Configuración de respaldo ISDA multilink BRI con vigilancia de marcador

Contenido

Introducción

Este documento proporciona una configuración de muestra para configurar una copia de seguridad ISDA multilink BRI usando el Monitoreo de marcado.

Proporciona los comandos del Troubleshooting básico, así como las instrucciones específicas para resolver problemas las configuraciones con el multilink de punto a punto (PPP) implementado en un escenario de backup conjuntamente con el Monitoreo de marcado.

Esta configuración puede ser utilizada cuando va la interfaz o las subinterfaces del Frame Relay principal abajo.

prerrequisitos

Requisitos

No hay requisitos previos específicos para este documento.

Componentes Utilizados

La información que contiene este documento se basa en las versiones de software y hardware indicadas a continuación.

- Dos Software Release 12.2(3) y 12.2(5) de Cisco IOS® de los Cisco 2500 Router que se ejecutan ([DTEs] del equipo de terminal de datos de Frame Relay).
- Un Cisco 4500 Router que actúa como switch de Frame Relay.

La información que se presenta en este documento se originó a partir de dispositivos dentro de un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener un comando antes de ejecutarlo.

Convenciones

Para obtener más información sobre las convenciones del documento, consulte Convenciones de Consejos Técnicos de Cisco.

Configurar

En esta sección encontrará la información para configurar las funciones descritas en este documento.

Nota: Para obtener información adicional sobre los comandos que se utilizan en este documento, use la herramienta Command Lookup.

Diagrama de la red

Este documento utiliza la instalación de red que se muestra en el siguiente diagrama.

Configuraciones

Este documento usa las configuraciones detalladas a continuación.

- krimson (Cisco 2500 Router)
- kevin (Cisco 2500 Router)

krimson (Cisco 2500 Router)

```
krimson#show running-config Building configuration... !
version 12.2 service timestamps debug datetime msec
service timestamps log datetime msec hostname krimson !
username kevin password 0 <password> ! isdn switch-type
basic-net3 ! interface Loopback0 ip address 10.7.7.1
255.255.255.0 ip ospf network point-to-point ! interface
Ethernet0 ip address 10.200.16.30 255.255.255.0 !
interface Serial1 bandwidth 64 no ip address
encapsulation frame-relay ! interface Serial1.1 point-
to-point ip address 10.5.5.2 255.255.255.0 no ip route-
cache frame-relay interface-dlci 20 ! interface BRI0 no
ip address encapsulation ppp no ip route-cache no ip
mroute-cache load-interval 30 no keepalive dialer pool-
member 1 isdn switch-type basic-net3 no fair-queue no
cdp enable ppp authentication chap ! interface Dialer0
ip address 10.9.9.1 255.255.255.0 encapsulation ppp no
ip route-cache no ip mroute-cache dialer pool 1 dialer
remote-name kevin dialer string 6120 dialer load-
```

```
threshold 1 either dialer watch-group 1 dialer-group 1
no cdp enable ppp authentication chap ppp multilink ! !
router ospf 10 log-adjacency-changes network 10.5.5.0
0.0.0.255 area 0 network 10.7.7.0 0.0.0.255 area 0
network 10.9.9.0 0.0.0.255 area 0 ! ip default-gateway
10.200.16.1 no ip classless ip route 0.0.0.0 0.0.0.0
10.200.16.1 no ip http server ! access-list 101 deny
ospf any any access-list 101 permit ip any any dialer
watch-list 1 ip 10.8.8.0 255.255.255.0 dialer-list 1
protocol ip list 101 ! line con 0 exec-timeout 0 0
privilege level 15 line aux 0 transport input all line
vty 0 4 exec-timeout 0 0 password <password> login ! end
```

kevin (Cisco 2500 Router)

```
kevin#show running-config Building configuration... !
version 12.2 service timestamps debug datetime msec
service timestamps log datetime msec ! hostname kevin !
username krimson password 0 <password> ! isdn switch-
type basic-net3 ! ! ! interface Loopback0 ip address
10.8.8.1 255.255.255.0 ip ospf network point-to-point !
interface Loopback1 ip address 172.19.0.1
255.255.255.255 ! interface Ethernet0 ip address
10.200.16.26 255.255.255.0 ! interface Serial0 no ip
address encapsulation frame-relay ! interface Serial0.1
point-to-point ip address 10.5.5.1 255.255.255.0 no cdp
enable frame-relay interface-dlci 20 ! interface BRI0 no
ip address encapsulation ppp dialer pool-member 1 isdn
switch-type basic-net3 no cdp enable ppp authentication
chap ! interface Dialer0 ip address 10.9.9.2
255.255.255.0 encapsulation ppp dialer pool 1 dialer
remote-name krimson dialer-group 1 no cdp enable ppp
authentication chap ppp multilink ! router ospf 10 log-
adjacency-changes network 10.5.5.0 0.0.0.255 area 0
network 10.8.8.0 0.0.0.255 area 0 network 10.9.9.0
0.0.0.255 area 0 ! ip default-gateway 10.200.16.1 ip
classless ip route 0.0.0.0 0.0.0.0 10.200.16.1 no ip
http server ! access-list 101 deny ospf any any access-
list 101 permit ip any any dialer-list 1 protocol ip
list 101 ! ! line con 0 exec-timeout 0 0 line aux 0
modem InOut line vty 0 4 exec-timeout 0 0 password
<password> login ! end
```

Verificación

En esta sección encontrará información que puede utilizar para confirmar que su configuración esté funcionando correctamente.

La herramienta del Output Interpreter soportan a los ciertos comandos show, que permite que usted vea una análisis de la salida del comando show.

- show interfaces serial – Muestra información sobre el identificador de conexión de links de datos (DLCI) de multidifusión, los DLCI usados en la interfaz y el DLCI usado en la LMI (interfaz de gestión local).
- **show interface dialer** - Visualiza la información sobre la interfaz del dialer.
- **ruta de IP de la demostración** - Entradas de tabla de IP Routing de las visualizaciones.
- **pvc del show frame-relay** - Visualiza el estatus de los PVC en el router.

