

Pontage de secours sur RNIS

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Introduction

Ce document explique et fournit un exemple de la façon configurer la sauvegarde jetant un pont sur avec le RNIS. Cette configuration emploie la méthode d'Interface de sauvegarde pour identifier que la liaison principale est en baisse. Pour plus d'informations sur la sauvegarde, voyez [en configurant et dépannage de la sauvegarde DDR](#).

Dans les environnements WAN traversiers, la seule solution de sauvegarde de Routage à établissement de connexion à la demande (DDR) disponible est l'utilisation du RNIS, comme la transition au-dessus d'async n'est pas prise en charge.

Rendez-vous compte que la transition sur une connexion RNIS tend à maintenir la connexion active pendant très des longues périodes, sinon de manière permanente. Si l'opérateur téléphonique (compagnie de téléphone) facture le RNIS basé sur le temps de connexion et la liaison série qui est dépitée est en baisse pendant très un longtemps, ceci peut avoir comme conséquence une facture très grande.

Note: Cette configuration est pour un site et un canal B. Pour plus d'un canal B, vous devez utiliser des Profils de composeur. (Référez-vous aux [Profils de composeur configurants pour jeter un pont sur utilisant la configuration RNIS](#).)

Pour les informations sur jeter un pont sur la configuration dans un environnement de non-sauvegarde, voyez la [transition à travers le RNIS](#).

Conditions préalables

Conditions requises

Assurez-vous de répondre à ces exigences avant d'essayer cette configuration :

- Possédez une connaissance de base du RNIS.

Composants utilisés

Les informations contenues dans ce document sont basées sur les versions de matériel et de logiciel suivantes :

- Routeurs de la gamme Cisco 2500 avec une interface série WAN et une interface chacune BRI.
- Version de logiciel 12.2(7b) de Cisco IOS®.

Note: Cette configuration peut être utilisée avec n'importe quel routeur qui a un lien (séquentiel) BLÈME et un port BRI.

Les informations contenues dans ce document ont été créées à partir des périphériques d'un environnement de laboratoire spécifique. Tous les périphériques utilisés dans ce document ont démarré avec une configuration effacée (par défaut). Si votre réseau est opérationnel, assurez-vous que vous comprenez l'effet potentiel de toute commande.

Produits connexes

Cette configuration peut être utilisée avec deux Routeurs quelconques qui exécutent le logiciel de Cisco IOS et chacun a au moins une interface série WAN et une interface BRI.

Conventions

Pour plus d'informations sur les conventions utilisées dans ce document, reportez-vous aux [Conventions relatives aux conseils techniques Cisco](#).

Configurez

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

Note: Pour obtenir des informations supplémentaires sur les commandes utilisées dans ce document, utilisez l'[Outil de recherche de commande](#) ([clients enregistrés](#) seulement).

Diagramme du réseau

Ce document utilise la configuration réseau suivante :

Configurations

Ce document utilise les configurations suivantes :

- [Router1](#)
- [Router2](#)

Router1

```
!  
hostname ROUTER1  
!  
!  
username ROUTER2 password 0 same  
!--- This is required for PPP Challenge Handshake  
Authentication Protocol !--- (CHAP) authentication  
during dial backup. !! isdn switch-type basic-5ess !---  
The ISDN switch type for this circuit. !--- Obtain this  
information from the Telco. !--- This ISDN switch type  
is specific to the United States, !--- and could change  
based on the requirements of the country and Telco. !  
interface Ethernet0 ip address 172.16.55.33  
255.255.255.240 no ip directed-broadcast no ip mroute-  
cache bridge-group 1 !--- Assign this interface to  
bridge-group 1. !--- Frames are bridged only among  
interfaces in the same group. !--- Note that the BRI  
interface and serial interface are also !--- in this  
bridge-group 1. ! interface Serial0 description Serial  
link to ROUTER2 backup interface BRI0 !--- This defines  
the backup interface. !--- Cisco IOS Software tracks the  
Serial0 interface, and !--- uses BRI0 if Serial0 fails.  
ip address 172.16.54.1 255.255.255.0 no ip directed-  
broadcast no ip mroute-cache no fair-queue bridge-group  
1 !--- Enable bridging on Serial0 for normal operation.  
! interface BRI0 description ISDN to ROUTER2 ip address  
172.16.53.19 255.255.255.240 no ip directed-broadcast  
encapsulation ppp no ip mroute-cache dialer map bridge  
name ROUTER2 broadcast 5552000 !--- The broadcast  
keyword is required to initiate the ISDN call. !---  
Dialer map bridge to the remote router. The statement  
includes !--- the name of the remote router and the  
phone number to be dialed. !--- Note that this dialer  
map statement includes the keyword bridge, !--- and does  
not include the IP address of the peer, as required for  
!--- IP routing-based dialer maps.  
dialer-group 1  
!--- Defines the interesting traffic as configured in  
the dialer-list. isdn switch-type basic-5ess !--- Check  
with your Telco for the correct values. ppp  
authentication chap bridge-group 1 !--- Enable bridging  
on BRI0. ! dialer-list 1 protocol bridge permit !---  
Defines the interesting traffic. In this case, all  
bridged traffic. bridge 1 protocol ieee !--- Defines the  
type of Spanning Tree Protocol (STP) used for the !---  
interface in bridge-group 1. Here, the IEEE STP is used.  
!--- The IEEE 802.1D STP is the preferred way to run the  
bridge. !
```

