

Manage volumes

[« \(blockstorage-api-throughput.html\)](#)
[» \(blockstorage-boot-from-volume.html\)](#)

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The default OpenStack Block Storage service implementation is an iSCSI solution that uses [Logical Volume Manager \(LVM\)](#) ([../common/glossary.html#term-logical-volume-manager-lvm](#)) for Linux.

Note

The OpenStack Block Storage service is not a shared storage solution like a Network Attached Storage (NAS) of NFS volumes where you can attach a volume to multiple servers. With the OpenStack Block Storage service, you can attach a volume to only one instance at a time.

The OpenStack Block Storage service also provides drivers that enable you to use several vendors' back-end storage devices in addition to the base LVM implementation. These storage devices can also be used instead of the base LVM installation.

This high-level procedure shows you how to create and attach a volume to a server instance.

To create and attach a volume to an instance

1. Configure the OpenStack Compute and the OpenStack Block Storage services through the `/etc/cinder/cinder.conf` file.
2. Use the **openstack volume create** command to create a volume. This command creates an LV into the volume group (VG) **cinder-volumes**.
3. Use the **openstack server add volume** command to attach the volume to an instance. This command creates a unique [IQN](#) ([../common/glossary.html#term-iscsi-qualified-name-iqn](#)) that is exposed to the compute node.
 - The compute node, which runs the instance, now has an active iSCSI session and new local storage (usually a `/dev/sdX` disk).
 - Libvirt uses that local storage as storage for the instance. The instance gets a new disk (usually a `/dev/vdX` disk).

For this particular walkthrough, one cloud controller runs **nova-api**, **nova-scheduler**, **nova-objectstore**, **nova-network** and **cinder-*** services. Two additional compute nodes run **nova-compute**. The walkthrough uses a custom partitioning scheme that carves out 60 GB of space and labels it as LVM. The network uses the **FlatManager** and **NetworkManager** settings for OpenStack Compute.

The network mode does not interfere with OpenStack Block Storage operations, but you must set up networking for Block Storage to work. For details, see [networking](#) (<https://docs.openstack.org/neutron/latest/>).

To set up Compute to use volumes, ensure that Block Storage is installed along with **lvm2**. This guide describes how to troubleshoot your installation and back up your Compute volumes.