Ejemplo de Resultado del Comando show

Los comandos show siguientes muestran al estado inicial en el router de llamada mientras que el link de Frame Relay es ascendente y funcional:

```
krimson#show interface serial 1.1 Serial1.1 is up, line protocol is up Hardware is HD64570
Internet address is 10.5.5.2/24 MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255,
txload 1/255, rxload 1/255 Encapsulation FRAME-RELAY krimson#show frame pvc PVC Statistics for
interface Serial1 (Frame Relay DTE) Active Inactive Deleted Static Local 1 0 0 0 Switched 0 0 0
0 Unused 0 0 0 0 DLCI = 20, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial1.1 input
pkts 53280 output pkts 62150 in bytes 3851528 out bytes 6340750 dropped pkts 0 in FECN pkts 0 in
BECN pkts 0 out FECN pkts 0 out BECN pkts 0 in DE pkts 0 out DE pkts 0 out bcast pkts 62092 out
bcast bytes 6334184 pvc create time 1w2d, last time pvc status changed 00:02:54 krimson#show
interface dialer 0 Dialer0 is up (spoofing), line protocol is up (spoofing) Hardware is Unknown
Internet address is 10.9.9.1/24 MTU 1500 bytes, BW 56 Kbit, DLY 20000 usec, reliability 255/255,
txload 1/255, rxload 1/255 Encapsulation PPP, loopback not set DTR is pulsed for 1 seconds on
reset Last input 00:01:50, output never, output hang never Last clearing of "show interface"
counters 8w0d Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing
strategy: weighted fair Output queue: 0/1000/64/0 (size/max total/threshold/drops) Conversations
0/1/16 (active/max active/max total) Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 12 kilobits/sec 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute
output rate 0 bits/sec, 0 packets/sec 31010 packets input, 2101372 bytes 31036 packets output,
2100401 bytes krimson#show interface serial 1 Serial1 is up, line protocol is up Hardware is
HD64570 MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255, txload 1/255, rxload
1/255 Encapsulation FRAME-RELAY, loopback not set Keepalive set (10 sec) LMI enq sent 53297, LMI
stat recvd 52975, LMI upd recvd 0, DTE LMI up LMI enq recvd 3, LMI stat sent 0, LMI upd sent 0
LMI DLCI 1023 LMI type is CISCO frame relay DTE FR SVC disabled, LAPF state down Broadcast queue
0/64, broadcasts sent/dropped 62118/1, interface broadcasts 53298 Last input 00:00:01, output
00:00:01, output hang never Last clearing of "show interface" counters 3w1d Input queue:
0/75/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing strategy: weighted fair Output
queue: 0/1000/64/0 (size/max total/threshold/drops) Conversations 0/3/16 (active/max active/max
total) Reserved Conversations 0/0 (allocated/max allocated) Available Bandwidth 48 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec
106412 packets input, 4626191 bytes, 0 no buffer Received 0 broadcasts, 0 runts, 0 giants, 0
throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 115787 packets output,
7047349 bytes, 0 underruns 0 output errors, 0 collisions, 46425 interface resets 0 output buffer
failures, 0 output buffers swapped out 76 carrier transitions DCD=up DSR=up DTR=up RTS=up CTS=up
krimson#show ip route Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP D
- EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1, N2
- OSPF NSSA external type 2 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP i -
IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area * - candidate default, U -
per-user static route, o - ODR P - periodic downloaded static route Gateway of last resort is
10.200.16.1 to network 0.0.0.0 192.168.64.0/30 is subnetted, 1 subnets C 192.168.64.0 is
directly connected, Dialer4 10.0.0.0/24 is subnetted, 6 subnets C 10.5.5.0 is directly
connected, Serial1.1 O 10.8.8.0 [110/1563] via 10.5.5.1, 00:04:35, Serial1.1 C 10.9.9.0 is
directly connected, Dialer0 C 10.7.7.0 is directly connected, Loopback0 C 10.9.8.0 is directly
connected, Dialer1 C 10.200.16.0 is directly connected, Ethernet0 S* 0.0.0.0/0 [1/0] via
10.200.16.1
```

