How to setup your vm policy for vsan storage

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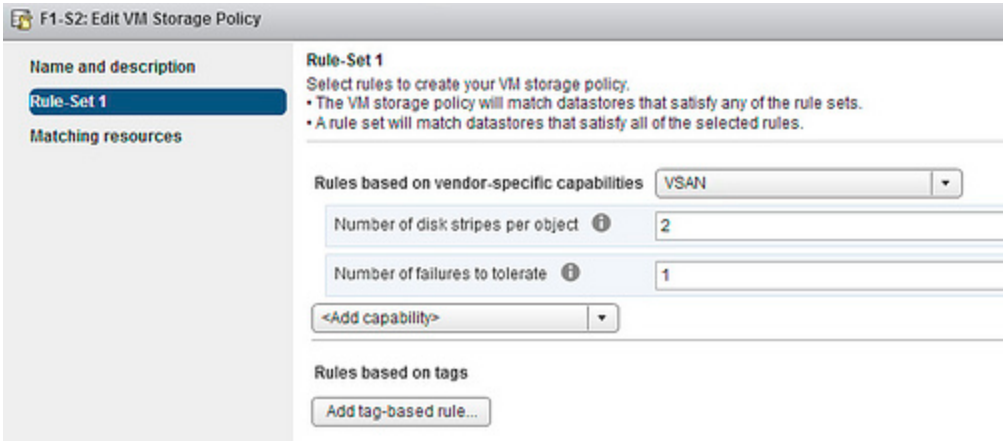
You can use this knowledge to setup the storage policy for your VM.

Command
[vCenter] -> [Rules and Profiles] -> [VM Storage Policies]

Note

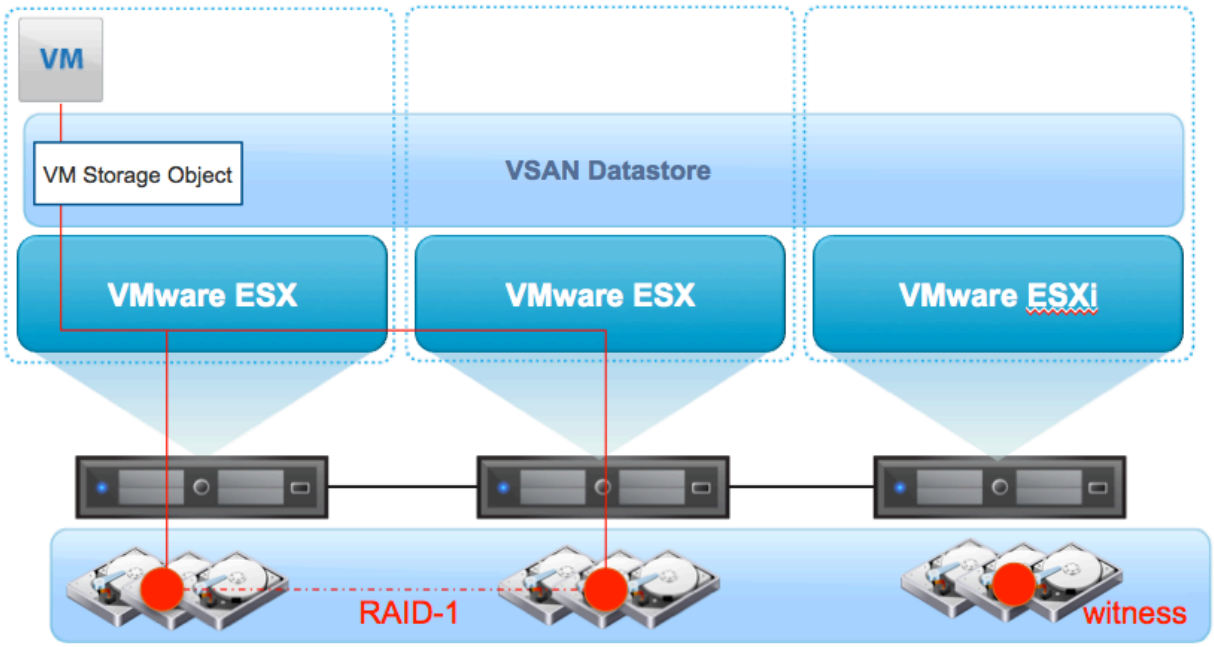
- So when you define stripe width, make sure you also define “failures to tolerate”. Otherwise, you will got "failures to tolerate = 0" and "no mirror copied = RAID 0" policy.



