

Exemplo de configuração de host iSCSI HP-UX para MDS/IPS-8

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[Introduction](#)

Os drivers iSCSI da Cisco, que residem no servidor, são um componente chave de uma solução iSCSI. Esses drivers iSCSI interceptam comandos **Small Computer System Interface (SCSI)**, os encapsulam em pacotes IP e os redirecionam para o documento Cisco SN 5420, Cisco SN 5428, Cisco SN 5428-2 ou Cisco MDS/IPS-8. This fornece configurações de exemplo para o host iSCSI HP-UX para SN 5428.

[Prerequisites](#)

[Requirements](#)

Antes de tentar esta configuração, verifique se você atende aos seguintes requisitos:

- Instale o driver iSCSI compatível com a versão HP-UX. A versão mais recente do driver pode ser encontrada na página de download [Cisco iSCSI Driver](#) (clientes [registrados](#) somente) em Cisco.com. O arquivo README.txt está incluído no arquivo zip(tar) do driver. O README contém informações sobre o contrato de licença, instruções de instalação e configuração do driver e uma visão geral técnica da arquitetura do driver.
- Os requisitos do sistema operacional e os requisitos de patch são descritos na seção *Requisitos do Sistema* das [Notas de Versão do Cisco iSCSI Driver para HP-UX](#).

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

- Servidor HP-UX 9000/800 A500 com dois processadores. **Observação:** nesta configuração de laboratório, não há nenhum adaptador Ethernet separado para iSCSI, e o adaptador em uso é 100 Mb. Em qualquer ambiente realista, você tem um adaptador(s) Gigabit Ethernet (GE) separado(s) como iniciador(es) iSCSI.

```
[/]/#opt/ignite/bin/print_manifest[...]
```

System Hardware

```
Model:          9000/800/A500-5X
Main Memory:    1024 MB
Processors:     2
OS mode:        64 bit
LAN hardware ID: 0x00306E1B6F51
Software ID:    586760518
Keyboard Language: Not_Applicable
```

Storage devices	HW Path	Interface
SEAGATE ST318404LC 17366 Mb	0/0/1/1.15.0	SCSI C896 Ultra Wide Single-Ended
SEAGATE ST318203LC 17366 Mb	0/0/2/1.15.0	SCSI C875 Ultra Wide Single-Ended

I/O Interfaces

Class	H/W Path	Driver	Description
lan	0/0/0/0	btlan3	HP PCI 10/100Base-TX Core
ext_bus	0/0/1/0	c720	SCSI C896 Ultra Wide LVD
ext_bus	0/0/1/1	c720	SCSI C896 Ultra Wide Single-Ended
ext_bus	0/0/2/0	c720	SCSI C875 Fast Wide Single-Ended
ext_bus	0/0/2/1	c720	SCSI C875 Ultra Wide Single-Ended
tty	0/0/4/0	asio0	PCI Serial (103c1048)
tty	0/0/5/0	asio0	PCI Serial (103c1048)
fc	0/2/0/0	td	HP Tachyon XL2 Fibre Channel Mass Storage

Adapter

Installed Software

Your system was installed with HP-UX version B.11.00.

Your system has the following software products installed and configured on the system disk drive(s).

Product	Revision	Description
A6795A	B.11.00.10	PCI Tachyon TL/TS/XL2 Fibre Channel
BUNDLE	B.11.00	Patch Bundle
HPUXEng64RT	B.11.00.01	English HP-UX 64-bit Runtime Environment
HWE1100	B.11.00.0203.5	Hardware Enablement Patches for HP-UX 11.00, March 2002
OnlineDiag	B.11.00.20.09	HPUX 11.0 Support Tools Bundle, Mar 2002
UXCoreMedia	B.11.00.02	HP-UX Media Kit (Reference Only. See Description)
UnlimUserLic	B.11.00.02	HP-UX Unlimited-User License
XSWG1100	B.11.00.47.08	General Release Patches, November 1999 (ACE)

[...]

- O Cisco iSCSI Driver 3.3.3 para HP-UX foi usado. Recomenda-se que você também instale (pelo menos) o patch cumulativo de transporte ARPA (Address Resolution Protocol) estável mais recente da HP. Quando este documento foi escrito, era PHNE_28538. Este patch tem várias dependências, por isso é necessário instalá-las conforme e quando necessário. Para obter mais informações de instalação, visite o [site oficial de suporte da HP](#) (somente [registrados](#)) .

```

[/]# swlist
# Initializing...
# Contacting target "ape"...
#
# Target:  ape:/
#
#
# Bundle(s):
#
A6795A                B.11.00.10      PCI Tachyon TL/TS/XL2 Fibre Channel
BUNDLE                B.11.00         Patch Bundle
HPUXEng64RT          B.11.00.01      English HP-UX 64-bit Runtime Environment
HWE1100              B.11.00.0203.5  Hardware Enablement Patches for HP-UX 11.00,
March 2002
OnlineDiag           B.11.00.20.09   HPUX 11.0 Support Tools Bundle, Mar 2002
QPK1100              B.11.00.56.5    Quality Pack for HP-UX 11.00, March 2002
UXCoreMedia          B.11.00.02      HP-UX Media Kit (Reference Only. See
Description)
UnlimUserLic         B.11.00.02      HP-UX Unlimited-User License
XSWG1100             B.11.00.47.08   General Release Patches, November 1999 (ACE)
#
# Product(s) not contained in a Bundle:
#
ISCSI                 3.3.3           ISCSI software
bison                 1.875           bison
flex                  2.5.4a          flex
gcc                   3.2.3           gcc
gettext               0.11.5          gettext
less                  376             less
libiconv              1.9             libiconv
make                   3.80            make
ncurses               5.2             ncurses
termcap               1.3.1           termcap
zsh                   4.0.7           zsh

```

```

[/]# swlist BUNDLE
# Initializing...
# Contacting target "ape"...
#
# Target:  ape:/
#
# BUNDLE                B.11.00         Patch Bundle
BUNDLE.PHCO_23651      1.0             fsck_vxfs(1M) cumulative patch
BUNDLE.PHKL_28496      1.0             SCSI IO Subsystem Cumulative Patch
BUNDLE.PHKL_27980      1.0             VxFS 3.1 cumulative patch: CR_EIEM
BUNDLE.PHKL_22840      1.0             IDS/9000; syscalls related to file/socket
BUNDLE.PHCO_28505      1.0             user/group(add/mod/del) (1M) cumulative patch
BUNDLE.PHKL_28150      1.0             LVM Cumulative Patch w/Performance Upgrades
BUNDLE.PHNE_28538      1.0             cumulative ARPA Transport patch
BUNDLE.PHNE_28143      1.0             LAN product cumulative patch
BUNDLE.PHNE_27902      1.0             Cumulative STREAMS Patch
BUNDLE.PHKL_29434      1.0             POSIX AIO;getdirenties;MVFS;rcp;mmap/IDS;
BUNDLE.PHKL_28766      1.0             Probe, IDDS, PM, VM, PA-8700, AIO, T600, FS, PDC, CLK
BUNDLE.PHKL_28004      1.0             Fibre Channel Mass Storage Driver Patch
BUNDLE.PHKL_27729      1.0             ioscan -u incorrect display (kernel patch).
BUNDLE.PHKL_24187      1.0             ioscan performance gain for SCSI Subsystem
BUNDLE.PHKL_24165      1.0             Kernel Patch For "ioscan -k" Performance
BUNDLE.PHKL_23409      1.0             NFS, Large Data Space, kernel memory leak
BUNDLE.PHKL_20016      1.0             2nd CPU not recognized in G70/H70/I70
BUNDLE.PHKL_18543      1.0             PM/VM/UFS/async/scsi/io/DMAPI/JFS/perf patch

