SIMPLEXUM

Payment Engine

Features for Bitcoin and
Bitcoin-based cryptocurrencies

Technical summary

Example setups

Multisignature:

- any combination, up to 15 participants

Address formats:

- p2pkh, p2sh, p2wpkh, p2wsh

BIP32 paths:

- arbitrary: /0'/1'/231'/555/2
- templates: /bip44/account/0/internal
              /custom/symbolic/path

Keys:

- static, random, HD
- various combinations
- within one system

Bulk payments:

- transaction batching
- handle tx size limitations:
  payment automatically split into several txs
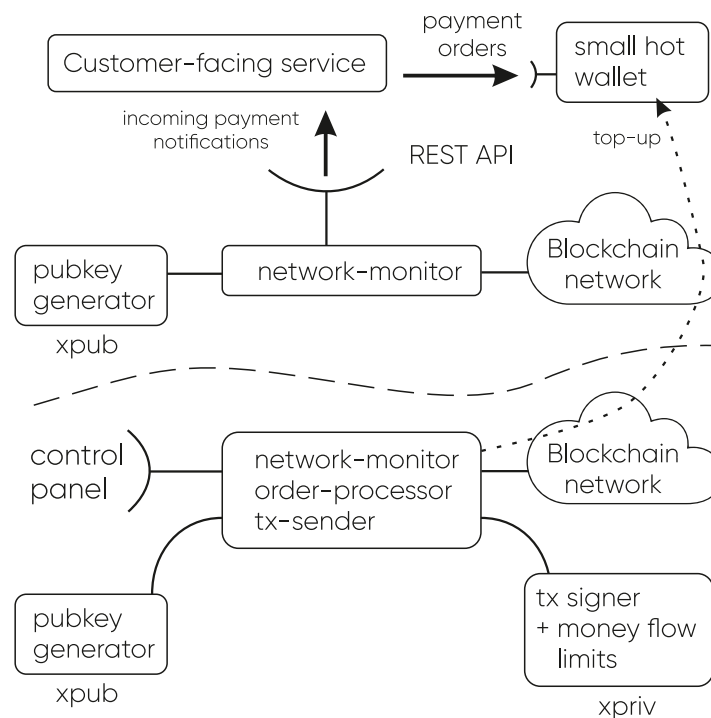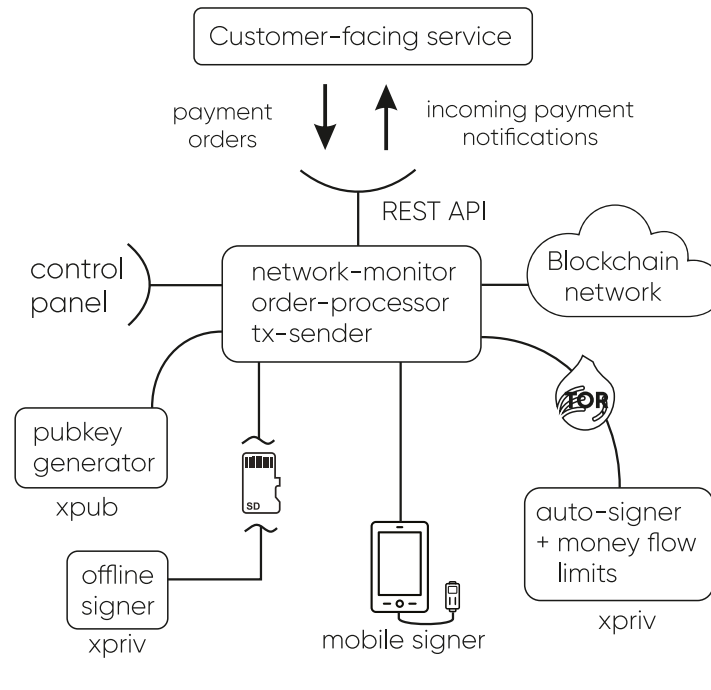
Scheduled payments:

- periodic or manual
- payment order priorities
- payment groups with individual
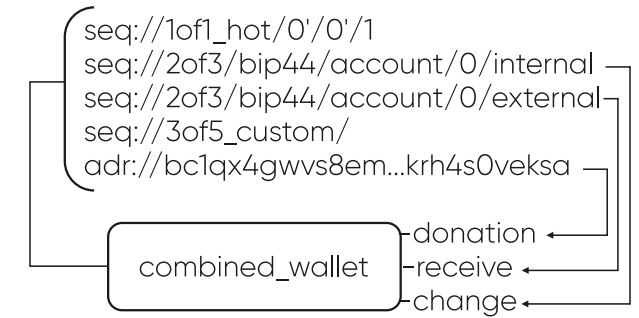 schedule policies

Fee-dependant UTXO set optimization:

- when fee is low, consolidate UTXO during
  regular payments (make txs bigger)
- when fee is high, create smaller txs

Customer-facing service

payment orders / incoming payment notifications

REST API

control panel

network-monitor
order-processor
tx-sender

Blockchain network

pubkey generator — xpub

SD

offline signer — xpriv

mobile signer

TOR / auto-signer + money flow limits — xpriv

Customer-facing service

payment orders → small hot wallet

incoming payment notifications

REST API

top-up

pubkey generator — xpub

network-monitor

Blockchain network

control panel

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Blockchain network

pubkey generator — xpub

tx signer + money flow limits — xpriv

Wallet compartments:

```
seq://1of1_hot/0'/0'/1
seq://2of3/bip44/account/0/internal
seq://2of3/bip44/account/0/external
seq://3of5_custom/
adr://bc1qx4gwvs8em...krh4s0veksa
```

combined_wallet
- donation
- receive
- change

Money flow limits:

- in btc/minute or satoshi/second
- set by cryptographically signed commands
- commands printed as QR codes on paper
- establish paper trail procedures for limiter
  settings changes

Hierarchial balance and spending:

- whole account:
  seq://3of5/purpose48/account/20/*
- whole department:
  seq://cold2of2/main/7/department/2/*
- whole sub-hierarchy:
  seq://custom_1of4/0'/25'/6/*

UTXO-level control:

- put tags on individual UTXOs
- handle UTXOs under one tag as a group
- exclude tagged UTXOs from wallet balance