其它功能 **孙小芹** 2008-12-25 发表

```
Windows Server 2008使用IP SAN的MPIO配置
```

一 组网需求:

Windows Server 2008 Enterprise服务器使用我司IP存储,希望服务器上有多块网卡可 实现链路冗余或负载分担,Windows Server 2008上MPIO实现该作用。

二 组网图:

Windows Server 2008 Enterprise上至少有两块以太网卡用于连接后端我司IP存储,Windows Server 2008通过iSCSI initiator软件挂载存储资源。以两块网卡为例,服务器上两块网卡的IP地址可以配置在同一网段,也可以在不同网段。服务器和存储之间网络连通,可以用ping命令测试。

2008 Server 200.200.10.112/24 | 200.200.2.112/24 IP交换机 200.200.10.157/24 | 200.200.2.1/24 H3C IP存储

本例中200.200.10.112/24和200.200.2.112/24为服务器上两网卡的IP地址, 200.200.1 0.157/24和200.200.2.1/24为存储IX3000的业务接口地址。

本例中Windows Server 2008 Enterprise为英文版。

三 配置步骤:

本案例适用于IX3000/IX1000/IV5600 V100R001版本。

1 存储设备上的操作

存储上为Windows Server 2008 Enterprise创建要挂载的逻辑资源和并将资源分配给对 应的客户端。本例以服务器上两块网卡配置在不同网段为例,分别为200.200.10.0/24 和200.200.2.0/24,对应存储上也有这两个网段的target地址,如图1在存储上为客户 端分配资源时target IP地址需将两个地址都选上。如果服务器上网卡在同一网段,则 存储上只要配置对应网段的target IP地址。

	幕則 资證 🚺	
D CHARLES FO	名称	(a
C Everyone_rc	Target ID	3
Everyone_ISCSI	Target名称	ign.2000-03.com.h3cD(3240-SC0.pe05-0
♀ 19 p510	Target IP地址	200.200.10.157 200.200.2.1
	Target Type	ISCSI
🖙 🔞 pe05	访问权限	读写
	起始LUN	0
 ign 12000-03 com h3t- Xt3240-SC0 pe05-0 ign 12000-03 com h3t- Xt3240-SC0 pe05-0 ign 1202 		

图1存储上创建的资源和客户端信息

2 Windows Server 2008上安装MPIO组件

Windows Server 2008系统默认没有安装MPIO组件,需手工安装并设置。在"Administ rative Tools"的"Server Manager"中展开"Features"节点,在"Features Summary"中列 出当前已安装的功能组件。点击"Add Features"添加,如图2,勾选 Multipath I/O功能 ,下一步后确认安装信息如图3,确认安装后点击"Install"开始安装。安装过程需要耐 心等待,安装成功后有图4的提示。MPIO安装后在"Features Summary"中显示,如图





在"Discover Muti-Paths"页签中勾选"Add support for iSCSI devices"项,并点击Add, 如图7。添加后会提醒重启系统,按照提示重启操作系统。系统重启后, MPIO对iSCSI 设备的支持功能生效,此时在"Discover Muti-Paths"页签中"Add support for iSCSI devices"项变为灰色,如图8。

s company: vvice Hardware Id
Add succost for SCSI devices
Irs
Add
OK Cancel Apply

IO-ed Devices Discover Multi-Paths	DSM Install
SPC-3 compliant	
Device Hardware Id	
Add support for ISCST devices	
	Edd
Qthers	
Device Hardware Id	
	244

图8

4 服务器上iSCSI配置

打开iSCSI initiator软件,配置正确的initiator名称和target地址,由于是同一个target, 在"Discovery"页签中可以只添加一个 targetIP地址。此时在"Targets"页签中target状态 仍为Inactive, logon targets时需要使能MPIO,并选择合适的IP路径,并logon两次。 选中target信息,点击"Log on...",在如图9根据情况勾选服务器重启时自动恢复连接 ,一定要使能MPIO,即勾选"Enable muti-path"。然后点击"Advanced..."进行高级选 项设置,如图10,在"General"页签中,"Local adapter"选择Microsoft iSCSI Initiator, "Source IP"选择服务器上网卡的IP地址,"Target portal"选择对应Source IP同一网段的 IP地址。本例中图10先选择200.200.2.0网段的地址,log on后target处于"Connected" 状态。选中该target信息,再次"Log on...",使能MPIO并进行高级选项设置,如图11 此次选择另外一个网卡对应的IP地址。

rget name:	
n.2000-03.com	n.h3cIX3240-SC0.pe05-0
Automatical	restore this connection when the computer starts
Enable multi-	and h
Only select	this option if iSCSI multi-path software is already installed
on your con	iputer.
Advanced)	OK Cancel
	图9 log on
	-
inced Settings	
neral IPsec	
Connect by using	
Local gdapter:	Microsoft GCSI Inibiator
Source IP:	200.200.2.112
Iarget portal:	200.200.2.1 / 3260
CRC / Checksum	
T Data digest	F Beader digest
	and the
CHAP helps ensure a relator. To use it, s for this initiator.	side security by providing authentication between a larget and an analy the same larget CAUP securit that was configured on the larget
Dername To	n.2000-12.0nn.h0c.pe05
Terpit secret	
Use RADIUS to a	generate user authentication credentials
	ethericator
F Before mature	
To use mutual CHAP RADIUS. The same	secret must be configured on the target.
Everion nuture To use meture CHAP RADIUS. The same Use BADIUS to a	wither being a second and the second se
Enformentation To use matual CHAP RACIUS. The same Use BADIUS to a	en en beste en en en beste en en en en en en beste en settinge page en soe es oek noat be configured on tie tanget withenticate tanget oredentials

