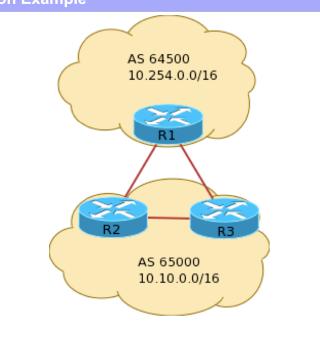




```
Configuration Example
hostname R1
interface Loopback 0
ip address 10.254.254.1 255.255.255.255
interface FastEthernet0/0
 ip address 10.254.100.1 255.255.255.252
 description p2p link to R2
interface FastEthernet0/1
 ip address 10.254.100.5 255.255.255.252
 description p2p link to R3
router BGP 64500
bgp log-neighbor-changes
 no synchronization
 no auto-summary
 distance bgp 200 200 200
 neighbor CustomerA peer-group
 neighbor CustomerA remote-as 65000
 neighbor CustomerA password N$RC
 neighbor CustomerA prefix-list cust-in in
 neighbor 10.254.100.2 peer-group CustomerA
 neighbor 10.254.100.6 peer-group CustomerA
 network 10.254.0.0 mask 255.255.0.0
ip prefix-list cust-in permit 10.10.0.0/16 le 32
ip route 10.254.0.0 255.255.0.0 null0 250
hostname R2
                                                  hostname R3
interface Loopback 0
                                                  interface Loopback 0
ip address 10.10.254.2 255.255.255.255
interface FastEthernet0/0
```



```
ip address 10.254.100.2 255.255.255.252
description p2p link to R1
interface FastEthernet0/1
ip address 10.10.200.1 255.255.255.252
description p2p link to R3
ip ospf 100 area 0
router ospf 100
redistribute connected subnets
passive-interface default
no passive-interface FastEthernet0/1
router BGP 65000
bgp log-neighbor-changes
no synchronization
no auto-summary
 \tt distance \ bgp \ 200 \ 200 \ 200 
neighbor 10.254.100.2 remote-as 65000
neighbor 10.254.100.2 description eBGP to R1
neighbor 10.254.100.2 password N$RC
neighbor 10.10.254.3 remote-as 64500
neighbor 10.10.254.3 description iBGP to R3
neighbor 10.10.254.3 password N$RC
neighbor 10.10.254.3 update-source Loopback0
network 10.10.0.0 mask 255.255.0.0
ip route 10.10.0.0 255.255.0.0 null0 250
```

```
ip address 10.10.254.3 255.255.255.255
interface FastEthernet0/0
ip address 10.254.100.6 255.255.255.252
description p2p link to R1
interface FastEthernet0/1
ip address 10.10.200.2 255.255.255.252
description p2p link to R2
ip ospf 100 area 0
router ospf 100
redistribute connected subnets
passive-interface default
no passive-interface FastEthernet0/1
router BGP 65000
bgp log-neighbor-changes
no synchronization
no auto-summary
distance bgp 200 200 200
neighbor 10.254.100.1 remote-as 65000
neighbor 10.254.100.1 description eBGP to R1
neighbor 10.254.100.1 password N$RC
neighbor 10.10.254.2 remote-as 64500
neighbor 10.10.254.2 description iBGP to R2
neighbor 10.10.254.2 password N$RC
neighbor 10.10.254.2 update-source Loopback0
network 10.10.0.0 mask 255.255.0.0
ip route 10.10.0.0 255.255.0.0 null0 250
```

Basic BGP Terminology			
Term	Description		
Autonomous System	A routing domain under the administrative control of a single entity		
eBGP	BGP session with a router in a different autonomous system		
iBGP	BGP session with a router in the same autonomous system		
Peering	A relationship between two routers that exchange routing information and traffic		
Transit	Carrying traffic across a network, usually for a fee		
Prefix List	A list of IP address blocks used for filtering and applying policy		

BGP Configuration Commands		
Command example	Description	
router bgp 65000	Start BGP configuration for Autonomous System 65000	
bgp log-neighbor-changes	Log neighbor up/down events	
no synchronization	Do not require routes to exist in IGP before announcing	
no auto-summary	Do not automatically summarize to classful block	
distance bgp 200 200 200	Give eBGP, iBGP and local routes the same distance	
neighbor 1.2.3.4 remote-as 65000	Configure neighbor address and autonomous system	
neighbor 1.2.3.4 update-source Lo0	iBGP sessions should use loopback addresses	
neighbor CustomerA peer-group	Define peer-group to assign common parameters	
neighbor 1.2.3.4 peer-group Customer	Associate neighbor address with peer-group	
network 1.2.3.4 mask M.M.M.M	Specify network to be announced via BGP	
neighbor 1.2.3.4 prefix-list list1 in	Filter incoming routes from neighbor using "list1"	
ip prefix-list list1 permit 10.10.0.0/16	Define a prefix-list called "list1" matching 10.10.0.0/16	
neighbor 1.2.3.4 soft-reconfig inbound	Enable soft reset of inbound session with neighbor	

BGP Troubleshooting Commands		
Command example	Description	
show ip bgp summary	Show general BGP information and neighbor state	
show ip bgp	Show a list of learned BGP routes	
show ip bgp neighbors	Show detailed information about each BGP neighbor	
show ip bgp neig 1.2.3.4 advertised-routes	Show routes advertised to a particular neighbor	
show ip route [bgp]	Show installed routes, optionally only from BGP	
debug ip bgp []	Show BGP events of various kinds	
clear ip bgp neighbor 1.2.3.4 [soft] in	If soft-reconfiguration inbound is enabled, "soft" option tells router to re-evaluate inbound policies. Otherwise, it asks neighbor to resend routes	
clear ip bgp neighbor 1.2.3.4 out	Resend routes to neighbor	
show ip bgp neigh [1.2.3.4] advertised-routes	Show prefixes advertised to neighbor	
Show ip bgp neigh [1.2.3.4] received-routes	Show prefixes received from neighbor (requires soft-reconfiguration inbound configuration)	

BGP Neighbor States		
State	Description	
Idle	Session shut down or neighbor not responding	
Connect	Waiting for TCP negotiation with peer	
Active	Attempting to connect to neighbor	
OpenSent	Open message has been sent to peer, waiting for peer to validate	
OpenConfirm	Peer has validated Open message. Waiting for peer to send Keepalive message	
Established	Peers are sending Update messages to exchange routing information	