

# مادختساب ISDN ل يطايتحال ا خسنل انيوكت ةمئاعلا ةتباثلا تاراسملا

## المحتويات

- [المقدمة](#)
- [المتطلبات الأساسية](#)
- [المتطلبات](#)
- [المكونات المستخدمة](#)
- [الاصطلاحات](#)
- [التكوين](#)
- [الرسم التخطيطي للشبكة](#)
- [التكوينات](#)
- [التحقق من الصحة](#)
- [استكشاف الأخطاء وإصلاحها](#)
- [أوامر استكشاف الأخطاء وإصلاحها](#)
- [نموذج إخراج أستكشاف الأخطاء وإصلاحها](#)
- [معلومات ذات صلة](#)

## المقدمة

يزود هذا وثيقة عينة تشكيل أن يطبق ISDN نسخة إحتياطية مع يطغو ساكن إستاتيكي مسحاج تحديد، ويزود أساسي تحشد معلومة ل هذا نوع التشكيل.

لمزيد من المعلومات حول عمليات التنفيذ الأكثر شيوعا للنسخ الاحتياطي ل ISDN، والمقارنات بين هذه العمليات، ارجع إلى المستند التالي: [تقييم واجهات النسخ الاحتياطي، والمسارات الثابتة العائمة، ومراقبة المتصل للنسخ الاحتياطي ل DDR](#).

## المتطلبات الأساسية

### المتطلبات

لا توجد متطلبات خاصة لهذا المستند.

### المكونات المستخدمة

تستند المعلومات الواردة في هذا المستند إلى إصدارات البرامج والمكونات المادية أدناه.

- موجهات Cisco 2500 التي تشغل برنامج Cisco IOS® Software، الإصدار 12.2(3) و 12.2(5)
- تم إنشاء المعلومات المقدمة في هذا المستند من الأجهزة الموجودة في بيئة معملية خاصة. بدأت جميع الأجهزة المستخدمة في هذا المستند بتكوين ممسوح (افتراضي). إذا كنت تعمل في شبكة مباشرة، فتأكد من فهمك للتأثير المحتمل لأي أمر قبل استخدامه.

## الاصطلاحات

للحصول على مزيد من المعلومات حول اصطلاحات المستندات، راجع [اصطلاحات تلمحات Cisco التقنية](#).

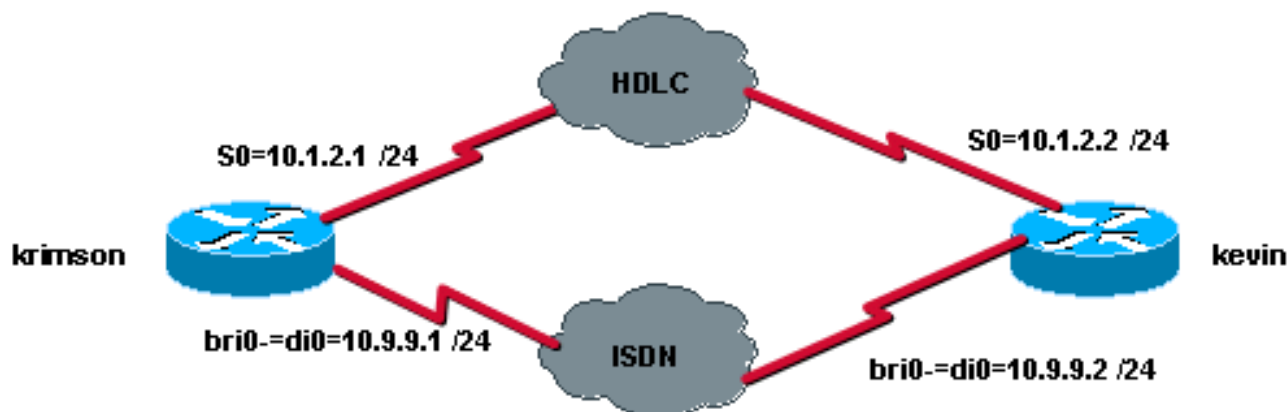
## التكوين

في هذا القسم، تُقدّم لك معلومات تكوين الميزات الموضحة في هذا المستند.

