

BUDGE BUDGE INSTITUTE OF TECHNOLOGY



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Year : 2nd

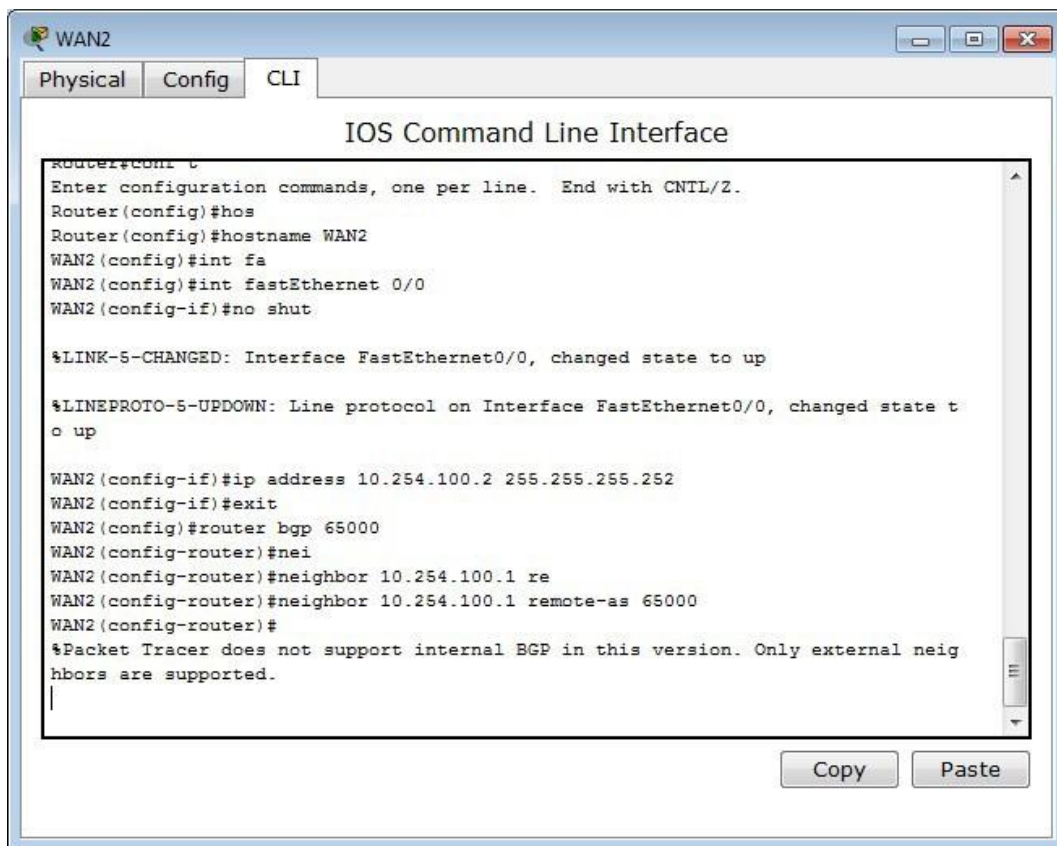
Roll: 16

Semester: 4th

COMPUTER NETWORK ASSIGNMENT

BGP Configuration in Packet Tracer

BGP (Border Gateway Protocol) is the core routing protocol of the Internet. It is described as a path vector protocol. BGP does not use traditional IGP (OSPF, EIGRP, RIP) metrics, but makes routing decisions based on path, network policies and/or rulesets. It maintains a table of IP networks or 'prefixes' which designate network reachability among autonomous systems (AS).



IOS commands available in Packet Tracer 7.1.1

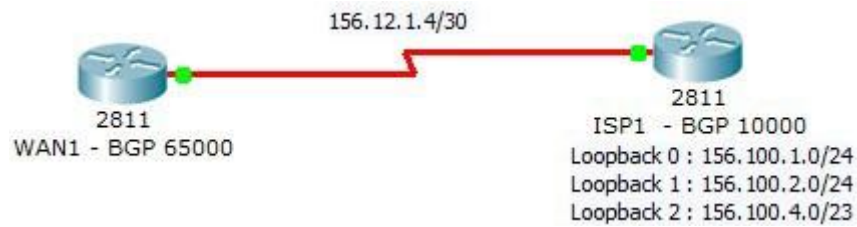
enable mode

- show ip bgpexit
- show ip bgp neighbors
- show ip bgp summary
- clear ip bgp *

router bgp mode

- bgp log-neighbor-changes
- bgp redistribute-internal
- bgp router-id A.B.C.D
- exit
- neighbor A.B.C.D next-hop-self
- neighbor A.B.C.D remote-as <1-65535>
- network A.B.C.D
- network A.B.C.D mask A.B.C.D
- redistribute connected / eigrp <1-65535> / ospf <1-65535> / static
- synchronization
- timers bgp <0-65535> <0-65535>

Sample BGP network



WAN1 router configuration :

A simple eBGP peering with ISP1 router is configured in the WAN1 router.

```
interface Serial0/0/0
ip address 156.12.1.6 255.255.255.252
!
router bgp 65000
bgp log-neighbor-changes
no synchronization
neighbor 156.12.1.5 remote-as 10000
```

ISP1 router configuration :

