

Configuration d'une sauvegarde RNIS avec des routes statiques flottantes

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Ce document fournit à une configuration d'échantillon pour mettre en application une sauvegarde RNIS des Routes statiques flottantes, et fournit l'information de dépannage de base pour ce type de configuration.

Pour les informations sur les réalisations les plus communes de la sauvegarde RNIS, et des comparaisons entre ces derniers, référez-vous au document suivant : [Évaluation des Interfaces de sauvegarde, des Routes statiques flottantes, et de la Fonction Dialer Watch pour la sauvegarde DDR.](#)

[Conditions préalables](#)

[Conditions requises](#)

Aucune spécification déterminée n'est requise pour ce document.

[Composants utilisés](#)

Les informations dans ce document sont basées sur les versions de logiciel et de matériel ci-dessous.

- Deux Routeurs de Cisco 2500 exécutant des versions de logiciel 12.2(3) et 12.2(5) de Cisco

IOS®

Les informations présentées dans ce document ont été créées à partir de périphériques dans un environnement de laboratoire spécifique. Tous les périphériques utilisés dans ce document ont démarré avec une configuration effacée (par défaut). Si vous travaillez dans un réseau opérationnel, assurez-vous de bien comprendre l'impact potentiel de toute commande avant de l'utiliser.

Conventions

Pour plus d'informations sur les conventions des documents, référez-vous aux [Conventions utilisées pour les conseils techniques de Cisco](#).

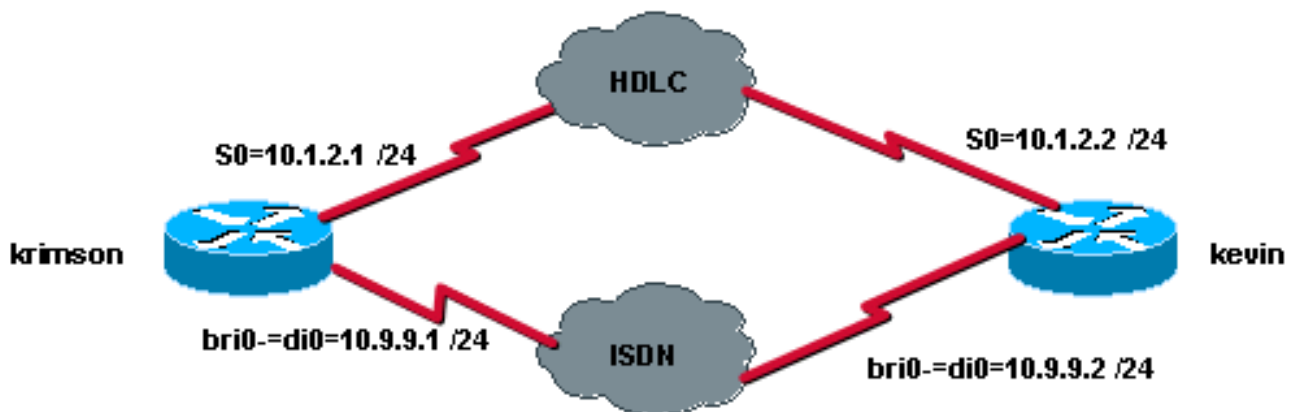
Configurez

Cette section vous fournit des informations pour configurer les fonctionnalités décrites dans ce document.

Note: Pour trouver les informations complémentaires sur les commandes utilisées dans ce document, utilisez l'[utilitaire de recherche de commande](#) (clients [enregistrés](#) seulement).

Diagramme du réseau

Ce document utilise la configuration réseau indiquée dans le diagramme suivant :



Configurations

Ce document utilise les configurations présentées ci-dessous.

