

配置SolarisiSCSI主机到MDS/IPS-8

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[Introduction](#)

Cisco小型计算机系统IP接口(iSCSI)驱动程序是iSCSI解决方案的一个关键组件。这些iSCSI驱动器在服务器驻留，他们：

- 截取iSCSI命令。
- 封装命令到IP信息包。
- 重定向命令对Cisco SN 5420、Cisco SN 5428、Cisco SN 5428-2或者Cisco MDS/IPS-8。

本文为Solaris iSCSI主机提供配置示例给Cisco MDS/IPS-8。

[Prerequisites](#)

[Requirements](#)

尝试进行此配置之前，请确保满足以下要求：

- 安装是与您的Solaris版本兼容的iSCSI驱动器然后创建在Cisco MDS 9000的iSCSI配置。参考[Cisco iSCSI驱动\(仅限注册用户\)](#)驱动程序(solaris-iscsi-3.3.5.tar.Z)的当前版本的。README.txt文件在驱动程序ZIP(TAR)文件包含。README.txt文件包含：许可证协议信息驱动安装和配置说明驱动器体系结构的技术概要
- 请参见系统要求部分在[Sun Solaris版本注释的Cisco iSCSI驱动方面](#)操作系统(OS)和补丁程序需求的。
- Sun Solaris的Cisco iSCSI驱动在SPARC机器仅运行。驱动程序不与任何其他处理器类型一起使用(例如，x86)。

Components Used

本文档中的信息基于以下软件和硬件版本：

- SunOS 5.9 , SPARC Ultra-4 E450

```
#uname -a
```

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

- Solaris的Cisco iSCSI驱动3.3.3

```
#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 MDS 9216用软件版本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
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.
```

Software

```
BIOS:      version 1.0.7
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)
```

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

Conventions

Refer to [Cisco Technical Tips Conventions](#) for more information on document conventions.

背景信息

IP存储体提供IP主机访问对光纤信道(FC)存储设备。IP存储体是DS-X9308-SMIP该提供透明iSCSI路由。使用iSCSI协议的IP主机能透明访问在FC网络的iSCSI (FC协议[FCP])目标。IP主机发送在iSCSI协议数据单元封装的iSCSI命令(PDUs)到在TCP/IP连接的Cisco MDS 9000 IP存储端口。在IP存储体适当地被配置的千兆以太网(GE)接口提供连接。IP存储体：

- Enable (event)创建虚拟iSCSI目标的您和映射他们对物理FC目标可用在FC SAN
- 提交FC目标到IP主机，好象物理目标本地附有IP网络

通过IP存储体要求对存储的访问的每台iSCSI主机必须有安装的一个兼容的iSCSI驱动器。iSCSI驱动器允许iSCSI主机传输iSCSI请求和回应在一个IP网络与iSCSI协议。从主机OS的角度，iSCSI驱动器看来是iSCSI传输驱动程序类似于一条周边信道的一FC驱动程序在主机。每台IP主机出现作为FC主机从存储设备的角度。

完成这些步骤从IP主机路由iSCSI到FC存储设备：

- 传输iSCSI请求和回应在IP网络在主机和IP存储体之间。
- 请使用IP存储体路由iSCSI请求和回应在主机在IP网络和FC存储设备(转换iSCSI之间对FCP反之亦然)。
- 传输FCP请求或回应在IP存储体和FC存储设备之间。

默认情况下IP存储体不导入FC目标iSCSI。您必须配置动态或静态映射，以便IP存储体安排FC目标可用iSCSI创始者。当配置时，静态被映射的FC目标有一个被配置的名字两个。此配置提供静态映

