

# ةيساس ال BGP ءاطخأ فاشك تسأ مهف اهحال صإو

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## ةمدقم

اهحال صإو (BGP) ءي دودحل ءراب عل لوك وتورب ءاطخأ فاشك تسأ ءارجا ءارجا دن تسمل اذه فص ي Nexus. ءل ءيساس ال تاجرخم مهف و

## ةيساس ال تابل طتم

### تابل طتم

ةيلال ءيضاوم لابل ءفر عم كيدل نوك ت نأ Cisco ءي صوت:

- Nexus تال وحم
- BGP

### ةمدخت سمل تانوك

ةني عم ءي دام تانوك وجم ارب تارادص ءل دن تسمل اذه رصت قي ال

ةصاخ ءي لم عم ءي ب ءي ءدو وجم ال ءزه ال نم دن تسمل اذه ءي ءدراول تامول عم ال ءاشن ا مت تناك اذ. (يضا رتفا) حوس مم نيوك ت دن تسمل اذه ءي ءمدخت سمل ءزه ال ءي مج ت اءب رمأ ي ال لم ت حمل ال ري ثا تلل كم هف نم دكا ت ف، لي غش تال دي ق ك تك ب ش

## ةيساس ا تامول عم

لدابت ني كم تل قاطن ال ءعساو تاك بشل ال ءي مدخت سي ءي ج راخ ءراب لوك وتورب وه BGP ءيساس ال ءي ج وتال لوك وتورب هن. (ASs) ءي تاذل ءم ظن ال ني ب لوصول او ءي ج وتال تامول عم ت نرتن ال لمل اع ال ءي ج وتال ما ظن ل غشي ي ذل

# BGP نارقأل هذيفنت مت يذلا نيوكتلا ديحت

Nexus 9300 لى BGP ةزيم نيكمت نم ققحت

همهفو BGP ةيلمع نيوكت فيرت

```
switch# show running-config bgp
```


```
!Command: show running-config bgp
!Running configuration last done at: Tue Jul 18 19:45:05 2023
!Time: Tue Jul 18 19:45:44 2023
```

```
version 10.2(4) Bios:version 05.47
feature bgp
```

```
router bgp 64512
  router-id 172.17.255.255
  address-family ipv4 unicast
    network 10.100.1.0/24
  redistribute direct route-map permit_all
  neighbor 10.1.1.1
    remote-as 64512
    address-family ipv4 unicast
      prefix-list allow_in in
      prefix-list allow_out out
      soft-reconfiguration inbound always
  neighbor 172.18.255.255
    remote-as 65535
    update-source loopback10
    ebgp-multihop 3
    address-family ipv4 unicast
      route-map block_route in
      route-map no_local out
      soft-reconfiguration inbound always
```

-> The AS number of the local BGP speaker.  
-> BGP speaker identifier.  
-> Global address family configuration.  
-> Specifies a network as local to this autonomous system  
-> Routes redistribution from other routing protocols (OS  
-> IP address of the remote BGP peer.  
-> The AS number of the remote BGP peer.\*  
-> Local address family configuration.  
-> Prefix-list applied at the inbound of the BGP peer. \*\*  
-> Prefix-list applied at the outbound of the BGP peer. \*\*  
-> Store the inbound BGP route updates.  
-> Interface used to source BGP updates.  
-> Maximum hops to reach peer IP address, it modifies the  
-> Route-map applied at the inbound of the BGP peer. \*\*  
-> Route-map applied at the outbound of the BGP peer. \*\*

---

 لمع ةسلج ديعبل او يلحم لى وتسم لى لع هنيوكت مت يذلا هسفن ASN ددحي: ةظالم iBGP، لمع ةسلج اهنوكت مت ةفلتخم ASN ةكبش فرعتو، يتلا تائدابلا ةمئاق نم لىلع ايلكيه لسلسلست ةميق لىلع راسملا ةطيرخ يوتحت ريظنلا سفن لىلع اهقيبطت مت

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## ةيساسأل (BGP) دودحلا ةباوب لوكوتورب تاجرخم مهف ةيفيك