- [krimson \(routeur de Cisco 2500\)](#)
- [Kevin \(routeur de Cisco 2500\)](#)

krimson (routeur de Cisco 2500)

```
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
!
interface Serial0
ip address 10.1.2.1 255.255.255.0
!
interface BRI0
no ip address
encapsulation ppp
no ip route-cache
no ip mroute-cache
load-interval 30
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 8114
dialer-group 1
no cdp enable
ppp authentication chap
!
ip classless
ip route 10.8.8.0 255.255.255.0 10.1.2.2
ip route 10.8.8.0 255.255.255.0 10.9.9.2 180
no ip http server
!
dialer-list 1 protocol ip permit
!
!
line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
exec-timeout 0 0
password <password> login
!
end
```

Kevin (routeur de Cisco 2500)

```
kevin#show running-config
```

```
Building configuration...

Current configuration : 1205 bytes
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname kevin
!
username krimson password 0 <password>
!
isdn switch-type basic-net3
!
!
!
interface Loopback0
ip address 10.8.8.1 255.255.255.0
!
interface Serial0
ip address 10.1.2.2 255.255.255.0
clockrate 2000000
!
interface Serial1
no ip address
shutdown
!
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 string 8113
dialer-group 1
no cdp enable
ppp authentication chap
!
!
dialer-list 1 protocol ip permit
!
!
line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
exec-timeout 0 0
password <password> login
!
end
```

[Vérifiez](#)

Cette section présente des informations que vous pouvez utiliser pour vous assurer que votre

configuration fonctionne correctement.

Certaines **commandes show** sont prises en charge par l'[outil d'Output Interpreter](#) (clients [enregistrés](#) seulement), qui te permet pour visualiser une analyse de sortie de commande show.

- **show ip route** - Entrées de table de Routage IP d'affichages.
- **interfaces d'exposition** - Statistiques d'affichages pour toutes les interfaces configurées sur le routeur ou le serveur d'accès.

[Dépannez](#)

Cette section fournit des informations que vous pouvez utiliser pour dépanner votre configuration.

[Dépannage des commandes](#)

Certaines **commandes show** sont prises en charge par l'[outil d'Output Interpreter](#) (clients [enregistrés](#) seulement), qui te permet pour visualiser une analyse de sortie de commande show.

Note: Avant d'exécuter les commandes **debug**, référez-vous à la section **Informations importantes sur les commandes Debug**.

- **debug isdn q931** - Affiche des informations au sujet de l'établissement d'appel et du démontage de la connexion réseau RNIS (couche 3) entre le routeur local (côté utilisateur) et le réseau.
- **debug isdn event** - Événements RNIS d'affichages se produisant du côté utilisateur (sur le routeur) de l'interface RNIS. Les événements RNIS qui peuvent être affichés sont les événements Q.931 (établissement d'appel et démontage de la connexion réseau RNIS).
- **mettez au point le numéroteur** - Les informations de débogage d'affichages au sujet des paquets ou des événements sur une interface de numérotation.
- **debug ppp negotiation** - Entraîne la commande de **debug ppp** d'afficher des paquets PPP transmis pendant le startup de PPP, où des options PPP sont négociées.
- **debug ppp authentication** - Entraîne la commande de **debug ppp** d'afficher des messages du protocole d'authentification, y compris des échanges de paquet de Protocol d'authentification de défi (CHAP) et des échanges de Password Authentication Protocol (PAP).

[Sortie de dépannage d'échantillon](#)

Ici, nous pouvons ne tester la fonctionnalité de sauvegarde à l'aide de l'**arrêt** et **aucune commande shutdown** sur l'interface série du côté distant. Ceci mène par conséquent à la disparition de l'artère primaire d'IP au réseau de destination en question.

D'abord regardons l'état initial de l'interface principale et de la table de Routage IP :

[Côté appelant :](#)

```
krimson#show interface serial 0
Serial0 is up, line protocol is up
Hardware is HD64570
```

```
Internet address is 10.1.2.1/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
Last input 00:00:07, output 00:00:07, output hang never
Last clearing of "show interface" counters never
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 0/1/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 1158 kilobits/sec
5 minute input rate 1000 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
92 packets input, 7599 bytes, 0 no buffer
Received 62 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
99 packets output, 8991 bytes, 0 underruns
0 output errors, 0 collisions, 12 interface resets
0 output buffer failures, 0 output buffers swapped out
4 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 10.48.74.1 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 5 subnets, 2 masks

C 10.1.2.0/24 is directly connected, Serial0

S 10.8.8.0/24 [1/0] via 10.1.2.2

!--- The IP route for the destination network points to the primary link. C 10.9.9.0/24 is directly connected, Dialer0 C 10.7.7.0/24 is directly connected, Loopback0 C 10.48.74.0/23 is directly connected, Ethernet0 S* 0.0.0.0/0 [254/0] via 10.48.74.1

Side appelé :

kevin#**show interface serial 0**

Serial0 is up, line protocol is up

Hardware is HD64570

Internet address is 10.1.2.2/24

MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255

Encapsulation HDLC, loopback not set

Keepalive set (10 sec)

Last input 00:00:00, output 00:00:08, output hang never

Last clearing of "show interface" counters never

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 0/1/256 (active/max active/max total)

Reserved Conversations 0/0 (allocated/max allocated)

Available Bandwidth 1158 kilobits/sec

5 minute input rate 0 bits/sec, 0 packets/sec

5 minute output rate 0 bits/sec, 0 packets/sec

