

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

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## Introduction

Les gestionnaires d'iSCSI de Cisco, qui résident sur le serveur, sont un élément clé d'une solution d'iSCSI. Ces gestionnaires d'iSCSI interceptent des commandes de l'**interface SCSI (SCSI)**, les encapsulent dans des paquets IP, et les réorientent au SN 5420 de Cisco, le SN 5428 de Cisco, le SN 5428-2 de Cisco, ou le document de Cisco MDS/IPS-8. This fournit des configurations d'échantillon pour l'hôte d'iSCSI de HP UX au SN 5428.

## Conditions préalables

### Conditions requises

Avant que vous tentiez cette configuration, assurez-vous que vous répondez à ces exigences :

- Installez le gestionnaire d'iSCSI qui est compatible à votre version de HP UX. La version la plus en cours du gestionnaire peut être trouvée à la page de téléchargement de [gestionnaire d'iSCSI de Cisco](#) (clients [enregistrés](#) seulement) sur Cisco.com. Le fichier de README.txt est inclus dans le fichier de zip(tar) de gestionnaire. LISEZ-MOI contient des informations sur le contrat de licence, installation de pilote et instructions de configuration, et un aperçu technique de l'architecture de gestionnaire.
- Les conditions requises du système d'exploitation et des conditions requises de correctif sont

décrites dans la section de *configurations système requises du gestionnaire d'iSCSI de Cisco pour des notes de mise à jour en HP UX*.

## Composants utilisés

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

- HP UX 9000/800 serveur A500 avec deux processeurs. **Remarque:** Dans cette installation de laboratoire, il n'y a aucun adaptateur Ethernet distinct pour l'iSCSI, et celui en service est la mi-bande 100. Dans n'importe quel environnement réaliste, vous avez un adaptateur distinct de Gigabit Ethernet (GE) en tant que vos demandeurs d'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 gestionnaire 3.3.3 d'iSCSI de Cisco pour HP UX a été utilisé. Il est recommandé que vous installez également (au moins) le correctif cumulatif du plus défunt transport stable d'Address

