

Configurar la redundancia de IPSec sobre el ISDN usando el Monitoreo de marcado

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[Introducción](#)

Este documento proporciona una configuración de muestra cómo cifrar el tráfico de la red detrás del router1 a la red detrás del router2 (el loopback 0s se utiliza como redes en este ejemplo). Si va el link principal (Ethernet) entre el router1 y el router2 abajo, el tráfico de la seguridad IP (IPSec) continúa atravesando el link secundario (ISDN). Hay varias maneras de alcanzar este objetivo; usted puede utilizar el Monitoreo de marcado, la Interfaz de respaldo, el circuito de la demanda, y la estática flotante. Este ejemplo de configuración demuestra el mecanismo de vigilancia de marcador. Si desea obtener más información sobre otras características, consulte [Evaluación de interfaces de copia de respaldo, rutas estáticas flotantes y vigilancia del marcador para la copia de respaldo de DDR](#).

[prerrequisitos](#)

[Requisitos](#)

No hay requisitos específicos para este documento.

[Componentes Utilizados](#)

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

- Routers 2621 y 3640 de Cisco
- Cisco IOS® Software Release 12.3(3)

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 su red está viva, asegúrese que usted entiende el impacto potencial del comando any antes de que usted lo utilice.

Convenciones

Para obtener más información sobre las convenciones del documento, consulte las [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 Command Lookup Tool (solo para clientes [registrados](#)).

Diagrama de la red

Este documento utiliza la configuración de la red mostrada en el diagrama aquí:

Configuraciones

Este documento utiliza las configuraciones mostradas aquí:

- [Router 1 \(2621\)](#)
- [Router 2 \(3640\)](#)

Router 1 (2621)

```
rl#show running-config Building configuration... Current
configuration : 2244 bytes ! version 12.3 service
timestamps debug uptime service timestamps log uptime no
service password-encryption ! hostname r1 ! boot-start-
marker boot-end-marker ! ! username r2 password 0 cisco
!--- This is the username for remote router (Router 2)
!--- and shared secret. Shared secret (used for
Challenge Handshake !--- Authentication Protocol [CHAP])
must be the same on both sides. no aaa new-model ip
subnet-zero ip tcp synwait-time 5 ! ! no ip domain
lookup ! ip audit notify log ip audit po max-events 100
ip ssh break-string no ftp-server write-enable ! ! !
crypto isakmp policy 10 hash md5 authentication pre-
share crypto isakmp key cisco address 222.222.222.222 !
! crypto ipsec transform-set abc esp-des esp-md5-hmac !
crypto map cisco local-address Loopback1 crypto map
cisco 10 ipsec-isakmp set peer 222.222.222.222 !--- Peer
address, Loopback 1 of Router 2 set transform-set abc
match address 101 !--- Networks to encrypt (Loopback 0
on both ends) ! isdn switch-type basic-ts013 ! ! ! ! ! !
```

```

!!! no voice hpi capture buffer no voice hpi capture
destination ! ! ! ! ! interface Loopback0 !--- Network
to encrypt ip address 11.11.11.11 255.255.255.0 !
interface Loopback1 !--- Used for peer address for IPsec
ip address 111.111.111.111 255.255.255.0 ! interface
FastEthernet0/0 !--- Primary link ip address 10.1.1.1
255.255.255.0 no ip route-cache !--- Enable process
switching no ip mroute-cache duplex auto speed auto
crypto map cisco !--- Apply crypto map on primary
interface ! interface BRI0/0 no ip address encapsulation
ppp no ip route-cache no ip mroute-cache dialer pool-
member 1 isdn switch-type basic-ts013 no cdp enable !
interface Dialer1 !--- Backup link ip address 20.1.1.1
255.255.255.0 encapsulation ppp no ip route-cache !---
Enable process switching ip ospf cost 9999 !--- Increase
the cost so that when primary comes up again, !--- Open
Shortest Path First (OSPF) routes are !--- preferred
using the primary link (due to better cost). no ip
mroute-cache dialer idle-timeout 180 dialer pool 1
dialer string 94134028 dialer watch-group 1 !--- Enable
dialer watch on this backup interface. !--- Watch the
route specified with the dialer watch-list 1 command.
dialer-group 1 !--- Apply interesting traffic defined in
dialer list 1. no peer neighbor-route ppp authentication
chap crypto map cisco !--- Apply crypto map on backup
interface. ! router ospf 1 !--- OSPF advertising
Loopback 0, Loopback 1, !--- primary, and secondary
links. log-adjacency-changes network 10.1.1.0 0.0.0.255
area 0 network 11.11.11.0 0.0.0.255 area 0 network
20.1.1.0 0.0.0.255 area 0 network 111.111.111.0
0.0.0.255 area 0 ! ip http server no ip http secure-
server ip classless ! ! access-list 101 permit ip host
11.11.11.11 host 22.22.22.22 !--- Access control list
(ACL) 101 is the !--- IPsec traffic used in match
address. access-list 110 deny ip any any !--- ACL 110 is
for the dialer list to mark !--- all IP traffic
uninteresting. The dialer watch will !--- trigger the
ISDN backup when the route is lost. dialer watch-list 1
ip 222.222.222.222 255.255.255.255 !--- This defines the
route(s) to be watched. !--- This exact route (including
subnet mask) !--- must exist in the routing table. !---
Use the dialer watch-group 1 command to apply this !---
list to the backup interface. dialer watch-list 1 delay
route-check initial 10 dialer-list 1 protocol ip list
110 !--- Interesting traffic is defined by ACL 110. !---
This is applied to Dialer1 using dialer group 1. ! ! !
dial-peer cor custom ! ! ! ! ! line con 0 exec-timeout 0
0 logging synchronous escape-character 27 line aux 0
line vty 0 4 login ! end

