Configurando o host do iSCSI de Solaris ao MDS/IPS-8

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Introdução

Os direcionadores do Small Computer Systems Interface over IP (iSCSI) de Cisco são um componente-chave da solução de iSCSI. Esses drivers da iSCSI residem no servidor, onde eles:

- Comandos do iSCSI da intercepção.
- Encapsular os comandos em pacotes IP.
- Reoriente os comandos ao Cisco SN 5420, ao Cisco SN 5428, ao Cisco SN5428-2, ou ao Cisco MDS/IPS-8.

Este original fornece configurações de amostra para o host do iSCSI de Solaris a Cisco MDS/IPS-8.

Pré-requisitos

Requisitos

Certifique-se de atender a estes requisitos antes de tentar esta configuração:

- Instale o driver iscsi que é compatível com sua versão de Solaris e crie então a configuração de iSCSI no Cisco MDS 9000. Refira driveres iscsi Cisco (clientes registrados somente) para a maioria de versão atual do direcionador (solaris-iscsi-3.3.5.tar.Z). Um arquivo de README.txt é incluído no arquivo do FECHO DE CORRER do direcionador (ALCATRÃO). O

arquivo de README.txt contém:Informação do contrato de licençaInstalação de driver e instruções de configuraçãoUma visão geral técnica da arquitetura do driver
- Refira as seções dos requisitos do sistema no driver iscsi Cisco para Release Note de Sun Solaris para o operating system (OS) e as exigências da correção de programa.
- O driver iscsi Cisco para Sun Solaris é executado somente em máquinas de SPARC. O direcionador não funciona com nenhuns outros tipos de processamento (por exemplo, x86).

Componentes Utilizados

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

- SunOS 5.9, SPARC Ultra-4 E450

```
#uname -a

SunOS baboon 5.9 Generic sun4u sparc SUNW,Ultra-4
```

- Driver iscsi Cisco 3.3.3 para Solaris

```
#pkginfo -l CSCOiscsi

   PKGINST:  CSCOiscsi
      NAME:  Cisco iSCSI device driver
  CATEGORY:  system
      ARCH:  sparc
   VERSION:  3.3.3
   BASEDIR:  /opt/CSCOiscsi
    VENDOR:  Cisco Systems, Inc.
      DESC:  Cisco iSCSI device driver 3.3.3
    PSTAMP:  solaris-920030807170521
  INSTDATE:  Aug 25 2003 23:41
   HOTLINE:  For contracted support, 1-800-553-2447,
             Cisco Technical Assistance Center (TAC)
     EMAIL:  For online help, go to http://www.cisco.com/
    STATUS:  completely installed
     FILES:       74 installed pathnames
                  16 shared pathnames
                  29 directories
                  32 executables
                2182 blocks used (approx)

#iscsi-ls -v

iSCSI driver version: 3.3.3
```

