



oVirt



Best Practices for oVirt Backup & Recovery



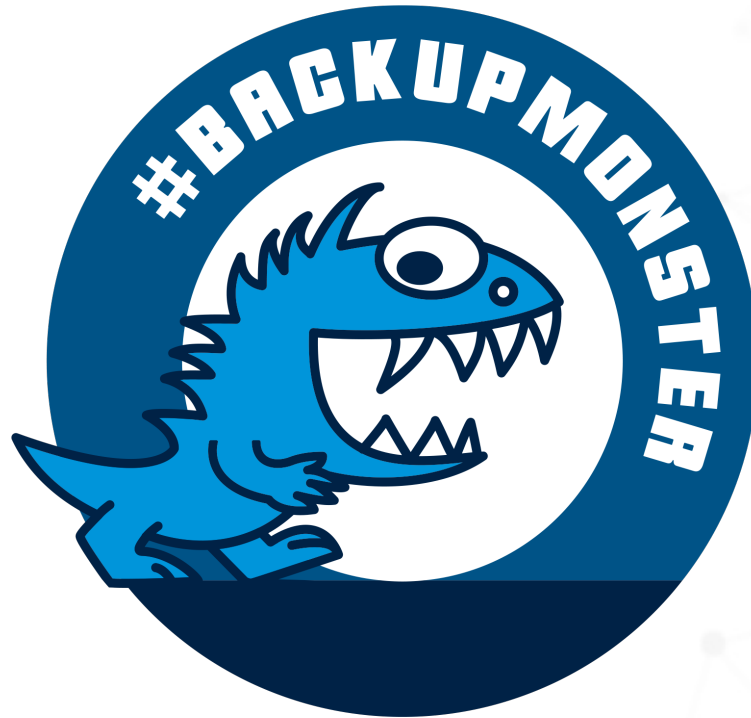
Simplified Data Protection

Storware provides highly efficient data protection solutions for all businesses.

Our mission & community

#backupmonster

oVirt



Eager to
protect the data

Who we are?

Founders



Paweł Mączka
CTO, VP



Jan Sobieszczański
CEO



Marcin Kubacki
Chief Software Architect



Operating principles



International Channel

Products distributed in Europe,
North & South America, Asia &
Gulf Region, South Africa and
Asia for over **70 business
partners.**

Operating principles



Growing Markets

Addressing the growing segment of open **hypervisors** (KVM-based, Xen-based), **containers** (Kubernetes, OpenShift) & **clouds** (AWS).

Operating principles



Certified by top vendors

IBM, Red Hat, Oracle, Nutanix,
Citrix Dell EMC and Veritas use our
solutions to widen their own
portfolio.

Virtualization market and beyond

1. VMware

2. HYPER-V

3. RED HAT/oVirt

Red Hat is recognized as an industry leader and open source champion. Hailed as the most successful open source company.

4. ORACLE VM

Chosen for Oracle DB partitioning and optimization of costs.

5. CITRIX

Owns the world's most-used cloud vendor software (Amazon, Softlayer, Rackspace, 1and1, QTS, OVH).

Figure 1. Magic Quadrant for x86 Server Virtualization Infrastructure



Source: Gartner (August 2016)

