

# Configurando o host iSCSI do Microsoft Windows XP para MDS/IPS-8

## Contents

[Introduction](#)

[Prerequisites](#)

[Requirements](#)

[Componentes Utilizados](#)

[Conventions](#)

[Material de Suporte](#)

[Configurar](#)

[Diagrama de Rede](#)

[Configurações](#)

[Verificar](#)

[Troubleshoot](#)

[Procedimento de solução de problemas](#)

[Informações Relacionadas](#)

## [Introduction](#)

Os drivers iSCSI da Cisco, que residem no servidor, são um componente chave da solução iSCSI. Esses drivers iSCSI interceptam comandos SCSI, os encapsulam em pacotes IP e os redirecionam para o Cisco SN 5420, Cisco SN 5428, Cisco SN 5428-2 ou Cisco MDS/IPS-8. Este documento fornece configurações de exemplo para um host com o Microsoft Windows XP iSCSI para MDS/IPS-8.

## [Prerequisites](#)

### [Requirements](#)

Antes de tentar esta configuração, verifique se estes requisitos são atendidos:

- Antes de criar sua configuração iSCSI no MDS 9000, é necessário instalar um driver iSCSI compatível com seu PC que executa o Microsoft Windows XP. A versão mais recente do Cisco iSCSI Driver para Windows 2000/XP/2003 pode ser encontrada na [página Cisco iSCSI Drivers](#) (somente clientes [registrados](#)) em Cisco.com. O nome do arquivo é **Cisco iSCSI Driver Version *number* para Win2k** e pode ser encontrado na tabela nesta página.

## [Componentes Utilizados](#)

As informações neste documento são baseadas nestas versões de software e hardware:

- PC com Microsoft Windows XP e driver iSCSI Cisco versão 3.1.2
- Cisco MDS 9216 com versão de software 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#
```

```
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 6 days 1 hours 11 minute(s) 5 second(s)
```

```
Last reset at 783455 usecs after Thu Aug 28 12:59:37 2003
Reason: Reset Requested by CLI command reload
System version: 1.1(2)
```

```
canterbury#
```

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is

live, make sure that you understand the potential impact of any command.

## Conventions

O termo MDS 9000 refere-se a qualquer produto de switch Fibre Channel (FC) na família MDS 9000 (MDS 9506, MDS 9509 ou MDS 9216). O blade IPS se refere ao IP Storage Services Module.

For more information on document conventions, refer to the [Cisco Technical Tips Conventions](#).

## Material de Suporte

O módulo de armazenamento IP fornece aos hosts IP acesso a dispositivos de armazenamento Fibre Channel (FC). O módulo de armazenamento IP é DS-X9308-SMIP. Fornece roteamento SCSI transparente. Os hosts IP que usam o protocolo iSCSI podem acessar destinos de SCSI (FCP) de forma transparente na rede FC. O host IP envia comandos SCSI encapsulados em Unidades de Dados de Protocolo (PDUs - Protocol Data Units) iSCSI para uma porta IPS MDS 9000 em uma conexão TCP/IP. No módulo de armazenamento IP, a conectividade é fornecida na forma de interfaces Gigabit Ethernet (GE) configuradas adequadamente. O módulo de armazenamento IP permite criar destinos iSCSI virtuais e mapeá-los para destinos FC físicos disponíveis na SAN FC. Ele apresenta os destinos FC aos hosts IP como se os destinos físicos estivessem conectados localmente.

Cada host iSCSI que requer acesso ao armazenamento por meio do módulo de armazenamento IP precisa ter um driver iSCSI compatível instalado. Com o protocolo iSCSI, o driver iSCSI permite que um host iSCSI transporte solicitações e respostas SCSI através de uma rede IP. Da perspectiva de um sistema operacional host, o driver iSCSI parece ser um driver de transporte SCSI semelhante a um driver FC para um canal periférico no host. Da perspectiva do dispositivo de armazenamento, cada host IP aparece como um host FC.

O roteamento SCSI do host IP para o dispositivo de armazenamento FC consiste nas seguintes ações principais:

- Transporte de solicitações e respostas iSCSI através de uma rede IP entre hosts e o módulo de armazenamento IP.
- Roteamento de solicitações e respostas SCSI entre hosts em uma rede IP e no dispositivo de armazenamento FC (convertendo iSCSI em FCP e vice-versa). Isso é executado pelo módulo de armazenamento IP.
- Transporte de solicitações ou respostas de FCP entre o módulo de armazenamento IP e os dispositivos de armazenamento FC.

Por padrão, o módulo de armazenamento IP não importa os destinos de FC para iSCSI. O mapeamento dinâmico ou estático deve ser configurado antes que o módulo de armazenamento IP torne os destinos FC disponíveis para iniciadores iSCSI. Quando ambos estão configurados, os destinos FC mapeados estaticamente têm um nome configurado. Nesta configuração, são fornecidos exemplos de mapeamento estático.

Com o mapeamento dinâmico, cada vez que o host iSCSI se conecta ao módulo de armazenamento IP, uma nova porta FC N é criada e os nWWNs e pWWNs alocados para essa porta N podem ser diferentes. Use o método de mapeamento estático se precisar obter os mesmos nWWNs e pWWNs para o host iSCSI toda vez que ele se conectar ao módulo de armazenamento IP. O mapeamento estático pode ser usado no módulo de armazenamento IP

para acessar matrizes de armazenamento FC inteligentes que tenham controle de acesso e configuração de mapeamento/mascaramento de número de unidade lógica (LUN) com base nos pWWNs e/ou nWWNs do iniciador.

Você pode controlar o acesso a cada destino iSCSI mapeado estaticamente se especificar uma lista de portas de armazenamento IP nas quais elas serão anunciadas e especificar uma lista de nomes de nós do iniciador iSCSI permitidos para acessá-la. O controle de acesso baseado em zoneamento FC e o controle de acesso baseado em iSCSI são os dois mecanismos pelos quais o controle de acesso pode ser fornecido para iSCSI. Ambos os métodos podem ser usados simultaneamente.

A descoberta de iSCSI ocorre quando um host iSCSI cria uma sessão de descoberta iSCSI e consulta todos os destinos iSCSI. O módulo de armazenamento IP retorna apenas a lista de destinos iSCSI que o host iSCSI pode acessar com base nas políticas de controle de acesso.

A criação de sessão iSCSI ocorre quando um host IP inicia uma sessão iSCSI. O módulo de armazenamento IP verifica se o destino iSCSI especificado (na solicitação de login da sessão) é um destino mapeado estático e, se verdadeiro, verifica se o nome do nó iSCSI do host IP tem permissão para acessar o destino. Se o host IP não tiver acesso, seu login será rejeitado.

O módulo de armazenamento IP cria uma porta N virtual FC (a porta N pode já existir) para este host IP e faz uma consulta de servidor de nome FC para o FCID do pWWN de destino FC acessado pelo host IP. Ele usa o IPvWWN da porta N virtual do host IP como o solicitante da consulta do servidor de nome. Assim, o servidor de nomes faz uma consulta imposta por zona para o pWWN e responde à consulta. Se o FCID for retornado pelo servidor de nome, a sessão iSCSI será aceita. Caso contrário, a solicitação de login será rejeitada.

## Configurar

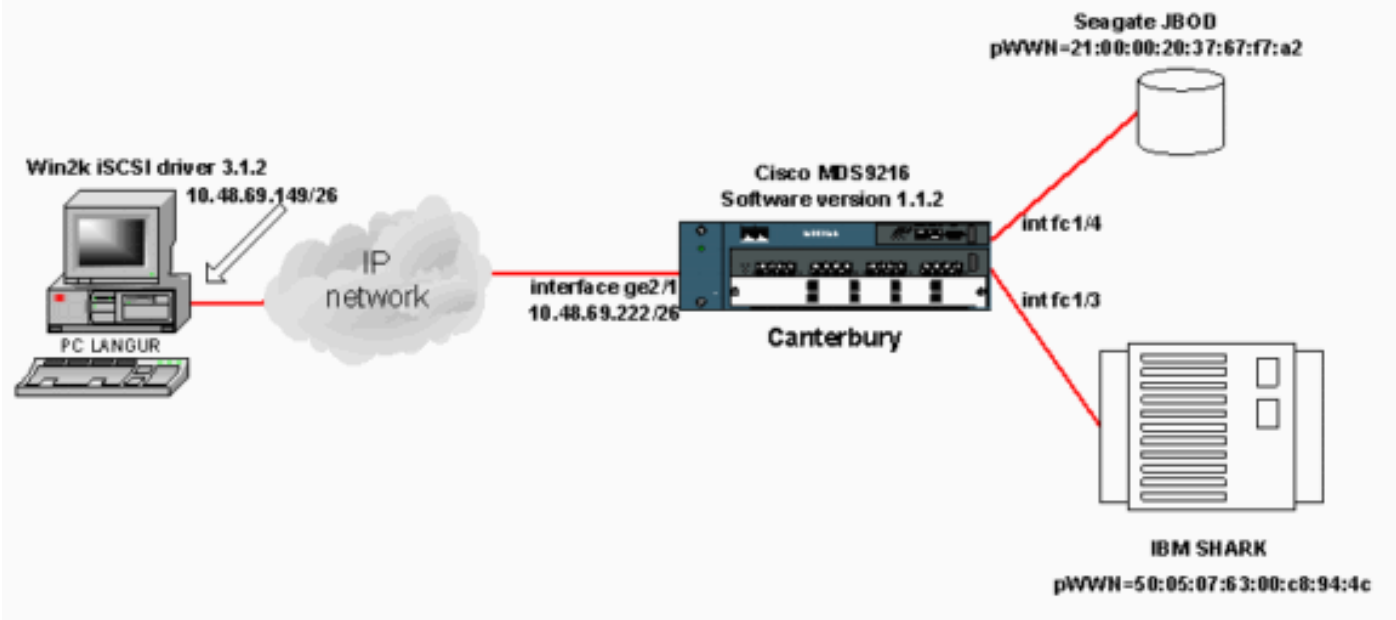
Nesta seção, você encontrará informações para configurar os recursos descritos neste documento.

**Observação:** para encontrar informações adicionais sobre os comandos usados neste documento, consulte a [Referência de Comandos da Família Cisco MDS 9000, Release 1.2.1a](#) e [Guia de Configuração de Software da Família Cisco MDS 9000, Release 1.2.1a](#) guias de configuração.

**Observação:** para encontrar informações adicionais sobre os comandos usados neste documento, use a [ferramenta Command Lookup Tool](#) (somente clientes [registrados](#)).

## Diagrama de Rede

Este documento utiliza a seguinte configuração de rede:



## Configurações

Este documento utiliza as seguintes configurações:

- Canterbury (MDS 9216)

### Canterbury (MDS 9216)

