



oVirt



Disaster recovery strategies for oVirt



Simplified Data Protection

Storware provides highly efficient data protection solutions for all businesses.

Key backup & disaster recovery areas



VM-level backup with
snapshots



datacenter-level
DR in oVirt



agent-less application
protection



snapshot management



hypervisor configuration
protection

Backup strategy 1

Export storage domain (RHV/oVirt/OLVM)

Export storage domain/repository = staging space on the node

Pros:

- supported since RHV/oVirt 3.5.1 (works with 4.0+)
- can be configured to write directly to the backup destination (file system)

Cons:

- RHV/oVirt requires additional VM cloning
- export storage domain management/setup
- no disk exclusion (RHV/oVirt)

The screenshot shows the 'New Domain' configuration page in the oVirt web interface. The sidebar on the left contains navigation links: Dashboard, Compute, Network, Storage, Administration, and Events. The main content area is titled 'New Domain' and contains the following configuration fields:

Field	Value	Label
Data Center	ovirt-h1-Local (Local)	Name
Domain Function	Data	Description
Storage Type	NFS	Comment
Host to Use	ovirt-h1	

Below these fields, there is an 'Export Path' field with a placeholder example: 'E.g.: myserver.mydomain.com:/my/local/path'. At the bottom, there are expandable sections for 'Custom Connection Parameters' and 'Advanced Parameters'.

Backup strategy 2

Disk attachment: Proxy VM

vProtect Node installed as Proxy VM on the cluster

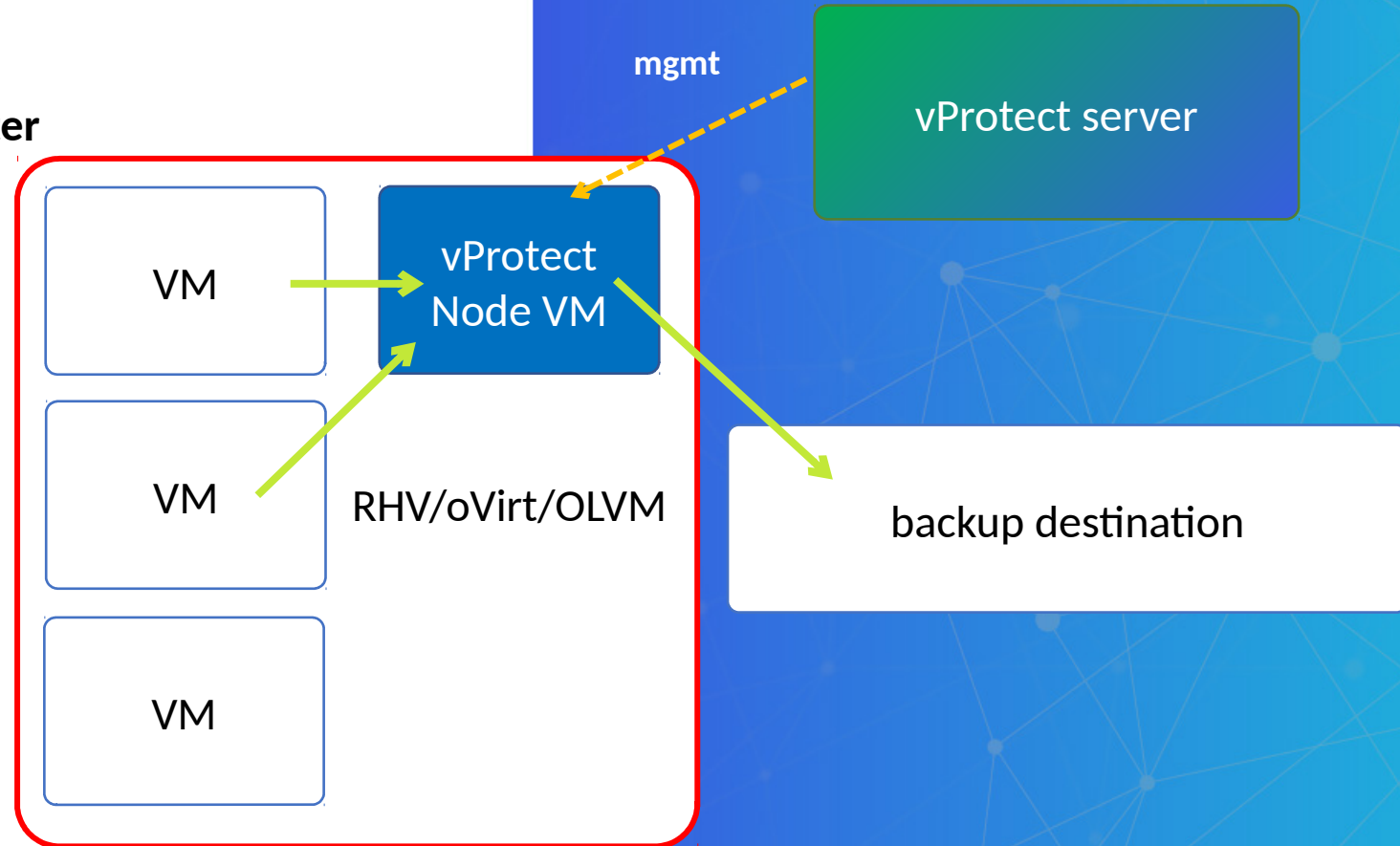
VM disk snapshots attached and dumped via Proxy VM.