El producto siguiente muestra que va el link de Frame Relay abajo y sube el link ISDN:

```
*Apr 26 04:57:25.801: OSPF: Rcv hello from 172.19.0.1 area 0 from Serial1.1 10.5.5.1
   *Apr 26 04:57:25.805: OSPF: End of hello processing

   *Apr 26 04:57:36.765: %LINK-3-UPDOWN: Interface Serial1, changed state to down
   *Apr 26 04:57:36.773: OSPF: Interface Serial1.1 going Down
   *Apr 26 04:57:36.777: %OSPF-5-ADJCHG: Process 10, Nbr 172.19.0.1 on Serial1.1
   from FULL to DOWN, Neighbor Down: Interface down or detached
   *Apr 26 04:57:36.921: DDR: Dialer Watch: watch-group = 1
   *Apr 26 04:57:36.925: DDR: network 10.8.8.0/255.255.255.0 DOWN,
   *Apr 26 04:57:36.929: DDR: primary DOWN
   *Apr 26 04:57:36.929: DDR: Dialer Watch: Dial Reason: Primary of group 1 DOWN
   *Apr 26 04:57:36.933: DDR: Dialer Watch: watch-group = 1,
   *Apr 26 04:57:36.933: BR0 DDR: rotor dialout [priority]
   *Apr 26 04:57:36.933: DDR: dialing secondary by dialer string 6120 on Di0
   *Apr 26 04:57:36.937: BR0 DDR: Attempting to dial 6120
```

```
*Apr 26 04:57:36.941: ISDN BR0: Outgoing call id = 0x818B, dsl 0
*Apr 26 04:57:37.033: ISDN BR0: Event: Call to 6120 at 64 Kb/s
*Apr 26 04:57:37.033: ISDN BR0: process_bri_call(): call id 0x818B, called_number
6120, speed 64, call type DATA
*Apr 26 04:57:37.037: CCBRI_Go Fr Host InPkgInfo (Len=20) :
*Apr 26 04:57:37.041: 1 0 1 81 8B 0 4 2 88 90 18 1 83 70 5 80 36 31 32 30
*Apr 26 04:57:37.049:
*Apr 26 04:57:37.049: CC_CHAN_GetIdleChanbri: dsl 0
*Apr 26 04:57:37.053: Found idle channel B1
*Apr 26 04:57:37.065: ISDN BR0: TX -> SETUP pd = 8 callref = 0x0E
*Apr 26 04:57:37.069: Bearer Capability i = 0x8890
*Apr 26 04:57:37.077: Channel ID i = 0x83
*Apr 26 04:57:37.081: Called Party Number i = 0x80, '6120', Plan:Unknown,
Type:Unknown
*Apr 26 04:57:37.161: ISDN BR0: RX <- CALL_PROC pd = 8 callref = 0x8E
*Apr 26 04:57:37.165: Channel ID i = 0x89
*Apr 26 04:57:37.181: CCBRI_Go Fr L3 pkt (Len=7) :
*Apr 26 04:57:37.181: 2 1 E 98 18 1 89
*Apr 26 04:57:37.185:
*Apr 26 04:57:37.189: ISDN BR0: LIF_EVENT: ces/callid 1/0x818B HOST_PROCEEDING
*Apr 26 04:57:37.189: ISDN BR0: HOST_PROCEEDING
*Apr 26 04:57:37.193: ISDN BR0: HOST_MORE_INFO
*Apr 26 04:57:37.461: ISDN BR0: RX <- CONNECT pd = 8 callref = 0x8E
*Apr 26 04:57:37.477: CCBRI_Go Fr L3 pkt (Len=4) :
*Apr 26 04:57:37.481: 7 1 E 91
*Apr 26 04:57:37.481:
*Apr 26 04:57:37.485: ISDN BR0: LIF_EVENT: ces/callid 1/0x818B HOST_CONNECT
*Apr 26 04:57:37.489: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up
*Apr 26 04:57:37.493: BR0:1 DDR: Dialer Watch: resetting call in progress
*Apr 26 04:57:37.497: %DIALER-6-BIND: Interface BR0:1 bound to profile Di0
*Apr 26 04:57:37.509: ISDN: get_isdn_service_state(): idb 0x221DA8
bchan 2 is_isdn 1 Not a Pri
*Apr 26 04:57:37.513: BR0:1 PPP: Treating connection as a callout
*Apr 26 04:57:37.513: BR0:1 PPP: Phase is ESTABLISHING, Active Open
[0 sess, 0 load]
*Apr 26 04:57:37.517: BR0:1 LCP: O CONFREQ [Closed] id 102 len 29
*Apr 26 04:57:37.521: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:37.525: BR0:1 LCP: MagicNumber 0x2180E264 (0x05062180E264)
*Apr 26 04:57:37.529: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:37.529: BR0:1 LCP: EndpointDisc 1 krimson (0x130A016B72696D736F6E)
*Apr 26 04:57:37.533: ISDN BR0: Event: Connected to 6120 on B1 at 64 Kb/s
*Apr 26 04:57:37.541: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x0E
*Apr 26 04:57:37.581: BR0:1 LCP: I CONFREQ [REQsent] id 191 len 27
*Apr 26 04:57:37.585: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:37.589: BR0:1 LCP: MagicNumber 0xCA476259 (0x0506CA476259)
*Apr 26 04:57:37.593: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:37.593: BR0:1 LCP: EndpointDisc 1 kevin (0x1308016B6576696E)
*Apr 26 04:57:37.601: BR0:1 LCP: O CONFACK [REQsent] id 191 len 27
*Apr 26 04:57:37.605: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:37.605: BR0:1 LCP: MagicNumber 0xCA476259 (0x0506CA476259)
*Apr 26 04:57:37.609: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:37.613: BR0:1 LCP: EndpointDisc 1 kevin (0x1308016B6576696E)
*Apr 26 04:57:37.617: BR0:1 LCP: I CONFACK [ACKsent] id 102 len 29
*Apr 26 04:57:37.621: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:37.621: BR0:1 LCP: MagicNumber 0x2180E264 (0x05062180E264)
*Apr 26 04:57:37.625: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:37.629: BR0:1 LCP: EndpointDisc 1 krimson (0x130A016B72696D736F6E)
*Apr 26 04:57:37.633: BR0:1 LCP: State is Open
*Apr 26 04:57:37.633: BR0:1 PPP: Phase is AUTHENTICATING, by both
[0 sess, 0 load]
*Apr 26 04:57:37.637: BR0:1 CHAP: O CHALLENGE id 157 len 28 from "krimson"
*Apr 26 04:57:37.657: BR0:1 CHAP: I CHALLENGE id 159 len 26 from "kevin"
*Apr 26 04:57:37.661: BR0:1 CHAP: O RESPONSE id 159 len 28 from "krimson"
*Apr 26 04:57:37.709: BR0:1 CHAP: I SUCCESS id 159 len 4
```

