Résolution des problèmes de contiguïté IS-IS

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Introduction

Ce document décrit comment dépanner le protocole IS-IS pour les plates-formes Cisco IOS® XE.

Conditions préalables

Exigences

Cisco vous recommande de prendre connaissance des rubriques suivantes :

- Système intermédiaire à système intermédiaire (IS-IS)
- Cisco IOS XE

Pour plus d'informations sur ces sujets, consultez :

- IP ROUTING: Guide de configuration ISIS
- Configuration de la contiguïté IS-IS et des types de zone

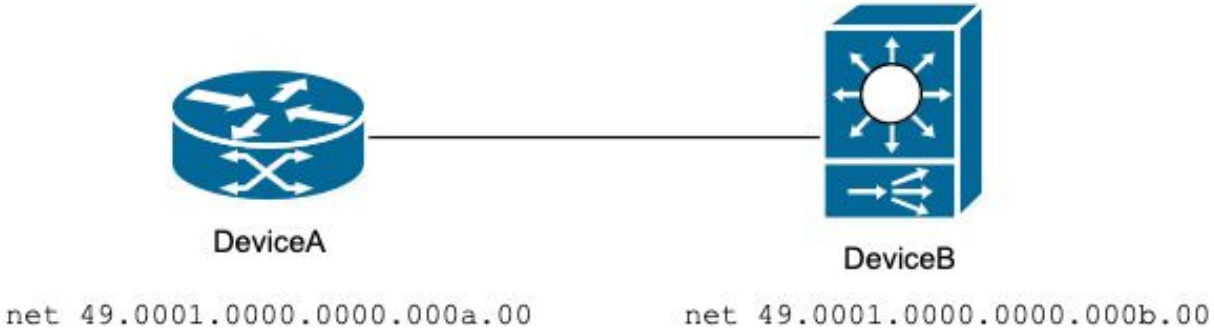
Composants utilisés

Les informations contenues dans ce document sont basées sur le logiciel Cisco IOS XE.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si votre réseau est en ligne, assurez-vous de bien comprendre l’incidence possible des commandes.

Contiguïté IS-IS inactive

Cette section fournit une solution au problème courant de désactivation d'IS-IS. Ce schéma de réseau est utilisé comme exemple:



Topologie de référence

IS-IS est en panne entre les périphériques A et B.

<#root>

```
DeviceA#
```

show isis neighbors detail

```
System Id       Type Interface     IP Address      State Holdtime Circuit Id
DeviceA#
```

<#root>

```
DeviceB#
```

show isis neighbors detail

```
System Id       Type Interface     IP Address      State Holdtime Circuit Id
DeviceA         L1L2 Twe1/0/9      192.0.2.1       DOWN  28       05
  Area Address(es): 49.0001
  SNPA: a84f.b1c3.9484
  State Changed: never
  Format: Phase V
  Remote TID: 0
  Local TID:  0
  Interface name: TwentyFiveGigE1/0/9
  Neighbor Circuit Id: 5
  Adj sync: Full
```

diagnostic du problème:

1. Validez la connectivité entre les périphériques.

<#root>

```
DeviceA#

ping 192.0.2.2 size 1500  df-bit


Type escape sequence to abort.
Sending 5, 1500-byte ICMP Echos to 192.0.2.2, timeout is 2 seconds:
Packet sent with the DF bit set
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
DeviceA#
```

<#root>

```
DeviceB#

ping 192.0.2.1 size 1500  df-bit


Type escape sequence to abort.
Sending 5, 1500-byte ICMP Echos to 192.0.2.1, timeout is 2 seconds:
Packet sent with the DF bit set
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
DeviceB#
```

2. Vérifiez la configuration des deux côtés.

<#root>

```
DeviceA#

show running-config | sec router isis

 ip router isis
router isis
 net 49.0001.0000.0000.000a.00
DeviceA#
```

<#root>

```
DeviceB#

show running-config | sec router isis

 ip router isis
```

```
router isis
 net 49.0001.0000.0000.000b.00
DeviceB#
```

3. Vérifiez si la contiguïté est active au niveau de CLNS (Connectionless Network Service). Ceci fournit un résumé des voisins connectés à votre périphérique.

<#root>

```
DeviceA#
```

show clns neighbors detail

```
System Id       Interface     SNPA                State  Holdtime  Type Protocol
0000.0000.000B  Te0/0/4
```

6c31.0edb.3b5f

Up

```
    257       IS   ES-IS
  Area Address(es): 49.0001
```

Uptime: 02:02:11

```
  Interface name: TenGigabitEthernet0/0/4
DeviceA#
```

<#root>

```
DeviceB#
```

show clns neighbors detail

```
System Id       Interface     SNPA                State  Holdtime  Type Protocol
0000.0000.000A  Twe1/0/9
```

a84f.b1c3.9484

Down

```
   20        L1L2 IS-IS
  Area Address(es): 49.0001
  IP Address(es):  192.0.2.1*
```

Uptime: 02:02:09

```
  NSF capable
  Interface name: TwentyFiveGigE1/0/9
DeviceB#
```

Les adresses mac répertoriées sur chaque voisin CLNS sont les adresses mac des périphériques distants qui s'appairent avec le périphérique local.

<#root>

```
DeviceA#

show interface TenGigabitEthernet0/0/4

TenGigabitEthernet0/0/4 is up, line protocol is up
  Hardware is 8xSFP+, address is

a84f.b1c3.9484 (bia a84f.b1c3.9484) < mac address appeared on SNPA DeviceB

  Internet address is 192.0.2.1/30
  MTU 1500 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

<#root>

```
 DeviceB#

show interface TwentyFiveGigE1/0/9

TwentyFiveGigE1/0/9 is up, line protocol is up (connected)
  Hardware is Twenty Five Gigabit Ethernet, address is

6c31.0edb.3b5f (bia 6c31.0edb.3b5f) < mac address appeared on SNPA DeviceA

  Internet address is 192.0.2.2/30
  MTU 9216 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
```

4. Exécutez la commande`show clns interface`
afin de valider si les paramètres correspondent à l'homologue.

Assurez-vous de correspondre à ces valeurs :

- Unité de transmission maximale (MTU)
- Type de circuit

PériphériqueA
<#root> DeviceA# **show clns interface TenGigabitEthernet0/0/4** TenGigabitEthernet0/0/4 is up, line protocol is up Attached to: isis Checksums enabled,

MTU 1497

, Encapsulation SAP
ERPDUs enabled, min. interval 10 msec.
CLNS fast switching disabled
CLNS SSE switching disabled
DEC compatibility mode OFF for this interface
Next ESH/ISH in 19 seconds
Routing Protocol: IS-IS

Circuit Type: level-1-2

Interface number 0x0, local circuit ID 0x5
Neighbor Extended Local Circuit ID: 0x0
Level-1 Metric: 10, Priority: 64, Circuit ID: DeviceA.05
Level-1 IPv6 Metric: 10
Number of active level-1 adjacencies: 0
Level-2 Metric: 10, Priority: 64, Circuit ID: DeviceA.05
Level-2 IPv6 Metric: 10
Number of active level-2 adjacencies: 0
Next IS-IS Hello in 908 milliseconds

if state DOWN

PériphériqueB

<#root>

DeviceB#

show clns interface TwentyFiveGigE1/0/9

TwentyFiveGigE1/0/9 is up, line protocol is up
Attached to: isis
Checksums enabled,

MTU 9213

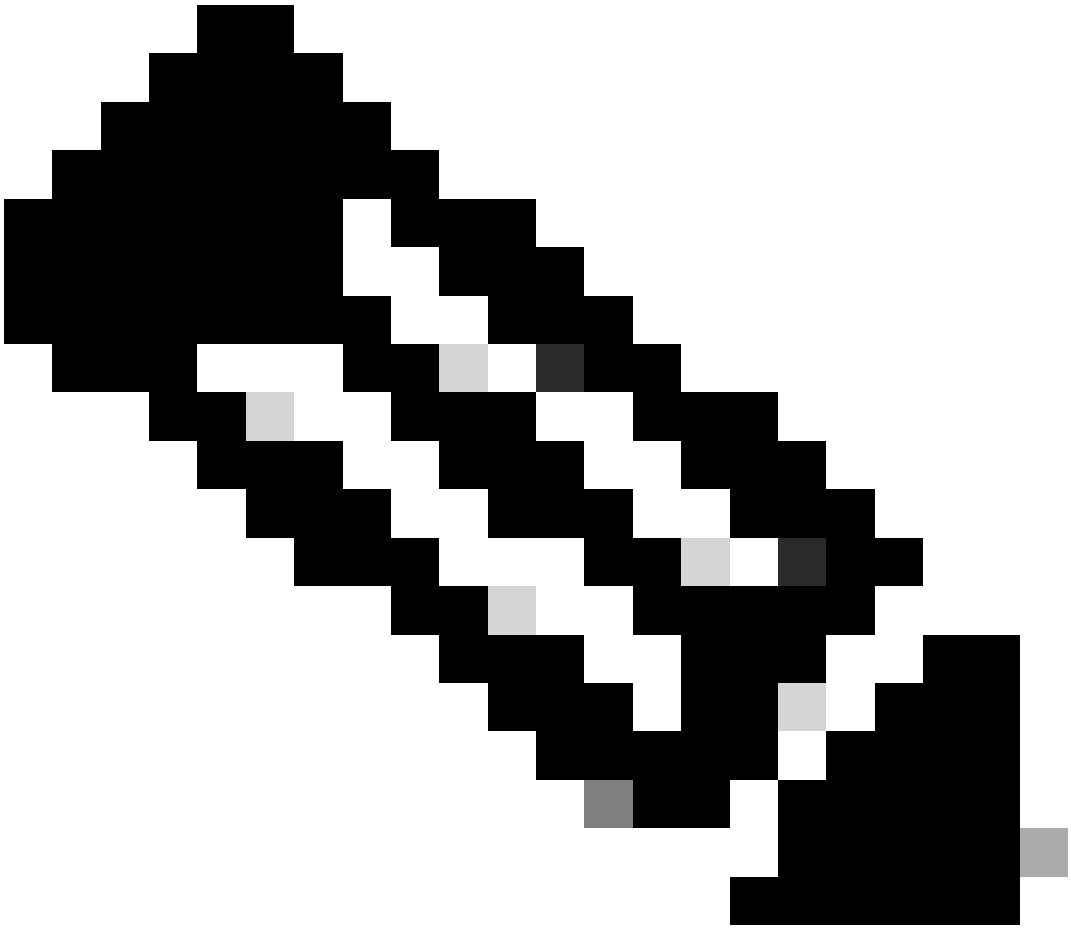
, Encapsulation SAP
ERPDUs enabled, min. interval 10 msec.
CLNS fast switching disabled
CLNS SSE switching disabled
DEC compatibility mode OFF for this interface
Next ESH/ISH in 8 seconds
Routing Protocol: IS-IS

Circuit Type: level-1-2

Interface number 0x0, local circuit ID 0xB
Neighbor Extended Local Circuit ID: 0x5
Neighbor System-ID: 0000.0000.000A
P2P retransmit queue size: 0
Level-1 Metric: 10, Priority: 64, Circuit ID: DeviceB.0B
Level-1 IPv6 Metric: 10
Number of active level-1 adjacencies: 0
Level-2 Metric: 10, Priority: 64, Circuit ID: DeviceB.0B
Level-2 IPv6 Metric: 10
Number of active level-2 adjacencies: 0
Next IS-IS Hello in 2 seconds

