

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](#).

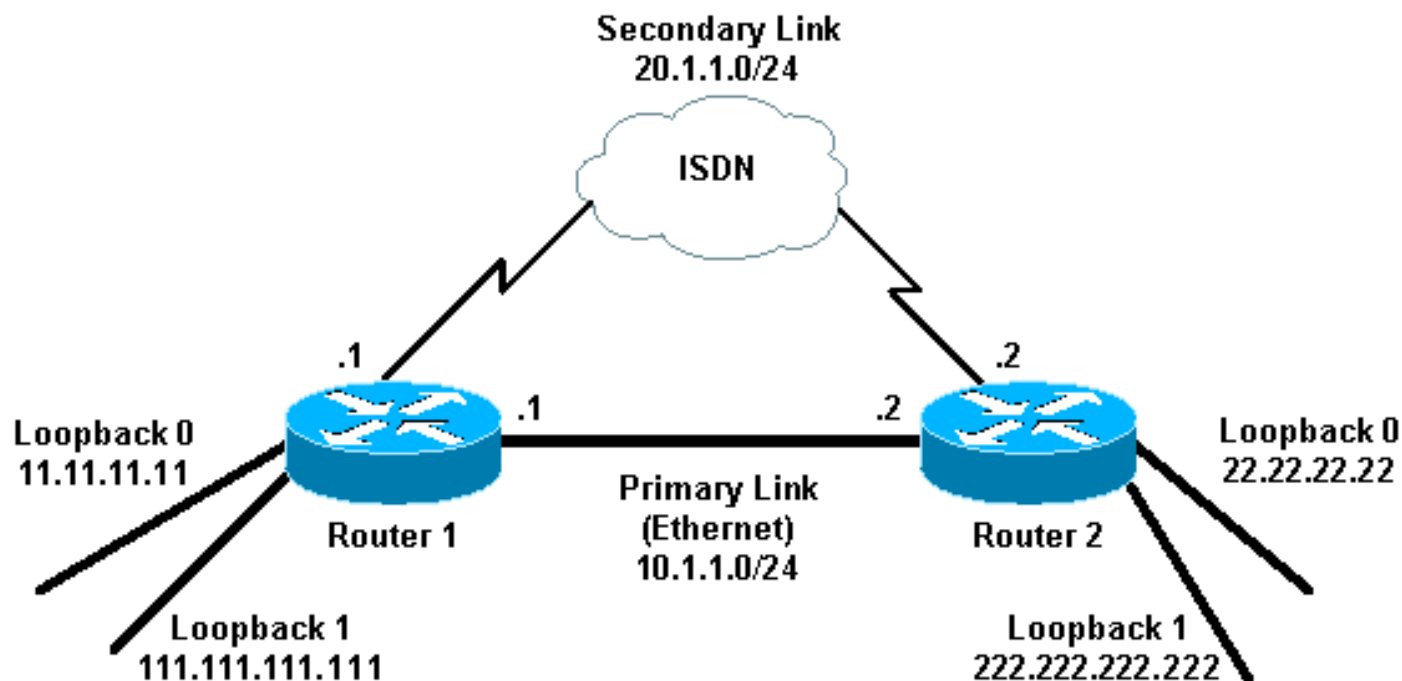
Configurar

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

Note: 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 222.222.222/255.255.255.255 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 Type	Calling Number	Called Number	Remote Name	Seconds Used	Seconds Left	Seconds Idle	Charges 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 Dil
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.

Note: [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](#)