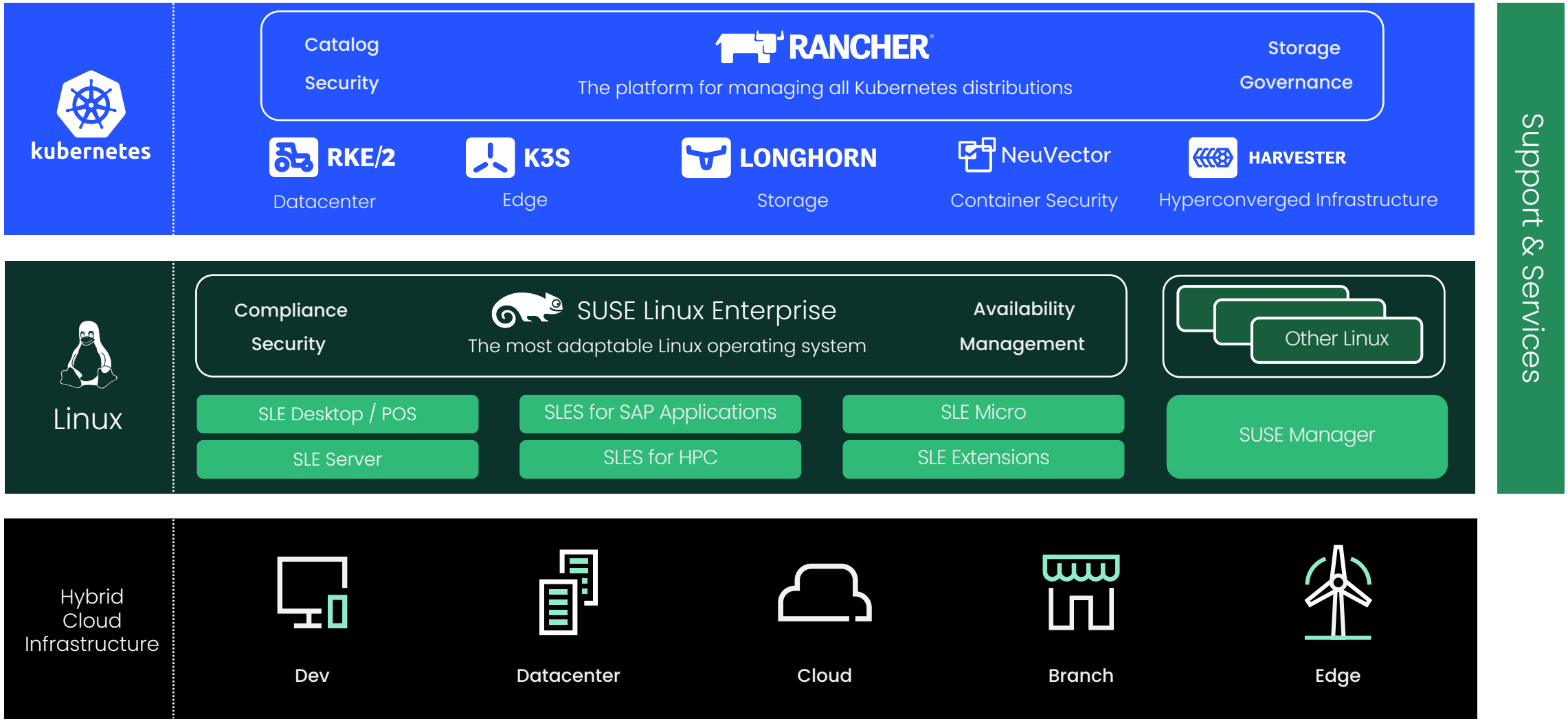
SUSE
Open Nebula
RKE2
Presente y futuro de
Rancher Kubernetes Engine
OpenNebula OneKE con RKE2 & Longhorn
Juan Herrera Utande
Head of Technical Marketing - SUSE
RANCHER
BY SUSE

