

## Scrutinize Into Prolific Environs with Energetic Data Management Using Flocker

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### Abstract

Nowadays we all know the storage processing that which is done by using the virtualization in cloud computing and many of the organizations practiced to use the virtualization storage, for the purpose retrieving and storing the data easily but the redundant data is being increased day by day hence to overcome the redundant data the docker container entered and managed the data being stored or retrieved by using container later. This paper proposes a new idea of flockerization that which overcomes the redundancy and brown computing increased by using the docker and the virtualization storage

**Key Words:** Brown computing, Docker container, locker container, redundancy, virtualization

### Introduction

In this well developed country the technology is playing a vital role and the storage has become very important in the day today life. In earlier days the magnetic tape, magnetic Drum, Selectron tube, Delay line memory, Magnetic core, hard disk, Music tape, DRAM(PDF), Twistormemory, bubblememory, 8" floppy, 5.25" floppy, CD, 3.5" floppy, CD ROM, DAT(digital Audio tape), DDS (digital data storage), Zip drive, DVD, smart media, phasewriter dual, multimedia card, micro drive, SD card, cloud storage was being developed since from 1956 -2005. And after the cloud storage came into the reality the world wide web also adopted the cloud computing technology for storing the data in huge purpose. And the cloud computing kept on developing the storing and retrieving factor by using the virtualization mechanism. This virtualization mechanism provided infinity storage and large amount of storage was provided and later it became difficult to retrieve the data. Because this virtualization had many redundant data in it and irrelevant data found while retrieving data. And while storing data it will not check for previously stored content when it is in different name it will store data in it.

### 1. VIRTUALIZATION

Virtualization is that creating a virtual version of the system or resource or services such as a server, hard disk, OS Where the two different OS can run in the same system by using the VMware. Simply by partitioning a hard disk into two also becomes virtualization. The human can use the virtualization for storing, accessing, retrieving, processing etc but it can't be viewed in the naked eyes

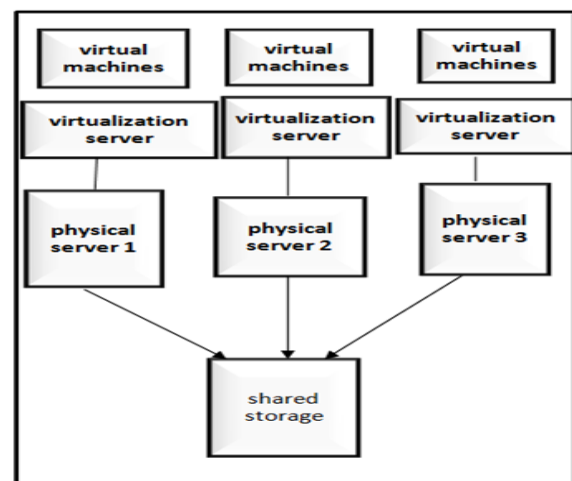


Figure 1: Virtual Storage

Virtualization storage solves number of vexing storage related problems. Such as

- Improve capacity utilization
- Disaster recovery

- Faster backup
- Data migration
- Automatic capacity expansion
- Online disk based recovery
- Application testing
- Improve database management
- High availability
- Resource sharing between heterogeneous servers

## 2. DOCKER CONTAINER:

Docker is the perception of running applications within the container. The Docker platform empower multiple applications to run in single copy of OS, it can be deployed by using the single physical server or by using the virtual machines.

There are two primary ways in managing the data in the docker they are

- Data Volumes and
- Data volume containers



Figure 2: Docker Container

### A.DATA VOLUMES:

The data volume is especially a labeled directory within one or more containers that circumvents the union file system. Data volumes have features for constant and shared data:

- Volumes are initialized when a container is generated. If the container's paltry image contains data at the specified mount point, that existing data is copied into the different volume upon volume is logged in.
- Data volumes can be shared and reused among containers.
- Modification to a data volume is made straightly.