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*Apr 26 04:57:37.725: BR0:1 CHAP: I RESPONSE id 157 len 26 from "kevin"
*Apr 26 04:57:37.733: BR0:1 CHAP: O SUCCESS id 157 len 4
*Apr 26 04:57:37.737: BR0:1 PPP: Phase is VIRTUALIZED [0 sess, 0 load]
*Apr 26 04:57:37.745: Di0 PPP: Phase is UP [0 sess, 0 load]
*Apr 26 04:57:37.749: Di0 IPCP: O CONFREQ [Closed] id 103 len 10
*Apr 26 04:57:37.753: Di0 IPCP: Address 10.9.9.1 (0x03060A090901)
*Apr 26 04:57:37.757: Di0 MLP: Added first link BR0:1 to bundle kevin
*Apr 26 04:57:37.757: Di0 PPP: Treating connection as a callout
*Apr 26 04:57:37.765: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1,
changed state to down
*Apr 26 04:57:37.773: Di0 IPCP: I CONFREQ [REQsent] id 103 len 10
*Apr 26 04:57:37.777: Di0 IPCP: Address 10.9.9.2 (0x03060A090902)
*Apr 26 04:57:37.777: Di0 IPCP: O CONFACK [REQsent] id 103 len 10
*Apr 26 04:57:37.781: Di0 IPCP: Address 10.9.9.2 (0x03060A090902)
*Apr 26 04:57:37.801: Di0 IPCP: I CONFACK [ACKsent] id 103 len 10
*Apr 26 04:57:37.805: Di0 IPCP: Address 10.9.9.1 (0x03060A090901)
*Apr 26 04:57:37.805: Di0 IPCP: State is Open
*Apr 26 04:57:37.813: Di0 DDR: dialer protocol up
*Apr 26 04:57:37.821: Di0 IPCP: Install route to 10.9.9.2
*Apr 26 04:57:38.225: BR0 DDR: rotor dialout [priority]
*Apr 26 04:57:38.225: BR0 DDR: Attempting to dial 6120
*Apr 26 04:57:38.229: ISDN BR0: Outgoing call id = 0x818C, dsl 0
*Apr 26 04:57:38.233: ISDN BR0: Event: Call to 6120 at 64 Kb/s
*Apr 26 04:57:38.233: ISDN BR0: process_bri_call(): call id 0x818C, called_number
6120, speed 64, call type DATA
*Apr 26 04:57:38.237: CCBRI_Go Fr Host InPkgInfo (Len=20) :
*Apr 26 04:57:38.241: 1 0 1 81 8C 0 4 2 88 90 18 1 83 70 5 80 36 31 32 30
*Apr 26 04:57:38.249:
*Apr 26 04:57:38.249: CC_CHAN_GetIdleChanbri: dsl 0
*Apr 26 04:57:38.253: Found idle channel B2
*Apr 26 04:57:38.265: ISDN BR0: TX -> SETUP pd = 8 callref = 0x0F
*Apr 26 04:57:38.269: Bearer Capability i = 0x8890
*Apr 26 04:57:38.277: Channel ID i = 0x83
*Apr 26 04:57:38.281: Called Party Number i = 0x80, '6120', Plan:Unknown,
Type:Unknown
*Apr 26 04:57:38.377: ISDN BR0: RX <- CALL_PROC pd = 8 callref = 0x8F
*Apr 26 04:57:38.385: Channel ID i = 0x8A
*Apr 26 04:57:38.405: CCBRI_Go Fr L3 pkt (Len=7) :
*Apr 26 04:57:38.405: 2 1 F 98 18 1 8A
*Apr 26 04:57:38.409:
*Apr 26 04:57:38.413: ISDN BR0: LIF_EVENT: ces/callid 1/0x818C HOST_PROCEEDING
*Apr 26 04:57:38.413: ISDN BR0: HOST_PROCEEDING
*Apr 26 04:57:38.417: ISDN BR0: HOST_MORE_INFO
*Apr 26 04:57:38.737: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed state to up
*Apr 26 04:57:38.761: ISDN BR0: RX <- CONNECT pd = 8 callref = 0x8F
*Apr 26 04:57:38.781: CCBRI_Go Fr L3 pkt (Len=4) :
*Apr 26 04:57:38.781: 7 1 F 91
*Apr 26 04:57:38.785:
*Apr 26 04:57:38.785: ISDN BR0: LIF_EVENT: ces/callid 1/0x818C HOST_CONNECT
*Apr 26 04:57:38.789: %LINK-3-UPDOWN: Interface BRI0:2, changed state to up
*Apr 26 04:57:38.797: %DIALER-6-BIND: Interface BR0:2 bound to profile Di0
*Apr 26 04:57:38.805: %ISDN-6-CONNECT: Interface BRI0:1 is now connected
to 6120 kevin
*Apr 26 04:57:38.809: ISDN: get_isdn_service_state():
idb 0x225754 bchan 3 is_isdn 1 Not a Pri
*Apr 26 04:57:38.813: BR0:2 PPP: Treating connection as a callout
*Apr 26 04:57:38.817: BR0:2 PPP: Phase is ESTABLISHING, Active Open
[0 sess, 0 load]
*Apr 26 04:57:38.821: BR0:2 LCP: O CONFREQ [Closed] id 50 len 29
*Apr 26 04:57:38.825: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:38.825: BR0:2 LCP: MagicNumber 0x2180E77A (0x05062180E77A)
*Apr 26 04:57:38.829: BR0:2 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:38.833: BR0:2 LCP: EndpointDisc 1 krimson (0x130A016B72696D736F6E)
```

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*Apr 26 04:57:38.837: ISDN BR0: Event: Connected to 6120 on B2 at 64 Kb/s
