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# OpenStack Backup and Recovery

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OpenStack is a powerful and versatile open-source cloud computing platform that empowers organizations to construct, deploy, and manage both private and public cloud infrastructures with unparalleled flexibility. Born out of collaboration among a community of developers, OpenStack has evolved into a robust and scalable solution that meets the dynamic demands of modern computing environments.

One of the standout features of OpenStack lies in its virtualization capabilities. It enables the efficient management of virtual machines, making it a go-to solution for organizations seeking to optimize resource utilization and scalability. The platform supports various hypervisors,

ensuring compatibility with different virtualization technologies and offering the freedom to choose the most suitable option for specific workloads. The same goes for Storware, which supports the largest number of hypervisors on the market under one license.

Storware Backup and Recovery for OpenStack offers a range of features tailored to address the unique requirements of OpenStack deployments. It supports various components of OpenStack, including compute nodes, storage nodes, networking infrastructure, and metadata services, ensuring that all critical data and configurations are protected.

## Supported OpenStack versions

OpenStack Community: Queens, Rocky, Stein, Train, Ussuri,  
Victoria, Wallaby, Xena, Yoga, Zed.

Sail through the ever-changing ocean of business data with confidence. Unlock the full potential of Storware Backup and Recovery with a 60-day trial. Choose Storware and protect your success today!



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## Features

- Support for OpenStack, OpenStack Canonical, OpenStack Red Hat Platform, OpenStack Ubuntu.
- Full and incremental backups.
- Instant Restore.
- Granular recovery.
- Support for multi-tenant OpenStack environments.
- Integration with multiple backup destinations, including OpenStack Swift.
- Intuitive HTML5 Web Interface and integration with OpenStack Horizon.
- Advanced security options, like: Linux-based installation, IsoLayer – Air-Gap Backup, Immutable Backup Destination, Retention Lock, RBAC, Keycloak – MFA.

## Benefits



**Transparent Licensing:** the easiest licensing without hidden costs: per VM, per Host, per TB, and 24/7 support team at your disposal.



**Scalability and Flexibility:** Storware Backup and Recovery can scale to meet the needs of even the largest OpenStack deployments. It supports a wide range of backup destinations, including local storage, remote storage, and cloud storage.



### Data Protection for All OpenStack Elements:

Storware Backup and Recovery can protect all types of data in OpenStack environments, including virtual machines and storage (Ceph RBD).



**Centralized Management and Control:** Storware Backup and Recovery provides a centralized console for managing all backup and recovery operations. This allows organizations to easily monitor backup jobs, schedule backups, and restore data.



**Rigorous Security Features:** Storware Backup and Recovery offers a comprehensive set of security features to protect data from unauthorized access and corruption. These features include encryption, access control, and auditing.



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## Benefits



### Reduced Costs and Improved Efficiency:

Storware Backup and Recovery can help organizations reduce the costs associated with data protection by optimizing backup jobs, reducing storage costs, and automating recovery processes.



### Meet Disaster Recovery Requirements:

Storware Backup and Recovery can be used to create disaster recovery plans for OpenStack environments. This ensures that organizations can quickly recover from outages or disasters.



### Simplified Compliance with Regulations:

Storware Backup and Recovery can help organizations meet compliance requirements by providing detailed audit trails and reporting capabilities.

## Key features of Storware Backup and Recovery for OpenStack include:

- **Full and incremental backups:** The solution allows you to perform both full and incremental backups, giving you flexibility in managing your backup strategy.
- **Granular recovery:** Storware Backup and Recovery enables you to restore individual files, virtual machines (VMs), volumes, or entire OpenStack instances.
- **Deduplication and compression:** To optimize storage utilization, Storware Backup and Recovery incorporates deduplication and compression techniques.



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## Key features of Storware Backup and Recovery for OpenStack include:

- **Automated scheduling and retention:** The solution offers flexible scheduling options, allowing you to automate backup jobs based on your organization's needs. You can define retention policies to retain backups for specific periods, ensuring compliance with data retention regulations.
- **OpenStack Horizon UI integration plugin:** Storware Backup and Recovery is accessible through the OpenStack Horizon menu, offering backup and recovery options via the RESTful API.

