Static routing and dynamic routing are two methods used in computer networking to determine the path that data packets should take from their source to their destination.

1. Static routing:

   Static routing involves manually configuring the routing table on routers or network devices

   In this method, network administrators manually specify the routes that packets should take based on factors like network topology, cost, and traffic patterns.
   Once configured, the routing table does not change unless updated manually by the administrator.
   Static routing is suitable for small networks with simple topologies where the network layout rarely changes. It's also used for security reasons, as it provides a high level of control over routing decisions.

2. Dynamic routing:

   -Dynamic routing, on the other hand, relies on routing protocols to automatically update routing tables and exchange routing information between routers.
   -Routing protocols, such as OSPF (Open Shortest Path First), RIP (Routing Information Protocol), and BGP (Border Gateway Protocol), are responsible for dynamically discovering network routes, determining the best paths, and sharing this information with other routers.
   -Dynamic routing adapts to changes in the network, such as link failures or changes in network topology, by automatically recalculating routes and updating routing tables accordingly.
   -Dynamic routing is typically used in large, complex networks where manual configuration of routes would be impractical or inefficient. It simplifies network management and reduces the administrative overhead associated with maintaining routing tables manually.