```

```
BUNDLE.PHCO_27818      1.0          ioscan(1M) cumulative patch
BUNDLE.PHCO_27375      1.0          cumulative SAM/ObAM patch
```

- Cisco MDS 9216 com software versão 1.2(1a).

```
vatican# show module
```

```
Mod  Ports  Module-Type          Model          Status
-----
1    16     1/2 Gbps FC/Supervisor  DS-X9216-K9-SUP  active *
2    8      IP Storage Module      DS-X9308-SMIP    ok
Mod  Sw      Hw      World-Wide-Name(s) (WWN)
-----
1    1.2(1a)  1.0     20:01:00:0c:30:57:5e:c0 to 20:10:00:0c:30:57:5e:c0
2    1.2(1a)  0.2     20:41:00:0c:30:57:5e:c0 to 20:48:00:0c:30:57:5e:c0

Mod  MAC-Address(es)          Serial-Num
-----
1    00-0b-be-f8-7f-00 to 00-0b-be-f8-7f-04  JAB070804Q3
2    00-05-30-00-a8-56 to 00-05-30-00-a8-62  JAB070205AM
```

* this terminal session

```
vatican# show version
```

```
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.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.
```

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 963108 kB
```

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

```
vatican uptime is 1 days 6 hours 17 minute(s) 25 second(s)
```

```
Last reset at 955065 usecs after Wed Sep 10 08:13:50 2003
Reason: Reset Requested by CLI command reload
System version: 1.1(2)
```

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

O Cisco MDS 9000 usado neste documento se refere a qualquer produto de switch Fibre Channel (FC) na família MDS 9000 (MDS 9506, MDS 9509, MDS 9216). O blade Cisco Intrusion Prevention System (IPS) refere-se ao IP Storage Services Module. For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

Informações de Apoio

O módulo Cisco Intrusion Prevention System (IPS) fornece aos hosts IP acesso a dispositivos de armazenamento Fibre Channel (FC). O módulo IPS é DS-X9308-SMIP. Fornece roteamento SCSI transparente. Os hosts IP que usam o protocolo iSCSI podem acessar de forma transparente destinos iSCSI na rede FC. O host IP envia comandos SCSI encapsulados em PDUs (iSCSI Protocol Data Units, Unidades de Dados de Protocolo iSCSI) para uma porta IPS MDS 9000 através de uma conexão TCP/IP. No módulo IPS, a conectividade é fornecida na forma de interfaces GE configuradas adequadamente. O módulo IPS permite criar destinos iSCSI virtuais e mapeá-los para destinos FC físicos disponíveis na SAN FC. Apresenta os destinos FC aos hosts IP como se os destinos físicos estivessem conectados à rede IP.

Cada host iSCSI que requer acesso ao armazenamento através do módulo IPS precisa ter um driver iSCSI compatível instalado. Com a ajuda do protocolo iSCSI, o driver iSCSI permite que um host iSCSI transporte solicitações e respostas SCSI através de uma rede IP. Da perspectiva de um sistema operacional host, o driver iSCSI parece ser um driver de transporte SCSI semelhante a um driver FC para um canal periférico no host. Da perspectiva do dispositivo de armazenamento, cada host IP aparece como um host FC. O roteamento SCSI do host IP para o dispositivo de armazenamento FC consiste nas seguintes ações principais:

- Transporte de solicitações e respostas iSCSI através de uma rede IP entre hosts e o módulo IPS
- Solicitações e respostas de roteamento SCSI entre hosts em uma rede IP e no dispositivo de armazenamento FC (convertendo iSCSI em FCP e FCP em iSCSI). Esse roteamento é executado pelo módulo IPS.
- Transporte de solicitações ou respostas FCP entre o módulo IPS e os dispositivos de armazenamento FC

O módulo IPS não importa os destinos de FC para iSCSI por padrão. O mapeamento dinâmico ou estático deve ser configurado antes que o módulo IPS disponibilize destinos FC para iniciadores iSCSI. Quando ambos estão configurados, os destinos FC mapeados estaticamente têm um nome configurado. Este documento fornece um exemplo de mapeamento estático. Com o mapeamento dinâmico, cada vez que o host iSCSI se conecta ao módulo IPS, uma nova porta FC N é criada e os nWWNs e pWWNs alocados para essa porta N podem ser diferentes. Use o método de mapeamento estático se precisar obter os mesmos nWWNs e pWWNs para o host iSCSI toda vez que ele se conectar ao módulo IPS. O mapeamento estático pode ser usado no módulo IPS para acessar matrizes de armazenamento FC inteligentes que tenham controle de acesso e mapeamento de números de unidade lógica (LUN) e configurações de mascaramento com base nos pWWNs ou nWWNs do iniciador.

Você pode controlar o acesso a cada destino iSCSI mapeado estaticamente com a criação de uma lista específica de portas IPS nas quais o destino é anunciado e a criação de uma lista de nomes de nós do iniciador iSCSI permitidos para acessá-lo. O controle de acesso baseado em zoneamento FC e o controle de acesso baseado em iSCSI são os dois mecanismos pelos quais o controle de acesso pode ser fornecido para iSCSI. Ambos os métodos podem ser usados simultaneamente. Nesta configuração, o zoneamento padrão é permitido para VSAN específica. Os módulos IPS usam listas de controle de acesso baseadas em nome de nó iSCSI e baseadas em zoneamento FC para aplicar o controle de acesso durante a descoberta iSCSI e a criação de sessões iSCSI.

- **Descoberta de iSCSI:** Quando um host iSCSI cria uma sessão de descoberta iSCSI e consulta todos os destinos iSCSI, o módulo IPS retorna somente a lista de destinos iSCSI

que esse host iSCSI tem permissão para acessar com base nas políticas de controle de acesso.

- **Criação de sessão iSCSI:** Quando um host IP inicia uma sessão iSCSI, o módulo IPS verifica se o destino iSCSI especificado (na solicitação de login da sessão) é um destino mapeado estático e, se verdadeiro, verifica se o nome do nó iSCSI do host IP tem permissão para acessar o destino. Se o host IP não tiver acesso, seu login será rejeitado.

O módulo IPS, em seguida, cria uma porta N virtual FC (a porta N pode já existir) para este host IP e faz uma consulta de servidor de nome FC para o FCID do pWWN de destino FC acessado pelo host IP. Ele usa o IPvWWN da porta N virtual do host IP como o solicitante da consulta do servidor de nome. Assim, o servidor de nomes faz uma consulta imposta por zona para o pWWN e responde à consulta. Se o FCID for retornado pelo servidor de nome, a sessão iSCSI será aceita. Caso contrário, a solicitação de login será rejeitada.

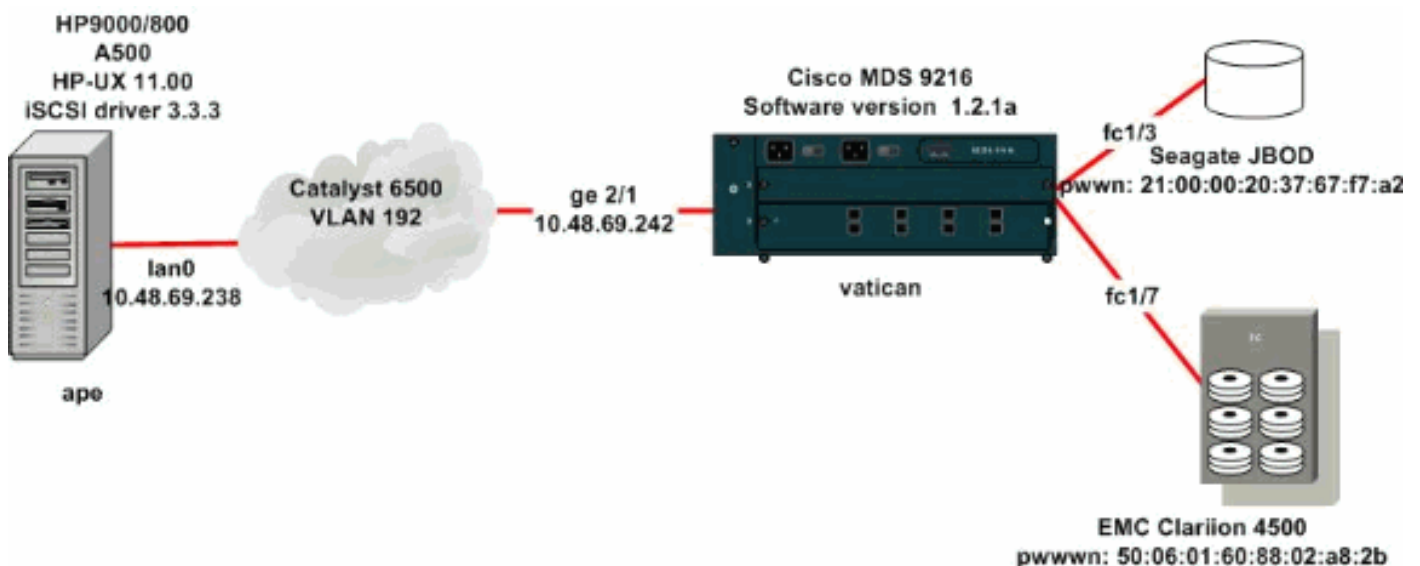
Configurar

Nesta seção, você recebe as informações para configurar o MDS 9216 e o driver iSCSI Cisco para Linux.

Observação: para encontrar informações adicionais sobre os comandos usados neste documento, use a [Referência de Comandos da Família Cisco MDS 9000](#) e o [Guia de Configuração de Software da Família Cisco MDS 9000](#).

Diagrama de Rede

Este documento utiliza a configuração de rede mostrada neste diagrama:



Configurações

Este documento utiliza as configurações mostradas aqui:

- Ape (HP 9000/800 A500 HP-UX 11.00)
- Vaticano (MDS 9216)

Ape (HP 9000/800 A500 HP-UX 11.00)

On the HP-UX host only the file /etc/iscsi.conf has to be modified:

```
[/]# cat /etc/iscsi.conf
# iSCSI configuration file - see iscsi.conf(4)
# DiscoveryAddress Settings
# -----
# Add "DiscoveryAddress=xxx" entries for each iSCSI
router instance.
# The driver attempts to discover iSCSI targets at that
address
# and make as many targets as possible available for
use.
# 'xxx' can be an IP address or a hostname. A TCP port
number can be
# specified by appending a colon and the port number to
the address.
# All entries have to start in column one and must not
contain any
# whitespace.
#
# Example:
#
# DiscoveryAddress=scsirouter1
  DiscoveryAddress=10.48.69.242

!--- Configure the IP address of the GE interface that
accepts iSCSI request from your host.

# The DiscoveryAddress Settings can take following
entry.
#
# 1) Authentication Settings
# 2) ConnectionTimeout Settings

!--- Other required driver parameters could be changed
in the iscsi.conf file.

.....

[/]# cat /etc/iscsi.bindings
# iSCSI bindings, file format version 1.0.
# NOTE: this file is automatically maintained by the
iSCSI daemon.
# You do not need to edit this file under most
circumstances.
# If iSCSI targets in this file have been permanently
deleted, you
# may wish to delete the bindings for the deleted
targets.
#
# Format:
# bus   target  iSCSI
# id    id      TargetName
#
[...]
```

0	10	seagate
0	11	spa-vt

!--- The iSCSI driver discovery daemon process looks up each discovered !--- target in the /etc/iscsi.bindings file. If an entry exists in the file for the target, !-- - the corresponding SCSI target ID is assigned to the target. If no entry !--- exists for the target, the

smallest available SCSI target ID is assigned !--- and an entry is written to the /etc/iscsi.bindings file for this target. !--- Note that the /etc/iscsi.bindings file permanently contains entries !--- for all iSCSI targets ever logged into from this host. If a target is !--- no longer available to a host, you can manually edit the file and remove !--- entries so that the obsolete target no longer consumes a SCSI target ID. !--- If you know the iSCSI target name of a target in advance, and you want !--- it to be assigned a particular SCSI target ID, you can add an entry !--- manually. You must stop the iSCSI driver before editing the !--- /etc/iscsi.bindings file. The maximum number of targets is 14. !--- Enter [/]#/sbin/init.d/iscsi start to manually start the iSCSI driver.

!--- Enter [/]#/sbin/init.d/iscsi stop to manually stop the iSCSI driver.

Vaticano (Cisco MDS 9216)

!--- If you are starting from the factory default configuration, you !--- need to setup the IP address and mask of the management interface. !--- This would normally be done during the initial setup . interface mgmt0 ip address 10.48.69.156 255.255.255.192 !--- In this configuration example, all the iSCSI targets are in a single vsan . vsan database vsan 1016 vsan 1016 interface fc1/3 vsan 1016 interface fc1/7 !--- These are the boot variables. boot system bootflash:/s111a boot kickstart bootflash:/k111a # Simple IP configuration ip domain-name cisco.com ip name-server 144.254.10.123 ip default-gateway 10.48.69.129 !--- Declare that the iSCSI initiator with the IP address of the host. # It belongs to the vsan of our choice iscsi authentication none iscsi initiator ip-address 10.48.69.238 vsan 1016 !--- Define the first virtual target, it is a JBOD. Identify the target !--- by its pWWN, advertise it on a GE interface, and allow access to the initiator. iscsi virtual-target name seagate pWWN 21:00:00:20:37:67:f7:a2 advertise interface GigabitEthernet2/1 initiator ip address 10.48.69.238 permit !--- The second target is a Clariion disk array. Since the maximum LUN number that you !--- can have under HP-UX without additional software is 7, define a mapping from FC LUN numbers !--- to the iSCSI LUN numbers you are going to present to the host. iscsi virtual-target name spa-vt pWWN 50:06:01:60:88:02:a8:2b fc-lun 0020 iscsi-lun 0003 pWWN 50:06:01:60:88:02:a8:2b fc-lun 0021 iscsi-lun 0004 advertise interface GigabitEthernet2/1 initiator ip address 10.48.69.238 permit !--- Permit access to the targets on the FC level. Create a simple zone configuration to do this. !--- Alternatively, you could have simply set the default zoning policy in vsan 1016 to permit. zone name jbod vsan 1016 member pwwn 21:00:00:20:37:67:f7:a2 member symbolic-nodename 10.48.69.238 zone name spa vsan 1016 member pwwn 50:06:01:60:88:02:a8:2b member symbolic-nodename 10.48.69.238 zoneset name iscsidoc vsan 1016 member jbod member spa zoneset activate name iscsidoc vsan 1016 !--- Set the IP address and mask of the GE interface and


