OmniBOLT

Smart asset lightning network, off-chain contract system for DeFi

Drafted by: Neo Carmack

Powered By Omni

What is OmniBOLT?

1. Lightning network for smart asset, issued on OmniBOLT via OmniLayer;

2. Build upon BTC/OmniLayer network, implements HTLC operations on the graph/network of Poon-Dryja channels;

3. Uses atomic swap to exchange assets among networks, lnd and obd;

4. Off chain smart contract written in Turing complete script languange for various finance scenarios. Easily embed into existing applications;

5. HD light client mechanism for secure wallet operations;

6. Lastest update: https://github.com/omnilaboratory/OmniBOLT-spec

Rationale of OmniBOLT

1. Build upon OmniLayer, proven secure, stable and anti-censor technology:

2. Constructs lightning channel by raw Omni/BTC transactions:

a) Seemlessly work with omnicore, smart assets payloads and validation managed by omnicore;

b) Lightning channel backed by 40+ transactions naturally operates assets without any extra cost of validation;

c) Extends to popular public chains, including Etherium(soon future);

3. Scalbility and speed proved by lightning theory;

4. HTLC chains asset channels to be a network, so that interoperation among assets networks is necessary. For example usdt network and btc network;

5. Much more flexible and extensible finance applications require quick and cheap smart asset/contract solutions like OmniBOLT;

Advantages of OmniBOLT

1. Technical ready. OBD testnet is online in May, 2020, and client API, which are highly similar to lnd client, is releasing, so that integration costs will be minimal;

2. Instant payment of smart assets issued on OmniLayer and Etherium(soon future) with the natural advantage of lightning theory.

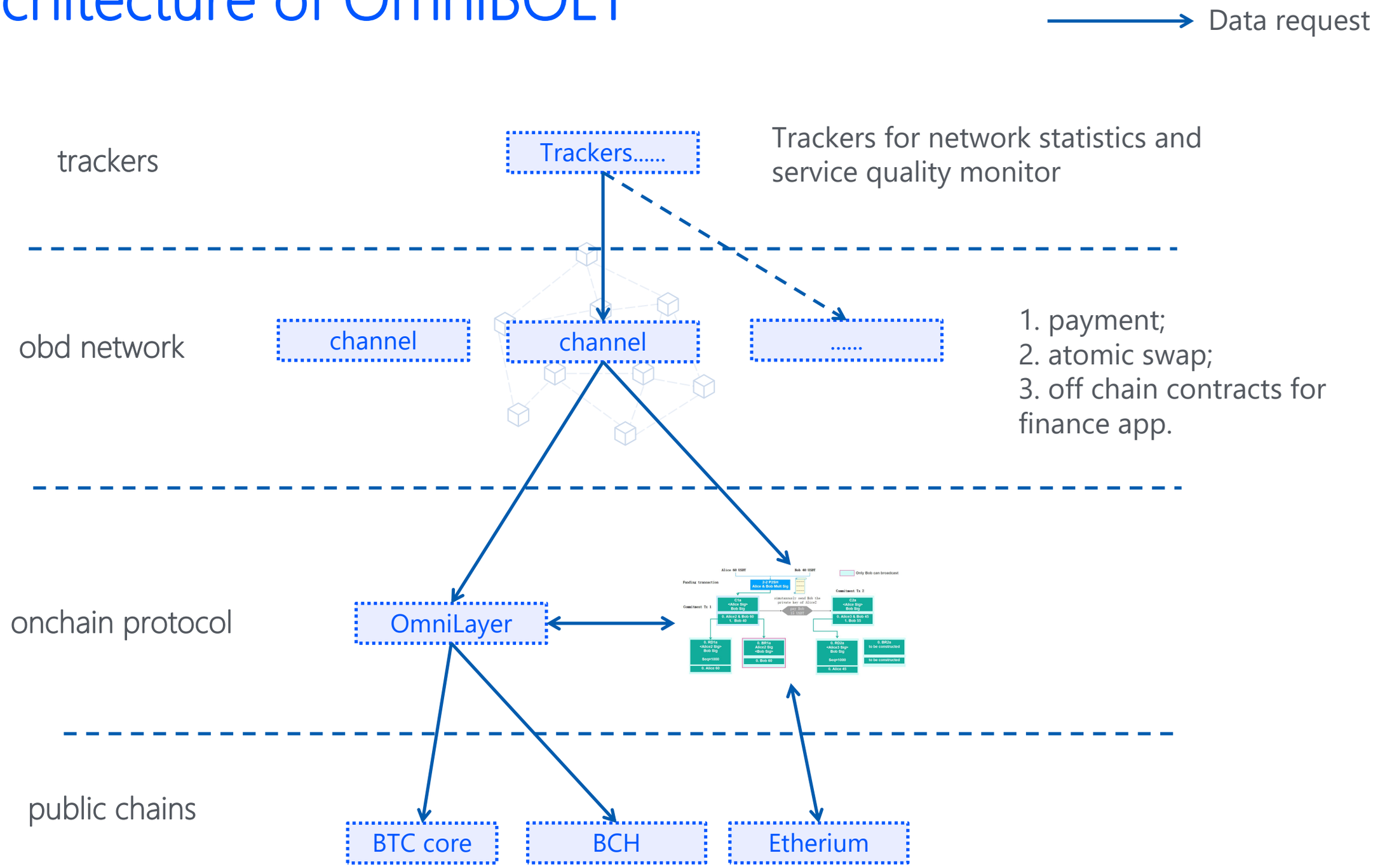
3. Cross channel atomic swap of different assets.