## How it Works?

- Storware Backup & Recovery supports backup for OpenStack:
- Disk attachment through Cinder (preferred).
- Disk image transfer - for KVM hypervisors with VMs using QCOW2.
- Volumes or Ceph-based storage.
- Disk attachment through Cinder.

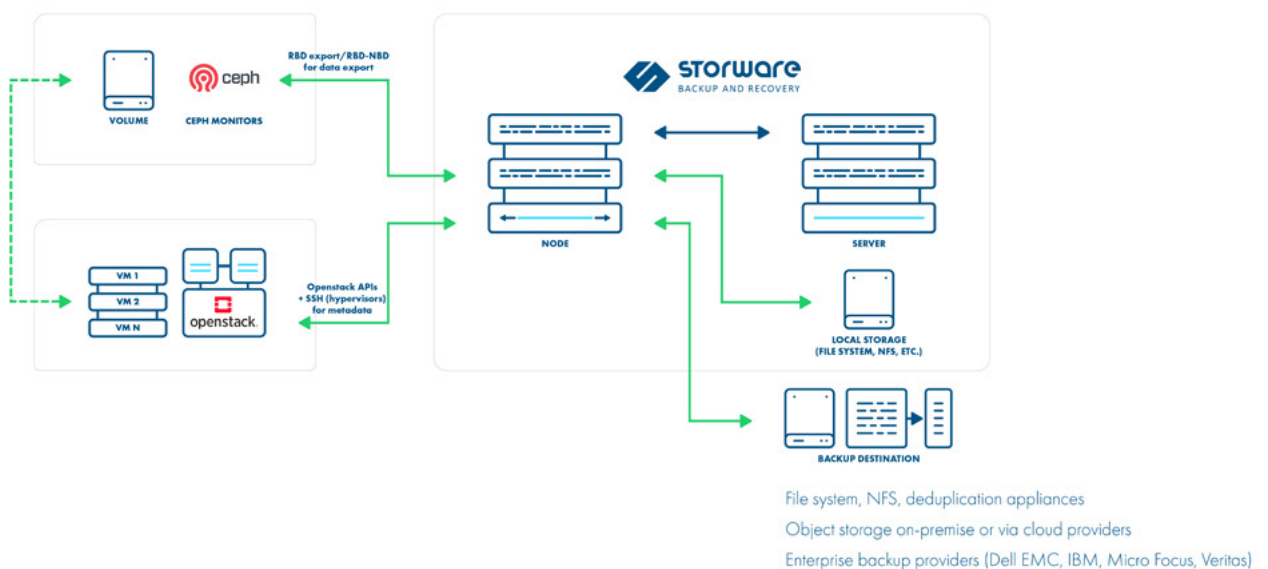
# OpenStack Backup and Recovery

## How it Works?

### Backup Strategies

#### Libvirt strategy

Storware Backup & Recovery supports OpenStack environments that use KVM hypervisors and VMs running on QCOW2 or RAW files. Storware Backup & Recovery communicates with OpenStack APIs such as Nova and Glance to collect metadata and for the import of the restored process. However, the actual backup is done over SSH directly from the hypervisor. The process is exactly the same as in Deployment in the KVM/Xen environment. Storware Backup & Recovery Node can be installed anywhere - it just needs to have access to the OpenStack APIs and hypervisor SSH via a network. Both full and incremental backups are supported.





