

HP-UX对MDS/IPS-8配置示例的iSCSI主机

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简介

Cisco iSCSI驱动，在服务器驻留，是iSCSI解决方案的关键组件。这些iSCSI驱动拦截小型计算机系统接口(SCSI)命令，封装他们到IP信息包，并且重定向他们对Cisco SN 5420、Cisco SN 5428、Cisco SN 5428-2或者思科MDS/IPS-8。This文档HP-UX iSCSI主机的提供配置示例对SN5428。

先决条件

要求

在尝试进行此配置之前，请确保满足以下要求：

- 安装是兼容对您的HP-UX版本的iSCSI驱动。驱动程序的多数当前版本可以在Cisco.com的[Cisco iSCSI驱动\(仅限注册用户\)](#)下载页找到。README.txt文件包括在驱动程序zip(tar)文件中。README包含关于许可证协议的信息、驱动程序安装和配置说明以及驱动体系结构的技术概要。
- 操作系统的需求和补丁程序需求在[Cisco iSCSI驱动的 System Requirements](#)部分描述[HP-UX版本注释](#)的。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- HP-UX 9000/800 A500服务器用两个处理器。**注意：**在此实验室设置，没有iSCSI的单独的以太网适配器，并且那个在使用中是100 Mb。在所有可实现的环境，您有一台独立的千兆以太网 (GE)适配器作为您的iSCSI发起者。


```
[/]#opt/ignite/bin/print_manifest[...] System Hardware
Model: 9000/800/A500-5X Main Memory: 1024 MB Processors: 2 OS mode: 64 bit LAN hardware ID:
0x00306E1B6F51 Software ID: 586760518 Keyboard Language: Not_Applicable Storage devices HW
Path Interface SEAGATE ST318404LC 17366 Mb 0/0/1/1.15.0 SCSI C896 Ultra Wide Single-Ended
SEAGATE ST318203LC 17366 Mb 0/0/2/1.15.0 SCSI C875 Ultra Wide Single-Ended I/O Interfaces
Class H/W Path Driver Description lan 0/0/0/0 btlan3 HP PCI 10/100Base-TX Core ext_bus
0/0/1/0 c720 SCSI C896 Ultra Wide LVD ext_bus 0/0/1/1 c720 SCSI C896 Ultra Wide Single-Ended
ext_bus 0/0/2/0 c720 SCSI C875 Fast Wide Single-Ended ext_bus 0/0/2/1 c720 SCSI C875 Ultra
Wide Single-Ended tty 0/0/4/0 asio0 PCI Serial (103c1048) tty 0/0/5/0 asio0 PCI Serial
(103c1048) fc 0/2/0/0 td HP Tachyon XL2 Fibre Channel Mass Storage Adapter Installed
Software Your system was installed with HP-UX version B.11.00. Your system has the following
software products installed and configured on the system disk drive(s). Product Revision
Description A6795A B.11.00.10 PCI Tachyon TL/TS/XL2 Fibre Channel BUNDLE B.11.00 Patch
Bundle HPUXEng64RT B.11.00.01 English HP-UX 64-bit Runtime Environment HWE1100
B.11.00.0203.5 Hardware Enablement Patches for HP-UX 11.00, March 2002 OnlineDiag
B.11.00.20.09 HPUX 11.0 Support Tools Bundle, Mar 2002 UXCoreMedia B.11.00.02 HP-UX Media
Kit (Reference Only. See Description) UnlimUserLic B.11.00.02 HP-UX Unlimited-User License
XSWGRI100 B.11.00.47.08 General Release Patches, November 1999 (ACE) [...]
```
- 使用了HP-UX的Cisco iSCSI驱动3.3.3。推荐您也安装(至少)从HP的最新的稳定的地址解析协议(ARPA)传输渐增补丁程序。当本文写入，这是PHNE_28538。此补丁程序有几从属关系，因此您必须安装他们，当需要时候。对于更多安装信息，请访问正式[HP支持站点 \(仅限注册用户\)](#)。


```
[/]#swlist # Initializing... # Contacting target "ape"... # # Target: ape:/ # # #
Bundle(s): # A6795A B.11.00.10 PCI Tachyon TL/TS/XL2 Fibre Channel BUNDLE B.11.00 Patch
Bundle HPUXEng64RT B.11.00.01 English HP-UX 64-bit Runtime Environment HWE1100
B.11.00.0203.5 Hardware Enablement Patches for HP-UX 11.00, March 2002 OnlineDiag
B.11.00.20.09 HPUX 11.0 Support Tools Bundle, Mar 2002 QPK1100 B.11.00.56.5 Quality Pack for
HP-UX 11.00, March 2002 UXCoreMedia B.11.00.02 HP-UX Media Kit (Reference Only. See
Description) UnlimUserLic B.11.00.02 HP-UX Unlimited-User License XSWGRI100 B.11.00.47.08
General Release Patches, November 1999 (ACE) # # Product(s) not contained in a Bundle: #
ISCSI 3.3.3 ISCSI software bison 1.875 bison flex 2.5.4a flex gcc 3.2.3 gcc gettext 0.11.5
gettext less 376 less libiconv 1.9 libiconv make 3.80 make ncurses 5.2 ncurses termcap 1.3.1
termcap zsh 4.0.7 zsh [/]# swlist BUNDLE # Initializing... # Contacting target "ape"... # #
Target: ape:/ # # BUNDLE B.11.00 Patch Bundle BUNDLE.PHCO_23651 1.0 fsck_vxfs(1M) cumulative
patch BUNDLE.PHKL_28496 1.0 SCSI IO Subsystem Cumulative Patch BUNDLE.PHKL_27980 1.0 VxFS
3.1 cumulative patch: CR_EIEM BUNDLE.PHKL_22840 1.0 IDS/9000; syscalls related to
file/socket BUNDLE.PHCO_28505 1.0 user/group(add/mod/del)(1M) cumulative patch
BUNDLE.PHKL_28150 1.0 LVM Cumulative Patch w/Performance Upgrades BUNDLE.PHNE_28538 1.0
cumulative ARPA Transport patch BUNDLE.PHNE_28143 1.0 LAN product cumulative patch
BUNDLE.PHNE_27902 1.0 Cumulative STREAMS Patch BUNDLE.PHKL_29434 1.0 POSIX
AIO;getdirententries;MVFS;rcp;mmmap/IDS; BUNDLE.PHKL_28766 1.0 Probe,IDS,PM,VM,PA-
8700,AIO,T600,FS,PDC,CLK BUNDLE.PHKL_28004 1.0 Fibre Channel Mass Storage Driver Patch
BUNDLE.PHKL_27729 1.0 ioscan -u incorrect display (kernel patch). BUNDLE.PHKL_24187 1.0
ioscan performance gain for SCSI Subsystem BUNDLE.PHKL_24165 1.0 Kernel Patch For "ioscan -
k" Performance BUNDLE.PHKL_23409 1.0 NFS, Large Data Space, kernel memory leak
BUNDLE.PHKL_20016 1.0 2nd CPU not recognized in G70/H70/I70 BUNDLE.PHKL_18543 1.0
PM/VM/UFS/async/scsi/io/DMAPI/JFS/perf patch BUNDLE.PHCO_27818 1.0 ioscan(1M) cumulative
patch BUNDLE.PHCO_27375 1.0 cumulative SAM/ObAM patch
```
- 有软件版本的1.2(1a) Cisco MDS 9216。


```
vatican#show module Mod Ports Module-Type Model
Status --- -----
1 16 1/2
Gbps FC/Supervisor DS-X9216-K9-SUP active * 2 8 IP Storage Module DS-X9308-SMIP ok Mod Sw Hw
World-Wide-Name(s) (WWN) --- -----
----- 1 1.2(1a) 1.0 20:01:00:0c:30:57:5e:c0 to 20:10:00:0c:30:57:5e:c0 2 1.2(1a) 0.2
20:41:00:0c:30:57:5e:c0 to 20:48:00:0c:30:57:5e:c0 Mod MAC-Address(es) Serial-Num --- -----
----- 1 00-0b-be-f8-7f-00 to 00-0b-be-f8-7f-04
JAB070804Q3 2 00-05-30-00-a8-56 to 00-05-30-00-a8-62 JAB070205AM * this terminal session
vatican# show version Cisco Storage Area Networking Operating System (SAN-OS) Software TAC
support: http://www.cisco.com/tac 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 1.0.8 loader: version 1.1(2) kickstart: version 1.2(1a) system: version 1.2(1a) BIOS
compile time: 08/07/03 kickstart image file is: bootflash:/k121a kickstart compile time:
9/1/2003 17:00:00 system image file is: bootflash:/s121a system compile time: 9/1/2003
17:00:00 Hardware RAM 963108 kB bootflash: 500736 blocks (block size 512b) slot0: 0 blocks
(block size 512b) vatican uptime is 1 days 6 hours 17 minute(s) 25 second(s) Last reset at
955065 usecs after Wed Sep 10 08:13:50 2003 Reason: Reset Requested by CLI command reload
System version: 1.1(2)
```