Connect by Use	0	a 1
Local gdapter:	Microsoft ISCSI Initiator	- E
Source IP:	200.200.10.112	- E
Iarget portali	200.200.10.157 / 3260	3
CRC / Checksur	n	
🗖 Data digest	F Header digest	
cristo nega en estistor. To use nor this visiator	are axia accurry by providing accomposition between a target, and an r, specify the same target OHP secret that non-compared on the target an 2000-12 conclude: paths	-
(jær norie) Taroet servet i		A 11

图11 MPIO设置路径2

在"Targets"页签中,如图12中选择"Details"对MPIO策略进行设置,进入图13target属 性页,在"Sessions"页签中看到两个会话对应刚才两次log on。选择一个session,点 击"Connections"进入会话连接如图14。在"Load balance policy"中选择合适的策略, 如Fail Over Only、Round Robin。每个session都做同样的操作,即每个session都设 置合适的负载均衡策略。

	Volumes and De	vices RADIUS
General	Discovery	Targets
access storage devices g on.	for a target, select t	he target and then click
see information about s k Details.	essions, connections	, and devices for a targe
rgets:		
lame		Status
	1	1
	OK	Cancel Apply
	图12	
et Properties		
et Properties	rine l	
et Properties	rties	
et Properties	rties	
et Properties sions) Devices Prope his target has the follow Identifier	rties ing gessions:	
et Properties	rties ing gessions: 00013700000003 00013700000004	
et Properties sions) Devices Prope is target has the follow Identifier fffffff84725194-40 fffffff84725194-40	rties ing gessions: 00013700000003 00013700000004	
et Properties sions) Devices Prope is target has the follow Identifier fffffff84725194-40 fffffff64725194-40	rties ing gessions: 00013700000003 00013700000004	
et Properties storg) Devices Prope is target has the follow identifier fifffff94725194-40 fifffff94725194-40	rties ing gessions: 0001370000003 0001370000004	Refresh
et Properties Store) Devices Prope his target has the follow Identifier ffffffff84225194-40 ffffffff84225194-40	rties ing gessions: 0001370000003 0001370000004 Log off	Refresh
et Properties	rties ing gessions: 	Rgfresh
et Properties Sersi Devices Prope is target has the follow identifier Infiffiffeat253194-40 Session Properties Target portal group: Setter:	ties ing gessions: 0001370000003 Log off 0 0 0 0 0 0 0 0 0 0 0 0 0	Rgfresh
et Properties Store) Devices Properties is target has the follow Identifier Iffiffff84725194-40 Session Properties Target portal group: Shatus:	rties ing gessions: 00013700000003 00013700000004 Log off 0 Con	
et Properties Store Devices Properties is target has the follow Identifier Iffiffffffffffffffffffffffffffffffffff	ttes ing gessions: 	
et Properties Store Devices Properties Interpret has the follow Interpret Properties Session Properties Target portal group: Status: Connection count: Session Connections	rties ing gessions: 	Refresh
et Properties Series Devices Proper is target has the follow Identifier Immittier225194-40 Immittier225194-40 Session Properties Target potal group: Status: Connection count: Session Connections To configure how the o the session are load ba Connections	ties ing gessions: 00013700000003 Log off 0 Con 1 ornections within lanced, click	
Connections Conn	rties ing gessions: 00013700000003 00013700000004 Log off 0 Con 1 ornections within Janced, click	

图13



磁盘管理配置

在"Computer Management"的"Disk Management"右键扫描磁盘,如图15,扫描后发 现未初始化的磁盘,对该磁盘进行联机和初始化操作。正确配置情况下如果存储端分 配一个资源给该客户端,则在磁盘管理应该只看到一个磁盘如图16,若看到两个同样 大小的磁盘如图17则说明MPIO配置不正确,需检查MPIO相关配置。如图17的错误, 可能是MPIO组件没有安装,或安装后没有使能对iSCSI设备的支持。



1. Windows Server 2008需安装MPIO组件,对iSCSI存储还需使能MPIO对iSCSI设备的支持。

- 2. 服务器上参与MPIO配置的网卡可以配置在同一网段或不同网段。
- 3. iSCSI initiator中对targets应进行两次log on,分别对应不同的路径。
- 4. MPIO中"Load balance policy"可选择Fail Over Only、Round Robin等。
- 注:配置关键点中2和3在功能上可以实现,但稳定性需和微软确认。