射示例。

每次iSCSI主机连接到IP存储体用动态映射的那：

- 一个新的FC N端口被创建。
- 节点全世界名字(nWWNs)和为此N端口(pWWNs)分配的端口全世界名字可以是不同的。

请使用静态映射方法，如果必须获得同样nWWNs，并且iSCSI的pWWNs每次主机连接到IP存储体。您能使用在IP存储体的静态映射访问有的智能FC存储阵列：

- 访问控制
- 根据发起者的pWWNs或nWWNs的逻辑部件号(LUN)映射和屏蔽的配置

指定这些项目控制对每个静态映射的iSCSI目标的访问：

- IP他们做通告的存贮端口列表
- iSCSI发起者允许访问的节点名列表

FC基于分区的访问控制和基于iSCSI的访问控制是访问控制可以为iSCSI提供的两个机制。您能同时使用两个方法。默认区域为一个特定虚拟存储区域网络(VSAN)允许在此配置。IP存储体使用基于域名的iSCSI的节点和FC基于分区的访问控制列表在iSCSI发现和iSCSI会话创建时强制执行访问控制。

iSCSI发起者可以统计性地定义由IP地址或由iSCSI限定名(IQN)。iSCSI创始者动态创建在SAN-IOS 1.3的Cisco MDS的交换的代理发起者选项enable (event)。

当iSCSI主机创建一次iSCSI发现会话和查询所有iSCSI目标的，iSCSI发现发生。IP存储体返回iSCSI目标仅列表访问控制策略允许iSCSI主机访问。

当IP主机起动手iSCSI会话，iSCSI会话创建发生。IP存储体验证：

- 如果指定的iSCSI目标(在会话登录请求)是静态被映射的目标
- IP主机的iSCSI节点名允许访问目标

如果IP主机不访问，登录被拒绝。

IP存储体然后：

- 创建一个FC虚拟N端口(N端口能已经存在)此IP主机的
- 执行光纤通道ID的(FCID该)一次FC名称服务器查询FC目标的pwwn IP主机访问

IP存储体使用IP主机虚拟N端口的pwwn作为名称服务器查询的请求方。因此，名称服务器执行pwwn的一次强制执行的区域查询并且回应查询。iSCSI会话被接受名称服务器是否返回FCID。否则，登录请求被拒绝。

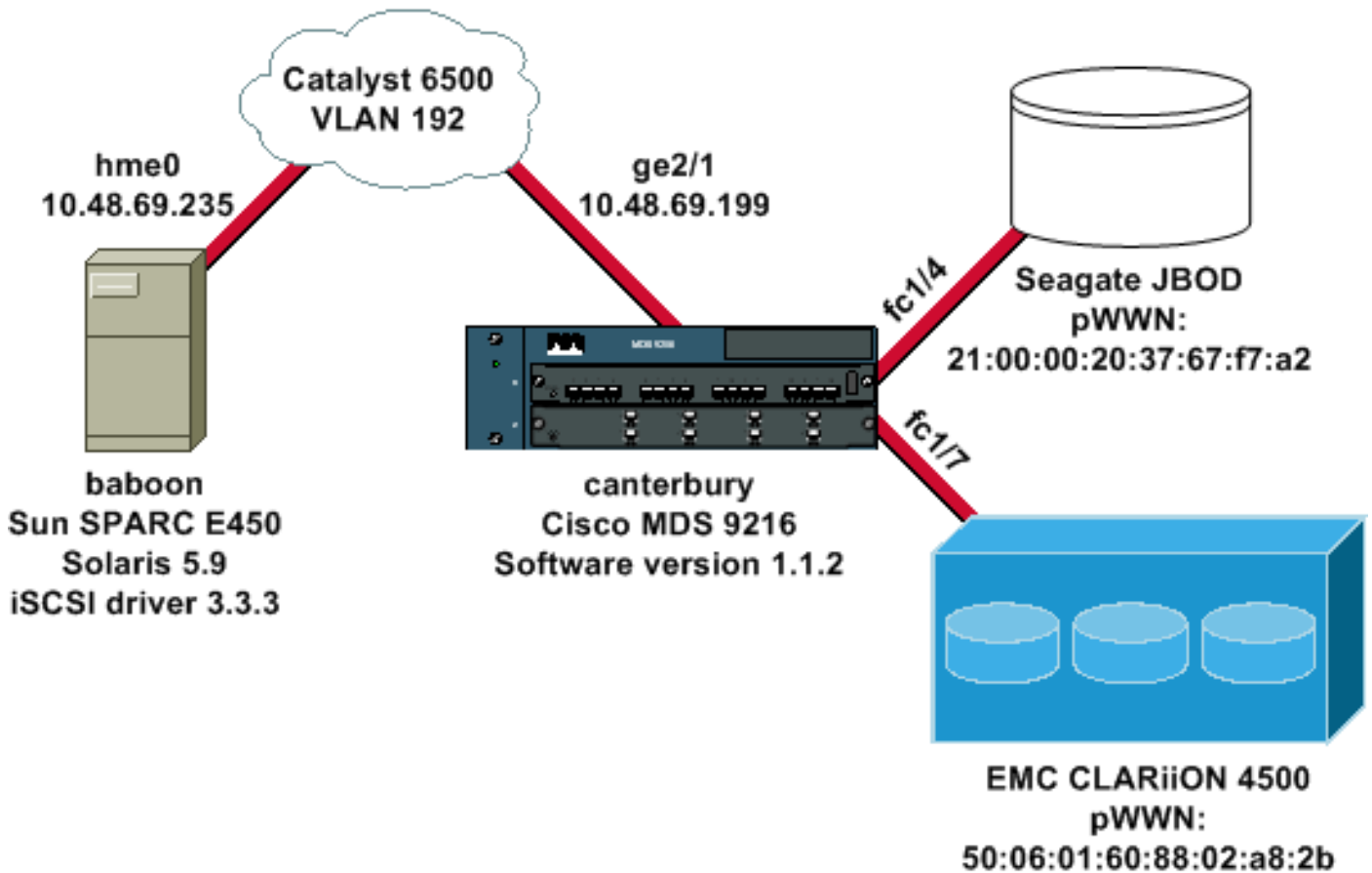
[Configure](#)