```

Router 2 (3640)

```

r2#show running-config Building configuration... Current
configuration : 2311 bytes ! version 12.3 service
timestamps debug datetime msec service timestamps log
datetime msec no service password-encryption ! hostname
r2 ! boot-start-marker boot-end-marker ! username r1
password 0 cisco !--- This is the username for remote
router (Router 1) !--- and shared secret. Shared secret
(used for CHAP) !--- must be the same on both sides. no
aaa new-model ip subnet-zero ip tcp synwait-time 5 ! !
no ip domain lookup ! ip audit notify log ip audit po
max-events 100 ip ssh break-string no ftp-server write-
enable ! ! ! crypto isakmp policy 10 hash md5
authentication pre-share crypto isakmp key cisco address

```

```

111.111.111.111 !! crypto ipsec transform-set abc esp-
des esp-md5-hmac !! crypto map cisco local-address
Loopback1 crypto map cisco 10 ipsec-isakmp set peer
111.111.111.111 !--- Peer address, Loopback 1 of Router
1 set transform-set abc match address 101 !--- Networks
to encrypt (Loopback 0 on both ends) ! isdn switch-type
basic-ts013 ! ! ! ! ! ! ! ! no voice hpi capture
buffer no voice hpi capture destination ! ! ! ! ! !
interface Loopback0 ip address 22.22.22.22 255.255.255.0
!--- Network to encrypt ! interface Loopback1 ip address
222.222.222.222 255.255.255.0 !--- Used for peer address
for IPSec. ! interface BRI0/0 no ip address
encapsulation ppp no ip route-cache no ip mroute-cache
dialer pool-member 1 isdn switch-type basic-ts013 !
interface Ethernet0/0 !--- Primary link ip address
10.1.1.2 255.255.255.0 no ip route-cache !--- Enable
process switching. no ip mroute-cache half-duplex crypto
map cisco !--- Apply crypto map on primary interface. !
interface Dialer1 ip address 20.1.1.2 255.255.255.0
encapsulation ppp no ip route-cache ip ospf cost 9999 no
ip mroute-cache dialer pool 1 dialer idle-timeout 600
dialer remote-name r1 !--- Dialer for the BRI interface
of the remote router !--- without a dial string. dialer-
group 1 !--- Apply interesting traffic defined in dialer
list 1. ppp authentication chap crypto map cisco !---
Apply crypto map on backup interface. ! router ospf 1
log-adjacency-changes network 10.1.1.0 0.0.0.255 area 0
network 20.1.1.0 0.0.0.255 area 0 network 22.22.22.0
0.0.0.255 area 0 network 222.222.222.0 0.0.0.255 area 0
! no ip http server no ip http secure-server ip
classless ! ! access-list 101 permit ip host 22.22.22.22
host 11.11.11.11 access-list 110 deny ospf any any !---
Mark OSPF as uninteresting. !--- This will not allow
OSPF hellos !--- to try to bring the link up. access-
list 110 permit ip any any dialer-list 1 protocol ip
list 110 !--- Interesting traffic is defined by ACL 110.
!--- This is applied to Dialer1 using dialer group 1. !
line con 0 exec-timeout 0 0 logging synchronous escape-
character 27 line aux 0 line vty 0 4 login ! end