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

规则

Cisco MDS 9000在的本文使用是指在MDS 9000系列(MD 9506的所有光纤信道(FC)交换产品，MDS9509，MDS9216)。思科入侵防御系统(IPS)刀片是指IP存储设备服务模块。有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

背景信息

思科入侵防御系统(IPS)模块提供IP主机存取对于光纤信道(FC)存储设备。IPS模块是DS-X9308-SMIP。它提供透明SCSI路由。使用iSCSI协议的IP主机能透明访问在IP主机在iSCSI协议数据单元的FC网络的iSCSI目标(PDU)发送SCSI命令集封装到在TCP/IP连接的一个MDS9000 IPS端口。在IPS模块上，连接提供以适当地配置的GE接口的形式。IPS模块使您创建虚拟iSCSI目标并且映射他们到在FC SAN上可用的物理FC目标。它提交FC目标到IP主机，好象物理目标附加对IP网络。

要求对存储设备的访问到IPS模块的每台iSCSI主机需要有安装的一兼容的iSCSI驱动。在iSCSI协议帮助下，iSCSI驱动允许iSCSI主机传输SCSI请求和答复在IP网络。从主机操作系统的角度，iSCSI驱动看来是SCSI运输驱动程序，与主机中一条外围通道的FC驱动程序相似。从存储设备的角度，每台IP主机出现为一台FC主机。路由SCSI从IP主机到FC存储设备包括这些主要操作：

- 传输iSCSI请求和答复在IP网络在主机和IPS模块之间
- 路由SCSI请求和答复在主机在IP网络和FC存储设备之间(转换iSCSI对FCP和FCP对iSCSI)。此运输路线由IPS模块执行。
- 传输FCP请求或答复在IPS模块和FC存储设备之间

默认情况下IPS模块不导入FC目标对iSCSI。在IPS模块安排FC目标可用iSCSI创始者前，动态或静态映射必须配置。当两个都被配置后，静态被映射的FC目标有一个配置的名称。本文提供静态映射示例。使用动态映射，每次那iSCSI主机连接对IPS模块，一个新的FC N端口创建，并且为此N端口和pWWNs分配的nWWNs可能不同的。请使用静态映射方法，如果您需要iSCSI主机每次获得同样nWWN和pWWN，它接到IPS模块。静态映射在IPS模块可以用于访问有映射和屏蔽配置的访问控制和Logical Unit Numbers (LUN)根据创始者的pWWNs或nWWNs的智能FC存储阵列。

您能控制对每个静态映射的iSCSI目标的访问与的IPS端口一特定列表的创建目标通告和iSCSI允许的发起者节点名列表的创建访问它。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提供的二个机制。可以同时使用两个方法。在此配置默认区域为特定VSAN允许。IPS模块使用基于域名的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发现**：当iSCSI主机创建一个iSCSI发现会话并询问所有iSCSI目标时，IPS模块返回iSCSI目标列表此iSCSI主机允许基于接入控制策略的接入。
- **iSCSI会话创建**：当IP主机启动iSCSI会话时，IPS模块验证指定的iSCSI目标(在会议登录请求)是否静态映射到目标，如果是，验证IP主机的iSCSI节点名是否允许访问目标。如果IP主机没有权限，其登录被拒绝。