```
if state INIT
```

Dans ce scénario, le problème est lié à la non-concordance de MTU. Si l'homologue distant n'est pas accessible, l' **debug isis adj-packets**
peut afficher la valeur MTU en cours d'envoi et de réception.



Remarque : Cela s'applique uniquement lorsque la commande est **show clns interface**imprimée if state INIT.

<#root>

DeviceA#

debug isis adj-packets TenGigabitEthernet 0/0/4

IS-IS Adjacency related packets debugging is on for router process null

```
*Jul 18 23:24:16.598: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 18 23:24:16.599: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN,
```

length 1496 < MTU sent to the neighbor >

```
*Jul 18 23:24:25.189: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 18 23:24:25.189: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
*Jul 18 23:24:34.057: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 18 23:24:34.057: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
*Jul 18 23:24:42.866: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 18 23:24:42.866: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
*Jul 18 23:24:51.646: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 18 23:24:51.646: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
*Jul 18 23:24:59.606: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 18 23:24:59.606: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
```

<#root>

```
DeviceB#
```

debug isis adj-packets twentyFiveGigE 1/0/9

```
*Jul 18 23:53:22.420: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:INIT,
```

length 9212 < MTU sent to the neighbor >

```
*Jul 18 23:53:22.591: ISIS-Adj: Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)
*Jul 18 23:53:22.591: ISIS-Adj: cir type L1L2, cir id 05,
```

length 1496 < MTU received from neighbor >

```
*Jul 18 23:53:22.592: ISIS-Adj: rcvd state DOWN, old state INIT, new state INIT, nbr usable TRUE
*Jul 18 23:53:22.592: ISIS-Adj: RCV:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x49000184 Length:5
*Jul 18 23:53:22.592: ISIS-Adj: Nghbr Ckt ID changed: FALSE
*Jul 18 23:53:22.592: ISIS-Adj: newstate:1, state_changed:0, going_up:0, going_down:0
*Jul 18 23:53:22.592: ISIS-Adj: Action = ACCEPT
*Jul 18 23:53:22.592: ISIS-Adj: ACTION_ACCEPT:
...
```

Contiguïté ISIS désactivée (non liée à une non-concordance MTU)

IS-IS est désactivé et MTU correspond sur les interfaces.

<#root>

```
DeviceA#
```

show clns neighbors

```
System Id       Interface     SNPA                State  Holdtime  Type Protocol
DeviceA#
```

<#root>

```
DeviceB#
```

show clns neighbors

```
System Id       Interface     SNPA                State  Holdtime  Type Protocol
DeviceB#
```

1. Validez la configuration qui correspond à l'homologue.
2. Assurez-vous que l'interface physique est en bon état pour transmettre (aucune erreur ou problème de niveau d'éclairage).
3. Vérifiez la connectivité entre les homologues (test ping ajoutant la taille de MTU et le bit df).
4. Validez les voisins CLNS entre les homologues.
5. Assurez-vous que les deux extrémités ont le même MTU et le même Circuit-Type ainsi que l'état.

PériphériqueA
<#root> DeviceA# **show clns interface TenGigabitEthernet 0/0/4** TenGigabitEthernet0/0/4 is up, line protocol is up Attached to: isis Checksums enabled, **MTU 1497** , Encapsulation SAP ERPDUs enabled, min. interval 10 msec. CLNS fast switching disabled CLNS SSE switching disabled DEC compatibility mode OFF for this interface Next ESH/ISH in 41 seconds Routing Protocol: IS-IS **Circuit Type: level-1-2** Interface number 0x0, local circuit ID 0x5 Neighbor Extended Local Circuit ID: 0x0 Level-1 Metric: 10, Priority: 64, Circuit ID: DeviceA.05 Level-1 IPv6 Metric: 10 Number of active level-1 adjacencies: 0 Level-2 Metric: 10, Priority: 64, Circuit ID: DeviceA.05 Level-2 IPv6 Metric: 10 Number of active level-2 adjacencies: 0 Next IS-IS Hello in 2 seconds

if state DOWN

PériphériqueB

<#root>

DeviceB#

show clns interface twentyFiveGigE 1/0/9

TwentyFiveGigE1/0/9 is up, line protocol is up
Attached to: isis
Checksums enabled,

MTU 1497

, Encapsulation SAP
ERPDUs enabled, min. interval 10 msec.
CLNS fast switching disabled
CLNS SSE switching disabled
DEC compatibility mode OFF for this interface
Next ESH/ISH in 42 seconds
Routing Protocol: IS-IS

Circuit Type: level-1-2

Interface number 0x0, local circuit ID 0xB
Neighbor Extended Local Circuit ID: 0x0
P2P retransmit queue size: 0
Level-1 Metric: 10, Priority: 64, Circuit ID: DeviceB.0B
Level-1 IPv6 Metric: 10
Number of active level-1 adjacencies: 0
Level-2 Metric: 10, Priority: 64, Circuit ID: DeviceB.0B
Level-2 IPv6 Metric: 10
Number of active level-2 adjacencies: 0
Next IS-IS Hello in 5 seconds

if state DOWN

6. Activez **debug isis adj-packet**
et validez les paquets qui sont envoyés et reçus.

<#root>

DeviceA#

debug isis adj-packets TenGigabitEthernet 0/0/4

IS-IS Adjacency related packets debugging is on for router process null
*Jul 19 13:32:52.788: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 19 13:32:52.788: ISIS-Adj:

Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length 1496

*Jul 19 13:33:00.708: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5

```
*Jul 19 13:33:00.709: ISIS-Adj:

Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length 1496

*Jul 19 13:33:09.726: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 19 13:33:09.726: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
*Jul 19 13:33:18.376: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 19 13:33:18.376: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
*Jul 19 13:33:26.132: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
*Jul 19 13:33:26.132: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length
DeviceA#
```

<#root>

```
DeviceB#

debug isis adj-packets TwentyFiveGigE1/0/9


IS-IS Adjacency related packets debugging is on for router process null
*Jul 19 14:01:32.125: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x0 Length:5
*Jul 19 14:01:32.125: ISIS-Adj:

Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:DOWN, length 1496

*Jul 19 14:01:40.005: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x0 Length:5
*Jul 19 14:01:40.005: ISIS-Adj:

Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:DOWN, length 1496

*Jul 19 14:01:49.602: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x0 Length:5
*Jul 19 14:01:49.602: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:DOWN, length 1496
*Jul 19 14:01:58.284: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x0 Length:5
*Jul 19 14:01:58.284: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:DOWN, length 1496
```

Les deux périphériques envoient, mais ils ne reçoivent pas le paquet Hello de leurs voisins.
7. Activez une capture afin de valider que les paquets sont envoyés à chaque voisin. Une fois la capture terminée, exportez-la vers la mémoire flash ou bootflash en tant que.pcap file et téléchargez-la vers un serveur TFTP pour plus de détails.

<#root>

```
DeviceA#

show monitor cap cap parameter



monitor capture cap interface TenGigabitEthernet0/0/4 BOTH < Interface from where send and receive the H
   monitor capture cap control-plane IN  < Packets to be process and generated by the CPU >

