Veeam Agent for Linux 5.0.2 Release Notes

This document provides last-minute information about Veeam Agent for Linux, including system requirements and installation, as well as relevant information on technical support, documentation, online resources and so on.

The release version of Veeam Agent for Linux 5.0.2 is available for installation from the Veeam software repository starting from December 22nd, 2021.

The Veeam software repository package is available for download at: https://www.veeam.com/downloads.html. Download the package and install it on the computer where you plan to install Veeam Agent for Linux. Then follow the instructions in the Installing Veeam Agent for Linux section.

See next:

- System Requirements
- Considerations and Limitations
- Known Issues
- Installing Veeam Agent for Linux
- Upgrading Veeam Agent for Linux
- Uninstalling Veeam Agent for Linux
- Licensing
- Technical Documentation References
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System Requirements

Hardware

CPU: x86-64 processor (i386 or later).

Memory: 1 GB RAM or more. Memory consumption varies depending on the backup type and the total amount of backed-up data.

Disk Space: 100 MB free disk space for product installation.

Network: 10 Mbps or faster network connection to a backup target.

System firmware: BIOS or UEFI.

Disk layout: MBR or GPT.

For virtual machines: Only full virtualization type is supported. Containers and paravirtualized instances are not supported. OVM is supported with limitations.

OS

> **IMPORTANT!**
>
> Check considerations and limitations that apply to the list of supported OSes.

Linux kernel from version 2.6.32 or later is supported.

Both 64-bit and 32-bit versions (if applicable) of the following distributions[2] are supported:

- Debian 9.0 – 11.1
- Ubuntu 14.04, 16.04, 18.04, 20.04, 20.10, 21.04, 21.10 and 22.04
- RHEL 6.0 – 8.5
- CentOS 7.0 – 8.5
- Oracle Linux 6 – 8.5 (RHCK)
- Oracle Linux 6 (starting from UEK R2) – Oracle Linux 8 (up to UEK R6 U2, kernel version 5.4.17-2102)
- SLES 11 SP4, 12 SP2 – 15 SP3
- SLES for SAP 11 SP4, 12 SP2 – 15 SP3
- Fedora 33, 34, 35
- openSUSE Leap 15.2 – 15.3
- openSUSE Tumbleweed

File System

> **IMPORTANT!**
>
> Check considerations and limitations that apply to the list of supported file systems.

Veeam Agent for Linux supports consistent snapshot-based data backup for the following file systems:

- Btrfs (for OSes that run Linux kernel 3.16 or later)
- Ext 2/3/4
- F2FS
- FAT16
- FAT32
- HFS
- HFS+
- JFS
- NILFS2
- NTFS
- ReiserFS
- XFS

The supported file system (except for Btrfs) can reside on a simple volume or LVM2 volume; volumes protected with encryption software such as dm-crypt are supported. Btrfs is supported only if it resides directly on a physical device with no additional abstraction layers (such as LVM, software RAID, dm-crypt and so on) below or above it.

Data that resides on other file systems and volumes (including NFS and SMB shares) can be backed up using the snapshot-less mode. For details, see the Snapshot-Less File-Level Backup section in the Veeam Agent for Linux User Guide.

Software

> **IMPORTANT!**
>
> Check considerations and limitations that apply to the list of supported components.

Protected computer must have the following components installed:

- dkms
- gcc
- make
- perl
- linux-headers (for Debian-based systems)
- kernel-headers (for RedHat-based systems)
- kernel-devel (for RedHat-based systems)
- libudev
- libacl
- libattr
- lvm2
- libfuse
- libncurses5
- dmidecode
- libmysqlclient
- libpq5
- python3
- efibootmgr (for UEFI-based systems)
- isolinux (for Debian-based systems)
- syslinux (for RedHat-based systems)
- btrfs-progs (for backup of Btrfs file system)
- mksquashfs (for custom Veeam Recovery Media)
- unsquashfs (for custom Veeam Recovery Media)
- wget (for custom Veeam Recovery Media)
- xorriso (for custom Veeam Recovery Media with EFI support)