IPS模块，然后创建一个FC虚拟N端口(N端口可能已经存在)此IP主机的并且执行由IP主机访问FC目标pwwn FCID的一FC名称服务器查询。它使用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，名称服务器执行的一次强制的pwwn区域查询并且回应查询。如果FCID由名称服务器返回，则iSCSI会话接受。否则，登录请求被拒绝。

配置

在此部分，您提交以信息配置MDS9216和Cisco iSCSI驱动Linux的。

注意：要寻找关于用于本文的命令的其他信息，请使用[Cisco MDS 9000系列命令参考](#)和[Cisco MDS 9000系列软件配置指南](#)。

网络图

本文档使用此图中所示的网络设置：

配置

本文档使用此处所示的配置：

- 猿(HP 9000/800 A500 HP-UX 11.00)
- 梵蒂冈(MDS9216)

猿(HP 9000/800 A500 HP-UX 11.00)

```
On the HP-UX host only the file /etc/iscsi.conf has to
be modified:

[/# cat /etc/iscsi.conf # iSCSI configuration file -
see iscsi.conf(4) # DiscoveryAddress Settings # -----
----- # Add "DiscoveryAddress=xxx" entries
for each iSCSI router instance. # The driver attempts to
discover iSCSI targets at that address # and make as
many targets as possible available for use. # 'xxx' can
be an IP address or a hostname. A TCP port number can be
# specified by appending a colon and the port number to
the address. # All entries have to start in column one
and must not contain any # whitespace. # # Example: # #
DiscoveryAddress=scsirouter1
DiscoveryAddress=10.48.69.242 !--- Configure the IP
address of the GE interface that accepts iSCSI request
from your host. # The DiscoveryAddress Settings can take
following entry. # # 1) Authentication Settings # 2)
ConnectionTimeout Settings !--- Other required driver
parameters could be changed in the iscsi.conf file.
..... [/# cat /etc/iscsi.bindings # iSCSI bindings,
file format version 1.0. # NOTE: this file is
automatically maintained by the iSCSI daemon. # You do
not need to edit this file under most circumstances. #
If iSCSI targets in this file have been permanently
deleted, you # may wish to delete the bindings for the
deleted targets. # # Format: # bus target iSCSI # id id
TargetName # [...] 0 10 seagate 0 11 spa-vt !--- The
iSCSI driver discovery daemon process looks up each
discovered !--- target in the /etc/iscsi.bindings file.
If an entry exists in the file for the target, !--- the
corresponding SCSI target ID is assigned to the target.
If no entry !--- exists for the target, the smallest
```

available SCSI target ID is assigned !--- and an entry is written to the /etc/iscsi.bindings file for this target. !--- Note that the /etc/iscsi.bindings file permanently contains entries !--- for all iSCSI targets ever logged into from this host. If a target is !--- no longer available to a host, you can manually edit the file and remove !--- entries so that the obsolete target no longer consumes a SCSI target ID. !--- If you know the iSCSI target name of a target in advance, and you want !--- it to be assigned a particular SCSI target ID, you can add an entry !--- manually. You must stop the iSCSI driver before editing the !--- /etc/iscsi.bindings file. The maximum number of targets is 14. !--- Enter [/]#/**sbin/init.d/iscsi** start to manually start the iSCSI driver. !--- Enter [/]#/**sbin/init.d/iscsi** stop to manually stop the iSCSI driver.

梵蒂冈(Cisco MDS 9216)

!--- If you are starting from the factory default configuration, you !--- need to setup the IP address and mask of the management interface. !--- This would normally be done during the initial setup . interface mgmt0 ip address 10.48.69.156 255.255.255.192 !--- In this configuration example, all the iSCSI targets are in a single vsan . vsan database vsan 1016 vsan 1016 interface fc1/3 vsan 1016 interface fc1/7 !--- These are the boot variables. boot system bootflash:/s111a boot kickstart bootflash:/k111a # Simple IP configuration ip domain-name cisco.com ip name-server 144.254.10.123 ip default-gateway 10.48.69.129 !--- Declare that the iSCSI initiator with the IP address of the host. # It belongs to the vsan of our choice iscsi authentication none iscsi initiator ip-address 10.48.69.238 vsan 1016 !--- Define the first virtual target, it is a JBOD. Identify the target !--- by its pWWN, advertise it on a GE interface, and allow access to the initiator. iscsi virtual-target name seagate pWWN 21:00:00:20:37:67:f7:a2 advertise interface GigabitEthernet2/1 initiator ip address 10.48.69.238 permit !--- The second target is a Clariion disk array. Since the maximum LUN number that you !--- can have under HP-UX without additional software is 7, define a mapping from FC LUN numbers !--- to the iSCSI LUN numbers you are going to present to the host. iscsi virtual-target name spa-vt pWWN 50:06:01:60:88:02:a8:2b fc-lun 0020 iscsi-lun 0003 pWWN 50:06:01:60:88:02:a8:2b fc-lun 0021 iscsi-lun 0004 advertise interface GigabitEthernet2/1 initiator ip address 10.48.69.238 permit !--- Permit access to the targets on the FC level. Create a simple zone configuration to do this. !--- Alternatively, you could have simply set the default zoning policy in vsan 1016 to permit. zone name jbod vsan 1016 member pwwn 21:00:00:20:37:67:f7:a2 member symbolic-nodename 10.48.69.238 zone name spa vsan 1016 member pwwn 50:06:01:60:88:02:a8:2b member symbolic-nodename 10.48.69.238 zoneset name iscsidoc vsan 1016 member jbod member spa zoneset activate name iscsidoc vsan 1016 !--- Set the IP address and mask of the GE interface and enable it. interface GigabitEthernet2/1 ip address 10.48.69.242 255.255.255.192 iscsi authentication none no shutdown # Lastly we bring up the iSCSI interface up interface iscsi2/1 no shutdown