Pros:

- no export storage domain requirement
- new RHV/oVirt/OLVM API (v4) used
- no additional cloning required
- disk exclusion support
- data read directly from the storage

Cons:

- more complex backup process
- no incremental backups at the moment



Backup strategy 3

Disk Image Transfer API

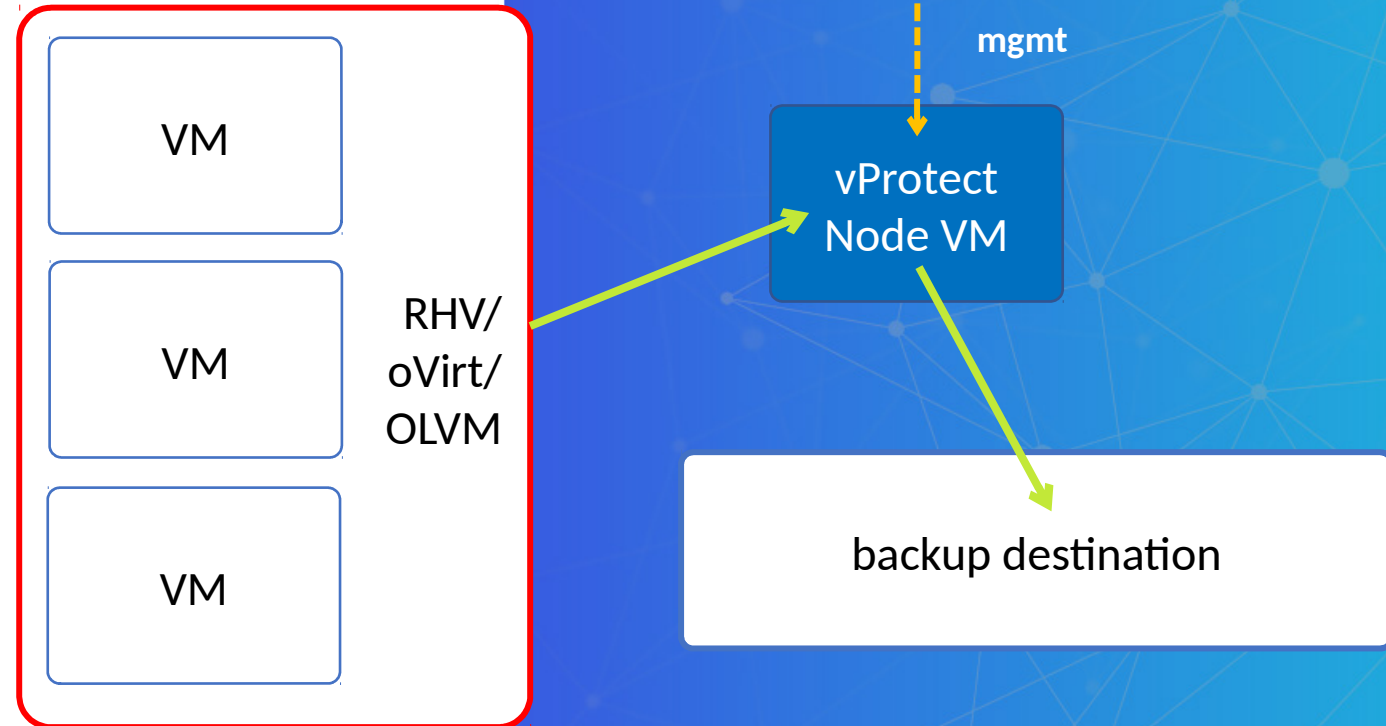
vProtect Node talks with RHV/oVirt manager and requests snapshot export

Pros:

- no export storage domain requirement
- new API (v4) used
- no additional cloning required
- disk exclusion support
- no proxy VM needed
- incremental backup option
- easy o setup

Cons:

- requires RHV/oVirt/OLVM 4.2
- data transfer passing through manager
- requires snapshot merge



