

# Configure an NFS storage back end

« (blockstorage-boot-from-volume.html) » (blockstorage-multi-backend.html) 🐛 (https://bugs.launchpad.net/cinder/+filebug?field.title=Configure%20an%20NFS%20storage%20back%20end%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-nfs-backend.rst%0AURL: https://docs.openstack.org/cinder/queens/admin/blockstorage-nfs-backend.html&field.tags=doc)

UPDATED: 2018-03-08 15:24

This section explains how to configure OpenStack Block Storage to use NFS storage. You must be able to access the NFS shares from the server that hosts the **cinder** volume service.

## 📌 Note

The **cinder** volume service is named **openstack-cinder-volume** on the following distributions:

- CentOS
- Fedora
- openSUSE
- Red Hat Enterprise Linux
- SUSE Linux Enterprise

In Ubuntu and Debian distributions, the **cinder** volume service is named **cinder-volume**.

## Configure Block Storage to use an NFS storage back end

1. Log in as **root** to the system hosting the **cinder** volume service.
2. Create a text file named **nfsshare**s in the **/etc/cinder/** directory.
3. Add an entry to **/etc/cinder/nfsshare**s for each NFS share that the **cinder** volume service should use for back end storage. Each entry should be a separate line, and should use the following format:

```
HOST:SHARE
```

Where:

- **HOST** is the IP address or host name of the NFS server.
- **SHARE** is the absolute path to an existing and accessible NFS share.

4. Set **/etc/cinder/nfsshare**s to be owned by the **root** user and the **cinder** group:

```
# chown root:cinder /etc/cinder/nfsshare
```

5. Set **/etc/cinder/nfsshare**s to be readable by members of the **cinder** group:

```
# chmod 0640 /etc/cinder/nfsshare
```

6. Configure the **cinder** volume service to use the **/etc/cinder/nfsshare**s file created earlier. To do so, open the **/etc/cinder/cinder.conf** configuration file and set the **nfs\_shares\_config** configuration key to **/etc/cinder/nfsshare**s.

On distributions that include **openstack-config**, you can configure this by running the following command instead:

```
# openstack-config --set /etc/cinder/cinder.conf \
  DEFAULT nfs_shares_config /etc/cinder/nfsshare
```

The following distributions include **openstack-config**:

- CentOS
- Fedora
- openSUSE
- Red Hat Enterprise Linux
- SUSE Linux Enterprise

7. Optionally, provide any additional NFS mount options required in your environment in the **nfs\_mount\_options** configuration key of **/etc/cinder/cinder.conf**. If your NFS shares do not require any additional mount options (or if you are unsure), skip this step.

On distributions that include **openstack-config**, you can configure this by running the following command instead:

```
# openstack-config --set /etc/cinder/cinder.conf \
  DEFAULT nfs_mount_options OPTIONS
```

Replace `OPTIONS` with the mount options to be used when accessing NFS shares. See the manual page for NFS for more information on available mount options (**man nfs**).

- Configure the `cinder` volume service to use the correct volume driver, namely `cinder.volume.drivers.nfs.NfsDriver`. To do so, open the `/etc/cinder/cinder.conf` configuration file and set the `volume_driver` configuration key to `cinder.volume.drivers.nfs.NfsDriver`.

On distributions that include `openstack-config`, you can configure this by running the following command instead:

```
# openstack-config --set /etc/cinder/cinder.conf \
  DEFAULT volume_driver cinder.volume.drivers.nfs.NfsDriver
```

- You can now restart the service to apply the configuration.

#### Note

The `nfs_sparsed_volumes` configuration key determines whether volumes are created as sparse files and grown as needed or fully allocated up front. The default and recommended value is `true`, which ensures volumes are initially created as sparse files.

Setting `nfs_sparsed_volumes` to `false` will result in volumes being fully allocated at the time of creation. This leads to increased delays in volume creation.

However, should you choose to set `nfs_sparsed_volumes` to `false`, you can do so directly in `/etc/cinder/cinder.conf`.

