

Windows Server 2003 iSCSI Host to MDS/IPS-8配置示例

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簡介

Cisco的iSCSI驅動程式位於伺服器上，是iSCSI解決方案的關鍵元件。這些iSCSI驅動程式會攔截SCSI命令，將其封裝到IP資料包中，然後將其重定向到Cisco SN 5420、Cisco SN 5428、Cisco SN5428-2或Cisco MDS/IPS-8。本文檔提供了Solaris iSCSI主機到MDS/IPS-8的配置示例。

開始之前

慣例

本文中使用的Cisco MDS 9000是指MDS 9000系列(MDS 9506、MDS 9509、MDS 9216)中的任何光纖通道(FC)交換機產品。

IPS刀片指的是IP儲存服務模組。如需文件慣例的詳細資訊，請參閱 [思科技術提示慣例](#)。

必要條件

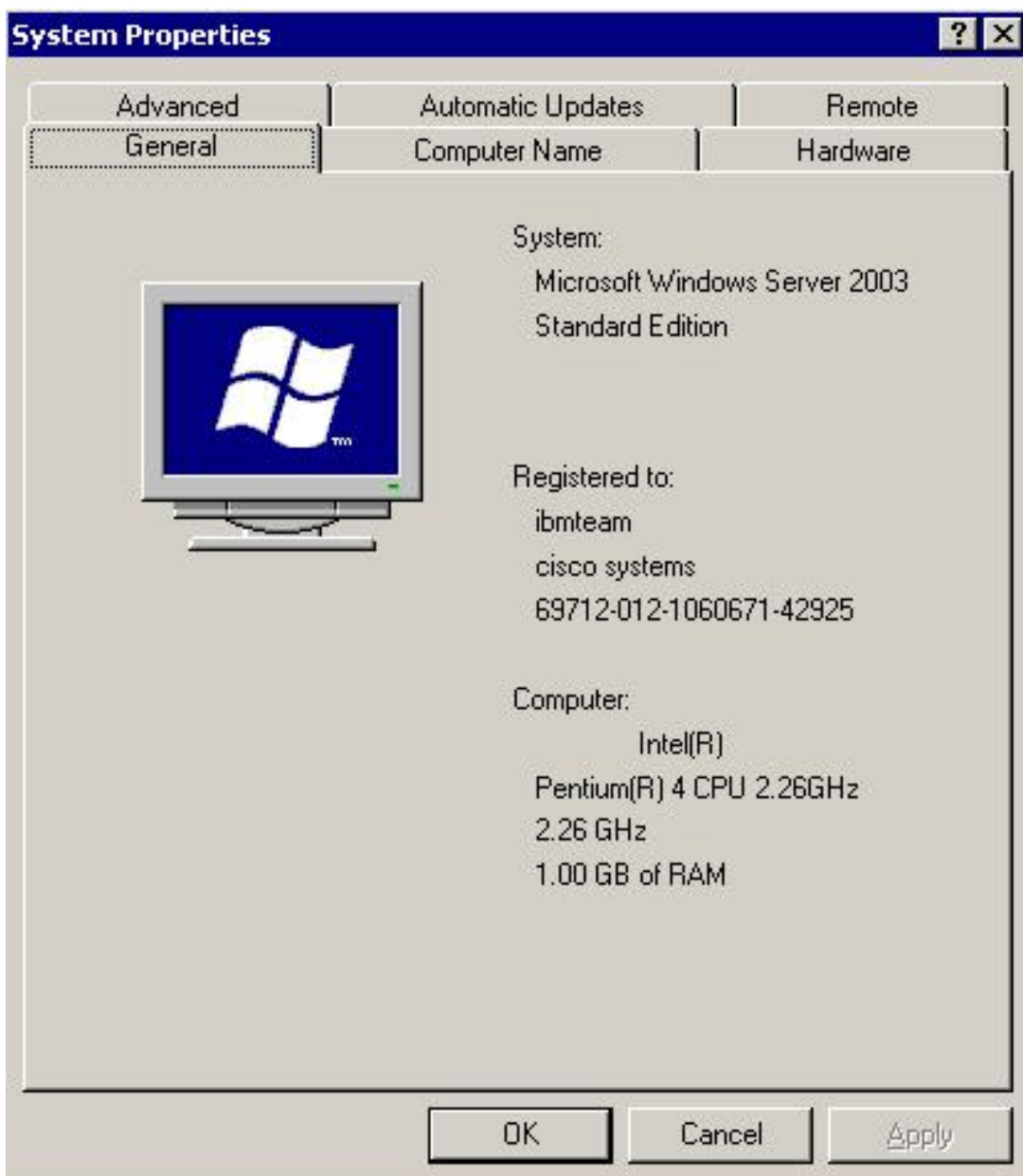
安裝與Windows Server 2003版本相容的iSCSI驅動程式。最新版本的驅動程式可以在Cisco.com上的[Cisco iSCSI Driver for Windows Server 2003](#) (僅限註冊客戶) 頁面上找到。README.txt檔案包含在驅動程式zip(tar)檔案中。自述檔案包含有關許可證協定、驅動程式安裝和配置說明以及驅動程式體系結構技術概述的資訊。

用於Microsoft Windows 2003的Cisco iSCSI驅動程式需要Windows Server 2003 Enterprise Edition、Standard Edition或Web Edition。

