

Exemple de configuration de l'hôte iSCSI HP-UX sur MDS/IPS-8

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Introduction

Les pilotes Cisco iSCSI, qui résident sur le serveur, sont un composant clé d'une solution iSCSI. Ces pilotes iSCSI interceptent les commandes **SCSI (Small Computer System Interface)**, les encapsulent dans des paquets IP et les redirigent vers le document Cisco SN 5420, Cisco SN 5428, Cisco SN 5428-2 ou Cisco MDS/IPS-8. This fournit des exemples de configuration pour l'hôte iSCSI HP-UX sur SN 5428.

Conditions préalables

Conditions requises

Avant de tenter cette configuration, assurez-vous de respecter les conditions suivantes :

- Installez le pilote iSCSI compatible avec votre version HP-UX. La version la plus récente du pilote se trouve sur la page de téléchargement du [pilote iSCSI Cisco \(clients enregistrés uniquement\)](#) sur Cisco.com. Le fichier README.txt est inclus dans le fichier zip(tar) du pilote. Le README contient des informations sur le contrat de licence, les instructions d'installation et de configuration des pilotes et une présentation technique de l'architecture des pilotes.
- Les exigences du système d'exploitation et les correctifs requis sont décrits dans la section *Configuration système requise* des [notes de version du pilote iSCSI Cisco pour HP-UX](#).

Components Used

Les informations contenues dans ce document sont basées sur les versions de matériel et de logiciel suivantes :

- Serveur HP-UX 9000/800 A500 avec deux processeurs. **Remarque** : dans ce TP, il n'y a pas de carte Ethernet distincte pour iSCSI et celle utilisée est de 100 Mo. Dans tout environnement réaliste, vous disposez d'un ou de plusieurs adaptateurs Gigabit Ethernet (GE) distincts comme initiateurs iSCSI.

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

```
System Hardware
```

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

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

```
I/O Interfaces
```

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

```
Adapter
```

```
Installed Software
```

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

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

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

- Le pilote Cisco iSCSI 3.3.3 pour HP-UX a été utilisé. Il est recommandé d'installer (au moins) le dernier correctif cumulatif de transport ARPA (Address Resolution Protocol) de HP. Lorsque ce document a été écrit, il s'agissait de PHNE_28538. Ce correctif a plusieurs dépendances, vous devez donc les installer en fonction des besoins. Pour plus d'informations sur l'installation, visitez le [site de support HP](#) officiel (clients [enregistrés](#) uniquement).

```
[/]# swlist
# Initializing...
# Contacting target "ape"...
#
# Target:  ape:/
#
#
# Bundle(s):
#
A6795A                B.11.00.10      PCI Tachyon TL/TS/XL2 Fibre Channel
BUNDLE                B.11.00         Patch Bundle
HPUXEng64RT          B.11.00.01      English HP-UX 64-bit Runtime Environment
HWE1100              B.11.00.0203.5  Hardware Enablement Patches for HP-UX 11.00,
March 2002
OnlineDiag           B.11.00.20.09   HPUX 11.0 Support Tools Bundle, Mar 2002
QPK1100              B.11.00.56.5    Quality Pack for HP-UX 11.00, March 2002
UXCoreMedia          B.11.00.02      HP-UX Media Kit (Reference Only. See
Description)
UnlimUserLic         B.11.00.02      HP-UX Unlimited-User License
XSWGR1100            B.11.00.47.08   General Release Patches, November 1999 (ACE)
#
# Product(s) not contained in a Bundle:
#
ISCSI                 3.3.3           ISCSI software
bison                 1.875           bison
flex                  2.5.4a          flex
gcc                   3.2.3           gcc
gettext               0.11.5          gettext
less                  376             less
libiconv              1.9             libiconv
make                   3.80            make
ncurses               5.2             ncurses
termcap               1.3.1           termcap
zsh                   4.0.7           zsh
```

```
[/]# swlist BUNDLE
# Initializing...
# Contacting target "ape"...
#
# Target:  ape:/
#
# BUNDLE                B.11.00         Patch Bundle
BUNDLE.PHCO_23651      1.0             fsck_vxfs(1M) cumulative patch
BUNDLE.PHKL_28496      1.0             SCSI IO Subsystem Cumulative Patch
BUNDLE.PHKL_27980      1.0             VxFS 3.1 cumulative patch: CR_EIEM
BUNDLE.PHKL_22840      1.0             IDS/9000; syscalls related to file/socket
BUNDLE.PHCO_28505      1.0             user/group(add/mod/del)(1M) cumulative patch
BUNDLE.PHKL_28150      1.0             LVM Cumulative Patch w/Performance Upgrades
BUNDLE.PHNE_28538      1.0             cumulative ARPA Transport patch
BUNDLE.PHNE_28143      1.0             LAN product cumulative patch
BUNDLE.PHNE_27902      1.0             Cumulative STREAMS Patch
BUNDLE.PHKL_29434      1.0             POSIX AIO;getdirentries;MVFS;rcp;mmap/IDS;
BUNDLE.PHKL_28766      1.0             Probe, IDDS, PM, VM, PA-8700, AIO, T600, FS, PDC, CLK
BUNDLE.PHKL_28004      1.0             Fibre Channel Mass Storage Driver Patch
BUNDLE.PHKL_27729      1.0             ioscan -u incorrect display (kernel patch).
BUNDLE.PHKL_24187      1.0             ioscan performance gain for SCSI Subsystem
BUNDLE.PHKL_24165      1.0             Kernel Patch For "ioscan -k" Performance
BUNDLE.PHKL_23409      1.0             NFS, Large Data Space, kernel memory leak
BUNDLE.PHKL_20016      1.0             2nd CPU not recognized in G70/H70/I70
BUNDLE.PHKL_18543      1.0             PM/VM/UFS/async/scsi/io/DMAPI/JFS/perf patch
```

```
BUNDLE.PHCO_27818      1.0          ioscan(1M) cumulative patch
BUNDLE.PHCO_27375      1.0          cumulative SAM/ObAM patch
```