```

canterbury# sh run

Building Configuration ...
....
vsan database
vsan 601
!--- VSAN 601 has been used for iSCSI targets. .... vsan
database vsan 601 interface fc1/3 vsan 601 interface
fc1/4 .... boot system bootflash:/sl12 boot kickstart
bootflash:/kl12 ip domain-name cisco.com ip name-server
144.254.10.123 ip default-gateway 10.48.69.129 ip route
10.48.69.149 255.255.255.255 interface
GigabitEthernet2/1 ip routing iscsi authentication none
iscsi initiator ip-address 10.48.69.149 !--- Identifies
the iSCSI initiator based on the IP address. !--- A
virtual N port is created for each NIC or network
interface. static pWWN 20:03:00:0c:30:6c:24:4c !---
Defining the PC Langur's pwwn above; this is necessary
here since lunmasking is !--- enforced on the IBM Shark,
but not on the JBOD. Therefore, pWWN must be statically
!--- bound to the initiator to be able to access and
manage disks on IBM Shark. vsan 601 !--- VSAN 601 has
been used for iSCSI targets. !--- Targets by way of VSAN
601 are accessible by iSCSI initiators. The !--- targets
are defined below. Create a static iSCSI virtual target
!--- for Seagate JBOD. iscsi virtual-target name san-fc-
jbod-1 pWWN 21:00:00:20:37:67:f7:a2 advertise interface
GigabitEthernet2/1 initiator ip address 10.48.69.149
permit !--- Create a static iSCSI virtual target for IBM
Shark. iscsi virtual-target name shark-c8 pWWN
50:05:07:63:00:c8:94:4c advertise interface
GigabitEthernet2/1 initiator ip address 10.48.69.149

```

