iStorage Server: 为 Windows Server 2008 和 Hyper-V 群集创建高可用性 iSCSI SAN

2013年2月21日星期四



核心安全科技有限公司

www.kernsafe.com

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概述

KernSafe iStorage Server 是一个先进的、强大的、功能齐全的纯软件 iSCSI 目标服务器,完全符合 最新 iSCSI 标准 1.0(原草案 20)。这是一个 IP SAN 解决方案,可快速导出现有存储,比如磁盘镜 像、VHD 文件、物理磁盘、分区、CD/DVD 光盘、磁带或任何其他类型的 SCSI 设备,甚至各种流 行的 CD / DVD 客户机的镜像文件。因此该软件可提供的直接利益是它允许存储合并、虚拟化和集 中管理。 iStorage Server 还提供了 RAID-1(镜像)功能,可创建两个 iSCSI 设备作为镜像备份。此 外, iStorage Server 还支持很多功能,如: VHD(虚拟硬盘)目标器,快照,STPI, RAID-1 和故障 转移,这些功能在存储行业是非常重要和普遍的,并使 iStorage Server 适合任何规模的企业。

高可用性群集(又称 HA 群集或故障转移群集)是以提供高可用性服务为主要目的的计算机群 集。它们有多余的计算机或节点,然后当系统组件出现故障时,使用这些计算机或节点来提供服 务。一般来说,如果一个有特定应用程序的服务器崩溃,在有人修复崩溃的服务器之前,应用程 序将无法使用。高可用性群集可检测硬件/软件故障,并在没有行政干预的情况下立即重新启动另 一个系统的应用程序,以此来补救上述情况,该过程称为故障转移。作为该过程的一部分,群集 软件可能会在启用应用程序之前配置节点。例如,可能需要输入并安装适当的文件系统,可能必 须配置网络硬件,以及运行一些配套应用程序。

iStorage Server2.0 后的版本支持服务器端镜像、同步复制和故障转移,允许用户为 Windows Server 2008 群集和 Hyper-V 创建高可用性 iSCSI SAN。



本文为您提供了在 KernSafe iStorage Server 上配置 Windows Server 2008 或 Windows Server 2008 R2 故障转移群集的详细步骤。在这之前,请准备以下四个计算机或 Hyper-V 里的虚拟机(建议使用 千兆网卡):

| 名称 | IP 地址 | 详情 |
|--------------|----------------------------|-------------------|
| 08DC | 192.168.1.2 | Domain Controller |
| 08Node1 | 心跳: 192.168.1.101 | Failover Node 1 |
| | 数据: 192.168.0.3(连接 iscsi) | |
| 08Node2 | 心跳: 192.168.1.102 | Failover Node 2 |
| | 数据: 192.168.0.4(连接 iscsi) | |
| KernStorage1 | 心跳: 10.10.16.2 | iStorage Server1 |
| | 数据: 192.168.0.113 (连接群集节点) | |

| KernStorage2 | 心跳: | 10.10.16.3 | iStorage Server2 |
|--------------|-----|-----------------------|------------------|
| | 数据: | 192.168.0.114(连接群集节点) | |

配置域控制器

网络适配器

在群集的工作环境中,必须给网络适配器分配一个静态 IP 地址。选择"Internet 协议版本 4 (TCP/IPv4)",然后点击"属性 (Properties)"按钮,弹出"Internet 协议版本 4 (TCP/IPv4)"对话框。由于活动目录需要 DNS,所以必须提供 DNS 地址,在这种情况下,我们可以指定 IP 地址。活动目录安装后才会安装 DNS。

| Internet Protocol Version 4 (TCP/IPv | /4) Properties | Ľ |
|---|--|---|
| General | | |
| You can get IP settings assigned autom this capability. Otherwise, you need to for the appropriate IP settings. | natically if your network supports ask your network administrator | |
| O Obtain an IP address automatical | ly | |
| ○ Use the following IP address: — | | |
| IP address: | 192.168.1.2 | |
| Subnet mask: | 255.255.255.0 | |
| Default gateway: | 192.168.1.2 | |
| C Obtain DNS server address auton | natically | |
| ─● Use the following DNS server add | lresses: | |
| Preferred DNS server: | 192 . 168 . 1 . 2 | |
| <u>A</u> lternate DNS server: | | |
| Vaļidate settings upon exit | Ad <u>v</u> anced | |
| | OK Cancel | |

输入 IP 地址和 DNS 服务器地址

点击"OK"按钮继续。



选择"开始->运行(Start->Run)"在"打开(Open)"输入框中输入"dcpromo"



点击"OK"按钮继续。

弹出"活动目录域服务安装向导(Active Directory Domain Services Installation Wizard)"。

| active Directory Domain | Services Installation Wizard | × |
|-------------------------|---|---|
| | Welcome to the Active Directory Domain Services Installation Wizard This wizard helps you install Active Directory Domain Services (AD DS) on this server, making the server an Active Directory domain controller. To continue, click Next. | |
| | Use <u>a</u> dvanced mode installation Leam more about the additional options that are available in <u>advanced mode installation</u> . | |
| | More about Active Directory Domain Services | |
| | < <u>B</u> ack <u>N</u> ext > Cancel | |

弹出"活动目录域服务安装向导(Active Directory Domain Services Installation Wizard)"。在点击 "下一步(Next)"按钮之前,请仔细阅读介绍说明。

| a Active Directory Domain Services Installation Wizard | × |
|--|---|
| Operating System Compatibility Improved security settings in Windows Server 2008 and Windows Server 2008 R2 affect older versions of Windows | |
| Windows Server 2008 and "Windows Server 2008 R2" domain controllers have a new more secure default for the security setting named "Allow cryptography algorit compatible with Windows NT 4.0." This setting prevents Microsoft Windows and non-Microsoft SMB "clients" from using weaker NT 4.0 style cryptography algorith when establishing security channel sessions against Windows Server 2008 or "Windows Server 2008 R2" domain controllers. As a result of this new default, operations or applications that require a security channel serviced by Windows Server 2008 or "Windows Server 2008 R2" domain controllers might fail. Platforms impacted by this change include Windows NT 4.0, as well as non-Micros SMB "clients" and network-attached storage (NAS) devices that do not support stronger cryptography algorithms. Some operations on clients running versions of Windows earlier than Windows Vista with Service Pack 1 are also impacted, includomain join operations performed by the Active Directory Migration Tool or Window Deployment Services. For more information about this setting, see Knowledge Base article 942564 (http://go.microsoft.com/fwlink/?LinkId=104751). | thms ms erver soft ding ws |
| < <u>B</u> ack <u>N</u> ext > C | ancel |

点击"下一步(Next)"按钮继续。

因为我们正在创建活动目录,选择"在新林区创建新域(Create a new domain in a new forest)"选

项。

| a Active Directory Domain Services Installation Wizard | × |
|---|--------|
| Choose a Deployment Configuration You can create a domain controller for an existing forest or for a new forest. | |
| O Existing forest | |
| $igcap_{	riangledd}$ $	riangleddd a$ domain controller to an existing domain | |
| C Greate a new domain in an existing forest This server will become the first domain controller in the new domain. | |
| Create a new domain in a new forest More about possible deployment configurations | |
| | |
| | |
| | |
| < <u>B</u> ack <u>N</u> ext > | Cancel |

指定林根域名称。

| Vame the Forest Root Domain The first domain in the forest is the forest root domain. Its name is also the name of the forest. Image: Type the fully qualified domain name (FQDN) of the new forest root domain. EQDN of the forest root domain: KemSafe.Local Example: corp.contoso.com | ctive Directory Domain Services Installation Wizard | X |
|--|---|------|
| Type the fully qualified domain name (FQDN) of the new forest root domain. <u>FQDN of the forest root domain:</u> KemSafe.Local Example: corp.contoso.com | ame the Forest Root Domain The first domain in the forest is the forest root domain. Its name is also the name of the forest. | |
| EQDN of the forest root domain: KemSafe.Local Example: corp.contoso.com | Type the fully qualified domain name (FQDN) of the new forest root domain. | |
| Example: corp.contoso.com | EQDN of the forest root domain: | _ |
| | Example: corp.contoso.com | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| < <u>B</u> ack <u>N</u> ext > Cance | < <u>B</u> ack <u>N</u> ext > Ca | ncel |

选择林功能级别。

| The service of the se | × |
|--|--------|
| Set Forest Functional Level Select the forest functional level. | |
| Forest functional level: | |
| Windows Server 2008 R2 | • |
| Details: | |
| The Windows Server 2008 R2 forest functional level provides all the features that are available in the Windows Server 2008 forest functional level, plus the following additional feature: Recycle Bin, which, when it is enabled, provides the ability to restore deleted objects in their entirety while Active Directory Domain Services is running. Any new domains that are created in this forest will operate by default at the Windows Server 2008 R2 domain functional level. | × |
| You will be able to add only domain controllers that are running Windows Server 2008 R2 or later to this forest. | |
| More about domain and forest functional levels | |
| < <u>B</u> ack <u>N</u> ext > | Cancel |

如果创建 Windows Server 2008 R2 群集,请选择 Windows Server 2008 或 Windows Server 2008 R2。

点击"下一步(Next)"按钮继续。

选择该控制器的额外选项。

| a Active Directory Domain Services Installation Wizard | × |
|--|--------|
| Additional Domain Controller Options | |
| Select additional options for this domain controller. | |
| DNS server | |
| 🔽 Global catalog | |
| <u>Bead-only domain controller (RODC)</u> | |
| Additional information: | |
| cannot be an RODC. We recommend that you install the DNS Server service on the first domain controller. More about additional domain controller options | |
| < <u>B</u> ack <u>N</u> ext > | Cancel |

保持 DNS 服务器选择。

点击"下一步(Next)"按钮继续。

弹出"活动目录域服务安装向导(Active Directory Domain Services Installation Wizard)"

| Active | Directory Domain Services Installation Wizard | \times |
|----------|--|----------|
| <u>^</u> | A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found or it does not run Windows DNS server. If you are integrating with an existing DNS infrastructure, you should manually create a delegation to this DNS server in the parent zone to ensure reliable name resolution from outside the domain "KernSafe.Local". Otherwise, no action is required. Do you want to continue? | |
| | <u>Y</u> es | |

点击"是(Yes)"按钮继续。

自定义数据库文件夹、日志文件文件夹和 SYSVOL 文件夹目录。

| Active Directory Domain Services Installation Wizard | | × |
|--|-----------------|---|
| Location for Database, Log Files, and SYSVOL Specify the folders that will contain the Active Directory domain controll database, log files, and SYSVOL. | er 📕 | |
| For better performance and recoverability, store the database and log fil volumes. | es on separate | |
| Database folder: | | |
| C:\Windows\NTDS | Browse | |
| Log files folder: | | |
| C:\Windows\NTDS | Br <u>o</u> wse | |
| <u>S</u> YSVOL folder: | | |
| C:\Windows\SYSVOL | Bro <u>w</u> se | |
| More about <u>placing Active Directory Domain Services files</u> | | |
| < <u>B</u> ack <u>N</u> ext : | Cancel | |

点击"下一步(Next)"按钮继续。

指定"目录服务还原模式管理员密码(Directory Services Restore Mode Administrator Password)"

| Active Directory Domain Ser | rvices Installation Wizard | × |
|---|--|--------|
| Directory Services Restore | Mode Administrator Password | |
| The Directory Services Resto Administrator account. | ore Mode Administrator account is different from the do | main |
| Assign a password for the Ad controller is started in Directo choose a strong password. | Iministrator account that will be used when this domain ny Services Restore Mode. We recommend that you | |
| Password: | ••••• | |
| Confirm password: | ••••• | |
| More about <u>Directory Service</u> | es Restore Mode password | |
| | < <u>B</u> ack <u>N</u> ext > | Cancel |
| | | |

检查是否所有参数都正确,如果需要更改,点击"返回(Back)"按钮。

| tive Directory Domain Services Installation Wizard | × |
|---|-------|
| immary | |
| Review your selections: Configure this server as the first Active Directory domain controller in a new forest. The new domain name is "KemSafe.Local". This is also the name of the new forest. The NetBIOS name of the domain is "KERNSAFE". Forest Functional Level: Windows Server 2008 R2 Domain Functional Level: Windows Server 2008 R2 Site: Default-First-Site-Name Additional Options: To change an option, click Back. To begin the operation, click Next. These settings can be exported to an answer file for use with other unattended operations. More about using an answer file | |
| < <u>B</u> ack <u>N</u> ext > Ca | incel |