On distributions that include `openstack-config`, you can configure this by running the following command instead:

```
# openstack-config --set /etc/cinder/cinder.conf \
  DEFAULT nfs_sparsed_volumes false
```

#### Warning

If a client host has SELinux enabled, the `virt_use_nfs` boolean should also be enabled if the host requires access to NFS volumes on an instance. To enable this boolean, run the following command as the `root` user:

```
# setsebool -P virt_use_nfs on
```

This command also makes the boolean persistent across reboots. Run this command on all client hosts that require access to NFS volumes on an instance. This includes all compute nodes.

« (blockstorage-boot-from-volume.html) » (blockstorage-multi-backend.html) 🐛 (https://bugs.launchpad.net/cinder/+filebug?field.title=Configure%20an%20NFS%20storage%20back%20end%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-nfs-backend.rst%0AURL: https://docs.openstack.org/cinder/queens/admin/blockstorage-nfs-backend.html&field.tags=doc)

UPDATED: 2018-03-08 15:24



(https://creativecommons.org/licenses/by/3.0/)

Except where otherwise noted, this document is licensed under [Creative Commons Attribution 3.0 License \(https://creativecommons.org/licenses/by/3.0/\)](https://creativecommons.org/licenses/by/3.0/). See all [OpenStack Legal Documents \(http://www.openstack.org/legal\)](http://www.openstack.org/legal).

🐛 FOUND AN ERROR? REPORT A BUG (HTTPS://BUGS.LAUNCHPAD.NET/CINDER/+FILEBUG?)

FIELD.TITLE=CONFIGURE%20an%20NFS%20storage%20back%20end%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:%20CA6E2FB1FB74150680BFF605A241947FC88DD51%0ASOURCE:%20HTTPS://GIT.OPENSTACK.ORG/CGIT/OPENSTACK/CINDER/TREE/DOC/SOURCE/ADMIN/BLOCKSTORAGE-NFS-BACKEND.RST%0AURL: HTTPS://DOCS.OPENSTACK.ORG/CINDER/QUEENS/ADMIN/BLOCKSTORAGE-NFS-BACKEND.HTML&FIELD.TAGS=DOC)

❓ QUESTIONS? (HTTP://ASK.OPENSTACK.ORG)

## Cinder 12.0.1

(../index.html)

Installation Guide (../install/index.html)

Upgrade Process (../upgrade.html)

Cinder Administration (index.html)

Increase Block Storage API service throughput (blockstorage-api-throughput.html)

Manage volumes (blockstorage-manage-volumes.html)

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

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)

## OpenStack

- Projects (<http://openstack.org/projects/>)
- OpenStack Security (<http://openstack.org/projects/openstack-security/>)
- Common Questions (<http://openstack.org/projects/openstack-faq/>)
- Blog (<http://openstack.org/blog/>)
- News (<http://openstack.org/news/>)

## Community

- User Groups (<http://openstack.org/community/>)
- Events (<http://openstack.org/community/events/>)
- Jobs (<http://openstack.org/community/jobs/>)
- Companies (<http://openstack.org/foundation/companies/>)
- Contribute (<http://docs.openstack.org/infra/manual/developers.html>)

## Documentation

- OpenStack Manuals (<http://docs.openstack.org>)
- Getting Started (<http://openstack.org/software/start/>)
- API Documentation (<http://developer.openstack.org>)
- Wiki (<https://wiki.openstack.org>)

## Branding & Legal

- Logos & Guidelines (<http://openstack.org/brand/>)
- Trademark Policy (<http://openstack.org/brand/openstack-trademark-policy/>)
- Privacy Policy (<http://openstack.org/privacy/>)
- OpenStack CLA ([https://wiki.openstack.org/wiki/How\\_To\\_Contribute#Contributor\\_License\\_Agreement](https://wiki.openstack.org/wiki/How_To_Contribute#Contributor_License_Agreement))

## Stay In Touch