Note: Coverage of container management has been discontinued. The SUSE Rancher Container Management Product Brief is no longer receiving updates as of September, 2023.

SUSE Rancher Container Management Platform and Service Overview

SUSE acquired Rancher Labs in 2020 and offers both a platform and a service solution for managing Kubernetes-orchestrated containers under the SUSE Rancher brand. The container management *platform* (SUSE Rancher) delivers functionality via a software subscription with a support contract while the container management *service (*SUSE Rancher Hosted*)* offers exactly the same functionality, but with SUSE staff performing the system operations, management and sustaining tasks, with a defined (financially-backed) service level agreement.

SUSE's strategy has historically been to maintain tight alignment with upstream open-source code to enable customer interoperability and portability between environments. The solution suite includes single pane of glass management of heterogenous, multi-cluster customer environments, allowing customers to leverage containers across hybrid and multi-cloud environments. Unlike many other companies, SUSE has chosen to not integrate specific application modernization services into SUSE Rancher but instead to address these requirements by offering customers the access to common open-source and ISV offerings. With the October 2020 acquisition of NeuVector, SUSE stepped away from their traditional open approach to add the advanced security features needed to support scaled-out container environments for enterprise customers. SUSE Rancher lacks the latest advances in AI-enabled observability, another area where rapid innovation is being delivered ahead of open-source deliverables.

SUSE has two solution delivery models for SUSE Rancher – the dominant installed model is customer self-managed, but

Highlights

- Management and control of Kubernetes-orchestrated containers – built on open source but with vendor support.
- Recent addition of advanced security services for scale-out production environments.
- Focused on maintaining alignment to upstream open source for portability – e.g., any K8s distribution, any Linux.
- On-premises deployment on bare metal or virtualized; cloud-deployment on a wide range of cloud services.
- Uniquely able to manage the top three cloud native services (EKS, AKS, GKE) with full lifecycle management; can create or destroy resources directly from the console.
- Options for customer-managed or a SUSE-managed solution (with SLA).
- No integrated application modernization tools or AI/ML.
- Extensive ISV and open-source ecosystem of complementary offerings.
- Strong solution for Edge deployments, with support for lightweight K8s (using K3S), Arm-based servers, and ability to scale lifecycle mgmt. to up to a million clusters.

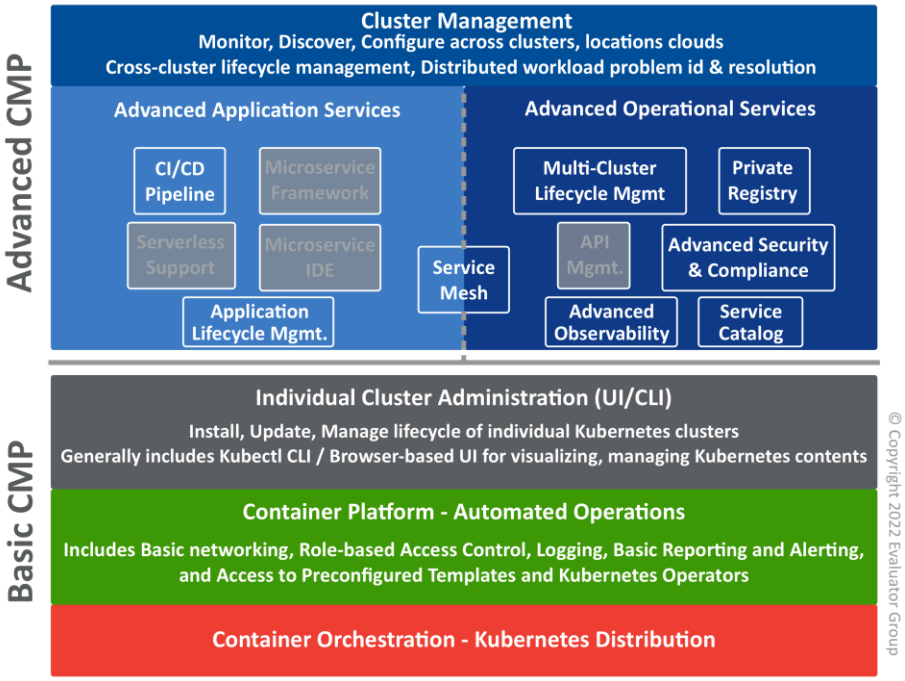
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customers can also avoid capital investment and some operations training while enabling faster time-to-usage by leveraging a SUSE-operated container management service (with defined SLA) offered on top of the AWS cloud (SUSE Rancher Hosted). This hosted offering supports management of hybrid and multi-cloud environments.