本部分提供有关如何配置本文档所述功能的信息。

Note: 有关本文档所用命令的详细信息，请使用[命令查找工具](#) ([仅限注册用户](#))。

[Network Diagram](#)

本文档使用以下网络设置：



配置

本文档使用以下配置：

- [狒狒\(SunOS 5.9 , SPARC E450\)](#)
- [坎特伯雷\(Cisco MDS 9216\)](#)

狒狒(SunOS 5.9 , SPARC E450)

修改在Solaris主机的这些文件：

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

这是输出的配置示例：

```
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="ataapi"
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.

```

坎特伯雷(Cisco MDS 9216)

```

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="ataapi"
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.
```

Verify

Use this section to confirm that your configuration works properly.

[命令输出解释程序 \(仅限注册用户 \)](#) (OIT) 支持某些 **show** 命令。使用 OIT 可查看对 show 命令输出的分析。

- **netstat - n** —验证在Solaris主机的TCP连接。
- **iscsi-ls - l** —显示是现在可以得到的在Solaris主机的设备。
- **show zone status** —显示区域信息。
- **show fcns database vsan 777** —显示一特定VSAN名称服务器信息。
- **show flogi database vsan 777** —显示结构一特定VSAN的登录(FLOGI)服务器信息。
- **show vsan membership** —显示不同的VSAN接口信息。
- **show iscsi initiator detail** —显示iSCSI发起者信息。
- **show iscsi initiator iscsi-session detail** — iSCSI发起者会话Shows详细信息。
- **show iscsi initiator fcp-session detail** — iSCSI发起者FCP会话Shows详细信息。
- **show ips stats tcp interface gigabitethernet 2/1 detail** —显示一个特定GE接口的TCP统计数据。
- **show iscsi virtual-target configured** —显示iSCSI在Cisco MDS 9000被配置了的虚拟目标。
- **show iscsi initiator configured** —显示在Cisco MDS 9000被配置了的iSCSI创始者。
- **show ips arp interface gigabitethernet 2/1** —显示IP存贮一个特定GE接口地址解析服务(ARP)信息。
- **show scsi-target devices vsan 777** —显示一特定VSAN的iSCSI设备(映射FC LUNs到iSCSI LUN)。
- **show int iscsi 2/1** —显示iSCSI接口。
- **show iscsi stats iscsi 2/1** —显示iSCSI统计数据。
- **show int gigabitethernet 2/1** —显示GE接口。
- **show ip route** —显示IP路由信息。

Troubleshoot

使用本部分可排除配置故障。

故障检修程序

- [狒狒输出](#)
- [坎特伯雷Cisco MDS 9216输出](#)
- [组织管理器和设备管理器输出](#)