- Cisco MDS9216 com Software Release 1.1.2

```
canterbury#show module

Mod  Ports  Module-Type                      Model              Status
---  -----  -------------------------------- ------------------ ------------
1    16     1/2 Gbps FC/Supervisor           DS-X9216-K9-SUP    active *
2    8      IP Storage Module                DS-X9308-SMIP      ok
Mod  Sw             Hw      World-Wide-Name(s) (WWN)
---  -----------    ------  --------------------------------------------------
1    1.1(2)         1.0     20:01:00:0c:30:6c:24:40 to 20:10:00:0c:30:6c:24:40
2    1.1(2)         0.3     20:41:00:0c:30:6c:24:40 to 20:48:00:0c:30:6c:24:40

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

* this terminal session
```

```
canterbury#show 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 1.0.7
  loader:    version 1.0(3a)
  kickstart: version 1.1(2)
  system:    version 1.1(2)

  BIOS compile time:       03/20/03
  kickstart image file is: bootflash:/k112
  kickstart compile time:  7/13/2003 20:00:00
  system image file is:    bootflash:/s112
  system compile time:     7/13/2003 20:00:00

Hardware
  RAM 963112 kB

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

  canterbury uptime is 16 days 20 hours 51 minute(s) 36 second(s)

  Last reset at 684726 usecs after Mon Aug 11 13:53:17 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

Consulte as Convenções de Dicas Técnicas da Cisco para obter mais informações sobre convenções de documentos.

Informações de Apoio

O módulo de armazenamento de IP fornece Host IP alcança ao Fibre Channel (FC) dispositivos de armazenamento. O módulo de armazenamento de IP é um DS-X9308-SMIP que forneça o roteamento transparente do iSCSI. Os Host IP que usam o protocolo iscsi podem transparentemente alcançar alvos do iSCSI ([FCP] do protocolo FC) na rede FC. O Host IP envia os comandos do iSCSI encapsulados nas unidades de dados do protocolo iscsi (PDU) a uma porta do armazenamento IP do Cisco MDS 9000 sobre uma conexão TCP/IP. As relações do gigabit Ethernet que são configuradas apropriadamente no módulo de armazenamento de IP fornecem a Conectividade. O módulo de armazenamento de IP:

- 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 são anexados localmente à rede

IP

Cada host do iSCSI que exige o acesso ao armazenamento através do módulo de armazenamento de IP deve ter um driver iscsi compatível instalado. O driver iscsi permite que um host do iSCSI transporte pedidos e respostas do iSCSI sobre uma rede IP com o protocolo iscsi. Da perspectiva de um OS do host, o driver iscsi parece ser um driver de transporte iSCSI similar a um direcionador FC para um canal periférico no host. Cada Host IP aparece como um host FC da perspectiva do dispositivo de armazenamento.

Termine estas etapas para distribuir o iSCSI do Host IP ao dispositivo de armazenamento FC:

- Transporte pedidos e respostas do iSCSI sobre uma rede IP entre anfitriões e o módulo de armazenamento de IP.
- Use o módulo de armazenamento de IP para distribuir pedidos e respostas do iSCSI entre anfitriões em uma rede IP e o dispositivo de armazenamento FC (iSCSI do converso ao FCP e vice-versa).
- Transporte pedidos ou respostas FCP entre o módulo de armazenamento de IP e dispositivos de armazenamento FC.

O módulo de armazenamento de IP não importa alvos FC ao iSCSI à revelia. Você deve configurar dinâmico ou o mapeamento estático de modo que o módulo de armazenamento de IP faça alvos FC disponíveis aos iniciadores de iSCSI. Os alvos estaticamente traçados FC têm um nome configurado quando ambos são configurados. Esta configuração fornece exemplos do mapeamento estático.

Cada vez que isso que o host do iSCSI conecta ao módulo de armazenamento de IP com o mapeamento dinâmico:

- Uma porta nova FC N é criada.
- Os nomes mundiais do nó (nWWNs) e os nomes mundiais da porta (pWWN) atribuídos para esta porta N podem ser diferentes.

Use o método do mapeamento estático se você deve obter o mesmo nWWNs e os pWWN para o iSCSI hospedam cada vez que conecta ao módulo de armazenamento de IP. Você pode usar o mapeamento estático no módulo de armazenamento de IP para alcançar os arranjos de armazenamento inteligentes FC que têm:

- Controle de acesso
- Mapeamento do número de unidade lógica (LUN) e configuração do mascaramento que é baseada nos pWWN ou no nWWNs do iniciador

Especifique estes artigos para controlar o acesso a cada destino de iscsi estático-traçado:

- Uma lista de armazenamento IP move em qual é anunciado
- Uma lista de nomes de nó do iniciador de iSCSI que é permitido o acesso

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. Você pode usar ambos os métodos simultaneamente. O Zoneamento do padrão foi permitido para uma rede de área específica do Virtual Storage (VSAN) nesta configuração. Os módulos de armazenamento de IP 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.

O iniciador de iSCSI pode estaticamente ser definido pelo endereço IP de Um ou Mais Servidores

Cisco ICM NT ou pelo nome qualificado do iSCSI (IQN). Uma opção do proxy-**iniciador** permite a criação dinâmica dos iniciadores de iSCSI em SAN-IOS 1.3 para o Switches de Cisco MDS.

a descoberta de iSCSI ocorre quando um host do iSCSI cria uma sessão de descoberta de iSCSI e perguntas para todos os destinos de iscsi. O módulo de armazenamento de IP retorna somente a lista de destinos de iscsi que as políticas do controle de acesso permitem que o host do iSCSI alcance.

a criação de sessão iSCSI ocorre quando um Host IP inicia uma sessão de iSCSI. O módulo de armazenamento de IP verifica:

- Se o destino de iscsi especificado (na solicitação de login da sessão) é um alvo traçado estática
- Que o nome de nó de iSCSI do Host IP está permitido alcançar o alvo

O início de uma sessão é rejeitado se o Host IP não tem o acesso.

O módulo de armazenamento de IP então:

- Cria uma porta virtual FC N (a porta N pode já existir) para este Host IP
- Faz uma pergunta do Nome do servidor FC para o Fiber Channel ID (FCID) do alvo pWWN FC esse os acessos do Host IP

O módulo de armazenamento de 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. A sessão de iSCSI é aceitada se o Nome do servidor retorna o FCID. Se não, a solicitação de login é rejeitada.

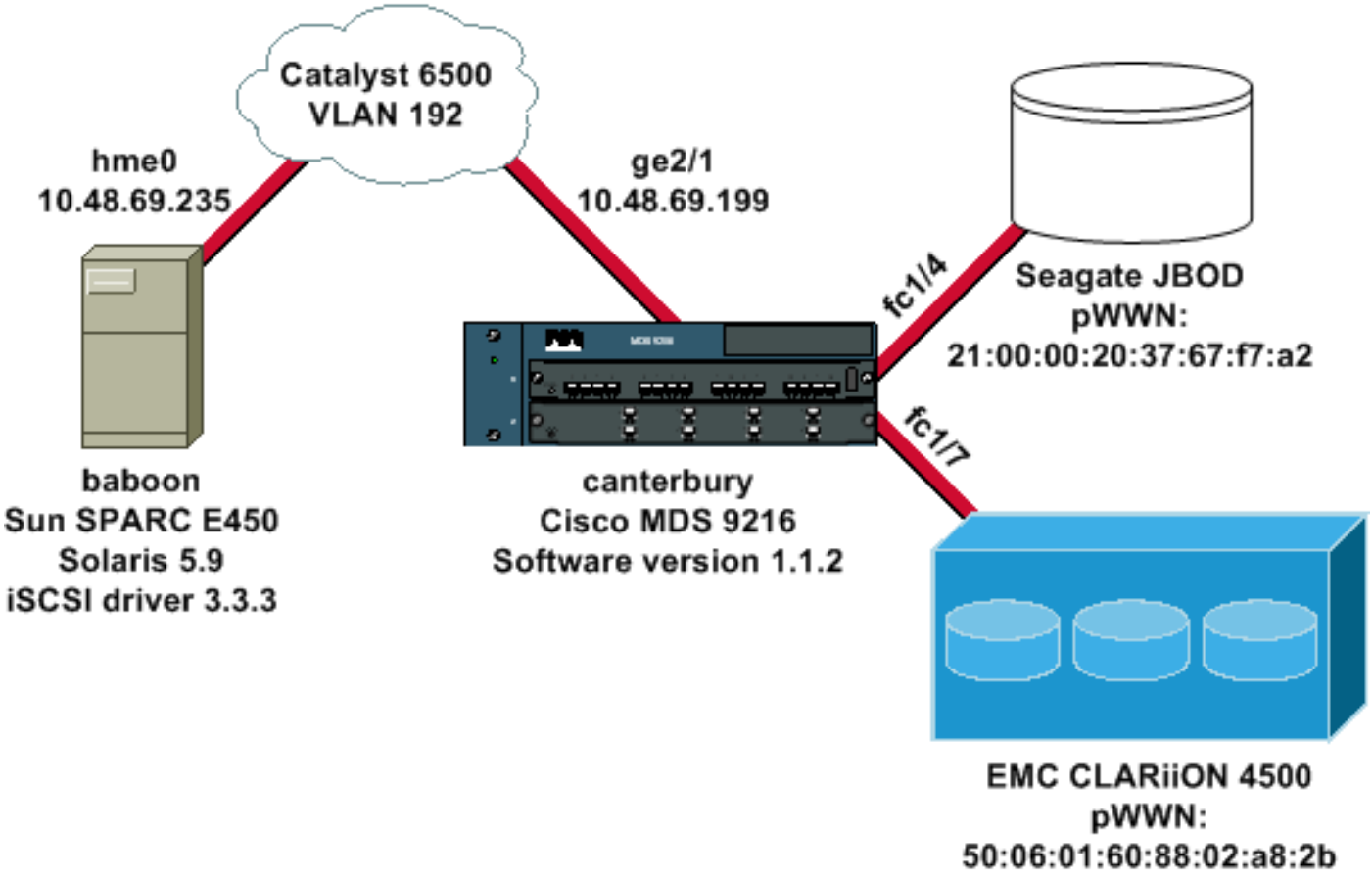
Configurar

Nesta seção, você encontrará informações para configurar os recursos descritos neste documento.

Nota: Use a ferramenta Command Lookup Tool (apenas para clientes registrados) para obter mais informações sobre os comandos usados neste documento.

Diagrama de Rede

Este documento utiliza a seguinte configuração de rede:



Configurações

Este documento utiliza as seguintes configurações:

- babuíno (SunOS 5.9, SPARC E450)
- canterbury (Cisco MDS9216)

babuíno (SunOS 5.9, SPARC E450)

Altere estes arquivos no host de Solaris:

- /etc/iscsi.conf
- /etc/iscsi.bindings
- /kernel/drv/sd.conf

Isto é configuração de exemplo output:

```
bash-2.05#cat /etc/iscsi.conf

# iSCSI configuration file - see iscsi.conf(4)

# DiscoveryAddress Settings
# -------------------------
# Add "DiscoveryAddress=xxx" entries for each iSCSI
router instance.
# The driver will attempt 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=10.48.69.199
 !--- Configure the IP address of the GE interface that
accepts iSCSI !--- requests from your host. # The
DiscoveryAddress Settings can take following entry. # #
1) Authentication Settings # 2) ConnectionTimeout
Settings !--- Other required driver parameters can be
changed in the iscsi.conf file. !--- Output is
suppressed. bash-2.05#cat /etc/iscsi.bindings

# iSCSI bindings, file format version 1.0.
# NOTE: this file is automatically maintained by the
iSCSI daemon.
# You should 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       0       san-fc-jbod-1
0       1       clariion
0       2       clariion-lun-3-4-5
!--- The iSCSI driver discovery daemon process looks up
each discovered target !--- in the /etc/iscsi.bindings
file. !--- The corresponding iSCSI target ID is assigned
to the target if an entry exists in the file for the
target. !--- The smallest available iSCSI target ID !---
is assigned if no entry exists for the target, 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. !--- You can
manually edit the file and remove !--- entries so that
the obsolete target no longer consumes an iSCSI target
ID if a target is no longer available to a host. !---
Add an entry manually if you know the iSCSI target name
!--- in advance and want it to be assigned a particular
iSCSI target ID. !--- Stop the iSCSI driver before you
edit the /etc/iscsi.bindings !--- file. Issue the !---
/etc/init.d/iscsi start command to manually start the
iSCSI driver. !--- Issue the /etc/init.d/iscsi stop
command to manually stop the iSCSI driver.