   monitor capture cap access-list TAC  < ACL for capture only the IS-IS packets >

   monitor capture cap buffer size 10
   monitor capture cap limit pps 1000

DeviceA#
```

show access-list TAC

Extended MAC access list TAC
    permit host

a84f.b1c3.9484

 host

0900.2b00.0005 < Local MAC address towards the IS-IS Hello >

    permit host

6c31.0edb.3b5f host 0900.2b00.0005 < Remote MAC address towards the IS-IS Hello >

<#root>

DeviceB#

show monitor capture cap parameter

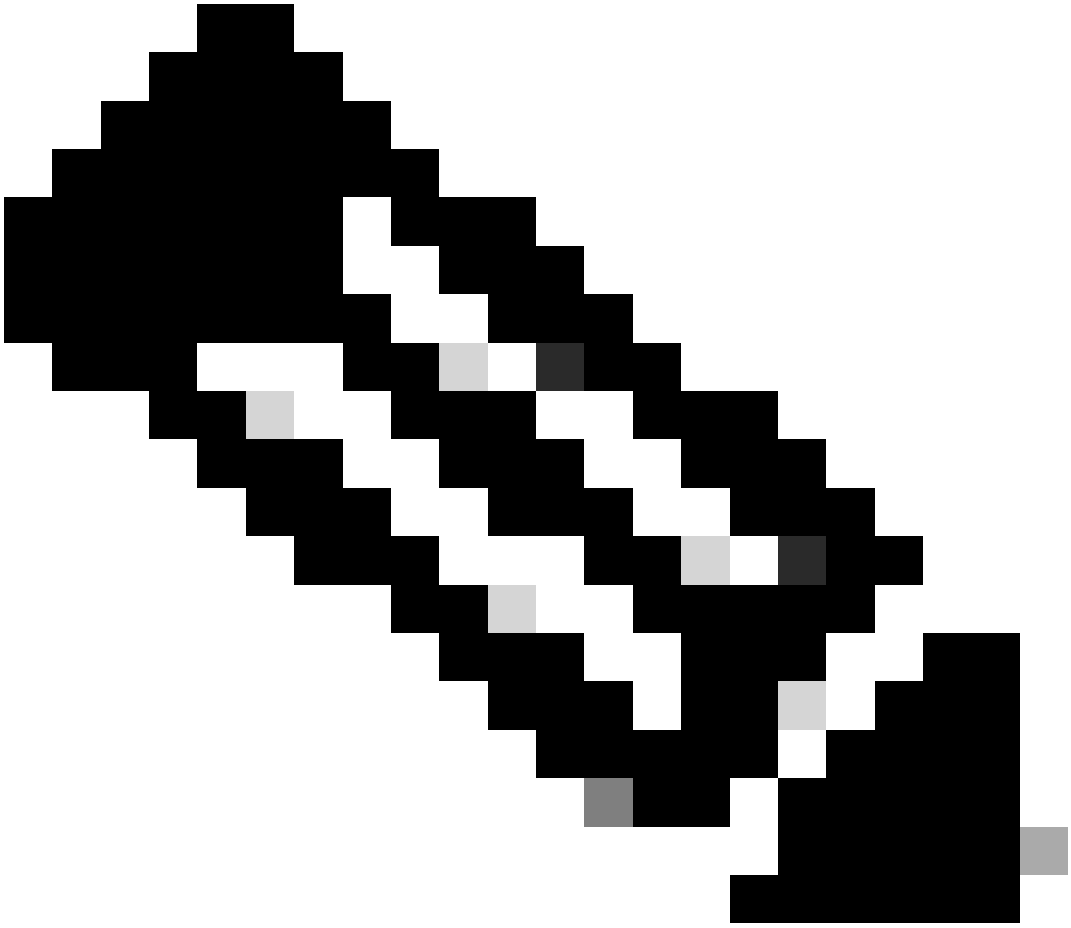
 monitor capture cap interface TwentyFiveGigE1/0/9 BOTH < Interface from where send and receive the Hell

 monitor capture cap control-plane BOTH < Packets to be process and generated by the CPU >

   monitor capture

 cap match any < match all the packets on the switch >

   monitor capture cap buffer size 10



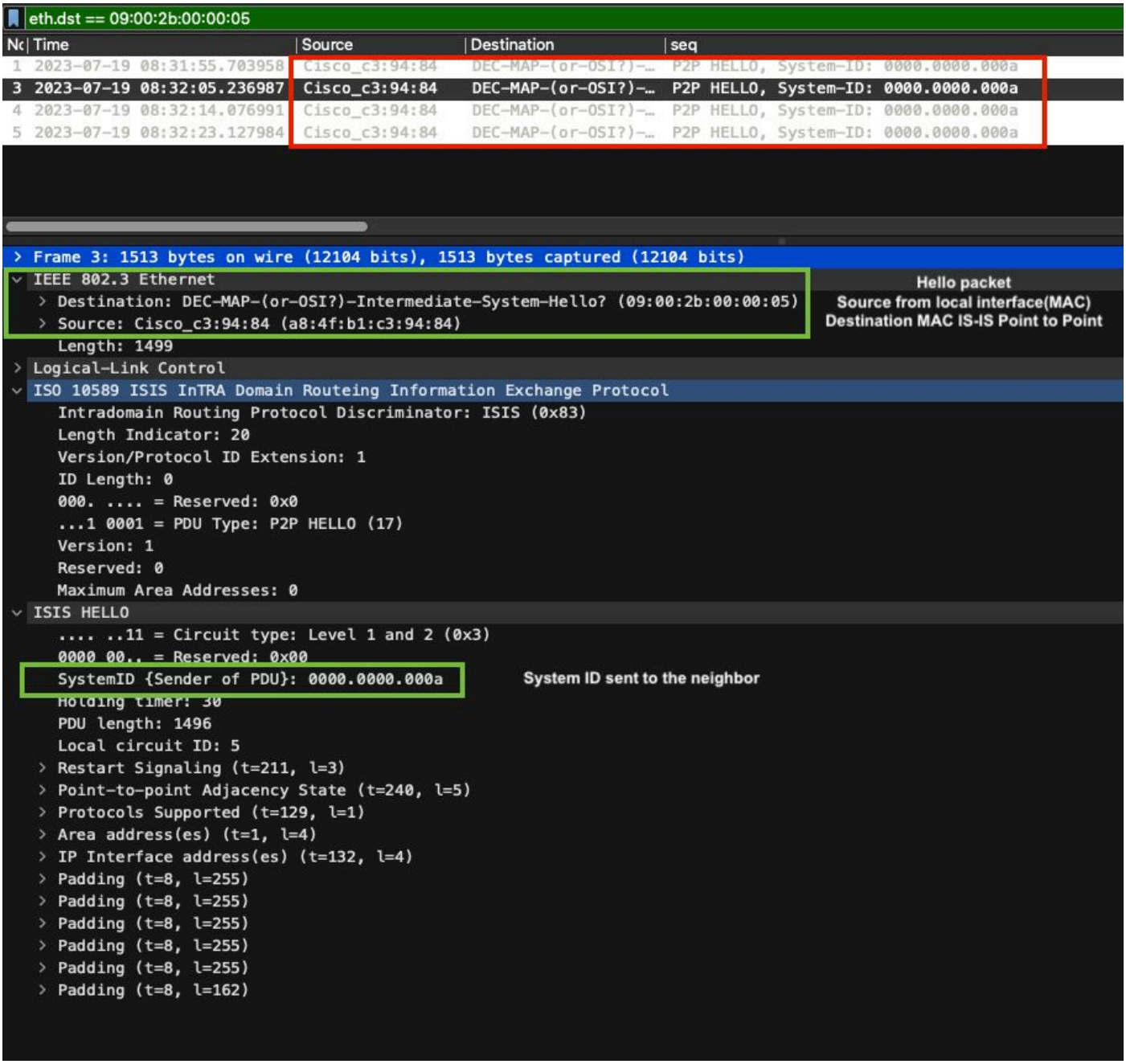
Remarque : EPC sur les commutateurs Catalyst Cisco IOS XE capture uniquement les paquets sortants IS-IS Hello et non les paquets entrants. Les captures SPAN sont également recommandées.

La référence aux paquets Hello est indiquée dans ce tableau.

Nom	Adresse MAC de destination
Tous les IS L1	0180.c200.0014
Tous les IS L2	0180.c200.0015
Tous les IS	0900.2b00.0005
Tous les ES	0900.2b00.0004

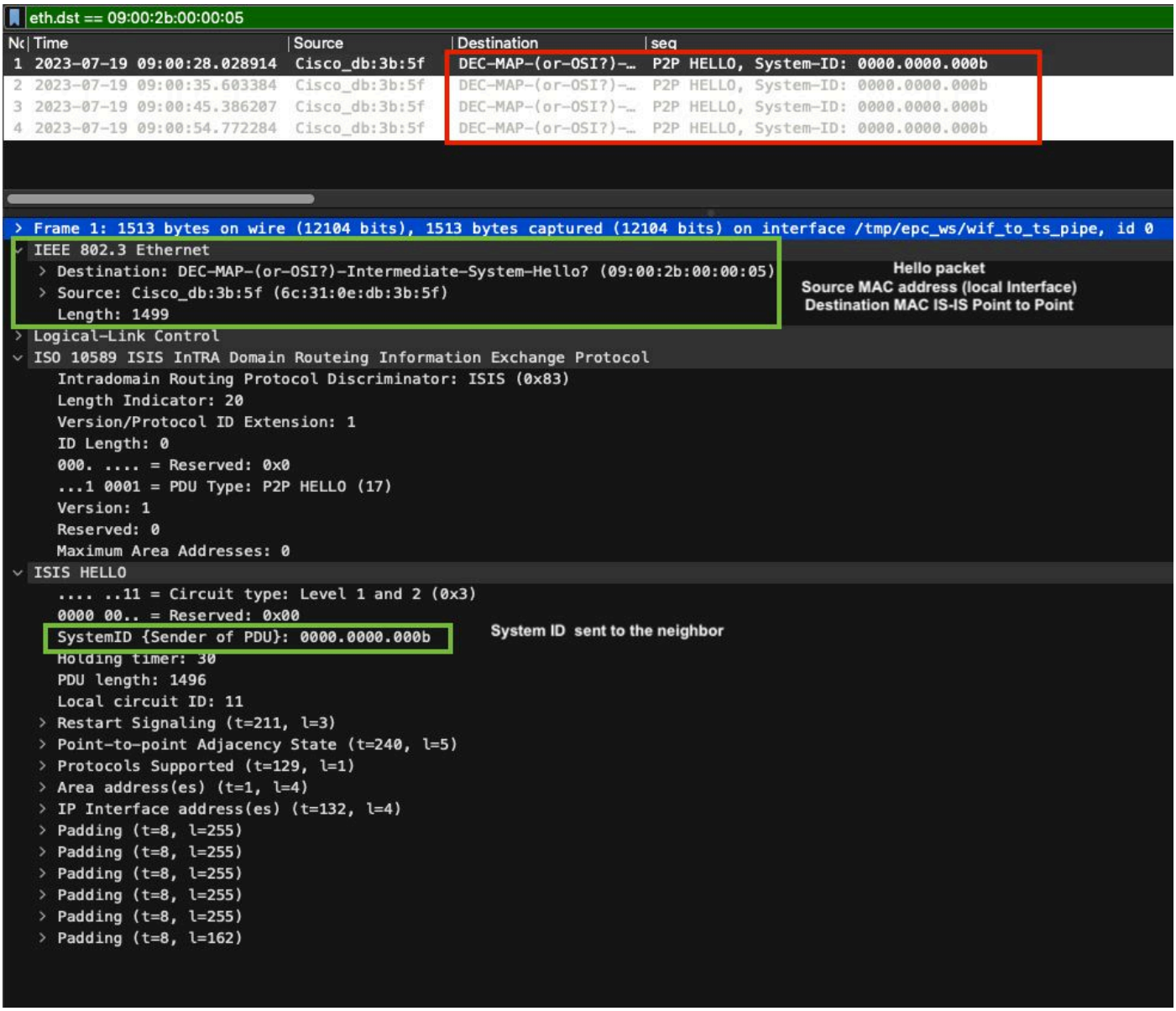
8. Vérifiez la capture exportée et assurez-vous que les paquets Hello sont échangés entre voisins.

Le périphérique A envoie les paquets Hello en ajoutant leur ID système (carré rouge). Il est censé recevoir un paquet de son voisin avec son ID système. Dans cette capture, vous pouvez comprendre que DeviceB ne transfère pas ces paquets à l'homologue.



Capture de périphériqueA ISIS en panne

La capture du périphérique B indique que les paquets Hello sont envoyés à son voisin (carré rouge). Cependant, comme pour la dernière capture, il ne reçoit pas les paquets Hello de son voisin.



DeviceB ISIS Down Capture

Le problème dans ce scénario est dû à un périphérique intermédiaire qui ne permet pas d'envoyer les paquets Hello. Si vous constatez une situation similaire et que vous devez poursuivre le dépannage, ouvrez un dossier Cisco TAC.

IS-IS Adjacency Unstable

Cette section fournit une solution au problème courant des volets IS-IS.

diagnostic du problème:

IS-IS est instable entre les périphériques A et B.

<#root>

