Analisador e PERÍODO FC para o exemplo de configuração do Switches MDS

Índice

Introdução

Similar à linha de produto do roteador Cisco debugar a capacidade, o Switches do armazenamento de Cisco MDS têm um analisador do Fibre Channel (FC) para examinar pacotes. O analisador FC examina pacotes a e das entidades que o interruptor fornece. O analisador FC pode debugar quadros que o interruptor é responsável para receber ou enviar a um dispositivo de armazenamento. Os quadros entre estações final não podem ser examinados pelo analisador FC.

Para examinar o fluxo da sessão, a funcionalidade do Switched Port Analyzer (SPAN) do Switches MDS deve ser usada. Bem como a função do PERÍODO em um Switch Ethernet de Cisco, o PERÍODO na linha de produto MDS replicates dados PARA MEDIR portas do destino, de modo que possa ser recolhido por um dispositivo de terceiros.

Pré-requisitos

Requisitos

Não existem requisitos específicos para este documento.

Componentes Utilizados

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

- Interruptor de Cisco MDS9216
- Interruptor de Cisco MDS9509
- Ambos executam o sistema operacional do Storage Area Networking (SAN-OS) 1.2.1a.

As informações neste documento foram criadas a partir de dispositivos em um ambiente de laboratório específico. Todos os dispositivos utilizados neste documento foram iniciados com uma configuração (padrão) inicial. Se a sua rede estiver ativa, certifique-se de que entende o impacto potencial de qualquer comando.

Convenções

Para obter mais informações sobre convenções de documento, consulte as Convenções de dicas técnicas Cisco.

Material de Suporte

Você deve saber quando usar a ferramenta do analisador FC e quando usar a característica do PERÍODO.

O analisador FC é uma ferramenta que recolha os quadros que são destinados a ou originam do supervisor MDS. o tráfego do Nó-à-interruptor ou do switch para switch pode ser considerado com esta ferramenta.

O PERÍODO é uma característica que permita os quadros que são transientes ao interruptor a ser copiado a uma segunda porta para a análise. O tráfego do nó para nó pode ser considerado com este método.

Refira este diagrama para uma ilustração:

As setas verde mostram o tráfego que pode ser seguido com a ferramenta do analisador FC, quando a seta cor-de-rosa mostrar o tráfego que pode ser capturado com o método do PERÍODO. O tráfego do host ao armazenamento não pode ser observado pelo analisador FC. Somente o tráfego do host ao interruptor ou do interruptor à direita puder ser considerado, quando você executar o analisador FC no interruptor à esquerda.

O PERÍODO pode ser usado para seguir o tráfego em (ingresso) e para fora (saída) de toda a porta no interruptor. O Remote SPAN (RSPAN), segundo as indicações do diagrama precedente, pode ser usado para recolher quadros dentro e fora da porta de host no interruptor esquerdo, com o analisador anexado ao interruptor do lado direito.

Configurar

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

Nota: Para localizar informações adicionais sobre os comandos usados neste documento, utilize a Ferramenta Command Lookup (somente clientes registrados).

Configurando o analisador local FC

Nota: A intenção é recolher os quadros FC de que origine, ou é destinada a, o supervisor 9612. Os quadros do host ao JBOD não são recolhidos com a ferramenta do analisador FC.

O local de analisador FC é executado do comando line interface(cli) através do acessório ou do telnet do console. Você pode executar um breve indicador para mostrar somente uma parcela pequena de cada quadro, ou você pode executar um traço detalhado para mostrar o quadro inteiro.

O traço for começado quando no modo de configuração, e é parado quando você pressiona o **Ctrl-c**. À revelia, somente 100 quadros são capturados. Para capturar mais de 100 quadros, adicionar a opção do **comando limit-captured-frames ao** comando que você se usa para começar o traço.

Você pode igualmente usar um filtro do indicador para limitar a saída do traço somente aos quadros específicos.

```
!--- VSAN 13 (0xd) is used here as example. MDS9216# show fcdomain domain-list vsan 13 Number of
domains: 2 Domain ID WWN --------- ----------------------- 0x66(102) 20:0d:00:05:30:00:47:9f
[Local] [Principal] 0x6b(107) 20:0d:00:05:30:00:51:1f MDS9216# show fcns data vsan 13 VSAN 13: -
---------------------------------------------------------------------- FCID TYPE PWWN
(VENDOR) FC4-TYPE:FEATURE ----------------------------------------------------------------------
---- 0x6600dc NL 21:00:00:20:37:15:a2:49 (Seagate) scsi-fcp:target 0x6600e0 NL
21:00:00:04:cf:6e:4a:8c (Seagate) scsi-fcp:target 0x6600e1 NL 21:00:00:04:cf:6e:37:8b (Seagate)
scsi-fcp:target 0x660101 NL 10:00:00:01:73:00:81:82 (JNI) 0x660201 N 10:00:00:05:30:00:47:9f
(Cisco) ipfc 0x6b0001 N 10:00:00:05:30:00:51:23 (Cisco) ipfc Total number of entries = 6 !---
Configure FC analyzer for brief output. MDS9216# config t Enter configuration commands, one per
line. End with CNTL/Z. MDS9216(config)# fcanalyzer local brief display-filter mdshdr.vsan==0xd
Capturing on eth2 0.000000 ff.ff.fd -> ff.ff.fd SW_ILS HLO 0.000095 ff.ff.fd -> ff.ff.fd FC Link
Ctl, ACK1 18.721559 ff.ff.fd -> ff.ff.fd SW_ILS HLO 18.721879 ff.ff.fd -> ff.ff.fd FC Link Ctl,
ACK1 19.970287 ff.ff.fd -> ff.ff.fd SW_ILS HLO 19.970368 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1
38.941558 ff.ff.fd -> ff.ff.fd SW_ILS HLO 38.941849 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1
39.940546 ff.ff.fd -> ff.ff.fd SW_ILS HLO 39.940628 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1
```