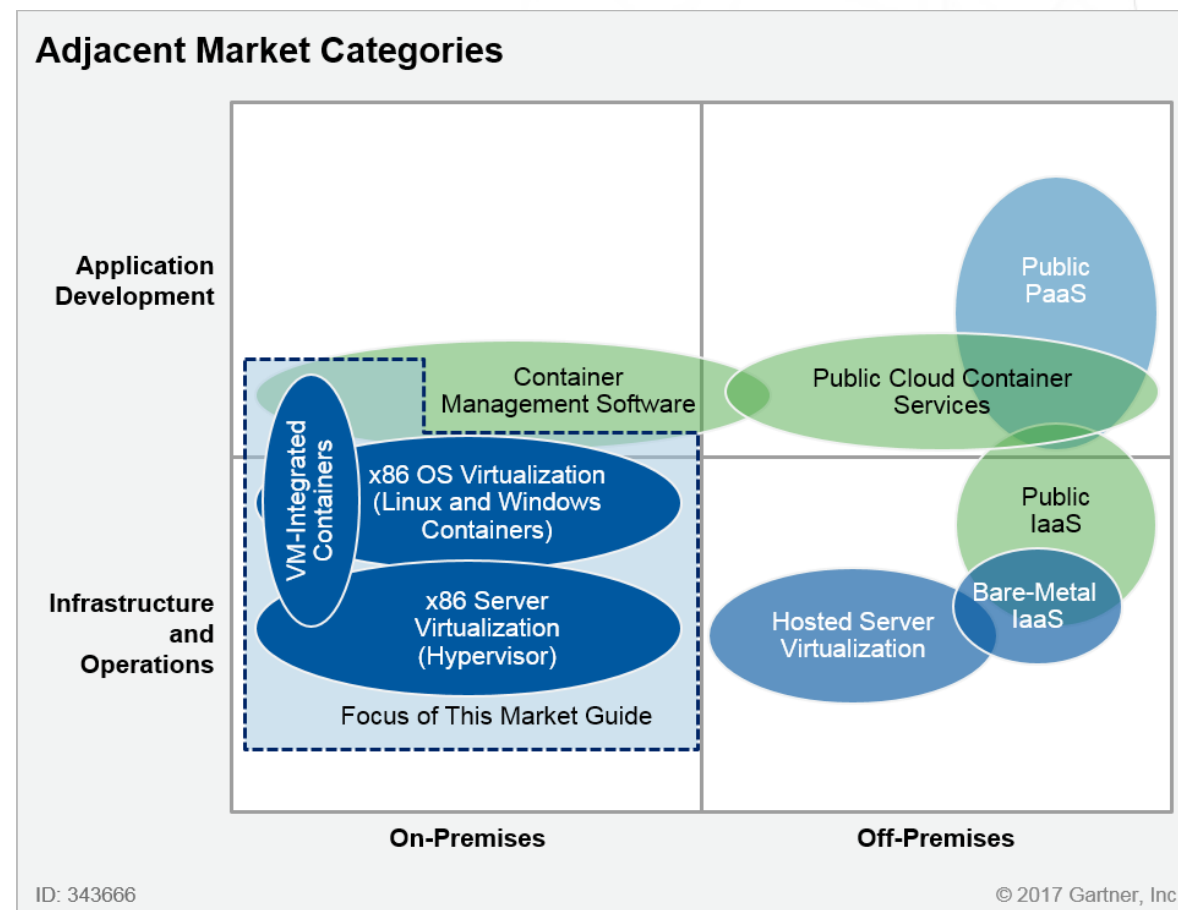
Gartner's Magic Quadrant

Virtualization market – future considerations

x86-based server virtualisation has changed

Adjacent markets now exist across the App Dev / Infra & Ops divide as well as across on- and off-prem.

This requires sufficient understanding of public cloud, hosting, private cloud and on-prem virtualisation.



* <https://blogs.gartner.com/michael-warrilow/the-future-of-server-virtualization/>

Storware vProtect is ...

... made to backup & recovery virtual machines, containers & clouds running on various platforms and protecting data at wide range of destinations.

NUTANIX



CITRIX
Hypervisor

vmware

KVM

oVirt



PROXMOX



ORACLE
VM

Main features

Mostly valued by our customers...



VM-level, Container-level, agentless full and incremental consistent backup.



Snapshot Management/Copy Data Management.



Application backup - generic backup process for any application, or set of files.



Independent backup server or proxy for legacy backup systems.

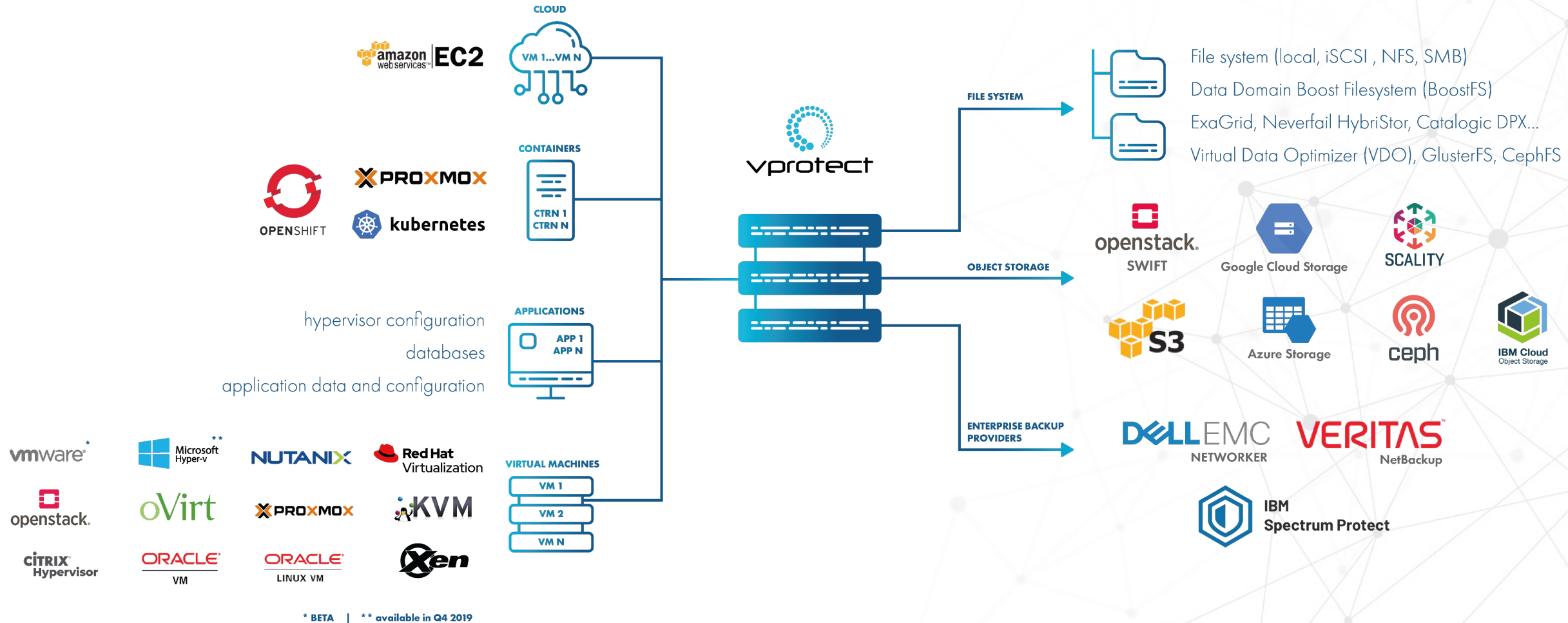


Disaster recovery based on IBM Spectrum Protect, Dell-EMC Networker, Veritas Netbackup, Amazon S3, Google Cloud Storage, Microsoft Azure, OpenStack Swift or any mounted file-system (especially supporting deduplication).



