

SUSE Virtualization 1.5.0, Veeam Kasten for Kubernetes 8.0.0

# Protect SUSE Virtualization Workloads with Veeam Kasten

Backup, Restore, and Move SUSE Virtualization Workloads

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### Summary

Veeam Kasten can provide backup, restore, disaster recovery, and ransomware protection for SUSE Virtualization and SUSE Rancher workloads. Veeam Kasten is simple to deploy and can be protecting workloads in a matter of minutes. This guide provides basic instructions for deploying Veeam Kasten to begin protecting VM workloads in your cloud native, SUSE Virtualization environment.

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# 1 Introduction

Enterprises embracing cloud native technologies, like containers and Kubernetes, seek efficiency, scale, and agility for their applications. They need to simplify management of their expanding cloud native estates. Thus, they turn to SUSE Rancher Prime, the open source platform designed to unify and streamline Kubernetes management across diverse infrastructures - data centers, clouds, and the edge.

The transition to cloud native is often gradual. Developers and business units often need time to redesign legacy applications or adapt business practices. Organizations may find that they must concurrently maintain both cloud native and traditional IT infrastructure. This situation often leads to higher material and operational costs and hindering the modernization effort.

SUSE Virtualization addresses this challenge by allowing enterprises to manage virtual machines (VMs) for legacy applications alongside containers within SUSE Rancher Prime. With unified management of containers and VMs, organizations can consolidate their IT estates, reduce costs, and continue their modernization journeys.

Business continuity is also crucial for enterprise IT estates. Veeam Kasten for Kubernetes provides policy-driven backup, disaster recovery, application mobility, and ransomware protection for cloud native environments. Integrating Veeam Kasten with SUSE Rancher Prime extends its enterprise-grade business continuity to VMs as well.

SUSE and Veeam together empower enterprises to unify their IT infrastructure estates, decrease operational costs, and ensure business continuity across both traditional and cloud native workloads.

## 1.1 Scope

This guide provides an architectural overview and steps for deployment and configuration of Veeam Kasten for Kubernetes in a SUSE Virtualization environment.

## 1.2 Audience

The intended audience for this document includes solution and infrastructure architects, system administrators, platform engineers, virtualization administrators, and backup and recovery administrators. A basic understanding of virtualization, Linux, and Kubernetes concepts and technologies is required to successfully follow and apply this guide.

