

Host do iSCSI HP-UX ao exemplo de configuração MDS/IPS-8

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[Introdução](#)

Os driveres iscsi Cisco, que residem no server, são um componente-chave de uma solução de iSCSI. Estes driveres iscsi interceptam **comandos Small Computer System Interface (SCSI)**, encapsular-los em pacotes IP, e reorientam-nos ao Cisco SN 5420, Cisco SN 5428, Cisco SN5428-2, ou o original de Cisco MDS/IPS-8. This fornece configurações de amostra para o host do iSCSI HP-UX ao SN5428.

[Pré-requisitos](#)

[Requisitos](#)

Antes que você tente esta configuração, certifique-se de que você cumpre estas exigências:

- Instale o driver iscsi que é compatível a sua versão HP-UX. A maioria de versão atual do direcionador pode ser encontrada na página da transferência do [driver iscsi Cisco \(clientes registrados somente\)](#) no cisco.com. O arquivo de README.txt é incluído no arquivo do zip(tar) do direcionador. O README contém a informação sobre o contrato de licença, instalação de driver e instruções de configuração, e uma visão geral técnica da arquitetura do driver.
- As exigências do sistema operacional e as exigências da correção de programa são descritas

na seção dos *requisitos do sistema* do [driver iscsi Cisco para Release Note HP-UX](#).

Componentes Utilizados

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

- Server A500 HP-UX 9000/800 com dois processadores. **Nota:** Nesta instalação de laboratório, não há nenhum adaptador do Ethernet separado para o iSCSI, e esse no uso é 100 Mb. Em todo o ambiente realista, você tem um adaptador separado do gigabit Ethernet como seu iniciador de iSCSI.

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

System Hardware

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

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

I/O Interfaces

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

Adapter

Installed Software

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

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

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

[...]

- O driver iscsi Cisco 3.3.3 para o HP-UX foi usado. Recomenda-se que você igualmente instale (pelo menos) a correção de programa cumulativa do transporte estável o mais atrasado do protocolo Protocolo de resolución de la dirección (ARP) (ARPA) do HP. Quando este original foi redigido, este era PHNE_28538. Esta correção de programa tem diversas

dependências, assim que você tem que instalá-las à medida que necessário. Para mais informação de instalação, visite a [site de suporte do oficial do HP \(clientes registrados somente\)](#).

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

```

```
Software
```

```

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

```

```

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

```

```
Hardware
```

```
RAM 963108 kB
```

```

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

```

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