一段时间后,活动目录域服务安装完成。



点击"完成(Finish)"按钮,关闭向导。

需要重新启动。



点击"立即重启(Restart Now)"按钮,重启计算机。

安装 DNS

使用管理员角色登录到域控制器,并启动 DNS 管理器。



右击左侧树视图"反向查找区域(Reverse Lookup Zone)",然后选择"新建区域(New Zone)"菜 单项。

弹出"新建区域向导(New Zone Wizard)"。



选择区域类型。

| New Zone Wizard 🔀 | | |
|---|--|--|
| Zone Type The DNS server supports various types of zones and storage. | | |
| Select the type of zone you want to create: Primary zone Creates a copy of a zone that can be updated directly on this server. Secondary zone | | |
| Creates a copy of a zone that exists on another server. This option helps balance the processing load of primary servers and provides fault tolerance. Stub zone Creates a copy of a zone containing only Name Server (NS), Start of Authority (SOA), and possibly glue Host (A) records. A server containing a stub zone is not authoritative for that zone. Store the zone in Active Directory (available only if DNS server is a writeable domain controller) | | |
| < Back Next > Cancel | | |

选择"主要区域(Primary zone)",并保持"将此区域存储在活动目录(Store the zone in Active Directory)"的选择。

点击"下一步(Next)"按钮继续。

选择区域复制范围。

| New Zone Wizard | × |
|---|------|
| Active Directory Zone Replication Scope You can select how you want DNS data replicated throughout your network. | |
| Select how you want zone data replicated: | |
| \bigcirc To all DNS servers running on domain controllers in this forest: KernSafe.Local | |
| • To all DNS servers running on domain controllers in this domain: KernSafe.Local | |
| To all domain controllers in this domain (for Windows 2000 compatibility): KernSafe.Local | |
| igodot To all domain controllers specified in the scope of this directory partition: | |
| | 7 |
| | |
| | |
| < Back Next > Ca | ncel |

保持默认选择。

点击"下一步(Next)"按钮继续。

选择"反向搜索区域名(Reverse Lookup Zone Name)"

| New Zone Wizard | × |
|---|----|
| Reverse Lookup Zone Name A reverse lookup zone translates IP addresses into DNS names. | |
| Choose whether you want to create a reverse lookup zone for IPv4 addresses or IPv6 addresses. | |
| IPv4 Reverse Lookup Zone | |
| O IPv6 Reverse Lookup Zone | |
| | |
| | |
| | |
| | |
| | |
| < Back Next > Cance | el |

选择"Ipv4 反向搜索区域(IPv4 Reverse Lookup Zone)"。

点击"下一步(Next)"按钮继续。

输入网络 ID 和区域名。

| New Zone Wizard | × |
|---|--|
| Reverse Lookup Zone Name A reverse lookup zone translates IP address | ses into DNS names. |
| To identify the reverse lookup zone, type th Network ID: 192 .168 .1 The network ID is the portion of the IP a network ID in its normal (not reversed) of If you use a zero in the network ID, it wi network ID 10 would create zone 10.in-a zone 0.10.in-addr.arpa. | e network ID or the name of the zone. ddresses that belongs to this zone. Enter the order. ill appear in the zone name. For example, addr.arpa, and network ID 10.0 would create |
| C Reverse lookup zone name: | |
| | < Back Next > Cancel |

选择网络 ID,然后在"网络 ID (Network ID)"中输入 IP 地址。

点击"下一步(Next)"按钮继续。

指定动态更新选项。

| New Zone Wizard | × | |
|---|------|--|
| Dynamic Update You can specify that this DNS zone accepts secure, nonsecure, or no dynamic updates. | | |
| Dynamic updates enable DNS client computers to register and dynamically update th resource records with a DNS server whenever changes occur. Select the type of dynamic updates you want to allow: | eir | |
| Allow only secure dynamic updates (recommended for Active Directory) This option is available only for Active Directory-integrated zones. | | |
| Allow both nonsecure and secure dynamic updates Dynamic updates of resource records are accepted from any client. This option is a significant security vulnerability because updates can be accepted from untrusted sources. | | |
| O Do not allow dynamic updates Dynamic updates of resource records are not accepted by this zone. You must update these records manually. | | |
| < Back Next > Ca | ncel | |

检查是否所有参数都正确,如果需要更改,点击"返回(Back)"按钮。

| New Zone Wizard | | × |
|-----------------|--|---|
| | Completing the New Zone Wizard | |
| | You have successfully completed the New Zone Wizard. You specified the following settings: | |
| | Name: 1.168.192.in-addr.arpa | |
| | Type: Active Directory-Integrated Primary | |
| | Lookup type: Reverse | |
| | Note: You should now add records to the zone or ensure that records are updated dynamically. You can then verify name resolution using nslookup. | |
| | To close this wizard and create the new zone, click Finish. | |
| | < Back Finish Cancel | |

点击"完成(Finish)"按钮,关闭"新建区域向导(New Zone Wizard)"。

右击左侧树视图的"DNS 管理器(DNS Manager)"上的 KernSafe.Local, 然后选择"新建主机(A或 AAA) New Host (A or AAA)"菜单项。

| 🚊 DNS Manager | | | - D × |
|---|--|--|---|
| File Action View Help | | | |
| (= =) 2 📰 💥 🖹 Q 🗟 🛛 🖬 🗄 🗊 | | | |
| Image: Second state sta | Type Start of Authority (SOA) Name Server (NS) Host (A) Host (A) Host (A) | [47], 08dc.kernsafe.local., 08dc.kernsafe.local. 192.168.0.197 192.168.0.197 192.168.0.197 | Timestamp static static 1/12/2010 9: static static |
| Create a new host resource record. | | | • |

弹出"新建主机(New Host)"对话框。

| New Host |
|---|
| Name (uses parent domain name if blank): |
| 08Node 1 |
| Fully qualified domain name (FQDN): |
| 08Node1.KernSafe.Local. |
| IP address: |
| 192.168.1.101 |
| Create associated pointer (PTR) record |
| Allow any authenticated user to update DNS records with the same owner name |
| |
| |
| |
| Add Host Cancel |

在"名称(Name)"栏里输入 08Node1 的主机名,并在"IP 地址(IP address)"栏里输入 IP 地址。

选择"创建相关指针(PTR)记录 Create associated pointer (PTR) record"复选框。

点击"添加主机(Add Host)"按钮,添加 08Node1 DNS 记录。

| New Host | × |
|---|---|
| Name (uses parent domain name if blank): | |
| 08Node2 | |
| Fully qualified domain name (FODN): | |
| 08Node2.KernSafe.Local. | - |
| , ID address: | |
| 192.168.1.102 | - |
| Create acceptated painter (PTD) record | |
| Allow any authenticated user to undate DNS records with the | |
| same owner name | |
| | |
| | |
| | |
| Add Host Done | |

在"名称(Name)"栏里输入 08Node2 的主机名,并在"IP 地址(IP address)"栏里输入 IP 地址。

选择"创建相关指针(PTR)记录 Create associated pointer (PTR) record"复选框。

点击"添加主机(Add Host)"按钮,添加 08Node2 DNS 记录。

点击"完成(Done)"按钮,关闭"新建主机(New Host)"对话框。

现在我们在"DNS 管理器(DNS Manager)"里可以看到两个记录。

| 🛔 DNS Manager | | | | - D × |
|--|---|--|---|---|
| File Action View Help | | | | |
| 🗢 🔿 🖄 📅 🔀 🖬 🙆 | 2 🖬 🗄 🗐 🖬 | | | |
| DNS 08DC Global Logs Forward Lookup Zones Construction Reverse Lookup Zones Conditional Forwarders | Name msdcs sites lcp udp DomainDnsZones ForestDnsZones (same as parent folder) (same as parent folder) (same as parent folder) 08dc 08Node1 08Node2 | Type Start of Authority (SOA) Name Server (NS) Host (A) Host (A) Host (A) Host (A) | Data [47], 08dc.kernsafe.local., 08dc.kernsafe.local. 192.168.0.197 192.168.0.197 192.168.1.101 192.168.1.102 | Timestamp static static 1/12/2010 9: static static |
| | • | | | • |

| 🌲 DNS Manager | | | | |
|--|--|--|--|---|
| <u>File Action View H</u> elp | | | | |
| 🗢 🔿 🙍 📅 🔀 🖨 😣 | 2 🖬 🗄 🗐 🖬 | | | |
| DNS DNS OBDC Solution Solution DNS Solution DNS Solution Solution DNS Solution Solutio | Name (same as parent folder) (same as parent folder) 192.168.1.101 192.168.1.102 | Type Start of Authority (SOA) Name Server (NS) Pointer (PTR) Pointer (PTR) | Data [3], 08dc.kernsafe.local., h 08dc.kernsafe.local. 08node1.kernsafe.local. 08node2.kernsafe.local. | Timestamp static static static static |
| | • | | | <u> </u> |

配置 iStorage Server1

网络适配器

在群集的工作环境中,必须给网络适配器分配一个静态 IP 地址。选择"Internet 协议版本 4 (TCP/IPv4)",然后点击"属性(Properties)"按钮,弹出"Internet 协议版本 4 (TCP/IPv4)"对话框。

| 常规 | | |
|----------------------------------|---------------------------|-------|
| 如果网络支持此功能,则可以紊 您需要从网络系统管理员处获得 | 取自动指派的 IP 设 适当的 IP 设置。 | 置。否则, |
| ◎ 自动获得 IP 地址(0) | | |
| ◎ 使用下面的 IP 地址(S): | | |
| IP 地址(L): | 192 .168 . 0 | . 113 |
| 子网掩码 (U): | 255 . 255 . 255 | . 0 |
| 默认网关 @): | 192 .168 . 0 | . 1 |
| ● 自动获得 DNS 服务器地址 | (B) | |
| ◎ 使用下面的 DNS 服务器地 | 址(匠): | |
| 首选 DNS 服务器(P): | 192 .168 . 0 | . 1 |
| 备用 DNS 服务器(A): | 20 E | 89 |
| 退出时验证设置(L) | | 高级(2) |
| | 78-2- | |

如图中所示设置 KernStorage1 网络适配器(连接群集节点)。 IP 地址设置为 192.168.0.113 ,子 网掩码设置为 255.255.255.0。

| 常规 如果网络支持此功能,则可以获取自 您需要从网络系统管理员处获得适当 ◎ 自动获得 IP 地址 @) | 自动指派的 IP 设置。否则, 当的 IP 设置。 |
|---|------------------------------|
| 如果网络支持此功能,则可以获取自 您需要从网络系统管理员处获得适当 ◎ 自动获得 IP 地址 @) | 自动指派的 IP 设置。否则, 当的 IP 设置。 |
| ◎ 自动获得 IP 地址(@) | |
| | |
| ◎ 使用下面的 IP 地址(S): | |
| IP 地址(I): | 10 . 10 . 16 . 2 |
| 子网掩码(U): | 255 . 255 . 255 . 0 |
| 默认网关 @): | 10 . 10 . 16 . 1 |
| ● 自动获得 DMS 服务器地址 (B) | -11 |
| ● 使用下面的 DWS 服务器地址(2) | D: |
| 首选 DMS 服务器(P): | 10 . 10 . 16 . 1 |
| 备用 DNS 服务器(A): | 1 K K K |
| 🕅 退出时验证设置 (L) | 高级(2) |
| | |

配置数据同步网卡,也称心跳网。

准备仲裁卷

启动 iStorage Server 管理控制台。在工具栏里点击"创建(Create)"按钮,将会弹出"创建设备向

导(Create iSCSI Target Wizard)"。

选择设备类型。

| eate iSCSI Target Wizard | | × |
|--|-------------------|----|
| iSCSI设备类型 选择一个您要创建的iSCSI目标器类型。 | | |
| ● 硬盘 使用物理硬盘、分区、镜像文件等创建 ○ 光学设备 | ₫Target | |
| 使用物理光驱或CD/DVD镜像创建Targe 通用SCSI设备 使用通用SCSI设备创建Target,比如 | t 便盘,CD-ROM | |
| ◎ 高级设备 创建高级iSCSI Target,例如CDP,链 | 接快照等 | |
| | | |
| | <上一步圆 下一步(M) > 取消 | É. |

选择"硬盘(Hard Disk)"

点击"下一步(Next)"按钮继续。

| eate iSCSI Target Wizard | |
|-----------------------------|-------------------|
| iSCSI媒体类型 | |
| 选择iSCSI磁盘的介质。 | |
| | ₽.ccc77兴血 |
| 使用标准視像或虚拟硬盆視像的理 | Ē12031004册 |
| ◎ 内存空间 使用内存空间创建iSCSI磁盘 | |
| ◎ 安全磁盘 为每一个客户端(发器端)创建一· | 个独立的虚拟镜像磁盘 |
| ◎磁盘分区 使用磁盘分区创建iSCSI磁盘 | |
| ○ 物理磁盘 使用物理硬盘设备创建iSCSI磁盘 | |
| | <上一步個 下一步(M) > 取消 |

