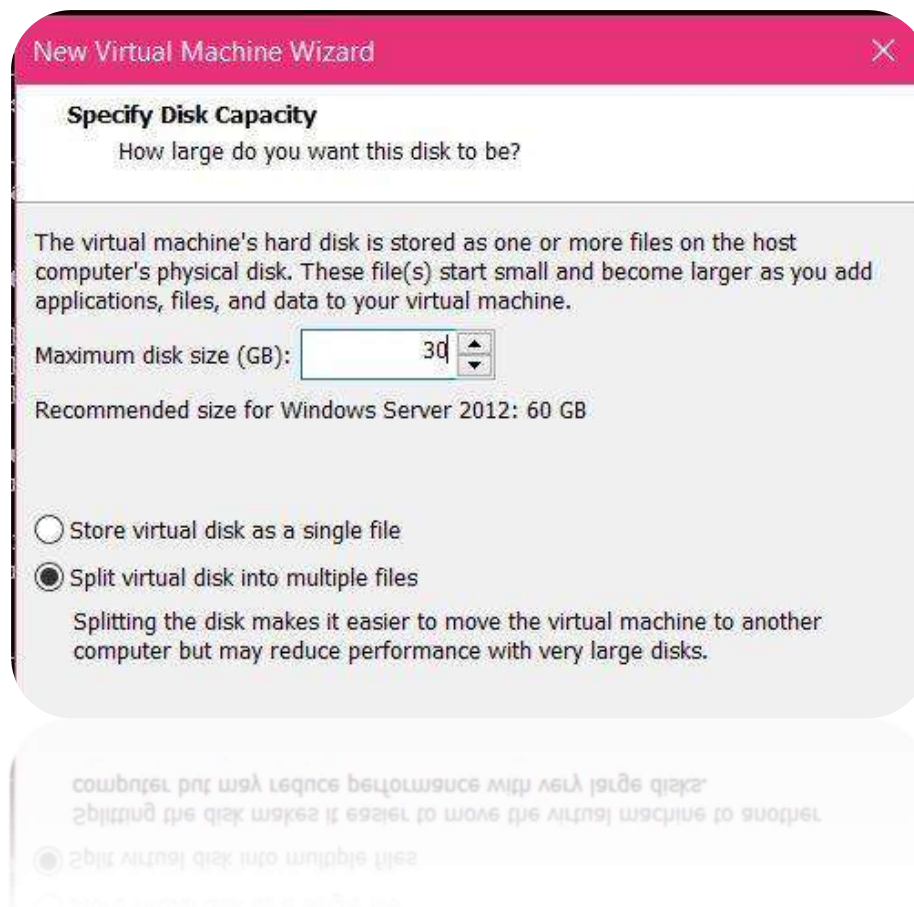


Tarefa Complementar

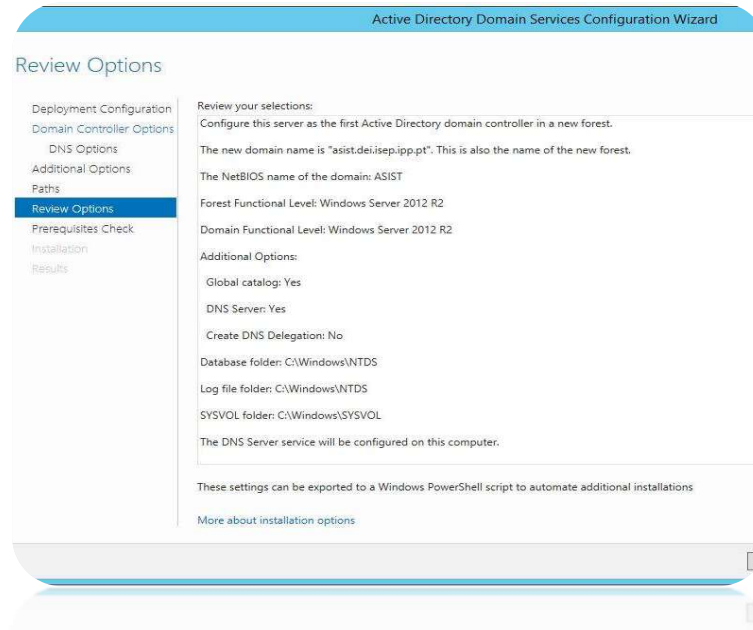
Implementação de SAN utilizando iSCSI

iSCSI *Initiator* do Windows aceder ao *target* na VM Linux

1. Configurar Máquina Windows Server:



2. Configurar Server



3. Na VM Linux instala-se o pacote do iSCSI:

```
asist@AsistServer:~$ sudo apt-get install iscsitarget
Reading package lists... Done
Building dependency tree
Reading state information... Done
iscsitarget is already the newest version (1.4.20.3+svn502-2ubuntu4.5).
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
asist@AsistServer:~$
```

4. Ativar ligação automática:

```
ISCSITARGET_ENABLE=true
ISCSITARGET_MAX_SLEEP=3

# ietd options
# See ietd(8) for details
ISCSITARGET_OPTIONS=****
```

5. Criar ficheiro da pasta partilhada:

```
asist@AsistServer:/home/storage$ sudo dd if=/dev/zero of=/home/storage/lun0.bin count=0 obs=1 seek=1
G
0+0 records in
0+0 records out
0 bytes copied, 0.000567148 s, 0.0 kB/s
asist@AsistServer:/home/storage$