```
permit ... !--- Here, the zone named 'Zone1' is used
under VSAN 601 for connectivity. !--- Both initiator and
targets are assigned as members of this zone. switchname
canterbury zone name Zone1 vsan 601 member pWWN
50:05:07:63:00:c8:94:4c !--- This is IBM Shark. member
pWWN 20:03:00:0c:30:6c:24:4c !--- This is PC Langur.
member pWWN 21:00:00:20:37:67:f7:a2 !--- This is Seagate
JBOD. member symbolic-nodename 10.48.69.149 !--- You
have this entry since zone membership is based on pWWN
(not on IP address). zoneset name ZoneSet1 vsan 601
member Zone1 zoneset activate name ZoneSet1 vsan 601
.... interface GigabitEthernet2/1 ip address
10.48.69.222 255.255.255.192 iscsi authentication none
no shutdown .... interface fc1/3 no shutdown interface
fc1/4 no shutdown ... interface mgmt0 ip address
10.48.69.156 255.255.255.192 interface iscsi2/1 no
shutdown canterbury#
```

## Verificar

Esta seção fornece informações que você pode usar para confirmar se sua configuração está funcionando adequadamente.

A [Output Interpreter Tool \(somente clientes registrados\) oferece suporte a determinados comandos show, o que permite exibir uma análise da saída do comando show.](#)

No PC, vá para **Painel de controle** e verifique estes itens:

- **Conexões de Rede -> Conexão Local -> Propriedades TCP/IP**
- **iSCSI Config -> status do destino** (para exibir uma captura de tela, consulte a seção [Exibições do PC](#) deste documento).

No MDS 9216, emita estes comandos para verificar a conectividade:

- **show zone status** — exibe informações da zona.
- **show zone active vsan 601** — zonas de exibição pertencentes à VSAN especificada.
- **show fcns database vsan 601** — exibe informações do servidor de nome para uma VSAN específica.
- **show fcns database detail vsan 601** — exibe as entradas locais de determinada VSAN.
- **show flogi database vsan 601** — exibe informações do FLOGI Server para uma VSAN específica.
- **show vsan member** — exibe informações de interface para diferentes VSANs.
- **show iscsi initiator** — exibe informações do iniciador iSCSI.
- **show iscsi initiator detail** — exibe informações sobre o iniciador iSCSI em mais detalhes.
- **show iscsi initiator iscsi-session detail** — exibe informações detalhadas para a sessão do iniciador iSCSI.
- **show iscsi initiator fcp-session detail** — exibe informações detalhadas para a sessão FCP do iniciador iSCSI.