```
DeviceA#
```

show logging

```
Jul 19 15:05:03.623:
```

%CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold time expired

```
Jul 19 15:05:15.075: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Up, new ad
Jul 19 15:07:04.575: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold
Jul 19 15:07:15.759: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Up, new ad
Jul 19 15:09:04.983: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold
Jul 19 15:09:14.835: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Up, new ad
```

<#root>

```
DeviceB#
```

show logging

```
Jul 19 15:05:02.316:
```

%CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold time expired

```
Jul 19 15:05:18.191: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Up, new adjace
Jul 19 15:07:09.280: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold tim
Jul 19 15:07:18.876: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Up, new adjace
Jul 19 15:09:06.080: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold tim
Jul 19 15:09:17.948: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Up, new adjace
```

1. Vérifiez la connectivité entre les homologues (test ping avec la taille de MTU et le jeu de bits df).

2. Assurez-vous que l'interface physique est en bon état pour transmettre (aucune erreur ou problème de niveau de lumière).

3. Validez les voisins CLNS qui s'envoient du trafic à l'aide de la commande **show clns traffic interface** .

<#root>

```
DeviceA#
```

show clns traffic interface TenGigabitEthernet0/0/4

```
CLNS:  Time since last clear: 00:01:57
CLNS & ESIS Output: 3, Input: 21
Dropped Protocol not enabled on interface: 0
CLNS Local: 0, Forward: 0
```

Interface TenGigabitEthernet0/0/4:

IS-IS: Time since last clear: 00:01:57
IS-IS: Level-1 Hellos (sent/rcvd): 0/0
IS-IS: Level-2 Hellos (sent/rcvd): 0/0

IS-IS: PTP Hellos   (sent/rcvd): 15/11 < DeviceA sends hello packets and receives less than its sends

IS-IS: Level-1 LSPs flooded (sent/rcvd): 2/2
IS-IS: Level-2 LSPs flooded (sent/rcvd): 2/2

IS-IS: Level-1 CSNPs (sent/rcvd): 1/1
IS-IS: Level-2 CSNPs (sent/rcvd): 1/1
IS-IS: Level-1 PSNPs (sent/rcvd): 1/1
IS-IS: Level-2 PSNPs (sent/rcvd): 1/1
IS-IS: Level-1 DR Elections: 0
IS-IS: Level-2 DR Elections: 0

<#root>

DeviceB#

show clns traffic interface TwentyFiveGigE1/0/9

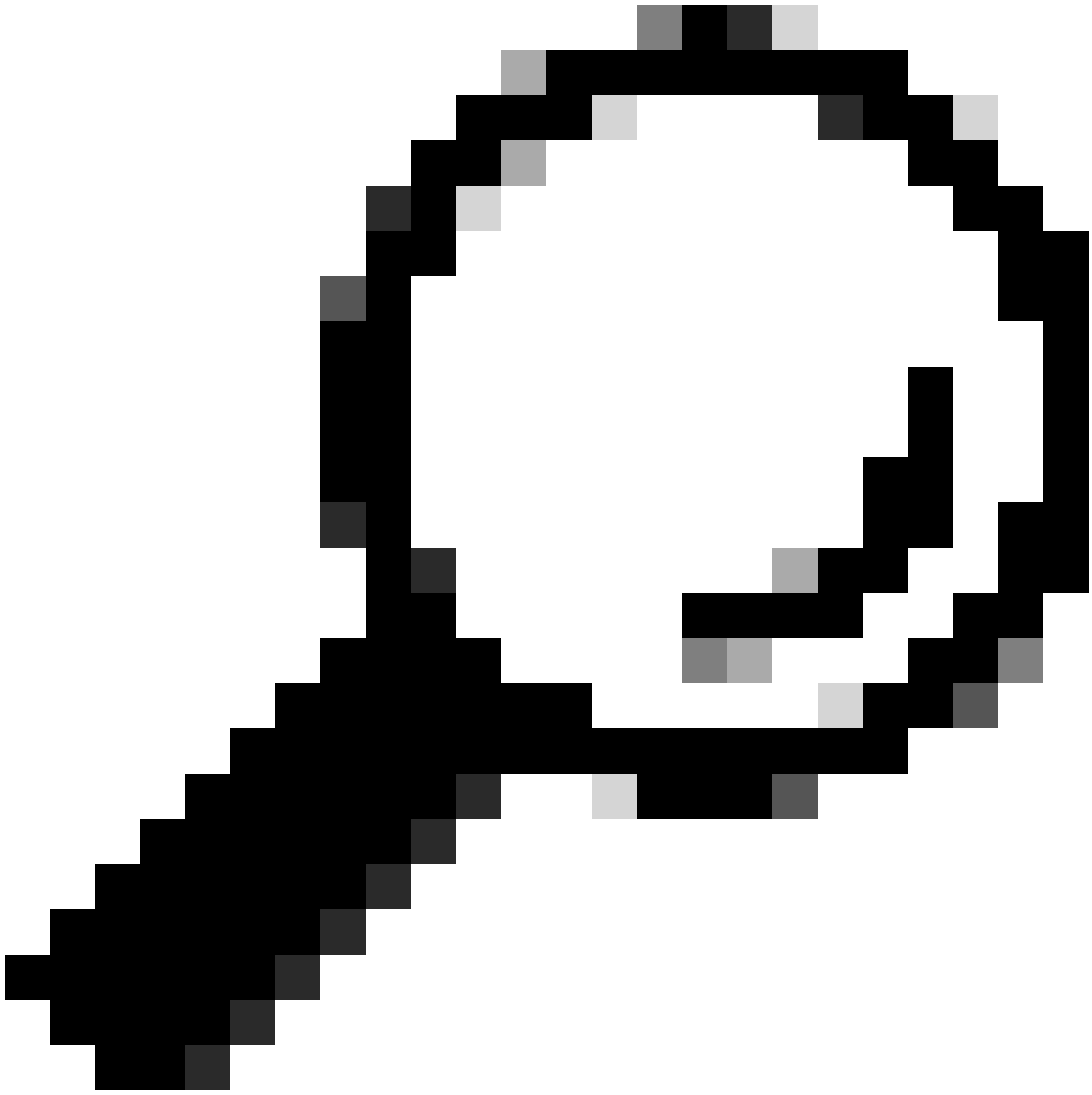
CLNS: Time since last clear: 00:00:27
CLNS queue depth: 0/100, drops: 0, highest: 2
CLNS & ESIS Output: 1, Input: 14
Dropped Protocol not enabled on interface: 0
CLNS Local: 0, Forward: 0

Interface TwentyFiveGigE1/0/9:
IS-IS: Time since last clear: 00:00:27
IS-IS: Level-1 Hellos (sent/rcvd): 0/0
IS-IS: Level-2 Hellos (sent/rcvd): 0/0

IS-IS: PTP Hellos   (sent/rcvd): 4/5 < DeviceB, sends and receives a couple of hellos in comparison w

IS-IS: Level-1 LSPs flooded (sent/rcvd): 2/2
IS-IS: Level-2 LSPs flooded (sent/rcvd): 2/2

IS-IS: Level-1 CSNPs (sent/rcvd): 1/1
IS-IS: Level-2 CSNPs (sent/rcvd): 1/1
IS-IS: Level-1 PSNPs (sent/rcvd): 1/1
IS-IS: Level-2 PSNPs (sent/rcvd): 1/1
IS-IS: Level-1 DR Elections: 0
IS-IS: Level-2 DR Elections: 0



Conseil : La commande clns traffic affiche les Hello IS-IS en fonction du niveau IS-IS et du type de réseau IS-IS.

4. Activez **debug ISIS adj-packets**
afin de voir quels paquets sont échangés entre voisins.

<#root>

DeviceA#

show isis adj-packets TenGigabitEthernet0/0/4

< Hellos sent to the DeviceB with no response >

```
Jul 19 18:58:34.779: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 19 18:58:34.779: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
Jul 19 18:58:42.719: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 19 18:58:42.719: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
Jul 19 18:58:50.430: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 19 18:58:50.430: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
Jul 19 18:58:58.356: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 19 18:58:58.356: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
```

< IS-IS declares the protocol down >

```
Jul 19 18:59:01.879: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4)
```

Down, hold time expired

< IS-IS sends hellos to the neighbor and receives a response from DeviceB >

```
Jul 19 18:59:01.879: ISIS-Adj: L2 adj count 0
Jul 19 18:59:07.724: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
Jul 19 18:59:07.724: ISIS-Adj:
```

Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length 1496

```
Jul 19 18:59:15.894: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x0 Length:5
Jul 19 18:59:15.894: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:DOWN, length 1
Jul 19 18:59:15.896: ISIS-Adj:
```

Rec serial IIH from 6c31.0edb.3b5f (TenGigabitEthernet0/0/4)

```
Jul 19 18:59:15.896: ISIS-Adj: cir type L2, cir id 0B, length 1496
Jul 19 18:59:15.896: ISIS-Adj:
```

RCV:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15

```
Jul 19 18:59:15.896: ISIS-Adj: Nghbr Ckt ID changed: TRUE
Jul 19 18:59:15.896: ISIS-Adj: received Neighbor System-ID (must be our) 0000.0000.000A
Jul 19 18:59:15.896: ISIS-Adj: received Neighbor ext.circuit ID (must be our) 0x5
Jul 19 18:59:15.896: ISIS-Adj: newstate:1, state_changed:1, going_up:0, going_down:0
Jul 19 18:59:15.896: ISIS-Adj: Action = GOING UP, new type = L2
```

< DeviceA declares that the adjacency is UP and starts to establish the session >

```
Jul 19 18:59:15.896: ISIS-Adj: New serial adjacency
Jul 19 18:59:15.896: ISIS-Adj:
```

rcvd state INIT, old state DOWN, new state INIT, nbr usable TRUE

```
Jul 19 18:59:15.898: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 19 18:59:15.898: ISIS-Adj:
```

Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:INIT, length 1496

```
Jul 19 18:59:15.900: ISIS-Adj: Rec serial IIH from 6c31.0edb.3b5f (TenGigabitEthernet0/0/4)
Jul 19 18:59:15.900: ISIS-Adj: cir type L2, cir id 0B, length 1496
Jul 19 18:59:15.900: ISIS-Adj:
```

rcvd state UP, old state INIT, new state UP, nbr usable TRUE

