GUIDE · 1BSV · USERS

1BSV User Guide: sending for free, receiving with certainty

How to use the 1BSV network, from both sides of it: sending transactions, which is free and needs no account, and receiving the network's delivery streams, which is a paid service with guaranteed, self-repairing delivery. This guide walks a receiver from signup to a live, monitored, dual-path connection, distinguishes the two receiver profiles (miners, whose delivery is targeted at block production, and applications, which serve many end users), and explains what you are billed for and what you never are.

Author: Jeff Harris · Lightweb Inc. · jeff@lightweb.net

Audience: anyone using the 1BSV network. **We** = the 1BSV network; **you** = a sender or a receiving customer (a miner, transaction processor, exchange, or service provider).

The short version

- **Senders are always free.** Hand your transaction to the network and it is carried to every subscribed receiver. No account, no configuration, no fee beyond the miner fee your transaction already pays.
- **Receivers subscribe to exactly what they want.** You elect delivery lanes and the slices of traffic you care about; anything you did not elect is never sent to you and never billed.
- **Miners and applications are different customers, with different lanes.** Miner accounts receive the settlement layer: the transaction stream plus subtree and block data. Application accounts receive the overlay layer: objects (BEEF) by topic plus a block-header feed for SPV verification. The mapping is strict; neither tier receives the other's lanes.
- **You keep your keys.** Your connection is a standard WireGuard tunnel. You generate the keypair; we only ever receive the public half.
- **Every stream is numbered and self-repairing.** A missing message is detected the moment it is skipped and recovered automatically; ordering is recoverable per flow.
- **Every connection has two paths.** Tunnels are provisioned with a primary and a standby; failover is automatic, and you can switch sides yourself at any time.
- **Billing is volume-only.** You pay for what is delivered to you, and nothing else: no subscriptions, no commitments, and traffic you send into the network is never billed.

1. Two ways to use the network

1BSV moves Bitcoin (BSV) transactions and blocks over layered multicast: each message is sent once and the fabric carries it to everyone subscribed. That gives the network two kinds of user.

Senders (wallets, applications, individuals) use the network the way they already use Bitcoin: broadcast a transaction and it propagates. This side is free, always.

Receivers (miners, transaction processors, exchanges, service providers) take delivery of the network's streams: complete, numbered, repaired, and filtered to their interest. This side is the paid service the rest of this guide describes.

2. Sending transactions

There is nothing to set up. A standard BSV transaction handed to the network at its nearest entry point is numbered, sorted into a delivery lane by a fixed public rule, and broadcast once; subscribed receivers everywhere get it. You pay only the miner fee the transaction itself carries.

If you operate infrastructure that originates significant volume and want a direct submission arrangement, get in touch (`1bsv@lightweb.net`).

3. Two kinds of receiver

The receiving side has two main profiles, and the network shapes delivery to each. Choose the one that fits at signup; a service-provider profile is also available for infrastructure operators that sit between the two.

Miners are targeted. A miner account is built around block production: the transaction flow (full, or sharded across your own cluster), plus the settlement lanes (subtree data and block data) that let you assemble and validate blocks at speed, with the earliest possible view of the network. The settlement lanes are gated to miner accounts on both sides: only miner accounts receive them, and only miner accounts may publish blocks, coinbase and subtree data into the network (block announcements are additionally validated by proof-of-work before the network relays them).

Applications serve everyone. An application account is built around your end users: subscribe to overlay object (BEEF) topics (complete transactions carried with their Merkle proofs) and to a compact block-header feed to verify them against. Your users get SPV-grade certainty without you running mining infrastructure, and your bandwidth tracks your users' interest, not chain volume: an application account never carries the raw transaction stream, whose volume is sized for mining operations.

The lane mapping is strict by design. If your service needs settlement-layer transaction delivery without operating mining infrastructure, that will be supported through a separate tier offering as demand requires: get in touch (`1bsv@lightweb.net`).

4. Becoming a receiver

Onboarding is self-service with one approval step. The whole flow:

1. **Sign up.** Create a login for your 1BSV account console (the console address is provided when we onboard you) and use *Request access* to open your account: pick your profile (miner, service provider, or application) and how you want to be billed.
2. **Approval.** We review and activate the account. You can watch its status on the console overview.
3. **Generate your keys.** Create a WireGuard keypair on your own machine (`wg genkey | tee privatekey | wg pubkey`). The private key never leaves you; only the public half is submitted.
4. **Request a tunnel.** From the console, request a tunnel: choose the traffic slices you want, the delivery lanes to receive (for applications, this includes the overlay topics to subscribe to), where delivery should land in your network, and attach your public key.
5. **Provisioning.** We approve the request and provision the tunnel: addressing is allocated, and it is placed on a primary and a separate standby delivery point.
6. **Connect.** Download the generated WireGuard configuration from the console, paste in your private key locally (the file ships with a placeholder; we never receive the real one), and bring the interface up. When the tunnel handshakes, your elected streams start arriving.