BGP ريظن ةلاح

```
switch# show ip bgp summary
```

BGP summary information for VRF default, address family IPv4 Unicast  
 BGP router identifier 172.17.255.255, local AS number 64512 -> Local BGP ID and ASN  
 BGP table version is 67, IPv4 Unicast config peers 2, capable peers 2  
 20 network entries and 19 paths using 5424 bytes of memory  
 BGP attribute entries [6/2112], BGP AS path entries [2/20]  
 BGP community entries [0/0], BGP clusterlist entries [0/0]  
 13 received paths for inbound soft reconfiguration  
 12 identical, 0 modified, 1 filtered received paths using 96 bytes

Neighbor	V AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.1.1.1	4 64512	346	334	67	0	0	05:25:12	8 -> BGP peer IP address, remote
172.18.255.255	4 65535	334	327	67	0	0	05:18:00	8

 ليوع BGP ريظن لمع ةسلج هي ف نوكت يذلا تقولا لفسأ/ليوع مسقلا ضرعي: ةظالم لفسأ وأ

ضرعت يهو. ايلاح ليغشلتا دي ق ةسلجلا BGP ةلاح PfxRcd/ةلاحلا مسق ضرعي  
 ةلاحلا سيسأت دنع اهتريظن نم اهملعت مت يتلا تائادابل ددع

BGP تالاح	
لطاق	ثدح ثدحي ".عدب ثدح" BGP لوكوتورب اهيف رظنتني يتلا لولأا ةلاحلا يه هذوه عي زجت طبض ةداعإ دنع وأ دي دج BGP راج نيوكتب ام صخش موق ي ام دنع ادبلا هؤاشنإ مت BGP.
لاصتالا	يف رمتسي هناف، حجني ام دنع. ةيثلثلا TCP ةحفاصم لامتك BGP رظنتني طاشنلا ةلاح ي ف رمتسنس، لشف لاج ي ف. OpenSend ةلاح.
طاشن	BGP راج عم لاصتاءاشنإل ىرخأ تاراسملا ةيثلث TCP ةحفاصم BGP لواحي تقوم ةيحلص تهتنا اذا. OpenSend ةلاح لىل لقتنا، حجنا اذا. دي عبلا لاصتالا ةلاح لىل ىرخأ ةرم دوعنس، ConnectRetry.
OpenSend	دي عبلا BGP راج نم ةحوتفم ةلاسر BGP رظنتني، ةلاحلا هذوه ي ف.
OpenConfirm	دي عبلا BGP راج نم keepalive ةلاسر BGP رظنتني.
انسأ	تامولعم لدابتل شي دحت مزح لاسراب BGP تاهجوم موقتو BGP رواجت لامتك مت هيجوتلا.

BGP ريظن تامولعم مهف.

```
switch# show ip bgp neighbors 10.1.1.1
BGP neighbor is 10.1.1.1, remote AS 64512, ibgp link, Peer index 3
  BGP version 4, remote router ID 172.16.255.255
  Neighbor previous state = OpenConfirm
  BGP state = Established, up for 00:05:29
  Neighbor vrf: default
  Peer is directly attached, interface Ethernet1/49
  Last read 00:00:28, hold time = 180, keepalive interval is 60 seconds
  Last written 00:00:28, keepalive timer expiry due 00:00:31
  Received 363 messages, 0 notifications, 0 bytes in queue
  Sent 354 messages, 1 notifications, 0(0) bytes in queue
  Enhanced error processing: On
```

-> Peer IP address, remote AS, Peer Index  
 -> BGP version, Peer Router ID  
 -> Previous BGP state  
 -> Current BGP state and up time  
 -> VRF used for the peer  
 -> Interface used to source traffic  
 -> Amount of time from last read  
 -> Amount of time from last write

0 discarded attributes  
Connections established 2, dropped 1  
Last update recd 00:05:28, Last update sent = 00:05:28  
Last reset by us 00:06:21, due to holdtimer expired error  
Last error length sent: 0  
Reset error value sent: 0  
Reset error sent major: 4 minor: 0  
Notification data sent:  
Last reset by peer never, due to No error  
Last error length received: 0  
Reset error value received 0  
Reset error received major: 0 minor: 0  
Notification data received:

-> Counters informing th  
-> Timer of the last maj  
-> Last reset timer and

#### Neighbor capabilities:

Dynamic capability: advertised (mp, refresh, gr) received (mp, refresh, gr)  
Dynamic capability (old): advertised received  
Route refresh capability (new): advertised received  
Route refresh capability (old): advertised received  
4-Byte AS capability: advertised received  
Address family IPv4 Unicast: advertised received  
Graceful Restart capability: advertised received

