

Risoluzione dei problemi di adiacenza di Nexus 7000 OSPF

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Introduzione

In questo documento vengono illustrati diversi scenari comuni in cui il router adiacente OSPF (Open Shortest Path First) non è in linea come previsto. Per evitare questo tipo di comportamento imprevisto sugli switch Cisco Nexus serie 7000, attenersi alle linee guida e alle restrizioni relative al layer 3 (L3) e al Virtual Port Channel (vPC).

Premesse

Prima di risolvere i problemi, verificare che le linee guida e le restrizioni siano state rispettate. Fare riferimento alla [Guida alla progettazione e configurazione: Best Practices for Virtual Port Channels \(vPC\) sugli switch Cisco Nexus serie 7000](#) per ulteriori informazioni su L3 e vPC.

La procedura utilizzata per risolvere i problemi di adiacenza OSPF su Nexus 7000 è simile a quella di Cisco IOS[®], ma Nexus 7000 dispone di più strumenti e filtri incorporati per identificare facilmente il problema.

L'adiacenza OSPF non è in linea

In alcuni casi l'adiacenza OSPF non è in linea. Il comando `show ip ospf neighbors` non visualizza il router adiacente.

```
R3#show ip ospf neighbor
```

```
R3#
```

Il problema potrebbe essere causato da:

- Problema di connettività L2/L3
- OSPF non abilitato sull'interfaccia
- L'interfaccia è definita come passiva
- Subnet mask non corrispondente
- Intervallo hello/dead non corrispondente
- Chiave di autenticazione non corrispondente
- ID area non corrispondente
- Opzione Transitio/stub/Non-so-stubby area (NSSA) non corrispondente

Per analizzare il problema, controllare la connettività, la configurazione e l'Access Control List (ACL)/Control Plane Policing (CoPP).

Verifica connettività L2/L3

1. Controllare la connettività unicast con ping.

In caso di problemi di connettività, verificare se sono dovuti al provider di servizi Internet (ISP) L2, a una porta fisica, a un convertitore di interfaccia Gigabit (GBIC) o a un cavo.

Nota: Si supponga che non vi siano ACL/CoPP che bloccano il traffico. Se il problema è dovuto a hardware difettoso o a un cavo, sostituirlo o spostarlo su un'altra porta per risolvere il problema.

2. Controllare la connettività multicast con ping.

```
N7K1-RP# ping multicast 224.0.0.5 interface vlan 5
PING 224.0.0.5 (224.0.0.5): 56 data bytes
64 bytes from 5.5.5.2: icmp_seq=0 ttl=254 time=1.739 ms
64 bytes from 5.5.5.2: icmp_seq=1 ttl=254 time=1.253 ms
64 bytes from 5.5.5.2: icmp_seq=2 ttl=254 time=0.866 ms
64 bytes from 5.5.5.2: icmp_seq=3 ttl=254 time=1.045 ms
64 bytes from 5.5.5.2: icmp_seq=4 ttl=254 time=1.89 ms

--- 224.0.0.5 ping multicast statistics ---
5 packets transmitted,
From member 5.5.5.2: 5 packets received, 0.00% packet loss
--- in total, 1 group member responded ---
N7K1-RP#
```

Verificare che l'interfaccia sia pulita e che non vi siano errori o errori con il comando **show int ethernet 1/1**.

```
N7K1-RP# show int ethernet 1/20 | section RX|TX
RX
 340213 unicast packets  368092 multicast packets  2 broadcast packets
 708307 input packets  233094927 bytes
 0 jumbo packets  0 storm suppression packets
 0 runs  0 giants  0 CRC/FCS  0 no buffer
 0 input error  0 short frame  0 overrun  0 underrun  0 ignored
 0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
 0 input with dribble  0 input discard
 0 Rx pause

TX
 1374131 unicast packets  324752 multicast packets  3 broadcast packets
 1698886 output packets  196282264 bytes
 0 jumbo packets
 0 output error  0 collision  0 deferred  0 late collision
```

```
0 lost carrier 0 no carrier 0 babble 0 output discard
0 Tx pause
N7K1-RP#
```

3. Determinare se queste funzionalità rilasciano pacchetti sulla scheda di linea, l'interfaccia o la CPU in ingresso.

- ACL - In entrata/in uscita dell'interfaccia
- Quality of Service (QoS) - Sull'interfaccia
- CoPP

QoS

```
N7K1-RP# show policy-map interface ethernet 1/20
```

```
Global statistics status : enabled
```

```
Ethernet1/20
```

```
Service-policy (queuing) input: default-in-policy
SNMP Policy Index: 301989913
```

```
Class-map (queuing): in-q1 (match-any)
queue-limit percent 50
bandwidth percent 80
queue dropped pkts : 0
```

```
Class-map (queuing): in-q-default (match-any)
queue-limit percent 50
bandwidth percent 20
queue dropped pkts : 0
```

```
Service-policy (queuing) output: default-out-policy
SNMP Policy Index: 301989922
```

```
Class-map (queuing): out-pq1 (match-any)
priority level 1
queue-limit percent 16
queue dropped pkts : 0
```

```
Class-map (queuing): out-q2 (match-any)
queue-limit percent 1
queue dropped pkts : 0
```

```
Class-map (queuing): out-q3 (match-any)
queue-limit percent 1
queue dropped pkts : 0
```

```
Class-map (queuing): out-q-default (match-any)
queue-limit percent 82
bandwidth remaining percent 25
queue dropped pkts : 0
```

CoPP

```
show policy-map interface control-plane class test1-copp-class-critical
```

Control Plane

```
service-policy input test1-copp-policy-lenient
```

```
class-map test1-copp-class-critical (match-any)
  match access-group name test1-copp-acl-bgp
  match access-group name test1-copp-acl-pim
  match access-group name test1-copp-acl-rip
  match access-group name test1-copp-acl-vpc
  match access-group name test1-copp-acl-bgp6
  match access-group name test1-copp-acl-igmp
  match access-group name test1-copp-acl-lisp
  match access-group name test1-copp-acl-msdp
  match access-group name test1-copp-acl-ospf
  match access-group name test1-copp-acl-pim6
  match access-group name test1-copp-acl-rip6
  match access-group name test1-copp-acl-rise
  match access-group name test1-copp-acl-eigrp
  match access-group name test1-copp-acl-lisp6
  match access-group name test1-copp-acl-ospf6
  match access-group name test1-copp-acl-rise6
  match access-group name test1-copp-acl-eigrp6
  match access-group name test1-copp-acl-otv-as
  match access-group name test1-copp-acl-mac-l2pt
  match access-group name test1-copp-acl-mpls-ldp
  match access-group name test1-copp-acl-mpls-oam
  match access-group name test1-copp-acl-mpls-rsvp
  match access-group name test1-copp-acl-mac-l3-isis
  match access-group name test1-copp-acl-mac-otv-isis
  match access-group name test1-copp-acl-mac-fabricpath-isis
  match protocol mpls router-alert
  match protocol mpls exp 6
  set cos 7
  police cir 39600 kbps bc 375 ms
    conform action: transmit
    violate action: drop
  module 1:
    conformed 539964945 bytes,
      5-min offered rate 5093 bytes/sec
      peak rate 5213 bytes/sec
    violated 0 bytes,
      5-min violate rate 0 bytes/sec
  module 2:
    conformed 784228080 bytes,
      5-min offered rate 5848 bytes/sec
      peak rate 7692 bytes/sec
    violated 0 bytes,
      5-min violate rate 0 bytes/sec
  module 3:
    conformed 5114206 bytes,
      5-min offered rate 41 bytes/sec
      peak rate 6656 bytes/sec
    violated 0 bytes,
      5-min violate rate 0 bytes/sec
```

