Common LSA Types

Router-LSA Type 1

> Every router on an OSPF network generates Router-LSAs. A Router-LSA describes a router's link state and cost and can be flooded only in the area to which the interface belongs.

Network-LSA Type 2

> A designated router (DR) generates Network-LSAs. A Network-LSA describes all the routers that establish adjacencies with the DR on the MA network to which the DR is connected and the DR itself. The LSA can be flooded only in the area to which the interface belongs.

Network-summary-LSA Type 3

> An area border router (ABR) generates Network-summary-LSAs. A Network-summary-LSA describes the route to the destination network segment of an area. It is used to transmit inter-area routes.

ASBR-summary-LSA Type 4

> An ABR generates ASBR-summary-LSAs. An ASBR-summary-LSA describes routes to an ASBR, and is equivalent to a host route to an autonomous system border router (ASBR).

AS-external-LSA Type 5

> An ASBR generates AS-external-LSAs. An AS-external-LSA describes routes to destinations outside an AS

NSSA LSA Type 7

> An ASBR generates NSSA LSAs. An NSSA LSA describes routes to destinations outside an AS. NSSA LSAs have similar functions as AS-external-LSAs, but are flooded in different areas. NSSA LSAs can be flooded only in the NSSA and cannot enter area 0. The ABR in the NSSA converts Type 7 LSAs into Type 5 LSAs and injects them into area 0.

DR/BDR/DRother

DR and BDR election process on a Broadcast or NBMA link:
1 The interface with the higher PSPF DR priority becomes the DR
2 If the priority (default 1) are is the same the router interface with the HIGHER OSPF router ID is elected as the DR.
3 If a DR and BDR existe on the network, newly connected routers will accept the DR and BDR that existe regardless of its router ID or priority.
4 IF the DR fails and goes Down, the BDR takes over the role of the DR and the remaing devices whose priority is greater than 0 compete to become the new BDR.
Only the DR and BDR can stablish adjacencies with other OSFP routers. DRothers do not stablish OSPF adjacencies with one another and their relationshiot is in the 2-way state

Link State Procol Steps
5 Establish a **neighbor** relationship between neighboring routers.
6 **Exchange** link state informacion.
7 **Calculate** optimal path.
8 **Generate** routing entries according to the **shortest path tree** and load the routin entries to the routing table.

Attributes	
Type	Link-State
Algorithm	Dijkstra
Metric	Cost
Route Preference Internal/External	10/150
Protocols/Port	IP/89
Hello Multicast Address	224.0.0.5
DR Multicast Address	224.0.0.6

Formula	
Cost	100M/Interface bandwidth

FSM
1 Down
2 Init
3 2-way
4 Extart
5 Exchange
6 Full

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