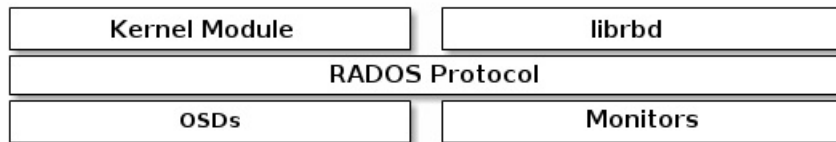


CEPH BLOCK DEVICE

A block is a sequence of bytes (for example, a 512-byte block of data). Block-based storage interfaces are the most common way to store data with rotating media such as hard disks, CDs, floppy disks, and even traditional 9-track tape. The ubiquity of block device interfaces makes a virtual block device an ideal candidate to interact with a mass data storage system like Ceph.

Ceph block devices are thin-provisioned, resizable and store data striped over multiple OSDs in a Ceph cluster. Ceph block devices leverage RADOS capabilities such as snapshotting, replication and consistency. Ceph's RADOS Block Devices (RBD) interact with OSDs using kernel modules or the `librbd` library.



Note: Kernel modules can use Linux page caching. For `librbd`-based applications, Ceph supports [RBD Caching](#).

Ceph's block devices deliver high performance with infinite scalability to [kernel modules](#), or to KVMs such as [Qemu](#), and cloud-based computing systems like [OpenStack](#) and [CloudStack](#) that rely on `libvirt` and `Qemu` to integrate with Ceph block devices. You can use the same cluster to operate the [Ceph RADOS Gateway](#), the [Ceph FS filesystem](#), and Ceph block devices simultaneously.

Important: To use Ceph Block Devices, you must have access to a running Ceph cluster.

- [Commands](#)
- [Kernel Modules](#)
- [Snapshots](#)
- [QEMU](#)
- [libvirt](#)
- [Cache Settings](#)
- [OpenStack](#)
- [CloudStack](#)
- [Manpage rbd](#)
- [Manpage rbd-fuse](#)
- [Manpage ceph-rbdnamer](#)
- [librbd](#)