

# Host del iSCSI HP-UX al ejemplo de configuración MDS/IPS-8

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## Introducción

Los driveres iSCSI de Cisco, que residen en el servidor, son un componente crucial de una solución iSCSI. Estos driveres iSCSI interceptan los **comandos Small Computer System Interface (SCSI)**, los encapsulan en los paquetes del IP, y los reorientan al Cisco SN 5420, Cisco SN 5428, Cisco SN5428-2, o el documento de Cisco MDS/IPS-8. This proporciona las configuraciones de muestra para el host del iSCSI HP-UX al SN5428.

## prerrequisitos

### Requisitos

Antes de que usted intente esta configuración, asegúrese que usted cumple estos requisitos:

- Instale el driver iSCSI que es compatible a su versión HP-UX. La mayoría de la versión actual del driver se puede encontrar en la página de la descarga del [driver iSCSI de Cisco \(clientes registrados solamente\)](#) en el cisco.com. El archivo de README.txt se incluye en el archivo del zip(tar) del driver. El README contiene la información sobre el acuerdo de licencia, instalación del driver y las instrucciones de configuración, y una descripción técnica general de la arquitectura del driver.
- Los requisitos del sistema operativo y los requisitos de la corrección se describen en la

## Componentes Utilizados

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

- Servidor A500 HP-UX 9000/800 con dos procesadores. **Nota:** En esta configuración de laboratorio, no hay adaptador Ethernet separado para el iSCSI, y el que está funcionando es 100 Mb. En cualquier entorno realista, usted tiene un adaptador separado del Gigabit Ethernet (GE) como su iniciador 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)

[...]

- El driver iSCSI de Cisco 3.3.3 para el HP-UX se ha utilizado. Se recomienda que usted también instale (por lo menos) la corrección acumulativa del último transporte estable del protocolo Protocolo de resolución de la dirección (ARP) (ARPA) de HP. Cuando este

