

Configuration de l'hôte iSCSI Solaris sur MDS/IPS-8

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[Introduction](#)

Les gestionnaires de Small Computer Systems Interface sur IP (iSCSI) de Cisco sont un élément clé de la solution d'iSCSI. Ces pilotes iSCSI résident sur le serveur où ils :

- Commandes d'iSCSI d'interception.
- Encapsulez les commandes dans des paquets IP.
- Réorientez les commandes au SN 5420 de Cisco, au SN 5428 de Cisco, au SN 5428-2 de Cisco, ou au Cisco MDS/IPS-8.

Ce document fournit des configurations d'échantillon pour l'hôte d'iSCSI de Solaris à Cisco MDS/IPS-8.

[Conditions préalables](#)

[Conditions requises](#)

Assurez-vous que vous répondez à ces exigences avant d'essayer cette configuration :

- Installez le gestionnaire d'iSCSI qui est compatible avec votre version Solaris et puis créez la configuration d'iSCSI sur le Cisco MDS 9000. Référez-vous aux [gestionnaires d'iSCSI de Cisco](#) (clients [enregistrés](#) seulement) pour la version la plus en cours du gestionnaire (solaris-iscsi-3.3.5.tar.Z). Un fichier de README.txt est inclus dans le fichier de ZIP de gestionnaire

(GOUDRON). Le fichier de README.txt contient : Les informations de contrat de licence Installation de pilote et instructions de configuration Un aperçu technique de l'architecture de gestionnaire

- Référez-vous aux sections de configurations système requises dans le [gestionnaire d'iSCSI de Cisco pour des notes de mise à jour en Sun Solaris](#) pour le système d'exploitation (SYSTÈME D'EXPLOITATION) et corrigez les conditions requises.
- Le gestionnaire d'iSCSI de Cisco pour le Sun Solaris fonctionne seulement sur des ordinateurs SPARC. Le gestionnaire ne fonctionne avec aucun autre type de processeur (par exemple, x86).

Composants utilisés

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

- SunOS 5.9, SPARC Ultra-4 E450

```
#uname -a
```

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

- Gestionnaire 3.3.3 d'iSCSI de Cisco pour Solaris

```
#pkginfo -l CSCOiscsi
```

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

```
#iscsi-ls -v
```

```
iSCSI driver version: 3.3.3
```

- Cisco MDS 9216 avec la version de logiciel 1.1.2

```
canterbury#show module
```

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

```
-----  
1    00-0b-be-f8-7f-08 to 00-0b-be-f8-7f-0c  JAB070804QK  
2    00-05-30-00-ad-e2 to 00-05-30-00-ad-ee  JAB070806SB
```

* this terminal session

canterbury#**show version**

Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: <http://www.cisco.com/tac>
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.

Software

```
BIOS:      version 1.0.7  
loader:    version 1.0(3a)  
kickstart: version 1.1(2)  
system:    version 1.1(2)
```

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

Hardware

RAM 963112 kB

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

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

```
Last reset at 684726 usecs after Mon Aug 11 13:53:17 2003  
Reason: Reset Requested by CLI command reload  
System version: 1.1(2)
```

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

Pour plus d'informations sur les conventions utilisées dans ce document, reportez-vous à [Conventions relatives aux conseils techniques Cisco](#).

Informations générales

Le module de mémoire IP permet d'accéder hôtes IP aux périphériques de stockage de la Manche de fibre (FC). Le module de mémoire IP est un DS-X9308-SMIP qui fournit le routage transparent d'iSCSI. Les hôtes IP qui utilisent le protocole d'iSCSI peuvent d'une manière transparente accéder à des cibles de l'iSCSI (FC Protocol [FCP]) sur le réseau FC. L'hôte IP envoie des commandes d'iSCSI encapsulées dans des Protocol Data Unit d'iSCSI (PDU) à un port de mémoire IP du Cisco MDS 9000 au-dessus d'une connexion TCP/IP. Les interfaces de Gigabit Ethernet (GE) qui sont convenablement configurées sur le module de mémoire IP fournissent la Connectivité. Le module de mémoire IP :

- Te permet de créer les cibles virtuelles d'iSCSI et les trace aux cibles physiques FC disponibles dans le FC SAN
- Présente les cibles FC aux hôtes IP comme si les cibles physiques sont localement reliées au réseau IP

Chaque hôte d'iSCSI qui exige l'accès à la mémoire par l'intermédiaire du module de mémoire IP doit avoir un gestionnaire compatible d'iSCSI installé. Le gestionnaire d'iSCSI permet à un hôte d'iSCSI pour transporter des demandes et des réponses d'iSCSI au-dessus d'un réseau IP avec le protocole d'iSCSI. De la perspective d'un SYSTÈME D'EXPLOITATION d'hôte, le gestionnaire d'iSCSI semble être un gestionnaire de transport d'iSCSI semblable à un gestionnaire FC pour un canal périphérique dans l'hôte. Chaque hôte IP apparaît comme un hôte FC de la perspective du périphérique de stockage.

Terminez-vous ces étapes pour conduire l'iSCSI de l'hôte IP au périphérique de stockage FC :

- Demandes et réponses d'iSCSI de transport au-dessus d'un réseau IP entre les hôtes et le module de mémoire IP.
- Utilisez le module de mémoire IP pour conduire des demandes et des réponses d'iSCSI entre les hôtes sur un réseau IP et le périphérique de stockage FC (iSCSI de conversion à FCP et vice versa).
- Demandes ou réponses du transport FCP entre le module de mémoire IP et les périphériques de stockage FC.

