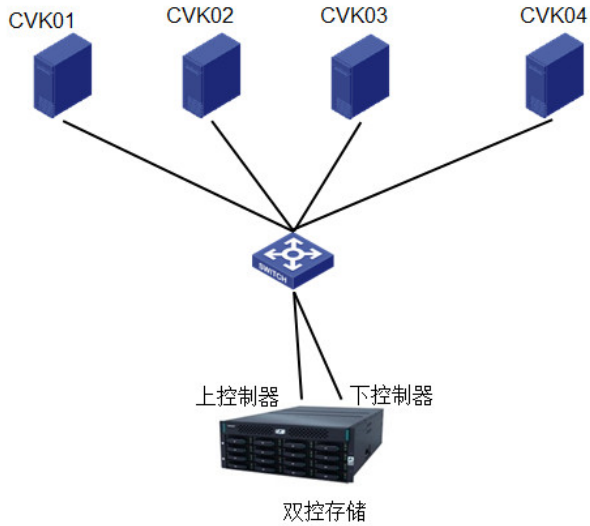


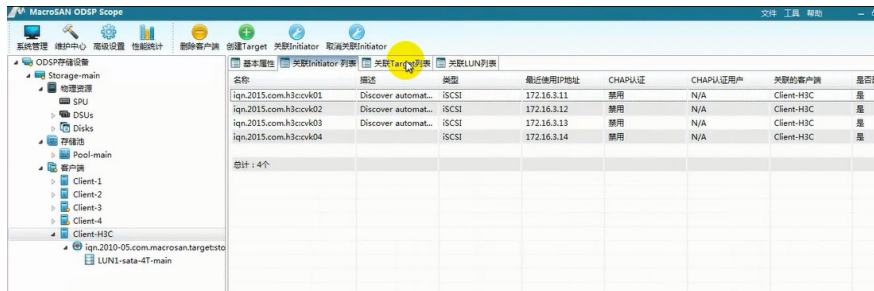
知 CAS如何和宏杉存储配合做IP多路径

孙孟 2015-07-29 发表

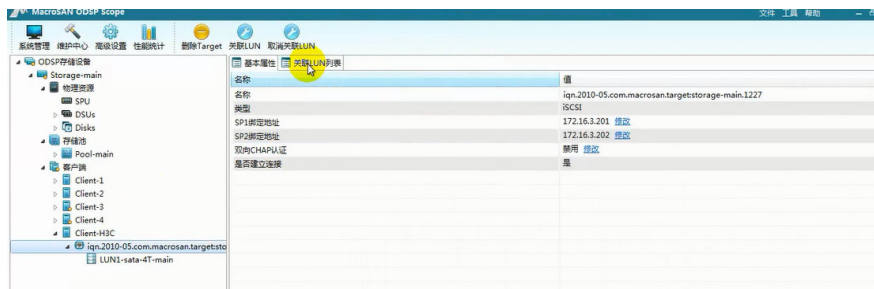
为了实现存储冗余，我们一般考虑做存储多路径。根据存储接口类型不同，分为IP和FC存储，这两个都可以做存储的多路径。这里介绍CAS结合宏杉的双控存储MS2510i做IP多路径的配置方法。



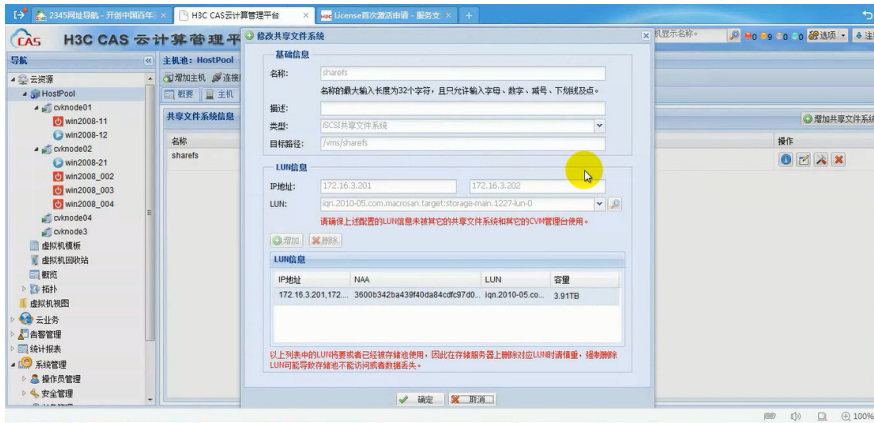
CAS集群中有4个CVK主机，每个主机都接到交换机上。交换机分别连接宏杉存储MS2510i的上控和下控。具体到实际中，服务器到交换机可以做聚合，交换机到存储也可以做聚合。也可以有两个交换机，做IRF等冗余。