ملاحظة: للعثور على معلومات إضافية حول الأوامر المستخدمة في هذا المستند، استخدم [أداة بحث الأوامر \(للعلماء المسجلين فقط\)](#).

## الرسم التخطيطي للشبكة

يستخدم هذا المستند إعداد الشبكة الموضح في الرسم التخطيطي أدناه.



## التكوينات

يستخدم هذا المستند التكوينات الموضحة أدناه.

- [كريمسون \(موجه Cisco 2500\)](#)
- [كيفن \(الموجه 2500 من Cisco\)](#)

### كريمسون (موجه 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

```

### كيفن (الموجه 2500 من Cisco)

```

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

```

## التحقق من الصحة

يوفر هذا القسم معلومات يمكنك استخدامها للتأكد من أن التكوين يعمل بشكل صحيح.

يتم دعم بعض أوامر العرض بواسطة أداة مترجم الإخراج (العملاء المسجلون فقط)، والتي تتيح لك عرض تحليل إخراج أمر العرض.

- **show ip route** - يعرض إدخلات جدول توجيه IP.
- **show interfaces** - يعرض إحصائيات لجميع الواجهات التي تم تكوينها على الموجه أو خادم الوصول.

## استكشاف الأخطاء وإصلاحها

يوفر هذا القسم معلومات يمكنك استخدامها لاستكشاف أخطاء التكوين وإصلاحها.

## [أوامر استكشاف الأخطاء وإصلاحها](#)

يتم دعم بعض أوامر العرض بواسطة [أداة مترجم الإخراج \(العملاء المسجلون فقط\)](#)، والتي تتيح لك عرض تحليل [إخراج أمر العرض](#).

ملاحظة: قبل إصدار أوامر تصحيح الأخطاء، يرجى الاطلاع على [المعلومات المهمة في أوامر تصحيح الأخطاء](#).

- **debug isdn q931** - يعرض معلومات حول إعداد المكالمات وإنزال إتصالات شبكة ISDN (الطبقة 3) بين الموجه المحلي (جانب المستخدم) والشبكة.
- **debug isdn events** - يعرض أحداث ISDN التي تحدث على جانب المستخدم (على الموجه) لواجهة ISDN. أحداث ISDN التي يمكن عرضها هي أحداث Q.931 (إعداد الاستدعاء وخفض إتصالات شبكة ISDN).
- **debug dialer** - يعرض معلومات تصحيح الأخطاء حول الحزم أو الأحداث على واجهة المتصل.
- **debug ppp negotiation** - يسبب الأمر **debug ppp** لعرض حزم PPP التي يتم إرسالها أثناء بدء تشغيل PPP، حيث يتم التفاوض مع خيارات PPP.
- **debug ppp authentication** - يسبب الأمر **debug ppp** لعرض رسائل بروتوكول المصادقة، بما في ذلك عمليات تبادل الحزم لبروتوكول المصادقة المتباينة (CHAP) وعمليات تبادل بروتوكول مصادقة كلمة المرور (PAP).

## [نموذج إخراج استكشاف الأخطاء وإصلاحها](#)

هنا، يمكننا إختبار وظيفة النسخ الاحتياطي باستخدام أوامر إيقاف التشغيل و **no shutdown** على الواجهة التسلسلية على الجانب البعيد. ويؤدي ذلك، بتوافق الآراء، إلى إختفاء المسار الرئيسي لبروتوكول الإنترنت إلى شبكة الواجهة المعنية.

دعنا أولاً نلقي نظرة على الحالة الأولية للواجهة الأساسية وجدول توجيه ip:

### [جانب الاتصال:](#)

```
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
minute input rate 1000 bits/sec, 0 packets/sec 5
minute output rate 0 bits/sec, 0 packets/sec 5
packets input, 7599 bytes, 0 no buffer 92
Received 62 broadcasts, 0 runts, 0 giants, 0 throttles
input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0
packets output, 8991 bytes, 0 underruns 99
output errors, 0 collisions, 12 interface resets 0
```