N7K1#

Controllare la configurazione OSPF

Utilizzare questi comandi per controllare la configurazione OSPF (subnet, intervallo hello/morto, ID area, tipo di area, chiave di autenticazione (se presente) e non passiva) e assicurarsi che corrisponda su entrambi i lati.

1. Mostra OSPF di esecuzione

2. Show ip ospf 5 interfaccia

3. Show ip ospf 5

Di seguito è riportato un esempio del primo comando:

```
N7K1-RP# show run ospf

!Command: show running-config ospf
!Time: Thu May 16 11:27:24 2013

version 6.2(2)
feature ospf

logging level ospf 7

router ospf 5
 router-id 5.5.0.1

interface Vlan5
 ip router ospf 5 area 0.0.0.0

interface loopback5
 ip router ospf 5 area 0.0.0.0
```

N7K1-RP#

Di seguito è riportato un esempio del secondo comando:

```
N7K1-RP# show ip ospf 5 interface

Vlan5 is up, line protocol is up
  IP address 5.5.5.1/24, Process ID 5 VRF default, area 0.0.0.0
  Enabled by interface configuration
  State DR, Network type BROADCAST, cost 40
  Index 2, Transmit delay 1 sec, Router Priority 1
  Designated Router ID: 5.5.0.1, address: 5.5.5.1
  Backup Designated Router ID: 5.5.0.2, address: 5.5.5.2
  1 Neighbors, flooding to 1, adjacent with 1
  Timer intervals: Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello timer due in 00:00:00
  No authentication
  Number of opaque link LSAs: 0, checksum sum 0
loopback5 is up, line protocol is up
  IP address 5.5.0.1/32, Process ID 5 VRF default, area 0.0.0.0
  Enabled by interface configuration
  State LOOPBACK, Network type LOOPBACK, cost 1
  Index 1
```

N7K1-RP#

Di seguito è riportato un esempio del terzo comando:

```
N7K1-RP# show ip ospf 5

Routing Process 5 with ID 5.5.0.1 VRF default
Routing Process Instance Number 3
Stateful High Availability enabled
Graceful-restart is configured
  Grace period: 60 state: Inactive
  Last graceful restart exit status: None
Supports only single TOS(TOS0) routes
Supports opaque LSA
```

```
Administrative distance 110
Reference Bandwidth is 40000 Mbps
SPF throttling delay time of 200.000 msecs,
  SPF throttling hold time of 1000.000 msecs,
  SPF throttling maximum wait time of 5000.000 msecs
LSA throttling start time of 0.000 msecs,
  LSA throttling hold interval of 5000.000 msecs,
  LSA throttling maximum wait time of 5000.000 msecs
Minimum LSA arrival 1000.000 msec
LSA group pacing timer 10 secs
Maximum paths to destination 8
Number of external LSAs 0, checksum sum 0
Number of opaque AS LSAs 0, checksum sum 0
Number of areas is 1, 1 normal, 0 stub, 0 nssa
Number of active areas is 1, 1 normal, 0 stub, 0 nssa
Install discard route for summarized external routes.
Install discard route for summarized internal routes.
Area BACKBONE(0.0.0.0)
  Area has existed for 1d10h
  Interfaces in this area: 2 Active interfaces: 2
  Passive interfaces: 0 Loopback interfaces: 1
  No authentication available
  SPF calculation has run 47 times
  Last SPF ran for 0.000542s
  Area ranges are
  Number of LSAs: 3, checksum sum 0x84d4
```

N7K1-RP#

Controllare i messaggi OSPF

Immettere il comando **show ip ospf event-history adjacency** per verificare che i messaggi di debug siano stati inviati e ricevuti dal processo OSPF.

Nota: Nella parte superiore vengono visualizzati i messaggi più recenti.

Nell'output vengono visualizzati tutti i messaggi di adiacenza OSPF scambiati tra router adiacenti OSPF. Quando si forma un'adiacenza OSPF, un router subisce diverse modifiche di stato prima di diventare completamente adiacente al router adiacente. Questo output mostra tutte le modifiche dello stato e le negoziazioni. Se si verifica un problema (MTU (Maximum Transition Unit), problemi di connettività, perdita di pacchetti), il messaggio viene visualizzato nell'output.

N7K1-RP# **show ip ospf 5 event-history adjacency**

```
Adjacency events for OSPF Process "ospf-5"
2013 May 16 10:50:58.121128 ospf 5 [9386]: : mtu 1600, opts: 0x42, ddbits:
0, seq: 0x6f40fde4
2013 May 16 10:50:58.121124 ospf 5 [9386]: : Sent DBD with 0 entries to 5.5.5.2
on Vlan5
2013 May 16 10:50:58.121114 ospf 5 [9386]: : Sending DBD to 5.5.5.2 on Vlan5
2013 May 16 10:50:58.118030 ospf 5 [9386]: : Nbr 5.5.5.2: LOADING --> FULL,
event LDDONE
2013 May 16 10:50:58.115840 ospf 5 [9386]: : Built LS Request packet for 5.5.5.2
with 1 entries
2013 May 16 10:50:58.115835 ospf 5 [9386]: : Add 5.5.0.2(0x1)5.5.0.2
(0x8000104e)(0x7ef8) (156) to LSR
2013 May 16 10:50:58.115823 ospf 5 [9386]: : Building LS Request packet to
5.5.5.2
2013 May 16 10:50:58.112201 ospf 5 [9386]: : Nbr 5.5.5.2: EXCHANGE --> LOADING,
event EXCHDONE
```

