

# رَبْع OSPF لَ عِيْلُوَالَا تَانِيوَكْتَلَا نِيوَكْتَلَا ثَبَلَا مَعْدَتَا لَ يَتَلَا تَاطَابَتَرَالَا

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## عَمْدَقْمَلَا

يَتَلَا تَاطَابَتَرَالَا رَبْع (OSPF) الُوَا رَاسَمَا رَصْقَا حَتْفَلَا عِيْلُوَالَا تَانِيوَكْتَلَا دَنَتَسْمَلَا اذَهَا فَصِيْ  
ثَبَلَا مَعْدَتَا لَ.

## عِيَسَاسَا تَامَوْلَعَم

عَدَدَعَتَمَا تَانَايَبَلَا عَمْدَخُوَا ATM و X.25 و تَارَاطَالَا لِيَحْرَتَلَا لَثَمَا ثَبَلَلَا عِلْبَاقَالَا رِيْغَا طِيْئَا سَوَالَا يَفِيْ  
نِيْ عَضْوَالَا يَفِيْ OSPF لِيْغَشْتَا نَكْمِيْ، (SMDS) عِلْوَحْمَلَا تَبَايَمَلْتَلَا

- (DR) دَدَحْمَا هَجْوَمَا رَايْتَخَا قِيْرَطْنَا عَا ثَبَلَا حَزْوَمَنَا يَكَايَا (NBMA): ثَبَلَا رَبْعَا دَدَعَتْمَلَا لَوُصْوَالَا  
عَكَبَشَلَا يَلَعَا ثَبَلَا حَزْوَمَنَا عَاكَا حَمَلْنَا تَا قِيْرَطْنَا كَانَهَا. (BDR) يَطَايْتَحَالَا خَسَنَلَلَا صَصَخْمَا هَجْوَمُوَا  
ip ospf عَكَبَشَلَا ثَبَلَا هَجَاوَلَا يِعْرَفَلَا رَمَالَا مَادَخْتَسَا بَا ثَبَلَا عَكَبَشَلَا عَوْنَا فَيِرْعَتَبَمَا قَا  
router ospf رَمَالَا مَادَخْتَسَتَا يَتَلَا عَرَاوَجْمَلَا تَارَابَعَالَا نِيوَكْتَلَا مَقَا وَا  
نَمَا عَمْدَعْمَكَا ثَبَلَا بَا عِلَصَتْمَلَا رِيْغَا عَكَبَشَلَا عَمَلَمَاعَتِيْ: عَدَدَعَتْمَا عَطَقِنَا لَ عَطَقِنَا نَمَا  
[ip ospf network point-to-multipoint](#) رَمَالَا نِيوَكْتَلَا بَسَحَا عَطَقِنَا لَ عَطَقِنَا نَمَا تَاطَابَتَرَا

مَدَقِيْ. عَرَاوَجْمَا تَارَابَعَا نِيوَكْتَلَا بَنَجْتَلَا لَسْرَمَلَا رِيْغَا تَاكَبَشَلَا يَلَعَا عَكَبَشَلَا عَوْنَا دِيْدَحْتَلَا بَحِيْ  
show ip ospf رَمَالَا مَادَخْتَسَا. عِيْ عَاذَا رِيْغَا تَاطَابَتَرَا رَبْع OSPF تَانِيوَكْتَلَا حَزْوَمَنَا دَنَتَسْمَلَا اذَهَا  
show ip ospf رَمَالَا مَادَخْتَسَا مَتِيْ و OSPF لَغَشْتَا يَتَلَا هَجَاوَلَا عَكَبَشَلَا عَوْنَا نَمَا قَقَحْتَلَا لَ interface  
neighbor رَاوَجْمَلَا هَجْوَمَلَا عِلَا حَا عَرْمَلَا

## عِيَسَاسَا لَاتَابَلَطَتْمَلَا

### تَابَلَطَتْمَلَا

ههچوت لوكوتوربل يساسال نيوكتال مهفب Cisco ي صوت [OSPF](#).