No exemplo seguinte, você tem os mesmos dados. Esta vez, contudo, a **breve** opção é omitida do comando, fornecer uma vista detalhada de cada pacote.

```
MDS9216(config)# fcanalyzer local display-filter mdshdr.vsan==0xd Capturing on eth2 Frame 1 (100
bytes on wire, 100 bytes captured) Arrival Time: Jul 4, 2003 12:31:18.310251000 Time delta from
previous packet: 0.000000000 seconds Time relative to first packet: 0.000000000 seconds Frame
Number: 1 Packet Length: 100 bytes Capture Length: 100 bytes Ethernet II, Src:
00:00:00:00:00:0a, Dst: 00:00:00:00:ee:00 Destination: 00:00:00:00:ee:00 (00:00:00:00:ee:00)
Source: 00:00:00:00:00:0a (00:00:00:00:00:0a) Type: Unknown (0xfcfc) Vegas (FC, SOFf/EOFn) Vegas
Header .000 .... = Version: 0 .... 0000 = Andiamo Type: Normal FC frame (0) #MPLS Labels: 0
Packet Len: 70 TTL: 255 0111 .... = User Priority: 7 .... 0000 0010 11.. = Dst Index: 0x000b
.... ..00 1111 1111 = Src Index: 0x00ff Ctrl Bits: Index Directed frame (0x01) Timestamp: 42678
.... .000 = Status: 0 (0) 0000 0... = Reason Code: 0 (0x00) .... 0000 0000 1101 = VSAN: 13
Checksum: 0 Vegas Trailer EOF: EOFn (3) CRC: 4022250974 Fibre Channel R_CTL: 0x02 Dest Addr:
ff.ff.fd CS_CTL: 0x00 Src Addr: ff.ff.fd Type: SW_ILS (0x22) F_CTL: 0x380000 (Exchange
Originator, Seq Initiator, Exchg First, Exchg Last, Seq Last, CS_CTL, Last Data Frame - No Info,
ABTS - Abort/MS, ) SEQ_ID: 0xe7 DF_CTL: 0x00 SEQ_CNT: 0 OX_ID: 0x1eb4 RX_ID: 0xffff Parameter:
0x00000000 SW_ILS Cmd Code: HLO (0x14) FSPF Header Version: 0x02 AR Number: 0x00 Authentication
Type: 0x00 Originating Domain ID: 102 Authentication: 0000000000000000 Options: 00000000 Hello
Interval (secs): 20 Dead Interval (secs): 80 Recipient Domain ID: 107 Originating Port Idx:
0x01000b Frame 2 (60 bytes on wire, 60 bytes captured) Arrival Time: Jul 4, 2003
12:31:18.310563000 Time delta from previous packet: 0.000312000 seconds Time relative to first
packet: 0.000312000 seconds Frame Number: 2 Packet Length: 60 bytes Capture Length: 60 bytes
Ethernet II, Src: 00:00:00:00:00:00, Dst: 00:00:00:00:00:00 Destination: 00:00:00:00:00:00
(00:00:00:00:00:00) Source: 00:00:00:00:00:00 (00:00:00:00:00:00) Type: Unknown (0x0000) Vegas
(FC, SOFf/EOFt) Vegas Header .000 .... = Version: 0 .... 0000 = Andiamo Type: Normal FC frame
(0) #MPLS Labels: 0 Packet Len: 30 TTL: 255 0111 .... = User Priority: 7 .... 0011 1111 11.. =
```