2013 May 16 10:50:58.112026 ospf 5 [9386]: : seqnr 0x6f40fde4, dbdbits 0x1,
mtu 1600, options 0x42
2013 May 16 10:50:58.112022 ospf 5 [9386]: : Got DBD from 5.5.5.2 with 0 entries
2013 May 16 10:50:58.111988 ospf 5 [9386]: : seqnr 0x6f40fde4, dbdbits 0x1,
mtu 1600, options 0x42
2013 May 16 10:50:58.111984 ospf 5 [9386]: : Got DBD from 5.5.5.2 with 0 entries
2013 May 16 10:50:58.110169 ospf 5 [9386]: : mtu 1600, opts: 0x42, ddbits: 0,
seq: 0x6f40fde3
2013 May 16 10:50:58.110165 ospf 5 [9386]: : Sent DBD with 0 entries to 5.5.5.2
on Vlan5
2013 May 16 10:50:58.110155 ospf 5 [9386]: : Sending DBD to 5.5.5.2 on Vlan5
2013 May 16 10:50:58.106609 ospf 5 [9386]: : Added 1 out of 1 LSAs to
request list
2013 May 16 10:50:58.106606 ospf 5 [9386]: : Added 5.5.0.2(0x1)5.5.0.2
(0x8000104e) (0x7ef8) (156) to request list
2013 May 16 10:50:58.106586 ospf 5 [9386]: : seqnr 0x6f40fde3, dbdbits 0x3,
mtu 1600, options 0x42
2013 May 16 10:50:58.106582 ospf 5 [9386]: : Got DBD from 5.5.5.2 with 1 entries
2013 May 16 10:50:58.106537 ospf 5 [9386]: : seqnr 0x6f40fde3, dbdbits 0x3,
mtu 1600, options 0x42
2013 May 16 10:50:58.106532 ospf 5 [9386]: : Got DBD from 5.5.5.2 with 1 entries
2013 May 16 10:50:58.104462 ospf 5 [9386]: : Built reply LSU with 2 LSAs for
5.5.5.2 128 bytes
2013 May 16 10:50:58.104439 ospf 5 [9386]: : Added 5.5.5.2(0x2)5.5.0.2
(0x80000045) (0xaf32) (156)
2013 May 16 10:50:58.104431 ospf 5 [9386]: : Added 5.5.0.1(0x1)5.5.0.1
(0x80000ecf) (0xd834) (8)(0)
2013 May 16 10:50:58.104408 ospf 5 [9386]: : Building reply LSU to 5.5.5.2
2013 May 16 10:50:58.104404 ospf 5 [9386]: : 2 requests in LSR (2 left)
2013 May 16 10:50:58.104370 ospf 5 [9386]: : Answering LSR from 5.5.5.2
2013 May 16 10:50:58.100790 ospf 5 [9386]: : Recv LSR from Nbr 5.5.5.2
2013 May 16 10:50:58.099055 ospf 5 [9386]: : mtu 1600, opts: 0x42, ddbits:
0x2, seq: 0x6f40fde2
2013 May 16 10:50:58.099051 ospf 5 [9386]: : Sent DBD with 3 entries to 5.5.5.2
on Vlan5
2013 May 16 10:50:58.099038 ospf 5 [9386]: : Sending DBD to 5.5.5.2 on Vlan5
2013 May 16 10:50:58.095072 ospf 5 [9386]: : seqnr 0x6f40fde2, dbdbits 0x7,
mtu 1600, options 0x42
2013 May 16 10:50:58.095068 ospf 5 [9386]: : Got DBD from 5.5.5.2 with 0 entries
2013 May 16 10:50:58.095024 ospf 5 [9386]: : Nbr 5.5.5.2: EXSTART --> EXCHANGE,
event NEGDONE
2013 May 16 10:50:58.094895 ospf 5 [9386]: : We are SLAVE, 5.5.5.2 is master
2013 May 16 10:50:58.094890 ospf 5 [9386]: : seqnr 0x6f40fde2, dbdbits 0x7,
mtu 1600, options 0x42
2013 May 16 10:50:58.094886 ospf 5 [9386]: : Got DBD from 5.5.5.2 with 0 entries
2013 May 16 10:50:58.093037 ospf 5 [9386]: : mtu 1600, opts: 0x42, ddbits: 0x7,
seq: 0x7273409a
2013 May 16 10:50:58.093033 ospf 5 [9386]: : Sent DBD with 0 entries to 5.5.5.2
on Vlan5
2013 May 16 10:50:58.093029 ospf 5 [9386]: : Sending DBD to 5.5.5.2 on Vlan5
2013 May 16 10:50:58.092915 ospf 5 [9386]: : Nbr 5.5.5.2: INIT --> EXSTART,
event TWOWAYRCVD
2013 May 16 10:50:58.092862 ospf 5 [9386]: : Nbr 5.5.5.2: TWOWAY --> EXSTART,
event ADJOK
2013 May 16 10:50:58.092763 ospf 5 [9386]: [9446]: Interface Vlan5 ---> BDR
2013 May 16 10:50:58.092757 ospf 5 [9386]: [9446]: Elected 5.5.0.2 as DR,
5.5.0.1 as BDR
2013 May 16 10:50:58.092690 ospf 5 [9386]: [9446]: This nbr 5.5.5.2 promoted
to current dr
2013 May 16 10:50:58.092687 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.2
(0x93e3524), state TWOWAY
2013 May 16 10:50:58.092683 ospf 5 [9386]: [9446]: Neighbor not declared DR,
ignoring
2013 May 16 10:50:58.092680 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.1

```

(0xaclf7514), state SELF
2013 May 16 10:50:58.092676 ospf 5 [9386]: [9446]: DR election starting
2013 May 16 10:50:58.092673 ospf 5 [9386]: [9446]: This neighbor is greater
than 2way
2013 May 16 10:50:58.092670 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.2
(0x93e3524), state TWOWAY
2013 May 16 10:50:58.092666 ospf 5 [9386]: [9446]: Compare done, new current
bdr 5.5.5.1
2013 May 16 10:50:58.092663 ospf 5 [9386]: [9446]: Current BDR set to this
neighbor
2013 May 16 10:50:58.092660 ospf 5 [9386]: [9446]: This neighbor is in
consideration for bdr
2013 May 16 10:50:58.092657 ospf 5 [9386]: [9446]: This neighbor is greater
than 2way
2013 May 16 10:50:58.092654 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.1
(0xaclf7514), state SELF
2013 May 16 10:50:58.092650 ospf 5 [9386]: [9446]: BDR election starting
2013 May 16 10:50:58.092647 ospf 5 [9386]: [9446]: DR/BDR Status of this router
changed, new election run
2013 May 16 10:50:58.092643 ospf 5 [9386]: [9446]: This nbr 5.5.5.2 promoted
to current dr
2013 May 16 10:50:58.092639 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.2
(0x93e3524), state TWOWAY
2013 May 16 10:50:58.092635 ospf 5 [9386]: [9446]: Neighbor not declared DR,
ignoring
2013 May 16 10:50:58.092632 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.1
(0xaclf7514), state SELF
2013 May 16 10:50:58.092628 ospf 5 [9386]: [9446]: DR election starting
2013 May 16 10:50:58.092625 ospf 5 [9386]: [9446]: This neighbor is greater
than 2way
2013 May 16 10:50:58.092622 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.2
(0x93e3524), state TWOWAY
2013 May 16 10:50:58.092618 ospf 5 [9386]: [9446]: Compare done, new current
bdr 5.5.5.1
2013 May 16 10:50:58.092613 ospf 5 [9386]: [9446]: Current BDR set to this
neighbor
2013 May 16 10:50:58.092610 ospf 5 [9386]: [9446]: This neighbor is in
consideration for bdr
2013 May 16 10:50:58.092607 ospf 5 [9386]: [9446]: This neighbor is greater
than 2way
2013 May 16 10:50:58.092604 ospf 5 [9386]: [9446]: Walking neighbor 5.5.5.1
(0xaclf7514), state SELF
2013 May 16 10:50:58.092597 ospf 5 [9386]: [9446]: BDR election starting
2013 May 16 10:50:58.092573 ospf 5 [9386]: [9446]: Current 0.0.0.0 as DR,
0.0.0.0 as BDR
2013 May 16 10:50:58.092567 ospf 5 [9386]: [9446]: Begin OSPF DR election on
Vlan5
2013 May 16 10:50:58.092432 ospf 5 [9386]: : Nbr 5.5.5.2: DOWN --> INIT,
event HELLORCVD