- **show ips stats tcp interface gigabitethernet 2/1 detail** — exibe estatísticas de TCP para uma interface GE específica.
- **show iscsi virtual-target configurado** — exibe destinos virtuais iSCSI que foram configurados no MDS 9000.
- **show iscsi initiator configurado** — exibe iniciadores iSCSI que foram configurados no MDS

9000.

- **show ips arp interface gigabitethernet 2/1** — exibe informações de IP Storage ARP para uma interface GE específica.
- **show scsi-target devices vsan 601** — exibe dispositivos SCSI para VSAN específicos (para mapeamento de FC-LUNs para iSCSI-LUNs).
- **show int iscsi 2/1**—exibe interfaces iSCSI.
- **show iscsi stats iscsi 2/1** — exibe estatísticas iSCSI.
- **show int gigabitethernet 2/1**—exibe a interface GE.
- **show ip route** — exibe informações sobre a rota IP.
- **show ips ip route interface gigabitethernet 2/1**—exibe a tabela de rotas.

## [Troubleshoot](#)

Esta seção fornece informações que podem ser usadas para o troubleshooting da sua configuração.

### [Procedimento de solução de problemas](#)

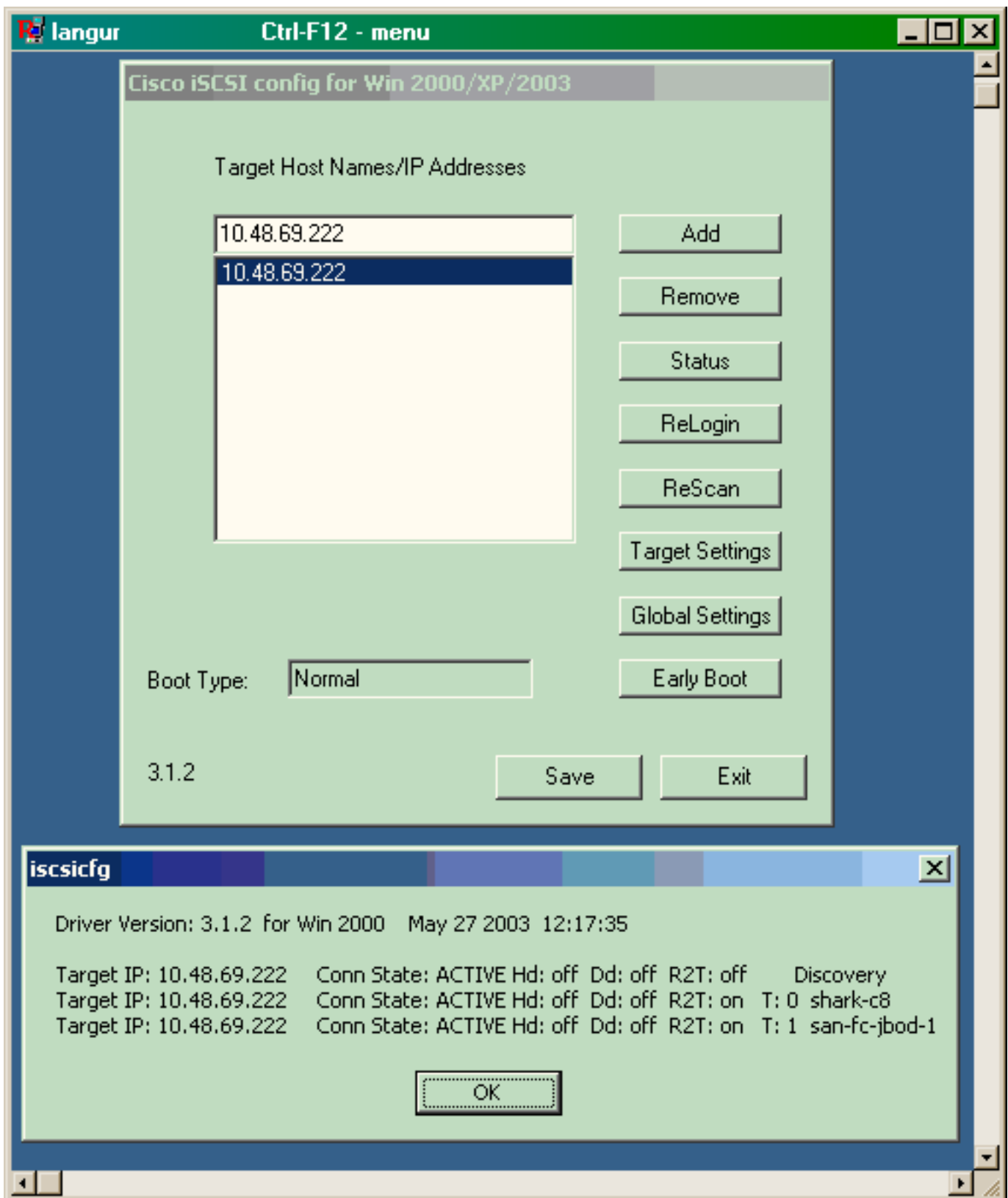
Esta seção fornece informações que podem ser usadas para o troubleshooting da sua configuração.

Aqui estão algumas informações relevantes de solução de problemas para esta configuração:

- Exibe no PC
- Exibições de Canterbury Cisco MDS 9216
- Telas do Fabric Manager e do Device Manager

### [Exibe no PC](#)

Esta captura de tela é a tela iSCSI do PC Langur:

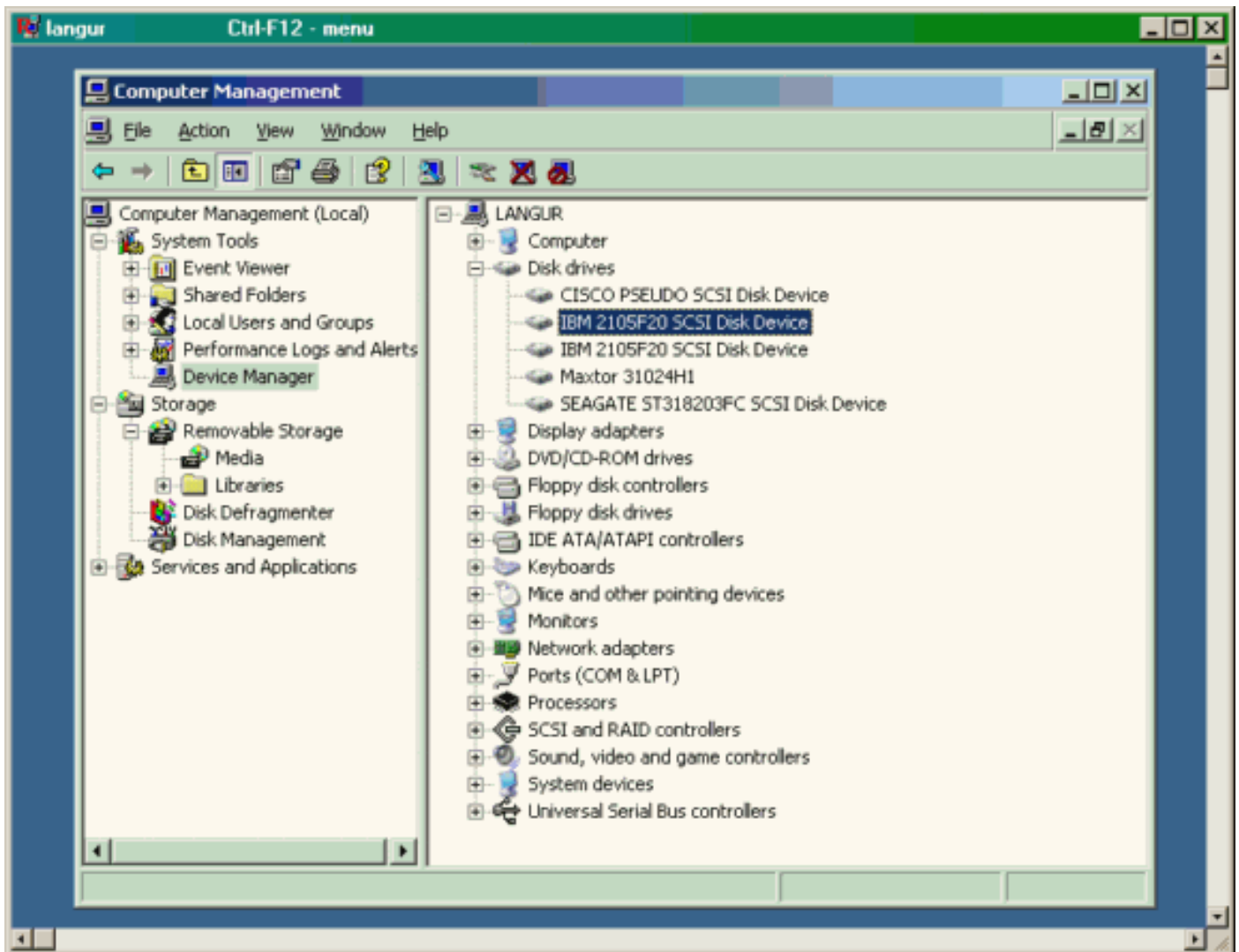


Para verificar esses novos discos, clique em **Iniciar** no canto inferior esquerdo do PC. Selecione estas opções:

**Meu computador -> Painel de controle -> Ferramentas administrativas -> Gerenciamento do computador**

Em **Ferramentas do sistema**, selecione **Gerenciador de dispositivos**. No lado direito, clique em **Unidades de disco**. Você deve ver isso:

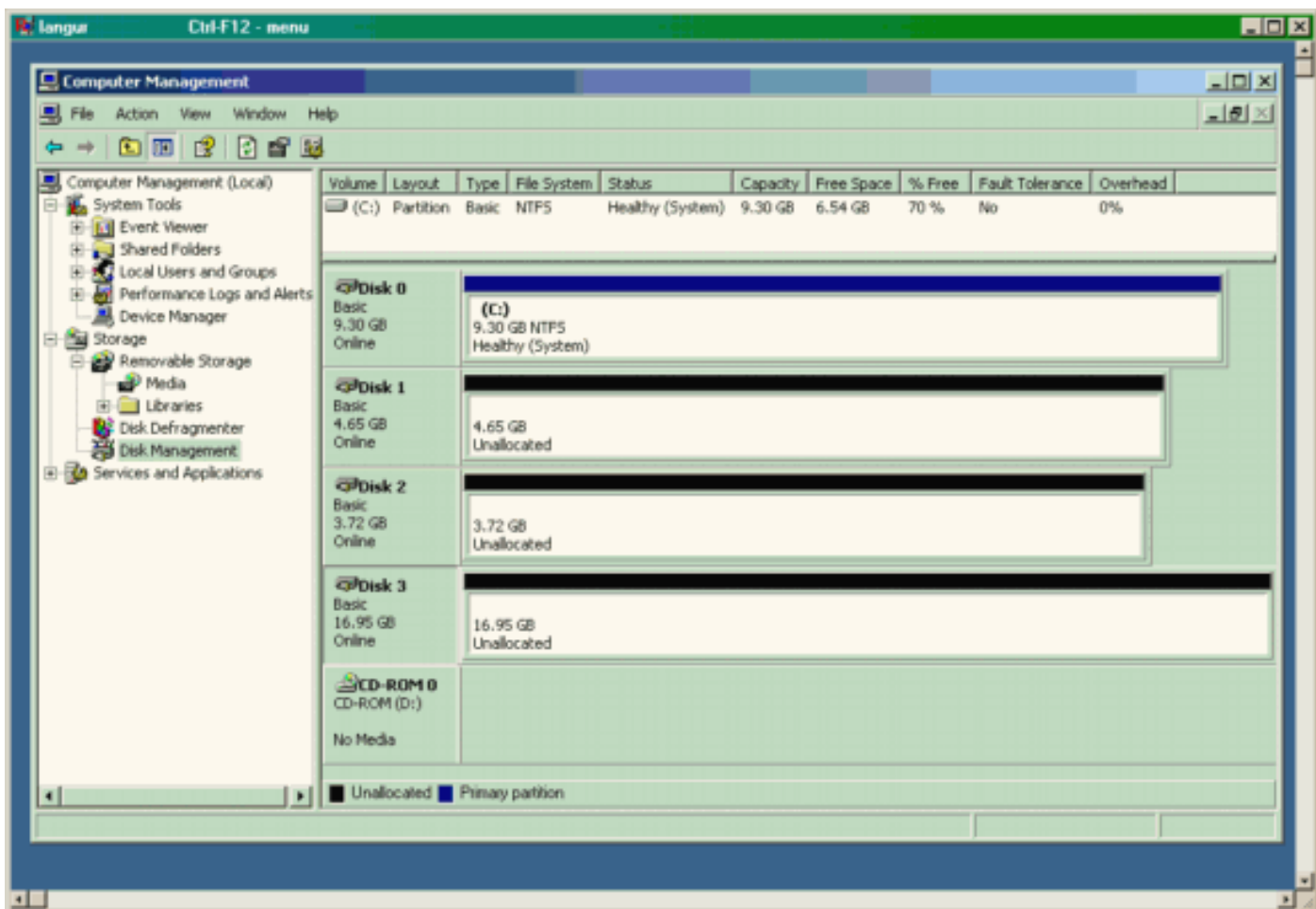




Para gerenciar esses discos, clique em **Iniciar** no canto inferior esquerdo do PC. Selecione estas opções:

**Meu computador -> Painel de controle -> Ferramentas administrativas -> Gerenciamento do computador**

Em **Armazenamento**, clique em **Gerenciamento de disco**. A captura de vídeo do PC Langur é mostrada abaixo. Observe que Disk1 e Disk2 são do IBM Shark e Disk3 é o Seagate JBOD.



## Exibições de Canterbury (MDS 9216)