验证

此部分提供您能使用适当地确认您的配置工作和排除故障的信息，万一注意问题。

确定请显示命令支持[命令查找工具\(仅限注册用户\)](#)，允许您查看show命令输出分析。

HP-UX主机命令

- **netstat-n**或**lsof** —验证TCP连接。
- **iscsi-ls** —显示现在可以得到的设备。
- **dmesg** —收集诊断消息。

MDS/IPS-8命令

- **show zone** —显示区域信息。
- **show flogi database** —显示FLOGI服务器信息。
- **show fcns database** —显示一特定VSAN的名称服务器信息。
- **show vsan membership** —显示不同的VSAN的接口信息。
- **show iscsi** —显示多种iSCSI信息。
- **show ips** —显示关于IP服务的多种信息。
- **show scsi-target** —显示特定VSAN的SCSI设备(映射对iSCSI-LUN的FC-LUNs)。
- **show interface** —显示关于多种接口的信息。
- **show ip route** -显示Ip route信息。

故障排除

本部分提供的信息可用于对配置进行故障排除。

这是故障排除信息与此配置有关：

- 从猿(HP 9000/800 A500 HP-UX 11.00)显示
- 从梵蒂冈(MDS9216)显示
- 组织管理器和设备管理器显示

猿(HP 9000/800 A500 HP-UX 11.00)

```
# /sbin/init.d/iscsi stop Waiting for iscsid to
terminate ..... Waiting for iscsid to terminate .....
Waiting for iscsid to terminate ..... Waiting for iscsid
to terminate ..... Waiting for iscsi_[tr]x_threads to
terminate ..... [/# /sbin/init.d/iscsi start Number of
indices in scsi_isc table used by System: 5 Index used
by iSCSI controller: 255 Number of free indices: 251
[/# netstat -n | grep '10.48.69.242' tcp 0 0
10.48.69.238.49501 10.48.69.242.3260 ESTABLISHED tcp 0 0
10.48.69.238.49500 10.48.69.242.3260 ESTABLISHED tcp 0 0
10.48.69.238.49499 10.48.69.242.3260 ESTABLISHED !--- If
you have lsof, you can also try the following: [/# lsof
-i @10.48.69.242 COMMAND PID USER FD TYPE DEVICE
SIZE/OFF NODE NAME iscsid 2836 root lu inet 0x41aa9268
0t1300 TCP ape.cisco.com:49499->10.48.69.242:3260
(ESTABLISHED) !--- Note that ioscan does not report
iSCSI devices. To see the list !--- of available iSCSI
```

```

devices from the host, issue the iscsi-ls command. [/#]#
iscsi-ls -l
#####
##### TARGET NAME = seagate TARGET ID = 10 ADDRESS =
10.48.69.242:3260,128 STATUS = CONNECTED
10.48.69.238:49501 <-> 10.48.69.242:3260 9/19/2003
15:40:42 SESSION = ISID 00023d000001 TSID 80 LUN 0 =
DISK c255t10d0 'SEAGATE ST318203FC 0004' BLOCKS :
35566479 BLOCKSIZE : 512 CAPACITY : 17366.00MB
#####
##### TARGET NAME = spa-vt TARGET ID = 11 ADDRESS =
10.48.69.242:3260,128 STATUS = CONNECTED
10.48.69.238:49500 <-> 10.48.69.242:3260 9/19/2003
15:40:42 SESSION = ISID 00023d000001 TSID 80 LUN 4 =
DISK c255t11d4 'DGC RAID 1 0632' BLOCKS : 6291419
BLOCKSIZE : 512 CAPACITY : 3071.00MB LUN 3 = DISK
c255t11d3 'DGC RAID 1 0632' BLOCKS : 10485607 BLOCKSIZE
: 512 CAPACITY : 5119.00MB !--- To see detailed
statistics for currently established iSCSI sessions, use
this: [/#]# iscsi-ls -c
#####
##### TARGET NAME = seagate TARGET ID = 10 ADDRESS =
10.48.69.242:3260,128 STATUS = CONNECTED
10.48.69.238:49501 <-> 10.48.69.242:3260 9/19/2003
15:40:42 SESSION = ISID 00023d000001 TSID 80 InitialR2T
= Yes FirstBurstLength = 262144 Bytes MaxBurstLength =
16776192 Bytes Header Digest = 1 Data Digest = 1 Login
Timeout = 15 Seconds Auth Timeout = 45 Seconds Active
Timeout = 5 Seconds Idle Timeout = 60 Seconds Ping
Timeout = 5 Seconds
#####
##### TARGET NAME = spa-vt TARGET ID = 11 ADDRESS =
10.48.69.242:3260,128 STATUS = CONNECTED
10.48.69.238:49500 <-> 10.48.69.242:3260 9/19/2003
15:40:42 SESSION = ISID 00023d000001 TSID 80 InitialR2T
= Yes FirstBurstLength = 262144 Bytes MaxBurstLength =
16776192 Bytes Header Digest = 1 Data Digest = 1 Login
Timeout = 15 Seconds Auth Timeout = 45 Seconds Active
Timeout = 5 Seconds Idle Timeout = 60 Seconds Ping
Timeout = 5 Seconds !--- Here are some of the entries
you can expect to find in the syslog: [/#]# dmesg [...]
iSCSI: session 0x4179b000 target 11 accepted the
preferred value (None) DataDigest=CRC32C iSCSI: session
0x41a64800 target 10 accepted the preferred value (None)
DataDigest=CRC32C iSCSI: Direct Access Device found at
lun 3 on target 11 Vendor Id : DGC Product Id : RAID 1
Product Rev: 0632 iSCSI: Direct Access Device found at
lun 0 on target 10 Vendor Id : SEAGATE Product Id :
ST318203FC Product Rev: 0004 iSCSI: Direct Access Device
found at lun 4 on target 11 Vendor Id : DGC Product Id :
RAID 1 Product Rev: 0632 iSCSI: iscsi_recv_cmd: session
(0x4179b000) recv_cmd(sc) (0x41844800), Cmd 0x25, status
0x2, senselen 18, sense key 06, ASC/ASCQ 29/00, task
(0x40718b00) to (host 255 target 11 lun 3), TargetAlias
spa-vt Sense 70000600 0000000a 00000000 29000000 0000
READ_CAPACITY result = 0x2 Target = 0xb LUN = 0x3 iSCSI:
iscsi_recv_cmd: task (0x40718b00) itt 9 to (host 255
target 11 lun 3), Cmd 0x25, U(Overflow/Underflow)
underflow, received 0(task->rxdata), residual 8,
expected 8 iSCSI: iscsi_recv_cmd: session (0x4179b000)
recv_cmd(sc) (0x41844800), Cmd 0x25, status 0x2,
senselen 18, sense key 06, ASC/ASCQ 29/00, task
(0x40718c00) to (host 255 target 11 lun 4), TargetAlias
spa-vt Sense 70000600 0000000a 00000000 29000000 0000

