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OSPF Tutorial

December 3rd, 2010 [Go to comments](#)

For example, R1 wants to find out if it has any neighbor running OSPF it sends a Hello message to the multicast address 224.0.0.5. This is the multicast address for all OSPF routers and all routers running OSPF will proceed this message.



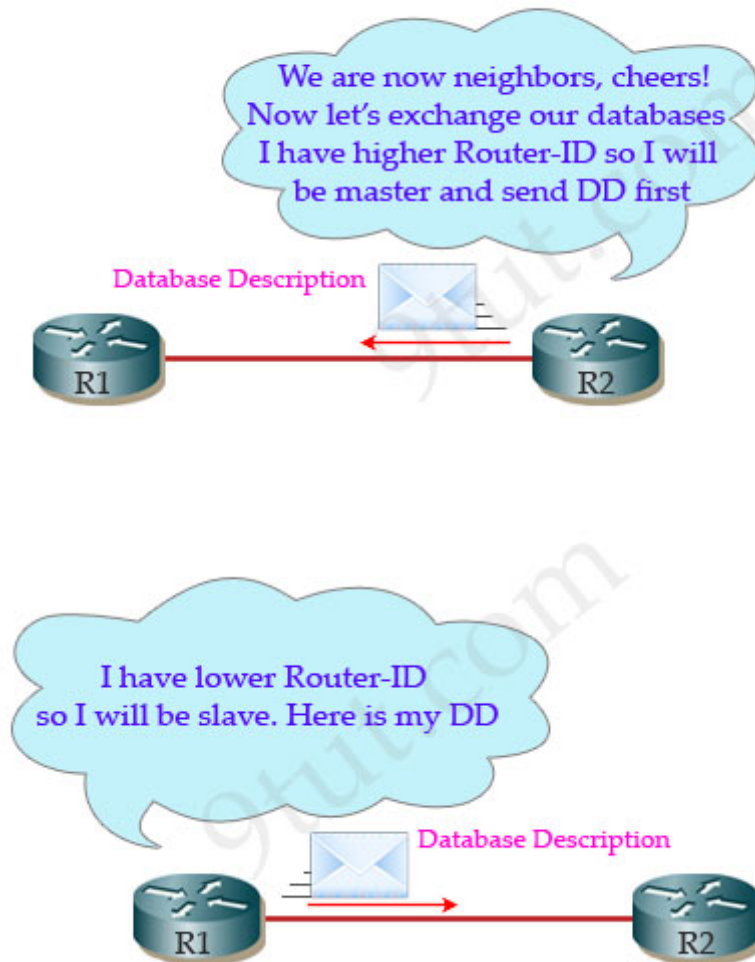
If an OSPF router receives an OSPF Hello packet that satisfied all its requirement then it will establish adjacency with the router that sent the Hello packet. In this example, if R1 meet R2's requirements, meaning it has the same **Hello interval**, **Dead interval** and **AREA number**, R2 will add R1 to its neighbor table.

- + **Hello interval**: indicates how often it sends Hello packets. By default, OSPF routers send Hello packets every 10 seconds on multiaccess and point-to-point segments and every 30 seconds on non-broadcast multiaccess (NBMA) segments (like Frame Relay, X.25, ATM)
- + **Dead interval**: number of seconds this router should wait between receiving hello packets from a neighbor before declaring the adjacency to that neighbor down
- + **AREA number**: the area it belongs to

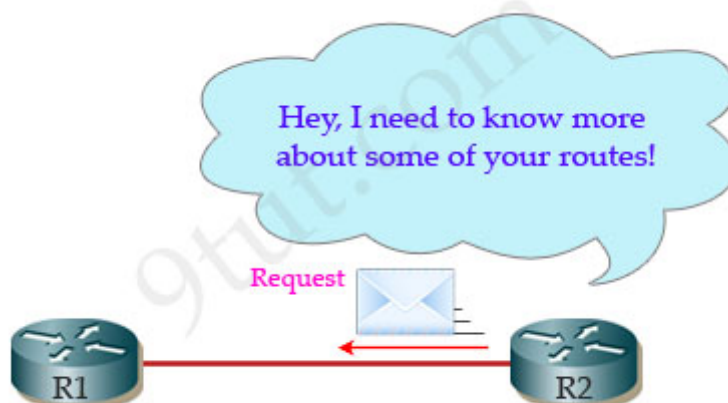


Now R1 and R2 are neighbors but they don't exchange LSAs immediately. Instead, they send Database Description (DD or DBD) packets which contain an abbreviated list of the sending router's link-state database.

The neighbors also determine who will be the master and who will be the slave. The router with higher router-id will become master and initiates the database exchange. The receiver acknowledges a received DD packet by sending an identical DD packet back to the sender. Each DD packet has a sequence number and only the master can increment sequence numbers.



R1 or R2 can send Request to get missing LSA from its neighbors





R2 sends back an LSAck packet to acknowledge the packet



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1. alpholove75
December 28th, 2019

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2. Calvin
December 30th, 2019

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6. Hasan Ghassan
November 7th, 2020

Nice Explanation, but I think you forgot to add OSPF configuration commands in this tutorial, it is only theoretical without commands.
Thanks

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