```
Last reset at 955065 usecs after Wed Sep 10 08:13:50 2003
```

```
Reason: Reset Requested by CLI command reload
```

```
System version: 1.1(2)
```

As informações neste documento foram criadas a partir de dispositivos em um ambiente de laboratório específico. Todos os dispositivos utilizados neste documento foram iniciados com uma configuração (padrão) inicial. Se a sua rede estiver ativa, certifique-se de que entende o impacto potencial de qualquer comando.

Convenções

O Cisco MDS 9000 que é usado neste original refere todos os produtos de switch do Fibre Channel (o FC) na família MDS9000 (MDS 9506, MDS9509, MDS9216). A lâmina do Sistema de prevenção de intrusões da Cisco (IPS) refere o Módulo de serviços do armazenamento IP. For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

Informações de Apoio

O módulo do Sistema de prevenção de intrusões da Cisco (IPS) fornece Host IP alcança ao Fibre Channel (FC) dispositivos de armazenamento. O módulo ips é DS-X9308-SMIP. Fornece o roteamento scsi transparente. Os Host IP que usam o protocolo iscsi podem transparentemente alcançar destinos de iscsi na rede que FC o Host IP envia comandos scsi encapsulou nas unidades de dados do protocolo iscsi (PDU) a uma porta MDS9000 IPS sobre uma conexão TCP/IP. No módulo ips, a Conectividade é fornecida sob a forma das relações GE que são configuradas apropriadamente. O módulo ips permite-o de criar destinos de iscsi virtuais e traça-os aos alvos físicos FC disponíveis no FC SAN. Apresenta os alvos FC aos Host IP como se os alvos físicos foram anexados à rede IP.

Cada host do iSCSI que exige o acesso ao armazenamento através do módulo ips precisa de ter um driver iscsi compatível instalado. Com a ajuda do protocolo iscsi, o driver iscsi permite que um host do iSCSI transporte pedidos e respostas SCSI sobre uma rede IP. Da perspectiva de um sistema operacional do host, o driver iscsi parece ser um driver de transporte SCSI similar a um direcionador FC para um canal periférico no host. Da perspectiva do dispositivo de armazenamento, cada Host IP aparece como um host FC. Distribuir o SCSI do Host IP ao dispositivo de armazenamento FC consiste nestas ações principal:

- Transportando pedidos e respostas do iSCSI sobre uma rede IP entre anfitriões e o módulo ips
- Distribuindo pedidos e respostas SCSI entre anfitriões em uma rede IP e o dispositivo de armazenamento FC (convertendo o iSCSI ao FCP e ao FCP ao iSCSI). Este roteamento é executado pelo módulo ips.
- Transportando pedidos ou respostas FCP entre o módulo ips e dispositivos de armazenamento FC

O módulo ips não importa alvos FC ao iSCSI à revelia. Dinâmico ou mapeamento estático deve ser configurado antes que o módulo ips faça alvos FC disponíveis aos iniciadores de iSCSI. Quando ambos são configurados, os alvos estaticamente traçados FC têm um nome configurado. Este original fornece um exemplo do mapeamento estático. Com mapeamento dinâmico, cada vez que isso que o host do iSCSI conecta ao módulo ips, uma porta nova FC N é criada e o nWWNs e os pWWN atribuídos para esta porta N podem ser diferentes. Use o método do mapeamento estático se você precisa de obter o mesmo nWWNs e os pWWN para o iSCSI o hospedam cada vez conectam ao módulo ips. O mapeamento estático pode ser usado no módulo ips para alcançar os arranjos de armazenamento inteligentes FC que têm as configurações do controle de acesso e dos números de unidade lógica (LUN) que traçam e da máscara baseadas nos pWWN ou no nWWNs do iniciador.

Você pode controlar o acesso a cada destino de iscsi estático-traçado com a criação de uma lista específica de portas IPS em que o alvo é anunciado e a criação de uma lista de nomes de nó do iniciador de iSCSI permitidos alcançá-la. O FC Zoneamento-baseou o controle de acesso e o controle de acesso iSCSI-baseado é os dois mecanismos por que o controle de acesso pode ser fornecido para o iSCSI. Ambos os métodos podem ser usados simultaneamente. Neste padrão da configuração o Zoneamento é permitido para o VSAN específico. Os módulos ips usam listas de controle de acesso nome-baseadas e FC Zoneamento-baseadas do nó de iSCSI para reforçar o

controle de acesso durante a descoberta de iSCSI e a criação de sessão iSCSI.

- **descoberta de iSCSI:** Quando um host do iSCSI cria uma sessão de descoberta de iSCSI e perguntas para todos os destinos de iscsi, o módulo ips retorna somente a lista de destinos de iscsi que este host do iSCSI é permitido alcançar baseado nas políticas do controle de acesso.
- **criação de sessão iSCSI:** Quando um Host IP inicia uma sessão de iSCSI, o módulo ips verifica se o destino de iscsi especificado (na solicitação de login da sessão) é um alvo traçado estática, e se verdadeiro, verifica se o nome de nó de iSCSI do Host IP é permitido alcançar o alvo. Se o Host IP não tem o acesso, seu início de uma sessão está rejeitado.

O módulo ips, então cria uma porta virtual FC N (a porta N pode já existir) para este Host IP e faz uma pergunta do Nome do servidor FC para o FCID do alvo pWWN FC que é alcançado pelo Host IP. Usa o pWWN da porta virtual do Host IP N como o solicitador da pergunta do Nome do servidor. Assim, o Nome do servidor faz uma consulta aplicada por zona para o pWWN e responde à pergunta. Se o FCID é retornado pelo Nome do servidor, a seguir a sessão de iSCSI está aceita. Se não, a solicitação de login é rejeitada.

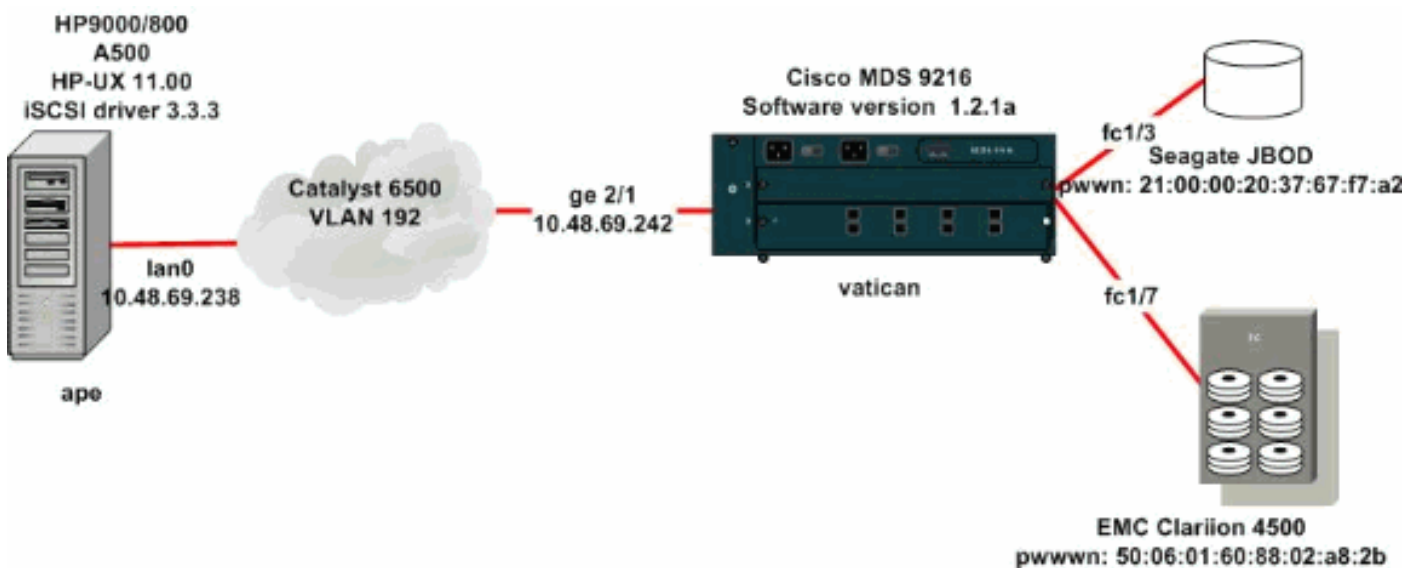
Configurar

Nesta seção, você é apresentado com a informação para configurar o MDS9216 e o driver iscsi Cisco para Linux.

Nota: Para encontrar a informação adicional nos comandos usados neste original, use o [manual de configuração da referência de comando da família do Cisco MDS 9000](#) e da [família do software do Cisco MDS 9000](#).

Diagrama de Rede

Este documento utiliza a configuração de rede mostrada neste diagrama:



Configurações

Este original usa as configurações mostradas aqui:

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

Macaco (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.
```