狒狒输出

```
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 established
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 established
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

```

坎特伯雷Cisco MDS 9216输出

```

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 unreachable, 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.mcandegew2k1 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
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

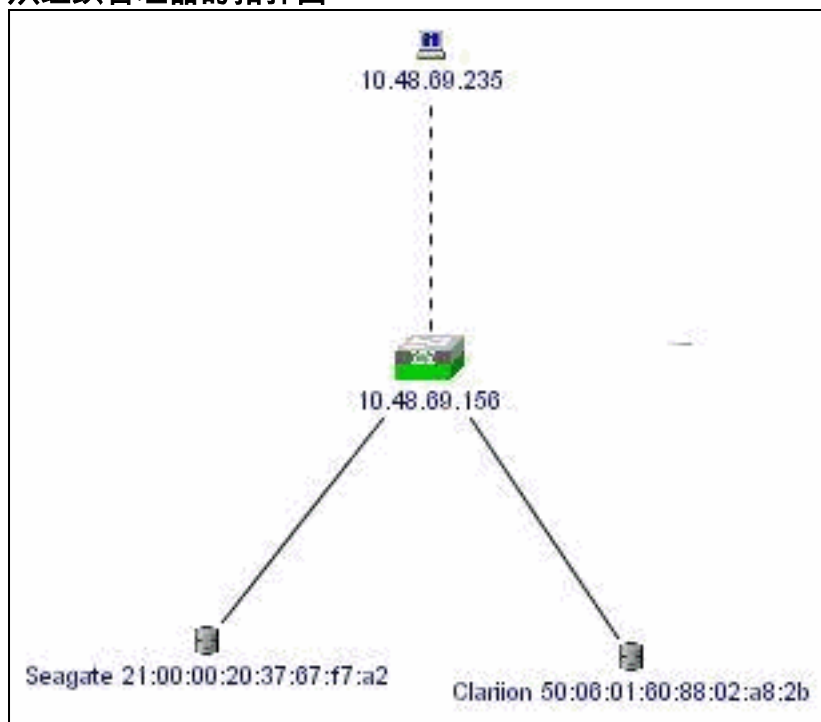
Gateway of last resort is 10.48.69.129

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

组织管理器和设备管理器输出

此部分提供从MD组织管理器1.1(2)和设备管理器的输出示例: 1.1.(2)。

从组织管理器的拓扑图



这是设备管理器1.1(2)查阅的示例屏幕画面在坎特伯雷的。



1. 选择在显示pWWNs、LUN ID和您的LUNs容量的Device Manager窗口的FC > LUNs。

canterbury - LUN

Discover Targets LUNs

Vsanid, Port WWN	Id	Capacity (MB)	SerialNum
777, Seagate 21:00:00:20:37:67:17:a2	0x0	18210	LRE8091500007039HLT6
777, Clarion 50:06:01:60:88:02:a8:2b	0x0	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x1	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x2	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x3	2147	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x4	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x5	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x6	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x7	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x8	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x9	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0xa	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0xb	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0xc	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0xd	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0xe	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0xf	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x10	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x11	1074	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x20	5369	f60004202091
777, Clarion 50:06:01:60:88:02:a8:2b	0x21	3221	f60004202091

Refresh Help Close

Data retrieved at 10:03:45

2. 选择显示iSCSI会话的IP > iSCSI。

canterbury - iSCSI

Initiators Targets Sessions Sessions Detail Session Statistics

Type	Direction	Initiator			Target		
		Name or IpAddress	Alias	Id	Name	Alias	Id
normal	inbound	10.48.69.235	baboon	00:02:3d:00:00:01	san-fc-ibod-1		128
normal	inbound	10.48.69.235	baboon	00:02:3d:00:00:01	clarion		128
discovery	inbound	10.48.69.235	baboon	00:02:3d:00:00:01			128
normal	inbound	10.48.69.235	baboon	00:02:3d:00:00:01	clarion-lun-3-4-5		128

4 row(s)

Connection... Refresh Help Close

Related Information

- [小型计算机系统IP接口\(iSCSI\)技术支持](#)