How to Share a Folder Between Container Hosts?

written by sysadmin | 30 July 2025

The previous articles have explained storage connections using volume and bind mount. This article will describe how to share a folder so that containers on other hosts can access it.

Problem

How to share a data folder between container hosts?

Solution

In this article, I use 3 servers where 1 server runs an NFS server with an IP of 192.168.56.12, and 2 servers run Docker with IPs 192.168.56.2 (docker1) and 192.168.56.102 (docker2). You can go to this article about NFS, and I use the **/var/nfs** folder as a data folder for all containers. After installing NFS on the server, type the following commands to configure NFS in the NFS server:

```
sudo mkdir /var/nfs
sudo chmod -R 777 /var/nfs
sudo echo "/var/nfs 192.168.56.0/24(rw,sync,no_subtree_check,no_root_squash)"
| sudo tee /etc/exports
sudo exportfs -r
sudo touch /var/nfs/test.txt
sudo bash -c 'echo "This is from NFS server" > /var/nfs/test.txt'
```

Warning
I think you should know the version of NFS you are using by typing the command **nfsstat -s** so that when creating the container for the **nfsvers** option, you can fill the option with that version of NFS.

On 2 other Docker hosts, type the command below to make a volume Docker:

```
docker volume create --driver local \
  --opt type=nfs \
  --opt o=addr=192.168.56.12,rw,nfsvers=4,noatime,nodev,nosuid \
  --opt device=:/var/nfs \
  nfs_volume
```

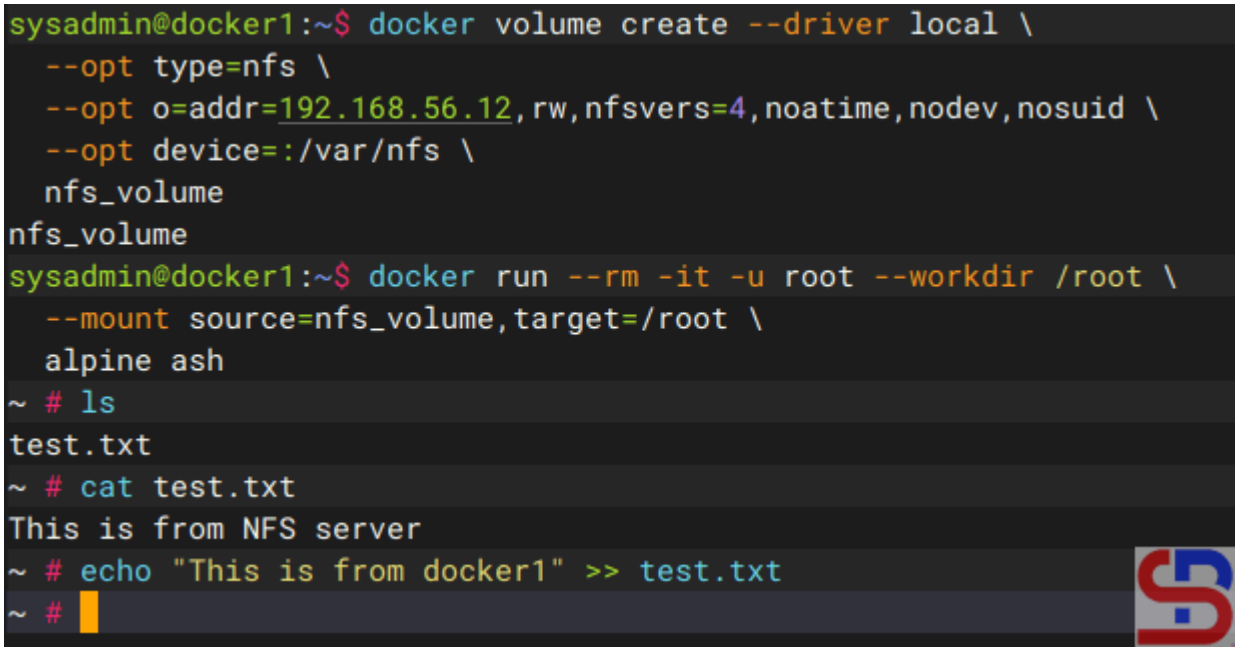
After that, type the command below on those 2 Docker hosts to run the container connected to your NFS server:

```
docker run --rm -it -u root --workdir /root \
  --mount source=nfs_volume,target=/root \
  alpine ash
```

INFO

The docker **run --rm -it image_name shell** command is used to run a container, and then you go to the folder / in the container. Add the **--workdir /root** option if you want to directly access the /root folder automatically after the container is formed. And if you exit from the container, the container is deleted instantly.

