

# Ejemplo de Configuración de Host iSCSI HP-UX a MDS/IPS-8

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## Introducción

Los controladores iSCSI de Cisco, que residen en el servidor, son un componente clave de una solución iSCSI. Estos controladores iSCSI interceptan los comandos **de interfaz de sistemas informáticos pequeños (SCSI)**, los encapsulan en paquetes IP y los redirigen al Cisco SN 5420, Cisco SN 5428, Cisco SN 5428-2, o el documento Cisco MDS/IPS-8. This proporciona configuraciones de ejemplo para el host iSCSI HP-UX al SN 5428.

## Prerequisites

### Requirements

Antes de intentar esta configuración, asegúrese de cumplir estos requisitos:

- Instale el controlador iSCSI compatible con su versión HP-UX. La versión más actual del controlador se puede encontrar en la página de descarga [Cisco iSCSI Driver \(sólo clientes registrados\)](#) en Cisco.com. El archivo README.txt se incluye en el archivo zip(tar) del controlador. README contiene información sobre el acuerdo de licencia, las instrucciones de instalación y configuración del controlador, y una descripción técnica de la arquitectura del controlador.
- Los requisitos del sistema operativo y los requisitos de parches se describen en la sección

## Componentes Utilizados

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

- Servidor HP-UX 9000/800 A500 con dos procesadores. **Nota:** En esta configuración de laboratorio, no hay ningún adaptador Ethernet separado para iSCSI y el que se utiliza es de 100 Mb. En cualquier entorno realista, dispone de un adaptador Gigabit Ethernet (GE) independiente como iniciador(s) 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)

[...]

- Se ha utilizado el controlador Cisco iSCSI 3.3.3 para HP-UX. Se recomienda que también instale (al menos) el último parche acumulativo de transporte del protocolo de resolución de direcciones (ARPA) estable de HP. Cuando se escribió este documento, era PHNE\_28538.

Este parche tiene varias dependencias, por lo que debe instalarlas como y cuando sea necesario. Para obtener más información sobre la instalación, visite el [Sitio de Soporte de HP \(sólo clientes registrados\)](#).

```
[/]# 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   HP-UX 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 MDS 9216 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)
```

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.

## Convenciones

El Cisco MDS 9000 que se utiliza en este documento se refiere a cualquier producto de switch de canal de fibra (FC) de la familia MDS 9000 (MDS 9506, MDS 9509, MDS 9216). El blade Cisco Intrusion Prevention System (IPS) hace referencia al módulo de servicios de almacenamiento IP. For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

## Antecedentes

El módulo Cisco Intrusion Prevention System (IPS) proporciona a los hosts IP acceso a dispositivos de almacenamiento Fibre Channel (FC). El módulo IPS es DS-X9308-SMIP. Proporciona routing SCSI transparente. Los hosts IP que utilizan el protocolo iSCSI pueden acceder de forma transparente a los destinos iSCSI en la red FC. El host IP envía comandos SCSI encapsulados en unidades de datos de protocolo (PDU) iSCSI a un puerto IPS MDS 9000 a través de una conexión TCP/IP. En el módulo IPS, la conectividad se proporciona en forma de interfaces GE que están configuradas correctamente. El módulo IPS le permite crear destinos iSCSI virtuales y asignarlos a los objetivos físicos de FC disponibles en la SAN FC. Presenta los destinos FC a los hosts IP como si los destinos físicos se conectaran a la red IP.

Cada host iSCSI que requiera acceso al almacenamiento a través del módulo IPS necesita tener instalado un controlador iSCSI compatible. Con la ayuda del protocolo iSCSI, el controlador iSCSI permite a un host iSCSI transportar solicitudes y respuestas SCSI a través de una red IP. Desde la perspectiva de un sistema operativo host, el controlador iSCSI parece ser un controlador de transporte SCSI similar a un controlador FC para un canal periférico en el host. Desde la perspectiva del dispositivo de almacenamiento, cada host IP aparece como un host FC. El routing SCSI del host IP al dispositivo de almacenamiento FC consta de las siguientes acciones principales:

- Transporte de solicitudes y respuestas iSCSI a través de una red IP entre hosts y el módulo IPS
- Enrutamiento de solicitudes SCSI y respuestas entre hosts en una red IP y el dispositivo de almacenamiento FC (conversión de iSCSI a FCP y FCP a iSCSI). Este ruteo lo realiza el módulo IPS.
- Transporte de solicitudes FCP o respuestas entre el módulo IPS y los dispositivos de almacenamiento FC

El módulo IPS no importa destinos FC a iSCSI de forma predeterminada. La asignación dinámica o estática debe configurarse antes de que el módulo IPS ponga los destinos FC a disposición de los iniciadores iSCSI. Cuando ambos están configurados, los destinos FC asignados estáticamente tienen un nombre configurado. Este documento proporciona un ejemplo de mapeo estático. Con la asignación dinámica, cada vez que el host iSCSI se conecta al módulo IPS, se crea un nuevo puerto FC N y los nWWN y pWWN asignados para este puerto N pueden ser diferentes. Utilice el método de asignación estática si necesita obtener los mismos nWWN y pWWN para el host iSCSI cada vez que se conecte al módulo IPS. El mapping estático se puede utilizar en el módulo IPS para acceder a matrices de almacenamiento de FC inteligentes que tienen control de acceso y configuraciones de asignación de números de unidad lógica (LUN) y enmascaramiento basadas en los pWWN o nWWN del iniciador.

Puede controlar el acceso a cada destino iSCSI asignado estáticamente con la creación de una lista específica de puertos IPS en los que se anuncia el destino y la creación de una lista de nombres de nodos iniciadores iSCSI con permiso para acceder a él. El control de acceso basado en zonas FC y el control de acceso basado en iSCSI son los dos mecanismos mediante los cuales se puede proporcionar el control de acceso para iSCSI. Ambos métodos se pueden utilizar simultáneamente. En esta configuración, se permite la zonificación predeterminada para VSAN

específicas. Los módulos IPS utilizan listas de control de acceso basadas en nombres de nodos iSCSI y basadas en zonas FC para aplicar el control de acceso durante la detección de iSCSI y la creación de sesión iSCSI.

- **Detección de iSCSI:** Cuando un host iSCSI crea una sesión de detección iSCSI y consultas para todos los destinos iSCSI, el módulo IPS devuelve solamente la lista de destinos iSCSI a los que se permite acceder este host iSCSI en función de las políticas de control de acceso.
- **Creación de sesión iSCSI:** Cuando un host IP inicia una sesión iSCSI, el módulo IPS verifica si el destino iSCSI especificado (en la solicitud de inicio de sesión) es un destino asignado estático y, si es true, verifica si el nombre de nodo iSCSI del host IP tiene permiso para acceder al destino. Si el host IP no tiene acceso, se rechaza su inicio de sesión.

El módulo IPS, a continuación, crea un puerto N virtual de FC (es posible que el puerto N ya exista) para este host IP y realiza una consulta de servidor de nombre de FC para el FCID del pWWN de destino de FC al que se accede mediante el host IP. Utiliza el IPWWN del puerto N virtual del host IP como solicitante de la consulta del servidor de nombres. Por lo tanto, el servidor de nombres realiza una consulta por zona para el pWWN y responde a la consulta. Si el servidor de nombres devuelve el FCID, se acepta la sesión iSCSI. De lo contrario, se rechaza la solicitud de inicio de sesión.