Several loopback interfaces are configured in ISP1 router to simulate connected networks whose are advertised router through the BGP peering.

```
interface Loopback0
ip address 156.100.1.1 255.255.255.0
!
interface Loopback1
ip address 156.100.2.1 255.255.255.0
!
interface Loopback2
ip address 156.100.4.1 255.255.254.0
!
interface Serial0/0/0
```

ip address 156.12.1.5 255.255.255.252

clock rate 500000

!

router bgp 10000

bgp log-neighbor-changes

no synchronization

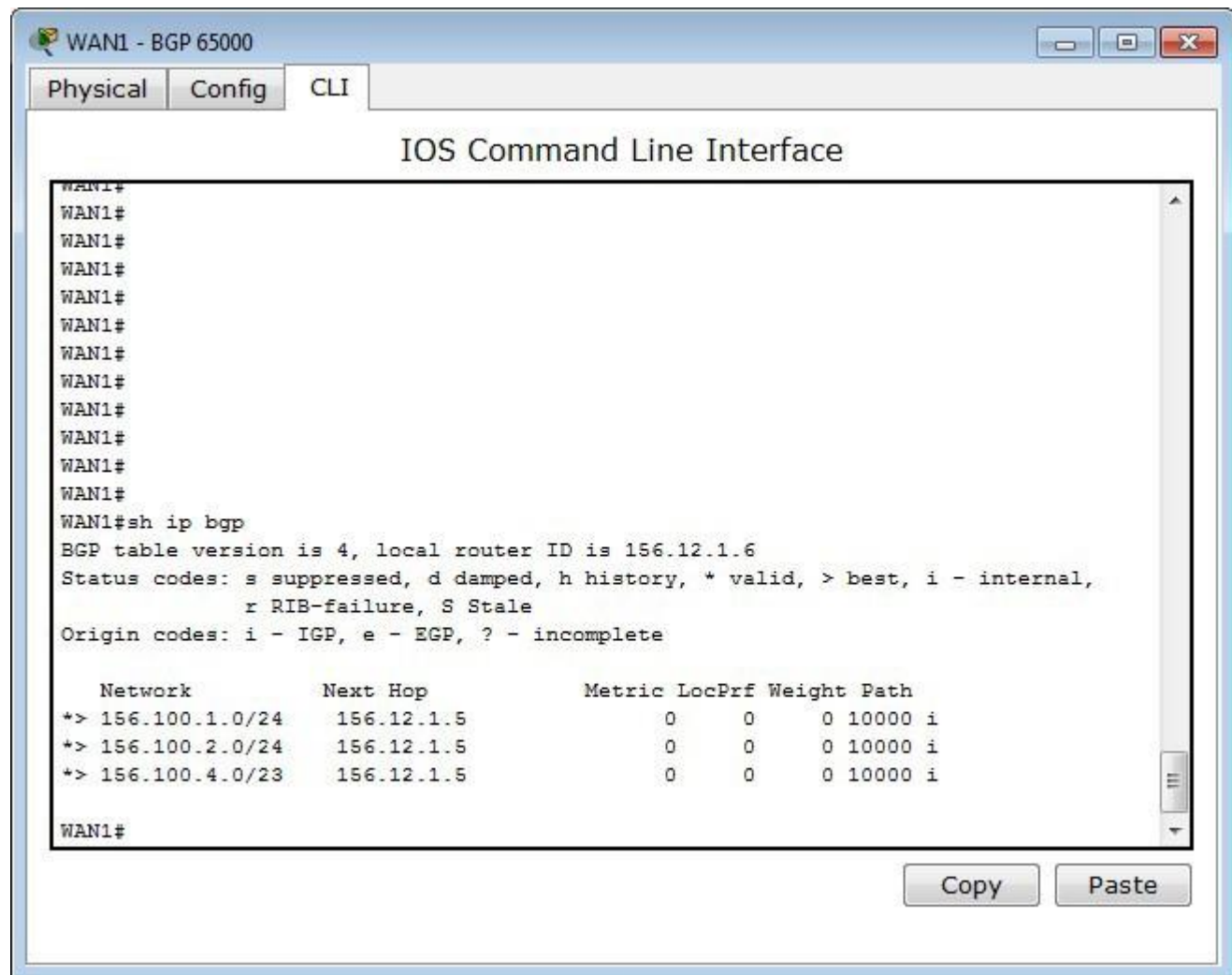
neighbor 156.12.1.6 remote-as 65000

network 156.100.4.0 mask 255.255.254.0

network 156.100.2.0 mask 255.255.255.0

network 156.100.1.0 mask 255.255.255.0

!



The screenshot shows a terminal window titled "WAN1 - BGP 65000" with tabs for "Physical", "Config", and "CLI". The "CLI" tab is active, displaying the "IOS Command Line Interface". The terminal shows the following commands and output:

```
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#
WAN1#sh ip bgp
BGP table version is 4, local router ID is 156.12.1.6
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network        Next Hop        Metric LocPrf Weight Path
*> 156.100.1.0/24   156.12.1.5         0      0      0 10000 i
*> 156.100.2.0/24   156.12.1.5         0      0      0 10000 i
*> 156.100.4.0/23   156.12.1.5         0      0      0 10000 i

WAN1#
```

At the bottom of the window, there are "Copy" and "Paste" buttons.