- Cisco MDS 9216 avec la version 1.2(1a) du logiciel.

```
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)
```

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

Le Cisco MDS 9000 utilisé dans ce document fait référence à tout produit de commutation Fibre Channel (FC) de la gamme MDS 9000 (MDS 9506, MDS 9509, MDS 9216). La lame IPS (Intrusion Prevention System) de Cisco fait référence au module de services de stockage IP. For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

Informations générales

Le module IPS (Intrusion Prevention System) de Cisco permet aux hôtes IP d'accéder aux périphériques de stockage Fibre Channel (FC). Le module IPS est DS-X9308-SMIP. Il fournit un routage SCSI transparent. Les hôtes IP qui utilisent le protocole iSCSI peuvent accéder de manière transparente aux cibles iSCSI sur le réseau FC. L'hôte IP envoie des commandes SCSI encapsulées dans des unités de données de protocole iSCSI (PDU) à un port IPS MDS 9000 via une connexion TCP/IP. Sur le module IPS, la connectivité est fournie sous la forme d'interfaces GE configurées de manière appropriée. Le module IPS vous permet de créer des cibles iSCSI virtuelles et de les mapper à des cibles FC physiques disponibles dans le SAN FC. Il présente les cibles FC aux hôtes IP comme si les cibles physiques étaient connectées au réseau IP.

Chaque hôte iSCSI nécessitant un accès au stockage via le module IPS doit disposer d'un pilote iSCSI compatible. Grâce au protocole iSCSI, le pilote iSCSI permet à un hôte iSCSI de transporter des requêtes et des réponses SCSI sur un réseau IP. Du point de vue d'un système d'exploitation hôte, le pilote iSCSI semble être un pilote de transport SCSI similaire à un pilote FC pour un canal périphérique dans l'hôte. Du point de vue du périphérique de stockage, chaque hôte IP apparaît comme un hôte FC. Le routage SCSI de l'hôte IP vers le périphérique de stockage FC se compose des actions principales suivantes :

- Transport des requêtes et des réponses iSCSI sur un réseau IP entre les hôtes et le module IPS
- Routage des requêtes et des réponses SCSI entre les hôtes d'un réseau IP et le périphérique de stockage FC (conversion iSCSI en FCP et FCP en iSCSI). Ce routage est effectué par le module IPS.
- Transport de requêtes ou de réponses FCP entre le module IPS et les périphériques de stockage FC

Par défaut, le module IPS n'importe pas de cibles FC vers iSCSI. Le mappage dynamique ou statique doit être configuré avant que le module IPS ne mette les cibles FC à la disposition des initiateurs iSCSI. Lorsque les deux sont configurées, les cibles FC mappées de manière statique ont un nom configuré. Ce document fournit un exemple de mappage statique. Avec le mappage dynamique, chaque fois que l'hôte iSCSI se connecte au module IPS, un nouveau port FC N est créé et les nWWN et pWWN attribués à ce port N peuvent être différents. Utilisez la méthode de mappage statique si vous devez obtenir les mêmes nWWN et pWWN pour l'hôte iSCSI chaque fois qu'il se connecte au module IPS. Le mappage statique peut être utilisé sur le module IPS pour accéder à des baies de stockage FC intelligentes disposant d'un contrôle d'accès et d'un mappage des numéros d'unité logique (LUN) et de configurations de masquage basées sur les pWWN ou nWWN de l'initiateur.

Vous pouvez contrôler l'accès à chaque cible iSCSI mappée de manière statique avec la création d'une liste spécifique de ports IPS sur lesquels la cible est annoncée et la création d'une liste de noms de noeuds initiateurs iSCSI autorisés à y accéder. Le contrôle d'accès basé sur le zonage FC et le contrôle d'accès basé sur iSCSI sont les deux mécanismes par lesquels le contrôle d'accès peut être fourni pour iSCSI. Les deux méthodes peuvent être utilisées simultanément. Dans cette configuration, le zonage par défaut est autorisé pour un VSAN spécifique. Les modules IPS utilisent à la fois des listes de contrôle d'accès basées sur le nom de noeud iSCSI et sur le zonage FC pour appliquer le contrôle d'accès lors de la découverte iSCSI et de la création de sessions iSCSI.