Router2

```

hostname router2
!
!
username ROUTER1 password 0 same
!--- Required for PPP CHAP Authentication during dial
backup. ! isdn switch-type basic-5ess !--- Check with
your Telco at the Router2 side for the correct values. !
interface Ethernet0 ip address 172.16.55.2
255.255.255.240 bridge-group 1 !--- Enable bridging on
Ethernet0. ! interface Serial0 description Serial link
to ROUTER1 !--- The backup interface bri0 command is not
required on this side, !--- because it is sufficient if
one side tracks the serial interface.
ip address 172.16.54.2 255.255.255.0
no fair-queue
bridge-group 1
!--- Enable bridging on Serial0 for normal operation.
interface BRI0 description ISDN to ROUTER1 ip address
172.16.53.17 255.255.255.240 encapsulation ppp no ip
mroute-cache dialer map bridge name ROUTER1 broadcast
5551000 !--- The broadcast keyword is required to
initiate the ISDN call.

dialer-group 1
!--- Defines the interesting traffic as configured in
the dialer-list. isdn switch-type basic-5ess !--- Check
with your Telco at the Router2 side for the correct
values. ppp authentication chap bridge-group 1 !---
Enable bridging on BRI0. ! dialer-list 1 protocol bridge
permit !--- Defines the interesting traffic. In this
case, all bridged traffic. bridge 1 protocol ieee !---
Defines the type of STP used for the interface in !---
bridge-group 1. Here the IEEE STP is used. !--- The IEEE
802.1D STP is the preferred way to run the bridge. !

```

Vérifiez

Cette section fournit des informations qui vous permettront de vérifier que votre configuration fonctionne correctement.

Certaines commandes **show** sont prises en charge par l'[Output Interpreter Tool](#) (clients [enregistrés](#) uniquement), qui vous permet de voir une analyse de la sortie de la commande show.

- **état de show isdn** — affiche la couche 1 (L1), la couche 2 (L2), et pose 3 le statut (L3) des interfaces RNIS.
- **show dialer** — affiche l'état du numéroteur et le statut individuel des canaux RNIS.
- **show bridge** — classes d'affichages des entrées dans la base de données de pont transparent.
- **interface d'exposition** — affiche le statut des diverses interfaces, telles que l'interface série et des interfaces BRI.
- **show spanning-tree** — affiche la topologie de spanning tree connue du routeur.

commandes show sur ROUTER1 quand Serial0 est

```
ROUTER1# show isdn status
```

```
Global ISDN Switchtype = basic-5ess
ISDN BRI0 interface
dsl 0, interface ISDN Switchtype = basic-5ess
Layer 1 Status:
DEACTIVATED
Layer 2 Status:
Layer 2 NOT Activated
Layer 3 Status:
0 Active Layer 3 Call(s)
Activated dsl 0 CCBS = 0
The Free Channel Mask: 0x80000003
Number of L2 Discards = 36, L2D_Task Discards = 35
Total Allocated ISDN CCBS = 0
```

ROUTER1# **show dialer**

BRI0 - dialer type = ISDN

```
Dial String Successes Failures Last DNIS Last status
5552000 29 977 00:45:08 successful
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
```

BRI0:1 - dialer type = ISDN

```
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is shutdown
```

BRI0:2 - dialer type = ISDN

```
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is shutdown
```

ROUTER1# **show bridge**

```
Total of 300 station blocks, 298 free
Codes: P - permanent, S - self
```

Bridge Group 1:

```
Address Action Interface Age RX count TX count
0000.0c76.2882 forward Serial0 0 5 4
```

!--- Bridging traffic goes through Serial0. 00d0.58ad.ae13 forward Ethernet0 0 42 5

[commandes show sur ROUTER1 quand Serial0 est vers le bas](#)

ROUTER1# **show isdn status**

```
Global ISDN Switchtype = basic-5ess
ISDN BRI0 interface
dsl 0, interface ISDN Switchtype = basic-5ess
Layer 1 Status:
ACTIVE
```

Layer 2 Status:

```
TEI = 114, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
```

!--- ISDN L1 and L2 will be up (when Serial0 fails) !--- even if interesting traffic is not present. Layer 3 Status: 1 **Active Layer 3 Call(s)**

```
Activated dsl 0 CCBS = 1
CCB:callid=8484, sapi=0, ces=1, B-chan=1, calltype=DATA
The Free Channel Mask: 0x80000002
Total Allocated ISDN CCBS = 1
```