Backup strategy 4

SSH transfer (RHV/oVirt/OLVM)

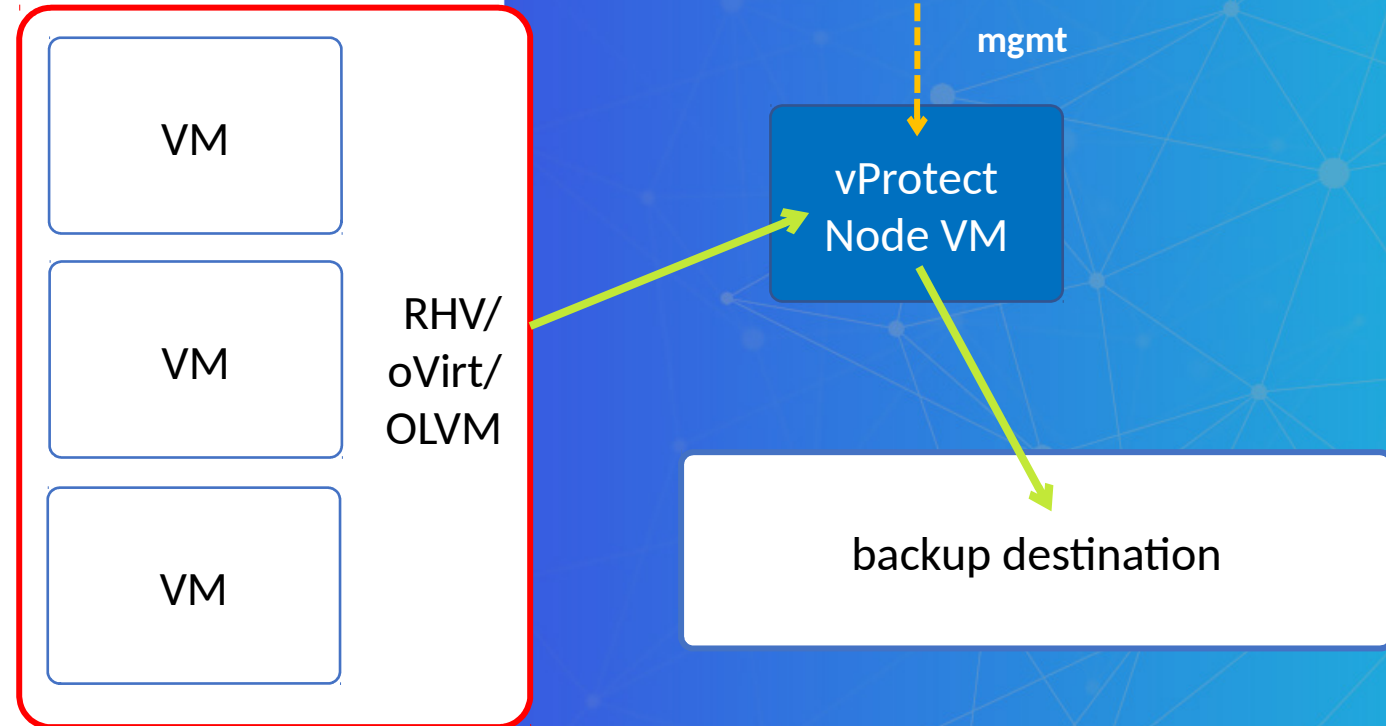
vProtect Node talks with RHV/oVirt manager and requests snapshot export

Pros:

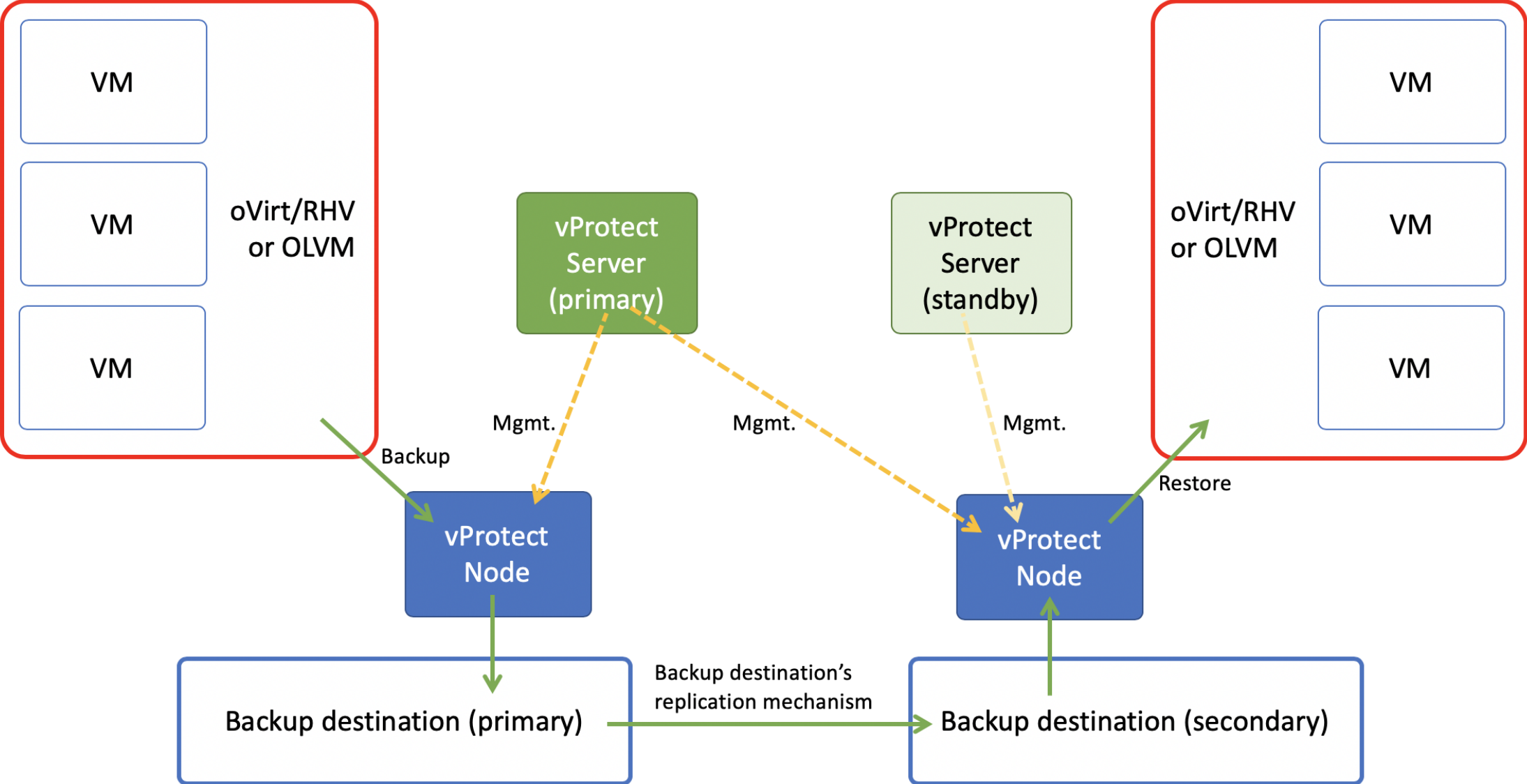
- no export storage domain requirement
- new API (v4) used
- no additional cloning required
- disk exclusion support
- no proxy VM needed
- incremental backup option
- direct data transfer from hypervisor
 - option to enhance transfer with netcat

Cons:

- requires snapshot merge
- root access to the hypervisor



Backup replication



Snapshot management

- Restore state of the VM without the need to restore data from the backup provider.
- vProtect creates snapshots periodically according to the policy (schedule and retention settings).
- Admin reverts VM using admin console of each Hypervisor platform or vProtect UI.

Edit policies (Snapshot management)

General

Name
s1

Auto remove non-present VEs

Priority *
67

Virtual Environments

Rule

Retention Versions *
3

Retention Days *
4

Choose schedules
 Select All

< Cancel

Application backup

Applications
APPLICATIONS LIST

Definitions Command Configs

Backup Selected Delete Selected

+ Create Application Definitions

<input type="checkbox"/>	NAME	POLICY	NODE	CMD EXECUTION CONFIG	BACKUP STATUS	LAST BACKUP DATE	LAST BACKUP SIZE (FULL)
<input type="checkbox"/>	My App	My App Policy	local	My App CMD	●		
<input type="checkbox"/>	vProtect DB	vProtect DB Backup Policy		vProtect DB Backup Command	●		

Use case:

- Generic backup using custom scripts provided by administrator.
- Scripts executed on the Node or via SSH on the target machine.
- Target application can be VM, Container or even physical.
- Apps can be anything: databases, custom applications, or just set of files.