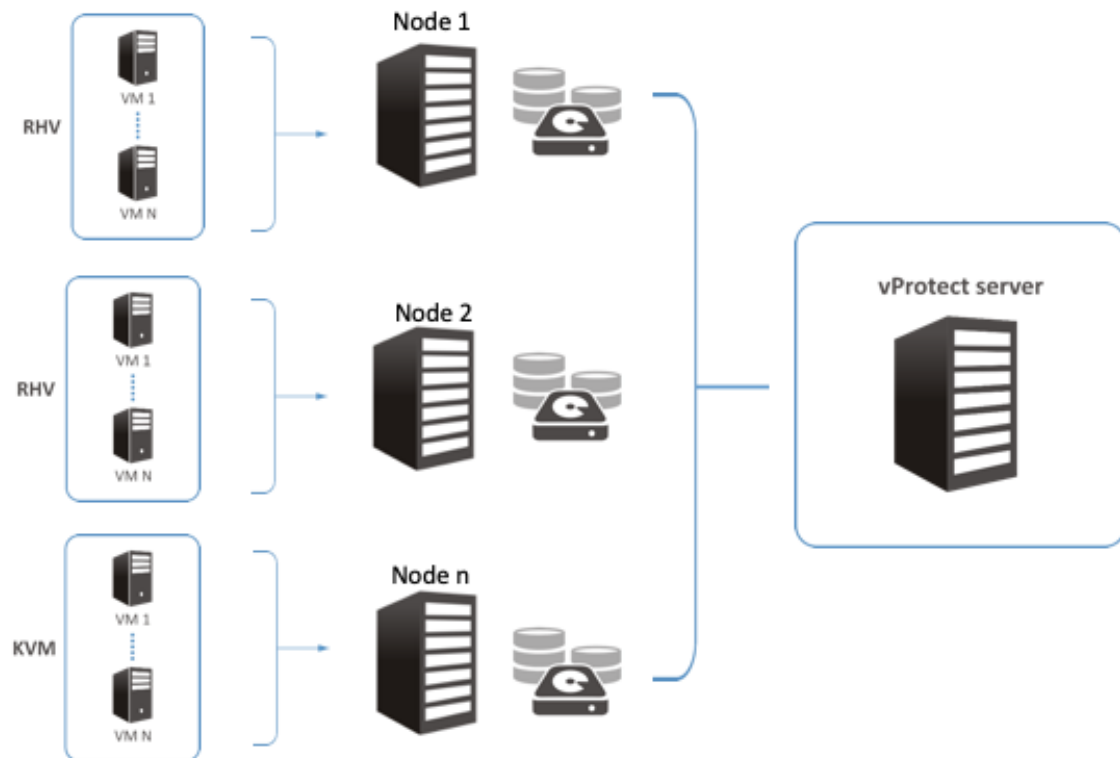
Open RESTful API and CLI for 3rd party integration.

