STORAGE AREA NETWORK

ASSIGNMENT-1

Demonstration of the exchange of a file between iSCSI Initiator and Target.

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iSCSI

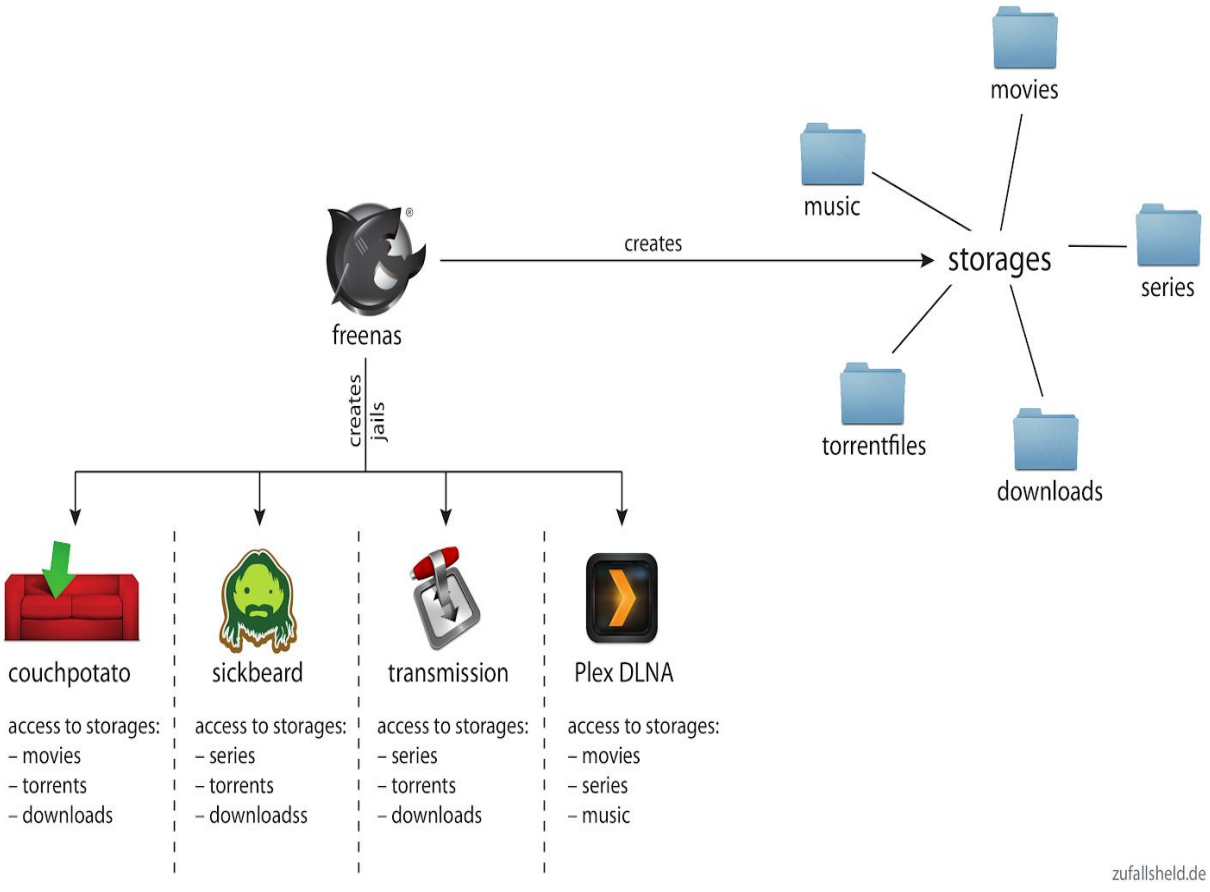
iSCSI(Internet Small Computer Systems Interface) is an Internet Protocol based storage networking standard for linking data storage facilities. It provides block level access to storage devices by carrying SCSI commands over a TCP/IP network.

iSCSI initiator is software or hardware that enables a host computer to send data to an external iSCSI-based storage array through an Ethernet network adapter over a Transmission Control Protocol TCP based Internet Protocol (IP) network. The iSCSI initiator originates the input/output (I/O) command sequence to facilitate data transmission to the storage device, which is also known as an **iSCSI target.**

Software(OS) : FreeNas 11.1v

FreeNAS is an open-source network-attached storage software based on FreeBSD and the OpenZFS file system. We have installed FreeNAS in a virtual machine(VMWARE Workstation) and configured the required settings.

We are transferring the files between 2 different operating systems; first is the freenas which is present in vmware and the other os is the Windows. First we have to configure the freenas in such a way that it behaves like a iSCSI Target; After setting the target finally the IP address is generated by FreeNAS.



Run the freenas in browser by providing the generated ip address and configure it.

1) SERVICES -> START ISCSI and FTP (choose start on boot)

2) STORAGE -> VOLUMES -> VOLUME MANAGER : provide a volume name and required capacity.

3) SHARING -> BLOCK iSCSI :

a) Portal : add new portal ; set ip address and group id
b) Initiator: set group id ,initiators and authorized access.
c) Target: Set the target name and alias(if required)
d) Extents: Add new extent. Specify extent name , extent type='file' , device, logical block size, LUN rpm(SSD-7200).
e) Associated Targets: Add Target which was specified in set target . Set target and lun id and choose the extent which has been created in previous step.

4) VOLUMES -> IMPORT DISK and VOLUME : choose the member disk and file system type and the destination(mount point).

iSCSI block sharing will create a new virtual drive which behaves the same way as virtual memory. We can check that in disk management.

COMPUTER MANAGEMENT -> DISK MANAGEMENT -> NEW VIRTUAL DRIVE(unallocated)

5) Open the iSCSI initiator in windows and configure it.
a) Enter the target ip address which was specified from freenas.
b) Quick Connect

c) Volumes and Devices configuration

The initiator and target are set for transfer of files between them. We can share the files from any specified drive to that virtual drive easily.