

Механизм изоляции

Как это работает?

Namespaces

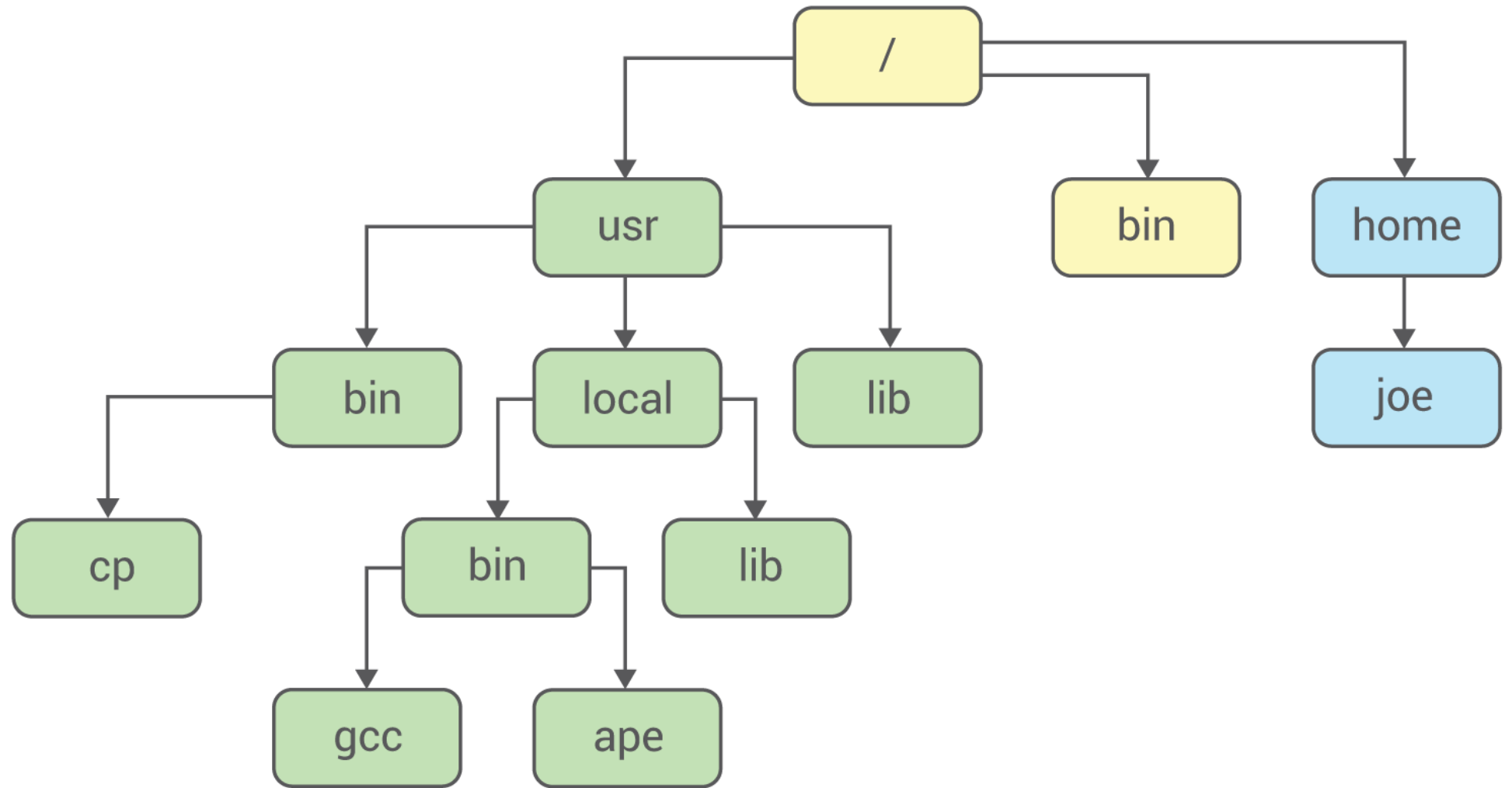
Cgroups

Docker daemon (Автоматизация управления)