Resolution Protocol (ARPA) du HP. Quand ce document a été écrit, c'était PHNE\_28538. Ce correctif a plusieurs dépendances, ainsi vous devez les installer au fur et à mesure que cela est eu besoin. Pour plus d'informations d'installation, visitez le [site du support technique officiel de HP](#) (clients [enregistrés](#) seulement).

```
[/]# 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
XSWG1100             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;getdirent;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 de logiciel 1.2(1a).

vatican# **show module**

Mod	Ports	Module-Type	Model	Status
1	16	1/2 Gbps FC/Supervisor	DS-X9216-K9-SUP	active *
2	8	IP Storage Module	DS-X9308-SMIP	ok

Mod	Sw	Hw	World-Wide-Name(s) (WWN)
1	1.2(1a)	1.0	20:01:00:0c:30:57:5e:c0 to 20:10:00:0c:30:57:5e:c0
2	1.2(1a)	0.2	20:41:00:0c:30:57:5e:c0 to 20:48:00:0c:30:57:5e:c0

Mod	MAC-Address(es)	Serial-Num
1	00-0b-be-f8-7f-00 to 00-0b-be-f8-7f-04	JAB070804Q3
2	00-05-30-00-a8-56 to 00-05-30-00-a8-62	JAB070205AM

\* this terminal session

vatican# **show version**

Cisco Storage Area Networking Operating System (SAN-OS) Software  
TAC support: <http://www.cisco.com/tac>  
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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)

Les informations contenues dans ce document ont été créées à partir des périphériques d'un environnement de laboratoire spécifique. Tous les périphériques utilisés dans ce document ont démarré avec une configuration effacée (par défaut). Si votre réseau est opérationnel, assurez-vous que vous comprenez l'effet potentiel de toute commande.

## Conventions

Le Cisco MDS 9000 qui est utilisé dans ce document se rapporte à n'importe quel produit de commutateur de la Manche de fibre (FC) dans la famille MDS 9000 (MDS 9506, MDS 9509, MDS 9216). La lame du Système de protection contre les intrusions Cisco (IPS) se rapporte au Module de services de mémoire IP. For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

## Informations générales

Le module du Système de protection contre les intrusions Cisco (IPS) permet d'accéder hôtes IP aux périphériques de stockage de la Manche de fibre (FC). Le module IPS est DS-X9308-SMIP. Il fournit le routage transparent SCSI. Les hôtes IP qui utilisent le protocole d'iSCSI peuvent d'une manière transparente accéder à des cibles d'iSCSI sur le réseau FC que l'hôte IP envoie des commandes SCSI encapsulées dans des Protocol Data Unit d'iSCSI (PDU) à un port MDS 9000 IPS au-dessus d'une connexion TCP/IP. Sur le module IPS, la Connectivité est fournie sous forme d'interfaces de GE qui sont convenablement configurées. Le module IPS te permet de créer les cibles virtuelles d'iSCSI et les trace aux cibles physiques FC disponibles dans le FC SAN. Il présente les cibles FC aux hôtes IP comme si les cibles physiques ont été reliées au réseau IP.

Chaque hôte d'iSCSI qui exige l'accès à la mémoire par le module IPS doit avoir un gestionnaire compatible d'iSCSI installé. Avec l'aide du protocole d'iSCSI, le gestionnaire d'iSCSI permet à un hôte d'iSCSI pour transporter des demandes et des réponses SCSI au-dessus d'un réseau IP. De la perspective d'un système d'exploitation d'hôte, le gestionnaire d'iSCSI semble être un gestionnaire de transport SCSI semblable à un gestionnaire FC pour un canal périphérique dans l'hôte. De la perspective du périphérique de stockage, chaque hôte IP apparaît comme un hôte FC. L'acheminement du SCSI de l'hôte IP au périphérique de stockage FC se compose de ces actions principales :

- Transport des demandes et des réponses d'iSCSI au-dessus d'un réseau IP entre les hôtes et le module IPS
- Acheminement des demandes et des réponses SCSI entre les hôtes sur un réseau IP et le périphérique de stockage FC (convertissant l'iSCSI en FCP et FCP en iSCSI). Ce routage est exécuté par le module IPS.