```

Risoluzione dei problemi

Se durante l'analisi della connettività L2/3, della configurazione e del traffico autorizzato OSPF il problema non viene individuato e visualizzato il router adiacente nell'elenco, aprire una richiesta Cisco Technical Assistance Center (TAC). Immettere questi comandi e fornire a TAC le informazioni provenienti da entrambi gli output adiacenti:

- Show run
- Mostra OSPF supporto tecnico

Router adiacente OSPF bloccato nello stato di inizializzazione

(INIT)

In alcuni casi, il router adiacente è bloccato nello stato INIT, il che indica che il Nexus 7000 vede i pacchetti hello provenienti dal router adiacente, ma non ne vede l'ID router nel pacchetto hello per passare allo stato successivo di bidirezionale.

```
router2#show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
170.170.5.1	1	INIT/-	00:00:34	170.170.1.1	ethernet 1/1

```
router-2#
```

Il problema potrebbe essere causato da:

- Un lato sta bloccando il pacchetto hello con l'ACL.
- Un lato è la traduzione, con Network Address Translation (NAT), il saluto OSPF.
- La funzionalità multicast di un lato è interrotta (L2).

Per analizzare il problema, completare i seguenti passaggi:

1. Verificare il funzionamento del control plane IP Multicast.

```
N7K4# ping multicast 224.0.0.5 interface Ethernet 1/1
```

Se l'indirizzo IP dei router adiacenti non è visualizzato nei risultati del ping, è presente un problema. Controllalo su entrambi i lati.

2. Verificare che i pacchetti HELLO vengano ricevuti dal router adiacente.

```
N7K4# show ip ospf 5 event-history adjacency
```

Nota: I pacchetti hello in uscita non vengono visualizzati.

3. Abilitare il debug della adiacenza OSPF su ciascuna interfaccia e verificare che i pacchetti hello vengano inviati.

```
N7K4# debug logfile debug-ospf size 10000
N7K4# debug-filter ip ospf 5 interface Ethernet 1/1
N7K4# debug ip ospf 5 adjacency detail
```

Nota: Non dimenticare di disabilitare i debug.

```
N7K4# undebug all
N7K4# no debug-filter all
N7K4# clear debug logfile debug-ospf
```

4. Verificare che i pacchetti vengano inviati da OSPF a **224.0.0.5**.

```
N7K4# debug logfile ospf_vj
N7K4# debug-filter ip mpacket interface e1/5
N7K4# debug-filter ip mpacket direction outbound
N7K4# debug-filter ip mpacket dest 224.0.0.5
N7K4# debug ip ospf 5 hello
```

```
N7K4# show debug logfile ospf_vj
```

```
N7K1-RP# show debug logfile ospf_vj
```

```
2013 May 16 11:18:55.202270 ospf: 5 [9386] (default) LAN hello in, ivl 10/40,
options 0x02, mask /24, prio 1, dr 5.5.5.1, bdr 5.5.5
.2 on Vlan5 from 5.5.5.2
2013 May 16 11:19:00.527640 ospf: 5 [9386] (default) LAN hello out, ivl 10/40,
options 0x02, mask /24, prio 1, dr 5.5.5.1, bdr 5.5.
5.2 nbrs 1 on Vlan5 (area 0.0.0.0)
2013 May 16 11:19:03.500785 ospf: 5 [9386] (default) LAN hello in, ivl 10/40,
options 0x02, mask /24, prio 1, dr 5.5.5.1, bdr 5.5.5
.2 on Vlan5 from 5.5.5.2
2013 May 16 11:19:09.515150 ospf: 5 [9386] (default) LAN hello out, ivl 10/40,
options 0x02, mask /24, prio 1, dr 5.5.5.1, bdr 5.5.
5.2 nbrs 1 on Vlan5 (area 0.0.0.0)
2013 May 16 11:19:10.406800 ospf: 5 [9386] (default) LAN hello in, ivl 10/40,
options 0x02, mask /24, prio 1, dr 0.0.0.0, bdr 0.0.0
.0 on Vlan5 from 5.5.5.2
2013 May 16 11:19:10.417602 ospf: 5 [9386] (default) LAN hello in, ivl 10/40,
options 0x02, mask /24, prio 1, dr 0.0.0.0, bdr 0.0.0
.0 on Vlan5 from 5.5.5.2
N7K1-RP#
```

Nota: Non dimenticare di disabilitare i debug.

```
N7K4# clear debug logfile ospf_vj
N7K4# undebug all
N7K4# no debug-fil all
no debug-filter ip mpacket interface Ethernet1/5
no debug-filter ip mpacket direction outbound
no debug-filter ip mpacket dest 224.0.0.5
N7K4#
```

5. Verificare che il pacchetto si trovi sull'analizzatore.