ROUTER1# **show dialer**

```
BRI0 - dialer type = ISDN
```

```
Dial String Successes Failures Last DNIS Last status
5552000 30 977 00:00:16 successful
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
```

```
BRI0:1 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Dial reason: bridge (0xFFFF)
Time until disconnect 106 secs
Connected to 5552000 (ROUTER2)
```

```
BRI0:2 - 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
```

```
ROUTER1# show bridge
```

```
Total of 300 station blocks, 298 free
Codes: P - permanent, S - self
```

```
Bridge Group 1:
```

```
Address Action Interface Age RX count TX count
0000.0c76.2882 forward BRI0 0 5 4
!--- Bridging traffic now goes through BRI0. 00d0.58ad.ae13 forward Ethernet0 0 5 5
```

Dépannez

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

Dépannage des ressources

Utilisez ces ressources au besoin :

- [Support technique RNIS](#)
- [Dépannage des lignes série](#)
- [Connexions dos à dos HDLC](#)

Dépannage des commandes

Certaines commandes **show** sont prises en charge par l'[Output Interpreter Tool](#) (clients [enregistrés](#) uniquement), qui vous permet de voir une analyse de la sortie de la commande show.

Note: Avant d'émettre des commandes **debug**, reportez-vous aux [Informations importantes sur les commandes de débogage](#).

- **mettez au point le numéroteur** — fournit des informations au sujet des événements d'interface de numérotation.
- **debug isdn event** — messages de débogage d'affichages liés à l'activité RNIS qui se produit du côté utilisateur de l'interface RNIS.
- **debug isdn q931** — fournit des informations au sujet de l'établissement d'appel et du

démontage de la connexion réseau RNIS (L3) entre le routeur local (côté utilisateur) et le réseau.

- **debug isdn q921** — messages de débogage d'affichages liés aux procédures d'accès de la couche liaison de données (L2) qui ont lieu au routeur sur le canal D (LAPD) de son interface RNIS.
- **debug ppp negotiation** — messages de débogage d'affichages liés à la négociation des paramètres d'options PPP et de protocole de contrôle de réseau (NCP).
- **debug ppp authentication** — Les messages de débogage d'affichages ont associé à l'échange des paquets de CHAP et de Password Authentication Protocol (PAP).

la sortie de débogage sur ROUTER1 quand Serial0 descend et RNIS reprend

```
ROUTER1# show debug
```

```
Dial on demand:
Dial on demand events debugging is on
PPP:
PPP authentication debugging is on
PPP protocol negotiation debugging is on
ISDN:
ISDN events debugging is on
ISDN Q921 packets debugging is on
ISDN Q931 packets debugging is on
```

```
ROUTER1#
```

```
!--- Interface serial0 goes down. ROUTER1# 00:56:53: %LINK-3-UPDOWN: Interface Serial0, changed
state to down *Mar 1 00:56:53.103: ISDN BR0 EVENT: isdn_sw_cstate: State = 0, Old State = 6
00:56:53: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down *Mar 1 00:56:53.107: BR0:1
LCP: State is Closed *Mar 1 00:56:53.111: BR0:1 DDR: disconnecting call 00:56:53: %LINK-3-
UPDOWN: Interface BRI0:2, changed state to down *Mar 1 00:56:53.119: BR0:2 LCP: State is Closed
*Mar 1 00:56:53.119: BR0:2 DDR: disconnecting call *Mar 1 00:56:53.127: ISDN BR0 EVENT:
isdn_sw_cstate: State = 4, Old State = 6 *Mar 1 00:56:53.135: ISDN BR0 EVENT: isdn_sw_cstate:
State = 4, Old State = 6 *Mar 1 00:56:53.567: ISDN BR0: RX <- IDCKRQ ri=0 ai=127 *Mar 1
00:56:53.567: ISDN Recvd L1 prim 3 dsl 0 state 3 ctrl_state 0 *Mar 1 00:56:53.571: ISDN BR0: L1
persistent Deactivated *Mar 1 00:56:53.571: ISDN Recvd L1 prim 7 dsl 0 state 3 ctrl_state 0 *Mar
1 00:56:53.575: ISDN BR0: Recvd MPH_IIC_IND from L1 *Mar 1 00:56:53.575: ISDN Recvd L1 prim 7
dsl 0 state 3 ctrl_state 0 *Mar 1 00:56:53.579: ISDN BR0: Recvd MPH_IIC_IND from L1 *Mar 1
00:56:53.579: ISDN Recvd L1 prim 1 dsl 0 state 3 ctrl_state 0 *Mar 1 00:56:53.583: ISDN BR0: L1
is IF_ACTIVE *Mar 1 00:56:53.583: ISDN BR0 EVENT: isdn_sw_cstate: State = 4, Old State = 6 *Mar
1 00:56:53.587: ISDN BR0: L2-TERM: ces/tei=1/0 AWAIT_ESTABLISH->TERM_DOWN *Mar 1 00:56:53.591:
ISDN BR0: Incoming call id = 0x0010, dsl 0 *Mar 1 00:56:53.595: ISDN BR0: L2-TERM: ces/tei=1/0
TERM_DOWN->AWAIT_ESTABLISH 00:56:53: %LINK-3-UPDOWN: Interface BRI0, changed state to up *Mar 1
00:56:53.631: ISDN BR0 EVENT: isdn_sw_cstate: State = 4, Old State = 6 *Mar 1 00:56:53.655: ISDN
BR0: TX -> IDREQ ri=48769 ai=127 00:56:54: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Serial0, changed state to down *Mar 1 00:56:54.387: ISDN BR0: RX <- IDCKRQ ri=0 ai=127 *Mar 1
00:56:55.655: ISDN BR0: TX -> IDREQ ri=42642 ai=127 *Mar 1 00:56:55.699: ISDN BR0: RX <- IDASSN
ri=42642 ai=68 *Mar 1 00:56:55.791: ISDN BR0: TX -> SABMEp c/r=0 sapi=0 tei=68 *Mar 1
00:56:55.823: ISDN BR0: RX <- Uaf c/r=0 sapi=0 tei=68 00:56:55: %ISDN-6-LAYER2UP: Layer 2 for
Interface BR0, TEI 68 changed to up *Mar 1 00:56:55.831: ISDN BR0: L2-TERM: ces/tei=1/68
AWAIT_ESTABLISH->ESTABLISHED !--- Interesting traffic has not arrived yet from Host1, !--- but
ISDN L1 and L2 are up now. ROUTER1# show isdn stat
```

```
Global ISDN Switchtype = basic-5ess
```

```
ISDN BRI0 interface
```

```
    dsl 0, interface ISDN Switchtype = basic-5ess
```

```
Layer 1 Status:
```

```
    ACTIVE
```

```
Layer 2 Status:
```

```
    TEI = 68, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
```

```
    I_Queue_Len 0, UI_Queue_Len 0
```