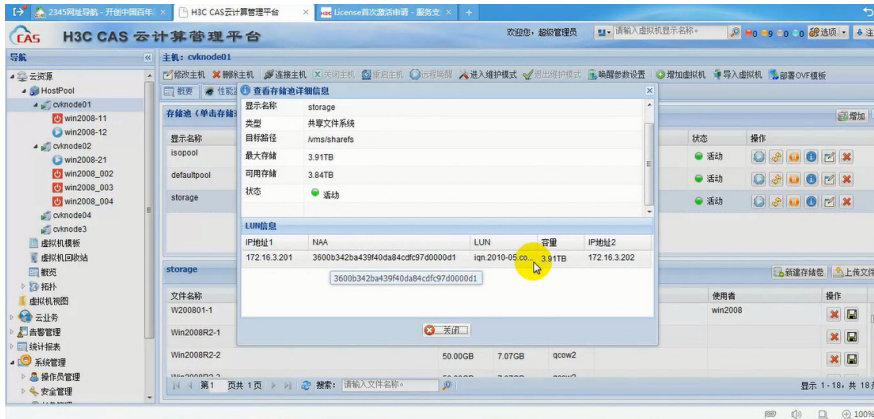
这里在存储上创建一个LUN，分配给一个SAN客户端。给四个CVK主机设置的initiator name分别是iqn.2015.com.h3c:cvk01---04



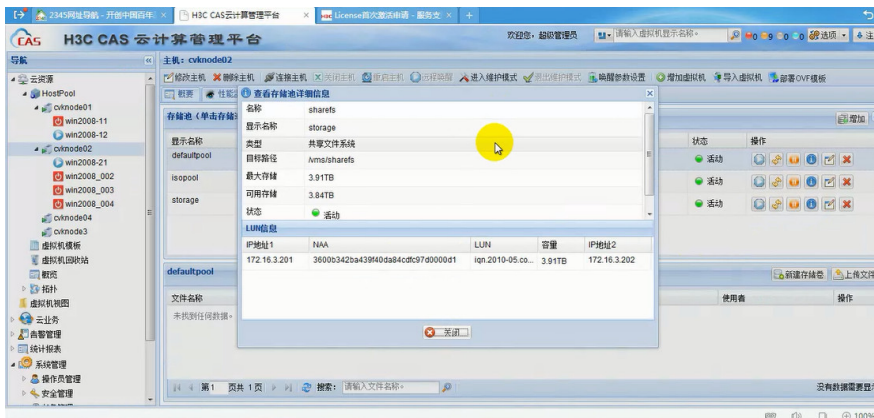
存储双控的地址分别是172.16.3.201和172.16.3.202.target name如上图名称所示，下图cas中添加共享文件系统就会扫出这个target。



存储上配置完毕后，在每个CVK主机上设置initiator name，保证CVK到存储网络互通，分别对应iqn.2015.com.cvk01--04.然后CAS上添加共享文件系统。两个IP地址分别是存储两个控制器的地址。



添加共享文件系统后，然后在每个CVK主机上添加存储池。上面的截图是CVK01主机的。



上面的截图是CVK02主机的存储池配置。

```

root@cvknode01:~#
root@cvknode01:~# more /etc/multipath.conf
blacklist
{
    wwid "*"
}
blacklist_exceptions
{
    wwid "3600b342ba439f40da84cdf97d0000d1"
}
multipaths
{
}
root@cvknode01:~#
root@cvknode01:~#
root@cvknode01:~# fdisk -l | grep sd
WARNING: GPT (GUID Partition Table) detected on '/dev/sda!' The util fdisk doesn't support GPT. Use GNU Parted.
Disk /dev/sdb doesn't contain a valid partition table
Disk /dev/sdc doesn't contain a valid partition table
Disk /dev/mapper/3600b342ba439f40da84cdf97d0000d1 doesn't contain a valid partition table
Disk /dev/sda: 299.4 GB, 299439751168 bytes
/dev/sda1: 1 584843263 292421631+ ee GPT
Disk /dev/sdb: 4295.0 GB, 4294967296000 bytes
Disk /dev/sdc: 4295.0 GB, 4294967296000 bytes
root@cvknode01:~#
root@cvknode01:~# /lib/udev/scsi_id --whitelist /dev/sdb
3600b342ba439f40da84cdf97d0000d1
root@cvknode01:~# /lib/udev/scsi_id --whitelist /dev/sdc
3600b342ba439f40da84cdf97d0000d1
root@cvknode01:~#
root@cvknode01:~#
root@cvknode01:~#
root@cvknode01:~#

