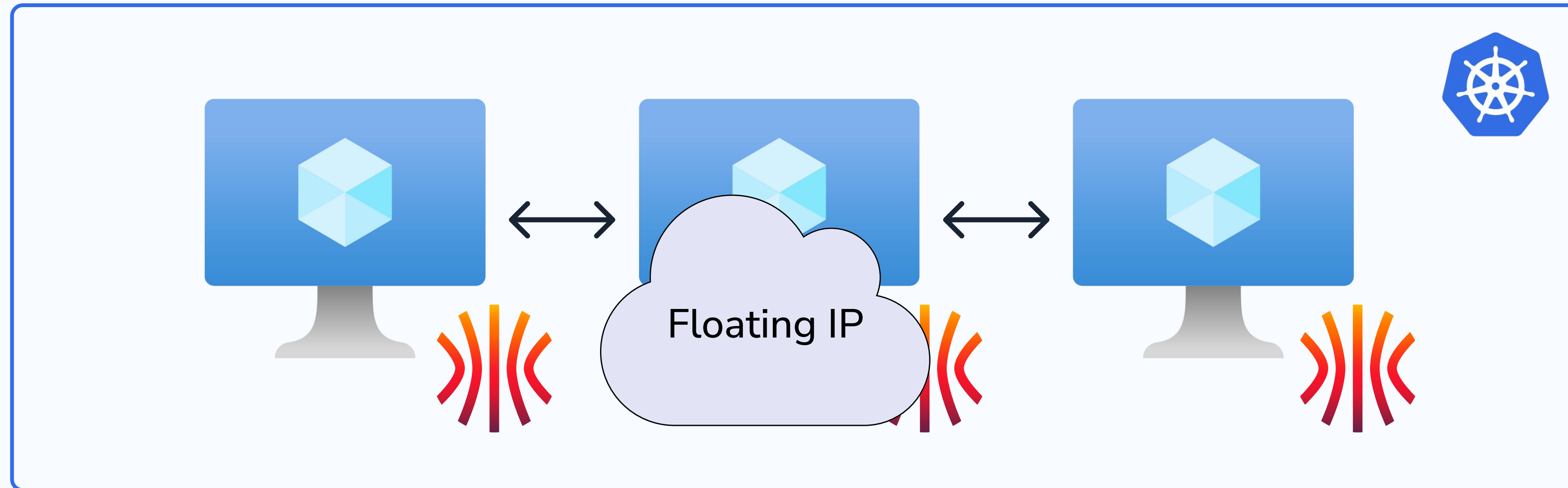
kubeconfig



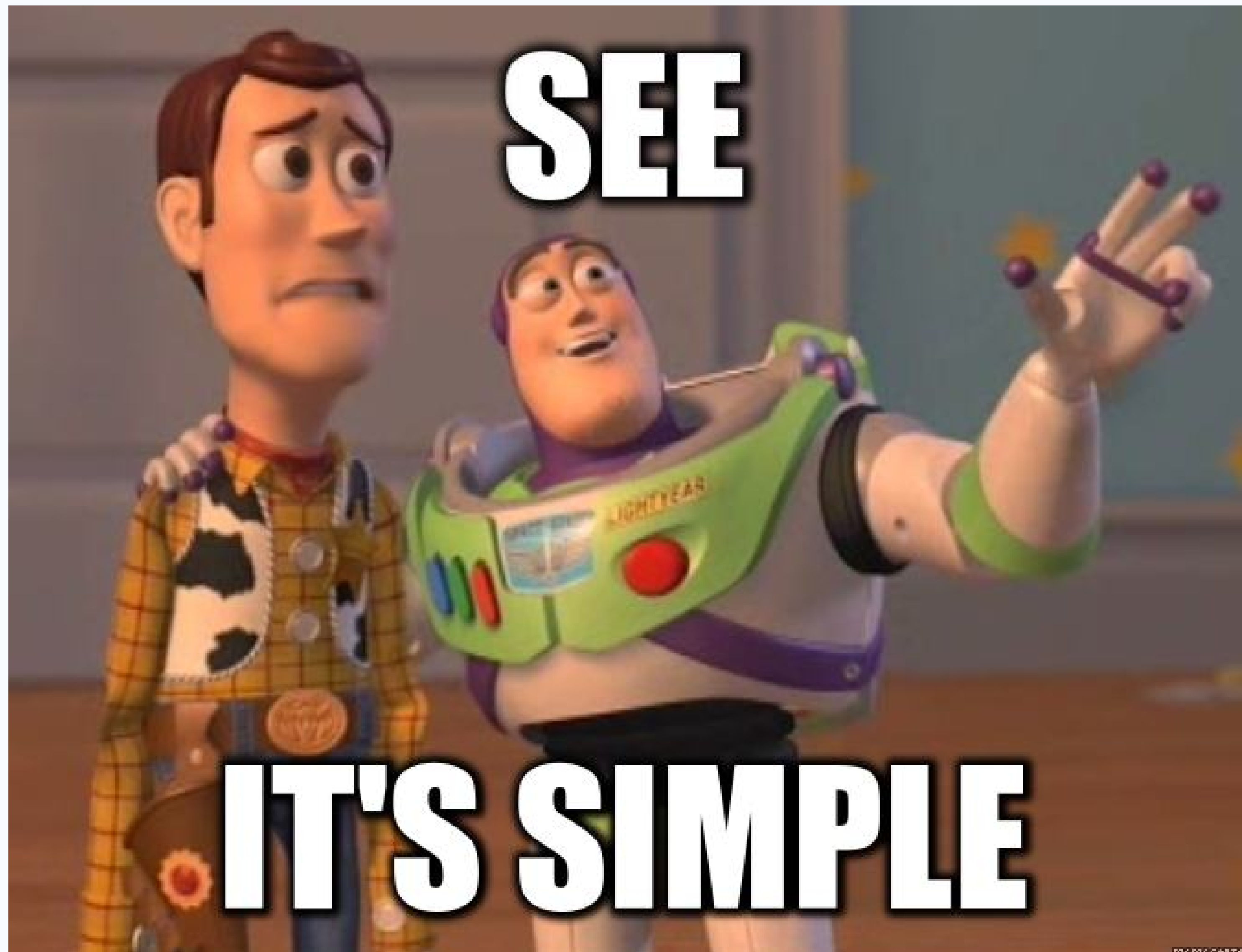
kubeconfig

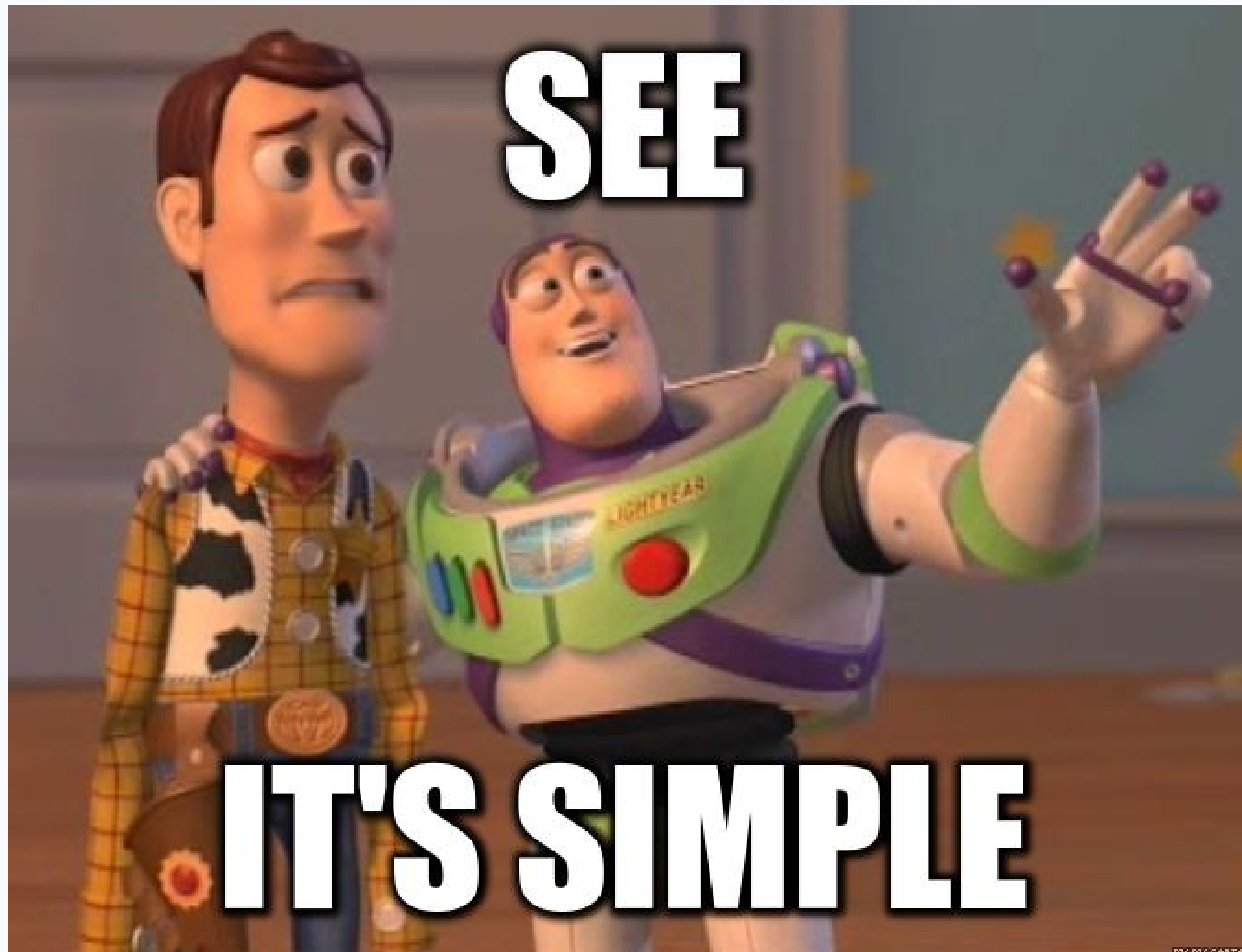


kubeconfig



kubeconfig





Talos-bootstrap: наша автоматизация

talos-bootstrap

developed by  154

talos-bootstrap

developed by  155



talos-bootstrap

developed by **Aenix** 156

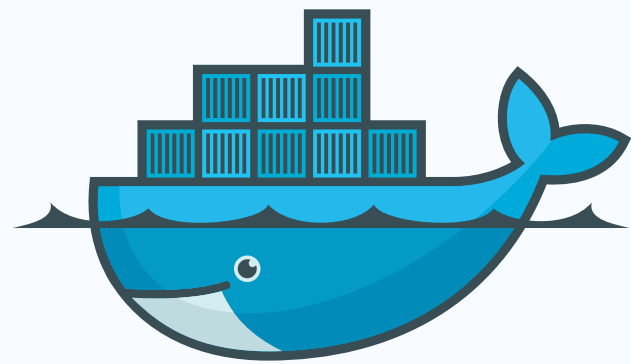
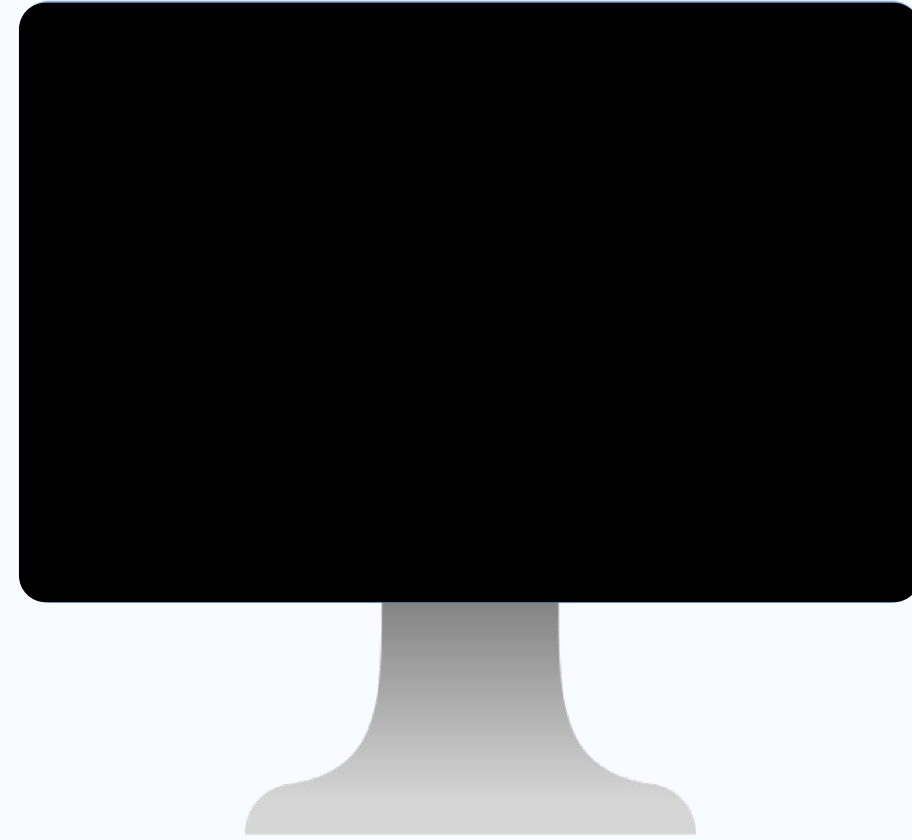


talos-bootstrap

developed by  157

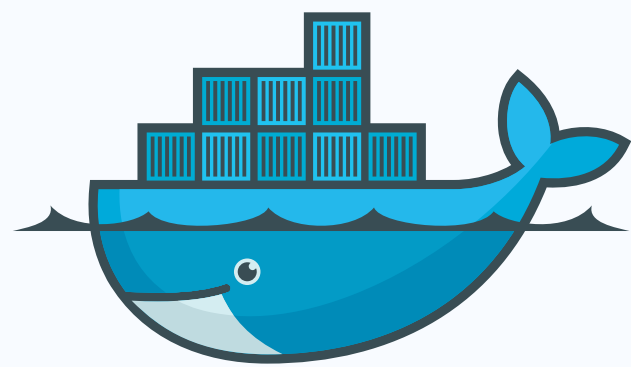


talos-bootstrap



DHCP-server
PXE-server

talos-bootstrap



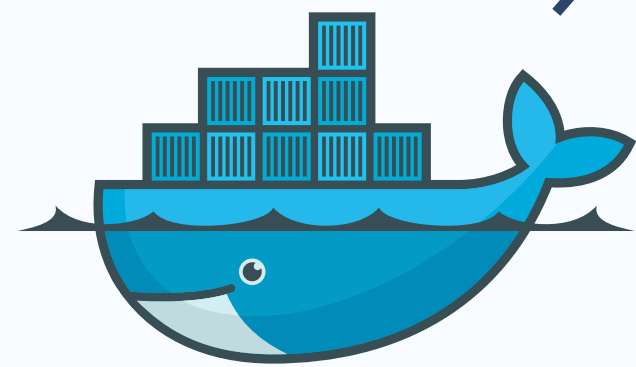
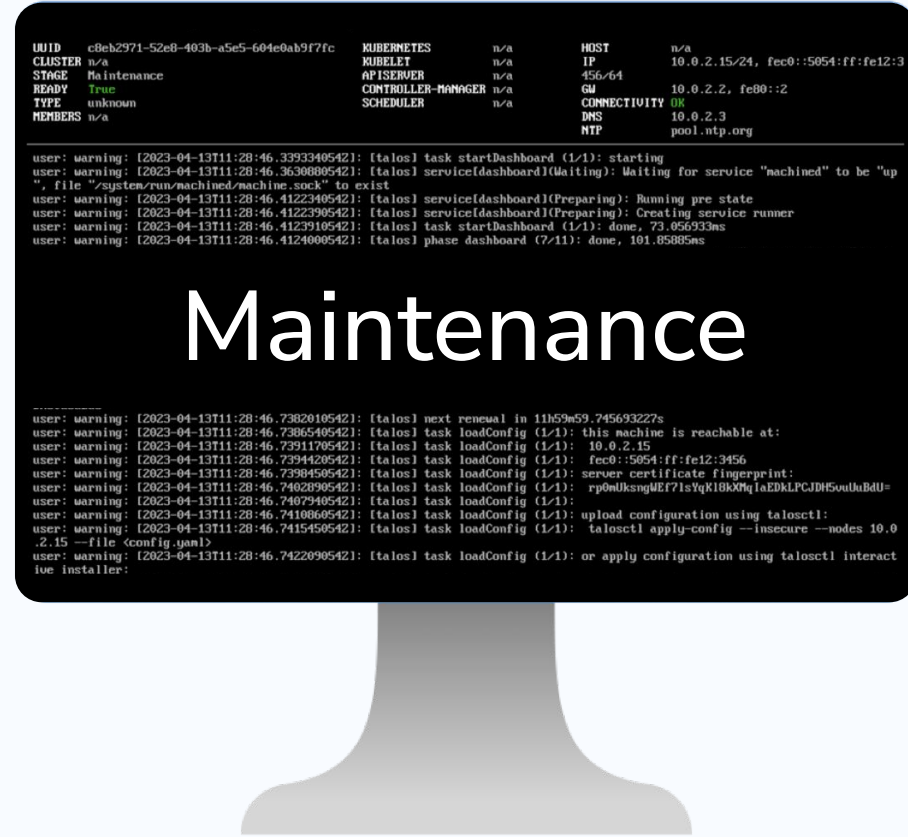
DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**



DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**

```
UID c9eb271-52d8-403b-a5e5-604eb4377c KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE unknown SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTF pool.slp.org

user: warning: [2023-04-13T11:20:46.329234054Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363600542Z]: (talos service{dashboard}(Waiting)): Waiting for service "machined" to be "up"
? file "/opt/kubernetes/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service{dashboard}(Preparing)): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service{dashboard}(Preparing)): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos task startDashboard (1-1)): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85885ms

-----
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 1105969.745693227s)
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729119054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.748209054Z]: (talos task loadConfig (1-1)): rpb0k8mgMf71sqK18X0q1aE2ALPCJH5odshdM+
user: warning: [2023-04-13T11:20:46.748209054Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741600542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209054Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
see installer
```

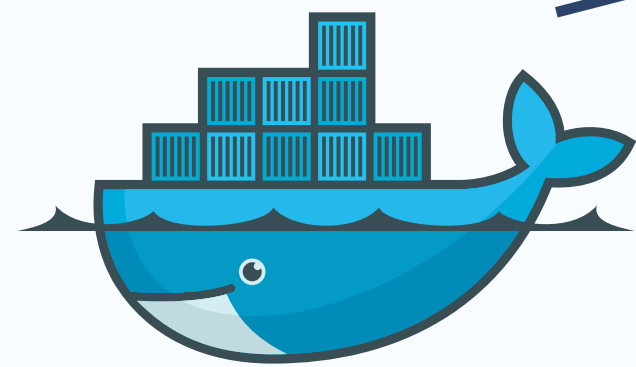
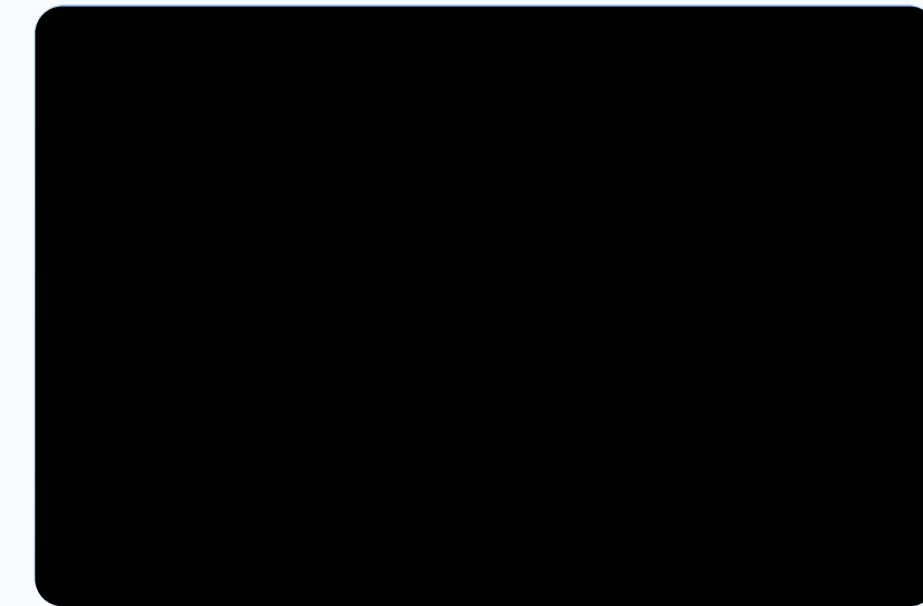
Maintenance

```
UID c9eb271-52d8-403b-a5e5-604eb4377c KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE unknown SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTF pool.slp.org

user: warning: [2023-04-13T11:20:46.329234054Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363600542Z]: (talos service{dashboard}(Waiting)): Waiting for service "machined" to be "up"
? file "/opt/kubernetes/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service{dashboard}(Preparing)): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service{dashboard}(Preparing)): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos task startDashboard (1-1)): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85885ms

-----
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 1105969.745693227s)
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729119054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.748209054Z]: (talos task loadConfig (1-1)): rpb0k8mgMf71sqK18X0q1aE2ALPCJH5odshdM+
user: warning: [2023-04-13T11:20:46.748209054Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741600542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209054Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
see installer
```

Maintenance



DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456:64
READY True CONTROLLER-MANAGER n/a OS 10.0.2.2, fe80::2
TYPE machine SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/terraform/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms
```

Maintenance

```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 1105969.745693227s
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.739119054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.739420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.739800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rpb0khangMZF7isqK18X0q1aZALPCJH5oahBdD+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456:64
READY True CONTROLLER-MANAGER n/a OS 10.0.2.2, fe80::2
TYPE machine SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/terraform/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms
```

Maintenance

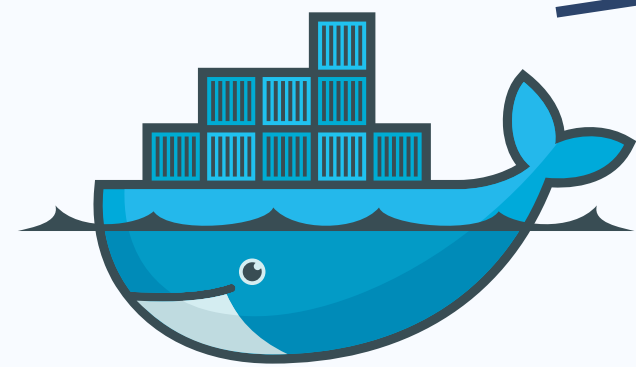
```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 1105969.745693227s
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.739119054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.739420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.739800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rpb0khangMZF7isqK18X0q1aZALPCJH5oahBdD+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456:64
READY True CONTROLLER-MANAGER n/a OS 10.0.2.2, fe80::2
TYPE machine SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/terraform/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms
```

Maintenance

```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 1105969.745693227s
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.739119054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.739420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.739800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rpb0khangMZF7isqK18X0q1aZALPCJH5oahBdD+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```



DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**

```
UID c8eb271-52d8-403b-a5e5-604eb49177c KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE unknown SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/etcd/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms
```

Maintenance

```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 1105969.745693227s
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0bKtngMzF7isqK18X0q1aZALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741060542Z]: (talos) task loadConfig (1-1): upload configuration using talonctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talonctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talonctl interact
see installer
```

```
UID c8eb271-52d8-403b-a5e5-604eb49177c KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE unknown SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/etcd/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms
```

Maintenance

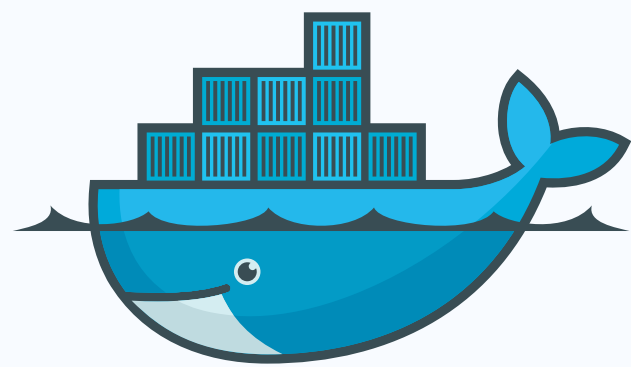
```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 1105969.745693227s
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0bKtngMzF7isqK18X0q1aZALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741060542Z]: (talos) task loadConfig (1-1): upload configuration using talonctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talonctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talonctl interact
see installer
```

```
UID c8eb271-52d8-403b-a5e5-604eb49177c KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE unknown SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/etcd/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms
```

Maintenance

```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 1105969.745693227s
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0bKtngMzF7isqK18X0q1aZALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741060542Z]: (talos) task loadConfig (1-1): upload configuration using talonctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talonctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talonctl interact
see installer
```



DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**



```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE kubemem SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTS pool.slp.org
```

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos service/dashboard)Waiting: Waiting for service "machined" to be "up"
? file "/opt/etcd/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service/dashboard)Preparing: Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service/dashboard)Preparing: Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

Maintenance

```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.745693227s  
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos task loadConfig (1-1)): this machine is reachable at:  
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15  
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456  
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): secure certificate fingerprint:  
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngMzF7isqK1B8X0q1aZALPCJH5oahBdD+  
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):  
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:  
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml  
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact  
via installer
```

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE kubemem SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTS pool.slp.org
```

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos service/dashboard)Waiting: Waiting for service "machined" to be "up"
? file "/opt/etcd/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service/dashboard)Preparing: Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service/dashboard)Preparing: Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

Maintenance

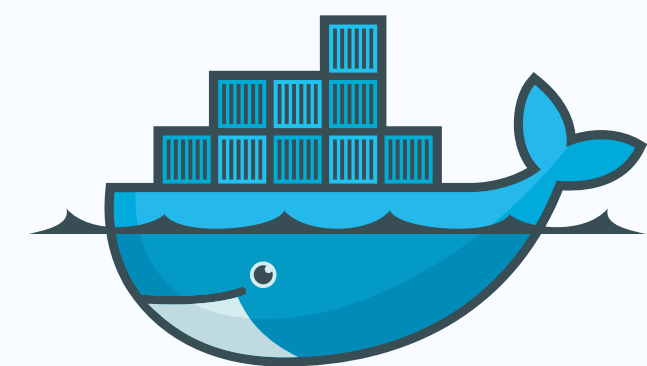
```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.745693227s  
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos task loadConfig (1-1)): this machine is reachable at:  
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15  
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456  
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): secure certificate fingerprint:  
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngMzF7isqK1B8X0q1aZALPCJH5oahBdD+  
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):  
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:  
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml  
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact  
via installer
```

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE kubemem SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTS pool.slp.org
```

user: warning: [2023-04-13T11:20:46.330234054Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos service/dashboard)Waiting: Waiting for service "machined" to be "up"
? file "/opt/etcd/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service/dashboard)Preparing: Running pre state
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos service/dashboard)Preparing: Creating service runner
user: warning: [2023-04-13T11:20:46.412234054Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

Maintenance

```
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.745693227s  
user: warning: [2023-04-13T11:20:46.738540542Z]: (talos task loadConfig (1-1)): this machine is reachable at:  
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15  
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456  
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): secure certificate fingerprint:  
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngMzF7isqK1B8X0q1aZALPCJH5oahBdD+  
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):  
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:  
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml  
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact  
via installer
```



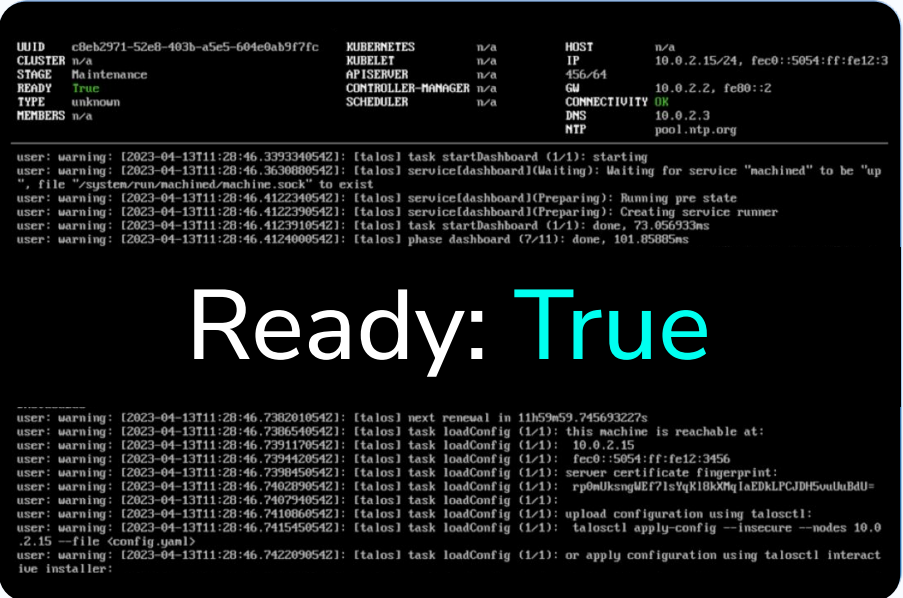
DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**



Terminal window showing the status of a Talos node. The status is **Ready: True**. The terminal output includes:

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE machine SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos service/dashboard)Waiting: Waiting for service "machine" to be "up"
? file "/opt/etcd/machine/machine.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service/dashboard)Preparing: Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service/dashboard)Preparing: Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.74569327s)
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): secure certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngMZF7isqK18X0q1aZALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741549542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
see installer
```



Terminal window showing the status of a Talos node. The status is **Maintenance**. The terminal output includes:

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE machine SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos service/dashboard)Waiting: Waiting for service "machine" to be "up"
? file "/opt/etcd/machine/machine.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service/dashboard)Preparing: Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service/dashboard)Preparing: Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.74569327s)
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): secure certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngMZF7isqK18X0q1aZALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741549542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
see installer
```

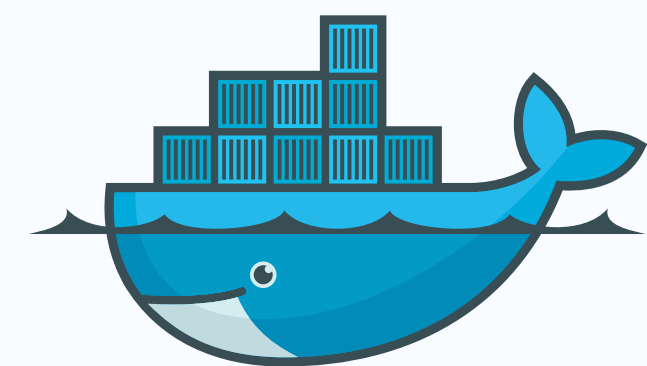


Terminal window showing the status of a Talos node. The status is **Maintenance**. The terminal output includes:

```
UID c8eb271-52d8-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456/44
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE machine SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos service/dashboard)Waiting: Waiting for service "machine" to be "up"
? file "/opt/etcd/machine/machine.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service/dashboard)Preparing: Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service/dashboard)Preparing: Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.74569327s)
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): secure certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngMZF7isqK18X0q1aZALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741549542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
see installer
```



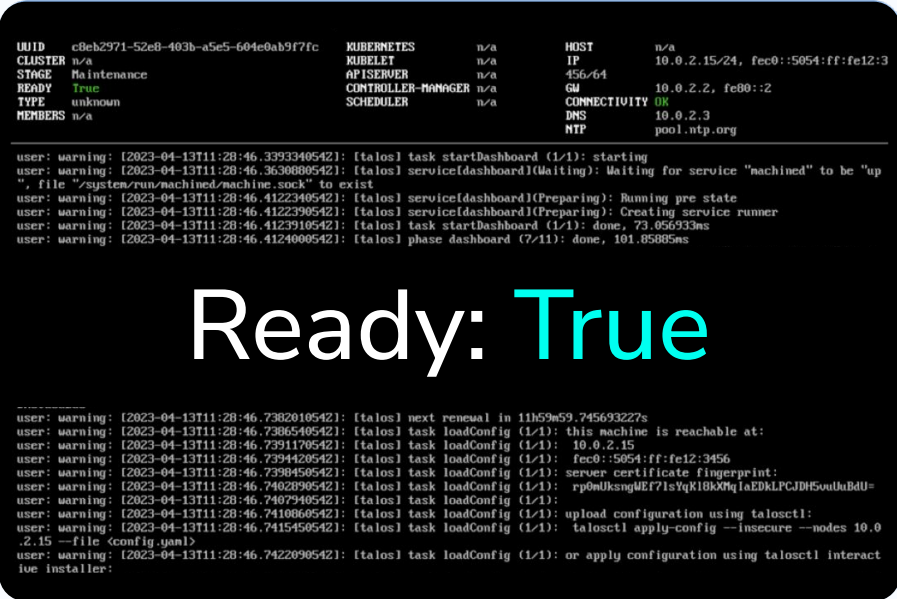
DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**



Terminal window showing the status of a Kubernetes cluster. The status is **Ready: True**. The terminal output includes:

```
UID c8eb271-52d-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE kubeadm SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
7: file "/opt/kubernetes/machined.machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 11059659.745693227s
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0bKtngM2F7isqK18X0q1aE2ALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741549542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```

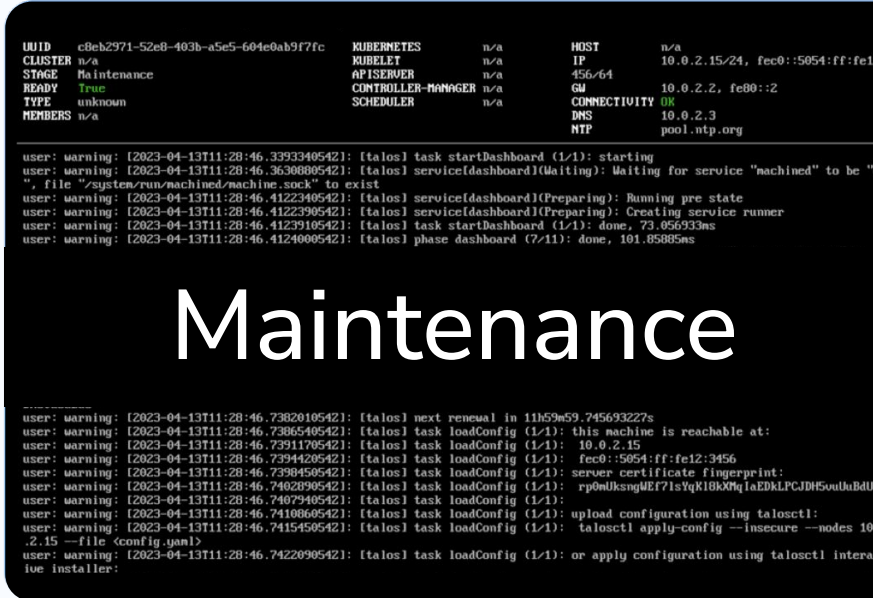


Terminal window showing the status of a Kubernetes cluster. The status is **Maintenance**. The terminal output includes:

```
UID c8eb271-52d-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE kubeadm SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
7: file "/opt/kubernetes/machined.machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 11059659.745693227s
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0bKtngM2F7isqK18X0q1aE2ALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741549542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```