Verificar

Esta seção fornece a informação que você pode se usar para confirmar corretamente seus trabalhos da configuração e para os pesquisar defeitos caso que você observa problemas.

Os determinados comandos de exibição são apoiados pela [ferramenta de consulta de comandos \(clientes registrados somente\)](#), que permite que você ver uma análise do emissor de comando de execução.

Comandos host HP-UX

- **netstat-n** ou **lsof** — verifica as conexões de TCP.
- **iscsi-ls** — mostra os dispositivos atualmente disponíveis.
- **dmesg** — recolhe mensagens de diagnóstico.

Comandos MDS/IPS-8

- **zona da mostra** — informação da zona dos indicadores.
- **mostre o base de dados do flogi** — informação do servidor dos indicadores FLOGI.
- **mostre o base de dados dos fcns** — informação do Nome do servidor dos indicadores para um VSAN específico.
- **mostre a sociedade vsan** — informação da relação dos indicadores para VSAN diferentes.
- **iscsi da mostra** — várias informações de iSCSI dos indicadores.
- **mostra IP** — várias informação dos indicadores sobre Serviços IP.
- **scsi alvo da mostra** — dispositivos dos indicadores SCSI para o VSAN específico (para traçar o FC-LUNs ao iSCSI-LUNs).
- **relação da mostra** — informação dos indicadores sobre várias relações.
- **mostre a rota IP** — informação da rota IP dos indicadores.