- Transport des demandes ou des réponses FCP entre le module IPS et les périphériques de stockage FC

Le module IPS n'importe pas des cibles FC à l'iSCSI par défaut. Le mappage dynamique ou statique doit être configuré avant que le module IPS rende des cibles FC disponibles aux demandeurs d'iSCSI. Quand chacun des deux sont configurés, les cibles statiquement tracées FC ont un nom configuré. Ce document fournit un exemple du mappage statique. Avec le mappage dynamique, chaque fois que cela que l'hôte d'iSCSI connecte au module IPS, un nouveau port FC N est créé et les nWWNs et les pWWNs alloués pour ce port N peuvent être différents. Utilisez la méthode statique de mappage si vous devez obtenir les mêmes nWWNs et les pWWNs pour l'iSCSI le hébergent chaque fois se connecte au module IPS. Le mappage statique peut être utilisé sur le module IPS pour accéder aux baies de stockage intelligentes FC qui ont les numéros de contrôle d'accès et d'unité logique (LUN) traçant et les configurations de masquage basées sur les pWWNs ou les nWWNs du demandeur.

Vous pouvez contrôler l'accès à chaque cible statique-tracée d'iSCSI avec la création d'une liste spécifique de ports IPS sur lesquels la cible est annoncée et la création d'une liste de noms du noeud de demandeur d'iSCSI permis pour l'accéder à. Le contrôle d'accès basé sur Répartition en

zones FC et le contrôle d'accès basé sur iSCSI sont les deux mécanismes par lesquels le contrôle d'accès peut être donné pour l'iSCSI. Les deux méthodes peuvent être utilisées simultanément. Dans ce par défaut de configuration on permet la Répartition en zones pour la particularité VSAN. Les modules IPS emploient le noeud d'iSCSI basé sur nom et les listes basées sur Répartition en zones de contrôle d'accès FC pour imposer le contrôle d'accès pendant la détection d'iSCSI et la création de session d'iSCSI.

- **détection d'iSCSI** : Quand un hôte d'iSCSI crée une session et des requêtes de détection d'iSCSI pour toutes les cibles d'iSCSI, on laisse les retours de module IPS seulement la liste d'iSCSI vise cet hôte d'iSCSI à accès basé sur sur les stratégies de contrôle d'accès.
- **création de session d'iSCSI** : Quand un hôte IP initie une session d'iSCSI, le module IPS vérifie si la cible spécifiée d'iSCSI (dans la demande de procédure de connexion de session) est une cible tracée par charge statique, et si vrai, vérifie si on permet au le nom du noeud de l'iSCSI de l'hôte IP pour accéder à la cible. Si l'hôte IP n'a pas accès, sa procédure de connexion est rejetée.

Le module IPS, alors crée un port virtuel FC N (le port N peut déjà exister) pour cet hôte IP et fait une requête de Serveur de noms FC pour le FCID du pWWN de cible FC qui est accédé à par l'hôte IP. Il utilise le pWWN du port virtuel de l'hôte IP N en tant que demandeur de la requête de Serveur de noms. Ainsi, le Serveur de noms fait une requête zone-imposée pour le pWWN et répond à la requête. Si le FCID est retourné par le Serveur de noms, alors la session d'iSCSI est reçue. Autrement, la demande de procédure de connexion est rejetée.

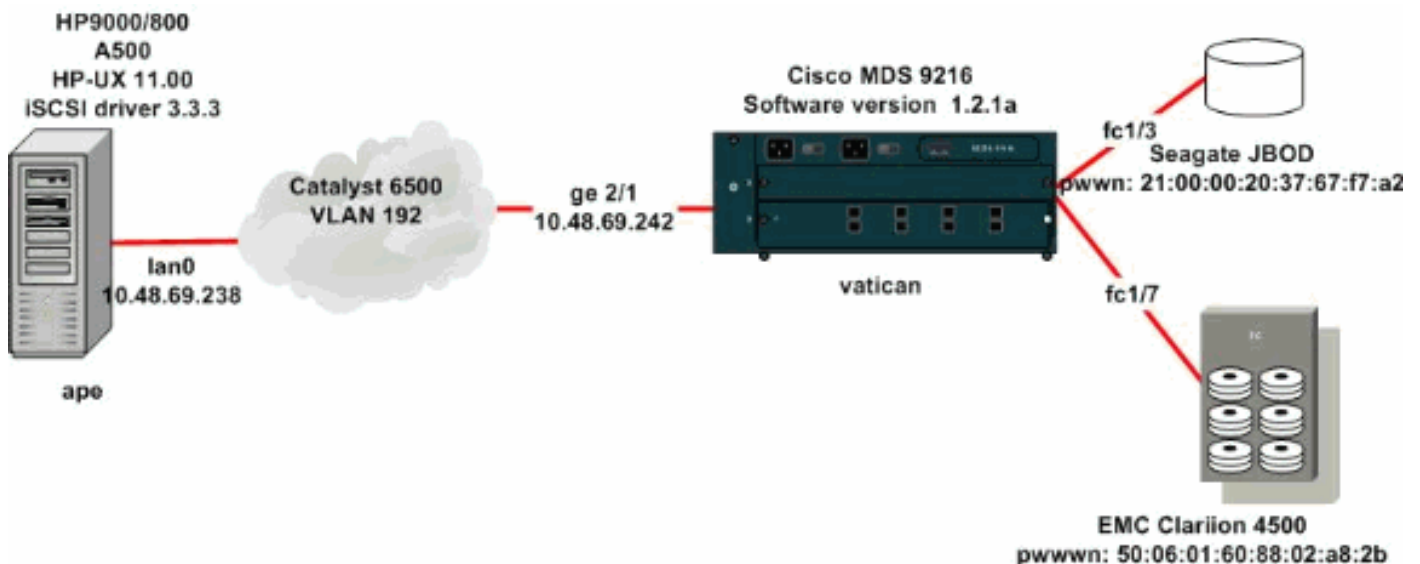
## Configurer

Dans cette section, vous êtes présenté avec les informations pour configurer le MDS 9216 et le gestionnaire d'iSCSI de Cisco pour le Linux.

**Remarque:** Pour trouver les informations complémentaires sur les commandes utilisées dans ce document, utilisez la [référence de commandes de famille du Cisco MDS 9000](#) et le [guide de configuration du logiciel de famille du Cisco MDS 9000](#).

## Diagramme du réseau

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



## Configurations

Ce document utilise les configurations affichées ici :

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

### Singe (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)