- **Découverte iSCSI** : Lorsqu'un hôte iSCSI crée une session de découverte iSCSI et des requêtes pour toutes les cibles iSCSI, le module IPS renvoie uniquement la liste des cibles

iSCSI auxquelles cet hôte iSCSI est autorisé à accéder en fonction des stratégies de contrôle d'accès.

- **Création de session iSCSI** : Lorsqu'un hôte IP initie une session iSCSI, le module IPS vérifie si la cible iSCSI spécifiée (dans la demande de connexion de session) est une cible mappée statique et, si la valeur est true, vérifie si le nom de noeud iSCSI de l'hôte IP est autorisé à accéder à la cible. Si l'hôte IP n'a pas accès, sa connexion est rejetée.

Le module IPS crée ensuite un port N virtuel FC (le port N peut déjà exister) pour cet hôte IP et effectue une requête de serveur de noms FC pour le FCID du pWWN cible FC auquel l'hôte IP accède. Il utilise le pWWN du port N virtuel de l'hôte IP comme demandeur de la requête de serveur de noms. Ainsi, le serveur de noms effectue une requête appliquée à la zone pour le nom de domaine virtuel (pWWN) et répond à la requête. Si le FCID est renvoyé par le serveur de noms, la session iSCSI est acceptée. Sinon, la demande de connexion est rejetée.

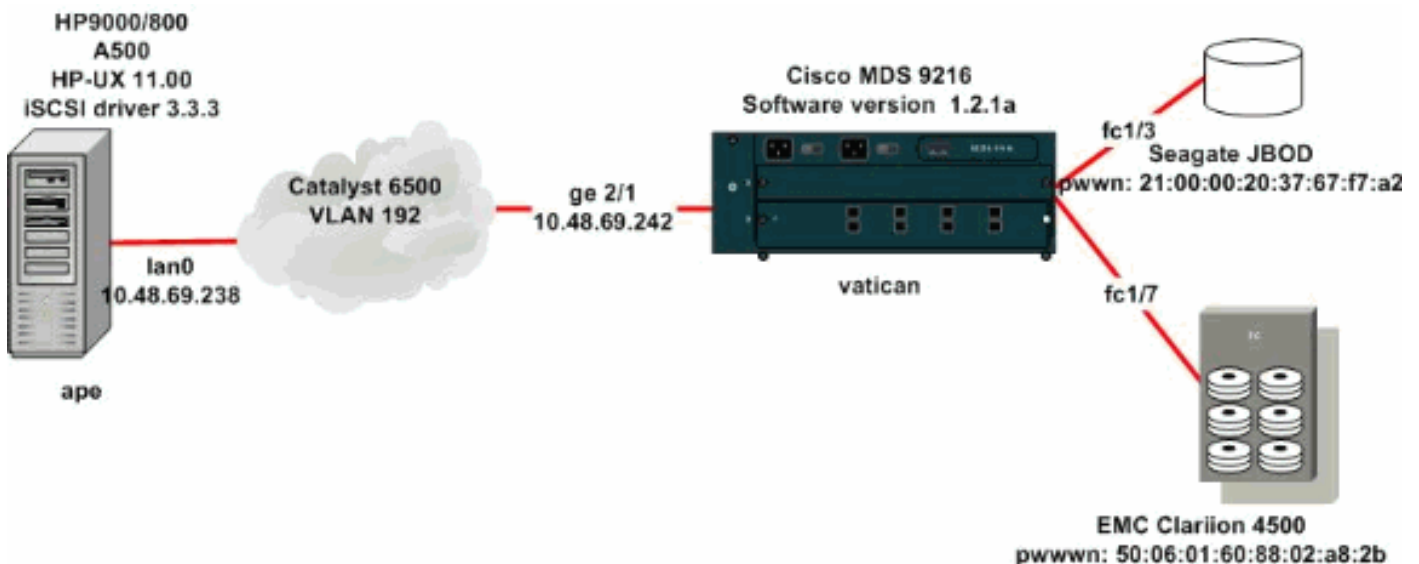
Configuration

Cette section présente les informations nécessaires à la configuration du MDS 9216 et du pilote Cisco iSCSI pour Linux.

Remarque : Pour obtenir des informations supplémentaires sur les commandes utilisées dans ce document, utilisez le [Guide de référence des commandes de la gamme Cisco MDS 9000](#) et le [Guide de configuration du logiciel de la gamme Cisco MDS 9000](#).