```

6. Identificar *target* no ficheiro de *config*:

```
#NOPInterval          0          # this target - 0 = unlimited
                          # Send a NOP-In ping each after
                          # that many seconds if the conn
                          # is otherwise idle - 0 = off
#NOPTimeout           0          # Wait that many seconds for a
                          # response on a NOP-In ping
                          # If 0 or > NOPInterval, NOPInterval
                          # is used!

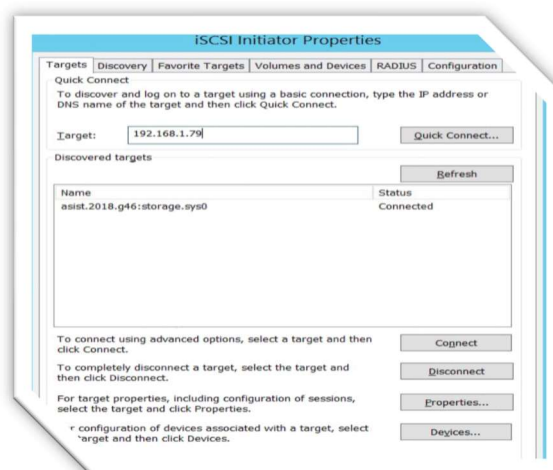
#
# Various target parameters
#
#Wthreads              8          # Number of IO threads
#QueuedCommands        32         # Number of queued commands

Target asist.2018.g46:storage.sys0
Lun 0 Path=/home/storage/lun0.bin,Type=fileio,ScsiId=lun0,ScsiSn=lun0
114,1 Bot
```

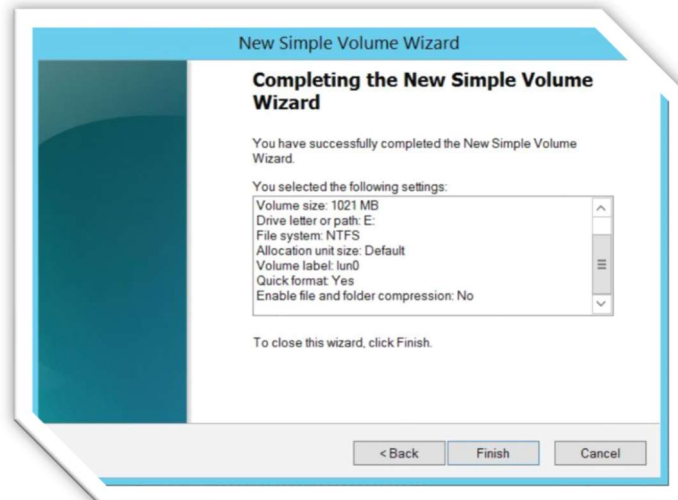
7. Reiniciar o serviço:

```
asist@AsistServer:/home/storage$ sudo service iscsitarget restart
asist@AsistServer:/home/storage$
```