Dst Index: 0x00ff .... ..00 0000 1011 = Src Index: 0x000b Ctrl Bits: 0 (0x00) Timestamp: 42679 .... .000 = Status: 0 (0) 0000 0... = Reason Code: 0 (0x00) .... 0000 0000 1101 = VSAN: 13 Checksum: 241 Vegas Trailer EOF: EOFt (1) CRC: 1019832848 Fibre Channel R_CTL: 0xc0(ACK1) Dest Addr: ff.ff.fd CS_CTL: 0x00 Src Addr: ff.ff.fd Type: Unknown (0x00) F_CTL: 0xf80000 (Exchange Responder, Seq Recipient, Exchg First, Exchg Last, Seq Last, CS_CTL, Last Data Frame - No Info, ABTS - Cont,) SEQ_ID: 0xe7 DF_CTL: 0x00 SEQ_CNT: 0 OX_ID: 0x1eb4 RX_ID: 0x1e66 Parameter: 0x00000001 Frame 3 (100 bytes on wire, 100 bytes captured) Arrival Time: Jul 4, 2003 12:31:19.309559000 Time delta from previous packet: 0.998996000 seconds Time relative to first packet: 0.999308000 seconds Frame Number: 3 Packet Length: 100 bytes Capture Length: 100 bytes Ethernet II, Src: 00:00:00:00:00:00, Dst: 00:00:00:00:00:00 Destination: 00:00:00:00:00:00 (00:00:00:00:00:00) Source: 00:00:00:00:00:00 (00:00:00:00:00:00) Type: Unknown (0x0000) Vegas (FC, SOFf/EOFn) Vegas Header .000 .... = Version: 0 .... 0000 = Andiamo Type: Normal FC frame (0) #MPLS Labels: 0 Packet Len: 70 TTL: 255 0111 .... = User Priority: 7 .... 0011 1111 11.. = Dst Index: 0x00ff .... ..00 0000 1011 = Src Index: 0x000b Ctrl Bits: 0 (0x00) Timestamp: 42779 .... .000 = Status: 0 (0) 0000 0... = Reason Code: 0 (0x00) .... 0000 0000 1101 = VSAN: 13 Checksum: 101 Vegas Trailer EOF: EOFn (3) CRC: 4200187557 Fibre Channel R_CTL: 0x02 Dest Addr: ff.ff.fd CS_CTL: 0x00 Src Addr: ff.ff.fd Type: SW_ILS (0x22) F_CTL: 0x380000 (Exchange Originator, Seq Initiator, Exchg First, Exchg Last, Seq Last, CS_CTL, Last Data Frame - No Info, ABTS - Abort/MS,) SEQ_ID: 0xe7 DF_CTL: 0x00 SEQ_CNT: 0 OX_ID: 0x1e67 RX_ID: 0xffff Parameter: 0x00000000 SW_ILS Cmd Code: HLO (0x14) FSPF Header Version: 0x02 AR Number: 0x00 Authentication Type: 0x00 Originating Domain ID: 107 Authentication: 0000000000000000 Options: 00000000 Hello Interval (secs): 20 Dead Interval (secs): 80 Recipient Domain ID: 102 Originating Port Idx: 0x01011c Frame 4 (60 bytes on wire, 60 bytes captured) Arrival Time: Jul 4, 2003 12:31:19.309646000 Time delta from previous packet: 0.000087000 seconds Time relative to first packet: 0.999395000 seconds Frame Number: 4 Packet Length: 60 bytes Capture Length: 60 bytes Ethernet II, Src: 00:00:00:00:00:0a, Dst: 00:00:00:00:ee:00 Destination: 00:00:00:00:ee:00 (00:00:00:00:ee:00) Source: 00:00:00:00:00:0a (00:00:00:00:00:0a) Type: Unknown (0xfcfc) Vegas (FC, SOFf/EOFt) Vegas Header .000 .... = Version: 0 .... 0000 = Andiamo Type: Normal FC frame (0) #MPLS Labels: 0 Packet Len: 30 TTL: 255 0111 .... = User Priority: 7 .... 0000 0010 11.. = Dst Index: 0x000b .... ..00 1111 1111 = Src Index: 0x00ff Ctrl Bits: Index Directed frame (0x01) Timestamp: 42778 .... .000 = Status: 0 (0) 0000 0... = Reason Code: 0 (0x00) .... 0000 0000 1101 = VSAN: 13 Checksum: 0 Vegas Trailer EOF: EOFt (1) CRC: 4022250974 Fibre Channel R_CTL: 0xc0(ACK1) Dest Addr: ff.ff.fd CS_CTL: 0x00 Src Addr: ff.ff.fd Type: Unknown (0x00) F_CTL: 0xf80000 (Exchange Responder, Seq Recipient, Exchg First, Exchg Last, Seq Last, CS_CTL, Last Data Frame - No Info, ABTS - Cont,) SEQ_ID: 0xe7 DF_CTL: 0x00 SEQ_CNT: 0 OX_ID: 0x1e67 RX_ID: 0x1eb5 Parameter: 0x00000001

Além disso, o breve traço é mostrado. Esta vez, contudo, o PC na porta 1/16 é desconectado e re-obstruído para forçar um início de uma sessão. Você vê quadros a e do outro interruptor FC, e a e do nó local anexado (o PC).