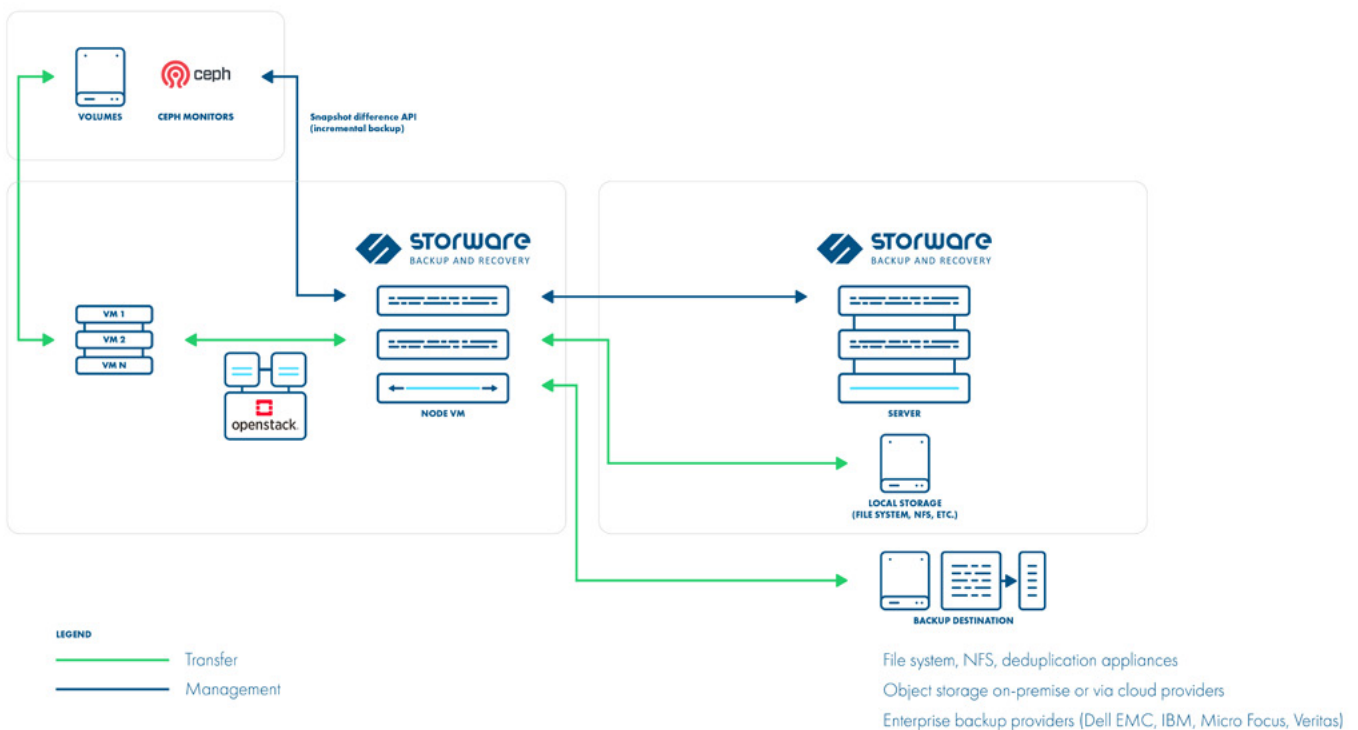
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## How it Works?

### Disk attachment

Storware Backup & Recovery also supports the disk-attachment method using cinder. This should allow you to use cinder-compatible storage and still allow Storware Backup & Recovery to create backups. Incremental backup is supported (which has higher CPU overhead). Storware Backup & Recovery needs to communicate with OpenStack service's API to attach drives to the proxy VM with Storware Backup & Recovery Node installed.







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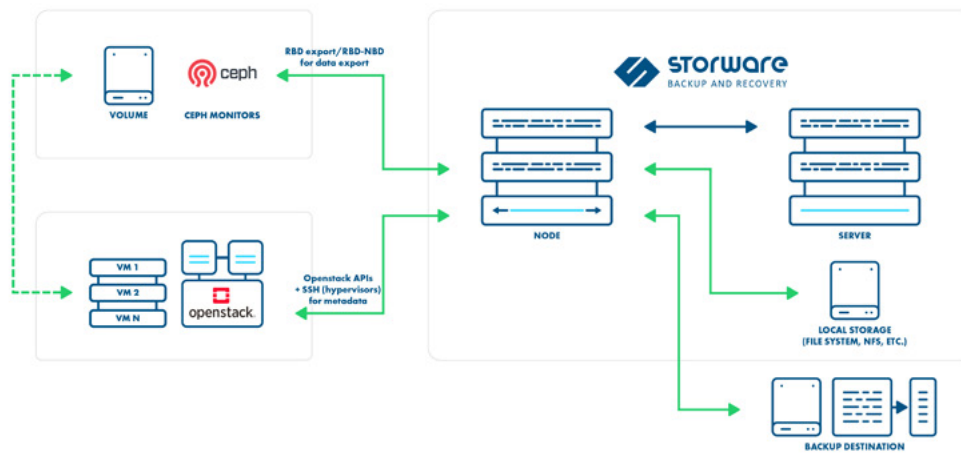
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## How it Works?