High-level architecture



Scalability

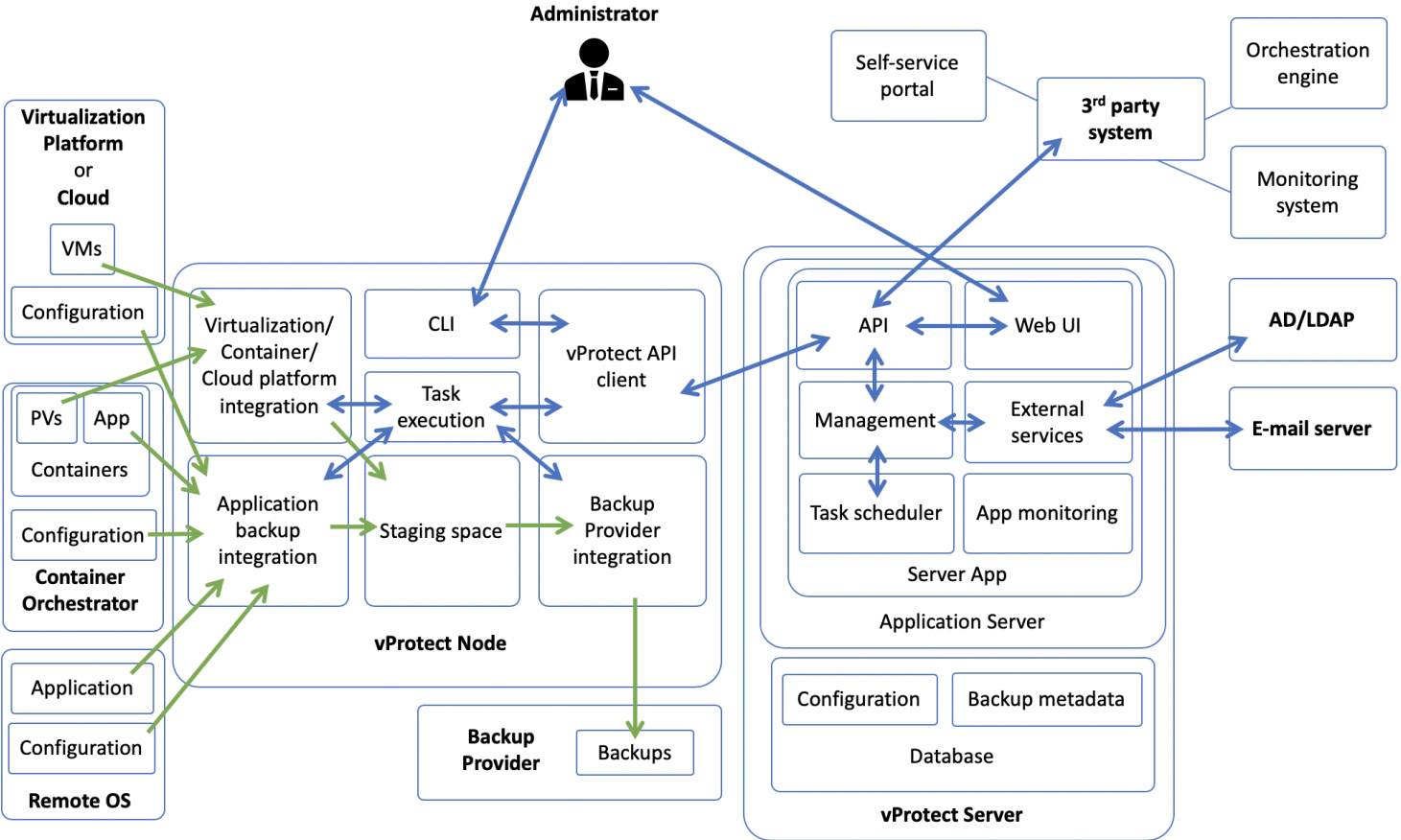
Multi-node architecture



Scale as you grow

- **scale-out** by adding as many nodes as you need
- **scale-up** by assigning more resources to vProtect nodes

Detailed architecture



Designed for modern world

- open RESTful API
- vProtect is ready to be part of wider automation or orchestration solutions

Key aspects of a good backup solution to consider?



oVirt backup best practices - #1

Single pane of glass



Centralized backup configuration, its logic and execution for all VMs or apps regardless of the hypervisor or backup provider.



Clean dashboard with most important status indicators.



Daily e-mail reports with backup summary.



Fine-tuning parameters to optimize the backup process RTO & RPO.

One tool for:

- multiple hypervisors
- multiple schedules
- multiple backup destinations
- combined protection form VMs and containers
- snapshots management
- any application backup

It's all about simplicity...

The dashboard provides a comprehensive overview of backup operations. At the top, it displays summary statistics for Virtual Environments and Applications, including counts for Protected, Not Protected, and No Schedule items. Key metrics include:

- Virtual Environments:** 7 Protected, 5 Not Protected, 158 No Schedule
- Applications:** 4 Protected, 1 Not Protected, 0 No Schedule

The main content area is divided into several functional sections:

- Last Backups (LAST 24H):** A table listing recent backup jobs with their names and sizes.

NAME	BACKUP SIZE
Windows 7 (32-bit) (1)	75.00 GiB
oVirt-190819	14.00 GiB
cirro03	2.00 GiB
- Success Rate (LAST 24H):** A circular gauge showing a 70% success rate for 94 GiB of data protected.
- Staging Space (STAGING UTILIZATION PER NODE):** A table showing storage usage for different nodes.

NODE	SPACE
node-oVirt	2.76 GiB / 7.99 GiB (34.58%)
vpro-local	496.56 GiB / 2.00 TiB (24.83%)
vpro-aws	1.50 GiB / 19.99 GiB (7.52%)
- Backup Destinations:** Metrics for VDO Dedup/Compression FileSystems, including Used Space (503.56 GiB / 2.00 TiB, 24.6%), Used Space (Deduplicated) (315.54 GiB / 500.00 GiB, 63.11%), and Reduction Ratio (37.34%).
- Backup Statistics:** A bar chart showing the amount of data protected by day, with a peak of approximately 160 GiB on 10 Sep.
- License Status:** A panel indicating the license is valid until 2019-09-30.
- TASKS CONSOLE [6]:** A table listing active backup tasks with their progress and details.