Diagramme du réseau

Ce document utilise la configuration réseau indiquée dans le diagramme suivant :



Configurations

Ce document utilise les configurations indiquées ici:

- Ape (HP 9000/800 A500 HP-UX 11.00)
- Vatican (MDS 9216)

Ape (HP 9000/800 A500 HP-UX 11.00)

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

```
[/]# cat /etc/iscsi.conf
# iSCSI configuration file - see iscsi.conf(4)
# DiscoveryAddress Settings
# -----
# Add "DiscoveryAddress=xxx" entries for each iSCSI
router instance.
# The driver attempts to discover iSCSI targets at that
address
# and make as many targets as possible available for
use.
# 'xxx' can be an IP address or a hostname. A TCP port
number can be
# specified by appending a colon and the port number to
the address.
# All entries have to start in column one and must not
contain any
# whitespace.
#
# Example:
#
# DiscoveryAddress=scsirouter1
DiscoveryAddress=10.48.69.242

!--- Configure the IP address of the GE interface that
accepts iSCSI request from your host.

# The DiscoveryAddress Settings can take following
entry.
#
# 1) Authentication Settings
# 2) ConnectionTimeout Settings

!--- Other required driver parameters could be changed
in the iscsi.conf file.
```

.....

```
[/]# cat /etc/iscsi.bindings
# iSCSI bindings, file format version 1.0.
# NOTE: this file is automatically maintained by the
iSCSI daemon.
# You do not need to edit this file under most
circumstances.
# If iSCSI targets in this file have been permanently
deleted, you
# may wish to delete the bindings for the deleted
targets.
#
# Format:
# bus  target  iSCSI
# id   id       TargetName
#
[...]
0     10       seagate
0     11       spa-vt
```

!--- The iSCSI driver discovery daemon process looks up each discovered !--- target in the /etc/iscsi.bindings file. If an entry exists in the file for the target, !--- the corresponding SCSI target ID is assigned to the target. If no entry !--- exists for the target, the

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

!--- Enter [/]#/sbin/init.d/iscsi stop to manually stop the iSCSI driver.

Vatican (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:/sl11a boot kickstart bootflash:/kl11a # 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
```

Vérification

Cette section fournit des informations que vous pouvez utiliser pour confirmer que votre configuration fonctionne correctement et résoudre les problèmes en cas de problème.

Certaines commandes **show** sont prises en charge par l'[Outil de recherche de commandes](#) (clients [enregistrés](#) uniquement) , qui vous permet d'afficher une analyse de **show** sortie de commande.

Commandes d'hôte HP-UX

- **netstat-n** ou **lsof** : vérifie les connexions TCP.
- **iscsi-ls** : affiche les périphériques actuellement disponibles.
- **dmesg** : collecte les messages de diagnostic.

Commandes MDS/IPS-8

- **show zone** : affiche les informations de zone.
- **show flogi database** - affiche les informations du serveur FLOGI.
- **show fcns database** - affiche les informations du serveur de noms pour un VSAN spécifique.
- **show vsan member** : affiche les informations d'interface pour différents VSAN.
- **show iscsi** : affiche différentes informations iSCSI.
- **show ips** : affiche diverses informations sur les services IP.
- **show scsi-target** : affiche les périphériques SCSI pour un VSAN spécifique (pour mapper les LUN FC à des LUN iSCSI).
- **show interface** : affiche des informations sur différentes interfaces.
- **show ip route** : affiche les informations de route IP.

Dépannage

Cette section fournit des informations que vous pouvez utiliser pour dépanner votre configuration.

Voici les informations de dépannage applicables à cette configuration:

- Affichages à partir d'Ape (HP 9000/800 A500 HP-UX 11.00)
- Affichages du Vatican (MDS 9216)
- Affichages du Fabric Manager et du Device Manager

Ape (HP 9000/800 A500 HP-UX 11.00)

```
# /sbin/init.d/iscsi stop
Waiting for iscsid to terminate .....
Waiting for iscsid to terminate .....
Waiting for iscsid to terminate .....
Waiting for iscsid to terminate .....
Waiting for iscsi_[tr]x_threads to terminate .....
```

```

[/]# /sbin/init.d/iscsi start
Number of indices in scsi_isc table used by System: 5
Index used by iSCSI controller: 255
Number of free indices: 251
[/]# netstat -n | grep '10.48.69.242'
tcp        0      0 10.48.69.238.49501 ESTABLISHED
10.48.69.242.3260
tcp        0      0 10.48.69.238.49500 ESTABLISHED
10.48.69.242.3260
tcp        0      0 10.48.69.238.49499 ESTABLISHED
10.48.69.242.3260

!--- 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

```

Affichages du Vatican (MDS 9216)

```

vatican# show zone status vsan 1016
VSAN: 1016 default-zone: deny distribute: active only
Interop: Off
Full Zoning Database :
  Zonesets:1 Zones:3 Aliases: 0
Active Zoning Database :
  Name: iscsidoc Zonesets:1 Zones:3
Status: Activation completed at Wed Sep 17 13:03:56
2003

```

```

vatican# show zone active vsan 1016
zone name jbod vsan 1016
* fcid 0x7902e8 [pwwn 21:00:00:20:37:67:f7:a2]
* fcid 0x790100 [symbolic-nodename 10.48.69.238]

zone name spa vsan 1016
* fcid 0x790104 [pwwn 50:06:01:60:88:02:a8:2b]
* fcid 0x790100 [symbolic-nodename 10.48.69.238]

zone name spb vsan 1016
* fcid 0x790105 [pwwn 50:06:01:68:88:02:a8:2b]
* fcid 0x790100 [symbolic-nodename 10.48.69.238]

```

```

vatican# show flogi database vsan 1016
-----
INTERFACE  VSAN    FCID          PORT NAME
NODE NAME
-----
fc1/3      1016    0x7902e8     21:00:00:20:37:67:f7:a2
20:00:00:20:37:67:f7:a2
fc1/7      1016    0x790104     50:06:01:60:88:02:a8:2b

```

```
50:06:01:60:11:02:a8:2b
 fc1/11      1016  0x790105  50:06:01:68:88:02:a8:2b
50:06:01:60:11:02:a8:2b
 iscsi2/1    1016  0x790100  20:03:00:0c:30:57:5e:c2
20:02:00:0c:30:57:5e:c2
```

Total number of flogi = 4.