Troubleshooting

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

Está aqui a informação de Troubleshooting relevante a esta configuração:

- Indicadores do macaco (HP 9000/800 A500 HP-UX 11.00)
- Indicadores de Vatican (MDS9216)
- Indicadores do Fabric Manager e do gerenciador de dispositivo

Macaco (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,
senseslen 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,
senseslen 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
```

Indicadores de Vatican (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.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
C:1 A:0
6a:66:0d:74:cb:33:88:6c
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
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
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
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
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
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
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
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
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
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

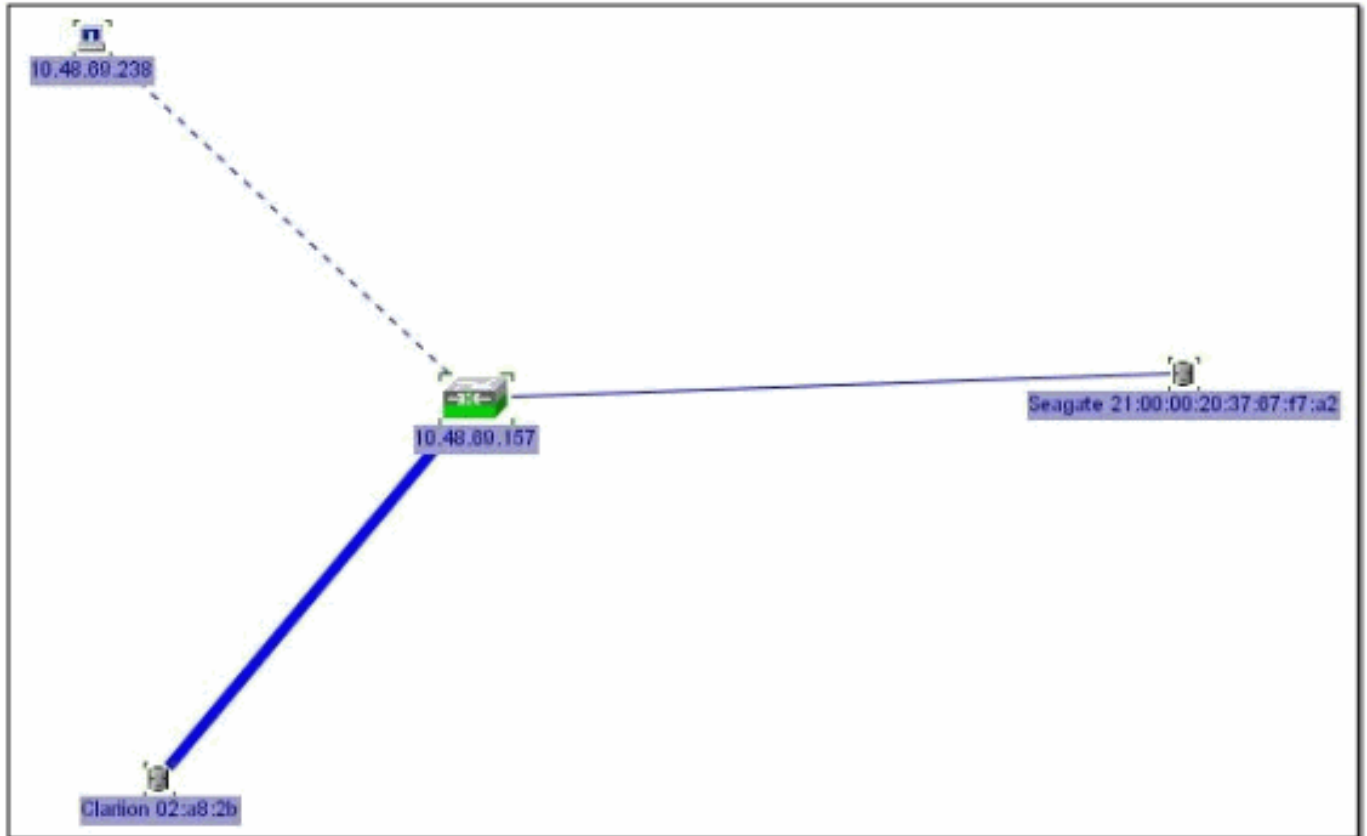
C 10.48.69.192/26 is directly connected,
gigabitethernet2-1
```

C 10.48.69.128/26 is directly connected, mgmt0

Indicadores do Fabric Manager e do gerenciador de dispositivo

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

Diagrama de topologia do Fabric Manager



O gerenciador de dispositivo



Selecione **FC** -> **LUN** no gerenciador de dispositivo para indicar os pWWN, o LUN ID, e a capacidade de seus 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)

Selecione IP > - iSCSI no gerenciador de dispositivo para indicar as sessões de 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