Functionality

Unlike other Container Management Platforms which deliver their functionality in multiple value-added (and cost-added) tiers, SUSE has instead chosen to deliver full scale out multi-cluster, multi-site functionality in a single tier SUSE Rancher solution. This offering also includes an Istio service mesh, an application catalog (for easier application installation) and a continuous deployment tool but does not include other application modernization tools. SUSE Rancher includes access to other open-source and ISV functionality for application modernization, including multiple serverless frameworks, but without SUSE personnel providing software support for these offerings. The solution map, embedded below, summarizes the elements provided in the offering.

Functionality Provided in SUSE Rancher Integrated Solution



In addition to offering a solution which is more portable than other alternatives, SUSE Rancher provides added value in three key areas. First, both the platform and managed service support control of Kubernetes clusters across a broader range of cloud environments (AWS, Google, Azure, Alibaba, Baidu, Huawei and Tencent) than most other container management solutions, with the ability to manage

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clusters *across* both a hybrid and multi-cloud enterprise (i.e., with a control plane on premises or in one cloud being capable of managing clusters in another cloud).
Second, SUSE Rancher provides a richer set of functionality for managing cloud-native clusters. While many container management offerings enable Kubernetes clusters instantiated on common hyperscale platforms (e.g., AWS EKS, Azure AKS, GCP GKE) to be managed by a global control plane located elsewhere (e.g., on a different cloud, or on premises), in general, these managed cloud-native clusters must be *imported* into the CMP provider's management environment, and the functionality provided via the CMP management system is limited. After import, for these vendors, the cloud-native Kubernetes systems can generally be included in global visualization and policy-based lifecycle management, but provisioning of the underlying Kubernetes distro must still be managed through the native cloud console. But SUSE Rancher also enables clusters in cloud service environments to also be provisioned, deployed, modified, and deleted in their native cloud architecture while still being monitored and managed by the platform.

Finally, SUSE Rancher supports a richer set of functionality for customers, with entry templates and pre-configuration at startup and an option for self-service node provisioning, enabling secure delegation of some cluster and image administration to development teams (while still maintaining compliance to corporate governance). For companies which are committed to providing decentralized development teams with more delegated control, this latter feature can be valuable.

SUSE Rancher will manage any CNCF-certified distribution of Kubernetes on any Linux operating system, though customers can choose to leverage three SUSE-developed, CNCF-certified Kubernetes distributions which include additional value when integrated with Rancher management. These include RKE, targeted to serve data center environments, and K3S, which is a lightweight Kubernetes distribution for resource-constrained environments at the edge. The third distribution, RKE2 (also known as RKE Government), is pre-configured with default security constraints, and has a broader range of integrated functionality, including an integrated suite of open-source solutions which provide cluster-by-cluster monitoring, registry, Kubernetes operator-based lifecycle management and package management (Helm), particularly suitable for customers needing to run in a standalone (e.g., air-gapped) environment.

SUSE's acquisition of NeuVector provides the SUSE Rancher solution with the advanced security customers need to manage a scaled-out Kubernetes environment, particularly one running across hybrid and multi-cloud platforms. NeuVector's capability to "learn" expected behaviors and watch for/alert on anomalous behavior offers an example of the capabilities that over-worked modern security teams need to stay ahead of potential issues.

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Packaging

Container Management Platform (Subscription)

The SUSE Rancher container management platform (customer self-managed solution) can be operated on bare metal servers, virtualized environments (VMware vSphere, RHV or other certified virtualization platforms), the SUSE Harvester HCI solution, private clouds based on OpenStack, or the wide range of Public Clouds, as noted above (e.g., AWS, Azure, GCP, and other certified public cloud platforms).

All SUSE Rancher Platform subscriptions (i.e., Rancher Management Server and Rancher Node) are chargeable based on the number of nodes, without regard for the number of underlying cores or vCPUs. Cost per node varies based on whether the Rancher node is running (or managing workers) on customer infrastructure, on IaaS, or a fully managed cloud service.

The SUSE Rancher Container Management Platform is based on an enterprise subscription model which can include either 12x5 business hour “Standard Support” or 24x7 “Priority Support”. Customers choosing Priority Support are entitled to faster response time.

Container Management Service

SUSE Rancher Hosted is a container management service delivered by SUSE personnel (provisioned on the AWS cloud). SUSE site reliability engineers manage installation, monitoring, management, maintenance, and upgrades for the control plane, worker nodes, and key services. Customers can use the service with any CNCF-certified Kubernetes distribution across both on-premises and any major clouds. SUSE includes a 99.9% SLA with this offering.

Customers can subscribe to the SUSE Rancher Hosted service in two tiers; a subscription which covers up to 500 nodes, and one for which an unlimited number of nodes can be managed.