### Ceph RBD storage backend

Storware Backup & Recovery also supports deployments with Ceph RBD as a storage backend. Storware Backup & Recovery communicates directly with Ceph monitors using RBD export/RBD mount when used with the Libvirt strategy or - when used with the Disk-attachment method - only during incremental backups (snapshot difference).

### Libvirt strategy



File system, NFS, deduplication appliances  
 Object storage on-premise or via cloud providers  
 Enterprise backup providers (Dell EMC, IBM, Micro Focus, Veritas)

LEGEND  
 — Transfer  
 — Management

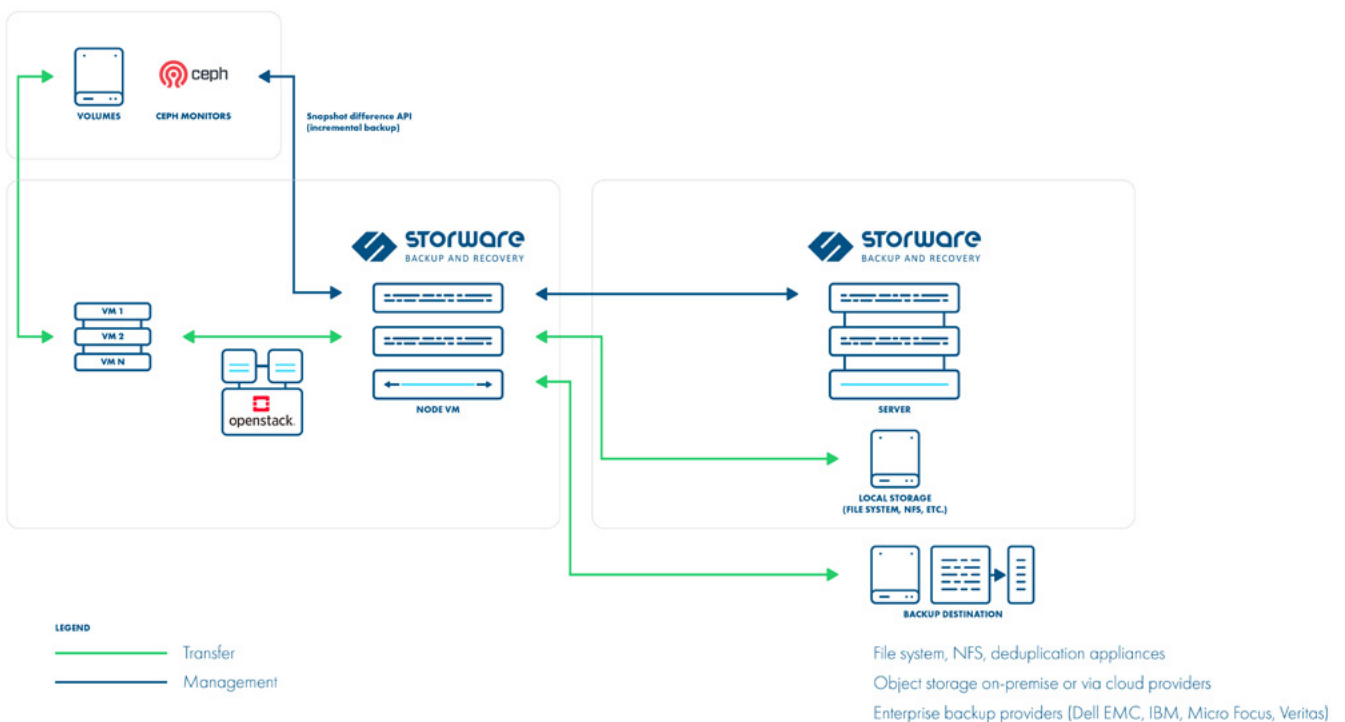


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## How it Works?

### Disk attachment strategy



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