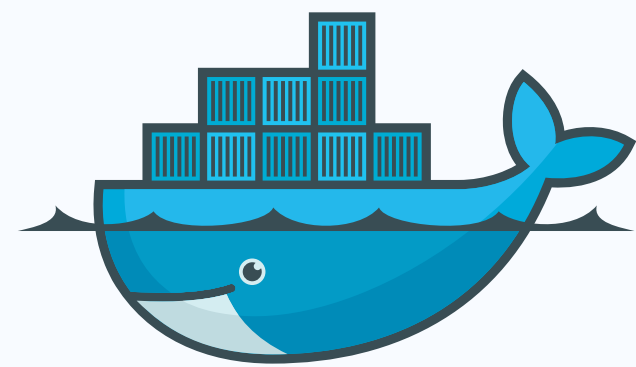


Terminal window showing the status of a Kubernetes cluster. The status is **Maintenance**. The terminal output includes:

```
UID c8eb271-52d-403b-a5e5-604eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE kubeadm SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363000542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
7: file "/opt/kubernetes/machined.machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos) phase dashboard (7-11): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 11059659.745693227s
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0bKtngM2F7isqK18X0q1aE2ALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741549542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```



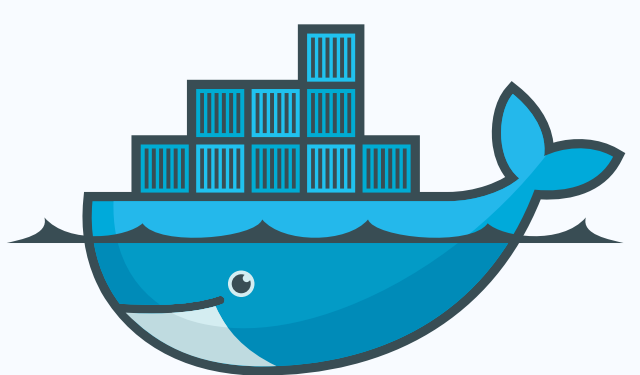
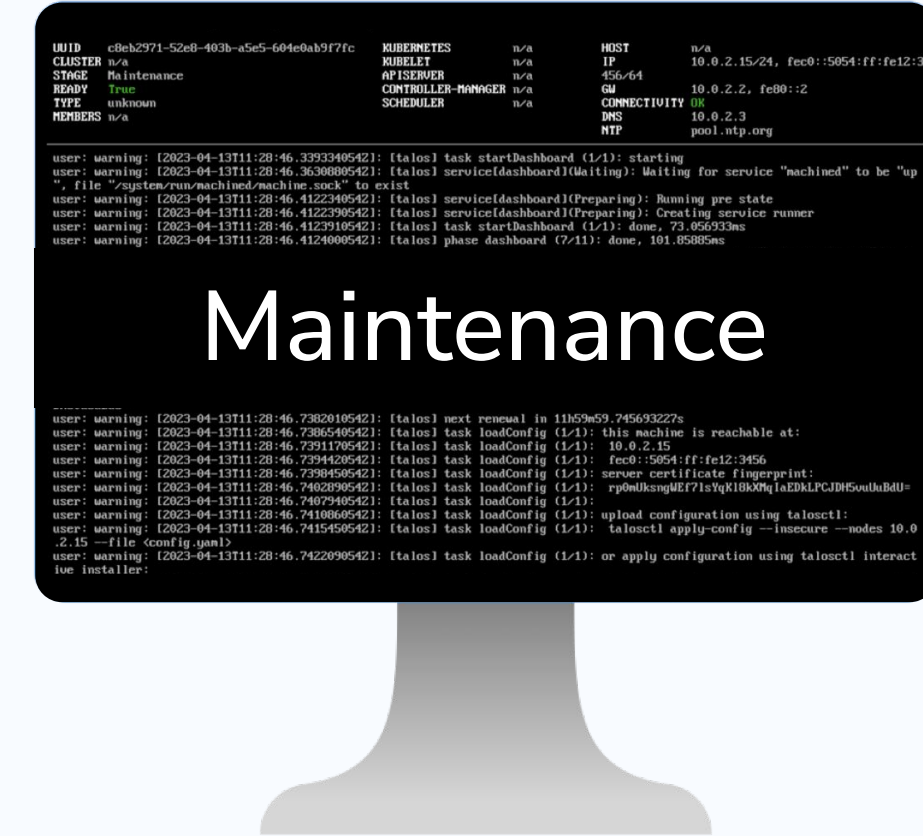
DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**



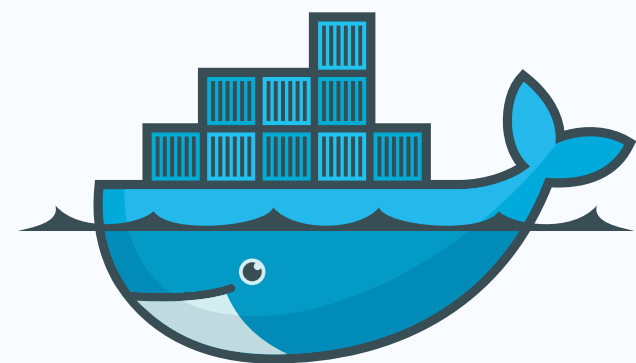
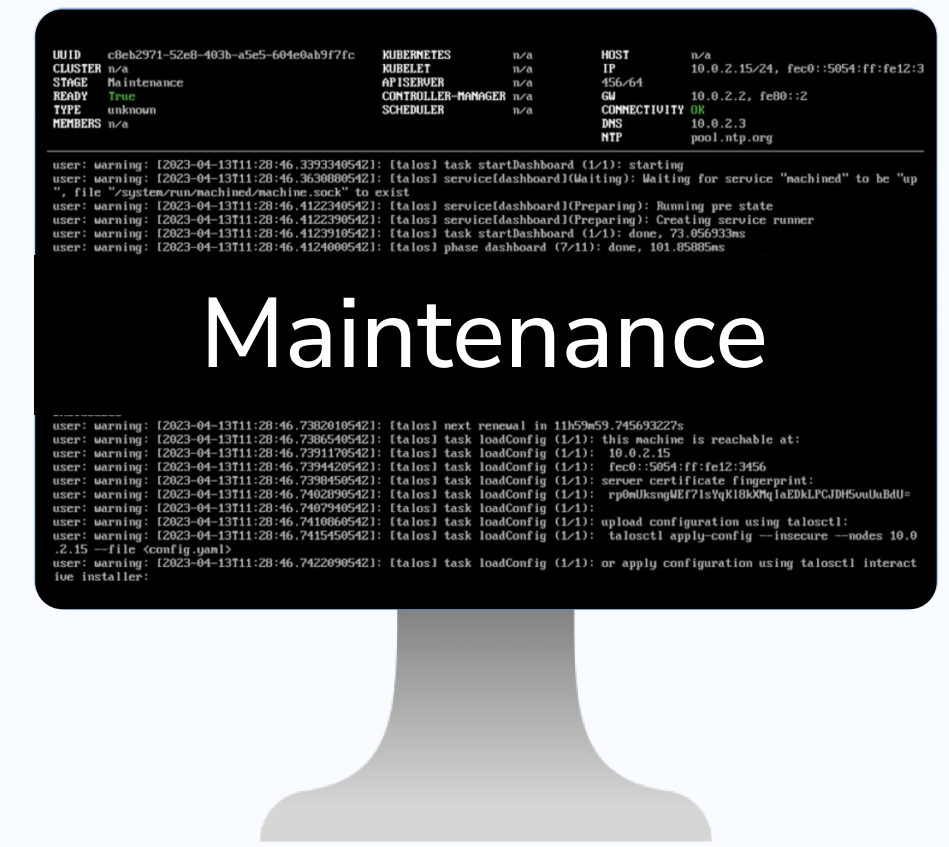
DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

developed by **Aenix**



DHCP-server
PXE-server



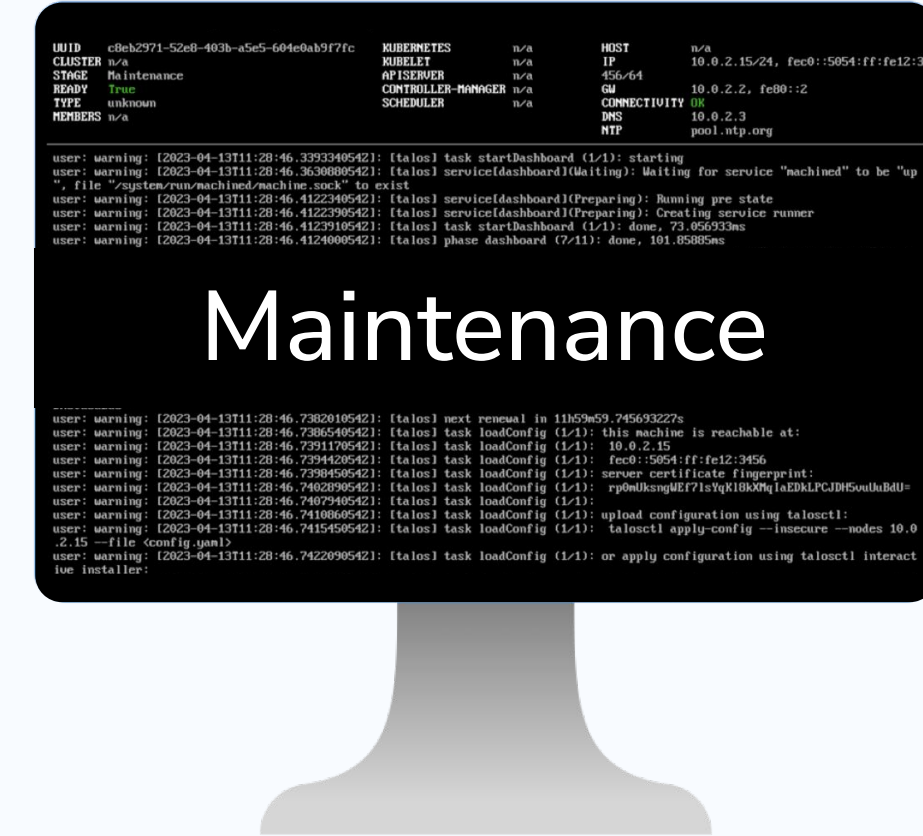
talos-bootstrap

talos-bootstrap

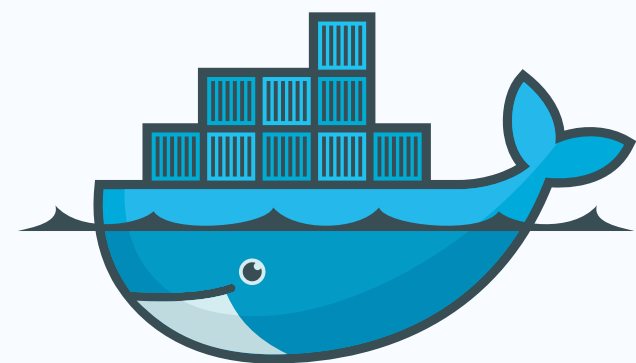
developed by **Aenix**



Two terminal windows are shown side-by-side, each displaying a Kubernetes cluster status. The top section of each terminal shows a table with columns: UID, CLUSTER, STAGE, READY, TYPE, and MEMBERS. The 'READY' column for both clusters is 'True'. Below the table, there are several lines of log output, including 'talos task startDashboard (1/1): starting', 'talos service(dashboard)(Waiting): Waiting for service "machined" to be "up"', 'talos service(dashboard)(Preparing): Running pre state', 'talos service(dashboard)(Preparing): Creating service runner', 'talos task startDashboard (1/1): done, 73.852933ms', and 'talos phase dashboard (7/11): done, 101.85885ms'.



A terminal window is shown displaying a Kubernetes cluster status. The top section shows a table with columns: UID, CLUSTER, STAGE, READY, TYPE, and MEMBERS. The 'READY' column for this cluster is 'Maintenance'. Below the table, there are several lines of log output, including 'talos task startDashboard (1/1): starting', 'talos service(dashboard)(Waiting): Waiting for service "machined" to be "up"', 'talos service(dashboard)(Preparing): Running pre state', 'talos service(dashboard)(Preparing): Creating service runner', 'talos task startDashboard (1/1): done, 73.852933ms', and 'talos phase dashboard (7/11): done, 101.85885ms'.



DHCP-server
PXE-server



talos-bootstrap

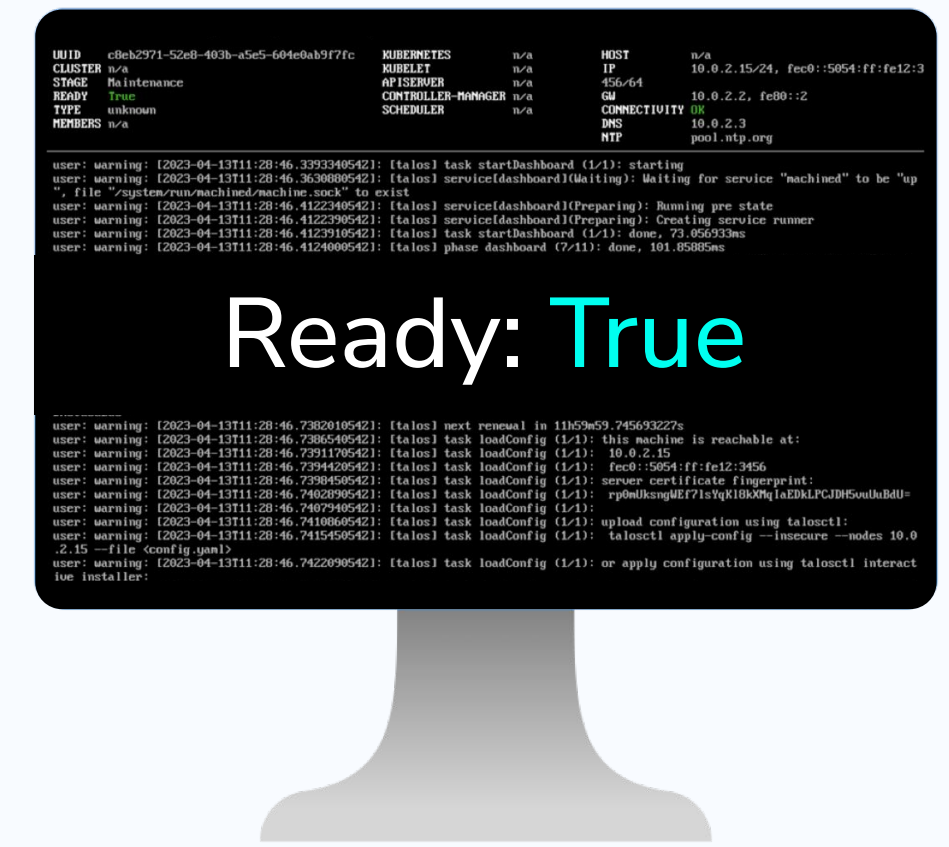
talos-bootstrap

developed by **Aenix**

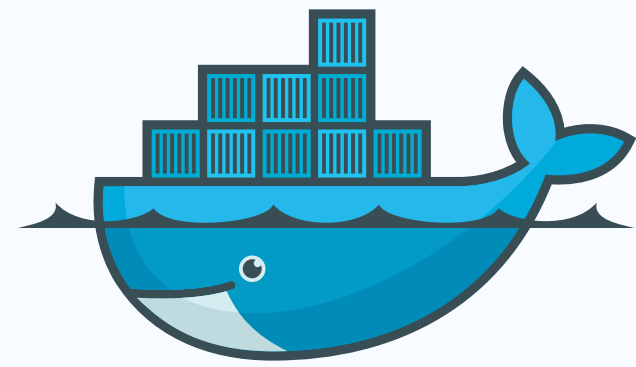


The image shows two terminal windows side-by-side, both displaying a 'Ready: True' status in large green text. Above the terminals is a blue Kubernetes logo. The terminal output includes a table of cluster components and a series of log messages indicating the successful completion of tasks such as starting the dashboard, preparing the service, and creating the service runner.

UID	ROLE	HOST	IP
c8eb271-52d-40b-a5e5-664eb4977c	KUBERNETES	n/a	n/a
n/a	API SERVER	n/a	10.0.2.15/24, fe80::5654:ff:fe12:3
n/a	CONTROLLER-MANAGER	n/a	10.0.2.2, fe80::2
n/a	SCHEDULER	n/a	10.0.2.3
n/a	DNS	n/a	10.0.2.3
n/a	MTD	n/a	pool.ntop.org



The image shows a single terminal window displaying a 'Ready: True' status in large green text. The terminal output is identical to the previous block, showing the cluster components table and the completion of various tasks.



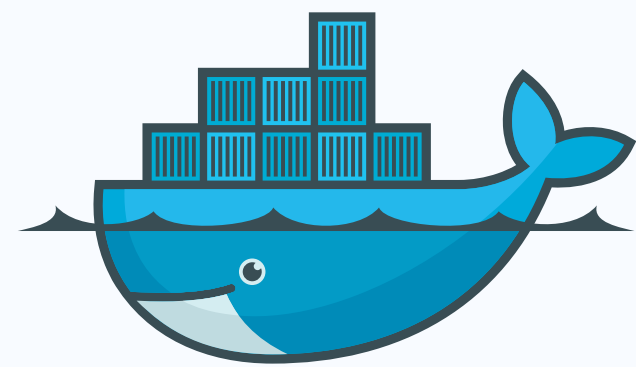
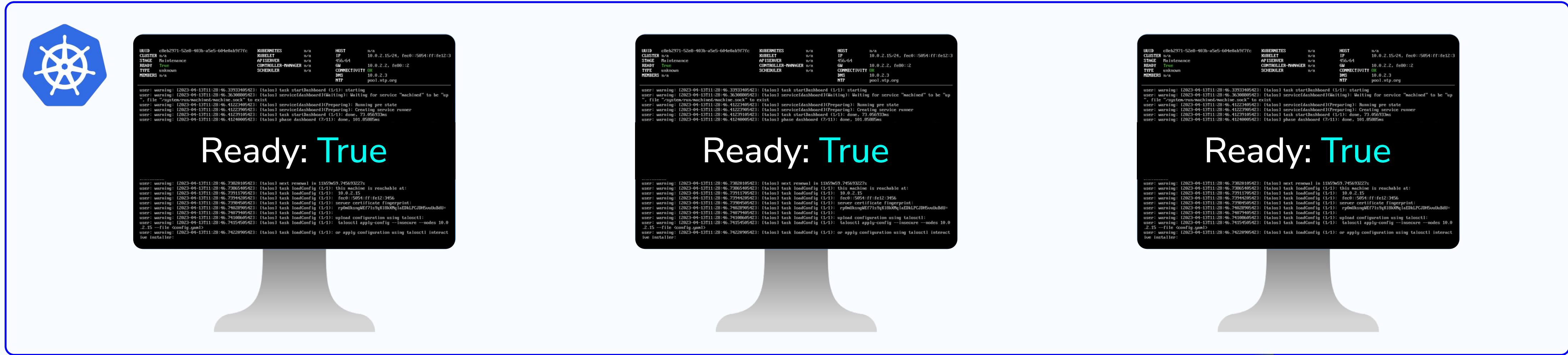
DHCP-server
PXE-server



talos-bootstrap

talos-bootstrap

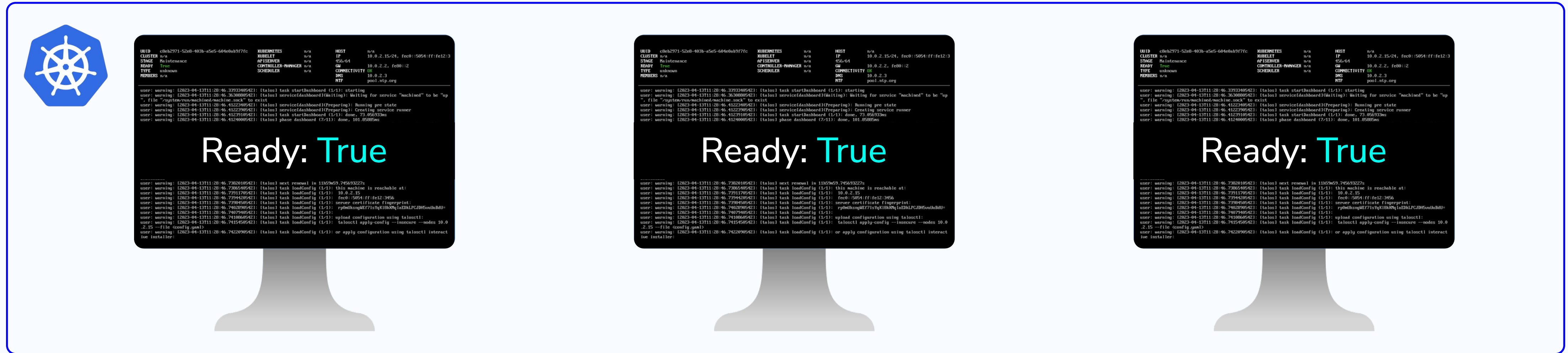
developed by **Aenix**



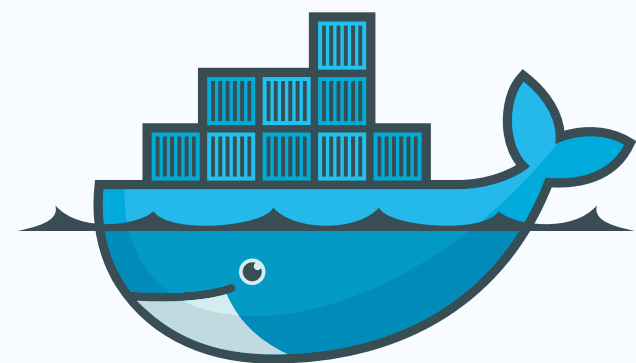
DHCP-server
PXE-server



talos-bootstrap



How does it work?



DHCP-server
PXE-server



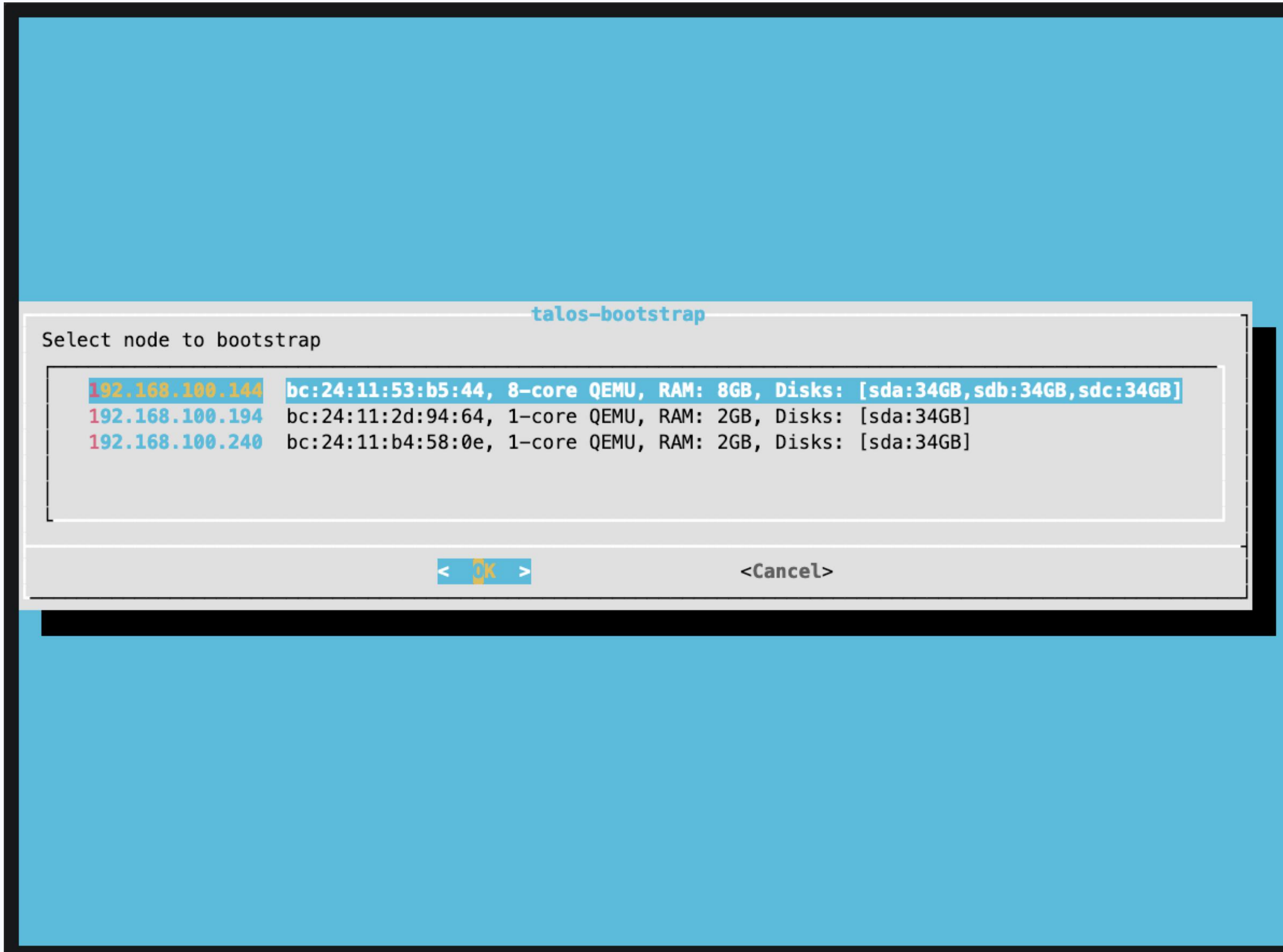
talos-bootstrap



talos-bootstrap

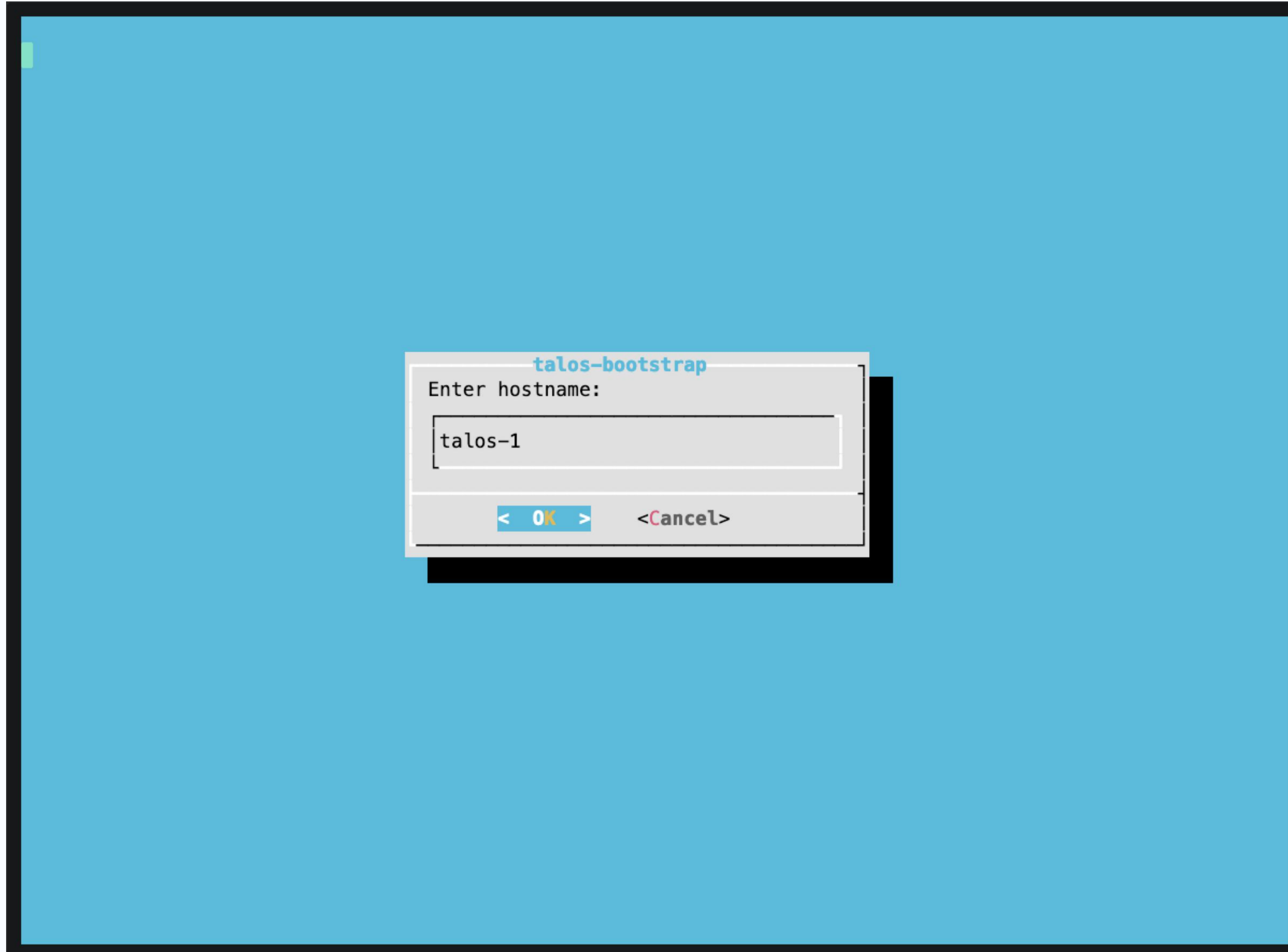
developed by  173

talos-bootstrap



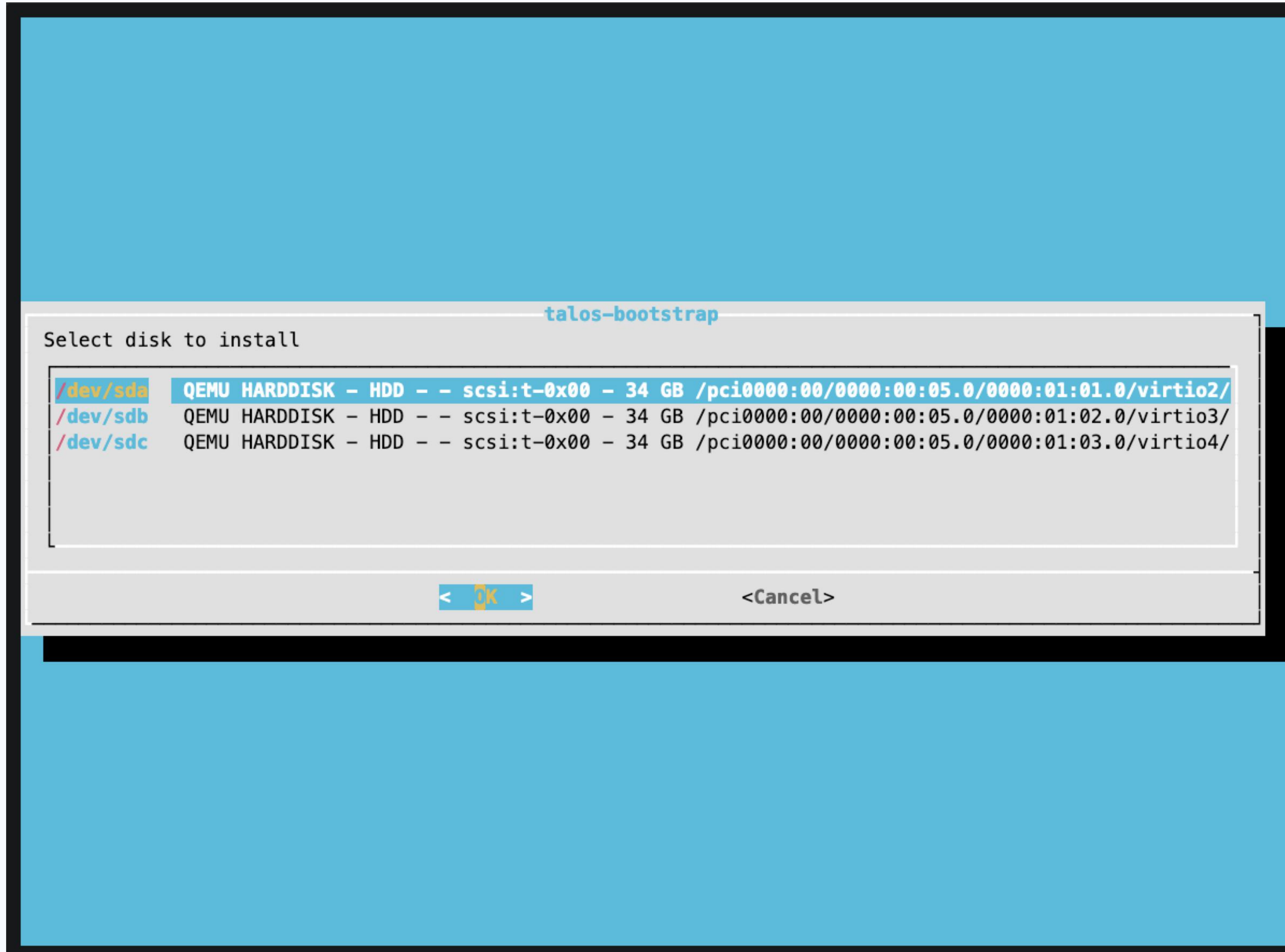
talos-bootstrap

developed by  175



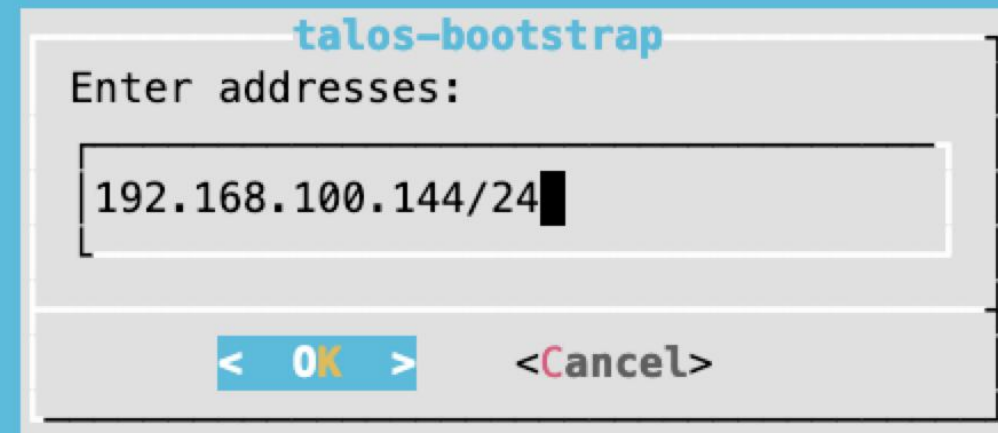
talos-bootstrap

developed by  176



talos-bootstrap

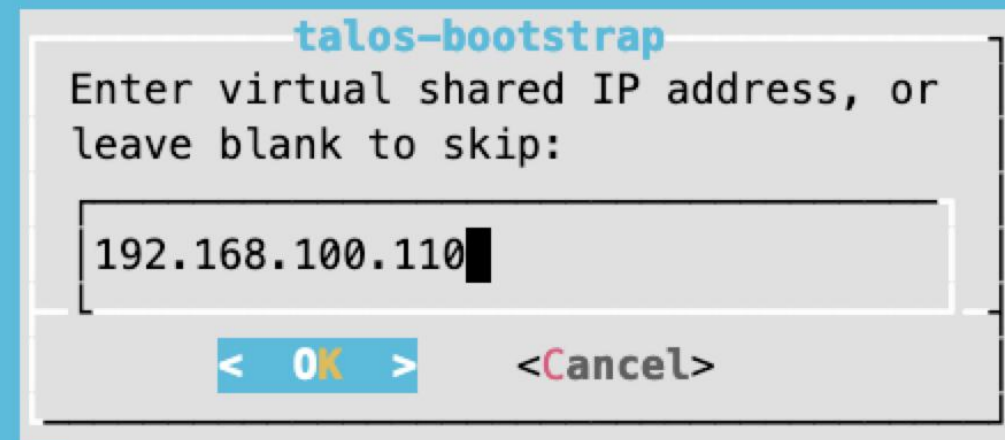
developed by  177



A screenshot of a terminal window with a blue background. In the center, a dialog box titled "talos-bootstrap" is displayed. The dialog box has a title bar with the text "talos-bootstrap" in blue. Below the title bar, the text "Enter addresses:" is shown. A text input field contains the IP address "192.168.100.144/24" followed by a cursor. At the bottom of the dialog box, there are two buttons: "< OK >" and "<Cancel>".

talos-bootstrap

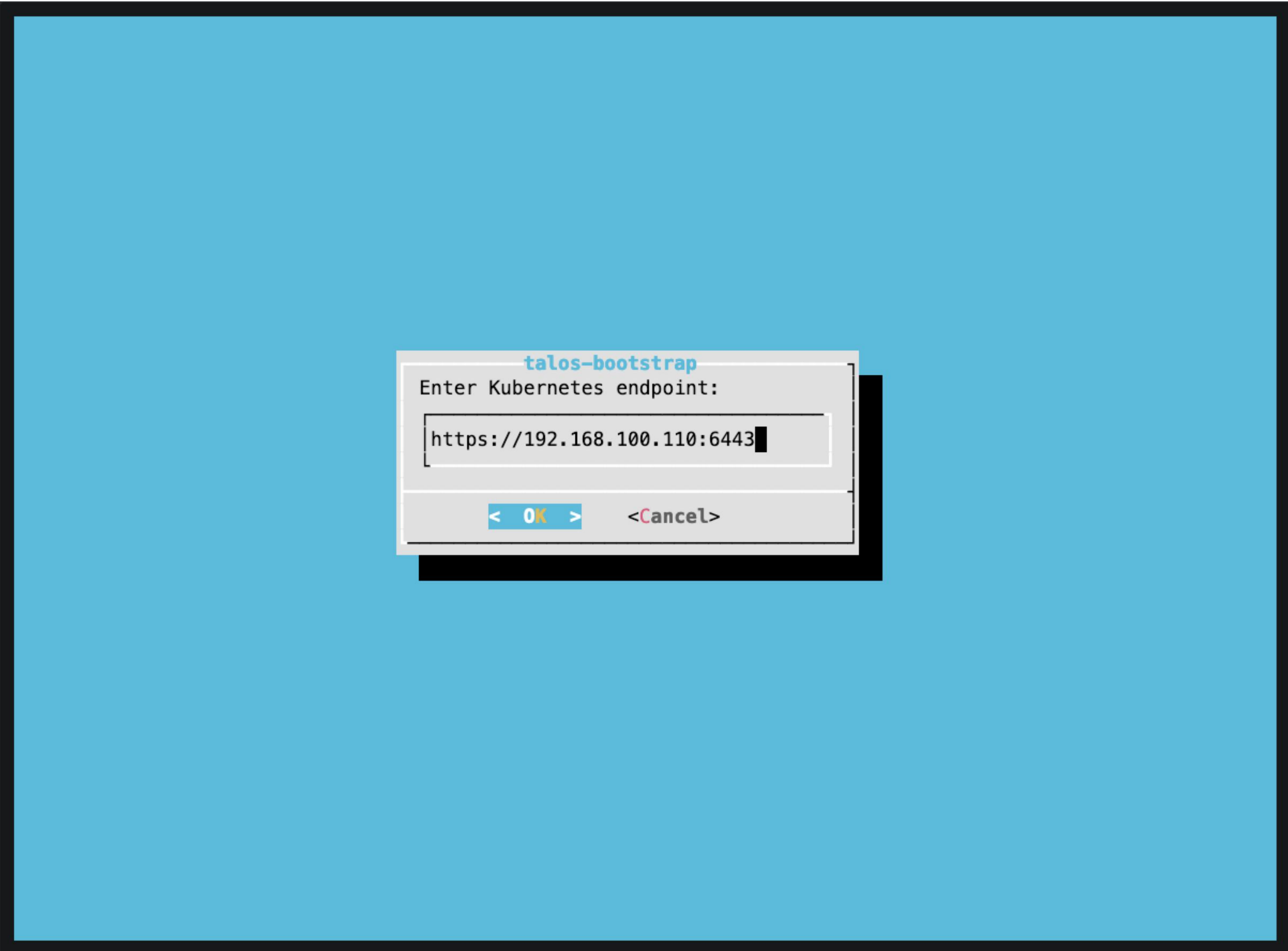
developed by  178



A screenshot of a terminal window with a light blue background. In the center, a dialog box titled "talos-bootstrap" is displayed. The dialog box contains the text "Enter virtual shared IP address, or leave blank to skip:" followed by a text input field containing "192.168.100.110". At the bottom of the dialog box, there are two buttons: "< OK >" and "<Cancel>".

talos-bootstrap

developed by  179



The screenshot shows a terminal window with a light blue background. In the center, a dialog box titled "talos-bootstrap" is displayed. The dialog box has a title bar with the text "talos-bootstrap" in blue. Below the title bar, the text "Enter Kubernetes endpoint:" is shown. A text input field contains the URL "https://192.168.100.110:6443". At the bottom of the dialog box, there are two buttons: "< OK >" and "<Cancel>".

talos-bootstrap

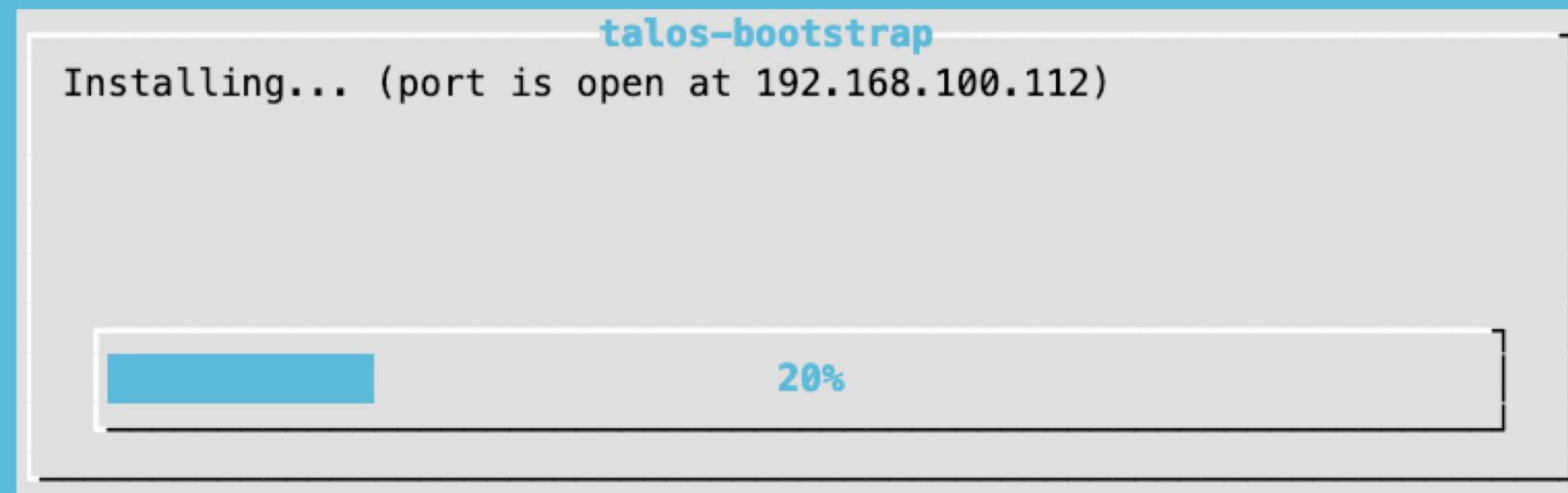
```
talos-bootstrap
Please confirm your configuration:

machine:
  type: controlplane
install:
  disk: /dev/sda
network:
  hostname: talos-2
  nameservers: [1.1.1.1,8.8.8.8]
  interfaces:
  - interface: enxbc2411b4580e
    vip:
      ip: 192.168.100.110
      addresses: [192.168.100.112/24]
    routes:
      - network: 0.0.0.0/0
        gateway: 192.168.100.1

<Install> <Cancel >
```

talos-bootstrap

developed by  181



talos-bootstrap

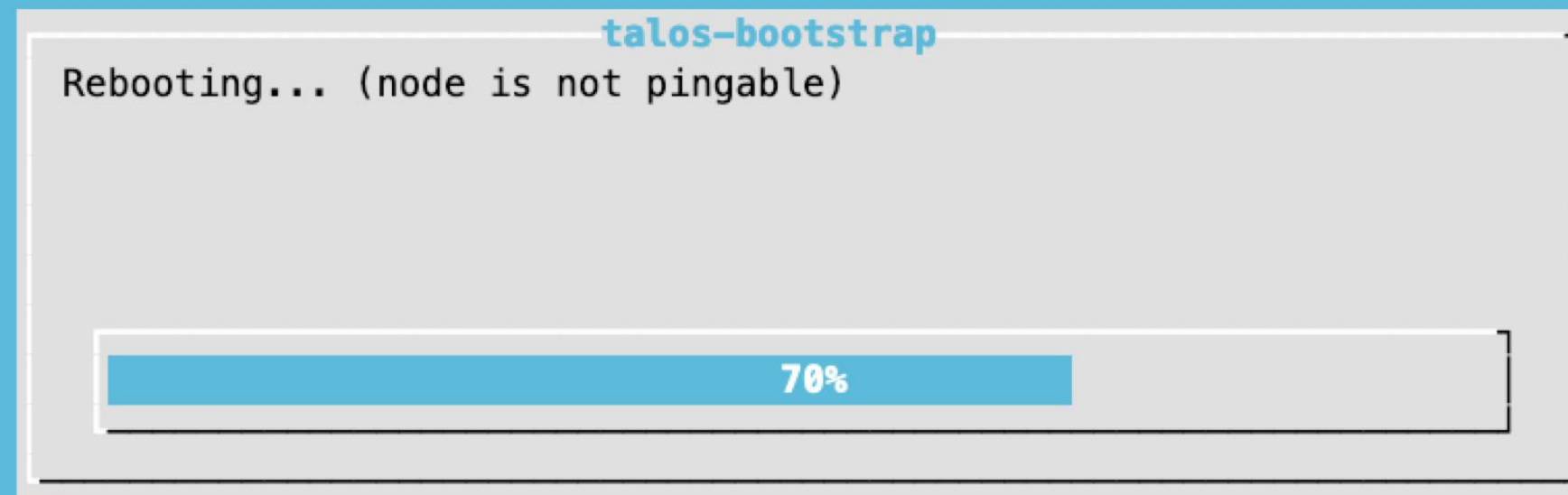
developed by  182

```
talos-bootstrap
Rebooting... (node is pingable at 192.168.100.112)