```
N7K4# ethanalyzer local interface inband capture-filter "ip proto \ospf"

N7K1# ethanalyzer local interface inband capture-filter "ip proto \ospf"
Capturing on inband
50 packets captured
2013-05-16 11:06:34.387196      5.5.5.2 -> 224.0.0.5      OSPF Hello Packet
2013-05-16 11:06:34.397553      5.5.5.2 -> 224.0.0.5      OSPF Hello Packet
2013-05-16 11:06:38.895343      5.5.5.1 -> 224.0.0.5      OSPF Hello Packet
```

Nota: Deve essere presente un contesto di dispositivo virtuale predefinito (VDC).

Risoluzione dei problemi

Se l'analisi della connettività L2/3, della configurazione e del traffico consentito OSPF non rileva il problema e mostra che il router adiacente diventa FULL, aprire una richiesta TAC. Immettere questi comandi e fornire a TAC le informazioni provenienti da entrambi gli output adiacenti:

- Show run
- Mostra OSPF supporto tecnico

Router adiacente OSPF bloccato in uno stato bidirezionale

In alcuni casi la risorsa adiacente OSPF è bloccata in uno stato bidirezionale. Questo scenario è normale nei tipi di reti broadcast e riduce la quantità di allagamento sul cavo. Questo scenario si verifica anche se tutti i router sono configurati con una priorità uguale a zero.

Nota: Solo i router di fascia bassa devono essere configurati con priorità zero in modo che non partecipino alla scelta del router designato (DR).

Fare riferimento alla sezione [Perché il comando show ip ospf neighbors rivela i vicini bloccati in uno stato a due vie?](#) per ulteriori informazioni.

Router adiacente OSPF bloccato in Exstart/Exchange

In alcuni casi la risorsa adiacente OSPF è bloccata nello stato Exstart/Exchange.

In caso di mancata corrispondenza MTU tra le interfacce dei router adiacenti OSPF o se questi non sono in grado di comunicare tra loro con le dimensioni del pacchetto della MTU configurata a causa dei supporti di trasmissione, la porta adiacente OSPF è bloccata nello stato exstart/exchange.

```
router-6# show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
170.170.11.7	1	EXCHANGE/ -	00:00:36	170.170.11.7	Serial2.7

```
router-6#
```

```
router-7# show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
170.170.11.6	1	EXSTART/ -	00:00:33	170.170.11.6	Serial0.6

```
router-7#
```

Il problema potrebbe essere causato da:

- MTU non corrispondente - EXCHANGE su un router ed EXSTART sull'altro
Nota: È possibile eseguire la configurazione con il comando `ip ospf mtu-ignore`.
- L'ID del router adiacente (RID) è uguale a quello del router adiacente - EXSTART
- Unicast interrotto - EXCHANGE Problema MTU. Impossibile eseguire il ping tra pacchetti con più di una determinata lunghezza
Blocco ACL unicast - dopo l'invio di un pacchetto unicast a due vie da parte di OSPF ad eccezione dei collegamenti Point-to-Point (P2P)
NAT converte il pacchetto unicast

Per analizzare il problema, completare i seguenti passaggi:

1. Controllare il ping normale con il bit "non frammentare" (DF, Don't Fragment) attivo e la MTU IP massima sull'interfaccia.

```
N7K4# ping 10.10.12.2 df-bit packet-size 1472
```

Nota: In Cisco IOS, quando si immette il comando `ping x.x.x.x size <size>`, il termine dimensioni si riferisce alle dimensioni del pacchetto IP. In Linux, specificare il payload ICMP (Internet Control Message Protocol) del ping anziché le dimensioni del pacchetto IP come in Cisco IOS. Come forse già sapete, Nexus è basato su Linux. L'MTU è ancora impostata su 1.500 byte - 20 di questi byte sono l'intestazione IP e altri 8 sono l'intestazione ICMP. $1.500 - 20 - 8 = 1.472$ byte di payload. Pertanto, le dimensioni effettive del datagramma IP sono le stesse di Cisco IOS, che è 1.500 byte.

2. Verificare se i pacchetti vengono scartati sulle interfacce in ingresso con il comando `show int ethernet 1/1`.

```
N7K1-RP# show int ethernet 1/20 | section RX|TX
RX
 340213 unicast packets  368092 multicast packets  2 broadcast packets
 708307 input packets  233094927 bytes
 0 jumbo packets  0 storm suppression packets
 0 runs  0 giants  0 CRC/FCS  0 no buffer
 0 input error  0 short frame  0 overrun  0 underrun  0 ignored
 0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
 0 input with dribble  0 input discard
 0 Rx pause
TX
 1374131 unicast packets  324752 multicast packets  3 broadcast packets
 1698886 output packets  196282264 bytes
 0 jumbo packets
 0 output error  0 collision  0 deferred  0 late collision
 0 lost carrier  0 no carrier  0 babble  0 output discard
 0 Tx pause
N7K1-RP#
```

3. Verificare se CoPP scarta il pacchetto OSPF con il comando `show policy-map interface control-plane class test1-copp-class-critical`.

```
Control Plane
service-policy input test1-copp-policy-lenient

class-map test1-copp-class-critical (match-any)
  match access-group name test1-copp-acl-bgp
  match access-group name test1-copp-acl-pim
  match access-group name test1-copp-acl-rip
  match access-group name test1-copp-acl-vpc
  match access-group name test1-copp-acl-bgp6
  match access-group name test1-copp-acl-igmp
  match access-group name test1-copp-acl-lisp
  match access-group name test1-copp-acl-msdp
  match access-group name test1-copp-acl-ospf
  match access-group name test1-copp-acl-pim6
  match access-group name test1-copp-acl-rip6
  match access-group name test1-copp-acl-rise
  match access-group name test1-copp-acl-eigrp
  match access-group name test1-copp-acl-lisp6
  match access-group name test1-copp-acl-ospf6
  match access-group name test1-copp-acl-rise6
  match access-group name test1-copp-acl-eigrp6
  match access-group name test1-copp-acl-otv-as
  match access-group name test1-copp-acl-mac-l2pt
  match access-group name test1-copp-acl-mls-ldp
```

```

match access-group name test1-copp-acl-mpls-oam
match access-group name test1-copp-acl-mpls-rsvp
match access-group name test1-copp-acl-mac-l3-isis
match access-group name test1-copp-acl-mac-otv-isis
match access-group name test1-copp-acl-mac-fabricpath-isis
match protocol mpls router-alert
match protocol mpls exp 6
set cos 7
police cir 39600 kbps bc 375 ms
  conform action: transmit
  violate action: drop
module 1:
  conformed 539964945 bytes,
    5-min offered rate 5093 bytes/sec
    peak rate 5213 bytes/sec
  violated 0 bytes,
    5-min violate rate 0 bytes/sec
module 2:
  conformed 784228080 bytes,
    5-min offered rate 5848 bytes/sec
    peak rate 7692 bytes/sec
  violated 0 bytes,
    5-min violate rate 0 bytes/sec
module 3:
  conformed 5114206 bytes,
    5-min offered rate 41 bytes/sec
    peak rate 6656 bytes/sec
  violated 0 bytes,
    5-min violate rate 0 bytes/sec

```

N7K1#

4. Controllare lo scambio del descrittore di database OSPF (DBD) con il comando **show ip ospf 5 event-history adjacency** o con il comando **debug ip ospf 5 adjacency**.