bash-2.05#cat /kernel/drv/sd.conf

name="sd" class="scsi" class_prop="atapi"
target=0 lun=0;

name="sd" class="scsi" target=1 lun=0;
name="sd" class="scsi" target=1 lun=1;
name="sd" class="scsi" target=1 lun=2;

# Start iSCSI auto-generated configuration -- do NOT
alter or delete this line
```

```
# You may need to add additional lines to probe for
additional LUNs
# or targets. You SHOULD delete any lines that represent
iSCSI targets
# or LUNs that are not used.
name="sd" parent="iscsi" target=0 lun=0;
name="sd" parent="iscsi" target=1 lun=0;
name="sd" parent="iscsi" target=1 lun=1;
name="sd" parent="iscsi" target=1 lun=2;
name="sd" parent="iscsi" target=2 lun=3;
name="sd" parent="iscsi" target=2 lun=4;
name="sd" parent="iscsi" target=2 lun=5;
name="sd" parent="iscsi" target=2 lun=0;

# End iSCSI auto-generated configuration -- do NOT alter
or delete this line

 !--- The corresponding entries for these devices must
be made in the standard device configuration files !---
if the targets that get discovered by the iSCSI driver
at any point in time !--- do not have a corresponding
entry in the standard device configuration files (for
example, /kernel/drv/sd.conf or /kernel/drv/st.conf). !-
-- Then reboot the system and issue the standard Solaris
administrative commands !--- (devfsadm, drvconfig) once
the system comes up. !--- You do not need to reboot the
system if the entries in the device configuration files
are already present. However, the standard device
configuration !--- commands (devfsadm, drvconfig, and so
on) must be issued to configure the !--- new iSCSI
devices in the system.
```

canterbury (Cisco MDS9216)

```
bash-2.05#cat /etc/iscsi.conf

# iSCSI configuration file - see iscsi.conf(4)

# DiscoveryAddress Settings
# -------------------------
# Add "DiscoveryAddress=xxx" entries for each iSCSI
router instance.
# The driver will attempt 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=10.48.69.199
 !--- Configure the IP address of the GE interface that
accepts iSCSI !--- requests from your host. # The
DiscoveryAddress Settings can take following entry. # #
1) Authentication Settings # 2) ConnectionTimeout
```

```
Settings !--- Other required driver parameters can be
changed in the iscsi.conf file. !--- Output is
suppressed. bash-2.05#cat /etc/iscsi.bindings

# iSCSI bindings, file format version 1.0.
# NOTE: this file is automatically maintained by the
iSCSI daemon.
# You should 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       0       san-fc-jbod-1
0       1       clariion
0       2       clariion-lun-3-4-5
!--- The iSCSI driver discovery daemon process looks up
each discovered target !--- in the /etc/iscsi.bindings
file. !--- The corresponding iSCSI target ID is assigned
to the target if an entry exists in the file for the
target. !--- The smallest available iSCSI target ID !---
is assigned if no entry exists for the target, 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. !--- You can
manually edit the file and remove !--- entries so that
the obsolete target no longer consumes an iSCSI target
ID if a target is no longer available to a host. !---
Add an entry manually if you know the iSCSI target name
!--- in advance and want it to be assigned a particular
iSCSI target ID. !--- Stop the iSCSI driver before you
edit the /etc/iscsi.bindings !--- file. Issue the !---
/etc/init.d/iscsi start command to manually start the
iSCSI driver. !--- Issue the /etc/init.d/iscsi stop
command to manually stop the iSCSI driver.

bash-2.05#cat /kernel/drv/sd.conf

name="sd" class="scsi" class_prop="atapi"
target=0 lun=0;

name="sd" class="scsi" target=1 lun=0;
name="sd" class="scsi" target=1 lun=1;
name="sd" class="scsi" target=1 lun=2;

# Start iSCSI auto-generated configuration -- do NOT
alter or delete this line
# You may need to add additional lines to probe for
additional LUNs
# or targets. You SHOULD delete any lines that represent
iSCSI targets
# or LUNs that are not used.
name="sd" parent="iscsi" target=0 lun=0;
name="sd" parent="iscsi" target=1 lun=0;
name="sd" parent="iscsi" target=1 lun=1;
name="sd" parent="iscsi" target=1 lun=2;
name="sd" parent="iscsi" target=2 lun=3;
name="sd" parent="iscsi" target=2 lun=4;
```

```
name="sd" parent="iscsi" target=2 lun=5;
name="sd" parent="iscsi" target=2 lun=0;

# End iSCSI auto-generated configuration -- do NOT alter
or delete this line

 !--- The corresponding entries for these devices must
be made in the standard device configuration files !---
if the targets that get discovered by the iSCSI driver
at any point in time !--- do not have a corresponding
entry in the standard device configuration files (for
example, /kernel/drv/sd.conf or /kernel/drv/st.conf). !-
-- Then reboot the system and issue the standard Solaris
administrative commands !--- (devfsadm, drvconfig) once
the system comes up. !--- You do not need to reboot the
system if the entries in the device configuration files
are already present. However, the standard device
configuration !--- commands (devfsadm, drvconfig, and so
on) must be issued to configure the !--- new iSCSI
devices in the system.
```

Verificar

Use esta seção para confirmar se a sua configuração funciona corretamente.

A Output Interpreter Tool (apenas para clientes registrados) (OIT) suporta determinados comandos show. Use a OIT para exibir uma análise da saída do comando show.

- **o netstat - n** — verifica as conexões de TCP no host de Solaris.
- **o iscsi-ls - l** — mostra os dispositivos que estão atualmente disponíveis no host de Solaris.
- **mostre o estado da zona** — Exibe informação de zona.
- **mostre a base de dados dos fcns 777 vsan** — Mostra a informação do Nome do servidor para um VSAN específico.
- **mostre a base de dados do flogi 777 vsan** — Mostra a informação do servidor do início de uma sessão da tela (FLOGI) para um VSAN específico.
- **mostre a sociedade vsan** — Mostra informação de interface para VSAN diferentes.
- **mostre o detalhe do iniciador do iscsi** — Exibe informação de iniciador iSCSI.
- **mostre o detalhe da iscsi-sessão do iniciador do iscsi** — Mostra a informação detalhada para a sessão do iniciador de iSCSI.
- **mostre o detalhe da sessão FCP do iniciador do iscsi** — Mostra a informação detalhada para a sessão FCP do iniciador de iSCSI.
- **mostre a gigabitethernet da relação tcp dos ips stat 2/1 de detalhe** — estatísticas das mostras TCP para uma relação específica GE.
- **mostre o virtual-alvo do iscsi configurado** — Mostra a iSCSI os alvos virtuais que foram configurados no Cisco MDS 9000.
- **mostre o iniciador do iscsi configurado** — Mostra os iniciadores de iSCSI que foram configurados no Cisco MDS 9000.
- **show ips arp interface gigabitethernet 2/1** — Informação do Address Resolution Protocol (ARP) do armazenamento IP das mostras para uma relação específica GE.
- **mostre a dispositivos do scsi alvo 777 vsan** — Mostra dispositivos iscsi para um VSAN específico (para traçar FC LUN ao iSCSI LUN).
- **mostre o iscsi 2/1 int** — Mostra relações do iSCSI.

- **mostre o iscsi 2/1 stats do iscsi** — Mostra estatísticas do iSCSI.
- **mostre o gigabitethernet 2/1 int** — Mostra a relação GE.
- **mostre a rota IP** — Informação da rota IP das mostras.

Troubleshooting

Use esta seção para resolver problemas de configuração.

Procedimento de Troubleshooting

- saída do babuíno
- saída de canterbury Cisco MDS9216
- Saída do Fabric Manager e do gerenciador de dispositivo

saída do babuíno