Le module de mémoire IP n'importe pas des cibles FC à l'iSCSI par défaut. Vous devez configurer le mappage dynamique ou statique de sorte que le module de mémoire IP rende des cibles FC disponibles aux demandeurs d'iSCSI. Les cibles statiquement tracées FC ont un nom configuré quand chacun des deux sont configurés. Cette configuration fournit des exemples du mappage statique.

Chaque fois que cela que l'hôte d'iSCSI connecte au module de mémoire IP au mappage dynamique :

- Un nouveau port FC N est créé.
- Le noeud dans le monde entier nomme (des nWWNs) et le port dans le monde entier nomme (des pWWNs) alloué pour ce port N peut être différent.

Utilisez la méthode statique de mappage si vous devez obtenir les mêmes nWWNs et les pWWNs pour l'iSCSI hébergent chaque fois qu'il se connecte au module de mémoire IP. Vous pouvez employer le mappage statique sur le module de mémoire IP pour accéder aux baies de stockage intelligentes FC qui ont :

- Contrôle d'accès
- Mappage du numéro d'unité logique (LUN) et configuration de masquage qui sont basés sur les pWWNs ou les nWWNs du demandeur

Spécifiez ces éléments pour contrôler l'accès à chaque cible statique-tracée d'iSCSI :

- Une liste de mémoire IP met en communication sur ce qu'elles sont annoncées
- Une liste de noms du noeud de demandeur d'iSCSI qui sont permis l'accès

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. Vous pouvez utiliser les deux méthodes simultanément. On a permis la Répartition en zones par défaut pour un réseau de stockage virtuel spécifique (VSAN) dans cette configuration. Les modules de mémoire IP 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.

Le demandeur d'iSCSI peut être statiquement défini par l'adresse IP ou par le nom qualifié d'iSCSI (IQN). Une option de proxy-**demandeur** active la création dynamique des demandeurs d'iSCSI dans SAN-IO 1.3 pour les Commutateurs de Cisco MDS.

la détection d'iSCSI se produit quand un hôte d'iSCSI crée une session et des requêtes de détection d'iSCSI pour toutes les cibles d'iSCSI. Le module de mémoire IP renvoie seulement la liste de cibles d'iSCSI que les stratégies de contrôle d'accès permettent à l'hôte d'iSCSI pour accéder à.

la création de session d'iSCSI se produit quand un hôte IP initie une session d'iSCSI. Le module de mémoire IP vérifie :

- Si la cible spécifiée d'iSCSI (dans la demande de procédure de connexion de session) est une cible tracée par charge statique
- Qu'on permet au le nom du noeud d'iSCSI de l'hôte IP pour accéder à la cible

La procédure de connexion est rejetée si l'hôte IP n'a pas accès.

Le module de mémoire IP puis :

- Crée un port virtuel FC N (le port N peut déjà exister) pour cet hôte IP
- Fait une requête de Serveur de noms FC pour l'ID de Fibre Channel (FCID) du pWWN de cible FC que l'hôte IP accède à

Le module de mémoire IP 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. La session d'iSCSI est reçue si le Serveur de noms renvoie le FCID. Autrement, la demande de procédure de connexion est rejetée.

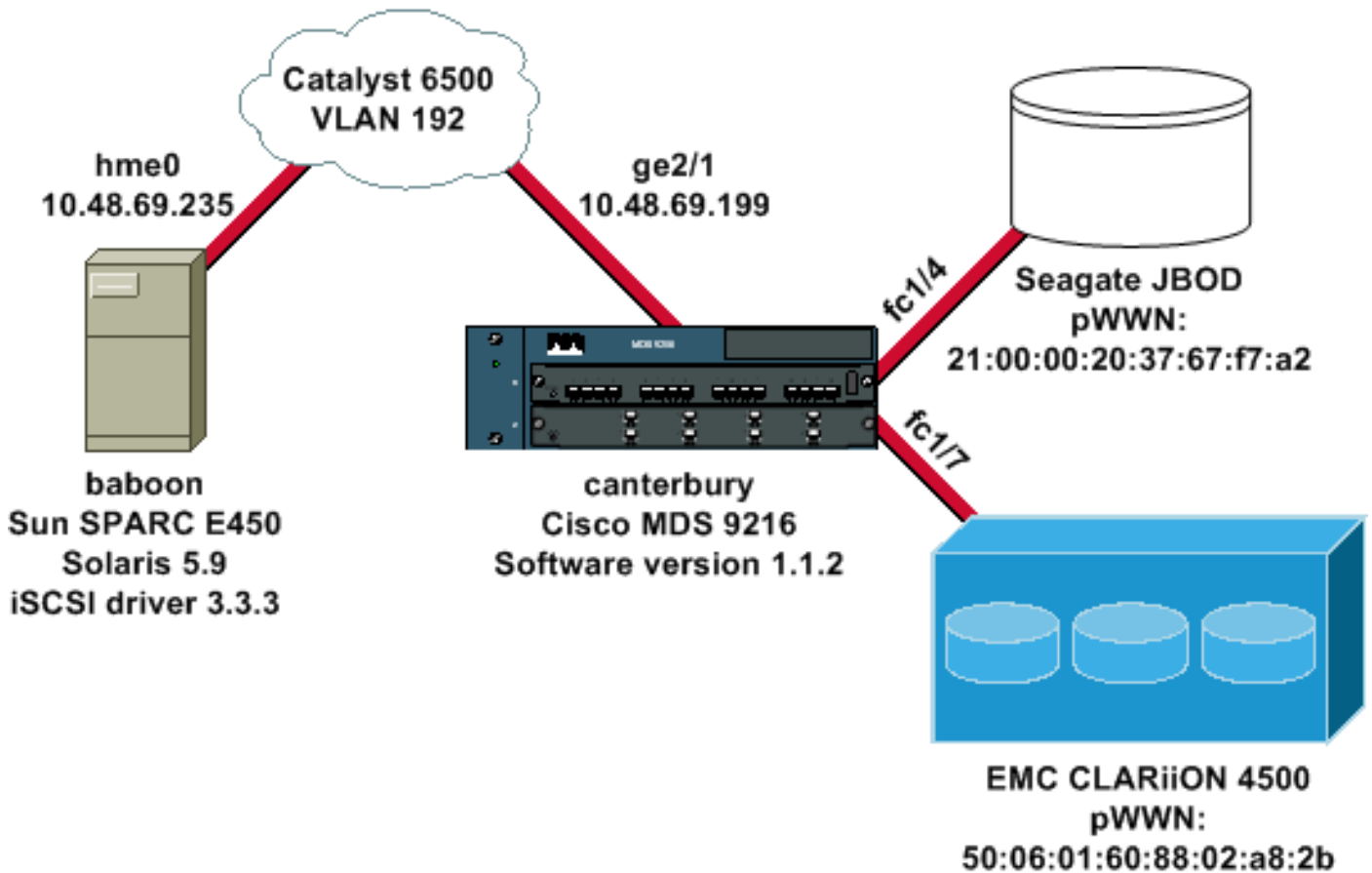
[Configurer](#)