```

N7K1-RP# debug logfile debug-ospf size 10000
N7K1-RP# debug-filter ip ospf 5 interface Vlan 5
N7K1-RP# debug ip ospf 5 adjacency detail

```

Di seguito è riportato un esempio:

```

N7K1-RP# show debug logfile debug-ospf
2013 May 20 05:36:23.414376 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state FULL, event HELLORCVD
2013 May 20 05:36:23.414424 ospf: 5 [8325] (default) Nbr 5.5.5.2: FULL -->
FULL, event HELLORCVD
2013 May 20 05:36:23.414438 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state FULL, event TWOWAYRCVD
2013 May 20 05:36:23.414450 ospf: 5 [8325] (default) Nbr 5.5.5.2: FULL -->
FULL, event TWOWAYRCVD
2013 May 20 05:36:28.832638 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state FULL, event HELLORCVD
2013 May 20 05:36:28.832674 ospf: 5 [8325] (default) Nbr 5.5.5.2: FULL -->
FULL, event HELLORCVD
2013 May 20 05:36:28.832695 ospf: 5 [8325] (default) Nbr 5.5.5.2: transitioning
to OneWay - did not find ourselves
2013 May 20 05:36:28.832709 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state FULL, event ONEWAYRCVD
2013 May 20 05:36:28.833073 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM state
changed from FULL to INIT, event ONEWAYRCVD

```