STATE	TYPE	HYPERVISOR MANAGER	HYPERVISOR	VE/APP	NODE	BACKUP DESTINATION	PRIORITY	WINDOW START	WINDOW END
Finished	Import	ovirt-m.storware.local		oVirt-190819	vpro-local	VDO Dedup/Compression FileSystem	50	2019-09-19 15:02:00	2019-09-19 16:02:00
Finished	Store		10.40.0.29	Windows 7 (32-bit) (1)	vpro-local	VDO Dedup/Compression FileSystem	50	2019-09-19 15:01:23	2019-09-19 20:01:23
Finished	Restore	ovirt-m.storware.local		oVirt-190819	vpro-local	VDO Dedup/Compression FileSystem	50	2019-09-19 14:57:59	2019-09-19 15:57:59
Finished	Store	ovirt-m.storware.local		oVirt-190819	vpro-local	Data Domain Boost FS	50	2019-09-19 14:57:48	2019-09-19 19:57:48
Finished	Export	ovirt-m.storware.local		oVirt-190819	vpro-local	Data Domain Boost FS	50	2019-09-19 14:52:00	2019-09-19 19:52:00
Finished	Export		10.40.0.29	Windows 7 (32-bit) (1)	vpro-local	VDO Dedup/Compression FileSystem	50	2019-09-19 14:51:00	2019-09-19 19:51:00

oVirt backup best practices - #2

Agent-less VM-level protection

Use **API v3.x/v4.x**
provided by
oVirt community

Backup consistency

Base protection

- crash-consistent backup

Quiesced snapshot - requires hypervisor specific tools

- RHV/oVirt - file-system freeze

Application-consistent backups

- pre/post remote command execution on the VM before and after snapshot is taken

Quiesce/freeze before snapshot

PRE/POST SNAPSHOT COMMAND EXECUTION

Execute command before creating a VM snapshot

Pre-snapshot command arguments (first argument is the executable)

[Add pre-snapshot command argument](#)

Command arg

/opt/scripts/quiesce_db.sh

Command arg

MY_DB

Execute command after creating a VM snapshot

Post-snapshot command arguments (first argument is the executable)

[Add post-snapshot command argument](#)

Command arg

/opt/scripts/resume_db.sh

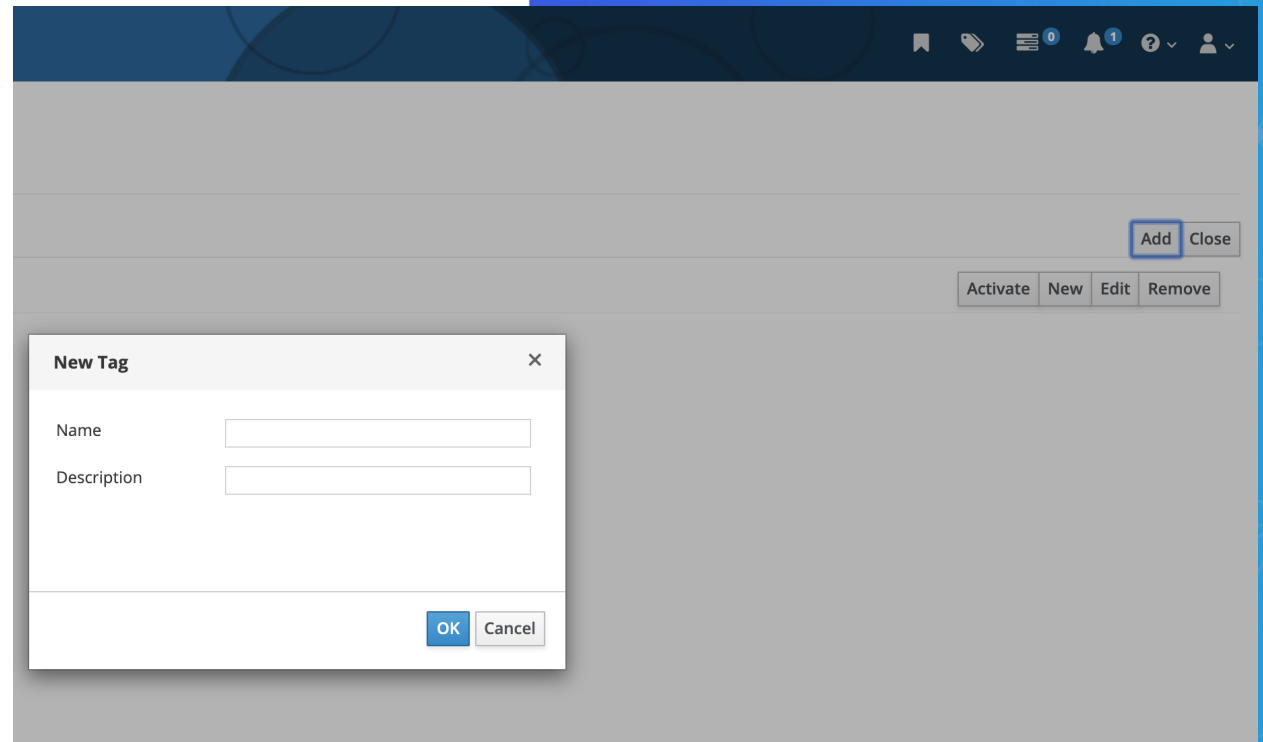
Command arg

MY_DB

oVirt backup best practices - #3

Tags + Regex to simplify assign to the backup policies

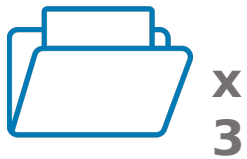
Use tags & regular expressions to get the things done without interrupting backup team.