```
enable it. interface GigabitEthernet2/1 ip address
10.48.69.242 255.255.255.192 iscsi authentication none
no shutdown # Lastly we bring up the iSCSI interface up
interface iscsi2/1 no shutdown
```

Verificar

Esta seção fornece informações que você pode usar para confirmar se sua configuração funciona corretamente e solucionar problemas em caso de problemas.

Determinados comandos **show** são suportados pela [Command Lookup Tool](#) (somente clientes [registrados](#)), que permite exibir uma análise da saída do comando **show**.

Comandos do host HP-UX

- **netstat-n** ou **lsof** —verifica as conexões TCP.
- **iscsi-ls** — mostra os dispositivos disponíveis no momento.
- **dmesg**—coleta mensagens de diagnóstico.

Comandos MDS/IPS-8

- **show zone** — exibe informações da zona.
- **show flogi database** — exibe informações do FLOGI Server.
- **show fcns database** — exibe informações do servidor de nome para uma VSAN específica.
- **show vsan member** — exibe informações de interface para diferentes VSANs.
- **show iscsi** — exibe várias informações iSCSI.
- **show ips** — exibe várias informações sobre serviços IP.
- **show scsi-target** — exibe dispositivos SCSI para VSAN específicos (para mapeamento de FC-LUNs para iSCSI-LUNs).
- **show interface** — exibe informações sobre várias interfaces.
- **show ip route** — exibe informações sobre a rota IP.

Troubleshoot

Esta seção fornece informações que podem ser usadas para o troubleshooting da sua configuração.

Está aqui a informação de Troubleshooting relevante a esta configuração:

- Exibições do Ape (HP 9000/800 A500 HP-UX 11.00)
- Exibições do Vaticano (MDS 9216)
- Telas do Fabric Manager e do Device Manager

Ape (HP 9000/800 A500 HP-UX 11.00)

```
# /sbin/init.d/iscsi stop
Waiting for iscsid to terminate .....
Waiting for iscsid to terminate .....
Waiting for iscsid to terminate .....
Waiting for iscsid to terminate .....
```

Waiting for iscsi_[tr]x_threads to terminate

```
[/]# /sbin/init.d/iscsi start
```

Number of indices in scsi_isc table used by System: 5

Index used by iSCSI controller: 255

Number of free indices: 251

```
[/]# netstat -n | grep '10.48.69.242'
```

```
tcp      0      0 10.48.69.242.3260 10.48.69.238.49501 ESTABLISHED
tcp      0      0 10.48.69.242.3260 10.48.69.238.49500 ESTABLISHED
tcp      0      0 10.48.69.242.3260 10.48.69.238.49499 ESTABLISHED
```

!--- If you have lsof, you can also try the following:

```
[/]# lsof -i @10.48.69.242
```

```
COMMAND PID USER  FD  TYPE          DEVICE SIZE/OFF NODE
NAME
iscsid  2836 root   lu   inet 0x41aa9268   0t1300  TCP
ape.cisco.com:49499->10.48.69.242:3260 (ESTABLISHED)
```

!--- Note that ioscan does not report iSCSI devices. To see the list

!--- of available iSCSI devices from the host, issue the **iscsi-ls** command.

```
[/]# iscsi-ls -l
```

```
#####
#####
```

```
TARGET NAME      = seagate
TARGET ID        = 10
ADDRESS          = 10.48.69.242:3260,128
STATUS           = CONNECTED 10.48.69.238:49501 <->
10.48.69.242:3260
                  9/19/2003 15:40:42
SESSION          = ISID 00023d000001 TSID 80

LUN      0      = DISK  c255t10d0  'SEAGATE
ST318203FC    0004'
                  BLOCKS : 35566479  BLOCKSIZE : 512
CAPACITY : 17366.00MB
```

```
#####
#####
```

```
TARGET NAME      = spa-vt
TARGET ID        = 11
ADDRESS          = 10.48.69.242:3260,128
STATUS           = CONNECTED 10.48.69.238:49500 <->
10.48.69.242:3260
                  9/19/2003 15:40:42
SESSION          = ISID 00023d000001 TSID 80

LUN      4      = DISK  c255t11d4  'DGC      RAID 1
0632'
                  BLOCKS : 6291419  BLOCKSIZE : 512
CAPACITY : 3071.00MB

LUN      3      = DISK  c255t11d3  'DGC      RAID 1
0632'
```

BLOCKS : 10485607 BLOCKSIZE : 512
CAPACITY : 5119.00MB

!--- To see detailed statistics for currently
established iSCSI sessions, use this:

```
[/]# iscsi-ls -c
```

```
#####  
####
```

```
TARGET NAME      = seagate  
TARGET ID        = 10  
ADDRESS          = 10.48.69.242:3260,128  
STATUS           = CONNECTED 10.48.69.238:49501 <->  
10.48.69.242:3260  
                  9/19/2003 15:40:42  
SESSION          = ISID 00023d000001 TSID 80  
InitialR2T      = Yes  
FirstBurstLength = 262144 Bytes  
MaxBurstLength  = 16776192 Bytes  
Header Digest   = 1  
Data Digest     = 1  
Login Timeout   = 15 Seconds  
Auth Timeout    = 45 Seconds  
Active Timeout  = 5 Seconds  
Idle Timeout    = 60 Seconds  
Ping Timeout    = 5 Seconds
```

```
#####  
####
```

```
TARGET NAME      = spa-vt  
TARGET ID        = 11  
ADDRESS          = 10.48.69.242:3260,128  
STATUS           = CONNECTED 10.48.69.238:49500 <->  
10.48.69.242:3260  
                  9/19/2003 15:40:42  
SESSION          = ISID 00023d000001 TSID 80  
InitialR2T      = Yes  
FirstBurstLength = 262144 Bytes  
MaxBurstLength  = 16776192 Bytes  
Header Digest   = 1  
Data Digest     = 1  
Login Timeout   = 15 Seconds  
Auth Timeout    = 45 Seconds  
Active Timeout  = 5 Seconds  
Idle Timeout    = 60 Seconds  
Ping Timeout    = 5 Seconds
```

*!--- Here are some of the entries you can expect to
find in the syslog:* [/]# **dmesg**