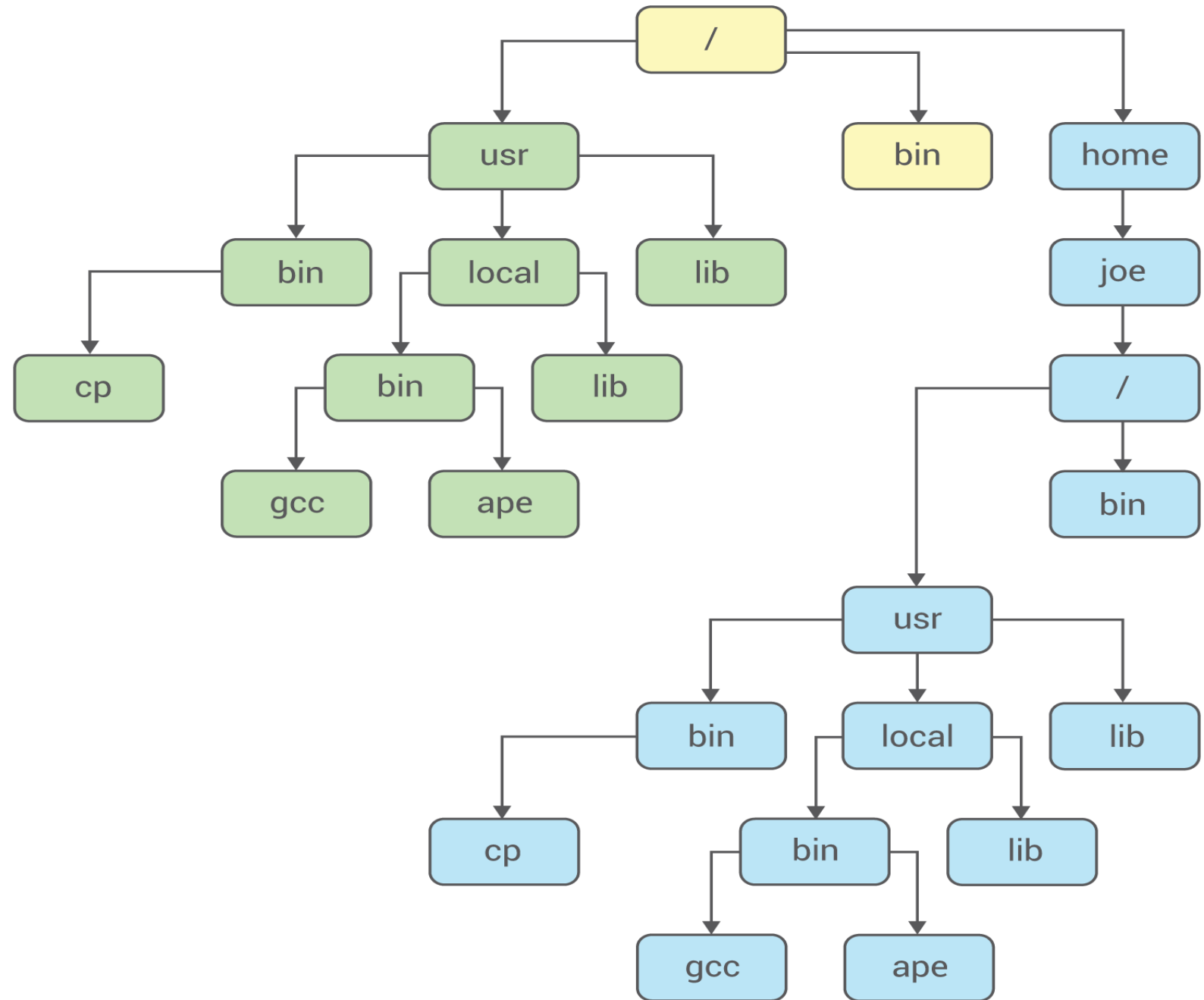
Linux namespaces

- Вначале было слово chroot! (1982 год!)

chroot



chroot



Linux namespaces

- Вначале было слово chroot! (1982 год!)
- И создал админ Jail

Linux namespaces

- Вначале было ~~слово~~ chroot!
- И создал админ Jail
- И наконец в Linux появились Namespace