documento fue escrito, éste estaba PHNE\_28538. Esta corrección tiene varias dependencias, así que usted tiene que instalarlas a medida que esté necesitado. Para más información de la instalación, visite

```
[/]# 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
XSWGR1100            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;getdirentries;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 MDS9216 con la versión de software 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>  
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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)

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

## Convenciones

El Cisco MDS 9000 que se utiliza en este documento refiere a cualquier Switch Product del Fibre Channel (el FC) en la familia MDS9000 (MDS 9506, MDS9509, MDS9216). La cuchilla del (IPS) del Cisco Intrusion Prevention System refiere al Módulo de servicios de almacenamiento IP. For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

## Antecedentes

El módulo del (IPS) del Cisco Intrusion Prevention System proporciona los host IP acceso a los dispositivos de almacenamiento del Fibre Channel (FC). El módulo ips es DS-X9308-SMIP. Proporciona el SCSI Routing transparente. Los host IP que utilizan el protocolo iscsi pueden transparente acceder los destinos iSCSI en la red FC que el host IP envía los comandos SCSI encapsuló en las unidades de datos del protocolo iscsi (PDU) a un puerto MDS9000 IPS sobre una conexión TCP/IP. En el módulo ips, la Conectividad se proporciona bajo la forma de interfaces de GE que se configuren apropiadamente. El módulo ips le permite para crear los destinos iSCSI virtuales y los asocia a las blancos físicas FC disponibles en el FC SAN. Presenta las blancos FC a los host IP como si las blancos físicas fueran asociadas a la red del IP.

Cada host del iSCSI que requiere el acceso al almacenamiento con las necesidades del módulo ips tener un driver iSCSI compatible instalado. Con la ayuda del protocolo iscsi, el driver iSCSI permite que un host del iSCSI transporte las peticiones y las respuestas de SCSI sobre una red del IP. Desde la perspectiva de un sistema operativo del host, el driver iSCSI aparece ser driver de transporte SCSI similar a un driver FC para un canal periférico en el host. Desde la perspectiva del dispositivo de almacenamiento, cada host IP aparece como host FC. Rutear SCSI del host IP al dispositivo de almacenamiento FC consiste en estas acciones principales:

- Transporte de las peticiones y de las respuestas del iSCSI sobre una red del IP entre los host y el módulo ips
- Rutear las peticiones y las respuestas de SCSI entre los host en una red del IP y el dispositivo de almacenamiento FC (convirtiendo el iSCSI al FCP y al FCP al iSCSI). Esta encaminamiento es realizada por el módulo ips.
- Transporte de las peticiones o de las respuestas FCP entre el módulo ips y los dispositivos de almacenamiento FC

El módulo ips no importa las blancos FC al iSCSI por abandono. Dinámico o correlación estática debe ser configurado antes de que el módulo ips ponga las blancos FC a disposición los iniciadores iSCSI. Cuando se configuran ambos, las blancos estáticamente asociadas FC tienen un nombre configurado. Este documento proporciona un ejemplo de la correlación estática. Con la correspondencia dinámica, cada vez que eso que el host del iSCSI conecta con el módulo ips, se crea un nuevo puerto FC N y el nWWNs y el pWWNs afectados un aparato para este puerto N pueden ser diferentes. Utilice el método de la correlación estática si usted necesita obtener el mismo nWWNs y el pWWNs para el iSCSI lo recibe conecta cada vez con el módulo ips. La correlación estática se puede utilizar en el módulo ips para acceder los conjuntos de almacenamiento inteligentes FC que tienen configuraciones del control de acceso y de los números de unidad lógica (LUN) que asocian y del enmascarado basadas en el pWWNs o el nWWNs del iniciador.

Usted puede controlar el acceso a cada destino iSCSI estático-asociado con la creación de una lista específica de puertos IPS en los cuales se haga publicidad la blanco y la creación de una lista de Nombres del nodo del iniciador iSCSI permitidos accederla. El FC Establecimiento de zonas-basó el control de acceso y el control de acceso iSCSI-basado es los dos mecanismos por los cuales el control de acceso se puede proporcionar para el iSCSI. Ambos métodos se pueden utilizar simultáneamente. En este valor por defecto de la configuración permiten al

Establecimiento de zonas para el VSAN específico. Los módulos IPS utilizan las listas nombre-basadas y FC Establecimiento de zonas-basadas del nodo iSCSI de control de acceso para aplicar el control de acceso durante el descubrimiento iSCSI y la creación de sesión iSCSI.

- **descubrimiento iSCSI:** Cuando un host del iSCSI crea una sesión de detección de iSCSI y las interrogaciones para todos los destinos iSCSI, el módulo ips devuelve solamente la lista de destinos iSCSI que este host del iSCSI se permite acceder basado en las directivas del control de acceso.
- **creación de sesión iSCSI:** Cuando un host IP inicia a una sesión iSCSI, el módulo ips verifica si el destino iSCSI especificado (en el pedido de registro de la sesión) es una blanco asociada los parásitos atmosféricos, y si es verdad, verifica si el nombre del nodo iSCSI del host IP se permite acceder la blanco. Si el host IP no tiene acceso, se rechaza su login.

El módulo ips, después crea un puerto virtual FC N (el puerto N puede existir ya) para este host IP y hace una interrogación del Servidor de nombres FC para el FCID del pWWN de la blanco FC que es accedido por el host IP. Utiliza el pWWN del puerto virtual del host IP N como el solicitante de la interrogación del Servidor de nombres. Así, el Servidor de nombres hace una consulta impuesta por zona para el pWWN y responde a la interrogación. Si el FCID es vuelto por el Servidor de nombres, después validan a la sesión iSCSI. Si no, se rechaza el pedido de registro.

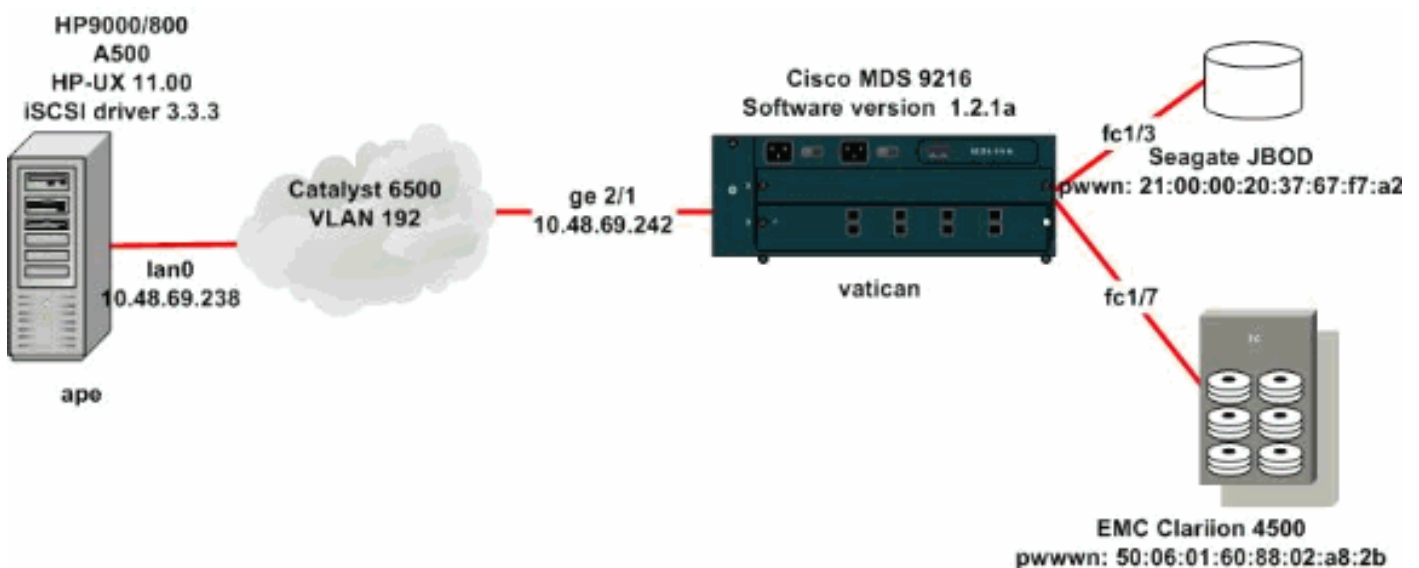
## Configurar

En esta sección, le presentan con la información para configurar el MDS9216 y el driver iSCSI de Cisco para Linux.

**Nota:** Para encontrar la información adicional en los comandos usados en este documento, utilice la [guía de configuración de la referencia de comandos Family del Cisco MDS 9000](#) y del [software de la familia del Cisco MDS 9000](#).

## Diagrama de la red

Este documento utiliza la configuración de red que se muestra en este diagrama:



## Configuraciones

Este documento utiliza las configuraciones mostradas aquí:

- Mono (HP 9000/800 A500 HP-UX 11.00)
- Vatican (MDS9216)

### Mono (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.*

## Vatican (Cisco MDS9216)

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.