```
[...]  
iSCSI: session 0x4179b000 target 11 accepted the  
preferred value (None) DataDigest=CRC32C  
iSCSI: session 0x41a64800 target 10 accepted the  
preferred value (None) DataDigest=CRC32C  
iSCSI: Direct Access Device found at lun 3 on target 11  
Vendor Id   : DGC  
Product Id  : RAID 1  
Product    :  
Rev: 0632  
iSCSI: Direct Access Device found at lun 0 on target 10  
Vendor Id   : SEAGATE  
Product Id  : ST318203FC  
Product    :  
Rev: 0004  
iSCSI: Direct Access Device found at lun 4 on target 11
```

```

Vendor Id   : DGC
Product Id  : RAID 1                               Product
Rev: 0632

iSCSI: iscsi_recv_cmd: session (0x4179b000)
recv_cmd(sc) (0x41844800), Cmd 0x25, status 0x2,
      senselen 18, sense key 06, ASC/ASCQ 29/00,
task (0x40718b00) to (host 255 target 11 lun 3),
      TargetAlias spa-vt
      Sense 70000600 0000000a 00000000 29000000 0000

READ_CAPACITY result = 0x2 Target = 0xb LUN = 0x3
iSCSI: iscsi_recv_cmd: task (0x40718b00) itt 9 to (host
255 target 11 lun 3), Cmd 0x25,
      U(Overflow/Underflow) underflow, received
0(task->rxdata), residual 8, expected 8
iSCSI: iscsi_recv_cmd: session (0x4179b000)
recv_cmd(sc) (0x41844800), Cmd 0x25, status 0x2,
senselen 18,
      sense key 06, ASC/ASCQ 29/00, task
(0x40718c00) to (host 255 target 11 lun 4), TargetAlias
spa-vt
      Sense 70000600 0000000a 00000000 29000000 0000

READ_CAPACITY result = 0x2 Target = 0xb LUN = 0x4
iSCSI: iscsi_recv_cmd: task (0x40718c00) itt 11 to
(host 255 target 11 lun 4), Cmd 0x25,
      U(Overflow/Underflow) underflow, received
0(task->rxdata), residual 8, expected 8

```

Exibições do Vaticano (MDS 9216)

```

vatican# show zone status vsan 1016
VSAN: 1016 default-zone: deny distribute: active only
Interop: Off
Full Zoning Database :
  Zonesets:1 Zones:3 Aliases: 0
Active Zoning Database :
  Name: iscsidoc Zonesets:1 Zones:3
Status: Activation completed at Wed Sep 17 13:03:56
2003

```

```

vatican# show zone active vsan 1016
zone name jbod vsan 1016
* fcid 0x7902e8 [pwwn 21:00:00:20:37:67:f7:a2]
* fcid 0x790100 [symbolic-nodename 10.48.69.238]

zone name spa vsan 1016
* fcid 0x790104 [pwwn 50:06:01:60:88:02:a8:2b]
* fcid 0x790100 [symbolic-nodename 10.48.69.238]

zone name spb vsan 1016
* fcid 0x790105 [pwwn 50:06:01:68:88:02:a8:2b]
* fcid 0x790100 [symbolic-nodename 10.48.69.238]

```

```
vatican# show flogi database vsan 1016
```

```

-----
INTERFACE  VSAN    FCID          PORT NAME
NODE NAME
-----
fc1/3      1016  0x7902e8    21:00:00:20:37:67:f7:a2
20:00:00:20:37:67:f7:a2

```

```
fc1/7      1016  0x790104  50:06:01:60:88:02:a8:2b
50:06:01:60:11:02:a8:2b
fc1/11     1016  0x790105  50:06:01:68:88:02:a8:2b
50:06:01:60:11:02:a8:2b
iscsi2/1   1016  0x790100  20:03:00:0c:30:57:5e:c2
20:02:00:0c:30:57:5e:c2
```

Total number of flogi = 4.

vatican# **show fcns database vsan 1016**

VSAN 1016:

```
-----
FCID          TYPE  PWWN                               (VENDOR)
FC4-TYPE:FEATURE
-----
0x790100      N      20:03:00:0c:30:57:5e:c2 (Cisco)
scsi-fcp:init isc..w
0x790104      N      50:06:01:60:88:02:a8:2b (Clariion)
scsi-fcp:target
0x790105      N      50:06:01:68:88:02:a8:2b (Clariion)
scsi-fcp:target
0x7902e8      NL     21:00:00:20:37:67:f7:a2 (Seagate)
scsi-fcp:target
Total number of entries = 4
```

--- FCID 0x790100 is the virtual N port(HBA) for the iSCSI host.

vatican# **show fcns database detail vsan 1016**

VSAN:1016 FCID:0x790100

```
-----
port-wwn (vendor)      :20:03:00:0c:30:57:5e:c2 (Cisco)
node-wwn                :20:02:00:0c:30:57:5e:c2
class                   :2,3
node-ip-addr            :10.48.69.238
ipa                     :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
symbolic-port-name     :
symbolic-node-name     :10.48.69.238
port-type               :N
port-ip-addr           :0.0.0.0
fabric-port-wwn        :20:41:00:0c:30:57:5e:c0
hard-addr               :0x000000
-----
```

VSAN:1016 FCID:0x790104

```
-----
port-wwn (vendor)      :50:06:01:60:88:02:a8:2b
(Clariion)
node-wwn                :50:06:01:60:11:02:a8:2b
class                   :3
node-ip-addr            :0.0.0.0
ipa                     :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:target
symbolic-port-name     :
symbolic-node-name     :
port-type               :N
port-ip-addr           :0.0.0.0
fabric-port-wwn        :20:07:00:0c:30:57:5e:c0
hard-addr               :0x000000
-----
```

VSAN:1016 FCID:0x790105

```
-----  
port-wwn (vendor)      :50:06:01:68:88:02:a8:2b  
(Clariion)  
node-wwn               :50:06:01:60:11:02:a8:2b  
class                  :3  
node-ip-addr           :0.0.0.0  
ipa                    :ff ff ff ff ff ff ff ff  
fc4-types:fc4_features:scsi-fcp:target  
symbolic-port-name    :  
symbolic-node-name    :  
port-type              :N  
port-ip-addr           :0.0.0.0  
fabric-port-wwn       :20:0b:00:0c:30:57:5e:c0  
hard-addr              :0x000000  
-----
```

VSAN:1016 FCID:0x7902e8

```
-----  
port-wwn (vendor)      :21:00:00:20:37:67:f7:a2  
(Seagate)  
node-wwn               :20:00:00:20:37:67:f7:a2  
class                  :3  
node-ip-addr           :0.0.0.0  
ipa                    :ff 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       :20:03:00:0c:30:57:5e:c0  
hard-addr              :0x000000  
-----
```

Total number of entries = 4

vatican# **show iscsi initiator**