Linux namespaces

UTC

IPC

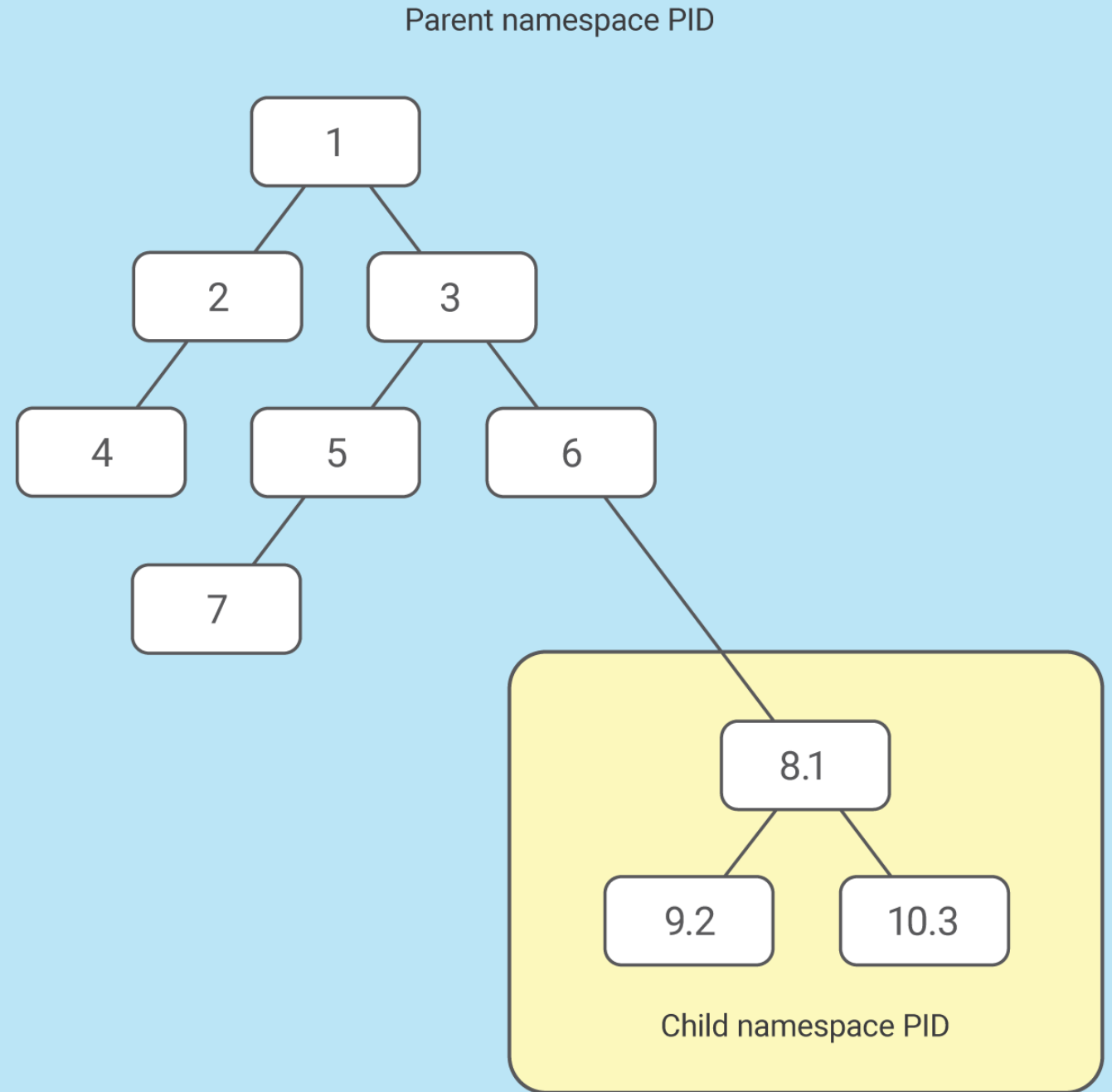
PID

User

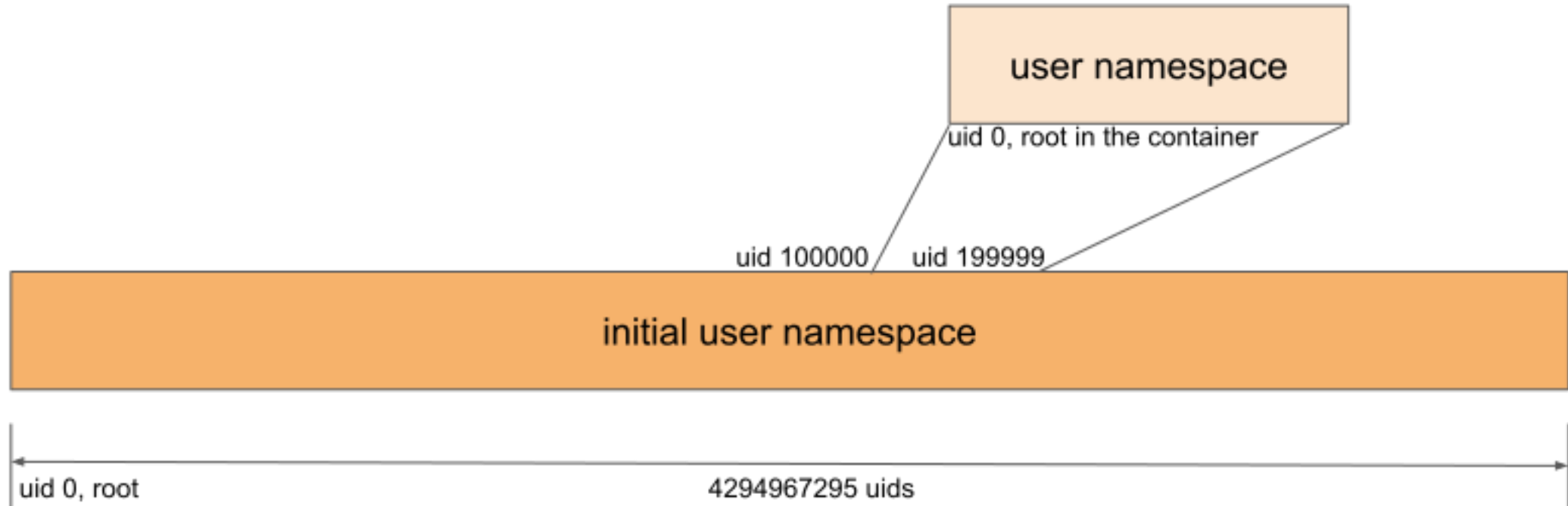
Mount

Network

