

Backup and Recovery for SUSE OpenStack Cloud

For all of the virtues of cloud technologies, outages still happen. Cloud-based applications have their own resiliency requirements, and operate independently of the underlying infrastructure. As customers move from a development phase into production mode applications need a consistent and dependable backup and recovery option. Trilio is the industry's first agentless, tenant driven, self-service, native backup and recovery solution for OpenStack, assuring data availability across the entire lifecycle of applications. Businesses can now meet service level agreements in all stages of the application lifecycle.

TrilioVault at a glance:

- + Single pane of glass management integrated with Horizon
- + REST API and command line interface
- + Ensure RPO and RTOs with policy based protection
- + Instant snapshot capture of the environment
- + Single click recovery to virtual machine, availability zone or cloud
- + Granular file and/or folder recovery
- + Infinite scalability, easy installation
- + NFS, Swift, and S3 backup targets
- + Deployable with Ansible, Puppet, and Chef
- + Automated discovery of virtual machine instances
- + 24 X 7 data protection

Products:

- SUSE OpenStack Cloud
- TrilioVault
- SUSE Enterprise Storage

The Challenge: Data Exposure

OpenStack has experienced tremendous growth in terms of its maturity as a cloud platform and has evolved into the platform of choice for enterprises, service providers, and telcos, providing more power and agility at a significantly lower cost. As the next stage in their evolution, enterprise IT departments and service providers are looking to offer both Backup-as-a-Service and BC/DR-as-a-Service for OpenStack private clouds. Once legacy applications or data are introduced into these scale-out cloud environments, it is vital to have a comprehensive and holistic resiliency and recovery solution.

Today, organizations have limited-to-no recovery and resiliency options for their customers outside of retrofitting traditional backup vendors' products with scripts, adding more storage, and manually reconstructing environments. These manual processes negatively impact manageability, environmental recoverability, and jeopardize corporate SLAs.

Additionally, DevOps teams must quickly spin up point-in-time test clouds—similar to production environments—to test feature and version releases and ensure reliable software delivery. This requires manual processes to recreate environments with copied production data, ultimately slowing release cycles.

The Solution: TrilioVault

TrilioVault is the industry's first native, tenant-level, backup and recovery solution for OpenStack clouds. Unlike traditional vendors that leverage heavy in-guest agents and only back up individual file systems, databases or application data, Trilio generates a full and forever incremental environmental point in time of the tenant's application container—application, compute resources, network configurations, security groups, metadata and storage data—as a whole. Through automation and policy, Trilio significantly lowers the total cost of ownership with the ability to remove the need for manual processes and/or IT Operation intervention. The benefits

**For more information visit:
www.suse.com/products/suse-openstack-cloud/**

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are the fastest and most reliable recovery, easier migration of applications and simplified virtual cloning of the applications in their entirety resulting in dramatically shortened release cycles.

As it relates to recovery, Trilio provides tenant driven, single-click and "Selective Restore" capabilities. The selective restore process provides enormous flexibility, as the solution discovers the target platforms and provides various possible options to map backup image resources to a new platform. This includes new hypervisor clusters, networks, and storage volumes.

With increasingly complex and critical IT environments, companies should look for the best ways to fully protect their business, while at the same time providing easier, faster and more reliable recovery. While nothing is fail-proof, an ideal recovery solution will get your business up and running as quickly as possible with minimal negative impact, should disaster strike. Trilio's hybrid cloud strategy does just that. As with any storage target, TrilioVault provides customers with the ability to store fully formed disaster recovery images up to public clouds such as Amazon's S3. Trilio empowers users to leverage the elastic computing power of their OpenStack environment with the business assurance of a best known state to retrieve both on- and off-premise in the event of a failure.

Backup to SUSE Enterprise Storage

TrilioVault full or incremental snapshots can be held in a variety of block, object

and file storage environments, including SUSE Enterprise Storage™, the intelligent software-defined storage solution powered by Ceph technology. SUSE Enterprise Storage presents a single unified software-defined storage cluster that provides applications with unified object, block and file storage designed with unlimited scalability from terabytes to petabytes, and no single points of failure, maximizing system resiliency and application availability following hardware failures.

Ready Certified for SUSE OpenStack Cloud

SUSE® OpenStack Cloud delivers Infrastructure-as-a-Service (IaaS) for your data center, with access to automated pools of IT resources to run applications, giving you the flexibility to respond quickly and easily to new demands. SUSE OpenStack Cloud eases OpenStack installation by delivering a structured installation process that maintains the enterprise's flexibility to address their unique requirements. TrilioVault is Ready Certified for SUSE OpenStack Cloud. That means it has been tested against the latest SUSE OpenStack Cloud release and is fully supported to work in that environment. Trilio's software is non-disruptive upon install and runs on standard x86 servers and is managed through either its own web-based dashboard, OpenStack Horizon, or REST APIs. TrilioVault is highly scalable to manage 10's of thousands of VMs and can leverage 3rd party arrays and de-duplication engines for storage.

For more information on TrilioVault visit:
www.triliodata.com/



Contact your local SUSE Solutions Provider, or call SUSE at:

1 800 796 3700 U.S./Canada
1 801 861 4500 Worldwide

SUSE
Maxfeldstrasse 5
90409 Nuremberg
Germany