What Is BGP ?

BGP – border gateway protocol

* BGP is used to exchange routes within AS and between AS number
* Layer 7 protocol
* Uses TCP at layer 4 for transport
* BGP always perform connection establishment using three way hand shake
* BGP port no 179

What are two types of neighbour ship ?

IBGP ( Internal BGP ) – when we are communicate in same AS then BGP neighborship type is IBGP

EBGP ( External BGP ) – when we are communicate in different AS then BGP neighborship type is EBGP

We can perform IBGP an EBGP using two methods

* Direct
* Indirect
* Direct- if BGP source and destination both are in same network .the BGP neighbour ship is direct

Indirect- if BGP source and destination are in different network the neighbourship is indirect

how to change update source in BGP packet

# neighbor 2.2.2.2 update-source loopback 1

What are types BGP message?

There are Four types of BGP message

* Open message – used to establish a neighbour relationship and exchange basic parameter’s. including AS no and router ID. This is sent only 1 times
* Keep alive – sent to maintain the neighbour relationship. keep alive message interval is 60 sec and hold down is 180 sec
* NLRI- network layer reachability information (update)
* NLRI is used to advertised route information
* In NLRI path attributes are also sent
* Notification – used to signal a BGP error

What are BGP neighbourship condition ?

* – local router AS no must match with router reference to the AS no
* - Unique router ID – BGP router ID election same AS OSPF.

State of BGP

* Idle
* Connect
* Active
* Open sent
* Open confirm
* Establish
* Idle – the BGP process is either administratively down or waiting for next retry attempt
* Connect – the BGP process is waiting for the TCP connection to be complete .if is successful it will continue to the open sent, in case it fails It will continue to the active state.
* Active – BGP will try another TCP three – way hand shake to establish a connection with the BGP neighbour .if it is successful ,it will move to the open sent state.
* Open sent- the TCP connection exits and a BGP open message has been sent to the peer but the matching open message has not yet been received from the other router.
* Open confirm – An open message has been both sent and received from the other router .next step is to receive a BGP keep alive message .or a BGP notification message ( to learn that there is some mismatch in neighbour parameter)
* Established – All neighbour parameter matched ,the BGP relationship has been established and the peer can now exchange update message

What are types of AD value of BGP?

* EBGP – 20
* IBGP- 200
* BGP path attributes
* Next hop
* Weight
* Local preference
* Local injected
* Origin code
* MED- multi exit discriminator
* Neighbour type
* IGP cost
* Oldest neighbour (BGP)
* Router id
* Interface IP

Command of BGP ?

R1 ( config)# router bgp 100

# neighbour 21.0.0.2 remote-as 100

# exit

R2 (config)#router bgp 100

# neighbour 21.0.0.1 remote-as 100

Exit

R1 ( config)#router bgp 100

# neighbour 2.2.2.2 remote-as 100

Exit

Router bgp 100

# neighbour 2.2.2.2 update source loopbck 1

R2 (config)#router bgp 100

#neighbor 1.1.1.1 remote- as 100

Exit

(config)#ip route 1.1.1.1 255.255.255.255 21.0.0.1

Router bgp 100

#neighbor 1.1.1.1 update source loopback 2

R1 (config)# router bgp 100

# neighbour 21.0.0.2 remote –as 200

Exit

R2(config)#router bgp 200

#neighbor 21.0.0.1 remote- as 100

# exit

R1 ( config)#router bgp 100

# neighbour 21.0.0.2 remote-as 200

#neighbor 23.0.0.3ebgp- multihop 2

# exit

R1(config)# ip route 23.0.0.0 255.0.0.0 21.0.0.2

R1(config)#router bgp 100

#neighbor 23.0.0.3 ebgp-multihop 2

exit

R2(config)#router bgp 200

#neighbor 21.0.0.1 remote-as 100

#neighbor 23.0.0.3 remote- as 300

#exit

R3(config)#router bgp 300

#neighbor 21.0.0.1 remote-as 100

#neighbor 23.0.0.2 remote-as 200

#exit

R3(config)#ip route 21.0.0.0 255.0.0.0 23.0.0.2

R3(config)#router bgp 300

#neighbor 21.0.0.1 ebgp –mulithop 2

#exit