Cette section vous fournit des informations pour configurer les fonctionnalités décrites dans ce document.

Remarque: Utilisez l'outil [Command Lookup Tool](#) (clients [enregistrés](#) seulement) pour trouver plus d'informations sur les commandes utilisées dans ce document.

[Diagramme du réseau](#)

Ce document utilise la configuration réseau suivante :



Configurations

Ce document utilise les configurations suivantes :

- [babouin \(SunOS 5.9, SPARC E450\)](#)
- [Cantorbéry \(Cisco MDS 9216\)](#)

babouin (SunOS 5.9, SPARC E450)

Modifiez ces fichiers sur l'hôte de Solaris :

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

C'est sortie de configuration témoin :

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

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

# DiscoveryAddress Settings
# -----
# Add "DiscoveryAddress=xxx" entries for each iSCSI
router instance.
# The driver will attempt to discover iSCSI targets at
that address
# and make as many targets as possible available for
use.
# 'xxx' can be an IP address or a hostname. A TCP port
number can be
# specified by appending a colon and the port number to
the address.
# All entries have to start in column one and must not
```

```

contain any
# whitespace.
#
# Example:
#
# DiscoveryAddress=scsirouter1
DiscoveryAddress=10.48.69.199
  !--- Configure the IP address of the GE interface that
accepts iSCSI !--- requests from your host. # The
DiscoveryAddress Settings can take following entry. # #
1) Authentication Settings # 2) ConnectionTimeout
Settings !--- Other required driver parameters can be
changed in the iscsi.conf file. !--- Output is
suppressed. bash-2.05#cat /etc/iscsi.bindings

# iSCSI bindings, file format version 1.0.
# NOTE: this file is automatically maintained by the
iSCSI daemon.
# You should not need to edit this file under most
circumstances.
# If iSCSI targets in this file have been permanently
deleted, you
# may wish to delete the bindings for the deleted
targets.
#
# Format:
# bus  target  iSCSI
# id   id       TargetName
#
0      0        san-fc-jbod-1
0      1        clariion
0      2        clariion-lun-3-4-5
!--- The iSCSI driver discovery daemon process looks up
each discovered target !--- in the /etc/iscsi.bindings
file. !--- The corresponding iSCSI target ID is assigned
to the target if an entry exists in the file for the
target. !--- The smallest available iSCSI target ID !---
is assigned if no entry exists for the target, and an
entry is written to the /etc/iscsi.bindings file for !--
- this target. !--- Note that the /etc/iscsi.bindings
file permanently contains entries !--- for all iSCSI
targets ever logged into from this host. !--- You can
manually edit the file and remove !--- entries so that
the obsolete target no longer consumes an iSCSI target
ID if a target is no longer available to a host. !---
Add an entry manually if you know the iSCSI target name
!--- in advance and want it to be assigned a particular
iSCSI target ID. !--- Stop the iSCSI driver before you
edit the /etc/iscsi.bindings !--- file. Issue the !---
/etc/init.d/iscsi start command to manually start the
iSCSI driver. !--- Issue the /etc/init.d/iscsi stop
command to manually stop the iSCSI driver.

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

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

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

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

```

```

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

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

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

```

Cantorbéry (Cisco MDS 9216)