```
106 packets input, 9432 bytes, 0 no buffer
Received 71 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
98 packets output, 8016 bytes, 0 underruns
0 output errors, 0 collisions, 4 interface resets
0 output buffer failures, 0 output buffers swapped out
1 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up
```

kevin#**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 10.48.74.1 to network 0.0.0.0

```
10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C 10.1.2.0/24 is directly connected, Serial0
C 10.9.9.0/24 is directly connected, Dialer0
C 10.8.8.0/24 is directly connected, Loopback0
C 10.48.74.0/23 is directly connected, Ethernet0
S* 0.0.0.0/0 [254/0] via 10.48.74.1
kevin#
```

Maintenant nous pouvons simuler la panne de lien à l'aide de la commande **shutdown** sur l'interface série distante :

kevin#**show interface serial 0**

```
Serial0 is up, line protocol is up
Hardware is HD64570
Internet address is 10.1.2.2/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
Last input 00:00:00, output 00:00:08, output hang never
Last clearing of "show interface" counters never
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 0/1/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 1158 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
106 packets input, 9432 bytes, 0 no buffer
Received 71 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
98 packets output, 8016 bytes, 0 underruns
0 output errors, 0 collisions, 4 interface resets
0 output buffer failures, 0 output buffers swapped out
1 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up
```

kevin#**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 10.48.74.1 to network 0.0.0.0
```

```
10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C 10.1.2.0/24 is directly connected, Serial0
C 10.9.9.0/24 is directly connected, Dialer0
C 10.8.8.0/24 is directly connected, Loopback0
C 10.48.74.0/23 is directly connected, Ethernet0
S* 0.0.0.0/0 [254/0] via 10.48.74.1
kevin#
```

Nous pouvons voir ici que la liaison principale est descendue.

```
krimson#show interface serial 0
Serial0 is down, line protocol is down
Hardware is HD64570
Internet address is 10.1.2.1/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
Last input 00:00:22, output 00:00:32, output hang never
Last clearing of "show interface" counters never
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 0/1/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 1158 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
108 packets input, 8526 bytes, 0 no buffer
Received 78 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
114 packets output, 9895 bytes, 0 underruns
0 output errors, 0 collisions, 12 interface resets
0 output buffer failures, 0 output buffers swapped out
5 carrier transitions
DCD=down DSR=down DTR=up RTS=up CTS=down
krimson#
```

Les détails de table de routage prouvent maintenant que la Route statique flottante est installée dans la table de routage :

```
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 10.48.74.1 to network 0.0.0.0
```

```
10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
```



```
S 10.8.8.0/24 [180/0] via 10.9.9.2
C 10.9.9.0/24 is directly connected, Dialer0
C 10.7.7.0/24 is directly connected, Loopback0
C 10.48.74.0/23 is directly connected, Ethernet0
S* 0.0.0.0/0 [254/0] via 10.48.74.1
krimson#
```

Sur le routeur appelé, nous pouvons simuler la défaillance de liaison primaire simulée à l'aide de la commande **shutdown** sur l'interface locale de l'interface série 0 :

```
kevin#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
kevin(config)#interface serial 0
kevin(config-if)#shutdown

*Mar 4 15:32:00.250: %LINK-5-CHANGED: Interface Serial0, changed state to
administratively down
*Mar 4 15:32:01.250: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Serial0, changed state to down
*Mar 4 15:32:03.742: %SYS-5-CONFIG_I: Configured from console by console
```