50%
```

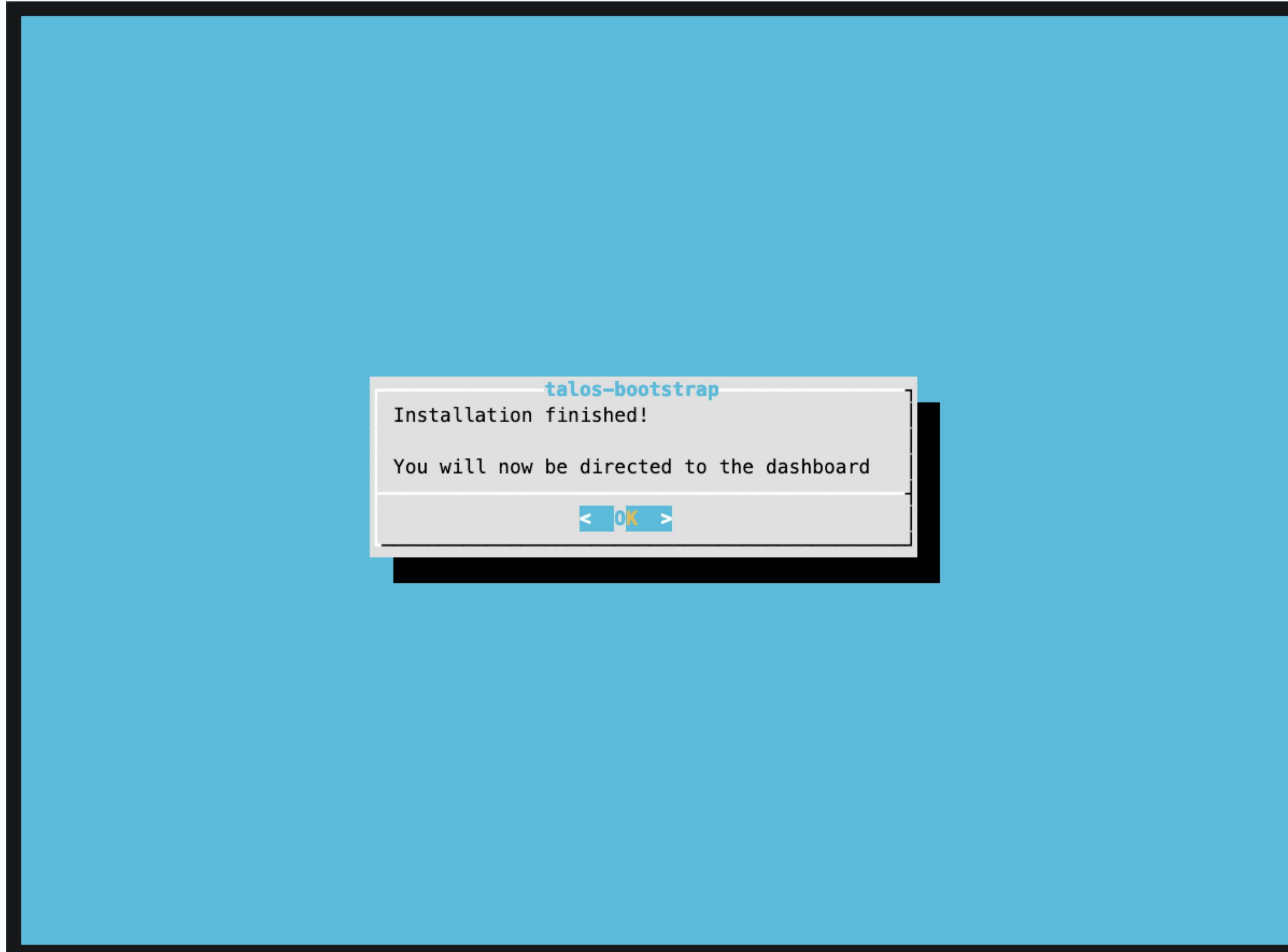
talos-bootstrap

developed by  183



talos-bootstrap

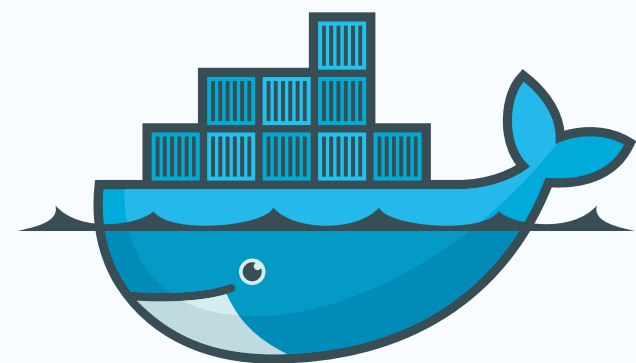
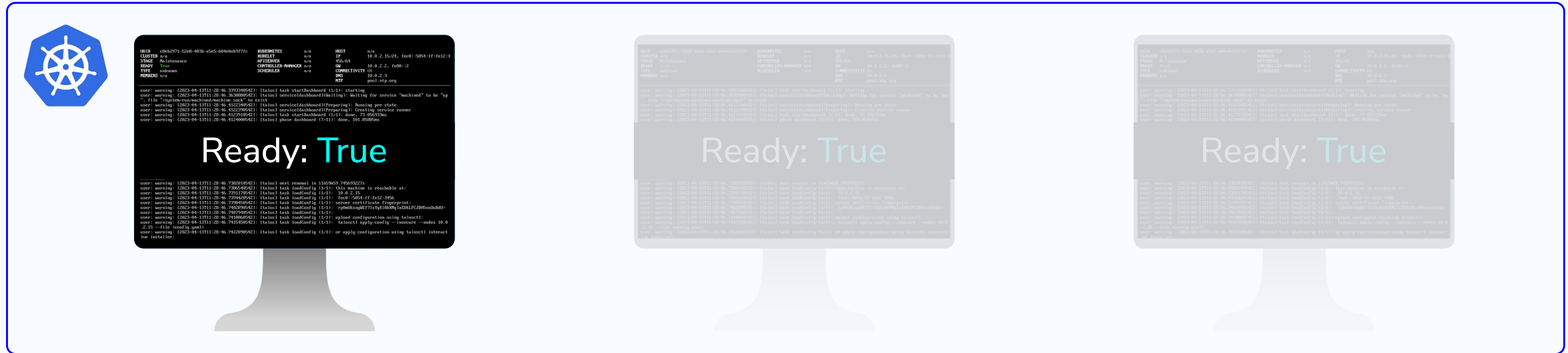
developed by  184



Готовый кластер за 5 минут

developed by **Aenix**

185



DHCP-server
PXE-server

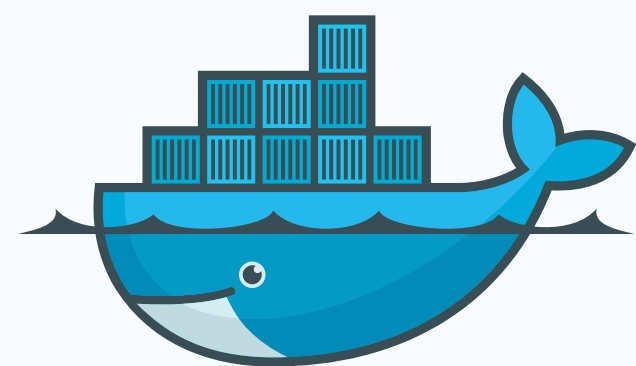
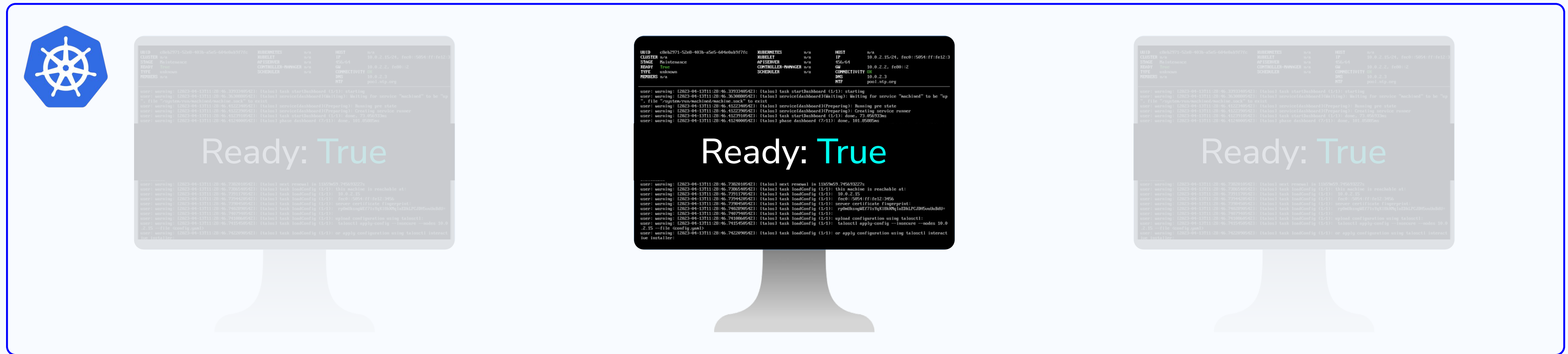


talos-bootstrap

Готовый кластер за 5 минут

developed by **Aenix**

186

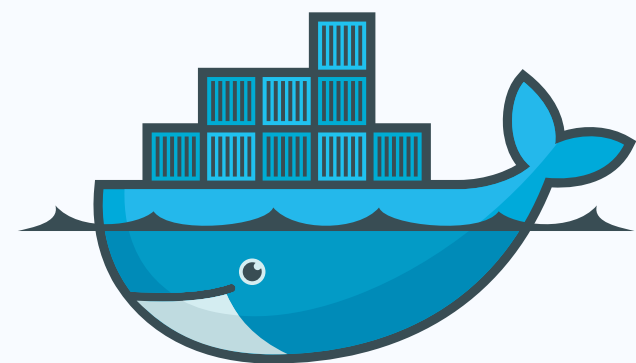
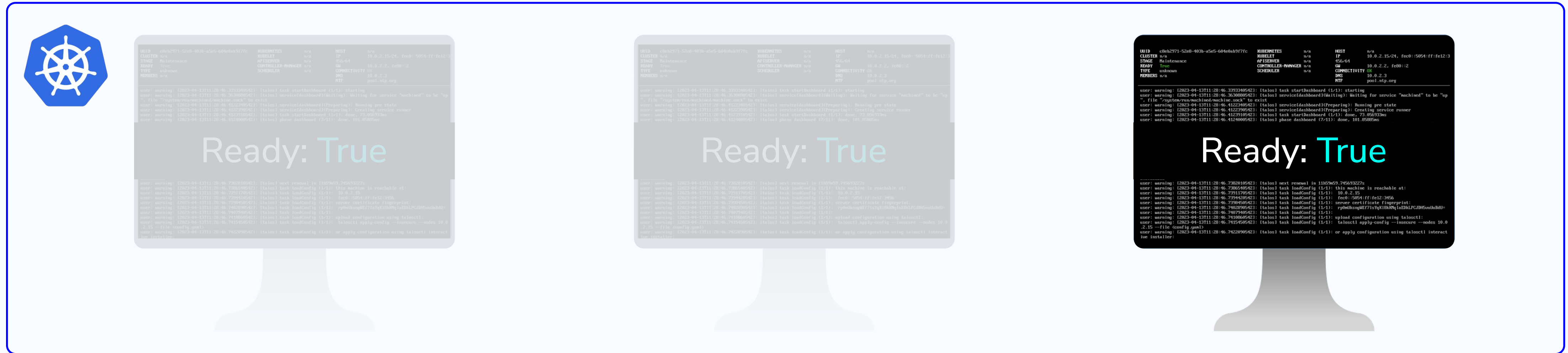


DHCP-server
PXE-server



talos-bootstrap

Готовый кластер за 5 минут



DHCP-server
PXE-server



talos-bootstrap

Готовый кластер за 5 минут

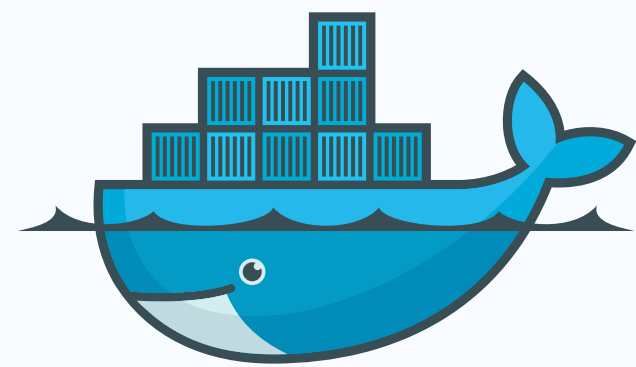
developed by **Aenix**

188

```
UID c8eb271-5268-403b-a5e5-664eb49f7fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5654:ff:fe12::3
STAGE Maintenance APISERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fec0:12
TYPE minikube SCHEDULER n/a CONNECTIVITY 00
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos) task startDashboard (1-1): starting
user: warning: [2023-04-13T11:20:46.363080542Z]: (talos) service(dashboard)(Waiting): Waiting for service "machined" to be "up"
? file "/opt/local/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos) task startDashboard (1-1): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400054Z]: (talos) phase dashboard (7-11): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos) next renewal in 11059659.745693227s
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos) task loadConfig (1-1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos) task loadConfig (1-1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos) task loadConfig (1-1): fec0:5654:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos) task loadConfig (1-1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos) task loadConfig (1-1): rp0b8kangMZF7isYqK1B8X0q1aZDALPCJH5oashBd+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos) task loadConfig (1-1):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos) task loadConfig (1-1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos) task loadConfig (1-1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos) task loadConfig (1-1): or apply configuration using talosctl interact
see installer
```



DHCP-server
PXE-server

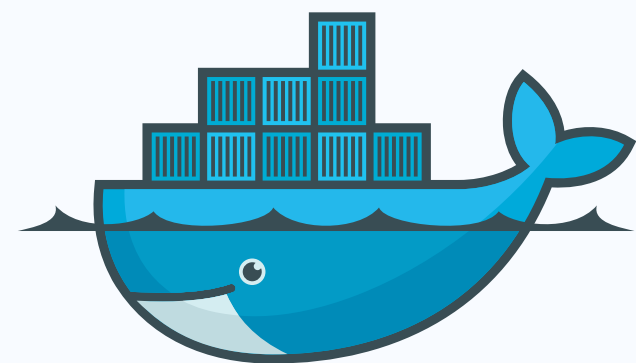
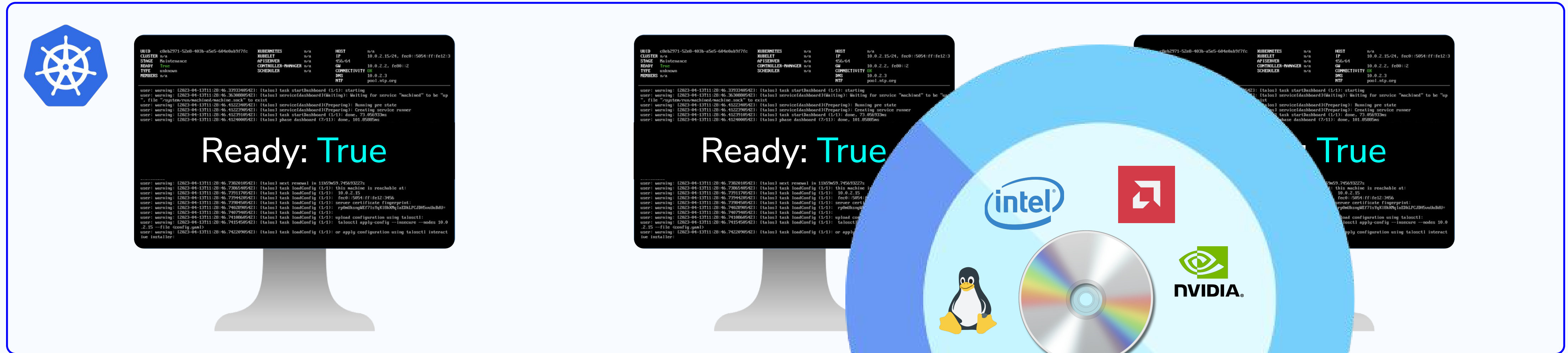


talos-bootstrap

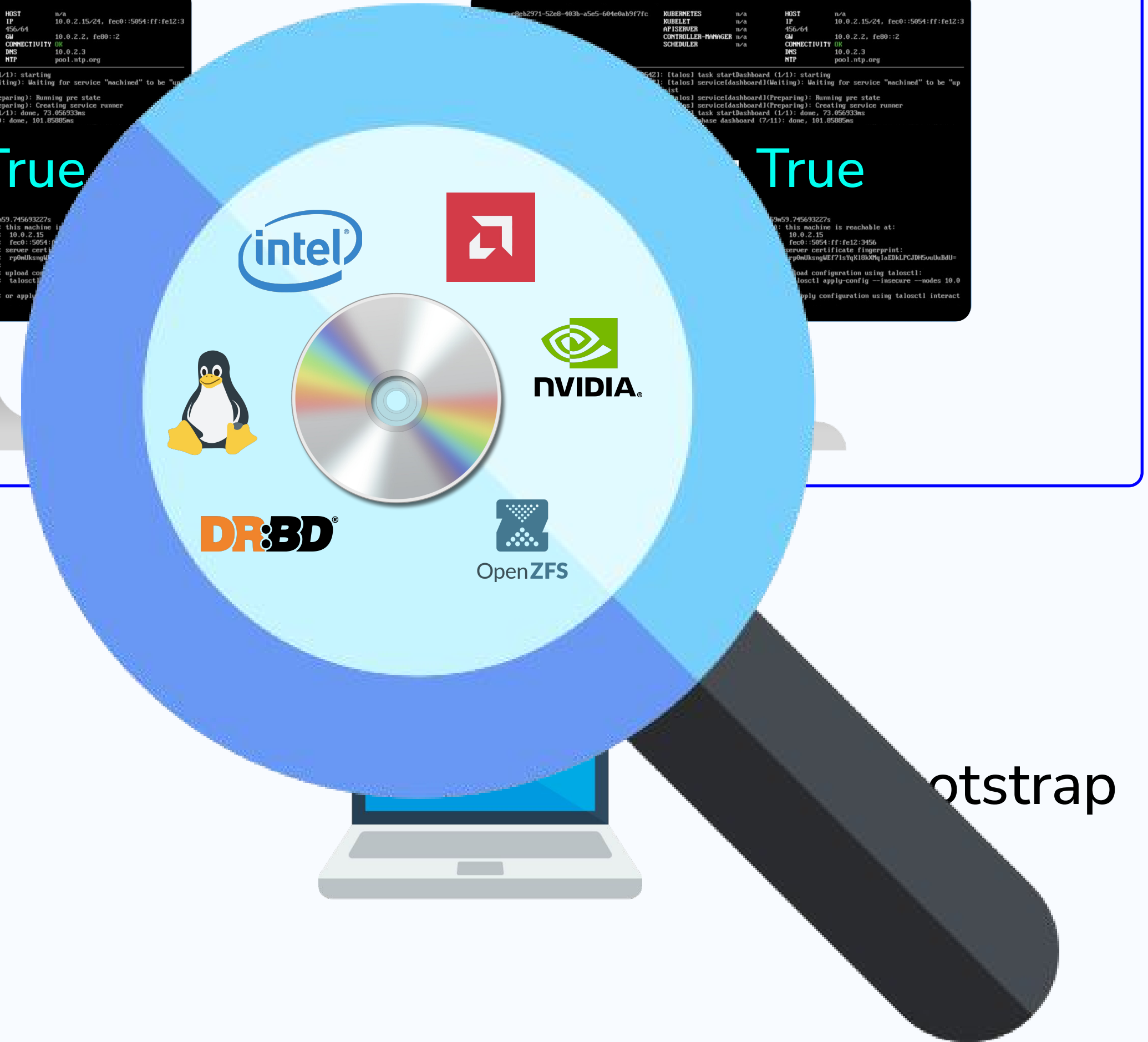
Готовый кластер за 5 минут

developed by **Aenix**

189



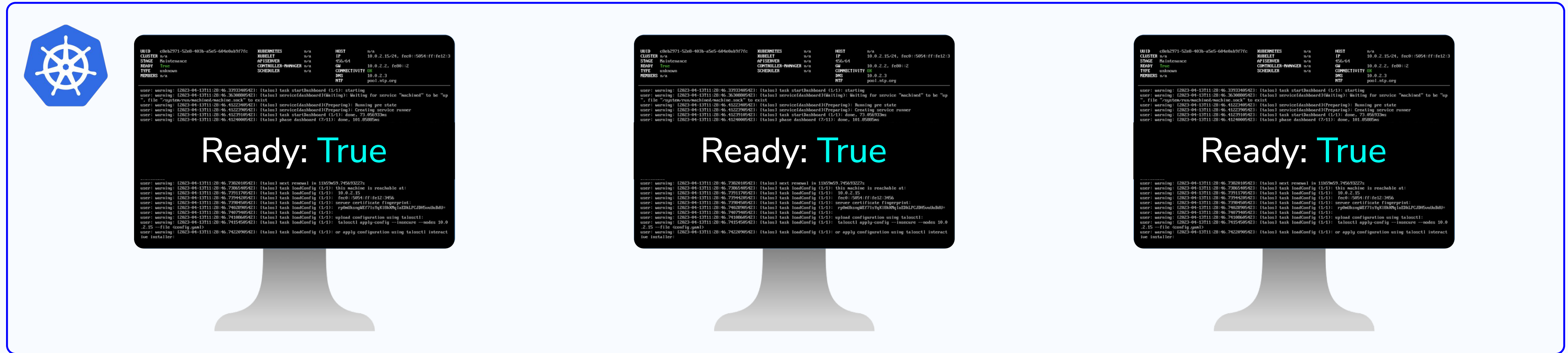
DHCP-server
PXE-server



Готовый кластер за 5 минут

developed by **Aenix**

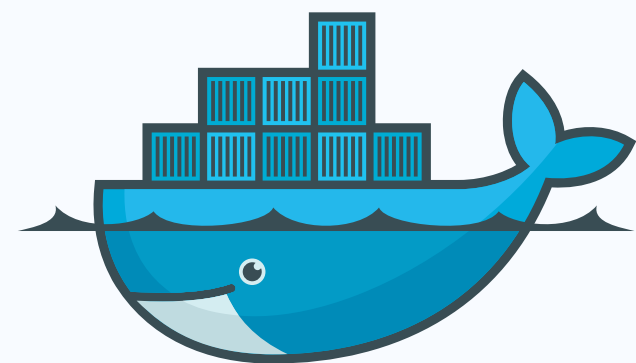
190



```
UID c8eb271-5268-403b-a5e5-664eb4977c KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP n/a 10.0.2.15/24, fe80::5054:ff:fe12:3
STAGE Maintenance APISERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a OS 10.0.2.2, fe80::2
TYPE minikube SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTL pool.slp.org

user: warning: [2023-04-13T11:20:46.330234954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363080542Z]: (talos service{dashboard}{Waiting}): Waiting for service "machined" to be "up"
? file "/opt/local/machined/machined.sock" to exist
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service{dashboard}{Preparing}): Running pre state
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos service{dashboard}{Preparing}): Creating service runner
user: warning: [2023-04-13T11:20:46.412234954Z]: (talos task startDashboard (1-1)): done, 73.850233ms
user: warning: [2023-04-13T11:20:46.412400542Z]: (talos phase dashboard (7-11)): done, 101.85085ms

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 11059659.745693227s)
user: warning: [2023-04-13T11:20:46.738549542Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729420542Z]: (talos task loadConfig (1-1)): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.728800542Z]: (talos task loadConfig (1-1)): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740290542Z]: (talos task loadConfig (1-1)): rp0bKtngM2F7isYq18X0q1aZDALPCJH5oahBd+
user: warning: [2023-04-13T11:20:46.740790542Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741080542Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741540542Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742290542Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
see installer
```



DHCP-server
PXE-server



talos-bootstrap

Готовый кластер за

developed by **Aenix**

191



```
UID: c5eb271-52d8-403b-a5e5-664eb49177c KUBERNETES n/a HOST n/a
CLUSTER n/a ROLES n/a IP 10.0.2.15/24, fe80::
STAGE Maintenance AP SERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE minikube SCHEDULER n/a 10.0.2.3
MEMBERS n/a NFS 10.0.2.3
MUI pool.slp.org

user: warning: [2023-04-13T11:20:46.329240952]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363000542]: [talos] service/dashboard[Waiting]: Waiting for service "machine"
to be up
user: warning: [2023-04-13T11:20:46.412234052]: [talos] service/dashboard[Preparing]: Running pre state
user: warning: [2023-04-13T11:20:46.412234052]: [talos] service/dashboard[Preparing]: Creating service runner
user: warning: [2023-04-13T11:20:46.412234052]: [talos] task startDashboard (1/1): done, 73.05237ms
user: warning: [2023-04-13T11:20:46.412400542]: [talos] phase dashboard (7/11): done, 101.05085ms

user: warning: [2023-04-13T11:20:46.738201052]: [talos] next renewal in 1105969.74569327s
user: warning: [2023-04-13T11:20:46.738540542]: [talos] task loadConfig (1/1): this machine is reachable at:
10.0.2.15
user: warning: [2023-04-13T11:20:46.739420542]: [talos] task loadConfig (1/1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.739420542]: [talos] task loadConfig (1/1): remove certificate fingerprint:
ryb0k8angM2F71qk108Xq[4E2ALPCJ0Eouh8B]
user: warning: [2023-04-13T11:20:46.740290542]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.741080542]: [talos] task loadConfig (1/1): upload configuration using talosctl:
2.15 --file: none by user
user: warning: [2023-04-13T11:20:46.742290542]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0
2.15
user: warning: [2023-04-13T11:20:46.742290542]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
```

Ready: **True**



DHCP-server
PXE-server



```
UID: c5eb271-52d8-403b-a5e5-664eb49177c KUBERNETES n/a HOST n/a
CLUSTER n/a ROLES n/a IP 10.0.2.15/24, fe80::
STAGE Maintenance AP SERVER n/a 456-64
READY True CONTROLLER-MANAGER n/a 10.0.2.2, fe80::2
TYPE minikube SCHEDULER n/a 10.0.2.3
MEMBERS n/a NFS 10.0.2.3
MUI pool.slp.org

user: warning: [2023-04-13T11:20:46.329240952]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363000542]: [talos] service/dashboard[Waiting]: Waiting for service "machine" to be up
user: warning: [2023-04-13T11:20:46.412234052]: [talos] service/dashboard[Preparing]: Running pre state
user: warning: [2023-04-13T11:20:46.412234052]: [talos] service/dashboard[Preparing]: Creating service runner
user: warning: [2023-04-13T11:20:46.412234052]: [talos] task startDashboard (1/1): done, 73.05237ms
user: warning: [2023-04-13T11:20:46.412400542]: [talos] phase dashboard (7/11): done, 101.05085ms