8. Na máquina de Windows usar *initiator* para fazer a ligação:



9. Configurar novo disco:



iSCSI *initiator* aceder ao *target* na VM Windows Server

10. Na máquina Linux instalar iSCSI:

```
asist@AsistServer:/home/storage$ sudo apt install open-iscsi
Reading package lists... Done
Building dependency tree
Reading state information... Done
open-iscsi is already the newest version (2.0.873+git0.3b4b4500-14ubuntu3.6).
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
asist@AsistServer:/home/storage$
```

11. Ligação automática do iSCSI:

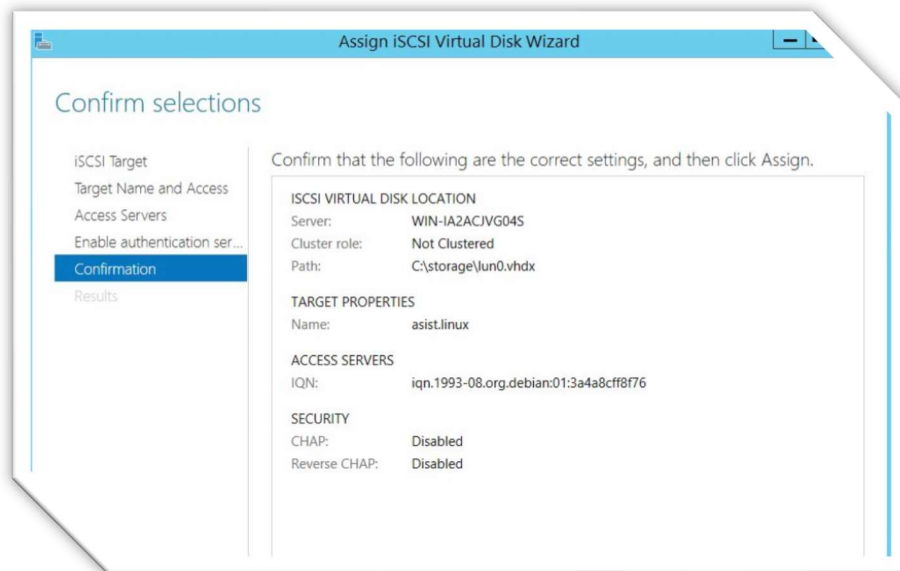
```
#####
# Startup settings
#####

# To request that the iscsi initd scripts startup a session set to "automatic".
# node.startup = automatic
#
# To manually startup the session set to "manual". The default is manual.
node.startup = automatic
```

12. Verificar nome do *initiator*:

```
asist@AsistServer:/home/storage$ sudo cat /etc/iscsi/initiatorname.iscsi
## DO NOT EDIT OR REMOVE THIS FILE!
## If you remove this file, the iSCSI daemon will not start.
## If you change the InitiatorName, existing access control lists
## may reject this initiator. The InitiatorName must be unique
## for each iSCSI initiator. Do NOT duplicate iSCSI InitiatorNames.
InitiatorName=iqn.1993-08.org.debian:01:3a4a8cff8f76
asist@AsistServer:/home/storage$ _
```

13. Configurar *target*:



14. Verificar *targets* disponíveis:

```
asist@AsistServer:/home/storage$ sudo iscsiadm -m discovery -t st -p 192.168.1.80
192.168.1.80:3260,1 iqn.1991-05.com.microsoft:win-ia2acjug04s-asist.linux-target
asist@AsistServer:/home/storage$
```