```
iSCSI Node name is 10.48.69.238  
  iSCSI Initiator name: iqn.1987-  
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale  
  iSCSI alias name: ape  
  Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)  
  Member of vsans: 1016  
  Number of Virtual n_ports: 1  
  Virtual Port WWN is 20:03:00:0c:30:57:5e:c2  
(dynamic)  
    Interface iSCSI 2/1, Portal group tag: 0x80  
    VSAN ID 1016, FCID 0x790100
```

vatican# **show iscsi initiator configured**

```
iSCSI Node name is 10.48.69.238  
  Member of vsans: 1016
```

vatican# **show iscsi initiator detail**

```
iSCSI Node name is 10.48.69.238  
  iSCSI Initiator name: iqn.1987-  
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale  
  iSCSI alias name: ape  
  Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)  
  Member of vsans: 1016  
  Number of Virtual n_ports: 1  
  
  Virtual Port WWN is 20:03:00:0c:30:57:5e:c2  
(dynamic)
```

Interface iSCSI 2/1, Portal group tag is 0x80
VSAN ID 1016, FCID 0x790100

2 FC sessions, 2 iSCSI sessions

iSCSI session details

Target: spa-vt

Statistics:

PDU: Command: 10, Response: 10

Bytes: TX: 416, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.242:3260, Remote

10.48.69.238:49500

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 62 ms, Variance:

3

Advertized window: Current: 256 KB,

Maximum: 256 KB, Scale: 3

Peer receive window: Current: 576 KB,

Maximum: 576 KB, Scale: 4

Congestion window: Current: 4 KB

Target: seagate

Statistics:

PDU: Command: 4, Response: 4

Bytes: TX: 304, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.242:3260, Remote

10.48.69.238:49501

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 62 ms, Variance:

3

Advertized window: Current: 256 KB,

Maximum: 256 KB, Scale: 3

Peer receive window: Current: 576 KB,

Maximum: 576 KB, Scale: 4

Congestion window: Current: 4 KB

FCP Session details

Target FCID: 0x790104 (S_ID of this session:
0x790100)

pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: spa-vt

Negotiated parameters

RcvDataFieldSize 1024 our_RcvDataFieldSize
1392

MaxBurstSize 0, EMPD: FALSE

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

Statistics:

PDU: Command: 0, Response: 10

Target FCID: 0x7902e8 (S_ID of this session:
0x790100)

pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: seagate

Negotiated parameters

RcvDataFieldSize 1392 our_RcvDataFieldSize

```
1392
    MaxBurstSize 0, EMPD: FALSE
    Random Relative Offset: FALSE, Sequence-in-
order: Yes
    Statistics:
    PDU: Command: 0, Response: 4

vatican# show iscsi initiator iscsi-session detail
iSCSI Node name is 10.48.69.238
    iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale
    iSCSI alias name: ape
    Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)
    Member of vsans: 1016
    Number of Virtual n_ports: 1
    Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic)
    Interface iSCSI 2/1, Portal group tag is 0x80
    VSAN ID 1016, FCID 0x790100
    2 FC sessions, 2 iSCSI sessions
    iSCSI session details
    Target: spa-vt
    Statistics:
    PDU: Command: 10, Response: 10
    Bytes: TX: 416, RX: 0
    Number of connection: 1
    TCP parameters
    Local 10.48.69.242:3260, Remote
10.48.69.238:49500
    Path MTU: 1500 bytes
    Retransmission timeout: 300 ms
    Round trip time: Smoothed 62 ms, Variance:
2
    Advertized window: Current: 256 KB,
Maximum: 256 KB, Scale: 3
    Peer receive window: Current: 576 KB,
Maximum: 576 KB, Scale: 4
    Congestion window: Current: 4 KB
    Target: seagate
    Statistics:
    PDU: Command: 4, Response: 4
    Bytes: TX: 304, RX: 0
    Number of connection: 1
    TCP parameters
    Local 10.48.69.242:3260, Remote
10.48.69.238:49501
    Path MTU: 1500 bytes
    Retransmission timeout: 300 ms
    Round trip time: Smoothed 62 ms, Variance:
2
    Advertized window: Current: 256 KB,
Maximum: 256 KB, Scale: 3
    Peer receive window: Current: 576 KB,
Maximum: 576 KB, Scale: 4
    Congestion window: Current: 4 KB

vatican# show iscsi initiator fcp-session detail
iSCSI Node name is 10.48.69.238
    iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale
    iSCSI alias name: ape
    Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)
    Member of vsans: 1016
    Number of Virtual n_ports: 1
```



```

Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic)
  Interface iSCSI 2/1, Portal group tag is 0x80
  VSAN ID 1016, FCID 0x790100
  2 FC sessions, 2 iSCSI sessions
  FCP Session details
    Target FCID: 0x790104 (S_ID of this session:
0x790100)
      pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b
      Session state: LOGGED_IN
      1 iSCSI sessions share this FC session
      Target: spa-vt
      Negotiated parameters
        RcvDataFieldSize 1024 our_RcvDataFieldSize
1392
        MaxBurstSize 0, EMPD: FALSE
        Random Relative Offset: FALSE, Sequence-in-
order: Yes
      Statistics:
        PDU: Command: 0, Response: 10
      Target FCID: 0x7902e8 (S_ID of this session:
0x790100)
        pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2
        Session state: LOGGED_IN
        1 iSCSI sessions share this FC session
        Target: seagate
        Negotiated parameters
          RcvDataFieldSize 1392 our_RcvDataFieldSize
1392
          MaxBurstSize 0, EMPD: FALSE
          Random Relative Offset: FALSE, Sequence-in-
order: Yes
        Statistics:
          PDU: Command: 0, Response: 4

vatican# show iscsi virtual-target configured
target: seagate
  * Port WWN 21:00:00:20:37:67:f7:a2
  === The "*" means you have both discovery and target
session. If there
  is no "*" in front of the pWWN, it means you only have
discovery session.
  Configured node
    No. of LU mapping: 1
      iSCSI LUN: 0000, FC LUN: 0000
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 1
      initiator 10.48.69.238/32 is permitted
      all initiator permit is disabled
target: spa-vt
  * Port WWN 50:06:01:60:88:02:a8:2b
  Secondary PWWN 50:06:01:68:88:02:a8:2b
  Configured node
    No. of LU mapping: 2
      iSCSI LUN: 0003, FC LUN: 0020
      iSCSI LUN: 0004, FC LUN: 0021
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 1
      initiator 10.48.69.238/32 is permitted
      all initiator permit is disabled

```

```

vatican# show iscsi stats iscsi 2/1
iscsi2/1
  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
    50932 packets input, 60370640 bytes
      Command 3659 pdus, Data-out 41069 pdus,
56533832 bytes, 2476 fragments
      output 115926 packets, 112863536 bytes
      Response 3374 pdus (with sense 206), R2T 1897
pdus
      Data-in 103999 pdus, 106404584 bytes

```