```
Jul 19 18:59:15.900: ISIS-Adj: RCV:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
```

```
Jul 19 18:59:15.900: ISIS-Adj: Nghbr Ckt ID changed: FALSE
Jul 19 18:59:15.900: ISIS-Adj: received Neighbor System-ID (must be our) 0000.0000.000A
Jul 19 18:59:15.900: ISIS-Adj: received Neighbor ext.circuit ID (must be our) 0x5
Jul 19 18:59:15.900: ISIS-Adj: newstate:0, state_changed:1, going_up:1, going_down:0
Jul 19 18:59:15.900: ISIS-Adj: Action = GOING UP, new type = L2
Jul 19 18:59:15.900: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4)
```

Up, new adjacency

<#root>

```
DeviceB#
```

debug isis adj-packets TwentyFiveGigE1/0/9

< Hello sent to the DeviceA with no response >

```
Jul 19 18:58:44.105: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 19 18:58:44.105: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496
Jul 19 18:58:51.814: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 19 18:58:51.814: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496
Jul 19 18:58:59.768: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 19 18:58:59.768: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496
```

< IS-IS declares the protocol down >

```
Jul 19 18:59:07.886: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9)
```

Down, hold time expired

< IS-IS sends hellos to the neighbor and receives a response from DeviceA >

```
Jul 19 18:59:07.887: ISIS-Adj: L2 adj count 0
Jul 19 18:59:08.422: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x0 Length:5
Jul 19 18:59:08.422: ISIS-Adj:
```

Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:DOWN, length 1496

```
Jul 19 18:59:16.144: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x0 Length:5
Jul 19 18:59:16.144: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:DOWN, length 1496
Jul 19 18:59:19.001: ISIS-Adj:
```

Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)

```
Jul 19 18:59:19.001: ISIS-Adj: cir type L2, cir id 05, length 1496
Jul 19 18:59:19.001: ISIS-Adj:
```

RCV:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0x49000184 Length:5

```
Jul 19 18:59:19.001: ISIS-Adj: Nghbr Ckt ID changed: TRUE
Jul 19 18:59:19.001: ISIS-Adj: newstate:1, state_changed:1, going_up:0, going_down:0
Jul 19 18:59:19.001: ISIS-Adj: Action = GOING UP, new type = L2
```

< DeviceB declares that the adjacency is UP and starts to establish the session >

```
Jul 19 18:59:19.001: ISIS-Adj: New serial adjacency
```

```
Jul 19 18:59:19.001: ISIS-Adj:
```

rcvd state DOWN, old state DOWN, new state INIT, nbr usable TRUE

```
Jul 19 18:59:19.002: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 19 18:59:19.002: ISIS-Adj:
```

Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:INIT, length 1496

```
Jul 19 18:59:19.004: ISIS-Adj: Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)
Jul 19 18:59:19.004: ISIS-Adj: cir type L2, cir id 05, length 1496
Jul 19 18:59:19.004: ISIS-Adj:
```

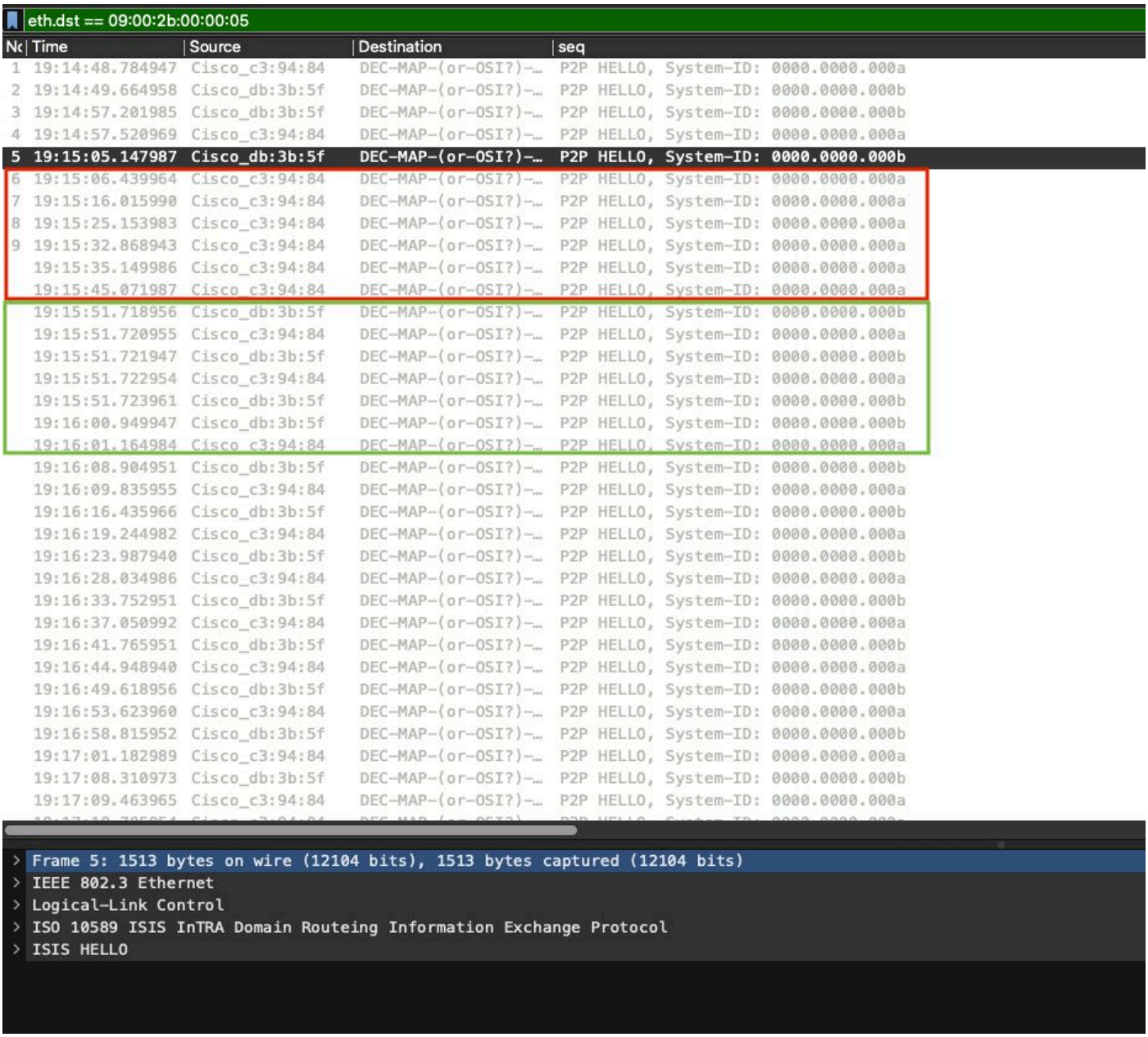
rcvd state INIT, old state INIT, new state UP, nbr usable TRUE

```
Jul 19 18:59:19.004: ISIS-Adj: RCV:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 19 18:59:19.004: ISIS-Adj: Nghbr Ckt ID changed: FALSE
Jul 19 18:59:19.004: ISIS-Adj: received Neighbor System-ID (must be our) 0000.0000.000B
Jul 19 18:59:19.004: ISIS-Adj: received Neighbor ext.circuit ID (must be our) 0xB
Jul 19 18:59:19.004: ISIS-Adj: newstate:0, state_changed:1, going_up:1, going_down:0
Jul 19 18:59:19.004: ISIS-Adj: Action = GOING UP, new type = L2
Jul 19 18:59:19.004: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9)
```

Up, new adjacency

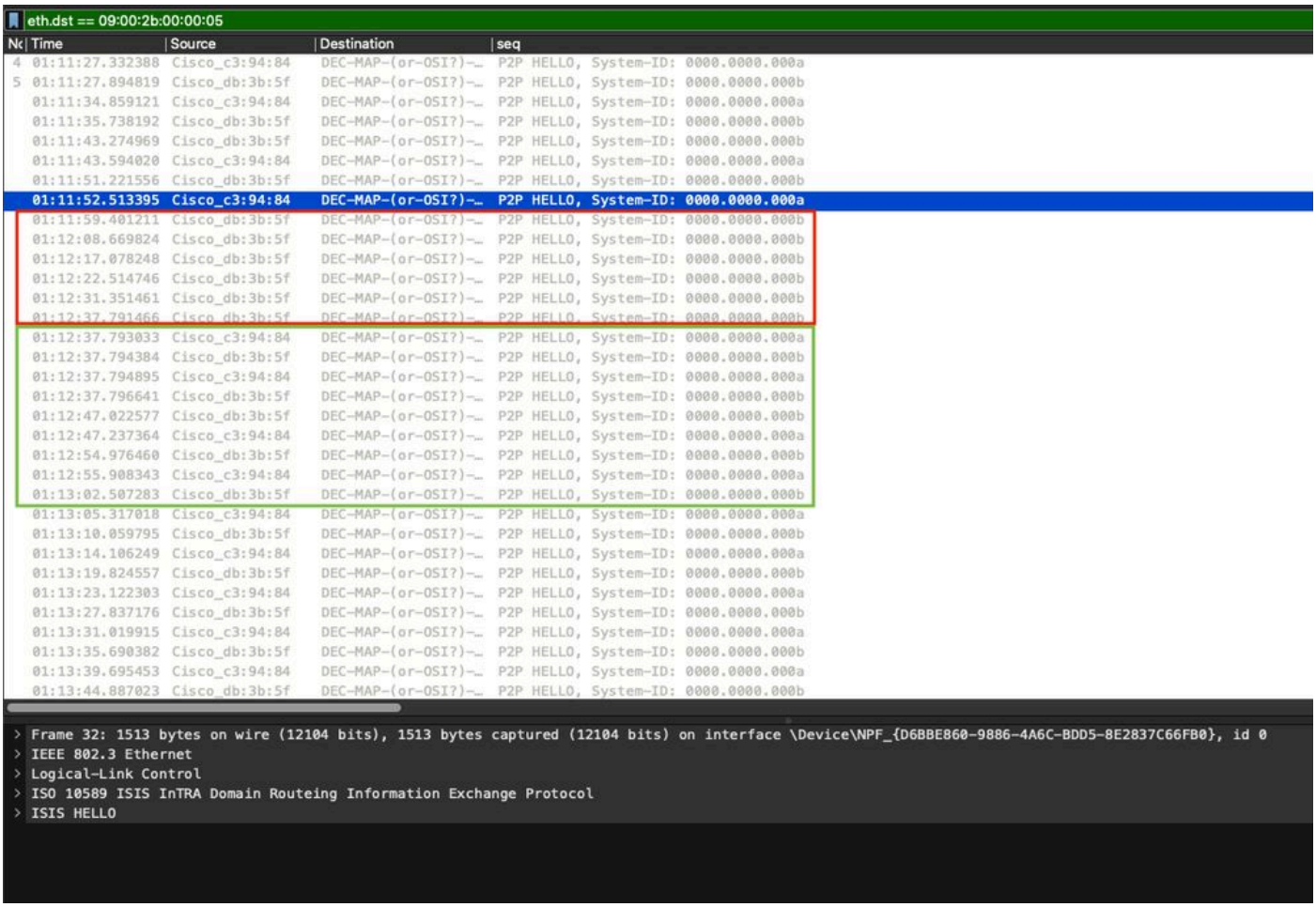
5. Activez une capture afin de valider que les paquets sont envoyés à chaque voisin. Une fois la capture terminée, exportez-la vers la mémoire flash de démarrage en tant que **.pcap file** et téléchargez-la vers un serveur TFTP pour plus de détails.

L'unité A reçoit un paquet de l'unité B (19:15.05) après la réception de ce paquet. Le périphérique A envoie son Hello correspondant sans réponse du voisin jusqu'à ce qu'il atteigne le délai d'attente expiré, qui est de 30 secondes par défaut (carré rouge).
C'est quand ce routeur déclare la contiguïté désactivée. Après cette période, le périphérique B envoie son paquet Hello et est reçu par le périphérique A. Ces paquets sont échangés sans problème (carré vert).



Périphérique instable ISISa

La capture à partir du périphérique B est similaire au symptôme de l'homologue. Le périphérique ne reçoit pas les paquets Hello de son voisin. Le dernier paquet est envoyé par le périphérique B sans réponse du périphérique A jusqu'à ce qu'il atteigne le minuteur d'attente de 30 secondes. Ce commutateur considère que la contiguïté est désactivée. Après cette panne, le commutateur reçoit le paquet hello du périphérique A et démarre le voisinage.



Périphérique instable ISISb

Ceci conclut qu'il y a un problème avec le transport et que vous devez revoir pourquoi les paquets sont perdus.

IS-IS Adjacency Unstable (volets aléatoires)

IS-IS est instable entre les périphériques A et B. Le protocole rencontre des failles aléatoires.

<#root>