```

bash-2.05#cat /etc/iscsi.conf

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

# DiscoveryAddress Settings
# -----
# Add "DiscoveryAddress=xxx" entries for each iSCSI
router instance.
# The driver will attempt to discover iSCSI targets at
that address
# and make as many targets as possible available for
use.
# 'xxx' can be an IP address or a hostname. A TCP port
number can be
# specified by appending a colon and the port number to
the address.
# All entries have to start in column one and must not
contain any
# whitespace.
#
# Example:
#
# DiscoveryAddress=scsirouter1
DiscoveryAddress=10.48.69.199
!--- Configure the IP address of the GE interface that
accepts iSCSI !--- requests from your host. # The
DiscoveryAddress Settings can take following entry. # #
1) Authentication Settings # 2) ConnectionTimeout

```



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

# iSCSI bindings, file format version 1.0.
# NOTE: this file is automatically maintained by the
iSCSI daemon.
# You should not need to edit this file under most
circumstances.
# If iSCSI targets in this file have been permanently
deleted, you
# may wish to delete the bindings for the deleted
targets.
#
# Format:
# bus  target  iSCSI
# id   id       TargetName
#
0      0        san-fc-jbod-1
0      1        clariion
0      2        clariion-lun-3-4-5
!--- The iSCSI driver discovery daemon process looks up
each discovered target !--- in the /etc/iscsi.bindings
file. !--- The corresponding iSCSI target ID is assigned
to the target if an entry exists in the file for the
target. !--- The smallest available iSCSI target ID !---
is assigned if no entry exists for the target, and an
entry is written to the /etc/iscsi.bindings file for !--
- this target. !--- Note that the /etc/iscsi.bindings
file permanently contains entries !--- for all iSCSI
targets ever logged into from this host. !--- You can
manually edit the file and remove !--- entries so that
the obsolete target no longer consumes an iSCSI target
ID if a target is no longer available to a host. !---
Add an entry manually if you know the iSCSI target name
!--- in advance and want it to be assigned a particular
iSCSI target ID. !--- Stop the iSCSI driver before you
edit the /etc/iscsi.bindings !--- file. Issue the !---
/etc/init.d/iscsi start command to manually start the
iSCSI driver. !--- Issue the /etc/init.d/iscsi stop
command to manually stop the iSCSI driver.

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

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

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

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

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

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

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

Vérifier

Référez-vous à cette section pour vous assurer du bon fonctionnement de votre configuration.

L'[Outil Interpréteur de sortie](#) (clients [enregistrés](#) uniquement) (OIT) prend en charge certaines commandes **show**. Utilisez l'OIT pour afficher une analyse de la sortie de la commande **show**.

- **le netstat - n** — vérifie les connexions TCP sur l'hôte de Solaris.
- **l'iscsi-LS - l** — affiche les périphériques qui sont actuellement disponibles sur l'hôte de Solaris.
- **affichez l'état de zone** — Les informations de zone d'expositions.
- **affichez à base de données de fcns 777 vsan** — Affiche les informations de Serveur de noms pour une particularité VSAN.
- **affichez à base de données de flogi 777 vsan** — Affiche les informations du serveur de la procédure de connexion de matrice (FLOGI) pour une particularité VSAN.
- **affichez l'adhésion vsan** — Les informations d'interface d'expositions pour VSANs différent.
- **affichez le détail de demandeur d'iscsi** — Affiche les informations de demandeur d'iSCSI.
- **affichez le détail d'iscsi-session de demandeur d'iscsi** — Affiche les informations détaillées pour la session de demandeur d'iSCSI.
- **affichez le détail de fcp-session de demandeur d'iscsi** — Affiche les informations détaillées pour la session du demandeur FCP d'iSCSI.
- **affichez à gigabitethernet d'interface de TCP de stats IPS 2/1 détail** — des statistiques de TCP d'expositions pour une interface spécifique de GE.
- **affichez la virtuel-cible d'iscsi configurée** — Affiche à iSCSI les cibles virtuelles qui ont été configurées sur le Cisco MDS 9000.
- **affichez le demandeur d'iscsi configuré** — Affiche les demandeurs d'iSCSI qui ont été configurés sur le Cisco MDS 9000.
- **affichez le gigabitethernet 2/1 d'interface d'ARP IPS** — Les informations de Protocole ARP (Address Resolution Protocol) de mémoire IP d'expositions pour une interface spécifique de GE.
- **affichez à des périphériques de SCSI-cible 777 vsan** — Affiche des périphériques d'iSCSI

- pour une particularité VSAN (pour tracer FC LUN à iSCSI LUN).
- **affichez l'iscsi 2/1 international** — Affiche des interfaces d'iSCSI.
- **affichez l'iscsi 2/1 de stats d'iscsi** — Affiche des statistiques d'iSCSI.
- **affichez le gigabitethernet 2/1 international** — Affiche l'interface de GE.
- **show ip route** — Les informations d'artère IP d'expositions.

Dépanner

Utilisez cette section pour dépanner votre configuration.

Procédure de dépannage

- [sortie de babouin](#)
- [Cisco MDS 9216 de Cantorbéry sorti](#)
- [Sortie de Fabric Manager et de gestionnaire de périphériques](#)

```

sortie de babouin

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

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

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

iSCSI is starting.

bash-2.05#bash-2.05# netstat -n

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

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

/etc/iscsi.bindings

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

```

```
bash-2.05# devfsadm
```

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

```
bash-2.05# format output
```

```
AVAILABLE DISK SELECTIONS:
```

```
  0. c0t0d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
    /pci@1f,4000/scsi@3/sd@0,0
  1. c0t1d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
    /pci@1f,4000/scsi@3/sd@1,0
  2. c3t0d0 <SEAGATE-ST318203FC-0004 cyl 9770 alt 2
hd 12 sec 303>
    /iscsipseudo/iscsi@0/sd@0,0
  3. c3t1d0 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@1,0
  4. c3t1d1 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@1,1
  5. c3t1d2 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@1,2
  6. c3t2d0 <drive not available>
    /iscsipseudo/iscsi@0/sd@2,0
```

```
!--- After you add the clariion-lun-3-4-5 virtual
target on the Cisco MDS 9216. /etc/iscsi.bindings
```

```
0      0      san-fc-jbod-1
0      1      clariion
0      2      clariion-lun-3-4-5
```