```

vatican# show ips arp interface gigabitethernet 2/1
Protocol      Address      Age (min)    Hardware Addr
Type  Interface
Internet      10.48.69.200      0      0008.e21e.c7bc
ARPA GigabitEthernet2/1
Internet      10.48.69.201      5      0202.3d30.45c9
ARPA GigabitEthernet2/1
Internet      10.48.69.206      5      0202.3d30.45ce
ARPA GigabitEthernet2/1
Internet      10.48.69.209      3      0202.3d30.45d1
ARPA GigabitEthernet2/1
Internet      10.48.69.226      2      0060.08f6.bc1a
ARPA GigabitEthernet2/1
Internet      10.48.69.229      4      0800.209e.edab
ARPA GigabitEthernet2/1
Internet      10.48.69.231      1      0002.b3c1.7dab
ARPA GigabitEthernet2/1
Internet      10.48.69.233      0      0010.4200.7d5b
ARPA GigabitEthernet2/1
Internet      10.48.69.238      0      0030.6e1b.6f51
ARPA GigabitEthernet2/1
Internet      10.48.69.239     10      0030.6e1c.a00b
ARPA GigabitEthernet2/1
Internet      10.48.69.241      0      000b.cdaf.b4c3
ARPA GigabitEthernet2/1
Internet      10.48.69.248      4      0202.3d30.45f8
ARPA GigabitEthernet2/1
Internet      10.48.69.252      1      0202.3d30.45fc
ARPA GigabitEthernet2/1
Internet      10.10.2.28        7      0202.3d0a.021c
ARPA GigabitEthernet2/1

```

```

vatican# show ips stats tcp interface gigabitethernet
2/1 detail
TCP Statistics for port GigabitEthernet2/1
  TCP send stats
    261205 segments, 117757220 bytes
    140632 data, 51907 ack only packets
    2655 control (SYN/FIN/RST), 0 probes, 2639 window
updates
    63382 segments retransmitted, 90885612 bytes
    63382 retransmitted while on ethernet send queue,
1 packets split
    13327 delayed acks sent
  TCP receive stats
    249073 segments, 72669 data packets in sequence,
61525764 bytes in sequence
    2335 predicted ack, 68605 predicted data

```

```

0 bad checksum, 0 multi/broadcast, 0 bad offset
0 no memory drops, 0 short segments
4396 duplicate bytes, 205 duplicate packets
0 partial duplicate bytes, 0 partial duplicate
packets
0 out-of-order bytes, 2625 out-of-order packets
0 packet after window, 0 bytes after window
0 packets after close
80504 acks, 117762158 ack bytes, 0 ack toomuch,
96274 duplicate acks
0 ack packets left of snd_una, 7 non-4 byte
aligned packets
54199 window updates, 0 window probe
6343 pcb hash miss, 709 no port, 6 bad SYN, 0
paws drops
TCP Connection Stats
0 attempts, 2718 accepts, 2718 established
2716 closed, 15 drops, 0 conn drops
3 drop in retransmit timeout, 10 drop in
keepalive timeout
0 drop in persist drops, 0 connections drained
TCP Miscellaneous Stats
37062 segments timed, 41787 rtt updated
817 retransmit timeout, 1 persist timeout
22654 keepalive timeout, 22643 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
2720 entries, 2718 connections completed, 0
entries timed out
0 dropped due to overflow, 2 dropped due to RST
0 dropped due to ICMP unreachable, 0 dropped due to
bucket overflow
0 abort due to no memory, 2 duplicate SYN, 183
no-route SYN drop
0 hash collisions, 0 retransmitted
TCP Active Connections
Local Address Remote Address State
Send-Q Recv-Q
10.48.69.242:3260 10.48.69.238:49499
ESTABLISH 0 0
10.48.69.242:3260 10.48.69.238:49500
ESTABLISH 0 0
10.48.69.242:3260 10.48.69.238:49501
ESTABLISH 0 0
0.0.0.0:3260 0.0.0.0:0
LISTEN 0 0
vatican# discover scsi-target local
discovery started

vatican# show scsi-target devices vsan 1016
-----
VSAN FCID PWWN VENDOR
MODEL REV
-----
1016 0x790104 50:06:01:60:88:02:a8:2b DGC
RAID 0 0632
1016 0x7902e8 21:00:00:20:37:67:f7:a2 SEAGATE
ST318203FC 0004

```

vatican# show scsi-target lun vsan 1016

- RAID from DGC (Rev 0632)

FCID is 0x790104 in VSAN 1016, PWWN is
50:06:01:60:88:02:a8:2b

LUN	Capacity (MB)	Status	Serial Number	Device-Id
0x0	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
da:05:b6:a9:b6:9d:7b:00				C:1 A:0
T:0 00:00:00:00				
0x1	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
6a:66:0d:74:cb:33:88:6c				C:1 A:0
T:0 00:01:00:00				
0x2	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ec:81:5b:a2:c4:43:0d:8a				C:1 A:0
T:0 00:02:00:00				
0x3	2147	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
e0:47:b3:be:3b:00:e0:d5				C:1 A:0
T:0 00:03:00:00				
0x4	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
00:51:5b:7f:3d:9a:7b:ce				C:1 A:0
T:0 00:04:00:00				
0x5	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ab:b1:ae:80:59:c0:fc:f0				C:1 A:0
T:0 00:05:00:00				
0x6	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ad:91:58:af:d2:fd:c7:47				C:1 A:0
T:0 00:06:00:00				
0x7	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
b1:ef:e7:6c:44:5c:16:97				C:1 A:0
T:0 00:07:00:00				
0x8	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
84:4f:09:60:30:1e:fc:50				C:1 A:0

T:0 00:08:00:00	0x9 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
aa:6d:e2:0e:ce:7a:cc:21				C:1 A:0
T:0 00:09:00:00	0xa 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
5b:66:67:89:6c:f2:d1:56				C:1 A:0
T:0 00:0a:00:00	0xb 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
a9:32:bd:04:4a:bb:3d:9b				C:1 A:0
T:0 00:0b:00:00	0xc 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
cd:d9:96:f7:57:3f:07:0c				C:1 A:0
T:0 00:0c:00:00	0xd 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
0c:e5:ba:39:68:ca:d6:f0				C:1 A:0
T:0 00:0d:00:00	0xe 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
60:6e:ee:76:98:fc:ab:97				C:1 A:0
T:0 00:0e:00:00	0xf 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
8b:58:80:7b:12:fb:6b:12				C:1 A:0
T:0 00:0f:00:00	0x10 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
a1:2f:6d:b0:c3:d6:c2:46				C:1 A:0
T:0 00:10:00:00	0x11 1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
2c:48:c4:74:25:4b:26:dd				C:1 A:0
T:0 00:11:00:00	0x20 5369	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ba:18:6a:40:22:40:94:75				C:1 A:0
T:0 00:20:00:00	0x21 3221	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				

74:d2:42:9e:31:8d:ff:86

C:1 A:0

T:0 00:21:00:00

- ST318203FC from SEAGATE (Rev 0004)

FCID is 0x7902e8 in VSAN 1016, PWWN is

21:00:00:20:37:67:f7:a2

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

