

# RLPx

[Return to Glossary](#)

**RLPx** is a [Glossary P Terms](#) suite and not a single protocol. On the one hand it maintains the [Peer-to-Peer \(P2P\)](#) overlay network with the means of a modified version of the [Kademlia](#) node discovery protocol (using [User Datagram Protocol \(UDP\)](#) messages). We could name it **RLPx Node Discovery Protocol**.

The first time two [Peers](#) meet each other, they should perform a two-phase handshake (i.e. two different handshakes). In the first handshake, they exchange some [cryptographic](#) secrets (the details are explained here (in the **RLPx** specification)) that are used for the subsequent communications between them. The subsequent messages are therefore [encrypted](#) and [authenticated](#).

In the second handshake, they exchange their capabilities, i.e. which **devp2p** subprotocols they support (the peers can support multiple protocols). This second handshake could be considered already part of **devp2p** wire protocol (the **Hello** message). The documentation says that:

*the  $\mathcal{D}\mathcal{E}\mathcal{V}p2p$  nodes communicate by sending messages using RLPx*

(this time using TCP messages). I list some **devp2p** wire subprotocols that are widely used:

- [Ethereum Wire Protocol \(ETH\)](#), the Ethereum wire subprotocol used to exchange the information about the blockchain
- [Whisper](#)
- [Light Ethereum Subprotocol \(LES\)](#) the light Ethereum subprotocol is the protocol designed for the light clients ...If you want you can write your own subprotocol <https://github.com/ethereum/go-ethereum/wiki/Peer-to-Peer>.

Therefore, **RLPx** messages are encrypted and authenticated and on top of them you can communicate with different protocols. We can say that **RLPx** is the transport layer protocol and **devp2p** and its subprotocols are the application level protocols.

Source:

<https://stackoverflow.com/questions/49029311/what-is-the-use-of-ethereums-rlpx-and-how-do-they-use-it-in-ethereum-ecosystem>

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