```

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.

```

## Vérifier

Cette section fournit des informations que vous pouvez employer pour confirmer vos travaux de configuration correctement et pour les dépanner au cas où vous noteriez des problèmes.

Certaines **commandes show** sont prises en charge par le [Command Lookup Tool](#) (clients [enregistrés](#) seulement), qui te permet pour visualiser une analyse de sortie de commande show.

## Commandes d'hôte de 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

- **zone d'exposition** — les informations de zone d'affichages.
- **affichez la base de données de flogi** — les informations du serveur des affichages FLOGI.
- **affichez la base de données de fcns** — les informations de Serveur de noms d'affichages pour une particularité VSAN.
- **affichez l'adhésion vsan** — les informations d'interface d'affichages pour VSANs différent.
- **iscsi d'exposition** — les diverses informations d'iSCSI d'affichages.
- **exposition IPS** — diverses informations d'affichages sur des Services IP.
- **SCSI-cible d'exposition** — périphériques SCSI d'affichages pour la particularité VSAN (pour tracer des FC-LUN aux iSCSI-LUN).
- **interface d'exposition** — affiche des informations au sujet de diverses interfaces.
- **show ip route** — les informations d'artère IP d'affichages.

## Dépanner

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

Voici l'information de dépannage concernant cette configuration :

- Affichages de singe (HP 9000/800 A500 HP UX 11.00)
- Affichages de Vatican (MDS 9216)
- Affichages du Fabric Manager et du Device Manager

### **Singe (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

```

## Affichages de 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:
```

```

    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

```

```

MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 10
Target FCID: 0x7902e8 (S_ID of this session:
0x790100)
pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2
Session state: LOGGED_IN
1 iSCSI sessions share this FC session
Target: seagate
Negotiated parameters
RcvDataFieldSize 1392 our_RcvDataFieldSize
1392
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 4

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

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

```

```

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

```

```

vatican# show ips stats tcp interface gigabitethernet
2/1 detail
TCP Statistics for port GigabitEthernet2/1
  TCP send stats
    261205 segments, 117757220 bytes
    140632 data, 51907 ack only packets
    2655 control (SYN/FIN/RST), 0 probes, 2639 window
updates
    63382 segments retransmitted, 90885612 bytes
    63382 retransmitted while on ethernet send queue,
1 packets split
    13327 delayed acks sent
  TCP receive stats
    249073 segments, 72669 data packets in sequence,
61525764 bytes in sequence
    2335 predicted ack, 68605 predicted data
    0 bad checksum, 0 multi/broadcast, 0 bad offset
    0 no memory drops, 0 short segments
    4396 duplicate bytes, 205 duplicate packets
    0 partial duplicate bytes, 0 partial duplicate
packets
    0 out-of-order bytes, 2625 out-of-order packets
    0 packet after window, 0 bytes after window
    0 packets after close
    80504 acks, 117762158 ack bytes, 0 ack toomuch,
96274 duplicate acks
    0 ack packets left of snd_una, 7 non-4 byte
aligned packets
    54199 window updates, 0 window probe
    6343 pcb hash miss, 709 no port, 6 bad SYN, 0
paws drops
  TCP Connection Stats

```

```

0 attempts, 2718 accepts, 2718 established
2716 closed, 15 drops, 0 conn drops
3 drop in retransmit timeout, 10 drop in
keepalive timeout
0 drop in persist drops, 0 connections drained
TCP Miscellaneous Stats
37062 segments timed, 41787 rtt updated
817 retransmit timeout, 1 persist timeout
22654 keepalive timeout, 22643 keepalive probes
TCP SACK Stats
0 recovery episodes, 0 data packets, 0 data bytes
0 data packets retransmitted, 0 data bytes
retransmitted
0 connections closed, 0 retransmit timeouts
TCP SYN Cache Stats
2720 entries, 2718 connections completed, 0
entries timed out
0 dropped due to overflow, 2 dropped due to RST
0 dropped due to ICMP unreachable, 0 dropped due to
bucket overflow
0 abort due to no memory, 2 duplicate SYN, 183
no-route SYN drop
0 hash collisions, 0 retransmitted
TCP Active Connections
Local Address Remote Address State
Send-Q Recv-Q
ESTABLISH 0 0
10.48.69.242:3260 10.48.69.238:49499
ESTABLISH 0 0
10.48.69.242:3260 10.48.69.238:49500
ESTABLISH 0 0
10.48.69.242:3260 10.48.69.238:49501
ESTABLISH 0 0
0.0.0.0:3260 0.0.0.0:0
LISTEN 0 0
vatican# discover scsi-target local
discovery started

vatican# show scsi-target devices vsan 1016
-----
VSAN FCID PWWN VENDOR
MODEL REV
-----
1016 0x790104 50:06:01:60:88:02:a8:2b DGC
RAID 0 0632
1016 0x7902e8 21:00:00:20:37:67:f7:a2 SEAGATE
ST318203FC 0004
vatican# show scsi-target lun vsan 1016

