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# Objective 3.4 – Configure and Manage VMFS Datastores

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## Knowledge

- Identify VMFS file system attributes

You can lookup the VMFS file system attributes from the command line.

```
vmkfstools -P -h <VMDK FILE NAME>
```

for example:

```
vmkfstools -P -h /vmfs/volumes/AOPSY001/TST001/TST001.vmdk
```

and a example output:

```
VMFS-3.33 file system spanning 1 partitions.
File system label (if any): AOPSY001
Mode: public
Capacity 931.2 GB, 359.4 GB available, file block size 4 MB
UUID: 4a6f26bb-33aca892-7b43-0024817ebe6b
Partitions spanned (on "lvm"):
naa.600508b300906430a44f208f2ba60007:1
```

- Determine the appropriate Datastore location/configuration for given virtual machines

When you create a Virtual machine there are a couple of consideration to make when creating the vDisk. In no particular order:

- Thick or thin

When you create a disk or clone a VM from template you can choose if you would like the disk you will be creating to be thick or thin provisioned. Think means that the complete size of the disk will be reserved on the storage array. Thin will use only the size that is actually use within the Virtual Machine.

- SCSI Controller Type

You can change the SCSI controller type in the properties of the VM. In vSphere there are four types of controllers you can choose from:

- BUSLogic Parallel
- LSI Logic Parallel
- LSI Logic SAS
- VMware Paravirtual

What controller you choose depends on you OS and performance needs. In general the VMware Paravirtual is the fastest controller you can choose, but also the controller that has the least number of operating systems that it is supported on.

- Spread the disks If you have a VM with multiple disks you can spread those disk over multiple VMFS volumes. Especially when these volumes are separate RAID sets and even better, accessed over different paths to the storage controller (or even on different storage controllers!) this can improve the performance of a VM.
- SCSI Bus Sharing

This defines if is disk can be used by one VM or by more than one VM the options are:

- None
  - Disk is for one VM only
- Virtual
  - Disk can be shared by VMs on the same ESX host
- Physical
  - Disk can be shared by VMs on different ESX hosts

- Determine use cases for multiple VMFS Datastores

Oops, just told you guys. But because Copy Past is really fast....: If you have a VM with multiple disks you can spread those disk over multiple VMFS volumes. Especially when these volumes are separate RAID sets and even better, accessed over



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different paths to the storage controller (or even on different storage controllers!) this can improve the performance of a VM.

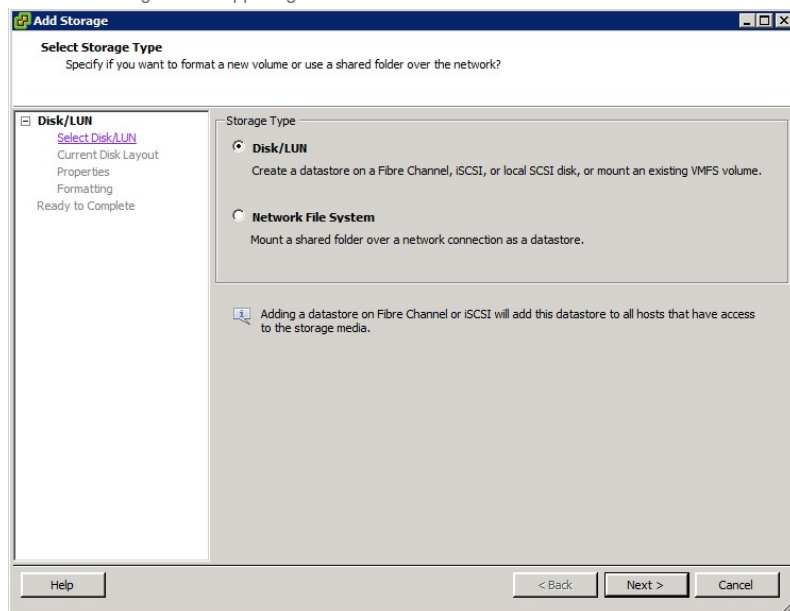
### ● Create/Configure VMFS Datastores

Before you try to add storage according to the following procedure, first check:

- Are the LUNs / targets presented on the storage controller?
- Is the zoning / LUN Masking configured correctly
- Are the HBA's / VMkernel interfaces configured correctly
- Did you scan for new LUNs / targets after they were presented?

To create a VMFS Datastore using the vSphere client:

- Select a ESX host
- Select the tab "Configuration"
- Select "Storage"
- Click "Add storage" in the upper right corner



- Follow the wizard for your type of storage

### ● Attach existing Datastore to new ESX host

If an existing datastore (formatted etc.) is present and visible to the ESX host you can add it to the "Storage" view by:

- Select a ESX host
- Select the tab "Configuration"
- Select "Storage"
- Click "Refresh" in the upper right corner
- After the refresh the disk should appear.

### ● Manage VMFS Datastores

#### ○ Group/Unmount/Delete Datastores

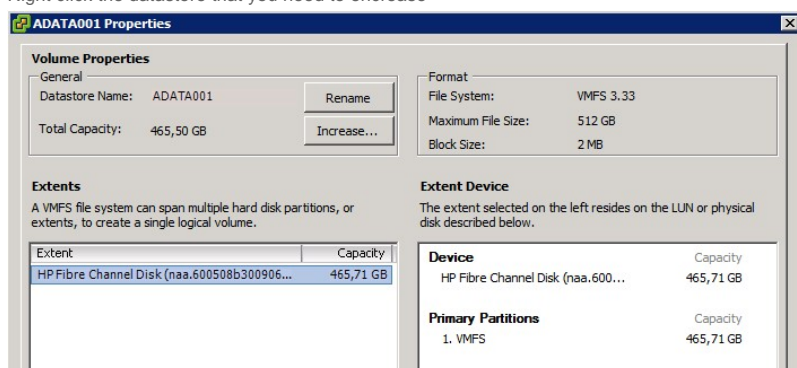
When a datastore is decommissioned you can delete a datastore from the storage view.

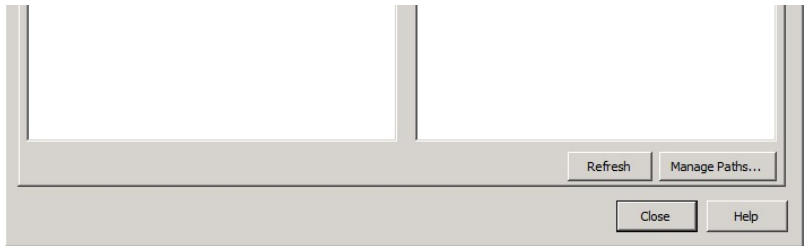
- Select a ESX host
- Select the tab "Configuration"
- Select "Storage"
- Right Click the datastore you would like to delete and confirm.

#### ○ Grow VMFS volumes

To increase the size of a VMFS datastore:

- Select a ESX host
- Select the tab "Configuration"
- Select "Storage"
- Right click the datastore that you need to increase





- Click on the "Increase" button and follow the wizard.

## Tools

- [ESX/ESXi Configuration Guides](#)
- [Product Documentation](#)
- [VMware vSphere Client](#)

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