

BGP Neighbor Negotiation Stages

1. Idle

Waiting for Start event, normally *initiated by operator* (establishing new BGP session or resetting an existing session).

After errors, BGP falls back to the Idle state.

After a Start event, BGP initializes, resets connect retry timer, initiates TCP transport connection, and listens for connections initiated by its peer.

2. Connect

BGP is **waiting for transport protocol connection to complete**. If TCP transport succeeds, transition to State 4, OpenSent.

If not, transition to **Active**. If the connect retry timer expires, remain in Connect, reset the timer, and initiate a transport protocol connection.

In case of any other event, transition back to Idle.

3. Active

BGP is **trying to initiate** a transport protocol connection and acquire a peer. **If successful, transition to State 4, OpenSent.**

If connect retry expires, restart the timer and fall back to the Connect state.

Also actively listen for connection by another peer. Go back to idle in case of other events.

Connect to Active flip-flops indicates a TCP transport problem, e.g. TCP retransmission.

4. OpenSent

BGP is **waiting for an OPEN message** from its peer. When one is received, transition to State 5, OpenConfirm.

If not correct, an error NOTIFICATION is sent and the system goes to Idle.

Negotiate hold time, smaller value wins.

If zero, hold timer and keepalive timer are not restarted. This state is not used.

5. OpenConfirm

BGP **waits for KEEPALIVE or NOTIFICATION**. If KEEPALIVE is received, transition to State 6, Established.

If UPDATE or KEEPALIVE is received, restart the hold timer.

If NOTIFICATION is received, transition to Idle.

Periodic KEEPALIVE messages are sent. If no response is received, transition to Idle.

then go to Idle.

6. Established

This is the final stage of neighbor negotiation.

Updates are checked for consistency.

transport, Stop event.

When a BGP neighbor is established, the BGP process sends a notification to the user.