```

Exibições de Canterbury (MDS 9216)

canterbury# show zone status

...

VSAN: 601 default-zone: deny distribute: active only
Interop: Off
Full Zoning Database :
    Zonesets:1 Zones:1 Aliases: 0
Active Zoning Database :
    Name: ZoneSet1 Zonesets:1 Zones:1
Status: Activation completed at Wed Sep 10 09:25:45
2003

...

canterbury#

canterbury# show zone active vsan 601
zone name Zone1 vsan 601
symbolic-nodename 10.48.69.231
* fcid 0x020001 [pWWN 50:05:07:63:00:c8:94:4c]
* fcid 0x020005 [pWWN 20:03:00:0c:30:6c:24:4c]
* fcid 0x0201e8 [pWWN 21:00:00:20:37:67:f7:a2]
* fcid 0x020005 [symbolic-nodename 10.48.69.149]

```

canterbury#

canterbury# **show fcns database vsan 601**

VSAN 601:

```
-----  
FCID          TYPE  pWWN                               (VENDOR)  
FC4-TYPE:FEATURE  
-----
```

```
0x020001      N      50:05:07:63:00:c8:94:4c (IBM)  
scsi-fcp:target fc..  
0x020005      N      20:03:00:0c:30:6c:24:4c (Cisco)  
scsi-fcp:init isc..w  
0x0201e8      NL     21:00:00:20:37:67:f7:a2 (Seagate)  
scsi-fcp:target  
Total number of entries = 3
```

canterbury#

canterbury# **show fcns database detail vsan 601**

```
-----  
VSAN:601  FCID:0x020001  
-----
```

```
port-wwn (vendor)      :50:05:07:63:00:c8:94:4c (IBM)  
node-wwn               :50:05:07:63:00:c0:94:4c  
class                  :2,3  
node-ip-addr           :0.0.0.0  
ipa                   :ff ff ff ff ff ff ff ff  
fc4-types:fc4_features:scsi-fcp:target fcsb2-ch-cu  
fcsb2-cu-ch  
symbolic-port-name     :  
symbolic-node-name     :  
port-type              :N  
port-ip-addr           :0.0.0.0  
fabric-port-wwn       :20:03:00:0c:30:6c:24:40  
hard-addr              :0x000000
```

```
-----  
VSAN:601  FCID:0x020005  
-----
```

```
port-wwn (vendor)      :20:03:00:0c:30:6c:24:4c (Cisco)  
node-wwn               :21:00:00:0c:30:6c:24:42  
class                  :2,3  
node-ip-addr           :10.48.69.149  
ipa                   :ff ff ff ff ff ff ff ff  
fc4-types:fc4_features:scsi-fcp:init iscsi-gw  
symbolic-port-name     :  
symbolic-node-name     :10.48.69.149  
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:601  FCID:0x0201e8  
-----
```

```
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
```

Total number of entries = 3

canterbury#

canterbury# **show flogi database vsan 601**

```
-----
INTERFACE  VSAN    FCID          PORT NAME
NODE NAME
-----
fc1/3      601    0x020001    50:05:07:63:00:c8:94:4c
50:05:07:63:00:c0:94:4c
fc1/4      601    0x0201e8    21:00:00:20:37:67:f7:a2
20:00:00:20:37:67:f7:a2
iscsi2/1   601    0x020005    20:03:00:0c:30:6c:24:4c
21:00:00:0c:30:6c:24:42
```

Total number of flogi = 3.

canterbury#

canterbury# **show vsan membership**

...

vsan 601 interfaces:

```
    fc1/3    fc1/4
```

...

canterbury#

canterbury# **show iscsi initiator**

...

```
iSCSI Node name is 10.48.69.149
  iSCSI Initiator name: iqn.1987-
05.com.cisco:02.e746244830dd.langur
  iSCSI alias name: LANGUR
  Node WWN is 21:00:00:0c:30:6c:24:42 (dynamic)
  Member of vsans: 601
  Number of Virtual n_ports: 1
  Virtual Port WWN is 20:03:00:0c:30:6c:24:4c
(configured)
  Interface iSCSI 2/1, Portal group tag: 0x80
  VSAN ID 601, FCID 0x020005
```

canterbury#

```
canterbury# show iscsi initiator detail
```

```
...
```

```
iSCSI Node name is 10.48.69.149
```

```
  iSCSI Initiator name: iqn.1987-  
05.com.cisco:02.e746244830dd.langur
```

```
  iSCSI alias name: LANGUR
```

```
  Node WWN is 21:00:00:0c:30:6c:24:42 (dynamic)
```

```
  Member of vsans: 601
```

```
  Number of Virtual n_ports: 1
```

```
  Virtual Port WWN is 20:03:00:0c:30:6c:24:4c  
(configured)
```

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