MDS9216(config)# **fcanalyzer local brief display-filter mdshdr.vsan==0xd** Capturing on eth2 0.000000 ff.ff.fd -> ff.ff.fd SW_ILS HLO 0.000310 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1 0.999598 ff.ff.fd -> ff.ff.fd SW_ILS HLO 0.999684 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1 19.990040 ff.ff.fd -> ff.ff.fd SW_ILS HLO 19.990295 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1 20.990602 ff.ff.fd -> ff.ff.fd SW_ILS HLO 20.990682 ff.ff.fd -> ff.ff.fd FC Link Ctl, ACK1 26.028780 ff.fc.66 -> ff.fc.6b SW_ILS SW_RSCN 26.029087 ff.fc.6b -> ff.fc.66 FC Link Ctl, ACK1 26.029541 ff.fc.6b -> ff.fc.66 SW_ILS SW_ACC (SW_RSCN) 26.029596 ff.fc.66 -> ff.fc.6b FC Link Ctl, ACK1 31.151197 00.00.01 -> ff.ff.fe FC ELS FLOGI 31.162809 ff.ff.fe -> 66.01.01 FC ELS ACC (FLOGI) 31.162841 ff.ff.fe -> 66.01.01 FC ELS ACC (FLOGI) 31.163139 66.01.01 -> ff.ff.fd FC ELS SCR 31.163583 ff.ff.fd -> 66.01.01 FC ELS ACC (SCR) 31.163603 ff.ff.fd -> 66.01.01 FC ELS ACC (SCR) 31.163835 66.01.01 -> ff.ff.fc FC ELS PLOGI 31.163965 ff.ff.fc -> 66.01.01 FC ELS ACC (PLOGI) 31.163985 ff.ff.fc -> 66.01.01 FC ELS ACC (PLOGI) 31.164186 66.01.01 -> ff.ff.fc dNS GA_NXT 31.164305 ff.fc.66 -> ff.fc.6b SW_ILS SW_RSCN 31.164479 ff.fc.6b -> ff.fc.66 FC Link Ctl, ACK1 31.164628 ff.fc.6b -> ff.fc.66 SW_ILS SW_ACC (SW_RSCN) 31.164670 ff.fc.66 -> ff.fc.6b FC Link Ctl, ACK1 31.165030 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.165050 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.165125 ff.fc.6b -> ff.fc.66 dNS GE_ID 31.165193 ff.fc.66 -> ff.fc.6b FC Link Ctl, ACK1 31.165419 66.01.01 -> ff.ff.fc dNS GA_NXT 31.165577 ff.fc.66 -> ff.fc.6b dNS ACC (GE_ID) 31.165781 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.165804 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.165943 ff.fc.6b -> ff.fc.66 FC Link Ctl, ACK1 31.166063 66.01.01 -> ff.ff.fc dNS GA_NXT 31.166870 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.166892 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.167268 66.01.01 -> ff.ff.fc dNS GA_NXT 31.167529 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.167549 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.168704 66.01.01 -> ff.ff.fc dNS GA_NXT 31.169272 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.169294 ff.ff.fc -> 66.01.01 dNS ACC

```
(GA_NXT) 31.169568 66.01.01 -> ff.ff.fc dNS GA_NXT 31.170453 ff.ff.fc -> 66.01.01 dNS ACC
(GA_NXT) 31.170473 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.170756 66.01.01 -> ff.ff.fc dNS
GA_NXT 31.170975 ff.ff.fc -> 66.01.01 dNS ACC (GA_NXT) 31.170994 ff.ff.fc -> 66.01.01 dNS ACC
(GA_NXT) 31.171400 66.01.01 -> 66.02.01 FC ELS PLOGI 31.171562 66.02.01 -> 66.01.01 FC ELS ACC
(PLOGI) 31.171581 66.02.01 -> 66.01.01 FC ELS ACC (PLOGI) 31.171752 66.01.01 -> 66.02.01 FC ELS
PRLI 31.171812 66.02.01 -> 66.01.01 FC ELS LS_RJT (PRLI) 31.171832 66.02.01 -> 66.01.01 FC ELS
LS_RJT (PRLI) 31.173863 66.01.01 -> ff.ff.fc FC ELS LOGO 31.175020 ff.ff.fc -> 66.01.01 FC ELS
ACC (LOGO) 31.175047 ff.ff.fc -> 66.01.01 FC ELS ACC (LOGO) 31.175182 66.01.01 -> ff.ff.fc FC
ELS PLOGI 31.175290 ff.ff.fc -> 66.01.01 FC ELS ACC (PLOGI) 31.175310 ff.ff.fc -> 66.01.01 FC
ELS ACC (PLOGI) 31.175632 66.01.01 -> ff.ff.fa FC ELS PLOGI 31.175753 ff.ff.fa -> 66.01.01 FC
ELS ACC (PLOGI) 31.175777 ff.ff.fa -> 66.01.01 FC ELS ACC (PLOGI) 32.460020 ff.fc.66 -> 66.01.01
FC ELS PLOGI 32.460050 ff.fc.66 -> 66.01.01 FC ELS PLOGI 32.460207 66.01.01 -> ff.fc.66 FC ELS
ACC (PLOGI) 32.460246 66.01.01 -> ff.fc.66 FC ELS ACC (PLOGI) 32.460340 ff.fc.66 -> 66.01.01 FC
ELS PRLI 32.460362 ff.fc.66 -> 66.01.01 FC ELS PRLI 32.460492 66.01.01 -> ff.fc.66 FC ELS LS_RJT
(PRLI) 32.460525 66.01.01 -> ff.fc.66 FC ELS LS_RJT (PRLI) 32.461839 ff.fc.66 -> 66.01.01 FC ELS
LOGO 32.461866 ff.fc.66 -> 66.01.01 FC ELS LOGO 32.462046 66.01.01 -> ff.fc.66 FC ELS ACC (LOGO)
32.462080 66.01.01 -> ff.fc.66 FC ELS ACC (LOGO) MDS9216(config)# ^C MDS9216(config)# exit
```

Configurar para o analisador remoto FC

Nota: A intenção é recolher os quadros FC de que origine, ou é destinada a, o supervisor 9612. Os quadros do host ao JBOD não são recolhidos com a ferramenta do analisador FC.

O telecontrole do analisador FC é executado em um PC que esteja usando 0.9(9) etéreo ou mais atrasado e WinPcap . O endereço IP de Um ou Mais Servidores Cisco ICM NT do PC é especificado no comando que é emitido para começar o traço do analisador FC no MDS CLI. No PC, a obrigação etéreo seja começada igualmente da linha de comando, e o endereço IP de Um ou Mais Servidores Cisco ICM NT da interface de gerenciamento MDS deve ser especificado no comando.