```

```
READ_CAPACITY result = 0x2 Target = 0xb LUN = 0x4 iSCSI:
iscsi_recv_cmd: task (0x40718c00) itt 11 to (host 255
target 11 lun 4), Cmd 0x25, U(Overflow/Underflow)
underflow, received 0(task->rxdata), residual 8,
expected 8
```

从梵蒂冈(MDS9216)显示

```
vatican# show zone status vsan 1016 VSAN: 1016 default-
zone: deny distribute: active only Interop: Off Full
Zoning Database : Zonesets:1 Zones:3 Aliases: 0 Active
Zoning Database : Name: iscsidoc Zonesets:1 Zones:3
Status: Activation completed at Wed Sep 17 13:03:56 2003
vatican# show zone active vsan 1016 zone name jbod vsan
1016 * fcid 0x7902e8 [pwwn 21:00:00:20:37:67:f7:a2] *
fcid 0x790100 [symbolic-nodename 10.48.69.238] zone name
spa vsan 1016 * fcid 0x790104 [pwwn
50:06:01:60:88:02:a8:2b] * fcid 0x790100 [symbolic-
nodename 10.48.69.238] zone name spb vsan 1016 * fcid
0x790105 [pwwn 50:06:01:68:88:02:a8:2b] * fcid 0x790100
[symbolic-nodename 10.48.69.238] vatican# show flogi
database vsan 1016 -----
----- INTERFACE VSAN
FCID PORT NAME NODE NAME -----
----- fc1/3 1016
0x7902e8 21:00:00:20:37:67:f7:a2 20:00:00:20:37:67:f7:a2
fc1/7 1016 0x790104 50:06:01:60:88:02:a8:2b
50:06:01:60:11:02:a8:2b fc1/11 1016 0x790105
50:06:01:68:88:02:a8:2b 50:06:01:60:11:02:a8:2b iscsi2/1
1016 0x790100 20:03:00:0c:30:57:5e:c2
20:02:00:0c:30:57:5e:c2 Total number of flogi = 4.
vatican# show fcns database vsan 1016 VSAN 1016: -----
-----
----- FCID TYPE PWWN (VENDOR) FC4-TYPE:FEATURE ---
-----
----- 0x790100 N 20:03:00:0c:30:57:5e:c2
(Cisco) scsi-fcp:init isc..w 0x790104 N
50:06:01:60:88:02:a8:2b (Clariion) scsi-fcp:target
0x790105 N 50:06:01:68:88:02:a8:2b (Clariion) scsi-
fcp:target 0x7902e8 NL 21:00:00:20:37:67:f7:a2 (Seagate)
scsi-fcp:target Total number of entries = 4 --- FCID
0x790100 is the virtual N port(HBA) for the iSCSI host.
vatican# show fcns database detail vsan 1016 -----
----- VSAN:1016 FCID:0x790100 -----
----- port-wwn (vendor) :20:03:00:0c:30:57:5e:c2
(Cisco) node-wwn :20:02:00:0c:30:57:5e:c2 class :2,3
node-ip-addr :10.48.69.238 ipa :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw symbolic-
port-name : symbolic-node-name :10.48.69.238 port-type
:N port-ip-addr :0.0.0.0 fabric-port-wwn
:20:41:00:0c:30:57:5e:c0 hard-addr :0x000000 -----
----- VSAN:1016 FCID:0x790104 -----
----- port-wwn (vendor) :50:06:01:60:88:02:a8:2b
(Clariion) node-wwn :50:06:01:60:11:02:a8:2b class :3
node-ip-addr :0.0.0.0 ipa :ff ff ff ff ff ff ff ff fc4-
types:fc4_features:scsi-fcp:target symbolic-port-name :
symbolic-node-name : port-type :N port-ip-addr :0.0.0.0
fabric-port-wwn :20:07:00:0c:30:57:5e:c0 hard-addr
:0x000000 ----- VSAN:1016
FCID:0x790105 ----- port-wwn (vendor)
:50:06:01:68:88:02:a8:2b (Clariion) node-wwn
:50:06:01:60:11:02:a8:2b class :3 node-ip-addr :0.0.0.0
ipa :ff ff ff ff ff ff ff ff fc4-
types:fc4_features:scsi-fcp:target symbolic-port-name :
symbolic-node-name : port-type :N port-ip-addr :0.0.0.0
```



```
fabric-port-wwn :20:0b:00:0c:30:57:5e:c0 hard-addr
:0x000000 ----- VSAN:1016
FCID:0x7902e8 ----- port-wwn (vendor)
:21:00:00:20:37:67:f7:a2 (Seagate) node-wwn
:20:00:00:20:37:67:f7:a2 class :3 node-ip-addr :0.0.0.0
ipa :ff ff ff ff ff ff ff fc4-
types:fc4_features:scsi-fcp:target symbolic-port-name :
symbolic-node-name : port-type :NL port-ip-addr :0.0.0.0
fabric-port-wwn :20:03:00:0c:30:57:5e:c0 hard-addr
:0x000000 Total number of entries = 4 vatican# show
iscsi initiator iSCSI Node name is 10.48.69.238 iSCSI
Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale iSCSI
alias name: ape Node WWN is 20:02:00:0c:30:57:5e:c2
(dynamic) Member of vsans: 1016 Number of Virtual
n_ports: 1 Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic) Interface iSCSI 2/1, Portal group tag: 0x80
VSAN ID 1016, FCID 0x790100 vatican# show iscsi
initiator configured iSCSI Node name is 10.48.69.238
Member of vsans: 1016 vatican# show iscsi initiator
detail iSCSI Node name is 10.48.69.238 iSCSI Initiator
name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale iSCSI
alias name: ape Node WWN is 20:02:00:0c:30:57:5e:c2
(dynamic) Member of vsans: 1016 Number of Virtual
n_ports: 1 Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic) Interface iSCSI 2/1, Portal group tag is 0x80
VSAN ID 1016, FCID 0x790100 2 FC sessions, 2 iSCSI
sessions iSCSI session details Target: spa-vt
Statistics: PDU: Command: 10, Response: 10 Bytes: TX:
416, RX: 0 Number of connection: 1 TCP parameters Local
10.48.69.242:3260, Remote 10.48.69.238:49500 Path MTU:
1500 bytes Retransmission timeout: 300 ms Round trip
time: Smoothed 62 ms, Variance: 3 Advertized window:
Current: 256 KB, Maximum: 256 KB, Scale: 3 Peer receive
window: Current: 576 KB, Maximum: 576 KB, Scale: 4
Congestion window: Current: 4 KB Target: seagate
Statistics: PDU: Command: 4, Response: 4 Bytes: TX: 304,
RX: 0 Number of connection: 1 TCP parameters Local
10.48.69.242:3260, Remote 10.48.69.238:49501 Path MTU:
1500 bytes Retransmission timeout: 300 ms Round trip
time: Smoothed 62 ms, Variance: 3 Advertized window:
Current: 256 KB, Maximum: 256 KB, Scale: 3 Peer receive
window: Current: 576 KB, Maximum: 576 KB, Scale: 4
Congestion window: Current: 4 KB FCP Session details
Target FCID: 0x790104 (S_ID of this session: 0x790100)
pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b Session state: LOGGED_IN 1 iSCSI
sessions share this FC session Target: spa-vt Negotiated
parameters RcvDataFieldSize 1024 our_RcvDataFieldSize
1392 MaxBurstSize 0, EMPD: FALSE Random Relative Offset:
FALSE, Sequence-in-order: Yes Statistics: PDU: Command:
0, Response: 10 Target FCID: 0x7902e8 (S_ID of this
session: 0x790100) pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2 Session state: LOGGED_IN 1 iSCSI
sessions share this FC session Target: seagate
Negotiated parameters RcvDataFieldSize 1392
our_RcvDataFieldSize 1392 MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-order: Yes
Statistics: PDU: Command: 0, Response: 4 vatican# show
iscsi initiator iscsi-session detail iSCSI Node name is
10.48.69.238 iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale iSCSI
alias name: ape Node WWN is 20:02:00:0c:30:57:5e:c2
```

```
(dynamic) Member of vsans: 1016 Number of Virtual
n_ports: 1 Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic) Interface iSCSI 2/1, Portal group tag is 0x80
VSAN ID 1016, FCID 0x790100 2 FC sessions, 2 iSCSI
sessions iSCSI session details Target: spa-vt