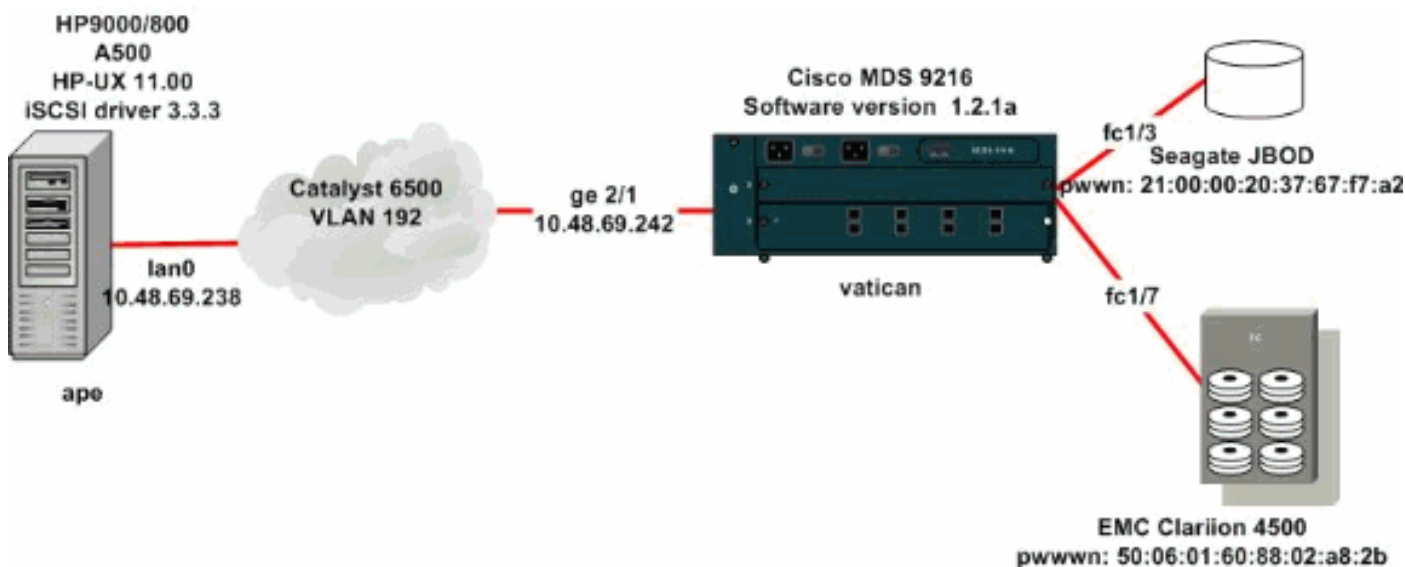
## Configurar

En esta sección, se le presenta la información para configurar el controlador MDS 9216 y Cisco iSCSI para Linux.

**Nota:** Para encontrar información adicional sobre los comandos usados en este documento, utilice la [Referencia de Comandos de la Familia Cisco MDS 9000](#) y la [Guía de Configuración de Software de la Familia Cisco MDS 9000](#).

## Diagrama de la red

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



## Configuraciones

Este documento usa las configuraciones detalladas aquí:

- 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 pwn
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
```

## Verificación

Esta sección proporciona información que puede utilizar para confirmar que su configuración funciona correctamente y para solucionar problemas en caso de que detecte problemas.

Ciertos **comandos show** son soportados por la [Command Lookup Tool](#) (sólo para clientes [registrados](#)), que le permite ver un análisis del resultado del comando [show](#).

## Comandos host HP-UX

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

## Comandos MDS/IPS-8

- **show zone**: muestra información de zona.
- **show flogi database**: muestra información del servidor FLOGI.
- **show fcns database**: muestra información del servidor de nombres para una VSAN específica.
- **show vsan membership**: muestra información de interfaz para diferentes VSAN.
- **show iscsi**: muestra información iSCSI diversa.
- **show ips**: muestra información diversa sobre los servicios IP.
- **show scsi-target**: muestra los dispositivos SCSI para VSAN específicos (para mapear FC-LUNs a iSCSI-LUNs).
- **show interface**: muestra información sobre varias interfaces.
- **show ip route**: muestra la información de la ruta IP.

## Troubleshoot

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

Aquí, está la información de troubleshooting relevante a esta configuración:

- Visualizaciones desde Ape (HP 9000/800 A500 HP-UX 11.00)
- Pantallas del Vaticano (MDS 9216)
- Visualizaciones de Fabric Manager y 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 10.48.69.238.49501
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
```

## Pantallas del 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
ESTABLISH 0 0
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