Application backup

how to configure commands to be executed by

vProtect

Settings Command Execution Config

Name *

vProtect DB Backup Command

Create CMD Argument

CMD Argument

/opt/vprotect/scripts/backup_db.sh

Choose applications

Select All

My App

vProtect DB

CMD Execution Method *

Remote SSH

Export Data

Source Type *

FILE

Source Path

/tmp/vprotect_db.sql.gz

[/tmp/file.tar](#)

< Cancel

Save

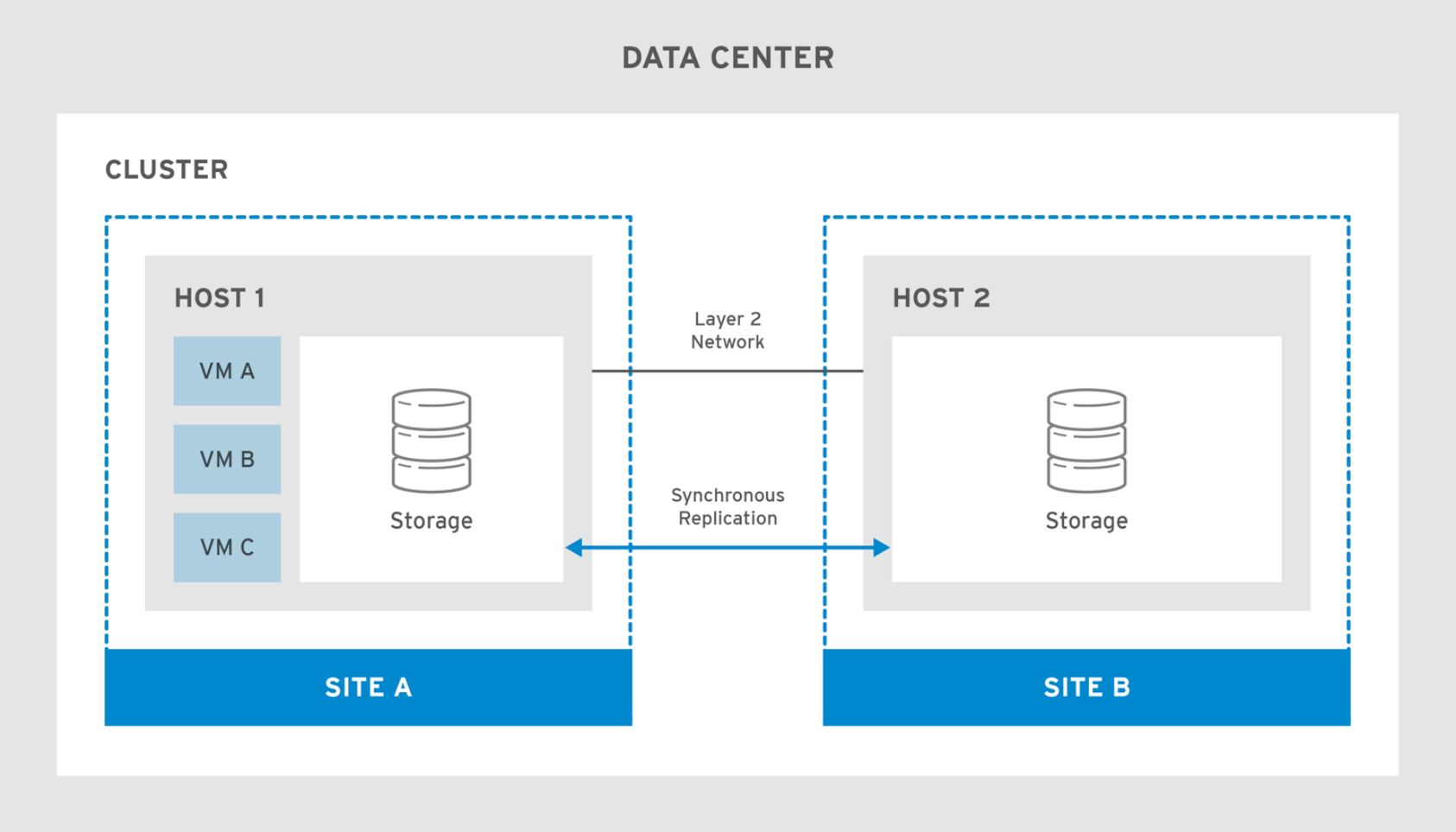
Application backup – use cases

oVirt metadata protection
with engine-backup.

Existing old script-based backups
centralized for scheduling and reporting.