Backup Target

Backup can be performed to the following disk-based storage:

- Local (internal) storage of the protected computer (not recommended)

- Direct attached storage (DAS), such as USB, eSATA or Firewire external drives

- Network Attached Storage (NAS) able to represent itself as SMB (CIFS) or NFS share

- Veeam Backup & Replication 11 or later backup repository (including deduplication appliances)

- Veeam Cloud Connect 11 or later repository

Considerations and Limitations

OS

- Linux kernel version 2.6.32 or later is supported as long as you use kernels supplied by your distribution. Consider the following limitations:

    o Fedora and openSUSE Tumbleweed are supported up to kernel 5.15.7.

    o Linux kernel 2.6.32-754.6.3 in CentOS / RHEL and Oracle Linux (RHCK) is not supported.

- Only GA versions of the supported distributions that have been released before the current version of Veeam Agent for Linux are supported.

    If a new version of a supported Linux distribution is released after the release of the current version of Veeam Agent, Veeam Agent may require a patch to support this new OS version. For details on Veeam Agent compatibility with Linux OS versions, see this Veeam KB article.

- For the following distributions, we recommend installing Veeam Agent from a pre-built binary `veeamsnap` kernel module packages provided by Veeam:

    o CentOS 7.0 – 8.5

    o RHEL 6.0 – 8.5

    o SLES 11 SP4, 12 SP2 – 15 SP3

    o SLES for SAP 11 SP4, 12 SP2 – 15 SP3

    o openSUSE Leap 15.2 – 15.3

    For other supported distributions, use the `dkms` packages instead of the pre-built binary `veeamsnap` kernel module packages.

    Keep in mind that the pre-built binary `veeamsnap` kernel module packages require kernel 2.6.32-131.0.15 or later for RHEL 6 (excluding 2.6.32-279.el6.i686) and 3.10.0-123 or later for CentOS / RHEL 7.0 – 7.9.

- To ensure proper functioning of the `veeamsnap` kernel module, verify that your system does not have any of the following modules installed: `hcdriver`, `snapapi26`, `snapapi`, `snapper`, `dattobd`, `dattobd-dkms`, `dkms-dattobd`, `cdr` or `cxbf`.

- The Linux OS must be set up to receive software updates from the default repositories enabled in the OS after installation.

- For cloud-based installations that use customized kernels (such as Linux distributions deployed from AWS Marketplace or Azure Marketplace), the `veeamsnap` kernel module has experimental support status. For details about experimental support, see this Veeam KB article.

- Automatic Veeam Agent deployment from the Veeam backup console is not supported for the following distributions:

    o Fedora 33, 34, 35

    o openSUSE Tumbleweed

- RHEL, CentOS and Oracle Linux (RHCK) are supported up to certain kernel versions. For details, see this Veeam KB article.

- Ubuntu 21.10 minimal install is not supported.

File System

- Veeam Agent for Linux does not back up the following objects:

  - LVM snapshots

  - Volumes that reside on USB devices and SD cards

- File-level backup has the following limitations:

  - Total size of all file systems must not exceed 218 TB. This limitation applies to all file systems where files you plan to back up are located.

  - Size of a file included in a file-level backup must not exceed 16 TB.

  - Name of a file must not be larger than 254 bytes.

    Keep in mind that characters that you can use in the file name may be encoded in 2 bytes or more.

- Veeam Agent supports backup of extended attributes with the following limitations:

  - Veeam Agent backs up extended attributes only with the following public namespaces: system, security, trusted, and user.

  - All extended attribute names and values of a file must not exceed 4096 bytes (size of a default ext4 file system block). Veeam Agent does not back up attributes exceeding the limit.