```

Verificación

Esta sección proporciona la información que usted puede utilizar para confirmar si funciona su configuración correctamente.

Salida de comando de muestra

La herramienta [Output Interpreter](#) (sólo para clientes [registrados](#)) permite utilizar algunos comandos “show” y ver un análisis del resultado de estos comandos.

- Tabla de ruteo de link principal del router1 (2621) — para arriba `rl#show ip route` Codes: C - connected, S - static, 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 I - IS-IS, su - IS-IS summary, 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 not set 222.222.222.0/32 is subnetted, 1 subnets O 222.222.222.222 [110/2] via 10.1.1.2, 00:00:25, FastEthernet0/0 20.0.0.0/24 is subnetted, 1 subnets C 20.1.1.0 is directly connected, Dialer1 22.0.0.0/32 is subnetted, 1 subnets O 22.22.22.22 [110/2] via 10.1.1.2,

00:00:25, FastEthernet0/0 111.0.0.0/24 is subnetted, 1 subnets C 111.111.111.0 is directly connected, Loopback1 10.0.0.0/24 is subnetted, 1 subnets C 10.1.1.0 is directly connected, FastEthernet0/0 11.0.0.0/24 is subnetted, 1 subnets C 11.11.11.0 is directly connected, Loopback0

- **Tabla de ruteo de link principal del router2 (3640) — para arriba**

```
r2#show ip route Codes: C -
connected, S - static, 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 I - IS-IS, su - IS-IS summary, 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 not
set. C 222.222.222.0/24 is directly connected, Loopback1 20.0.0.0/24 is subnetted, 1 subnets
C 20.1.1.0 is directly connected, Dialer1 22.0.0.0/24 is subnetted, 1 subnets C 22.22.22.0
is directly connected, Loopback0 111.0.0.0/32 is subnetted, 1 subnets O 111.111.111.111
[110/11] via 10.1.1.1, 00:06:22, Ethernet0/0 10.0.0.0/24 is subnetted, 1 subnets C 10.1.1.0
is directly connected, Ethernet0/0 11.0.0.0/32 is subnetted, 1 subnets O 11.11.11.11
[110/11] via 10.1.1.1, 00:06:23, Ethernet0/0
```
- **Vecino OSPF del link principal del router1 (2621) — para arriba**

```
r1#show ip ospf neighbor
Neighbor ID Pri State Dead Time Address Interface 222.222.222.222 1 FULL/DR 00:00:33
10.1.1.2 FastEthernet0/0
```
- **Vecino OSPF del router 2 (3640)—link primario activo**

```
r2#show ip ospf neighbor Neighbor ID
Pri State Dead Time Address Interface 111.111.111.111 1 FULL/BDR 00:00:31 10.1.1.1
Ethernet0/0
```
- **Tabla de ruteo de link principal del router1 (2621) — abajo**

```
r1#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
not set. 222.222.222.0/32 is subnetted, 1 subnets O 222.222.222.222 [110/10000] via
20.1.1.2, 00:00:09, Dialer1 20.0.0.0/24 is subnetted, 1 subnets C 20.1.1.0 is directly
connected, BRI0/0 20.0.0.0/24 is subnetted, 1 subnets C 20.1.1.0 is directly connected,
Dialer1 22.0.0.0/32 is subnetted, 1 subnets O 22.22.22.22 [110/10000] via 20.1.1.2,
00:00:09, Dialer1 111.0.0.0/24 is subnetted, 1 subnets C 111.111.111.0 is directly
connected, Loopback1 10.0.0.0/24 is subnetted, 1 subnets O 10.1.1.0 [110/10009] via
20.1.1.2, 00:00:09, Dialer1 11.0.0.0/24 is subnetted, 1 subnets C 11.11.11.0 is directly
connected, Loopback0
```
- **Tabla de de ruteo del router 2 (3640)—error en el link principal**

```
r2#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
not set. C 222.222.222.0/24 is directly connected, Loopback1 20.0.0.0/8 is variably
subnetted, 2 subnets, 2 masks C 20.1.1.0/24 is directly connected, Dialer1 C 20.1.1.1/32 is
directly connected, Dialer1 22.0.0.0/24 is subnetted, 1 subnets C 22.22.22.0 is directly
connected, Loopback0 111.0.0.0/32 is subnetted, 1 subnets O 111.111.111.111 [110/10000] via
20.1.1.1, 00:00:07, Dialer1 10.0.0.0/24 is subnetted, 1 subnets C 10.1.1.0 is directly
connected, Ethernet0/0 11.0.0.0/32 is subnetted, 1 subnets O 11.11.11.11 [110/10000] via
20.1.1.1, 00:00:08, Dialer1
```
- **Vecino OSPF del link principal del router1 (2621) — abajo**

```
r1#show ip ospf neighbor Neighbor
ID Pri State Dead Time Address Interface 222.222.222.222 0 FULL/ - 00:00:32 20.1.1.2 Dialer1
```
- **Vecino OSPF del router 2 (3640)—link primario fuera de servicio**

```
r2#show ip ospf neighbor
Neighbor ID Pri State Dead Time Address Interface 111.111.111.111 0 FULL/ - 00:00:31
20.1.1.1 Dialer1
```

El debug dialer y varias salidas del comando show visualizados aquí muestran el link principal como ruta perdida reconocizethe fallado, y del Monitoreo de marcado. El router entonces inicia el link de backup y el OSPF converge a través del link secundario. Cada vez que el tiempo de espera ocioso finaliza, el router verifica si el link principal está inactivo. Si el link principal se encuentra para estar para arriba, el Monitoreo de marcado desconecta el link de backup después de que el temporizador de la neutralización expire y derribe la llamada, y el OSPF converge por el

link principal como de costumbre.

