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K3S General Overview

Hussein Galal (Hussein.Galal@suse.com)
Manuel Buil (mbuil@suse.com)



What Is K3s?

- Lightweight kubernetes
- Single binary (~50MB)
- Low memory/cpu footprint
- CNCF certified distro
- Designed for production
- ARM support
- Perfect for the edge



K3S



What Is K3s?

- Edge and Arm Devices
- CI/CD
- Developer Desktops (Rancher Desktop and k3d)
- Cloud and Data Center deployments



Why K3S Is Different

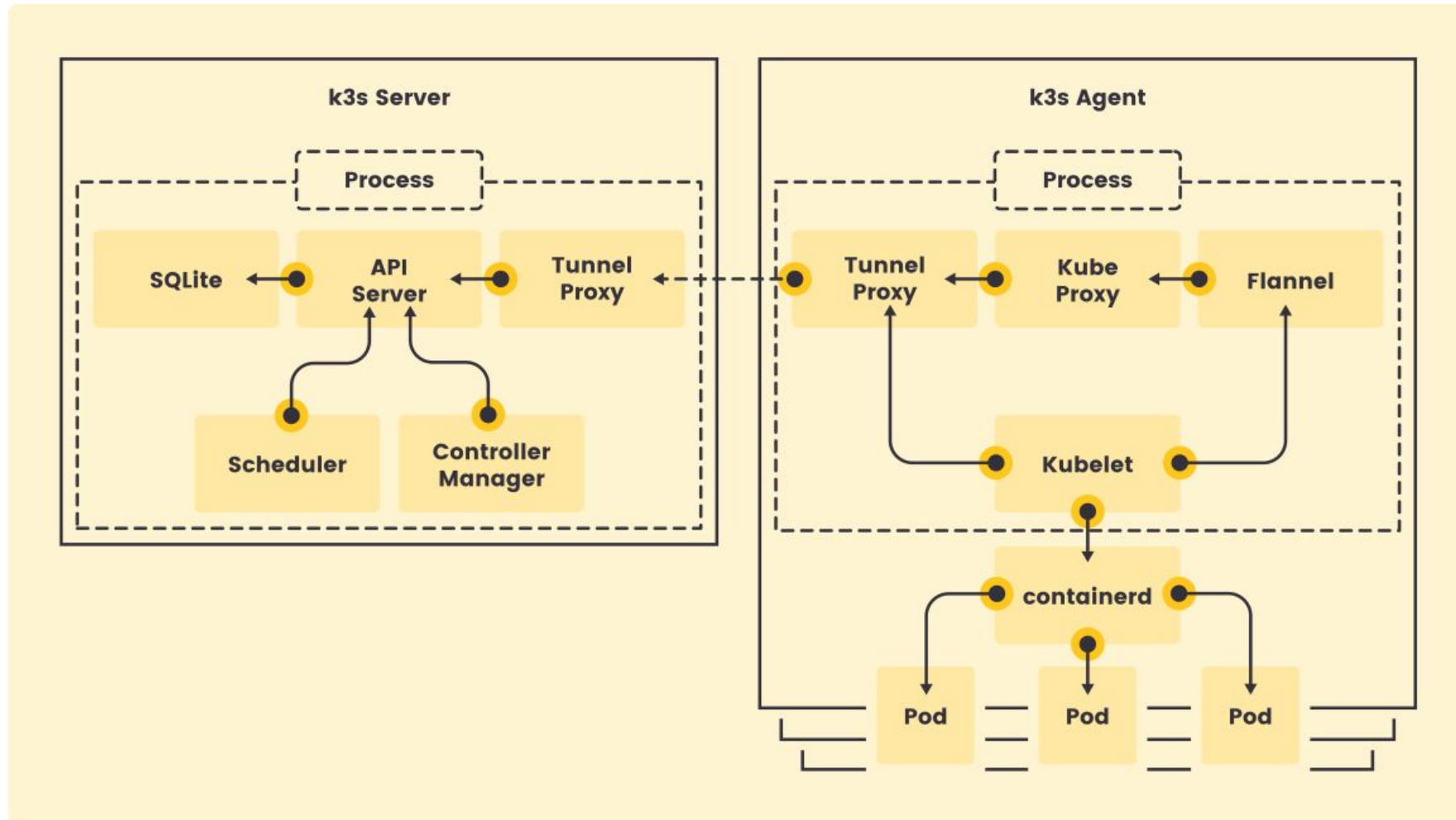
- **No external dependencies** – can work on empty root with `/proc`, `/sys`, and `/dev` mounted
- **Single self-extracting archive** – data directory created on startup with all necessary host binaries
- **More database options** – Rancher's unique etcd shim kine (Kine Is Not Etcd) allows use of MySQL, PostgreSQL, or SQLite in addition to standard etcd
- **Built-in value-add functionality** – Several controllers that support different functions including helm controller, manifest auto deployment, network policy controller, and more
- **Batteries included, but swappable** – All K3S specific features and opinions can be replaced or turned off

What's In K3S

- Fully functional Kubernetes cluster
- Sqlite as default database
- Containerd as default container runtime
- Flannel as network plugin by default
- Traefik as Ingress controller
- Local storage provisioner as default storageclass



K3S Architecture



K3S Network Architecture

CNI plugins:

- Flannel (vxlan, ipsec, host-gw and wireguard)
- No-flannel (any cni plugin can be selected)

Network Policy:

- Uses network policy controller from kube-router

Services:

- Load balancer controller to provide external-ip



Roadmap

- Expanded networking support
 - IPv4/IPv6 dualstack support
 - More first class CNI choices
 - SR-IOV support

- Security and compliance
 - Continue to improve SELinux support
 - FIPS 140-2/3 crypto validation (a U.S. government standard for cryptography)
 - Automated base image scanning and revving for CVE mitigation
 - Ensure proper support and integration for PSP v2
 - Custom CIS-like hardening guide for K3s



K3s Community

Join the **SUSE & Rancher Community** for exclusive access to the 3-week course “Up and Running with: k3s”, as well as lots of other interesting webinars, videos, articles and Academy Classes

When: anytime, new live cohort starting soon!

What:

- Architecture and Installation
- Networking and Drivers
- Day 2 Operations

Where: <https://community.suse.com>



Demo Time!





Thank you

For more information, contact SUSE at:

+1 800 796 3700 (U.S./Canada)

+49 (0)911-740 53-0 (Worldwide)

Maxfeldstrasse 5

90409 Nuremberg

www.suse.com

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