```

## Verificación

Esta sección proporciona la información que usted puede utilizar para confirmar sus trabajos de la configuración correctamente y para resolverlos problemas en caso de que usted note los problemas.

[La herramienta de búsqueda de comandos \(clientes registrados solamente\)](#) soportan a los ciertos comandos show, que permite que usted vea una análisis de la salida del comando show.

## Comandos host HP-UX

- **netstat-n** o **lsof** — verifica las conexiones TCP.
- **iscsi-ls** — muestra los dispositivos actualmente disponibles.
- **dmesg** — recoge los mensajes de diagnóstico.

## Comandos MDS/IPS-8

- **zona de la demostración** — información de zona de las visualizaciones.
- **muestre la base de datos del flogi** — información del servidor del FLOGI de las visualizaciones.
- **muestre la base de datos del fcns** — información del Servidor de nombres de las visualizaciones para un VSAN específico.
- **muestre la calidad de miembro del vsan** — información de la interfaz de las visualizaciones para diversos VSAN.
- **iscsi de la demostración** — diversa información iSCSI de las visualizaciones.
- **demostración IPS** — diversa información de las visualizaciones sobre los Servicios IP.
- **scsi-target de la demostración** — dispositivos SCSI de las visualizaciones para el VSAN específico (para asociar el FC LUN al iscsi LUN).
- **interfaz de la demostración** — información de las visualizaciones sobre las diversas interfaces.
- **ruta de IP de la demostración** — información de la ruta de IP de las visualizaciones.

## Troubleshooting

En esta sección encontrará información que puede utilizar para solucionar problemas de configuración.

Aquí está la información de Troubleshooting relevante a esta configuración:

- Visualizaciones del mono (HP 9000/800 A500 HP-UX 11.00)
- Visualizaciones del Vatican (MDS9216)
- Visualizaciones del Fabric Manager y del administrador de dispositivo

### **Mono (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 10.48.69.238.49501 10.48.69.242.3260 ESTABLISHED
tcp          0      0 10.48.69.238.49500 10.48.69.242.3260 ESTABLISHED
```

```

tcp          0      0 10.48.69.238.49499
10.48.69.242.3260      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

```

## Visualizaciones del Vaticano (MDS9216)

```

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.a06c4e2b8b247cadceb8afla8474dale

```



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