user: warning: [2023-04-13T11:20:46.738201052]: [talos] next renewal in 1105969.74569327s
user: warning: [2023-04-13T11:20:46.738540542]: [talos] task loadConfig (1/1): this machine is reachable at:
10.0.2.15
user: warning: [2023-04-13T11:20:46.739420542]: [talos] task loadConfig (1/1): fe80::5054:ff:fe12:3456
user: warning: [2023-04-13T11:20:46.739420542]: [talos] task loadConfig (1/1): remove certificate fingerprint:
ryb0k8angM2F71qk108Xq[4E2ALPCJ0Eouh8B]
user: warning: [2023-04-13T11:20:46.740290542]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.741080542]: [talos] task loadConfig (1/1): upload configuration using talosctl:
2.15 --file: none by user
user: warning: [2023-04-13T11:20:46.742290542]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0
2.15
user: warning: [2023-04-13T11:20:46.742290542]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
```

Ready: **True**

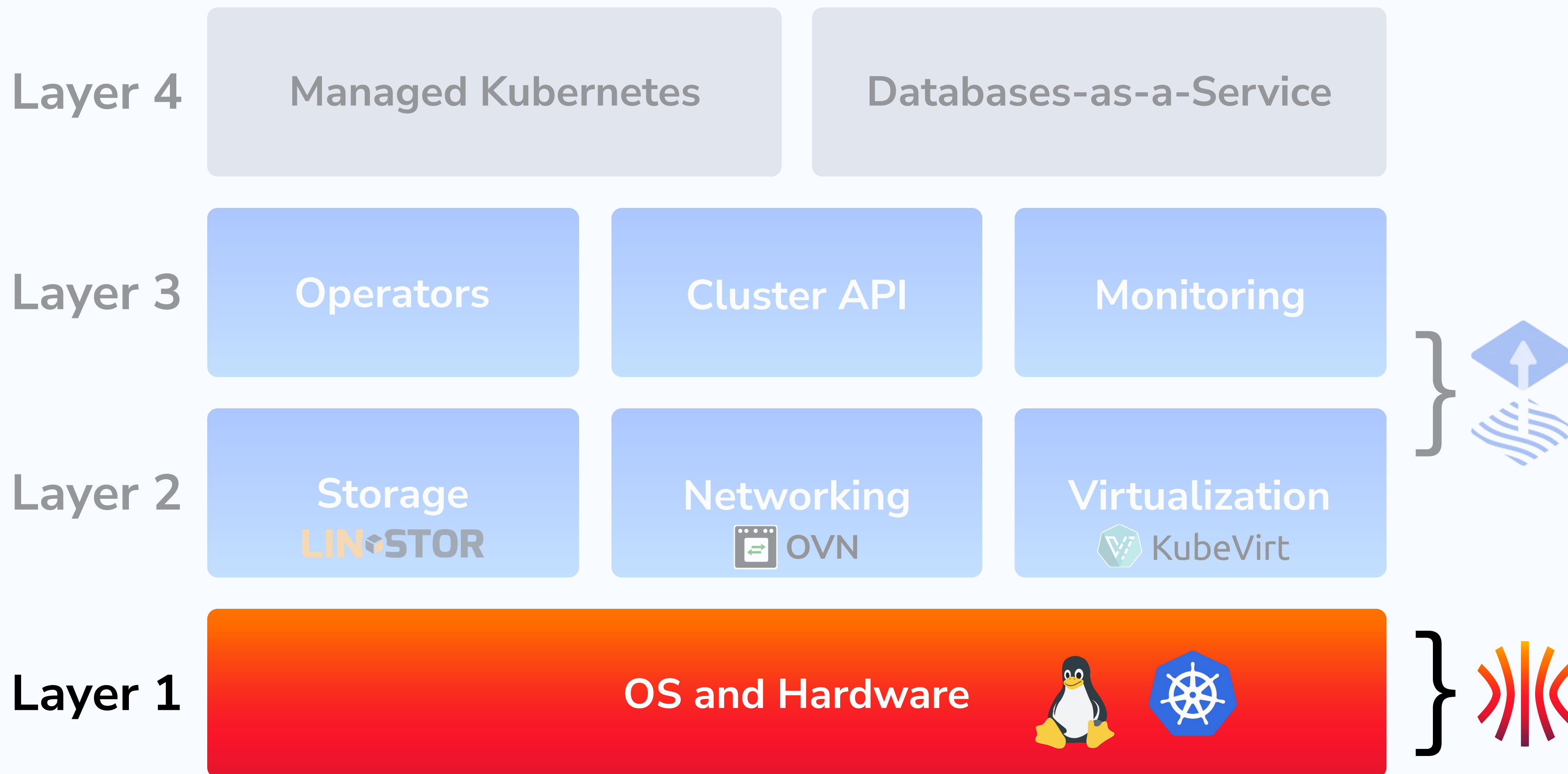


talos-bootstrap

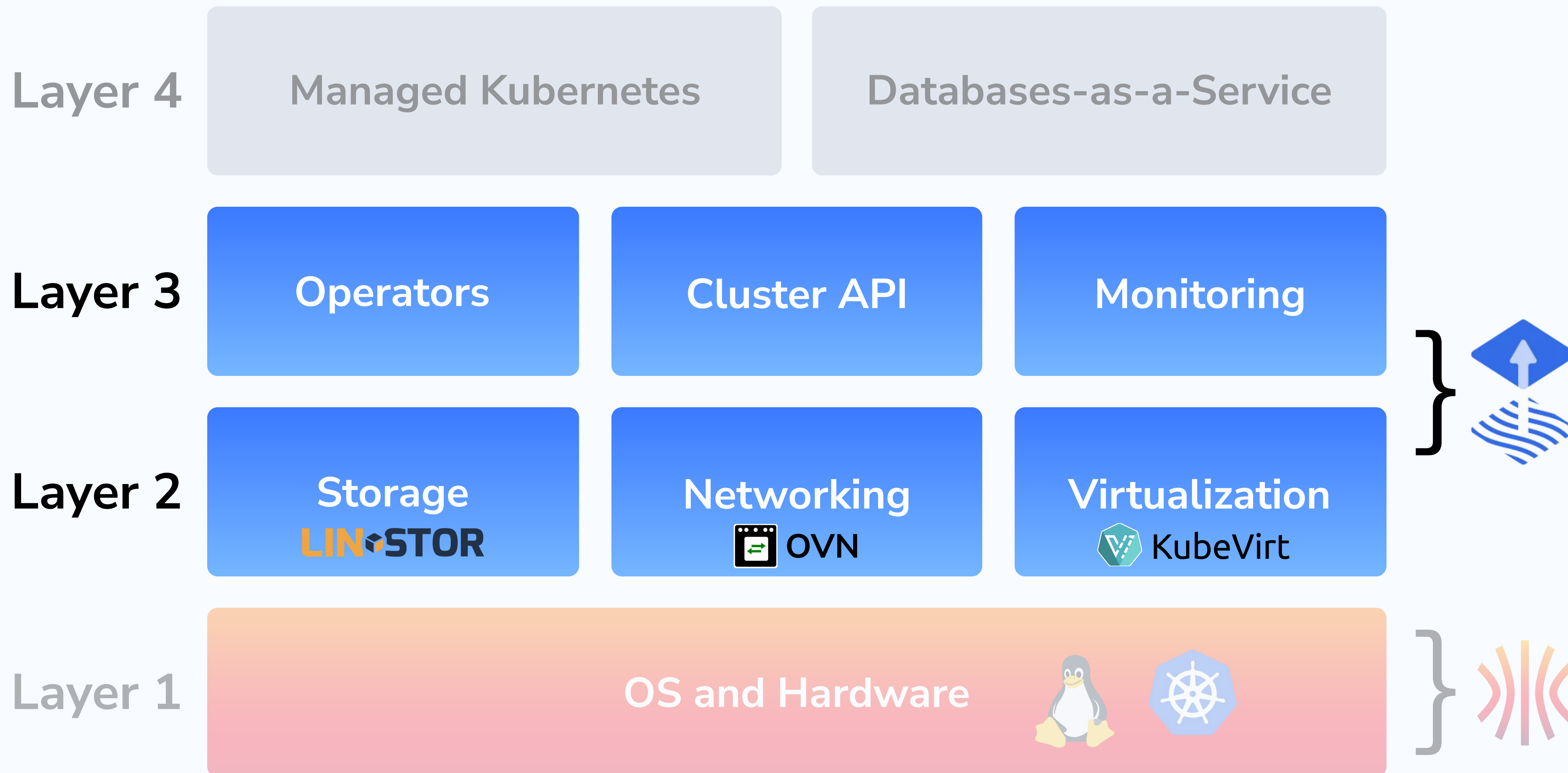


DevOps
2024

COZYETACK



COZYETACK

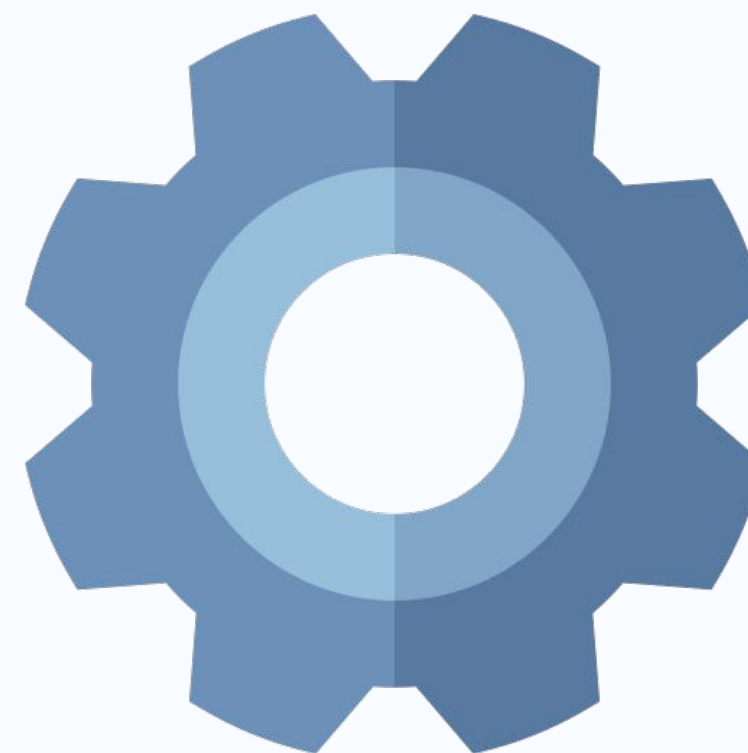




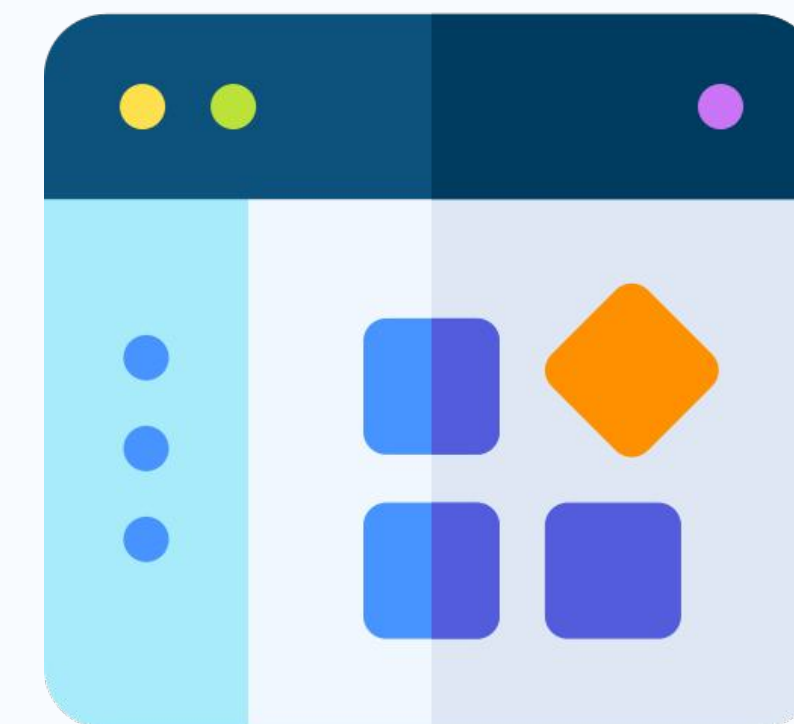
K8s на железе



Железо и ОС



Системные
компоненты



Пользовательские
приложения

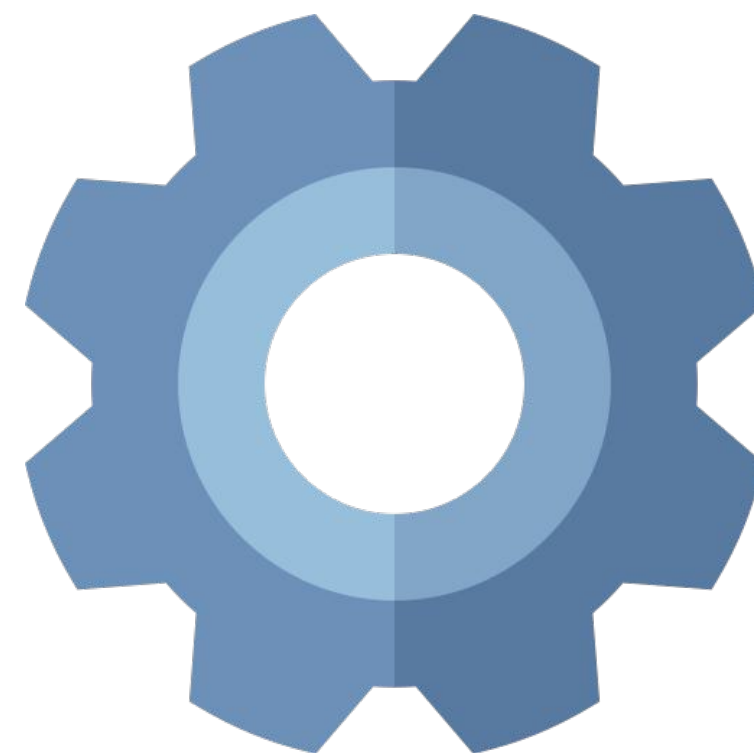
 ПЛАТФОРМА



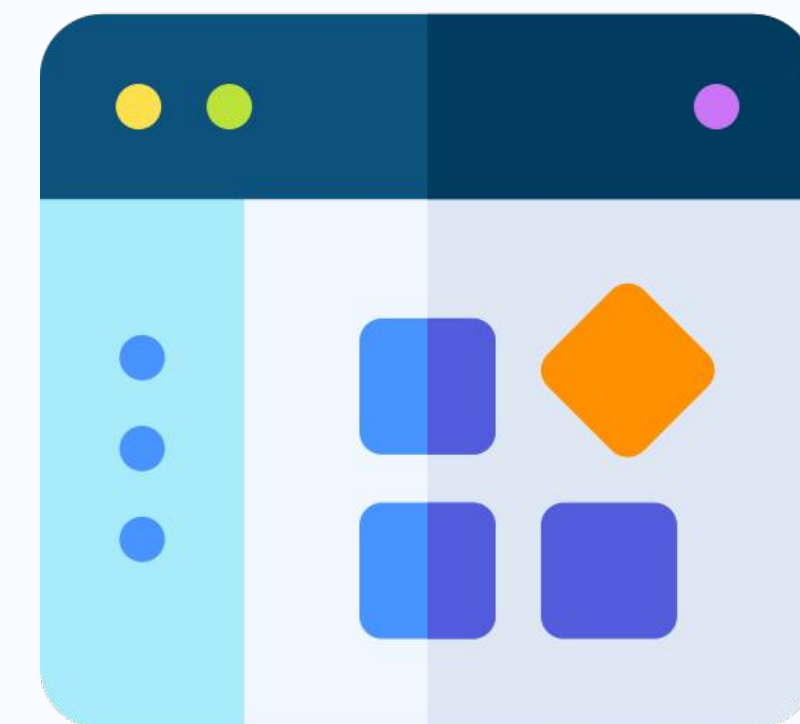
К8s на железе



Железо и ОС



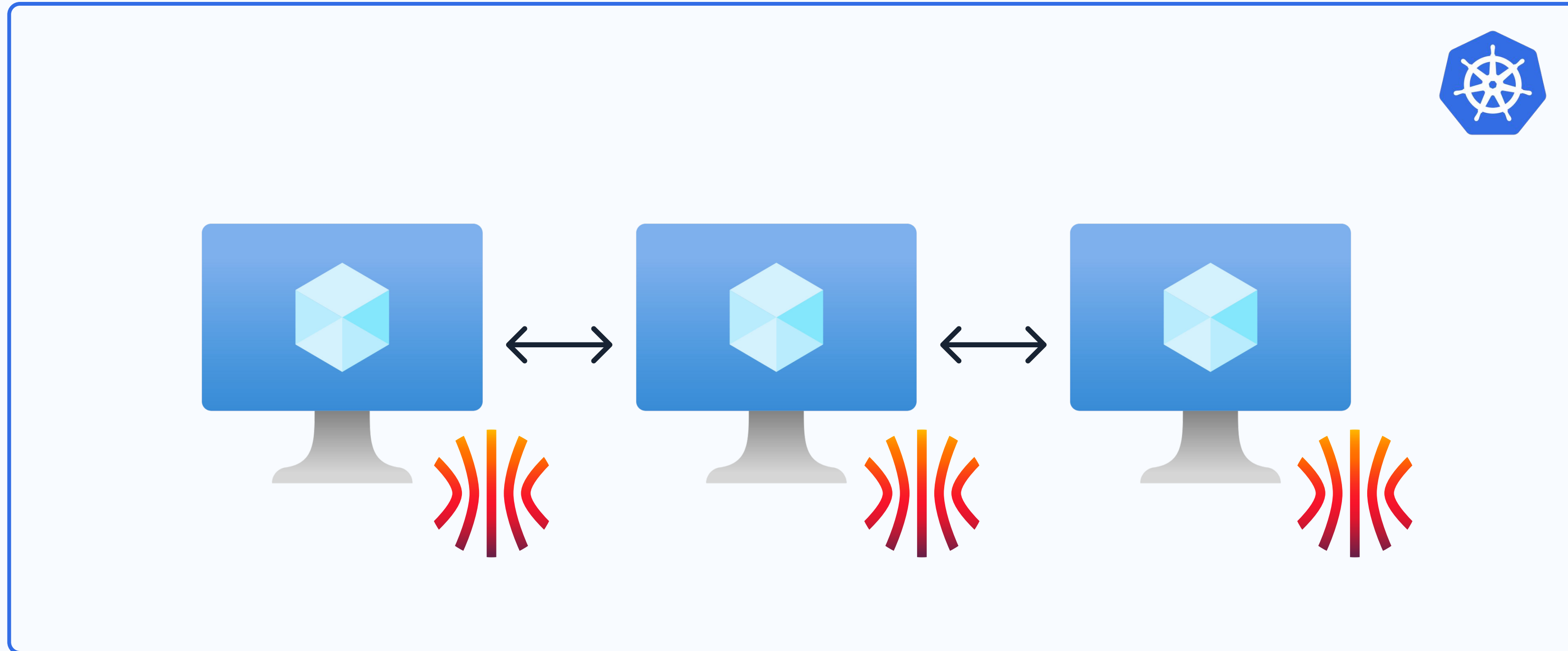
Системные
компоненты

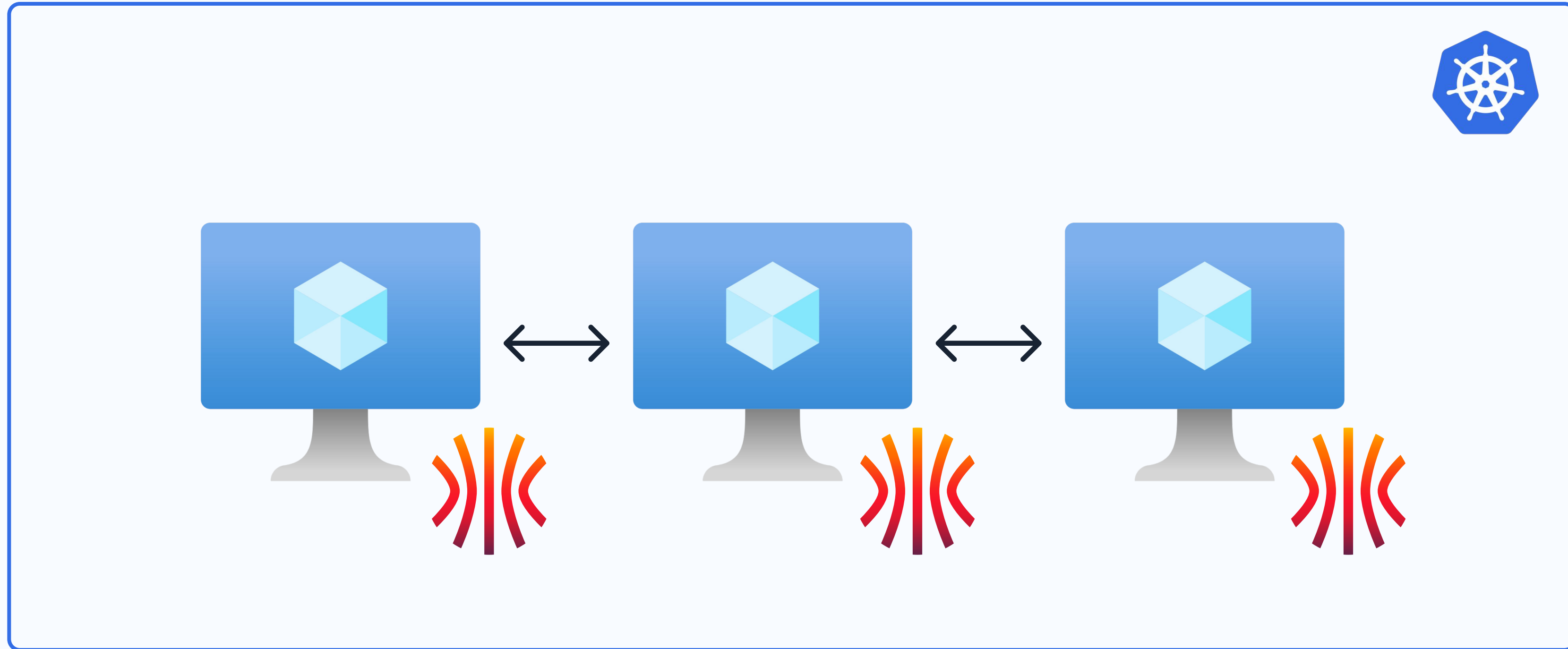


Пользовательские
приложения

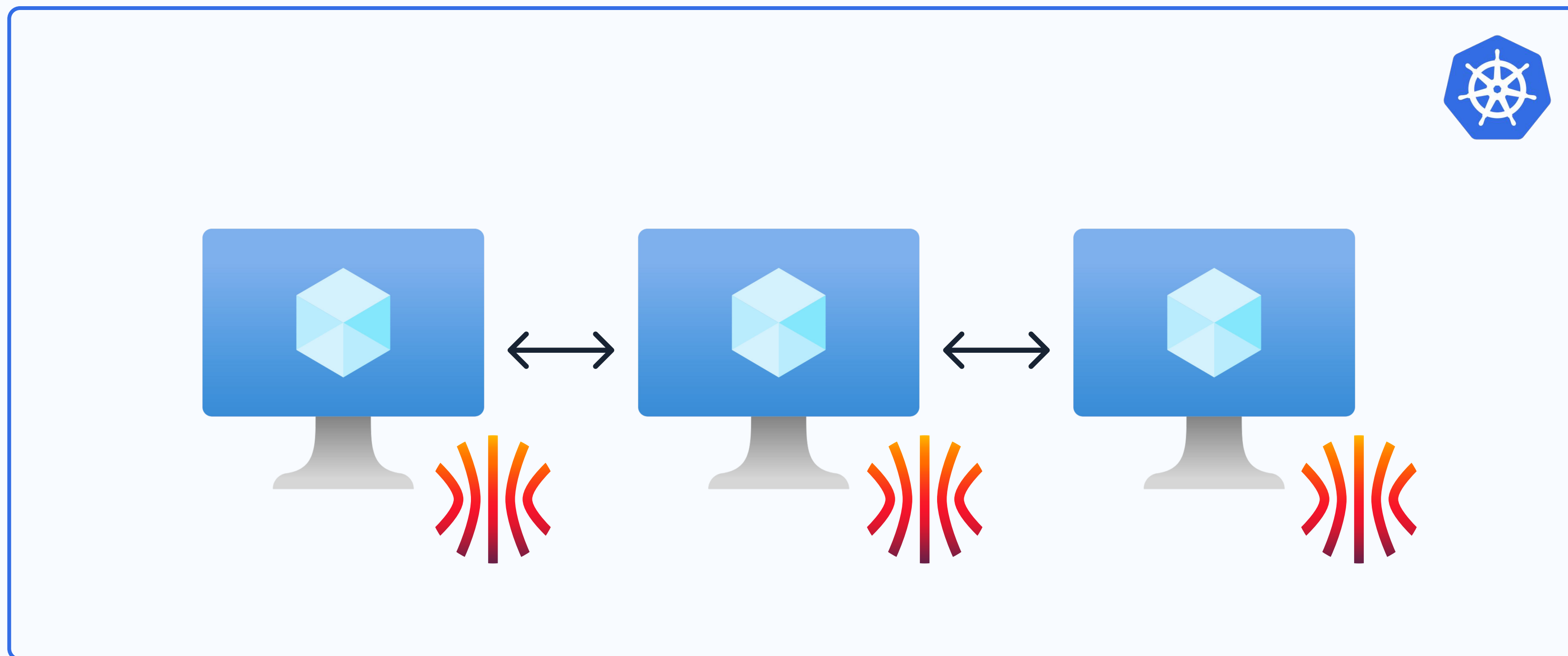
 ПЛАТФОРМА

Установка инфраструктурных приложений

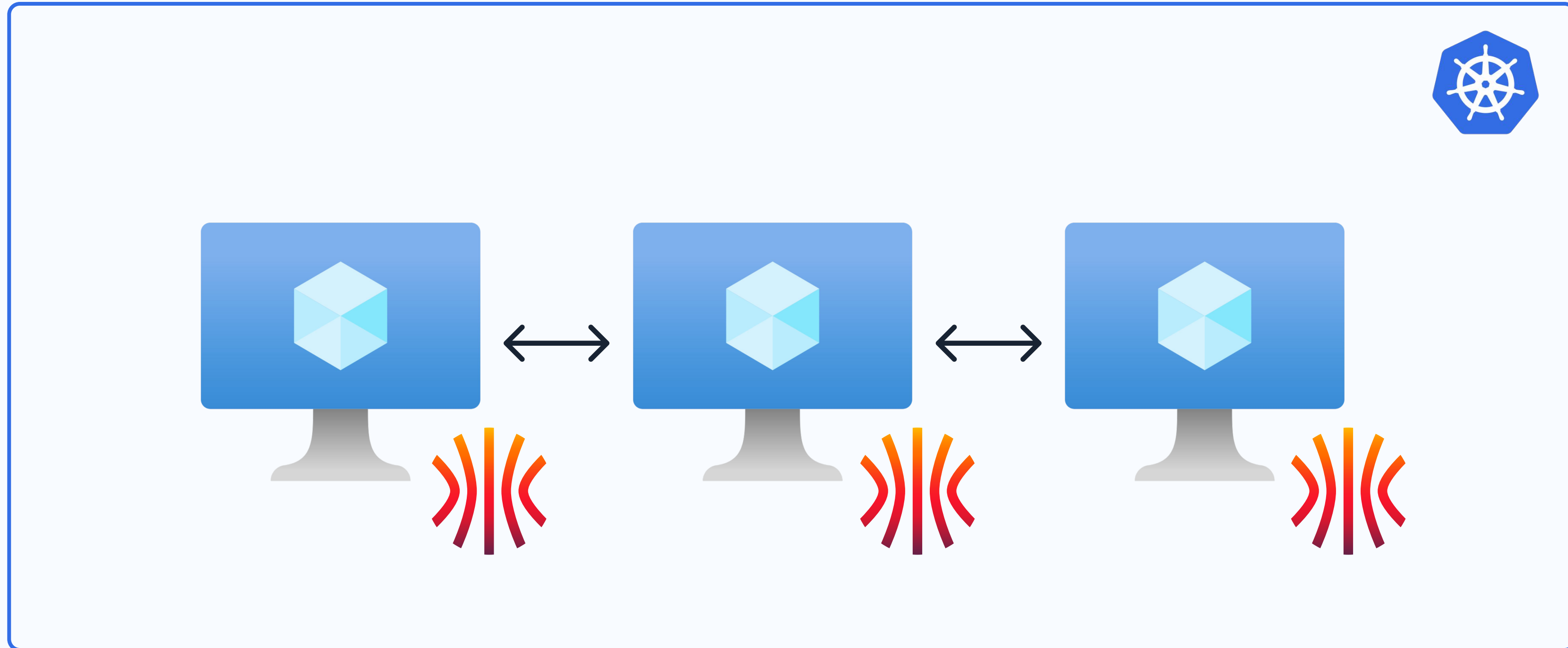




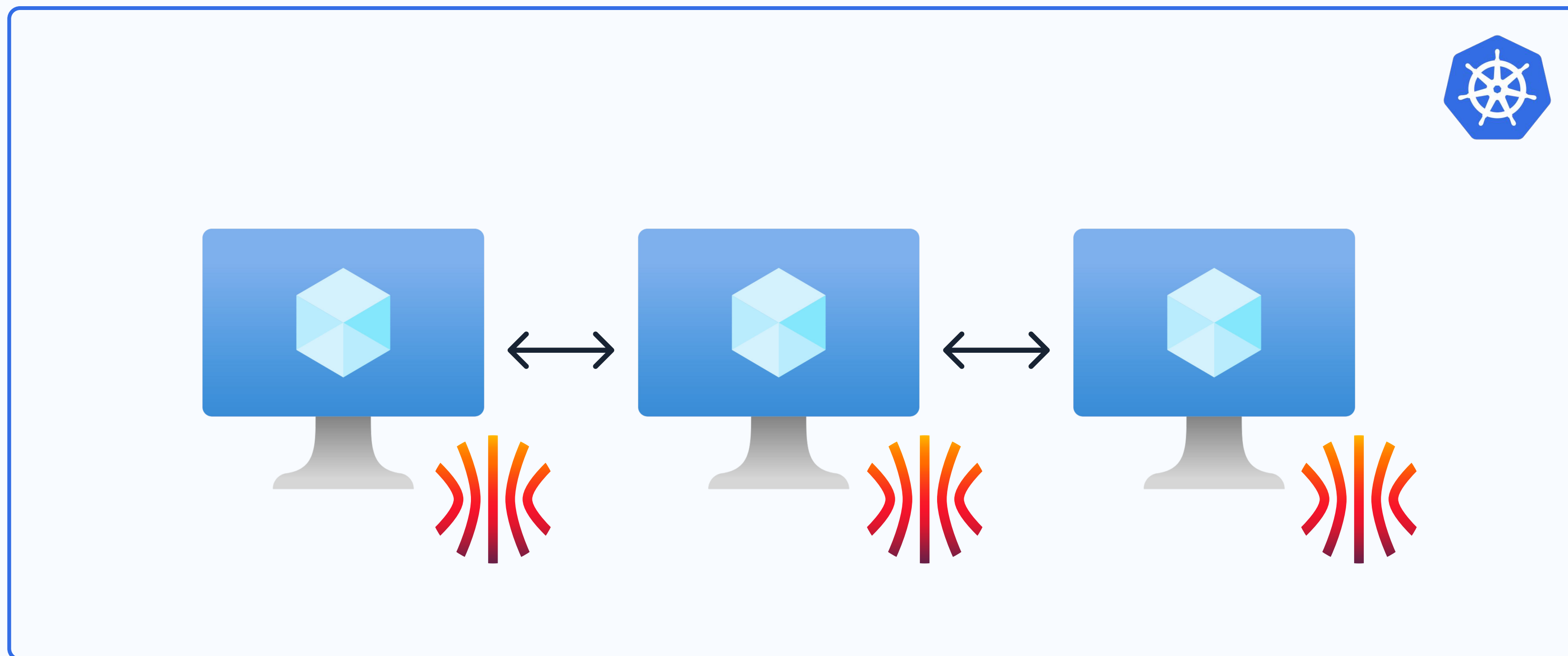
Установка инфраструктурных приложений



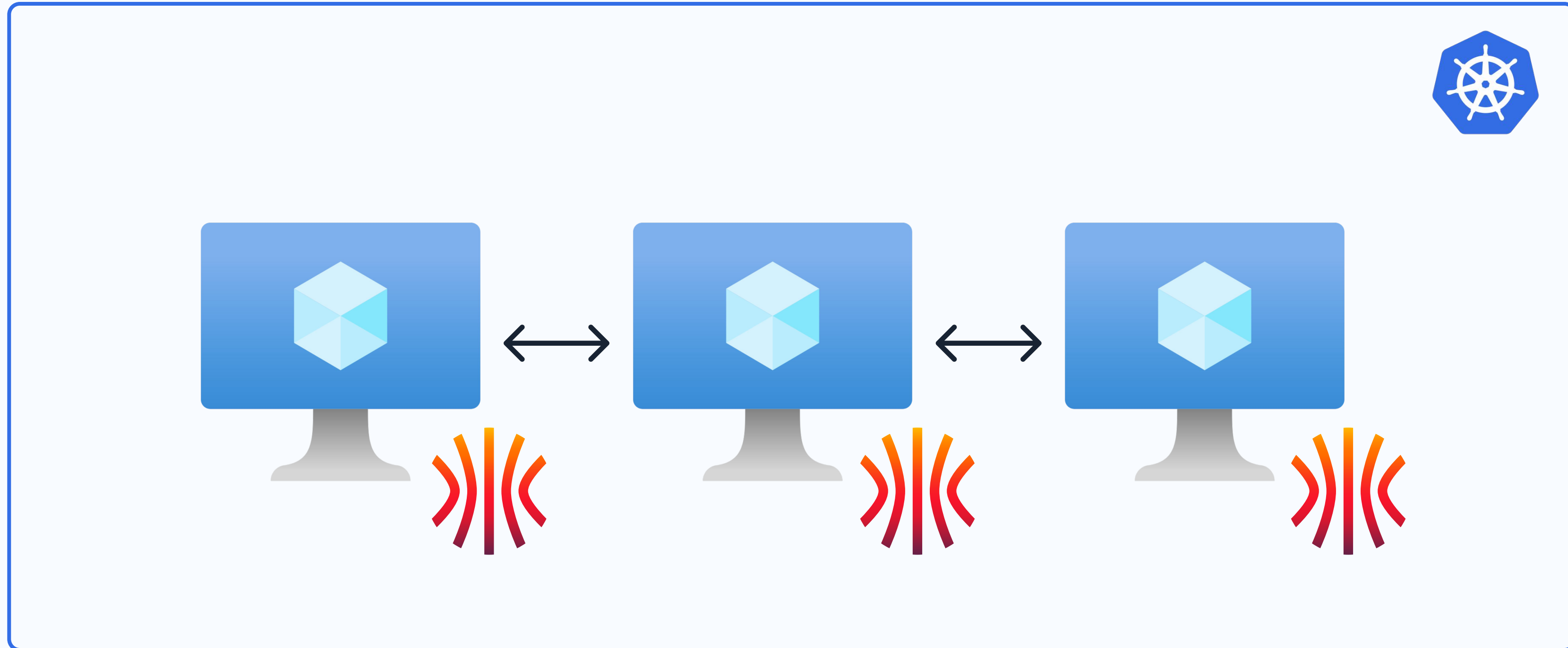
Установка инфраструктурных приложений



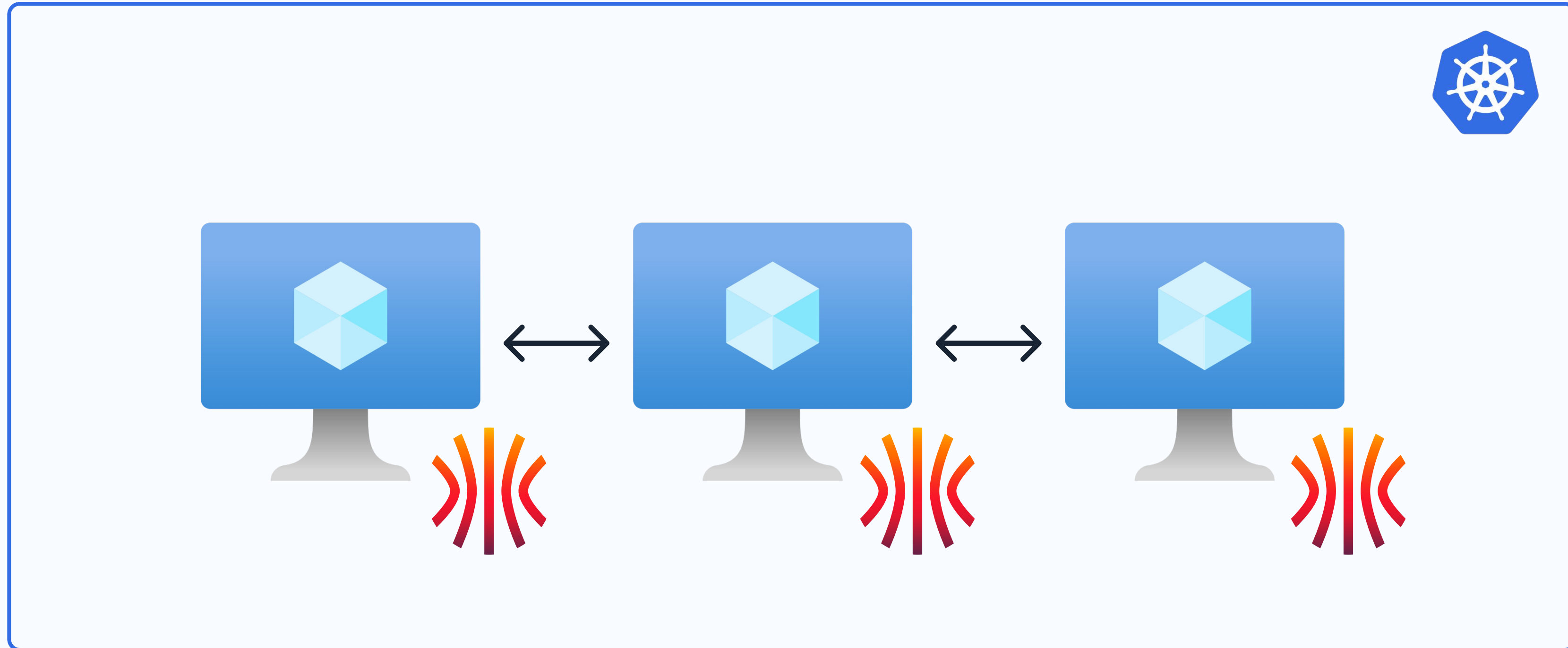
Установка инфраструктурных приложений



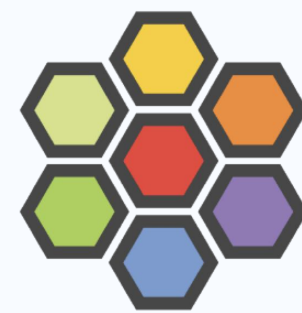
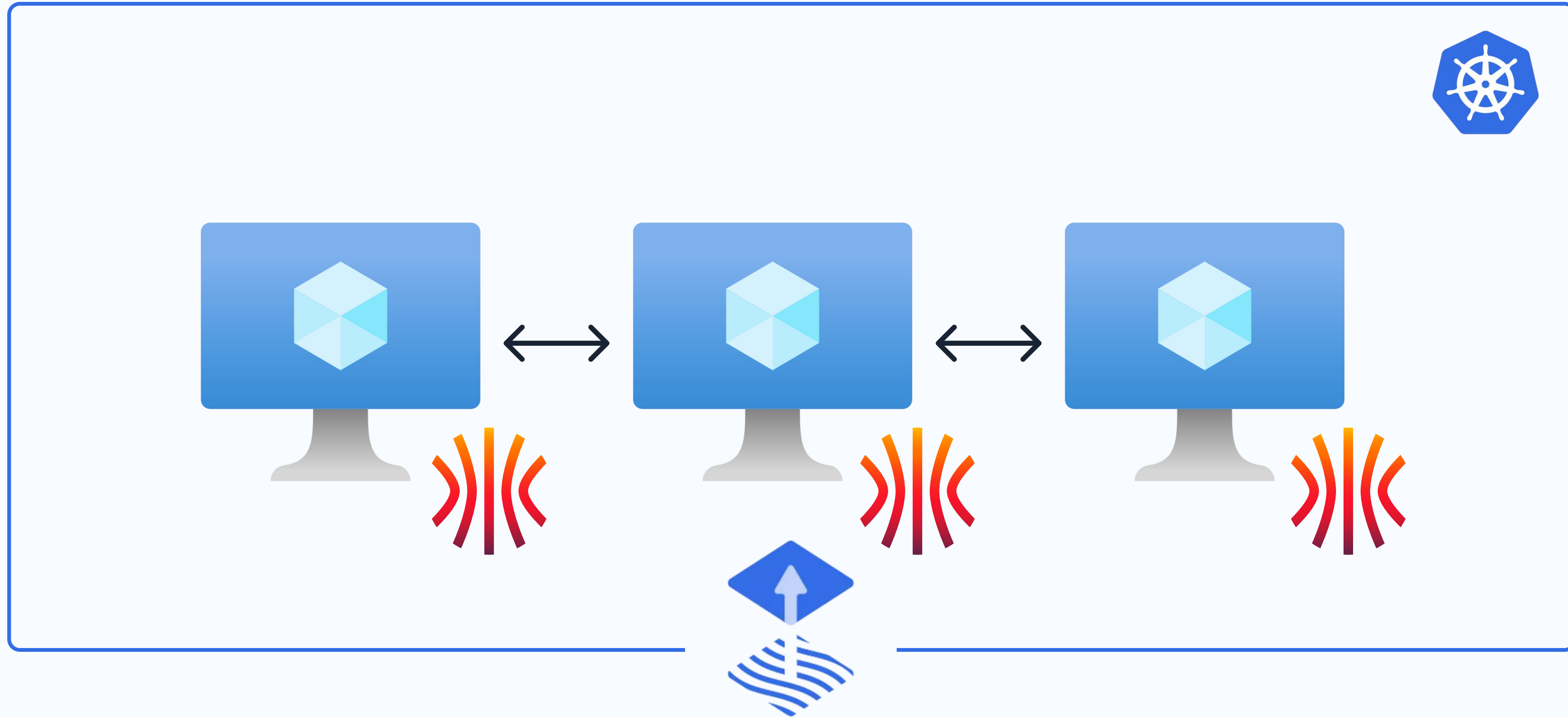
Установка инфраструктурных приложений



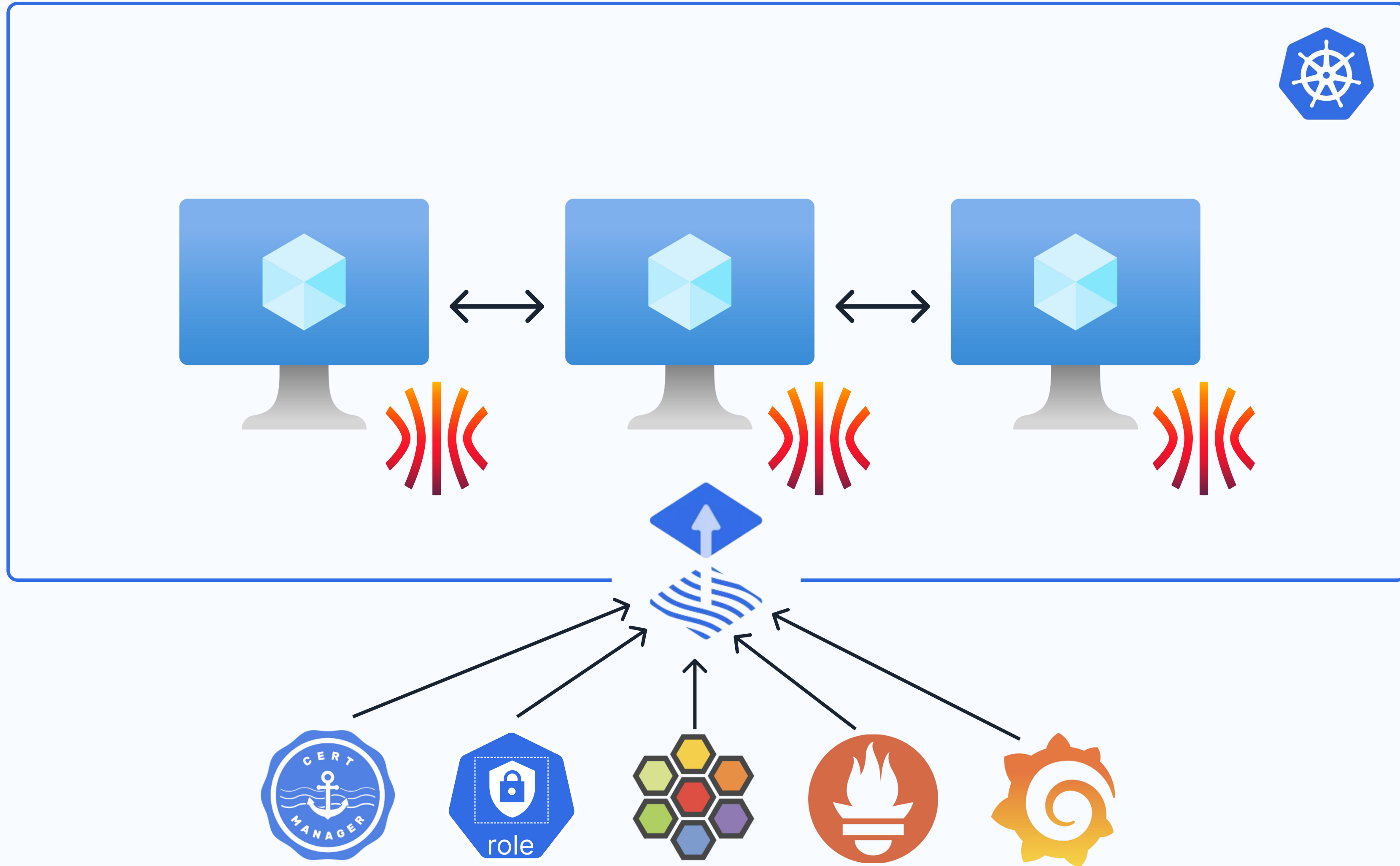
Talos Linux ❤️❤️❤️ FluxCD



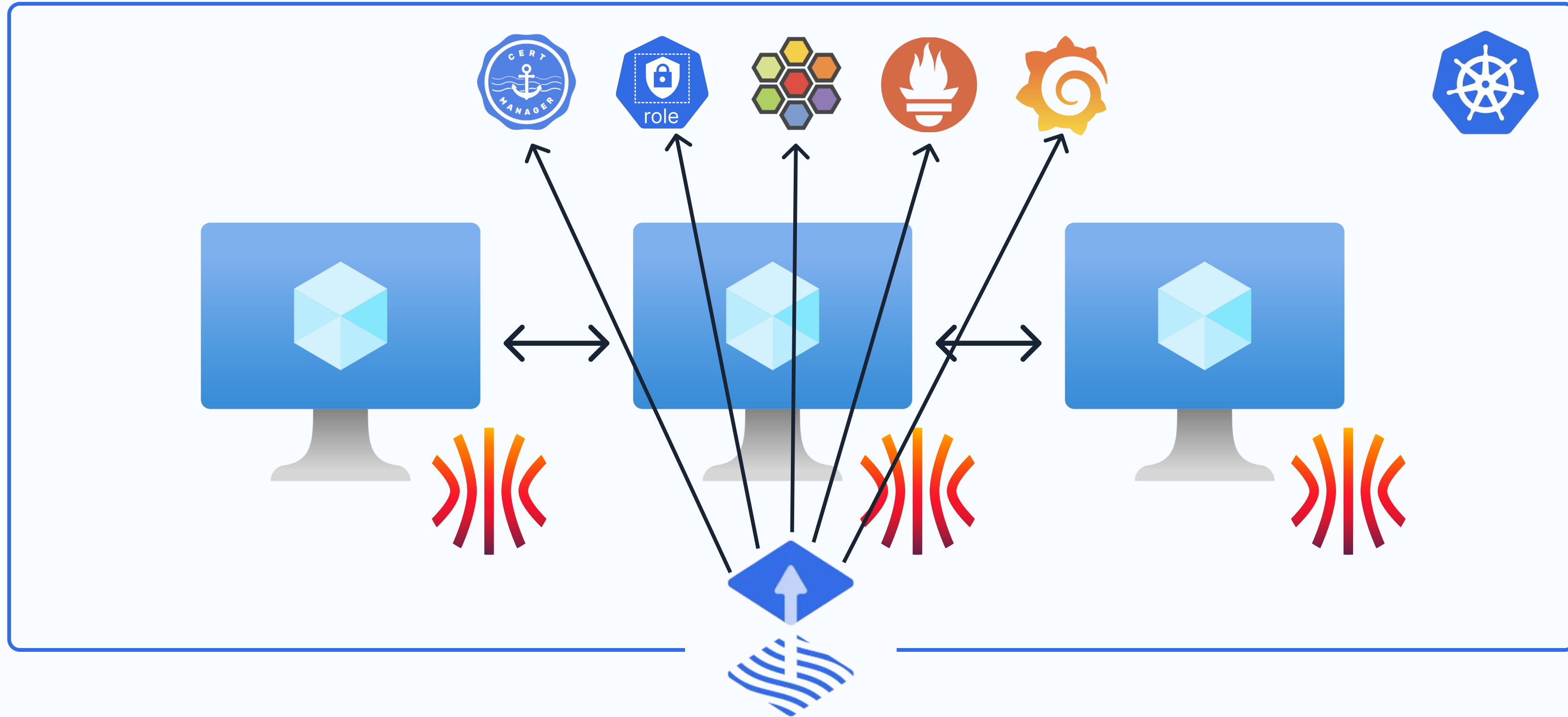
Talos Linux ❤️❤️❤️ FluxCD



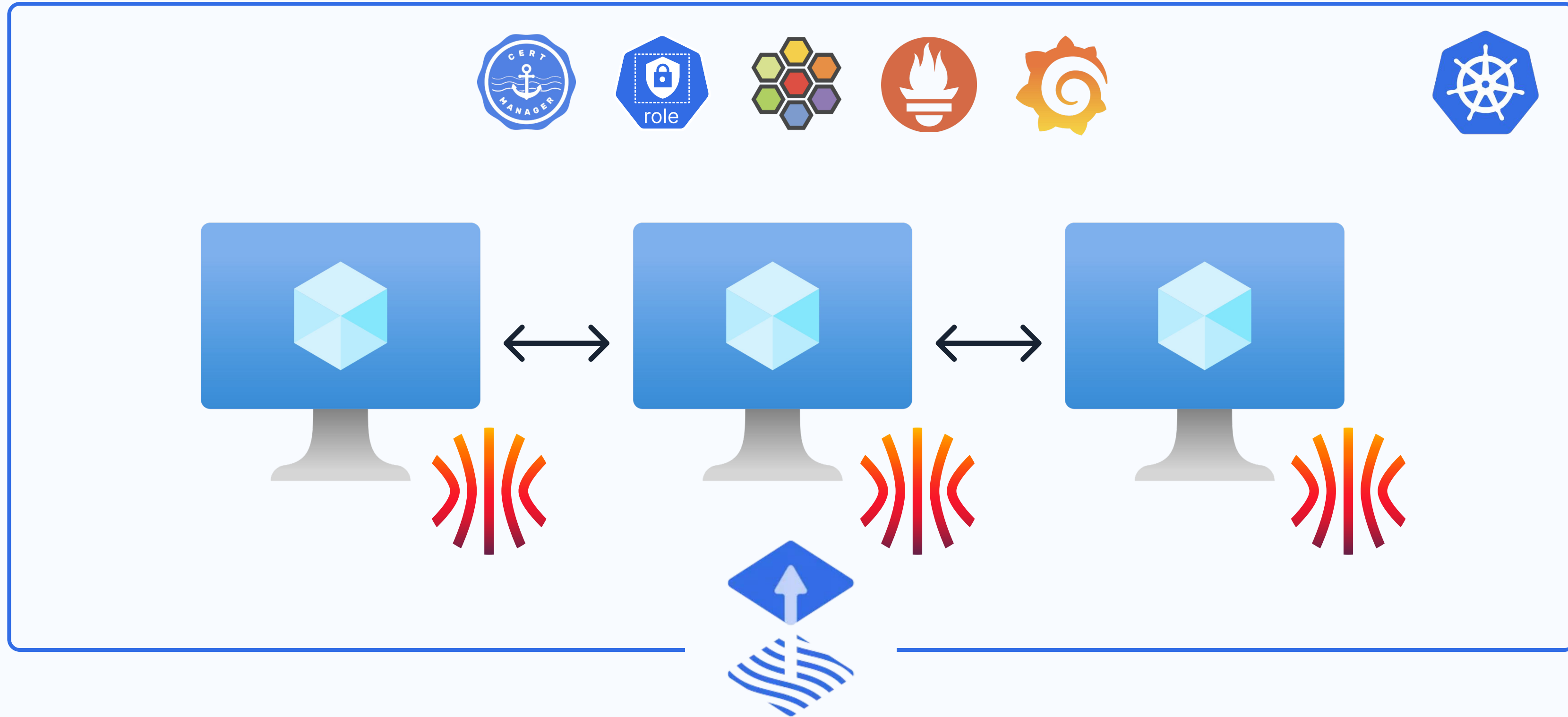
Talos Linux ❤️❤️❤️ FluxCD



Talos Linux ❤️❤️❤️ FluxCD



Talos Linux ❤️❤️❤️ FluxCD





```
machine:
  type: control-plane
  ca: { crt: "" key: "" }
  certSANs:
    - 127.0.0.1
    - cluster1.example.org
  network:
    interfaces:
      - interface: eth0
        vip: 192.168.100.10
  install:
    disk: /dev/sda
  cluster:
    controlPlane:
      endpoint: https://192.168.100.10:6443
    ca: { crt: "" key: "" }
    apiServer: {}
    etcd: {}
    extraManifests: {}
```



```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```




```
machine:  
  type: control-plane  
  ca: { crt: "" key: "" }  
  certSANs:  
    - 127.0.0.1  
    - cluster1.example.org  
  network:  
    interfaces:  
      - interface: eth0  
        vip: 192.168.100.10  
  install:  
    disk: /dev/sda  
  cluster:  
    controlPlane:  
      endpoint: https://192.168.100.10:6443  
    ca: { crt: "" key: "" }  
    apiServer: {}  
    etcd: {}  
    extraManifests: {}
```



```
machine:
  type: control-plane
  ca: { crt: "" key: "" }
  certSANs:
    - 127.0.0.1
    - cluster1.example.org
  network:
    interfaces:
      - interface: eth0
        vip: 192.168.100.10
  install:
    disk: /dev/sda
  cluster:
    controlPlane:
      endpoint: https://192.168.100.10:6443
    ca: { crt: "" key: "" }
    apiServer: {}
    etcd: {}
    extraManifests:
      - https://example.org/fluxcd.yaml
```



```
machine:
  type: control-plane
  ca: { crt: "" key: "" }
  certSANs:
    - 127.0.0.1
    - cluster1.example.org
  network:
    interfaces:
      - interface: eth0
        vip: 192.168.100.10
  install:
    disk: /dev/sda
  cluster:
    controlPlane:
      endpoint: https://192.168.100.10:6443
    ca: { crt: "" key: "" }
    apiServer: {}
    etcd: {}
    extraManifests:
      - https://example.org/fluxcd.yaml
      - https://example.org/my-config.yaml
```



**Метод наш другой немного,
не используем git мы и вместе все
компоненты устанавливаем.**



```
UID cbe2971-5268-403b-a5e5-664e6ab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5054::ff:fe12:3
STATUS Pending APISERVER n/a 556/64
READY True CONTROLLER-MANAGER n/a ON 10.0.2.2, fec0:12
TYPE unknown SCHEDULER n/a CONNECTIVITY ON
MEMBERS n/a DNS 10.0.2.3
MTI pool.mip.org

user: warning: [2023-04-13T11:20:46.329336954Z]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363088954Z]: [talos] service(dashboard)(Waiting): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] task startDashboard (1/1): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400954Z]: [talos] phase dashboard (7/11): done, 101.85885ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] next renewal in 1150969.74569327s
user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] task loadConfig (1/1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117954Z]: [talos] task loadConfig (1/1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729426954Z]: [talos] task loadConfig (1/1): fec0:5054::ff:fe12:3456
user: warning: [2023-04-13T11:20:46.729896954Z]: [talos] task loadConfig (1/1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.746209954Z]: [talos] task loadConfig (1/1): fingerprint[715]qK18X0n[42]ALPCJ8Gouab8M+
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545954Z]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209954Z]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
for installer.
```

```
UID cbe2971-5268-403b-a5e5-664e6ab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5054::ff:fe12:3
STATUS Pending APISERVER n/a 556/64
READY True CONTROLLER-MANAGER n/a ON 10.0.2.2, fec0:12
TYPE unknown SCHEDULER n/a CONNECTIVITY ON
MEMBERS n/a DNS 10.0.2.3
MTI pool.mip.org

user: warning: [2023-04-13T11:20:46.329336954Z]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363088954Z]: [talos] service(dashboard)(Waiting): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] task startDashboard (1/1): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400954Z]: [talos] phase dashboard (7/11): done, 101.85885ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] next renewal in 1150969.74569327s
user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] task loadConfig (1/1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117954Z]: [talos] task loadConfig (1/1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729426954Z]: [talos] task loadConfig (1/1): fec0:5054::ff:fe12:3456
user: warning: [2023-04-13T11:20:46.729896954Z]: [talos] task loadConfig (1/1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.746209954Z]: [talos] task loadConfig (1/1): fingerprint[715]qK18X0n[42]ALPCJ8Gouab8M+
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545954Z]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209954Z]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
for installer.
```

```
UID cbe2971-5268-403b-a5e5-664e6ab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5054::ff:fe12:3
STATUS Pending APISERVER n/a 556/64
READY True CONTROLLER-MANAGER n/a ON 10.0.2.2, fec0:12
TYPE unknown SCHEDULER n/a CONNECTIVITY ON
MEMBERS n/a DNS 10.0.2.3
MTI pool.mip.org

user: warning: [2023-04-13T11:20:46.329336954Z]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363088954Z]: [talos] service(dashboard)(Waiting): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(Preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(Preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] task startDashboard (1/1): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400954Z]: [talos] phase dashboard (7/11): done, 101.85885ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] next renewal in 1150969.74569327s
user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] task loadConfig (1/1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117954Z]: [talos] task loadConfig (1/1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729426954Z]: [talos] task loadConfig (1/1): fec0:5054::ff:fe12:3456
user: warning: [2023-04-13T11:20:46.729896954Z]: [talos] task loadConfig (1/1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.746209954Z]: [talos] task loadConfig (1/1): fingerprint[715]qK18X0n[42]ALPCJ8Gouab8M+
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545954Z]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209954Z]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
for installer.
```



```
UID cbe2971-5268-403b-a5e5-664e6ab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5654:fff:fe12:3
STATUS Pending APISERVER n/a 556/64
READY True CONTROLLER-MANAGER n/a ON 10.0.2.2, fec0:12
TYPE unknown SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTI pool.mip.org

user: warning: [2023-04-13T11:20:46.329336954Z]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363088954Z]: [talos] service(dashboard)(waiting): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] task startDashboard (1/1): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400954Z]: [talos] phase dashboard (7/11): done, 101.85885ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] next renewal in 1150969.74569327s
user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] task loadConfig (1/1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117954Z]: [talos] task loadConfig (1/1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729426954Z]: [talos] task loadConfig (1/1): fec0:5654:fff:fe12:3456
user: warning: [2023-04-13T11:20:46.729896954Z]: [talos] task loadConfig (1/1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.746209954Z]: [talos] task loadConfig (1/1): fingerprint:f715qk18X0n1a2BkLPCJmGouabdtU+
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.746800954Z]: [talos] task loadConfig (1/1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545954Z]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209954Z]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
for installer.
```

```
UID cbe2971-5268-403b-a5e5-664e6ab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5654:fff:fe12:3
STATUS Pending APISERVER n/a 556/64
READY True CONTROLLER-MANAGER n/a ON 10.0.2.2, fec0:12
TYPE unknown SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTI pool.mip.org

user: warning: [2023-04-13T11:20:46.329336954Z]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363088954Z]: [talos] service(dashboard)(waiting): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] task startDashboard (1/1): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400954Z]: [talos] phase dashboard (7/11): done, 101.85885ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] next renewal in 1150969.74569327s
user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] task loadConfig (1/1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117954Z]: [talos] task loadConfig (1/1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729426954Z]: [talos] task loadConfig (1/1): fec0:5654:fff:fe12:3456
user: warning: [2023-04-13T11:20:46.729896954Z]: [talos] task loadConfig (1/1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.746209954Z]: [talos] task loadConfig (1/1): fingerprint:f715qk18X0n1a2BkLPCJmGouabdtU+
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.746800954Z]: [talos] task loadConfig (1/1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545954Z]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209954Z]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
for installer.
```

```
UID cbe2971-5268-403b-a5e5-664e6ab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5654:fff:fe12:3
STATUS Pending APISERVER n/a 556/64
READY True CONTROLLER-MANAGER n/a ON 10.0.2.2, fec0:12
TYPE unknown SCHEDULER n/a CONNECTIVITY OK
MEMBERS n/a DNS 10.0.2.3
MTI pool.mip.org

user: warning: [2023-04-13T11:20:46.329336954Z]: [talos] task startDashboard (1/1): starting
user: warning: [2023-04-13T11:20:46.363088954Z]: [talos] service(dashboard)(waiting): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(preparing): Running pre state
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] service(dashboard)(preparing): Creating service runner
user: warning: [2023-04-13T11:20:46.412236954Z]: [talos] task startDashboard (1/1): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400954Z]: [talos] phase dashboard (7/11): done, 101.85885ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] next renewal in 1150969.74569327s
user: warning: [2023-04-13T11:20:46.738201954Z]: [talos] task loadConfig (1/1): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729117954Z]: [talos] task loadConfig (1/1): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729426954Z]: [talos] task loadConfig (1/1): fec0:5654:fff:fe12:3456
user: warning: [2023-04-13T11:20:46.729896954Z]: [talos] task loadConfig (1/1): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.746209954Z]: [talos] task loadConfig (1/1): fingerprint:f715qk18X0n1a2BkLPCJmGouabdtU+
user: warning: [2023-04-13T11:20:46.746799954Z]: [talos] task loadConfig (1/1):
user: warning: [2023-04-13T11:20:46.746800954Z]: [talos] task loadConfig (1/1): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545954Z]: [talos] task loadConfig (1/1): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209954Z]: [talos] task loadConfig (1/1): or apply configuration using talosctl interact
for installer.
```



```
UID cbe2971-5268-403b-a5e5-664eab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5054::ff:fe12:3
STATUS Ready True APISERVER n/a 556/64
TYPE unknown CONTROLLER-MANAGER n/a 10.0.2.2, fec0:5054::ff:fe12:2
MEMBERS n/a SCHEDULER n/a CONNECTIVITY 0/0
DNS 10.0.2.3
MTI pool.ntp.org

user: warning: [2023-04-13T11:20:46.329336954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363080954Z]: (talos service{dashboard}(waiting)): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos service{dashboard}(preparing)): Running pre state
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos service{dashboard}(preparing)): Creating service runner
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos task startDashboard (1-1)): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400654Z]: (talos phase dashboard (7-11)): done, 101.85895ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 1105969.745693227s)
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729442054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729442054Z]: (talos task loadConfig (1-1)): fec0:5054::ff:fe12:3456
user: warning: [2023-04-13T11:20:46.740299654Z]: (talos task loadConfig (1-1)): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740299654Z]: (talos task loadConfig (1-1)): fingerprint:f715qk10X0m1a2BkLPCJmGouabB0+
user: warning: [2023-04-13T11:20:46.740799654Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741000654Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545654Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209654Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
for installer.
```

```
UID cbe2971-5268-403b-a5e5-664eab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5054::ff:fe12:3
STATUS Ready True APISERVER n/a 556/64
TYPE unknown CONTROLLER-MANAGER n/a 10.0.2.2, fec0:5054::ff:fe12:2
MEMBERS n/a SCHEDULER n/a CONNECTIVITY 0/0
DNS 10.0.2.3
MTI pool.ntp.org

user: warning: [2023-04-13T11:20:46.329336954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363080954Z]: (talos service{dashboard}(waiting)): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos service{dashboard}(preparing)): Running pre state
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos service{dashboard}(preparing)): Creating service runner
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos task startDashboard (1-1)): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400654Z]: (talos phase dashboard (7-11)): done, 101.85895ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 1105969.745693227s)
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729442054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729442054Z]: (talos task loadConfig (1-1)): fec0:5054::ff:fe12:3456
user: warning: [2023-04-13T11:20:46.740299654Z]: (talos task loadConfig (1-1)): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740299654Z]: (talos task loadConfig (1-1)): fingerprint:f715qk10X0m1a2BkLPCJmGouabB0+
user: warning: [2023-04-13T11:20:46.740799654Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741000654Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545654Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209654Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
for installer.
```