```
    VSAN ID 601, FCID 0x 20005
```

```
    2 FC sessions, 2 iSCSI sessions
```

```
    iSCSI session details
```

```
      Target: shark-c8
```

```
      Statistics:
```

```
        PDU: Command: 45, Response: 45
```

```
        Bytes: TX: 5968, RX: 0
```

```
        Number of connection: 1
```

```
      TCP parameters
```

```
        Local 10.48.69.222:3260, Remote
```

```
10.48.69.149:2196
```

```
        Path MTU: 1500 bytes
```

```
        Retransmission timeout: 300 ms
```

```
        Round trip time: Smoothed 219 ms, Variance:
```

```
15
```

```
        Advertized window: Current: 61 KB, Maximum:  
62 KB, Scale: 0
```

```
        Peer receive window: Current: 63 KB,  
Maximum: 63 KB, Scale: 0
```

```
        Congestion window: Current: 11 KB
```

```
      Target: san-fc-jbod-1
```

```
      Statistics:
```

```
        PDU: Command: 26, Response: 26
```

```
        Bytes: TX: 3168, RX: 0
```

```
        Number of connection: 1
```

```
      TCP parameters
```

```
        Local 10.48.69.222:3260, Remote
```

```
10.48.69.149:3124
```

```
        Path MTU: 1500 bytes
```

```
        Retransmission timeout: 300 ms
```

```
        Round trip time: Smoothed 219 ms, Variance:
```

```
15
```

```
        Advertized window: Current: 61 KB, Maximum:  
62 KB, Scale: 0
```

```
        Peer receive window: Current: 63 KB,  
Maximum: 63 KB, Scale: 0
```

```
        Congestion window: Current: 11 KB
```

```
    FCP Session details
```

```
      Target FCID: 0x020001 (S_ID of this session:  
0x020005)
```

```
      pWWN: 50:05:07:63:00:c8:94:4c, nWWN:  
50:05:07:63:00:c0:94:4c
```

```
      Session state: LOGGED_IN
```

```
      1 iSCSI sessions share this FC session
```

```
      Target: shark-c8
```

```
      Negotiated parameters
```

```
        RcvDataFieldSize 2048 our_RcvDataFieldSize
```

```
1392
    MaxBurstSize 0, EMPD: FALSE
    Random Relative Offset: FALSE, Sequence-in-
order: Yes
    Statistics:
        PDU: Command: 0, Response: 45
    Target FCID: 0x0201e8 (S_ID of this session:
0x020005)
        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 1392 our_RcvDataFieldSize
1392
    MaxBurstSize 0, EMPD: FALSE
    Random Relative Offset: FALSE, Sequence-in-
order: Yes
    Statistics:
        PDU: Command: 0, Response: 26

canterbury# show iscsi initiator iscsi-session detail

iSCSI Node name is 10.48.69.149
    iSCSI Initiator name: iqn.1987-
05.com.cisco:02.e746244830dd.langur
    iSCSI alias name: LANGUR
    Node WWN is 21:00:00:0c:30:6c:24:42 (dynamic)
    Member of vsans: 601
    Number of Virtual n_ports: 1

    Virtual Port WWN is 20:03:00:0c:30:6c:24:4c
(configuration)
    Interface iSCSI 2/1, Portal group tag is 0x80
    VSAN ID 601, FCID 0x 20005
    2 FC sessions, 2 iSCSI sessions
    iSCSI session details
        Target: shark-c8
        Statistics:
            PDU: Command: 45, Response: 45
            Bytes: TX: 5968, RX: 0
            Number of connection: 1
        TCP parameters
            Local 10.48.69.222:3260, Remote
10.48.69.149:2196
            Path MTU: 1500 bytes
            Retransmission timeout: 300 ms
            Round trip time: Smoothed 217 ms, Variance:
14
            Advertized window: Current: 62 KB, Maximum:
62 KB, Scale: 0
            Peer receive window: Current: 63 KB,
Maximum: 63 KB, Scale: 0
            Congestion window: Current: 11 KB
        Target: san-fc-jbod-1
        Statistics:
            PDU: Command: 26, Response: 26
            Bytes: TX: 3168, RX: 0
            Number of connection: 1
        TCP parameters
            Local 10.48.69.222:3260, Remote
10.48.69.149:3124
            Path MTU: 1500 bytes
```

```
Retransmission timeout: 300 ms
Round trip time: Smoothed 217 ms, Variance:
14
    Advertized window: Current: 61 KB, Maximum:
62 KB, Scale: 0
    Peer receive window: Current: 63 KB,
Maximum: 63 KB, Scale: 0
    Congestion window: Current: 11 KB

canterbury#

canterbury# show iscsi initiator fcp-session detail

iSCSI Node name is 10.48.69.149
    iSCSI Initiator name: iqn.1987-
05.com.cisco:02.e746244830dd.langur
    iSCSI alias name: LANGUR
    Node WWN is 21:00:00:0c:30:6c:24:42 (dynamic)
    Member of vsans: 601
    Number of Virtual n_ports: 1

    Virtual Port WWN is 20:03:00:0c:30:6c:24:4c
(configuration)
    Interface iSCSI 2/1, Portal group tag is 0x80
    VSAN ID 601, FCID 0x 20005
    2 FC sessions, 2 iSCSI sessions

    FCP Session details
    Target FCID: 0x020001 (S_ID of this session:
0x020005)
        pWWN: 50:05:07:63:00:c8:94:4c, nWWN:
50:05:07:63:00:c0:94:4c
        Session state: LOGGED_IN
        1 iSCSI sessions share this FC session
        Target: shark-c8
        Negotiated parameters
        RcvDataFieldSize 2048 our_RcvDataFieldSize
1392
        MaxBurstSize 0, EMPD: FALSE
        Random Relative Offset: FALSE, Sequence-in-
order: Yes
        Statistics:
        PDU: Command: 0, Response: 45
    Target FCID: 0x0201e8 (S_ID of this session:
0x020005)
        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 1392 our_RcvDataFieldSize
1392
        MaxBurstSize 0, EMPD: FALSE
        Random Relative Offset: FALSE, Sequence-in-
order: Yes
        Statistics:
        PDU: Command: 0, Response: 26