    For the kernel version 4.13 or later, if a value of extended attribute exceeds the limit, Veeam Agent uses the **ea_inodes** feature. Backups created using the **ea_inodes** feature cannot be mounted on kernel versions up to 4.12.

- Backup of file and directory attributes (for example, a — append only, c — compressed, and so on) is not supported.

- Each volume included in a backup must have a unique UUID.

- The `veeamsnap` module provides RAM-based changed block tracking (CBT) mechanism. Every time the module is unloaded, or Veeam Agent for Linux computer is rebooted, CBT data is reset. As a result, Veeam Agent reads the entire data added to the backup scope to detect what blocks have changed since the last job session, and incremental backup requires greater time.

- Veeam Agent for Linux does not back up an entire system image or specific volumes of machines used as cluster nodes. Only snapshot-less file-level backup of machines used as cluster nodes is supported. That includes backup of machines that use shared disks, clustered file systems or clustered LVM.

- Certain limitations for EMC PowerPath configuration apply. To learn more, see this Veeam KB article.

- BFQ I/O scheduler is not supported.

- Sparse files are not supported. Veeam Agent backs up and restores sparse files as regular files.

Software

> **IMPORTANT!**
>
> Linux user account used to work with Veeam Agent for Linux must have the `/bin/bash` shell set as the default shell.

- The following packages are not required for CentOS, RHEL and SLES distributions if a pre-built binary `veeamsnap` package is to be installed:

  - dkms

  - gcc

  - make

  - perl

  - kernel-headers (for RedHat-based systems)

  - kernel-devel (for RedHat-based systems)

  For details, see Installing Veeam Agent for Linux.

- Version of the following packages varies according to the Linux kernel version that you use:

  - linux-headers (for Debian-based systems)

  - kernel-headers (for RedHat-based systems)

  - kernel-devel (for RedHat-based systems)

- For openSUSE and SLES distributions, either of the following packages is required: `libncurses5` or `libncurses6`.

- The `dmidecode` package is required for Veeam Agent management — a valid BIOS UUID must be obtainable either from `dmidecode | grep -i uuid` or from `/sys/class/dmi/id/product_uuid`. Each Veeam Agent that consumes a license installed in Veeam Backup & Replication must have a unique BIOS UUID. If a valid UUID cannot be obtained, Veeam will generate it automatically.

- The `libmysqlclient` package is required to process MySQL database system located on the Veeam Agent server. Package version varies according to the MySQL database system version that you use.

- The `libpq5` package is required to process PostgreSQL database system located on the Veeam Agent server.

- The `python3` package or another RPM package providing a `/usr/bin/python3` binary is required for CentOS, RHEL 7.0 and later distributions if a pre-built binary `kmod-veeamsnap` package is to be installed.

- The `btrfs-progs` package version 3.16 or later is required.

- The `lvm2` package version up to 2.03.12 is required. Later versions are not supported.

Known Issues

General

- User interface may appear unreadable in some terminal programs due to using incorrect symbols for pseudographics. To fix the issue, do the following:
    - Kitty: select the **Allow ACS line drawing in UTF** check box.
- If a directory contains file with a long name consisting of 2-byte characters, the content of this directory may not be displayed in the file system tree views of the user interface.

Backup

- Volume-level backup jobs that rely on a device name under the `/dev` directory require volumes to have their corresponding device names under the `/dev` directory staying persistent (e.g. `/dev/md-127`, `/dev/dm-1`). Otherwise, the job will back up the wrong volume.
- Backup to CIFS is not supported for x86+PAE systems.
- Directories encrypted with eCryptfs can be backed up only in the following conditions:
    - eCryptfs is unmounted (files will be encrypted inside the backup)
    - snapshot-less mode is used (files will be decrypted inside the backup)
- Network shares (both CIFS and NFS) can be selected as a source only in the snapshot-less mode.
- LVM physical volumes cannot be backed up, as well as RAID members. Only LVM/RAID logical volumes containing file systems can be backed up. If a physical volume is selected, then all logical volumes residing on that physical volume will be backed up.
- Disks partitioned with cfdisk version older than 2.25 are not supported.
- File-level backup masks do not apply to directories.
- Backup job type cannot be switched between file and volume levels.
- Very high data change rate during backup may cause snapshot overflow. Should this happen, the job will attempt to retry processing up to 3 times with a larger snapshot.
- Sparse files are backed up as regular files.
- If you use the Veeam Agent for Linux version up to 4.0 and target a backup job at an immutable Linux repository, the backup job may fail during the merge operation.