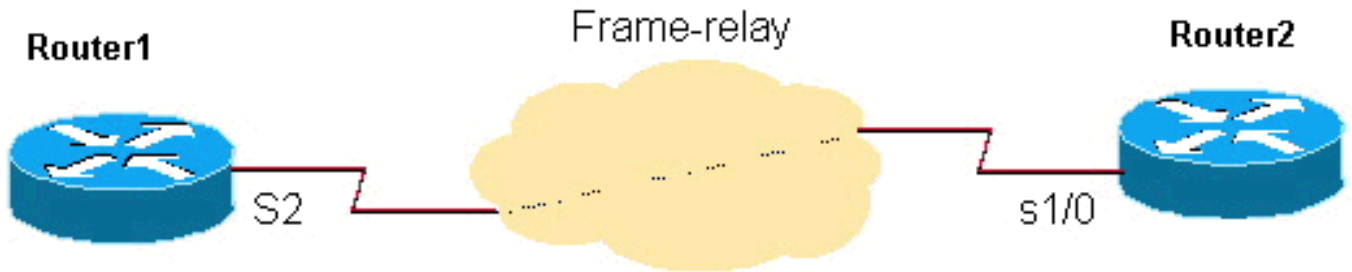
## ةمدختسما تانوكملا

ةيلال ةيداملا تانوكملا او جماربل تارادصل ل دنتسما اذف ةدراول تامولعمل دنتست:

- Cisco نم 2500 تاهجوملا
  - تاهجوملا لعل هليغشت متي يذلا Cisco نم 12.2(24a) رادصلال IOS® جم انرب
- ةصاخ ةيلعمل عم ةئيب يف ةدوجوملا ةزهجال نم دنتسما اذف يف ةدراول تامولعمل عاشنإ مت تناك اذإ. (يضا رتفا) حوسمم نيوكتب دنتسما اذف يف ةمدختسما ةزهجال عيمج تادب رما يال لمحتملا ريثاتلل كمهف نم دكاتف، ليغشتلا ديقت كتكبش

## ةكبشلال يطيختلا مسرلا

دنتسما اذف يف نيوكتال ةلثمأ يف مدختسما ةكبشلال يطيختلا مسرلا وه اذف



## ةكبشلال عون ثب مادختسا NBMA تانويوكت

### 1 هجوملا

```
interface Loopback0
  ip address 192.0.2.3 255.255.255.255
  !
  !
interface Serial2
  ip address 192.0.2.1 255.255.255.0
  encapsulation frame-relay
  ip ospf network broadcast
  no keepalive
  frame-relay map ip 192.0.2.1 16 broadcast
  !
  !
router ospf 1
  network 192.0.2.0 0.0.0.255 area 0
```

### 2 هجوملا

```
interface Loopback0
  ip address 192.0.2.2 255.255.255.255
  !
interface Serial1/0
  ip address 192.0.2.1 255.255.255.0
  encapsulation frame-relay
  ip ospf network broadcast
  no keepalive
```

```

clockrate 2000000
frame-relay map ip 192.0.2.1 16 broadcast
!
router ospf 1
network 192.0.2.0 0.0.0.255 area 0
!

```

## ققحتللا تاجيملت

1. هجوملل show رمأل جارخا وه اذه

```
Router1# show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.0.2.2	1	FULL/BDR	00:00:37	192.0.2.1	Serial2

```
Router1# show ip ospf interface s2
```

```

Serial2 is up, line protocol is up
Internet Address 192.0.2.1/24, Area 0
Process ID 1, Router ID 192.0.2.3, Network Type BROADCAST, Cost: 64
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.0.2.3, Interface address 192.0.2.1
Backup Designated router (ID) 192.0.2.2, Interface address 192.0.2.1
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
Hello due in 00:00:00
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 2
Last flood scan time is 0 msec, maximum is 4 msec
Neighbor Count is 1, Adjacent neighbor count is 1
Adjacent with neighbor 192.0.2.2 (Backup Designated Router)
Suppress hello for 0 neighbor(s)

```

ي.لي امك يه 2 هجوملاب ةصاخلا تاجرخملاو