## 2 Architecture

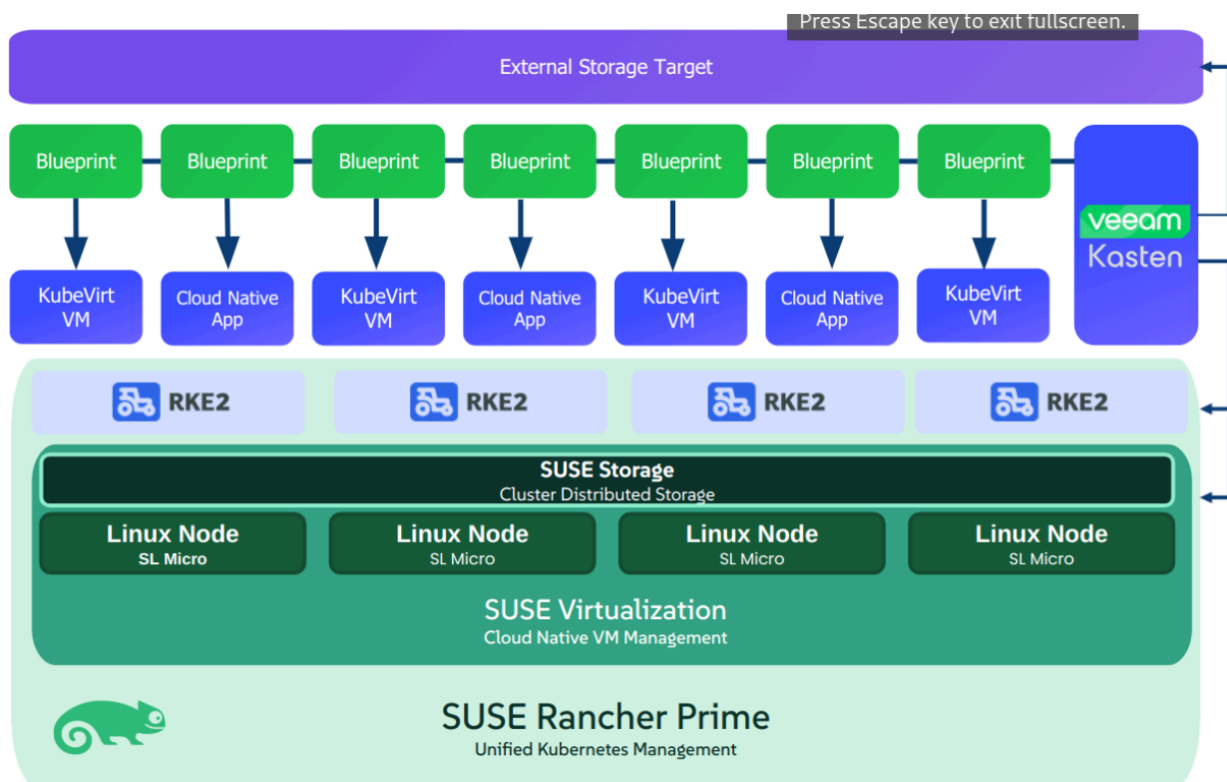


FIGURE 1: ARCHITECTURE OVERVIEW

Veeam Kasten for Kubernetes is deployed to a SUSE Virtualization cluster. It uses the underlying RKE2 Kubernetes cluster for the control plane, and includes NGNIX ingress to serve the Veeam Kasten user interface (UI). When installed in the cluster, Veeam Kasten can view all namespaces and resources and administrators can create backup policies for namespaces or individual VMs.

### 2.1 Components

Component technologies used in this guide include:

- One or more physical Linux servers as worker nodes to host VMs  
For this guide, [SUSE Linux Micro](https://www.suse.com/products/micro/) (<https://www.suse.com/products/micro/>) 6.1 is used as the worker node operating system.
- [SUSE Virtualization](https://www.suse.com/products/rancher/virtualization/) (<https://www.suse.com/products/rancher/virtualization/>) (1.5.0 or later) installed onto the RKE2 cluster and configured on each node

- Veeam Kasten for Kubernetes (<https://www.veeam.com/products/cloud/kubernetes-data-protection.html>) (8.0.0 or later) providing data protection
- Backups are configured to be stored in an Amazon S3 bucket, ensuring offsite data availability and durability.



## Note

Always check the current [product support matrices](https://www.suse.com/suse-rancher/support-matrix/) (<https://www.suse.com/suse-rancher/support-matrix/>) to ensure proper choice of product versions.

## 2.2 Additional resources

Additional resources you will need to follow the steps in this guide include:

- A workstation you will use to connect to and administer the cluster environment
- Helm (<https://helm.sh>) v3 Kubernetes package manager installed on your workstation
- Kubectl (<https://kubernetes.io/docs/reference/kubectl/>) command line tool installed on your workstation for accessing the Kubernetes API

## 3 Prepare the environment

Before installing Veeam Kasten, you must first prepare your SUSE Virtualization environment.

### 1. Deploy SUSE Virtualization.

Detailed guidance is provided in the [official documentation](https://documentation.suse.com/cloudnative/virtualization/) (<https://documentation.suse.com/cloudnative/virtualization/>).



## Note

A single-node cluster is sufficient for this guide.