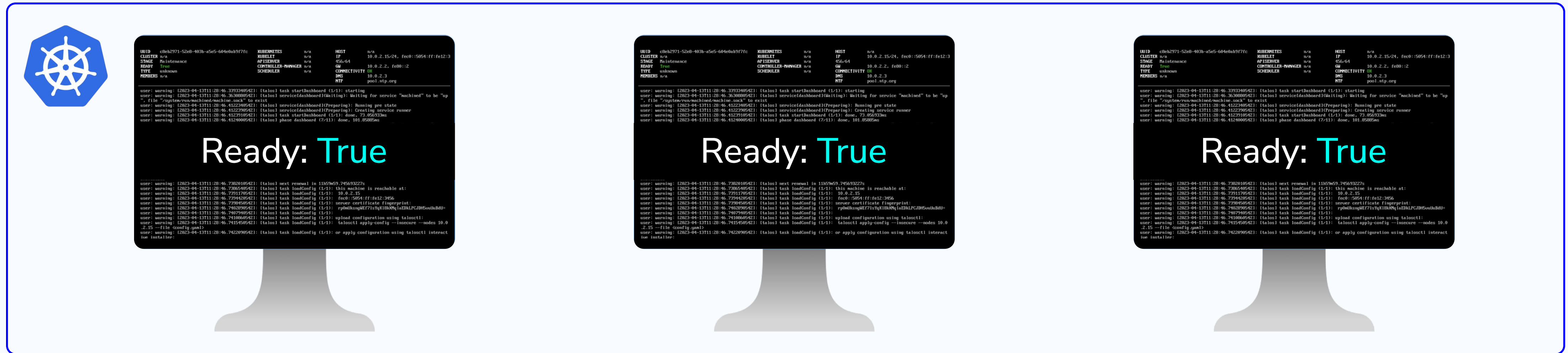
```
UID cbe2971-5268-403b-a5e5-664eab977fc KUBERNETES n/a HOST n/a
CLUSTER n/a NAMESPACE n/a IP 10.0.2.15/24, fec0:5054::ff:fe12:3
STATUS Ready True APISERVER n/a 556/64
TYPE unknown CONTROLLER-MANAGER n/a 10.0.2.2, fec0:5054::ff:fe12:2
MEMBERS n/a SCHEDULER n/a CONNECTIVITY 0/0
DNS 10.0.2.3
MTI pool.ntp.org

user: warning: [2023-04-13T11:20:46.329336954Z]: (talos task startDashboard (1-1)): starting
user: warning: [2023-04-13T11:20:46.363080954Z]: (talos service{dashboard}(waiting)): Waiting for service "machined" to be "up"
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos service{dashboard}(preparing)): Running pre state
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos service{dashboard}(preparing)): Creating service runner
user: warning: [2023-04-13T11:20:46.412239654Z]: (talos task startDashboard (1-1)): done, 73.852933ms
user: warning: [2023-04-13T11:20:46.412400654Z]: (talos phase dashboard (7-11)): done, 101.85895ms

Ready: True

user: warning: [2023-04-13T11:20:46.738201054Z]: (talos next renewal in 1105969.745693227s)
user: warning: [2023-04-13T11:20:46.738201054Z]: (talos task loadConfig (1-1)): this machine is reachable at:
user: warning: [2023-04-13T11:20:46.729442054Z]: (talos task loadConfig (1-1)): 10.0.2.15
user: warning: [2023-04-13T11:20:46.729442054Z]: (talos task loadConfig (1-1)): fec0:5054::ff:fe12:3456
user: warning: [2023-04-13T11:20:46.740299654Z]: (talos task loadConfig (1-1)): server certificate fingerprint:
user: warning: [2023-04-13T11:20:46.740299654Z]: (talos task loadConfig (1-1)): fingerprint:f715qk10X0m1a2BkLPCJmGouabB0+
user: warning: [2023-04-13T11:20:46.740799654Z]: (talos task loadConfig (1-1)):
user: warning: [2023-04-13T11:20:46.741000654Z]: (talos task loadConfig (1-1)): upload configuration using talosctl:
user: warning: [2023-04-13T11:20:46.741545654Z]: (talos task loadConfig (1-1)): talosctl apply-config --insecure --nodes 10.0.2.15 --file config.yaml
user: warning: [2023-04-13T11:20:46.742209654Z]: (talos task loadConfig (1-1)): or apply configuration using talosctl interact
for installer.
```

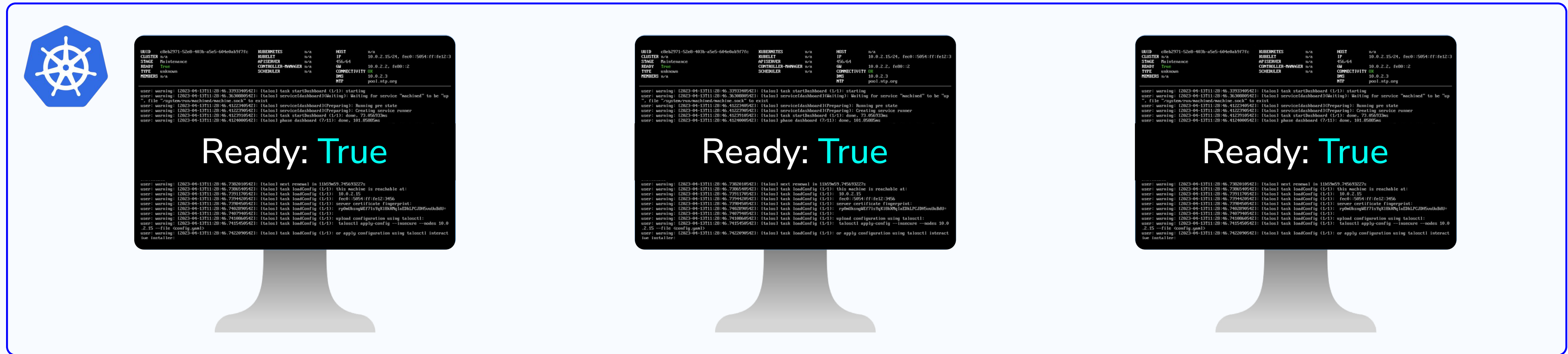




The image shows three terminal windows, each representing a different stage of the COZYETACK platform installation. Each window displays the following information:

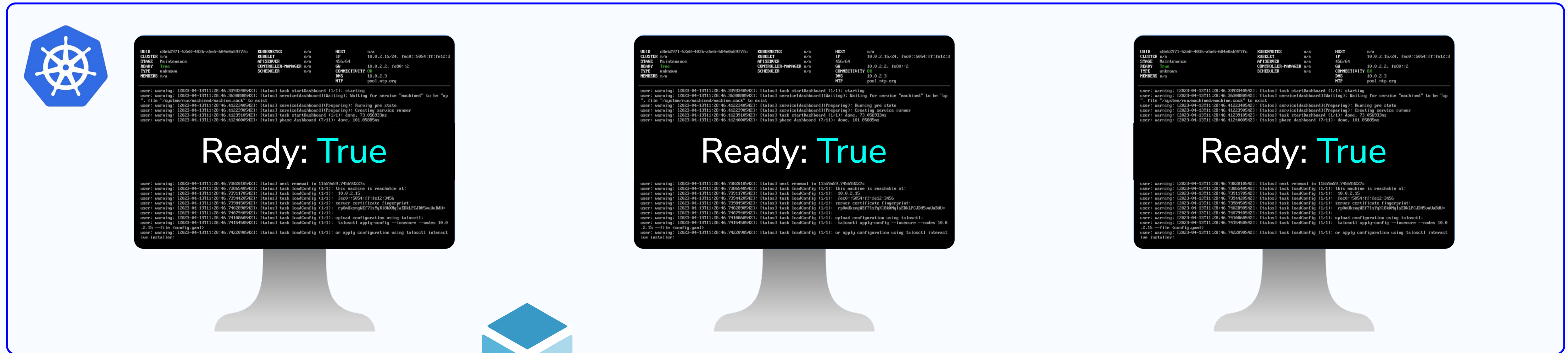
- Terminal 1 (Left):** Shows the Kubernetes cluster status. The 'Ready' field is 'True'. The output includes details about the cluster's state, such as 'Starting', 'Waiting for service "machines" to be "up"', and 'Running pre state'.
- Terminal 2 (Middle):** Shows the next step in the installation, which is 'next renewal in 1105909.74503327s'. It lists tasks like 'loadConfig' and 'apply-config'.
- Terminal 3 (Right):** Shows the final configuration steps, including 'upload configuration using talonctl' and 'apply-config'.





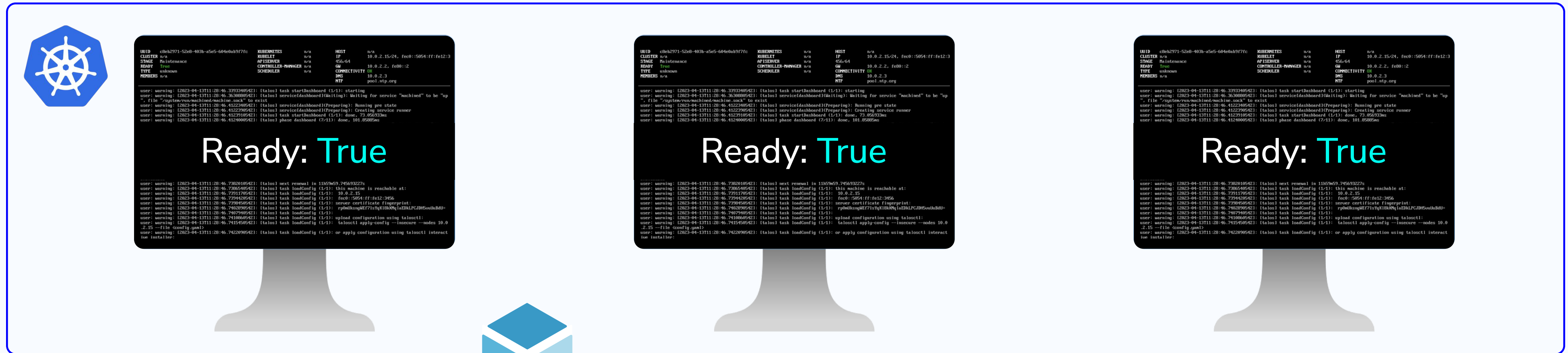
kubectl apply -f cozystack.yaml





kubectl apply -f cozystack.yaml





kubectl apply -f cozystack.yaml

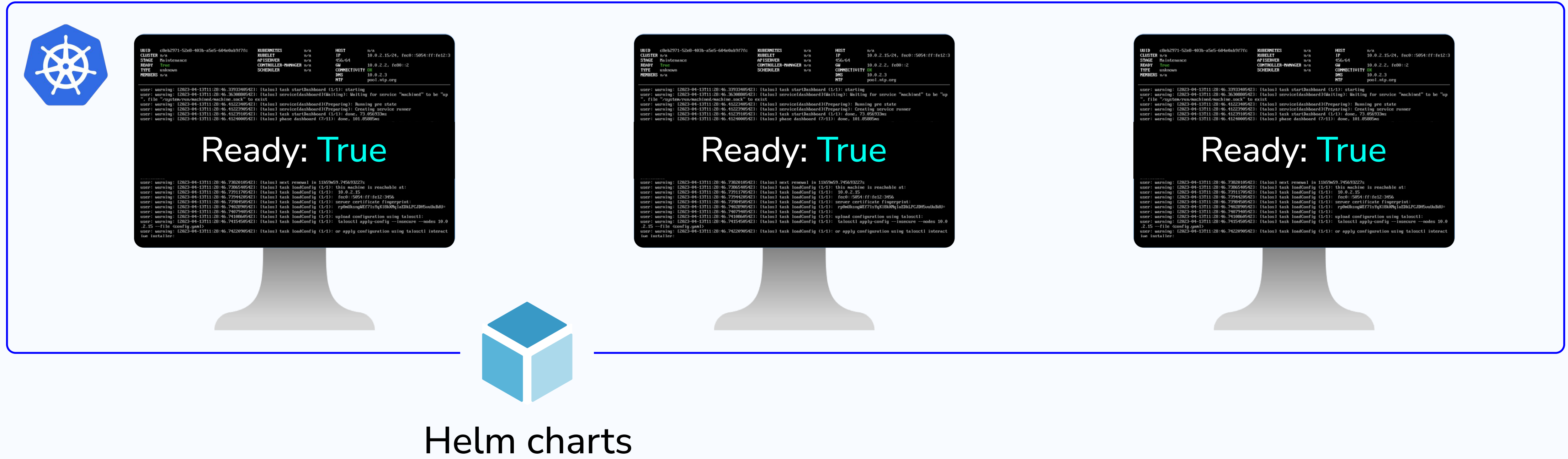


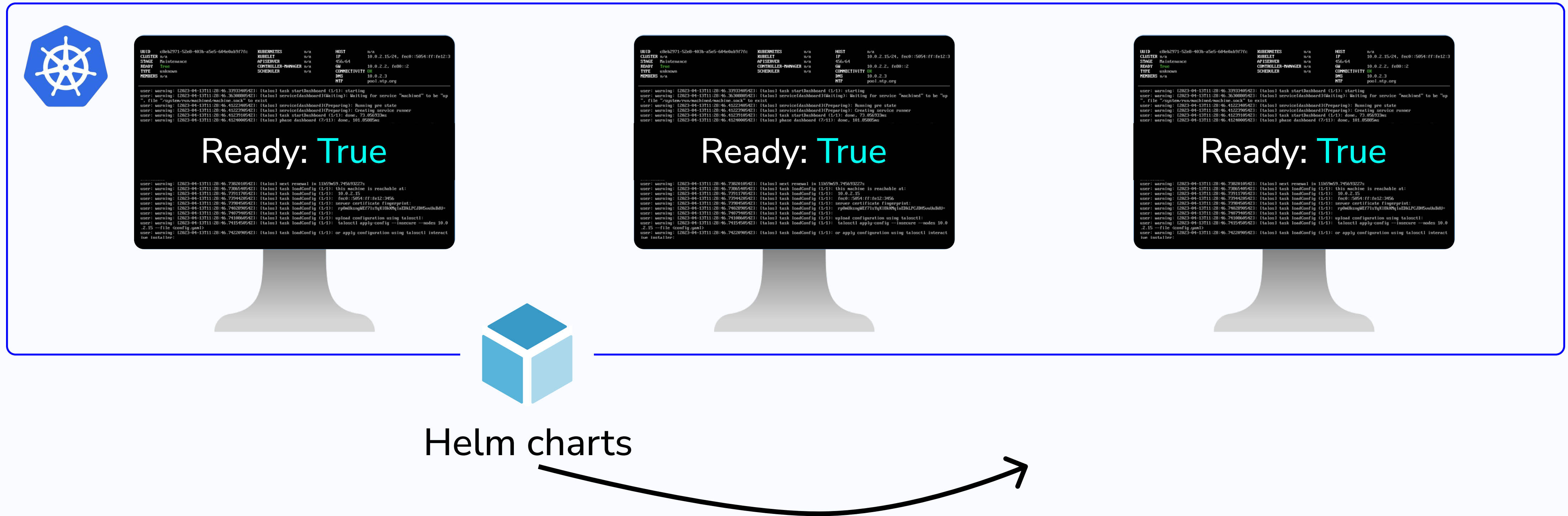
The image shows three terminal windows, each representing a step in the installation process. Each window has a terminal header with cluster information:

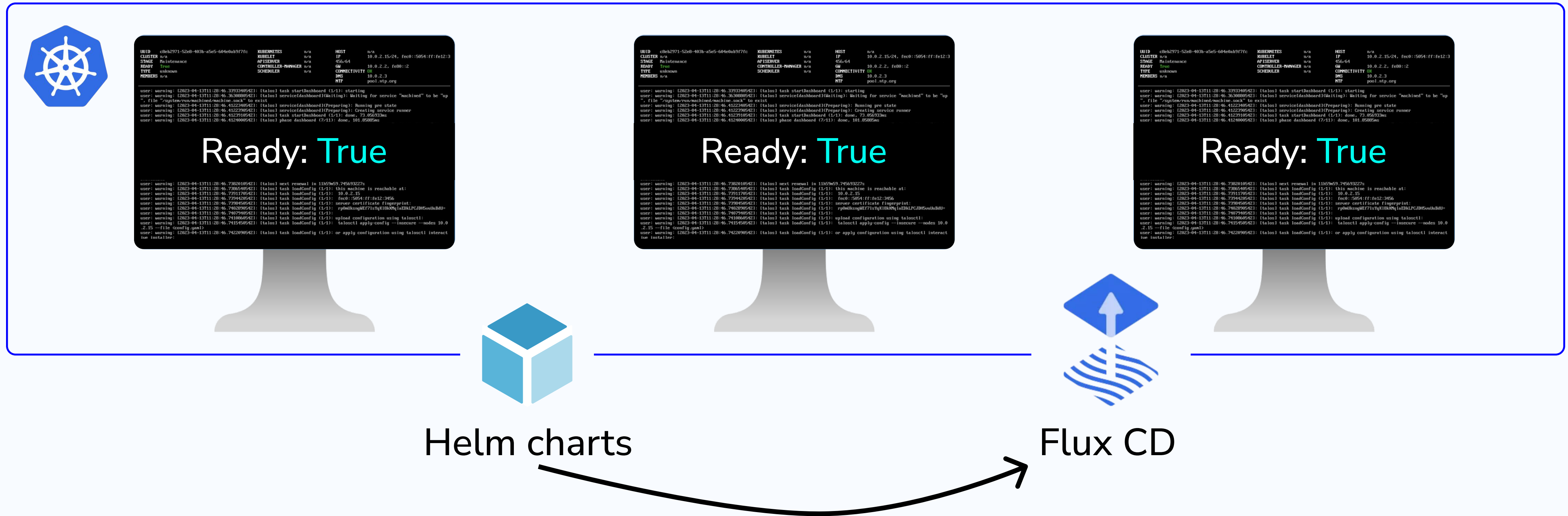
UID	CLUSTER	STATUS	READY	TYPE	MEMBERS
c9eb2971-526b-403b-a5e5-664e6ab9f7fc	kubernetes	Ready	True	unknown	n/a

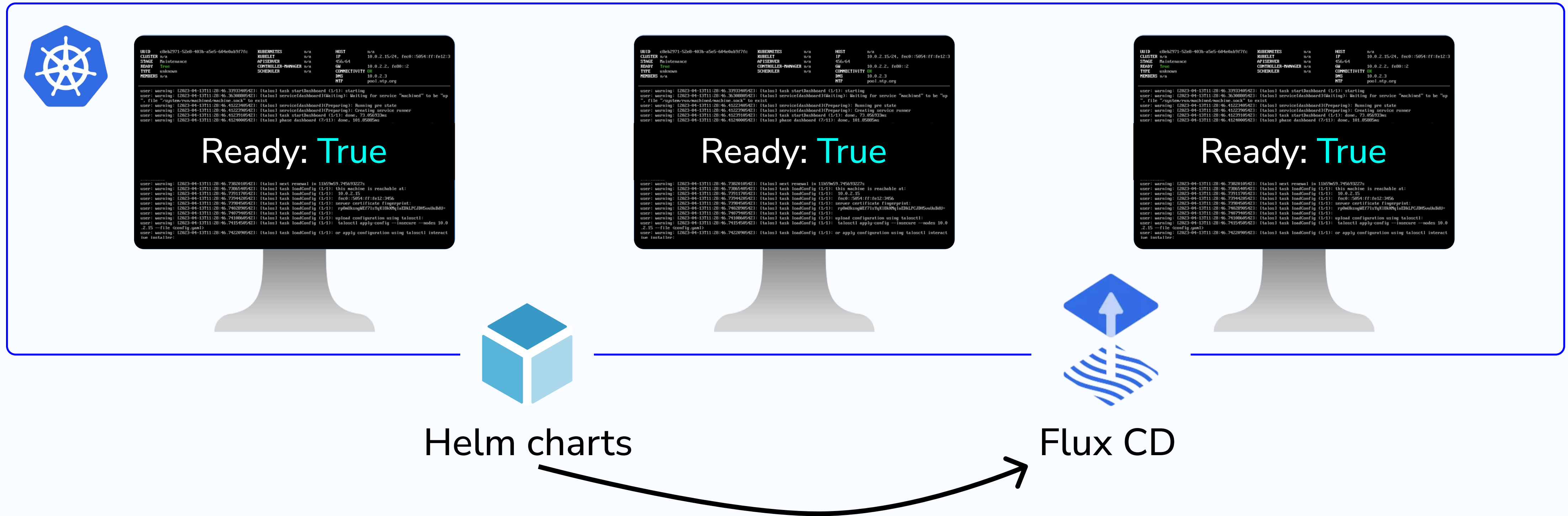
Below the header, each window shows a log entry: `user: warning: [2023-04-13T11:20:46.339330654Z] (talos) task startDashboard (1/1): starting`. The first window shows the dashboard starting and becoming ready. The second and third windows show the application of configurations, with logs like `user: warning: [2023-04-13T11:20:46.738201054Z] (talos) next renewal in 1150969.74569327s` and `user: warning: [2023-04-13T11:20:46.72854954Z] (talos) task loadConfig (1/1): this machine is reachable at: 10.0.2.15`. All three windows prominently display **Ready: True** in green text.

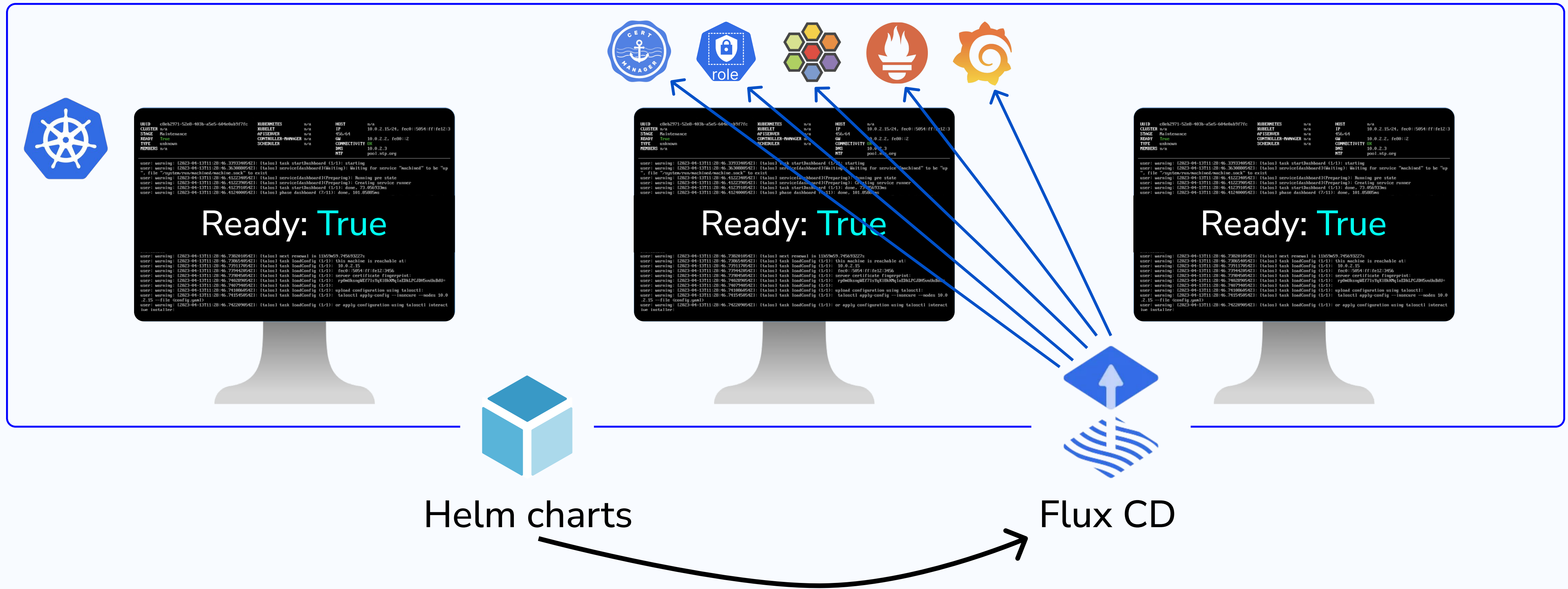
kubectl apply -f cozystack.yaml

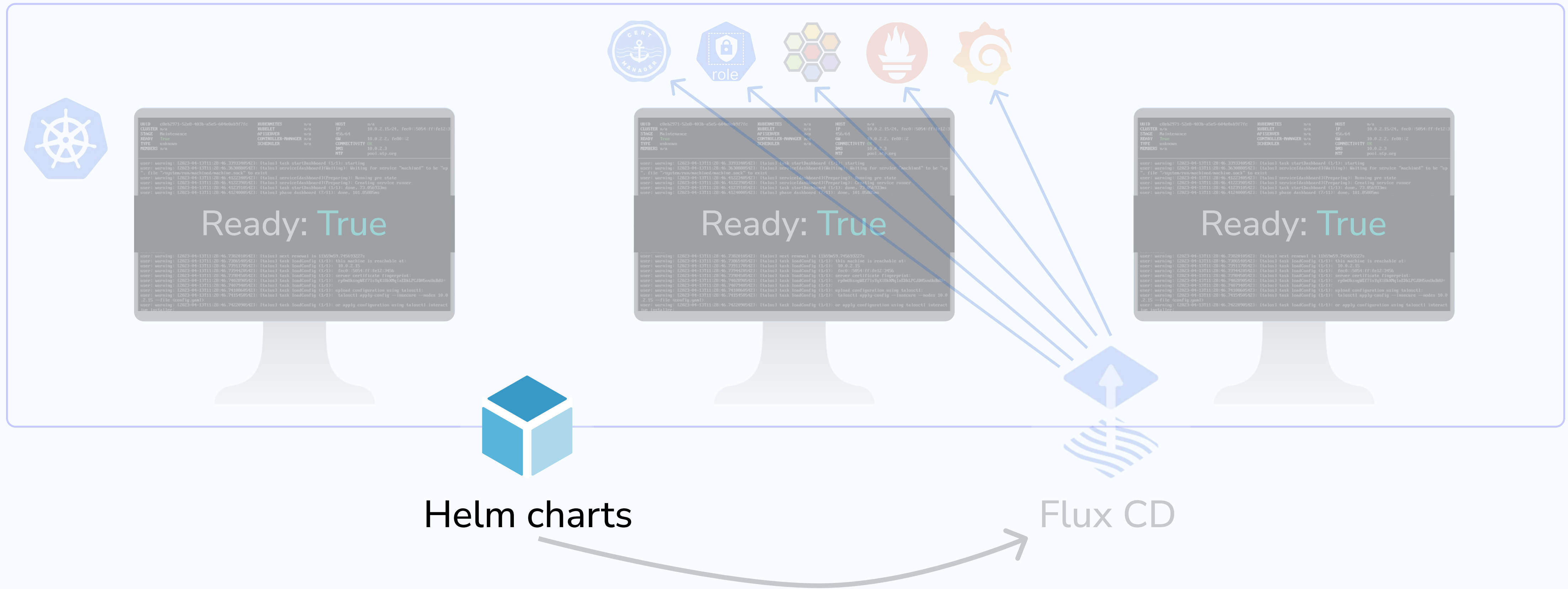


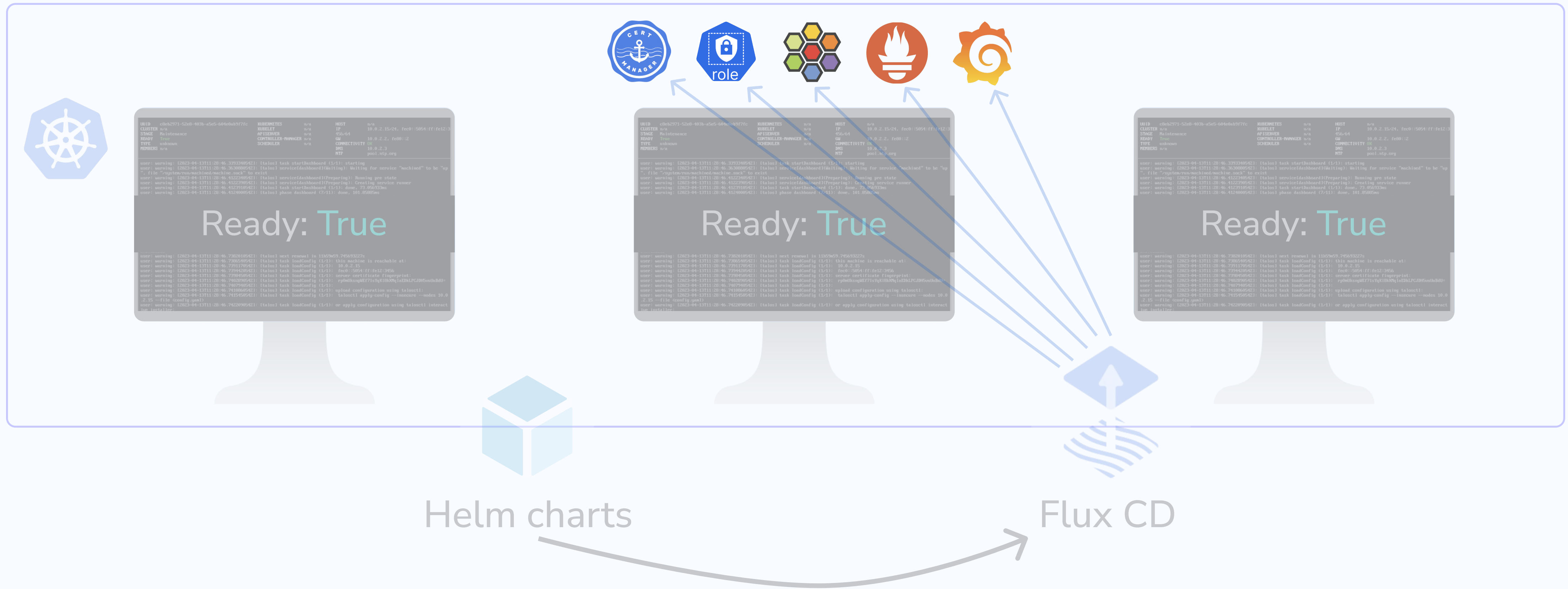


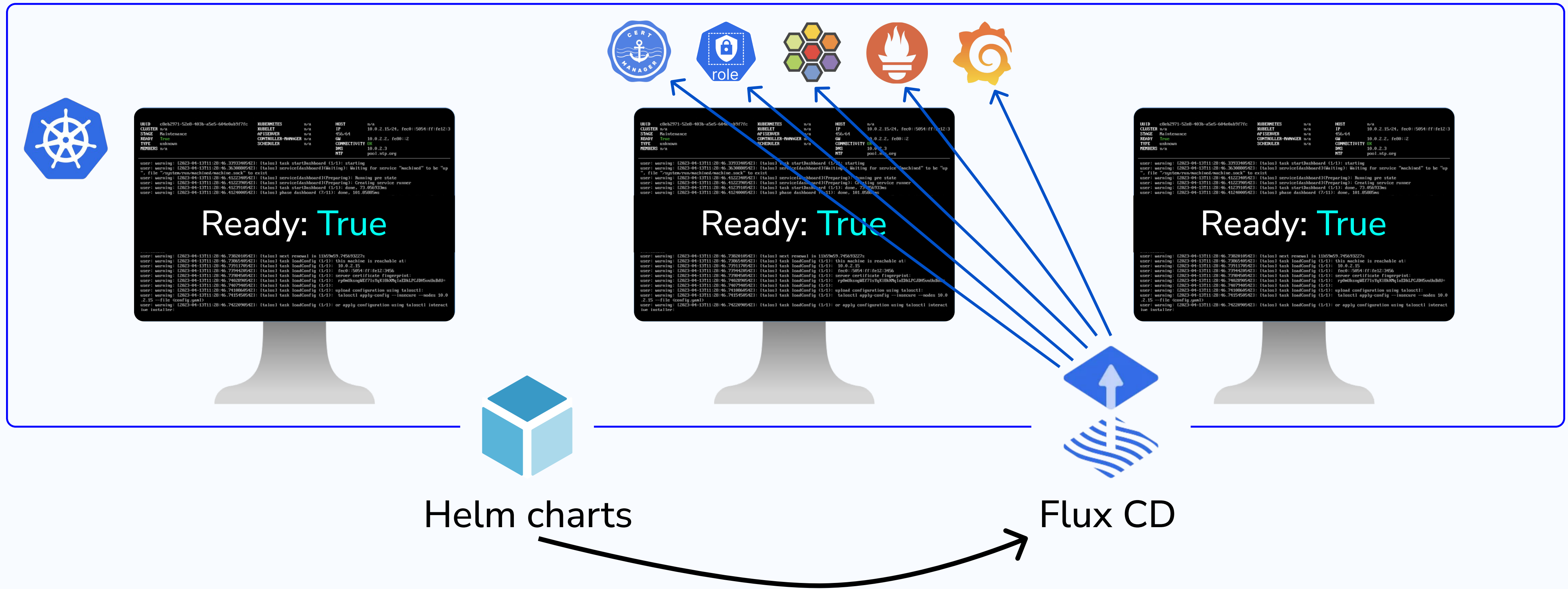












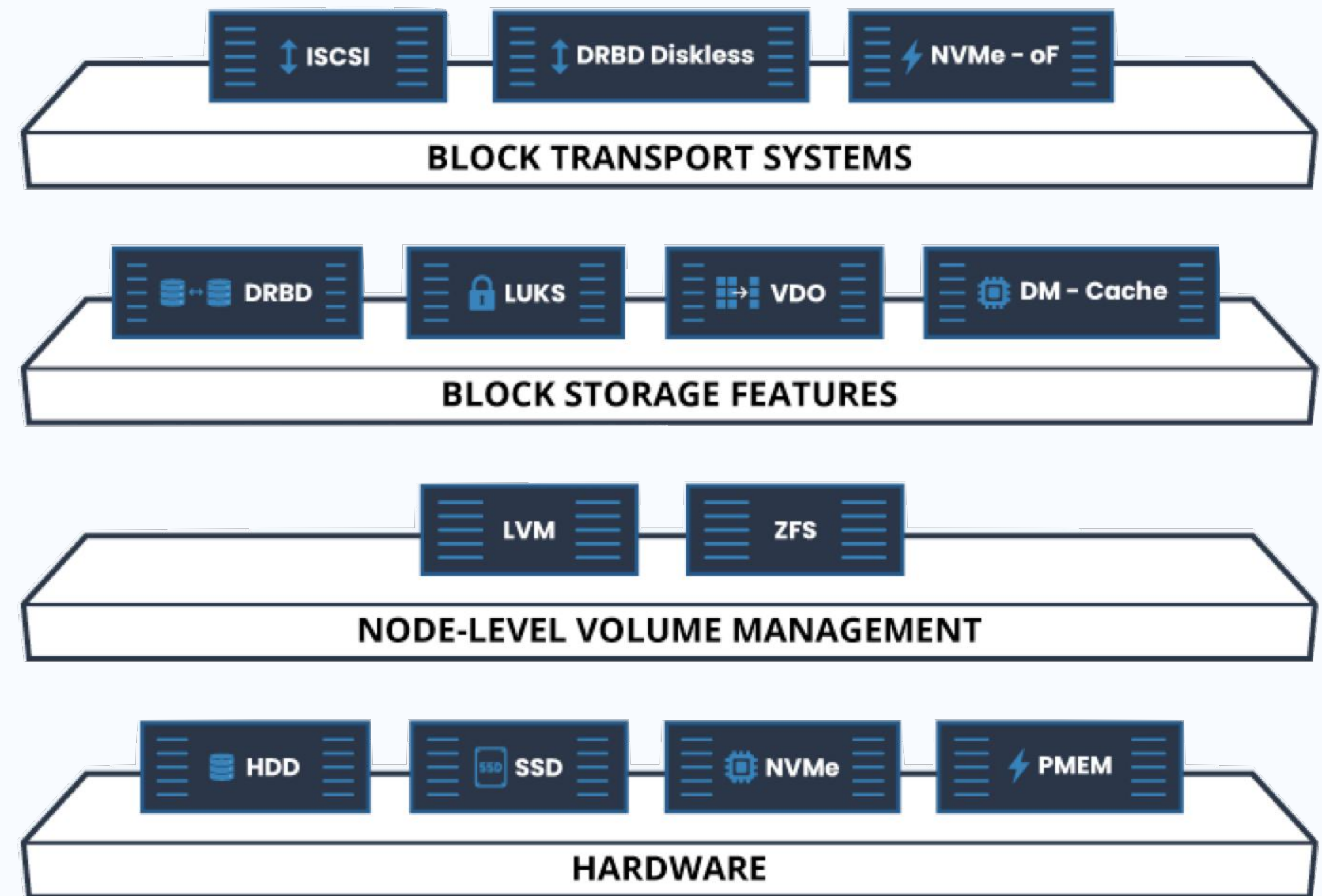
Быстрое и надежное хранилище

- Репликация в самом ядре linux
- Простой дизайн
- Проверенные временем технологии
- Готовые к использованию конфигурации