- [Boot from volume \(blockstorage-boot-from-volume.html\)](#)
- [Configure an NFS storage back end \(blockstorage-nfs-backend.html\)](#)
- [Configure multiple-storage back ends \(blockstorage-multi-backend.html\)](#)
 - [Enable multiple-storage back ends \(blockstorage-multi-backend.html#enable-multiple-storage-back-ends\)](#)
 - [Configure Block Storage scheduler multi back end \(blockstorage-multi-backend.html#configure-block-storage-scheduler-multi-back-end\)](#)
 - [Volume type \(blockstorage-multi-backend.html#volume-type\)](#)
 - [Usage \(blockstorage-multi-backend.html#usage\)](#)
- [Back up Block Storage service disks \(blockstorage-backup-disks.html\)](#)
- [Migrate volumes \(blockstorage-volume-migration.html\)](#)
- [Back up and restore volumes and snapshots \(blockstorage-volume-backups.html\)](#)
- [Export and import backup metadata \(blockstorage-volume-backups-export-import.html\)](#)
- [Use LIO iSCSI support \(blockstorage-lio-iscsi-support.html\)](#)
- [Configure and use volume number weigher \(blockstorage-volume-number-weigher.html\)](#)
 - [Enable volume number weigher \(blockstorage-volume-number-weigher.html#enable-volume-number-weigher\)](#)
 - [Configure multiple-storage back ends \(blockstorage-volume-number-weigher.html#configure-multiple-storage-back-ends\)](#)
 - [Volume type \(blockstorage-volume-number-weigher.html#volume-type\)](#)
 - [Usage \(blockstorage-volume-number-weigher.html#usage\)](#)
- [Consistency groups \(blockstorage-consistency-groups.html\)](#)
- [Configure and use driver filter and weighing for scheduler \(blockstorage-driver-filter-weighing.html\)](#)
 - [What is driver filter and weigher and when to use it \(blockstorage-driver-filter-weighing.html#what-is-driver-filter-and-weigher-and-when-to-use-it\)](#)
 - [Enable driver filter and weighing \(blockstorage-driver-filter-weighing.html#enable-driver-filter-and-weighing\)](#)
 - [Defining your own filter and goodness functions \(blockstorage-driver-filter-weighing.html#defining-your-own-filter-and-goodness-functions\)](#)
 - [Supported operations in filter and goodness functions \(blockstorage-driver-filter-weighing.html#supported-operations-in-filter-and-goodness-functions\)](#)
 - [Available properties when creating custom functions \(blockstorage-driver-filter-weighing.html#available-properties-when-creating-custom-functions\)](#)
 - [Host stats for a back end \(blockstorage-driver-filter-weighing.html#host-stats-for-a-back-end\)](#)
 - [Capabilities specific to a back end \(blockstorage-driver-filter-weighing.html#capabilities-specific-to-a-back-end\)](#)
 - [Requested volume properties \(blockstorage-driver-filter-weighing.html#requested-volume-properties\)](#)
 - [Extra specs for the requested volume type \(blockstorage-driver-filter-weighing.html#extra-specs-for-the-requested-volume-type\)](#)
 - [Current QoS specs for the requested volume type \(blockstorage-driver-filter-weighing.html#current-qos-specs-for-the-requested-volume-type\)](#)
 - [Driver filter and weigher usage examples \(blockstorage-driver-filter-weighing.html#driver-filter-and-weigher-usage-examples\)](#)
- [Rate-limit volume copy bandwidth \(blockstorage-ratelimit-volume-copy-bandwidth.html\)](#)
 - [Configure volume copy bandwidth limit \(blockstorage-ratelimit-volume-copy-bandwidth.html#configure-volume-copy-bandwidth-limit\)](#)


- [Oversubscription in thin provisioning \(blockstorage-over-subscription.html\)](#)
 - [Configure oversubscription settings \(blockstorage-over-subscription.html#configure-oversubscription-settings\)](#)
 - [Capabilities \(blockstorage-over-subscription.html#capabilities\)](#)
 - [Volume type extra specs \(blockstorage-over-subscription.html#volume-type-extra-specs\)](#)
 - [Volume replication extra specs \(blockstorage-over-subscription.html#volume-replication-extra-specs\)](#)
 - [Capacity filter \(blockstorage-over-subscription.html#capacity-filter\)](#)
 - [Capacity weigher \(blockstorage-over-subscription.html#capacity-weigher\)](#)
- [Image-Volume cache \(blockstorage-image-volume-cache.html\)](#)
 - [Configure the Internal Tenant \(blockstorage-image-volume-cache.html#configure-the-internal-tenant\)](#)
 - [Configure the Image-Volume cache \(blockstorage-image-volume-cache.html#configure-the-image-volume-cache\)](#)
 - [Notifications \(blockstorage-image-volume-cache.html#notifications\)](#)
 - [Managing cached Image-Volumes \(blockstorage-image-volume-cache.html#managing-cached-image-volumes\)](#)
- [Volume-backed image \(blockstorage-volume-backed-image.html\)](#)
 - [Configure the Volume-backed image \(blockstorage-volume-backed-image.html#configure-the-volume-backed-image\)](#)
 - [Creating a Volume-backed image \(blockstorage-volume-backed-image.html#creating-a-volume-backed-image\)](#)
- [Get capabilities \(blockstorage-get-capabilities.html\)](#)
 - [Usage of cinder client \(blockstorage-get-capabilities.html#usage-of-cinder-client\)](#)
 - [Disable a service \(blockstorage-get-capabilities.html#disable-a-service\)](#)
 - [Usage of REST API \(blockstorage-get-capabilities.html#usage-of-rest-api\)](#)
 - [Usage of volume type access extension \(blockstorage-get-capabilities.html#usage-of-volume-type-access-extension\)](#)
- [Generic volume groups \(blockstorage-groups.html\)](#)

Note

To enable the use of encrypted volumes, see the setup instructions in [Create an encrypted volume type \(https://docs.openstack.org/cinder/latest/configuration/block-storage/volume-encryption.html#create-an-encrypted-volume-type\)](#).

