

BGP

- iBGP — 255 TTL
- eBGP — 1 TTL

TCP 179 is used

Also granular control for load balancing

- Why we use BGP is because bgp can provide per path / per subnet based routing
- if you want to import outbound traffic on bgp we use
 - weight
 - local preference
- for incoming — As path , Med (BGP metric)

→ • OSPF reacts faster to Network changes than BGP

- BGP is tcp 179 that means its an application
- iGP is ip protocol

- BGP does not use multicast or broadcast to send information
- BGP sends unicast messages over TCP 179 conn.
- In BGP we have to explicitly mention the neighbours
- neighbours may not be in the common Subnet like IGP
- neighbours may not be directly connected
- BGP advertises the whole subnet unlike IGP which ads the individual subnet

Adjacency BGP connection states

1. · Idle
2. · connect
3. · Active
4. · opensent
5. · openconfirm
6. · Established

ICA OOE

OSPF states -
 Down - Down
 Pending - Init
 Tentative - 2-way
 Grace - Ex Start
 Extremely - Exchange
 Loading - Loading
 Full - Full

AS Numbers are 16 bit
 choose from.

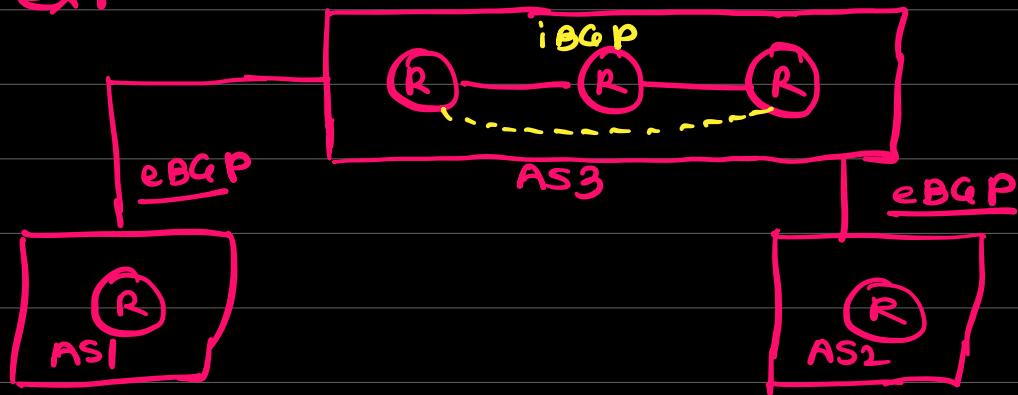
numbers to

As range 1 - 64511 — globally unique
64512 - 65535 are private AS N.

Why do we use iBGP?

- We use iBGP to send eBGP information through internal network

ex.

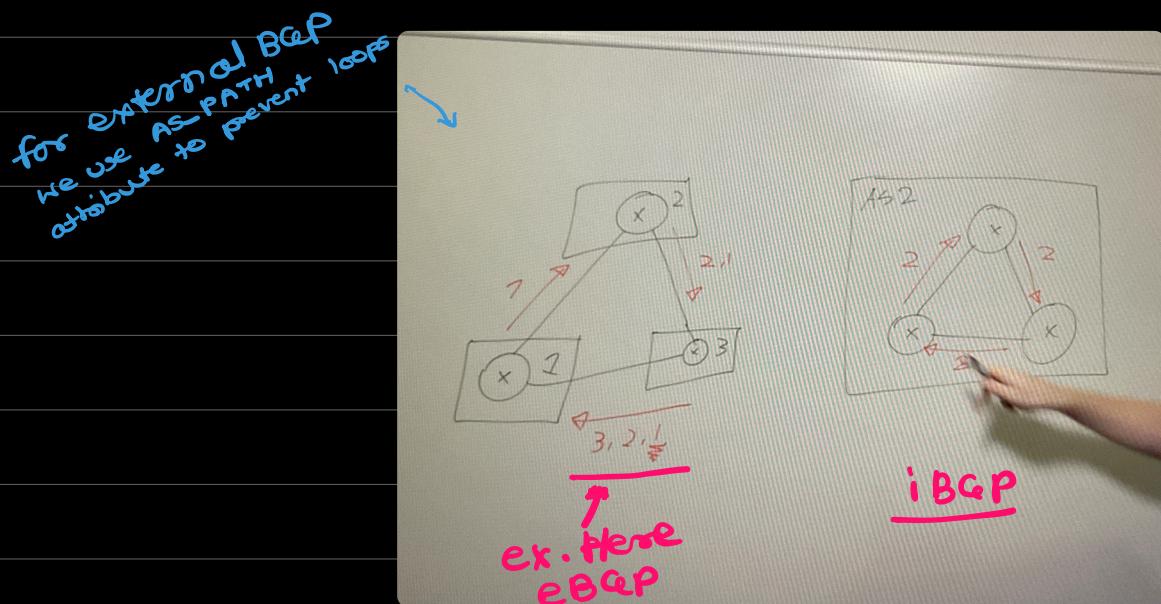


- Here iBGP is working inside the single AS to send information of eBGP from AS1 to AS2

1. The reason we don't use OSPF to transfer this information is sometimes the prefixes or routing table of BGP are too big for OSPF or IGRP to handle.

- BGP Loop prevention Mechanism

To prevent loop in eBGP we do that by knowing the prefix in the routing info if its own prefix in the list that means that router won't send that info.



But for iBGP we have same AS No. since its working inside single AS.

- iBGP uses split-Horizon to prevent loops we create full Mesh But that's too much work & formula to calculate How many to do is $N(N-1)/2$ N-being node.

To reduce this peering we use

- ① Route reflector
- ② BGP confederation

Connection - Type of BGP.

- ① Single Home
- ② Dual - Home



To see the specific entry in the routing table

show ip bgp 4.4.4.4

show bgp ipv4 unicast summary

BGP Holdtime - 180 s

keepalive - 60s

Troubleshooting

① Interface is down → # sh ip int brief

To set static route

ip route next-hop {subnet} {current-ip}

② Layer 3 connectivity is down →

for BGP to work those source & destination should have a static route because BGP works on TCP so TCP synchronization is required.

* clear bgp ipv4 uni *

* In BGP we don't use default route for establishing BGP synchronization.

eBGP config.

(R)

router bgp 100 → ASN

neighbour 238.2.2.24 remote-as 200
ASN

network 1.1.1.0 mask 255.255.255.0

(R)

scope

↑ This is to advertise that network with BGP

if you want pass

neighbour 192.168.12.2 pass AWS

To extend the hops manually

neighbour 192.168.23.3 ebgp-multihop 2

Why we use iBGP over IGP like OSPF/EIGRP?

Usually the BGP tables are extremely large for IGP's to handle.