

Lesson 03 Demo 01

Demonstrating How to Use Storage across Cluster Nodes

Objective: To demonstrate the utilization of storage across cluster nodes in Docker for enhanced container management and data persistence

Tools required: Ubuntu

Prerequisites: None

Steps to be followed:

1. Utilize a volume for storage, replicate a service, and inspect worker nodes

Step 1: Utilize a volume for storage, replicate a service, and inspect worker nodes

- 1.1 Run the following command to create a volume on the manager node:

sudo docker volume create volume1

```
labsuser@ip-172-31-29-216:~$ sudo docker volume create volume1
volume1
labsuser@ip-172-31-29-216:~$
```

- 1.2 Run the following command to list the current volumes in the manager node:

sudo docker volume ls

```
labsuser@ip-172-31-29-216:~$ sudo docker volume ls
DRIVER      VOLUME NAME
local      2281939aad8bcc95d474eb57331ad7d2397742cd27032390259583f4533d16e8
local      b6182087d714beb4020f0c9262a345fe8f6910239ca94e28b862b72ec4563418
local      d5f9cd061c6b84fe79c305f4132626e1baad50c7cba28192529dd50ecbf6711e
local      ec8f292c8ec4bf1c45d154bdb87edeeb91302abff8ef38d5dc1bd6357a14bfed
local      my_vol
local      volume1
labsuser@ip-172-31-29-216:~$
```

- 1.3 Execute the following command to create a replicated service using the local volume:

```
sudo docker service create -d --replicas=4 --name replicated-service \
--mount source=volume1,target=/app nginx:latest
```

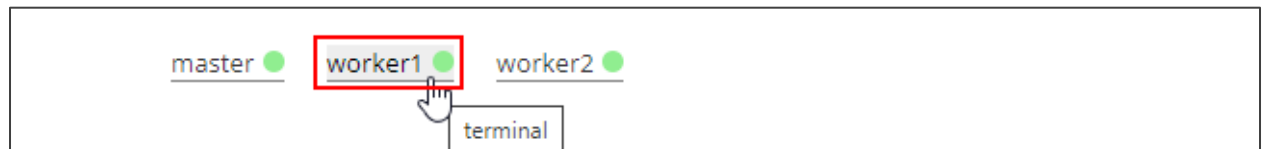
```
labsuser@ip-172-31-29-216:~$ sudo docker service create -d --replicas=4 --name replicated-service \
> --mount source=volume1,target=/app nginx:latest
qvt1bibbfbdhvc95hvf5jw2s
labsuser@ip-172-31-29-216:~$
```

- 1.4 Run the following command to list the replicated services:

```
sudo docker service ps replicated-service
```

```
labsuser@ip-172-31-29-216:~$ sudo docker service ps replicated-service
ID                NAME                IMAGE             NODE              DESIRED STATE      CURRENT STATE      CURRENT STATE
zc5a5e9mgy3w      replicated-service.1  nginx:latest      ip-172-31-30-210  Running            Running 51 seconds ago
g3xh0fwf1fmh      replicated-service.2  nginx:latest      ip-172-31-29-216  Running            Running 51 seconds ago
depekrdq7y1o      replicated-service.3  nginx:latest      ip-172-31-29-216  Running            Running 51 seconds ago
lr2mp2vce8s7      replicated-service.4  nginx:latest      ip-172-31-26-147  Running            Running 51 seconds ago
labsuser@ip-172-31-29-216:~$
```

- 1.5 Click on the **worker1** option and navigate to the newly opened tab of worker1 node:



- 1.6 Execute the following command to list the local volumes on worker1 node:

```
sudo docker volume ls
```

```
labsuser@ip-172-31-26-147:~$ sudo docker volume ls
DRIVER          VOLUME NAME
local           4b335d273e8b710352fc0f2e8b89af0d85d4d3cb8d1c20b3daa74f83f440db24
local           71544d57eb4e25a232d43c586cfc3070401827eb8bb3843d1c1830b351c2950
local           d635914e43dc46961e402ca3b6400de4dda727d3ee1dd597a72519229b53feca
local           volume1
labsuser@ip-172-31-26-147:~$
```

Note: Volume created on the **master** node is used by the **worker1** node.

1.7 Click on the **worker2** option and navigate to the newly opened tab of worker2 node



1.8 Execute the following command to list the local volumes on worker2 node:

sudo docker volume ls

```
labsuser@ip-172-31-30-210:~$ sudo docker volume ls
DRIVER          VOLUME NAME
local           6d38e6b453b9d3d9a546425548479f81d1633d7a9e99c24a1c5cfc7f35db6dcc
local           c8bd94f786bb5bc7366983d5cc5561ef4be67a5dcb0889d9a79735adce85d236
local           cacd17597d4e5dbb40bc6e21f603b23d5d1d85ed692dce583bb8f746adbf5846
local           f6bac7bca5ac0a9078506d7df3dc51b677d4af16a947f611c5137fd92c22aacc
local           volume1
labsuser@ip-172-31-30-210:~$
```

By following these steps, you have successfully demonstrated storage utilization across cluster nodes in Docker to enhance container management capabilities and facilitate data persistence across the cluster.