```
0x0      18210      Online  LRE8091500007039 C:1 A:0 T:3  
20:00:00:20:37:67:f7:a2
```

vatican# **show interface iscsi 2/1**

iscsi2/1 is up

Hardware is GigabitEthernet

Port WWN is 20:41:00:0c:30:57:5e:c0

Admin port mode is ISCSI

Port mode is ISCSI

Speed is 1 Gbps

iSCSI initiator is identified by name

Number of iSCSI session: 0, Number of TCP

connection: 0

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

Maximum allowed bandwidth is 500000 kbps

Minimum available bandwidth is 500000 kbps

Estimated round trip time is 10000 usec

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 50920 packets, 60370032 bytes

Command 3659 pdus, Data-out 41069 pdus,
56533832 bytes fragments 2476

Output 115914 packets, 112862928 bytes

Response 3374 pdus (with sense 206), R2T 1897
pdus

Data-in 103999 pdus, 106404584 bytes

vatican# **show interface gigabitethernet 2/1**

GigabitEthernet2/1 is up

Hardware is GigabitEthernet, address is
0005.3000.a85a

Internet address is 10.48.69.242/26

MTU 1500 bytes

Port mode is IPS

Speed is 1 Gbps

Beacon is turned off

Auto-Negotiation is turned on

iSCSI authentication: NONE

5 minutes input rate 440 bits/sec, 55 bytes/sec, 0

```
frames/sec
 5 minutes output rate 80 bits/sec, 10 bytes/sec, 0
frames/sec
850346 packets input, 127958119 bytes
 6488 multicast frames, 0 compressed
 0 input errors, 0 frame, 0 overrun 0 fifo
289960 packets output, 201600774 bytes, 0 underruns
 0 output errors, 0 collisions, 0 fifo
 0 carrier errors

vatican# show ip route

Codes: C - connected, S - static

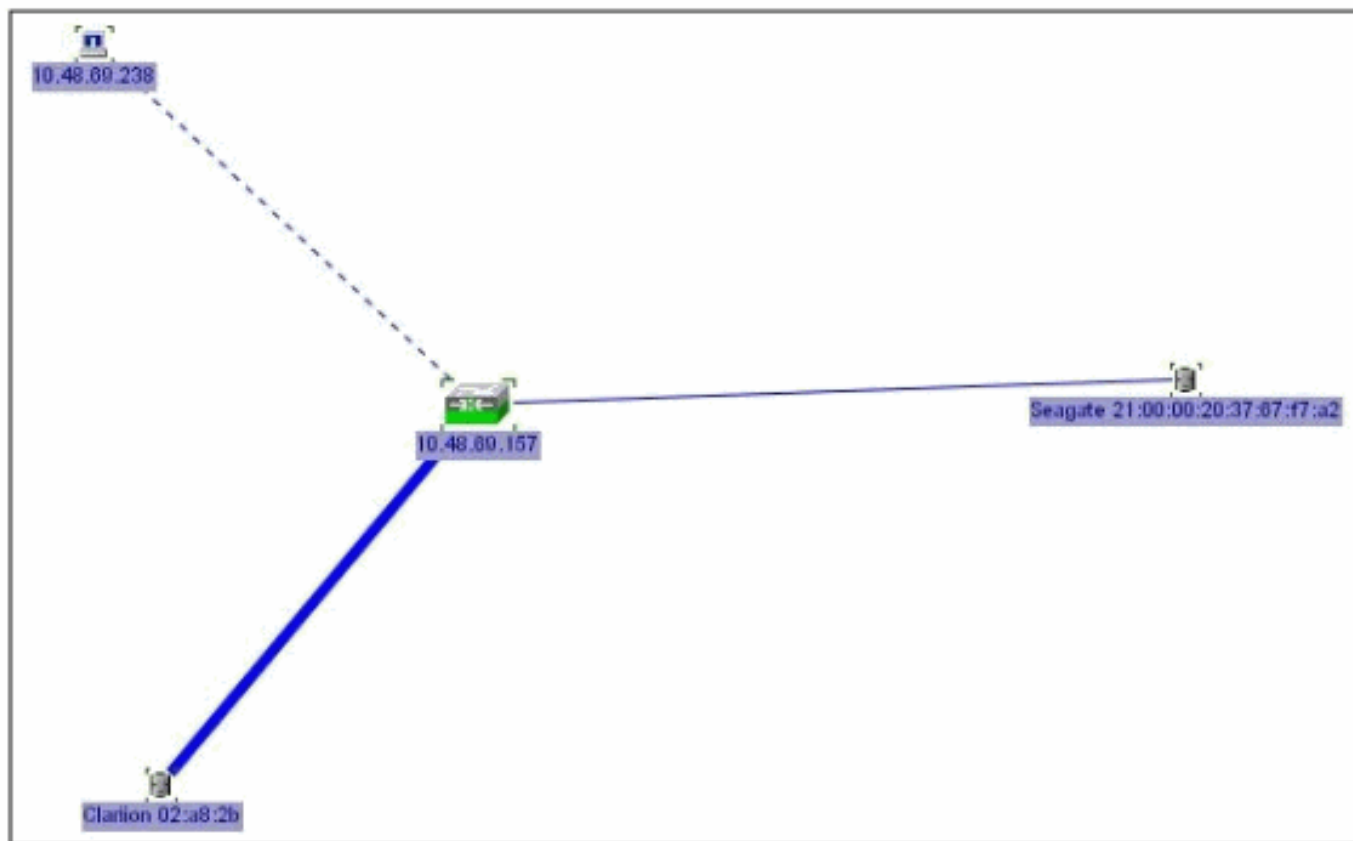
Default gateway is 10.48.69.129

C 10.48.69.192/26 is directly connected,
gigabitethernet2-1
C 10.48.69.128/26 is directly connected, mgmt0
```

Telas do Fabric Manager e do Device Manager

Esta seção fornece capturas de tela do MDS Fabric Manager 1.2(1a) e do Device Manager 1.2(1a).

Diagrama de topologia do Fabric Manager



O Gerenciador de dispositivos



Selecione **FC- > LUNs** no Gerenciador de dispositivos para exibir os pWWNs, IDs de LUNs e a capacidade dos LUNs.

vatican - LUN

Discover Targets LUNs

VsanId, Port WWN	Id	Capacity (MB)	SerialNum
1016, Clariion 50:06:01:60:88:02:a8:2b	0x0	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x1	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x2	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x3	2147	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x4	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x5	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x6	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x7	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x8	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x9	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xa	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xb	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xc	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xd	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xe	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xf	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x10	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x11	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x20	5369	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x21	3221	f60004202091
1016, Seagate 21:00:00:20:37:67:f7:a2	0x0	18210	LRE8091500007039HLT6

Refresh Help Close

21 row(s)

Selecione IP > iSCSI no Gerenciador de dispositivos para exibir as sessões iSCSI.

vatican - iSCSI

Initiators Targets Sessions Sessions Detail Session Statistics

Name or IpAddress	TargetName	Immediate Data	Ready To Transfer		Burst Size		Data InOrder		Connection Number	Recovery Level
			Initial	MaxOutstanding	First	Max	Sequence	PDU		
10.48.69.238		false	true	1	0	0	false	false	1	0
10.48.69.238	spa-vt	false	true	1	0	0	false	false	1	0
10.48.69.238	seagate	false	true	1	0	0	false	false	1	0

Refresh Help Close

Data retrieved at 17:49:36