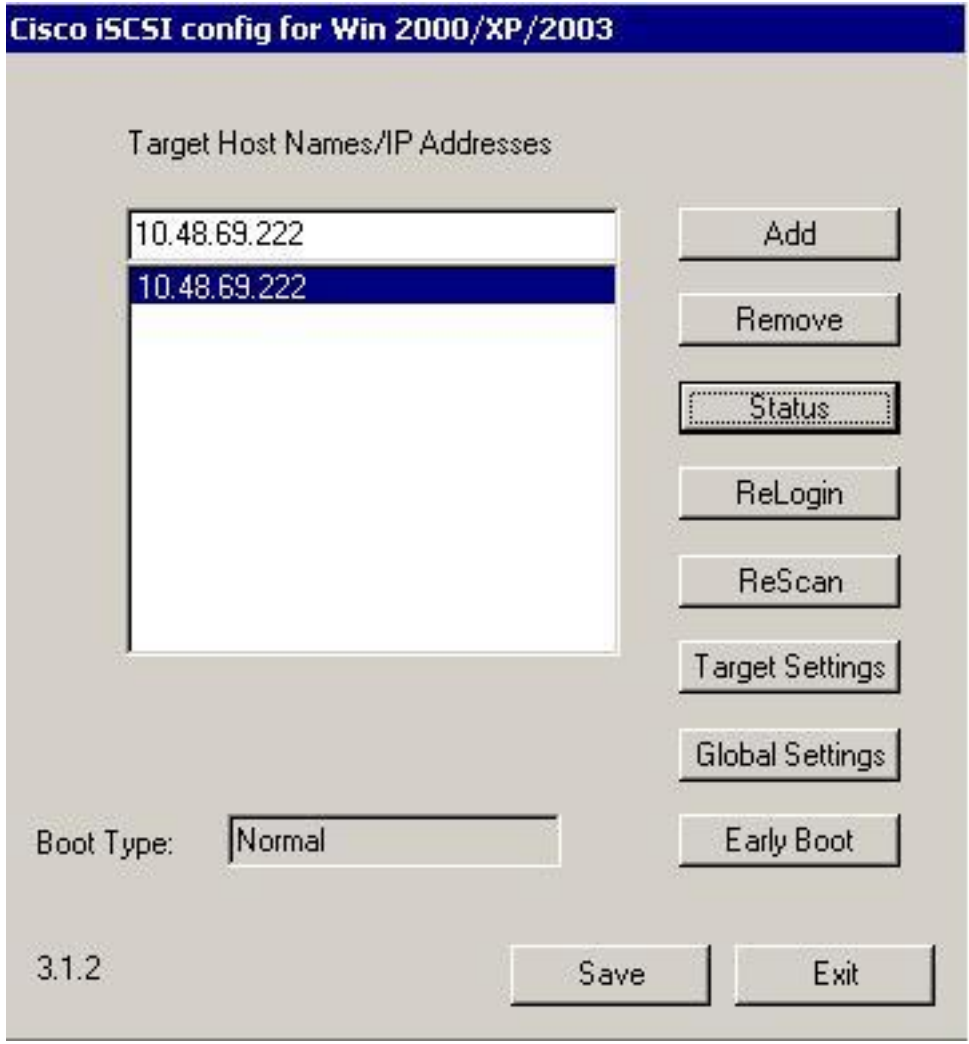
採用元件

本檔案中的資訊是根據以下軟體和硬體版本。

- 使用Windows Server 2003 Standard Edition的主機



- 用於Windows Server 2003的Cisco iSCSI驅動程式3.1.2。在「iSCSI配置」視窗的左下角可以看到iSCSI驅動程式版本。



- Cisco MDS 9216與軟體版本1.2(1a)

```

canterbury# show module
Mod  Ports  Module-Type                Model                Status
---  ---
1    16     1/2 Gbps FC/Supervisor    DS-X9216-K9-SUP     active *
2     8     IP Storage Services Module DS-X9308-SMIP       ok

Mod  Sw          Hw          World-Wide-Name(s) (WWN)
---  ---
1    1.2(1a)    1.0         20:01:00:0c:30:6c:24:40 to 20:10:00:0c:30:6c:24:40
2    1.2(1a)    0.3         20:41:00:0c:30:6c:24:40 to 20:48:00:0c:30:6c:24:40

Mod  MAC-Address(es)                Serial-Num
---  ---
1    00-0b-be-f8-7f-08 to 00-0b-be-f8-7f-0c  JAB070804QK
2    00-05-30-00-ad-e2 to 00-05-30-00-ad-ee  JAB070806SB

```

```

* this terminal session
Canterbury#show ver
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.

```

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Software

```
BIOS:      version 1.0.8
loader:    version 1.1(2)
kickstart: version 1.2(1a)
system:    version 1.2(1a)
```

```
BIOS compile time:      08/07/03
kickstart image file is: bootflash:/k121a
kickstart compile time: 9/1/2003 17:00:00
system image file is:   bootflash:/s121a
system compile time:    9/1/2003 17:00:00
```

Hardware

```
RAM 960080 kB
```

```
bootflash: 500736 blocks (block size 512b)
slot0:      0 blocks (block size 512b)
```

```
Canterbury uptime is 1 days 12 hours 3 minute(s) 29 second(s)
```

```
Last reset at 39578 usecs after Mon Oct 13 07:32:38 2003
Reason: Reset Requested by CLI command reload
System version: 1.2(1a)
```

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除 (預設) 的組態來啟動。如果您在即時網路中工作，請確保在使用任何命令之前瞭解其潛在影響。

背景理論

IP儲存模組為IP主機提供對FC儲存裝置的訪問。IPS模組是DS-X9308-SIMP。它提供透明的SCSI路由。使用iSCSI協定的IP主機可以透明地訪問FC網路上的SCSI(FCP)目標IP主機通過TCP/IP連線將封裝在iSCSI協定資料單元(PDU)中的SCSI命令傳送到MDS 9000 IPS埠。在IPS模組上，連線以正確配置的千兆乙太網(GE)介面的形式提供。IPS模組使您能夠建立虛擬iSCSI目標並將它們對映到FC SAN中可用的物理FC目標。它將FC目標呈現給IP主機，就像物理目標在本地連線到IP網路一樣。

每個需要通過IPS模組訪問儲存的iSCSI主機都需要安裝相容的iSCSI驅動程式。使用iSCSI協定，iSCSI驅動程式允許iSCSI主機通過IP網路傳輸SCSI請求和響應。從主機作業系統的角度來看，iSCSI驅動程式似乎是SCSI傳輸驅動程式，類似於主機中外圍通道的FC驅動程式。從儲存裝置的角度來看，每個IP主機都顯示為FC主機。

將SCSI從IP主機路由到FC儲存裝置包含以下主要操作：

- 通過IP網路在主機和IPS模組之間傳輸iSCSI請求和響應。
- 在IP網路上的主機和FC儲存裝置之間路由SCSI請求和響應 (將iSCSI轉換為FCP，反之亦然)。此路由由IPS模組執行。
- 在IPS模組和FC儲存裝置之間傳輸FCP請求或響應。

預設情況下，IP儲存模組不會將FC目標匯入iSCSI。在IPS模組使FC目標可用於iSCSI啟動器之前，必須配置動態或靜態對映。當兩者都配置時，靜態對映的FC目標具有已配置的名稱。在此配置中，您將看到靜態對映的示例。使用動態對映時，每次iSCSI主機連線到IPS模組時，都會建立一個新

的FC N埠，並為此N埠分配的nWWN和pWWN可能不同。如果需要在iSCSI主機每次連線到IPS模組時獲得相同的nWWN和pWWN，請使用靜態對映方法。可以在IPS模組上使用靜態對映來訪問智慧FC儲存陣列，這些儲存陣列具有基於啟動器的pWWN和/或nWWN的訪問控制和LUN對映/掩蔽配置。

您可以通過指定將向其通告靜態對映的iSCSI目標的IPS埠清單以及指定允許訪問它的iSCSI啟動器節點名稱清單來控制對各個靜態對映的iSCSI目標的訪問。基於FC分割槽的訪問控制和基於iSCSI的訪問控制是為iSCSI提供訪問控制的兩種機制。這兩種方法可以同時使用。在此配置中，允許特定VSAN的預設分割槽。IPS模組使用基於iSCSI節點名稱的訪問控制清單和基於FC分割槽的訪問控制清單，在iSCSI發現和iSCSI會話建立期間實施訪問控制。

- **iSCSI發現**：當iSCSI主機建立iSCSI發現會話並查詢所有iSCSI目標時，IPS模組僅返回該iSCSI主機根據訪問控制策略被允許訪問的iSCSI目標清單。
- **iSCSI會話建立**：當IP主機發起iSCSI會話時，IPS模組驗證指定的iSCSI目標（在會話登入請求中）是否為靜態對映目標，如果為true，則驗證是否允許IP主機的iSCSI節點名稱訪問目標。如果IP主機沒有存取許可權，則其登入會遭到拒絕。

IP儲存模組為此IP主機建立一個FC虛擬N埠（N埠可能已經存在），並為IP主機正在訪問的FC目標pWWN的FCID執行FC名稱伺服器查詢。它使用IP主機虛擬N埠的pWWN作為名稱伺服器查詢的請求者。因此，名稱伺服器對pWWN執行區域強制查詢並響應查詢。如果名稱伺服器返回FCID，則接受iSCSI會話。否則，登入請求將被拒絕。

設定

本節提供用於配置MDS 9216和Cisco iSCSI Driver for Solaris的資訊。

附註：要查詢有關本文檔中使用的命令的其他資訊，請使用[Cisco MDS 9000系列命令參考](#)和[Cisco MDS 9000系列軟體配置指南](#)。

網路圖表

本文檔使用下圖所示的網路設定。

Windows Server 2003
Cisco iSCSI driver 3.1.2



LAN connection
10.48.69.241/26

Catalyst 6500
VLAN 192

ge 2/5
10.48.69.222/26



Cisco MDS 9216
Software Version 1.2.(1a)

canterbury

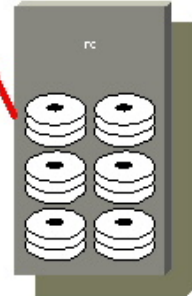
fc1/5

fc1/7



Seagate JBOD

wwn: 21:00:00:04:cf:db:3e:a7



IBM Shark 2105F20

Licensed Internal Code 1.5.2.114
wwn: 50:05:07:63:00:c4:94:4c

組態

本文檔使用如下所示的配置。

- Vuk(Windows Server 2003)
- 坎特伯里(MDS 9216)

Vuk(Windows Server 2003)

初始配置任務包括以下操作：

- 設定驅動程式將訪問的MDS 9000系列系統的iSCSI目標IP地址。
- 設定iSCSI目標身份驗證使用者名稱和密碼。
- 儲存iSCSI目標配置，並設定驅動程式的啟動型別。

要配置驅動程式，請執行以下步驟：

1. 以具有管理員許可權的使用者身份登入電腦。
2. 按一下**Start**，指向**Settings**，按一下**Control Panel**，然後按兩下**iSCSI Config**。**Iscsi Config**程式導致顯示Win 2000/XP/2003對話方塊的Cisco iSCSI配置。
3. 在Cisco iSCSI config for Win 2000對話方塊中，按如下方式配置MDS 9000系列系統中SCSI路由例項的IP地址：在「**Target Host Names/IP Addresses**」文本框中，鍵入MDS 9000系列系統中SCSI路由例項的IP地址。在此配置示例中，IP地址為10.48.69.222。按一下「**Add**」。IP地址顯示在目標主機名/IP地址文本框下方的顯示區域。