1. Para parar o traço do analisador MDS FC, você deve pressionar o **Ctrl-c do** CLI.`MDS9216# config t Enter configuration commands, one per line. End with CNTL/Z. MDS9216(config)# fcanalyzer remote 64.102.58.114 MDS9216(config)# ^C` Não especifique a **opção ativa no** comando precedente, ou você precisará de adicionar opções adicionais à linha de comando em seu PC quando você começa etéreo. Adicionar a **palavra-chave ativa** significa geralmente que você tem que igualmente configurar o número de porta de TCP. Recomenda-se que você usa os padrões.
2. No PC, verifique o endereço IP de Um ou Mais Servidores Cisco ICM NT, e comece o programa remoto etéreo da captação.`d:\> ipconfig Windows 2000 IP Configuration Ethernet adapter wireless: Connection-specific DNS Suffix . : cisco.com IP Address. . . . . : 64.102.58.114 Subnet Mask . . . . . : 255.255.255.128 Default Gateway . . . . . : 64.102.58.1 Ethernet adapter builtinE: Connection-specific DNS Suffix . : cisco.com Autoconfiguration IP Address. . . : 169.254.219.141 Subnet Mask . . . . . : 255.255.0.0 Default Gateway . . . . . : d:\> cd ethereal099 D:\Ethereal099> ethereal099 -i rpcap://172.18.172.56/eth2`
3. Uma vez os começos do programa, escolhem a **captação** e clicam então a **APROVAÇÃO** para iniciar a coleção de pacotes.Os pacotes FC que são recolhidos aparecem como `outro no` indicador sumário.
4. Clique a **parada** para parar a coleção de pacotes e começar a parcela da opinião do traço do programa.Você pode usar filtros para limitar o indicador a um fluxo de tráfego específico.
5. Se há um problema com a iniciação remota da captação, você pode ver uma tela do erro similar a essa na imagem seguinte. O analisador FC não é ativo no MDS, ou a **palavra-chave ativa** foi usada sem uma porta especificada.

Configurar para o SPAN local

Nota: A intenção é recolher — com o analisador FC na porta 1/15 — quadros FC a e do host na porta 1/16 dos 9216.

Um analisador FC nas mostras da porta 1/15 pedidas ajusta-se, mas não os grupos pedidos que ocorrem no link que está sendo SPANed. O dispositivo do analisador FC pode ser um adaptador do analisador de porta (PAA) e um PC que seja ser executado etéreo, similar a um dispositivo de Finisar.

Configuração MDS9216

```
MDS9216# show run vsan 13 vsan 13 interface fc1/16 vsan 13 interface fc2/16 boot system
bootflash:/m9200-ek9-mzg.1.2.0.77.bin boot kickstart bootflash:/m9200-ek9-kickstart-
mzg.1.2.0.77.bin interface fc1/15 switchport mode SD switchport speed 2000 no shutdown interface
fc1/16 no shutdown interface mgmt0 ip address 172.18.172.56 255.255.255.0 span session 1
destination interface fc1/15 source interface fc1/16 rx source interface fc1/16 tx
```

Indicadores MDS9216

```
MDS9216# show interface fc 1/15 fc1/15 is up Hardware is Fibre Channel Port WWN is
20:0f:00:05:30:00:47:9e Admin port mode is SD Port mode is SD Port vsan is 1 Speed is 2 Gbps
Beacon is turned off 5 minutes input rate 73704 bits/sec, 9213 bytes/sec, 13 frames/sec 5
minutes output rate 2275584 bits/sec, 284448 bytes/sec, 430 frames/sec 2839098 frames input,
1883173240 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too short 3049460
frames output, 2038253240 bytes 0 discards, 0 errors 0 input OLS, 0 LRR, 0 NOS, 0 loop inits 0
output OLS, 0 LRR, 0 NOS, 0 loop inits MDS9216# show interface fc 1/16 fc1/16 is up Hardware is
Fibre Channel Port WWN is 20:10:00:05:30:00:47:9e Admin port mode is auto, trunk mode is on Port
mode is FL, FCID is 0x660100 Port vsan is 13 Speed is 2 Gbps Transmit B2B Credit is 0 Receive
B2B Credit is 16 Receive data field Size is 2112 Beacon is turned off 5 minutes input rate
771568 bits/sec, 96446 bytes/sec, 171 frames/sec 5 minutes output rate 1503144 bits/sec, 187893
bytes/sec, 258 frames/sec 1238843 frames input, 691853044 bytes 0 discards, 0 errors 0 CRC, 0
unknown class 0 too long, 0 too short 1864744 frames output, 1357707740 bytes 0 discards, 0
errors 0 input OLS, 0 LRR, 0 NOS, 49 loop inits 10 output OLS, 0 LRR, 10 NOS, 14 loop inits
MDS9216# show interface fc 2/16 fc2/16 is up Hardware is Fibre Channel Port WWN is
20:50:00:05:30:00:47:9e Admin port mode is FX Port mode is FL, FCID is 0x660000 Port vsan is 13
Speed is 1 Gbps Transmit B2B Credit is 0 Receive B2B Credit is 12 Receive data field Size is
2112 Beacon is turned off 5 minutes input rate 1647552 bits/sec, 205944 bytes/sec, 283
frames/sec 5 minutes output rate 845624 bits/sec, 105703 bytes/sec, 188 frames/sec 1867680
frames input, 1361393600 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too
short 1241179 frames output, 694505284 bytes 0 discards, 0 errors 0 input OLS, 0 LRR, 0 NOS, 2
loop inits 0 output OLS, 0 LRR, 0 NOS, 2 loop inits MDS9216# show fcns data vsan 13 VSAN 13: ---
------------------------------------------------------------------------ FCID TYPE PWWN (VENDOR)
FC4-TYPE:FEATURE ------------------------------------------------------------------------------
0x6600dc NL 21:00:00:20:37:15:a2:49 (Seagate) scsi-fcp:target 0x6600e0 NL
21:00:00:04:cf:6e:4a:8c (Seagate) scsi-fcp:target 0x6600e1 NL 21:00:00:04:cf:6e:37:8b (Seagate)
scsi-fcp:target 0x660101 NL 10:00:00:01:73:00:81:82 (JNI) Total number of entries = 4 MDS9216#
show span session brief ------------------------------------------------------ Session Admin
Oper Destination State State Interface ---------------------------------------------------------
1 no suspend active fc1/15 MDS9216# show span session 1 Session 1 (active) Destination is fc1/15
No session filters configured Ingress (rx) sources are fc1/16, Egress (tx) sources are fc1/16,
MDS9216# show span internal info session 1 ==================================== Admin
Configuration for session [1] ==================================== Name: Destination port:
[100e000] [fc1/15] Flags [1] State: [0] not suspended Session Flags: [0] <> Session Filter rx:
none Session Filter tx: none Source interface - rx: fc1/16 Source interface - tx: fc1/16 Source
vsan (rx): none Session [1] is UNLOCKED txn[0] cfg[0] rid[80000000]
==================================== Runtime Data for session [1]
==================================== Status <active: 0 inactive 1> : [0] active State reason:[0]
Flags [6]rx_span_bit [0] tx_span_bit[1] ( 4s invalid) oper configured PHYSICAL ports fc1/16
PHYSICAL ports undergoing configuration none PHYSICAL ports in error state none PHYSICAL ports
(incl. dest) link status fc1/15, fc1/16
```