Change the Storage Policy on the Fly (ref)

Number of Failure to tolerate = 1, Number of disk stripes per object = 0

- 跨 host 做 RAID 1 實現 節點 tolerate
- esxi host 裡面的硬碟不做 stripe 存取



(ref)

IOPS for each HDD on the esxi host does not enough

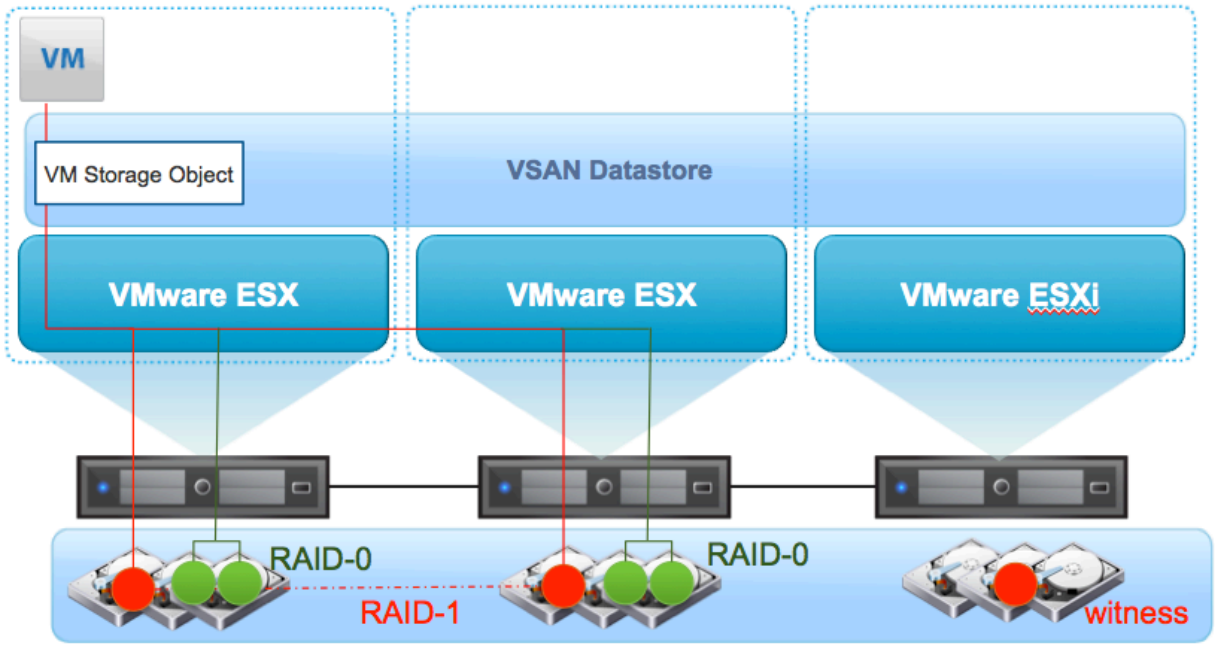
> The admin then notices that the virtual machine deployed on their VSAN is getting a 90% read cache hit rate. This implies that 10% of reads need to be serviced from HDD. At peak time, this VM is doing 2000 read operations per second. Therefore, there are 200 reads that need to be serviced from HDD (the 10% of reads which are cache misses). The specifications on the HDDs imply that each disk can do 150 iops, meaning that a single disk cannot service these additional 200 iops. To meet the I/O requirements of the VM implies that a stripe width of two disks should be implemented.

[vsan, cache status] How to determine the vsan cache status -- write through/write back, hit rate? (view)

Change the Policy

Number of Failure to tolerate = 1, Number of disk stripes per object = 2

- 跨 host 做 RAID 1 實現 節點 tolerate
- esxi host 裡面的硬碟做 stripe 2 (拿兩顆做 RAID 0) 存取,增加 iops 能力.