```
DeviceA#
```

show logging

```
Jul 21 10:03:38.633: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold
Jul 21 10:05:10.272: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Up, new ad
Jul 21 10:33:41.528: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold
Jul 21 10:35:07.979: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Up, new ad
Jul 21 11:03:42.442: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold
Jul 21 11:05:08.469: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Up, new ad
```

<#root>

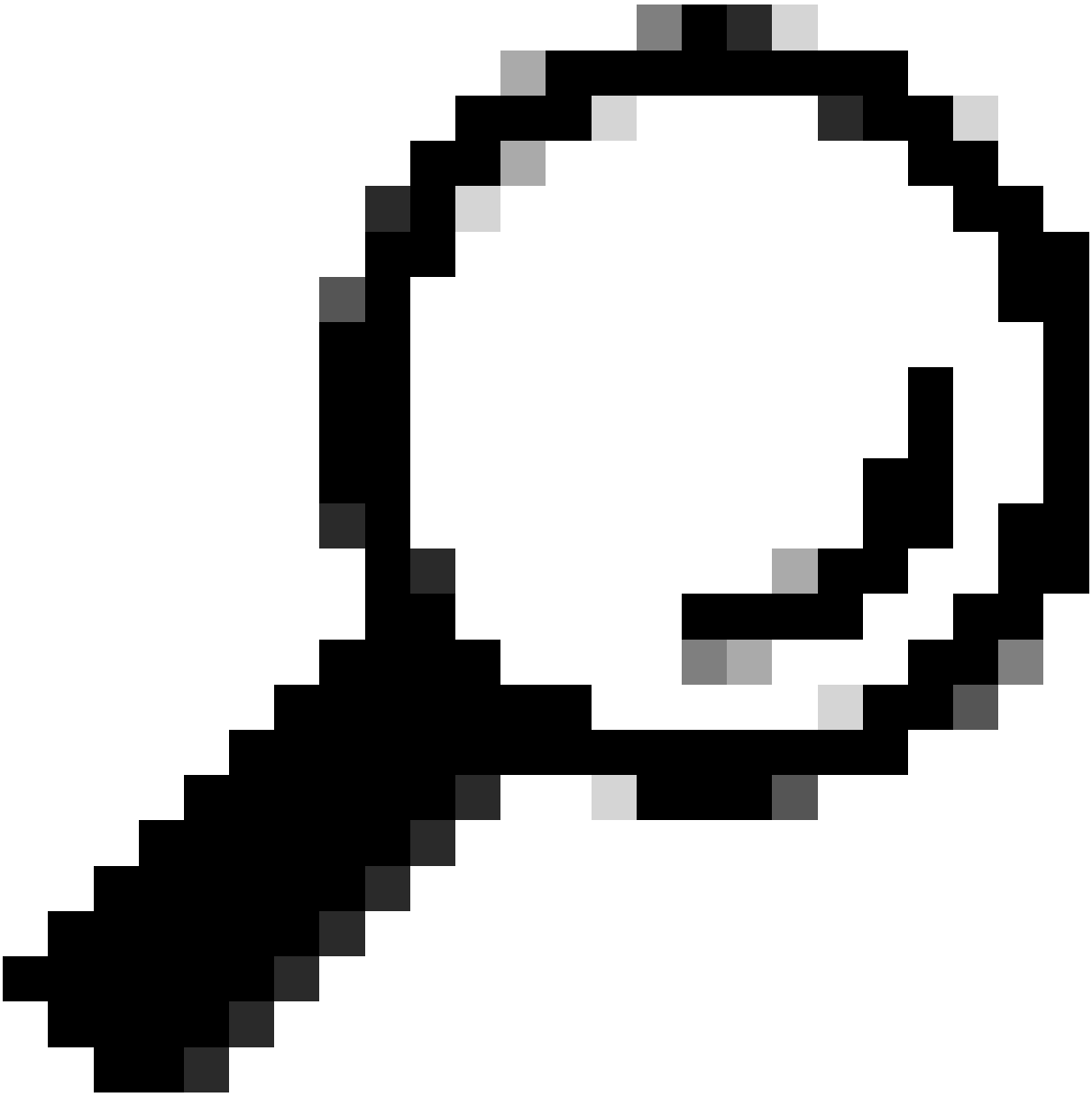
```
DeviceB#
```

show logging

```
Jul 21 10:03:44.535: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold tim
Jul 21 10:05:13.281: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Up, new adjace
Jul 21 10:33:38.408: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold tim
Jul 21 10:35:10.989: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Up, new adjace
Jul 21 11:03:39.291: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold tim
Jul 21 11:05:11.479: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Up, new adjace
```

Lorsque le problème se produit, assurez-vous de poursuivre les actions suivantes :

1. Vérifiez que la configuration correspond à l'homologue.
2. Assurez-vous que l'interface physique est en bon état pour transmettre (aucune erreur ou problème de niveau d'éclairage).
3. Vérifiez la connectivité entre les homologues (test ping avec la taille de MTU et le jeu de bits df).



Conseil : Il n'est pas facile de dépanner ce genre de problèmes en raison de l'état des volets aléatoires. Afin de résoudre cette situation, pensez à utiliser des scripts pour exécuter les commandes nécessaires et poursuivez le dépannage.

---

4. Configurez une capture de moniteur avec une liste d'accès afin d'être plus précis sur le dépannage.
5. Désactivez la console de journalisation et activez ledebug isis adj-packets

.

<#root>

DeviceA(config)#

no logging console

```
DeviceA(config)#exit
DeviceA#
```

debug isis adj-packets TenGigabitEthernet0/0/4

6. Activez la capture de paquets sur l’équipement et activez-la.

<#root>

```
DeviceA#
```

show monitor capture cap parameter

```
   monitor capture cap interface TenGigabitEthernet0/0/4 BOTH
   monitor capture cap control-plane IN
   monitor capture cap
```

access-list TAC > match only the packets allowed on the ACL

```
   monitor capture cap buffer size 100
```

circular > when the capture reaches the size of 100 MB this overwrite the previous information.

```
   monitor capture cap limit pps 1000

DeviceA#
```

show access-lists TAC

```
Extended MAC access list TAC
    permit
```

host a84f.b1c3.9484 host 0900.2b00.0005 < Local MAC address towards the IS-IS Hello >

```
    permit
```

host 6c31.0edb.3b5f host 0900.2b00.0005 < Remote MAC address towards the IS-IS Hello >

DeviceA#monitor capture cap start

7. Configurez le gestionnaire d'événements intégré (EEM) sur le périphérique Cisco. Une fois que le problème déclenche le modèle syslog, cela génère des journaux qui sont stockés sur la mémoire flash en tant que.txtfichier. Pour plus d'informations, téléchargez-les sur un serveur TFTP.

<#root>

```
DeviceA#
```

show running-config | sec event

event manager applet ISIS_Flap authorization bypass

```
 event syslog pattern "%CLNS-5-ADJCHANGE:.*hold time expired"


 action 1.0 syslog msg "ISIS down Please wait - capturing the traffic"
 action 1.1 cli command "enable"
 action 1.2 cli command "show clns interface ten0/0/4 | append bootflash:ISIS_DeviceA.txt"
 action 1.3 cli command "show clns traffic interface tenGigabitEthernet 0/0/4 |
```

append bootflash:ISIS_DeviceA.txt"

```
 action 2.0 cli command "show logging | append bootflash:debug_DeviceA.txt"
 action 2.1 cli command "undebug all"
 action 2.2 cli command "monitor capture cap stop"
 action 3.0 cli command "end"

 For switches to append the logs it is neccesary to use the
```

append flash:

, as example:

```
event manager applet ISIS_Flap authorization bypass
 event syslog pattern "%CLNS-5-ADJCHANGE:.*hold time expired"
 action 1.0 syslog msg "ISIS down Please wait - capturing the traffic"
 action 1.1 cli command "enable"
 action 1.2 cli command "show clns interface ten0/0/4 | append
```

flash:ISIS_DeviceB.txt"

```
 action 3.0 cli command "end"
```

8. Une fois que le problème se déclenche, continuez à exporter la capture sur le bootflash/flash et assurez-vous que les.txtfichiers sont correctement stockés au même emplacement.

<#root>

DeviceA#

monitor capture cap export bootflash:ISIS_DeviceA.pcap

```
Exported Successfully

DeviceA#
dir bootflash:*.txt
Directory of bootflash:/*.txt

Directory of bootflash:/

   19  -rw-        6048  Jul 22 2023 13:33:40 +00:00
ISIS_DeviceA.txt
   20  -rw-      103153  Jul 22 2023 13:33:40 +00:00
debug_DeviceA.txt

26975526912 bytes total (20527607808 bytes free)

DeviceB#
monitor capture cap export location flash:ISIS_DeviceB.pcap

Exported Successfully

DeviceB#
dir bootflash:*.txt
Directory of bootflash:/*.txt

Directory of bootflash:/

356939  -rw-         660  Jul 22 2023 13:33:42 +00:00
 ISIS_DeviceB.txt
356943  -rw-      103283  Jul 22 2023 13:33:42 +00:00
debug_DeviceB.txt
```

9. Téléchargez les fichiers sur un serveur TFTP afin de comparer les journaux entre les périphériques.