```
vatican# show fcns database vsan 1016
```

```
VSAN 1016:
```

```
-----
FCID          TYPE  PWWN                               (VENDOR)
FC4-TYPE:FEATURE
-----
0x790100      N      20:03:00:0c:30:57:5e:c2 (Cisco)
scsi-fcp:init isc..w
0x790104      N      50:06:01:60:88:02:a8:2b (Clariion)
scsi-fcp:target
0x790105      N      50:06:01:68:88:02:a8:2b (Clariion)
scsi-fcp:target
0x7902e8      NL     21:00:00:20:37:67:f7:a2 (Seagate)
scsi-fcp:target
Total number of entries = 4
```

--- FCID 0x790100 is the virtual N port(HBA) for the iSCSI host.

```
vatican# show fcns database detail vsan 1016
```

```
-----
VSAN:1016 FCID:0x790100
-----
```

```
port-wwn (vendor)      :20:03:00:0c:30:57:5e:c2 (Cisco)
node-wwn               :20:02:00:0c:30:57:5e:c2
class                  :2,3
node-ip-addr           :10.48.69.238
ipa                    :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
symbolic-port-name     :
symbolic-node-name     :10.48.69.238
port-type              :N
port-ip-addr           :0.0.0.0
fabric-port-wwn        :20:41:00:0c:30:57:5e:c0
hard-addr              :0x000000
```

```
-----
VSAN:1016 FCID:0x790104
-----
```

```
port-wwn (vendor)      :50:06:01:60:88:02:a8:2b
(Clariion)
node-wwn               :50:06:01:60:11:02:a8:2b
class                  :3
node-ip-addr           :0.0.0.0
ipa                    :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:target
symbolic-port-name     :
symbolic-node-name     :
port-type              :N
port-ip-addr           :0.0.0.0
fabric-port-wwn        :20:07:00:0c:30:57:5e:c0
hard-addr              :0x000000
```

```
-----
VSAN:1016 FCID:0x790105
```

```
-----
port-wwn (vendor)      :50:06:01:68:88:02:a8:2b
(Clariion)
node-wwn              :50:06:01:60:11:02:a8:2b
class                 :3
node-ip-addr          :0.0.0.0
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:target
symbolic-port-name    :
symbolic-node-name    :
port-type             :N
port-ip-addr          :0.0.0.0
fabric-port-wwn      :20:0b:00:0c:30:57:5e:c0
hard-addr             :0x000000
-----
```

VSAN:1016 FCID:0x7902e8

```
-----
port-wwn (vendor)      :21:00:00:20:37:67:f7:a2
(Seagate)
node-wwn              :20:00:00:20:37:67:f7:a2
class                 :3
node-ip-addr          :0.0.0.0
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:target
symbolic-port-name    :
symbolic-node-name    :
port-type             :NL
port-ip-addr          :0.0.0.0
fabric-port-wwn      :20:03:00:0c:30:57:5e:c0
hard-addr             :0x000000
-----
```

Total number of entries = 4

vatican# **show iscsi initiator**

```
iSCSI Node name is 10.48.69.238
  iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale
  iSCSI alias name: ape
  Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)
  Member of vsans: 1016
  Number of Virtual n_ports: 1
  Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic)
  Interface iSCSI 2/1, Portal group tag: 0x80
  VSAN ID 1016, FCID 0x790100
```

vatican# **show iscsi initiator configured**

```
iSCSI Node name is 10.48.69.238
  Member of vsans: 1016
```

vatican# **show iscsi initiator detail**

```
iSCSI Node name is 10.48.69.238
  iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale
  iSCSI alias name: ape
  Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)
  Member of vsans: 1016
  Number of Virtual n_ports: 1

  Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic)
  Interface iSCSI 2/1, Portal group tag is 0x80
```

VSAN ID 1016, FCID 0x790100
2 FC sessions, 2 iSCSI sessions
iSCSI session details

Target: spa-vt

Statistics:

PDU: Command: 10, Response: 10

Bytes: TX: 416, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.242:3260, Remote

10.48.69.238:49500

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 62 ms, Variance:

3

Advertized window: Current: 256 KB,

Maximum: 256 KB, Scale: 3

Peer receive window: Current: 576 KB,

Maximum: 576 KB, Scale: 4

Congestion window: Current: 4 KB

Target: seagate

Statistics:

PDU: Command: 4, Response: 4

Bytes: TX: 304, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.242:3260, Remote

10.48.69.238:49501

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 62 ms, Variance:

3

Advertized window: Current: 256 KB,

Maximum: 256 KB, Scale: 3

Peer receive window: Current: 576 KB,

Maximum: 576 KB, Scale: 4

Congestion window: Current: 4 KB

FCP Session details

Target FCID: 0x790104 (S_ID of this session:
0x790100)

pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: spa-vt

Negotiated parameters

RcvDataFieldSize 1024 our_RcvDataFieldSize
1392

MaxBurstSize 0, EMPD: FALSE

Random Relative Offset: FALSE, Sequence-in-
order: Yes

Statistics:

PDU: Command: 0, Response: 10

Target FCID: 0x7902e8 (S_ID of this session:
0x790100)

pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: seagate

Negotiated parameters

RcvDataFieldSize 1392 our_RcvDataFieldSize
1392

```
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 4

vatican# show iscsi initiator iscsi-session detail
iSCSI Node name is 10.48.69.238
iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale
iSCSI alias name: ape
Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)
Member of vsans: 1016
Number of Virtual n_ports: 1
Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
(dynamic)
Interface iSCSI 2/1, Portal group tag is 0x80
VSAN ID 1016, FCID 0x790100
2 FC sessions, 2 iSCSI sessions
iSCSI session details
Target: spa-vt
Statistics:
PDU: Command: 10, Response: 10
Bytes: TX: 416, RX: 0
Number of connection: 1
TCP parameters
Local 10.48.69.242:3260, Remote
10.48.69.238:49500
Path MTU: 1500 bytes
Retransmission timeout: 300 ms
Round trip time: Smoothed 62 ms, Variance:
2
Advertized window: Current: 256 KB,
Maximum: 256 KB, Scale: 3
Peer receive window: Current: 576 KB,
Maximum: 576 KB, Scale: 4
Congestion window: Current: 4 KB
Target: seagate
Statistics:
PDU: Command: 4, Response: 4
Bytes: TX: 304, RX: 0
Number of connection: 1
TCP parameters
Local 10.48.69.242:3260, Remote
10.48.69.238:49501
Path MTU: 1500 bytes
Retransmission timeout: 300 ms
Round trip time: Smoothed 62 ms, Variance:
2
Advertized window: Current: 256 KB,
Maximum: 256 KB, Scale: 3
Peer receive window: Current: 576 KB,
Maximum: 576 KB, Scale: 4
Congestion window: Current: 4 KB

vatican# show iscsi initiator fcp-session detail
iSCSI Node name is 10.48.69.238
iSCSI Initiator name: iqn.1987-
05.com.cisco.01.a06c4e2b8b247cadceb8af1a8474dale
iSCSI alias name: ape
Node WWN is 20:02:00:0c:30:57:5e:c2 (dynamic)
Member of vsans: 1016
Number of Virtual n_ports: 1
Virtual Port WWN is 20:03:00:0c:30:57:5e:c2
```



```

(dynamic)
  Interface iSCSI 2/1, Portal group tag is 0x80
  VSAN ID 1016, FCID 0x790100
  2 FC sessions, 2 iSCSI sessions
  FCP Session details
    Target FCID: 0x790104 (S_ID of this session:
0x790100)
      pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b
      Session state: LOGGED_IN
      1 iSCSI sessions share this FC session
      Target: spa-vt
      Negotiated parameters
        RcvDataFieldSize 1024 our_RcvDataFieldSize
1392
        MaxBurstSize 0, EMPD: FALSE
        Random Relative Offset: FALSE, Sequence-in-
order: Yes
      Statistics:
        PDU: Command: 0, Response: 10
      Target FCID: 0x7902e8 (S_ID of this session:
0x790100)
        pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2
        Session state: LOGGED_IN
        1 iSCSI sessions share this FC session
        Target: seagate
        Negotiated parameters
          RcvDataFieldSize 1392 our_RcvDataFieldSize
1392
          MaxBurstSize 0, EMPD: FALSE
          Random Relative Offset: FALSE, Sequence-in-
order: Yes
        Statistics:
          PDU: Command: 0, Response: 4

vatican# show iscsi virtual-target configured
target: seagate
  * Port WWN 21:00:00:20:37:67:f7:a2
  === The "*" means you have both discovery and target
session. If there
  is no "*" in front of the pWWN, it means you only have
discovery session.
  Configured node
    No. of LU mapping: 1
      iSCSI LUN: 0000, FC LUN: 0000
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 1
      initiator 10.48.69.238/32 is permitted
      all initiator permit is disabled
target: spa-vt
  * Port WWN 50:06:01:60:88:02:a8:2b
  Secondary PWWN 50:06:01:68:88:02:a8:2b
  Configured node
    No. of LU mapping: 2
      iSCSI LUN: 0003, FC LUN: 0020
      iSCSI LUN: 0004, FC LUN: 0021
    No. of advertised interface: 1
      GigabitEthernet 2/1
    No. of initiators permitted: 1
      initiator 10.48.69.238/32 is permitted
      all initiator permit is disabled

```