Databases and other applications running
on VMs:
- native mechanisms to provide
consistent backups
- when crash-consistent snapshots
are not an option

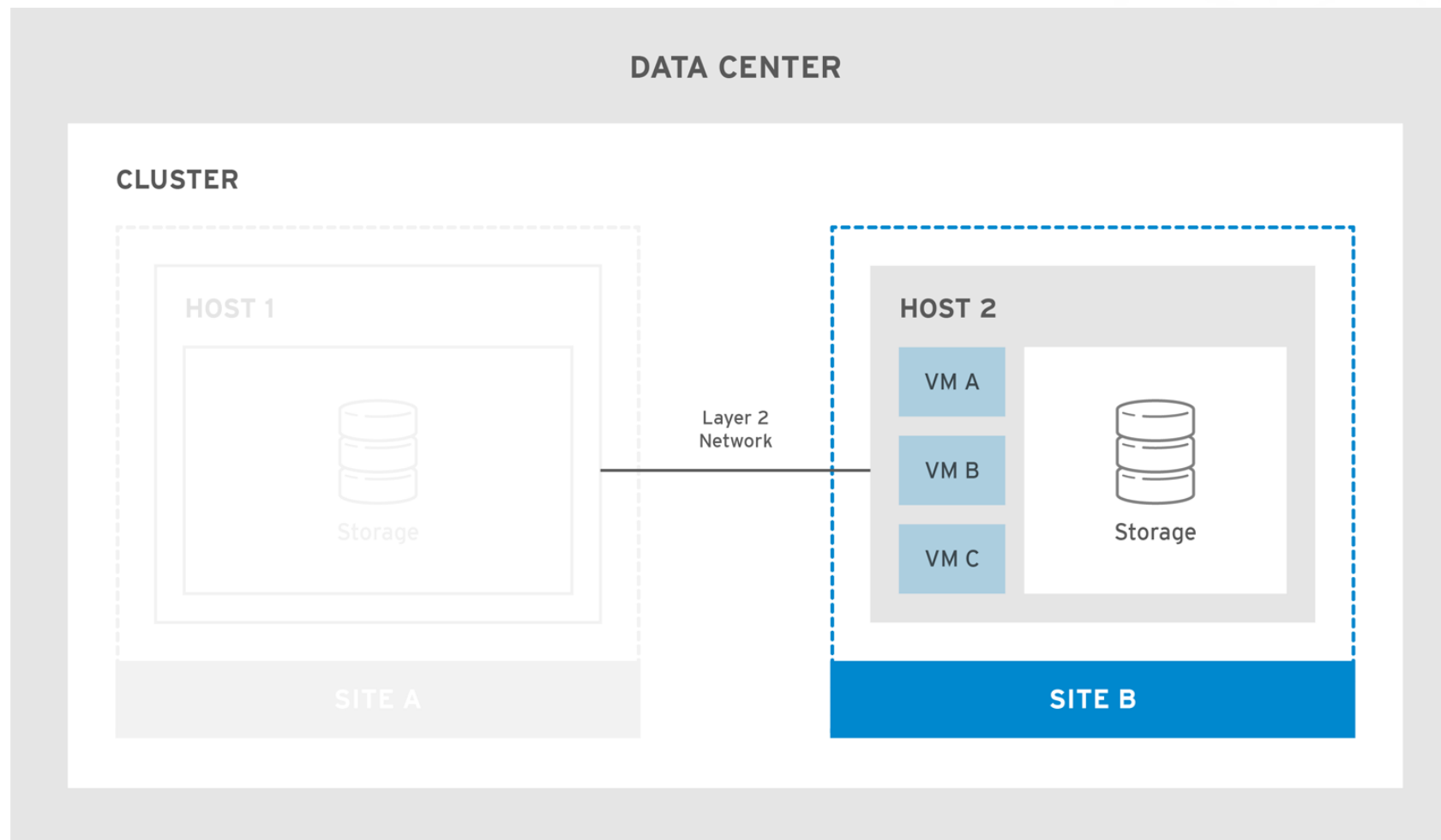
DC replication - active-active DR



All the hosts belong to the same oVirt cluster.