Configurar para o alcance remoto

Nota: A intenção é recolher — com o analisador FC anexado aos 9509 — quadros FC a e do host nos 9216. A relação ST deve ter um gigabit interface converter (GBIC) instalado e a velocidade deve combinar a porta do destino do período (SD) nos 9509.

Antes que você tente configurar o RSPAN, assegure-se de que estes pontos estejam endereçados:

- Todo o Switches deve executar o código 1.2 MDS ou mais atrasado.
- Nenhum cabo deve ser anexado ao form fatora pequeno pluggable (SFP) na porta do terminal do período (ST).
- Certifique-se de que o túnel FC está ACIMA antes que você comece a recolher quadros.
- O analisador FC pode ser um PAA e um PC que seja ser executado etéreo, similar a um dispositivo de Finisar.

Se há qualquer Switches intermediário entre a fonte do PERÍODO e o switch de destino do PERÍODO, siga este procedimento:

1. Crie uma relação ativa VSAN na mesma sub-rede como o origem e destino do túnel.
2. Permita Roteamento IP.
3. Permita o FC-Tunelamento.
4. Use SAN-OS 1.2 ou mais atrasado.

Configuração MDS9216

```
MDS9216# 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 1.2(1) [build 1.2(0.77)] [gdb] system: version
1.2(1) [build 1.2(0.77)] [gdb] BIOS compile time: 03/20/03 kickstart image file is:
bootflash:/m9200-ek9-kickstart-mzg.1.2.0.77.bin kickstart compile time: 6/29/2003 0:00:00 system
image file is: bootflash:/m9200-ek9-mzg.1.2.0.77.bin system compile time: 6/29/2003 0:00:00
Hardware RAM 963108 kB bootflash: 503808 blocks (block size 512b) slot0: 0 blocks (block size
512b) MDS9216 uptime is 0 days 21 hours 28 minute(s) 20 second(s) Last reset at 50030 usecs
after Thu Jul 3 13:09:31 2003 Reason: Reset Requested by CLI command reload System version:
1.2(0.45c) MDS9216# show run Building Configuration ... interface fc-tunnel 13 destination
10.0.0.2 source 10.0.0.1 no shutdown vsan database vsan 13 interface vsan13 ip address 10.0.0.1
255.255.255.0 no shutdown vsan 13 interface fc1/16 vsan 13 interface fc2/16 boot system
bootflash:/m9200-ek9-mzg.1.2.0.77.bin boot kickstart bootflash:/m9200-ek9-kickstart-
mzg.1.2.0.77.bin fc-tunnel enable ip routing zone default-zone permit vsan 13 interface fc1/12
no shutdown interface fc1/15 switchport mode ST switchport speed 1000 rspan-tunnel interface fc-
tunnel 13 no shutdown interface fc1/16 no shutdown interface fc2/16 no shutdown interface mgmt0
ip address 172.18.172.56 255.255.255.0 span session 1 destination interface fc-tunnel 13 source
interface fc1/16 rx source interface fc1/16 tx !--- Output suppressed.
```