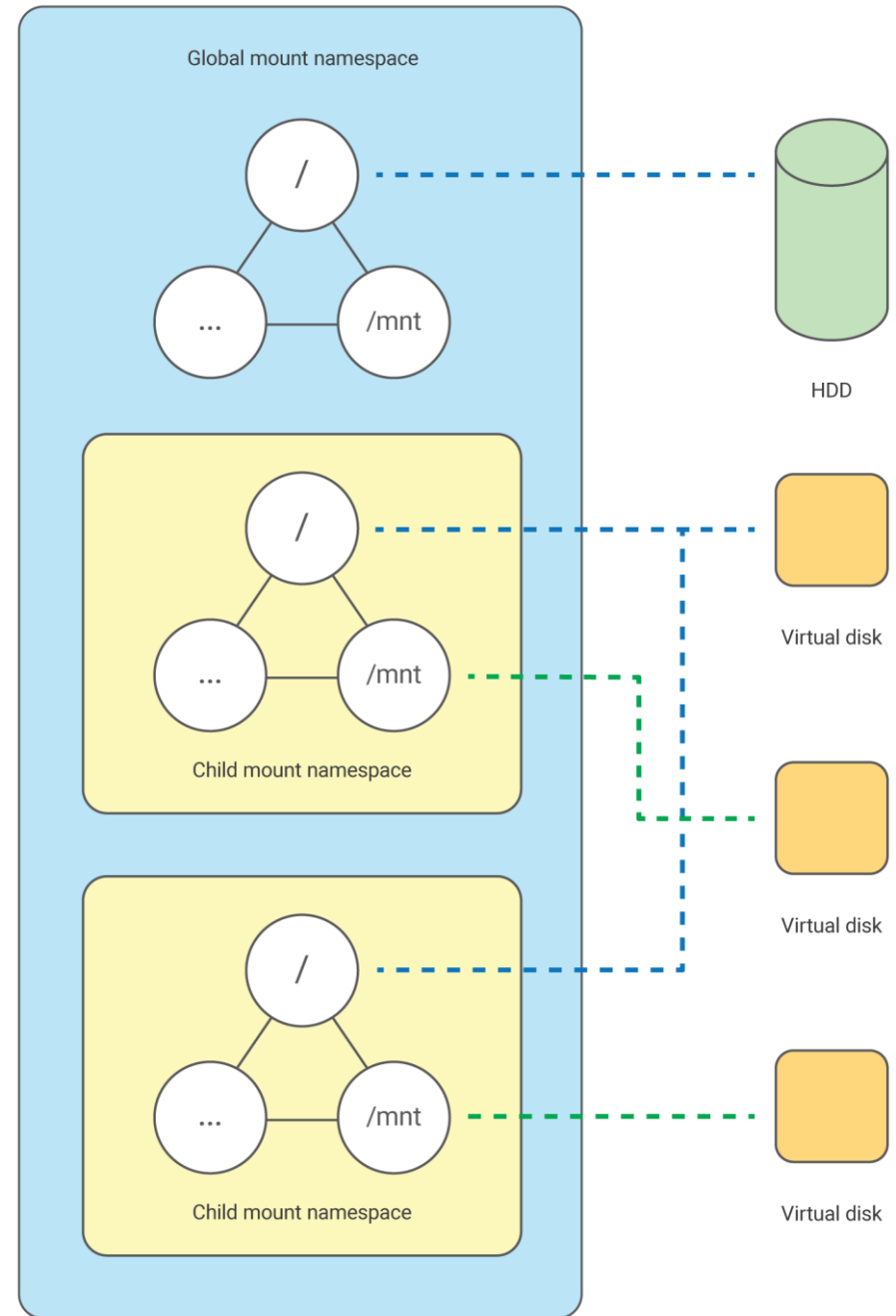
Linux namespaces - PID



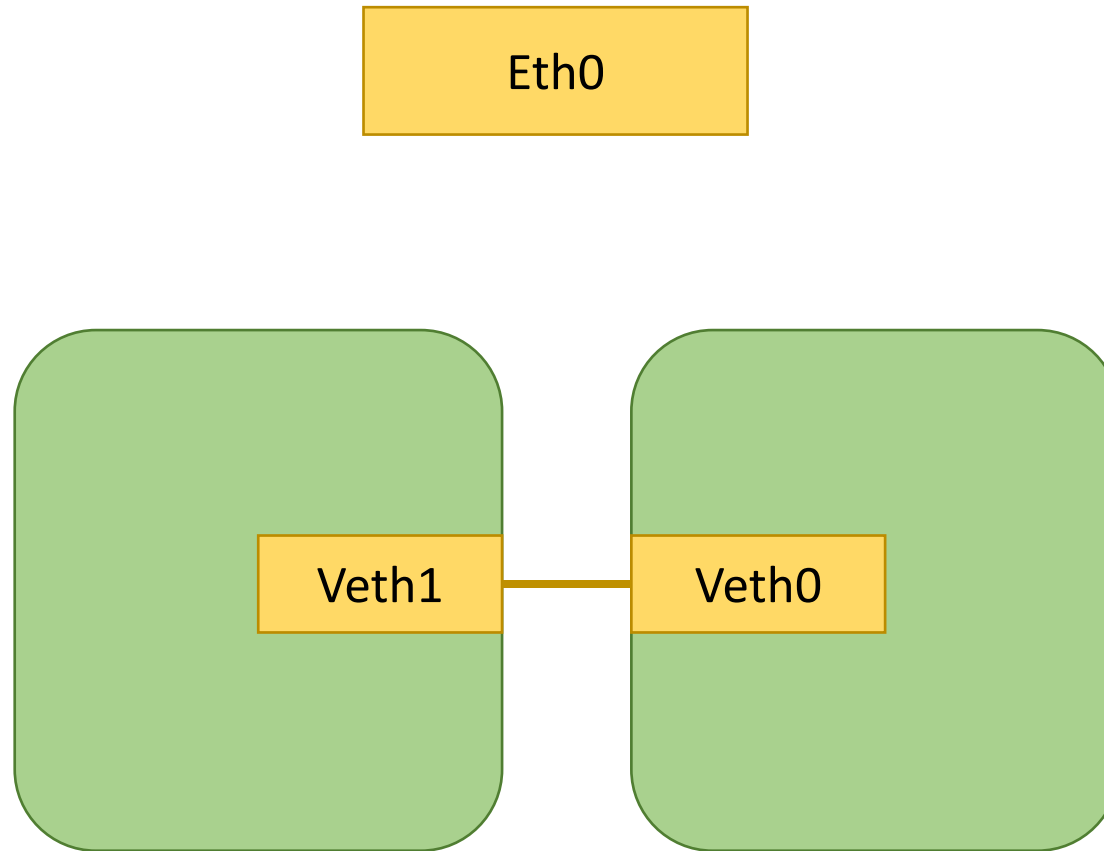
Linux namespaces - User



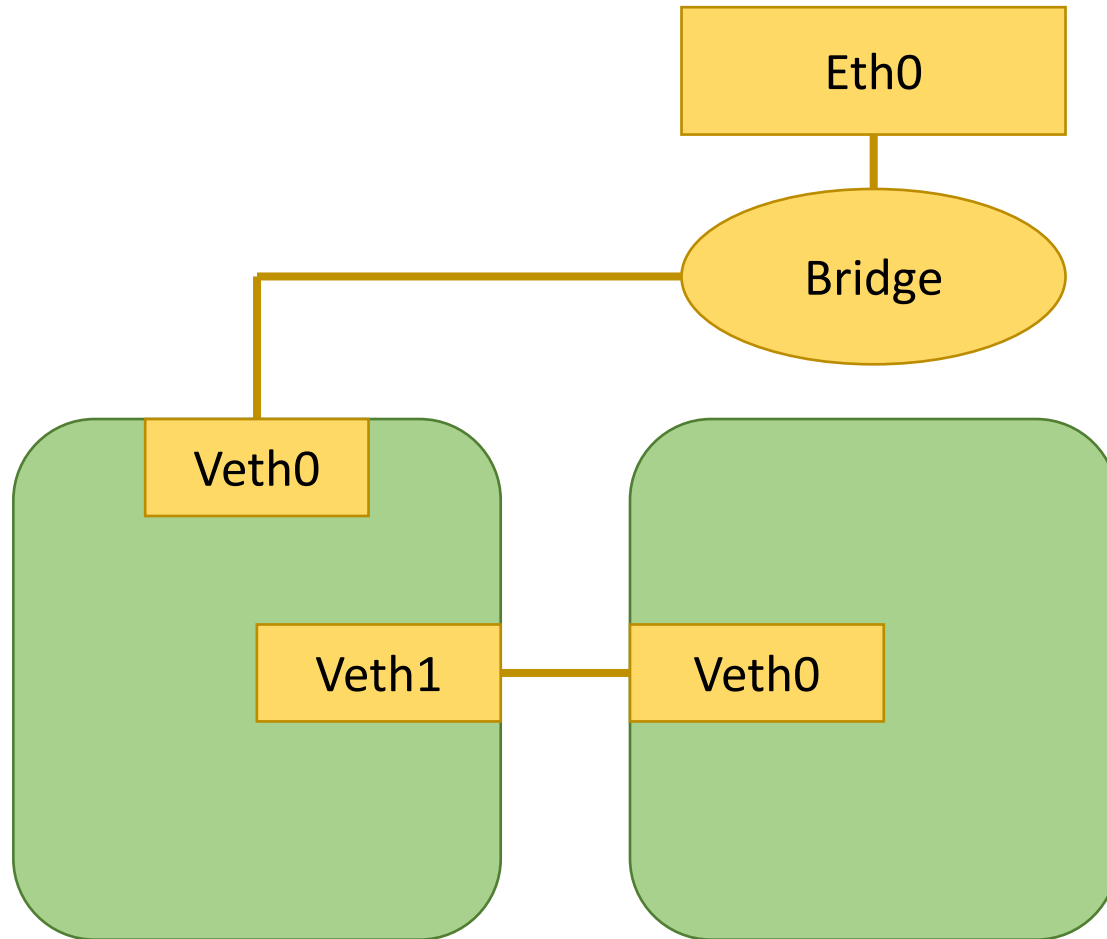