#### Graceful Restart Parameters:

Address families advertised to peer:  
IPv4 Unicast  
Address families received from peer:  
IPv4 Unicast  
Forwarding state preserved by peer for:  
Restart time advertised to peer: 120 seconds  
Stale time for routes advertised by peer: 300 seconds  
Restart time advertised by peer: 120 seconds  
Extended Next Hop Encoding Capability: advertised received  
Receive IPv6 next hop encoding Capability for AF:  
IPv4 Unicast VPNv4 Unicast

#### Message statistics:

	Sent	Rcvd
Opens:	2	2
Notifications:	1	0
Updates:	22	20
Keepalives:	340	339
Route Refresh:	1	0
Capability:	2	2
Total:	354	363
Total bytes:	7949	7524
Bytes in queue:	0	0

#### For address family: IPv4 Unicast

BGP table version 88, neighbor version 88  
8 accepted prefixes (8 paths), consuming 2176 bytes of memory  
0 received prefixes treated as withdrawn  
11 sent prefixes (11 paths)  
Inbound soft reconfiguration allowed(always)  
Third-party Nexthop will not be computed.  
Inbound ip prefix-list configured is allow\_in, handle obtained  
Outbound ip prefix-list configured is allow\_out, handle obtained  
Last End-of-RIB received 00:00:01 after session start  
Last End-of-RIB sent 00:00:01 after session start  
First convergence 00:00:01 after session start with 11 routes sent

-> Amount of prefixes ad

Local host: 10.1.1.2, Local port: 28262

Foreign host: 10.1.1.1, Foreign port: 179  
fd = 73

## BGP لودج مهف

لك راسم و، نزولا، يلحم لال لىضفت لال، سايق لال، ةللال ةوطخلال، ةلال لال جارخال اذه ضرعي  
BGP لودج ي ف اه لىل فرع لال مت ي لال تال دابلال

```
switch# show ip bgp
BGP routing table information for VRF default, address family IPv4 Unicast
BGP table version is 88, Local Router ID is 172.17.255.255
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*>r10.1.1.0/30	0.0.0.0	0	100	32768	?
*>i10.100.1.0/24	10.1.1.1		100	0	i
*>i10.100.2.0/24	10.1.1.1		100	0	i
*>i10.100.3.0/24	10.1.1.1		150	0	i
*>i10.100.4.0/24	10.1.1.1	0	100	0	?
*>i10.100.5.0/24	10.1.1.1	0	100	0	?
*>i10.100.6.0/24	10.1.1.1	0	100	0	?
*>i10.100.7.0/24	10.1.1.1	0	100	0	?
*>i10.100.8.0/24	10.1.1.1	0	100	0	?
*>r172.17.255.255/32	0.0.0.0	0	100	32768	?
*>e172.30.1.0/24	172.18.255.255	0		0	65535 ?
*>e172.30.2.0/24	172.18.255.255	0		0	65535 ?
*>e172.30.3.0/24	172.18.255.255	0		0	65535 ?
*>e172.30.4.0/24	172.18.255.255	0		0	65535 ?
*>e172.30.5.0/24	172.18.255.255	0		0	65535 65534 65533 ?
*>e172.30.6.0/24	172.18.255.255	0		0	65535 65534 65533 ?
*>e172.30.7.0/24	172.18.255.255	0		0	65535 65534 65533 ?
*>e172.30.8.0/24	172.18.255.255	0		0	65535 65534 65533 ?
*>r192.168.1.0/30	0.0.0.0	0	100	32768	?

ةن ي ع BGP ةرول ل تال دابلال ن نال ةال مت ي

```
switch# show ip bgp neighbors 172.18.255.255 advertised-routes
```

```
Peer 172.18.255.255 routes for address family IPv4 Unicast:
BGP table version is 88, Local Router ID is 172.17.255.255
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*>i10.100.1.0/24	10.1.1.1		100	0	i
*>i10.100.2.0/24	10.1.1.1		100	0	i
*>i10.100.3.0/24	10.1.1.1		150	0	i


```
*>i10.100.4.0/24 10.1.1.1 0 100 0 ?
*>i10.100.5.0/24 10.1.1.1 0 100 0 ?
*>i10.100.6.0/24 10.1.1.1 0 100 0 ?
*>i10.100.7.0/24 10.1.1.1 0 100 0 ?
*>i10.100.8.0/24 10.1.1.1 0 100 0 ?
```