```

2013 May 20 05:36:28.833120 ospf: 5 [8325] Begin OSPF DR election on Vlan5
2013 May 20 05:36:28.833140 ospf: 5 [8325] Current 5.5.0.1 as DR, 5.5.0.2
as BDR
2013 May 20 05:36:28.833177 ospf: 5 [8325] BDR election starting
2013 May 20 05:36:28.833196 ospf: 5 [8325] Walking neighbor 5.5.5.1
(0xaec59188), state SELF
2013 May 20 05:36:28.833211 ospf: 5 [8325] This neighbor is greater
than 2way
2013 May 20 05:36:28.833235 ospf: 5 [8325] Walking neighbor 5.5.5.2
(0x9777584), state INIT
2013 May 20 05:36:28.833249 ospf: 5 [8325] DR election starting
2013 May 20 05:36:28.833265 ospf: 5 [8325] Walking neighbor 5.5.5.1
(0xaec59188), state SELF
2013 May 20 05:36:28.833281 ospf: 5 [8325] This nbr 5.5.5.1 promoted to
current dr
2013 May 20 05:36:28.833297 ospf: 5 [8325] Walking neighbor 5.5.5.2
(0x9777584), state INIT
2013 May 20 05:36:28.833404 ospf: 5 [8325] Elected 5.5.0.1 as DR,
0.0.0.0 as BDR
2013 May 20 05:36:28.833440 ospf: 5 [8325] Interface Vlan5 ---> DR
2013 May 20 05:36:28.833456 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state INIT, event ADJOK
2013 May 20 05:36:28.833474 ospf: 5 [8325] (default) Nbr 5.5.5.2: INIT -->
INIT, event ADJOK
2013 May 20 05:36:28.833492 ospf: 5 [8325] (default) Nbr 5.5.5.2: FULL -->
INIT, event ONEWAYRCVD
2013 May 20 05:36:28.843309 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state INIT, event HELLORCVD
2013 May 20 05:36:28.843339 ospf: 5 [8325] (default) Nbr 5.5.5.2: INIT -->
INIT, event HELLORCVD
2013 May 20 05:36:28.843357 ospf: 5 [8325] (default) Nbr 5.5.5.2: transitioning
to OneWay - did not find ourselves
2013 May 20 05:36:28.843370 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state INIT, event ONEWAYRCVD
2013 May 20 05:36:28.843386 ospf: 5 [8325] (default) Nbr 5.5.5.2: INIT -->
INIT, event ONEWAYRCVD
2013 May 20 05:36:34.244541 ospf: 5 [8325] (default) Got DBD from 5.5.5.2
with 0 entries
2013 May 20 05:36:34.244567 ospf: 5 [8325] (default) seqnr 0x9247f5e,
dbdbits 0x7, mtu 1600, options 0x42
2013 May 20 05:36:34.244622 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state INIT, event TWOWAYRCVD
2013 May 20 05:36:34.244798 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM state
changed from INIT to EXSTART, event ADJOK
2013 May 20 05:36:34.244859 ospf: 5 [8325] Begin OSPF DR election on Vlan5
2013 May 20 05:36:34.244880 ospf: 5 [8325] Current 5.5.0.1 as DR, 0.0.0.0
as BDR
2013 May 20 05:36:34.244916 ospf: 5 [8325] BDR election starting
2013 May 20 05:36:34.244935 ospf: 5 [8325] Walking neighbor 5.5.5.1
(0xaec59288), state SELF
2013 May 20 05:36:34.244949 ospf: 5 [8325] This neighbor is greater
than 2way
2013 May 20 05:36:34.244965 ospf: 5 [8325] Walking neighbor 5.5.5.2
(0x9777584), state EXSTART
2013 May 20 05:36:34.244978 ospf: 5 [8325] This neighbor is greater
than 2way
2013 May 20 05:36:34.244991 ospf: 5 [8325] This neighbor is in consideration
for bdr
2013 May 20 05:36:34.245004 ospf: 5 [8325] Current BDR set to this neighbor
2013 May 20 05:36:34.245019 ospf: 5 [8325] Compare done, new current
bdr 5.5.5.2
2013 May 20 05:36:34.245033 ospf: 5 [8325] DR election starting
2013 May 20 05:36:34.245049 ospf: 5 [8325] Walking neighbor 5.5.5.1
(0xaec59288), state SELF

```

2013 May 20 05:36:34.245065 ospf: 5 [8325] This nbr 5.5.5.1 promoted to
current dr
2013 May 20 05:36:34.245080 ospf: 5 [8325] Walking neighbor 5.5.5.2
(0x9777584), state EXSTART
2013 May 20 05:36:34.245094 ospf: 5 [8325] Neighbor not declared DR,
ignoring
2013 May 20 05:36:34.245202 ospf: 5 [8325] Elected 5.5.0.1 as DR,
5.5.0.2 as BDR
2013 May 20 05:36:34.245247 ospf: 5 [8325] Interface Vlan5 ---> DR
2013 May 20 05:36:34.245262 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state EXSTART, event ADJOK
2013 May 20 05:36:34.245299 ospf: 5 [8325] (default) Nbr 5.5.5.2:
EXSTART --> EXSTART, event ADJOK
2013 May 20 05:36:34.245318 ospf: 5 [8325] (default) Nbr 5.5.5.2:
INIT --> EXSTART, event TWOWAYRCVD
2013 May 20 05:36:34.245335 ospf: 5 [8325] (default) We are SLAVE,
5.5.5.2 is master
2013 May 20 05:36:34.245348 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state EXSTART, event NEGDONE
2013 May 20 05:36:34.245366 ospf: 5 [8325] (default) Preparing DBD exchange
for nbr 5.5.5.2, 387/5
2013 May 20 05:36:34.245463 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM state
changed from EXSTART to EXCHANGE, event NEGDONE
2013 May 20 05:36:34.245483 ospf: 5 [8325] (default) Nbr 5.5.5.2: EXSTART -->
EXCHANGE, event NEGDONE
2013 May 20 05:36:34.245843 ospf: 5 [8325] (default) Got DBD from 5.5.5.2
with 0 entries
2013 May 20 05:36:34.245862 ospf: 5 [8325] (default) seqnr 0x9247f5e,
dbdbits 0x7, mtu 1600, options 0x42
2013 May 20 05:36:34.245997 ospf: 5 [8325] (default) Sending DBD to
5.5.5.2 on Vlan5
2013 May 20 05:36:34.246031 ospf: 5 [8325] (default) Add 5.5.0.2(0x1)5.5.0.2
(0x80000084) (0x2c26) (109) to DBD
2013 May 20 05:36:34.246062 ospf: 5 [8325] (default) Add 5.5.0.1(0x1)5.5.0.1
(0x8000007f) (0xa3c7) (5)(0) to DBD
2013 May 20 05:36:34.246078 ospf: 5 [8325] (default) Filled DBD to 5.5.5.2
with 2 entries
2013 May 20 05:36:34.246111 ospf: 5 [8325] (default) Sent DBD with 2 entries to
5.5.5.2 on Vlan5
2013 May 20 05:36:34.246128 ospf: 5 [8325] (default) mtu 1600, opts: 0x42,
dbdbits: 0x2, seq: 0x9247f5e
2013 May 20 05:36:34.258616 ospf: 5 [8325] (default) Recv LSR from Nbr 5.5.5.2
2013 May 20 05:36:34.258634 ospf: 5 [8325] (default) schedule flood
2013 May 20 05:36:34.258674 ospf: 5 [8325] (default) Answering LSR from 5.5.5.2
2013 May 20 05:36:34.258690 ospf: 5 [8325] (default) 1 requests in LSR (1 left)
2013 May 20 05:36:34.258707 ospf: 5 [8325] (default) Building reply LSU to 5.5.5.2
2013 May 20 05:36:34.258726 ospf: 5 [8325] (default) Found requested LSA
5.5.0.1(1)5.5.0.1 for 5.5.5.2
2013 May 20 05:36:34.258791 ospf: 5 [8325] (default) Added 5.5.0.1(0x1)
5.5.0.1 (0x8000007f) (0xa3c7) (5)(0)
2013 May 20 05:36:34.258872 ospf: 5 [8325] (default) Built reply LSU with 1 LSAs
for 5.5.5.2 96 bytes
2013 May 20 05:36:34.286591 ospf: 5 [8325] (default) Got DBD from 5.5.5.2
with 2 entries
2013 May 20 05:36:34.286615 ospf: 5 [8325] (default) seqnr 0x9247f5f,
dbdbits 0x3, mtu 1600, options 0x42
2013 May 20 05:36:34.286751 ospf: 5 [8325] (default) Got DBD from 5.5.5.2
with 2 entries
2013 May 20 05:36:34.286784 ospf: 5 [8325] (default) seqnr 0x9247f5f,
dbdbits 0x3, mtu 1600, options 0x42
2013 May 20 05:36:34.286804 ospf: 5 [8325] (default) Found 5.5.5.1(0x2)
5.5.0.1 (0x80000004) (0x46de) (111) in DBD
2013 May 20 05:36:34.286870 ospf: 5 [8325] (default) Added 5.5.5.1(0x2)
5.5.0.1 (0x80000004) (0x46de) (111)(DO) to request li

st
2013 May 20 05:36:34.286889 ospf: 5 [8325] (default) Found 5.5.0.2(0x1)
5.5.0.2 (0x80000085) (0x91d0) (5) in DBD
2013 May 20 05:36:34.286917 ospf: 5 [8325] (default) Added 5.5.0.2(0x1)
5.5.0.2 (0x80000084) (0x2c26) (109) to request list
2013 May 20 05:36:34.286932 ospf: 5 [8325] (default) Added 2 out of 2 LSAs
to request list
2013 May 20 05:36:34.287046 ospf: 5 [8325] (default) Sending DBD to
5.5.5.2 on Vlan5
2013 May 20 05:36:34.287066 ospf: 5 [8325] (default) Filled DBD to
5.5.5.2 with 0 entries
2013 May 20 05:36:34.287101 ospf: 5 [8325] (default) Sent DBD with 0 entries to
5.5.5.2 on Vlan5
2013 May 20 05:36:34.287121 ospf: 5 [8325] (default) mtu 1600, opts: 0x42,
ddbits: 0, seq: 0x9247f5f
2013 May 20 05:36:34.291760 ospf: 5 [8325] (default) Got DBD from 5.5.5.2
with 0 entries
2013 May 20 05:36:34.291789 ospf: 5 [8325] (default) seqnr 0x9247f60,
dbdbits 0x1, mtu 1600, options 0x42
2013 May 20 05:36:34.291915 ospf: 5 [8325] (default) Got DBD from 5.5.5.2
with 0 entries
2013 May 20 05:36:34.291934 ospf: 5 [8325] (default) seqnr 0x9247f60,
dbdbits 0x1, mtu 1600, options 0x42
2013 May 20 05:36:34.291953 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state EXCHANGE, event EXCHDONE
2013 May 20 05:36:34.292101 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM state
changed from EXCHANGE to LOADING, event EXCHDONE
2013 May 20 05:36:34.292124 ospf: 5 [8325] (default) Nbr 5.5.5.2: EXCHANGE -->
LOADING, event EXCHDONE
2013 May 20 05:36:34.293200 ospf: 5 [8325] (default) Building LS Request packet
to 5.5.5.2
2013 May 20 05:36:34.293231 ospf: 5 [8325] (default) Add 5.5.0.2(0x1)
5.5.0.2 (0x80000084) (0x2c26) (110) to LSR
2013 May 20 05:36:34.293262 ospf: 5 [8325] (default) Add 5.5.5.1(0x2)
5.5.0.1 (0x80000004) (0x46de) (111)(DO) to LSR
2013 May 20 05:36:34.293281 ospf: 5 [8325] (default) Built LS Request packet for
5.5.5.2 with 2 entries
2013 May 20 05:36:34.297954 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state LOADING, event LDDONE
2013 May 20 05:36:34.298069 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM state
changed from LOADING to FULL, event LDDONE
2013 May 20 05:36:34.298206 ospf: 5 [8325] (default) Nbr 5.5.5.2: LOADING -->
FULL, event LDDONE
2013 May 20 05:36:34.299179 ospf: 5 [8325] (default) Sending DBD to 5.5.5.2
on Vlan5
2013 May 20 05:36:34.299199 ospf: 5 [8325] (default) Filled DBD to 5.5.5.2
with 0 entries
2013 May 20 05:36:34.299233 ospf: 5 [8325] (default) Sent DBD with 0 entries to
5.5.5.2 on Vlan5
2013 May 20 05:36:34.299253 ospf: 5 [8325] (default) mtu 1600, opts: 0x42,
ddbits: 0, seq: 0x9247f60
2013 May 20 05:36:38.746942 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state FULL, event HELLORCVD
2013 May 20 05:36:38.747010 ospf: 5 [8325] (default) Nbr 5.5.5.2: FULL -->
FULL, event HELLORCVD
2013 May 20 05:36:38.747024 ospf: 5 [8325] (default) Nbr 5.5.5.2 FSM start:
old state FULL, event TWOWAYRCVD
2013 May 20 05:36:38.747046 ospf: 5 [8325] (default) Nbr 5.5.5.2: FULL -->
FULL, event TWOWAYRCVD
2013 May 20 05:36:38.747073 ospf: 5 [8325] (default) Different BDR in hello,
invoking nbrchange
2013 May 20 05:36:38.747090 ospf: 5 [8325] (default) Neighbor
priority/options/DR/BDR value changed
2013 May 20 05:36:38.747265 ospf: 5 [8325] Begin OSPF DR election on Vlan5