- And modifications to a data volume will not be included when it is updating an image.
  - Data volumes are constant even if the container itself is deleted.
- Data volumes are designed to constant data, independent of the container's life cycle. Dockers therefore never naturally delete volumes when it removes a container, nor will it "garbage collect" volumes that are no longer referenced by a container. This how the docker volume will be executed

### Mounts":

```
[
{
  "Name": "fac362...80535",
  "Source": "/var/lib/docker/volumes/fac362...80535/_data",
  "Destination": "/webapp",
  "Driver": "local",
  "Mode": "",
  "RW": true,
  "Propagation": ""
}
]
```

The source is indicating the location of the host and the destination is indicating the volume the data in the host and RW indicating the read/write in the volume. Before getting this kind of output the data volume has to initiate that initiation is done by adding the data volume to the container and then locating the data volume to the host.

### B.DATA VOLUME CONTAINER:

The secondary source for managing the data in docker is data volume container. This approach is essentially sluggish container that which has more than one or more volumes generated within itself. These volumes can export to one or more other containers by the command '-volumes-from' for the additional containers. The data volume container act like an internal Docker NFS server that which providing access to containers from a central mount point. The advantage of using this mechanism of accessing is that it abstruse the area of the authentic data, making the data container a cogent mount point.



Figure 2.1: Data volume container

### C. DOCKER VS VIRTUAL MACHINE

Virtual machines show an full server with all of the associated software and maintenance concerns. Docker containers serve application confinement and can be configured with minimum run-time environments. In a Docker container, the kernel and elements of the operating system framework are shared. For the virtual machine, a full operating system must be included. Docker can be created or destroyed easily and quickly. Virtual machines require whole installation and more computing resources and process for the execution. Containers are lightweight hence many containers run more than virtual machines simultaneously. Containers can share all the resources more efficiently and the virtual machines are isolated. Containers cannot migrate during the execution but the virtual machines can be migrated during the execution of the process. The size of virtual machine is very large hence bulk data sharing is not done more efficiently and the docker uses LXC so the sharing of bulk data is done easily. Virtual machines uses its own set of resources hence its sharing is in minimal and the Docker uses LXC since it is lightweight it requires the less resources and gets less isolated. Virtual machine takes some minutes to start its performance and the Docker takes few seconds and mostly less than seconds. Virtual machine has no overhead of rerunning a guest kernel and the docker require consumed memory and not provisioned memory. Virtual machine is measured using the core mark and in the docker the micro benchmark is measuring CPU performance. Hence the virtual machine storage provides the large amount of the storage but when compared to docker its resource sharing and the

performance are too low and the brown IT increased vastly. When the heat dissipation comes to docker is low.

### 3. FLOCKER CONTAINER

Flocker is an open-source container for the data volume manger that which is majorly used for Dockerized application. Flocker is managing the dcoker containers and data volumes together, and when the flocker is used to manage the stateful microservice, the volumes will follow the container when it moves between different hosts in the cluster itself.



Figure 3: Flocker container

The fig 3. Shows when container moves its volume and stays in a place itself then the database starts on the new server without any data. And the fig 4.3 shows when the containers move the data volume also moves with it and the database gets to keep its data. It says that flocker moves a container and the volume together between hosts. Flocker is a lightweight volume and the container manger that where the developers can use that to define their application as a set of connected docker containers. And then the flocker is data technology and it is categorically not a storage area network technology. By coming to know this new technology than the docker container flocker is designed to build and run different applications simultaneously in distributed application and the storage the supports block-based shared storage such as Amazon EBS and this flocker storage backend is best for all the application in retrieving and then storing the data in the World Wide Web.