oVirt backup best practices - #4

3-2-1 Backup Rule

- Keep at least **three** copies of your data
- Store **two** backup copies on different devices or storage media
- Keep at least **one** backup copy offsite



X
3

Create 3 copies of your data
(1 primary and 2 backups)



X
2

Store your copies in at least
2 types of storage media

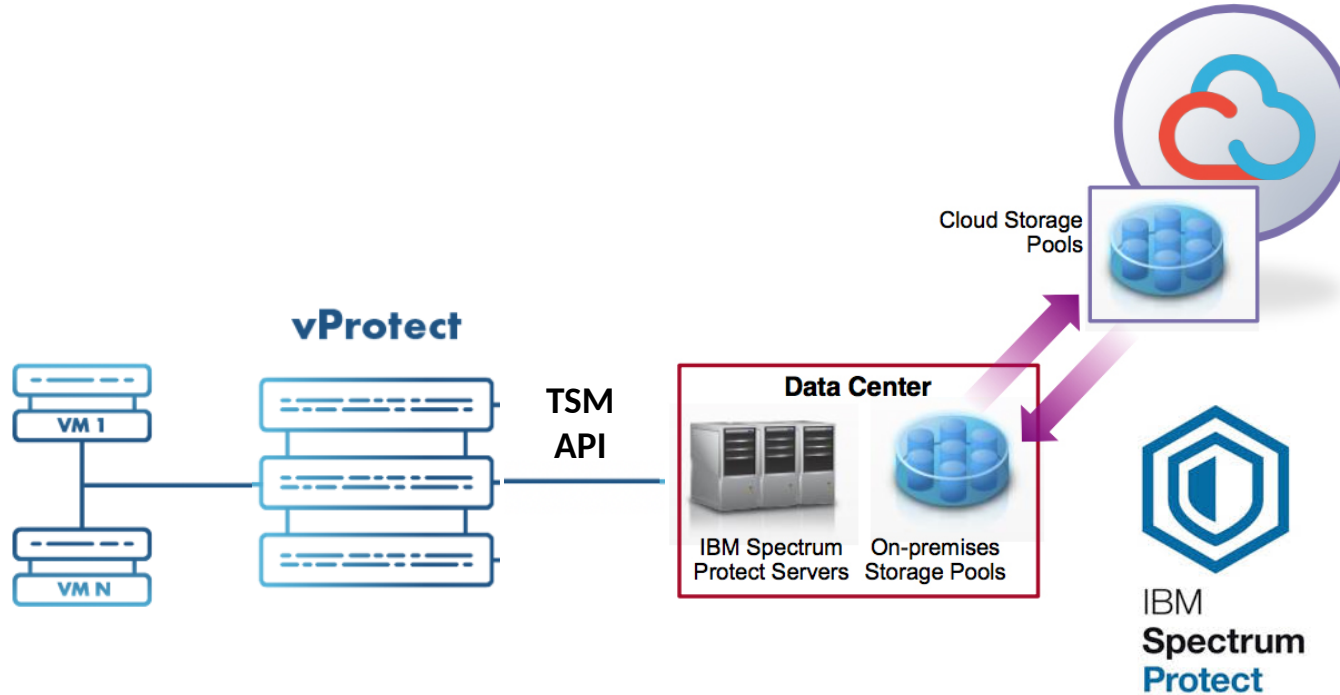


X
1

Store 1 of these copies
offsite

- prepare for ransomware
- peace of mind (good sleeping ☑)

Integration with IBM Spectrum Protect



- agentless protection for VM's
- vProtect proxy is one node on ISP server - each protected VM is in a separate filespace
- can be installed on a physical box or VM
- all of tasks are managed by vProtect

Integration with Dell EMC Data Domain

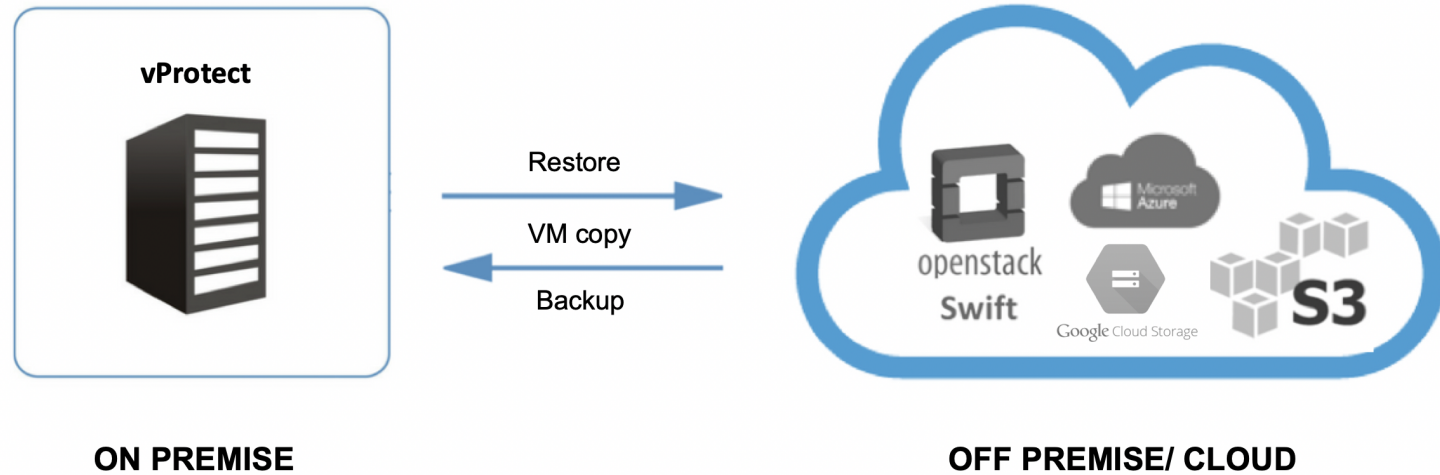
- Certified Data Domain® DD Boost File System Plug-In (BoostFS).
- DD Boost File System Plug-In (BoostFS) resides on the vProtect, presenting a standard file system mount point to the application (NFS Share from DD).
- vProtect writes directly to Data Domain (staging + backup destination).