Introducing **SUSE & Rancher**

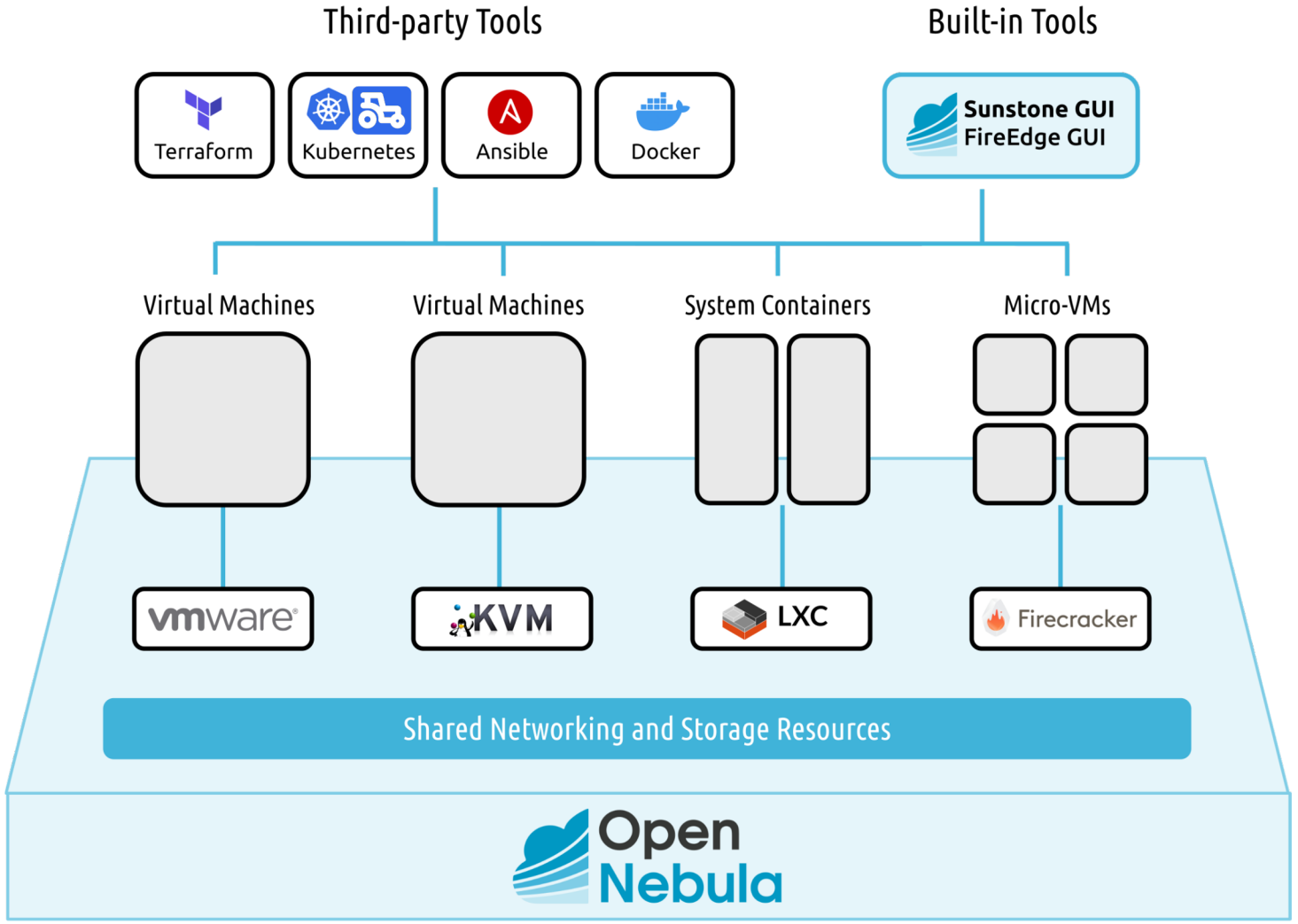
SUSE's portfolio



Copyright © SUSE 2023

OpenNebula and Kubernetes

Building Your Enterprise Cloud



- ✓ Multi-Tenancy
- ✓ Self-Service
- ✓ Elasticity
- ✓ Multi-Tier Apps
- ✓ High Availability
- ✓ Federation
- ✓ Provisioning
- ✓ Multi-Cloud
- ✓ VMs + Containers

Copyright © SUSE 2023

Kubernetes on OpenNebula

Simplified Lifecycle Management

Offer abstraction from physical hardware, with easy deployment, resize and overprovision if necessary

Central Management for All Workloads

Encompass K8s clusters with other virtualized workloads using a single control layer to reduce complexity, consumption and operating costs

Kubernetes as a Service

Build a multi-tenant self-service environment for the execution of K8s clusters on a shared physical infrastructure

Enhanced Security

Enhance security thanks to the additional layer provided by hardware virtualization to isolate resources pools on the same host

Fast Deployment on any Infrastructure

Automatically deploy and manage multiple K8s clusters across on-premises, edge, and cloud locations.