*Apr 26 04:57:38.845: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x0F
*Apr 26 04:57:38.885: BR0:2 LCP: I CONFREQ [REQsent] id 102 len 27
*Apr 26 04:57:38.889: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:38.893: BR0:2 LCP: MagicNumber 0xCA476774 (0x0506CA476774)
*Apr 26 04:57:38.897: BR0:2 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:38.897: BR0:2 LCP: EndpointDisc 1 kevin (0x1308016B6576696E)
*Apr 26 04:57:38.905: BR0:2 LCP: O CONFACK [REQsent] id 102 len 27
*Apr 26 04:57:38.905: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:38.909: BR0:2 LCP: MagicNumber 0xCA476774 (0x0506CA476774)
*Apr 26 04:57:38.913: BR0:2 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:38.917: BR0:2 LCP: EndpointDisc 1 kevin (0x1308016B6576696E)
*Apr 26 04:57:38.921: BR0:2 LCP: I CONFACK [ACKsent] id 50 len 29
*Apr 26 04:57:38.925: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
*Apr 26 04:57:38.925: BR0:2 LCP: MagicNumber 0x2180E77A (0x05062180E77A)
*Apr 26 04:57:38.929: BR0:2 LCP: MRRU 1524 (0x110405F4)
*Apr 26 04:57:38.933: BR0:2 LCP: EndpointDisc 1 krimson (0x130A016B72696D736F6E)
*Apr 26 04:57:38.937: BR0:2 LCP: State is Open
*Apr 26 04:57:38.937: BR0:2 PPP: Phase is AUTHENTICATING, by both
[0 sess, 0 load]
*Apr 26 04:57:38.941: BR0:2 CHAP: O CHALLENGE id 104 len 28 from "krimson"
*Apr 26 04:57:38.961: BR0:2 CHAP: I CHALLENGE id 102 len 26 from "kevin"
*Apr 26 04:57:38.969: BR0:2 CHAP: O RESPONSE id 102 len 28 from "krimson"
*Apr 26 04:57:39.017: BR0:2 CHAP: I SUCCESS id 102 len 4
*Apr 26 04:57:39.033: BR0:2 CHAP: I RESPONSE id 104 len 26 from "kevin"
*Apr 26 04:57:39.037: BR0:2 CHAP: O SUCCESS id 104 len 4
*Apr 26 04:57:39.045: BR0:2 PPP: Phase is VIRTUALIZED [0 sess, 0 load]
*Apr 26 04:57:39.049: Di0 MLP: Added link BR0:2 to bundle kevin
*Apr 26 04:57:40.045: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:2,
changed state to up
*Apr 26 04:57:40.749: OSPF: Rcv hello from 172.19.0.1 area 0 from Dialer0 10.9.9.2
*Apr 26 04:57:40.757: OSPF: 2 Way Communication to 172.19.0.1 on Dialer0, state 2WAY
*Apr 26 04:57:40.757: OSPF: Send DBD to 172.19.0.1 on Dialer0 seq 0x67F opt
0x42 flag 0x7 len 32
*Apr 26 04:57:40.765: OSPF: End of hello processing
*Apr 26 04:57:40.801: OSPF: Rcv DBD from 172.19.0.1 on Dialer0 seq 0x2175 opt
0x42 flag 0x7 len 32 mtu 1500 state EXSTART
*Apr 26 04:57:40.805: OSPF: NBR Negotiation Done. We are the SLAVE
*Apr 26 04:57:40.805: OSPF: Send DBD to 172.19.0.1 on Dialer0 seq 0x2175 opt
0x42 flag 0x2 len 72
*Apr 26 04:57:40.853: OSPF: Rcv DBD from 172.19.0.1 on Dialer0 seq 0x2176 opt
0x42 flag 0x3 len 72 mtu 1500 state EXCHANGE
*Apr 26 04:57:40.857: OSPF: Send DBD to 172.19.0.1 on Dialer0 seq 0x2176 opt
0x42 flag 0x0 len 32
*Apr 26 04:57:40.865: OSPF: Database request to 172.19.0.1
*Apr 26 04:57:40.865: OSPF: sent LS REQ packet to 10.9.9.2, length 12
*Apr 26 04:57:40.905: OSPF: Rcv DBD from 172.19.0.1 on Dialer0 seq 0x2177 opt
0x42 flag 0x1 len 32 mtu 1500 state EXCHANGE
*Apr 26 04:57:40.909: OSPF: Exchange Done with 172.19.0.1 on Dialer0
*Apr 26 04:57:40.909: OSPF: Send DBD to 172.19.0.1 on Dialer0 seq 0x2177 opt
0x42 flag 0x0 len 32
*Apr 26 04:57:40.921: OSPF: Synchronized with 172.19.0.1 on Dialer0, state FULL
*Apr 26 04:57:40.925: %OSPF-5-ADJCHG: Process 10, Nbr 172.19.0.1 on Dialer0
from LOADING to FULL, Loading Done
*Apr 26 04:57:44.917: %ISDN-6-CONNECT: Interface BRI0:2 is now connected to
6120 kevin
*Apr 26 04:58:00.753: OSPF: Rcv hello from 172.19.0.1 area 0 from Dialer0 10.9.9.2
*Apr 26 04:58:00.753: OSPF: End of hello processing
*Apr 26 04:57:50.753: OSPF: Rcv hello from 172.19.0.1 area 0 from Dialer0 10.9.9.2
*Apr 26 04:57:50.753: OSPF: End of hello processing
```