Hybrid protection

2nd tier of data can be stored in a cloud object storage

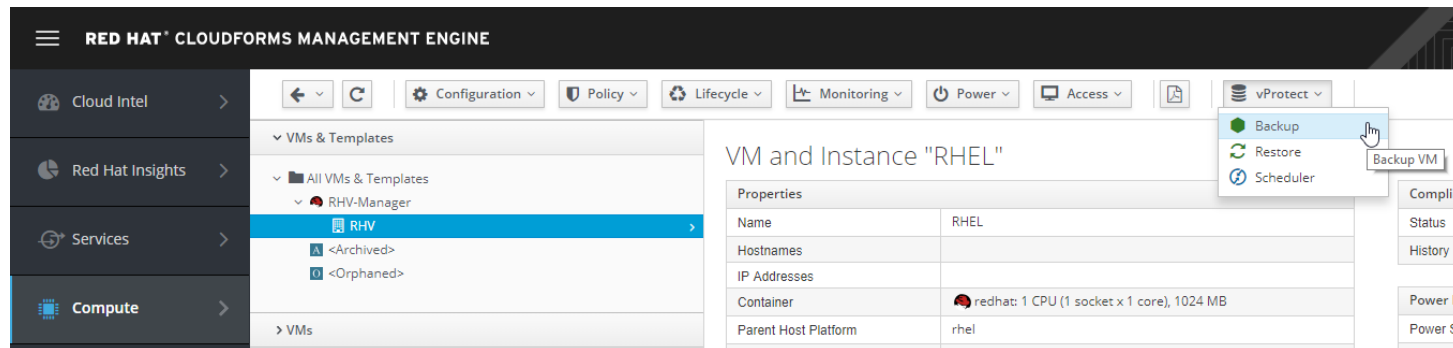
Supported Cloud Providers



- Amazon S3
- Azure BLOB Storage
- OpenStack Swift
- Google Cloud Storage

oVirt backup best practices - #5

Ready for integration



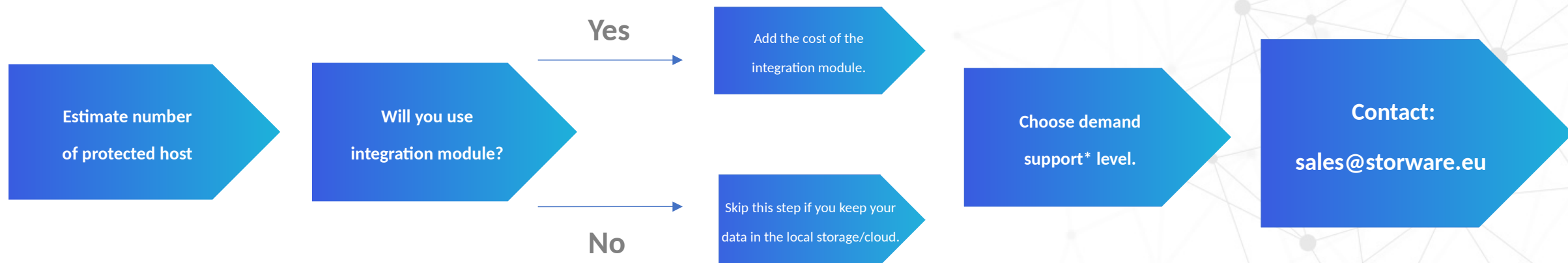
```
[[root@vProtect01 ~]# vprotect vm -l
```

GUID	Name	Hypervisor	Present	VM group	Protected	Last backup
f49013a8-9afe-4018-88c3-35e050a6e8cd	RHEL1804050000	RHV-H1.lab.local	true	Important VMs	true	2018-06-07 15:18 (Thu)
65bab151-a351-43d4-bf20-215971f1f5a5	RHEL18040500001804241428	-	false	-	-	-
405b5a5e-9197-405d-a48c-9078456ade7a	VM	pve	true	-	-	2018-04-10 15:00 (Tue)
b7369c0c-6fd1-4518-92ee-aea7550c6be5	Cent05xen	dXenServer72	true	CITRIX	true	2018-06-06 22:00 (Wed)
226c445f-53f9-4f99-89d2-632e33211311	Cent05xens	dXenServer72	true	-	-	-
a30fd8dd-b7e3-4b1f-9995-60dedc091469	Cent05xens	dXenServer72	true	CITRIX	false	2018-05-29 11:22 (Tue)