Éstas son las salidas del comando **debug and show de router uno (2621)**, cuando el link principal va abajo y se trae para arriba otra vez.

```
r1#show debug Dial on demand: Dial on demand events debugging is on r1# 03:00:21: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down !--- Primary link was brought down manually when you disable the switch ports. 03:00:21: %OSPF-5-ADJCHG: Process 1, Nbr 222.222.222.222 on FastEthernet0/0 from FULL to DOWN, Neighbor Down: Interface down or detached !--- Primary link goes down. !--- OSPF loses neighbor adjacency. r1# !--- Dialer watch kicks in. 03:00:21: DDR: Dialer Watch: watch-group = 1 03:00:21: DDR: network 222.222.222.222/255.255.255.255 DOWN, 03:00:21: DDR: primary DOWN 03:00:21: DDR: Dialer Watch: Dial Reason: Primary of group 1 DOWN 03:00:21: DDR: Dialer Watch: watch-group = 1, 03:00:21: BR0/0 DDR: rotor dialout [best] least recent failure is also most recent failure 03:00:21: BR0/0 DDR: rotor dialout [best] also has most recent failure 03:00:21: BR0/0 DDR: rotor dialout [best] 03:00:21: DDR: dialing secondary by dialer string 94134028 on Di1 03:00:21: BR0/0 DDR: Attempting to dial 94134028 03:00:21: DDR: Dialer Watch: watch-group = 1 r1# 03:00:21: DDR: network 222.222.222.222/255.255.255.255 DOWN, 03:00:21: DDR: primary DOWN 03:00:21: DDR: Dialer Watch: Dial Reason: Secondary of group 1 AVAILABLE 03:00:21: DDR: Dialer Watch: watch-group = 1, 03:00:21: DDR: Dialer Watch: watch-group = 1 03:00:21: DDR: network 222.222.222.222/255.255.255.255 DOWN, 03:00:21: DDR: primary DOWN 03:00:21: DDR: Dialer Watch: Dial Reason: Secondary of group 1 AVAILABLE 03:00:21: DDR: Dialer Watch: watch-group = 1, 03:00:21: %ISDN-6-LAYER2UP: Layer 2 for Interface BR0/0, TEI 82 changed to up 03:00:94489280514: %LINK-3-UPDOWN: Interface BRI0/0:1, changed state to up 03:00:94489280516: BR0/0:1 DDR: Dialer Watch: resetting call in progress 03:00:94489280512: BR0/0:1: interface must be fifo queue, force fifo 03:00:94489280512: %DIALER-6-BIND: Interface BR0/0:1 bound to profile Di1 r1# 03:00:22: BR0/0:1 DDR: Remote name for r2 03:00:22: BR0/0:1 DDR: dialer protocol up 03:00:23: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0/0:1, changed state to up r1# 03:00:28: %ISDN-6-CONNECT: Interface BRI0/0:1 is now connected to 94134028 r2 !--- Backup link is now connected to Router 2. r1# 03:00:31: %OSPF-5-ADJCHG: Process 1, Nbr 222.222.222.222 on Dialer1 from LOADING to FULL, Loading Done !--- OSPF converges over the backup link. r1# r1#show dialer BRI0/0 - dialer type = ISDN Dial String Successes Failures Last DNIS Last status 0 incoming call(s) have been screened. 0 incoming call(s) rejected for callback. BRI0/0:1 - dialer type = ISDN Idle timer (180 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is data link layer up Dial reason: Dialing on watched route loss !--- Dial reason is the lost route. Interface bound to profile Di1 Time until disconnect 154 secs !