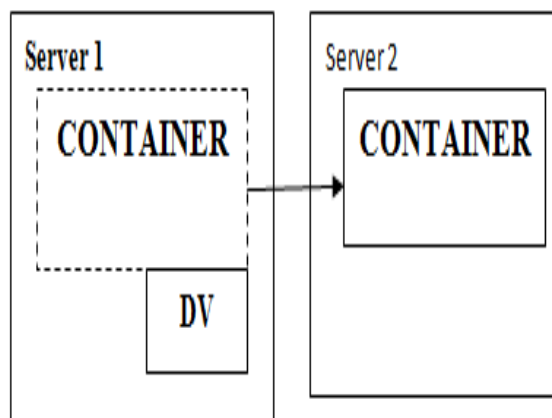


Figure 3.1 Native Docker

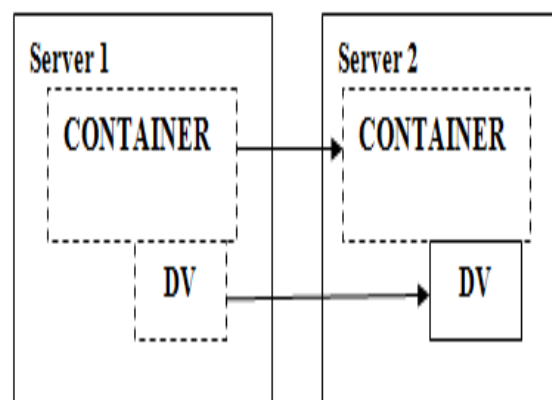


Figure 3.2: Using Flocker

Docker container is being managed by the flocker since the flocker container is more lighter than the docker and the docker has traditionally worked with the data by the data volumes but it comes under limitations and manually copying data into another container isn't simple and the speed up process have been implemented in the flocker and it supports the backend needs and to snapshots. by using the flocker the process of moving the database and their data between the servers can reattach their existing data volumes from the shared storage environment and the stateful application failover can be done manually to new machine and reattach its existing the data volume, the speed up time to recovery is of distributed NoSql databases and moving the databases to a more powerful virtual machine or a bare metal server and then upgrading the RAM/CPU/Disk in the machines is done with the minimal service

downtime. Running the containers on the bare metal but having manageability of VMs.

#### 4. CONCLUSION AND ANALYSIS

From the above analysis in each and every development of the technology there is versatile data management then the virtual machine storage provide the large amount and storage but copying and storing and retrieving process is not done that easily and then the process of searching the data is getting the authorized data and this VMs is not visible and the storage provided in large amount. Hence the brown environment is being increased and the ecosystem is being in the bad condition .When comes to the docker storage is divided into the containers and since it is lightweight the process of copying data is done easily and quickly but manually sharing data is not done easily and it takes more time for sharing the data the major advantage is that docker starts its performance in few seconds. Here in the docker storage management the dissipation of the heat is less when compared to virtualization storage because the time of processing is less and the storage process is done in the form of containers.

And when comes to flocker it is managing the whole dockerized container and it takes lesser time of performance than the docker container. The database alone is not moved or migrated the whole container is migrated while the execution and then the storing, retrieving, processing, deploying, sharing data, copying data is more easier than the docker container. When the data is being managed this easily in the flocker container it is easy to share the data manually from one server to another server and the performance time of processing the data is less than few seconds and heat dissipation is very less than the docker and the storage management is done more efficiently when compared to all the other storage management process. And green environment will be high than brown IT.

#### 6. PROPOSAL

From the above analysis it is known that the flocker container is managing the data more efficiently and the virtualization is the

concept in the cloud computing where the World Wide Web is now familiar. My idea is to propose the concept of flockerization (i.e.) the virtualization storage is very large and connected as a backend in the cloud computing technology and the flocker is managing the data more efficiently than the virtual machines hence when the flocker is binded with the virtualization the storage will be managed easily and the large amount of the storage will be provided and the world wide web will work in the energetic environment and space managed effectively.

## REFERENCES

1. <https://www.google.co.in/search?q=data+volume+container+docker+image&tbm=isch&tbo=usource=univ&sa=X&ved=0ahUKEWjd6eLphY7LAhVBWo4KHatJAYEQsAQIJg&biw=665&bih=630#imgsrc=TZ3V7zWDpqgKW M%3A>
2. <http://thenewstack.io/flocker-a-nascent-docker-service-for-making-containers-portable-data-and-all/>
3. <http://www.infoworld.com/article/2936531/application-virtualization/flocker-bundles-docker-containers-and-data-for-easy-transport.html>
4. <http://www.snia.org/sites/default/files/sn iavirt.pdf>
5. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7307643&newsearch=true&queryText=docker%20container>
6. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7431433&newsearch=true&queryText=docker%20container>
7. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7432984&newsearch=true&queryText=docker%20container>
8. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7346917&newsearch=true&queryText=docker%20container>
9. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7036275&newsearch=true&queryText=docker%20container>
10. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7307624&newsearch=true&queryText=docker%20container>
11. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7307636&newsearch=true&queryText=docker%20container>
12. <http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=7226571&url=http%3A%2F%2Fieeexplore.ieee.org%2Fstamp%2Fstamp.jsp%3Ftp%3D%26arnumber%3D7226571>

## BIOGRAPHY

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