canterbury#
```

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

```
TCP Statistics for port GigabitEthernet2/1
TCP send stats
  241247690 segments, 176414627280 bytes
  239428551 data, 1738205 ack only packets
  42541 control (SYN/FIN/RST), 0 probes, 38280
window updates
  498 segments retransmitted, 526612 bytes
  464 retransmitted while on ethernet send queue,
111295209 packets split
  2505024 delayed acks sent
TCP receive stats
  34418285 segments, 8983771 data packets in
sequence, 9282604852 bytes in s
equence
  854523 predicted ack, 6126542 predicted data
  0 bad checksum, 0 multi/broadcast, 0 bad offset
  0 no memory drops, 0 short segments
  1844 duplicate bytes, 77 duplicate packets
  0 partial duplicate bytes, 0 partial duplicate
packets
  123700 out-of-order bytes, 2235 out-of-order
packets
  6 packet after window, 0 bytes after window
  0 packets after close
  28128679 acks, 173967225697 ack bytes, 0 ack
toomuch, 75348 duplicate acks
  0 ack packets left of snd_una, 12 non-4 byte
aligned packets
  18442549 window updates, 0 window probe
  88637 pcb hash miss, 2150 no port, 14 bad SYN, 0
paws drops
TCP Connection Stats
  26 attempts, 42272 accepts, 42274 established
  42327 closed, 40043 drops, 24 conn drops
  106 drop in retransmit timeout, 152 drop in
keepalive timeout
  0 drop in persist drops, 0 connections drained
TCP Miscellaneous Stats
  9776335 segments timed, 9780142 rtt updated
  402 retransmit timeout, 457 persist timeout
  69188 keepalive timeout, 69015 keepalive probes
TCP SACK Stats
  100 recovery episodes, 231520160 data packets,
330107461536 data bytes
  396 data packets retransmitted, 482072 data bytes
retransmitted
  13 connections closed, 46 retransmit timeouts
TCP SYN Cache Stats
  42281 entries, 42272 connections completed, 3
entries timed out
  0 dropped due to overflow, 6 dropped due to RST
  0 dropped due to ICMP unreachable, 0 dropped due to
bucket overflow
  0 abort due to no memory, 43 duplicate SYN, 1833
no-route SYN drop
  0 hash collisions, 0 retransmitted

TCP Active Connections
  Local Address      Remote Address      State
Send-Q  Recv-Q
```



```

10.48.69.222:3260      10.48.69.149:1026
ESTABLISH 0          0
10.48.69.222:3260      10.48.69.149:2196
ESTABLISH 0          0
10.48.69.222:3260      10.48.69.149:3124
ESTABLISH 0          0
0.0.0.0:3260          0.0.0.0:0
LISTEN 0            0

canterbury#

canterbury# show iscsi virtual-target configured

target: shark-c8

* Port WWN 50:05:07:63:00:c8:94:4c

!--- The asterisk (*) in front of the pWWN means !---
that you have both discovery and target sessions. If !--
- you do not see this, it means that only a discovery !-
-- session exists. Configured node No. of advertised
interface: 1 GigabitEthernet 2/1 No. of initiators
permitted: 2 initiator 10.48.69.231/32 is permitted
initiator 10.48.69.149/32 is permitted all initiator
permit is disabled target: san-fc-jbod-1 * Port WWN
21:00:00:20:37:67:f7:a2 Configured node No. of
advertised interface: 1 GigabitEthernet 2/1 No. of
initiators permitted: 2 initiator 10.48.69.232/32 is
permitted initiator 10.48.69.149/32 is permitted all
initiator permit is disabled canterbury# canterbury#
show iscsi initiator configured

...

iSCSI Node name is 10.48.69.149
Member of vsans: 601
No. of pWWN: 1
Port WWN is 20:03:00:0c:30:6c:24:4c

canterbury#

canterbury# show ips arp interface gigabitethernet 2/1

Protocol      Address      Age (min)    Hardware Addr
Type  Interface
Internet      10.48.69.149      3      0008.e21e.c7bc
ARPA GigabitEthernet2/1
Internet      10.48.69.200      0      0008.e21e.c7bc
ARPA GigabitEthernet2/1
Internet      10.48.69.201      4      0202.3d30.45c9
ARPA GigabitEthernet2/1
Internet      10.48.69.206      9      0005.9ba6.95ff
ARPA GigabitEthernet2/1
Internet      10.48.69.209      6      0009.7c60.561f
ARPA GigabitEthernet2/1
Internet      10.48.69.229      4      0800.209e.edab
ARPA GigabitEthernet2/1
Internet      10.48.69.233      0      0010.4200.7d5b
ARPA GigabitEthernet2/1
Internet      10.48.69.235      0      0800.20b6.6559
ARPA GigabitEthernet2/1
Internet      10.48.69.238      4      0030.6e1b.6f51

```

```
ARPA GigabitEthernet2/1
  Internet 10.48.69.239 1 0030.6e1c.a00b
ARPA GigabitEthernet2/1
  Internet 10.48.69.248 7 0202.3d30.45f8
ARPA GigabitEthernet2/1
  Internet 10.48.69.252 1 0202.3d30.45fc
ARPA GigabitEthernet2/1
  Internet 10.10.2.28 0 0202.3d0a.021c
ARPA GigabitEthernet2/1
```

canterbury#

canterbury# **show scsi-target devices vsan 601**

```
-----
VSAN      FCID      pWWN      VENDOR
MODEL          REV
-----
 601      0x020001  50:05:07:63:00:c8:94:4c  IBM
2105F20          .114
 601      0x0201e8  21:00:00:20:37:67:f7:a2  SEAGATE
ST318203FC      0004
```

canterbury#

canterbury# **show int 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: 3, Number of TCP
connection: 3
  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 enabled
    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 76856 packets, 8696216 bytes
    Command 13139 pdus, Data-out 85 pdus, 84292
bytes
    Output 89876 packets, 6629892 bytes
    Response 13132 pdus (with sense 16), R2T 25
pdus
    Data-in 13072 pdus, 2125736 bytes
```

canterbury#

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

```
iscsi2/1
  5 minutes input rate 8 bits/sec, 1 bytes/sec, 0
frames/sec
  5 minutes output rate 8 bits/sec, 1 bytes/sec, 0
frames/sec
  iSCSI statistics
    76857 packets input, 8696264 bytes
      Command 13139 pdus, Data-out 85 pdus, 84292
bytes, 0 fragments
      output 89877 packets, 6629940 bytes
      Response 13132 pdus (with sense 16), R2T 25
pdus
      Data-in 13072 pdus, 2125736 bytes
```

canterbury#

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

```
GigabitEthernet2/1 is up
  Hardware is GigabitEthernet, address is
0005.3000.ade6
  Internet address is 10.48.69.222/26
  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 464 bits/sec, 58 bytes/sec, 0
frames/sec
  5 minutes output rate 64 bits/sec, 8 bytes/sec, 0
frames/sec
  30544982 packets input, 9266250283 bytes
    29435 multicast frames, 0 compressed
    0 input errors, 0 frame, 0 overrun 0 fifo
  233947842 packets output, 179379369852 bytes, 0
underruns
    0 output errors, 0 collisions, 0 fifo
    0 carrier errors
```

canterbury#

canterbury# **show ip route**

```
Codes: C - connected, S - static
Gateway of last resort is 10.48.69.129
S 10.48.69.149, gigabitethernet2-1
C 6.6.6.0/30 is directly connected, gigabitethernet2-6
C 5.5.5.0/30 is directly connected, gigabitethernet2-5
C 10.48.69.192/26 is directly connected,
gigabitethernet2-1
C 10.48.69.128/26 is directly connected, mgmt0
```

```

canterbury#
canterbury# show ips ip route interface gigabitethernet
2/1
Codes: C - connected, S - static
No default gateway
S 10.48.69.149/32 via 0.0.0.0, GigabitEthernet2/1
C 10.48.69.192/26 is directly connected,
GigabitEthernet2/1
canterbury#

```

## [Telas do Fabric Manager e do Device Manager](#)

Esta seção fornece capturas de tela do MDS Fabric Manager 1.1(2) e do Device Manager 1.1.2.

