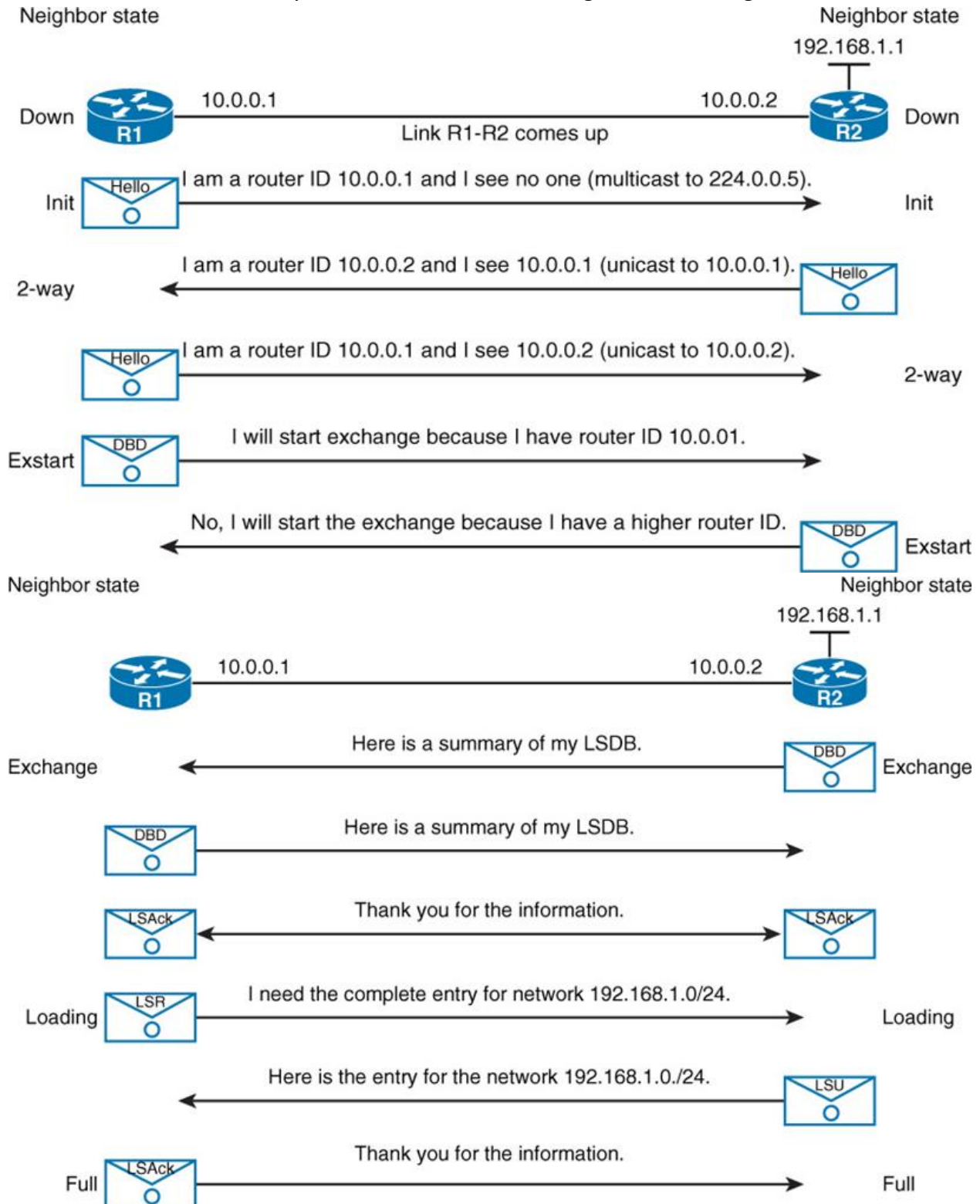


OSPF Neighbor Adjacencies :

Before establishing a neighbor relationship, OSPF routers go through several state changes.

Down State, Init State, 2-Way State, Exstart State, Exchange State, Loading State and Full State.