Maintenant nous pouvons voir que la liaison principale descend :

```
kevin#show interface serial 0
Serial0 is administratively down, line protocol is down
Hardware is HD64570
Internet address is 10.1.2.2/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
Last input 00:01:28, output 00:01:18, output hang never
Last clearing of "show interface" counters never
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 0/1/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 1158 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
114 packets input, 9895 bytes, 0 no buffer
Received 79 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
108 packets output, 8526 bytes, 0 underruns
0 output errors, 0 collisions, 4 interface resets
0 output buffer failures, 0 output buffers swapped out
1 carrier transitions
DCD=down DSR=down DTR=up RTS=up CTS=down
```

Le trafic ping qui est défini comme trafic intéressant initie l'appel sortant par l'intermédiaire de l'interface du numéroteur de sauvegarde 0.

```
krimson#ping 10.8.8.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.8.8.1, timeout is 2 seconds:

*Mar 4 15:27:39.618: BR0 DDR: rotor dialout [priority]
*Mar 4 15:27:39.622: BR0 DDR: Dialing cause ip (s=10.9.9.1, d=10.8.8.1)
*Mar 4 15:27:39.626: BR0 DDR: Attempting to dial 8114
```

```

*Mar 4 15:27:39.642: ISDN BR0: TX -> SETUP pd = 8 callref = 0x09
*Mar 4 15:27:39.646: Bearer Capability i = 0x8890
*Mar 4 15:27:39.654: Channel ID i = 0x83
*Mar 4 15:27:39.658: Called Party Number i = 0x80, '8114',
Plan:Unknown, Type:Unknown
*Mar 4 15:27:39.718: ISDN BR0: RX <- CALL_PROC pd = 8 callref = 0x89
*Mar 4 15:27:39.722: Channel ID i = 0x89
*Mar 4 15:27:39.974: ISDN BR0: RX <- CONNECT pd = 8 callref = 0x89
*Mar 4 15:27:39.990: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up
*Mar 4 15:27:39.998: %DIALER-6-BIND: Interface BR0:1 bound to profile Di0
*Mar 4 15:27:40.010: BR0:1 PPP: Treating connection as a callout
*Mar 4 15:27:40.010: BR0:1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
*Mar 4 15:27:40.014: BR0:1 LCP: O !!!CONFREQ [Closed] id 19 len 15
*Mar 4 15:27:40.018: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.022: BR0:1 LCP: MagicNumber 0x12D0A490 (0x050612D0A490)
*Mar 4 15:27:40.030: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x09
*Mar 4 15:27:40.054: BR0:1 LCP: I CONFREQ [REQsent] id 9 len 15
*Mar 4 15:27:40.058: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.062: BR0:1 LCP: MagicNumber 0x12D6B638 (0x050612D6B638)
*Mar 4 15:27:40.066: BR0:1 LCP: O CONFACK [REQsent] id 9 len 15
*Mar 4 15:27:40.066: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.070: BR0:1 LCP: MagicNumber 0x12D6B638 (0x050612D6B638)
*Mar 4 15:27:40.074: BR0:1 LCP: I CONFACK [ACKsent] id 19 len 15
*Mar 4 15:27:40.078: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.082: BR0:1 LCP: MagicNumber 0x12D0A490 (0x050612D0A490)
*Mar 4 15:27:40.082: BR0:1 LCP: State is Open
*Mar 4 15:27:40.086: BR0:1 PPP: Phase is AUTHENTICATING, by both [0 sess, 0 load]
*Mar 4 !
Suc15:27:40.090: BR0:1 CHAP: O CHALLENGE id 7 len 28 from "krimson"
*Mar 4 15:27:40.106: BR0:1 CHAP: I CHALLENGE id 7 len 26 from "kevin"
*Mar 4 15:27:40.110: BR0:1 CHAP: O RESPONSE id 7 len 28 from "krimson"
*Mar 4 15:27:40.138: BR0:1 CHAP: I SUCCESS id 7 len 4
*Mar 4 15:27:40.150: BR0:1 CHAP: I RESPONSE id 7 len 26 from "kevin"
*Mar 4 15:27:40.158: BR0:1 CHAP: O SUCCESS id 7 len 4
*Mar 4 15:27:40.162: BR0:1 PPP: Phase is UP [0 sess, 0 load]
*Mar 4 15:27:40.166: BR0:1 IPCP: O CONFREQ [Not negotiated] id 2 len 10
*Mar 4 15:27:40.170: BR0:1 IPCP: Address 10.9.9.1 (0x03060A090901)
*Mar 4 15:27:40.186: BR0:1 IPCP: I CONFREQ [REQsent] id 2 len 10
*Mar 4 15:27:40.190: BR0:1 IPCP: Address 10.9.9.2 (0x03060A090902)
*Mar 4 15:27:40.190: BR0:1 IPCP: O CONFACK [REQsent] id 2 len 10
*Mar 4 15:27:40.194: BR0:1 IPCP: Address 10.9.9.2 (0x03060A090902)
*Mar 4 15:27:40.202: BR0:1 IPCP: I CONFACK [ACKsent] id 2 len 10
*Mar 4 15:27:40.206: BR0:1 IPCP: Address 10.9.9.1 (0x03060A090901)
*Mar 4 15:27:40.206: BR0:1 IPCP: State is Open
*Mar 4 15:27:40.214: BR0:1 DDR: dialer protocol up
*Mar 4 15:27:40.218: Di0 IPCP: Install route to 10.9.9.2
*Mar 4 15:27:41.162: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed state to upcess rate is 80 percent (4/5), round-trip min/avg/max =
36/47/76 ms
krimson#