No Provider Lock-in

Deploy K8s anywhere, with the configuration you want and following the same process

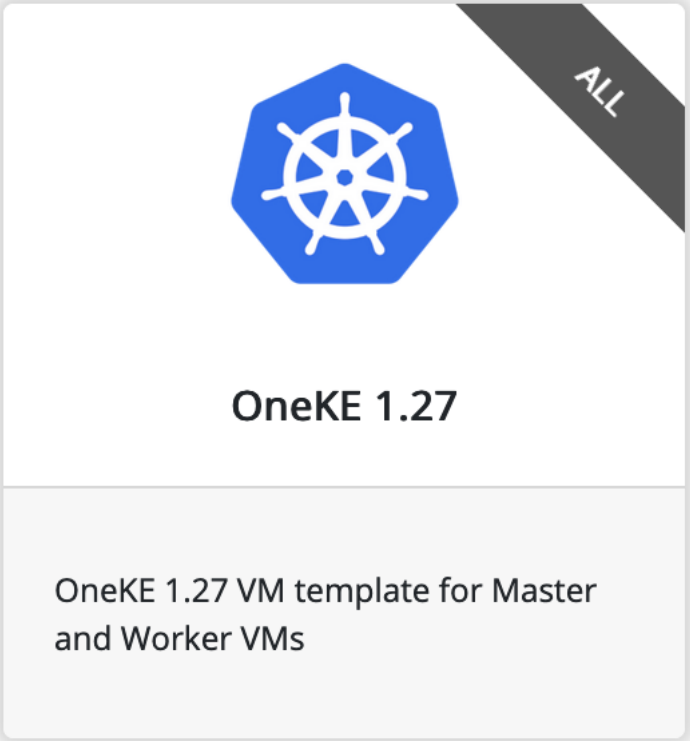
Copyright © SUSE 2023

OpenNebula's OneKE Appliance

A minimal out of the box hyperconverged Kubernetes platform in **OpenNebula** 🚀

Features:

- ✓ Kubernetes version 1.24
- ✓ Based on **RKE2**
- ✓ Multi-master ready
- ✓ Canal CNI networking
- ✓ CNCF **Longhorn** distributed storage
- ✓ Traefik Ingress Controller
- ✓ MetalLB load balancer