State	Description
Down State	No hello has been received. All OSPF routers begin in this state.
Init State	The interface has detected a Hello packet coming from a neighbor, but bi-directional communication has not yet been established.
2-Way State	When hello is exchanged between two OSPF routers that is called 2 way. Designated Router (DR) and BDR is elected in this stage.
Exstart State	Beginning of the LSDB exchange between both routers. Routers will start to exchange link state information. Master & slave is elected in this stage.
Exchange State	Routers will describe their entire link-state database by sending database description packets. At this state, packets could be flooded to other interfaces on the router.
Loading State	In this state actual database is exchanged means that LS-Request, LS-Update, LS Acknowledgement are also exchanged.
Full State	At this state, the adjacency is complete. The neighboring routers are fully adjacent. Adjacent routers will have a similar link-state database.

R1# debug ip ospf adj

R1# clear ip ospf process

Reset ALL OSPF processes? [no]: yes

```
*Dec 17 15:33:19.287: OSPF: Remember old DR 192.168.12.1 (id)
*Dec 17 15:33:19.295: OSPF: Interface FastEthernet0/0 going Up
*Dec 17 15:33:19.367: OSPF: 2 Way Communication to 2.2.2.2 on FastEthernet0/0, state 2WAY
*Dec 17 15:33:19.371: OSPF: Backup seen Event before WAIT timer on FastEthernet0/0
*Dec 17 15:33:19.371: OSPF: DR/BDR election on FastEthernet0/0
*Dec 17 15:33:19.371: OSPF: Elect BDR 192.168.12.1
*Dec 17 15:33:19.371: OSPF: Elect DR 2.2.2.2
*Dec 17 15:33:19.371: OSPF: Elect BDR 192.168.12.1
*Dec 17 15:33:19.375: OSPF: Elect DR 2.2.2.2
*Dec 17 15:33:19.375: DR: 2.2.2.2 (Id) BDR: 192.168.12.1 (Id)
*Dec 17 15:33:19.375: OSPF: FastEthernet0/
R1#0 Nbr 2.2.2.2: Prepare dbase exchange
*Dec 17 15:33:19.379: OSPF: Send DBD to 2.2.2.2 on FastEthernet0/0 seq 0x1B41 opt 0x52 flag 0x7 len 32
*Dec 17 15:33:19.475: OSPF: Rcv DBD from 2.2.2.2 on FastEthernet0/0 seq 0x3 opt 0x52 flag 0x7 len 32 mtu 1500 state EXSTART
*Dec 17 15:33:19.475: OSPF: First DBD and we are not SLAVE
*Dec 17 15:33:19.475: OSPF: Rcv DBD from 2.2.2.2 on FastEthernet0/0 seq 0x1B41 opt 0x52 flag 0x2 len 72 mtu 1500 state EXSTART
*Dec 17 15:33:19.475: OSPF: NBR Negotiation Done. We are the MASTER
*Dec 17 15:33:19.479: OSPF: FastEthernet0/0 Nbr 2.2.2.2: Summary list built, size 0
*Dec 17 15:33:19.479: OSPF: Send DBD to 2.2.2.2 on FastEthernet0/0 seq 0x1B42 opt 0x52 flag 0x1 len 32
*Dec 17 15:33:19.567: OSPF: Rcv DBD from 2.2.2.2 on FastEthernet0/0 seq 0x1B42 opt 0x52 flag 0x0 len 32 mtu 1500 state EXCHANGE
*Dec 17 15:33:19.571: OSPF: Exchange Done with 2.2.2.2 on FastEthernet0/0
*Dec 17 15:33:19.571: OSPF: Send LS REQ to 2.2.2.2 length 24 LSA count 2
*Dec
R1# 17 15:33:19.671: OSPF: Rcv LS UPD from 2.2.2.2 on FastEthernet0/0 length 108 LSA count 2
*Dec 17 15:33:19.671: OSPF: Synchronized with 2.2.2.2 on FastEthernet0/0, state FULL
*Dec 17 15:33:19.675: %OSPF-5-ADJCHG: Process 1, Nbr 2.2.2.2 on FastEthernet0/0 from LOADING to FULL, Loading Done
```