在"iSCSI 介质类型(iSCSI Medium Type)"页面中,选择"镜像文件(Image File)"

点击"下一步(Next)"按钮继续。

| Create iSCSI Target Wizard | | × |
|--|------------------|----|
| iSCSI镜像类型 选择作为iSCSI磁盘的镜像类型。 | | |
| ● 标准镜像文件 使用标准镜像文件创建iSCSI磁盘 ● 虚拟硬盘镜像 (VHD) 使用虚拟硬盘镜像 (VHD) 创建iSCSI晶 | i 注 品 | |
| | <上一步(B) 下一步(N) > | 取消 |

选择"标准镜像文件(Standard Image File)",然后点击"下一步(Next)"按钮继续。 指定镜像文件路径和大小。

| 设备参数 | |
|---------------|-----------------------|
| ○ 使用已存在的 | 續像文件 ◎ 创建新的镜像文件 |
| G:\Quorum.img | 浏览图 |
| 设备容重(MBs): | 1024 |
| 🗌 将镜像填充为 | 0 Ellan Ellandows系统缓存 |
| 选项 | |
| 📃 使用NTFS稀疏 | 文件 |
| 📃 压缩(启用文 | 件系统压缩属性) |
| 🗌 加密(启用文 | 件系统加密功能) |

选择"创建新镜像文件(Create a new image file)"或者如果已经有镜像文件,选择"使用现有镜像 文件(Use existing image file)"。 指定设备大小。 点击"下一步(Next)"按钮继续。 设置验证模式。

| iSCSI 目标器向导 | |
|---------------------------|---------------------|
| 安全验证 请您设置验证类型,匿 | 名、CHAP或IP过滤器。 |
| 唐名 无需任何授权,所有发器端可读 | 专家权限访问 |
| CHAP 使用CHAP进行权限验证 | |
| ◎ IP 地址 使用发器端的IP地址进行验证 | |
| ◎ 混合 使用CHAP和IP地址共同验证 | |
| ☑ 从全局设置继承安全规则 | |
| | <上一步(B) 下一步(N) > 取消 |

指定验证模式,我们以"匿名(Anonymous)"验证模式为例。 点击"下一步(Next)"按钮继续。 完成创建 iSCSI 目标器。

| 建 iSCSI 目标器向导 | × |
|---|---|
| 创建iSCSI目标器结束 指定目标器名称和其他选项完成iSCSI目标器创建。 | |
| 基本信息 目标器名称: .2006-03.com.kernsafe:KernStorage.Quorum ② 如果发器端没有写权限则报告为只读设备[B] ③ 允许多发起端读写权限连接(SAN FS共享和群集支持)[E] | |
| Note 默认情况下,iStorage Server不允许两个或两个以上的客户端以读写权限连接,但 是该功能在群集或SAN FS共享情况下是需要的。 | |
| <上一步(B) 完成 取消 | |

在"目标器名称栏"中键入目标器名称,或者使用默认名称。

选择复选框"启用多个发起端完全访问连接(SAN FS 共享和群集)Enable multiple initiators with

full access connected (sharing and clustering)" .

点击"完成(Finish)"按钮继续。

准备标准卷

启动 iStorageServer 管理控制台,在工具栏里点击"创建(Create)"按钮,将会弹出"创建设备向导

(Create Device Wizard) " $_{\circ}$

选择设备类型


选择"硬盘(Hard Disk)" 点击"下一步(Next)"按钮继续。

| ate iSCSI Target Wizard | | |
|-----------------------------|--------------|----|
| iSCSI媒体类型 | | .0 |
| 选择iSCSI磁盘的介质。 | | |
| | | |
| 使用标准镇像或虚拟键盘镇像创建计 | SCSI戰黨 | |
| ○ 内存空间 使用内存空间创建iSCSI磁盘 | | |
| ◎ 安全磁盘 为每一个客户端(发器端)创建一个 | 独立的虚拟镜像磁盘 | |
| ◎磁盘分区 使用磁盘分区创建iSCSI磁盘 | | |
| ◎ 物理磁盘 使用物理硬盘设备创建iSCSI磁盘 | | |
| | <上一步® 下一步® > | 取消 |

在"iSCSI 介质类型(iSCSI Medium Type)"窗口选择"镜像文件(Image File)" 点击"下一步(Next)"按钮继续。

| Create iSCSI Target Wizard | | × |
|--|------------------|----|
| iSCSI镜像类型 选择作为iSCSI磁盘的镜像类型。 | | |
| ● 标准镜像文件 使用标准镜像文件创建iSCSI磁盘 ● 虚拟硬盘镜像 (VHD) 使用虚拟硬盘镜像 (VHD) 创建iSCSI晶 | 議盘 | |
| | <上一步(B) 下一步(D) > | 取消 |

选择"标准镜像文件(Standard Image File)",然后点击"下一步(Next)"按钮继续。 指定镜像文件路径和大小。

| 设备参 | 数 | | | | | |
|-----------|-------------|--------|------------|---------------|-------|--|
| © (9 | 期已存在的镜 | 象文件 | ◎ 创建新的 |)镜像 文件 | | |
| G: \(| Generic.img | | | | 浏览[1] | |
| 设备 | 容量(MBs): | 4096 | * | | | |
| | 8镜像填充为0 | Ē. | 明Windows寿 | 系统缓存 | | |
| 选项 | | | | | | |
| i | 使用NTFS稀疏文(| Ψ | | | | |
| E | E缩(启用文件》 | 系统压缩属性 | E) | | | |
| b | u密(启用文件》 | 系统加密功能 | <u>(</u>) | | | |

选择"创建新镜像文件(Create a new image file)"或者如果已经有镜像文件,选择"使用现有镜像 文件(Use existing image file)"。 指定设备大小。

点击"下一步(Next)"按钮继续。 设置验证模式。

| 安全验证 | |
|---------------------------|--------------------|
| 请您设置验证类型,目 | 置名、CHAP或IP过滤器。 |
| | 法定和限制 |
| 九斋江问投狱,则有及畚编可 | 读与1XPR WIN |
| ◎ CHAP 使用CHAP进行权限验证 | |
| ◎ IP 地址 使用发器端的IP地址进行验证 | |
| ◎ 混合 使用CHAP和IP地址共同验证 | |
| 📝 从全局设置继承安全规则 | |
| | |
| | <上一步(B) 下一步(D)> 取消 |

指定验证模式,这里我们选择"匿名(Anonymous)"验证。 点击"下一步(Next)"按钮继续。 完成创建 iSCSI 目标器

| 建 iSCSI 目标器向导 | — X |
|---|------------|
| 创建iSCSI目标器结束 指定目标器名称和其他选项完成iSCSI目标器创建。 | 3 |
| 基本信息 | |
| 目标器名称: | |
| qn.2006-03.com.kernsafe:KernStorage.Generic | |
| ☑ 如果发器端没有写权限则报告为只读设备[匙] | |
| ☑ 允许多发起端读写权限连接(SAN FS共享和群集支持)[E] | |
| Note 默认情况下,iStorage Server不允许两个或两个以上的客户端以读 | 写权限连接,但 |
| 是该功能在群集或SAN FS共享情况下是需要的。 | |
| | |
| | |
| | |
| < 上一步(B) 完 | 成 取消 |
| | |

在"目标器名称栏"中键入目标器名称,或者使用默认名称。

选择复选框"启用多个发起端完全访问连接(共享和群集)Enable multiple initiators with full access

connected (sharing and clustering)" $_{\circ}$

点击"完成(Finish)"按钮。

现在如果成功的话,你可以在 iStorage Server 管理控制台看到样品镜像。

| iStorage Server Management Cons | ole | | | | | - 0 X |
|---------------------------------|--|---------|-----------|---------|--------------------|-----------------|
| 文件匠服务器图存储图 客户的 | | | | | | |
| | 2 <mark>〇</mark> 晶 晶 同 - 🔒 止 刷新 添加 删除 视图 - 访问 | - 🍄 🖶 | ① 关于 | | | |
| 服务器树 × | iStorage Server: LocalHost | | | | | |
| iutong-PC (127.0.0.1:3261) | 基本 目标器 应用 IP讨法器 用户 组 F | 1 | | | | |
| 白● 目标器 > KernStorage.Quorum | | 设备类型 | 源 | 容量 | 认证类型 | 状态 |
| KernStorage.Generic | 👒 iqn.2006-03.com.kernsafe:KernStorage.Quorum | 磁盘驱动器 | G:\Quoru | 1.00G | 匿名 | 启用 |
| | iqn.2006-03.com.kernsafe:KernStorage.Generic | 磁盘驱动器 | G:\Generi | 4.00G | 匿名 | 启用 |
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| | | 0.00 | | | | |
| | | III | | Charles | 71 | • |
| | | | | 39 建按 | ej : LocalHost (UI | timate License) |

配置 iStorage Server2

网络适配器

在群集的工作环境中,必须给网络适配器分配一个静态 IP 地址。选择"Internet 协议版本 4 (TCP/IPv4)",然后点击"属性 (Properties)"按钮,弹出"Internet 协议版本 4 (TCP/IPv4)"对话框。

| 常规 | |
|----------------------------------|----------------------------------|
| 如果网络支持此功能,则可以系 您需要从网络系统管理员处获得 | 获取自动指派的 IP 设置。否则, 寻适当的 IP 设置。 |
| ◎ 自动获得 IP 地址 @) | |
| ● 使用下面的 IP 地址(≦): | |
| IP 地址(L): | 192 .168 . 0 .114 |
| 子网掩码 (1): | 255 .255 .255 . 0 |
| 默认网关 @): | 192 .168 . 0 . 1 |
| ◯ 自动获得 DMS 服务器地址 | B |
| 🧕 使用下面的 DNS 服务器地 | 址(2): |
| 首选 DNS 服务器(P): | 192 .168 . 0 . 1 |
| 备用 DNS 服务器(A): | 20 20 AT |
| 🔲 退出时验证设置 (L) | 高级(2) |
| | |

如图中所示设置 KernStorage2 网络适配器(连接群集节点)。 IP 地址设置为 192.168.0.114 ,子 网掩码设置为 255.255.255.0。

| Internet 协议版本 4 (TCP/IPv4) 属性 | ? × |
|------------------------------------|------------------------------|
| 常规 | |
| 如果网络支持此功能,则可以获取 您需要从网络系统管理员处获得适 | 自动指派的 IP 设置。否则, 当的 IP 设置。 |
| ○ 自动获得 IP 地址 (0) | |
| ● 使用下面的 IP 地址(2): | |
| IP 地址(L): | 10 . 10 . 16 . 3 |
| 子网掩码 (U): | 255 . 255 . 255 . 0 |
| 默认网关 @): | 10 . 10 . 16 . 1 |
| ○ 自动获得 DNS 服务器地址 (B) | |
| ● 使用下面的 DNS 服务器地址(| (<u>E</u>): |
| 首选 DMS 服务器 (P): | 10 . 10 . 16 . 1 |
| 备用 DNS 服务器(A): | 20 20 40 |
| 退出时验证设置(L) | 高级 (2) |
| | 通定 取消 |
| | |

配置数据同步网卡。

准备卷

我们在 iStorage Server2 上还需要两卷,我们将它们命名为 KernStorage.Qunrumpartner 和 KernStorage.Genericpartner, 分别与 iStorage Server1 的卷大小相同,且创建过程相同。如果成功,将会出现以下主界面。

| iStorage Server Management Console | | | | | | X- |
|---|---|-------|----------------|-------|--------------|-----------------------|
| 文件回服务器图存储图 客户端回 | 视图⊻ 工具□ 帮助吐 | | | | | |
| | <mark>〇</mark> 晶 晶 同 - 🔒 - 🤤 刷新 添加 删除 视图 - 访问 设计 | 1 日 | ① 关于 | | | |
| 服务器树 × | iStorage Server: LocalHost | | | | | |
| E test-PC (127.0.0.1:3261) | 基本 目标器 应用 IP过滤器 用户 组 日志 | | | | | |
| □目标器 > KernStorage.Quorumpartner | 目标器名 | 设备类型 | 源 | 容量 | 认证类型 | 状态 |
| KernStorage.Genericpartner | 👒 iqn.2006-03.com.kernsafe:KernStorage.Quorumpartn | 磁盘驱动器 | C:\Quorum.img | 1.00G | 匿名 | 启用 |
| ——▲● 应用 ———————————————————————————————————— | iqn.2006-03.com.kernsafe:KernStorage.Genericpartner | 磁盘驱动器 | C:\Generic.img | 4.00G | 匿名 | 启用 |
| | | | | | | |
| 1 日志 | | | | | | |
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| | 4. | | | | S) 连接到: Loca | IHost (20-Days Trial) |