Layer 3 Status:

0 Active Layer 3 Call(s)

Active dsl 0 CCBs = 0

The Free Channel Mask: 0x80000003

Number of L2 Discards = 0, L2 Session ID = 34

Total Allocated ISDN CCBs = 0

ROUTER1#

*Mar 1 00:57:25.839: ISDN BR0: TX -> RRp sapi=0 tei=68 nr=0

*Mar 1 00:57:25.871: ISDN BR0: RX <- RRf sapi=0 tei=68 nr=0

ROUTER1#

!--- Interesting traffic arrives now, !--- which triggers ISDN Dialup (see below). *Mar 1 00:57:32.519: BR0 DDR: **Dialing cause bridge (0xFFFF)**

*Mar 1 00:57:32.519: BR0 DDR: Attempting to dial 5552000

*Mar 1 00:57:32.523: ISDN BR0: Outgoing call id = 0x800E, dsl 0

*Mar 1 00:57:32.527: ISDN BR0: Event: Call to 5552000 at 64 Kb/s

*Mar 1 00:57:32.527: ISDN BR0: process_bri_call(): call id 0x800E, called_number 5552000, speed 64, call type DATA

*Mar 1 00:57:32.531: CCBRI_Go Fr Host InPkgInfo (Len=22) :

*Mar 1 00:57:32.535: 1 0 1 80 E 0 4 2 88 90 18

1 83 2C 7 35 35 35 32 30 30 30

*Mar 1 00:57:32.543:

*Mar 1 00:57:32.547: CC_CHAN_GetIdleChanbri: dsl 0

*Mar 1 00:57:32.547: Found idle channel B1

*Mar 1 00:57:32.563: ISDN BR0: TX -> INFOc sapi=0 tei=68 ns=0 nr=0
i=0x08010E05040288901801832C0735353532303030

*Mar 1 00:57:32.583: SETUP pd = 8 callref = 0x0E

*Mar 1 00:57:32.591: Bearer Capability i = 0x8890

*Mar 1 00:57:32.599: Channel ID i = 0x83

*Mar 1 00:57:32.603: Keypad Facility i = '5552000'

*Mar 1 00:57:32.867: ISDN BR0: RX <- INFOc sapi=0 tei=68 ns=0 nr=1
i=0x08018E02180189

*Mar 1 00:57:32.875: CALL_PROC pd = 8 callref = 0x8E

*Mar 1 00:57:32.883: Channel ID i = 0x89

*Mar 1 00:57:32.899: ISDN BR0: TX -> RRr sapi=0 tei=68 nr=1

*Mar 1 00:57:32.907: CCBRI_Go Fr L3 pkt (Len=7) :