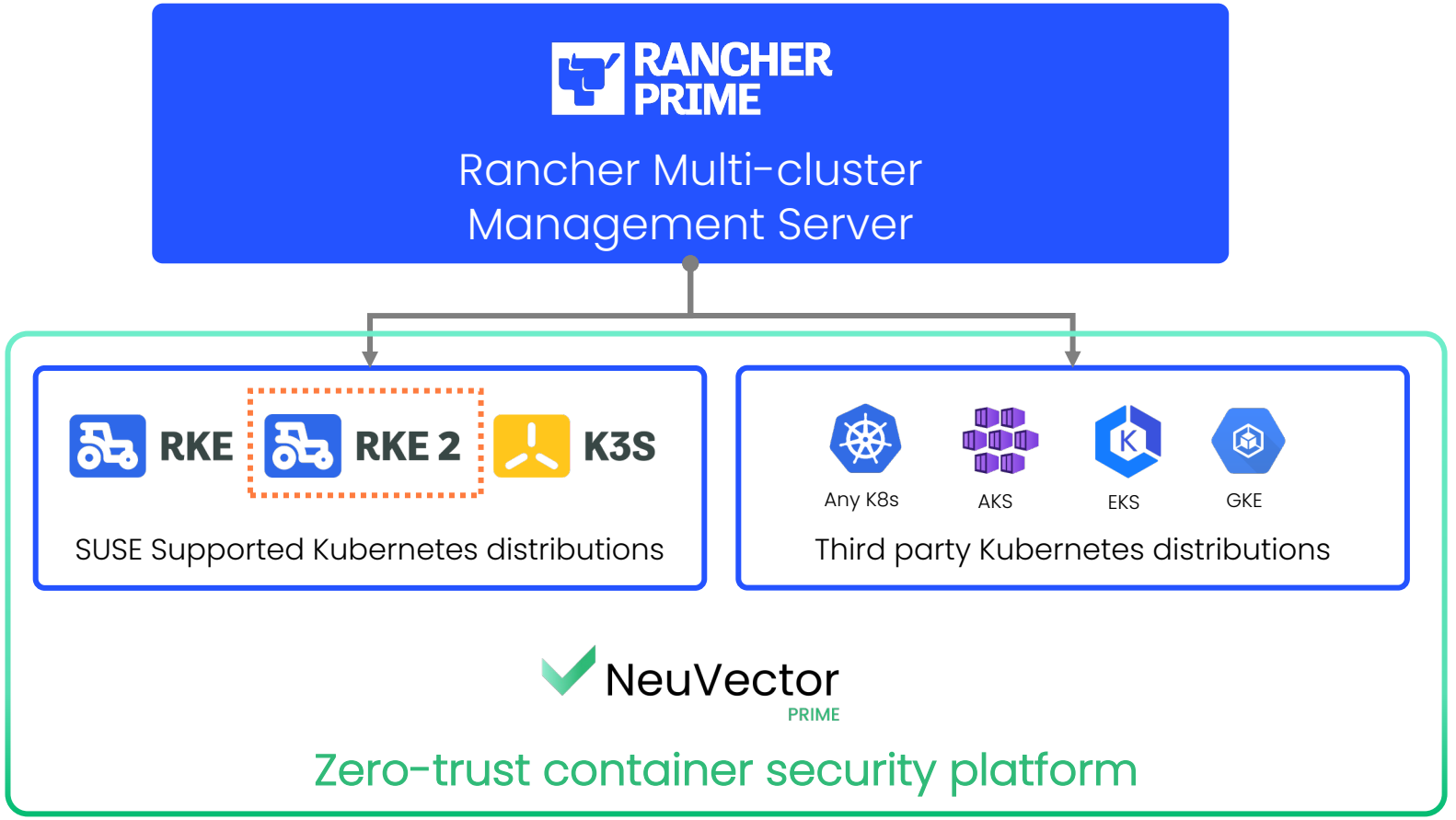


Copyright © SUSE 2023

Rancher Kubernetes Engine (RKE)

Rancher, RKE, RKE2 and K3s

A quick look at SUSE's solutions for Kubernetes Management and Security



Copyright © SUSE 2023

RKE2 is the best of two worlds

Rancher's next-generation Kubernetes distribution (aka RKE Government)

RKE2, the **most secure and certified** Kubernetes distribution ready for Data Center and Edge, is derived from:

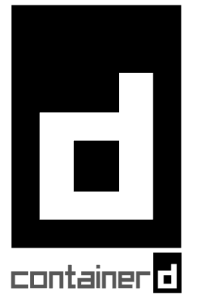
- **K3s**: inheriting the usability, ease-of-operations, and deployment model.
- **RKE**: bullet proof Kubernetes distribution built on containers for containers.

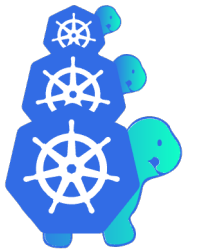
Copyright © SUSE 2023

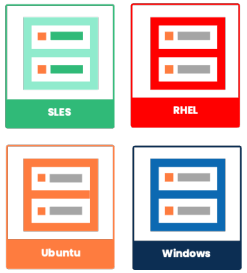
RKE2 platform features

Multi-platform, multi-OS, standards compliant Kubernetes

- Fast and simple installation from a single binary. Easy to configure and scale.
- Fulyl integrated with Rancher Manager Server
- ClusterAPI ready
- containerd as Container runtime
- Supported CNIs:
  - Canal
  - Calico
  - Cilium
  - Multus & DPDK
  - Cisco ACI Support
- Kubernetes 1.26, 1.27 and 1.28 support
- Supported OS:
  - SLES, SLE Micro & openSUSE Leap
  - RHEL & Clones
  - Ubuntu
  - Windows (worker nodes)
- HW architectures:
  - x86_64
  - ARM
  - s390x







Copyright © SUSE 2023

RKE2 security features

Highly-security Kubernetes built to meet the demanding requirements of the US DoD

- Built using hardened images based on SLE Base Container Image (BCI)
- Compatible with AppArmor, SELinux and Multi-Category Security (MCS)

- FIPS 140-2/3 compliance
- DISA STIG certification
- Provides defaults and configuration options that allow clusters to pass the CIS Kubernetes Benchmark v1.8 or v1.24 with minimal operator intervention

- Signed releases with Cosign (Sigstore)
- Support for SBOM (SLSA Level 3-Q1CY24)

RGS Rancher Government Solutions

DISA

RKE2 and Rancher Management Server:

the only Kubernetes solutions with DISA STIG Certified hardening guides!

Copyright © SUSE 2023

RANCHER BY SUSE

Longhorn

Longhorn main feautres

Highly available, software-defined storage solution for K8s

LONGHORN

Kubernetes PV Support

- Block, FS, Object Storage Volume
- RWO, RWX

Kubernetes CSI Protocol Support

- Volume Provision, Attachment, Snapshot, Clone, Expansion

Volume Capabilities

- Thin provisioning
- Snapshot, CoW
- Trim
- Live upgrade

IO Performance

- Data Locality, Local Volume
- SPDK Data Engine

Storage Topology

- Node & Zone replica scheduling anti-affinity
- Storage tag

Data Protection

- Data replication
- Data encryption in transit and at rest
- Bit-rot protection

Data Services

- In-cluster/out-of-cluster backup & restore
- Disaster recovery

Data Reduction

- Space efficiency for Snapshot
- Backup compression

Copyright © SUSE 2023

RANCHER BY SUSE

SUSE

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

© 2023 SUSE LLC. All Rights Reserved. SUSE and the SUSE logo are registered trademarks of SUSE LLC in the United States and other countries. All third-party trademarks are the property of their respective owners.