ةطيرخ وأوتائدابلا ةمئاق) ةيفصت لم اوع ي أ لب ق BGP ريظن نم ةم لتسملا تائدابلا  
 ل(راسملا)\*

```
switch# show ip bgp neighbors 172.18.255.255 received-routes
```

```
Peer 172.18.255.255 routes for address family IPv4 Unicast:
BGP table version is 88, Local Router ID is 172.17.255.255
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2
```

Network	Next Hop	Metric	LocPrf	Weight Path
* e172.18.255.255/32	172.18.255.255	0		0 65535 ?
*>e172.30.1.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.2.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.3.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.4.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.5.0/24	172.18.255.255	0		0 65535 65534 65533 ?
*>e172.30.6.0/24	172.18.255.255	0		0 65535 65534 65533 ?
*>e172.30.7.0/24	172.18.255.255	0		0 65535 65534 65533 ?
*>e172.30.8.0/24	172.18.255.255	0		0 65535 65534 65533 ?

 رواجملا ىلع دراوالا يئاق لتلا نيوكتلا ةداع | نيوكت بجي ةظحالم

راسملا ةطيرخ وأ (list-ةداب) ةيفصتلا لم اوع دب BGP ريظن نم ةم لتسملا تائدابلا

```
switch# show ip bgp neighbors 172.18.255.255 routes
```

```
Peer 172.18.255.255 routes for address family IPv4 Unicast:
BGP table version is 88, Local Router ID is 172.17.255.255
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup, 2 - best2
```

Network	Next Hop	Metric	LocPrf	Weight Path
*>e172.30.1.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.2.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.3.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.4.0/24	172.18.255.255	0		0 65535 ?
*>e172.30.5.0/24	172.18.255.255	0		0 65535 65534 65533 ?
*>e172.30.6.0/24	172.18.255.255	0		0 65535 65534 65533 ?
*>e172.30.7.0/24	172.18.255.255	0		0 65535 65534 65533 ?

\*>e172.30.8.0/24 172.18.255.255 0

0 65535 65534 65533 ?

ةنعم ةئداب ل راسم لة لصف تاملعم

switch# show ip bgp 172.30.6.0

BGP routing table information for VRF default, address family IPv4 Unicast

BGP routing table entry for 172.30.6.0/24, version 28

Paths: (3 available, best #3)

Flags: (0x8000001a) (high32 00000000) on xmit-list, is in urib, is best urib route, is in HW

Path type: external, path is valid, not best reason: Router Id, no labeled nexthop

AS-Path: 65535 65534 65533 , path sourced external to AS

172.20.255.255 (metric 0) from 172.20.255.255 (172.20.255.255)

Origin incomplete, MED 0, localpref 100, weight 0

-> Prefi

-> Numbe

-> As Pa

-> Next l

Path type: external, path is valid, not best reason: newer EBGP path, no labeled nexthop

AS-Path: 65535 65534 65533 , path sourced external to AS

172.19.255.255 (metric 0) from 172.19.255.255 (172.19.255.255)

Origin incomplete, MED 0, localpref 100, weight 0

Advertised path-id 1

Path type: external, path is valid, is best path, no labeled nexthop, in rib

AS-Path: 65535 65534 65533 , path sourced external to AS

172.18.255.255 (metric 0) from 172.18.255.255 (172.18.255.255)

Origin incomplete, MED 0, localpref 100, weight 0


-> Path s

Path-id 1 advertised to peers:

10.1.1.2

-> BGP pee

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 ءاشن ةهف م ةذلا عقوم ل ةل لوصول هريرم م ةذلا ASN لثم ة AS-Path: \* ةظالم ةئداب ل.  
راسم ل ةل نيم ل ن AS-Path أرقى \*\*

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BGP راسم ل ةذحت لصف أ عجار ، BGP ةف راسم ةذحت ةلمع لصف أ عجارم ل

## ةلص تاذ تاملعم

- [Cisco نم تاليزنت ل ةل ةل م ةل](#)