```
Router2# show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.0.2.3	1	FULL/DR	00:00:38	192.0.2.1	Serial1/0

```
Router2# show ip ospf interface s1/0
```

```

Serial1/0 is up, line protocol is up
Internet Address 192.0.2.1/24, Area 0
Process ID 1, Router ID 192.0.2.2, Network Type BROADCAST, Cost: 64
Transmit Delay is 1 sec, State BDR, Priority 1
Designated Router (ID) 192.0.2.3, Interface address 192.0.2.1
Backup Designated router (ID) 192.0.2.2, Interface address 192.0.2.1
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
Hello due in 00:00:03
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 2
Last flood scan time is 0 msec, maximum is 4 msec
Neighbor Count is 1, Adjacent neighbor count is 1
Adjacent with neighbor 192.0.2.3 (Designated Router)
Suppress hello for 0 neighbor(s)

```

## (راوجللا تارابع مادختسا) NBMA تانيوكت

1 هجوملا

```

interface Loopback0
  ip address 192.0.2.3 255.255.255.255
!
interface Serial2
  ip address 192.0.2.1 255.255.255.0
  encapsulation frame-relay
  ip ospf priority 2
  no keepalive
  frame-relay map ip 192.0.2.1 16
!
router ospf 1
  network 192.0.2.0 0.0.0.255 area 0
  neighbor 192.0.2.1
!

```

## 2 هجومال

```

interface Loopback0
  ip address 192.0.2.2 255.255.255.255
!
interface Serial1/0
  ip address 192.0.2.1 255.255.255.0
  encapsulation frame-relay
  no keepalive
  clockrate 2000000
  frame-relay map ip 192.0.2.1 16
!
router ospf 1
  network 192.0.2.0 0.0.0.255 area 0
  neighbor 192.0.2.1
!

```

1 هجومال لى `ip ospf priority 2` رمأل موقى، وتلل هحضومال تانويكتل ي ف: **هظحال** لعت يتل او، 1 ب ةصاخلا ةيضارتفال ةيولوال ةمىق نم لىل ةهجاو ةيولوا نىيغت ب ةيولوال ةمىق نىيغت كنكمى، رمأل مزل اذا NBMA ةكبشل BDR ةركاذا Router2 و DR نم يروحمل تاكبش ي ف يروض اذهو. DR/BDR ادبأ حبصى ال شىب هجوم نىوكتل 0 لىل BDR و DR نارومل نوكى ال بچى شىب، DR حبصىل رومل نىوكت بچى شىب شحتل او تاسرامم نم ف، رواجتل نىوكتل فاك دحاو بناج نم رواجل ناىب نىوكت نا نم مغرل لىل ال تاراطال لىحرت ةطىرخ رماوا نا امك. حضوم وه امك نىيتىاهنل ال لىل اهنيوكت ةديجل مادختساب يدخال اههيجوت متى OSPF مزح نال ثبل ةملعم لىل يوتحت نا لىل جاتحت رواجمل ةلمج.

## ققحتل تاحىملت

1. هجوملل `show` رمأل جارخا وه اذه

```
Router1# show ip ospf neighbors
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.0.2.2	1	FULL/BDR	00:01:39	192.0.2.1	Serial2

```
Router1# show ip ospf interface s2
```

```

Serial2 is up, line protocol is up
Internet Address 192.0.2.1/24, Area 0
Process ID 1, Router ID 192.0.2.3, Network Type NON_BROADCAST, Cost: 64
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.0.2.3, Interface address 192.0.2.1
Backup Designated router (ID) 192.0.2.2, Interface address 192.0.2.1

```

```
Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
  Hello due in 00:00:19
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 2, maximum is 2
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 1, Adjacent neighbor count is 1
  Adjacent with neighbor 192.0.2.2 (Backup Designated Router)
Suppress hello for 0 neighbor(s)
```

ي.لي امك يه 2 هجوم لابل ةصاخلا تاجخ م لاو

```
Router2# show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.0.2.3	1	FULL/DR	00:01:49	192.0.2.1	Serial1/0

```
Router2# show ip ospf interface s1/0
```

```
Serial1/0 is up, line protocol is up
Internet Address 192.0.2.1/24, Area 0
Process ID 1, Router ID 192.0.2.2, Network Type NON_BROADCAST, Cost: 64
Transmit Delay is 1 sec, State BDR, Priority 1
Designated Router (ID) 192.0.2.3, Interface address 192.0.2.1
Backup Designated router (ID) 192.0.2.2, Interface address 192.0.2.1
Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
  Hello due in 00:00:01
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 2, maximum is 2
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 1, Adjacent neighbor count is 1
  Adjacent with neighbor 192.0.2.3 (Designated Router)
Suppress hello for 0 neighbor(s)
```