Statistics: PDU: Command: 10, Response: 10 Bytes: TX:
416, RX: 0 Number of connection: 1 TCP parameters Local
10.48.69.242:3260, Remote 10.48.69.238:49500 Path MTU:
1500 bytes Retransmission timeout: 300 ms Round trip
time: Smoothed 62 ms, Variance: 2 Advertized window:
Current: 256 KB, Maximum: 256 KB, Scale: 3 Peer receive
window: Current: 576 KB, Maximum: 576 KB, Scale: 4
Congestion window: Current: 4 KB Target: seagate
Statistics: PDU: Command: 4, Response: 4 Bytes: TX: 304,
RX: 0 Number of connection: 1 TCP parameters Local
10.48.69.242:3260, Remote 10.48.69.238:49501 Path MTU:
1500 bytes Retransmission timeout: 300 ms Round trip
time: Smoothed 62 ms, Variance: 2 Advertized window:
Current: 256 KB, Maximum: 256 KB, Scale: 3 Peer receive
window: Current: 576 KB, Maximum: 576 KB, Scale: 4
Congestion window: Current: 4 KB vatican# show iscsi
initiator fcp-session detail iSCSI Node name is
10.48.69.238 iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8afla8474dale iSCSI
alias name: ape Node WWN is 20:02:00:0c:30:57:5e:c2
(dynamic) Member of vsans: 1016 Number of Virtual
n_ports: 1 Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic) Interface iSCSI 2/1, Portal group tag is 0x80
VSAN ID 1016, FCID 0x790100 2 FC sessions, 2 iSCSI
sessions FCP Session details Target FCID: 0x790104 (S_ID
of this session: 0x790100) pWWN:
50:06:01:60:88:02:a8:2b, nWWN: 50:06:01:60:11:02:a8:2b
Session state: LOGGED_IN 1 iSCSI sessions share this FC
session Target: spa-vt Negotiated parameters
RcvDataFieldSize 1024 our_RcvDataFieldSize 1392
MaxBurstSize 0, EMPD: FALSE Random Relative Offset:
FALSE, Sequence-in-order: Yes Statistics: PDU: Command:
0, Response: 10 Target FCID: 0x7902e8 (S_ID of this
session: 0x790100) pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2 Session state: LOGGED_IN 1 iSCSI
sessions share this FC session Target: seagate
Negotiated parameters RcvDataFieldSize 1392
our_RcvDataFieldSize 1392 MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-order: Yes
Statistics: PDU: Command: 0, Response: 4 vatican# show
iscsi virtual-target configured target: seagate * Port
WWN 21:00:00:20:37:67:f7:a2 == The "*" means you have
both discovery and target session. If there is no "*" in
front of the pWWN, it means you only have discovery
session. Configured node No. of LU mapping: 1 iSCSI LUN:
0000, FC LUN: 0000 No. of advertised interface: 1
GigabitEthernet 2/1 No. of initiators permitted: 1
initiator 10.48.69.238/32 is permitted all initiator
permit is disabled target: spa-vt * Port WWN
50:06:01:60:88:02:a8:2b Secondary PWWN
50:06:01:68:88:02:a8:2b Configured node No. of LU
mapping: 2 iSCSI LUN: 0003, FC LUN: 0020 iSCSI LUN:
0004, FC LUN: 0021 No. of advertised interface: 1
GigabitEthernet 2/1 No. of initiators permitted: 1
initiator 10.48.69.238/32 is permitted all initiator
permit is disabled vatican# show iscsi stats iscsi 2/1
iscsi2/1 5 minutes input rate 16 bits/sec, 2 bytes/sec,
0 frames/sec 5 minutes output rate 16 bits/sec, 2
bytes/sec, 0 frames/sec iSCSI statistics 50932 packets
```

```

input, 60370640 bytes Command 3659 pdus, Data-out 41069
pdus, 56533832 bytes, 2476 fragments output 115926
packets, 112863536 bytes Response 3374 pdus (with sense
206), R2T 1897 pdus Data-in 103999 pdus, 106404584 bytes
vatican# show ips arp interface gigabitethernet 2/1
Protocol Address Age (min) Hardware Addr Type Interface
Internet 10.48.69.200 0 0008.e21e.c7bc ARPA
GigabitEthernet2/1 Internet 10.48.69.201 5
0202.3d30.45c9 ARPA GigabitEthernet2/1 Internet
10.48.69.206 5 0202.3d30.45ce ARPA GigabitEthernet2/1
Internet 10.48.69.209 3 0202.3d30.45d1 ARPA
GigabitEthernet2/1 Internet 10.48.69.226 2
0060.08f6.bcla ARPA GigabitEthernet2/1 Internet
10.48.69.229 4 0800.209e.edab ARPA GigabitEthernet2/1
Internet 10.48.69.231 1 0002.b3c1.7dab ARPA
GigabitEthernet2/1 Internet 10.48.69.233 0
0010.4200.7d5b ARPA GigabitEthernet2/1 Internet
10.48.69.238 0 0030.6elb.6f51 ARPA GigabitEthernet2/1
Internet 10.48.69.239 10 0030.6elc.a00b ARPA
GigabitEthernet2/1 Internet 10.48.69.241 0
000b.cdaf.b4c3 ARPA GigabitEthernet2/1 Internet
10.48.69.248 4 0202.3d30.45f8 ARPA GigabitEthernet2/1
Internet 10.48.69.252 1 0202.3d30.45fc ARPA
GigabitEthernet2/1 Internet 10.10.2.28 7 0202.3d0a.021c
ARPA GigabitEthernet2/1 vatican# show ips stats tcp
interface gigabitethernet 2/1 detail TCP Statistics for
port GigabitEthernet2/1 TCP send stats 261205 segments,
117757220 bytes 140632 data, 51907 ack only packets 2655
control (SYN/FIN/RST), 0 probes, 2639 window updates
63382 segments retransmitted, 90885612 bytes 63382
retransmitted while on ethernet send queue, 1 packets
split 13327 delayed acks sent TCP receive stats 249073
segments, 72669 data packets in sequence, 61525764 bytes
in sequence 2335 predicted ack, 68605 predicted data 0
bad checksum, 0 multi/broadcast, 0 bad offset 0 no
memory drops, 0 short segments 4396 duplicate bytes, 205
duplicate packets 0 partial duplicate bytes, 0 partial
duplicate packets 0 out-of-order bytes, 2625 out-of-
order packets 0 packet after window, 0 bytes after
window 0 packets after close 80504 acks, 117762158 ack
bytes, 0 ack toomuch, 96274 duplicate acks 0 ack packets
left of snd_una, 7 non-4 byte aligned packets 54199
window updates, 0 window probe 6343 pcb hash miss, 709
no port, 6 bad SYN, 0 paws drops TCP Connection Stats 0
attempts, 2718 accepts, 2718 established 2716 closed, 15
drops, 0 conn drops 3 drop in retransmit timeout, 10
drop in keepalive timeout 0 drop in persist drops, 0
connections drained TCP Miscellaneous Stats 37062
segments timed, 41787 rtt updated 817 retransmit
timeout, 1 persist timeout 22654 keepalive timeout,
22643 keepalive probes TCP SACK Stats 0 recovery
episodes, 0 data packets, 0 data bytes 0 data packets
retransmitted, 0 data bytes retransmitted 0 connections
closed, 0 retransmit timeouts TCP SYN Cache Stats 2720
entries, 2718 connections completed, 0 entries timed out
0 dropped due to overflow, 2 dropped due to RST 0
dropped due to ICMP unreachable, 0 dropped due to bucket
overflow 0 abort due to no memory, 2 duplicate SYN, 183
no-route SYN drop 0 hash collisions, 0 retransmitted TCP
Active Connections Local Address Remote Address State
Send-Q Recv-Q 10.48.69.242:3260 10.48.69.238:49499
ESTABLISH 0 0 10.48.69.242:3260 10.48.69.238:49500
ESTABLISH 0 0 10.48.69.242:3260 10.48.69.238:49501
ESTABLISH 0 0 0.0.0.0:3260 0.0.0.0:0 LISTEN 0 0 vatican#