--- Idle timeout is ticking. Current call connected 00:00:25 Connected to 94134028 (r2) BRI0/0:2 - dialer type = ISDN Idle timer (120 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is idle Di1 - dialer type = DIALER PROFILE Idle timer (180 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is data link layer up Number of active calls = 1 Dial String Successes Failures Last DNIS Last status 94134028 45 24 00:00:27 successful Default r1#show isdn active ----- ISDN ACTIVE CALLS ----- Call Calling Called Remote Seconds Seconds Seconds Charges Type Number Number Name Used Left Idle Units/Currency ----- Out ---N/A--- 94134028 r2 37 142 37 0 ----- r1#show dialer BRI0/0 - dialer type = ISDN Dial String Successes Failures Last DNIS Last status 0 incoming call(s) have been screened. 0 incoming call(s) rejected for callback. BRI0/0:1 - dialer type = ISDN Idle timer (180 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is data link layer up Dial reason: Dialing on watched route loss Interface bound to profile Di1 Time until disconnect 47 secs !--- Idle timeout is ticking. Current call connected 00:02:12 Connected to 94134028 (r2) BRI0/0:2 - dialer type = ISDN Idle timer (120 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is idle Di1 - dialer type = DIALER PROFILE Idle timer (180 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is data link layer up Number of active calls = 1 Dial String Successes Failures Last DNIS Last status 94134028 45 24 00:02:14 successful Default r1#show dialer BRI0/0 - dialer type = ISDN Dial String Successes Failures Last DNIS Last status 0 incoming call(s) have been screened. 0 incoming call(s) rejected for callback. BRI0/0:1 - dialer type = ISDN Idle timer (180 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is data link layer up Dial reason: Dialing on watched route loss Interface bound to profile Di1 Time until disconnect 0 secs !--- Idle timeout is ticking. Current call connected 00:02:59 Connected to 94134028 (r2) BRI0/0:2 - dialer type = ISDN Idle
```



```

timer (120 secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle Di1 - dialer type = DIALER PROFILE Idle timer (180 secs), Fast idle timer
(20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is data link layer up
Number of active calls = 1 Dial String Successes Failures Last DNIS Last status 94134028 45 24
00:03:05 successful Default r1# 03:03:22: BR0/0:1 DDR: idle timeout !--- Idle timed out. !---
Dialer watch checks lost routes !--- again and reset the idle time since primary is not up yet.
03:03:22: DDR: Dialer Watch: watch-group = 1 03:03:22: DDR: network
222.222.222.222/255.255.255.255 UP, 03:03:22: DDR: primary DOWN !--- Primary link is still down.
r1# r1#show dialer BRI0/0 - dialer type = ISDN Dial String Successes Failures Last DNIS Last
status 0 incoming call(s) have been screened. 0 incoming call(s) rejected for callback. BRI0/0:1
- dialer type = ISDN Idle timer (180 secs), Fast idle timer (20 secs) Wait for carrier (30
secs), Re-enable (15 secs) Dialer state is data link layer up Dial reason: Dialing on watched
route loss Interface bound to profile Di1 Time until disconnect 154 secs !--- Idle timeout was
