



# Modernized Backup for Virtual Environments

## Open VM and Container Backup with Integration into Enterprise Backup Platforms

### vProtect Highlights

- Support for a wide range of Open VM platforms: RHV/oVirt, Nutanix Acropolis, Citrix XenServer, KVM, PowerKVM, KVM for IBM z, oVirt, Proxmox, Xen and Oracle VM.
- Support for backup and snapshot management of Amazon EC2
- Support for Kubernetes containers on OpenShift
- Supports data export into existing backup environments for integration and long-term storage. Works with IBM Spectrum Protect, Veritas NetBackup, Dell-EMC Networker and Catalogic vStor.
- Easy file recovery directly from within the Web UI
- Data exported in native, hypervisor-specific format
- Backup to any mounted file system (local, NFS, iSCSI, SMB)
- Backup to Amazon S3, Microsoft Azure, Google Cloud Storage (Nearline, Coldline), OpenStack Swift, Neverfail HybriStor or Data Domain Boost
- Data encryption for Amazon S3, Microsoft Azure and file system backup providers
- Open API for 3rd party software integration (REST API) as well as command line
- Multi-node support for better scalability or geographically dispersed environments.
- Pre/post snapshot remote command execution on VM to enable operations such as DB quiesce
- UI – Chinese, Spanish and German language supported

## vProtect Introduction

vProtect is an enterprise backup solution for Open VM environments and containers such as Nutanix, Citrix Hypervisor (XenServer), RedHat Virtualization, KVM, Kubernetes and more. vProtect enables VM-level protection and can function as a standalone solution or integrate with enterprise backup software.

## Platform Specific Features

vProtect provides a wide range of capabilities and makes use of advanced virtualization platform features such as changed block tracking when available. Platform-specific features are listed below, alphabetically by platform.

### Amazon EC2

- Full backup with disk-exclusion support for EC2-based VMs (backup to on-premises copy)
- File-level restore with mountable backups
- EC2 snapshot management

### Citrix Hypervisor (XenServer)

- Hypervisor snapshot management
- Efficient, incremental backups (changed block tracking)
- Option to back up only selected VM disks
- VM auto-grouping based on regular expressions and tags
- Snapshot consistency technology and quiesced snapshots
- Easy file-level restore using mountable backups

### Kubernetes / OpenShift

- Crash-consistent backup of deployments running in Kubernetes environments
- Backup both metadata and persistent volumes attached to Kubernetes pods
- Automatic pause of running deployments for consistent backup
- Option to exclude specific persistent volumes

### KVM

- Hypervisor snapshot management
- Incremental backups using snapshot chain export
- Option to back up only selected VM disks
- Easy file-level restore using mountable backups
- Full backup of QCOW2 or LVM-based VMs

### Nutanix Acropolis / AHV

- Hypervisor snapshot management
- Efficient, incremental backups (changed block tracking)
- Option to back up only selected VM disks
- Easy file-level restore using mountable backups
- Application consistent snapshots
- Install vProtect nodes directly in the Nutanix cluster for much faster backups

### Oracle VM

- Full backups
- Backups exported using external storage repository
- File-level restore with mountable backups
- VM auto-grouping based on regular expressions and tags

**Proxmox**

- Hypervisor snapshot management
- Easy file-level restore using mountable backups
- Disc-exclusion option for backups
- Automatic backup import to the Proxmox hypervisor
- Full image backup with native hypervisor mechanism (Proxmox v5.0+)
- Proxmox containers support

**Red Hat Virtualization / oVirt**

- Hypervisor snapshot management

- Incremental backups using snapshot chain export
- VM auto-grouping based on regular expressions and tags
- Snapshot consistency technology and quiesced snapshots
- Easy file-level restore using mountable backups
- Restore VMs as either thin-provisioned sparse format or as preallocated (RAW)
- RHV API v4 support with proxy VM backup strategy (which doesn't require export storage domain)

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## vProtect Architecture

The vProtect architecture consists of two components: the vProtect Server and one or more Nodes. The Server provides management and stores all metadata. A Node is responsible for data transfer and integration with the hypervisor platform / Kubernetes container / EC2 and backup destinations. A vProtect deployment can have one or multiple nodes.

The Proxy VM can be any CentOS/RHEL based

installation. For smaller environments, all components can install on the same VM. Individual VMs/containers are automatically discovered and indexed, and then backup policies can be applied to them.

For Nutanix Acropolis, vProtect can run as a VM within the hypervisor.