```
bash-2.05#bash-2.05# netstat -n
```

```
TCP: IPv4
```

```
Local Address      Remote Address     Swind Send-Q
Rwind Recv-Q  State
```

```
-----
10.48.69.235.32797 10.48.69.199.3260 65535 0
49172 0 TIME_WAIT
10.48.69.235.32798 10.48.69.199.3260 9379072 0
263152 0 ESTABLISHED
10.48.69.235.32799 10.48.69.199.3260 9379072 0
263152 0 ESTABLISHED
10.48.69.235.32800 10.48.69.199.3260 65535 0
49108 0 ESTABLISHED
10.48.69.235.32801 10.48.69.199.3260 9379072 0
263152 0 ESTABLISHED
```

```
Active UNIX domain sockets
```

```
Address Type      Vnode      Conn      Local Addr
Remote Addr
30002d95c88 dgram      30000205828 00000000 /tmp/portal
```

```
bash-2.05# devfsadm
```

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

```
And the format output:
```

```
0. c0t0d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
```

```

    /pci@1f,4000/scsi@3/sd@0,0
    1. c0t1d0 <SUN18G cyl 7506 alt 2 hd 19 sec 248>
    /pci@1f,4000/scsi@3/sd@1,0
    2. c3t0d0 <SEAGATE-ST318203FC-0004 cyl 9770 alt 2
hd 12 sec 303>
    /iscsipseudo/iscsi@0/sd@0,0
    3. c3t1d0 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@1,0
    4. c3t1d1 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@1,1
    5. c3t1d2 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@1,2
    6. c3t2d0 <drive not available>
    /iscsipseudo/iscsi@0/sd@2,0
    7. c3t2d3 <DGC-RAID0-0632 cyl 10920 alt 2 hd 3
sec 128>
    /iscsipseudo/iscsi@0/sd@2,3
    8. c3t2d4 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@2,4
    9. c3t2d5 <DGC-RAID0-0632 cyl 5459 alt 2 hd 3 sec
128>
    /iscsipseudo/iscsi@0/sd@2,5
!--- Issue the iscsi-ls -v command to see iSCSI driver
version.

bash-2.05# iscsi-ls -v

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

bash-2.05# iscsi-ls -l

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

```

```

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

bash-2.05# iscsi-ls -c

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

```

```

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

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

```


canterbury#show zone status

VSAN: 1 default-zone: permit distribute: active only
Interop: Off

Full Zoning Database :
Zonesets:0 Zones:0 Aliases: 0

Active Zoning Database :
Database Not Available

Status: Deactivation completed at Fri Aug 22 11:47:53
2003

VSAN: 777 default-zone: permit distribute: active only
Interop: Off.

Full Zoning Database :
Zonesets:0 Zones:0 Aliases: 0

Active Zoning Database :
Database Not Available

Status: Default zoning policy changed to permit at Mon
Aug 25 20:19:31 2003

*!--- VSAN 777 has been used for this configuration, and
default-zone behavior has been !--- set to permit.*

canterbury#show flogi da vsan 777

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

Total number of flogi = 3.

canterbury#show fcns database vsan 777

VSAN 777:

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

Total number of entries = 3

*!--- FCID 0X700100 is the virtual N port (HBA) for the
iSCSI host.* canterbury#show fcns database detail vsan
777

```
-----  
VSAN:777    FCID:0x7000e8  
-----
```

```
port-wwn (vendor)      :21:00:00:20:37:67:f7:a2 (Seagate)
node-wwn               :20:00:00:20:37:67:f7:a2
class                 :3
node-ip-addr          :0.0.0.0
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:target
symbolic-port-name    :
symbolic-node-name    :
port-type             :NL
port-ip-addr          :0.0.0.0
fabric-port-wwn       :20:04:00:0c:30:6c:24:40
hard-addr             :0x000000
```

```
-----
VSAN:777    FCID:0x700100
-----
```

```
port-wwn (vendor)      :21:02:00:0c:30:6c:24:42 (Cisco)
node-wwn               :21:01:00:0c:30:6c:24:42
class                 :2,3
node-ip-addr          :10.48.69.235
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
!--- Virtual N port for host. symbolic-port-name :
symbolic-node-name    :10.48.69.235 port-type :N port-ip-
addr :0.0.0.0 fabric-port-wwn :20:41:00:0c:30:6c:24:40
hard-addr :0x000000 ----- VSAN:777
FCID:0x700103 ----- port-wwn (vendor)
:50:06:01:60:88:02:a8:2b (Clariion) node-wwn
:50:06:01:60:11:02:a8:2b class :3 node-ip-addr :0.0.0.0
ipa :ff ff ff ff ff ff ff ff fc4-
types:fc4_features:scsi-fcp:target symbolic-port-name :
symbolic-node-name    : port-type :N port-ip-addr :0.0.0.0
fabric-port-wwn :20:07:00:0c:30:6c:24:40 hard-addr
:0x000000 Total number of entries = 3 canterbury#show
```

vsan membership

```
vsan 777 interfaces:
    fc1/4    fc1/7
```

canterbury#show iscsi initiator

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

canterbury#show iscsi initiator detail

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

  Virtual Port WWN is 21:02:00:0c:30:6c:24:42
(dynamic)
```

Interface iSCSI 2/1, Portal group tag is 0x80

VSAN ID 777, FCID 0x700100

2 FC sessions, 3 iSCSI sessions

iSCSI session details

Target: san-fc-jbod-1

Statistics:

PDU: Command: 24, Response: 24

Bytes: TX: 3504, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.199:3260, Remote

10.48.69.235:32798

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 4 ms, Variance: 6

Advertized window: Current: 256 KB, Maximum:

257 KB, Scale: 3

Peer receive window: Current: 9159 KB,

Maximum: 9159 KB, Scale: 8

Congestion window: Current: 11 KB

Target: clariion-lun-3-4-5

Statistics:

PDU: Command: 73, Response: 73

Bytes: TX: 9740, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.199:3260, Remote

10.48.69.235:32801

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 7 ms, Variance: 13

Advertized window: Current: 256 KB, Maximum:

257 KB, Scale: 3

Peer receive window: Current: 9159 KB,

Maximum: 9159 KB, Scale: 8

Congestion window: Current: 11 KB

Target: clariion

Statistics:

PDU: Command: 101, Response: 101

Bytes: TX: 14828, RX: 0

Number of connection: 1

TCP parameters

Local 10.48.69.199:3260, Remote

10.48.69.235:32799

Path MTU: 1500 bytes

Retransmission timeout: 300 ms

Round trip time: Smoothed 2 ms, Variance: 1

Advertised window: Current: 256 KB, Maximum:

257 KB, Scale: 3

Peer receive window: Current: 9159 KB,

Maximum: 9159 KB, Scale: 8

Congestion window: Current: 11 KB

FCP Session details

Target FCID: 0x7000e8 (S_ID of this session:
0x700100)

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

Session state: LOGGED_IN

1 iSCSI sessions share this FC session

Target: san-fc-jbod-1

Negotiated parameters

RcvDataFieldSize 2048 our_RcvDataFieldSize

2048

```
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 24
Target FCID: 0x700103 (S_ID of this session:
0x700100)
pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b
Session state: LOGGED_IN
2 iSCSI sessions share this FC session
Target: clariion-lun-3-4-5
Target: clariion
Negotiated parameters
RcvDataFieldSize 1024 our_RcvDataFieldSize
2048
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 174
canterbury#show iscsi initiator iscsi-session detail
iSCSI Node name is 10.48.69.235
iSCSI Initiator name: iqn.1987-
05.com.cisco:01.894b196796e7
iSCSI alias name: baboon
Node WWN is 21:01:00:0c:30:6c:24:42 (dynamic)
Member of vsans: 777
Number of Virtual n_ports: 1
Virtual Port WWN is 21:02:00:0c:30:6c:24:42
(dynamic)
Interface iSCSI 2/1, Portal group tag is 0x80
VSAN ID 777, FCID 0x700100
2 FC sessions, 3 iSCSI sessions
iSCSI session details
Target: san-fc-jbod-1
Statistics:
PDU: Command: 24, Response: 24
Bytes: TX: 3504, RX: 0
Number of connection: 1
TCP parameters
Local 10.48.69.199:3260, Remote
10.48.69.235:32798
Path MTU: 1500 bytes
Retransmission timeout: 300 ms
Round trip time: Smoothed 4 ms, Variance: 6
Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
Congestion window: Current: 11 KB
Target: clariion-lun-3-4-5
Statistics:
PDU: Command: 73, Response: 73
Bytes: TX: 9740, RX: 0
Number of connection: 1
TCP parameters
Local 10.48.69.199:3260, Remote
10.48.69.235:32801
Path MTU: 1500 bytes
Retransmission timeout: 300 ms
```

```
Round trip time: Smoothed 7 ms, Variance: 13
Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
Congestion window: Current: 11 KB
Target: clariion
Statistics:
PDU: Command: 101, Response: 101
Bytes: TX: 14828, RX: 0
Number of connection: 1
TCP parameters
Local 10.48.69.199:3260, Remote
10.48.69.235:32799
Path MTU: 1500 bytes
Retransmission timeout: 300 ms
Round trip time: Smoothed 2 ms, Variance: 1
Advertized window: Current: 256 KB, Maximum:
257 KB, Scale: 3
Peer receive window: Current: 9159 KB,
Maximum: 9159 KB, Scale: 8
Congestion window: Current: 11 KB
```

canterbury#show iscsi initiator fcp-session detail

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

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

FCP Session details
Target FCID: 0x7000e8 (S_ID of this session:
0x700100)
pWWN: 21:00:00:20:37:67:f7:a2, nWWN:
20:00:00:20:37:67:f7:a2
Session state: LOGGED_IN
1 iSCSI sessions share this FC session
Target: san-fc-jbod-1
Negotiated parameters
RcvDataFieldSize 2048 our_RcvDataFieldSize
2048
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 24
Target FCID: 0x700103 (S_ID of this session:
0x700100)
pWWN: 50:06:01:60:88:02:a8:2b, nWWN:
50:06:01:60:11:02:a8:2b
Session state: LOGGED_IN
2 iSCSI sessions share this FC session
Target: clariion-lun-3-4-5
Target: clariion
Negotiated parameters
```

```
RcvDataFieldSize 1024 our_RcvDataFieldSize
2048
MaxBurstSize 0, EMPD: FALSE
Random Relative Offset: FALSE, Sequence-in-
order: Yes
Statistics:
PDU: Command: 0, Response: 174
```

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

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