Cisco iSCSI config for Win 2000/XP/2003

Target Host Names/IP Addresses

10.48.69.222

10.48.69.222

Add

Remove

Status

ReLogin

ReScan

Target Settings

Global Settings

Boot Type: Normal

Early Boot

3.1.2

Save

Exit

4. 按一下儲存並退出。

5. 重新啟動電腦。

坎特伯里(Cisco MDS 9216)

```
vsan database
vsan 222 name ozden
!--- VSAN 222 has been used for iSCSI targets. vsan database vsan
222 interface fc1/5 !--- Seagate is connected to fc1/5. vsan 222
interface fc1/6 vsan 222 interface fc1/7 !--- IBM Shark is
connected to fc1/7. vsan 222 interface fc1/8 !--- System boot
variables. boot system bootflash:/s121a boot kickstart
bootflash:/k121a !--- IP configurations. ip domain-name cisco.com
ip name-server 144.254.10.123 ip default-gateway 10.48.69.129 ip
routing iscsi authentication none
```

```
!--- Identify the iSCSI initiator based on the IP address of your
host. !--- A static virtual N port is defined for each NIC or
network interface. !--- LUN-mapping and LUN-masking on the
storage device has to be done with the static pWWN !--- that you
have defined for the initiator. Refer to the Enterprise Storage
Server Specialist !--- (ESSS) screen capture in the Fabric
Manager and Device Manager Displays section !--- for more
information. iscsi initiator ip-address 10.48.69.241 static nWWN
22:01:00:0c:30:6c:24:42 static pWWN 21:03:00:0c:30:6c:24:42 !---
Targets via Vsan 222 are accesible by iSCSI initiators. vsan 222
!--- A virtual target has been defined for the JBOD. The target
has !--- been identified by it's pWWN. The target has been
advertised via !--- GE interface 2/5. Host 10.48.69.241 is the
only initiator. iscsi virtual-target name seagate pWWN
21:00:00:04:cf:db:3e:a7 fc-lun 0x0000 iscsi-lun 0x0000 advertise
```

```

interface GigabitEthernet2/5 initiator ip address 10.48.69.241
permit !--- A virtual target has been defined for the IBM Shark.
The target has been identified by the pWWN. !--- Do not specify
the LUN if you wish to map the entire FC target to an iSCSI
target. !--- In the virtual-target shark-lun, LUN-mapping options
have been used. FC-LUN 0x0000 has been !--- mapped to iSCSI-LUN
0x0000. It is also possible to map FC-LUN 0x0000 to a different
iSCSI-LUN number. iscsi virtual-target name shark-lun pWWN
50:05:07:63:00:c4:94:4c fc-lun 0x0000 iscsi-lun 0x0000 pWWN
50:05:07:63:00:c4:94:4c fc-lun 0x0001 iscsi-lun 0x0001 advertise
interface GigabitEthernet2/5 initiator ip address 10.48.69.241
permit line console exec-timeout 0 line vty exec-timeout 0 ntp
server 10.48.64.100 switchname canterbury
..
zone default-zone permit vsan 1
!--- Default zone policy is set to permit for VSAN 222. zone
default-zone permit vsan 222 interface GigabitEthernet2/5 ip
address 10.48.69.222 255.255.255.192 no shutdown ... interface
fc1/5 no shutdown interface fc1/6 interface fc1/7 no shutdown ...
interface mgmt0 ip address 10.48.69.156 255.255.255.192 !---The
iSCSI interface has to be set no shut. interface iscsi2/5 no
shutdown

```

驗證

本節提供的資訊可用於確認您的組態是否正常運作。

- **show zone status** — 顯示區域資訊。
- **show fcns database vsan 222** — 顯示特定VSAN的名稱伺服器資訊。
- **show flogi database vsan 222** -顯示特定VSAN的FLOGI伺服器資訊。
- **show vsan membership** — 顯示不同VSAN的介面資訊。
- **show iscsi initiator detail** — 顯示iSCSI啟動器資訊。
- **show iscsi initiator iscsi-session detail** — 顯示iSCSI啟動器會話的詳細資訊。
- **show iscsi initiator fcp-session detail** — 顯示iSCSI啟動器FCP會話的詳細資訊。
- **show ips stats tcp interface gigabitethernet 2/5 detail** — 顯示特定GE介面的TCP統計資訊。
- **show iscsi virtual-target configured** — 顯示已在MDS 9000上配置的iSCSI虛擬目標。
- **show iscsi initiator configured** — 顯示已在MDS 9000上配置的iSCSI啟動器。
- **show ips arp interface gigabitethernet 2/5** — 顯示特定GE介面的IPS arp資訊。
- **show scsi-target lun vsan 222** -顯示特定VSAN的SCSI裝置 (用於將FC-LUN對映到iSCSI-LUN) 。
- **show int iscsi 2/5** — 顯示iSCSI介面。
- **show iscsi stats iscsi 2/5** — 顯示iSCSI統計資訊。
- **show int gigabitethernet 2/5** — 顯示GE介面。
- **show ip route** — 顯示IP路由資訊。

