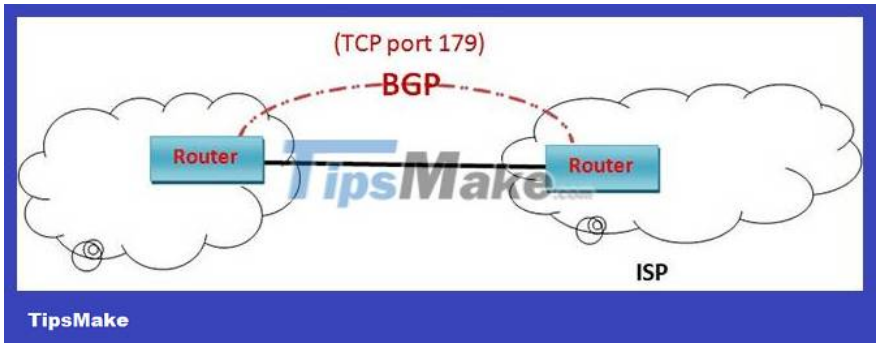
Learn about Border Gateway Protocol (BGP)

Border Gateway Protocol (BGP) is used to exchange routing information for the Internet and is the protocol used between ISPs (which are different ASs).

Border Gateway Protocol (BGP) is used to exchange routing information for the Internet and is the protocol used between ISPs (which are different ASs).

The protocol can connect any Internet of autonomous systems using an arbitrary topology. The only requirement is that each AS has at least one router that can run BGP and that it is a router that connects to at least one other AS's BGP router.

The main function of BGP is to exchange network reachability information with other BGP systems. Border Gateway Protocol builds an autonomous system graph based on information exchanged between BGP routers.



Features of Border Gateway Protocol (BGP)

1. Configuring federated autonomous systems: The primary role of BGP is to provide communication between two autonomous systems.
2. BGP supports Next-Hop Paradigm.
3. Coordination between multiple BGP speakers in AS (Autonomous System).
4. Path information: BGP advertisement also includes path information, along with a pair of reachable destinations and next destinations.
5. Policy support: BGP can deploy policies that can be configured by administrators. For example, a router running BGP can be configured to distinguish between routes known within the AS and known from outside the AS.
6. Runs over TCP.
7. BGP conserves network bandwidth.
8. BGP supports CIDR.
9. BGP also supports security.

Functions of Border Gateway Protocol (BGP)

BGP performs 3 functions, which are given below.

1. The first function includes acquiring and authenticating the initial peers. Both peers establish a TCP connection and perform a message exchange ensuring that both parties have agreed to communicate.

2. The second function mainly focuses on sending negative or positive accessibility information.

3. The third function verifies that the peers and the network connection between them are working correctly.

BGP route information management functions

1. **Route storage** : Each BGP stores information about how to reach other networks.
2. **Route Update** : In this task, special techniques are used to determine when and how to use information received from peers to update routes properly.
3. **Route selection** : Each BGP uses information in its route database to select good routes to each network on the Internet.
4. **Route Broadcast** : Each BGP speaker regularly tells its peers what they need to know about different networks and methods to reach them.