```

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

```

canterbury#show iscsi virtual-target configured

target: san-fc-jbod-1

* Port WWN 21:00:00:20:37:67:f7:a2

!--- The * means that you have both discovery and target sessions. !--- You only have a discovery session if there is no * in front of the pWWN.

Configured node

No. of advertised interface: 1

GigabitEthernet 2/1

No. of initiators permitted: 3

initiator iqn.1987-

05.com.cisco.02.89451e183581.mcandegew2k1 is permitted

initiator 10.48.69.235/32 is permitted

initiator 10.48.69.232/32 is permitted

all initiator permit is disabled

target: clariion

* Port WWN 50:06:01:60:88:02:a8:2b

Configured node

No. of LU mapping: 3

iSCSI LUN: 0000, FC LUN: 0000

iSCSI LUN: 0001, FC LUN: 0001

iSCSI LUN: 0002, FC LUN: 0002

No. of advertised interface: 1

GigabitEthernet 2/1

No. of initiators permitted: 1

initiator 10.48.69.235/32 is permitted

all initiator permit is disabled

target: clariion-lun-3-4-5

* Port WWN 50:06:01:60:88:02:a8:2b

Configured node

No. of LU mapping: 3

iSCSI LUN: 0003, FC LUN: 0003

iSCSI LUN: 0004, FC LUN: 0004

iSCSI LUN: 0005, FC LUN: 0005

No. of advertised interface: 1

GigabitEthernet 2/1

No. of initiators permitted: 1

initiator 10.48.69.235/32 is permitted

all initiator permit is disabled

canterbury#show iscsi initiator configured

iSCSI Node name is 10.48.69.235

Member of vsans: 777

canterbury#show ips arp interface gigabitethernet 2/1

Protocol Type	Address Interface	Age (min)	Hardware Addr
Internet	10.48.69.200	0	0008.e21e.c7bc
ARPA	GigabitEthernet2/1		
Internet	10.48.69.206	7	0005.9ba6.95ff
ARPA	GigabitEthernet2/1		
Internet	10.48.69.209	4	0009.7c60.561f
ARPA	GigabitEthernet2/1		
Internet	10.48.69.226	0	0060.08f6.bc1a
ARPA	GigabitEthernet2/1		
Internet	10.48.69.229	15	0800.209e.edab
ARPA	GigabitEthernet2/1		
Internet	10.48.69.233	0	0010.4200.7d5b
ARPA	GigabitEthernet2/1		
Internet	10.48.69.235	9	0800.20b6.6559
ARPA	GigabitEthernet2/1		
Internet	10.48.69.238	5	0030.6e1b.6f51
ARPA	GigabitEthernet2/1		
Internet	10.48.69.239	12	0030.6e1c.a00b
ARPA	GigabitEthernet2/1		
Internet	10.48.69.248	5	0202.3d30.45f8
ARPA	GigabitEthernet2/1		
Internet	10.48.69.252	1	0202.3d30.45fc
ARPA	GigabitEthernet2/1		
Internet	10.10.2.28	9	0202.3d0a.021c
ARPA	GigabitEthernet2/1		

canterbury#show scsi-target devices vsan 777

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

canterbury#show scsi-target lun vsan 777

- ST318203FC from SEAGATE (Rev 0004)
FCID is 0x7000e8 in VSAN 777, PWWN is
21:00:00:20:37:67:f7:a2

LUN	Capacity (MB)	Status	Serial Number	Device-Id
0x0	18210	Online	LRE8091500007039	C:1 A:0 T:3
20:00:00:20:37:67:f7:a2				

- RAID from DGC (Rev 0632)
FCID is 0x700103 in VSAN 777, PWWN is
50:06:01:60:88:02:a8:2b

LUN	Capacity (MB)	Status	Serial Number	Device-Id
-----	------------------	--------	---------------	-----------

0x0	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
da:05:b6:a9:b6:9d:7b:00				
C:1 A:0 T:0				
00:00:00:00				
0x1	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
6a:66:0d:74:cb:33:88:6c				
C:1 A:0 T:0				
00:01:00:00				
0x2	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ec:81:5b:a2:c4:43:0d:8a				
C:1 A:0 T:0				
00:02:00:00				
0x3	2147	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
e0:47:b3:be:3b:00:e0:d5				
C:1 A:0 T:0				
00:03:00:00				
0x4	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
00:51:5b:7f:3d:9a:7b:ce				
C:1 A:0 T:0				
00:04:00:00				
0x5	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ab:b1:ae:80:59:c0:fc:f0				
C:1 A:0 T:0				
00:05:00:00				
0x6	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
ad:91:58:af:d2:fd:c7:47				
C:1 A:0 T:0				
00:06:00:00				
0x7	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
b1:ef:e7:6c:44:5c:16:97				
C:1 A:0 T:0				
00:07:00:00				
0x8	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
84:4f:09:60:30:1e:fc:50				
C:1 A:0 T:0				
00:08:00:00				
0x9	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
aa:6d:e2:0e:ce:7a:cc:21				
C:1 A:0 T:0				
00:09:00:00				
0xa	1074	Online	f60004202091	C:1 A:0 T:3
60:06:01:60:88:02:a8:2b				
5b:66:67:89:6c:f2:d1:56				

```
C:1 A:0 T:0
00:0a:00:00
 0xb 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
a9:32:bd:04:4a:bb:3d:9b
C:1 A:0 T:0
00:0b:00:00
 0xc 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
cd:d9:96:f7:57:3f:07:0c
C:1 A:0 T:0
00:0c:00:00
 0xd 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
0c:e5:ba:39:68:ca:d6:f0
C:1 A:0 T:0
00:0d:00:00
 0xe 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
60:6e:ee:76:98:fc:ab:97
C:1 A:0 T:0
00:0e:00:00
 0xf 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
8b:58:80:7b:12:fb:6b:12
C:1 A:0 T:0
00:0f:00:00
 0x10 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
a1:2f:6d:b0:c3:d6:c2:46
C:1 A:0 T:0
00:10:00:00
 0x11 1074 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
2c:48:c4:74:25:4b:26:dd
C:1 A:0 T:0
00:11:00:00
 0x20 5369 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
ba:18:6a:40:22:40:94:75
C:1 A:0 T:0
00:20:00:00
 0x21 3221 Online f60004202091 C:1 A:0 T:3
60:06:01:60:88:02:a8:2b
74:d2:42:9e:31:8d:ff:86
C:1 A:0 T:0
00:21:00:00
canterbury#show interface iscsi 2/1
iscsi2/1 is up
  Hardware is GigabitEthernet
  Port WWN is 20:41:00:0c:30:6c:24:40
  Admin port mode is ISCSI
  Port mode is ISCSI
```

