Link State Advertisements

Rohith Perumalla | 11/20/17

This past week I've been learning about the different types of Link State Advertisements (LSAs) in multi-area OSPF. Multi-area OSPF is a version of OSPF which creates a hierarchical dynamically routed network facilitating fast efficient and effective routing. There are 5 main types of link state advertisements I focused on. The first type was LSA type 1, Router LSAs. The second type was LSA type 2, Network LSAs. The third type was LSA type 3, Summary LSAs. The fourth type was LSA type 4, Summary LSAs. The fifth type was LSA type 5, External LSAs. In OSPF LSAs type 1, it contains a list of all directly connect network prefixes and link types and states. All routers create LSA type 1 and flood them within an area, and are not propagated past an ABR router. LSA type 2 only exist in multi areas and nonbroadcast multiaccess networks. LSA 2 contain the router ID and IP of the Designated Router and the router ID's of all the other routers in the multi access segment. Only a DR can produce LSA type 2. Type 3 LSAs are learned from type 1 LSAs and are required for every subnet and are used by ABRs to flood areas and regenerated by other ABRs. The LSA type 3 is similar to the LSA type 4 in that they are both summary LSAs, however, type 4 LSAs are used only by ASBRs while type 3's are used by ABRs. Type 5 LSAs are used to advertise external router outside the OSPF network. Overall, learning about the different types of LSAs seemed a little unnecessary as it all occurs automatically with OSPF but I soon realized while troubleshooting that understanding how a protocol works is imperative to implementing it successfully.