```
bash-2.05# /etc/init.d/iscsi stop

iSCSI is stopping.
Aug 28 09:42:08 baboon iscsimod: iSCSIs: closing
connection to target 2 at 10.48.69.199
Aug 28 09:42:08 baboon iscsimod: iSCSIs: closing
connection to target 1 at 10.48.69.199
Aug 28 09:42:08 baboon iscsimod: iSCSIs: closing
connection to target 0 at 10.48.69.199

bash-2.05# /etc/init.d/iscsi start

iSCSI is starting.

bash-2.05#bash-2.05# netstat -n

TCP: IPv4
   Local Address        Remote Address    Swind Send-Q
Rwind Recv-Q  State
-------------------- -------------------- ----- ------ -
---- ------ -------
10.48.69.235.32797   10.48.69.199.3260    65535      0
49172    0   ESTABLISHED
10.48.69.235.32798   10.48.69.199.3260    9379072    0
263152   0   ESTABLISHED
10.48.69.235.32799   10.48.69.199.3260    9379072    0
263152   0   ESTABLISHED

Active UNIX domain sockets
Address  Type          Vnode       Conn     Local Addr
Remote Addr
30002d95c88 dgram      30000205828 00000000 /tmp/portal

/etc/iscsi.bindings

#
0       0       san-fc-jbod-1
0       1       clariion

bash-2.05# devfsadm
```

```
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 0, Cmd 0x4d, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 0, Cmd 0x5e, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 1, Cmd 0x00, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000600 0000000a
00000000 29000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 1, Cmd 0x4d, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 1, Cmd 0x5e, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 2, Cmd 0x00, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000600 0000000a
00000000 29000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 2, Cmd 0x4d, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:45:04 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 1 lun 2, Cmd 0x5e, Sense:
Aug 28 09:45:04 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:45:05 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 0 lun 0, Cmd 0x1c, Sense:
Aug 28 09:45:05 baboon iscsimod:     70000500 0000000a
00000000 35010300 0000

bash-2.05# format output

AVAILABLE DISK SELECTIONS:
       0. c0t0d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
          /pci@1f,4000/scsi@3/sd@0,0
       1. c0t1d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
          /pci@1f,4000/scsi@3/sd@1,0
       2. c3t0d0 <SEAGATE-ST318203FC-0004 cyl 9770 alt 2
hd 12 sec 303>
          /iscsipseudo/iscsi@0/sd@0,0
       3. c3t1d0 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@1,0
       4. c3t1d1 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@1,1
       5. c3t1d2 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@1,2
       6. c3t2d0 <drive not available>
          /iscsipseudo/iscsi@0/sd@2,0
 !--- After you add the clariion-lun-3-4-5 virtual
target on the Cisco MDS 9216. /etc/iscsi.bindings

0       0       san-fc-jbod-1
0       1       clariion
```

```
0       2       clariion-lun-3-4-5

bash-2.05#bash-2.05# netstat -n

TCP: IPv4
   Local Address        Remote Address    Swind Send-Q
Rwind Recv-Q  State
-------------------- -------------------- ----- ------ -
---- ------ -------
10.48.69.235.32797   10.48.69.199.3260    65535      0
49172      0 TIME_WAIT
10.48.69.235.32798   10.48.69.199.3260    9379072    0
263152     0 ESTABLISHED
10.48.69.235.32799   10.48.69.199.3260    9379072    0
263152     0 ESTABLISHED
10.48.69.235.32800   10.48.69.199.3260    65535      0
49108      0 ESTABLISHED
10.48.69.235.32801   10.48.69.199.3260    9379072    0
263152     0 ESTABLISHED

Active UNIX domain sockets
Address  Type          Vnode       Conn     Local Addr
Remote Addr
30002d95c88 dgram      30000205828 00000000 /tmp/portal

bash-2.05# devfsadm

Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 3, Cmd 0x00, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000600 0000000a
00000000 29000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 3, Cmd 0x4d, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 3, Cmd 0x5e, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 4, Cmd 0x00, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000600 0000000a
00000000 29000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 4, Cmd 0x5e, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 5, Cmd 0x00, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000600 0000000a
00000000 29000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 5, Cmd 0x4d, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000
Aug 28 09:47:58 baboon iscsimod: NOTICE: iSCSIs: bus 0
tgt 2 lun 5, Cmd 0x5e, Sense:
Aug 28 09:47:58 baboon iscsimod:     70000500 0000000a
00000000 20000000 0000

And the format output:
       0. c0t0d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
          /pci@1f,4000/scsi@3/sd@0,0
       1. c0t1d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
```

```
          /pci@1f,4000/scsi@3/sd@1,0
       2. c3t0d0 <SEAGATE-ST318203FC-0004 cyl 9770 alt 2
hd 12 sec 303>
          /iscsipseudo/iscsi@0/sd@0,0
       3. c3t1d0 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@1,0
       4. c3t1d1 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@1,1
       5. c3t1d2 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@1,2
       6. c3t2d0 <drive not available>
          /iscsipseudo/iscsi@0/sd@2,0
       7. c3t2d3 <DGC-RAID0-0632 cyl 10920 alt 2 hd 3
sec 128>
          /iscsipseudo/iscsi@0/sd@2,3
       8. c3t2d4 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@2,4
       9. c3t2d5 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
          /iscsipseudo/iscsi@0/sd@2,5
 !--- Issue the iscsi-ls -v command to see iSCSI driver
version.

bash-2.05# iscsi-ls -v

iSCSI driver version: 3.3.3
!--- Issue the iscsi-ls -l or iscsi-ls commands to see
the devices that are currently available.

bash-2.05# iscsi-ls -l

*******************************************************
************************
TARGET NAME san-fc-jbod-1
TARGET ID 0:
  ADDRESS = 10.48.69.199:3260, 128
  STATUS  = Connected 10.48.69.235:32798<-
>10.48.69.199:3260  8/28/2003 09:43:59
  SESSION = ISID 00023d000001  TSID 128  PID 463
  LUN   0 = DISK c3t0d0 (sd296) 'SEAGATE-ST318203FC-
0004' SERIAL# LRE80915
            BLOCKS: 35566479  BLOCK SIZE: 512
*******************************************************
************************
TARGET NAME clariion
TARGET ID 1:
  ADDRESS = 10.48.69.199:3260, 128
  STATUS  = Connected 10.48.69.235:32799<-
>10.48.69.199:3260  8/28/2003 09:43:59
  SESSION = ISID 00023d000001  TSID 128  PID 464
  LUN   0 = DISK c3t1d0 (sd297) 'DGC-RAID 0-0632'
SERIAL# 008E080000CL
            BLOCKS: 2097023  BLOCK SIZE: 512
  LUN   1 = DISK c3t1d1 (sd298) 'DGC-RAID 0-0632'
SERIAL# 0127AB0000CL
            BLOCKS: 2097023  BLOCK SIZE: 512
  LUN   2 = DISK c3t1d2 (sd299) 'DGC-RAID 0-0632'
SERIAL# 02E4180000CL
            BLOCKS: 2097023  BLOCK SIZE: 512
*******************************************************
```

```
************************
TARGET NAME clariion-lun-3-4-5
TARGET ID 2:
  ADDRESS = 10.48.69.199:3260, 128
  STATUS  = Connected 10.48.69.235:32801<-
>10.48.69.199:3260  8/28/2003 09:46:42
  SESSION = ISID 00023d000001  TSID 128  PID 482
  LUN   0 : SCSI Inquiry failed - Bad file number
  LUN   3 = DISK c3t2d3 (sd371) 'DGC-RAID 0-0632'
SERIAL# 03E0A1E330CL
            BLOCKS: 4194047  BLOCK SIZE: 512
  LUN   4 = DISK c3t2d4 (sd372) 'DGC-RAID 0-0632'
SERIAL# 04E9A1E330CL
            BLOCKS: 2097023  BLOCK SIZE: 512
  LUN   5 = DISK c3t2d5 (sd373) 'DGC-RAID 0-0632'
SERIAL# 0594B1E330CL
            BLOCKS: 2097023  BLOCK SIZE: 512
************************************************************
************************
 !-- Issue the iscsi-ls -c command to see detailed
statistics for currently established iSCSI sessions.