*Mar 1 00:57:32.907: 2 1 E 98 18 1 89

*Mar 1 00:57:32.911:

*Mar 1 00:57:32.915: ISDN BR0: LIF_EVENT: ces/callid 1/0x800E
HOST_PROCEEDING

*Mar 1 00:57:32.919: ISDN BR0: HOST_PROCEEDING

*Mar 1 00:57:32.919: ISDN BR0: HOST_MORE_INFO

*Mar 1 00:57:33.159: ISDN BR0: RX <- INFOc sapi=0 tei=68 ns=1
nr=1 i=0x08018E07

*Mar 1 00:57:33.167: CONNECT pd = 8 callref = 0x8E

*Mar 1 00:57:33.183: ISDN BR0: TX -> RRr sapi=0 tei=68 nr=2

*Mar 1 00:57:33.191: CCBRI_Go Fr L3 pkt (Len=4) :

*Mar 1 00:57:33.191: 7 1 E 91

*Mar 1 00:57:33.195:

*Mar 1 00:57:33.199: ISDN BR0: LIF_EVENT: ces/callid 1/0x800E
HOST_CONNECT

00:57:33: %LINK-3-UPDOWN: **Interface BRI0:1, changed state to up**

*Mar 1 00:57:33.215: ISDN: get_isdn_service_state():
idb 0x19F4D8 bchan 2 is_isdn 1 Not a Pri

*Mar 1 00:57:33.215: BR0:1 PPP: Treating connection as a callout

*Mar 1 00:57:33.219: BR0:1 PPP: Phase is ESTABLISHING,
Active Open [0 sess, 1 load]

*Mar 1 00:57:33.223: BR0:1 LCP: 0 CONFREQ [Closed] id 27 len 15

*Mar 1 00:57:33.227: BR0:1 LCP: AuthProto CHAP
(0x0305C22305)

*Mar 1 00:57:33.231: BR0:1 LCP: MagicNumber 0x6091A5F6
(0x05066091A5F6)