Your console shows the tunnel's live status, the exact delivery addresses, and everything else in this guide as it applies to your account.

5. Your tunnel

- **Two paths, automatic failover.** Every tunnel has a primary and a standby side. If the active side fails, delivery moves to the other automatically; you can also switch the active side yourself from the console at any time, instantly and reversibly. It is safe to rehearse.
- **Your keys stay yours.** We hold only your public key. Replacing it is self-service: generate a fresh pair, submit the new public half, and keep the old interface up until the new one handshakes (the old key keeps working for the few minutes the change takes to reach the network's edge).
- **Revoking** a tunnel is self-service too, and immediate.

6. What gets delivered

Delivery is by election within your tier. You choose lanes, and each lane arrives as its own stream inside your tunnel. The lane-to-tier mapping is strict:

- **Transactions** (miner accounts only): the network's transaction stream, delivered as extended-format transactions, full or filtered to the shard slices you subscribed to. Traffic is split across independent lanes by a fixed, verifiable rule, so a mining cluster can spread the load. This stream is sized for mining operations, which is why it is a miner lane.
- **Settlement lanes: subtree and block data** (miner accounts only): block announcements, block contents, and subtree data as the network carries them, for assembly and validation at speed.
- **Overlay objects (BEEF)** (application accounts; early access): subscribe by named topic, and each object arrives complete (the transaction together with its Merkle proof ancestry) as a length-delimited record, ready for SPV verification against the header feed. Publishing an object to a single topic through the public door is free, like any send; publishing one object to several topics at once is available on authenticated connections. The object plane is published as open standards (BRC-148 and BRC-149 on the Standards page).
- **Block headers** (application accounts): a compact feed of block headers as the chain advances: the reference your application verifies proofs against.

Anything you did not elect is never sent to you, and never billed. Every stream is numbered: a gap is detected the instant it is skipped and the missing message is recovered automatically, so what you receive is complete, with ordering recoverable per flow. The mechanisms are published as open standards you can verify (see the Standards page on 1bsv.net).

7. Usage, statements, and billing

- **Volume-only.** You are billed for the data delivered to you, and for nothing else. No subscription, no minimum, no commitment.
- **Never billed:** traffic you send into the network (ingress is measured and shown to you, but free), and the network's own repair retransmissions.
- **Usage** is on your console over selectable windows from an hour to a year, with a CSV export of any window: per tunnel, per interval, bytes, packets, transactions, and rates.
- **Statements** list every billing period, one per tunnel per period, with amounts in the currency of your chosen billing rail.
- **If an account falls behind** on payment, delivery is suspended but the tunnel itself stays up and connected: your keys, addresses, and placement are all kept, and delivery resumes automatically once the balance clears. Nothing needs to be rebuilt.

For current rates and terms, contact `1bsv@lightweb.net`.

8. Troubleshooting

Three things explain almost every "my tunnel doesn't work":

1. **The wrong key in the config.** The most common mistake anywhere in WireGuard: pasting the *public* key into `PrivateKey =`. Both halves look identical (44 characters of base64) and WireGuard accepts either silently. Verify with `wg pubkey < privatekey`: it must print the public key you registered, which is also embedded in your config's comments and shown on your console tunnels page.
2. **Testing with your own traffic.** By default the network does not echo your own submissions back down your own tunnel, so sending a transaction and watching your own feed shows nothing by design. Test with traffic from a second machine, or ask us to adjust the setting.
3. **Reading the wrong health signal.** The tunnel's health signal is its WireGuard handshake age, not ping: delivery endpoints do not answer ICMP even when healthy. With keepalives on, a handshake older than a couple of minutes means the path is down; a recent one means it is up.

If none of these fit, your console shows the tunnel status we see, and `1bsv@lightweb.net` reaches a human.

References

1BSV — https://1bsv.net

How the network works — https://1bsv.net/technology.html

The open standards suite — https://1bsv.net/standards.html

Engineering papers — https://1bsv.net/papers.html

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Lightweb Inc. · Jeff Harris · jeff@lightweb.net · github.com/lightwebinc