Although hosted on AWS, the SUSE Rancher Hosted service is provisioned and billed from SUSE. Customers must negotiate any discounts with SUSE; they cannot leverage their existing AWS discount agreements.

Special Use Cases

Edge

SUSE Rancher includes several capabilities which make it one of the stronger container management offerings for Kubernetes-orchestrated clusters in edge environments. First, as noted above, SUSE Rancher ships with the ability to provision clusters based on the lightweight Kubernetes, K3s. Originally developed by SUSE but now in open-source, K3s was created to run in remote, resource-constrained environments. SUSE Rancher leverages integration of Fleet (open-source) to automate policy and security management of large numbers of Kubernetes nodes. (SUSE states that with this technology,

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the solution can scale to managing 1,000,000 clusters). Finally, SUSE Rancher is one of few container management solutions that can manage an ARM-based server environment, which can be critical for industrial edge use cases.

Air-Gapped Environments

SUSE Rancher can manage Kubernetes clusters in an air-gapped environment.

Windows

Like all CNCF-certified Kubernetes offerings, SUSE Rancher can be used to deploy and manage Windows workers but only in clusters which also contain Linux worker nodes. The Kubernetes control plane must run on a Linux node.

Combined Management of Virtual Machines and Containers

SUSE offers customers the ability to manage both containers and virtual machines in a common environment by operating virtual machine-based workloads on SUSEs hyperconverged Harvester solution, and then managing both containers and VMs using SUSE Rancher. However, the hypervisor on Harvester is KVM-based. Customers with legacy VMs operating on vSphere would need to convert these systems. SUSE indicates that its new Kubernetes distribution, RKE2, supports converged management (with similar limitations). This offering is currently focused on government environments, but the stated intent is to "graduate" the offering to more general use.

Other Services

SUSE's focus is on providing solutions aimed at the management of Kubernetes-orchestrated containers; they do not provide fully integrated solutions for application modernization, AI/ML, infrastructure automation or digital transformation. They are focused on delivering a resilient and easy to use product-service for Kubernetes-orchestrated containers, from entry to scale. Like most open-source container management providers, they offer some professional consulting services; however, these are not intended to compete broadly with the end-to-end strategic consulting such as is offered by VMware's Tanzu Labs. The company offers both instructor-led and online training courses in SUSE Rancher, leading customers to certification. The company offers the SUSE Rancher Rodeo Workshop, a free three-day session aimed at introducing DevOps and IT teams to the skills they need to deploy and optimize their use of SUSE Rancher.

The EvaluScale summary for SUSE Rancher is included on the following page.

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Evaluator Group *EvaluScale*™: Container Management: SUSE Rancher Container Management Platform and Service

	Criteria	Description	EG View of Offerings	Explanation
1	**Global Enterprise Functionality: Capable of managing multi-cluster, multi-site production environments**	Ability to deploy, manage and support a fully scaled-out Kubernetes environment, including integrated advanced security and observability.	Exceeds Requirements	SUSE Rancher enables multi-cluster scale-out with single-pane of glass management. With the acquisition of NeuVector, the product r now includes strong multi-cluster, multi-environment security with automated governance.
2	**Ease of Deployment and Operation (for Platform)**	Customer can effectively deploy and operate the platform themselves, with the vendor providing software update and technical help desk support	Exceeds Requirements	Customers can deploy and manage a Kubernetes-orchestrated environment. SUSE Rancher offers added easy startup templates and delegation capability to make self-management easier, particularly in an environment which needs developer self-service.
3	**Integrated Application Modernization Tool set**	Ability to acquire, maintain and expect support for a full container infrastructure including the application tools needed to run a modern development environment.	Area for Development	SUSE Rancher does not integrate and provide direct support for a full suite of application modernization tools. Customers will need to acquire tools, support from other sources
4	**Hybrid: Manages a combined environment of on premises with a public cloud**	Integrated operation across on-premises and a public cloud environment.	Meets Requirements	SUSE Rancher supports management of hybrid environments with its control plane either on premises or in the cloud.
5	**Management across multiple public clouds**	Integrated operation across multiple public clouds	Exceeds Requirements	SUSE Rancher supports a CNCF-certified K8s across all major cloud K8s) for both control and worker nodes as well as both import and ongoing native operation of cloud providers K8s (e.g., EKS).
6	**Solution Portability Across Public Clouds and On Premises**	Ability to migrate containers easily between public clouds, on/off on-premises and to another management solution.	Exceeds Requirements	SUSE maintains the closest mapping to upstream open K8s of all CMP solution providers. Best in class for portability.
7	**Combined Management of VMware virtual machines and Kubernetes**	Ability to administer VMware virtual machines and containers from a common administrative control plane.	Area for Development	While SUSE provides a solution for common management with KVM and Harvester, its solution for customers with legacy VMware requires customers to convert their VMs and to replace their HCI