疑難排解

本節提供的資訊可用於對組態進行疑難排解。

附註：要查詢有關IP儲存問題故障排除的其他資訊，請使用[Cisco MDS 9000系列故障排除指南](#)。

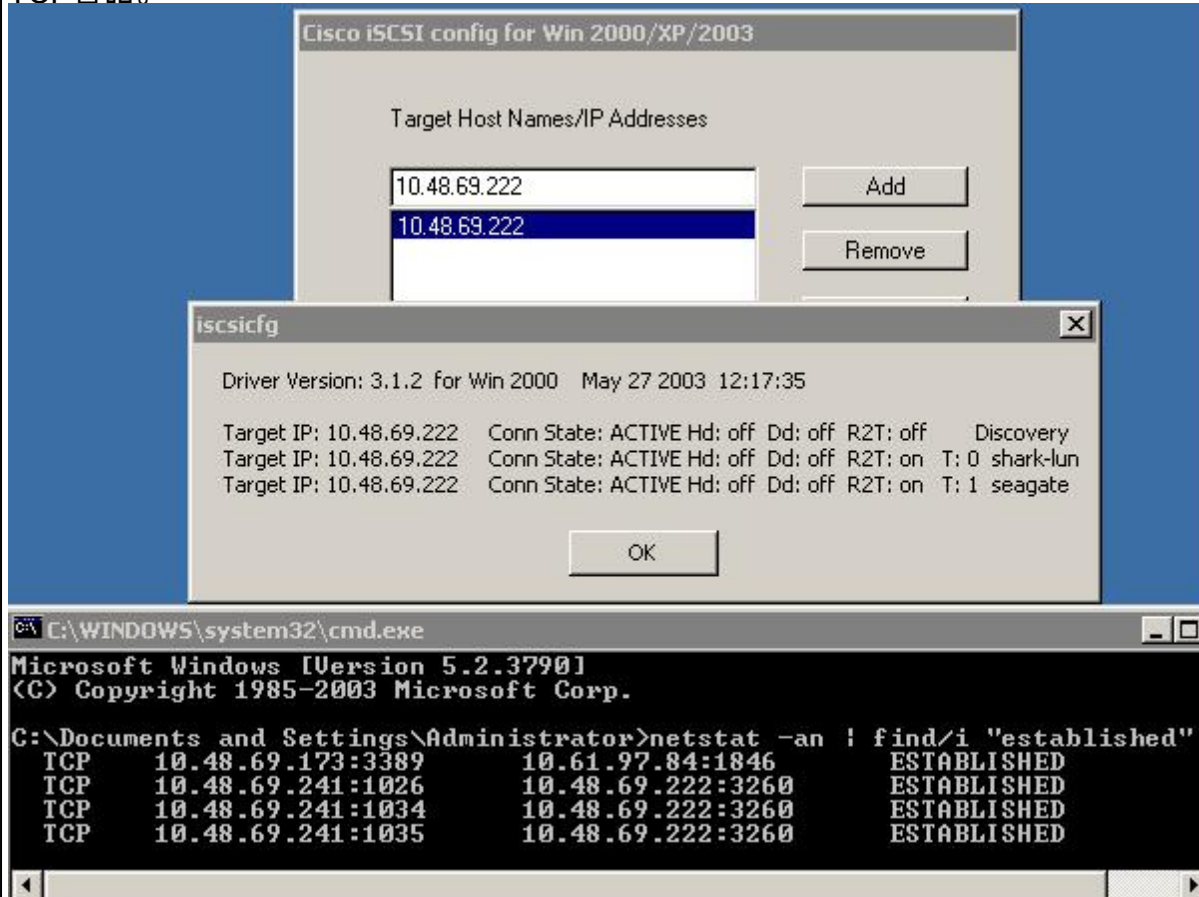
疑難排解程序

以下是與此組態相關的疑難排解資訊。

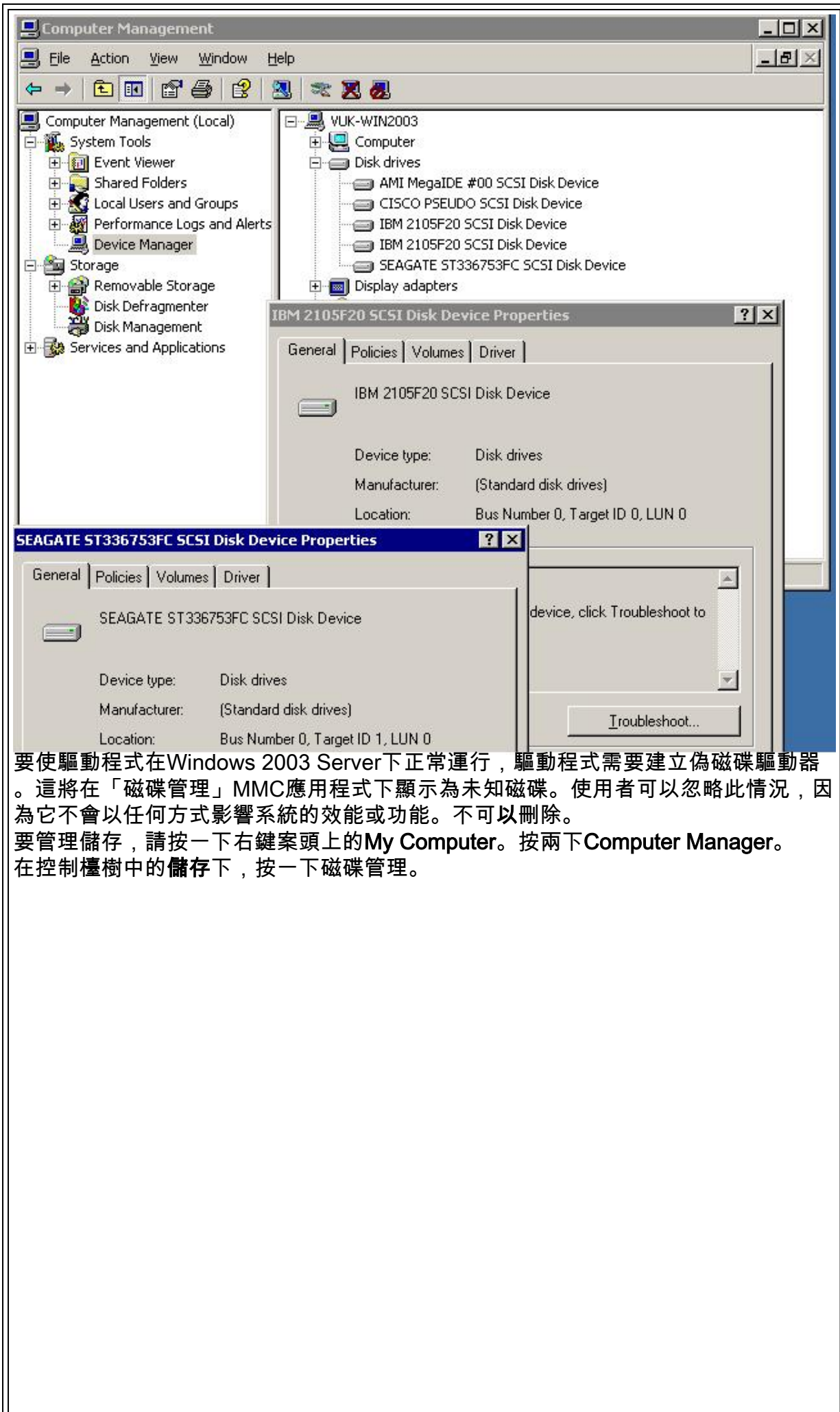
- 從Vuk顯示(Windows Server 2003)
- 來自Canterbury Cisco MDS 9216的顯示器

從Vuk顯示(Windows Server 2003)

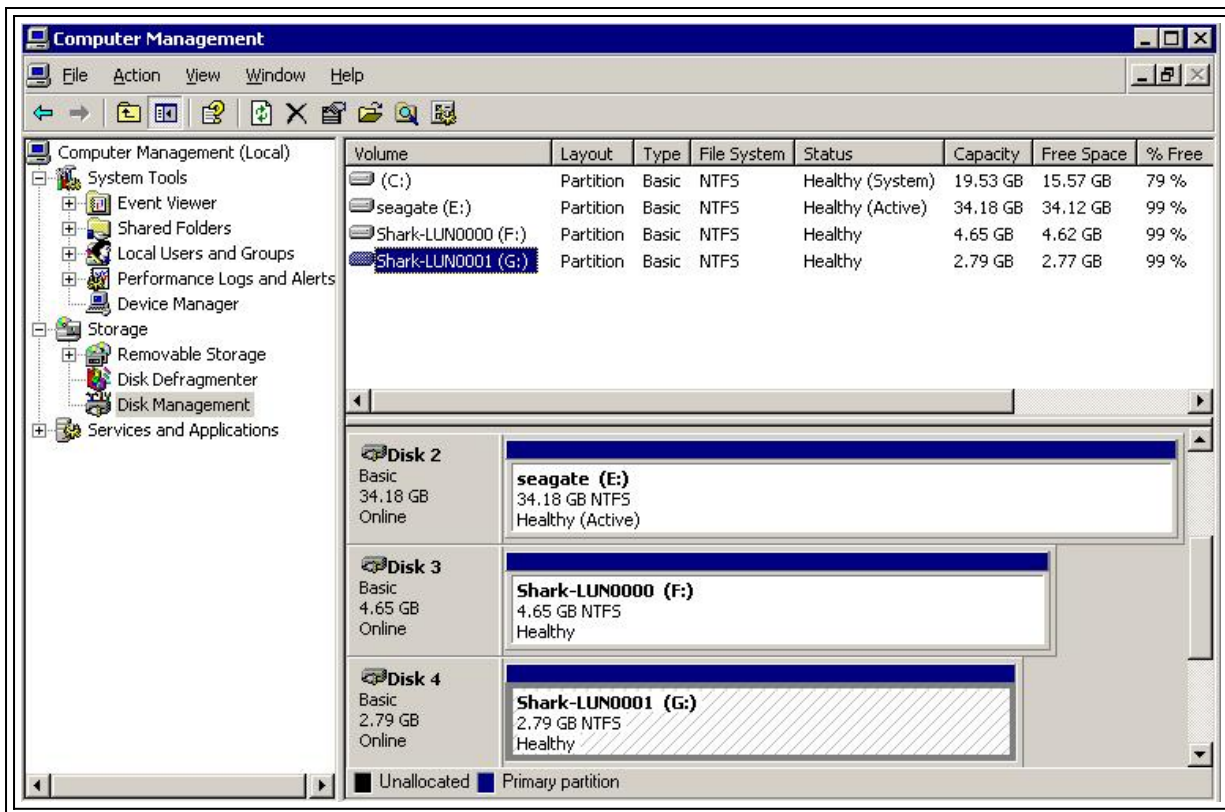
在Cisco iSCSI config視窗中，按一下**Status**以檢查主機是否成功登入到iSCSI目標。在命令列中，發出**netstat -an | find/i "established"**以檢視在10.48.69.222之間建立的TCP會話。



要檢視新磁碟，請在案頭上按一下右鍵**My Computer**。按兩下**Computer Manager**。在**System Tool**下的控制檯樹中，按一下**Device Manager**