4. Decentralized exchange on top of lightning channels with quick exchange speed and almost zero fee.

5. Collateral Lending Contract and more flexible contracts for various DeFi scenarios based on atomic swap, without any extra cost of transaction fee or any intermediary;

Architecture

Architecture of OmniBOLT



Protocol Suite

Data request

Contracts and Applications

OmniBOLT #05: Atomic Swap Protocol among Channels

OmniBOLT #06: DEX, Collateral Lending Contract, online store and more applications

obd network

channel

channel

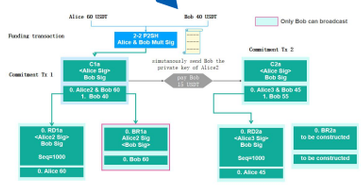
.....

OmniBOLT #03: RSMC and OmniLayer Transactions

OmniBOLT #04: HTLC and payment Routing

onchain protocol

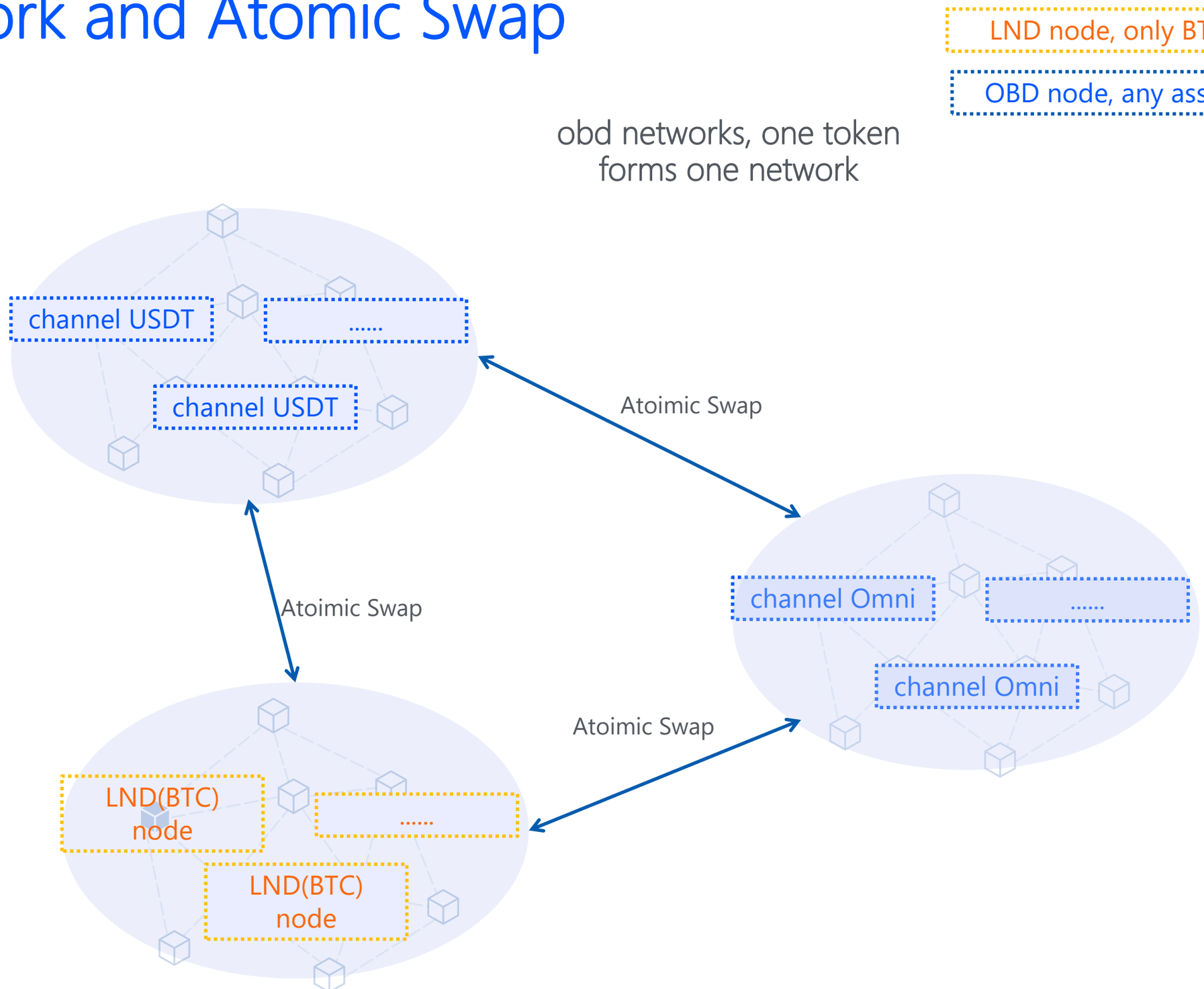
OmniLayer



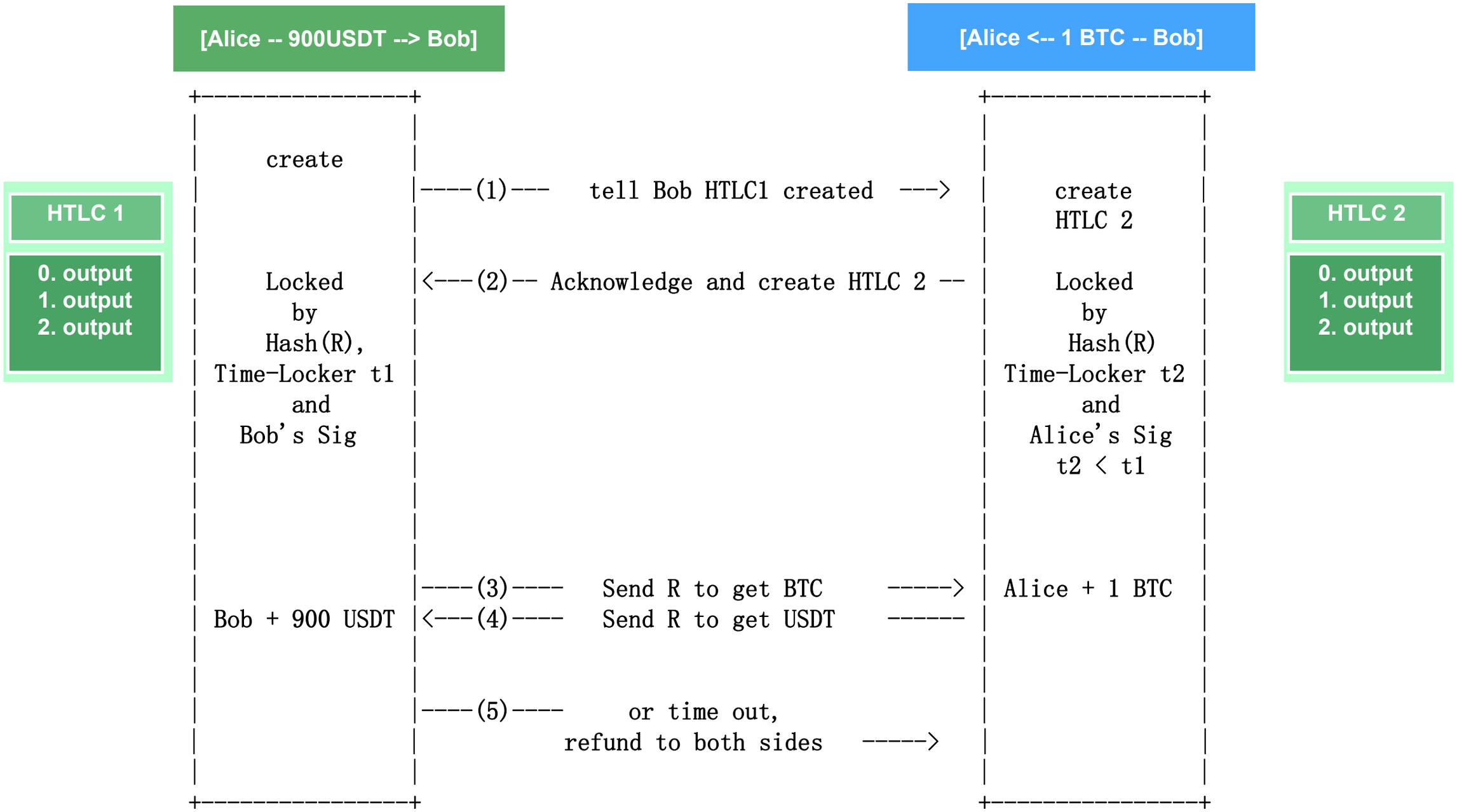
OmniBOLT #07: Construct transactions on OmniLayer

https://github.com/omnilaboratory/OmniBOLT-spec#chapters

Network and Atomic Swap



Atomic Swap

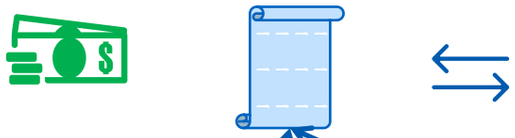


https://github.com/omnilaboratory/OmniBOLT-spec/blob/master/OmniBOLT-05-Atomic-Swap-among-Channels.md