```

vatican# show iscsi stats iscsi 2/1
iscsi2/1
  5 minutes input rate 16 bits/sec, 2 bytes/sec, 0
frames/sec
  5 minutes output rate 16 bits/sec, 2 bytes/sec, 0
frames/sec
  iSCSI statistics
    50932 packets input, 60370640 bytes
      Command 3659 pdus, Data-out 41069 pdus,
56533832 bytes, 2476 fragments
      output 115926 packets, 112863536 bytes
      Response 3374 pdus (with sense 206), R2T 1897
pdus
      Data-in 103999 pdus, 106404584 bytes

vatican# show ips arp interface gigabitethernet 2/1
Protocol      Address      Age (min)    Hardware Addr
Type  Interface
Internet      10.48.69.200      0      0008.e21e.c7bc
ARPA GigabitEthernet2/1
Internet      10.48.69.201      5      0202.3d30.45c9
ARPA GigabitEthernet2/1
Internet      10.48.69.206      5      0202.3d30.45ce
ARPA GigabitEthernet2/1
Internet      10.48.69.209      3      0202.3d30.45d1
ARPA GigabitEthernet2/1
Internet      10.48.69.226      2      0060.08f6.bc1a
ARPA GigabitEthernet2/1
Internet      10.48.69.229      4      0800.209e.edab
ARPA GigabitEthernet2/1
Internet      10.48.69.231      1      0002.b3c1.7dab
ARPA GigabitEthernet2/1
Internet      10.48.69.233      0      0010.4200.7d5b
ARPA GigabitEthernet2/1
Internet      10.48.69.238      0      0030.6e1b.6f51
ARPA GigabitEthernet2/1
Internet      10.48.69.239     10      0030.6e1c.a00b
ARPA GigabitEthernet2/1
Internet      10.48.69.241      0      000b.cdaf.b4c3
ARPA GigabitEthernet2/1
Internet      10.48.69.248      4      0202.3d30.45f8
ARPA GigabitEthernet2/1
Internet      10.48.69.252      1      0202.3d30.45fc
ARPA GigabitEthernet2/1
Internet      10.10.2.28        7      0202.3d0a.021c
ARPA GigabitEthernet2/1

vatican# show ips stats tcp interface gigabitethernet
2/1 detail
TCP Statistics for port GigabitEthernet2/1
  TCP send stats
    261205 segments, 117757220 bytes
    140632 data, 51907 ack only packets
    2655 control (SYN/FIN/RST), 0 probes, 2639 window
updates
    63382 segments retransmitted, 90885612 bytes
    63382 retransmitted while on ethernet send queue,
1 packets split
    13327 delayed acks sent
  TCP receive stats
    249073 segments, 72669 data packets in sequence,
61525764 bytes in sequence
    2335 predicted ack, 68605 predicted data
    0 bad checksum, 0 multi/broadcast, 0 bad offset

```

```

0 no memory drops, 0 short segments
4396 duplicate bytes, 205 duplicate packets
0 partial duplicate bytes, 0 partial duplicate
packets
0 out-of-order bytes, 2625 out-of-order packets
0 packet after window, 0 bytes after window
0 packets after close
80504 acks, 117762158 ack bytes, 0 ack toomuch,
96274 duplicate acks
0 ack packets left of snd_una, 7 non-4 byte
aligned packets
54199 window updates, 0 window probe
6343 pcb hash miss, 709 no port, 6 bad SYN, 0
paws drops
TCP Connection Stats
0 attempts, 2718 accepts, 2718 established
2716 closed, 15 drops, 0 conn drops
3 drop in retransmit timeout, 10 drop in
keepalive timeout
0 drop in persist drops, 0 connections drained
TCP Miscellaneous Stats
37062 segments timed, 41787 rtt updated
817 retransmit timeout, 1 persist timeout
22654 keepalive timeout, 22643 keepalive probes
TCP SACK Stats
0 recovery episodes, 0 data packets, 0 data bytes
0 data packets retransmitted, 0 data bytes
retransmitted
0 connections closed, 0 retransmit timeouts
TCP SYN Cache Stats
2720 entries, 2718 connections completed, 0
entries timed out
0 dropped due to overflow, 2 dropped due to RST
0 dropped due to ICMP unreachable, 0 dropped due to
bucket overflow
0 abort due to no memory, 2 duplicate SYN, 183
no-route SYN drop
0 hash collisions, 0 retransmitted
TCP Active Connections
Local Address Remote Address State
Send-Q Recv-Q
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