要使驅動程式在Windows 2003 Server下正常運行，驅動程式需要建立偽磁碟驅動器。這將在「磁碟管理」MMC應用程式下顯示為未知磁碟。使用者可以忽略此情況，因為它不會以任何方式影響系統的效能或功能。不可以刪除。
要管理儲存，請按一下右鍵案頭上的**My Computer**。按兩下**Computer Manager**。在控制檯樹中的**儲存**下，按一下磁碟管理。



來自坎特伯雷的顯示器(Cisco MDS 9216)

```

canterbury#show vsan membership
vsan 1 interfaces:
  fc1/3 fc1/10 fc1/12 fc1/13 fc1/14 fc1/16

vsan 222 interfaces:
  fc1/5 fc1/6 fc1/7 fc1/8

vsan 4094(isolated_vsan) interfaces:

canterbury#show zone status
VSAN: 1 default-zone: permit distribute: active only Interop: 100
Full Zoning Database :
  Zonesets:0 Zones:0 Aliases: 0
Active Zoning Database :
  Database Not Available
Status:

VSAN: 222 default-zone: permit distribute: active only Interop:
100
Full Zoning Database :
  Zonesets:0 Zones:0 Aliases: 0
Active Zoning Database :
  Database Not Available
Status:

!--- VSAN 222 has been used for this configuration, default-zone
behavior has been set to permit. canterbury#show flogi database
vsan 222
-----
INTERFACE VSAN FCID PORT NAME NODE NAME

```

```
-----
fc1/5 222 0x62011e 21:00:00:04:cf:db:3e:a7
20:00:00:04:cf:db:3e:a7
fc1/7 222 0x620003 50:05:07:63:00:c4:94:4c
50:05:07:63:00:c0:94:4c
iscsi2/5 222 0x620001 21:03:00:0c:30:6c:24:42
22:01:00:0c:30:6c:24:42
```

Total number of flogi = 3.

!--- FCID 0X620001 is the virtual N port(HBA) for the iSCSI host Vuk. canterbury#**show fcns database vsan 222**

VSAN 222:

```
-----
FCID TYPE PWWN (VENDOR) FC4-TYPE:FEATURE
-----
```

```
0x620001 N 21:03:00:0c:30:6c:24:42 (Cisco) scsi-fcp:init isc..w
0x620003 N 50:05:07:63:00:c4:94:4c (IBM) scsi-fcp:target fc..
0x62011e NL 21:00:00:04:cf:db:3e:a7 (Seagate) scsi-fcp:target
```

Total number of entries = 3

canterbury#**show fcns database detail vsan 222**

```
-----
VSAN:222 FCID:0x620001
-----
```

```
port-wwn (vendor) :21:03:00:0c:30:6c:24:42 (Cisco)
node-wwn :22:01:00:0c:30:6c:24:42
class :2,3
```

node-ip-addr :10.48.69.241

ipa :ff ff ff ff ff ff ff ff

fc4-types:fc4_features:scsi-fcp:init iscsi-gw

!--- Virtual N port for host. symbolic-port-name : symbolic-node-
name :10.48.69.241 port-type :N port-ip-addr :0.0.0.0 fabric-
port-wwn :20:51:00:0c:30:6c:24:40 hard-addr :0x000000 -----
----- VSAN:222 FCID:0x620003 -----

```
port-wwn (vendor) :50:05:07:63:00:c4:94:4c (IBM) node-wwn
:50:05:07:63:00:c0:94:4c class :2,3 node-ip-addr :0.0.0.0 ipa :ff
ff ff ff ff ff ff fc4-types:fc4_features:scsi-fcp:target
fcsb2-ch-cu fcsb2-cu-ch symbolic-port-name : symbolic-node-name :
port-type :N port-ip-addr :0.0.0.0 fabric-port-wwn
:20:07:00:0c:30:6c:24:40 hard-addr :0x000000 -----
```

```
---- VSAN:222 FCID:0x62011e ----- port-wwn
(vendor) :21:00:00:04:cf:db:3e:a7 (Seagate) node-wwn
:20:00:00:04:cf:db:3e:a7 class :3 node-ip-addr :0.0.0.0 ipa :ff
ff ff ff ff ff ff fc4-types:fc4_features:scsi-fcp:target
symbolic-port-name : symbolic-node-name : port-type :NL port-ip-
addr :0.0.0.0 fabric-port-wwn :20:05:00:0c:30:6c:24:40 hard-addr
:0x000000 Total number of entries = 3 canterbury#show iscsi
```

session

Initiator 10.48.69.241

Initiator name ign.1987-05.com.cisco:02.9a74eb40e94d.vuk-win2003

Session #1

Discovery session, ISID 00023d000023, Status active

Session #2

Target shark-lun

VSAN 222, ISID 00023d000024, Status active, no reservation

Session #3

Target seagate

VSAN 222, ISID 00023d000025, Status active, no reservation

canterbury#show iscsi initiator

iSCSI Node name is 10.48.69.241

iSCSI Initiator name: iqn.1987-05.com.cisco:02.9a74eb40e94d.vuk-win2003

iSCSI alias name: VUK-WIN2003

Node WWN is 22:01:00:0c:30:6c:24:42 (dynamic)

Member of vsans: 222

Number of Virtual n_ports: 1

Virtual Port WWN is 21:03:00:0c:30:6c:24:42 (configured)

Interface iSCSI 2/5, Portal group tag: 0x84

VSAN ID 222, FCID 0x620001

canterbury#show iscsi initiator detail

iSCSI Node name is 10.48.69.241

iSCSI Initiator name: iqn.1987-05.com.cisco:02.9a74eb40e94d.vuk-win2003

iSCSI alias name: VUK-WIN2003

Node WWN is 22:01:00:0c:30:6c:24:42 (dynamic)

Member of vsans: 222

Number of Virtual n_ports: 1

Virtual Port WWN is 21:03:00:0c:30:6c:24:42 (configured)

Interface iSCSI 2/5, Portal group tag is 0x84

VSAN ID 222, FCID 0x620001

2 FC sessions, 2 iSCSI sessions

iSCSI session details

Target: seagate

Statistics:

PDU: Command: 16, Response: 16

Bytes: TX: 188, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.222:3260, Remote 10.48.69.241:1035

Path MTU: 1500 bytes

Retransmission timeout: 350 ms

Round trip time: Smoothed 165 ms, Variance: 46

Advertized window: Current: 125 KB, Maximum: 125 KB, Scale: 1

Peer receive window: Current: 118 KB, Maximum: 118 KB, Scale: 1

Congestion window: Current: 9 KB

Target: shark-lun

Statistics:

PDU: Command: 2343, Response: 2343

Bytes: TX: 46363700, RX: 45494272

Number of connection: 1

TCP parameters

Local 10.48.69.222:3260, Remote 10.48.69.241:1034

Path MTU: 1500 bytes

Retransmission timeout: 390 ms

Round trip time: Smoothed 136 ms, Variance: 65

Advertized window: Current: 125 KB, Maximum: 125 KB, Scale: 1

Peer receive window: Current: 118 KB, Maximum: 118 KB, Scale: 1

Congestion window: Current: 11 KB

FCP Session details

Target FCID: 0x62011e (S_ID of this session: 0x620001)

pWWN: 21:00:00:04:cf:db:3e:a7, nWWN: 20:00:00:04:cf:db:3e:a7

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: seagate

Negotiated parameters

RcvDataFieldSize 1404 our_RcvDataFieldSize 1404

MaxBurstSize 0, EMPD: FALSE

Random Relative Offset: FALSE, Sequence-in-order: Yes

Statistics:

PDU: Command: 0, Response: 16

Target FCID: 0x620003 (S_ID of this session: 0x620001)

pWWN: 50:05:07:63:00:c4:94:4c, nWWN: 50:05:07:63:00:c0:94:4c

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: shark-lun

Negotiated parameters

RcvDataFieldSize 2048 our_RcvDataFieldSize 1404

MaxBurstSize 0, EMPD: FALSE

Random Relative Offset: FALSE, Sequence-in-order: Yes

Statistics:

PDU: Command: 0, Response: 2343

canterbury#show iscsi initiator iscsi-session detail

iSCSI Node name is 10.48.69.241

iSCSI Initiator name: iqn.1987-05.com.cisco:02.9a74eb40e94d.vuk-win2003

iSCSI alias name: VUK-WIN2003

Node WWN is 22:01:00:0c:30:6c:24:42 (dynamic)

Member of vsans: 222

Number of Virtual n_ports: 1

Virtual Port WWN is 21:03:00:0c:30:6c:24:42 (configured)