2. Create a virtual machine (<https://documentation.suse.com/cloudnative/virtualization/v1.5/en/virtual-machines/create-vm.html>) (VM) using SUSE Virtualization to host your Kubernetes cluster and applications.
3. Plan your backup target storage in advance and ensure credentials are ready if using S3-compatible object storage.

## 4 Procedure

1. After deploying a SUSE Virtualization cluster, log in to the management IP (<https://documentation.suse.com/cloudnative/virtualization/v1.5/en/installation-set-up/management-address.html>) address and then navigate to the desired cluster.
2. Click *Support* located at the bottom left of the navigation menu.

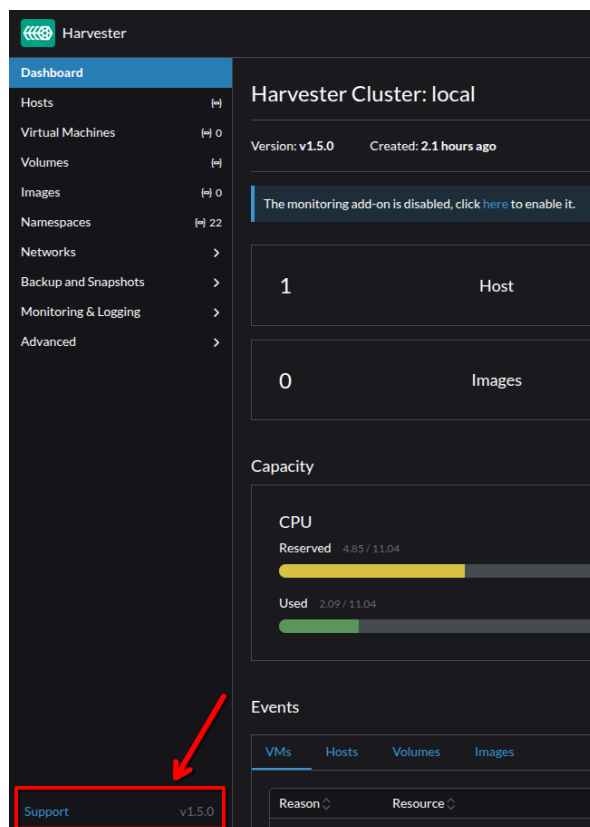


FIGURE 2: SUSE VIRTUALIZATION CLUSTER DASHBOARD

3. Select the *Download KubeConfig* option to save the cluster configuration file to your workstation.

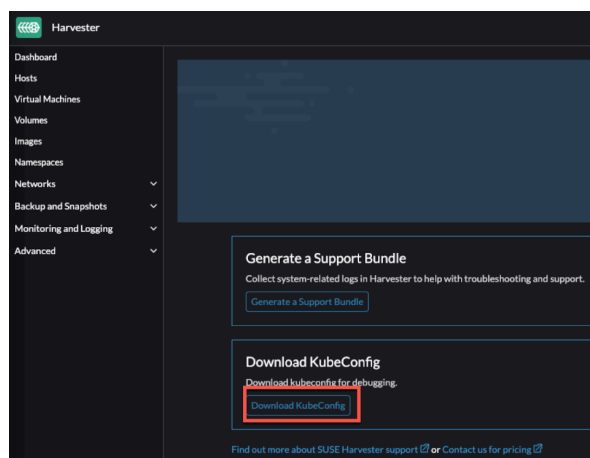


FIGURE 3: SAVE CLUSTER CONFIGURATION FILE

4. Place the downloaded file in the default Kubernetes configuration path (typically `~/.kube` on Linux and MacOSX).



5. Open a command terminal on your workstation and confirm connectivity to the SUSE Virtualization RKE2 cluster using Kubernetes CLI command.

```
kubectl get nodes
```

6. SUSE Virtualization uses SUSE Storage, which is built on Longhorn as its default block storage solution. To enable Veeam Kasten to export block-mode disks, annotate the `harvester-longhorn` storage class accordingly.

```
kubectl annotate storageclass harvester-longhorn \
k10.kasten.io/sc-supports-block-mode-exports=true
```