**Backup Storage Options**

vProtect has a unique ability to export backups to third-party backup providers. This allows vProtect to add native Open VM backup functionality into products that do not natively support these hypervisor platforms or Kubernetes. vProtect works with IBM Spectrum Protect, Veritas NetBackup, Dell-EMC Networker and Catalogic vStor. Amazon EC2-based VMs can also be backed up to these backup systems. vProtect can also optionally keep a local backup copy for faster operational recovery purposes.

Standalone deployments are also possible. vProtect can back up to any file system connected to the Proxy VM. In addition, data can be exported to Amazon S3, Microsoft Azure, Google Cloud Storage (Nearline, Coldline), Neverfail HybriStor, Data Domain Boost or OpenStack Swift.

### Efficient Backups

vProtect provides incremental backups for Citrix Hypervisor and Nutanix through the use of Changed-Region Tracking (CRT) based on the hypervisor APIs. Incremental backups for RHV/oVirt and KVM are done using snapshot chain export. In addition to incremental backups, users can exclude specific VM disks from backup. For example, disks that store large temp files that aren't needed in recovery. The disk exclusion feature is available for KVM, Nutanix Acropolis, Citrix Hypervisor (Xen), and Proxmox.

### Hypervisor Snapshot Management

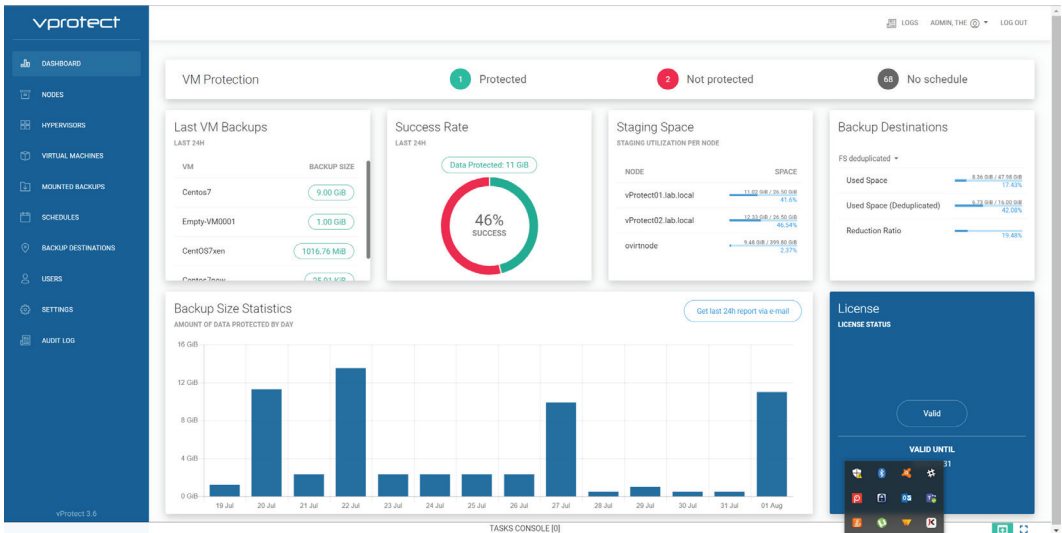
Hypervisor snapshot management is available for KVM, RedHat Virtualization, Nutanix Acropolis, Citrix Hypervisor (Xen), Proxmox and Amazon EC2. vProtect manages hypervisor snapshot schedules and retention times, allowing you to combine a short-term protection option that provides fast restore/revert using snapshots, plus a longer-term backup to a separate target device, all managed in one place.

### Data Consistency

vProtect uses the hypervisor functions to create application-consistent snapshots for Citrix, Nutanix and RHV/oVirt VMs. This allows for quiescing databases prior to the snapshot, which results in a more consistent backup. vProtect also allows you to setup periodic backup with your own scripts or application-native backup commands. These can be executed either on the Node or remotely over SSH. The application can reside anywhere: in a VM, Kubernetes deployment or on a physical box. The only requirement is to allow vProtect to execute set of commands over SSH or on the node to access data remotely.

### Easy Dashboard View

vProtect provides an easy-to-use, intuitive interface that makes management and monitoring simple. Configuration steps are clearly defined. A visual scheduler aids in understanding. And the dashboard immediately identifies any VMs that are not protected.



## Mountable Backups and File Restore

The mountable backup feature provides a quick and easy way to access backup data without having to do a full VM restore. This is especially useful for restoring one or a few individual files. The user can mount the backup image which requires no data movement, and simply copy back the needed files. Incremental backups can also be mounted because the vProtect Node merges the incremental backups into the full backup image.

Backup images can be scheduled to mount at a pre-set time, and mount points specified.

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