Interface iSCSI 2/5, Portal group tag is 0x84

VSAN ID 222, FCID 0x620001

2 FC sessions, 2 iSCSI sessions

iSCSI session details

Target: seagate

Statistics:

PDU: Command: 16, Response: 16

Bytes: TX: 188, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.222:3260, Remote 10.48.69.241:1035

Path MTU: 1500 bytes

Retransmission timeout: 350 ms

Round trip time: Smoothed 165 ms, Variance: 46

Advertized window: Current: 125 KB, Maximum: 125 KB, Scale: 1

Peer receive window: Current: 118 KB, Maximum: 118 KB, Scale: 1

Congestion window: Current: 9 KB

Target: shark-lun

Statistics:

PDU: Command: 2343, Response: 2343

Bytes: TX: 46363700, RX: 45494272

Number of connection: 1

TCP parameters

Local 10.48.69.222:3260, Remote 10.48.69.241:1034

Path MTU: 1500 bytes

Retransmission timeout: 390 ms

Round trip time: Smoothed 136 ms, Variance: 65

Advertized window: Current: 125 KB, Maximum: 125 KB, Scale: 1

Peer receive window: Current: 118 KB, Maximum: 118 KB, Scale: 1

Congestion window: Current: 11 KB

canterbury#show iscsi initiator fcp-session detail

iSCSI Node name is 10.48.69.241

iSCSI Initiator name: iqn.1987-05.com.cisco:02.9a74eb40e94d.vuk-win2003

iSCSI alias name: VUK-WIN2003

Node WWN is 22:01:00:0c:30:6c:24:42 (dynamic)

Member of vsans: 222

Number of Virtual n_ports: 1

Virtual Port WWN is 21:03:00:0c:30:6c:24:42 (configured)
Interface iSCSI 2/5, Portal group tag is 0x84
VSAN ID 222, FCID 0x620001
2 FC sessions, 2 iSCSI sessions

FCP Session details

Target FCID: 0x62011e (S_ID of this session: 0x620001)
pWWN: 21:00:00:04:cf:db:3e:a7, nWWN: 20:00:00:04:cf:db:3e:a7
Session state: LOGGED_IN
1 iSCSI sessions share this FC session

Target: seagate

Negotiated parameters

RcvDataFieldSize 1404 our_RcvDataFieldSize 1404
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-order: Yes
Statistics:

PDU: Command: 0, Response: 16

Target FCID: 0x620003 (S_ID of this session: 0x620001)
pWWN: 50:05:07:63:00:c4:94:4c, nWWN: 50:05:07:63:00:c0:94:4c
Session state: LOGGED_IN
1 iSCSI sessions share this FC session

Target: shark-lun

Negotiated parameters

RcvDataFieldSize 2048 our_RcvDataFieldSize 1404
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-order: Yes
Statistics:

PDU: Command: 0, Response: 2343

canterbury#show ips stats tcp interface gigabitethernet 2/5

TCP Statistics for port GigabitEthernet2/5

Connection Stats

0 active openings, 345 accepts
0 failed attempts, 0 reset received, 345 established
Segment stats
160524 received, 158647 sent, 1 retransmitted
0 bad segments received, 1 reset sent

TCP Active Connections

Local Address	Remote Address	State	Send-Q	Recv-Q
10.48.69.222:3260	10.48.69.241:1026	ESTABLISH	0	0
10.48.69.222:3260	10.48.69.241:1034	ESTABLISH	0	0
10.48.69.222:3260	10.48.69.241:1035	ESTABLISH	0	0
0.0.0.0:3260	0.0.0.0:0	LISTEN	0	0

canterbury#show ips stats tcp interface gigabitethernet 2/5

detail

TCP Statistics for port GigabitEthernet2/5

TCP send stats

158647 segments, 132538432 bytes
113573 data, 44411 ack only packets
318 control (SYN/FIN/RST), 0 probes, 344 window updates
1 segments retransmitted, 48 bytes
1 retransmitted while on ethernet send queue, 0 packets split
29286 delayed acks sent

TCP receive stats

160524 segments, 102518 data packets in sequence, 125344708
bytes in sequence
0 predicted ack, 94889 predicted data
0 bad checksum, 0 multi/broadcast, 0 bad offset
0 no memory drops, 0 short segments
0 duplicate bytes, 0 duplicate packets
0 partial duplicate bytes, 0 partial duplicate packets
0 out-of-order bytes, 0 out-of-order packets

```
0 packet after window, 0 bytes after window
0 packets after close
58221 acks, 132539086 ack bytes, 0 ack toomuch, 6563 duplicate
acks
0 ack packets left of snd_una, 0 non-4 byte aligned packets
37322 window updates, 0 window probe
865 pcb hash miss, 171 no port, 1 bad SYN, 0 paws drops
TCP Connection Stats
0 attempts, 345 accepts, 345 established
342 closed, 341 drops, 0 conn drops
0 drop in retransmit timeout, 10 drop in keepalive timeout
0 drop in persist drops, 0 connections drained
TCP Miscellaneous Stats
26399 segments timed, 26398 rtt updated
1 retransmit timeout, 0 persist timeout
6702 keepalive timeout, 6692 keepalive probes
TCP SACK Stats
0 recovery episodes, 0 data packets, 0 data bytes
0 data packets retransmitted, 0 data bytes retransmitted
0 connections closed, 0 retransmit timeouts
TCP SYN Cache Stats
345 entries, 345 connections completed, 0 entries timed out
0 dropped due to overflow, 0 dropped due to RST
0 dropped due to ICMP unreachable, 0 dropped due to bucket overflow
0 abort due to no memory, 0 duplicate SYN, 2 no-route SYN drop
0 hash collisions, 0 retransmitted

TCP Active Connections
Local Address Remote Address State Send-Q Recv-Q
10.48.69.222:3260 10.48.69.241:1026 ESTABLISH 0 0
10.48.69.222:3260 10.48.69.241:1034 ESTABLISH 0 0
10.48.69.222:3260 10.48.69.241:1035 ESTABLISH 0 0
0.0.0.0:3260 0.0.0.0:0 LISTEN 0 0
```

```
canterbury#show iscsi virtual-target configured
```

```
target: seagate
```

```
* Port WWN 21:00:00:04:cf:db:3e:a7 !--- The "*" means you have
both discovery and target session. If there is no "*" in !---
front of the pWWN, it means either you only have discovery
session or !--- you have no active session. Configured node No.
of LU mapping: 1 iSCSI LUN: 0x0000, FC LUN: 0x0000 No. of
advertised interface: 1 GigabitEthernet 2/5 No. of initiators
permitted: 1 initiator 10.48.69.241/32 is permitted all initiator
permit is disabled target: shark-lun * Port WWN
50:05:07:63:00:c4:94:4c Configured node No. of LU mapping: 2
iSCSI LUN: 0x0000, FC LUN: 0x0000 iSCSI LUN: 0x0001, FC LUN:
0x0001 No. of advertised interface: 1 GigabitEthernet 2/5 No. of
initiators permitted: 1 initiator 10.48.69.241/32 is permitted
all initiator permit is disabled canterbury#show iscsi initiator
configured
iSCSI Node name is 10.48.69.241
Member of vsans: 222
No. of PWWN: 1
Port WWN is 21:03:00:0c:30:6c:24:42
```

```
canterbury#show ips arp interface gigabitethernet 2/5
```

```
Protocol Address Age (min) Hardware Addr Type Interface
Internet 10.48.69.200 0 0008.e21e.c7bc ARPA GigabitEthernet2/5
Internet 10.48.69.202 4 0202.3d30.45ca ARPA GigabitEthernet2/5
Internet 10.48.69.206 4 0202.3d30.45ce ARPA GigabitEthernet2/5
Internet 10.48.69.226 10 0060.08f6.bcl1a ARPA GigabitEthernet2/5
Internet 10.48.69.229 10 0800.209e.edab ARPA GigabitEthernet2/5
Internet 10.48.69.232 5 0003.4796.34c3 ARPA GigabitEthernet2/5
Internet 10.48.69.238 5 0030.6e1b.6f51 ARPA GigabitEthernet2/5
```



```
Internet 10.48.69.239 11 0030.6e1c.a00b ARPA GigabitEthernet2/5
Internet 10.48.69.241 4 000b.cdaf.b4c3 ARPA GigabitEthernet2/5
Internet 10.48.69.248 2 0202.3d30.45f8 ARPA GigabitEthernet2/5
Internet 10.10.2.28 5 0202.3d0a.021c ARPA GigabitEthernet2/5
canterbury#show scsi-target devices vsan 222
```

```
-----
VSAN FCID PWWN VENDOR MODEL REV
-----
```

```
222 0x62011e 21:00:00:04:cf:db:3e:a7 SEAGATE ST336753FC 0003
222 0x620003 50:05:07:63:00:c4:94:4c IBM 2105F20 .114
```

```
!--- All LUNs that have been exported by the IBM Shark are not
shown in the display output. canterbury#show scsi-target lun vsan
222
```

```
- ST336753FC from SEAGATE (Rev 0003)
FCID is 0x62011e in VSAN 222, PWWN is 21:00:00:04:cf:db:3e:a7
-----
```

```
LUN Capacity Status Serial Number Device-Id
(MB)
-----
```

```
0x0 36704 Online 3HX00Q2600007326 C:1 A:0 T:3
20:00:00:04:cf:db:3e:a7
```

```
- 2105F20 from IBM (Rev .114)
FCID is 0x620003 in VSAN 222, PWWN is 50:05:07:63:00:c4:94:4c
-----
```

```
LUN Capacity Status Serial Number Device-Id
(MB)
-----
```

```
0x5100 4000 Online 10022196 C:2 A:0 T:1 IBM 2105
```

```
0x5101 4000 Online 10122196 C:2 A:0 T:1 IBM 2105
```

```
....
```

```
0x5011 5000 Online 01122196 C:2 A:0 T:1 IBM 2105
```

```
0x5012 5000 Online 01222196 C:2 A:0 T:1 IBM 2105
```

```
0x5013 5000 Online 01322196 C:2 A:0 T:1 IBM 2105
```

```
0x5014 5000 Online 01422196 C:2 A:0 T:1 IBM 2105
```

```
0x5400 3000 Online 40022196 C:2 A:0 T:1 IBM 2105
```

```
0x5401 5000 Online 40122196 C:2 A:0 T:1 IBM 2105
```

```
0x5200 3000 Online 20022196 C:2 A:0 T:1 IBM 2105
```

```
0x5201 3000 Online 20122196 C:2 A:0 T:1 IBM 2105
```

```
0x5202 3000 Online 20222196 C:2 A:0 T:1 IBM 2105
```

```
0x5203 3000 Online 20322196 C:2 A:0 T:1 IBM 2105
```

```
0x5204 3000 Online 20422196 C:2 A:0 T:1 IBM 2105
```