```

En même temps, met au point l'exécution sur l'entresort appelé la sortie suivante pour cet même appel :

```

krimson#ping 10.8.8.1

```

```

Type escape sequence to abort.

```

```

Sending 5, 100-byte ICMP Echos to 10.8.8.1, timeout is 2 seconds:

```

```

*Mar 4 15:27:39.618: BR0 DDR: rotor dialout [priority]
*Mar 4 15:27:39.622: BR0 DDR: Dialing cause ip (s=10.9.9.1, d=10.8.8.1)
*Mar 4 15:27:39.626: BR0 DDR: Attempting to dial 8114
*Mar 4 15:27:39.642: ISDN BR0: TX -> SETUP pd = 8 callref = 0x09

```

```

*Mar 4 15:27:39.646: Bearer Capability i = 0x8890
*Mar 4 15:27:39.654: Channel ID i = 0x83
*Mar 4 15:27:39.658: Called Party Number i = 0x80, '8114',
Plan:Unknown, Type:Unknown
*Mar 4 15:27:39.718: ISDN BR0: RX <- CALL_PROC pd = 8 callref = 0x89
*Mar 4 15:27:39.722: Channel ID i = 0x89
*Mar 4 15:27:39.974: ISDN BR0: RX <- CONNECT pd = 8 callref = 0x89
*Mar 4 15:27:39.990: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up
*Mar 4 15:27:39.998: %DIALER-6-BIND: Interface BR0:1 bound to profile Di0
*Mar 4 15:27:40.010: BR0:1 PPP: Treating connection as a callout
*Mar 4 15:27:40.010: BR0:1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
*Mar 4 15:27:40.014: BR0:1 LCP: O !!!CONFREQ [Closed] id 19 len 15
*Mar 4 15:27:40.018: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.022: BR0:1 LCP: MagicNumber 0x12D0A490 (0x050612D0A490)
*Mar 4 15:27:40.030: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x09
*Mar 4 15:27:40.054: BR0:1 LCP: I CONFREQ [REQsent] id 9 len 15
*Mar 4 15:27:40.058: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.062: BR0:1 LCP: MagicNumber 0x12D6B638 (0x050612D6B638)
*Mar 4 15:27:40.066: BR0:1 LCP: O CONFACK [REQsent] id 9 len 15
*Mar 4 15:27:40.066: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.070: BR0:1 LCP: MagicNumber 0x12D6B638 (0x050612D6B638)
*Mar 4 15:27:40.074: BR0:1 LCP: I CONFACK [ACKsent] id 19 len 15
*Mar 4 15:27:40.078: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 4 15:27:40.082: BR0:1 LCP: MagicNumber 0x12D0A490 (0x050612D0A490)
*Mar 4 15:27:40.082: BR0:1 LCP: State is Open
*Mar 4 15:27:40.086: BR0:1 PPP: Phase is AUTHENTICATING, by both [0 sess, 0 load]
*Mar 4 !
Suc15:27:40.090: BR0:1 CHAP: O CHALLENGE id 7 len 28 from "krimson"
*Mar 4 15:27:40.106: BR0:1 CHAP: I CHALLENGE id 7 len 26 from "kevin"
*Mar 4 15:27:40.110: BR0:1 CHAP: O RESPONSE id 7 len 28 from "krimson"
*Mar 4 15:27:40.138: BR0:1 CHAP: I SUCCESS id 7 len 4
*Mar 4 15:27:40.150: BR0:1 CHAP: I RESPONSE id 7 len 26 from "kevin"
*Mar 4 15:27:40.158: BR0:1 CHAP: O SUCCESS id 7 len 4
*Mar 4 15:27:40.162: BR0:1 PPP: Phase is UP [0 sess, 0 load]
*Mar 4 15:27:40.166: BR0:1 IPCP: O CONFREQ [Not negotiated] id 2 len 10
*Mar 4 15:27:40.170: BR0:1 IPCP: Address 10.9.9.1 (0x03060A090901)
*Mar 4 15:27:40.186: BR0:1 IPCP: I CONFREQ [REQsent] id 2 len 10
*Mar 4 15:27:40.190: BR0:1 IPCP: Address 10.9.9.2 (0x03060A090902)
*Mar 4 15:27:40.190: BR0:1 IPCP: O CONFACK [REQsent] id 2 len 10
*Mar 4 15:27:40.194: BR0:1 IPCP: Address 10.9.9.2 (0x03060A090902)
*Mar 4 15:27:40.202: BR0:1 IPCP: I CONFACK [ACKsent] id 2 len 10
*Mar 4 15:27:40.206: BR0:1 IPCP: Address 10.9.9.1 (0x03060A090901)
*Mar 4 15:27:40.206: BR0:1 IPCP: State is Open
*Mar 4 15:27:40.214: BR0:1 DDR: dialer protocol up
*Mar 4 15:27:40.218: Di0 IPCP: Install route to 10.9.9.2
*Mar 4 15:27:41.162: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed state to upcess rate is 80 percent (4/5), round-trip min/avg/max =
36/47/76 ms
krimson#