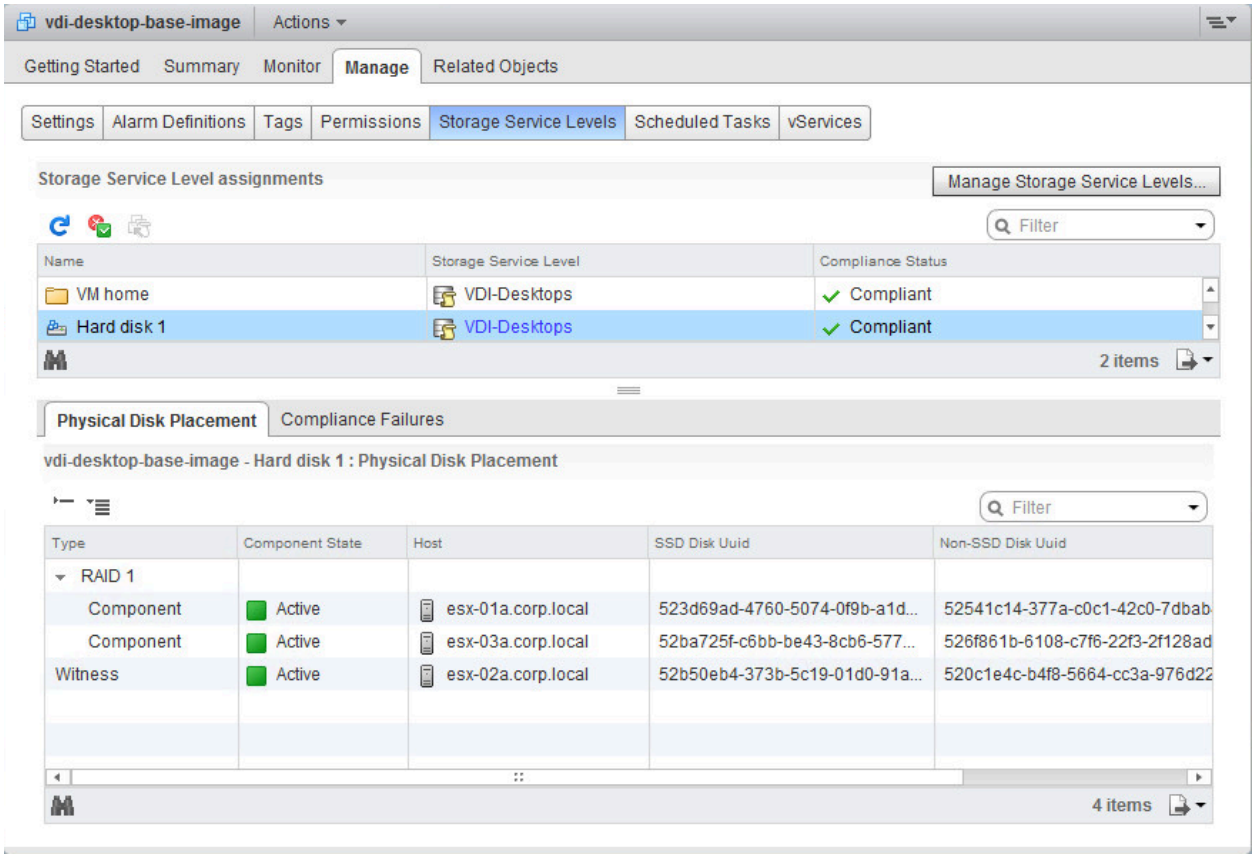
Why additional witness components? (ref)

In order for a VM to continue to access all its components when changing the policy, greater than 50% of the components of that objects must still be available in the cluster. Therefore changes to the VM Storage Policy could result in additional witness components being created