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	containers			architecture with Harvester.
8	**Integrated Solution for AI/ML or Database Use Cases**	Ability to rapidly get to productive use with a set of container and application tools needed to satisfy a particularly common, high value use case.	Area for Development	SUSE does not offer fast time to use integrated solutions for AI/ML or big data use cases.
9	**Management of Edge Containers**	Ability to support K8s use cases at the edge.	Exceeds Requirements	SUSE offers specialized K8s distribution, high-scale fleet management, ARM-server support and integrated HCI offerings to help customers deploy at the edge.
10	**Professional Services/Training**	Expert services by vendor supporting either/both strategic or operational needs.	Meets Requirements	Basic professional services are available for optimizing the use of SUSE Rancher; they do offer 3-day free workshops and both instructor and online technical training
11	**Vendor Market Strength**	Vendor's odds of continuing to be a successful participant in the market	Exceeds Requirements	SUSE Rancher is widely installed; the company is a leader in the community and does impact solution direction.

Evaluator Group Opinion

SUSE is one of the leaders in the container managed platform market, with a large SUSE Rancher install base, a strong investment in the relevant open-source development community, and a portfolio of complementary partners.

The SUSE solution portfolio (i.e., SUSE Rancher, Harvester, etc.) has its greatest strength in its ability to support a customer's requirements from low-cost entry to a scaled-out hybrid and multi-cloud environment with an offering which is closely aligned with upstream open source. This means SUSE Rancher is highly portable, giving customers the opportunity for flexibility in deployment with minimal lock-in to the solution.

The offering includes strong multi-cluster and multi-site capabilities, including a global control plane, lifecycle management and advanced security features (based on the recent acquisition of NeuVector) as well as extensive deployment options across on premises and a wide range of cloud providers. Customers who expect to operate Kubernetes across multiple cloud services are likely to be particularly attracted by SUSE Rancher's unique capability to import and manage the native cloud offerings of AWS, Azure and Google directly from the global console (including creating, modifying, and deleting use of the underlying cloud services).

Enterprise customers who are focused on digital transformation will need to add complementary open source or third-party ISV offerings for application modernization. For customers desiring a choice of

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application tools (or who wish to integrate tools they have already selected), this strategy is a good fit. However, if a customer is looking for single call support across both the operation Kubernetes layer as well as a full suite of application development and support tools, SUSE Rancher would not be the optimal solution; customers choosing this solution will need to manage a multi-vendor support environment. This is equally the case for customers looking for a fast bring-up of a container environment with data science or database applications; SUSE does not provide a fully integrated environment supporting these use cases.

The SUSE Rancher Hosted service does enable enterprises to begin their journey to cloud-native containerization (or to leverage it for selected use cases) with the speedy bring-up and ease of use of a fully managed service. SUSE engineers perform all the SRE tasks, with an operating SLA of 99.5%. As with the self-managed offering, SUSE does not include application services (e.g., AI/ML and big data) in this offering; customers will need to provision, deploy, and manage these services separately. Customers looking for a low-risk solution to integrate ongoing operational management of existing VMware vSphere systems and containers from a single console will not find it in the SUSE Rancher offering. While these technologies can be combined for management, this option requires customers to migrate their vSphere-based virtual machines to KVM, and to leverage SUSE Harvester HCI for on premises.

SUSE has a solid foundation (and appears to be continuing to invest) in a solid suite of offerings for the Edge, including at the industrial level. The combination of lightweight K8s, support for ARM-based servers and leverage of Fleet technology (which provides support for a larger number of clusters as well as easier scaled out policy management) should be attractive for customers looking to use Kubernetes in high-scale environments such as storefronts, industrial manufacturing locations etc. Air-gap support also enables use of the technology in cases where network connectivity may not be strong or continuous.

SUSE is an open-source, product-centric company. Customers who are looking for a solid technical approach to containerization, with the minimum risk of vendor lock-in, will be well-served by this offering. But enterprises desiring single vendor support and a single bill to pay across an entire stack of hardware and application services – or desiring their container management vendor to augment their knowledge or talent with professional services and training – will need to evaluate alternatives. SUSE's customer engagement focus is predominantly at the DevOps level. VPs of Operations who are looking for strategic guidance on how to develop and execute their infrastructure and application modernization journey will need to look to partners for strategic support.

More information is available at **http://evaluatorgroup.com**

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