bash-2.05# iscsi-ls -c

************************************************************
************************
TARGET NAME san-fc-jbod-1
TARGET ID 0:
  ADDRESS = 10.48.69.199:3260, 128
  STATUS  = Connected 10.48.69.235:32798<-
>10.48.69.199:3260  8/28/2003 09:43:59
  SESSION = ISID 00023d000001  TSID 128  PID 463
  InitialR2T               = Yes
  MaxRecvDataSegmentLength = 131072 Bytes
  MaxXmitDataSegmentLength = 2048 Bytes
  FirstBurstLength         = 262144 Bytes
  MaxBurstLength           = 16776192 Bytes
  LoginTimeout             = 15 Seconds
  AuthTimeout              = 45 Seconds
  ActiveTimeout            = 5 Seconds
  IdleTimeout              = 60 Seconds
  PingTimeout              = 5 Seconds
  HeaderDigest             = None
  DataDigest               = None
  ConnFailTimeout          = Default
  MultiPath                = None
************************************************************
************************
TARGET NAME clariion
TARGET ID 1:
  ADDRESS = 10.48.69.199:3260, 128
  STATUS  = Connected 10.48.69.235:32799<-
>10.48.69.199:3260  8/28/2003 09:43:59
  SESSION = ISID 00023d000001  TSID 128  PID 464
  InitialR2T               = Yes
  MaxRecvDataSegmentLength = 131072 Bytes
  MaxXmitDataSegmentLength = 2048 Bytes
  FirstBurstLength         = 262144 Bytes
  MaxBurstLength           = 16776192 Bytes
  LoginTimeout             = 15 Seconds
  AuthTimeout              = 45 Seconds
  ActiveTimeout            = 5 Seconds
  IdleTimeout              = 60 Seconds
  PingTimeout              = 5 Seconds
```

```
  HeaderDigest             = None
  DataDigest               = None
  ConnFailTimeout          = Default
  MultiPath                = None
**********************************************************
************************
TARGET NAME clariion-lun-3-4-5
TARGET ID 2:
  ADDRESS = 10.48.69.199:3260, 128
  STATUS  = Connected 10.48.69.235:32801<-
>10.48.69.199:3260  8/28/2003 09:46:42
  SESSION = ISID 00023d000001  TSID 128  PID 482
  InitialR2T               = Yes
  MaxRecvDataSegmentLength = 131072 Bytes
  MaxXmitDataSegmentLength = 2048 Bytes
  FirstBurstLength         = 262144 Bytes
  MaxBurstLength           = 16776192 Bytes
  LoginTimeout             = 15 Seconds
  AuthTimeout              = 45 Seconds
  ActiveTimeout            = 5 Seconds
  IdleTimeout              = 60 Seconds
  PingTimeout              = 5 Seconds
  HeaderDigest             = None
  DataDigest               = None
  ConnFailTimeout          = Default
  MultiPath                = None
**********************************************************
************************
 !--- You can see these iSCSI connections in the
/var/adm/messages or dmesg:

Aug 28 09:43:59 baboon iscsid[454]: [ID 702911
daemon.notice]
   version 3.3.3 ( 7-Aug-2003)
Aug 28 09:43:59 baboon iscsid[463]: [ID 702911
daemon.notice]
   iSCSI normal session to san-fc-jbod-1 estabished
Aug 28 09:43:59 baboon iscsid[463]: [ID 702911
daemon.notice]
   logged into target san-fc-jbod-1 -- id 0, Initiator
sid 00023d000001, target sid 128
Aug 28 09:43:59 baboon iscsid[464]: [ID 702911
daemon.notice]
   iSCSI normal session to clariion estabished
Aug 28 09:43:59 baboon iscsid[464]: [ID 702911
daemon.notice]
   logged into target clariion -- id 1, Initiator sid
00023d000001, target sid 128
Aug 28 09:45:23 baboon iscsi: [ID 318680 kern.notice]
NOTICE:
   tran_start disabled to bus 0, target 2, lun 0
Aug 28 09:46:42 baboon iscsid[482]: [ID 702911
daemon.notice]
   iSCSI normal session to clariion-lun-3-4-5
established
Aug 28 09:46:42 baboon iscsid[482]: [ID 702911
daemon.notice]
   logged into target clariion-lun-3-4-5 -- id 2,
Initiator sid 00023d000001,
   target sid 128
```

saída de canterbury Cisco MDS9216

```
canterbury#show zone status

VSAN: 1 default-zone: permit distribute: active only
Interop: Off
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases: 0
Active Zoning Database :
    Database Not Available
Status: Deactivation completed at Fri Aug 22 11:47:53
2003

VSAN: 777 default-zone: permit distribute: active only
Interop: Off.
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases: 0
Active Zoning Database :
    Database Not Available
Status: Default zoning policy changed to permit at Mon
Aug 25 20:19:31 2003
!--- VSAN 777 has been used for this configuration, and
default-zone behavior has been !--- set to permit.
canterbury#show flogi da vsan 777

--------------------------------------------------------
------------------
INTERFACE  VSAN    FCID            PORT NAME
NODE NAME
--------------------------------------------------------
------------------
fc1/4      777   0x7000e8  21:00:00:20:37:67:f7:a2
20:00:00:20:37:67:f7:a2
fc1/7      777   0x700103  50:06:01:60:88:02:a8:2b
50:06:01:60:11:02:a8:2b
iscsi2/1   777   0x700100  21:02:00:0c:30:6c:24:42
21:01:00:0c:30:6c:24:42

Total number of flogi = 3.

canterbury#show fcns database vsan 777

VSAN 777:
--------------------------------------------------------
------------------
FCID        TYPE  PWWN                    (VENDOR)
FC4-TYPE:FEATURE
--------------------------------------------------------
------------------
0x7000e8    NL    21:00:00:20:37:67:f7:a2 (Seagate)
scsi-fcp:target
0x700100    N     21:02:00:0c:30:6c:24:42 (Cisco)
scsi-fcp:init isc..w
0x700103    N     50:06:01:60:88:02:a8:2b (Clariion)
scsi-fcp:target

Total number of entries = 3
!--- FCID 0X700100 is the virtual N port (HBA) for the
iSCSI host. canterbury#show fcns database detail vsan
777

------------------------
VSAN:777   FCID:0x7000e8
------------------------
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       :20:04:00:0c:30:6c:24:40
hard-addr             :0x000000
------------------------
VSAN:777   FCID:0x700100
------------------------
port-wwn (vendor)     :21:02:00:0c:30:6c:24:42 (Cisco)
node-wwn              :21:01:00:0c:30:6c:24:42
class                 :2,3
node-ip-addr          :10.48.69.235
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
!--- Virtual N port for host. symbolic-port-name :
symbolic-node-name :10.48.69.235 port-type :N port-ip-
addr :0.0.0.0 fabric-port-wwn :20:41:00:0c:30:6c:24:40
hard-addr :0x000000 ------------------------ VSAN:777
FCID:0x700103 ------------------------ 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:30:6c:24:40 hard-addr
:0x000000 Total number of entries = 3 canterbury#show
vsan membership

vsan 777 interfaces:
        fc1/4   fc1/7

canterbury#show iscsi initiator

iSCSI Node name is 10.48.69.235
    iSCSI Initiator name: iqn.1987-
05.com.cisco:01.894b196796e7
    iSCSI alias name: baboon
    Node WWN is 21:01:00:0c:30:6c:24:42 (dynamic)
    Member of vsans: 777
    Number of Virtual n_ports: 1
    Virtual Port WWN is 21:02:00:0c:30:6c:24:42
(dynamic)
      Interface iSCSI 2/1, Portal group tag: 0x80
      VSAN ID 777, FCID 0x700100

canterbury#show iscsi initiator detail

iSCSI Node name is 10.48.69.235
    iSCSI Initiator name: iqn.1987-
05.com.cisco:01.894b196796e7
    iSCSI alias name: baboon
    Node WWN is 21:01:00:0c:30:6c:24:42 (dynamic)
    Member of vsans: 777
    Number of Virtual n_ports: 1

