

# OSPF Neighbor States

*The several state changes a router goes through before an OSPF adjacency is formed with its neighbor*

## Down

It means that no information has been received from this neighbor, but Hello packets can still be sent to the neighbor in this state.

If a router doesn't receive a hello packet from a neighbor within the **RouterDeadInterval** time ( $\text{RouterDeadInterval} = 4 * \text{HelloInterval}$ ) then the neighbor state changes from Full to Down.

## Attempt

This state is only valid for neighbors in an **NBMA** environment. Attempt means that the *router is sending hello packets* but has not yet received any information.

## Init

This state specifies that the *router has received a hello packet* from its neighbor, but the receiving

When a router receives a hello packet from a neighbor, it should list the sender's router ID in its hello

## 2-Way

This state designates that **bi-directional communication** has been established between

Bi-directional means that each router has seen the other's hello packet.

At this state, a *router decides* whether to become adjacent with this neighbor. If

the backup designated router (BDR); it stays in the 2-way state with all other

## Exstart

This is the first state in forming adjacency. It is used to **elect the**

The router with the **higher router ID becomes the master**, and

## Exchange

In the exchange state, OSPF routers **exchange**

Each database description (DBD) packet has

update packets (which contain the entire

## Loading

In the loading state, routers send

During the adjacency, if a

## Full

In this state, routers

Full is the

The only

Neighbor