```
output buffer failures, 0 output buffers swapped out 0
carrier transitions 4
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
```

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

**تم استدعاء الجانب:**

```
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
minute input rate 0 bits/sec, 0 packets/sec 5
minute output rate 0 bits/sec, 0 packets/sec 5
packets input, 9432 bytes, 0 no buffer 106
Received 71 broadcasts, 0 runts, 0 giants, 0 throttles
input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0
packets output, 8016 bytes, 0 underruns 98
output errors, 0 collisions, 4 interface resets 0
output buffer failures, 0 output buffers swapped out 0
carrier transitions 1
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
```

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

الآن يمكننا محاكاة فشل الارتباط باستخدام الأمر **shutdown** على الواجهة التسلسلية البعيدة:

```
#krimson
Mar 4 15:25:18.302: %LINK-3-UPDOWN: Interface Serial0, changed state to*
down
Mar 4 15:25:19.302: %LINEPROTO-5-UPDOWN: Line protocol on Interface*
Serial0, changed state to down
```

يمكننا أن نرى هنا أن الرابط الأساسي قد إنخفض.

```
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
  minute input rate 0 bits/sec, 0 packets/sec 5
  minute output rate 0 bits/sec, 0 packets/sec 5
  packets input, 8526 bytes, 0 no buffer 108
  Received 78 broadcasts, 0 runts, 0 giants, 0 throttles
  input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0
  packets output, 9895 bytes, 0 underruns 114
  output errors, 0 collisions, 12 interface resets 0
  output buffer failures, 0 output buffers swapped out 0
  carrier transitions 5
  DCD=down DSR=down DTR=up RTS=up CTS=down
#krimson
```

تظهر تفاصيل جدول التوجيه الآن أن المسار الثابت العائم مثبت في جدول التوجيه:

```
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
```

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

على الموجه المستدعى، يمكننا محاكاة فشل الارتباط الأساسي الذي تم محاكاته باستخدام الأمر **shutdown** على الواجهة التسلسلية 0 المحلية:

```
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*
```

الآن يمكننا أن نرى أن الرابط الأساسي ينخفض:

```
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
      minute input rate 0 bits/sec, 0 packets/sec 5
      minute output rate 0 bits/sec, 0 packets/sec 5
      packets input, 9895 bytes, 0 no buffer 114
      Received 79 broadcasts, 0 runts, 0 giants, 0 throttles
      input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0
      packets output, 8526 bytes, 0 underruns 108
      output errors, 0 collisions, 4 interface resets 0
      output buffer failures, 0 output buffers swapped out 0
      carrier transitions 1
      DCD=down DSR=down DTR=up RTS=up CTS=down
```

تقوم حركة مرور إختبار الاتصال المعرفة على أنها حركة مرور مثيرة للاهتمام بتهيئة المكالمة الصادرة عبر واجهة المتصل الاحتياطي 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
ms 36/47/76
#krimson

```

في نفس الوقت، تظهر الأخطاء التي يتم تشغيلها على الجانب المتصل الإخراج التالي لنفس الاستدعاء:

```

#kevin
Mar 4 15:34:21.698: ISDN BR0: RX <- SETUP pd = 8 callref = 0x07*
Mar 4 15:34:21.706: Bearer Capability i = 0x8890*
Mar 4 15:34:21.714: Channel ID i = 0x89*
, 'Mar 4 15:34:21.718: Calling Party Number i = 0xA1, '8113*
Plan:ISDN, Type:National
, 'Mar 4 15:34:21.734: Called Party Number i = 0xC1, '8114*
(Plan:ISDN, Type:Subscriber(local
Mar 4 15:34:21.762: ISDN BR0: Event: Received a DATA call from 8113 on B1*