Restore

- File-level restore cannot be performed on kernels versions 4.0.x-4.1.33 due to the bug in FUSE kernel module. To work around the issue, either upgrade the kernel, or perform file-level restore from the Recovery Media, or on another machine.
- File-level restore for files residing on eCryptfs directories does not mount eCryptfs filesystem automatically.
- Concurrent file-level restore sessions from different restore points are not supported because only one restore point can be mounted at a time. To perform a file-level restore from another restore point, unmount currently mounted one first.
- Restore of encrypted devices is not supported.

- If root partition and bootloader reside on software RAID (mdadm), the following operations will have to be performed manually via usage of the tools provided in the Recovery Media:
  - bootloader installation
  - software RAID configuration
  - fstab and grub configuration adjustments
- It is required to switch the agent from "Managed by backup server" mode to "Standalone" mode in order to restore from Veeam Cloud Connect repository.
- Sparse files are restored as regular files.
- If you restore data from an encrypted backup and create a LUKS volume using the product graphical user interface, the product creates a LUKS2 volume. The LUKS2 volume can be decrypted only on Linux kernel version 4.19 or later.

Veeam Backup & Replication Integration

- Encrypted backups created with versions older than v3.0 cannot be imported to Veeam Agent for Linux directly.
- Instant Restore feature is not available for backups created with versions older than 3.0.

Oracle AAIP

Databases residing on ASM volumes cannot be backed up. However, they will be prepared by AAIP engine and will be shown in Veeam Explorer for Oracle without possibility to be restored.

Configurations

For GPT disks: bootloader will not be backed up if BTRFS root and BIOS boot partition reside on different physical disks.

BTRFS Support

- Bugs and issues in the kernel that affect BTRFS snapshots and send/receive functionality can cause backup jobs to fail.
- Backup progress for subvolumes cannot be properly shown on systems with *btrfsprogs* versions lower than v4.1.
- Large overhead can be observed in the *Transferred* statistics field for backup jobs that include BTRFS that has no subvolumes.
- If the root subvolume (id 5) is more than 50% full, restore of the subvolume may fail.
- If a subvolume is deleted during restore, it is required to remove the corresponding entry from fstab manually. Otherwise, the system will not boot.

Snapshot-Less Mode

- Indexed BTRFS mount points cannot be browsed or restored in Veeam Backup Enterprise Manager.
- The *tmpfs* file system cannot be backed up in the snapshot-less mode.

ISO

- User interface may not show backups that contain localized symbols in their names.
- Using Veeam Recovery Media, you may experience certain rare issues. To learn more, see this Veeam KB article.

Agent Management

- Statistics for file-level backup jobs managed by the backup server may be inaccurate.

- A backup job managed by the backup server will perform merge even if a corrupted restore point is present in a backup chain. The corrupted restore point will be deleted during the next job run.

Other

- A backup job that uses a network folder as a target cannot be created on systems with Kaspersky Endpoint Security 10.

- If an LVM physical volume is selected for backup, all volume groups that fully reside in this physical volume will be backed up.

Installing Veeam Agent for Linux

> **TIP:**
>
> For information on auto-deployment, refer to the Veeam Agent Management Guide at: https://www.veeam.com/documentation-guides-datasheets.html.