Indicadores MDS9216

```
MDS9216# show interface fc 1/16 fc1/16 is up Hardware is Fibre Channel Port WWN is
20:10:00:05:30:00:47:9e Admin port mode is auto, trunk mode is on Port mode is FL, FCID is
0x660100 Port vsan is 13 Speed is 2 Gbps Transmit B2B Credit is 0 Receive B2B Credit is 16
Receive data field Size is 2112 Beacon is turned off 5 minutes input rate 1480080 bits/sec,
185010 bytes/sec, 331 frames/sec 5 minutes output rate 2907712 bits/sec, 363464 bytes/sec, 498
frames/sec 574444 frames input, 320246452 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0
too long, 0 too short 865170 frames output, 629303788 bytes 0 discards, 0 errors 0 input OLS, 0
LRR, 0 NOS, 10 loop inits 5 output OLS, 0 LRR, 5 NOS, 9 loop inits MDS9216# show interface fc
2/16 fc2/16 is up Hardware is Fibre Channel Port WWN is 20:50:00:05:30:00:47:9e Admin port mode
is FX Port mode is FL, FCID is 0x660000 Port vsan is 13 Speed is 1 Gbps Transmit B2B Credit is 0
Receive B2B Credit is 12 Receive data field Size is 2112 Beacon is turned off 5 minutes input
```

rate 2905056 bits/sec, 363132 bytes/sec, 498 frames/sec 5 minutes output rate 1480184 bits/sec, 185023 bytes/sec, 330 frames/sec 867932 frames input, 632889576 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too short 576681 frames output, 322771132 bytes 0 discards, 0 errors 0 input OLS, 0 LRR, 0 NOS, 2 loop inits 0 output OLS, 0 LRR, 0 NOS, 2 loop inits MDS9216# **show interface fc 1/15** fc1/15 is up Hardware is Fibre Channel Port WWN is 20:0f:00:05:30:00:47:9e Admin port mode is ST Port mode is ST Port vsan is 1 Speed is 1 Gbps Rspan tunnel is fc-tunnel 13 Beacon is turned off 5 minutes input rate 4391896 bits/sec, 548987 bytes/sec, 827 frames/sec 5 minutes output rate 4391896 bits/sec, 548987 bytes/sec, 820 frames/sec 1431232 frames input, 941079708 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too short 1406853 frames output, 941079708 bytes 0 discards, 0 errors 0 input OLS, 0 LRR, 0 NOS, 0 loop inits 0 output OLS, 0 LRR, 0 NOS, 0 loop inits MDS9216# **show interface fc 1/12** fc1/12 is trunking Hardware is Fibre Channel Port WWN is 20:0c:00:05:30:00:47:9e Peer port WWN is 20:5d:00:05:30:00:51:1e Admin port mode is auto, trunk mode is on Port mode is TE Port vsan is 1 Speed is 2 Gbps Transmit B2B Credit is 12 Receive B2B Credit is 255 Receive data field Size is 2112 Beacon is turned off Trunk vsans (admin allowed and active) (1-5,13,20,777) Trunk vsans (up) (1,13) Trunk vsans (isolated) (2-5,20,777) Trunk vsans (initializing) () 5 minutes input rate 384 bits/sec, 48 bytes/sec, 0 frames/sec 5 minutes output rate 4458296 bits/sec, 557287 bytes/sec, 827 frames/sec 19865 frames input, 2220112 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too short 1468709 frames output, 971064244 bytes 0 discards, 0 errors 0 input OLS, 2 LRR, 0 NOS, 0 loop inits 2 output OLS, 2 LRR, 0 NOS, 2 loop inits MDS9216# **show interface fc-tunnel 13** fc-tunnel 13 is up Dest IP Addr: 10.0.0.2 Tunnel ID: 13 Source IP Addr: 10.0.0.1 LSP ID: 1 Explicit Path Name: Outgoing interface: fc1/12 Outgoing Label(s) to Insert: 10005:0:1:ff'h Record Routes: 10.0.0.2 MDS9216# **show interface vsan 13** vsan13 is up, line protocol is up WWPN is 10:00:00:05:30:00:47:9f, FCID is 0x660201 Internet address is 10.0.0.1/24 MTU 1500 bytes, BW 1000000 Kbit 2207 packets input, 170332 bytes, 0 errors, 0 multicast 14952 packets output, 2225444 bytes, 0 errors, 0 dropped MDS9216# **show span session 1** Session 1 (active) Destination is fc-tunnel 13 No session filters configured Ingress (rx) sources are fc1/16, Egress (tx) sources are fc1/16, MDS9216# **show fc-tunnel internal states** number of sessions : 1 Sess: 10.0.0.2 Tunnel-ID 13 Ext-Tunnel-ID 10.0.0.1 MDS9216# **show fc-tunnel internal data** vsan interfaces: vsan 13: 10.0.0.1/255.255.255.0 [2] vsan 2: 15.0.0.4/255.255.255.0 [2] next hop switch information: 10.0.0.2 {vsan (13), 0x6b0001/8}: [4] fc1/12 layer 2 interfaces: fc1/12: Trunking, Up

Configuração MDS9509

RTP-9509-1# **show run** Building Configuration ... vsan database vsan 13 interface vsan13 ip address 10.0.0.2 255.255.255.0 no shutdown vsan 13 interface fc2/16 boot system bootflash:/m9500-sf1ek9-mzg.1.2.0.77.bin sup-1 boot kickstart bootflash:/m9500-sf1ek9-kickstart-mzg.1.2.0.77.bin sup-1 boot system bootflash:/m9500-sf1ek9-mzg.1.2.0.77.bin sup-2 boot kickstart bootflash:/m9500-sf1ek9-kickstart-mzg.1.2.0.77.bin sup-2 fc-tunnel enable fc-tunnel tunnel-id-map 13 interface fc2/6 ip routing switchname RTP-9509-1 interface fc2/6 switchport mode SD switchport speed 1000 no shutdown interface fc2/29 switchport mode E no shutdown interface mgmt0 ip address 172.18.172.57 255.255.255.0