RHV_460251_1017

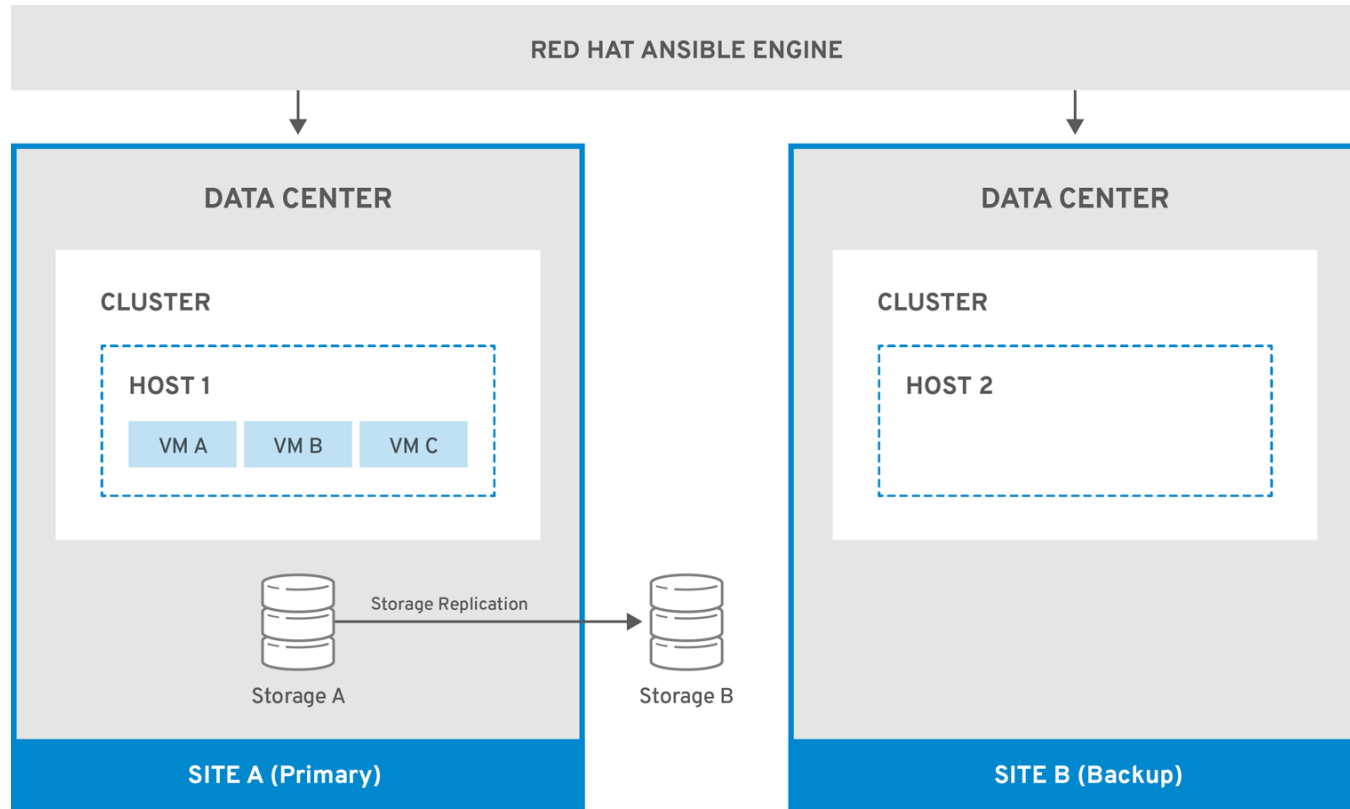
DC replication - active-active DR



RHV_460251_1017

VMs will automatically failback to the primary site when the site becomes available and the storage is replicated in both sites.

DC replication - active-passive DR



2 environments: the active primary, and the passive secondary (backup).

1. Playbook to generate the mapping File

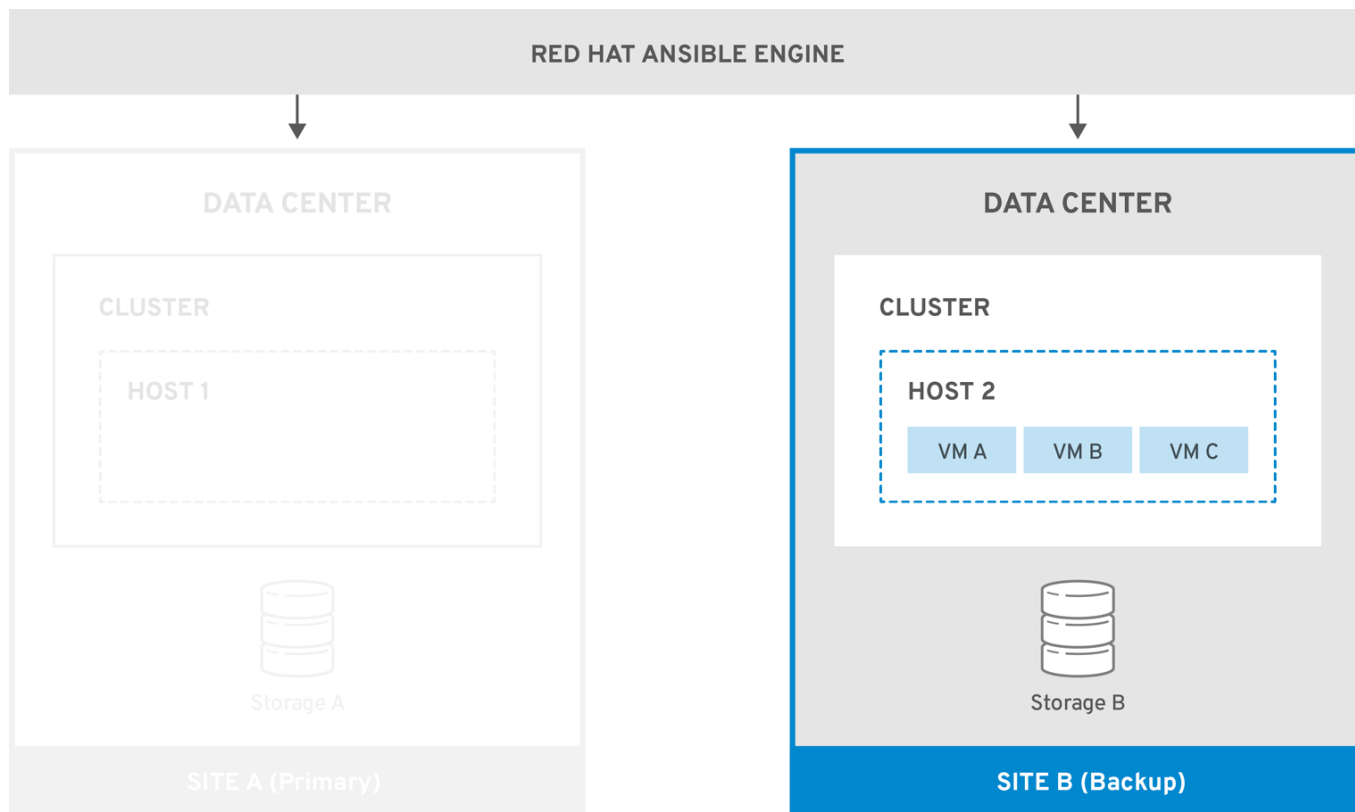
- create an Ansible playbook **ansible-playbook dr-rhv-setup.yml --tags "generate_mapping"**
- configure the mapping file (site details, clusters, storage domain etc.)