« (blockstorage-api-throughput.html) » (blockstorage-boot-from-volume.html) 🐛 (https://bugs.launchpad.net/cinder/+filebug?field.title=Manage%20volumes%20in%20Cinder&field.comment=%0A%0A%0AThis bug tracker is for errors with the documentation, use the following as a template and remove or add fields as you see fit. Convert [] into [x] to check boxes:%0A%0A- [] This doc is inaccurate in this way: ____%0A- [] This is a doc addition request.%0A- [] I have a fix to the document that I can paste below including example: input and output.%0A%0AIf you have a troubleshooting or support issue, use the following resources:%0A%0A - Ask OpenStack: http://ask.openstack.org%0A - The mailing list: http://lists.openstack.org%0A - IRC: 'openstack' channel on Freenode%0A%0A-----%0ARElease:%2012.0.1.dev9%20on%202018-03-08%2015:24%0ASHA:%20ca6e2fb1fb74150680bff605a241947fc88ddd51%0ASource:%20https://git.openstack.org/cgit/openstack/cinder/tree/doc/source/admin/blockstorage-manage-volumes.rst%0AURL: https://docs.openstack.org/cinder/queens/admin/blockstorage-manage-volumes.html&field.tags=doc)

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- [\(../index.html\)](#)
- [Installation Guide \(../install/index.html\)](#)
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- Cinder Administration (index.html)
- [Increase Block Storage API service throughput \(blockstorage-api-throughput.html\)](#)
- [Manage volumes](#)
- [Troubleshoot your installation \(blockstorage-troubleshoot.html\)](#)
- [Generalized filters \(generalized_filters.html\)](#)
- [Back up Block Storage service disks \(blockstorage-backup-disks.html\)](#)
- [Boot from volume \(blockstorage-boot-from-volume.html\)](#)
- [Consistency groups \(blockstorage-consistency-groups.html\)](#)
- [Configure and use driver filter and weighing for scheduler \(blockstorage-driver-filter-weighing.html\)](#)
- [Get capabilities \(blockstorage-get-capabilities.html\)](#)

[Generic volume groups \(blockstorage-groups.html\)](#)
[Image-Volume cache \(blockstorage-image-volume-cache.html\)](#)
[Use LIO iSCSI support \(blockstorage-lio-iscsi-support.html\)](#)
[Configure multiple-storage back ends \(blockstorage-multi-backend.html\)](#)
[Configure an NFS storage back end \(blockstorage-nfs-backend.html\)](#)
[Oversubscription in thin provisioning \(blockstorage-over-subscription.html\)](#)
[Rate-limit volume copy bandwidth \(blockstorage-ratelimit-volume-copy-bandwidth.html\)](#)
[Volume-backed image \(blockstorage-volume-backed-image.html\)](#)
[Export and import backup metadata \(blockstorage-volume-backups-export-import.html\)](#)
[Back up and restore volumes and snapshots \(blockstorage-volume-backups.html\)](#)
[Migrate volumes \(blockstorage-volume-migration.html\)](#)
[Volume multi-attach: Enable attaching a volume to multiple servers \(blockstorage-volume-multiattach.html\)](#)
[Configure and use volume number weigher \(blockstorage-volume-number-weigher.html\)](#)
[Report backend state in service list \(blockstorage-report-backend-state.html\)](#)

[Cinder Service Configuration \(../configuration/index.html\)](#)
[Sample Configuration File \(../sample_config.html\)](#)
[Sample Policy File \(../sample_policy.html\)](#)
[Available Drivers \(../drivers.html\)](#)

[Command-Line Interface Reference \(../cli/index.html\)](#)
[cinder-manage Usage \(../man/cinder-manage.html\)](#)

[Contributor Guide \(../contributor/index.html\)](#)

[Glossary \(../common/glossary.html\)](#)

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