

Accelerate Your Private Cloud with the Fastest, Most Scalable Storage for OpenStack

Deploy cloud services faster with resilient storage that rapidly scales in lockstep with your business demands



RAPID DEPLOYMENT AND EXPANSION

- Spin up new services in minutes
- Support tens of thousands of workloads
- Install the using Infrastructure as Code (IaC)
- Use incumbent TCP/IP high performance networking



BEST PRICE/PERFORMANCE

- Reduce your TCO by 50% or more vs. Ceph
- Achieve up to 4.4M IOPS per Rack Unit
- Use commodity hardware from any vendor
- Built-in data reduction



BUILT FOR ANY APPLICATION

- Cinder driver for OpenStack
- CSI plugin for Kubernetes
- QoS to ensure consistent application user experience
- Highly available and reliable for your mission critical applications

THE CHALLENGE

As organizations modernize their data centers, they increasingly turn to open-source, software-defined cloud models that offer flexibility and robust support for diverse applications. This requires a data storage platform that delivers a solid user experience by being highly elastic while being cost-efficient, simple to manage and flexible enough to support any application, no matter what the requirements are. These organizations seek to avoid the high costs associated with traditional, proprietary enterprise storage. Instead, they prefer software-defined, open-source solutions that seamlessly integrate into their desired architectures.

OpenStack is an open-source, software-defined cloud computing platform that provides Infrastructure as a Service (IaaS) by enabling the management and orchestration of large pools of compute, storage, and networking resources.

Lightbits specializes in delivering high-performance, software-defined storage solutions tailored for modern data centers. Built from the ground up to be flexible and fast; the software utilizes commodity hardware to drive end-to-end NVMe; redefining how storage is managed and delivered in cloud-scale environments.

THE NEXT GENERATION SOLUTION

With Lightbits storage powering your OpenStack environment, application owners gain the confidence that their platform will support them through every stage—building, operating, and growing their service. When storage footprints inevitably grow; Lightbits enables you to keep up with demand by instantly scaling vertically or horizontally without application downtime and with no effect on data transfer speeds.

Due to utilizing commodity hardware, infrastructure teams can choose which server vendor to purchase from. As the inventors of NVMe/TCP, the Lightbits storage platform enables the networking to be TCP/IP which enables a “plug and play” experience. Building on commodity server and network infrastructure coupled with the unique architecture of Lightbits drives incredible performance, at the same time keeping total cost of ownership (TCO) 50% lower than [alternative software-defined solutions](#).

Empower your cloud consumers to deploy any application at ease. Using the upstreamed Lightbits cinder driver for OpenStack and the Lightbits open source CSI plugin for containerized environments, be assured that your cloud is flexible, robust and tightly integrated with the whole stack, including management and integration tools.

SOLUTION DESIGN

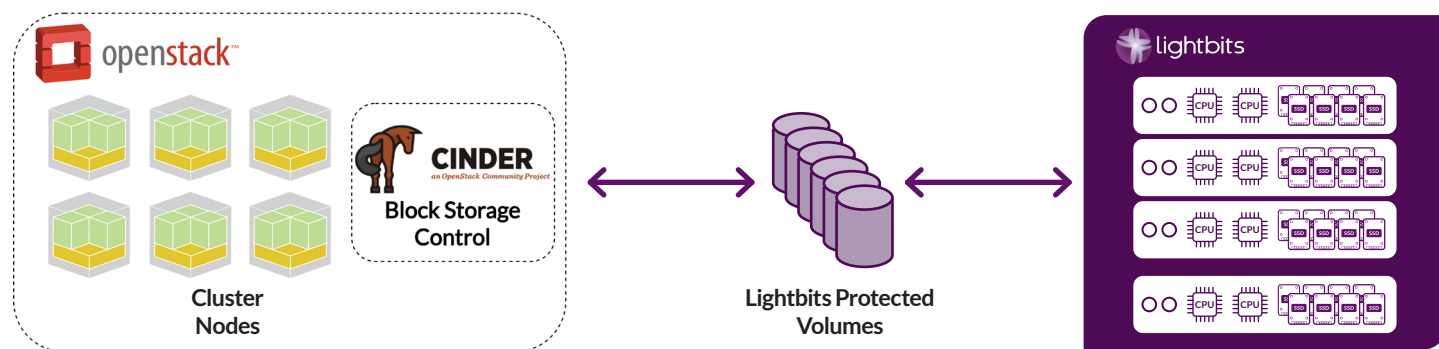


Figure 1: High level architecture of Lightbits working with OpenStack through Cinder.

The architecture in **Figure 1** shows how Lightbits communicates through the OpenStack Cinder driver to provision and mount highly available, replicated Lightbits volumes as NVMe devices to OpenStack compute nodes. With this design, the orchestration and management of data is controlled directly from OpenStack ensuring that the solution will seamlessly integrate with any OpenStack environment.

SUPPORTED OPERATIONS

- Create volume
- Delete volume
- Attach volume
- Detach volume
- Create image from volume
- Live migration
- Volume replication
- Thin provisioning
- Multi-attach
- Supported vendor driver
- Extend volume
- Create snapshot
- Delete snapshot
- Create volume from snapshot
- Create volume from volume (clone)
- IP access control

Table 1: [Lightbits Cinder supported operations](#)

VALUABLE FEATURES

Outside of the direct Cinder functionality, Lightbits provides the following features which will assist in managing cloud environments.

- Dynamic data rebalancing
- Thin provisioning and inline compression
- Quality of Service (QoS)
- Rolling upgrades
- Storage scale up and scale out
- Software encryption at rest
- Failure domains
- Self-healing
- Multi-tenancy
- Data protection and rapid rebuild in case of a server or disk failure

CUSTOMER INSIGHTS

“Lightbits has enhanced my scalability for OpenStack {application performance, durability}”

“Lightbits is the Goldilocks of storage for OpenStack ...it has everything...”

“Lightbits allows us to run any application on our platform without question; the business is free to choose”

POWER YOUR MOST CRITICAL APPLICATIONS

With Lightbits driving simple, highly available and scalable block storage for OpenStack environments with the power of NVMe/TCP, cloud builders have experienced dramatic improvements in application user experience, time to scale and all without sacrificing their ability to provide a cost efficient platform.

With environments constantly adapting to new technologies, Lightbits has you covered with our support of VMs through OpenStack or KVM, containers through CSI and with our support of containerized VMs with such platforms as OpenShift-V or KubeVirt with our CSI integration.

Ready to build a next-generation private cloud platform that runs every application effortlessly? Contact Lightbits today at info@lightbitlabs.com or explore our [documentation](#) for detailed insights.