```

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
```

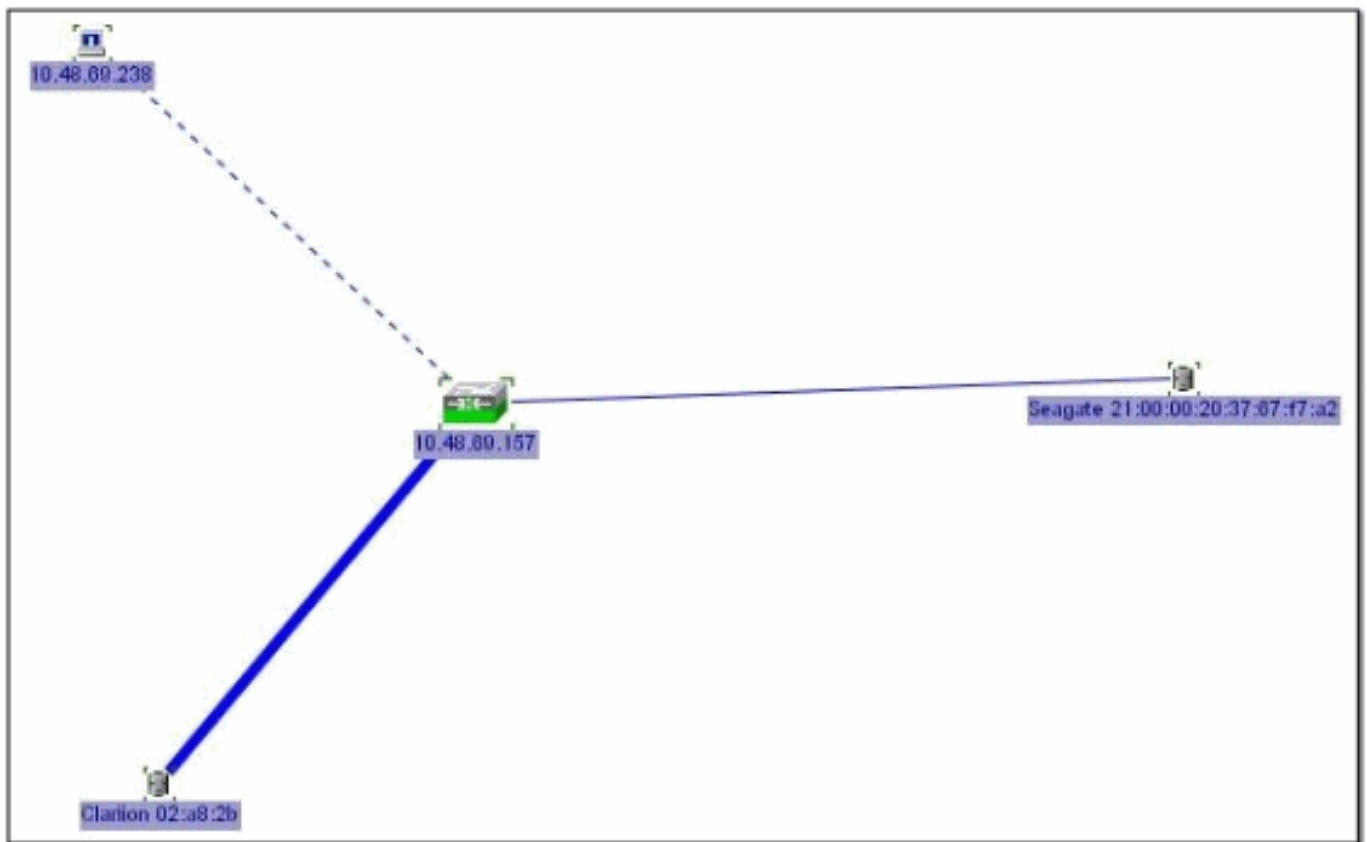
```
C 10.48.69.192/26 is directly connected,  
gigabitethernet2-1
```

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

## Visualizaciones del Fabric Manager y del administrador de dispositivo

Esta sección proporciona a las capturas de pantalla del Fabric Manager MDS 1.2(1a) y del administrador de dispositivo 1.2(1a).

### Diagrama de topología del Fabric Manager



### El administrador de dispositivo





Seleccione **FC**-> los **LUN** en el administrador de dispositivo para visualizar el pWWNs, las identificaciones de LUN, y la capacidad de sus LUN.

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)

Seleccione IP > - iSCSI en el administrador de dispositivo para visualizar a las sesiones 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