Linux namespaces – Mount



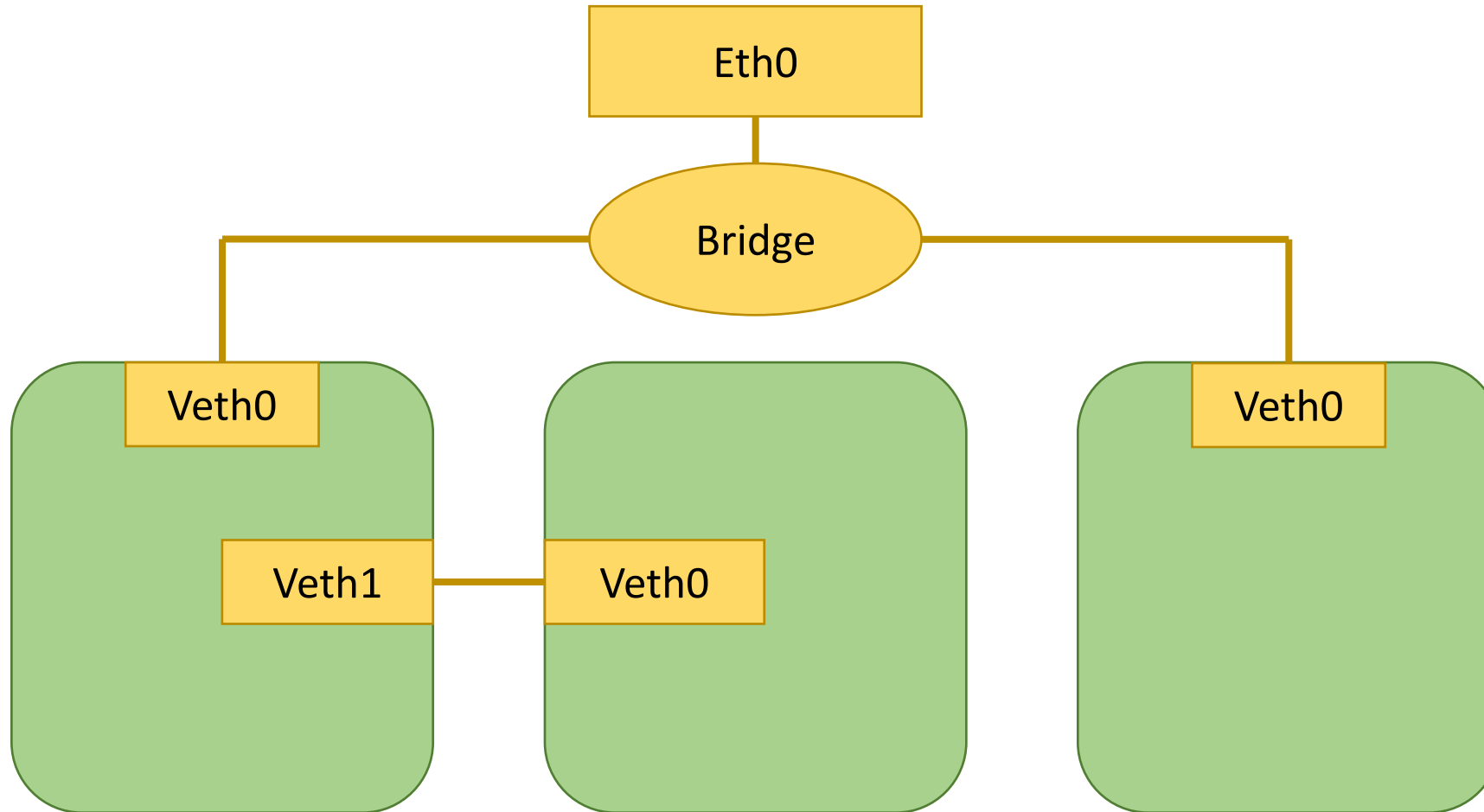
Linux namespaces - Network



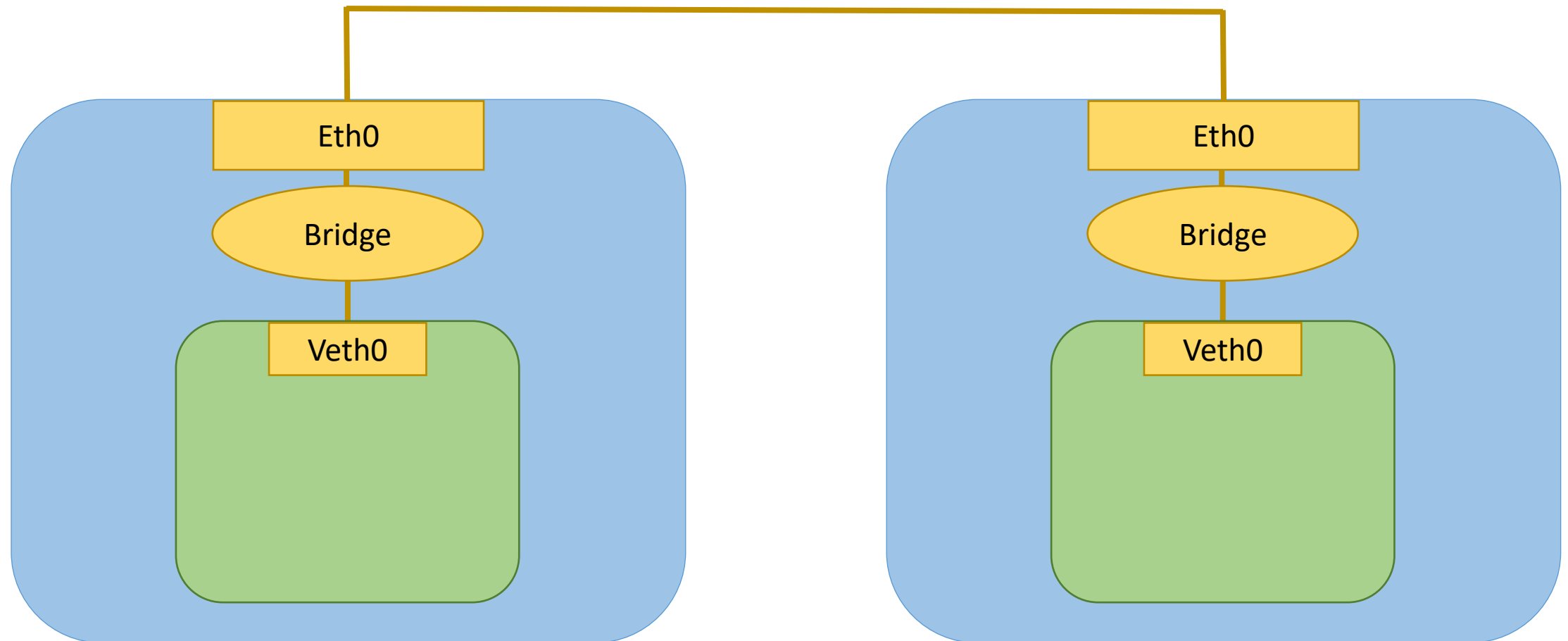
Linux namespaces - Network