OBD Client SDK

Light Client Adaption

Contracts and Applications

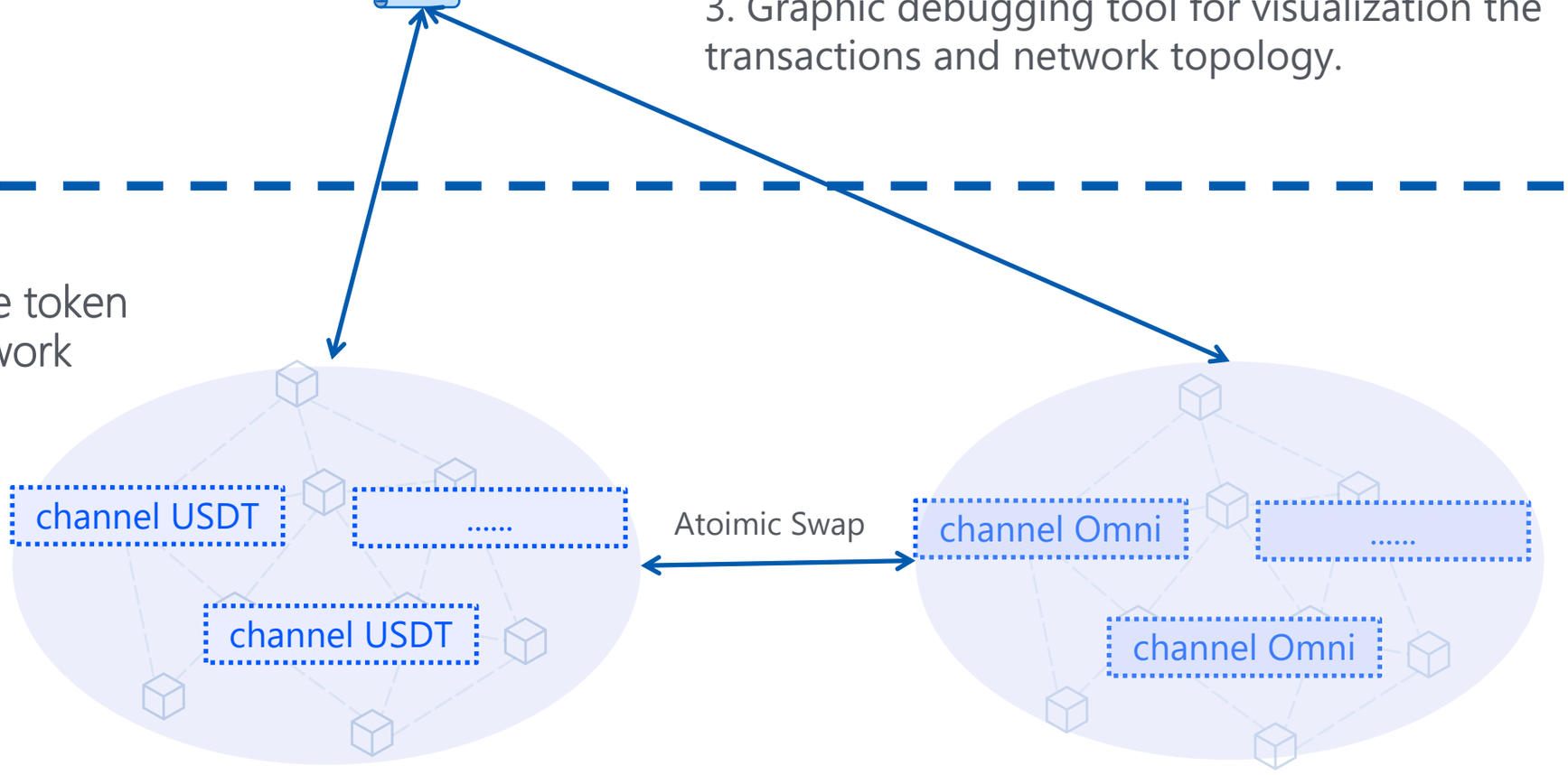


1. Websocket for web client

2. Javascript sdk for any client, mobile or desktop

3. Graphic debugging tool for visualization the transactions and network topology.

obd networks, one token forms one network



API documentation
https://api.omnilab.online

Tool kits
https://github.com/omnilaboratory/DebuggingTool

Light Client Adaption

1. Currently being released are websocket and javascript API package;

2. Function names are similar to LND clinet API, but not 100% the same, because OmniBOLT supports smart assets circulation and users shall be enabled to operates.

3. Learning curve will be smooth if one is already familar with LND.

4. For new comer, the materials from BOLT/LND community are excellent to be learned from, and all knowledges apply to OmniBOLT.