0x5205 3000 Online 20522196 C:2 A:0 T:1 IBM 2105

0x5206 3000 Online 20622196 C:2 A:0 T:1 IBM 2105

0x5207 3000 Online 20722196 C:2 A:0 T:1 IBM 2105

0x5208 3000 Online 20822196 C:2 A:0 T:1 IBM 2105

0x5209 3000 Online 20922196 C:2 A:0 T:1 IBM 2105

.....

canterbury#**show int iscsi 2/5**

```
iscsi2/5 is up
Hardware is GigabitEthernet
Port WWN is 20:51:00:0c:30:6c:24:40
Admin port mode is ISCSI
Port mode is ISCSI
Speed is 1 Gbps
iSCSI initiator is identified by name
Number of iSCSI session: 3, Number of TCP connection: 3
Configured TCP parameters
Local Port is 3260
PMTU discover is enabled, reset timeout is 3600 sec
Keepalive-timeout is 60 sec
Minimum-retransmit-time is 300 ms
Max-retransmissions 4
Sack is disabled
QOS code point is 0
Forwarding mode: pass-thru
TMF Queueing Mode : disabled
5 minutes input rate 16 bits/sec, 2 bytes/sec, 0 frames/sec
5 minutes output rate 16 bits/sec, 2 bytes/sec, 0 frames/sec
iSCSI statistics
Input 132567 packets, 125344708 bytes
Command 8637 pdus, Data-out 117005 pdus, 118916096 bytes
Output 113573 packets, 132538432 bytes
Response 8439 pdus (with sense 10), R2T 3913 pdus
Data-in 93902 pdus, 127070632 bytes
```

canterbury#**show iscsi stats iscsi 2/5**

```
iscsi2/5
5 minutes input rate 16 bits/sec, 2 bytes/sec, 0 frames/sec
5 minutes output rate 16 bits/sec, 2 bytes/sec, 0 frames/sec
iSCSI statistics
132567 packets input, 125344708 bytes
Command 8637 pdus, Data-out 117005 pdus, 118916096 bytes, 0
fragments
output 113573 packets, 132538432 bytes
Response 8439 pdus (with sense 10), R2T 3913 pdus
Data-in 93902 pdus, 127070632 bytes
```

canterbury#**show int gigabitethernet 2/5**

```
GigabitEthernet2/5 is up
Hardware is GigabitEthernet, address is 0005.3000.adea
Internet address is 10.48.69.222/26
MTU 1500 bytes
Port mode is IPS
Speed is 1 Gbps
Beacon is turned off
Auto-Negotiation is turned on
5 minutes input rate 224 bits/sec, 28 bytes/sec, 0 frames/sec
5 minutes output rate 80 bits/sec, 10 bytes/sec, 0 frames/sec
```

```
205453 packets input, 138346789 bytes
0 multicast frames, 0 compressed
0 input errors, 0 frame, 0 overrun 0 fifo
165673 packets output, 141485482 bytes, 0 underruns
0 output errors, 0 collisions, 0 fifo
0 carrier errors
```

```
canterbury#show ip route
```

```
Codes: C - connected, S - static
```

```
Gateway of last resort is 10.48.69.129
```

```
C 10.48.69.192/26 is directly connected, GigabitEthernet2/5
```

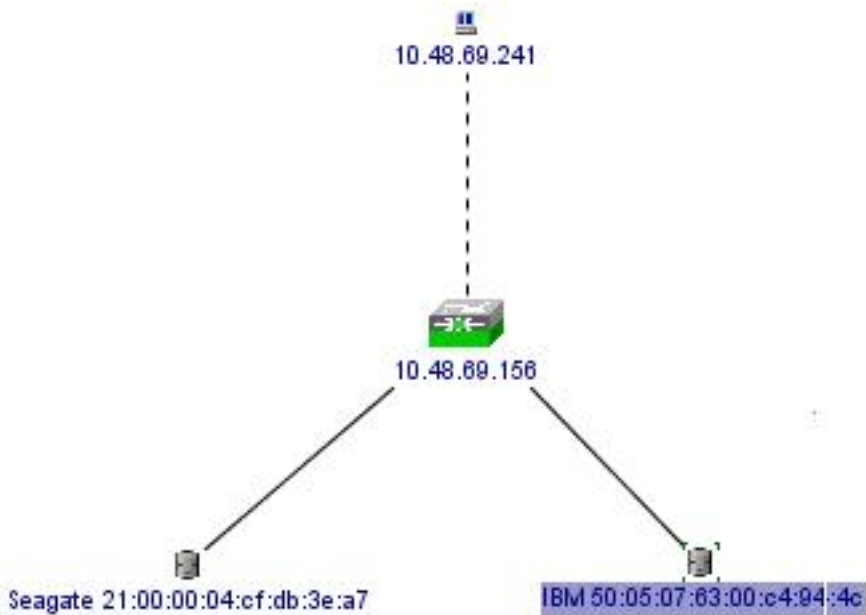
```
C 10.48.69.128/26 is directly connected, mgmt0
```

```
canterbury#
```