reset by dialer watch. Current call connected 00:03:25 Connected to 94134028 (r2) BRI0/0:2 -
dialer type = ISDN Idle timer (120 secs), Fast idle timer (20 secs) Wait for carrier (30 secs),
Re-enable (15 secs) Dialer state is idle Di1 - dialer type = DIALER PROFILE Idle timer (180
secs), Fast idle timer (20 secs) Wait for carrier (30 secs), Re-enable (15 secs) Dialer state is
data link layer up Number of active calls = 1 Dial String Successes Failures Last DNIS Last
status 94134028 45 24 00:03:28 successful Default r1# 03:04:59: %LINEPROTO-5-UPDOWN: Line
protocol on Interface FastEthernet0/0, changed state to up !--- Primary link was brought up
manually when the switch ports are enabled. r1# r1# 03:05:50: %OSPF-5-ADJCHG: Process 1, Nbr
222.222.222.222 on FastEthernet0/0 from LOADING to FULL, Loading Done r1# r1#show ip ospf neigh
Neighbor ID Pri State Dead Time Address Interface 222.222.222.222 0 FULL/ - 00:00:02 20.1.1.2
Dialer1 !--- OSPF over secondary link is still up because !--- the call is not terminated yet,
waiting for idle timeout. 222.222.222.222 1 FULL/DR 00:00:38 10.1.1.2 FastEthernet0/0 !--- OSPF
is now starts to converge over primary link. r1# r1#show ip route 222.222.222.222 !--- The
watched route is now learned through the primary link. !--- Check the cost. Routing entry for
222.222.222.222/32 Known via "ospf 1", distance 110, metric 2, type intra area Last update from
10.1.1.2 on FastEthernet0/0, 00:00:16 ago Routing Descriptor Blocks: * 10.1.1.2, from
222.222.222.222, 00:00:16 ago, via FastEthernet0/0 Route metric is 2, traffic share count is r1#
03:06:22: BR0/0:1 DDR: idle timeout !--- Idle timed out. !--- Dialer watch checks lost routes.
Since primary is up, !--- it tears down the call. 03:06:22: DDR: Dialer Watch: watch-group = 1
03:06:22: DDR: network 222.222.222.222/255.255.255.255 UP, 03:06:22: DDR: primary UP 03:06:22:
BR0/0:1 DDR: disconnecting call 03:06:22: BR0/0:1 DDR: Dialer Watch: resetting call in progress
03:06:22: DDR: Dialer Watch: watch-group = 1 03:06:22: DDR: network
222.222.222.222/255.255.255.255 UP, 03:06:22: DDR: primary UP 03:06:22: %ISDN-6-DISCONNECT:
Interface BRI0/0:1 disconnected from 94134028 r2, call lasted 360 seconds 03:06:96677768412:
%LINK-3-UPDOWN: Interface BRI0/0:1, changed state to down 03:06:94489281195: BR0/0 DDR: has
total 0 call(s), dial_out 0, dial_in 0 r1# 03:06:94489280544: %DIALER-6-UNBIND: Interface
BR0/0:1 unbound from profile Di1 03:06:23: %LINEPROTO-5-UPDOWN: Line protocol on Interface
BRI0/0:1, changed state to down r1# 03:06:37: %ISDN-6-LAYER2DOWN: Layer 2 for Interface BR0/0,
TEI 82 changed to down r1# 03:07:01: %OSPF-5-ADJCHG: Process 1, Nbr 222.222.222.222 on Dialer1
from FULL to DOWN, Neighbor Down: Dead timer expired !--- OSPF neighbor is down because the
secondary link is down. !--- Dead timer has expired. r1# r1#show ip ospf neigh Neighbor ID Pri
State Dead Time Address Interface 222.222.222.222 1 FULL/DR 00:00:38 10.1.1.2 FastEthernet0/0 !-
-- OSPF neighbor is through the primary link only. r1#u all All possible debugging has been
turned off r1#