```
Speed is 1 Gbps
iSCSI initiator is identified by name
Number of iSCSI session: 4, Number of TCP
connection: 4
Configured TCP parameters
  Local Port is 3260
  PMTU discover is enabled, reset timeout is 3600
sec
  Keepalive-timeout is 60 sec
  Minimum-retransmit-time is 300 ms
  Max-retransmissions 4
  Sack is disabled
  Maximum allowed bandwidth is 800000 kbps
  Minimum available bandwidth is 800000 kbps
  Estimated round trip time is 100000 usec
  5 minutes input rate 168 bits/sec, 21 bytes/sec, 0
frames/sec
  5 minutes output rate 728 bits/sec, 91 bytes/sec, 0
frames/sec
iSCSI statistics
  Input 12209 packets, 2668348 bytes
  Command 3282 pdus, Data-out 1038 pdus, 1989664
bytes
  Output 14762 packets, 3486596 bytes
  Response 3059 pdus (with sense 77), R2T 153 pdus
  Data-in 3215 pdus, 2744116 bytes
```

```
canterbury#show iscsi stats iscsi 2/1
```

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

```
canterbury#show interface gigabitethernet 2/1
```

```
GigabitEthernet2/1 is up
  Hardware is GigabitEthernet, address is
0005.3000.ade6
  Internet address is 10.48.69.199/26
  MTU 2156 bytes
  Port mode is IPS
  Speed is 1 Gbps
  Beacon is turned off
  Auto-Negotiation is turned on
  iSCSI authentication: NONE
  5 minutes input rate 392 bits/sec, 49 bytes/sec, 0
frames/sec
  5 minutes output rate 64 bits/sec, 8 bytes/sec, 0
frames/sec
  126128 packets input, 12476013 bytes
  2 multicast frames, 0 compressed
  0 input errors, 0 frame, 0 overrun 0 fifo
  43443 packets output, 6256174 bytes, 0 underruns
  0 output errors, 0 collisions, 0 fifo
  0 carrier errors
```

```

canterbury#show ip route

Codes: C - connected, S - static

Gateway of last resort is 10.48.69.129

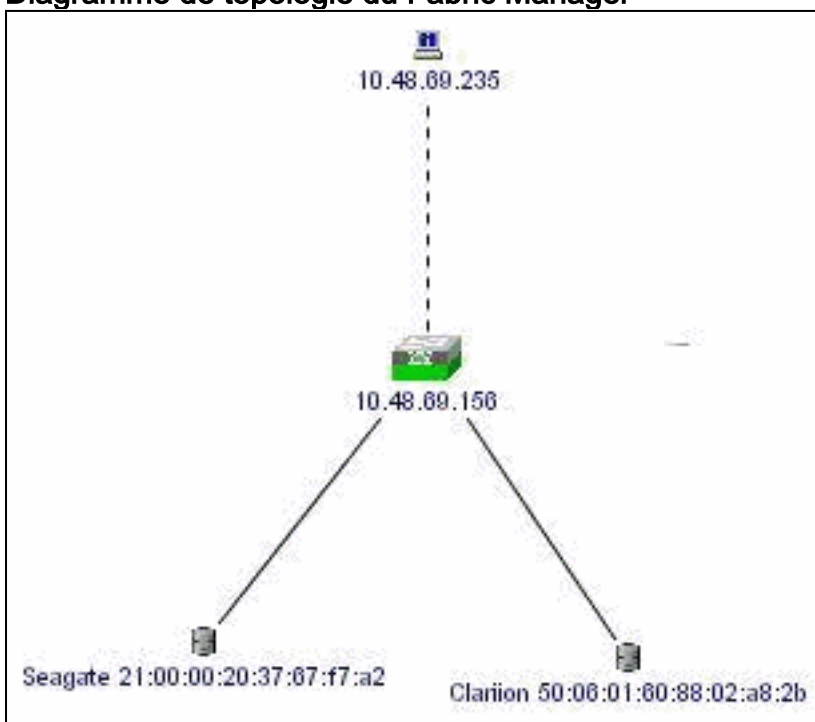
C 10.48.69.192/26 is directly connected,
gigabitethernet2-1
C 10.48.69.128/26 is directly connected, mgmt0

```

Sortie de Fabric Manager et de gestionnaire de périphériques

Cette section fournit la sortie témoin du Fabric Manager MDS 1.1(2) et du gestionnaire de périphériques 1.1.(2).

Diagramme de topologie du Fabric Manager



C'est une copie d'écran témoin de la vue du gestionnaire de périphériques 1.1(2) sur Cantorbéry.



1. Choisi **FC > LUN** dans la fenêtre de gestionnaire des périphériques pour afficher les pWWNs, des id LUN, et la capacité de vos

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

Data retrieved at 10:03:45

LUN.

2. Choisi **IP > iSCSI** pour afficher les sessions d'iSCSI.

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

4 row(s)

Informations connexes

- [Support technique de Small Computer Systems Interface sur IP \(iSCSI\)](#)