创建应用

创建仲裁应用

在 iStorage Server1 上,右击主界面左侧树中的"应用(Applications)",选择弹出菜单上的"创建应用(Create Application)",便会弹出"创建应用程序向导(Create Application Wizard)"

| 创建应用向导 | × |
|---|---------|
| 应用类型 选择一个您要创建的应用类型。 | |
| 滾像(BAID-1) 附加到一个iSCSI目标器和远程iSCSI目标器进行同步复制(BAID-1)。 异步复制 创建远程实时异步复制到另外一个iSCSI目标器或镜像文件。 数障转移群集 使用两个或两个以上iSCSI目标器创建高可用性iSCSI存储节点 | |
| ◎ 自动快照 创建自动快照异步复制到远程iSCSI目标器。 | |
| <mark>〈上一歩⑧</mark> 下一步씬〉 | 取消 |

选择"故障转移群集(Failover Cluster)"。 点击"下一步(Next)"按钮继续。

| 收降转移设置 指定两个服务器设置故障转移。 | d |
|--|------|
| 基础目标器 | |
| 目标器名 | 设备类型 |
| 🔽 ign. 2006-03. com. kernsafe: KernStorage. Quorum | Disk |
| | |
| 镜像目标器 | 编辑旧 |
| | |
| | |
| | |

选择高可用性存储,并点击"编辑(Edit)"找到镜像目标器。

| iSCSI源 — | | | |
|----------|------------------------|-----------------------|----------|
| 服务器名: | 10.10.16.3 | 端口: | 3260 |
| CHAP | | | |
| | 🧾 使用 CHAP认证 | | |
| 用户名: | - | | |
| 密码: | - | | |
| 目标 | l | | |
| 目标器: | iqn.2006-03.com.kemsaf | e:KernStorage.Quorump | artner 🗸 |
| | | | |

在"iSCSI 源(iSCSI Source)"选项卡上输入服务器 2 的 IP 地址和端口,然后单击窗口底部的"发现 (Discovery)"找到镜像目标器,在下拉列表中选择 HApartner。 点击"OK"按钮继续。

注意:如果目标器需要 CHAP 授权,你应该提供用户名和密码登录。

| 是础目标器 | | 1 | |
|--------------|--|------|-----|
| 目标器名 | | 设备类型 | |
| 📝 i qn. 20 | 06-03. com. kernsafe:KernStorage. Quorum | Disk | |
| ign. 20 | 06-03. com. kernsafe:KernStorage.Generic | Disk | |
| 像目标器 | | | |
| i qn. 2006-0 |)3. com. kernsafe:KernStorage.Quorumpartne | r | 编辑旧 |

镜像目标器将被添加到该窗口,然后点击"下一步(Next)"按钮继续。

| 指定同步参数 | <u>h</u> | | | |
|----------|------------------------------|-------------------|----------|-------|
| 15地目标器 | | | | |
| 目标器名称: | iqn.2006-03.com.kernsafe: | KernStorage. Quo: | rum | |
| 通道地址: | 10.10.16.2 | ~ | 端口: | Any 💉 |
| 远程目标器 | | | | |
| 目标器名称: | iqn. 2006-03. com. kernsafe: | KernStorage. Quo | rumpartı | ier |
| 通道地址: | 10.10.16.3 | ~ | 端口: | 3260 |
| 指定一个用户 | 品时转储的目录(该目录必须存 | 在): | | |
| C:\Temp\ | | | | 浏览 |
| | | | | |

通道地址选择 iStorage Server 数据通信的网络,也称作心跳网。

| 同步类型 | |
|---------------|-------------------|
| ◎ 从原目标器完全同步 | |
| ◎ 不进行同步(手动初始) | ED] |
| 同步进度 | |
| | |
| | 수 포트 io trajo 구 내 |
| 警古: 阿步后镇像设备的所 | 有数据都将去矢。 |

现在镜像目标器应同步到源目标器,如果这两个目标器都是新目标器,没有被初始化,我们可以选择"不同步创建镜像设备(手动初始化) Create mirror device without synchronization (Manual Initialization)",否则,我们必须选择"创建镜像设备完全同步于源 iSCSI 目标器(Create mirror device with full synchronization from base iSCSI target)"

点击"OK"按钮继续。



点击"完成(Finish)"按钮,完成创建应用。

创建通用应用

在 iStorage Server1 上,右击主界面左侧树中的"应用(Applications)",选择弹出菜单上的"创建应用(Create Application)",便会弹出"创建应用程序向导(Create Application Wizard)"窗口。

|]建应用向导 | × |
|--|----|
| 应用类型 选择一个您要创建的应用类型。 | 2 |
| 積像(RAID-1) 附加到一个iSCSI目标器和远程iSCSI目标器进行同步复制(RAID-1)。 异步复制 创建远程实时异步复制到另外一个iSCSI目标器或镜像文件。 数醇转移群集 使用两个或两个以上iSCSI目标器创建高可用性iSCSI存储节点 | |
| ◎ 自动快照 创建自动快照异步复制到远程iSCSI目标器。 | |
| <mark>〈上一歩個</mark> 下一歩씬〉 | 取消 |

选择"故障转移 iSCSI SAN 节点(Failover iSCSI SAN Node)"。

点击"下一步(Next)"按钮继续。

| 目标器名 设备类型 □ iqn. 2006-03. com. kernsafe:KernStorage.Quorum Disk ☑ iqn. 2006-03. com. kernsafe:KernStorage.Generic Disk |
|--|
| ☐ iqn. 2006-03. com. kernsafe:KernStorage. Quorum ☐ iqn. 2006-03. com. kernsafe:KernStorage. Generic Disk |
| 📝 ign. 2006-03. com. kernsafe: KernStorage. Generic 🛛 Disk |
| |
| [] |

选择高可用性存储,并点击"编辑(Edit)"找到镜像目标器。

| iSCSI源 — | | | |
|----------|------------------------|------------------------|---------|
| 服务器名: | 10.10.16.3 | 端口:32 | 260 |
| CHAP | | | |
| | 🔄 使用 CHAP 认证 | | |
| 用户名: | - | | |
| 密码: | - | | |
| 目标 | 1 | | |
| 目标器: | iqn.2006-03.com.kemsaf | e:KemStorage.Genericpa | rtner 🗸 |
| | | | |

在"iSCSI 源(iSCSI Source)"选项卡上输入服务器 2 的 IP 地址和端口,然后单击窗口底部的"发现 (Discovery)"找到镜像目标器,在下拉列表中选择 Hapartner。 点击"OK"按钮继续。

注意:如果目标器需要 CHAP 授权,你应该提供用户名和密码登录。

| | | 1 |
|---|----------|-----|
| 目标器名 | 设备类型 | |
| 📰 i qn. 2006-03. com. kernsafe:KernStorage.Quor | um Disk | |
| 💟 iqn. 2006-03. com. kernsafe:KernStorage. Gene | ric Disk | |
| | | |
| iqn. 2006-03. com. kernsafe:KernStorage.Generic | partner | 编辑旧 |

镜像目标器将被添加到该窗口,然后点击"下一步(Next)"按钮继续。

| 四夕 又 旦 指定同步参数 | ۵. | | | |
|-------------------------|---------------------------|--------------------|----------|-------|
| 本地目标器 | | | | |
| 目标器名称: | iqn. 2006-03. com. kernsa | fe:KernStorage.Gen | eric | |
| 通道地址: | 10.10.16.2 | ~ | 端口: | Any 💉 |
| 远程目标器 | | | | |
| 目标器名称: | iqn. 2006-03. com. kernsa | fe:KernStorage.Gen | ericpart | iner |
| 通道地址: | 10.10.16.3 | ~ | 端口: | 3260 |
| 指定一个用户 | 品时转储的目录(该目录必须 | 页存在): | | |
| C:\Temp\ | | | | 浏览 |
| | | | | |

通道地址选择 iStorage Server 数据通信的网络,也称作心跳网。

| 镜 | 象同步 · · · · · · · · · · · · · · · · · · · |
|---|---|
| ſ | 同步类型 |
| | ◎ 从原目标器完全同步 |
| | ◎ 不进行同步(手动初始化) |
| Ť | 同步进度 |
| | |
| | 物件、同时已法海边发动的大型组织的工具 |
| 1 | |
| | OK 取消 |

现在镜像目标器应同步到源目标器,如果这两个目标器都是新目标器,没有被初始化,我们可以选择"不同步创建镜像设备(手动初始化)Create mirror device without synchronization (Manual

Initialization)", 否则, 我们必须选择"创建镜像设备完全同步于源 iSCSI 目标器(Create mirror device with full synchronization from base iSCSI target)" 点击"OK"按钮继续。



点击"完成(Finish)"按钮,完成创建应用。

| iStorage Server Management Conse | ole | | | ↔ |
|---|---|---------|--|-------------------------|
| 文件旧 服务器 5 存储 6 客户 3 | 灣☑ 视图☑ 工具□ 帮助旧 | | | |
| - 100 A A A A A A A A A A A A A A A A A A | ▲ ○ ○ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ | - 🔒 - 鏠 | 日 ① 打印 关于 | |
| 服务器树 × | iStorage Server: LocalHost | | | |
| iutong-PC (127.0.0.1:3261) | 基本 目标器 应用 IP讨读器 用户 | 组日志 | | |
| □ | 目标器名 | 应用类型 | 镜像设备 | 状态 |
| KernStorage.Generic | 祠 iqn.2006-03.com.kernsafe:KernStora | 高可用性 | iSCSI: 10.10.16.3:3260:iqn.2006-03.com.kernsafe:KernSto. | . 运行 |
| → · · · · · · · · · · · · · · · · · · · | iqn.2006-03.com.kernsafe:KernStora | 高可用性 | iSCSI: 10.10.16.3:3260:iqn.2006-03.com.kernsafe:KernSto. | . 运行 |
| □ 3 用户 | | | | |
| 日志 | | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |
| | 4. | | S 连接到: Local | Host (Ultimate License) |

现在,如果成功的话,两个应用程序将显示在主界面上, iStorage Server1 的配置完成。我们在 iStorage Server2 上进行相同的操作来创建应用程序,创建成功后,主界面将如下所示:

| iStorage Server Management Console | 3 iStorage Server Management Console | | | | | | | |
|--|---|----------------------|---|-------------------|--|--|--|--|
| 文件旧 服务器图 存储图 客户端图 | □ 视图M 工具□ 帮助Ⅲ | | | | | | | |
| - 100 - 100 A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | ┃ ♀ ┃ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ | □ → ☆ ■ 访问 设置 打 | □ ① □ 关于 | | | | | |
| 服务器材 × - KernSafe Servers test-PC (127.0.0.1:3261) | iStorage Server: LocalHost 基本 目标器 应用 IP过滤器 用户 组 日志 | | | | | | | |
| ा विशेषक ≫ KernStorage.Quorumpartner | 目标器名 | 应用类型 | 镜像设备 | 状态 | | | | |
| KernStorage.Genericpartner | 🔊 iqn.2006-03.com.kernsafe:KernStora | 高可用性 | iSCSI: 10.10.16.2:3260:iqn.2006-03.com.kernsafe:KernSto | 运行 | | | | |
| | 🧊 iqn.2006-03.com.kernsafe:KernStora | 高可用性 | iSCSI: 10.10.16.2:3260:iqn.2006-03.com.kernsafe:KernSto | 运行 | | | | |
| | | | | | | | | |
| < + | • | III | | - + | | | | |
| | | | 3 1年接到: LocalHost (20 | J-Days Irial) .:: | | | | |

配置群集节点1

网络适配器

在群集的工作环境中,必须给网络适配器分配一个静态 IP 地址。选择"Internet 协议版本 4 (TCP/IPv4)",然后点击"属性 (Properties)"按钮,弹出"Internet 协议版本 4 (TCP/IPv4)"对话框。

| Internet Protocol Version 4 (TCP/IPv | v4) Properties | | | | | | | |
|---|---|--|--|--|--|--|--|--|
| General | | | | | | | | |
| You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings. | You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. | | | | | | | |
| O Obtain an IP address automatical | ly | | | | | | | |
| Use the following IP address: | | | | | | | | |
| IP address: | 192.168.1.101 | | | | | | | |
| Subnet mask: | 255.255.255.0 | | | | | | | |
| Default gateway: | 192.168.1.2 | | | | | | | |
| C Obtain DNS server address autor | natically | | | | | | | |
| └. Use the following DNS server add | resses: | | | | | | | |
| Preferred DNS server: | 192.168.1.2 | | | | | | | |
| <u>A</u> lternate DNS server: | | | | | | | | |
| Vaļidate settings upon exit | Ad <u>v</u> anced | | | | | | | |
| | OK Cancel | | | | | | | |