    Virtual Port WWN is 21:02:00:0c:30:6c:24:42
(dynamic)
      Interface iSCSI 2/1, Portal group tag is 0x80
      VSAN ID 777, FCID 0x700100
```

```
      2 FC sessions, 3 iSCSI sessions
      iSCSI session details
        Target: san-fc-jbod-1
          Statistics:
            PDU: Command: 24, Response: 24
            Bytes: TX: 3504, RX: 0
            Number of connection: 1
          TCP parameters
            Local 10.48.69.199:3260, Remote
10.48.69.235:32798
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 4 ms, Variance: 6
            Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
            Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
            Congestion window: Current: 11 KB
        Target: clariion-lun-3-4-5
          Statistics:
            PDU: Command: 73, Response: 73
            Bytes: TX: 9740, RX: 0
            Number of connection: 1
          TCP parameters
            Local 10.48.69.199:3260, Remote
10.48.69.235:32801
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 7 ms, Variance: 13
            Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
            Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
            Congestion window: Current: 11 KB
        Target: clariion
          Statistics:
            PDU: Command: 101, Response: 101
            Bytes: TX: 14828, RX: 0
            Number of connection: 1
          TCP parameters
            Local 10.48.69.199:3260, Remote
10.48.69.235:32799
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 2 ms, Variance: 1
            Advertised window: Current: 256 KB, Maximum:
257 KB, Scale: 3
            Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
            Congestion window: Current: 11 KB

      FCP Session details
        Target FCID: 0x7000e8 (S_ID of this session:
0x700100)
          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: san-fc-jbod-1
          Negotiated parameters
            RcvDataFieldSize 2048 our_RcvDataFieldSize
2048
            MaxBurstSize 0, EMPD: FALSE
            Random Relative Offset: FALSE, Sequence-in-
```

```
order: Yes
          Statistics:
            PDU: Command: 0, Response: 24
        Target FCID: 0x700103 (S_ID of this session:
0x700100)
          pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b
          Session state: LOGGED_IN
          2 iSCSI sessions share this FC session
            Target: clariion-lun-3-4-5
            Target: clariion
          Negotiated parameters
            RcvDataFieldSize 1024 our_RcvDataFieldSize
2048
            MaxBurstSize 0, EMPD: FALSE
            Random Relative Offset: FALSE, Sequence-in-
order: Yes
          Statistics:
            PDU: Command: 0, Response: 174

canterbury#show iscsi initiator iscsi-session detail

iSCSI Node name is 10.48.69.235
    iSCSI Initiator name: iqn.1987-
05.com.cisco:01.894b196796e7
    iSCSI alias name: baboon
    Node WWN is 21:01:00:0c:30:6c:24:42 (dynamic)
    Member of vsans: 777
    Number of Virtual n_ports: 1

    Virtual Port WWN is 21:02:00:0c:30:6c:24:42
(dynamic)
      Interface iSCSI 2/1, Portal group tag is 0x80
      VSAN ID 777, FCID 0x700100
      2 FC sessions, 3 iSCSI sessions
      iSCSI session details
        Target: san-fc-jbod-1
          Statistics:
            PDU: Command: 24, Response: 24
            Bytes: TX: 3504, RX: 0
            Number of connection: 1
          TCP parameters
            Local 10.48.69.199:3260, Remote
10.48.69.235:32798
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 4 ms, Variance: 6
            Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
            Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
            Congestion window: Current: 11 KB
        Target: clariion-lun-3-4-5
          Statistics:
            PDU: Command: 73, Response: 73
            Bytes: TX: 9740, RX: 0
            Number of connection: 1
          TCP parameters
            Local 10.48.69.199:3260, Remote
10.48.69.235:32801
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 7 ms, Variance: 13
            Advertized window: Current: 256 KB, Maximum:
```

```
257 KB, Scale: 3
            Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
            Congestion window: Current: 11 KB
        Target: clariion
          Statistics:
            PDU: Command: 101, Response: 101
            Bytes: TX: 14828, RX: 0
            Number of connection: 1
          TCP parameters
            Local 10.48.69.199:3260, Remote
10.48.69.235:32799
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 2 ms, Variance: 1
            Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
            Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
            Congestion window: Current: 11 KB

canterbury#show iscsi initiator fcp-session detail

iSCSI Node name is 10.48.69.235
    iSCSI Initiator name: iqn.1987-
05.com.cisco:01.894b196796e7
    iSCSI alias name: baboon
    Node WWN is 21:01:00:0c:30:6c:24:42 (dynamic)
    Member of vsans: 777
    Number of Virtual n_ports: 1

    Virtual Port WWN is 21:02:00:0c:30:6c:24:42
(dynamic)
      Interface iSCSI 2/1, Portal group tag is 0x80
      VSAN ID 777, FCID 0x700100
      2 FC sessions, 3 iSCSI sessions

      FCP Session details
        Target FCID: 0x7000e8 (S_ID of this session:
0x700100)
          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: san-fc-jbod-1
          Negotiated parameters
            RcvDataFieldSize 2048 our_RcvDataFieldSize
2048
            MaxBurstSize 0, EMPD: FALSE
            Random Relative Offset: FALSE, Sequence-in-
order: Yes
          Statistics:
            PDU: Command: 0, Response: 24
        Target FCID: 0x700103 (S_ID of this session:
0x700100)
          pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b
          Session state: LOGGED_IN
          2 iSCSI sessions share this FC session
            Target: clariion-lun-3-4-5
            Target: clariion
          Negotiated parameters
            RcvDataFieldSize 1024 our_RcvDataFieldSize
2048
```

```
            MaxBurstSize 0, EMPD: FALSE
            Random Relative Offset: FALSE, Sequence-in-
order: Yes
          Statistics:
            PDU: Command: 0, Response: 174

canterbury#show ips stats tcp interface gigabitethernet
2/1 detail

TCP Statistics for port GigabitEthernet2/1
    TCP send stats
      28621 segments, 4231096 bytes
      15842 data, 12335 ack only packets
      168 control (SYN/FIN/RST), 0 probes, 210 window
updates
      66 segments retransmitted, 63724 bytes
      66 retransmitted while on ethernet send queue,
1127 packets split
      480 delayed acks sent
    TCP receive stats
      36728 segments, 12911 data packets in sequence,
2668162 bytes in sequence
      0 predicted ack, 12050 predicted data
      0 bad checksum, 0 multi/broadcast, 0 bad offset
      0 no memory drops, 0 short segments
      48 duplicate bytes, 1 duplicate packets
      0 partial duplicate bytes, 0 partial duplicate
packets
      0 out-of-order bytes, 164 out-of-order packets
      0 packet after window, 0 bytes after window
      0 packets after close
      12621 acks, 3486850 ack bytes, 0 ack toomuch,
11652 duplicate acks
      0 ack packets left of snd_una, 6 non-4 byte
aligned packets
      8333 window updates, 0 window probe
      624 pcb hash miss, 79 no port, 0 bad SYN, 0 paws
drops
    TCP Connection Stats
      0 attempts, 231 accepts, 231 established
      227 closed, 14 drops, 0 conn drops
      0 drop in retransmit timeout, 2 drop in keepalive
timeout
      0 drop in persist drops, 0 connections drained
    TCP Miscellaneous Stats
      11761 segments timed, 12027 rtt updated
      51 retransmit timeout, 304 persist timeout
      10452 keepalive timeout, 10450 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
      233 entries, 231 connections completed, 1 entries
timed out
      0 dropped due to overflow, 1 dropped due to RST
      0 dropped due to ICMP unreach, 0 dropped due to
bucket overflow
      0 abort due to no memory, 4 duplicate SYN, 76 no-
route SYN drop
      0 hash collisions, 0 retransmitted