```

[Troubleshooting](#)

En esta sección encontrará información que puede utilizar para solucionar problemas de configuración. Para obtener más información sobre cómo resolver los problemas generales con las capas 1, 2 y 3 ISDN, consulte el [Uso del comando show isdn status para resolución de problemas de BRI](#).

[Comandos para resolución de problemas](#)

La herramienta [Output Interpreter](#) (sólo para clientes [registrados](#)) permite utilizar algunos comandos “show” y ver un análisis del resultado de estos comandos.

Nota: [Antes de ejecutar un comando de depuración, consulte Información importante sobre comandos de depuración.](#)

Estos **comandos debug** pueden ser funcionados con en ambos peers IPsec.

- **debug crypto ipsec** — Muestra errores durante la fase 1.
- **debug crypto ipsec** — Muestra errores durante la fase 2.
- **debug crypto engine** — Muestra información del motor de criptografía.

Estos **comandos show** pueden ser funcionados con en ambos peers IPsec.

- **muestre isakmp crypto sa** — Visualiza todas las asociaciones de seguridad actuales del Internet Key Exchange (IKE) (SA) en un par.
- **show crypto ipsec sa**—Muestra las configuraciones empleadas por las SA [IPsec] actuales.
- **show crypto engine connections active**—Muestra la información y conexiones actuales relacionadas con los paquetes encriptación y desencriptación.

Estos **comandos clear** pueden ser utilizados para borrar los SA.

- **borre el isakmp crypto** — Borra las asociaciones de seguridad del fase uno.
- **borre el sa crypto** — Borra las asociaciones de seguridad de la fase dos.

[Información Relacionada](#)

- [Página de soporte de IPsec](#)
- [Configuración y resolución de problemas de respaldo de DDR](#)
- [Evaluación de interfaces de respaldo, rutas estáticas flotantes y monitoreo de marcado para el respaldo de DDR](#)
- [Configuración de respaldo de marcado utilizando vigilancia de programas "Dialer"](#)
- [Uso del comando show isdn status para la resolución de problemas de BRI](#)
- [Soporte Técnico - Cisco Systems](#)