7. Similarly, annotate the longhorn-snapshot `volumesnapshotclass` so Veeam Kasten can use it to take storage snapshots.

```
kubectl annotate volumesnapshotclass longhorn-snapshot \
k10.kasten.io/is-snapshot-class=true
```

8. Add the *kasten* repository to Helm.

```
helm repo add kasten https://charts.kasten.io
```

9. Install Veeam Kasten via Helm.

```
helm install k10 kasten/k10 \
--namespace 'kasten-io' \
--create-namespace \
--set "ingress.create=true" \
--set-string "ingress.class=nginx" \
--set "auth.basicAuth.enabled=true" \
--set-string "auth.basicAuth.htpasswd=kasten:{SHA}3ddV7KLvFY/54nJZFXKfZHf78k="
```



## Note

This will install Veeam Kasten with basic authentication, with a user name of 'kasten' and password 'Kasten/4u!'. If you want to use a different user name and password, do so by generating a different htpasswd string and replacing the string in the command above.

10. Watch the Veeam Kasten pods and wait for all to have a status of RUNNING.

```
watch 'kubectl get pods -n kasten-io'
```

11. Using your Web browser, enter the host name or management IP address of the SUSE Virtualization, and append '/k10/' to the end of the URL. The Veeam Kasten dashboard should load and ask for a user name and password. Enter 'kasten' and 'Kasten/4u!' if you did not change the htpasswd string in the Helm installation command, otherwise enter the user name and password you configured.

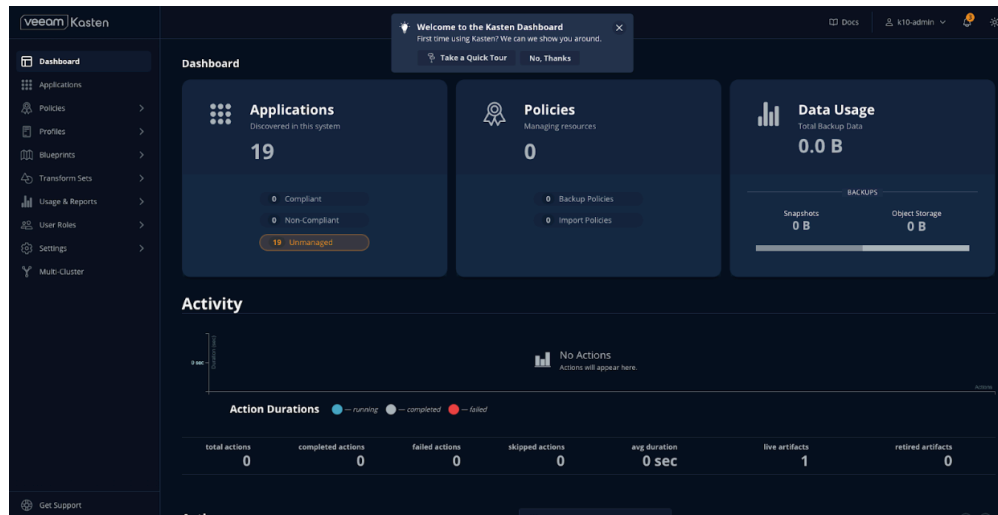


FIGURE 4: VEEAM KASTEN DASHBOARD

12. Veeam Kasten can now be configured to send backups to an external source. To do so, navigate to *Profiles > Location Profiles*, choosing *Add New* and selecting the relevant storage provider and configuring authentication.



## Note

The multiple location profiles can be defined, allowing administrators to send back-up data to different locations depending on requirements, cost, etc.