```
<#root>

DeviceA#
copy bootflash:ISIS_DeviceA.txt tftp:
Address or name of remote host []?
< TFTP IP address >
Destination filename [
ISIS_DeviceA.txt
]?
```

```
!!
18144 bytes copied in 0.095 secs (190989 bytes/sec)
```

10. Comparez les captures et les journaux afin de valider si les paquets sont envoyés et reçus des deux routeurs.

Analyse des journaux IS-IS :

- Les deux interfaces IS-IS sont configurées avec le même type de réseau L1-L2.
- L'état Interfaces (si l'état est DOWN) indique que les deux interfaces ne reçoivent pas le paquet Hello.
- IS-IS: Les paquets envoyés et reçus ne correspondent pas dans les paquets PTP Hello. Alors que le périphérique A envoie 205 paquets et reçoit 199 paquets de l'homologue, le périphérique B en a 202 sur 202. Cela indique que le transport n'est pas fiable.

<#root>

DeviceA

```
TenGigabitEthernet0/0/4 is up, line protocol is up
 Attached to: isis
  Checksums enabled, MTU 1497, Encapsulation SAP
  ERPDUs enabled, min. interval 10 msec.
  CLNS fast switching disabled
  CLNS SSE switching disabled
  DEC compatibility mode OFF for this interface
  Next ESH/ISH in 30 seconds
  Routing Protocol: IS-IS
```

Circuit Type: level-1-2

```
    Interface number 0x0, local circuit ID 0x5
    Neighbor Extended Local Circuit ID: 0x0
    Level-1 Metric: 10, Priority: 64, Circuit ID: DeviceA.05
    Level-1 IPv6 Metric: 10
    Number of active level-1 adjacencies: 0
    Level-2 Metric: 10, Priority: 64, Circuit ID: DeviceA.05
    Level-2 IPv6 Metric: 10
    Number of active level-2 adjacencies: 0
    Next IS-IS Hello in 574 milliseconds
```

if state DOWN

```
CLNS:  Time since last clear: 00:29:37
CLNS & ESIS Output: 33, Input: 241
Dropped Protocol not enabled on interface: 0
CLNS Local: 0, Forward: 0
```

```
Interface TenGigabitEthernet0/0/4:
IS-IS: Time since last clear: 00:29:37
IS-IS: Level-1 Hellos (sent/rcvd): 0/0
IS-IS: Level-2 Hellos (sent/rcvd): 0/0
```

IS-IS: PTP Hellos (sent/rcvd): 205/199
IS-IS: Level-1 LSPs flooded (sent/rcvd): 2/2
IS-IS: Level-2 LSPs flooded (sent/rcvd): 2/2

```
IS-IS: Level-1 CSNPs (sent/rcvd): 0/0
IS-IS: Level-2 CSNPs (sent/rcvd): 0/0
IS-IS: Level-1 PSNPs (sent/rcvd): 2/2
IS-IS: Level-2 PSNPs (sent/rcvd): 2/2
IS-IS: Level-1 DR Elections: 0
IS-IS: Level-2 DR Elections: 0
```

DeviceB

```
TwentyFiveGigE1/0/9 is up, line protocol is up
 Attached to: isis
  Checksums enabled, MTU 1497, Encapsulation SAP
  ERPDUs enabled, min. interval 10 msec.
  CLNS fast switching disabled
  CLNS SSE switching disabled
  DEC compatibility mode OFF for this interface
  Next ESH/ISH in 20 seconds
  Routing Protocol: IS-IS
```

Circuit Type: level-1-2

```
    Interface number 0x0, local circuit ID 0xB
    Neighbor Extended Local Circuit ID: 0x0
    P2P retransmit queue size: 0
    Level-1 Metric: 10, Priority: 64, Circuit ID: DeviceB.0B
    Level-1 IPv6 Metric: 10
    Number of active level-1 adjacencies: 0
    Level-2 Metric: 10, Priority: 64, Circuit ID: DeviceB.0B
    Level-2 IPv6 Metric: 10
    Number of active level-2 adjacencies: 0
    Next IS-IS Hello in 7 seconds
```

if state DOWN

```
CLNS:  Time since last clear: 00:29:34
CLNS queue depth: 0/100, drops: 0, highest: 1
CLNS & ESIS Output: 34, Input: 243
Dropped Protocol not enabled on interface: 0
CLNS Local: 0, Forward: 0
```

```
Interface TwentyFiveGigE1/0/9:
IS-IS: Time since last clear: 00:29:34
IS-IS: Level-1 Hellos (sent/rcvd): 0/0
IS-IS: Level-2 Hellos (sent/rcvd): 0/0

IS-IS: PTP Hellos     (sent/rcvd): 202/202
IS-IS: Level-1 LSPs flooded (sent/rcvd): 2/2
IS-IS: Level-2 LSPs flooded (sent/rcvd): 2/2

IS-IS: Level-1 CSNPs (sent/rcvd): 0/0
IS-IS: Level-2 CSNPs (sent/rcvd): 0/0
IS-IS: Level-1 PSNPs (sent/rcvd): 2/2
IS-IS: Level-2 PSNPs (sent/rcvd): 2/2
IS-IS: Level-1 DR Elections: 0
IS-IS: Level-2 DR Elections: 0
```

L'étape suivante consiste à comparer les débogages et les captures.

<#root>

DeviceA

```
Jul 22 19:17:24.929: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:24.929: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 1496
Jul 22 19:17:31.685: ISIS-Adj: Rec serial IIH from 6c31.0edb.3b5f (TenGigabitEthernet0/0/4)

Jul 22 19:17:31.685: ISIS-Adj: cir type L1L2, cir id 0B, length 1496
Jul 22 19:17:31.685: ISIS-Adj: rcvd state UP, old state UP, new state UP, nbr usable TRUE
Jul 22 19:17:31.685: ISIS-Adj: RCV:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 22 19:17:31.685: ISIS-Adj: Nghbr Ckt ID changed: FALSE
Jul 22 19:17:31.685: ISIS-Adj: received Neighbor System-ID (must be our) 0000.0000.000A
Jul 22 19:17:31.685: ISIS-Adj: received Neighbor ext.circuit ID (must be our) 0x5
Jul 22 19:17:31.685: ISIS-Adj: newstate:0, state_changed:0, going_up:0, going_down:0
Jul 22 19:17:31.685: ISIS-Adj: Action = ACCEPT
Jul 22 19:17:31.685: ISIS-Adj: ACTION_ACCEPT:

Jul 22 19:17:33.626: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:33.627: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 1496
Jul 22 19:17:42.671: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:42.672: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 1496

Jul 22 19:17:52.008: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:52.008: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
Jul 22 19:18:01.475: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:18:01.475: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149

Jul 22 19:18:01.685: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold

Jul 22 19:18:01.685: ISIS-Adj: L1 adj count 0
Jul 22 19:18:01.685: ISIS-Adj: L2 adj count 0
```

DeviceB

```
Jul 22 19:17:25.693: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
```

```
Jul 22 19:17:25.693: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496


Jul 22 19:17:27.882: ISIS-Adj: Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)


Jul 22 19:17:27.882: ISIS-Adj: cir type L1L2, cir id 05, length 1496
Jul 22 19:17:27.882: ISIS-Adj: rcvd state UP, old state UP, new state UP, nbr usable TRUE
Jul 22 19:17:27.882: ISIS-Adj: RCV:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:27.882: ISIS-Adj: Nghbr Ckt ID changed: FALSE
Jul 22 19:17:27.882: ISIS-Adj: received Neighbor System-ID (must be our) 0000.0000.000B
Jul 22 19:17:27.882: ISIS-Adj: received Neighbor ext.circuit ID (must be our) 0xB
Jul 22 19:17:27.882: ISIS-Adj: newstate:0, state_changed:0, going_up:0, going_down:0
Jul 22 19:17:27.882: ISIS-Adj: Action = ACCEPT
Jul 22 19:17:27.882: ISIS-Adj: ACTION_ACCEPT:

Jul 22 19:17:34.637: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15


Jul 22 19:17:34.637: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496


Jul 22 19:17:36.579: ISIS-Adj: Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)


Jul 22 19:17:36.579: ISIS-Adj: cir type L1L2, cir id 05, length 1496
Jul 22 19:17:36.579: ISIS-Adj: rcvd state UP, old state UP, new state UP, nbr usable TRUE
Jul 22 19:17:36.579: ISIS-Adj: RCV:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:36.579: ISIS-Adj: Nghbr Ckt ID changed: FALSE
Jul 22 19:17:36.579: ISIS-Adj: received Neighbor System-ID (must be our) 0000.0000.000B
Jul 22 19:17:36.579: ISIS-Adj: received Neighbor ext.circuit ID (must be our) 0xB
Jul 22 19:17:36.579: ISIS-Adj: newstate:0, state_changed:0, going_up:0, going_down:0
Jul 22 19:17:36.579: ISIS-Adj: Action = ACCEPT
Jul 22 19:17:36.579: ISIS-Adj: ACTION_ACCEPT:

Jul 22 19:17:43.270: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15


Jul 22 19:17:43.271: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496


Jul 22 19:17:51.658: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 22 19:17:51.658: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496
Jul 22 19:18:00.248: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 22 19:18:00.248: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496

Jul 22 19:18:06.579: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold time


Jul 22 19:18:06.579: ISIS-Adj: L1 adj count 0
Jul 22 19:18:06.579: ISIS-Adj: L2 adj count 0
```

Analyse des journaux de débogage IS-IS :

- Le périphérique A envoie un paquet Hello (22 juillet 19:17:24), le périphérique B répond à ce paquet (22 juillet 19:17:25), et le périphérique A reçoit cette réponse (22 juillet 19:17:31).

PériphériqueA