## طاقن ةدع لى ةطقن نم ةئيه تاي لمع

### هجوم 1

```
interface Loopback0
  ip address 192.0.2.3 255.255.255.255
!
interface Serial2
  ip address 192.0.2.1 255.255.255.0
  encapsulation frame-relay
  ip ospf network point-to-multipoint
  no keepalive
  frame-relay map ip 192.0.2.1 16 broadcast
!
router ospf 1
  network 192.0.2.0 0.0.0.255 area 0
!
```

### هجوم 2

```
interface Loopback0
  ip address 192.0.2.2 255.255.255.255
!
interface Serial1/0
  ip address 192.0.2.1 255.255.255.0
  encapsulation frame-relay
  ip ospf network point-to-multipoint
```

```

no keepalive
clockrate 2000000
frame-relay map ip 192.0.2.1 16 broadcast
!
router ospf 1
network 192.0.2.0 0.0.0.255 area 0

```

## ققحتللا تاجيملت

1. هجوجلل show رمأل جارجا وه اذه

```
Router1# show ip ospf neighbors
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.0.2.2	1	FULL/ -	00:01:53	192.0.2.1	Serial2

```
Router1# show ip ospf interface s2
```

```

Serial2 is up, line protocol is up
Internet Address 192.0.2.1/24, Area 0
Process ID 1, Router ID 192.0.2.3, Network Type POINT_TO_MULTIPOINT, Cost: 64
Transmit Delay is 1 sec, State POINT_TO_MULTIPOINT,
Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
Hello due in 00:00:18
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 1
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 1, Adjacent neighbor count is 1
Adjacent with neighbor 192.0.2.2
Suppress hello for 0 neighbor(s)

```

ي.لي امك يه 2 هجوجلل اةصاخلا تاجرخلل او

```
Router2# show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.0.2.3	1	FULL/ -	00:01:58	192.0.2.1	Serial1/0

```
Router2# show ip ospf interface s1/0
```

```

Serial1/0 is up, line protocol is up
Internet Address 192.0.2.1/24, Area 0
Process ID 1, Router ID 192.0.2.2, Network Type POINT_TO_MULTIPOINT, Cost: 64
Transmit Delay is 1 sec, State POINT_TO_MULTIPOINT,
Timer intervals configured, Hello 30, Dead 120, Wait 120, Retransmit 5
Hello due in 00:00:18
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 1
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 1, Adjacent neighbor count is 1
Adjacent with neighbor 192.0.2.3
Suppress hello for 0 neighbor(s)

```

نېوكت م تي امدنع (BDR) جامدال اةداع او دادرئسالا تامدخ نم يا رايئخا م تي ال :ةظحالما لماعتلا م تي هنأل ارظن ، جتاونلا يف حضوم وه امك طاقن دةع لى اةطقنك NBMA ةكبش اةطقن لى اةطقن نم تااطابئرال نم ةعومجمك اعم.

OSPF نېوكت عجار ، تامولعملال نم ديزمل

## ةلص تاذا تامولعم

- [معد ةحفص OSPF](#)
- [هيجوت تالوكوتورب معد ةحفص IP](#)
- [تادن تسمل او ينقتلا معدلا - Cisco Systems](#)

ةمچرتل هذه لوج

ةللأل تاي نقتل نم ةومچم مادختساب دن تسمل اذہ Cisco تچرت  
ملاعلاء انءمچي فني مدختسمل معدى وتحم مي دقتل ةيرشبل او  
امك ةقيقد نوك تنل ةللأل ةمچرت لصف أن ةظحال مچري. ةصاغل مهتبل ب  
Cisco يلخت. فرتحم مچرت مامدقي يتل ةيفارتحال ةمچرتل عم لالحل وه  
ىل إأمئاد ةوچرلاب ي صؤت وتامچرتل هذه ةقدنع اهتيل وئسم Cisco  
Systems (رفوتم طبارل) يلصلأل يزي لچن إل دن تسمل