Managing cloud data storage with OpenStack and Dell

OpenStack offers numerous benefits as an open-source cloud computing platform, providing organizations with flexibility, scalability, and cost efficiency. With no licensing fees, it allows businesses to build and manage their own cloud infrastructure free from vendor lock-in. OpenStack supports multi-tenancy, ensuring secure resource sharing across different users and teams with strict access controls. Its modular architecture enables customization, making it suitable for a variety of workloads, from web applications to high-performance computing. Additionally, OpenStack integrates seamlessly with both private and public cloud environments, supporting hybrid cloud strategies. With broad industry adoption and a strong global community, it continues to evolve, offering continuous innovation, security updates, and a robust ecosystem of tools and services. For DevOps professionals prioritizing automation and continuous delivery, OpenStack offers powerful automation capabilities. Its drivers enable the automation of manual tasks, enhancing efficiency and scalability. With infrastructure as code supported by Dell, OpenStack addresses infrastructure pain points, unlocking innovative possibilities for driving operational excellence.

Supported Storage Solutions

Dell Technologies integrates OpenStack through its Cinder and Manila drivers for block and file storage, respectively. Cinder (Block Storage): OpenStack's block storage service offers scalable, reliable, and easy-to-manage cloud storage. It acts as a bridge, integrating with block storage and leveraging existing infrastructure. Users can create, attach, and manage volumes on demand, ensuring flexible, high-performance storage. Advanced features like snapshots, backups, and multi-attach enhance data protection and operational efficiency, making Cinder ideal for both enterprise workloads and virtual machines.

Cinder driver

Supported Storage Arrays

PowerFlex

PowerStore

PowerMax

Manila (File Storage): Manila simplifies the management of networked file storage in flexible cloud environments. It supports multiple backends and protocols, making it adaptable to diverse storage needs. Manila's robust driver framework integrates with a wide range of storage solutions, from traditional enterprise systems to cloud-native platforms. With features like snapshot support, access management, and multi-tenancy, Manila empowers users to efficiently manage shared file systems across their infrastructure.

Manila driver

Supported Storage Arrays, CIFS, NFS configurations

PowerFlex

PowerStore

PowerMax

Partner Implementations

Canonical's OpenStack deployment with PowerFlex enables automated storage driver lifecycle management, offering operational simplicity for DevOps teams managing dynamic environments. This solution combines OpenStack and Dell hardware to deliver a robust, scalable cloud infrastructure. Canonical's automation tools, such as MAAS (Metal as a Service) and Juju, simplify complex cloud operations, while Dell's high-performance servers provide the reliable hardware foundation. Together, they help businesses modernize operations, reduce costs, and deploy scalable workloads with confidence.

Red Hat OpenStack, integrated with Dell PowerFlex, enables scalable private cloud solutions. This partnership combines OpenShift's container management with OpenStack's efficient storage management

layer. The result is seamless deployment, high availability, and simplified application management across multicloud environments. Organizations benefit from enhanced data performance, streamlined operations, and faster innovation while retaining full control over storage and workloads.

Global Financial Institution:
"Our IT team transitioned to automated workflows, reducing manual overhead by 70%. With Dell OpenStack Solutions, we now deliver services faster and with greater reliability."

Mid-Sized SaaS Company:
"We scaled our private cloud in record time while maintaining impeccable performance—all thanks to PowerFlex's seamless integration with Canonical OpenStack!"

Tech Startup:
"Dell's solutions empowered us to adopt Red Hat OpenStack with minimal friction. Automated driver deployment is a lifesaver for our lean IT team."

Conclusion

Dell OpenStack distributions combine cutting-edge storage capabilities, automation-driven workflows, and compatibility across leading data storage offers. For developers, DevOps, and IT professionals, OpenStack aids in simplifies the management of modern data centers while delivering efficiency and scalability. Experience the power of Dell OpenStack and Dell to automate, scale, and optimize your IT operations.

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