```

```

at 64 Kb/s
Mar 4 15:34:21.762: ISDN BR0: Event: Accepting the call id 0xC*
Mar 4 15:34:21.766: BR0:1: interface must be fifo queue, force fifo*
Mar 4 15:34:21.774: %DIALER-6-BIND: Interface BR0:1 bound to profile Di0*
Mar 4 15:34:21.786: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up*
Mar 4 15:34:21.798: BR0:1 PPP: Treating connection as a callin*
,Mar 4 15:34:21.802: BR0:1 PPP: Phase is ESTABLISHING, Passive Open [0 sess*
[load 0
Mar 4 15:34:21.806: BR0:1 LCP: State is Listen*
Mar 4 15:34:21.818: ISDN BR0: TX -> CALL_PROC pd = 8 callref = 0x87*
Mar 4 15:34:21.826: Channel ID i = 0x89*
Mar 4 15:34:21.854: ISDN BR0: TX -> CONNECT pd = 8 callref = 0x87*
Mar 4 15:34:21.918: ISDN BR0: RX <- CONNECT_ACK pd = 8 callref = 0x07*
Mar 4 15:34:21.926: Channel ID i = 0x89*
Mar 4 15:34:21.978: BR0:1 LCP: I CONFREQ [Listen] id 19 len 15*
(Mar 4 15:34:21.982: BR0:1 LCP: AuthProto CHAP (0x0305C22305*
(Mar 4 15:34:21.986: BR0:1 LCP: MagicNumber 0x12D0A490 (0x050612D0A490*
Mar 4 15:34:21.990: BR0:1 LCP: O CONFREQ [Listen] id 9 len 15*
(Mar 4 15:34:21.994: BR0:1 LCP: AuthProto CHAP (0x0305C22305*
(Mar 4 15:34:21.994: BR0:1 LCP: MagicNumber 0x12D6B638 (0x050612D6B638*
Mar 4 15:34:21.998: BR0:1 LCP: O CONFACK [Listen] id 19 len 15*
(Mar 4 15:34:22.002: BR0:1 LCP: AuthProto CHAP (0x0305C22305*
(Mar 4 15:34:22.006: BR0:1 LCP: MagicNumber 0x12D0A490 (0x050612D0A490*
Mar 4 15:34:22.030: BR0:1 LCP: I CONFACK [ACKsent] id 9 len 15*
(Mar 4 15:34:22.034: BR0:1 LCP: AuthProto CHAP (0x0305C22305*
(Mar 4 15:34:22.034: BR0:1 LCP: MagicNumber 0x12D6B638 (0x050612D6B638*
Mar 4 15:34:22.038: BR0:1 LCP: State is Open*
Mar 4 15:34:22.042: BR0:1 PPP: Phase is AUTHENTICATING, by both [0 sess, 0*
[load
"Mar 4 15:34:22.046: BR0:1 CHAP: O CHALLENGE id 7 len 26 from "kevin"
"Mar 4 15:34:22.050: BR0:1 CHAP: I CHALLENGE id 7 len 28 from "krimson"
Mar 4 15:34:22.054: BR0:1 CHAP: Waiting for peer to authenticate first*
"Mar 4 15:34:22.070: BR0:1 CHAP: I RESPONSE id 7 len 28 from "krimson"
Mar 4 15:34:22.078: BR0:1 CHAP: O SUCCESS id 7 len 4*
Mar 4 15:34:22.082: BR0:1 CHAP: Processing saved Challenge, id 7*
"Mar 4 15:34:22.090: BR0:1 CHAP: O RESPONSE id 7 len 26 from "kevin"
Mar 4 15:34:22.114: BR0:1 CHAP: I SUCCESS id 7 len 4*
[Mar 4 15:34:22.118: BR0:1 PPP: Phase is UP [0 sess, 0 load*
Mar 4 15:34:22.122: BR0:1 IPCP: O CONFREQ [Not negotiated] id 2 len 10*
(Mar 4 15:34:22.126: BR0:1 IPCP: Address 10.9.9.2 (0x03060A090902*
Mar 4 15:34:22.130: BR0:1 IPCP: I CONFREQ [REQsent] id 2 len 10*
(Mar 4 15:34:22.134: BR0:1 IPCP: Address 10.9.9.1 (0x03060A090901*
Mar 4 15:34:22.138: BR0:1 IPCP: O CONFACK [REQsent] id 2 len 10*
(Mar 4 15:34:22.142: BR0:1 IPCP: Address 10.9.9.1 (0x03060A090901*
Mar 4 15:34:22.226: BR0:1 IPCP: I CONFACK [ACKsent] id 2 len 10*
(Mar 4 15:34:22.230: BR0:1 IPCP: Address 10.9.9.2 (0x03060A090902*
Mar 4 15:34:22.230: BR0:1 IPCP: State is Open*
Mar 4 15:34:22.242: BR0:1 DDR: dialer protocol up*
Mar 4 15:34:22.250: Di0 IPCP: Install route to 10.9.9.1*
,Mar 4 15:34:23.114: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1*
changed state to up
Mar 4 15:34:27.794: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to*
krimson 8113