### Diagrama de Topologia do Fabric Manager

Esta captura de tela é o diagrama de topologia do Fabric Manager:

The screenshot displays the Fabric Manager interface. On the left is a tree view of the fabric structure, including Fabric 10.48.69.156 and various VSANs. The main area shows the configuration for /Fabric 10.48.69.156/VSAN0601/ZoneSet1 (Active). Below this is a table of Active Zones and a topology diagram.

Zone	Type	Switch/Port	Name	Fcid	LUNs	Information
Zone1	ISCSI	10.48.69.156 iscsi2f	10.48.69.231	0x020004		
Zone1	VWVN	10.48.69.156 tc1/S	IBM 50:05:07:63:00:c8:94:4c@IBM 3:00:c0:94:4c	0x020001		
Zone1	VWVN	10.48.69.156 iscsi2f	10.48.69.149	0x020005		
Zone1	VWVN	10.48.69.156 tc1/A	Seagate 21:00:00:20:37:67:17:a2	0x0201e8		

The topology diagram shows a central switch at IP 10.48.69.156 connected to three nodes: a server at 10.48.69.157, a server at 10.48.69.155, and a storage node at 10.48.69.140. The storage node is further connected to two LUNs: IBM 3:00:c0:94:4c and Seagate 21:00:00:20:37:67:17:a2.

Selecione **FC-LUNs** para exibir os pWWNs, IDs de LUNs e a capacidade dos LUNs do Gerenciador de dispositivos.

Device Manager 1.1(2) - 10.48.69.156 [admin]

Device Physical Interface FC IP Events Security Admin Help

Device Summary

CISCO SYSTEMS MDS 9216

STATUS SYSTEM Console Mgmt Serial




1.1(2)

Chassis	Port	Status
1	1	Up (TE)
	2	Up (TE)
	3	Down (F)
	4	Down (FL)
	5	Down (F)
	6	Unreachable
	7	Down (F)
	8	Down (F)
	9	Fail (X)
	10	Unreachable
	11	Down (F)
	12	Down
	13	Unreachable
	14	Down
	15	Down
	16	Down
2	1	Up (I)
	2	Down
	3	Fail (X)
	4	Fail (X)
	5	Up
	6	Up
	7	Up
	8	Fail (X)

Legend: Up (Green), Down (Yellow), Fail (Red), Unreachable (Grey)

10.48.69.156 - LUN

Discover Targets LUNs

VsanId, Port WWN ▲	Id	Capacity (MB)	SerialNum
901, Clariion 50:06:01:60:88:02:a8:2b	0x10	1074	f600042...
901, Clariion 50:06:01:60:88:02:a8:2b	0x11	1074	f600042...
601, Seagate 21:00:00:20:37:67:f7:a2	0x0	18210	LRE8091...
601, IBM 50:05:07:63:00:c8:94:4c	0x5600	17500	60022196
601, IBM 50:05:07:63:00:c8:94:4c	0x5601	17500	60122196
601, IBM 50:05:07:63:00:c8:94:4c	0x5602	17500	60222196
601, IBM 50:05:07:63:00:c8:94:4c	0x5000	10000	00022196
601, IBM 50:05:07:63:00:c8:94:4c	0x500b	5000	00B22196
601, IBM 50:05:07:63:00:c8:94:4c	0x500c	5000	00C22196
601, IBM 50:05:07:63:00:c8:94:4c	0x500d	5000	00D22196
601, IBM 50:05:07:63:00:c8:94:4c	0x500e	5000	00E22196
601, IBM 50:05:07:63:00:c8:94:4c	0x500f	5000	00F22196
601, IBM 50:05:07:63:00:c8:94:4c	0x5010	5000	01022196
601, IBM 50:05:07:63:00:c8:94:4c	0x5011	5000	01122196
601, IBM 50:05:07:63:00:c8:94:4c	0x5012	5000	01222196
601, IBM 50:05:07:63:00:c8:94:4c	0x5013	5000	01322196
601, IBM 50:05:07:63:00:c8:94:4c	0x5014	5000	01422196
601, IBM 50:05:07:63:00:c8:94:4c	0x5401	5000	40122196
601, IBM 50:05:07:63:00:c8:94:4c	0x5100	4000	10022196
601, IBM 50:05:07:63:00:c8:94:4c	0x5101	4000	10122196
601, IBM 50:05:07:63:00:c8:94:4c	0x5107	3000	10722196
601, IBM 50:05:07:63:00:c8:94:4c	0x5108	3000	10822196
601, IBM 50:05:07:63:00:c8:94:4c	0x5109	3000	10922196
601, IBM 50:05:07:63:00:c8:94:4c	0x510a	3000	10A22196
601, IBM 50:05:07:63:00:c8:94:4c	0x510b	3000	10B22196
601, IBM 50:05:07:63:00:c8:94:4c	0x510c	3000	10C22196
601, IBM 50:05:07:63:00:c8:94:4c	0x511d	3000	11D22196
601, IBM 50:05:07:63:00:c8:94:4c	0x511e	3000	11E22196
601, IBM 50:05:07:63:00:c8:94:4c	0x511f	3000	11F22196

Refresh Help Close

127 row(s)

Selecione IP-iSCSI para exibir as sessões iSCSI do Gerenciador de dispositivos.

10.48.69.156 - iSCSI

Initiators | Targets | Sessions | Sessions Detail | Session Statistics

Type	Direction	Initiator			Target		
		Name or IpAddress	Alias	Id	Name	Alias	Id
discovery	inbound	10.48.69.149	LANGUR	00:02:3d:00:90:ec			128
normal	inbound	10.48.69.149	LANGUR	00:02:3d:00:90:ed	shark-c8		128
normal	inbound	10.48.69.149	LANGUR	00:02:3d:00:90:ee	san-fc-jbod-1		128

3 row(s)

Connection... Refresh Help Close

## Informações Relacionadas

- [Downloads de software iSCSI da Cisco \(somente clientes registrados\)](#)
- [Perguntas freqüentes sobre driver iSCSI para Windows 2000](#)
- [Driver iSCSI: Notas de versão do driver iSCSI Cisco para Microsoft Windows, driver versão 3.1.2](#)
- [Troubleshooting de iSCSI Driver para Windows 2000](#)
- [Suporte Técnico - Cisco Systems](#)