The image below is an example of when a container from docker1 host (192.168.56.2) accesses the NFS server:



Access the NFS folder from the docker1 host

The image below is an example of when a container from the docker2 host (192.168.56.102) accesses the NFS server:

```
[sysadmin@docker2 ~]$ docker volume create --driver local \
  --opt type=nfs \
  --opt o=addr=192.168.56.12,rw,nfsvers=4,noatime,nodev,nosuid \
  --opt device=:/var/nfs \
  nfs_volume
nfs_volume
[sysadmin@docker2 ~]$ docker run --rm -it -u root --workdir /root \
  --mount source=nfs_volume,target=/root \
  alpine ash
~ # ls
test.txt
~ # cat test.txt
This is from NFS server
This is from docker1
~ # echo "This is from docker2" >> test.txt
~ # cat test.txt
This is from NFS server
This is from docker1
This is from docker2
~ #
```

Access the NFS folder from docker2 host

As you can see in the images above, all containers can access the NFS server and can change the files on the NFS server.

Note

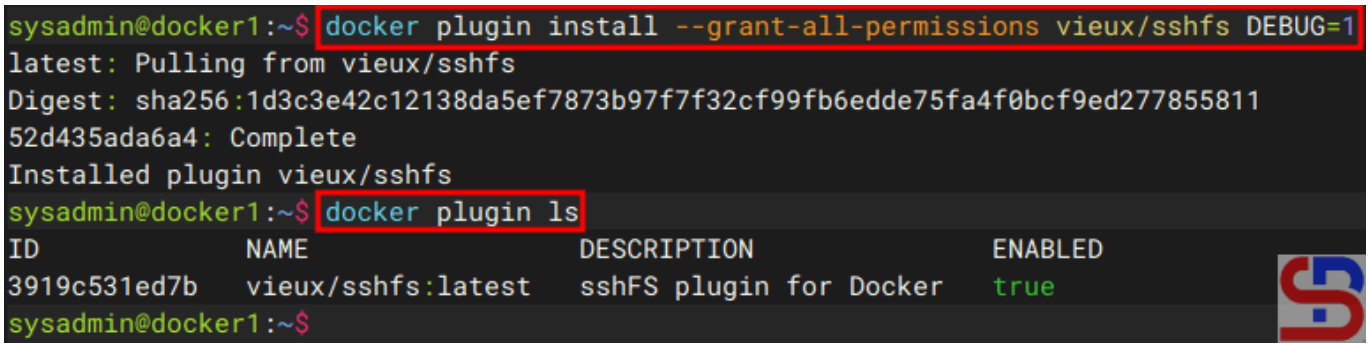
On the internet, some developers make a Docker plugin to access NFS servers from containers, such as plugins [docker-volume-netshare](), [nfs- volume-plugin, nfsvol](), and so on. I have tried the first 3 plugins, but I always failed when accessing the NFS server using the plugins. But, there is a Docker plugin called [docker-volume-sshfs]() that can access a folder, but the connection does not use NFS; but uses SSH, so you don’t need to install and configure NFS. As long as the folder can still be accessed using SSH, then this Docker

plugin can still be used. For example, I create **/home/sysadmin/data** as a data folder in IP 192.168.56.12, so I use the commands below to create the folder:

```
mkdir /home/sysadmin/data
cd /home/sysadmin/data
echo "This is from server" > test.txt
```

On the 2 Docker hosts, use the command below to install the Docker plugin:

```
docker plugin install --grant-all-permissions vieux/sshfs DEBUG=1
docker plugin ls
```



Install Docker plugin vieux/sshfs

Use the command below to create a volume in Docker:

```
docker volume create \
-d vieux/sshfs \
-o sshcmd=sysadmin@192.168.56.12:/home/sysadmin/data \
-o port=22 \
-o password=qwerty \
ssh_volume
```

After that, use the command below to run the container to connect to the folder:

```
docker run -it --rm \
--workdir /root  \
-v ssh_volume:/root  \
alpine sh
```

The image below is an example of when a container from

docker1 host (192.168.56.2) accesses the data folder:

```
sysadmin@docker1:~$ docker volume create \
-d vieux/sshfs \
-o sshcmd=sysadmin@192.168.56.12:/home/sysadmin/data \
-o port=22 \
-o password=qwerty \
ssh_volume
ssh_volume
sysadmin@docker1:~$ docker run -it --rm \
--workdir /root  \
-v ssh_volume:/root  \
alpine sh
~ # ls
test.txt
~ # cat test.txt
This is from server
~ # echo "This is from docker1" >> test.txt
~ #
```

Access the data folder from docker1 host

The image below is an example of when a container from docker2 host (192.168.56.102) accesses the data folder:

```
[sysadmin@docker2 ~]$ docker volume create \
-d vieux/sshfs \
-o sshcmd=sysadmin@192.168.56.12:/home/sysadmin/data \
-o port=22 \
-o password=qwerty \
ssh_volume
ssh_volume
[sysadmin@docker2 ~]$ docker run -it --rm \
--workdir /root  \
-v ssh_volume:/root  \
alpine sh
~ # ls
test.txt
~ # cat test.txt
This is from server
This is from docker1
~ # echo "This is from docker2" >> test.txt
~ # cat test.txt
This is from server
This is from docker1
This is from docker2
~ #
```

Access the data folder from docker2 host

As you can see in the images above, all containers can access the data folder and can change the files in the folder.

References

youtube.dimas-maryanto.com
docs.docker.com