```

配置完成后，查看CVK01的多路径配置文件，fdisk -l，还有识别到lun的wwid信息。正常主机看到两个lun的盘符，这里分别是sdb和sdc，他们的大小和wwid（也就是cas中添加共享文件系统扫描出来的NAA）一样。

```
root@cvknode01:~#  
root@cvknode01:~#  
root@cvknode01:~# multipath -ll  
3600b342ba439f40da84cdfc97d0000d1 dm-0 MacroSAN,LU  
size=3.9T features='0' hwhandler='0' wp=rw  
|-- policy='round-robin 0' prio=1 status=enabled  
|- 8:0:0:0 sdb 8:16 active ready running  
|-- policy='round-robin 0' prio=1 status=active  
|- 9:0:0:0 sdc 8:32 active ready running  
root@cvknode01:~#  
root@cvknode01:~#
```

查看多路径状态正常。

```
root@cvknode01:~# multipath ll  
root@cvknode01:~# multipath -ll  
600b342ba439f40da84cdfc97d0000d1 dm-0 MacroSAN,LU  
size=3.9T features='0' hwhandler='0' wp=rw  
|-- policy='round-robin 0' prio=1 status=active  
|- 8:0:0:0 sdb 8:16 active ready running  
|-- policy='round-robin 0' prio=1 status=enabled  
|- 9:0:0:0 sdc 8:32 active ready running  
root@cvknode01:~#  
root@cvknode01:~#  
root@cvknode01:~# multipath -ll  
3600b342ba439f40da84cdfc97d0000d1 dm-0 MacroSAN,LU  
size=3.9T features='0' hwhandler='0' wp=rw  
|-- policy='round-robin 0' prio=1 status=active  
|- 8:0:0:0 sdb 8:16 active ready running  
|-- policy='round-robin 0' prio=1 status=enabled  
|- 9:0:0:0 sdc 8:32 active ready running  
root@cvknode01:~# multipath -ll  
3600b342ba439f40da84cdfc97d0000d1 dm-0 MacroSAN,LU  
size=3.9T features='0' hwhandler='0' wp=rw  
|-- policy='round-robin 0' prio=1 status=active  
|- 8:0:0:0 sdb 8:16 active ready running  
|-- policy='round-robin 0' prio=1 status=enabled  
|- 9:0:0:0 sdc 8:32 active ready running  
root@cvknode01:~# multipath -ll  
3600b342ba439f40da84cdfc97d0000d1 dm-0 MacroSAN,LU  
size=3.9T features='0' hwhandler='0' wp=rw  
|-- policy='round-robin 0' prio=0 status=enabled  
|- 8:0:0:0 sdb 8:16 failed faulty running  
|-- policy='round-robin 0' prio=1 status=active  
|- 9:0:0:0 sdc 8:32 active ready running  
root@cvknode01:~#  
root@cvknode01:~# multipath -ll  
3600b342ba439f40da84cdfc97d0000d1 dm-0 MacroSAN,LU  
size=3.9T features='0' hwhandler='0' wp=rw  
|-- policy='round-robin 0' prio=0 status=enabled  
|- 8:0:0:0 sdb 8:16 failed faulty running  
|-- policy='round-robin 0' prio=1 status=active  
|- 9:0:0:0 sdc 8:32 active ready running  
root@cvknode01:~#  
root@cvknode01:~#  
root@cvknode01:~# ssh cvknode02
```

然后进行存储上控制器拔线，观察多路径的切换。就会发现原来active的变为enabled，原来enabled的变为active。说明多路径配置正常，切换正常。

注意正确的连线 and 配置即可。