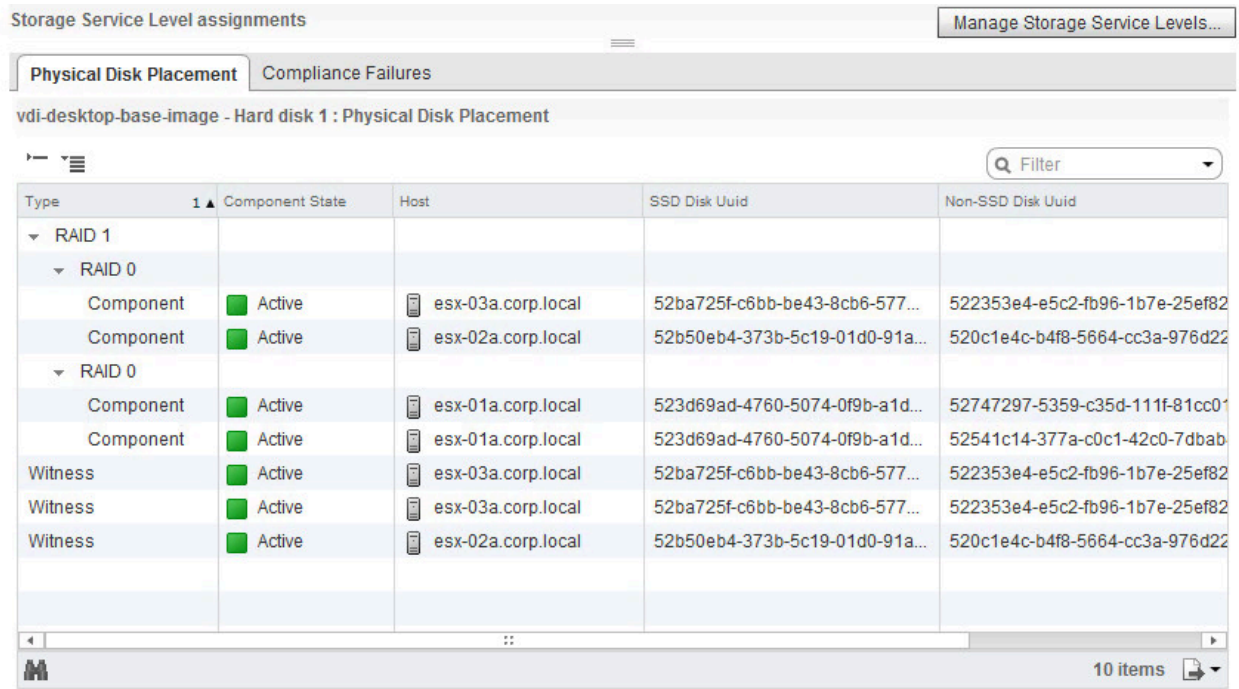
Verification

[vCenter] -> [VM] -> [Manage] -> [Storage Service Levels]

before


vdi-desktop-base-image
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Alarm Definitions
Tags
Permissions
Storage Service Levels
Scheduled Tasks
vServices
Storage Service Level assignments
Manage Storage Service Levels...
Filter
Name
Storage Service Level
Compliance Status
VM home
VDI-Desktops
Compliant
Hard disk 1
VDI-Desktops
Compliant
2 items
Physical Disk Placement
Compliance Failures
vdi-desktop-base-image - Hard disk 1 : Physical Disk Placement
Filter
Type
Component State
Host
SSD Disk Uuid
Non-SSD Disk Uuid
RAID 1
Component
Active
esx-01a.corp.local
523d69ad-4760-5074-0f9b-a1d...
52541c14-377a-c0c1-42c0-7dbab
Component
Active
esx-03a.corp.local
52ba725f-c6bb-be43-8cb6-577...
526f861b-6108-c7f6-22f3-2f128ad
Witness
Active
esx-02a.corp.local
52b50eb4-373b-5c19-01d0-91a...
520c1e4c-b4f8-5664-cc3a-976d22
4 items

after


Storage Service Level assignments
Manage Storage Service Levels...
Physical Disk Placement
Compliance Failures
vdi-desktop-base-image - Hard disk 1 : Physical Disk Placement
Filter
Type
1
Component State
Host
SSD Disk Uuid
Non-SSD Disk Uuid
RAID 1
RAID 0
Component
Active
esx-03a.corp.local
52ba725f-c6bb-be43-8cb6-577...
522353e4-e5c2-fb96-1b7e-25ef82
Component
Active
esx-02a.corp.local
52b50eb4-373b-5c19-01d0-91a...
520c1e4c-b4f8-5664-cc3a-976d22
RAID 0
Component
Active
esx-01a.corp.local
523d69ad-4760-5074-0f9b-a1d...
52747297-5359-c35d-111f-81cc01
Component
Active
esx-01a.corp.local
523d69ad-4760-5074-0f9b-a1d...
52541c14-377a-c0c1-42c0-7dbab
Witness
Active
esx-03a.corp.local
52ba725f-c6bb-be43-8cb6-577...
522353e4-e5c2-fb96-1b7e-25ef82
Witness
Active
esx-03a.corp.local
52ba725f-c6bb-be43-8cb6-577...
522353e4-e5c2-fb96-1b7e-25ef82
Witness
Active
esx-02a.corp.local
52b50eb4-373b-5c19-01d0-91a...
520c1e4c-b4f8-5664-cc3a-976d22
10 items

References

- http://featurewalkthrough.vmware.com/#!/virtual-san
- Be careful when defining a VM storage policy for VSAN, http://www.yellow-bricks.com/2013/09/19/be-careful-when-defining-a-vm-storage-policy-for-vsan/
- http://cormachogan.com/2013/09/19/vsan-part-10-changing-vm-storage-profile-on-the-fly/