15. Fazer *login* no *target*:

```
asist@AsistServer:/home/storage$ sudo iscsiadm -m node --login
Logging in to [iface: default, target: iqn.1991-05.com.microsoft:win-ia2acjug04s-asist.linux-target,
portal: 192.168.1.80,3260] (multiple)
Login to [iface: default, target: iqn.1991-05.com.microsoft:win-ia2acjug04s-asist.linux-target, port
al: 192.168.1.80,3260] successful.
```

16. Criar partição:

```
asist@AsistServer:/home/storage$ sudo fdisk /dev/sdb

Welcome to fdisk (util-linux 2.27.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0x80440d3c.

Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1):
First sector (2048-2097151, default 2048): w
Value out of range.
First sector (2048-2097151, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-2097151, default 2097151):

Created a new partition 1 of type 'Linux' and of size 1023 MiB.

Command (m for help):
```

```
Command (m for help):
Created a new partition 1 of type 'Linux' and of size 1023 MiB.
First sector (2048-2097151, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-2097151, default 2097151):
```

17. Lista de partições:

```
asist@AsistServer:/home/storage$ sudo fdisk -l
Disk /dev/sda: 10 GiB, 10737418240 bytes, 20971520 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xf209188f

Device      Boot    Start        End    Sectors    Size Id Type
/dev/sda1   *          2048    11718655    11716608    5.6G 83 Linux
/dev/sda2             11720702    20969471    9248770     4.4G  5 Extended
/dev/sda5             19924992    20969471    1044480     510M 82 Linux swap / Solaris
/dev/sda6             11720704    19924991     8204288     3.9G 83 Linux
```

Partition table entries are not in disk order.

```
Disk /dev/sdb: 1 GiB, 1073741824 bytes, 2097152 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
```

```
NO size (minimum/optimal): 4096 bytes / 4096 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
Units: sectors of 1 * 512 = 512 bytes
Disk identifier: 0x1033541854 sectors, 5035125 sectors
```


18. Formatar e montar partição:

```
asist@AsistServer:/home/storage$ sudo mkfs.ext4 /dev/sdb
mkfs.ext4 1.42.13 (17-May-2015)
Creating filesystem with 262144 4k blocks and 65536 inodes
Filesystem UUID: 2a5b6f6d-3bad-4674-8578-1cc4ed272be3
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376

Allocating group tables: done
Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

asist@AsistServer:/home/storage$ sudo mount /dev/sdb /srv
asist@AsistServer:/home/storage$
```

19. Ficheiro iSCSI que será preparado durante o arranque:

```
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point> <type> <options> <dump> <pass>
# / was on /dev/sda1 during installation
UUID=560fb29c-f2cf-422c-a047-caad1de4b694 / ext4 errors=remount-ro 0 1
# /home was on /dev/sda6 during installation
UUID=9b21394b-91da-417e-8e25-6353a35c1ac6 /home ext4 defaults,usrquota,grpquota 0 2
# swap was on /dev/sda5 during installation
UUID=e2a6609e-de73-44d1-89e5-3e28c950b22c none swap sw 0 0
#Monta iscsi drive durante o arranque
/dev/sdb /srv ext4 defaults,auto,_netdev 0 0
```

Bibliografia

iSCSI *Initiator* do Windows aceder ao *target* na VM Linux:

- <https://tinyurl.com/ycrumxgg> - Documentação Ubuntu de configuração do iSCSI - 28 nov. 18.
- <https://tinyurl.com/ybucyxfm> - Tutorial de configuração para o Ubuntu servir de iSCSI *target* – 28 nov. 18.

iSCSI *initiator* do Linux aceder ao *target* na VM Windows Server:

- <https://tinyurl.com/ybqavn2k> - Tutorial de configuração para o Windows Server servir de iSCSI *target* – 28 nov. 18.