输入 IP 地址,子网掩码,默认网关和首选 DNS 服务器(该网卡为心跳网) 设置 08Node 的第二个网络适配器。

| u can get IP settings assigned au s capability. Otherwise, you need the appropriate IP settings. | tomatically if your network supports I to ask your network administrator |
|--|---|
| O <u>O</u> btain an IP address automat | ically |
| • Use the following IP address:- | |
| IP address: | 192.168.0.3 |
| S <u>u</u> bnet mask: | 255 . 255 . 255 . 0 |
| Default gateway: | 192.168.0.1 |
| Obtain DNS server address au Use the following DNS server a Preferred DNS server: Alternate DNS server: | tomatically addresses: 192 . 168 . 0 . 1 |
| Validate settings upon exit | Ad <u>v</u> anced |

输入 IP 地址和子网掩码(该网卡为与 iscsi 通信)。 按"OK"按钮,更改 IP 地址。

加入域

按"OK"按钮,更改 IP 地址。 打开"系统属性(System Properties)"页面



点击"更改设置(Change settings)"链接,弹出"系统属性(System Properties)"对话框。

| System Properties | | × |
|--|---|---|
| Computer Name Hardwar | re Advanced Remote | 1 |
| Windows uses on the network | the following information to identify your computer | |
| Computer description: | | |
| | For example: "IIS Production Server" or "Accounting Server". | |
| Full computer name: | WIN-761UGR36DM5 | |
| Workgroup: | WORKGROUP | |
| To rename this computer workgroup, click Change | or change its domain or <u>C</u> hange | |
| | OK Cancel Apply | |

点击"更改(Change)"按钮。

| Computer Name/Domain Changes |
|--|
| You can change the name and the membership of this computer. Changes might affect access to network resources. <u>More information</u> |
| Computer name: |
| 08Node1 |
| Full computer name: 08Node1 |
| <u>M</u> ore |
| Member of |
| Domain: |
| kemsafe.local |
| O Workgroup: |
| WORKGROUP |
| OK Cancel |

在"计算机名称(**Computer name**)"里输入"08Node1","域(**Domain**)"里输入"kernsafe.local"。 点击"OK"按钮,更改计算机名称并加入域。

域控制器账户需要加入域。

| Windows Securit | v | × |
|----------------------------------|---|---|
| Computer Nam Enter the name a | ne/Domain Changes and password of an account with permission to join the domain. | _ |
| | User name Password Domain: kernsafe | |
| | OK Cancel | |

输入用户名和密码。

点击"OK"按钮继续。

如果成功的话,弹出"计算机名称/域更改(Computer Name/Domain Changes)"通知对话框。



点击"OK"按钮继续。 需要重新启动。

| Microsoft Windows |
|--|
| You must restart your computer to apply these changes |
| Before restarting, save any open files and close all programs. |
| Restart Now Restart Later |

点击"立即重启(Restart Now)"按钮,重启计算机。

安装 MPIO 功能

启动"开始->管理工具->服务器管理器",进入"功能(Features)"选项,并单击"添加(Add)"功能。会弹出一个"添加功能向导(Add Features Wizard)"。在功能列表中选择"多路径I/O(Multipath I/O)"功能并安装。

| Add Features Wizard | | <u>></u> | < |
|---|---|---|---|
| Select Features | | | |
| Features Confirmation Progress Results | Select one or more features to install on this server. Eeatures: | Description: <u>Multipath I/O</u> , along with the Microsoft Device Specific Module (DSM) or a third-party DSM, provides support for using multiple data paths to a storage device on Windows. | |
| | < Previous Next | t > Install Cancel | |

登录 iSCSI 磁盘

启动"管理工具->微软 iSCSI 发起端(Administrative Tools -> Microsoft iSCSI initiator)"。

| SI Initiator Properties | | |
|---|--|--|
| Targets Discovery Favorite Targ | ets Volumes and Devices R | ADIUS Configuration |
| To discover and log on to a target DNS name of the target and then | t using a basic connection, type dick Quick Connect. | the IP address or |
| Target: | | Quick Connect |
| Discovered targets | | Refresh |
| Name | St | atus |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| To connect using advanced option click Connect. | ns, select a target and then | Connect |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. | ns, select a target and then | Co <u>n</u> nect Disconnect |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. For target properties, including co select the target and click Propert | ns, select a target and then ;, select the target and onfiguration of sessions, ies. | Connect |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. For target properties, including co select the target and click Propert For configuration of devices assoc the target and then click Devices. | ns, select a target and then c, select the target and onfiguration of sessions, ties. ciated with a target, select | Co <u>n</u> nect Disconnect Properties De <u>y</u> ices |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. For target properties, including co select the target and click Propert For configuration of devices assoc the target and then click Devices. | ns, select a target and then ; select the target and onfiguration of sessions, ies. ciated with a target, select | Connect Disconnect Properties De <u>v</u> ices |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. For target properties, including co select the target and click Propert For configuration of devices assoc the target and then click Devices. More about basic iSCSI connections | ns, select a target and then c, select the target and onfiguration of sessions, ies. ciated with a target, select | Cognect Disconnect Properties Devices |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. For target properties, including co select the target and click Propert For configuration of devices assoc the target and then click Devices. | ns, select a target and then c, select the target and onfiguration of sessions, ies. ciated with a target, select | Cognect Disconnect Properties De <u>v</u> ices |
| To connect using advanced option click Connect. To completely disconnect a target then click Disconnect. For target properties, including co select the target and click Propert For configuration of devices assoc the target and then click Devices. | ns, select a target and then c, select the target and onfiguration of sessions, ies. ciated with a target, select | Cognect Disconnect Properties Deyjces |

选择"发现(Discovery)"页面。

| SCSI Initi | iator Prope | erties | | | × |
|---|------------------------|------------------------------|---|----------------|----------|
| Targets | Discovery | Favorite Targets | Volumes and Devices | RADIUS Config | guration |
| | | _ | | | |
| Targe | t portals | | | Refres | |
| The s | system will lo | ok for <u>T</u> argets on fo | ollowing portals: | ID addre | |
| Addr | 655 | Port | | IF addre | |
| | | | | | |
| | | | | | |
| | | | | | |
| To ad | ld a target p | ortal, click Discover | Portal. | Discover Po | rtal |
| To re | move a targ | et portal, select the | address above and | <u>R</u> emove | |
| ulen | Click Remove | | | | |
| -:::::::::::::::::::::::::::::::::::::: | | | | | |
| The s | ervers vstem is rea | istered on the follo | wing iSNS servers: | Refres | n |
| Name | 2 | | <u>, , , , , , , , , , , , , , , , , , , </u> | | |
| | | | | | |
| | | | | | |
| | | | | | |
| To ad | ld an iSNS se | rver, dick Add Serv | /er | Add Serve | Y |
| To us | | Conversion colored the | | | |
| then | click Remove | s server, select the | e server above and | Remove | <u> </u> |
| | | | | | |
| | | | | | |
| More | e about Disco | overy and iSNS | | | |
| | | | | | |
| | | | | | |
| | | | ок | Cancel | Apply |
| | | | | | |

点击"发现门户(Discover Portal)"按钮,弹出"发现目标器门户(Discover Target Portal)"对话框。

| Discover Target Portal | × |
|---|---|
| Enter the IP address or DNS name want to add. | and port number of the portal you |
| To change the default settings of t the Advanced button. | he discovery of the target portal, dick |
| IP address or DNS name: | Port: (Default is 3260.) |
| 192.168.0.113 | 3260 |
| Advanced | QK <u>C</u> ancel |

| Enter the IP address or DNS name want to add. | and port number of the portal you |
|--|---|
| To always a bloc da fai da anatinana a fa | he discovery of the target portal, dick |
| the Advanced button. | ne albeerer y er ere earget per eary eres |
| IP address or DNS name: | Port: (Default is 3260.) |

输入"iStorage Server 的 IP 地址或 NDS 名称和端口"。 点击"OK"按钮继续。

选择"目标器(Targets)"页面。

| iSCSI Initiator Properties | | | × |
|--|-----------|-------------------|----------|
| Targets Discovery Favorite Targets Volumes and Devices | RADIU | S Config | juration |
| - Ouick Connect | | | |
| To discover and log on to a target using a basic connection, to DNS name of the target and then click Quick Connect. | ype the I | (P addres | s or |
| Target: | (| <u>Q</u> uick Cor | inect |
| Discovered targets | | Refre | sh |
| | | <u>R</u> ente | |
| Name | Status | | |
| iqn.2006-03.com.kernsafe:KernStorage.Generic | Inactive | | |
| iqn.2006-03.com.kernsafe:KernStorage.Genericpartner | Inactive | 2 | |
| iqn.2006-03.com.kernsafe:KernStorage.Quorum | Inactive | : | |
| iqn.2006-03.com.kernsafe:KernStorage.Quorumpartner | Inactive | | |
| To connect using advanced options, select a target and then | | Conne | ect |
| dick Connect. | | | |
| To completely disconnect a target, select the target and then dick Disconnect. | | Discon | nect |
| For target properties, including configuration of sessions, select the target and click Properties. | | <u>P</u> ropert | ies |
| For configuration of devices associated with a target, select the target and then click Devices. | | De <u>v</u> ice | es |
| More about basic iSCSI connections and targets | | | |
| OK | Cano | el | Apply |

选择刚添加的目标器,然后点击"连接(Connect)"按钮。

| Connect To Target | × |
|---|---|
| Target name: | |
| iqn.2006-03.com.kernsafe:KernStorage.Quorum | |
| Add this connection to the list of Favorite Targets. This will make the system automatically attempt to restore the connection every time this computer restarts. | |
| Enable multi-path | |
| Advanced OK Cancel | |
| Connect To Target | × |
| Target name: | |
| iqn.2006-03.com.kernsafe:KernStorage.Quorumpartner | |
| Add this connection to the list of Favorite Targets. This will make the system automatically attempt to restore the connection every time this computer restarts. | |
| Enable multi-path | |
| Advanced OK Cancel | |
| Connect To Target | × |
| Target name: | |
| iqn.2006-03.com.kernsafe:KernStorage.Generic | |
| Add this connection to the list of Favorite Targets. This will make the system automatically attempt to restore the connection every time this computer restarts. | |
| ☑ Enable multi-path | |
| Advanced OK Cancel | |

| Connect To Target | × |
|---|-------------------|
| Target name: | |
| iqn.2006-03.com.kernsafe:KernStorage.Generic | partner |
| Add this connection to the list of Favorite Targ | gets. |
| This will make the system automatically attemp connection every time this computer restarts. | pt to restore the |
| ☑ Enable multi-path | |
| <u>A</u> dvanced | OK Cancel |

保持"将此连接添加到最喜欢的目标器列表(Add this connection to the list of Favorite Targets)"的 选择。

点击"OK"按钮添加。

如果成功的话,登录的目标器将会显示在列表中。

| CSI Initiator P | roperties | | | | | × |
|--|--|---------------------------|---------|------------|-------------|---|
| Targets Disco | very Favorite Targets Volume | es and Device | s RAD | IUS Cor | nfiguration | |
| -Ouick Connect | | | | | | , |
| To discover an DNS name of | nd log on to a target using a bas the target and then click Quick C | ic connection, onnect. | type th | ne IP addr | ess or | |
| Target: | | | , | Quick C | ionnect,,, | |
| Discovered tar | gets | | | Re | fresh |] |
| Name | | | Statu | IS | | |
| ign 2006-03 | com kernsafe:KernStorage Gen | eric | Conn | ected | | |
| ign 2006-03 | com kernsafe KernStorage Gen | ericnartner | Conn | ected | | |
| ign 2006-03 | ign. 2006-03.com.kernsate:kernstorage.Genericpartner Connected | | | | | |
| ign 2006-03 | com kornesfei KornStorage. Quo | rumportoor | Conn | octod | | |
| To connect us click Connect. | ing advanced options, select a t | arget and the | n | Co | nnect | |
| To completely then click Disc | To completely disconnect a target, select the target and Disconnect then click Disconnect. | | | | | |
| For target properties, including configuration of sessions, select the target and dick Properties. | | | | | | |
| For configuration of devices associated with a target, select Devices | | | | | | |
| More about ba | sic iSCSI connections and target | 2 | | | |] |
| | | ОК | C | ancel | Apply | |