krimson#**show interface serial 1** Serial1 is down, line protocol is down *!--- note that the physical Frame Relay interface is down.* due to shutdown on locally attacher port on FR switch
Hardware is HD64570 MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255, txload

1/255, rxload 1/255 Encapsulation FRAME-RELAY, loopback not set Keepalive set (10 sec) LMI enq sent 53316, LMI stat recvd 52994, LMI upd recvd 0, DTE LMI down LMI enq recvd 3, LMI stat sent 0, LMI upd sent 0 LMI DLCI 1023 LMI type is CISCO frame relay DTE FR SVC disabled, LAPF state down Broadcast queue 0/64, broadcasts sent/dropped 62140/1, interface broadcasts 53317 Last input 00:00:57, output 00:00:57, output hang never Last clearing of "show interface" counters 3w1d Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing strategy: weighted fair Output queue: 0/1000/64/0 (size/max total/threshold/drops) Conversations 0/3/16 (active/max active/max total) Reserved Conversations 0/0 (allocated/max allocated) Available Bandwidth 48 kilobits/sec 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec 106450 packets input, 4627830 bytes, 0 no buffer --More-- Received 0 broadcasts, 0 runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 115828 packets output, 7049810 bytes, 0 underruns 0 output errors, 0 collisions, 46426 interface resets 0 output buffer failures, 0 output buffers swapped out 77 carrier transitions DCD=down DSR=down DTR=up RTS=up CTS=down krimson#**show interface serial 1.1** Serial1.1 is down, line protocol is down Hardware is HD64570 Internet address is 10.5.5.2/24 MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation FRAME-RELAY krimson#**show interface dialer** Dialer0 is up, line protocol is up Hardware is Unknown Internet address is 10.9.9.1/24 MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation PPP, loopback not set DTR is pulsed for 1 seconds on reset Time to interface disconnect: idle 00:00:57 Interface is bound to BR0:1 Interface is bound to BR0:2 LCP Open, multilink Open Open: IPCP Last input 00:00:09, output never, output hang never Last clearing of "show interface" counters 8w0d Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing strategy: weighted fair Output queue: 0/1000/64/0 (size/max total/threshold/drops) Conversations 0/1/16 (active/max active/max total) Reserved Conversations 0/0 (allocated/max allocated) Available Bandwidth 66 kilobits/sec 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec 31025 packets input, 2102400 bytes 31053 packets output, 2101523 bytes Bound to: BRI0:1 is up, line protocol is up Hardware is BRI MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation PPP, loopback not set Keepalive not set DTR is pulsed for 1 seconds on reset Interface is bound to Di0 (Encapsulation PPP) LCP Open, multilink Open Last input 00:00:11, output 00:00:01, output hang never Last clearing of "show interface" counters never Queueing strategy: fifo Output queue 0/40, 0 drops; input queue 0/75, 0 drops 30 second input rate 0 bits/sec, 0 packets/sec 30 second output rate 0 bits/sec, 0 packets/sec 34919 packets input, 2419929 bytes, 0 no buffer Received 0 broadcasts, 0 runts, 0 giants, 0 throttles 29 input errors, 18 CRC, 0 frame, 0 overrun, 0 ignored, 11 abort 34744 packets output, 2252062 bytes, 0 underruns 0 output errors, 0 collisions, 27 interface resets 0 output buffer failures, 0 output buffers swapped out 925 carrier transitions Bound to: BRI0:2 is up, line protocol is up Hardware is BRI MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation PPP, loopback not set Keepalive not set DTR is pulsed for 1 seconds on reset Interface is bound to Di0 (Encapsulation PPP) LCP Open, multilink Open Last input 00:00:03, output 00:00:07, output hang never Last clearing of "show interface" counters never Queueing strategy: fifo Output queue 0/40, 0 drops; input queue 0/75, 0 drops 30 second input rate 0 bits/sec, 0 packets/sec 30 second output rate 0 bits/sec, 0 packets/sec 2165 packets input, 87326 bytes, 0 no buffer Received 0 broadcasts, 0 runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 2260 packets output, 89305 bytes, 0 underruns 0 output errors, 0 collisions, 27 interface resets 0 output buffer failures, 0 output buffers swapped out 345 carrier transitions krimson#**show frame pvc** PVC Statistics for interface Serial1 (Frame Relay DTE) Active Inactive Deleted Static Local 0 0 1 0 Switched 0 0 0 0 Unused 0 0 0 0 DLCI = 20, DLCI USAGE = LOCAL, PVC STATUS = DELETED, INTERFACE = Serial1.1 input pkts 53307 output pkts 62181 in bytes 3853472 out bytes 6343822 dropped pkts 0 in FECN pkts 0 in BECN pkts 0 out FECN pkts 0 out BECN pkts 0 in DE pkts 0 out DE pkts 0 out bcast pkts 62123 out bcast bytes 6337256 pvc create time 1w2d, last time pvc status changed 00:01:12 krimson#**show ip route** Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area * - candidate default, U - per-user static route, o - ODR P - periodic downloaded static route Gateway of last resort is 10.200.16.1 to network 0.0.0.0 192.168.64.0/30 is subnetted, 1 subnets C 192.168.64.0 is directly connected, Dialer4 10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks C 10.9.9.2/32 is directly connected, Dialer0 O 10.8.8.0/24 [110/782] via 10.9.9.2, 00:01:03, Dialer0 *!--- now route to the destination network points to backup interface as a next hop* C 10.9.9.0/24 is directly connected, Dialer0 C 10.7.7.0/24 is directly connected, Loopback0 C 10.9.8.0/24 is directly connected, Dialer1 C 10.200.16.0/24 is directly connected, Ethernet0 S* 0.0.0.0/0 [1/0] via 10.200.16.1

La interfaz de Frame Relay sube, y la Interfaz de respaldo va abajo.