*Mar 1 00:57:33.235: ISDN BR0: Event: Connected to 5552000
on B1 at 64 Kb/s


```
*Mar 1 00:57:33.247: ISDN BR0: TX -> INFOc sapi=0 tei=68 ns=1 nr=2
i=0x08010E0F
*Mar 1 00:57:33.251: CONNECT_ACK pd = 8 callref = 0x0E
*Mar 1 00:57:33.267: BR0:1 LCP: I CONFREQ [REQsent] id 4 len 15
*Mar 1 00:57:33.271: BR0:1 LCP: AuthProto CHAP
(0x0305C22305)
*Mar 1 00:57:33.275: BR0:1 LCP: MagicNumber 0x6062D6EA
(0x05066062D6EA)
*Mar 1 00:57:33.279: BR0:1 LCP: O CONFACK [REQsent] id 4 len 15
*Mar 1 00:57:33.283: BR0:1 LCP: AuthProto CHAP
(0x0305C22305)
*Mar 1 00:57:33.287: BR0:1 LCP: MagicNumber 0x6062D6EA
(0x05066062D6EA)
*Mar 1 00:57:33.291: BR0:1 LCP: I CONFACK [ACKsent] id 27 len 15
*Mar 1 00:57:33.291: BR0:1 LCP: AuthProto CHAP
(0x0305C22305)
*Mar 1 00:57:33.295: BR0:1 LCP: MagicNumber 0x6091A5F6
(0x05066091A5F6)
*Mar 1 00:57:33.299: BR0:1 LCP: State is Open
*Mar 1 00:57:33.303: BR0:1 PPP: Phase is AUTHENTICATING,
by both [0 sess, 1 load]
*Mar 1 00:57:33.307: BR0:1 CHAP: O CHALLENGE id 14
len 28 from "ROUTER1"
*Mar 1 00:57:33.319: BR0:1 CHAP: I CHALLENGE id 4
len 28 from "ROUTER2"
*Mar 1 00:57:33.327: BR0:1 CHAP: O RESPONSE id 4
len 28 from "ROUTER1"
*Mar 1 00:57:33.335: ISDN BR0: RX <- RRr sapi=0
tei=68 nr=2
*Mar 1 00:57:33.351: BR0:1 CHAP: I SUCCESS id 4
len 4
*Mar 1 00:57:33.367: BR0:1 CHAP: I RESPONSE id 14
len 28 from "ROUTER2"
*Mar 1 00:57:33.371: BR0:1 CHAP: O SUCCESS id 14
len 4
*Mar 1 00:57:33.375: BR0:1 PPP: Phase is UP [0 sess, 0 load]
*Mar 1 00:57:33.379: BR0:1 BNCP: O CONFREQ [Closed] id 14
len 4
*Mar 1 00:57:33.387: BR0:1 CDPCP: O CONFREQ [Closed] id 14
len 4
*Mar 1 00:57:33.395: BR0:1 BNCP: I CONFREQ [REQsent] id 4
len 4
*Mar 1 00:57:33.399: BR0:1 BNCP: O CONFACK [REQsent] id 4
len 4
*Mar 1 00:57:33.403: BR0:1 IPCP: I CONFREQ [Not negotiated] id 4
len 10
*Mar 1 00:57:33.407: BR0:1 IPCP: Address 172.16.53.17
(0x0306AC103511)
*Mar 1 00:57:33.415: BR0:1 LCP: O PROTREJ [Open] id 28
len 16 protocol IPCP
(0x80210104000A0306AC103511)
*Mar 1 00:57:33.419: BR0:1 CDPCP: I CONFREQ [REQsent] id 4
len 4
*Mar 1 00:57:33.423: BR0:1 CDPCP: O CONFACK [REQsent] id 4
len 4
*Mar 1 00:57:33.427: BR0:1 BNCP: I CONFACK [ACKsent] id 14
len 4
*Mar 1 00:57:33.431: BR0:1 BNCP: State is Open
*Mar 1 00:57:33.435: BR0:1 CDPCP: I CONFACK [ACKsent] id 14
len 4
*Mar 1 00:57:33.439: BR0:1 CDPCP: State is Open
*Mar 1 00:57:33.443: BR0:1 DDR: dialer protocol up
00:57:34: %LINEPROTO-5-UPDOWN:
Line protocol on Interface BRI0:1, changed state to up
```

```
00:57:39: %ISDN-6-CONNECT: Interface BRI0:1 is now connected
to 5552000 ROUTER2
ROUTER1#
```

```
ROUTER1# show isdn status
```

```
Global ISDN Switchtype = basic-5ess
```

```
ISDN BRI0 interface
```

```
    dsl 0, interface ISDN Switchtype = basic-5ess
```

```
Layer 1 Status:
```

```
    ACTIVE
```

```
Layer 2 Status:
```

```
    TEI = 68, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
```

```
    I_Queue_Len 0, UI_Queue_Len 0
```

```
Layer 3 Status:
```

```
    1 Active Layer 3 Call(s)
```

```
    CCB:callid=800E, sapi=0, ces=1, B-chan=1, calltype=DATA
```

```
Active dsl 0 CCBs = 1
```

```
The Free Channel Mask: 0x80000002
```

```
Number of L2 Discards = 0, L2 Session ID = 34
```

```
Total Allocated ISDN CCBs = 1
```

```
*Mar 1 00:58:03.343: ISDN BR0: TX -> RRp sapi=0 tei=68 nr=2
```

```
*Mar 1 00:58:03.379: ISDN BR0: RX <- RRf sapi=0 tei=68 nr=2pann
```

```
ROUTER1# show spanning-tree
```

```
Bridge group 1 is executing the ieee compatible Spanning Tree protocol
```

```
Bridge Identifier has priority 32768, address 0060.5cf4.a9a8
```

```
Configured hello time 2, max age 20, forward delay 15
```

```
Current root has priority 32768, address 0060.5cf4.a955
```

```
Root port is 3 (BRI0), cost of root path is 15625
```

```
Topology change flag set, detected flag not set
```

```
Number of topology changes 10 last change occurred 00:01:15 ago
```

```
from Serial0
```

```
Times: hold 1, topology change 35, notification 2
```

```
hello 2, max age 20, forward delay 15
```

```
Timers: hello 0, topology change 0, notification 0, aging 15
```

```
Port 2 (Ethernet0) of Bridge group 1 is forwarding
```

```
Port path cost 100, Port priority 128, Port Identifier 128.2.
```

```
Designated root has priority 32768, address 0060.5cf4.a955
```

```
Designated bridge has priority 32768, address 0060.5cf4.a9a8
```

```
Designated port id is 128.2, designated path cost 15625
```

```
Timers: message age 0, forward delay 0, hold 0
```

```
Number of transitions to forwarding state: 2
```

```
BPDU: sent 751, received 0
```

```
Port 3 (BRI0) of Bridge group 1 is forwarding
```

```
!--- BRI Interface forwards the bridged traffic now. Port path cost 15625, Port priority 128,
Port Identifier 128.3. Designated root has priority 32768, address 0060.5cf4.a955 Designated
bridge has priority 32768, address 0060.5cf4.a955 Designated port id is 128.3, designated path
cost 0 Timers: message age 2, forward delay 0, hold 0 Number of transitions to forwarding state:
3 BPDU: sent 1014, received 608 Port 6 (Serial0) of Bridge group 1 is down
```

```
Port path cost 647, Port priority 128, Port Identifier 128.6.
```

```
Designated root has priority 32768, address 0060.5cf4.a955
```

```
Designated bridge has priority 32768, address 0060.5cf4.a9a8
```

```
Designated port id is 128.6, designated path cost 15625
```

```
Timers: message age 0, forward delay 0, hold 0
```

```
Number of transitions to forwarding state: 1
```

```
BPDU: sent 15, received 27
```

```
ROUTER1#
```

```
*Mar 1 00:58:33.387: ISDN BR0: TX -> RRp sapi=0 tei=68 nr=2
```

```
*Mar 1 00:58:33.423: ISDN BR0: RX <- RRf sapi=0 tei=68 nr=2
```