启用多路径支持

点击"开始 - >管理工具 - >MPIO(Start->Administrative Tools->MPIO)", 启动 MPIO 管理器。进入 "发现多路径(Discover Multi-Paths)"选项卡,选择"为 iSCSI 设备添加支持(Add support for iSCSI devices)"。

| PIO Properties | |
|--|------------------------------------|
| MPIO Devices Discover Multi-Paths | DSM Install Configuration Snapshot |
| SPC-3 compliant | |
| Device Hardware Id | 1 |
| ✓ Add support for ISCSI devices | |
| ······································ | Add |
| Others Device Hardware Id | |
| | |
| | Add |
| More information on discovery of m | ultipathed devices |
| | |

点击"添加(Add)"按钮。 Windows 会提示你重新启动服务器。



点击"是的(Yes)"按钮,重启服务器。

启动"Windows 计算机管理控制台(Windows Computer Management Console)" 弹出"初始化磁盘(Initialize Disk)"对话框。
| Select disks: | | | |
|---------------------|--------------------------|--------------------------|----------------|
| ✓ Disk 1 ✓ Disk 2 | | | |
| | | | |
| | | | |
| l lao tha fallouina | natilian stale for the | a a last ad disks. | |
| C upp (u | partition style for the | e selected disks: | |
| • MBR (Master | Boot Record) | | |
| G GPT (GUID F | Partition Table) | | |
| Note: The GPT p | artition style is not re | cognized by all previo | us versions of |
| Windows. It is rec | ommended for disks | s larger than 2TB, or di | sks used on |
| Lanium-Dased Cor | nputers. | | |

保持选择两个磁盘。 选择选定磁盘的分区样式。 点击"OK"按钮继续。

| E Server Manager | | |
|--------------------------|---|---|
| File Action View Help | | |
| 🗢 🔿 🔰 🖬 🚺 🔂 🗡 | < 🗳 🖻 🖉 😡 | |
| Server Manager (08NODE1) | Disk Management Volume List + Graphical View Actions | |
| + P Roles | Volume Layout Type File System Status Disk Management | - |
| | | • |
| Configuration | ,, | |
| Windows Server Backup | | |
| 🚔 Disk Management | | |
| | Basic System I (C:) | |
| | Online Healthy (S Healthy (Boot, Page File, Cr. | |
| | | |
| | Disk 1 | |
| | 4.00 GB 4.00 GB | |
| | Online Unallocated | |
| | | |
| | Basic | |
| | Online Unallocated | |
| | Unallocated Primary partition | |
| I] | | |
| 1 | L L L L L L L L L L L L L L L L L L L | |

右击磁盘,然后根据向导提示在两个磁盘上选择新建简单卷、分区和格式。

如果成功的话,新建卷就会在以下窗口中显示。



安装故障转移群集服务

启动"Windows 服务器管理器控制台(Windows Server manager Console)"

| 📕 Server Manager | | | | <u>s</u> × |
|---|---|--|--|------------|
| Eile Action View Help | | | | |
| | | | | |
| Server Manager (08NODE1) Configuration Storage | Server Manager (08NODE1) Get an overview of the status of | his server, perform top management tasks, and add or remo | ove server roles and features. | |
| | Server Summary | | Server Summary Help | |
| | Computer Information Full Computer Name: Domain: Local Area Connection: Local Area Connection 2: Remote Desktop: Server Manager Remote Management: Product ID: Do not show me this concole at loops | 08Node 1.KernSafe.Local KernSafe.Local IPv4 address assigned by DHCP, IPv6 enabled 192.168.1.102, IPv6 enabled Disabled Disabled Not activated | Activate Windows Change System Properties View Network Connections Configure Remote Desktop Configure Server Manager Remote Management | |
| | Security Information Windows Firewall: Windows Updates: Last checked for updates: Last installed updates: IE Enhanced Security Configuration (ESC): Last Refresh: Today at 10:57 PM Configure | Domain: On, Public: On Not configured Never Never Off for Administrators Off for Users e refresh | Go to Windows Firewall Configure Updates Check for New Roles Run Security Configuration Wizard Configure IE ESC | T |
| | | | | |

从左侧的树视图中选择"功能(Features)"节点



点击"添加功能(Add Features)"连接,弹出"添加功能向导(Add Features Wizard)"

| Add Features Wizard | | X |
|---|---|--|
| Select Features | | |
| Features Confirmation Progress Results | Select one or more features to install on this server. Eetures: Description: Image: | ring allows multiple ctogether to provide y of services and allover Clustering is file and print services, nail applications. |

选择"故障转移群集(Failover Clustering)"。

点击"下一步(Next)"按钮继续。

| Add Features Wizard | | × |
|---|---|---|
| Confirm Installa | tion Selections | |
| Features Confirmation Progress Results | To install the following roles, role services, or features, dick Install. | |

点击"安装(Install)"按钮,安装"故障转移群集(Failover Clustering)"功能。 故障转移群集安装过程继续。

| Add Features Wizard | |
|---|------------|
| Installation Progr | ress |
| Features Confirmation Progress Results | Testalling |
| | |

如果成功的话,向导完成并如下图显示。

| Add Features Wizard | | | × |
|---|---|---|---|
| Installation Res | ults | | |
| Features Confirmation Progress Results | The following roles, role services, or 1 warning message below Windows automatic updating automatically updated, turn of | features were installed successfully: is not enabled. To ensure that your newly-installed role or feature is n Windows Update in Control Panel. | _ |
| | Failover Clustering | Installation succeeded | |
| | Print, e-mail, or save the installation | report | |
| | | < Previous Next > Close Cancel | |

点击"关闭(Close)"按钮。

配置群集节点 2

网络适配器

在群集的工作环境中,必须给网络适配器分配一个静态 IP 地址。选择"Internet 协议版本 4 (TCP/IPv4)",然后点击"属性 (Properties)"按钮,弹出"Internet 协议版本 4 (TCP/IPv4)"对话框。

| Internet Protocol Version 4 (TCP/IPv | /4) Properties |
|---|--|
| General | |
| You can get IP settings assigned autom this capability. Otherwise, you need to for the appropriate IP settings. | natically if your network supports ask your network administrator |
| O Obtain an IP address automatical | ly |
| • Use the following IP address: | |
| IP address: | 192.168.1.102 |
| Subnet mask: | 255 . 255 . 255 . 0 |
| Default gateway: | 192.168.1.2 |
| C Obtain DN5 server address autor | natically |
| □ ─ • Use the following DNS server add | resses: |
| Preferred DNS server: | 192.168.1.2 |
| Alternate DNS server: | · · · |
| Vaļidate settings upon exit | Ad <u>v</u> anced |
| | OK Cancel |

输入 IP 地址,子网掩码,默认网关和首选 DNS 服务器。 设置 08Node 的第二个网络适配器。

| ernet Protocol Version 4 (TCP/I ieneral | Pv4) Properties | ? |
|--|---|------------|
| You can get IP settings assigned aut this capability. Otherwise, you need for the appropriate IP settings. | omatically if your network suppo to ask your network administrat | orts or |
| C Obtain an IP address automatic | cally | |
| Use the following IP address:- | - 52 | - |
| IP address: | 192.168.0.3 | |
| Subnet mask: | 255 . 255 . 255 . 0 | |
| Default gateway: | 192.168.0.1 | |
| C Obtain DNS server address aut | omatically | |
| □ Use the following DNS server a | ddresses: | |
| Preferred DNS server: | 192.168.0.1 | |
| Alternate DNS server: | • • | |
| 🗖 Vaļidate settings upon exit | Advanced | <u> </u> |
| | ОК Са | ncel |
| | | |

输入 IP 地址和子网掩码。 按"OK"按钮,更改 IP 地址。

加入域

按"OK"按钮,更改 IP 地址。 打开"系统属性(System Properties)"页面



点击"更改设置(Change settings)"链接,弹出"系统属性(System Properties)"对话框。

| System Properties | | × |
|--|---|---|
| Computer Name Hardwa | re Advanced Remote | |
| Windows uses on the network | the following information to identify your computer | |
| Computer description: | | |
| | For example: "IIS Production Server" or "Accounting Server". | |
| Full computer name: | WIN-1SKQN4PN90I | |
| Workgroup: | WORKGROUP | |
| To rename this computer workgroup, click Change | or change its domain or <u>Change</u> | |
| | OK Cancel Apply | |

点击"更改(Change...)"按钮。

| Computer Name/Domain Changes |
|--|
| You can change the name and the membership of this computer. Changes might affect access to network resources. <u>More information</u> |
| Computer name: |
| 08Node2 |
| Full computer name: 08Node2 |
| <u>M</u> ore |
| Member of |
| • Domain: |
| KemSafe |
| C Workgroup: |
| WORKGROUP |
| OK Cancel |

在"计算机名称(**Computer name**)"里输入"08Node2","域(**Domain**)"里输入"kernsafe.local"。 点击"OK"按钮,更改计算机名称并加入域。

域控制器账户需要加入域。

| Windows Securit | Y | × |
|----------------------------------|---|---|
| Computer Nan Enter the name a | ne/Domain Changes and password of an account with permission to join the domain. | _ |
| | User name Password Domain: kernsafe | |
| | OK Cancel | |

输入用户名和密码。

点击"OK"按钮继续。

如果成功的话,弹出"计算机名称/域更改(Computer Name/Domain Changes)"通知对话框。



点击"OK"按钮继续。 需要重新启动。

| Microsoft Windows |
|--|
| You must restart your computer to apply these changes |
| Before restarting, save any open files and close all programs. |
| Restart Now Restart Later |

点击"立即重启(Restart Now)"按钮,重启计算机。

安装 MPIO 功能

启动"开始->管理工具->服务器管理器",进入"功能(Features)"选项,并单击"添加(Add)"功能。会弹出一个"添加功能向导(Add Features Wizard)"。在功能列表中选择"多路径I/O(Multipath I/O)"功能并安装。

| Add Features Wizard | | <u>></u> | < |
|---|---|---|---|
| Select Features | | | |
| Features Confirmation Progress Results | Select one or more features to install on this server. Eeatures: | Description: <u>Multipath I/O</u> , along with the Microsoft Device Specific Module (DSM) or a third-party DSM, provides support for using multiple data paths to a storage device on Windows. | |
| | < Previous Next | t > Install Cancel | |

登录 iSCSI 磁盘

启动"管理工具->微软 iSCSI 发起端(Administrative Tools -> Microsoft iSCSI initiator)"。

| 51 Initiator Properties | |
|--|--|
| argets Discovery Favorite Targets Volumes and Devices | RADIUS Configuration |
| Quick Connect To discover and log on to a target using a basic connection, ty DNS name of the target and then click Quick Connect. | pe the IP address or |
| Target: | Quick Connect |
| Discovered targets | <u>R</u> efresh |
| Name | Status |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| To connect using advanced options, select a target and then dick Connect. | Cognect |
| To connect using advanced options, select a target and then dick Connect. To completely disconnect a target, select the target and then dick Disconnect. | Connect Disconnect |
| To connect using advanced options, select a target and then click Connect. To completely disconnect a target, select the target and then click Disconnect. For target properties, including configuration of sessions, select the target and click Properties. | Co <u>n</u> nect Disconnect Properties |
| To connect using advanced options, select a target and then click Connect. To completely disconnect a target, select the target and then click Disconnect. For target properties, including configuration of sessions, select the target and click Properties. For configuration of devices associated with a target, select the target and then click Devices. | Co <u>n</u> nect Disconnect Properties, De <u>v</u> ices, |
| To connect using advanced options, select a target and then click Connect. To completely disconnect a target, select the target and then click Disconnect. For target properties, including configuration of sessions, select the target and click Properties. For configuration of devices associated with a target, select the target and then click Devices. | Co <u>n</u> nect Disconnect Properties, De <u>v</u> ices |
| To connect using advanced options, select a target and then click Connect. To completely disconnect a target, select the target and then click Disconnect. For target properties, including configuration of sessions, select the target and click Properties. For configuration of devices associated with a target, select the target and then click Devices. | Connect Disconnect Properties, De <u>v</u> ices, |
| To connect using advanced options, select a target and then click Connect. To completely disconnect a target, select the target and then click Disconnect. For target properties, including configuration of sessions, select the target and click Properties. For configuration of devices associated with a target, select the target and then click Devices. | Co <u>n</u> nect Disconnect Properties De <u>v</u> ices |
| To connect using advanced options, select a target and then click Connect. To completely disconnect a target, select the target and then click Disconnect. For target properties, including configuration of sessions, select the target and click Properties. For configuration of devices associated with a target, select the target and then click Devices. | Co <u>n</u> nect Disconnect Properties De <u>v</u> ices |
| To connect using advanced options, select a target and then dick Connect. To completely disconnect a target, select the target and then dick Disconnect. For target properties, including configuration of sessions, select the target and dick Properties. For configuration of devices associated with a target, select the target and then dick Devices. | Co <u>n</u> nect Disconnect Properties, De <u>v</u> ices |