```

```

discover scsi-target local discovery started vatican#
show scsi-target devices vsan 1016 -----
-----
--- VSAN FCID PWWN VENDOR MODEL REV -----
-----
---- 1016 0x790104 50:06:01:60:88:02:a8:2b DGC RAID 0
0632 1016 0x7902e8 21:00:00:20:37:67:f7:a2 SEAGATE
ST318203FC 0004 vatican# show scsi-target lun vsan 1016
- RAID from DGC (Rev 0632) FCID is 0x790104 in VSAN
1016, PWWN is 50:06:01:60:88:02:a8:2b -----
-----
---- LUN Capacity Status Serial Number Device-Id (MB) --
-----
----- 0x0 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b da:05:b6:a9:b6:9d:7b:00
C:1 A:0 T:0 00:00:00:00 0x1 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 6a:66:0d:74:cb:33:88:6c
C:1 A:0 T:0 00:01:00:00 0x2 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b ec:81:5b:a2:c4:43:0d:8a
C:1 A:0 T:0 00:02:00:00 0x3 2147 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b e0:47:b3:be:3b:00:e0:d5
C:1 A:0 T:0 00:03:00:00 0x4 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 00:51:5b:7f:3d:9a:7b:ce
C:1 A:0 T:0 00:04:00:00 0x5 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b ab:b1:ae:80:59:c0:fc:f0
C:1 A:0 T:0 00:05:00:00 0x6 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b ad:91:58:af:d2:fd:c7:47
C:1 A:0 T:0 00:06:00:00 0x7 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b b1:ef:e7:6c:44:5c:16:97
C:1 A:0 T:0 00:07:00:00 0x8 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 84:4f:09:60:30:1e:fc:50
C:1 A:0 T:0 00:08:00:00 0x9 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b aa:6d:e2:0e:ce:7a:cc:21
C:1 A:0 T:0 00:09:00:00 0xa 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 5b:66:67:89:6c:f2:d1:56
C:1 A:0 T:0 00:0a:00:00 0xb 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b a9:32:bd:04:4a:bb:3d:9b
C:1 A:0 T:0 00:0b:00:00 0xc 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b cd:d9:96:f7:57:3f:07:0c
C:1 A:0 T:0 00:0c:00:00 0xd 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 0c:e5:ba:39:68:ca:d6:f0
C:1 A:0 T:0 00:0d:00:00 0xe 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 60:6e:ee:76:98:fc:ab:97
C:1 A:0 T:0 00:0e:00:00 0xf 1074 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 8b:58:80:7b:12:fb:6b:12
C:1 A:0 T:0 00:0f:00:00 0x10 1074 Online f60004202091
C:1 A:0 T:3 60:06:01:60:88:02:a8:2b
a1:2f:6d:b0:c3:d6:c2:46 C:1 A:0 T:0 00:10:00:00 0x11
1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b 2c:48:c4:74:25:4b:26:dd C:1 A:0
T:0 00:11:00:00 0x20 5369 Online f60004202091 C:1 A:0
T:3 60:06:01:60:88:02:a8:2b ba:18:6a:40:22:40:94:75 C:1
A:0 T:0 00:20:00:00 0x21 3221 Online f60004202091 C:1
A:0 T:3 60:06:01:60:88:02:a8:2b 74:d2:42:9e:31:8d:ff:86
C:1 A:0 T:0 00:21:00:00 - ST318203FC from SEAGATE (Rev
0004) FCID is 0x7902e8 in VSAN 1016, PWWN is
21:00:00:20:37:67:f7:a2 -----
-----
----- LUN
Capacity Status Serial Number Device-Id (MB) -----
-----
----- 0x0 18210 Online LRE8091500007039 C:1 A:0
T:3 20:00:00:20:37:67:f7:a2 vatican# show interface
iscsi 2/1 iscsi2/1 is up Hardware is GigabitEthernet
Port WWN is 20:41:00:0c:30:57:5e:c0 Admin port mode is