```

L'état après la sauvegarde est « vers le haut de » :

```

krimson#show interface dialer 0
Dialer0 is up, 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
Interface is bound to BR0:1
Last input never, output never, output hang never
Last clearing of "show interface" counters 00:13:26

```

```
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 42 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
36 packets input, 2160 bytes
36 packets output, 2160 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 set (10 sec)
Time to interface disconnect: idle 00:01:33
Interface is bound to Di0 (Encapsulation PPP)
LCP Open
Open: IPCP
Last input 00:00:26, 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
126 packets input, 3664 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
131 packets output, 3777 bytes, 0 underruns
0 output errors, 0 collisions, 15 interface resets
0 output buffer failures, 0 output buffers swapped out
28 carrier transitions
```

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 10.48.74.1 to network 0.0.0.0
```

```
10.0.0.0/8 is variably subnetted, 5 subnets, 3 masks
C 10.9.9.2/32 is directly connected, Dialer0
S 10.8.8.0/24 [180/0] via 10.9.9.2
C 10.9.9.0/24 is directly connected, Dialer0
C 10.7.7.0/24 is directly connected, Loopback0
C 10.48.74.0/23 is directly connected, Ethernet0
S* 0.0.0.0/0 [254/0] via 10.48.74.1
```

De Side appelé :

L'état après la sauvegarde est « vers le haut de ».

kevin#show interface dialer 0

```
Dialer0 is up, line protocol is up (spoofing)
Hardware is Unknown
```

```

Internet address is 10.9.9.2/24
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
Interface is bound to BR0:1
Last input never, output never, output hang never
Last clearing of "show interface" counters 00:16:18
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 42 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
40 packets input, 2224 bytes
40 packets output, 2224 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 set (10 sec)
Time to interface disconnect: idle 00:01:11
Interface is bound to Di0 (Encapsulation PPP)
LCP Open
Open: IPCP
Last input 00:00:48, output 00:00:00, 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
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
136 packets input, 3857 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
131 packets output, 3744 bytes, 0 underruns
0 output errors, 0 collisions, 12 interface resets
0 output buffer failures, 0 output buffers swapped out
35 carrier transitions

```

kevin#**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 10.48.74.1 to network 0.0.0.0