COZYSTACK

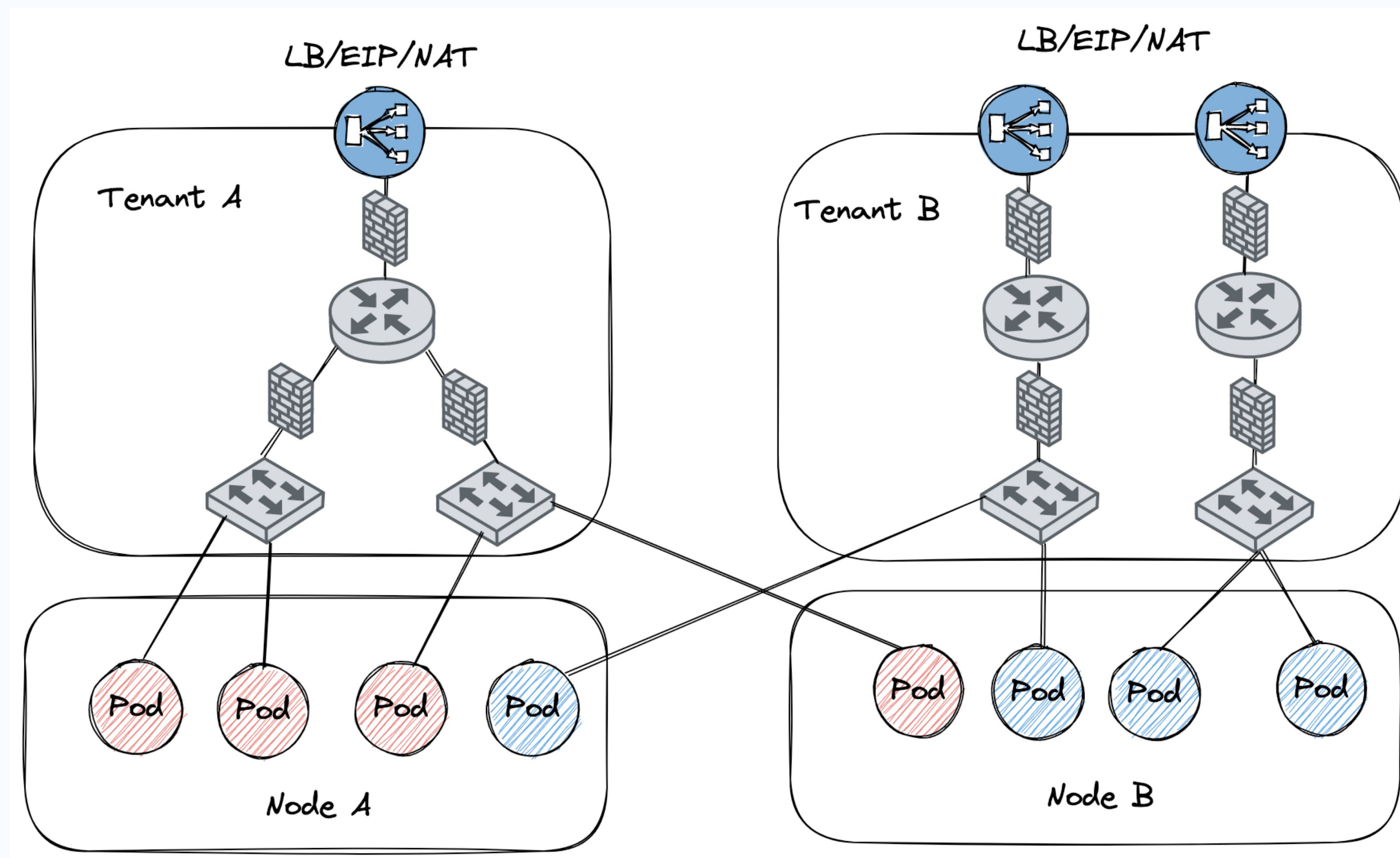
229

LIN^{STOR}

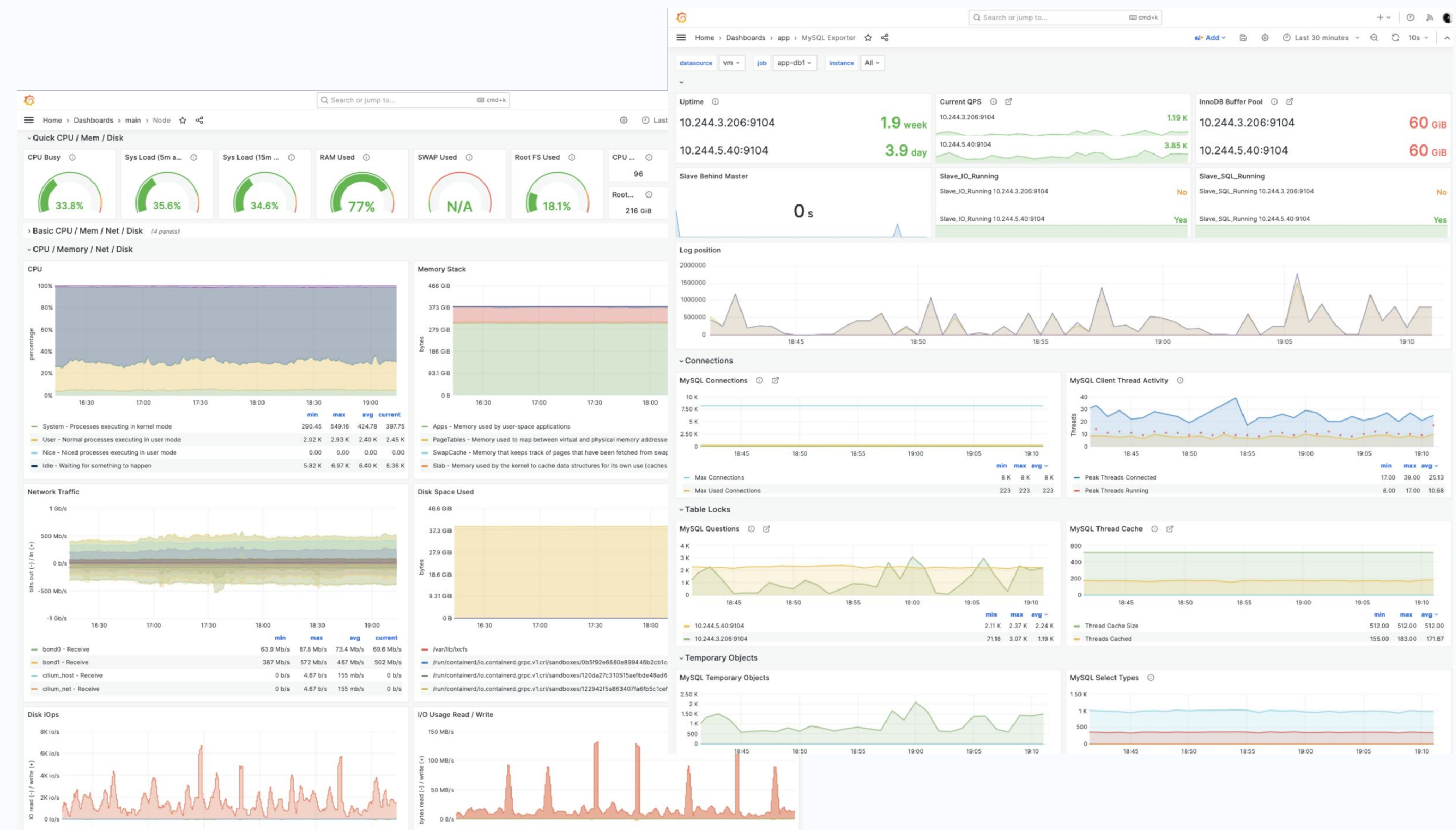


powered by LIN^{STOR}

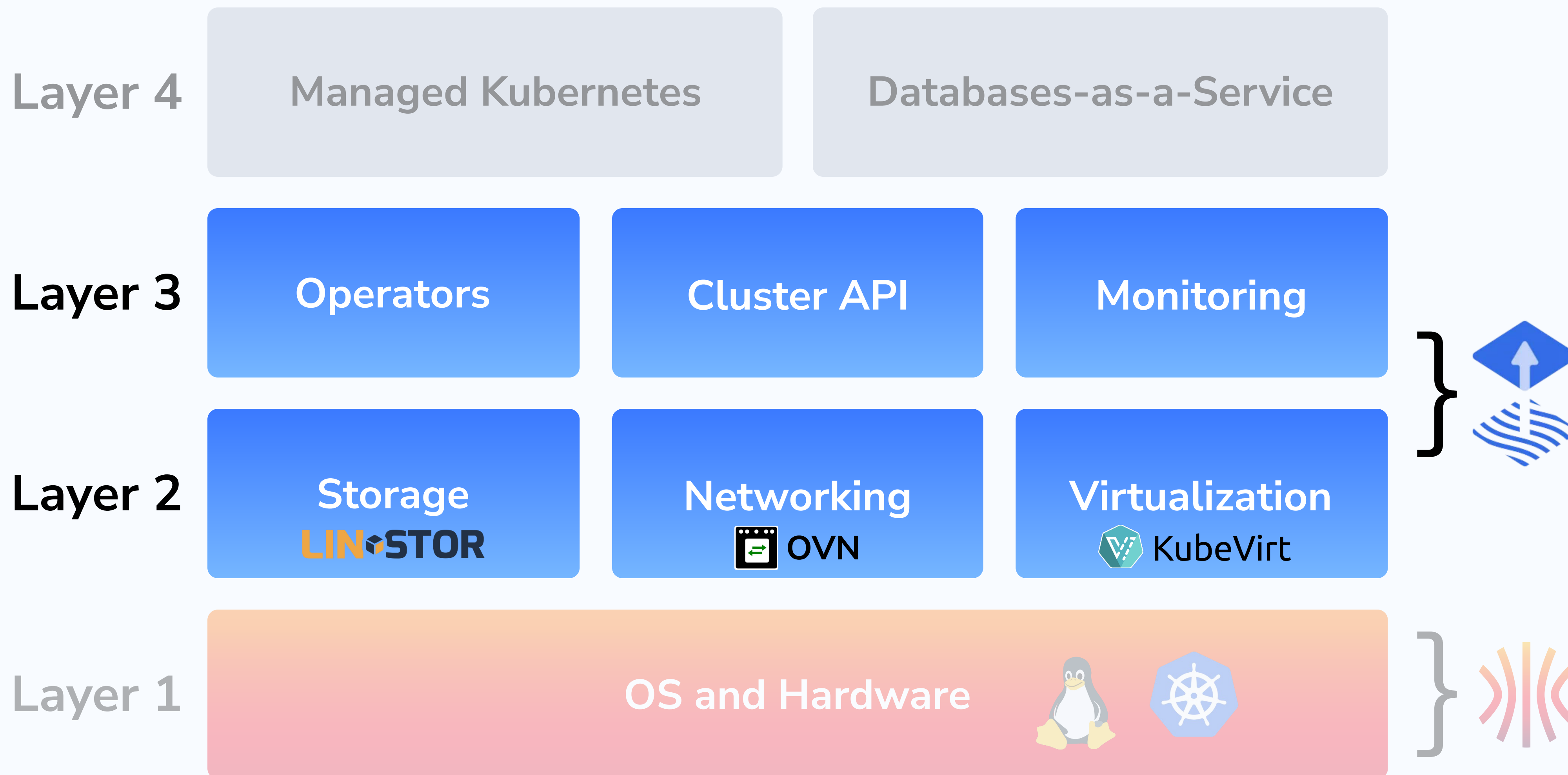
- Мульти-тенантность и VPCs (Virtual Personal Networks)
- Простая и бесшовная интеграция с существующей сетью
- Ускорение сети за счет eBPF и SR-IOV



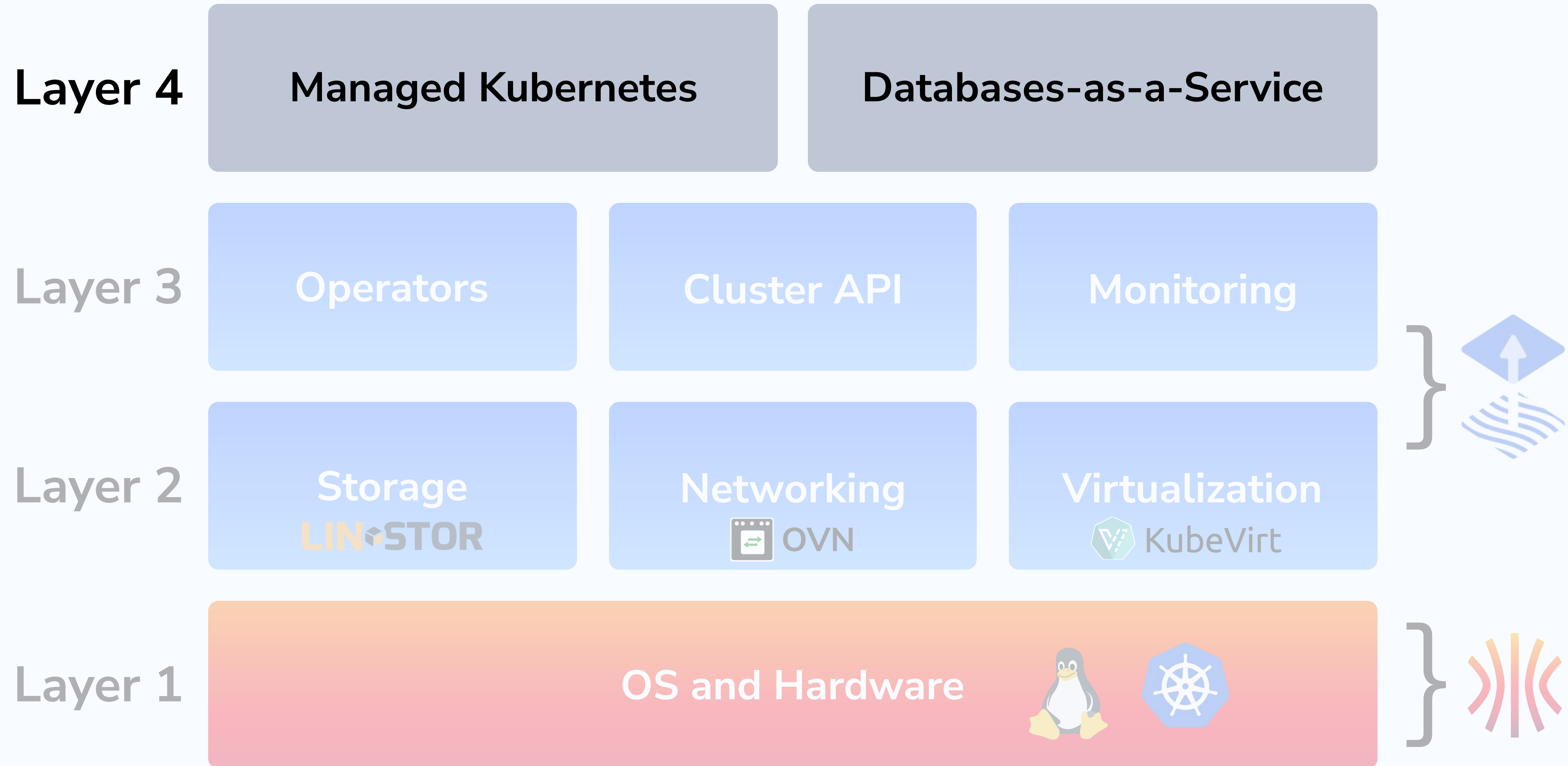
- Преднастроенные дашборды Grafana
- Все сервисы автоматически подключаются
- Встроенная система реакции на инциденты (IRM)



COZYETACK



COZYETACK

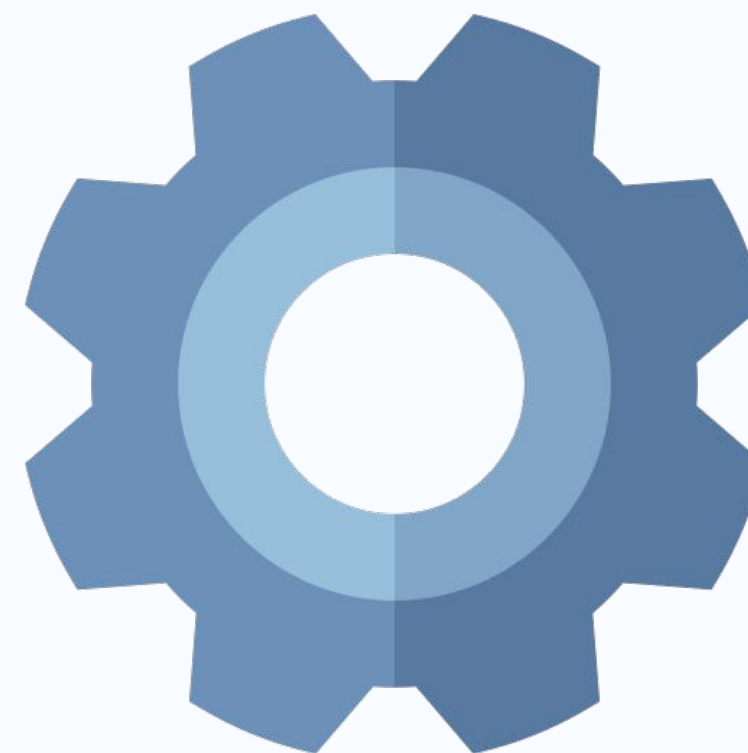




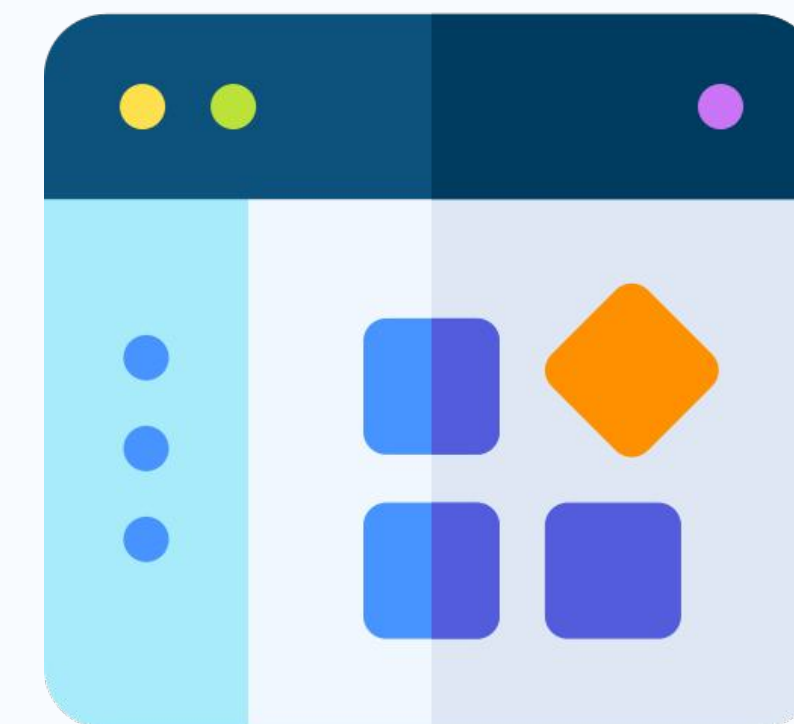
K8s на железе



Железо и ОС



Системные
компоненты



Пользовательские
приложения

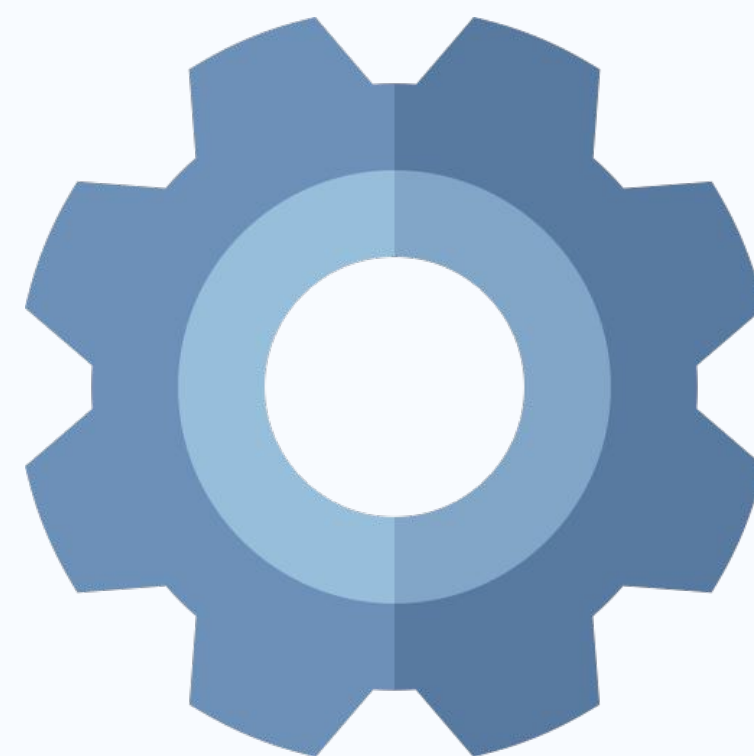
 ПЛАТФОРМА



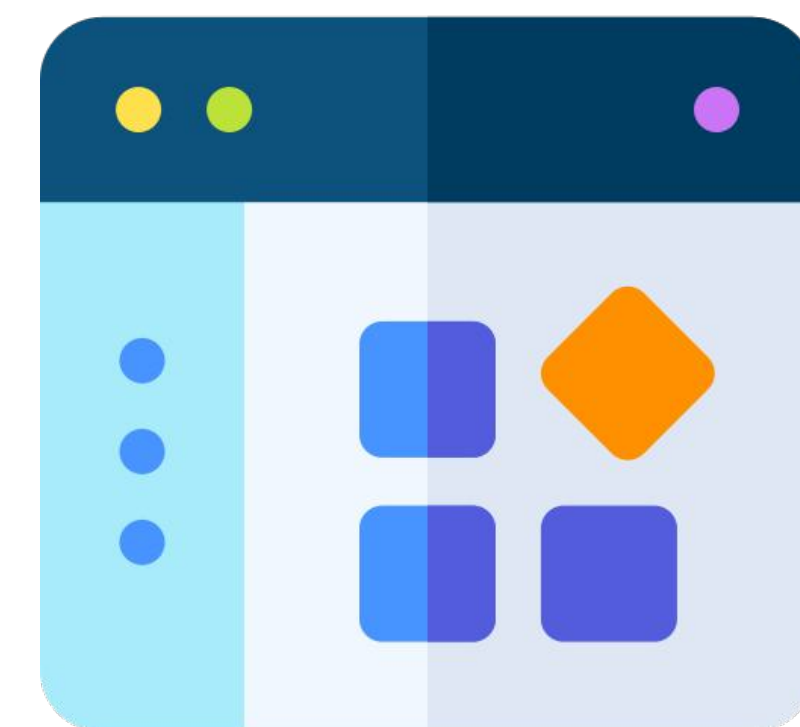
К8s на железе



Железо и ОС



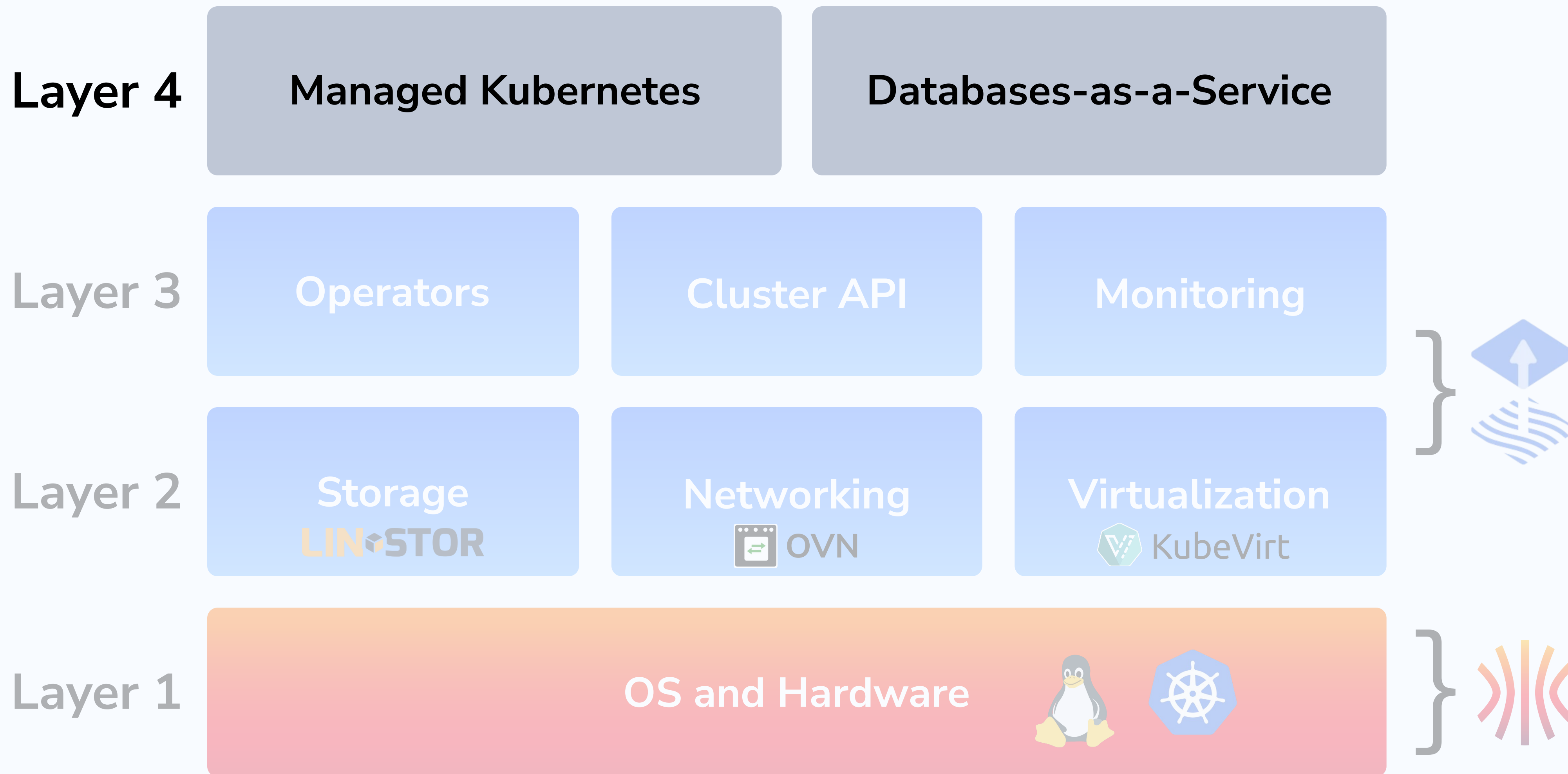
Системные
компоненты



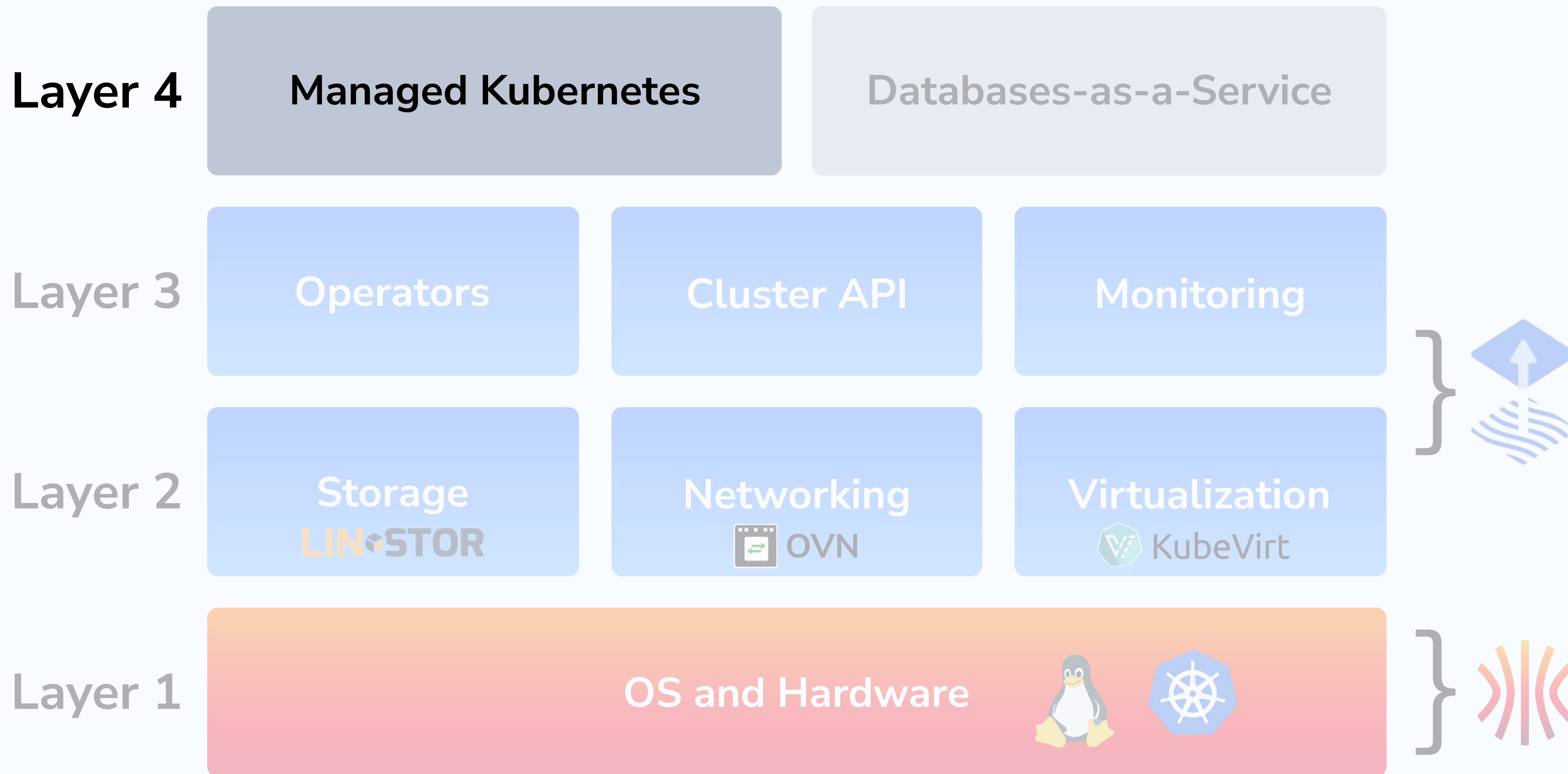
Пользовательские
приложения

 ПЛАТФОРМА

COZYETACK

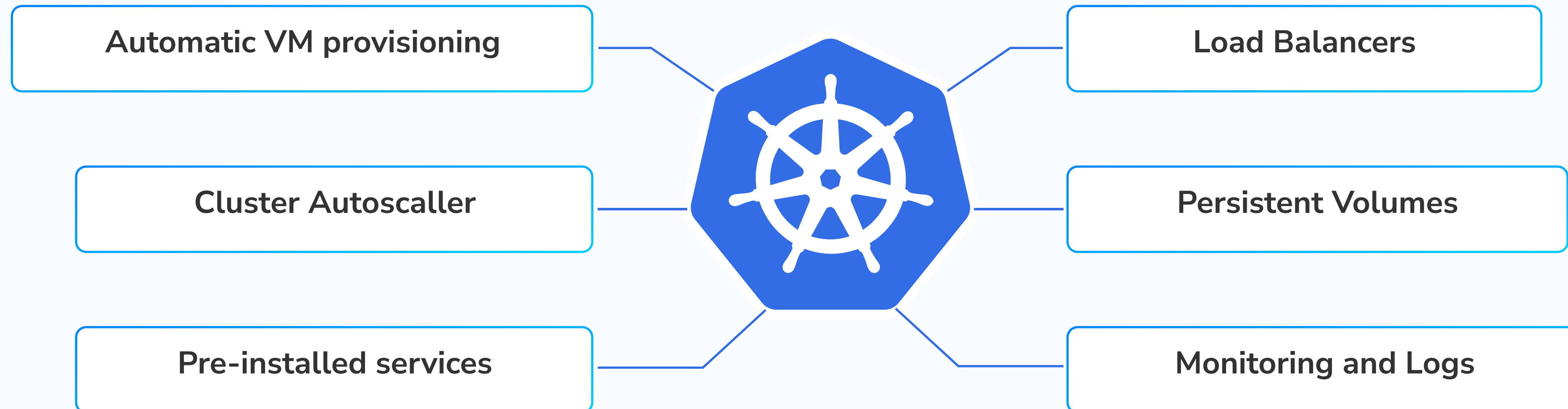


COZYETACK



Построить по-настоящему управляемый Kubernetes непросто.

Мы предлагаем простое и абсолютно полноценное решение на базе Kubernetes, которое работает везде - и в облаках, и на своем железе

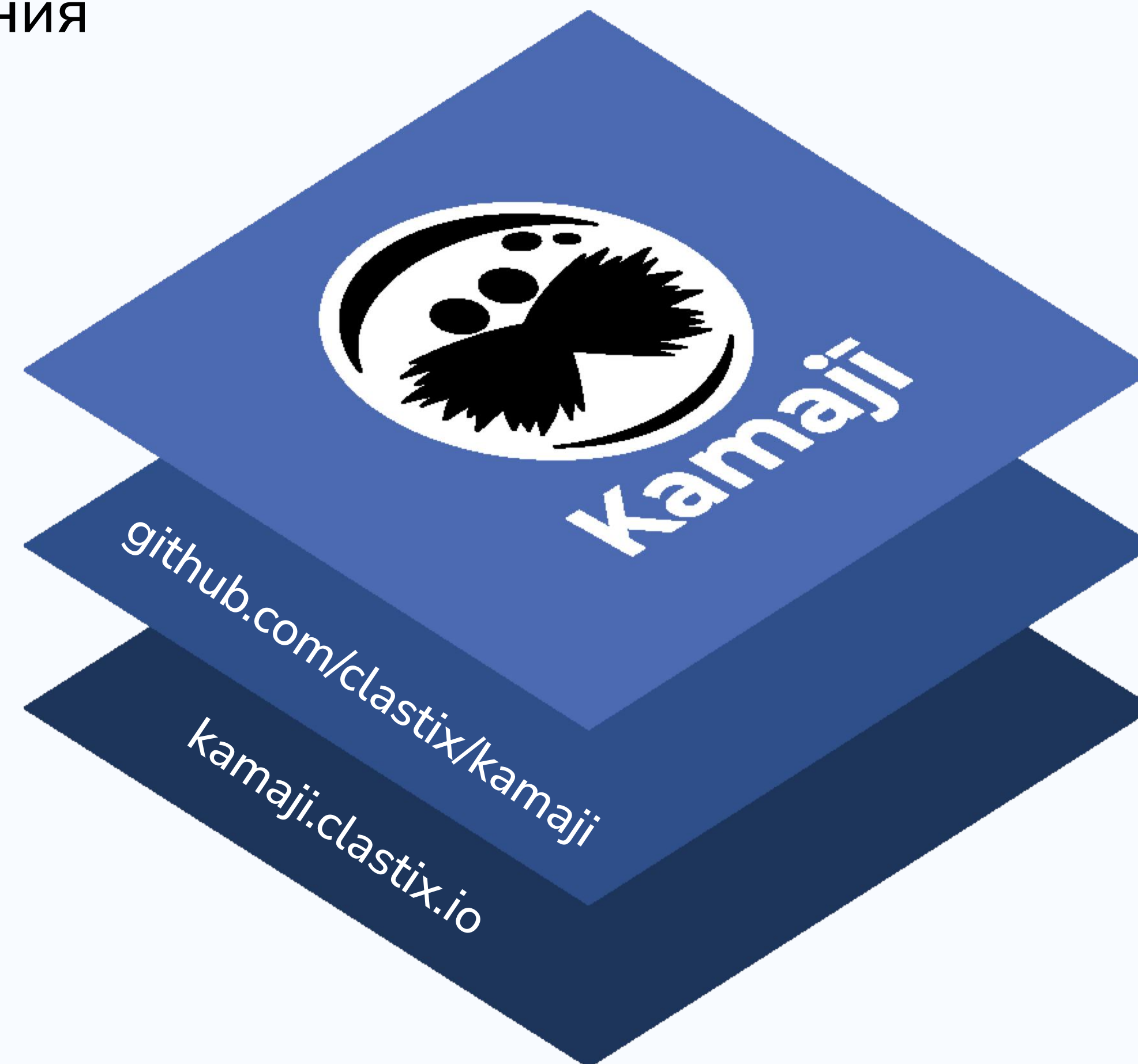


Знакомьтесь, Kamaji

Kubernetes оператор, предоставляющий Custom Resource Definitions для декларативного управления Tenant Control Plane.

- Реализует day 2 operations
- Полностью декларативный (GitOps)
- Надежный и безопасный
- Дешевый

...и не забудьте поставить звездочку на GitHub! 🌟





imgflip.com

• Kubernetes as a Service

- Можно подключать свои узлы
- Разные провайдеры

• Обработка событий

- Высокая доступность
- Обновление
- Миграция на более емкое хранилище
- Реконсильация

• Быстрый запуск

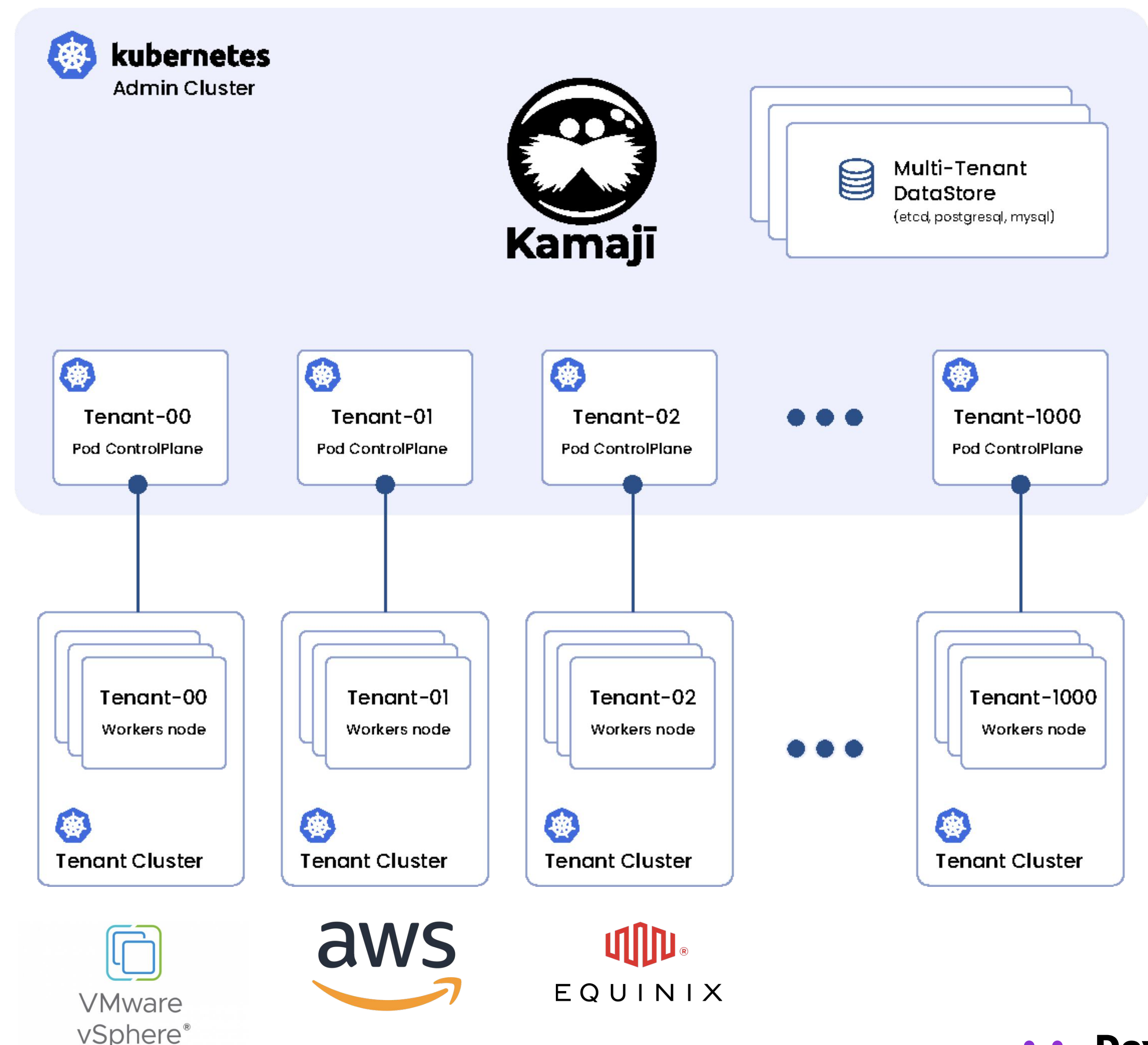
- запуск подов vs. виртуальные машины

• Безопасный

- KataContainers
- Выделенное хранилище

• Дешевый

- потребление ресурсов (поды vs VM)



Cluster API

Clastix реализует интеграции через Cluster API с основными инфраструктурными провайдерами, чтобы предоставить пользователям полную свободу выбора (Bring Your Own Infrastructure - BYOI). И в будущем интеграций будет еще больше!



E Q U I N I X



Архитектура

Будучи оператором Kubernetes предоставляет Custom Resource Definition для декларативного описания control plane.