[< Back to Location Profiles](#)

## Create Location Profile

### Steps

- Name and Provider**
- Configuration
- Summary

**Location Profile Name**  
The display name for this location profile

**Storage Provider**

aws Amazon S3

Azure Storage

Google Cloud Storage

NFS FileStore

S3 Compatible

Veeam Repository

FIGURE 5: VEEAM KASTEN CREATE LOCATION PROFILE

- Backup policies can now be configured to protect workloads. To do so, navigate to *Applications*, click the menu to the right of a namespace you want to protect, and select *Create Policy*.

All <span>Filter by Name</span> <span>Options</span> 0 selected				
<input type="checkbox"/>	NAME	STATUS	STATS	LAST BACKUP
<input type="checkbox"/>	cattle-logging-system	Unmanaged	2	No restore point
<input type="checkbox"/>	cattle-monitoring-system	Unmanaged	3	No restore point
<input type="checkbox"/>	cattle-provisioning-capi-system	Unmanaged	1 1 3	No restore point
<input type="checkbox"/>	cattle-system	Unmanaged	4 4 36	No restore point
<input type="checkbox"/>	cattle-ui-plugin-system	Unmanaged	1	No restore point
<input type="checkbox"/>	cluster-fleet-local-local-1a3d67d0a899	Unmanaged	2	No restore point
<input type="checkbox"/>	default	Unmanaged	1 1	No restore point
<input type="checkbox"/>	fleet-default	Unmanaged	2	No restore point
<input type="checkbox"/>	fleet-local	Unmanaged	7	No restore point
<input type="checkbox"/>	harvester-public	Unmanaged	3	No restore point
<input type="checkbox"/>	harvester-system	Unmanaged	11 10 27	No restore point
<input type="checkbox"/>	images	Unmanaged	1	No restore point
<input type="checkbox"/>	local	Unmanaged	1	No restore point
<input type="checkbox"/>	longhorn-system	Unmanaged	6 5 5	No restore point
<input type="checkbox"/>	user-7qn68	Unmanaged	1	No restore point

FIGURE 6: VEEAM KASTEN APPLICATIONS

- The backup policy can now be defined, including scheduling and frequency, the retention schedule, and where to export backup data.

**New Policy**

**Name**  
The display name for this policy  
default-backup

**Comments**

**Action**  
The action that should be taken when this policy is executed  
☒ Snapshot
 ☐ Import

☐ **Use a Preset**  
Choose a pre-configured group of schedule and export settings

**Backup Frequency**  
☒ Hourly
 ☐ Daily
 ☐ Weekly
 ☐ Monthly
 ☐ Yearly
 ☐ On Demand

☐ Advanced Frequency Options  
☐ Backup Window

> Snapshot at :00 each hour

**Note:** Times are stored in UTC, which does not change with Daylight Savings Time.

**Snapshot Retention**

Create Policy </> YAML Cancel

FIGURE 7: VEEAM KASTEN NEW POLICY



## Note

This [step-by-step visual walkthrough \(https://youtu.be/CrkbHHzdvw4?si=a66O8u\\_ROX-SpMeQ9\)](https://youtu.be/CrkbHHzdvw4?si=a66O8u_ROX-SpMeQ9) demonstrates how to deploy Veeam Kasten for Kubernetes into a SUSE Virtualization environment. It also shows how to create a backup policy, and perform a backup and restoration of a VM.


## 5 Summary

Organizations can struggle to manage VMs for their legacy applications while trying to modernize to cloud-native technologies, such as containers and Kubernetes. SUSE Virtualization helps address this problem by delivering a cloud-native approach to VMs deployment and management. Easily integrated with SUSE Rancher Prime, SUSE Virtualization enables organizations to unify their VM and container environments, reducing infrastructure and operational overhead. Veeam Kasten for Kubernetes supports both SUSE Virtualization and SUSE Rancher Prime, providing backup, restore, disaster recovery, and ransomware protection for an organization's workloads in VMs and containers. Veeam Kasten for Kubernetes is simple to deploy and configure, and it can be protecting workloads in a matter of minutes.

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