选择"发现(Discovery)"页面。

| SCSI Initi | iator Prope | erties | | | X |
|------------|--|------------------------------|---------------------|-----------------------|---|
| Targets | Discovery | Favorite Targets | Volumes and Devices | RADIUS Configuration | |
| | | ' | | | |
| Targe | t portals | | | Refresh | |
| The s | system will lo | ok for <u>T</u> argets on fo | ollowing portals: | IR address | |
| Addi | C35 | Fuit | Анаркеі | IF duitess | |
| | | | | | |
| | | | | | |
| | | | | | |
| To ad | ld a target p | ortal, click Discover | Portal. | Discover Portal | |
| To re | move a targ | et portal, select the | address above and | <u>R</u> emove | |
| ulen | cick Remove | | | | |
| | | | | | |
| The s | ervers system is rea | istered on the follow | wing iSNS servers: | Refresh | |
| Name | 2 | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| To ad | ld an iSNS se | rver, dick Add Serv | /or | Add Server | |
| Touc | | | | <u>ng</u> a och chini | |
| then | To remove an iSNS server, select the server above and then dick Remove. | | | Remove | |
| | | | | | |
| | | | | | 1 |
| More | e about Disco | overy and iSNS | | | |
| | | | | | |
| | | | | | |
| | | | ок | Cancel Apply | |
| | | | | | |

点击"发现门户(Discover Portal)"按钮,弹出"发现目标器门户(Discover Target Portal)"对话框。

| Discover Target Portal | × |
|---|---|
| Enter the IP address or DNS name want to add. | and port number of the portal you |
| To change the default settings of t the Advanced button. | he discovery of the target portal, dick |
| IP address or DNS name: | Port: (Default is 3260.) |
| 192.168.0.113 | 3260 |
| Advanced | QK <u>C</u> ancel |

| Enter the IP address or DNS name want to add. | and port number of the portal you |
|--|---|
| To always a bloc da fai da anatinana a fa | he discovery of the target portal, dick |
| the Advanced button. | ne albeerer y er ere earget per eary eres |
| IP address or DNS name: | Port: (Default is 3260.) |

输入"iStorage Server 的 IP 地址或 NDS 名称和端口"。 点击"OK"按钮添加。 选择"目标器(Targets)"页面。

| iSCSI Initiator Properties | | | X |
|---|------------|--------------------|---|
| Targets Discovery Favorite Targets Volumes and Devices | RADIU | S Configuration | |
| Quick Connect To discover and log on to a target using a basic connection, t DNS name of the target and then click Quick Connect. | type the I | IP address or | |
| Target: | | Quick Connect | |
| Discovered targets | | <u>R</u> efresh | |
| Name | Status | | |
| ign, 2006-03.com, kernsafe: KernStorage, Generic | Inactive | | |
| ign, 2006-03.com, kernsafe: KernStorage, Genericpartner | Inactive | | |
| ign, 2006-03.com.kernsafe:KernStorage.Quorum | Inactive | | |
| ign.2006-03.com.kernsafe:KernStorage.Quorumpartner | Inactive | | |
| To connect using advanced options, select a target and then click Connect. | | Connect | |
| To completely disconnect a target, select the target and then click Disconnect. | | <u>D</u> isconnect | |
| For target properties, including configuration of sessions, select the target and click Properties. | | Properties | |
| For configuration of devices associated with a target, select the target and then click Devices. | | De <u>v</u> ices | |
| More about basic iSCSI connections and targets | | | |
| ОК | Can | cel <u>Apply</u> | |

选择刚添加的目标器,然后点击"连接(Connect)"按钮。

| Connect To Target | × | | |
|---|---|--|--|
| Target name: | | | |
| iqn.2006-03.com.kernsafe:KernStorage.Quorum | | | |
| Add this connection to the list of Favorite Targets. This will make the system automatically attempt to restore the connection every time this computer restarts. | | | |
| Enable multi-path | | | |
| Advanced OK Cancel | | | |
| Connect To Target | × | | |
| Target name: | | | |
| iqn.2006-03.com.kernsafe:KernStorage.Quorumpartner | | | |
| Add this connection to the list of Favorite Targets. This will make the system automatically attempt to restore the connection every time this computer restarts. | | | |
| Enable multi-path | | | |
| Advanced OK Cancel | | | |
| Connect To Target | × | | |
| Target name: | | | |
| iqn.2006-03.com.kernsafe:KernStorage.Generic | | | |
| Add this connection to the list of Favorite Targets. This will make the system automatically attempt to restore the connection every time this computer restarts. | | | |
| ☑ Enable multi-path | | | |
| Advanced OK Cancel | | | |

| Connect To Target | × |
|--|----------------------------------|
| Target name: | |
| iqn.2006-03.com.kernsafe:KernStorage.Generi | cpartner |
| Add this connection to the list of Favorite Tar This will make the system automatically attem connection every time this computer restarts | rgets. npt to restore the |
| I Enable multi-path | |
| <u>A</u> dvanced | OK Cancel |

保持"将此连接添加到最喜欢的目标器列表(Add this connection to the list of Favorite Targets)"的 选择。

点击"OK"按钮继续。

如果成功的话,登录的目标器将会显示在列表中。

| CSI Initiator P | roperties | | | | | > |
|-----------------------------------|--|----------------------------|---------|------------|------------|---|
| Targets Disco | very Favorite Targets Volum | es and Device | s RAD | OIUS Cor | figuration | |
| Quick Connect | | | | | | |
| To discover an DNS name of | nd log on to a target using a bas the target and then click Quick C | ic connection, Connect. | type th | ne IP addr | ess or | |
| Target: | | | | Quick C | ionnect | |
| Discovered tar | gets | | | Re | fresh | |
| Name | | | Statu | JS | | |
| ian. 2006-03. | com.kernsafe:KernStorage.Gen | eric | Conn | ected | | |
| ign. 2006-03. | com.kernsafe:KernStorage.Gen | ericpartner | Conn | ected | | |
| ign. 2006-03. | com.kernsafe:KernStorage.Quo | rum | Conn | ected | | |
| ign 2006-03 | com kernsafe KernStorage Oun | rumpartner | Conn | ected | | |
| To connect us click Connect. | ing advanced options, select a t | arget and the | n | Cor | nnect | |
| To completely then click Disc | disconnect a target, select the onnect. | target and | | Disc | onnect | |
| For target pro select the targ | perties, including configuration get and click Properties. | of sessions, | | Prope | erties | |
| For configuration the target and | tion of devices associated with a d then click Devices. | target, selec | t | Dev | ices | |
| More about ba | sic iSCSI connections and target | <u>s</u> | | | | |
| | | ОК | с | ancel | Apply | |

启用多路径支持

点击"开始 - >管理工具 - >MPIO(Start->Administrative Tools->MPIO)", 启动 MPIO 管理器。进入 "发现多路径(Discover Multi-Paths)"选项卡,选择"为 iSCSI 设备添加支持(Add support for iSCSI devices)"。

| PIO Properties | |
|--|------------------------------------|
| MPIO Devices Discover Multi-Paths | DSM Install Configuration Snapshot |
| SPC-3 compliant | |
| Device Hardware Id | 1 |
| ✓ Add support for ISCSI devices | |
| ······································ | Add |
| Others | |
| | |
| | Add |
| More information on discovery of m | ultipathed devices |
| | |

点击"添加(**Add**)"按钮。 Windows 会提示你重新启动服务器。



点击"是的(Yes)"按钮,重启服务器。

启动"Windows 计算机管理控制台(Windows Computer Management Console)"

| Server Manager | |
|---|--|
| File Action View Help | |
| | |
| Image: Server Manager (08NODE 1) Image | Page File, Crash Dump, Pri m, Active, Primary Partition |
| Basic 4.00 GB 4.00 GB 4.00 GB Help 4.00 GB Gibisk 2 Basic Basic 1021 MB Offline 1021 MB Help 1021 MB Unallocated Primary partition | |

磁盘1和磁盘2离线,我们不应使这两个磁盘联机。

安装故障转移群集服务

启动"Windows 服务器管理器控制台(Windows Server manager Console)"

| 📕 Server Manager | | | _ | . 8 × |
|--|---|--|--|-------|
| <u>File Action View H</u> elp | | | | |
| ♦ ↓ | | | | |
| Server Manager (08NODE1) Construction Configuration Confi | Server Manager (08NODE1) Get an overview of the status of | this server, perform top management tasks, and add or remo | ove server roles and features. | |
| | Server Summary | | Server Summary Help | |
| | Computer Information Full Computer Name: Domain: Local Area Connection: Local Area Connection 2: Remote Desktop: Server Manager Remote Management: Product ID: Do not show me this console at logo | 08Node 1.KernSafe.Local KernSafe.Local IPv4 address assigned by DHCP, IPv6 enabled 192.168.1.102, IPv6 enabled Disabled Disabled Not activated | Activate Windows Change System Properties View Network Connections Configure Remote Desktop Configure Server Manager Remote Management | |
| | Security Information Windows Firewall: Windows Updates: Last checked for updates: Last installed updates: IE Enhanced Security Configuration (ESC): Last Refresh: Today at 10:57 PM Configurence | Domain: On, Public: On Not configured Never Never Off for Administrators Off for Users | Go to Windows Firewall Configure Updates Check for New Roles Run Security Configuration Wizard Configure IE ESC | |
|]] | J | | | |

从左侧的树视图中选择"功能(Features)"节点。



点击"添加功能(Add Features)"链接,弹出"添加功能向导(Add Features Wizard)"。

| Add Features Wizard | | X |
|---|---|--|
| Select Features | | |
| Features Confirmation Progress Results | Select one or more features to install on this server. Eetures: Description: Image: | ring allows multiple ctogether to provide y of services and allover Clustering is file and print services, nail applications. |

选择"故障转移群集(Failover Clustering)"。

点击"下一步(Next)"按钮继续。

| Add Features Wizard | | × |
|---|--|---|
| Confirm Installa | tion Selections | |
| Features Confirmation Progress Results | To install the following roles, role services, or features, dick Install. Informational message below Initial the following roles, role services, or features, dick Install. Initial the following roles, role services, or features, dick Install. Install the following roles, role services, or features, dick Install. Install the following roles, role services, or features, dick Install. Print, e-mail, or save this information < | _ |

点击"安装(Install)"按钮,安装"故障转移群集(Failover Clustering)"功能。 故障转移群集安装过程继续。

| Add Features Wizard | | | | |
|---|------------|--|--|--|
| Installation Progr | ress | | | |
| Features Confirmation Progress Results | Testalling | | | |
| | | | | |

如果成功的话,向导完成并如下图显示。

| Add Features Wizard | | | × |
|---|---|--|---|
| Installation Res | ults | | |
| Features Confirmation Progress Results | The following roles, role services, o | r features were installed successfully: is not enabled. To ensure that your newly-installed role or feature is on Windows Update in Control Panel. | |
| | Failover Clustering | Installation succeeded | |
| | | | |
| | Print, e-mail, or save the installation | <u>n report</u> | |
| | | < Previous Next > Close Cancel | |

点击"关闭(Close)"按钮。

配置故障转移群集

验证配置

请注意创建群集时此步骤并非必须的,但它确保了配置适合于故障转移群集。

在节点1和节点2的计算机上开启"Windows 故障转移群集管理器(Windows Failover Cluster Manager)"控制台。



点击"验证配置...(Validate a Configuration)"链接。

弹出"验证配置向导(Validate a Configuration Wizard)"。

👹 Validate a Configuration Wizard

| Before Y | ou Begin |
|--|--|
| Before You Begin Select Servers or a Cluster Testing Options Confirmation Validating Summary | This wizard runs validation tests to determine whether this configuration of servers and attached storage is set up correctly to support failover. A cluster solution is supported by Microsoft only if the complete configuration (servers, network, and storage) passes all tests in this wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2008 R2". If you want to validate a set of unclustered servers, you need to know the names of the servers. Important: the storage connected to the selected servers will be unavailable during validation tests. If you want to validate an existing failover cluster, you need to know the name of the cluster or one of its nodes. You must be a local administrator on each of the servers you want to validate. To continue, click Next. |
| | More about preparing your hardware for validation More about cluster validation tests □ Do not show this page again Next > Cancel |