CRDs

■ TenantControlPlane (tcp)

Управляет control plane

■ DataStore

Для надежности и оптимизации стоимости



Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



Kubernetes app

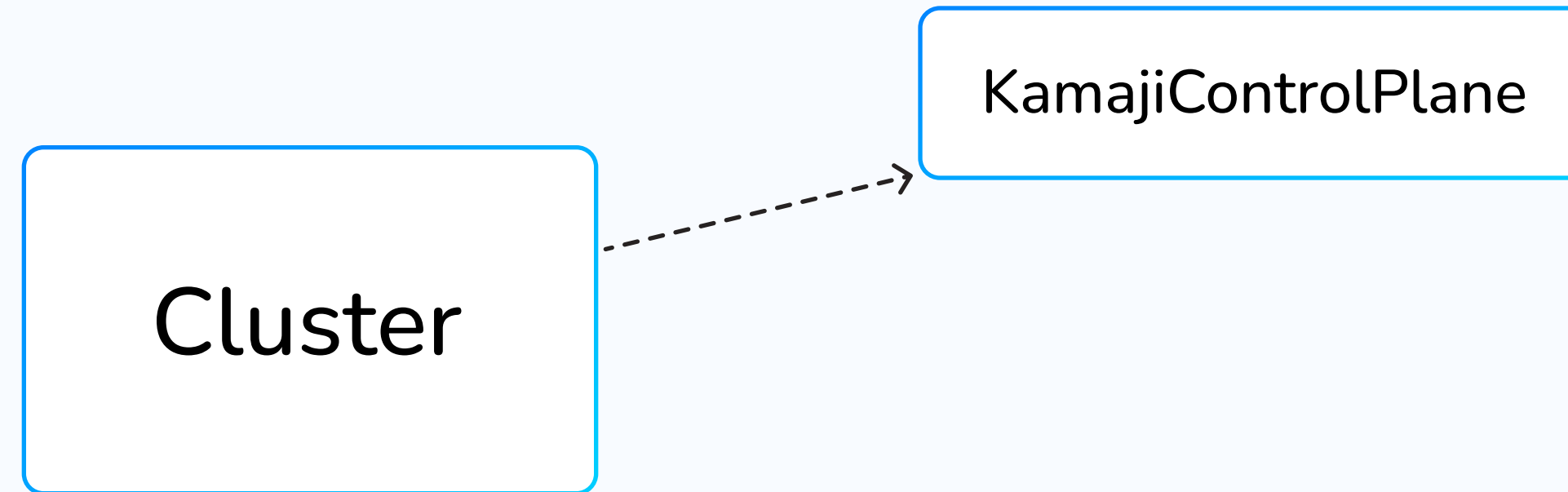
```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```

Cluster



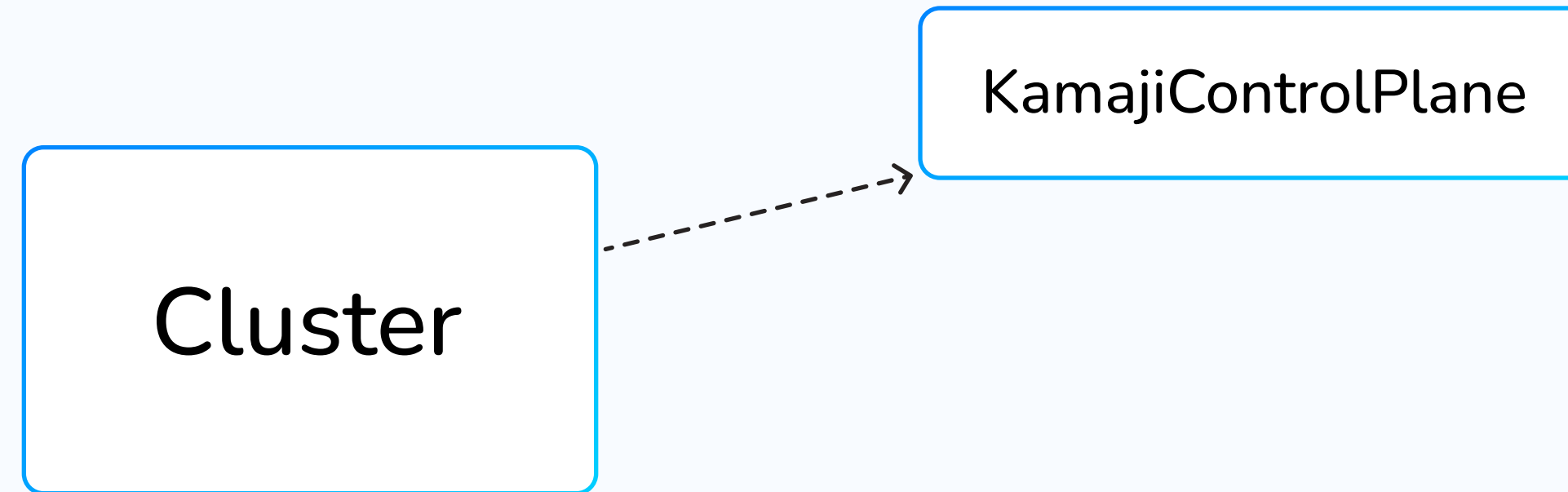
Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



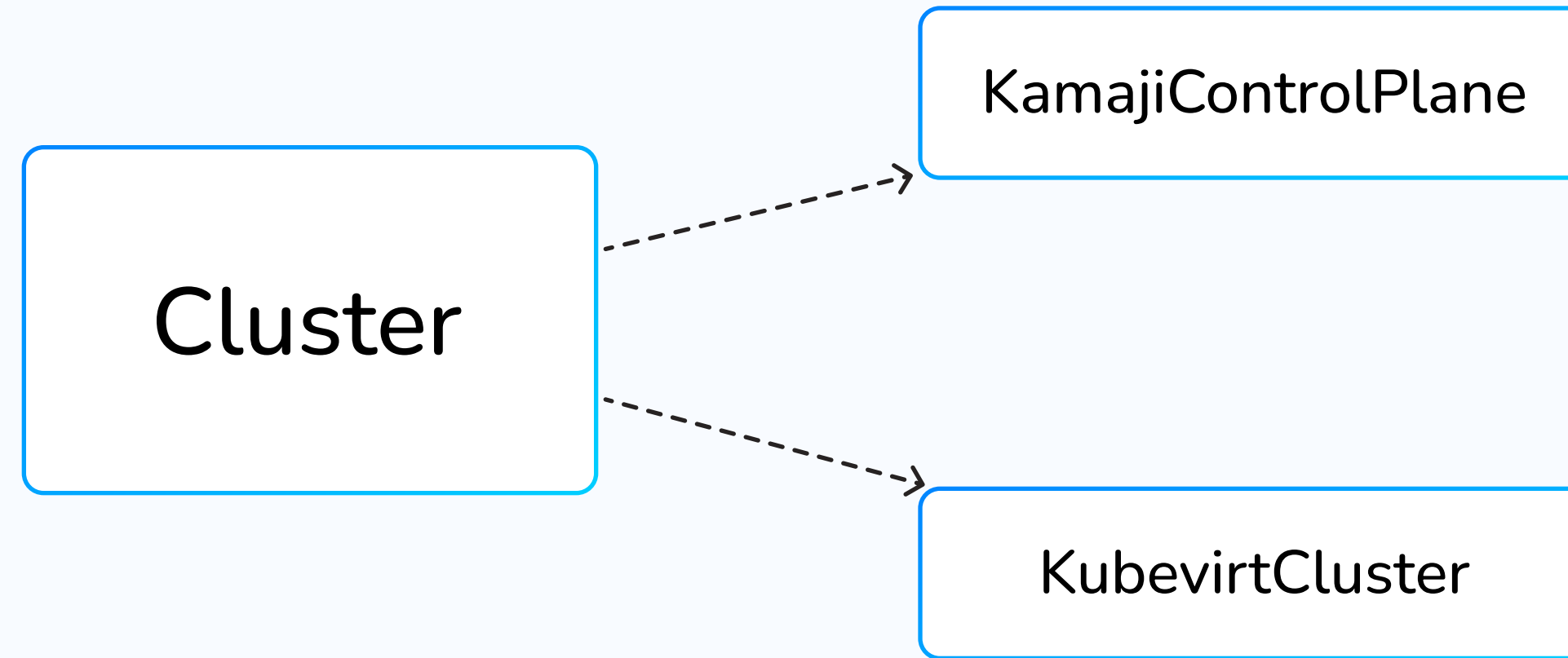
Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



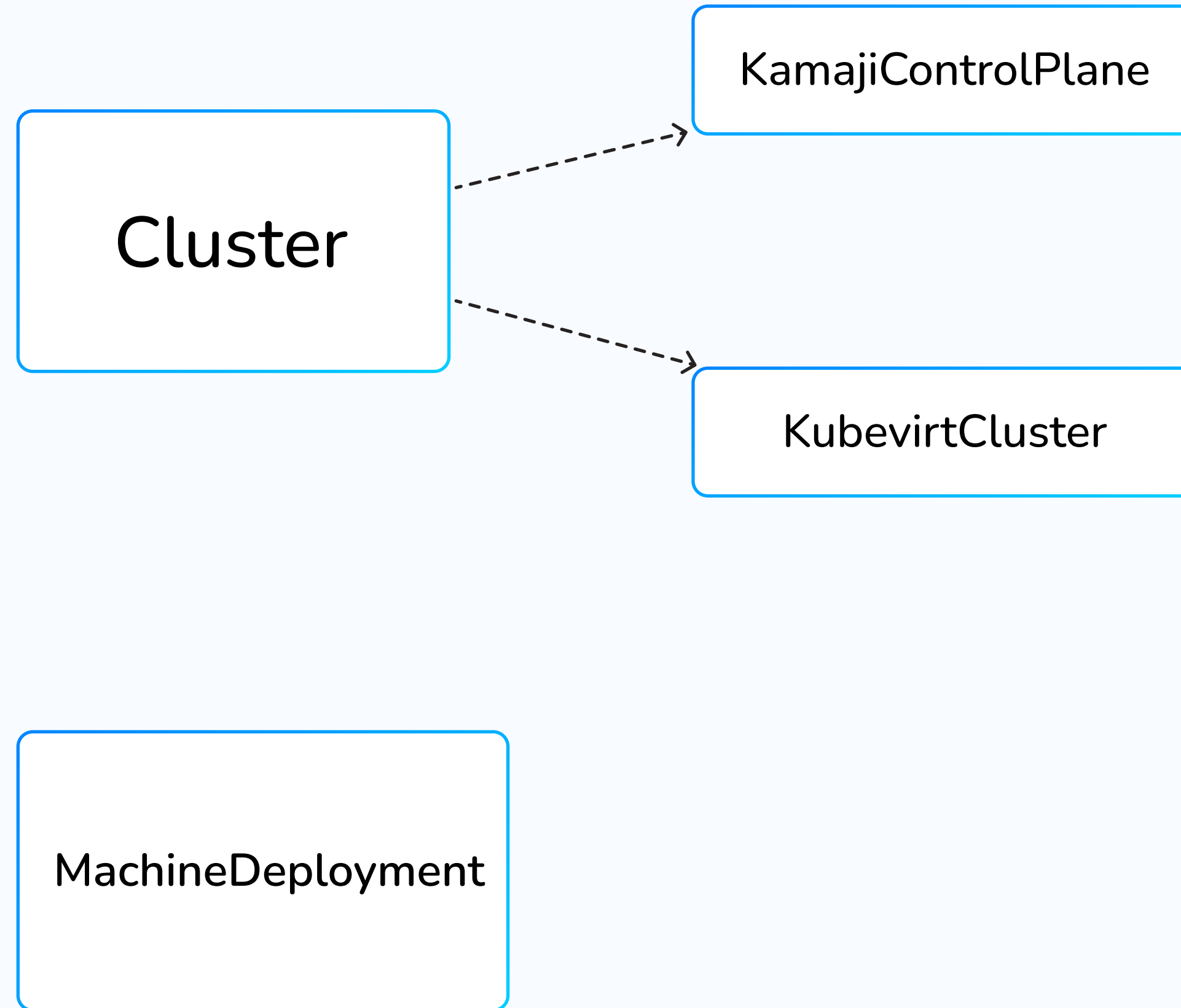
Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



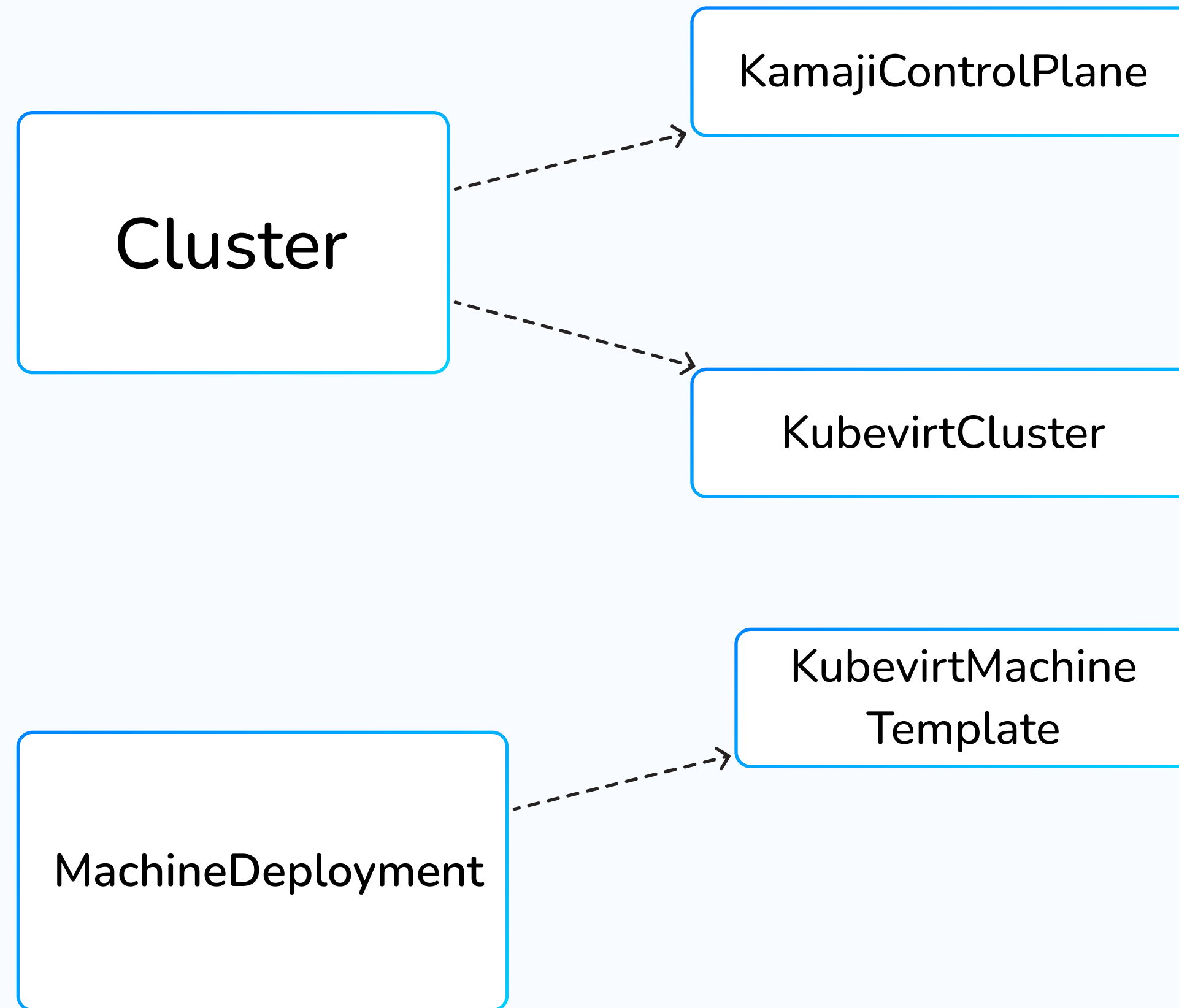
Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



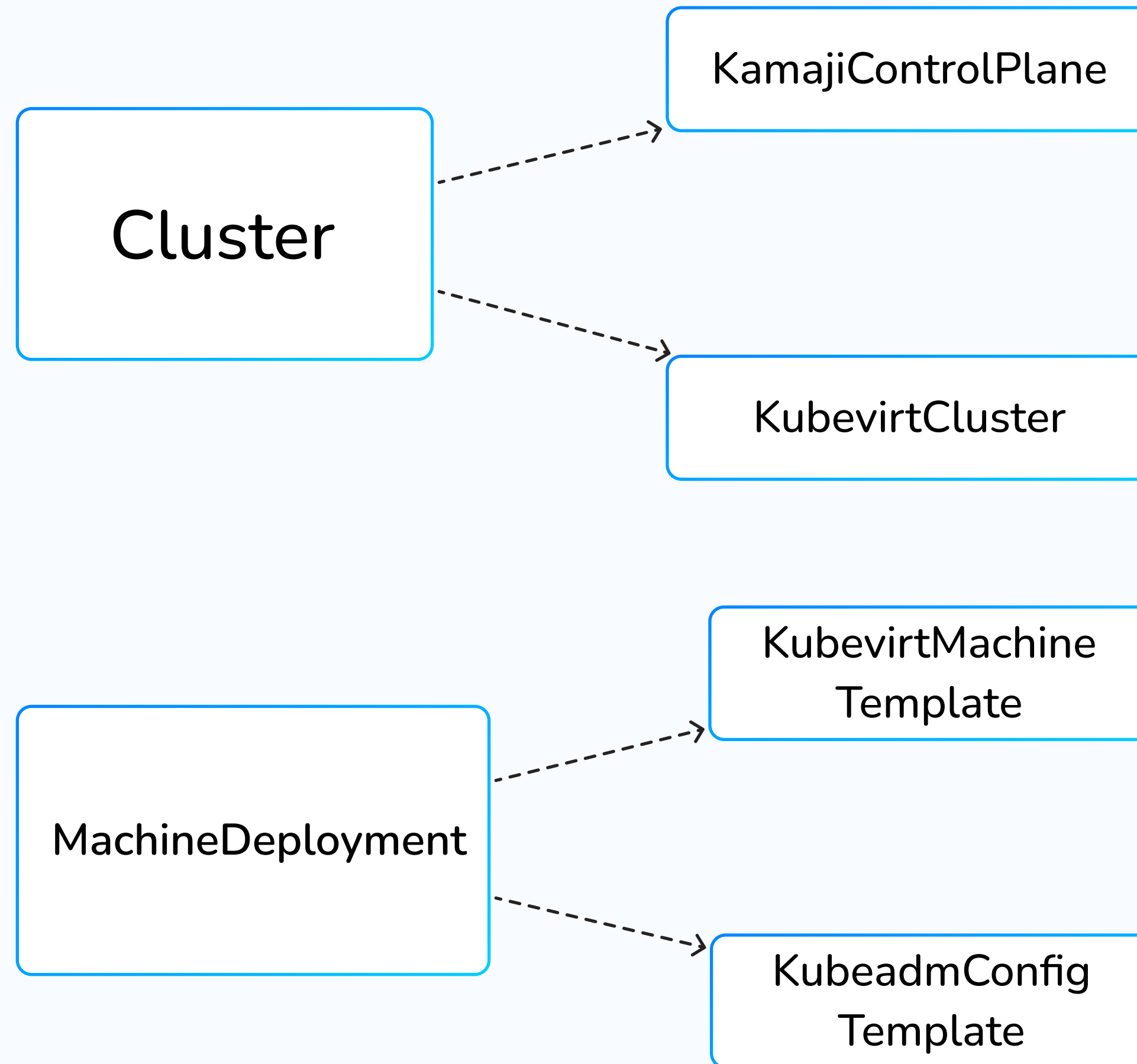
Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



Kubernetes app

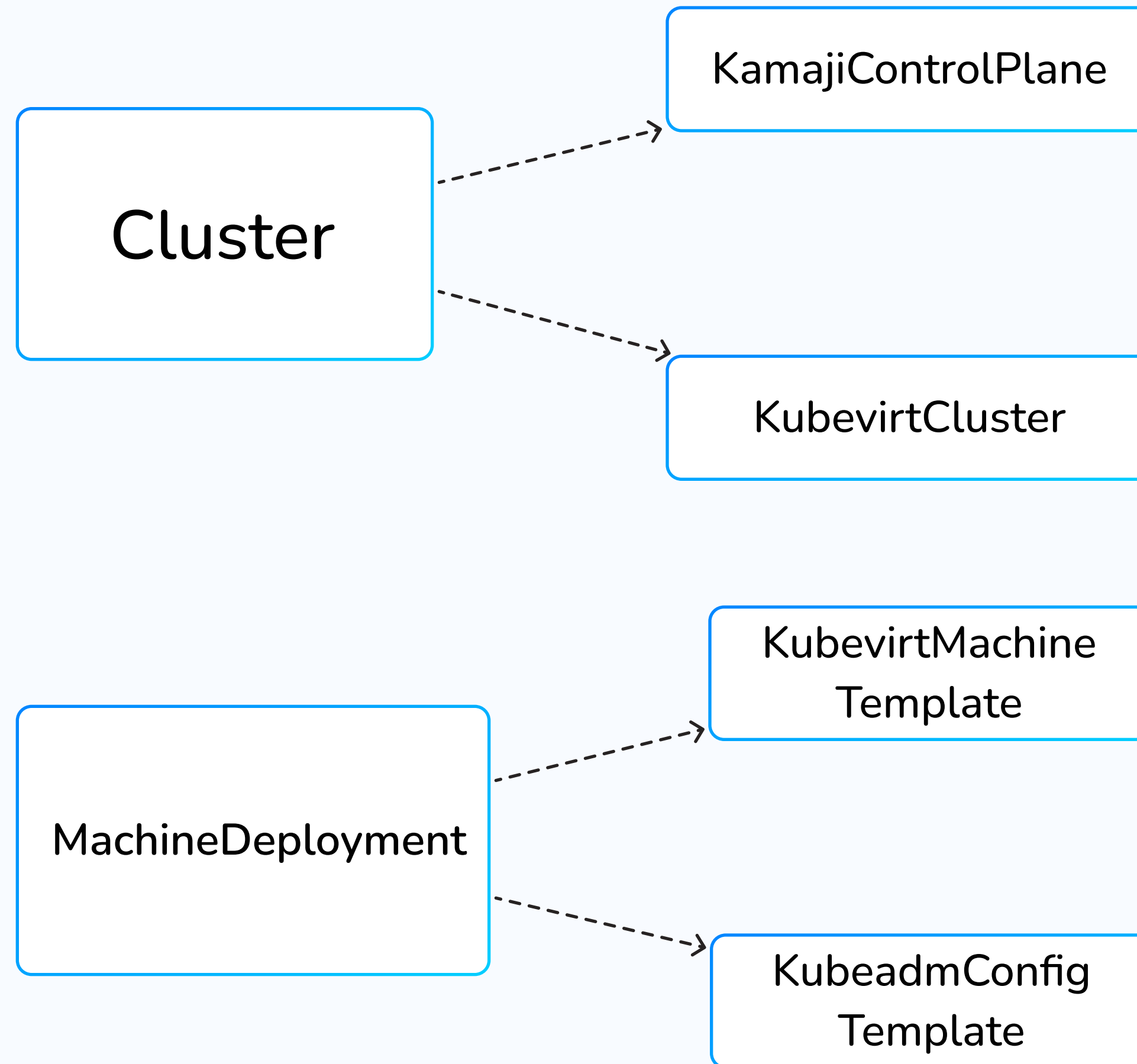
```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



Kubernetes app

```
host: ""
controlPlane:
  replicas: 2

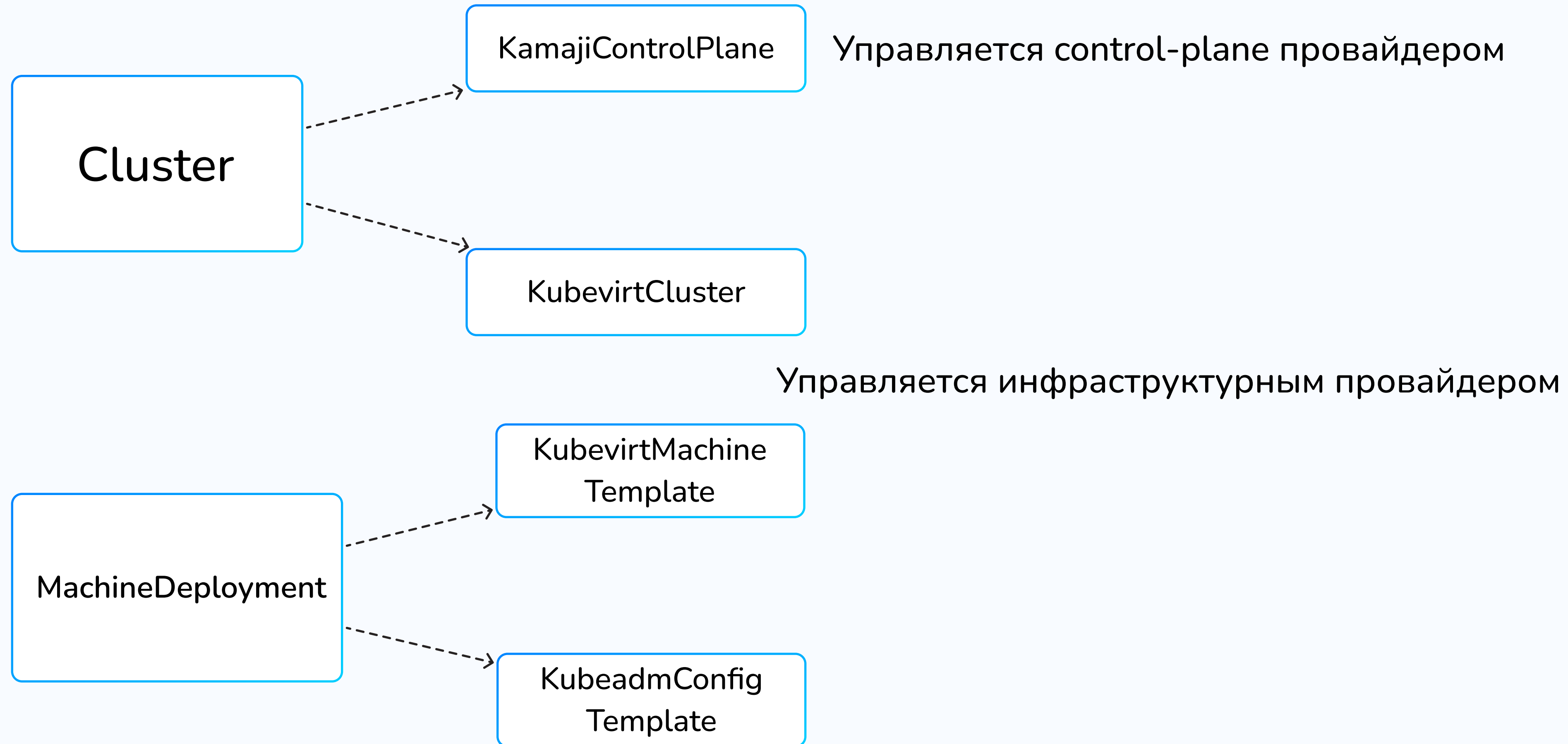
nodeGroups:
  md0:
    minReplicas: 0
    maxReplicas: 10
    resources:
      cpu: 2
      memory: 1024Mi
```



Управляется control-plane провайдером

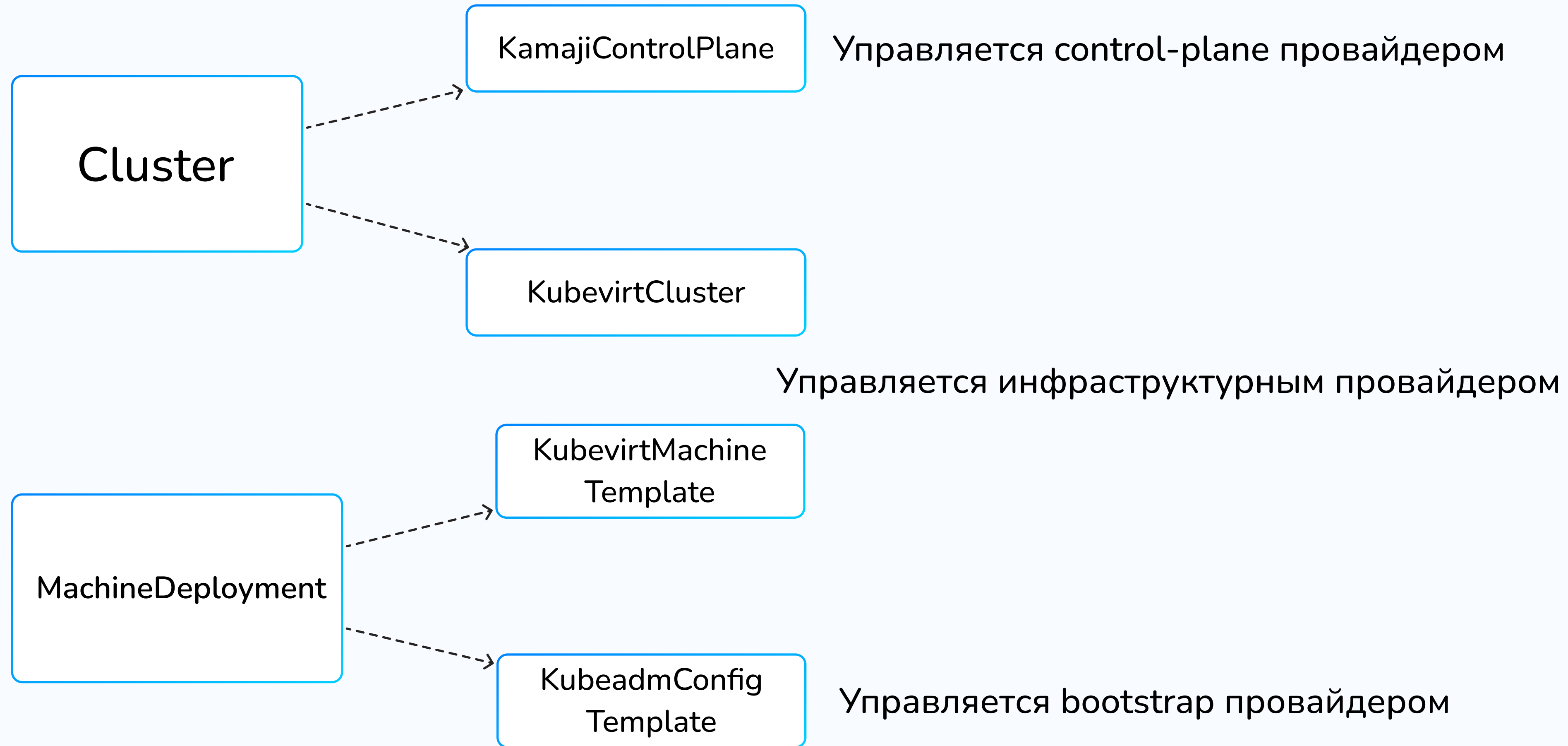
Kubernetes app

```
host: ""  
controlPlane:  
replicas: 2  
  
nodeGroups:  
md0:  
  minReplicas: 0  
  maxReplicas: 10  
  resources:  
    cpu: 2  
    memory: 1024Mi
```



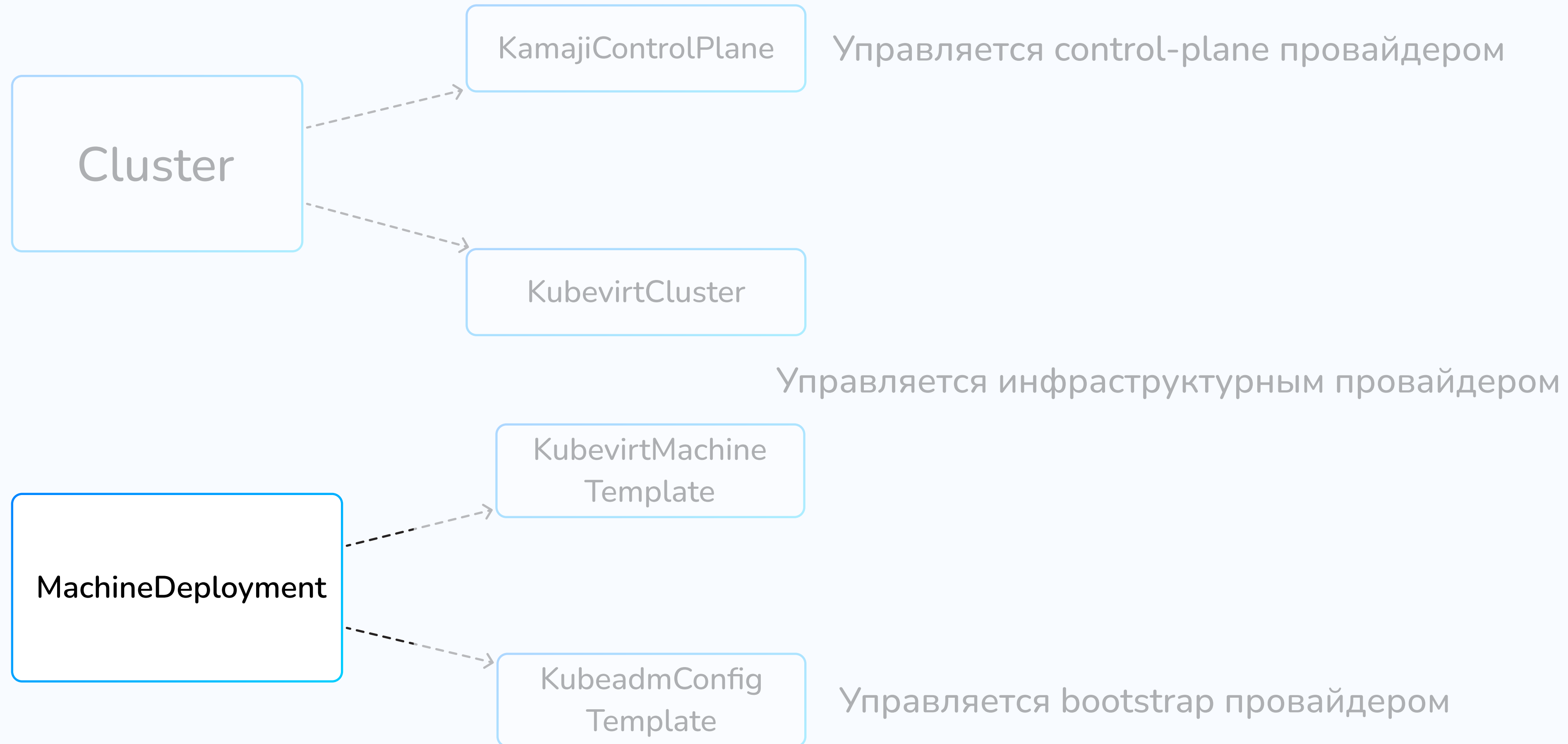
Kubernetes app

```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



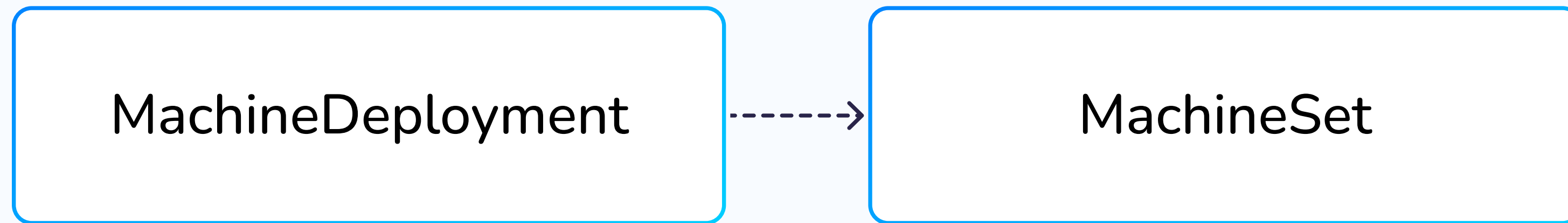
Kubernetes app

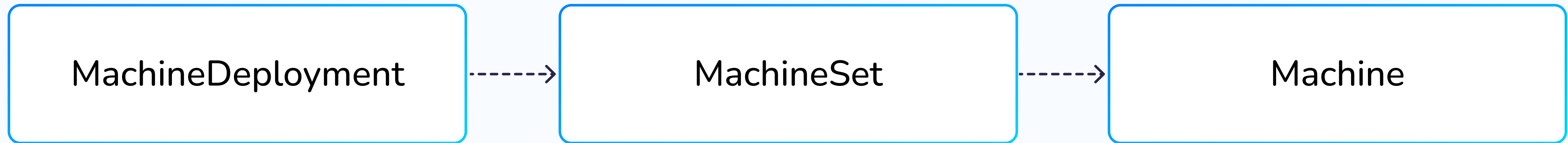
```
host: ""  
controlPlane:  
  replicas: 2  
  