```

2013 May 20 05:36:38.747288 ospf: 5 [8325] Current 5.5.0.1 as DR,
5.5.0.2 as BDR
2013 May 20 05:36:38.747329 ospf: 5 [8325] BDR election starting
2013 May 20 05:36:38.747348 ospf: 5 [8325] Walking neighbor 5.5.5.1
(0xaec59478), state SELF
2013 May 20 05:36:38.747362 ospf: 5 [8325] This neighbor is greater
than 2way
2013 May 20 05:36:38.747648 ospf: 5 [8325] Walking neighbor 5.5.5.2
(0x9777584), state FULL
2013 May 20 05:36:38.747662 ospf: 5 [8325] This neighbor is greater
than 2way
2013 May 20 05:36:38.747676 ospf: 5 [8325] This neighbor is in consideration
for bdr
2013 May 20 05:36:38.747689 ospf: 5 [8325] Current BDR set to this neighbor
2013 May 20 05:36:38.747705 ospf: 5 [8325] Compare done, new current bdr
5.5.5.2
2013 May 20 05:36:38.747733 ospf: 5 [8325] DR election starting
2013 May 20 05:36:38.747750 ospf: 5 [8325] Walking neighbor 5.5.5.1
(0xaec59478), state SELF
2013 May 20 05:36:38.747766 ospf: 5 [8325] This nbr 5.5.5.1 promoted to
current dr
2013 May 20 05:36:38.747782 ospf: 5 [8325] Walking neighbor 5.5.5.2
(0x9777584), state FULL
2013 May 20 05:36:38.747796 ospf: 5 [8325] Neighbor not declared DR,
ignoring
2013 May 20 05:36:38.747948 ospf: 5 [8325] Elected 5.5.0.1 as DR,
5.5.0.2 as BDR
2013 May 20 05:36:38.748004 ospf: 5 [8325] Interface Vlan5 ---> DR

```

Nota: Non dimenticare di disabilitare i debug.

```

N7K1-RP# clear debug logfile debug-ospf
N7K1-RP# undebug all
N7K1-RP# no debug-fil all

```

Suggerimenti:

Cercare i messaggi MTU non corrispondenti. Seguire il numero di sequenza e cercare una ritrasmissione a causa della perdita di DBD. Controllare la ricezione di un numero di sequenza DBD imprevisto.

Risoluzione dei problemi

Se l'analisi della connettività L2/3, della configurazione e del traffico consentito OSPF non ha individuato il problema e mostrato che il router adiacente è online, aprire una richiesta TAC. Immettere questi comandi e fornire a TAC le informazioni provenienti da entrambi gli output adiacenti:

- Show run
- Mostra OSPF supporto tecnico

Router adiacente OSPF bloccato in stato di caricamento

In alcuni casi la risorsa adiacente OSPF è bloccata in uno stato di caricamento.

Il problema potrebbe essere causato da:

- Viene effettuata una richiesta di stato del collegamento (LS) e il router adiacente invia un pacchetto non valido o la memoria è danneggiata. Immettere il comando **show IP OSPF bad** per visualizzare l'annuncio dello stato del collegamento (LSA) errato. Il comando **show log** visualizza il messaggio **OSPF-4-BADLSATYPE**. Viene effettuata una richiesta LS e il router adiacente ignora la richiesta.

Se un router riceve un LSA obsoleto, danneggiato o mancante, il protocollo OSPF rimane in uno stato di caricamento e genera il messaggio di errore **OSPF-4-BADLSA**.

Immettere questo comando per verificare:

```
7K1-RP# show ip ospf traffic vlan 5
OSPF Process ID 5 VRF default, Packet Counters (cleared 1d12h ago)
Interface Vlan5, Area 0.0.0.0
Total: 15214 in, 15214 out
LSU transmissions: first 88, rxmit 9(13), for req 0, nbr xmit 289801235
Flooding packets output throttled (IP/tokens): 0 (0/0)
Ignored LSAs: 0, LSAs dropped during SPF: 0
LSAs dropped during graceful restart: 0
Errors: drops in      0, drops out      0, errors in      0,
        errors out    0, hellos in      0, dbds in      0,
        lsreq in      0, lsu in        0, lsacks in     0,
        unknown in    0, unknown out  0, no ospf      0,
        bad version   0, bad crc      0, dup rid      0,
        dup src       0, invalid src  0, invalid dst  0,
        no nbr        0, passive      0, wrong area   0,
        pkt length    0, nbr changed  0, ip addr     0,
        bad auth      0

```

	hellos	dbds	lsreqs	lsus	acks
In:	14957	42	13	108	94
Out:	14957	46	14	110	87

N7K1-RP#

Risoluzione dei problemi

Se l'analisi della connettività L2/3, della configurazione e del traffico consentito OSPF non ha individuato il problema e mostrato che il router adiacente è online, aprire una richiesta TAC. Immettere questi comandi e fornire a TAC le informazioni provenienti da entrambi gli output adiacenti:

- **Mostra file registro**
- **Mostra OSPF supporto tecnico**