```

الحالة بعد "تشغيل" النسخة الاحتياطية:

```

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
minute input rate 0 bits/sec, 0 packets/sec 5
minute output rate 0 bits/sec, 0 packets/sec 5
packets input, 2160 bytes 36
packets output, 2160 bytes 36
: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
second input rate 0 bits/sec, 0 packets/sec 30
second output rate 0 bits/sec, 0 packets/sec 30
packets input, 3664 bytes, 0 no buffer 126
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0
packets output, 3777 bytes, 0 underruns 131
output errors, 0 collisions, 15 interface resets 0
output buffer failures, 0 output buffers swapped out 0
carrier transitions 28

```

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

is variably subnetted, 5 subnets, 3 masks 10.0.0.0/8

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

[على الجانب المتصل:](#)

الحالة بعد "تشغيل" النسخة الاحتياطية.

```

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
minute input rate 0 bits/sec, 0 packets/sec 5
minute output rate 0 bits/sec, 0 packets/sec 5
packets input, 2224 bytes 40
packets output, 2224 bytes 40
: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
minute input rate 0 bits/sec, 0 packets/sec 5
minute output rate 0 bits/sec, 0 packets/sec 5
packets input, 3857 bytes, 0 no buffer 136
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 0
packets output, 3744 bytes, 0 underruns 131
output errors, 0 collisions, 12 interface resets 0
output buffer failures, 0 output buffers swapped out 0
carrier transitions 35

```

```

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

is variably subnetted, 4 subnets, 3 masks 10.0.0.0/8
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

هنا، نقوم بمحاكاة إستعادة الارتباط الأساسي باستخدام الأمر **no shutdown** على الواجهة التسلسلية البعيدة:

```
#krimson
Mar 4 15:28:58.726: %LINK-3-UPDOWN: Interface Serial0, changed state to up*
Mar 4 15:28:59.730: %LINEPROTO-5-UPDOWN: Line protocol on Interface*
Serial0, changed state to up
```

تم قطع اتصال النسخة الاحتياطية بعد انتهاء مهلة الخمول.

```
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*
kevin, call lasted 121 seconds 8114
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
```

تم الآن إستعادة الحالة الأولية.

```
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

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

## معلومات ذات صلة

- [صفحات دعم تقنية الطلب](#)
- [الدعم الفني - Cisco Systems](#)

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسم ل ا اذ ه Cisco ت مچرت  
م ل ا ل ا ا ن ا ع مچ ي ف ن ي م د خ ت س م ل ل م ع د ي و ت ح م م ي د ق ت ل ة ي ر ش ب ل و  
ا م ك ة ق ي ق د ن و ك ت ن ل ة ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ا ل م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب  
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ا ل ا ة مچرت ل ا ع م ل ا ح ل ا و ه  
ي ل ا م ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا ه ذ ه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco  
Systems ( ر ف و ت م ط ب ا ر ل ا ) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا دن ت س م ل ا