# Self-Study Guide: BGP Protocol Terminologies

BGP Stands for **Border Gateway Protocol**. It is one of the most important protocols to make Internet work the way it works. It is used mainly in two scenarios:

- **Between ISP (Internet Service Provider)** – ISP connect with at least one or more of other ISPs and exchange all of their Public IP Routing information. This makes possible the connectivity around the globe for all the internet users.
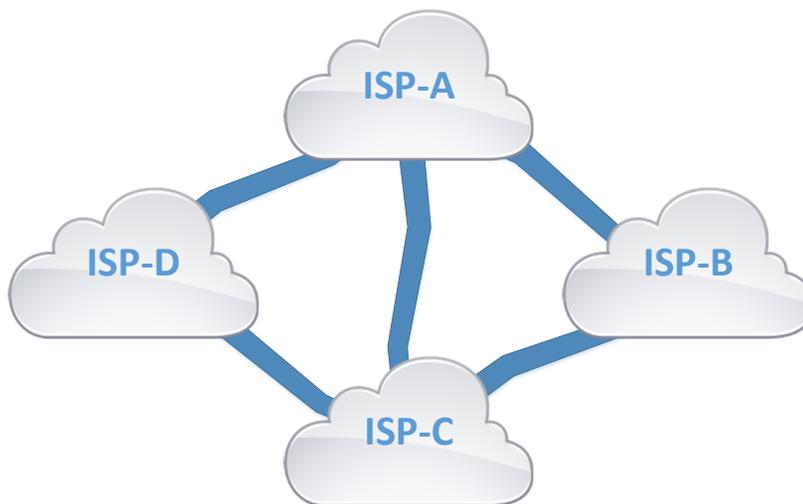
- **Between ISP and Enterprise Network** – Enterprises sometimes host some servers and services within their premises which they want people to access using Internet. In such a scenario if they want to advertise their Public IP network to 2 different ISP so that even if one ISP fails people can come in to access the services from the second ISP. Note that it is not required if enterprise wants to just use two connections for failover purpose when people inside the enterprise are accessing internet.

Enterprise Customer — ISP-A, ISP-B, ISP-C
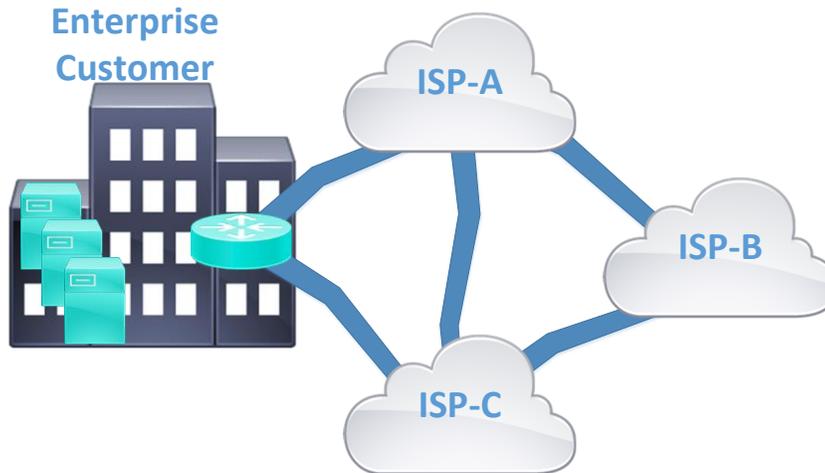
BGP is one the most fine tunable protocol and can handle very large number of routes as required by most ISPs. It is one of the major topics for CCNP and CCIE Certification. Hence, we summarized few of the most commonly used Acronyms of BGP Protocol for you.

1. **BGP:**
   Border Gateway Protocol; it is a protocol for Inter-AS communication.

2. **ASN:**
   Autonomous System Number represents a group of devices under a single administration. ASN can be any number from 1 to 65535.

3. **BGP Peer:**
   A BGP speaking router that has established the neighbor relationship with other BGP Speaking Router.

4. **FSM:**
   Finite State Machine; BGP use FSM to make decisions with peers. FSM has six states.

5. **BGP Speaker:**
   A BGP Running router is known as BGP Speaker.

6. **eBGP:**
   BGP neighbor relationship between two different ASN is known as external BGP peering.

7. **iBGP:**
   BGP neighbor relationship between two same ASN is known as internal BGP peering.

8. **BGP Synchronization Rule:**
   A BGP router should not use, or advertise to an external neighbor, a route learned by IBGP, unless that route is local or is learned from the IGP.

9. **Neighbor Table:**
   A table created in BGP that keeps all the BGP speaking neighbor information.

10. **BGP Table:**
    Also considered as forwarding database. It contains list of networks learned from each neighbor, BGP Attributes and some other information.

11. **NLRI:**
    Network layer reachability Information: A list of Length, prefix tuples.

12. **Single Homed:**
    When a router is connected with only one ISP, it is known as Single Homed connectivity.

13. **Dual Homed:**
    When there are more than one connection from ISP terminating on a single customer, it is known as Dual Homed.

14. **Multihomed:**
    Connections from different ISPs can terminate on single customer site router.

15. **Dual Multihomed:**
    Multiple edge routers, connecting to multiple ISP is known as Multihomed connection.

16. **Path Attributes:**
    Set of metrics describing the path to the network.

17. **Router Reflectors:**
    A technique used in IBGP to avoid full mesh neighbor relationship with other peers which is necessary.

18. **Communities:**
    BGP Communities are tags that can be used by BGP to achieve some task. Communities can be applied on incoming and outgoing prefixes.

19. **MED:**
    Multi-Exit Discriminator; an attribute defining preferred path among multiple entry points into an AS.

20. **AS-Path List:**

A list of autonomous systems that a prefix crosses to reach the destination. BGP maintain an AS-Path list for loop avoidance.

21. **Open Message:**

It includes a set of parameters that have to be agreed upon before a full BGP adjacency can be established. After successful exchange of Open Message, updates can be sent.

22. **Notification Message:**

Message sent when neighbor relationship is tiered down because of some error.

23. **Weight:**

A Cisco proprietary attribute for path selection. It has the value from 0 to 65535 and is completely locally significant.

24. **Hard Reset:**

Event that completely re-initializes the routing table on one or more BGP sessions.

25. **Soft Reset:**

Re-establishing the neighbor relationship on per neighbor basis without clearing the BGP session. It doesn't stop the flow of the traffic.

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