

# Configurando a redundância de IPSec sobre o ISDN usando o Dialer Watch

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## [Introdução](#)

Este documento fornece uma configuração de exemplo como cifrar o tráfego da rede atrás do roteador1 à rede atrás do roteador2 (o laço de retorno 0s é usado como redes neste exemplo). Se o link principal (Ethernet) entre o roteador1 e o roteador2 vai para baixo, o tráfego da Segurança IP (IPsec) continua a correr através do enlace secundário (ISDN). Há diversas maneiras de conseguir este objetivo; você pode usar o Dialer Watch, a Interface de backup, o circuito da procura, e a estática flutuante. Esse exemplo de configuração demonstra o mecanismo do relógio do discador. Para obter informações sobre outros recursos, consulte [Avaliando interfaces de backup, rotas estáticas flutuantes e relógio de discador para backup de DDR](#).

## [Pré-requisitos](#)

### [Requisitos](#)

Não existem requisitos específicos para este documento.

### [Componentes Utilizados](#)

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

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

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 sua rede está viva, certifique-se de que você compreende o impacto potencial do comando any antes que você o use.

## Convenções

Para obter mais informações sobre convenções de documento, consulte as [Convenções de dicas técnicas Cisco](#).

## 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](#)).

## Diagrama de Rede

Este documento usa a instalação de rede mostrada no diagrama aqui:

## Configurações

Este documento usa as configurações mostradas aqui:

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

```
Roteador 1 (2621)
r1#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

```

## Roteador 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

```

## Verificar

Esta seção fornece a informação que você pode se usar para confirmar se sua configuração funciona corretamente.

## Exemplo de saída do comando

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

- Tabela de roteamento do link principal do roteador1 (2621) — acima `r1#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

- **Tabela de roteamento do link principal do roteador2 (3640) — acima**  
`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**
- **Vizinho de OSPF do link principal do roteador1 (2621) — acima**  
`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**
- **Vizinho OSPF do Roteador 2 (3640)—link primário ativo**  
`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**
- **Tabela de roteamento do link principal do roteador1 (2621) — para baixo**  
`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
- **Tabela de roteamento do link principal do roteador2 (3640) — para baixo**  
`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**
- **Vizinho de OSPF do link principal do roteador1 (2621) — para baixo**  
`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**
- **Vizinho de OSPF do link principal do roteador2 (3640) — para baixo**  
`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**

O debug dialer e diversos show command outputs (resultado do comando show) indicados aqui mostram o link principal como a rota perdida reconhecida falhada, e do Dialer Watch. O roteador inicia então o link de backup e o OSPF converge através do enlace secundário. Sempre que o timeout de ociosidade expira, o roteador verifica se o enlace principal está inativo. Se o link principal é encontrado para estar acima, o Dialer Watch desliga o link de backup depois que o temporizador de desabilitação expira e rasga para baixo o atendimento, e o OSPF converge pelo link principal como de costume.

Estas são as saídas do comando **debug and show** do roteador um (2621), quando o link principal vai para baixo e é trazido acima outra 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

Esta seção fornece informações que podem ser usadas para o troubleshooting da sua configuração. Para obter informações sobre como solucionar problemas gerais com as Camadas 1, 2 e 3 do ISDN, consulte [Using the show isdn status Command for BRI Troubleshooting](#).

## Comandos para Troubleshooting

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

**Nota:** [Antes de emitir comandos de depuração, consulte Informações Importantes sobre Comandos de Depuração.](#)

Estes **comandos debug** podem ser executados em ambos os ipsec peer.

- **debug crypto isakmp** — Exibe erros durante a Fase 1.
- **debug crypto ipsec** — Exibe erros durante a Fase 2.
- **debug crypto engine** — Exibe informações a partir do cripto mecanismo.

Estes **comandos show** podem ser executados em ambos os ipsec peer.

- **mostre isakmp cripto sa** — Indica todas as associações de segurança atuais do Internet Key Exchange (IKE) (SA) em um par.
- **mostre IPsec cripto sa** — Indica os ajustes usados pelo [IPSec] atual SA.
- **active do show crypto engine connections** — Conexões atual e informação dos indicadores em relação aos pacotes criptografado e decriptografado.

Estes **comandos clear** podem ser usados para cancelar SA.

- **cancela o isakmp cripto** — Cancela as associações de segurança fase um.
- **cancela o sa cripto** — Cancela as associações de segurança da fase dois.

## [Informações Relacionadas](#)

- [Página de suporte do IPSec](#)
- [Configurando e Troubleshooting de Backup DDR](#)
- [Avaliando a interface da cópia de segurança, rotas estáticas flutuantes e relógio de discador para backup DDR](#)
- [Configurando o backup de discagem com o relógio de discador](#)
- [Usando o Comando show isdn status para Troubleshooting de BRI](#)
- [Suporte Técnico - Cisco Systems](#)