    TCP Active Connections
```

```
      Local  Address        Remote Address        State
Send-Q   Recv-Q
      10.48.69.199:3260     10.48.69.235:32798
ESTABLISH  0        0
      10.48.69.199:3260     10.48.69.235:32799
ESTABLISH  0        0
      10.48.69.199:3260     10.48.69.235:32800
ESTABLISH  0        0
      10.48.69.199:3260     10.48.69.235:32801
ESTABLISH  0        0
      0.0.0.0:3260          0.0.0.0:0             LISTEN
0        0

canterbury#show iscsi virtual-target configured

target: san-fc-jbod-1
  * Port WWN 21:00:00:20:37:67:f7:a2
!--- The * means that you have both discovery and target
sessions. !--- You only have a discovery session if
there is no * in front of the pWWN.

    Configured node
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 3
      initiator iqn.1987-
05.com.cisco.02.89451e183581.mcandege-w2k1 is permitted
      initiator 10.48.69.235/32 is permitted
      initiator 10.48.69.232/32 is permitted
    all initiator permit is disabled

target: clariion
  * Port WWN 50:06:01:60:88:02:a8:2b
    Configured node
    No. of LU mapping: 3
      iSCSI LUN: 0000, FC LUN: 0000
      iSCSI LUN: 0001, FC LUN: 0001
      iSCSI LUN: 0002, FC LUN: 0002
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 1
      initiator 10.48.69.235/32 is permitted
    all initiator permit is disabled

target: clariion-lun-3-4-5
  * Port WWN 50:06:01:60:88:02:a8:2b
    Configured node
    No. of LU mapping: 3
      iSCSI LUN: 0003, FC LUN: 0003
      iSCSI LUN: 0004, FC LUN: 0004
      iSCSI LUN: 0005, FC LUN: 0005
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 1
      initiator 10.48.69.235/32 is permitted
    all initiator permit is disabled

canterbury#show iscsi initiator configured

iSCSI Node name is 10.48.69.235
    Member of vsans: 777

canterbury#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    10.48.69.206        7     0005.9ba6.95ff
ARPA  GigabitEthernet2/1
Internet    10.48.69.209        4     0009.7c60.561f
ARPA  GigabitEthernet2/1
Internet    10.48.69.226        0     0060.08f6.bc1a
ARPA  GigabitEthernet2/1
Internet    10.48.69.229       15     0800.209e.edab
ARPA  GigabitEthernet2/1
Internet    10.48.69.233        0     0010.4200.7d5b
ARPA  GigabitEthernet2/1
Internet    10.48.69.235        9     0800.20b6.6559
ARPA  GigabitEthernet2/1
Internet    10.48.69.238        5     0030.6e1b.6f51
ARPA  GigabitEthernet2/1
Internet    10.48.69.239       12     0030.6e1c.a00b
ARPA  GigabitEthernet2/1
Internet    10.48.69.248        5     0202.3d30.45f8
ARPA  GigabitEthernet2/1
Internet    10.48.69.252        1     0202.3d30.45fc
ARPA  GigabitEthernet2/1
Internet      10.10.2.28        9     0202.3d0a.021c
ARPA  GigabitEthernet2/1

canterbury#show scsi-target devices vsan 777

-------------------------------------------------------
------------------------
VSAN    FCID        PWWN                      VENDOR
MODEL             REV
-------------------------------------------------------
------------------------
777     0x7000e8    21:00:00:20:37:67:f7:a2   SEAGATE
ST318203FC        0004
777     0x700103    50:06:01:60:88:02:a8:2b   DGC
RAID 0            0632

canterbury#show scsi-target lun vsan 777

- ST318203FC from SEAGATE (Rev 0004)
  FCID is 0x7000e8 in VSAN 777, 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
- RAID from DGC (Rev 0632)
  FCID is 0x700103 in VSAN 777, 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

canterbury#show interface iscsi 2/1

iscsi2/1 is up
    Hardware is GigabitEthernet
    Port WWN is 20:41:00:0c:30:6c:24:40
    Admin port mode is ISCSI
    Port mode is ISCSI
    Speed is 1 Gbps
    iSCSI initiator is identified by name
```

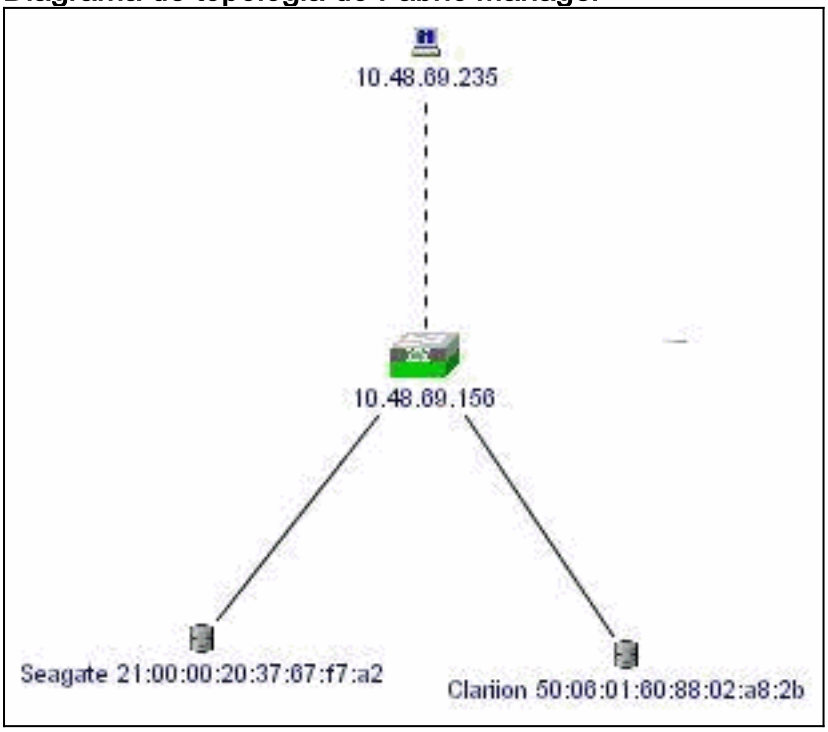
```
    Number of iSCSI session: 4, Number of TCP
connection: 4
    Configured TCP parameters
        Local Port is 3260
        PMTU discover is enabled, reset timeout is 3600
sec
        Keepalive-timeout is 60 sec
        Minimum-retransmit-time is 300 ms
        Max-retransmissions 4
        Sack is disabled
        Maximum allowed bandwidth is 800000 kbps
        Minimum available bandwidth is 800000 kbps
        Estimated round trip time is 100000 usec
    5 minutes input rate 168 bits/sec, 21 bytes/sec, 0
frames/sec
    5 minutes output rate 728 bits/sec, 91 bytes/sec, 0
frames/sec
    iSCSI statistics
      Input 12209 packets, 2668348 bytes
        Command 3282 pdus, Data-out 1038 pdus, 1989664
bytes
      Output 14762 packets, 3486596 bytes
        Response 3059 pdus (with sense 77), R2T 153 pdus
        Data-in 3215 pdus, 2744116 bytes