2. Failover and Failback Playbooks

- create playbook and select source and target site

ansible-playbook dr-rhv-failover.yml --tags "fail_over"

DC replication - active-passive DR



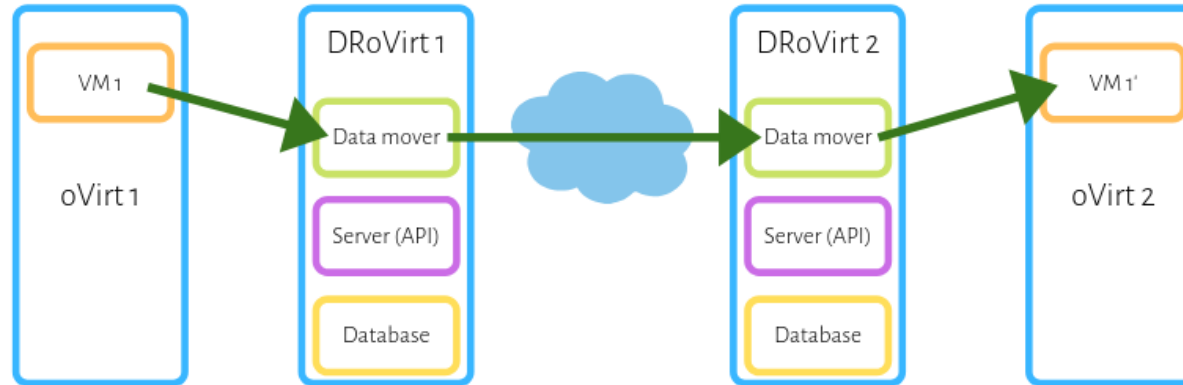
RHV_466010_0218

<https://github.com/oVirt/ovirt-ansible-disaster-recovery>

The **primary storage domain's block devices or shares** that contain virtual machine disks or templates **must be replicated**.

The **secondary storage must not be attached to any data center**, and will be added to the backup site's data center during failover.

DRoVirt



Disaster Recovery / Replication for oVirt/RHV - storage agnostic

Planned 3 components:

- **Data-mover** - responsible for grabbing data periodically and transferring it
- **Server/API** - central management point to invoke tasks
- **Database** - small DB to store current tasks
- **CLI** - utility to easier manage the replication configuration tasks

The actual implementation of the replication is subject to discussion. Initially we want to start with oVirt/RHV 4.2 Disk Image Transfer API / SSH Transfer and later add additional strategies.

<https://github.com/Storware/drovirt>

Key takeaways

Snapshots are not a backups

If you loose parts of your infrastructure, that affect VM
– you'll use snapshot anyway.

Replication is not a backup

Any user error or ransomware activity is going to be
replicated anyway.

Agents cost time to install them and manage

Agent-less approach is easier maintain.

Conclusions:

- you always need a backup
- best if it can be handled in an agent-less way
- enhance RTO/RPO with snapshot management or replication



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