Fabric Manager和Device Manager顯示

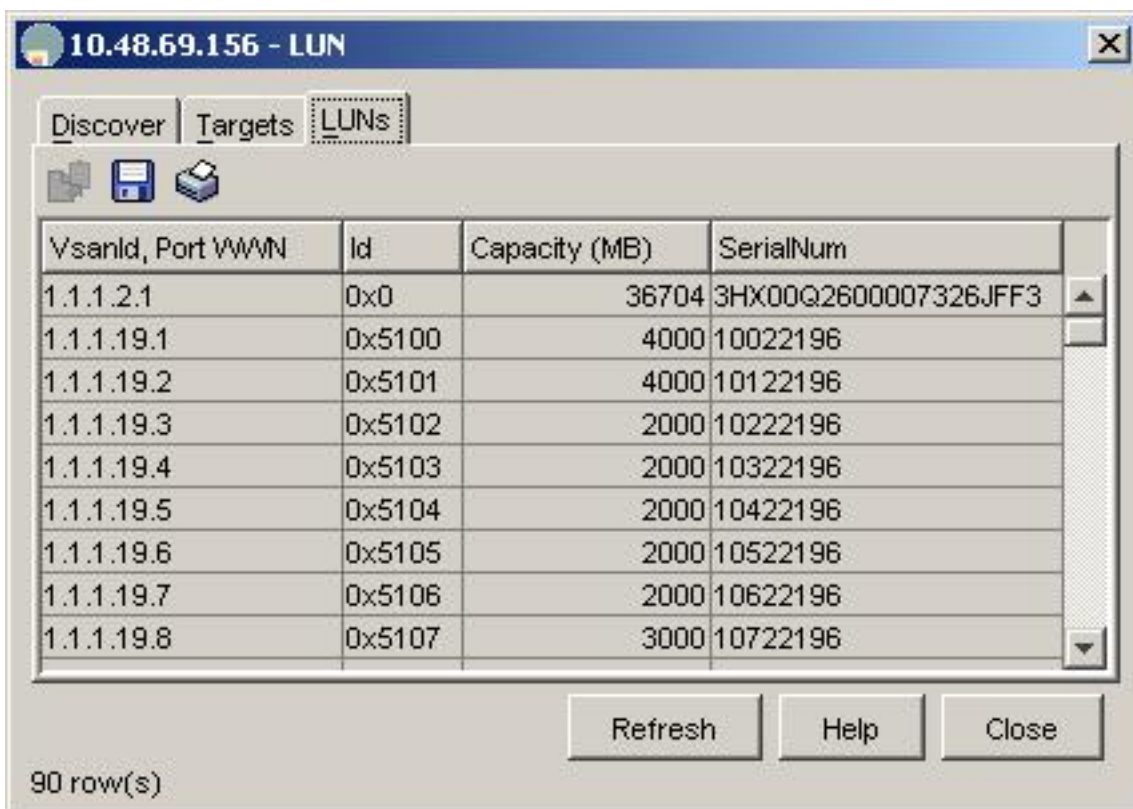
本節提供來自MDS交換矩陣管理器1.2(2)和裝置管理器1.2(2)的螢幕截圖。

Fabric Manager中的拓撲圖

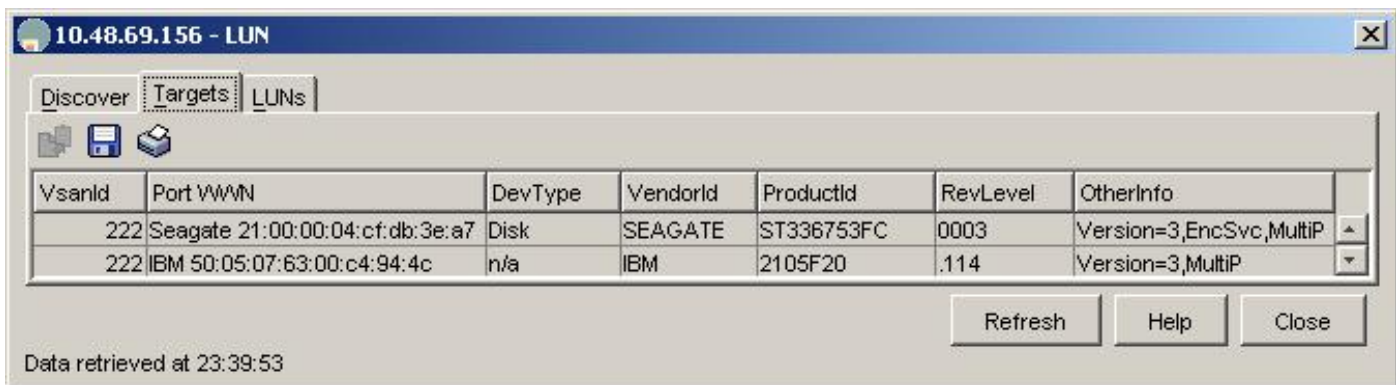




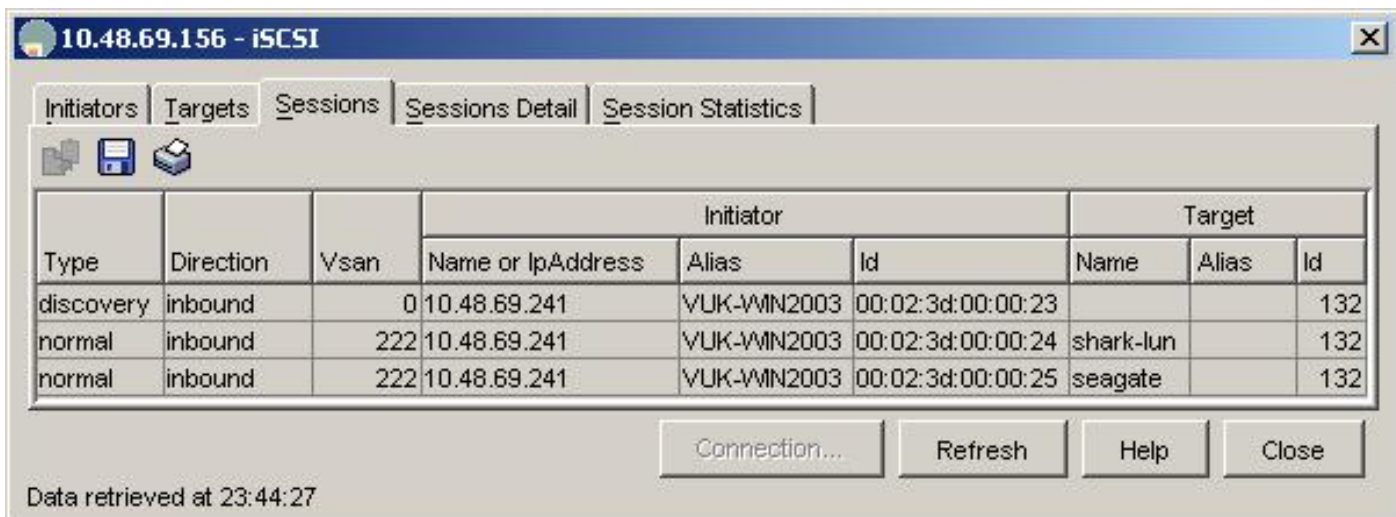
從裝置管理器選擇FC-LUN以顯示pWWN、LUN ID和LUN的容量。



選擇FC-LUN以顯示裝置管理器中的目標。



選擇IP-iSCSI以從裝置管理器顯示iSCSI會話。



IBM Shark定義

本部分提供了來自企業儲存伺服器專家(ESSS)的螢幕捕獲。

在ESS上定義了一個主機，該主機使用為啟動器定義的靜態WWPN 21:03:00:0c:30:6c:24:42。已為此主機分配了兩個卷。

Specialist - shark1

Enterprise Storage Server Specialist

Open System Storage

Host Systems

Nickname	Host Type	Attachment	WWPN	Hostname/IP Address
sonja_fc11	PC Server (Win 2000 or Win NT 4.0)	FC	2800000653389EA0	sonja
sonja_fc12	PC Server (Win 2000 or Win NT 4.0)	FC	2900000653389EA0	sonja
vuk-iscsi	PC Server (Win 2000 or Win NT 4.0)	FC	2103000C306C2442	vuk

Assigned Volumes (Total: 2 volumes)

Volume	Vol Type	Size	Storage Type	Location	LSS	Shared
012-22196	Open System	05.0 GB	RAID Array	Device Adapter Pair 1 Cluster 1, Loop A Array 2, Vol 018	LSS: 0x010	Yes
209-22196	Open System	03.0 GB	RAID Array	Device Adapter Pair 2 Cluster 1, Loop A Array 2, Vol 009	LSS: 0x012	Yes

Java Applet Window

相關資訊

- [Cisco iSCSI軟體下載 \(僅限註冊客戶 \)](#)
- [用於Windows 2000的iSCSI驅動程式常見問題](#)
- [Cisco Windows 2000 iSCSI驅動程式發行說明](#)
- [用於Windows 2000的iSCSI驅動程式故障排除](#)
- [Cisco MDS 9000系列故障排除指南, 版本1.2\(1a\)](#)
- [技術支援與文件 - Cisco Systems](#)