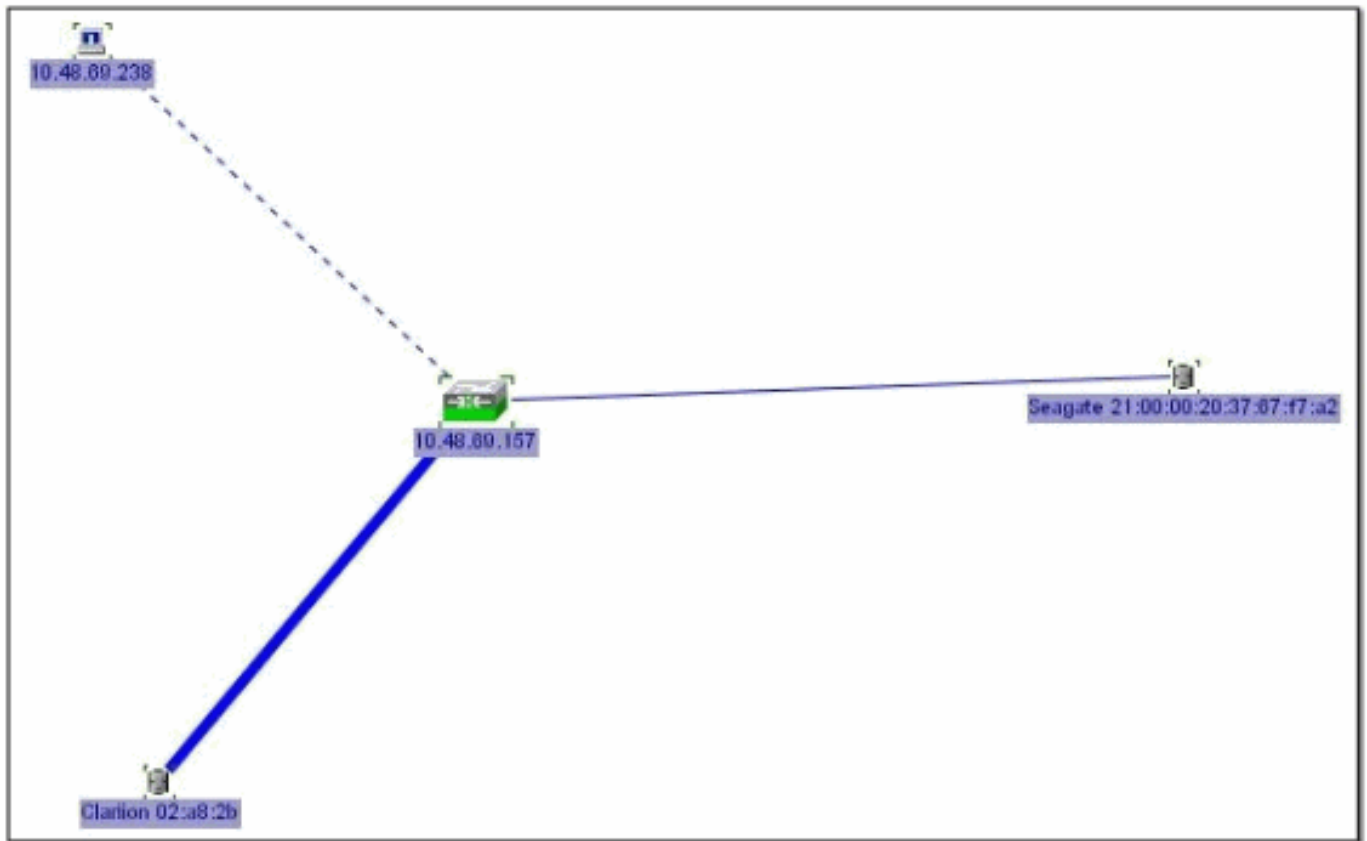
Default gateway is 10.48.69.129

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

## [Visualizaciones de Fabric Manager y Device Manager](#)

Esta sección proporciona capturas de pantalla de MDS Fabric Manager 1.2(1a) y Device Manager 1.2(1a).

### Diagrama de topología del Fabric Manager



### El administrador de dispositivos



Seleccione FC- > LUNs en el Administrador de dispositivos para mostrar los pWWN, IDs de LUNs y la capacidad de sus 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)

Seleccione IP > -iSCSI en el Administrador de dispositivos para mostrar 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