[la sortie de débogage sur ROUTER1 quand Serial0 revient de nouveau et RNIS](#)

relâche l'appel

```
00:58:37: %LINK-3-UPDOWN: Interface Serial0, changed state to up
*Mar 1 00:58:37.671: BR0:1 DDR: disconnecting call
*Mar 1 00:58:37.675: BR0:2 DDR: disconnecting call
*Mar 1 00:58:37.675: ISDN BR0: Event: Hangup call to call id 0x800E
*Mar 1 00:58:37.679: ISDN BR0: process_disconnect(): call id 0x800E,
  call type is DATA, b_idb 0x19F4D8, ces 1, cause Normal call
  clearing(0x10)
00:58:37: %ISDN-6-DISCONNECT: Interface BRI0:1 disconnected from
5552000 ROUTER2, call lasted 64 seconds
*Mar 1 00:58:37.691: ISDN: get_isdn_service_state(): idb 0x19F4D8
  bchan 2 is_isdn 1 Not a Pri
*Mar 1 00:58:37.695: CCBRI_Go Fr Host InPkgInfo (Len=13) :
*Mar 1 00:58:37.699: 5 0 1 80 E 3 8 1 90 8 2 80 90
*Mar 1 00:58:37.703:
*Mar 1 00:58:37.719: ISDN BR0: TX -> INFOc sapi=0 tei=68 ns=2 nr=2
  i=0x08010E4508028090
*Mar 1 00:58:37.727: DISCONNECT pd = 8 callref = 0x0E
*Mar 1 00:58:37.735: Cause i = 0x8090 - Normal call clearing
*Mar 1 00:58:37.743: ISDN BR0 EVENT: isdn_sw_cs!!!!!!!!!!!!!!!!!!!!tate:
  State = 6, Old State = 4
00:58:37: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down
*Mar 1 00:58:37.751: BR0:1 BNCP: State is Closed
*Mar 1 00:58:37.755: BR0:1 CDPCP: State is Closed
*Mar 1 00:58:37.755: BR0:1 PPP: Phase is TERMINATING [0 sess, 1 load]
*Mar 1 00:58:37.759: BR0:1 LCP: State is Closed
*Mar 1 00:58:37.763: BR0:1 PPP: Phase is DOWN [0 sess, 1 load]
*Mar 1 00:58:37.763: BR0:1 DDR: disconnecting call
*Mar 1 00:58:37.775: ISDN Recvd L1 prim 3 dsl 0 state 1 ctrl_state 0
*Mar 1 00:58:37.779: ISDN BR0: Physical layer is IF_DOWN
*Mar 1 00:58:37.783: ISDN BR0: Shutting down ME
00:58:37: %ISDN-6-LAYER2DOWN: Layer 2 for Interface BRI0,
  TEI 68 changed to down
*Mar 1 00:58:37.791: ISDN BR0: L2-TERM: ces/tei=1/68
  ESTABLISHED->TERM_DOWN
*Mar 1 00:58:37.795: ISDN BR0: LIF_EVENT: ces/callid 1/0x800E
  HOST_DISCONNECT_ACK
*Mar 1 00:58:37.803: ISDN: get_isdn_service_state(): idb 0x19F4D8
  bchan 2 is_isdn 1 Not a Pri
*Mar 1 00:58:37.807: ISDN BR0: HOST_DISCONNECT_ACK: call type is DATA
00:58:37: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down
*Mar 1 00:58:37.815: BR0:1 LCP: State is Closed
*Mar 1 00:58:37.815: BR0:1 DDR: disconnecting call
*Mar 1 00:58:37.819: ISDN BR0: Shutting down ISDN Layer 3
00:58:37: %ISDN-6-LAYER2DOWN: Layer 2 for Interface BR0,
  TEI 68 changed to down
00:58:37: %LINK-5-CHANGED: Interface BRI0, changed state to standby mode
*Mar 1 00:58:37.847: ISDN BR0 EVENT: isdn_sw_cstate: State = 6,
  Old State = 4
00:58:37: %LINK-3-UPDOWN: Interface BRI0:2, changed state to down
*Mar 1 00:58:37.855: BR0:2 LCP: State is Closed
*Mar 1 00:58:37.855: BR0:2 DDR: disconnecting call
*Mar 1 00:58:37.895: ISDN BR0: Incoming call id = 0x0011, dsl 0
*Mar 1 00:58:37.895: ISDN BR0: L2-TERM: ces/tei=1/0
  TERM_DOWN->AWAIT_ESTABLISH
*Mar 1 00:58:37.935: ISDN BR0: Activating
00:58:38: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0,
  changed state to up
00:58:38: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
  changed state to down
*Mar 1 00:58:39.939: ISDN BR0: Could not bring up interface
```

```
*Mar 1 00:58:39.943: ISDN BR0: Shutting down ISDN Layer 3
*Mar 1 00:58:39.963: ISDN BR0: Activating
*Mar 1 00:58:41.943: ISDN BR0: Could not bring up interface
*Mar 1 00:58:41.947: ISDN BR0: Shutting down ISDN Layer 3
*Mar 1 00:58:41.947: ISDN BR0: Activating
ROUTER1#
```

```
ROUTER1# show isdn status
```