nodeGroups:  
  md0:  
    minReplicas: 0  
    maxReplicas: 10  
    resources:  
      cpu: 2  
      memory: 1024Mi
```



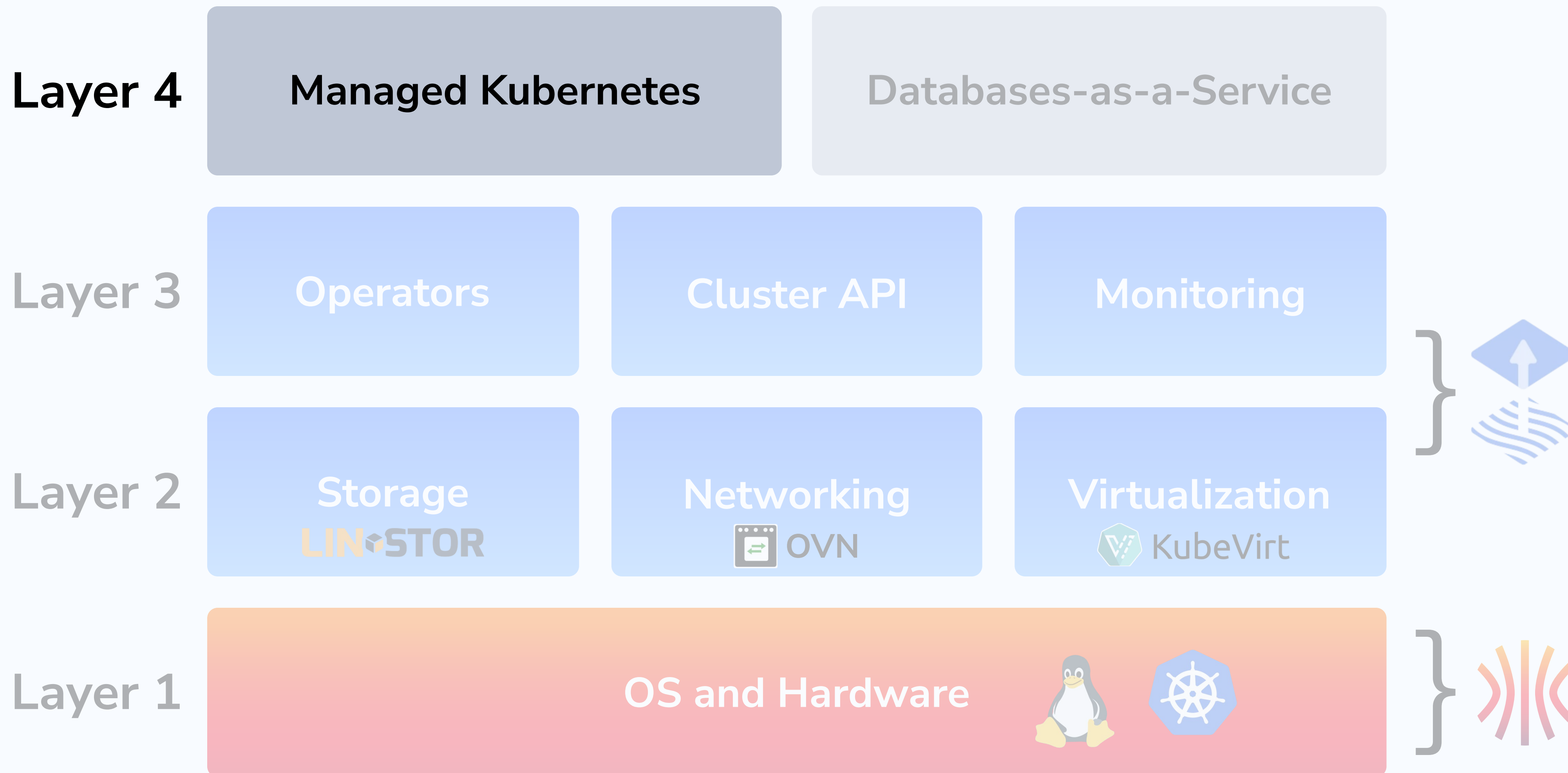
Kubernetes app

MachineDeployment

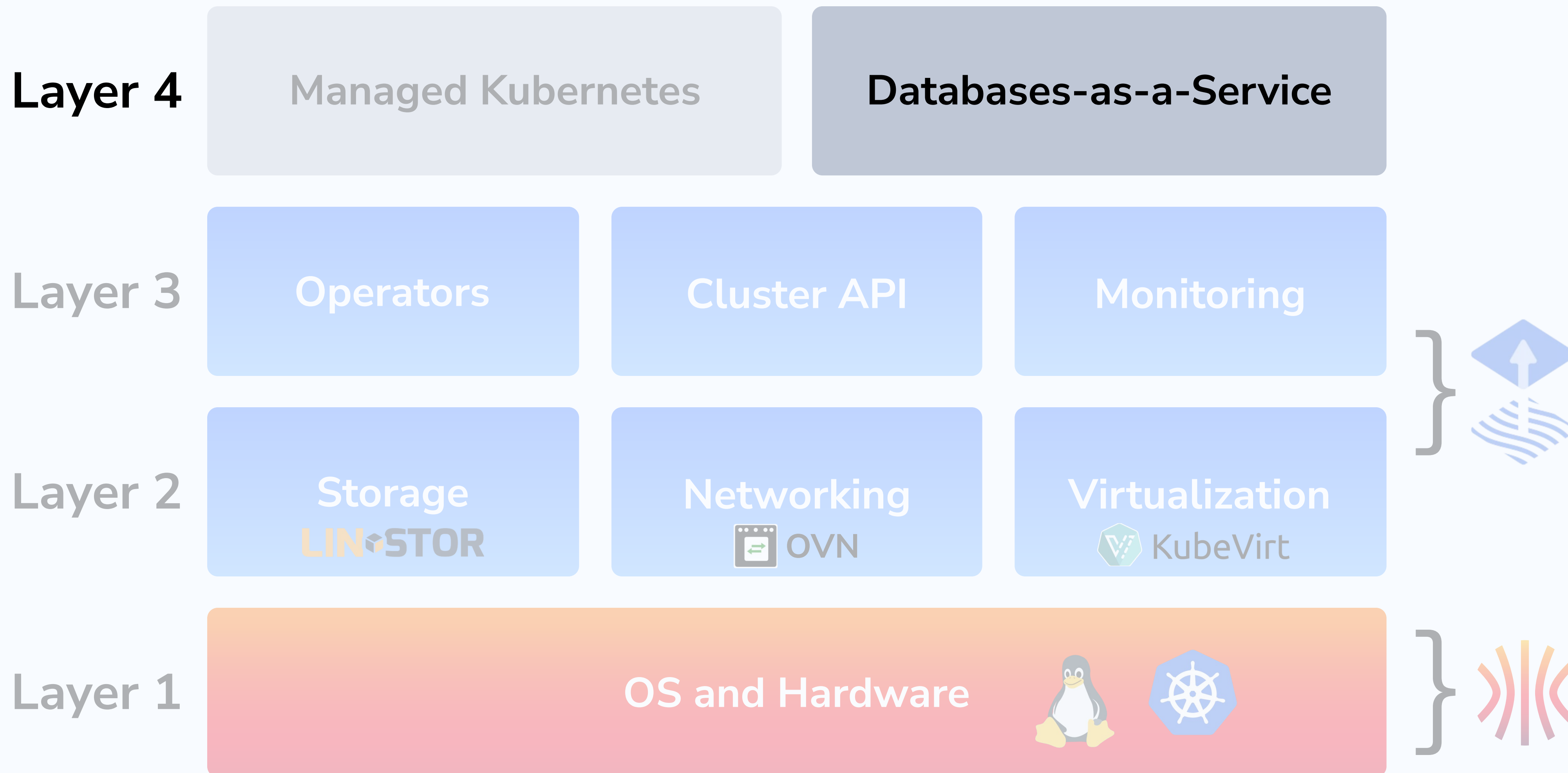




COZYETACK



COZYETACK



COZYTASK

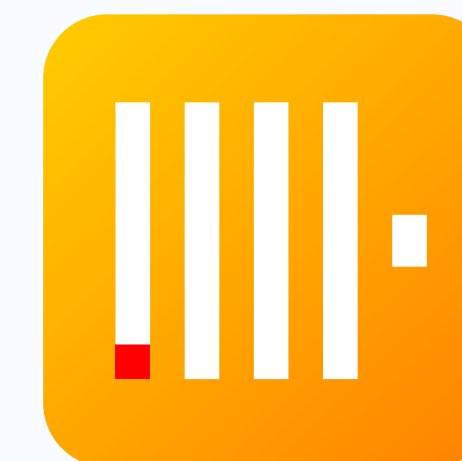
Управляемые базы данных

Управляются и настраиваются операторами.

Высокодоступны с самого старта.

Возможности:

- Создание баз данных
- Управление пользователями и доступами
- Настройка автоматического резервного копирования
- Мониторинг (дашборды Grafana в комплекте)
- Оповещения о важных событиях и сбоях



cloudnative-pg/ cloudnative-pg

CloudNativePG is a comprehensive platform designed to seamlessly manage PostgreSQL databases within Kubernetes environments, covering the entire operational lifecycle from...



strimzi/strimzi-kafka-operator



spotahome/redis-operator

Redis Operator creates/configures/manages high availability redis with sentinel automatic failover atop Kubernetes.



Altinity/clickhouse-operator

Altinity Kubernetes Operator for ClickHouse creates, configures and manages ClickHouse clusters running on Kubernetes



mariadb-operator/ mariadb-operator

 Run and operate MariaDB in a cloud native way



rabbitmq/cluster-operator

RabbitMQ Cluster Kubernetes Operator




Catalog

263

- FILTERS**
- Package Type**
- Helm Charts via Flux


bucket



S3 compatible storage

0.1.0 cozystack-apps Flux


clickhouse



Managed ClickHouse service

0.3.0 cozystack-apps Flux


ferretdb



Managed FerretDB service

0.2.0 cozystack-apps Flux


http-cache



Layer7 load balancer and caching service

0.3.0 cozystack-apps Flux


kafka



Managed Kafka service

0.3.0 cozystack-apps Flux


kubernetes



Managed Kubernetes service

0.9.0 cozystack-apps Flux


mysql



Managed MariaDB service

0.4.0 cozystack-apps Flux


nats



Managed NATS service

0.2.0 cozystack-apps Flux


postgres



Managed PostgreSQL service

0.5.0 cozystack-apps Flux


rabbitmq



Managed RabbitMQ service

0.3.0 cozystack-apps Flux


redis



Managed Redis service

0.3.0 cozystack-apps Flux


tcp-balancer



Layer4 load balancer service


0.2.0 cozystack-apps Flux

tenant




Separated tenant namespace

virtual-machine



Virtual machine instance

vpn



Managed VPN service

COZYETACK Applications Catalog Current Context: 12 default 10 tenant-keep

Catalog

FILTERS
Package Type
 Helm Charts via Flux

bucket S3 compatible storage 0.1.0 cozyetack-ee3 Flux	clickhouse Managed Clickhouse service 0.3.0 cozyetack-ee3 Flux	ferretdb Managed FerretDB service 0.2.0 cozyetack-ee3 Flux	http-cache Layer7 load balancer and caching service 0.3.0 cozyetack-ee3 Flux
kafka Managed Kafka service 0.3.0 cozyetack-ee3 Flux	kubernetes Managed Kubernetes service 0.3.0 cozyetack-ee3 Flux	mysql Managed MariaDB service 0.4.0 cozyetack-ee3 Flux	nats Managed NATS service 0.2.0 cozyetack-ee3 Flux
postgres Managed PostgreSQL service 0.5.0 cozyetack-ee3 Flux	rabbitmq Managed RabbitMQ service 0.3.0 cozyetack-ee3 Flux	redis Managed Redis service 0.3.0 cozyetack-ee3 Flux	tcp-balancer Layer4 load balancer service 0.2.0 cozyetack-ee3 Flux
tenant Separated tenant namespace 1.4.0 cozyetack-ee3 Flux	virtual-machine Virtual machine instance 0.3.0 cozyetack-ee3 Flux	vpn Managed VPN service 0.3.0 cozyetack-ee3 Flux	

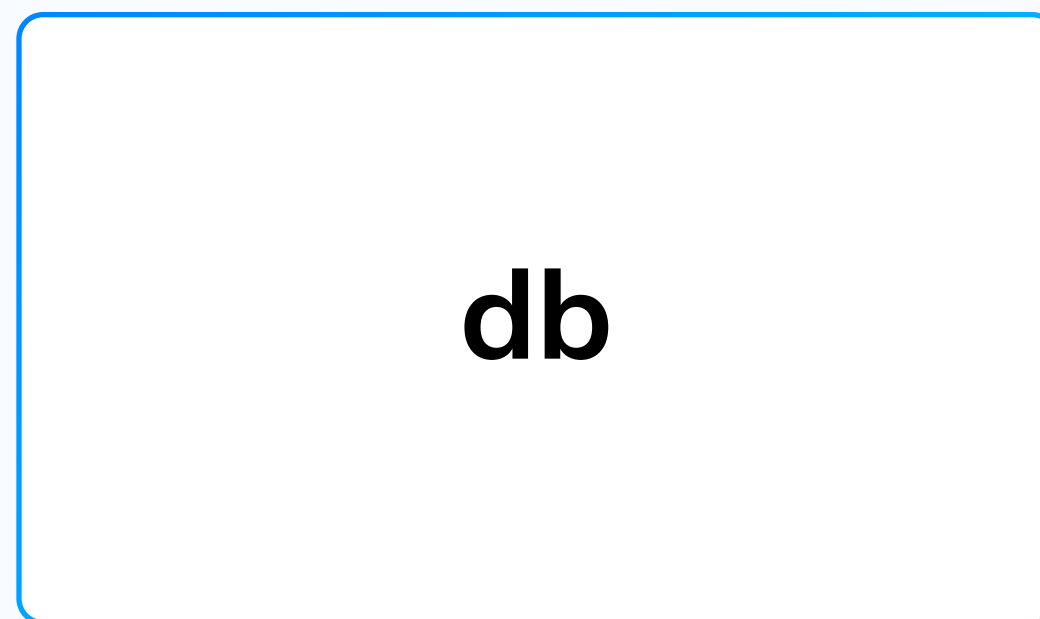
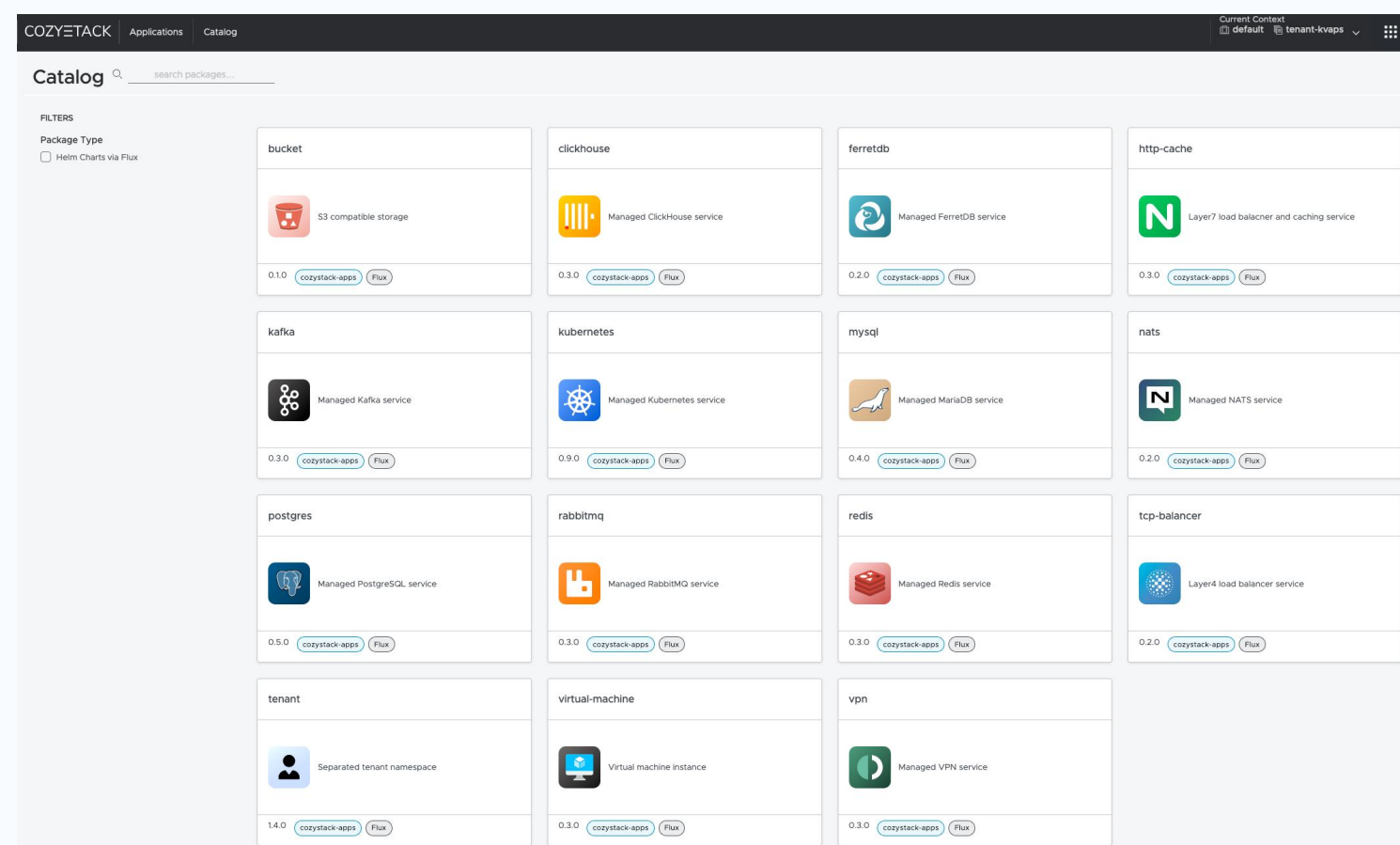
COZYETACK Applications Catalog Current Context: default tenant-keep

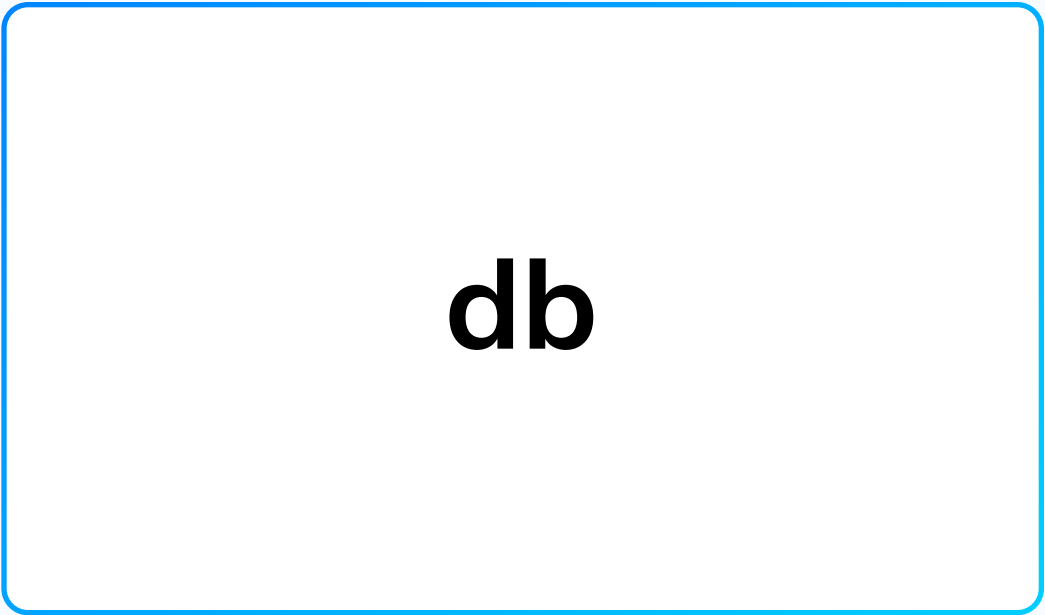
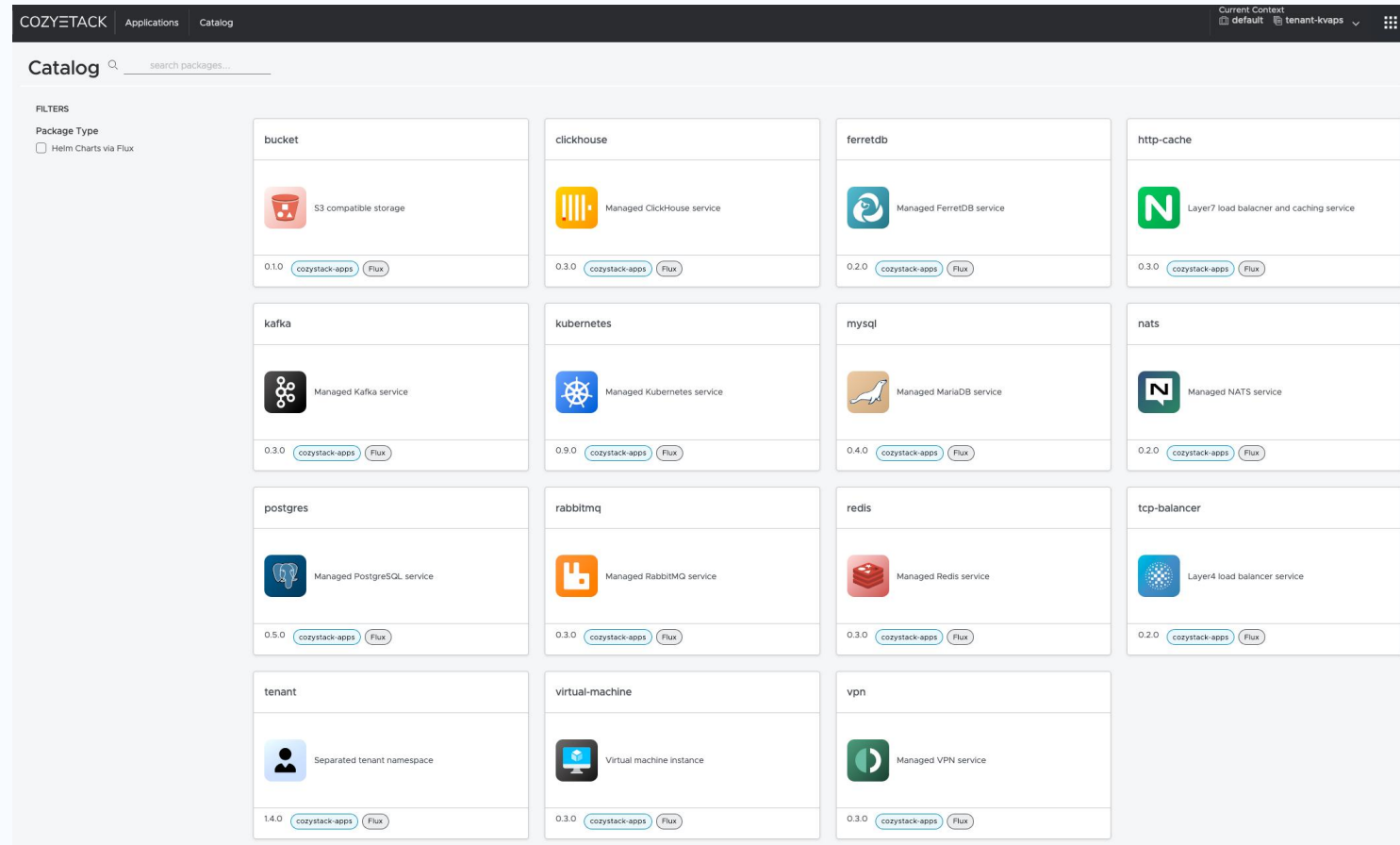
Catalog

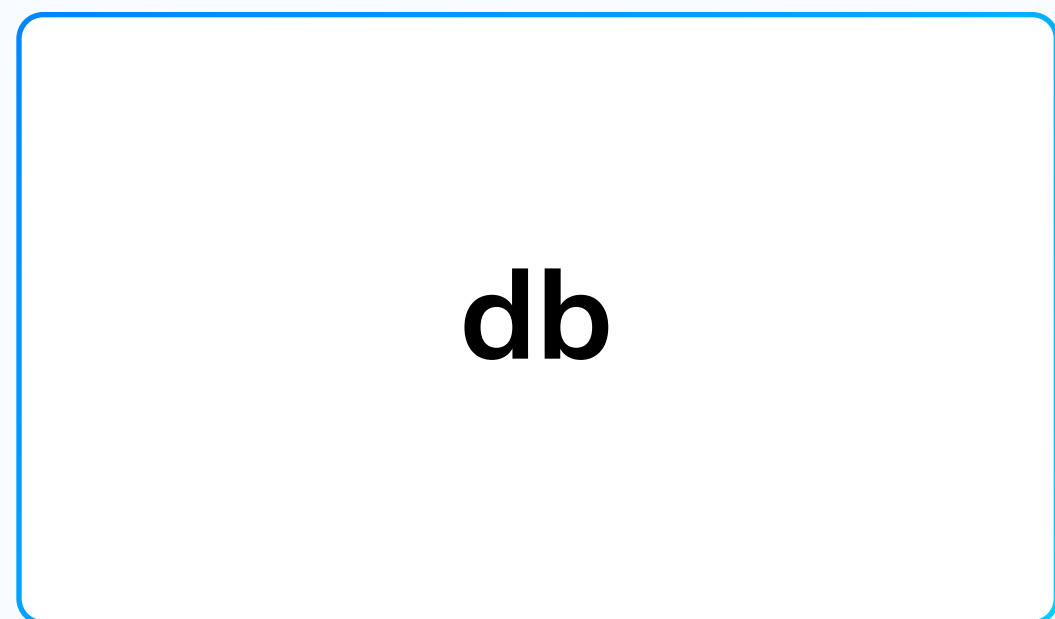
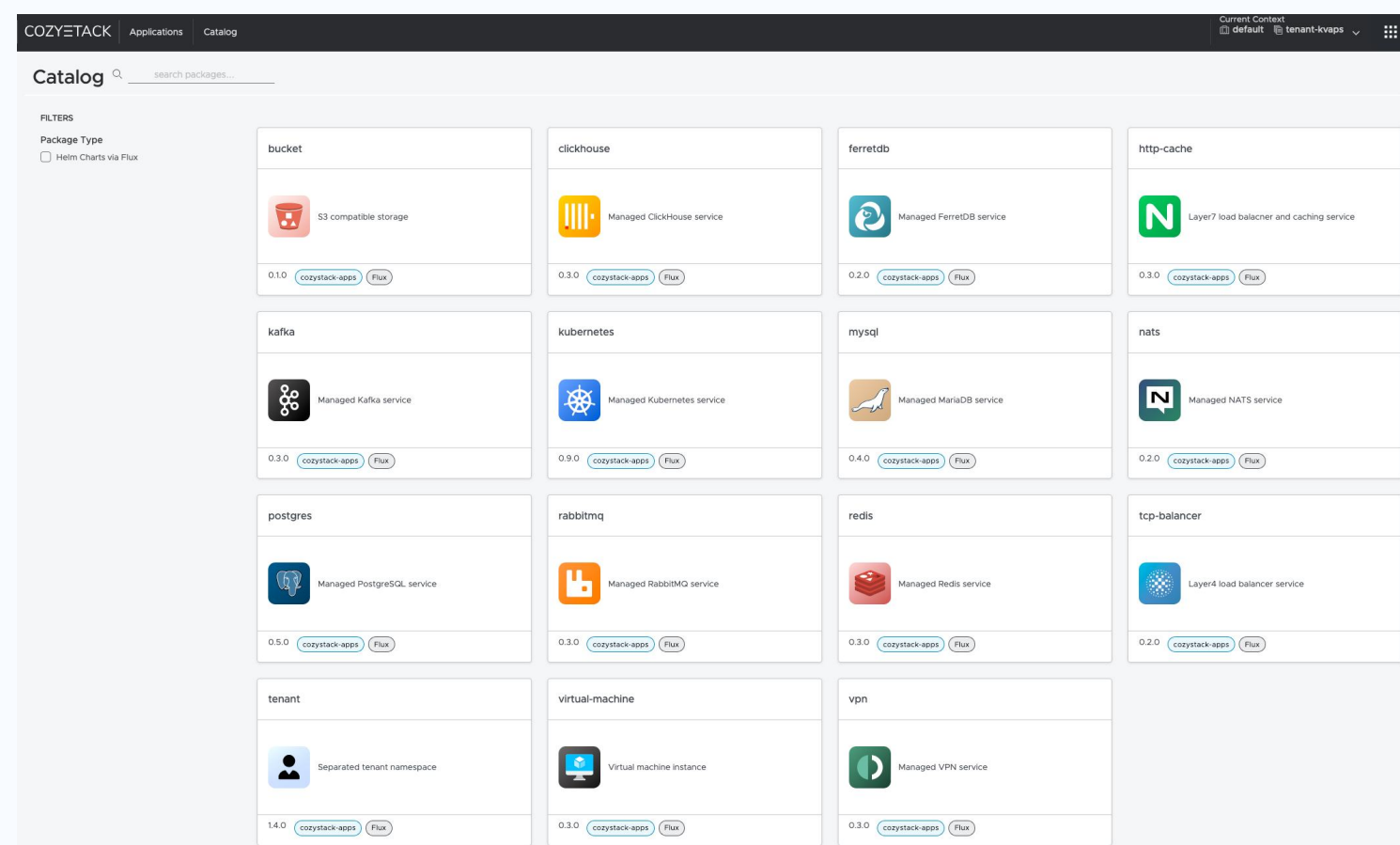
FILTERS
Package Type
 Helm Charts via Flux

bucket S3 compatible storage 0.1.0 cozyetack-ops Flux	clickhouse Managed Clickhouse service 0.3.0 cozyetack-ops Flux	ferretdb Managed FerretDB service 0.2.0 cozyetack-ops Flux	http-cache Layer7 load balancer and caching service 0.3.0 cozyetack-ops Flux
kafka Managed Kafka service 0.3.0 cozyetack-ops Flux	kubernetes Managed Kubernetes service 0.3.0 cozyetack-ops Flux	mysql Managed MariaDB service 0.4.0 cozyetack-ops Flux	nats Managed NATS service 0.2.0 cozyetack-ops Flux
postgres Managed PostgreSQL service 0.5.0 cozyetack-ops Flux	rabbitmq Managed RabbitMQ service 0.3.0 cozyetack-ops Flux	redis Managed Redis service 0.3.0 cozyetack-ops Flux	tcp-balancer Layer4 load balancer service 0.2.0 cozyetack-ops Flux
tenant Separated tenant namespace 1.4.0 cozyetack-ops Flux	virtual-machine Virtual machine instance 0.3.0 cozyetack-ops Flux	vpn Managed VPN service 0.3.0 cozyetack-ops Flux	











redis

Helm Chart via Flux

Package Version

0.2.0 / App Version 6.2.6

App Version

6.2.6

Package Version

0.2.0

Name

A descriptive name for this application

Visual editor

YAML editor

<< < PAGE 1 OF 1 > >>

Search Type to search by key...

+ Key	Type	Description	Default Value	Current Value
external	boolean	external	false	<input type="checkbox"/> false
size	string	size	1Gi	1Gi
replicas	number	replicas	2	2

<< < PAGE 1 OF 1 > >>

Page size Show 10

The unsaved changes will automatically be applied before deploying or when visualizing the diff view. You can also [save the changes manually](#).

DEPLOY 0.2.0

RESTORE DEFAULTS



Redis app

```
external: false  
size: 1Gi  
replicas: 2
```



Redis app

```
external: false  
size: 1Gi  
replicas: 2
```



RedisFailover

Service

VMServiceScrape

COZYETACK

Установка в одно нажатие



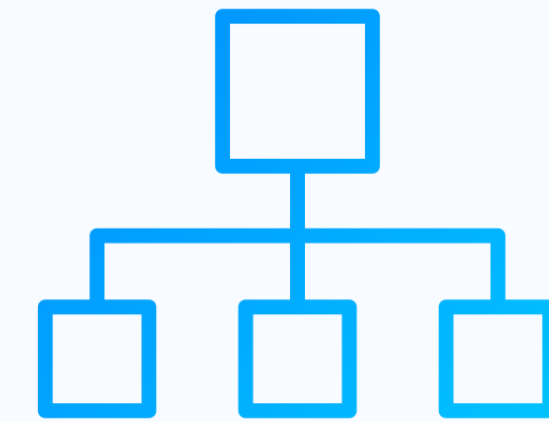
Managed Kubernetes



Managed Databases



Virtual Machines



Load balancers



Managed VPN service

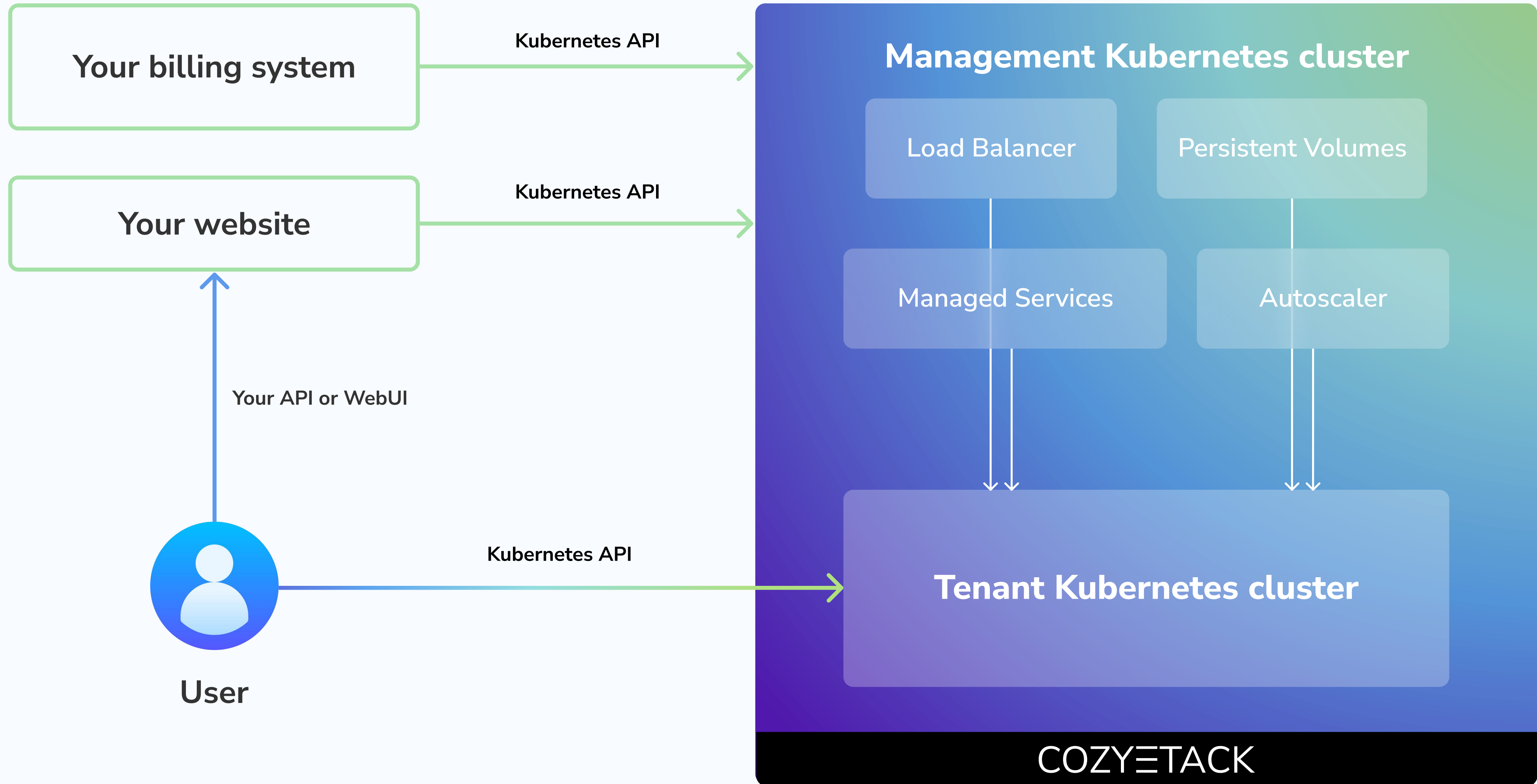


HTTP-caching service



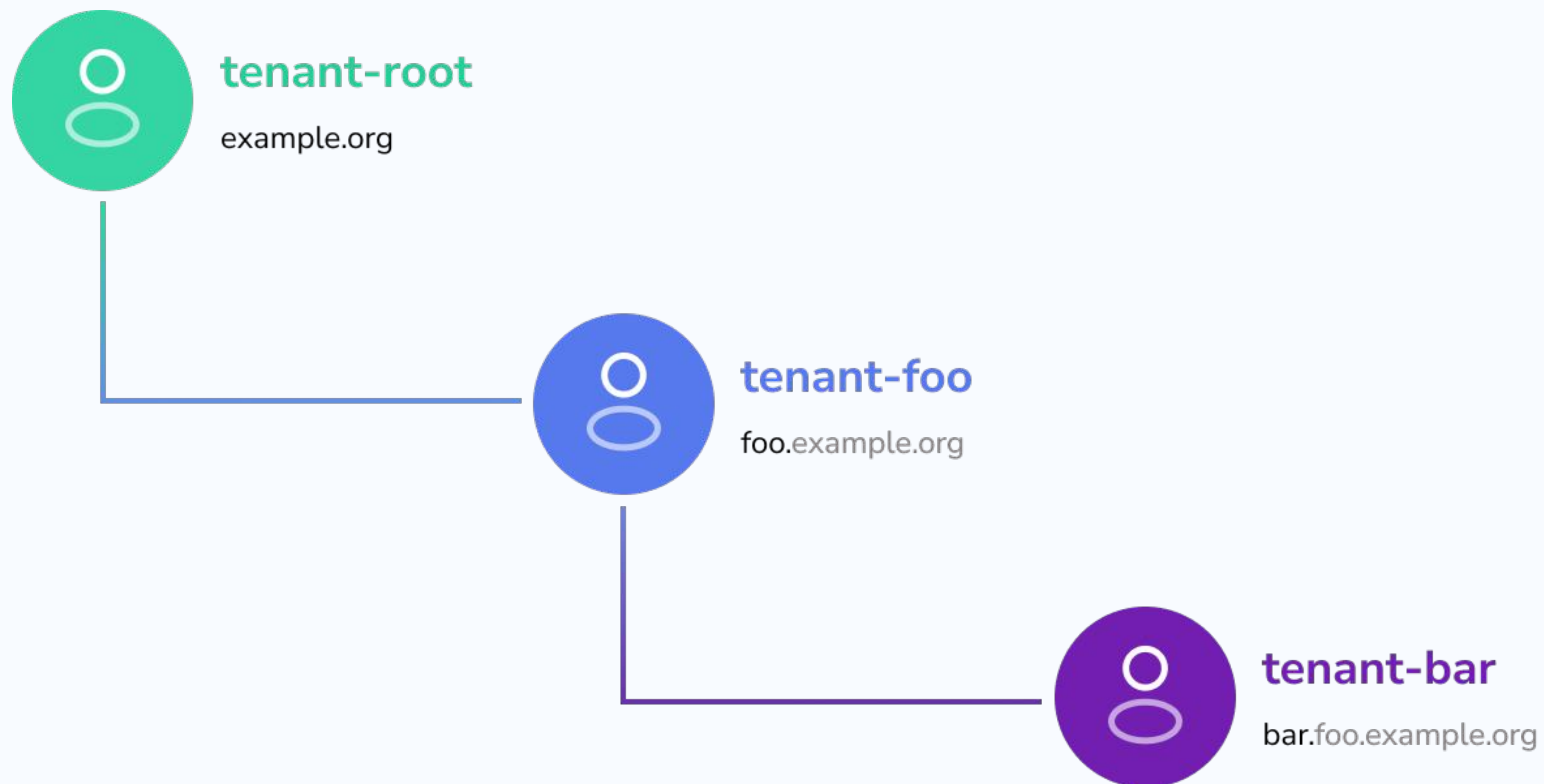
S3 Storage

Что насчет мульти-тенантности?

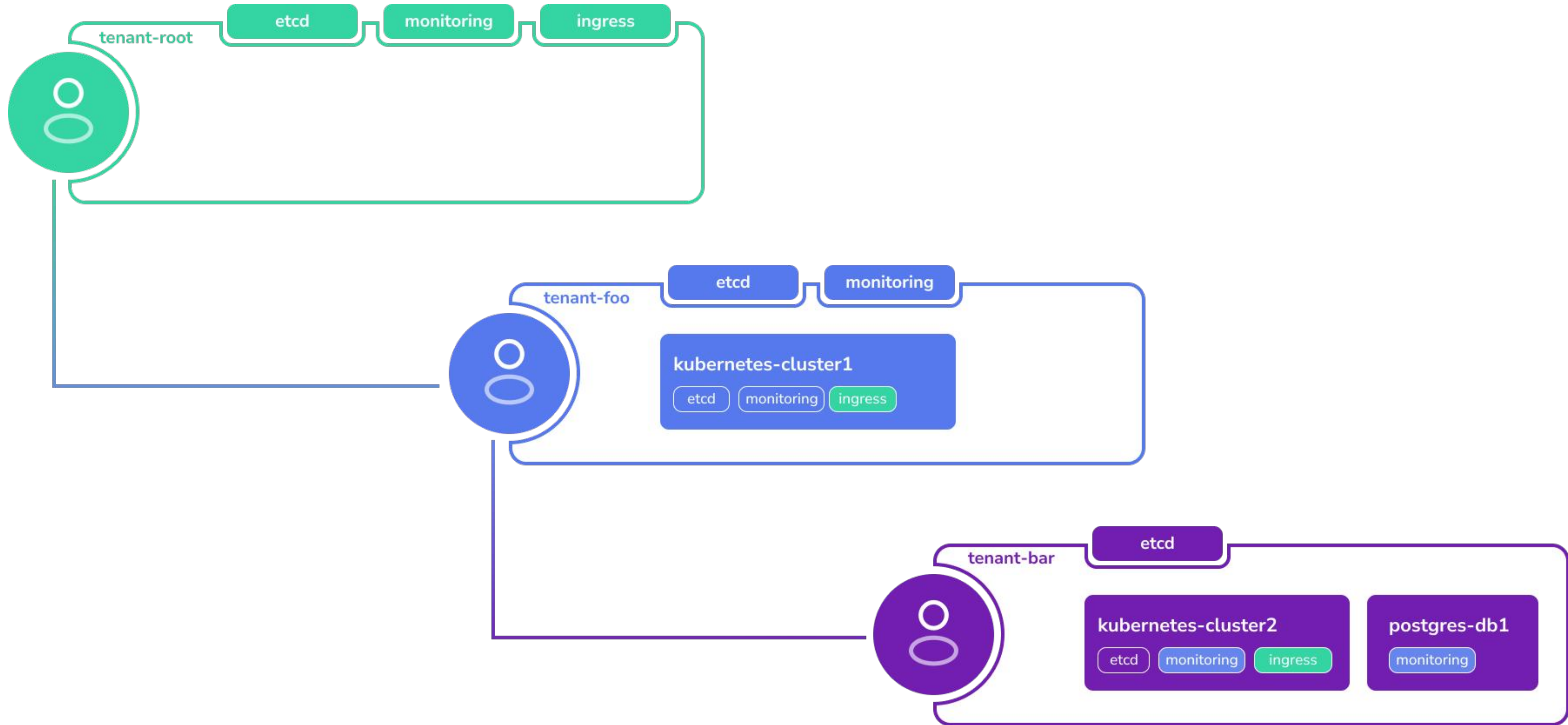


Экономно и безопасно

Наша уникальная модель тенантов обеспечивает эффективное выделение ресурсов и необходимый уровень безопасности.



COZYETACK



Все окружения единообразны и повторяемы



Все окружения единообразны и повторяемы

Простой интерфейс установки



Все окружения единообразны и повторяемы

Простой интерфейс установки

Платформа закрывает весь стек для построения облака



Выводы

280

Все окружения единообразны и повторяемы

Простой интерфейс установки

Платформа закрывает весь стек для построения облака

Легко расширяемая



Выводы

281

Все окружения единообразны и повторяемы

Простой интерфейс установки

Платформа закрывает весь стек для построения облака

Легко расширяемая

Открытый код!






COZYSTACK

Cozystack

[See more](#)



The logo for Cozystack, featuring the word "COZYSTACK" in white, uppercase, sans-serif font centered on a solid black rectangular background.

COZYSTACK

Cozystack

[See more](#)



Talos Linux

[See more](#)





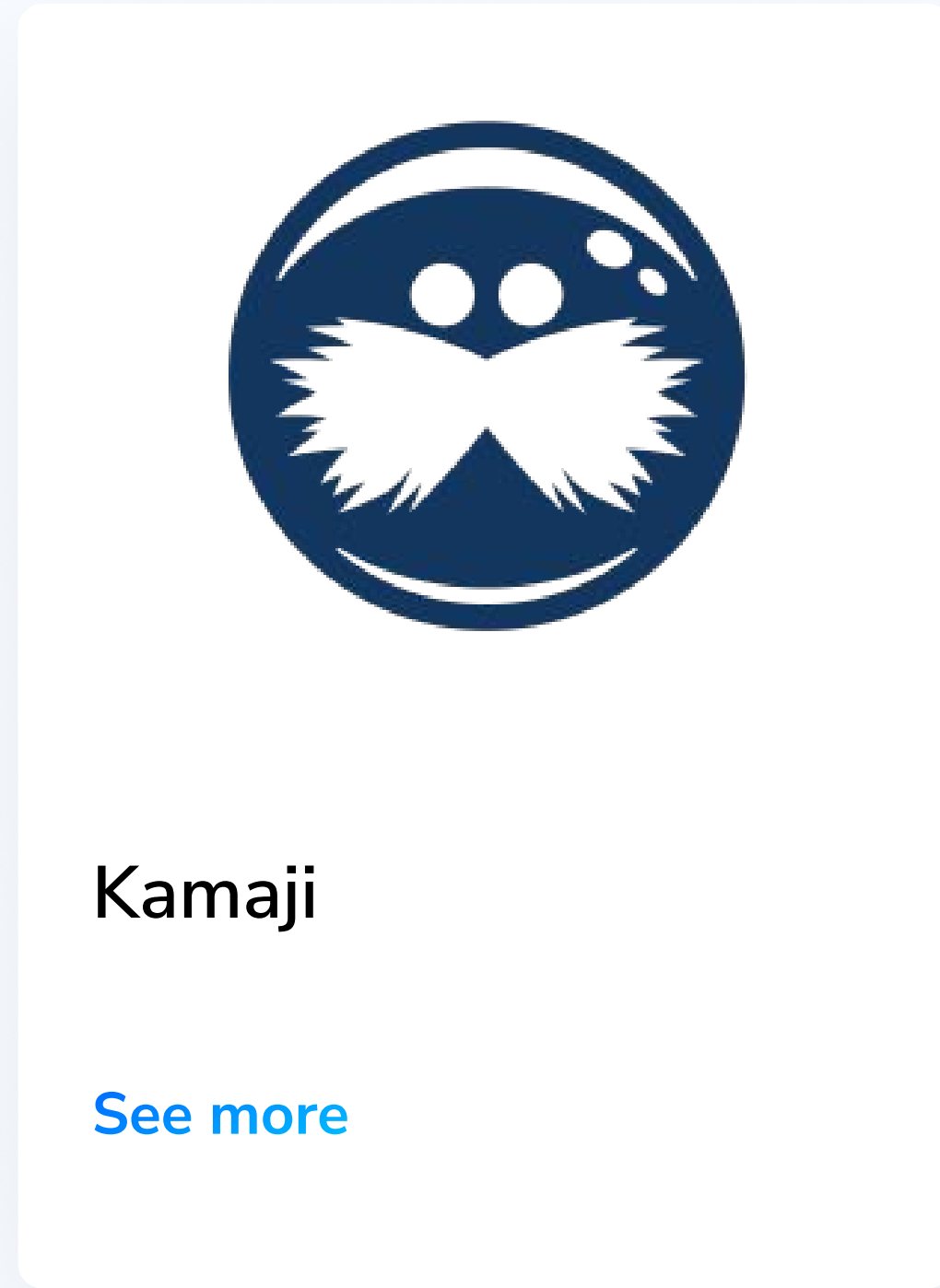
Cozystack

[See more](#)



Talos Linux

[See more](#)



Kamaji

[See more](#)





Cozystack

[See more](#)



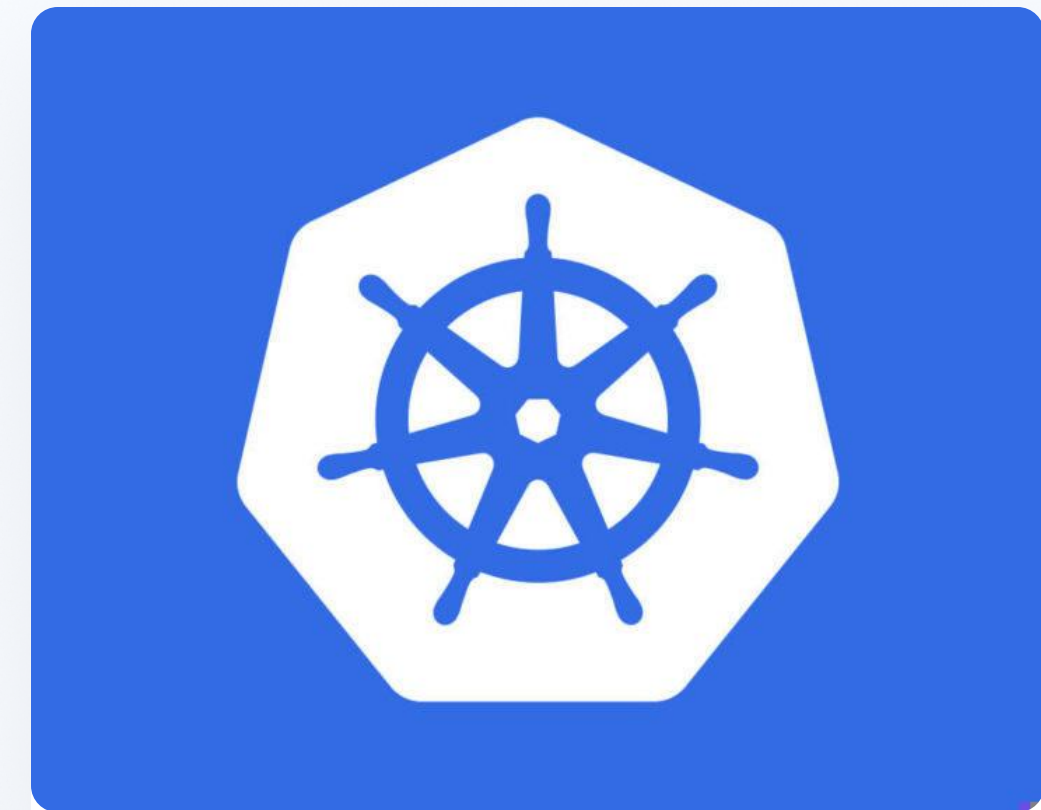
Talos Linux

[See more](#)



Kamaji

[See more](#)



DIY: Create Your Own
Cloud with Kubernetes

[See more](#)



Благодарности



Dario Tranchitella



Timur Tukaev



Viktoriia Kvapil



Andrei Kvapil

Спасибо! Вопросы?

Георг Гаал

CTO & основатель of Ænix