```

```
ISCSI Port mode is ISCSI Speed is 1 Gbps iSCSI initiator
is identified by name Number of iSCSI session: 0, Number
of TCP connection: 0 Configured TCP parameters Local
Port is 3260 PMTU discover is enabled, reset timeout is
3600 sec Keepalive-timeout is 60 sec Minimum-retransmit-
time is 300 ms Max-retransmissions 4 Sack is disabled
Maximum allowed bandwidth is 500000 kbps Minimum
available bandwidth is 500000 kbps Estimated round trip
time is 10000 usec 5 minutes input rate 16 bits/sec, 2
bytes/sec, 0 frames/sec 5 minutes output rate 16
bits/sec, 2 bytes/sec, 0 frames/sec iSCSI statistics
Input 50920 packets, 60370032 bytes Command 3659 pdus,
Data-out 41069 pdus, 56533832 bytes fragments 2476
Output 115914 packets, 112862928 bytes Response 3374
pdus (with sense 206), R2T 1897 pdus Data-in 103999
pdus, 106404584 bytes vatican# show interface
gigabitethernet 2/1 GigabitEthernet2/1 is up Hardware is
GigabitEthernet, address is 0005.3000.a85a Internet
address is 10.48.69.242/26 MTU 1500 bytes Port mode is
IPS Speed is 1 Gbps Beacon is turned off Auto-
Negotiation is turned on iSCSI authentication: NONE 5
minutes input rate 440 bits/sec, 55 bytes/sec, 0
frames/sec 5 minutes output rate 80 bits/sec, 10
bytes/sec, 0 frames/sec 850346 packets input, 127958119
bytes 6488 multicast frames, 0 compressed 0 input
errors, 0 frame, 0 overrun 0 fifo 289960 packets output,
201600774 bytes, 0 underruns 0 output errors, 0
collisions, 0 fifo 0 carrier errors vatican# show ip
route Codes: C - connected, S - static Default gateway
is 10.48.69.129 C 10.48.69.192/26 is directly connected,
gigabitethernet2-1 C 10.48.69.128/26 is directly
connected, mgmt0
```

[组织管理器和设备管理器显示](#)

此部分提供从MD组织管理器1.2(1a)和设备管理器的屏幕截图1.2(1a)。

从组织管理器的拓扑图

设备管理器

挑选在显示pWWNs、LUN您的LUN ID和产能的设备管理器的FC- > LUN。

精选IP > -在显示iSCSI会话的设备管理器的iSCSI。

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