```
Global ISDN Switchtype = basic-5ess
ISDN BRI0 interface
dsl 0, interface ISDN Switchtype = basic-5ess
Layer 1 Status:
DEACTIVATED
Layer 2 Status:
Layer 2 NOT Activated
```

```
!--- ISDN L1 and L2 are back to the deactivated state. Layer 3 Status: 0 Active Layer 3 Call(s)
Active dsl 0 CCBs = 0 The Free Channel Mask: 0x80000003 Number of L2 Discards = 0, L2 Session ID
= 39 Total Allocated ISDN CCBs = 0 ROUTER1# *Mar 1 00:58:49.951: ISDN BR0: Could not bring up
interface *Mar 1 00:58:49.951: ISDN BR0: Shutting down ISDN Layer 3 ROUTER1# ROUTER1# show
spanning-tree
```

```
Bridge group 1 is executing the ieee compatible Spanning Tree protocol
```

```
Bridge Identifier has priority 32768, address 0060.5cf4.a9a8
Configured hello time 2, max age 20, forward delay 15
Current root has priority 32768, address 0060.5cf4.a955
Root port is 6 (Serial0), cost of root path is 647
Topology change flag not set, detected flag not set
Number of topology changes 13 last change occurred 00:28:23 ago
from Serial0
Times: hold 1, topology change 35, notification 2
hello 2, max age 20, forward delay 15
Timers: hello 0, topology change 0, notification 0, aging 300
```

```
Port 2 (Ethernet0) of Bridge group 1 is forwarding
```

```
Port path cost 100, Port priority 128, Port Identifier 128.2.
Designated root has priority 32768, address 0060.5cf4.a955
Designated bridge has priority 32768, address 0060.5cf4.a9a8
Designated port id is 128.2, designated path cost 647
Timers: message age 0, forward delay 0, hold 0
Number of transitions to forwarding state: 2
BPDU: sent 1633, received 0
```

```
Port 3 (BRI0) of Bridge group 1 is down
```

```
!--- BRI0 is in the down state when Serial 0 is up. Port path cost 15625, Port priority 128,
Port Identifier 128.3. Designated root has priority 32768, address 0060.5cf4.a955 Designated
bridge has priority 32768, address 0060.5cf4.a9a8 Designated port id is 128.3, designated path
cost 647 Timers: message age 0, forward delay 0, hold 0 Number of transitions to forwarding
state: 3 BPDU: sent 1014, received 622 Port 6 (Serial0) of Bridge group 1 is forwarding
```

```
!--- Serial0 forwards the bridged traffic now. Port path cost 647, Port priority 128, Port
Identifier 128.6. Designated root has priority 32768, address 0060.5cf4.a955 Designated bridge
has priority 32768, address 0060.5cf4.a955 Designated port id is 128.6, designated path cost 0
Timers: message age 1, forward delay 0, hold 0 Number of transitions to forwarding state: 2
BPDU: sent 18, received 896 ROUTER1#
```

[Informations connexes](#)

- [Pontage via RNIS](#)
- [Sauvegarde BRI RNIS avec l'interface de sauvegarde](#)
- [Configuration d'une sauvegarde BRI Multilink RNIS avec Dialer Watch](#)
- [Configuration d'une sauvegarde BRI RNIS avec Dialer Watch](#)
- [Configuration d'une sauvegarde RNIS avec des routes statiques flottantes](#)

- [Sauvegarde DDR utilisant BRIs et la commande backup interface](#)
- [Configuration de l'interface de sauvegarde d'un accès de base \(BRI\) à l'aide de profils de numéroteur](#)
- [Configuration d'une sauvegarde DDR à l'aide d'accès de base \(BRI\) et de Dialer Watch](#)
- [Configuration d'une sauvegarde RNIS pour des liaisons WAN en utilisant des routes statiques flottantes](#)
- [Configurer la sauvegarde en relais de trame](#)
- [Configurer l'Accès direct secours pour des lignes série](#)
- [Ordres de services de numérotation de Cisco IOS](#)
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