×

点击"下一步(Next)"按钮继续。 添加节点到群集。

| 👹 Validate a Configu | ration Wizard | | × |
|--|---|---|---|
| Select Se | ervers or a Cluster | | |
| Before You Begin Select Servers or a Cluster | To validate a set of server To test an existing cluster, | rs, add the names of all the servers. , add the name of the cluster or one of its nodes. | |
| Testing Options Confirmation Validating Summary | <u>E</u> nter name: <u>S</u> elected servers: | | <u>B</u> rowse <u>A</u> dd <u>R</u> emove |
| | | < Previous | Cancel |

点击"浏览(Browse)"按钮,弹出"选择计算机(Select Computers)"对话框。

| Select Computers | | <u>? ×</u> |
|---|----|---------------------|
| Select this object type: | | |
| Computers | | Object Types |
| From this location: | | |
| KemSafe.Local | | Locations |
| Enter the object names to select (<u>examples</u>): | | |
| | | <u>C</u> heck Names |
| | | |
| <u>A</u> dvanced | OK | Cancel |

点击"高级...(Advanced...)"按钮。

| Select Compute | ers | | | ? × |
|----------------------|----------------|---|---|-----------------|
| Select this object | t type: | | | |
| Computers | | | | Object Types |
| From this location | n: | | | |
| KemSafe.Local | | | | Locations |
| Common Queri | es | | | |
| N <u>a</u> me: | Starts with 💌 | | | <u>C</u> olumns |
| Description: | Starts with 💌 | | | Find Now |
| Disa <u>b</u> led | accounts | | | Stop |
| 🔲 Non e <u>x</u> pir | ring password | | | |
| Days since la | st logon: | • | | 9 7 |
| Search results: | | | 0 | K Cancel |
| Name (RDN) | In Folder | | | |
| None (HEH) | KemSafe.Local/ | · | | |
| E 08NODE1 | KemSafe.Local/ | | | |
| NODE2 | KemSafe.Local/ | · | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| J | | | | |

选择"08NODE1"项目,然后点击"OK"按钮添加。

| Select Computers | | ?× |
|--|----|----------------------|
| Select this object type: | | |
| Computers | | <u>O</u> bject Types |
| From this location: | | |
| KemSafe.Local | | Locations |
| Enter the object names to select (examples): | | |
| 08NODE1 | | Check Names |
| | | |
| 1 | | |
| <u>A</u> dvanced | ОК | Cancel |

点击"OK"按钮。

| 👹 Validate a Configu | ration Wizard | × | | | |
|--|--|---|--|--|--|
| Select Servers or a Cluster | | | | | |
| Before You Begin Select Servers or a Cluster Testing Options Confirmation Validating Summary | To validate a set of servers, add the names of all the servers. To test an existing cluster, add the name of the cluster or one of its nodes. Enter name: Enter name: Browse Selected servers: 08node1.kemsafe.local Add Remove Add Remove | | | | |
| | < Previous Next > Cancel | | | | |

点击"浏览...(Browse...)"按钮,并以相同的方法添加"08NODE2"。

| 👹 Validate a Configu | ration Wizard | | × |
|--|---|---|--|
| Select Se | ervers or a Cluster | | |
| Before You Begin Select Servers or a Cluster Testing Options Confirmation Validating Summary | To validate a set of serve To test an existing cluster Enter name: Selected servers: | ers, add the names of all the servers. r, add the name of the cluster or one of its nodes. 09node1.kemsafe.local 08node2.kemsafe.local | <u>B</u> rowse <u>Add</u> <u>R</u> emove |
| | | < <u>P</u> revious <u>N</u> ext > | Cancel |

点击"下一步(Next)"按钮继续。
👹 Validate a Configuration Wizard

| 🖞 Validate a Configuration Wizard | | |
|-----------------------------------|--|---|
| Testing C | Options | |
| Before You Begin | Choose between running all tests or running selected tests. | |
| Cluster | The tests include Inventory tasks, Network tests, Storage tests, and System Configuration tests. | |
| Testing Options | Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in this wizard. In addition, all hardware components in the cluster solution must be "Certified | |
| Confirmation | for Windows Server 2008 R2". | |
| Validating | | |
| Summary | | |
| | Run <u>all</u> tests (recommended) | |
| | Run only tests I select | |
| | More about cluster validation tests | |
| | | |
| | < <u>P</u> revious <u>N</u> ext > Cancel |] |

选择"运行所有测试(推荐)Run all tests (recommended)"

点击"下一步(Next)"按钮继续。

| 👹 Validate a Configu | ration Wizard | | × |
|--|---|-------------------|----------|
| Confirmat | tion | | |
| Before You Begin Select Servers or a Cluster | You are ready to start validation. Please confirm that the following settings are correct: | | |
| Testing Options | Servers to Test | | |
| Confirmation | 08node1.kernsafe.local | | |
| Validating | 08node2.kernsafe.local | | |
| Summary | | | |
| | Tests Selected by the User | Category | |
| | List BIOS Information | Inventory | |
| | List Environment Variables | Inventory | |
| | List Fibre Channel Host Bus Adapters | Inventory | • |
| | To continue, click Next. More about cluster validation tests | | |
| | | < Previous Next > | Cancel |

点击"下一步(Next)"按钮继续。

如果成功的话,包括"SCSI -3 持久保留(SCSI-3 Persistent Reservation)"在内的所有测试是有效的,如下图所示。

| 👹 Validate a Configu | iration Wizard | × |
|--|--|-----|
| Summary | / | |
| Before You Begin Select Servers or a Cluster | Testing has completed successfully and the configuration is suitable for clustering. | |
| Testing Options | | • |
| Confirmation Validating | Validate Multiple Arbitration Success | |
| Summary | Validate SCSI device Vital Product Data (VPD) | |
| | Validate SCSI-3 Persistent Reservation Success | |
| | Validate Simultaneous Failover Success | - |
| | To view the report created by the wizard, click View Report. To close this wizard, click Finish. <u>Create the cluster now using the validated normalized to the cluster now using the validated normalized to the cluster now using the validated normalized to the cluster normalized </u> | ort |
| | More about cluster validation tests | |
| | <u> </u> | h |

点击"完成(Finish)"按钮,完成配置验证。

创建故障转移群集

在"故障转移群集管理器(Failover Cluster Manager)"的"动作(Actions)"面板上点击"创建群集...

(Create a Cluster...) "项目。



弹出"创建群集向导(Create Cluster Wizard)"

🚏 Create Cluster Wizard

| Before Y | ou Begin |
|---|---|
| Before You Begin Select Servers Validation Warning Access Point for Administering the Cluster Confirmation Creating New Cluster Summary | This wizard creates a cluster, which is a set of servers that work together to increase the availability of clustered services and applications. If one of the servers fails, another server begins hosting the clustered services and applications (a process known as failover). Before you run this wizard, we strongly recommend that you run the Validate a Configuration wizard to ensure that your hardware and hardware settings are compatible with failover clustering. Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in the Validate a Configuration wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2008 R2". You must be a local administrator on each of the servers you want to include in the cluster. To continue, click Next. More about Microsoft support of cluster solutions that have passed validation tests <u>More about the name and IP address information needed for a new cluster</u> Do not show this page again |

×

点击"下一步(Next)"按钮继续。

| 🚏 Create Cluster Wiz | zard | | × |
|----------------------|----------------------------|--|--------------|
| Select Se | ervers | | |
| Before You Begin | Add the names of all the s | ervers that you want to have in the cluster. You must add at least one serve | я г . |
| Select Servers | | | |
| Validation Warning | | | |
| Access Point for | Enter server name: | Browse | e |
| Cluster | Selected servers: | Add | |
| Confirmation | | Remo | |
| Creating New Cluster | | <u></u> | |
| Summary | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | < Previous Next > Cance | 1 |

点击"浏览...(Browse...)"按钮,然后点击"添加(Add)"按钮,添加节点到群集。

| 柠 Create Cluster Wiz | zard | | | × |
|---|---|---|-------------------------------------|-------------------------------|
| Select Se | ervers | | | |
| Before You Begin Select Servers Access Point for Administering the | Add the names of all the | servers that you want to have | in the cluster. You must add at lea | ast one server. |
| Cluster Confirmation Creating New Cluster Summary | Enter server name: Selected servers: | 08node 1.kemsafe.local 08node2.kemsafe.local | | <u>A</u> dd <u>R</u> emove |
| | | | < <u>P</u> revious <u>N</u> ext > | Cancel |

点击"下一步(Next)"按钮继续。 为群集指定 IP 地址。

| 🚏 Create Cluster Wiz | zard | × |
|--|--|---|
| Access P | Point for Administering the Cluster | |
| Before You Begin Select Servers Access Point for Administering the Cluster Confirmation | Type the name you want to use when administering the cluster. Cluster Name: KemSafeCluster One or more DHCP IPv4 addresses were configured automatically. One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address. | |
| Creating New Cluster | Networks Address | |
| Summary | 192.168.1.0/24 192.168.1.20 | |
| | More about the administrative Access Point for a cluster < Previous Next > Cancel |] |

在"地址(Address)"栏里输入 IP 地址。

点击"下一步(Next)"按钮继续。

| 🚏 Create Cluster Wiz | zard | | × |
|---|--|---|---------------|
| Confirma | tion | | |
| Before You Begin Select Servers | You are ready to create a The wizard will create yo | a cluster. ur cluster with the following settings: | |
| Access Point for Administering the Cluster Confirmation Creating New Cluster Summary | Cluster: Node: Node: IP Address: IP Address: To continue, click Next. | KernSafeCluster 08node1.kernsafe.local 08node2.kernsafe.local DHCP address on 192.168.0.0/24 192.168.1.20 | * |
| | | < <u>P</u> revious | Next > Cancel |

点击"下一步(Next)"按钮继续,如需要任何更改,点击"上一步(Previous)"按钮。 如果成功的话,"创建群集向导(Create Cluster Wizard)"完成,如下图所示。

| 🍟 Create Cluster Wiz | zard | | × |
|---|---|---|---------------------|
| Summary | , | | |
| Before You Begin Select Servers Access Point for Administering the | You have suc | cessfully completed the Create Cluster Wizard. | |
| Cluster Confirmation Creating New Cluster Summary | Cluster: Node: | Create Cluster KernSafeCluster 08node1.kernsafe.local | |
| | Node: Quorum: | 08node2.kernsafe.local Node and Disk Majority (Cluster Disk 2) | • |
| | To view the report crea To close this wizard, cl | ated by the wizard, click View Report. ick Finish. | <u>V</u> iew Report |
| | | | <u>F</u> inish |

点击"完成(Finish)"按钮继续。

| Server Manager | | | | | <u>_ </u> |
|---|------------------------------|---------------------|---|------------|--|
| File Action View Help | | | | | |
| 🗢 🔿 🖄 🖬 🚺 🖬 | | | | | |
| Server Manager (08NODE1) | Storage | | | Actions | |
| 🕀 🔁 Roles | | | | Storage | |
| E 🚮 Features | Storage | Recent Cluster Eve | ents: 🔼 <u>Critical:4, Error: 70, Waming:</u> | | |
| E Realover Cluster Manager | Summary of St | torage | | Add a disk | |
| KernsareCluster.Kerns E Services and applic | anna, | | | View | • |
| | | | | a Refresh | |
| 📇 Storage | Storage: | Total Capacity: | Available Capacity: | | |
| 🕀 🏨 Networks | 2 Total Disks - 2 online | Total: 4.99 GB | Total: 4 GB | Help | |
| Cluster Events | 1 Available Disks - 1 online | Free Space: 4.9 GB | Free Space: 3.95 GB | | |
| | T In Use Disks - Fonline | Fercent Free: 56.2% | Fercent Free: 36.6% | | |
| | | | | | |
| Windows Server Backup | | | | | |
| Disk Management | Disk | Status | Current Owner | | |
| _ | Disk Witness in Quorun | n | | | |
| | R Churter Diele 1 | (Online | 09Nodo1 | | |
| | Volume: (E) | File System: NTES | 1.021 MB (95.7% free.) | | |
| | volume. (F) | File System. NTFS | 1,021 MD (55.7% Hee) | | |
| | Available Storage | | | | |
| | 🗆 📼 Cluster Disk 2 | Online | 08Node1 | | |
| | Volume: (E) | File System: NTFS | 4 GB (98.8% free) | | |
| | | | (| | |
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| | 1 | | | | |
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现在已完成群集创建、扩大群集节点并选择存储节点,如下图所示,两个群集磁盘显示联机。

联系方式

| 支持: | support@kernsafe.com atom@kernsafe.com |
|--------|---|
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| 产品页面: | http://www.kernsafe.cn/product/istorage-server.aspx |
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