krimson#**show interface serial 1.1** Serial1.1 is up, line protocol is up Hardware is HD64570 Internet address is 10.5.5.2/24 MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation FRAME-RELAY *Apr 26 04:59:49.481: %LINK-3-UPDOWN: Interface Serial1, changed state to up *Apr 26 04:59:50.481: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1, changed state to up *Apr 26 05:01:44.001: Di0 DDR: idle timeout *!--- backup is going down after expiration of the idle timer* *Apr 26 05:01:44.001: DDR: Dialer Watch: watch-group = 1 *Apr 26 05:01:44.001: DDR: network 10.8.8.0/255.255.255.0 UP, *Apr 26 05:01:44.005: DDR: primary DOWN *Apr 26 05:01:44.009: Di0 DDR: disconnecting call *Apr 26 05:01:44.013: BR0:1 PPP: Phase is TERMINATING [0 sess, 1 load] *Apr 26 05:01:44.013: BR0:1 LCP: O TERMREQ [Open] id 106 len 4 *Apr 26 05:01:44.021: BR0:2 PPP: Phase is TERMINATING [0 sess, 1 load] *Apr 26 05:01:44.021: BR0:2 LCP: O TERMREQ [Open] id 54 len 4 *Apr 26 05:01:44.029: Di0 IPCP: State is Closed *Apr 26 05:01:44.033: Di0 PPP: Phase is TERMINATING [0 sess, 1 load] *Apr 26 05:01:44.033: Di0 LCP: State is Closed *Apr 26 05:01:44.037: Di0 PPP: Phase is DOWN [0 sess, 1 load] *Apr 26 05:01:44.041: Di0 IPCP: Remove route to 10.9.9.2 *Apr 26 05:01:44.045: BR0:1 LCP: I TERMACK [TERMsent] id 106 len 4 *Apr 26 05:01:44.049: BR0:1 LCP: State is Closed *Apr 26 05:01:44.049: BR0:1 PPP: Phase is DOWN [0 sess, 1 loow ad] *Apr 26 05:01:44.053: BR0 DDR: has total 1 call(s), dial_out 1, dial_in 0 *Apr 26 05:01:44.057: BR0:1 PPP: Treating connection as a callout *Apr 26 05:01:44.057: BR0:1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load] *Apr 26 05:01:44.061: BR0:1 LCP: O CONFREQ [Closed] id 107 len 15 *Apr 26 05:01:44.065: BR0:1 LCP: AuthProto CHAP (0x0305C22305) *Apr 26 05:01:44.069: BR0:1 LCP: MagicNumber 0x2184A57C (0x05062184A57C) *Apr 26 05:01:44.069: %DIALER-6-UNBIND: Interface BR0:1 unbound from profile Di0 *Apr 26 05:01:44.077: BR0:1 DDR: disconnecting call *Apr 26 05:01:44.077: BR0:1 DDR: Dialer Watch: resetting call in progress *Apr 26 05:01:44.081: DDR: Dialer Watch: watch-group = 1 *Apr 26 05:01:44.081: DDR: network 10.8.8.0/255.255.255.0 UP, *Apr 26 05:01:44.085: DDR: primary DOWN *Apr 26 05:01:44.085: ISDN BR0: Event: Hangup call to call id 0x818D *Apr 26 05:01:44.089: ISDN BR0: process_disconnect(): call id 0x818D, call type is DATA, b_idb 0x221DA8, ces 1, cause Normal call clearing(0x10) *Apr 26 05:01:44.097: %ISDN-6-DISCONNECT: Interface BRI0:1 disconnected from 6120 kevin, call lasted 120 seconds *Apr 26 05:01:44.101: ISDN: get_isdn_service_state(): idb 0x221DA8 bchan 2 is_isdn 1 Not a Pri *Apr 26 05:01:44.105: CCBRI_Go Fr Host InPkgInfo (Len=13) : *Apr 26 05:01:44.105: 5 0 1 81 8D 3 8 1 90 8 2 80 90 *Apr 26 05:01:44.109: *Apr 26 05:01:44.121: ISDN BR0: TX -> DISCONNECT pd = 8 callref = 0x10 *Apr 26 05:01:44.129: Cause i = 0x8090 - Normal call clearing *Apr 26 05:01:44.137: BR0:2 LCP: I TERMACK [TERMsent] id 54 len 4 *Apr 26 05:01:44.141: BR0:2 LCP: State is Closed *Apr 26 05:01:44.141: BR0:2 PPP: Phase is DOWN [0 sess, 1 load] *Apr 26 05:01:44.145: BR0 DDR: has total 0 call(s), dial_out 0, dial_in 0 *Apr 26 05:01:44.149: BR0:2 PPP: Treating connection as a callout *Apr 26 05:01:44.149: BR0:2 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load] *Apr 26 05:01:44.153: BR0:2 LCP: O CONFREQ [Closed] id 55 len 15 *Apr 26 05:01:44.157: BR0:2 LCP: AuthProto CHAP (0x0305C22305) *Apr 26 05:01:44.161: BR0:2 LCP: MagicNumber 0x2184A5D9 (0x05062184A5D9) *Apr 26 05:01:44.161: %DIALER-6-UNBIND: Interface BR0:2 unbound from profile Di0 *Apr 26 05:01:44.165: BR0:2 DDR: disconnecting call *Apr 26 05:01:44.173: ISDN BR0: Event: Hangup call to call id 0x818E *Apr 26 05:01:44.173: ISDN BR0: process_disconnect(): call id 0x818E, call type is DATA, b_idb 0x225754, ces 1, cause Normal call clearing(0x10) *Apr 26 05:01:44.181: %ISDN-6-DISCONNECT: Interface BRI0:2 disconnected from 6120 kevin, call lasted 119 seconds *Apr 26 05:01:44.189: ISDN: get_isdn_service_state(): idb 0x225754 bchan 3 is_isdn 1 Not a Pri *Apr 26 05:01:44.189: CCBRI_Go Fr Host InPkgInfo (Len=13) : *Apr 26 05:01:44.193: 5 0 1 81 8E 3 8 1 90 8 2 80 90 *Apr 26 05:01:44.197: *Apr 26 05:01:44.205: ISDN BR0: RX <- RELEASE pd = 8 callref = 0x90 *Apr 26 05:01:44.221: ISDN BR0: TX -> DISCONNECT pd = 8 callref = 0x11 *Apr 26 05:01:44.225: Cause i = 0x8090 - Normal call clearing *Apr 26 05:01:44.241: CCBRI_Go Fr L3 pkt (Len=4) : *Apr 26 05:01:44.241: 4D 1 10 97 *Apr 26 05:01:44.245: *Apr 26 05:01:44.249: ISDN BR0: LIF_EVENT: ces/callid 1/0x818D HOST_DISCONNECT_ACK *Apr 26 05:01:44.253: ISDN: get_isdn_service_state(): idb 0x221DA8 bchan 2 is_isdn 1 Not a Pri *Apr 26 05:01:44.257: ISDN BR0: HOST_DISCONNECT_ACK: call type is DATA *Apr 26 05:01:44.257: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down *Apr 26 05:01:44.265: BR0:1 LCP: State is Closed *Apr 26 05:01:44.265: BR0:1 PPP: Phase is DOWN [0 sess, 0 load] *Apr 26 05:01:44.269: BR0:1 DDR: disconnecting call *Apr 26 05:01:44.273: ISDN BR0: LIF_EVENT: ces/callid 1/0x818D HOST_DISCONNECT_ACK *Apr 26 05:01:44.277: ISDN: get_isdn_service_state(): idb 0x221DA8 bchan 2 is_isdn 1 Not a Pri *Apr 26 05:01:44.277: ISDN BR0: HOST_DISCONNECT_ACK: call type is DATA *Apr 26 05:01:44.289: ISDN BR0: TX -> RELEASE_COMP pd = 8 callref = 0x10 *Apr 26 05:01:44.305: ISDN BR0: RX <- RELEASE pd = 8 callref = 0x91 *Apr 26 05:01:44.325: CCBRI_Go Fr L3 pkt (Len=4) : *Apr 26 05:01:44.325: 4D 1 11 97 *Apr 26 05:01:44.329: *Apr 26 05:01:44.333: ISDN BR0: LIF_EVENT: ces/callid 1/0x818E HOST_DISCONNECT_ACK *Apr 26 05:01:44.337: ISDN: get_isdn_service_state():