To install Veeam Agent for Linux:

1. Download the latest version of the Veeam software repository installation package from the Veeam Download page at https://www.veeam.com/linux-backup-download.html to the computer where you want to install the product.

2. Browse to the directory with the downloaded `veeam-release` package and install the repository using one of the following commands depending on your Linux distribution:

Debian Ubuntu	`dpkg -i ./veeam-release*` `apt-get update`
CentOS Fedora Oracle Linux RHEL	`rpm -ivh ./veeam-release*` `yum check-update`
openSUSE SLES	`zypper in ./veeam-release*` `zypper refresh`

3. Install Veeam Agent for Linux:

Debian Ubuntu	`apt-get install veeam`
CentOS[1] Fedora Oracle Linux RHEL[1]	`yum install veeam`

openSUSE	Tumbleweed:
	`zypper in veeam`
	Leap 15.2– 15.3:
	`zypper in veeamsnap-kmp-default`
	`zypper in veeam`
	Preempt kernel:
	`zypper in veeamsnap-kmp-preempt`
	`zypper in veeam`

SLES 11 SP4	Default kernel:
	`zypper in veeamsnap-kmp-default`
	`zypper in veeam`
	Trace kernel:
	`zypper in veeamsnap-kmp-trace`
	`zypper in veeam`
	Xen kernel:
	`zypper veeamsnap-kmp-xen`
	`zypper in veeam`
	PAE kernel:
	`veeamsnap-kmp-pae`
	`zypper in veeam`

SLES 12 SP2 -
SLES 15 SP3
	Default kernel:
	`zypper in veeamsnap-kmp-default`
	`zypper in veeam`
	Preempt kernel:
	`zypper in veeamsnap-kmp-preempt`
	`zypper in veeam`

TIP:

System will ask for your permission to perform tasks such as downloading required packages, importing GPG keys from the repository etc. You can append the abovementioned commands with the `-y` key to answer "yes" automatically, for example:
`yum install veeam -y`

[1] Prebuilt binaries require kernel >= 2.6.32-131.0.15 for RHEL 6 and kernel >= 3.10.0-123 for CentOS / RHEL 7 to function. For other kernels please install the `veeamsnap` module using the source rpm package available at the repository.

The following dependency packages may require special handling in case you see installation errors:

- dkms package is not present in default repositories for some Linux distributions. You should obtain it from third-party repositories:

    - Oracle Linux, Fedora: EPEL repository

    - OpenSUSE: Packman repository

- Extended kernels such as kernel-pae, kernel-uek and other require appropriate kernel-devel packages to be installed, for example:

Kernel	Required Package
kernel-uek	kernel-uek-devel
kernel-default	kernel-default-devel
kernel-pae	kernel-pae-devel

The **kernel-devel** version must match your current kernel version. To check your current kernel version, run `uname -r`.

Oracle Linux: if yum package manager installs packages that do not match your current kernel version, you should either update your system or fetch older versions of the required packages from Oracle repository: http://yum.oracle.com/.

Upgrading Veeam Agent for Linux

> **IMPORTANT!**
>
> Make sure that there are no jobs running on the host before update!

To upgrade Veeam Agent for Linux:

Debian **Ubuntu**	`apt-get update` `apt-get install –only-upgrade veeam`

CentOS[1]
RHEL[1]
	`yum update veeam`
	`rpm -e --nodeps dkms veeamsnap`
	`yum install kmod-veeamsnap*`
	or
	`yum install kmod-veeamsnap*`
	`yum update veeam`
	`rpm -e dkms veeamsnap`

Fedora **Oracle Linux**	`yum update veeam`

openSUSE[1]	Tumbleweed:
	`zypper update veeam`
	Leap 15.2:
	`zypper in veeamsnap-kmp-default-5.0.2.4567_k5.3.18_lp152.19-2`
	`zypper in --force veeamsnap-kmp-default-5.0.2.4567_k5.3.18_lp152.19-2`
	Leap 15.3:
	`zypper in veeamsnap-kmp-default-5.0.1.4493_k5.3.18_57-2`
	`zypper in --force veeamsnap-kmp-default-5.0.1.4493_k5.3.18_57-2`