canterbury#show iscsi stats iscsi 2/1

iscsi2/1
    5 minutes input rate 168 bits/sec, 21 bytes/sec, 0
frames/sec
    5 minutes output rate 728 bits/sec, 91 bytes/sec, 0
frames/sec
    iSCSI statistics
      12209 packets input, 2668348 bytes
        Command 3282 pdus, Data-out 1038 pdus, 1989664
bytes, 0 fragments
      output 14762 packets, 3486596 bytes
        Response 3059 pdus (with sense 77), R2T 153 pdus
        Data-in 3215 pdus, 2744116 bytes

canterbury#show interface gigabitethernet 2/1

GigabitEthernet2/1 is up
    Hardware is GigabitEthernet, address is
0005.3000.ade6
    Internet address is 10.48.69.199/26
    MTU 2156  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 392 bits/sec, 49 bytes/sec, 0
frames/sec
    5 minutes output rate 64 bits/sec, 8 bytes/sec, 0
frames/sec
    126128 packets input, 12476013 bytes
      2 multicast frames, 0 compressed
      0 input errors, 0 frame, 0 overrun 0 fifo
    43443 packets output, 6256174 bytes, 0 underruns
      0 output errors, 0 collisions, 0 fifo
      0 carrier errors

canterbury#show ip route
```

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

Gateway of last resort is 10.48.69.129

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

Saída do Fabric Manager e do gerenciador de dispositivo

Esta seção fornece o exemplo de saída do Fabric Manager MDS 1.1(2) e do gerenciador de dispositivo 1.1.(2).

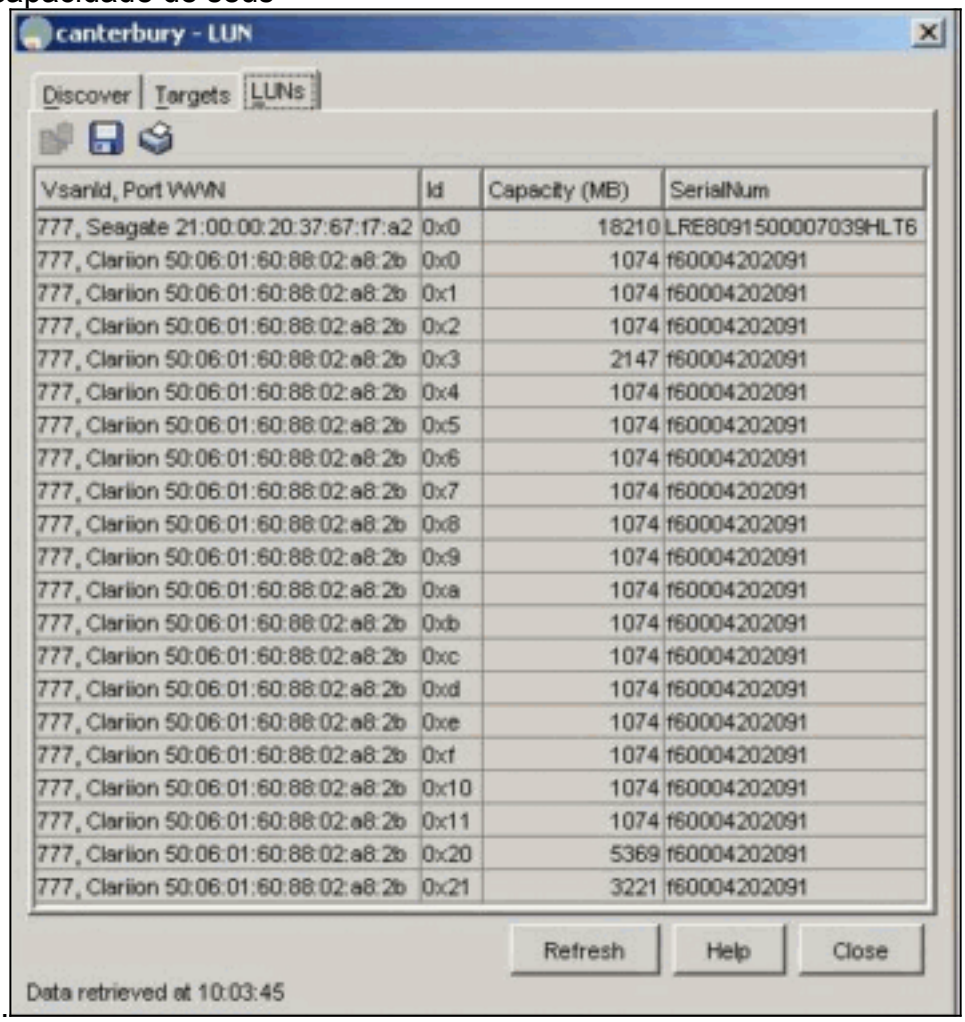
Diagrama de topologia do Fabric Manager



Este é um screen shot da amostra da opinião do gerenciador de dispositivo 1.1(2) em canterbury.

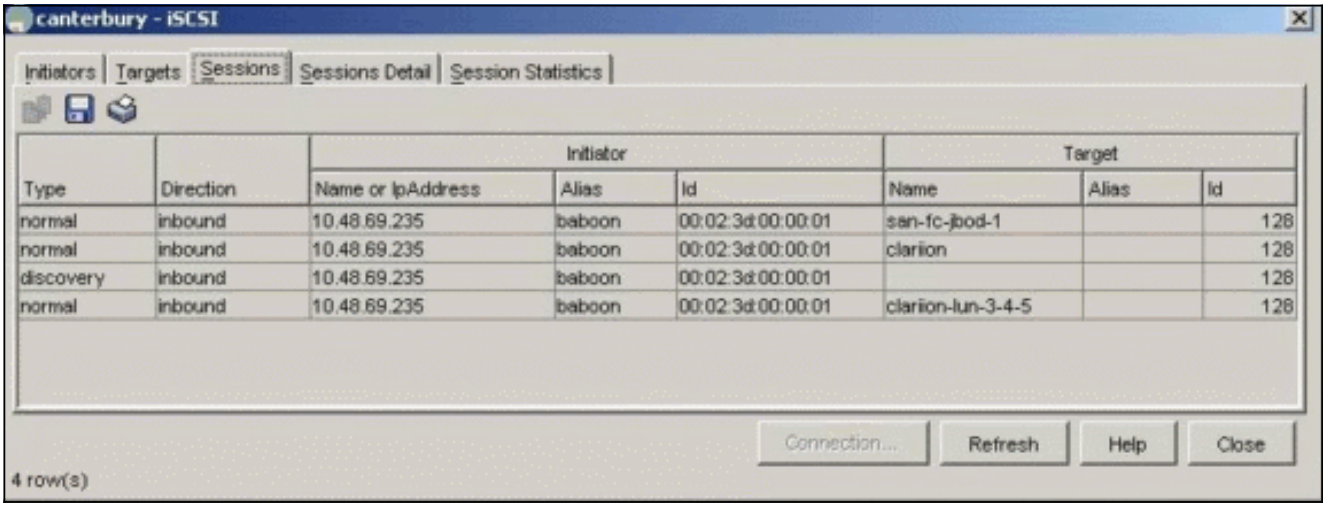
1. Selecione **FC > LUN na** janela de gerenciador do dispositivo para indicar os pWWN, LUN ID,

e a capacidade de seus



LUN.

2. Selecione **IP > iSCSI** para indicar as sessões de iSCSI.



Informações Relacionadas

- Suporte por tecnologia do Small Computer Systems Interface over IP (iSCSI)