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idb 0x225754 bchan 3 is_isdn 1 Not a Pri *Apr 26 05:01:44.341: ISDN BR0: HOST_DISCONNECT_ACK:
call type is DATA *Apr 26 05:01:44.341: %LINK-3-UPDOWN: Interface BRI0:2, changed state to down
*Apr 26 05:01:44.345: BR0:2 LCP: State is Closed *Apr 26 05:01:44.349: BR0:2 PPP: Phase is DOWN
[0 sess, 0 load] *Apr 26 05:01:44.349: BR0:2 DDR: disconnecting call *Apr 26 05:01:44.353: ISDN
BR0: LIF_EVENT: ces/callid 1/0x818E HOST_DISCONNECT_ACK *Apr 26 05:01:44.357: ISDN:
get_isdn_service_state(): idb 0x225754 bchan 3 is_isdn 1 Not a Pri *Apr 26 05:01:44.361: ISDN
BR0: HOST_DISCONNECT_ACK: call type is DATA *Apr 26 05:01:44.369: ISDN BR0: TX -> RELEASE_COMP
pd = 8 callref = 0x11 *Apr 26 05:01:45.009: %LINEPROTO-5-UPDOWN: Line protocol on Interface
BRI0:1, changed state to down *Apr 26 05:01:45.017: %LINEPROTO-5-UPDOWN: Line protocol on
Interface BRI0:2, changed state to down krimson#show isdn active ------------------------------
------------------------------------------------ ISDN ACTIVE CALLS ---------------------------
------------------------------------------------------ Call Calling Called Remote Seconds Seconds
Seconds Charges Type Number Number Name Used Left Idle Units/Currency -------------------------
------------------------------------------------------ ---------------------------------------
--------------------------------------- krimson#show ip route Codes: C - connected, S - static,
I - IGRP, R - RIP, M - mobile, B - BGP D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter
area N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2 E1 - OSPF external type 1,
E2 - OSPF external type 2, E - EGP i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area * - candidate default, U - per-user static route, o - ODR P - periodic downloaded
static route Gateway of last resort is 10.200.16.1 to network 0.0.0.0 192.168.64.0/30 is
subnetted, 1 subnets C 192.168.64.0 is directly connected, Dialer4 10.0.0.0/24 is subnetted, 6
subnets C 10.5.5.0 is directly connected, Serial1.1 O 10.8.8.0 [110/1563] via 10.5.5.1,
00:00:11, Serial1.1 !--- The monitored router again shows the primary interface as the next hop
C 10.9.9.0 is directly connected, Dialer0 C 10.7.7.0 is directly connected, Loopback0 C 10.9.8.0
is directly connected, Dialer1 C 10.200.16.0 is directly connected, Ethernet0 S* 0.0.0.0/0 [1/0]
via 10.200.16.1
```

Troubleshooting

En esta sección encontrará información que puede utilizar para solucionar problemas de configuración.

La configuración de Frame Relay mostrada aquí, que tiene subinterfaces punto a punto y utiliza el Open Shortest Path First (OSPF) como Routing Protocol, es específica a esta configuración. Sin embargo, los pasos de Troubleshooting dados abajo son más generales y se pueden utilizar con diversas configuraciones tales como Frame Relay de punto a multipunto o link principal con el High-Level Data Link Control (HDLC) y la encapsulación PPP, sin importar el Routing Protocol usado.

Para verificar la funcionalidad de copia de seguridad, hemos ubicado una de las interfaces en el router Cisco 4500 que está actuando como un switch de retransmisión de tramas en estado de cierre normal a fines de simular problemas dentro de la red de retransmisión de tramas. Por consiguiente, esto provoca que el estado inactivo PVC sea conducido al router DTE por medio de la red de Frame Relay y un evento de caída de la subinterfaz de Frame Relay. Esto activa la Interfaz de respaldo.

Comandos para resolución de problemas

La herramienta del Output Interpreter soportan a los ciertos comandos show, que permite que usted vea una análisis de la salida del comando show.

Nota: Antes de ejecutar un comando debug, consulte Información Importante sobre Comandos Debug.

- debug isdn q931 - Muestra información acerca de la configuración de llamadas y desconexión de conexiones de red ISDN (Capa 3) entre el router local (lado del usuario) y la red.

- debug isdn events: muestra los acontecimientos de ISDN que se producen en el lado del usuario (en el router) de la interfaz de ISDN.
- debug dialer – Muestra información de depuración acerca de los paquetes o eventos en una interfaz del marcador.
- debug ppp negotiation – hace que el comando debug ppp muestre los paquetes PPP transmitidos durante el inicio de PPP donde se negocian las opciones PPP
- debug ppp authentication – Hace que el comando debug ppp muestre los mensajes del protocolo de autenticación, entre ellos el intercambio de paquetes de protocolo de autenticación por desafío mutuo (CHAP) y los intercambios de protocolo de autenticación de contraseña (PAP).
- **debug ip ospf events** - Visualiza la información sobre los eventos de OSPF relacionado, tales como adyacencias, información de inundación, selección del router designado, y cálculo del trayecto más corto primer (SPF)
- **debug frame-relay events** - Visualiza la información de debugging sobre las respuestas ARP del Frame Relay en las redes que soportan un canal de multidifusión y utilizan el direccionamiento dinámico.

Información Relacionada

- Páginas de soporte de la tecnología de marcación
- Soporte Técnico - Cisco Systems