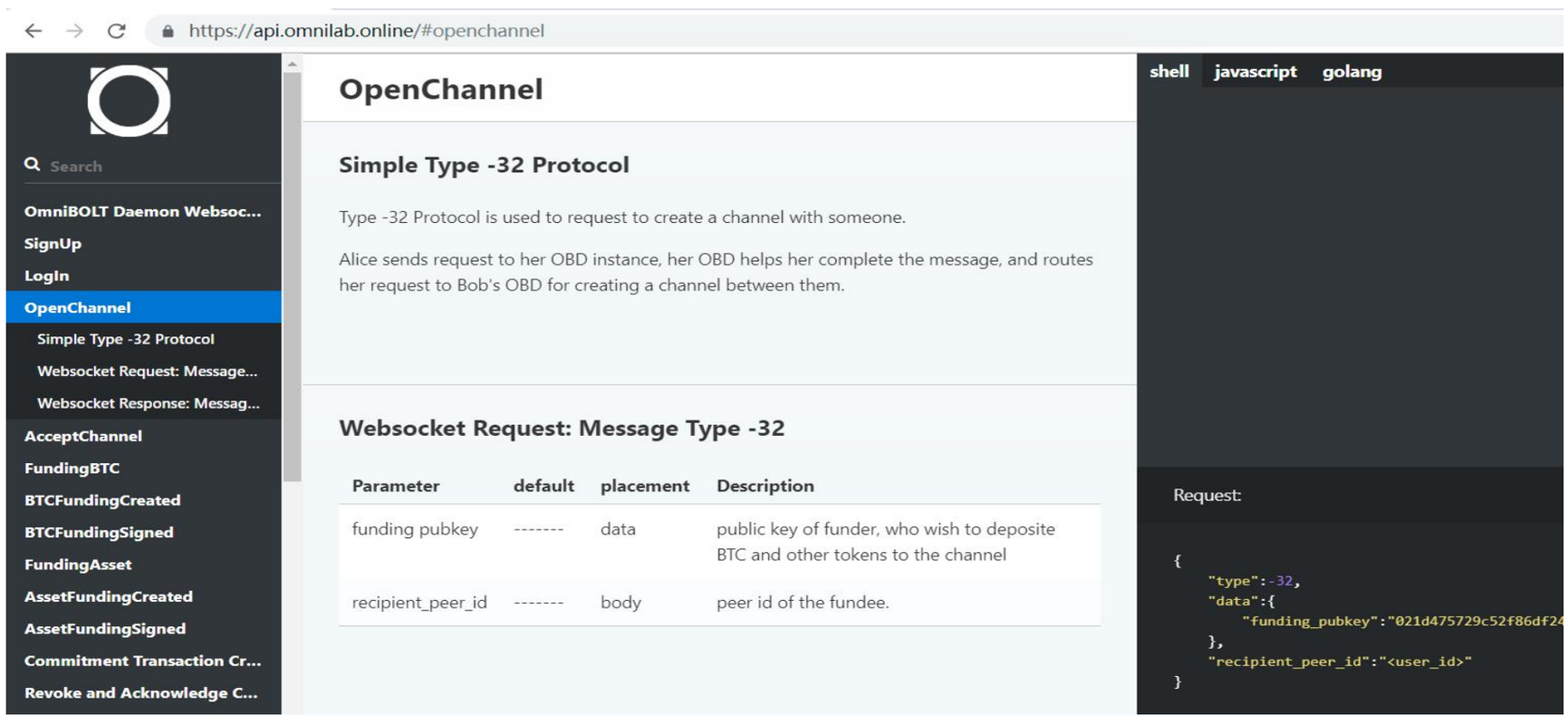
5. General knowledge of OmniLayer, Bitcoin and lightning network can be found in there own communities.

Currently being Released JS and Websocket API

Function names similar to LND client

Arguments similar to LND client

Examples for App developers



Integration Stack

Integration Stack

1 application — wallet, echange, games, finance,.....

client SDK

2 SDK — invoices, balances, identities, payments, assets, service qualities...

obd services | Trackers.....

3 contracts — node database, HTLCs, contracts

obd node | libP2P

4 assets — onchain communications, protocols

OmniLayer core

5 chains — public chains for settelment

BTC core | BCH | Etherium

Related Projects

https://github.com/omnilaboratory/obd

https://github.com/omnilaboratory/DebuggingTool

https://github.com/OmniLayer/omniwallet

https://github.com/OmniLayer/omnicore

https://github.com/OmniLayer/OmniJ

https://github.com/OmniLayer/spec

https://github.com/lightningnetwork/lightning-rfc

https://github.com/lightningnetwork/lnd

https://github.com/omnilaboratory/OmniWalletMobile

Thank you