```

10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C 10.9.9.0/24 is directly connected, Dialer0
C 10.8.8.0/24 is directly connected, Loopback0
C 10.9.9.1/32 is directly connected, Dialer0
C 10.48.74.0/23 is directly connected, Ethernet0
S* 0.0.0.0/0 [254/0] via 10.48.74.1

```

Ici, nous simulons la reprise de la liaison principale à l'aide de l'aucune commande shutdown sur l'interface série distante :

kevin#show interface dialer 0

Dialer0 is up, line protocol is up (spoofing)
Hardware is Unknown
Internet address is 10.9.9.2/24
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
Interface is bound to BR0:1
Last input never, output never, output hang never
Last clearing of "show interface" counters 00:16:18
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 42 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
40 packets input, 2224 bytes
40 packets output, 2224 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 set (10 sec)
Time to interface disconnect: idle 00:01:11
Interface is bound to Di0 (Encapsulation PPP)
LCP Open
Open: IPCP
Last input 00:00:48, output 00:00:00, 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
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
136 packets input, 3857 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
131 packets output, 3744 bytes, 0 underruns
0 output errors, 0 collisions, 12 interface resets
0 output buffer failures, 0 output buffers swapped out
35 carrier transitions

kevin#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 10.48.74.1 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C 10.9.9.0/24 is directly connected, Dialer0
C 10.8.8.0/24 is directly connected, Loopback0
C 10.9.9.1/32 is directly connected, Dialer0

```
C 10.48.74.0/23 is directly connected, Ethernet0
S* 0.0.0.0/0 [254/0] via 10.48.74.1
```

La sauvegarde est déconnectée après le délai d'attente de veille.

```
krimson#show isdn active
```

```
-----
ISDN ACTIVE CALLS
-----
```

```
Call Calling Called Remote Seconds Seconds Seconds Charges
Type Number Number Name Used Left Idle
Units/Currency
-----
```

```
Out 8114 kevin 120 1 118 0
-----
```

```
krimson#
```

```
*Mar 4 15:29:41.738: BR0:1 DDR: idle timeout
*Mar 4 15:29:41.742: BR0 DDR: has total 0 call(s), dial_out 0, dial_in 0
*Mar 4 15:29:41.746: BR0:1 PPP: Treating connection as a callout
*Mar 4 15:29:41.750: %DIALER-6-UNBIND: Interface BR0:1 unbound from profile
Di0
*Mar 4 15:29:41.754: BR0:1 DDR: disconnecting call
*Mar 4 15:29:41.758: %ISDN-6-DISCONNECT: Interface BRI0:1 disconnected from
8114 kevin, call lasted 121 seconds
*Mar 4 15:29:41.774: ISDN BR0: TX -> DISCONNECT pd = 8 callref = 0x09
*Mar 4 15:29:41.782: Cause i = 0x8090 - Normal call clearing
*Mar 4 15:29:41.790: Di0 IPCP: Remove route to 10.9.9.2
*Mar 4 15:29:41.862: ISDN BR0: RX <- RELEASE pd = 8 callref = 0x89
*Mar 4 15:29:41.886: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down
*Mar 4 15:29:41.894: BR0:1 IPCP: State is Closed
*Mar 4 15:29:41.894: BR0:1 PPP: Phase is TERMINATING [0 sess, 0 load]
*Mar 4 15:29:41.898: BR0:1 LCP: State is Closed
*Mar 4 15:29:41.898: BR0:1 PPP: Phase is DOWN [0 sess, 0 load]
*Mar 4 15:29:41.902: BR0:1 DDR: disconnecting call
*Mar 4 15:29:41.910: ISDN BR0: TX -> RELEASE_COMP pd = 8 callref = 0x09
*Mar 4 15:29:42.886: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed state to down
```

L'état initial est maintenant restauré.

```
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 10.48.74.1 to network 0.0.0.0
```

```
10.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
C 10.1.2.0/24 is directly connected, Serial0
S 10.8.8.0/24 [1/0] via 10.1.2.2
C 10.9.9.0/24 is directly connected, Dialer0
C 10.7.7.0/24 is directly connected, Loopback0
C 10.48.74.0/23 is directly connected, Ethernet0
```

S* 0.0.0.0/0 [254/0] via 10.48.74.1

[Informations connexes](#)

- [Pages d'assistance sur la technologie de numérotation](#)
- [Support technique - Cisco Systems](#)