- RAID from DGC (Rev 0632)
FCID is 0x790104 in VSAN 1016, PWWN is
50:06:01:60:88:02:a8:2b
-----
LUN Capacity Status Serial Number Device-Id
(MB)
-----
0x0 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
da:05:b6:a9:b6:9d:7b:00
C:1 A:0

```

T:0 00:00:00:00	0x1 1074 Online f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b		
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

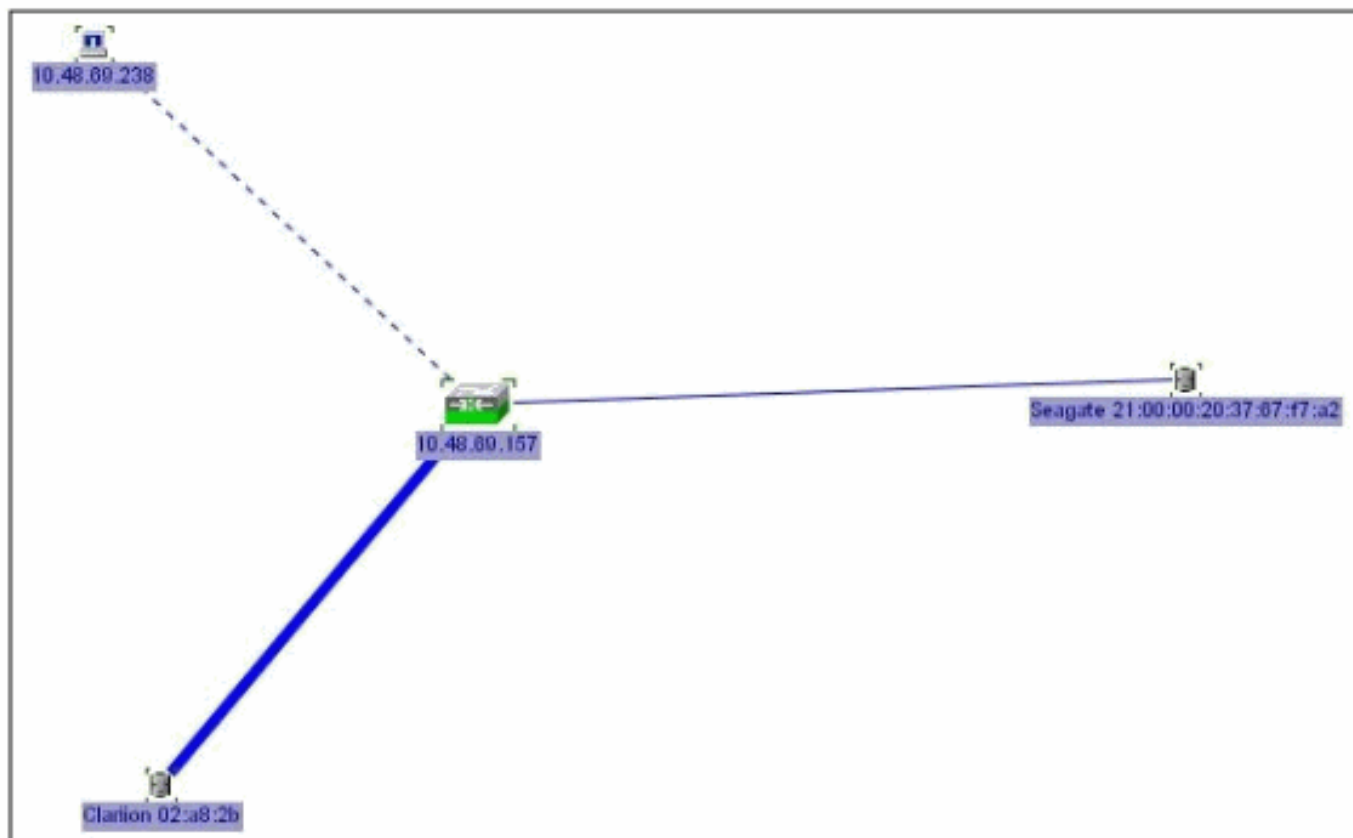
Default gateway is 10.48.69.129
```

```
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 de Fabric Manager MDS 1.2(1a) et de gestionnaire de périphériques 1.2(1a).

### Diagramme de topologie du Fabric Manager



### Le gestionnaire de périphériques








Choisi FC- > LUN dans le gestionnaire de périphériques pour afficher les pWWNs, des id 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)

Choisi IP > - iSCSI dans le gestionnaire de périphériques pour afficher les sessions d'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