- open Rest API
- Command Line Interface
- vProtect can be fully managed via API or CLI
- vProtect is ready to be part of a wider automation or orchestration solutions

Licensing model

- ✓ Per Host (1 license = 2 sockets)
- ✓ Per VM
- ✓ Integration Module for Enterprise Backup Providers



*Support levels

Standard: 8 h response time, 8 h/5 working days per week

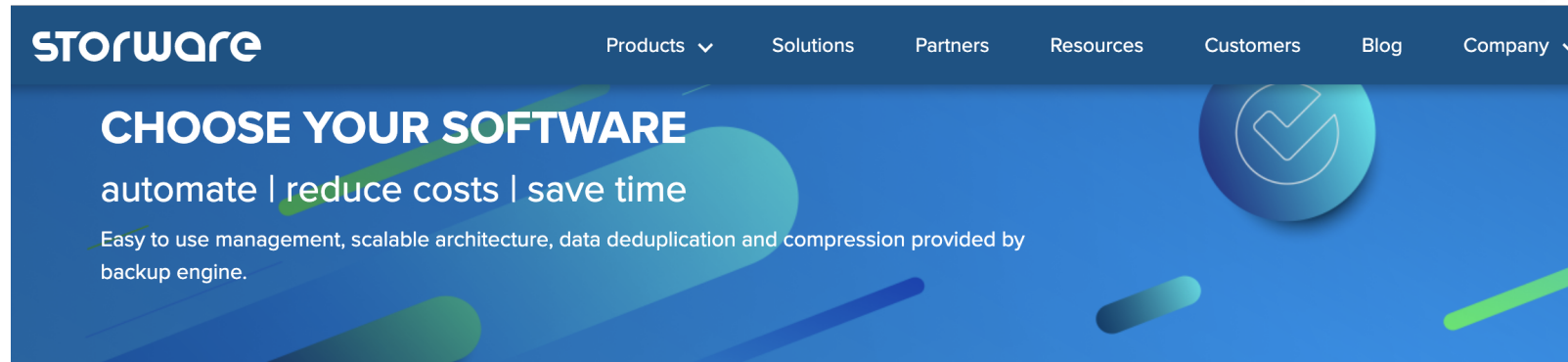
Premium: 4 h response time, 24 h/5 working days per week

Titanium: 4 h response time, 24 h/7 working days per week

Annual maintenance renewal costs equal to 25% of the product price.

Play for free forever or get a 30 day trial

<https://licenses.storware.eu>



The screenshot shows the top navigation bar of the Storware website. The navigation menu includes: Products, Solutions, Partners, Resources, Customers, Blog, and Company. The main header area features the Storware logo on the left and a large blue graphic on the right containing a white checkmark icon. The text in the header reads: "CHOOSE YOUR SOFTWARE", "automate | reduce costs | save time", and "Easy to use management, scalable architecture, data deduplication and compression provided by backup engine."

Your license

License configuration

License

Free Trial Enterprise

PROCEED TO LICENSE REGISTRATION

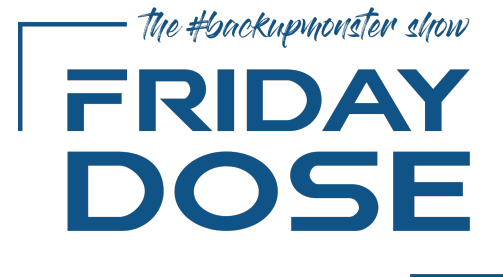
It's all about a community

Open ^{Virtualization} Pro

professional community



Open Source
Replication
Module for
oVirt



IBM
Spectrum Protect

LinkedIn IBM Spectrum Protect User Group

Find us on Social Media



<https://www.linkedin.com/company/storware/>



<https://www.facebook.com/storware/>

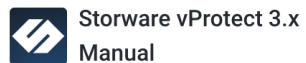


<https://www.facebook.com/storware/>



<https://www.youtube.com/channel/UCKvLitYPyApIBctXibFWrkw>

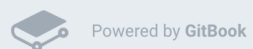
More information – official documentation



<https://storware.gitbook.io/storware-vprotect/>

Introduction

- Getting started >
- Installation >
- vProtect Virtual Appliance deployment >
- Initial configuration >
- Update >
- vProtect Web UI >
- vProtect CLI >
- Troubleshooting
- Disaster recovery
- API - Integration Guide



Introduction



**MODERNIZED
DATA PROTECTION
FOR OPEN VIRTUAL MACHINES**



Example customers (>500)





WHY NOT TRY SOMETHING BLUE?

Ready to see live demo?





STORWARE Sp. z o.o.

Leszno St. 8/44

01-192 Warsaw

Poland

info@storware.eu

mobile: +48 725 602 679



Simplified Data Protection

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