Indicadores MDS9509

RTP-9509-1# **show interface fc 2/29** fc2/29 is trunking Hardware is Fibre Channel Port WWN is 20:5d:00:05:30:00:51:1e Peer port WWN is 20:0c:00:05:30:00:47:9e Admin port mode is E, trunk mode is on Port mode is TE Port vsan is 501 Speed is 2 Gbps Transmit B2B Credit is 255 Receive B2B Credit is 12 Receive data field Size is 2112 Beacon is turned off Trunk vsans (admin allowed and active) (1,13,86,100,501) Trunk vsans (up) (1,13) Trunk vsans (isolated) (86,100,501) Trunk vsans (initializing) () 5 minutes input rate 4497752 bits/sec, 562219 bytes/sec, 835 frames/sec 5 minutes output rate 344 bits/sec, 43 bytes/sec, 0 frames/sec 1934604 frames input, 1285716656 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too short 16903 frames output, 932076 bytes 0 discards, 0 errors 1 input OLS, 1 LRR, 2 NOS, 0 loop inits 3 output OLS, 1 LRR, 2 NOS, 0 loop inits RTP-9509-1# **show interface fc 2/6** fc2/6 is up Hardware is Fibre Channel Port WWN is 20:46:00:05:30:00:51:1e Admin port mode is SD Port mode is SD Port vsan is 1 Speed is 1 Gbps Beacon is turned off 5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec 5 minutes output rate 4421448 bits/sec, 552681 bytes/sec, 835 frames/sec 0 frames input, 0 bytes 0 discards, 0 errors 0 CRC, 0 unknown class 0 too long, 0 too short 1912319 frames output, 1263982444 bytes 0 discards, 0 errors 0 input OLS, 0 LRR, 0 NOS, 0 loop inits 0 output OLS, 0 LRR, 0 NOS, 0 loop inits RTP-9509-1# **show interface fc-tunnel 13** ^ % invalid interface range detected at '^' marker. *!--- This is because the tunnel is not defined on the 9509.* RTP-9509-1#

```
show interface vsan 13 vsan13 is up, line protocol is up WWPN is 10:00:00:05:30:00:51:23, FCID
is 0x6b0001 Internet address is 10.0.0.2/24 MTU 1500 bytes, BW 1000000 Kbit 15071 packets input,
2243728 bytes, 0 errors, 1 multicast 2342 packets output, 185864 bytes, 0 errors, 0 dropped RTP-
9509-1# show fc-tunnel tunnel-id-map tunnel id egress interface 13 fc2/6 14 RTP-9509-1# show fc-
tunnel internal states number of sessions : 1 Sess: 10.0.0.2 Tunnel-ID 13 Ext-Tunnel-ID 10.0.0.1
RTP-9509-1# show fc-tunnel internal data vsan interfaces: vsan 13: 10.0.0.2/255.255.255.0 [2]
next hop switch information: layer 2 interfaces: fc2/6: Non-Trunking, Up
```

Notas para dispositivos do adaptador do analisador de porta

A porta Ethernet é de cobre, e tem auto-detecta velocidades do 1 Gbps ou do 100 Mbps. 0.9(9) Ou mais atrasado etéreo e WinPcap devem ser instalados no PC.

A porta FC exige um SFP e um cabo LC-à-LC para o acessório ao MDS.

Estas são configurações de switch no PAA:

- As posições de switch são numeradas 1, 2,3, e 4 da esquerda para a direita.
- Na lista seguinte, um `1` indica que o switch DIP está LIGADA ou LEVANTA-O. O A0 indica que o switch DIP está PARA BAIXO ou.`0001 1G  NTM`
```
1001 1G  ETM
0101 1G  STM
0011 1G  DTM

0000 2G  NTM
1000 2G  ETM
0100 2G  STM
0010 2G  DTM

1111 1G  MNM
!--- Used for diagnostics only.
```
- Comute 4 dita a velocidade (em = 1G, fora de = 2G). Modo truncado das ordens do Switches 1, 2, e 3. Todas as mudanças exigem um ciclo da potência.

Estes são os modos:

- Nenhum modo truncado (NTM) — Os quadros FC são passados sem nenhumas alterações.
- Os Ethernet truncam o modo (o ETM) — Reduz o tamanho de virulência de 528 linhas a 368 linhas, trunca o quadro FC a um máximo de 1496 bytes.
- Modo truncado raso (STM) — Reduz o tamanho de virulência de 528 linhas a 58 linhas, trunca o quadro FC a um máximo dos bytes 256.
- Modo profundamente truncado (DTM) — Reduz o tamanho de virulência de 528 linhas às linhas 10, trunca o quadro FC a um máximo de 64 bytes.

Verificar

No momento, não há procedimento de verificação disponível para esta configuração.

Troubleshooting

Atualmente, não existem informações disponíveis específicas sobre Troubleshooting para esta configuração.

Informações Relacionadas

- Suporte a hardware dos MDS 9000 Multilayer Switch
- Apoio de produtos de Redes de Armazenamento
- Suporte Técnico - Cisco Systems