```
Jul 22 19:17:24.929: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:24.929: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
Jul 22 19:17:31.685: ISIS-Adj: Rec serial IIH from 6c31.0edb.3b5f (TenGigabitEthernet0/0/4)
```

PériphériqueB

```
Jul 22 19:17:25.693: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 22 19:17:25.693: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496
Jul 22 19:17:27.882: ISIS-Adj: Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)
```

- Le périphériqueA envoie un autre paquet Hello (22 juillet 19:17:33), le périphériqueB envoie son paquet Hello (22 juillet 19:17:34) et, deux secondes plus tard, reçoit le paquet de son homologue.

PériphériqueA

```
Jul 22 19:17:33.626: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:33.627: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
```

PériphériqueB

```
Jul 22 19:17:34.637: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 22 19:17:34.637: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496
Jul 22 19:17:36.579: ISIS-Adj: Rec serial IIH from a84f.b1c3.9484 (TwentyFiveGigE1/0/9)
```

- Pendant la période pendant laquelle le périphérique A ne reçoit pas le paquet envoyé par le périphérique B, le protocole se déclare hors service au bout de 30 secondes.

PériphériqueA

```
Jul 22 19:17:42.671: ISIS-Adj: SND:3way Adj. Local Ckt ID:0x5 Nghbr Ckt ID:0xB Length:15
Jul 22 19:17:42.672: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149

Jul 22 19:18:01.475: ISIS-Adj: Sending serial IIH on TenGigabitEthernet0/0/4, 3way state:UP, length 149
Jul 22 19:18:01.685: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceB (TenGigabitEthernet0/0/4) Down, hold
```

- Le périphérique B ne reçoit aucun paquet de son homologue. Après le délai d'attente par défaut, ce protocole se déclare hors service.

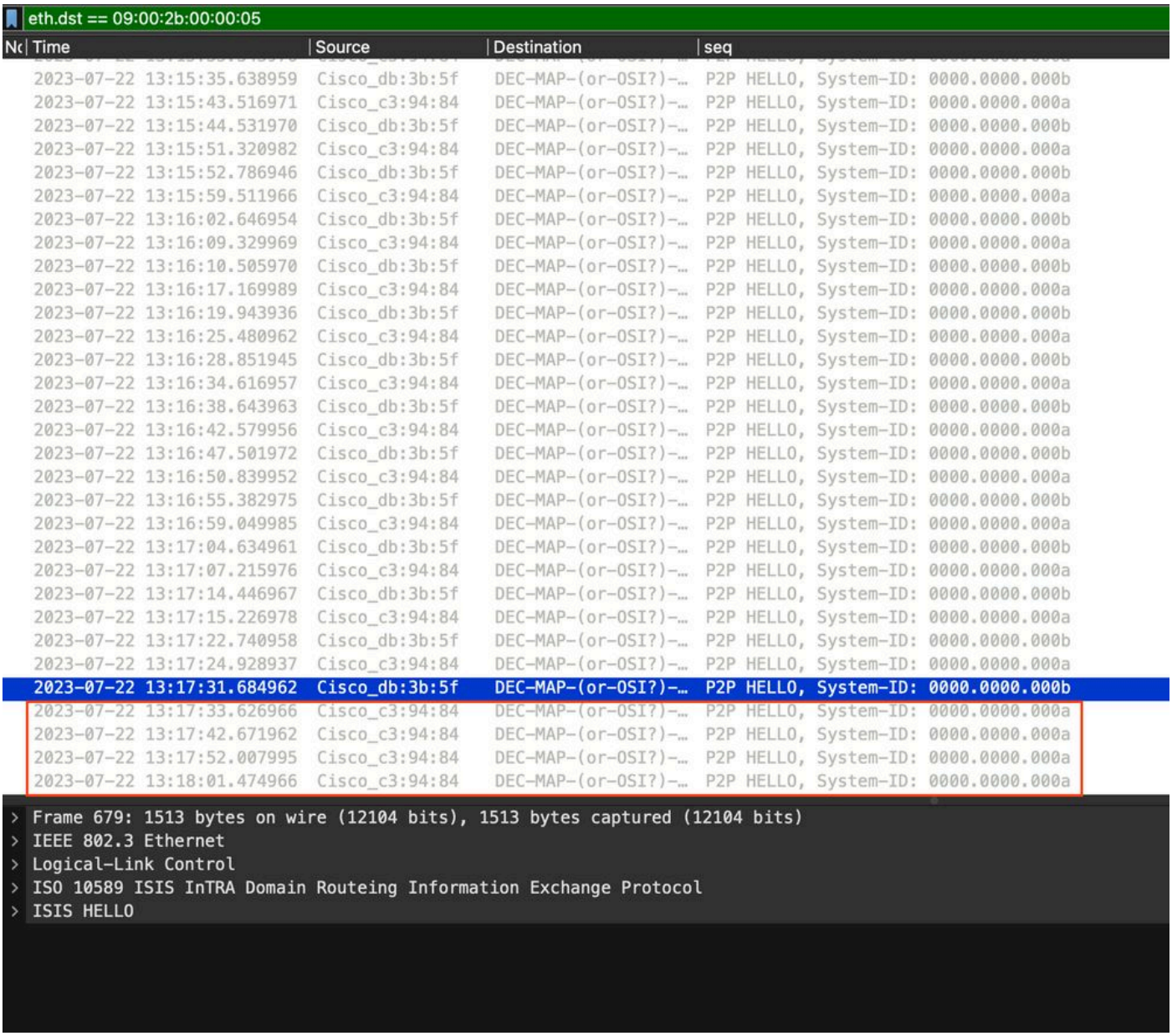
PériphériqueB

```
Jul 22 19:17:43.270: ISIS-Adj: SND:3way Adj. Local Ckt ID:0xB Nghbr Ckt ID:0x5 Length:15
Jul 22 19:17:43.271: ISIS-Adj: Sending serial IIH on TwentyFiveGigE1/0/9, 3way state:UP, length 1496

<snip>

Jul 22 19:18:06.579: %CLNS-5-ADJCHANGE: ISIS: Adjacency to DeviceA (TwentyFiveGigE1/0/9) Down, hold tim
```

Analyse des captures :

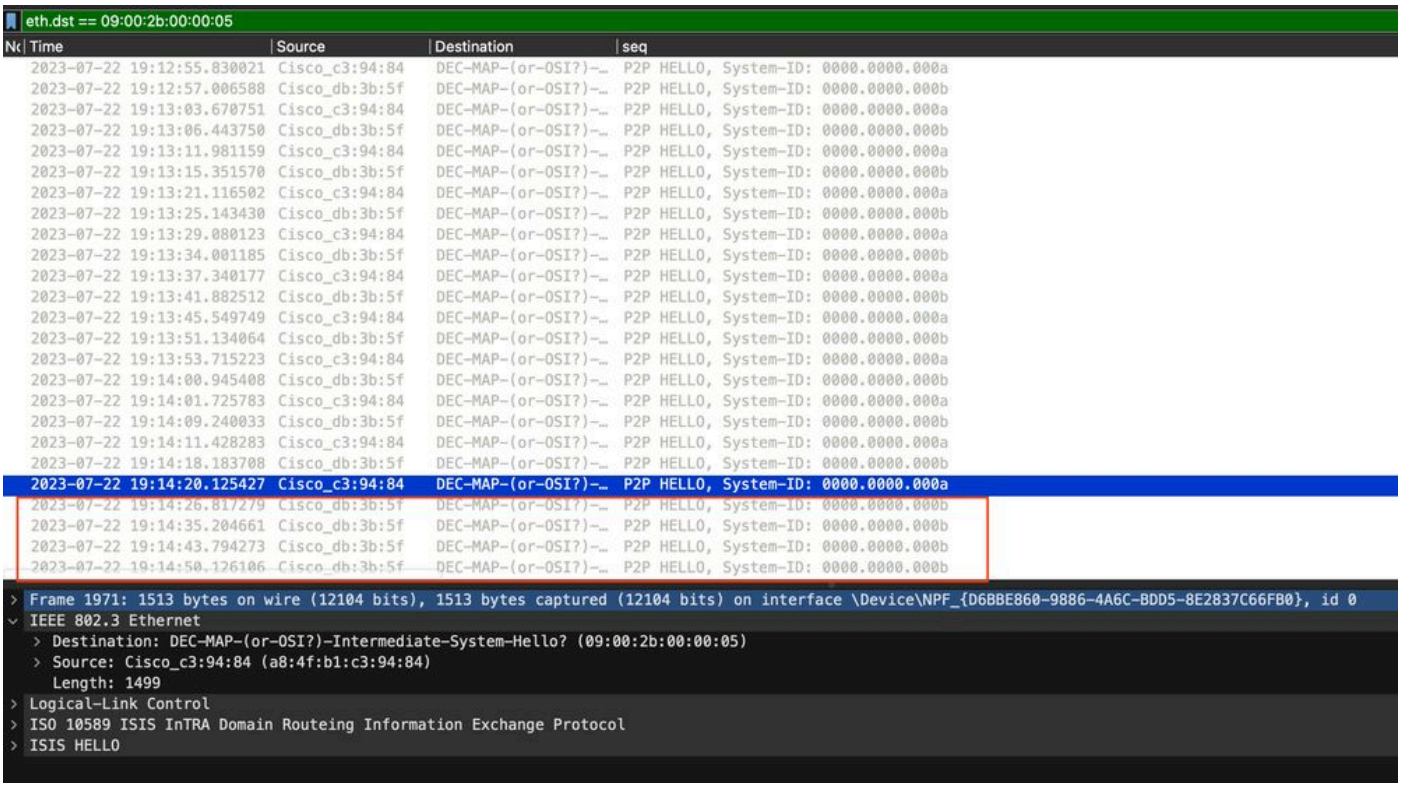
Le périphérique A reçoit des paquets du périphérique B, mais le dernier paquet que ce routeur reçoit du pair est à la minute 13:17.31. Le périphérique A envoie ensuite des paquets Hello

sans aucune réponse de l'homologue.



ISIS Random Flaps DeviceA

La capture du périphérique B présente une condition similaire : le commutateur reçoit le dernier paquet Hello de son homologue, mais le périphérique B commence à envoyer ses paquets Hello sans réponse.



Périphérique instable ISISb

Dans les captures exportées, les paquets Hello ne sont pas remis entre homologues. Ce problème semble être lié au transport.

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