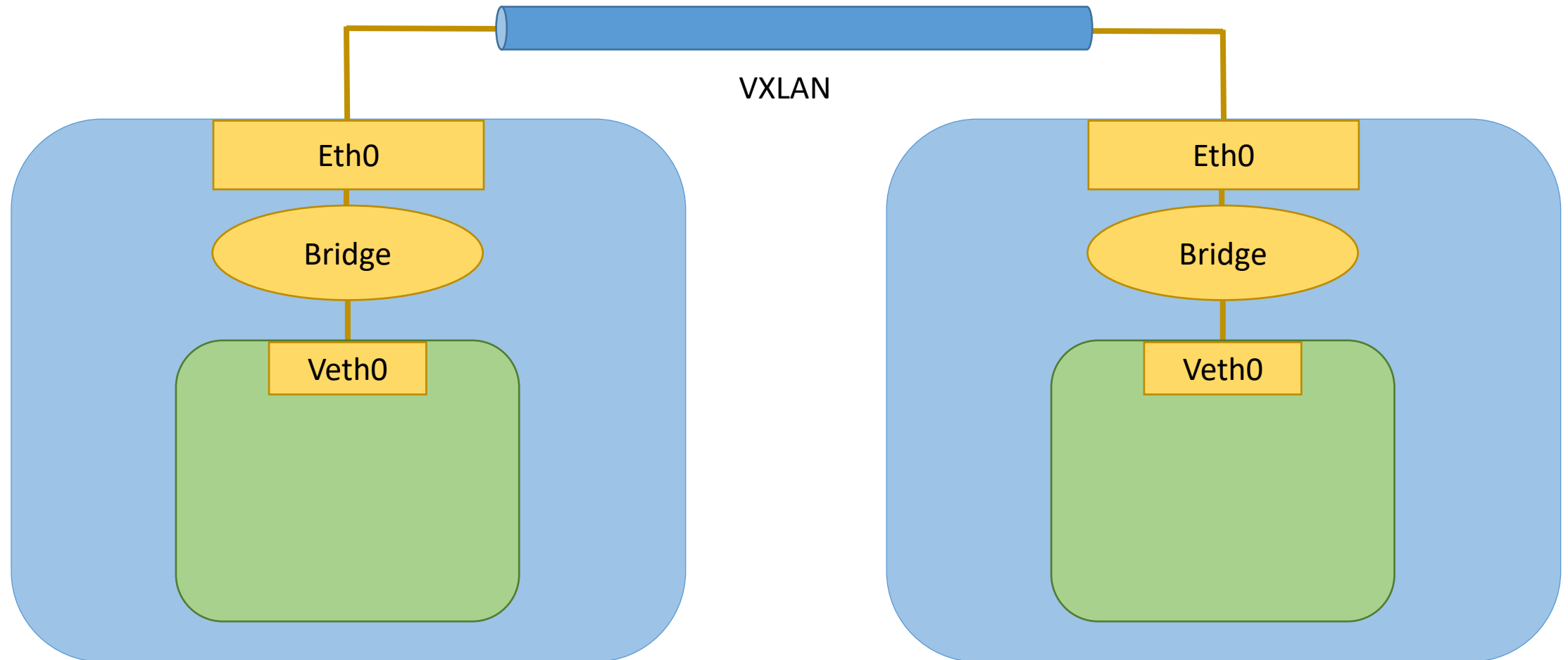
Linux namespaces - Network



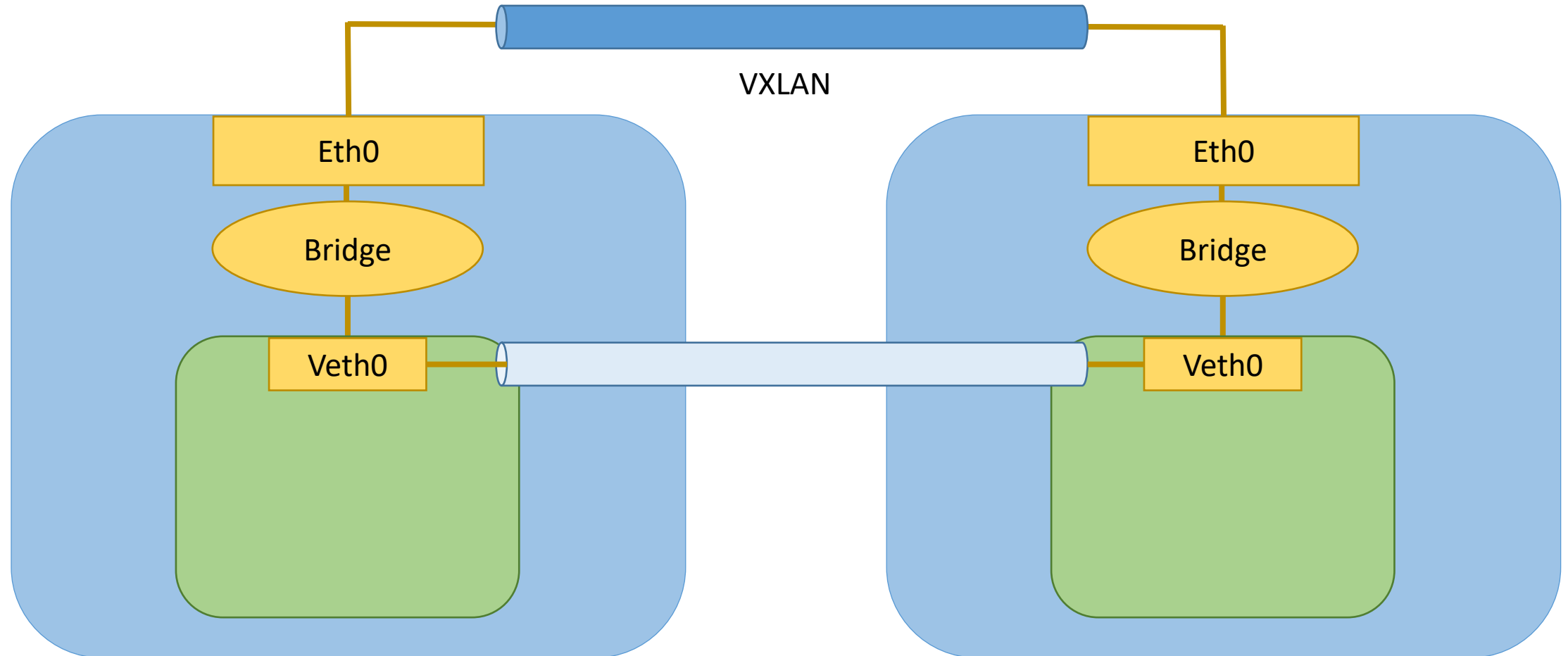
Linux namespaces – Network + VXLAN



Linux namespaces – Network + VXLAN



Linux namespaces – Network + VXLAN



Linux namespaces

UTC

IPC

PID

User

Mount

Network

Как это работает?