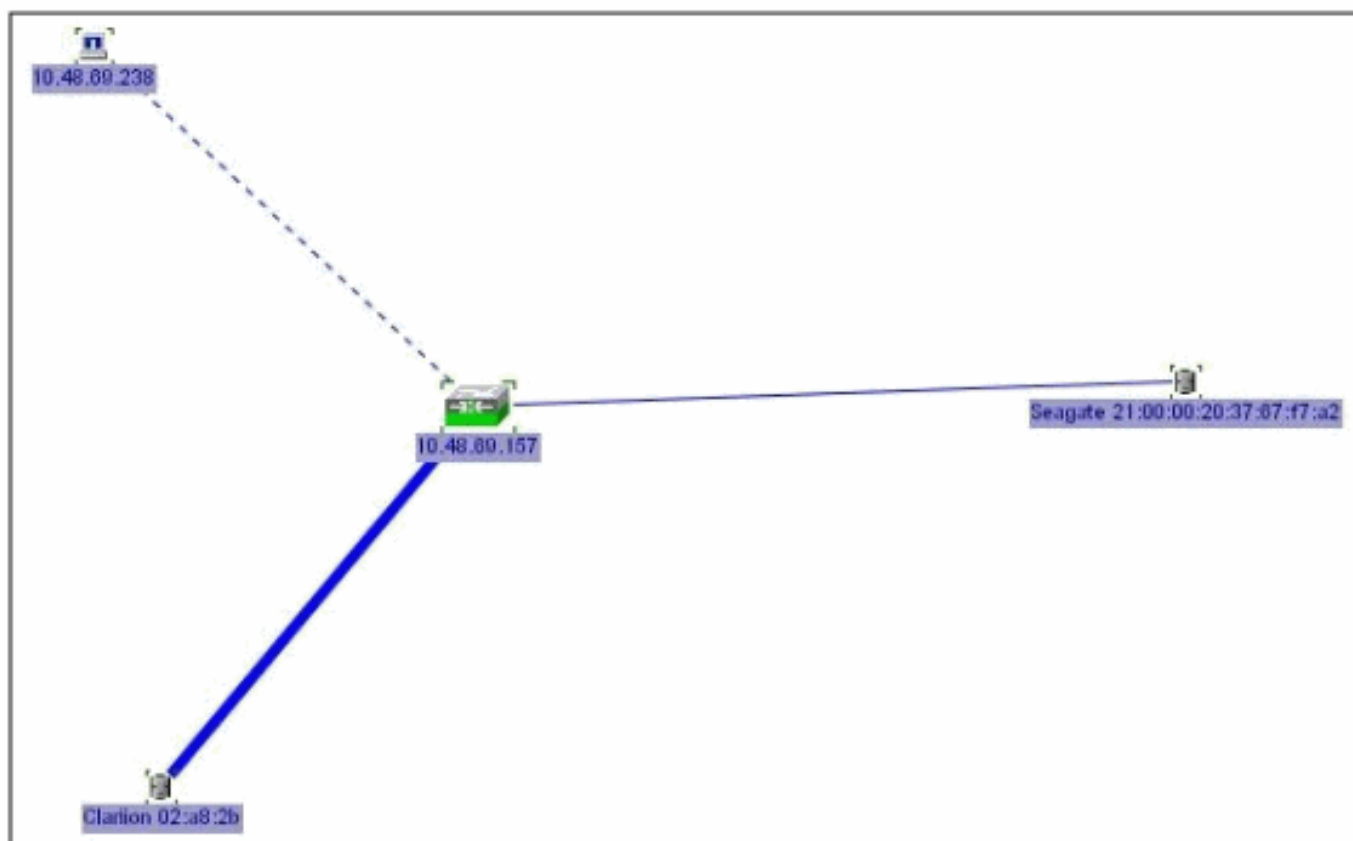
Default gateway is 10.48.69.129

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

Affichages du Fabric Manager et du Device Manager

Cette section fournit des captures d'écran provenant de MDS Fabric Manager 1.2(1a) et Device Manager 1.2(1a).

Schéma de topologie du Fabric Manager






Gestionnaire de périphériques



Sélectionnez **FC- > LUN** dans le Gestionnaire de périphériques pour afficher les noms de domaine (pWWN), les ID de LUN et la capacité de vos LUN.

vatican - LUN

Discover | Targets | **LUNs**

VsanId, Port WWN	Id	Capacity (MB)	SerialNum
1016, Clariion 50:06:01:60:88:02:a8:2b	0x0	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x1	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x2	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x3	2147	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x4	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x5	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x6	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x7	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x8	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x9	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xa	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xb	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xc	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xd	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xe	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0xf	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x10	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x11	1074	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x20	5369	f60004202091
1016, Clariion 50:06:01:60:88:02:a8:2b	0x21	3221	f60004202091
1016, Seagate 21:00:00:20:37:67:f7:a2	0x0	18210	LRE8091500007039HLT6




Refresh Help Close

21 row(s)

Sélectionnez IP > iSCSI dans le Gestionnaire de périphériques pour afficher les sessions iSCSI.

vatican - iSCSI

Initiators | Targets | Sessions | **Sessions Detail** | Session Statistics

Name or IpAddress	TargetName	Immediate Data	Ready To Transfer		Burst Size		Data InOrder		Connection Number	Recovery Level
			Initial	MaxOutstanding	First	Max	Sequence	PDU		
10.48.69.238		false	true	1	0	0	false	false	1	0
10.48.69.238	spa-vt	false	true	1	0	0	false	false	1	0
10.48.69.238	seagate	false	true	1	0	0	false	false	1	0

Refresh Help Close

Data retrieved at 17:49:36