SLES 11 SP4[1]	Default kernel:
	`zypper in veeamsnap-kmp-default`
	`zypper in --force veeamsnap-kmp-default`
	Xen kernel:
	`zypper in veeamsnap-kmp-xen`
	`zypper in --force veeamsnap-kmp-xen`
	Trace kernel:
	`zypper in veeamsnap-kmp-trace`
	`zypper in --force veeamsnap-kmp-trace`
	PAE kernel:
	`zypper in veeamsnap-kmp-pae`
	`zypper in --force veeamsnap-kmp-pae`

SLES 12 SP2 -
SLES 15 SP3[1]
	Default kernel:
	`zypper in veeamsnap-kmp-default`
	`zypper in --force veeamsnap-kmp-default`
	Preempt kernel:
	`zypper in veeamsnap-kmp-xen`
	`zypper in --force veeamsnap-kmp-xen`

[1] The `--force` key is required to properly replace the missing link to .ko in case of update from the `dkms` version of `veeamsnap` to a prebuilt binary. To stay on the `dkms` version run:

For CentOS, RHEL

`yum update veeamsnap && yum update veeam`

For SLES / openSUSE

```
zypper update veeam
```

Uninstalling Veeam Agent for Linux

To uninstall Veeam Agent for Linux:

Debian Ubuntu	`apt-get remove veeam veeamsnap`
CentOS Fedora Oracle Linux RHEL	`yum remove veeam veeamsnap`
openSUSE SLES	`zypper rm veeam veeamsnap`

Licensing

By installing Veeam Agent for Linux, you agree to the Veeam End User License Agreement (EULA) and 3rd party components license agreements. To view the license agreement, click the Veeam End User License Agreement link in the setup program, or visit the following link: https://www.veeam.com/eula.html.

Veeam Agent for Linux comes in different editions. You do not need to obtain or install a license to use the free edition.

Paid editions of Veeam Agent for Linux are licensed per protected computer ("Computer"). The paid license includes a one-year maintenance plan. To renew your license, please contact Veeam customer support at: renewals@veeam.com.

Technical Documentation References

To view the product help, type in your terminal:

```
man veeamconfig
```

If you have any questions about Veeam Agent for Linux, you may use the following resources:

- Product web page: https://go.veeam.com/linux

- User guide: https://helpcenter.veeam.com/docs/agentforlinux/userguide/

- Veeam R&D forums: https://forums.veeam.com/veeam-agent-for-linux-f41

Technical Support

We offer email and phone technical support for customers with current subscriptions, as well as during the official evaluation period. For better experience, please provide the following when contacting our technical support:

- Version information for the product and all infrastructure components.

- Error message and/or description of the problem you are having.

- Log files. To export the log files, open Veeam Agent for Linux user interface, press **M**, select **Export Logs**, and choose a directory to export logs to.

To submit your support ticket or obtain additional information please visit https://www.veeam.com/support.html.

> **TIP:**
>
> Before contacting technical support, consider searching for a resolution on Veeam R&D forums at https://www.veeam.com/forums.

Contacting Veeam Software

At Veeam Software we pay close attention to comments from our customers. It is important to us not only to quickly help you with your technical support issues — we make it our mission to listen to your input, and to build our products with your suggestions in mind. Should you have a Customer Support issue or question, please feel free to contact us. We have qualified technical and customer support staff available 24 hours a day, 7 days a week who will help you with any inquiry that you may have.

Customer Support

For the most up to date information about our support practices, business hours and contact details, please visit https://www.veeam.com/support.html. You can also use this page to submit a support ticket and download the support policy guide.

Company Contacts

For the most up to date information about company contacts and office location, please visit https://www.veeam.com/contacts.