The diagram consists of a large light blue rounded rectangle containing two smaller rounded rectangles. The left one is green and labeled 'Namespaces', and the right one is blue and labeled 'Cgroups'. Below these two is the text 'Docker daemon (Автоматизация управления)'.

Namespaces

Cgroups

Docker daemon (Автоматизация управления)



App

The diagram consists of a large light blue rounded rectangle containing three smaller, darker blue rounded rectangles at the top. These smaller rectangles are labeled 'App', 'DB', and 'Cache' from left to right. The 'App' rectangle is on the left, 'DB' is in the middle, and 'Cache' is on the right. There are no lines or arrows connecting these components.

DB

Cache

```
graph LR; subgraph Container; App; DB; Cache; App_exporter[App exporter]; DB_exporter[DB exporter]; end
```

App

DB

Cache

App
exporter

DB exporter

```
graph LR; App[App] --- DB[DB]; DB --- Cache[Cache]; Cache --- AppExporter[App exporter]; AppExporter --- DBExporter[DB exporter]; DBExporter --- ELK[ELK]; ELK --- App; style App fill:#2e5496,color:#fff; style DB fill:#2e5496,color:#fff; style Cache fill:#2e5496,color:#fff; style AppExporter fill:#2e5496,color:#fff; style DBExporter fill:#2e5496,color:#fff; style ELK fill:#2e5496,color:#fff;
```

App

DB

Cache

App
exporter

ELK

DB exporter

App

DB

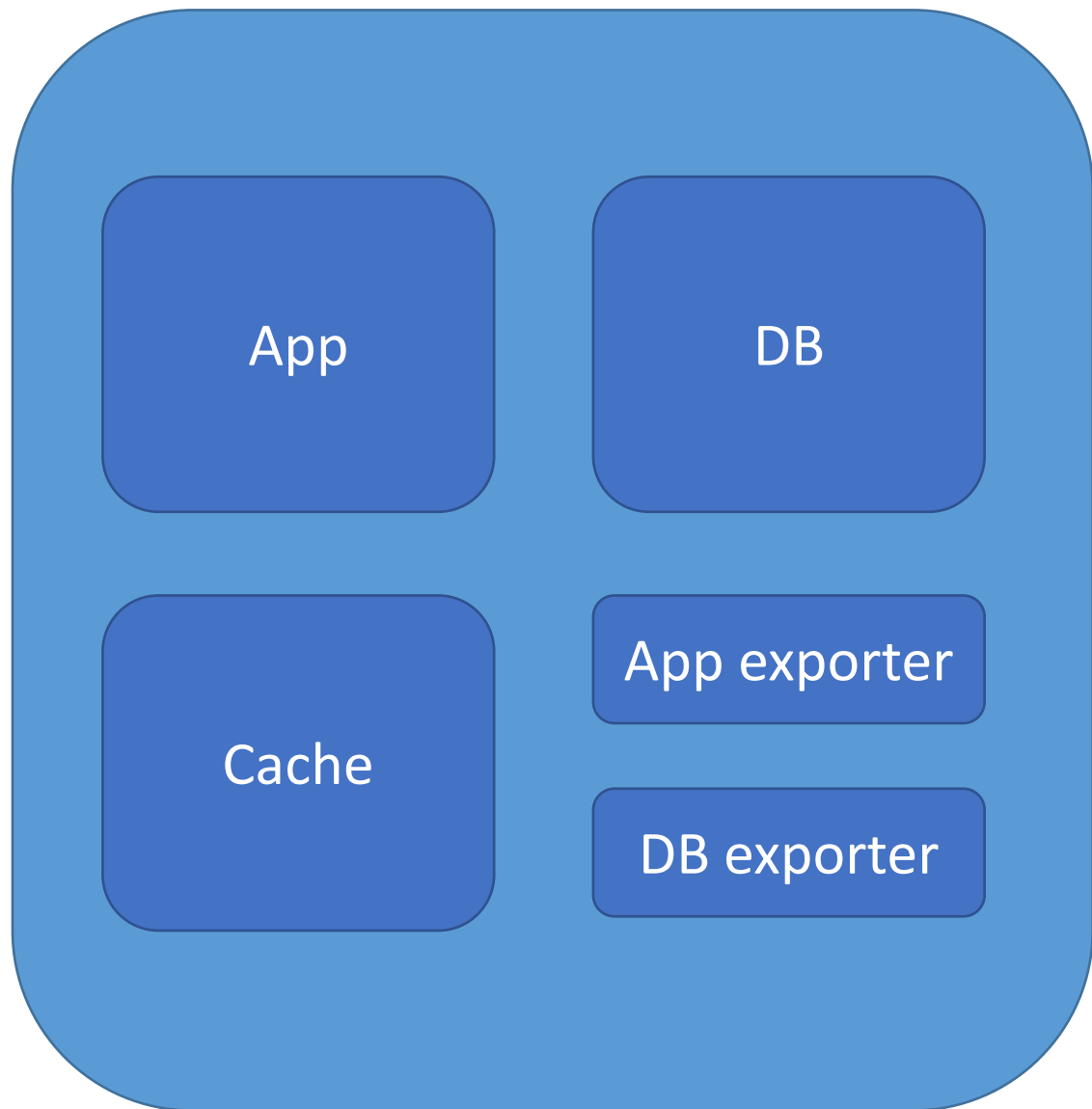
Cache

App
exporter

4 GB Ram

ELK

DB exporter



Linux control groups

- Block devices (IOPS)
- CPU (Core, and CPU time access)
- RAM + OOM Control
- Devices
- Network packets priority – QoS per network interface