


# OSPF Overview

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NOTE:

 OSPF protocol supports VRF.

The high-level operation of OSPF is explained below:

1. OSPF routers send Hello packets out of all OSPF-enabled interfaces. Two routers sharing a common data link become *neighbors*. If they agree on certain parameters in Hello packets.
2. Some neighbors move on and form *adjacencies*, which can be thought of as virtual point-to-point links over which routing information is exchanged.
3. Each OSPF router sends LSAs (link-state advertisements) over all its adjacencies. The LSAs describe the router's neighbors, links, and the state of the links. OSPF defines multiple LSA types to communicate different types of link-state information.
4. When an OSPF router receives an LSA from a neighbor, it adds the LSA to its link-state database. The router also sends a copy of the LSA over all of its adjacencies. The flooding of LSAs throughout an OSPF area enables all routers to have identical link-state databases.
5. When the link-state databases are built, every router runs the Dijkstra's SPF (Shortest Path First) algorithm to calculate the shortest loop-free path to every known subnet. The collection of all paths calculated by the router, with itself as the root, is known as the SPF tree.
6. Each router populates its routing table from its SPF tree.