Fast Confirmation Rule for RPCs

The Fast Confirmation Rule (FCR) is a new Ethereum feature that **decreases deposit time from Ethereum to exchanges and L2s to approximately 13 seconds**, a 98% reduction from the approximately 13-minute time to finality. Faster deposits directly lead to better user experience, but also decrease capital lockup and improve market efficiency.

FCR works by counting attestations in real-time. If there is overwhelming support for a block and robustness checks are passed, the block is fast-confirmed. L1 nodes run the rule locally, which means FCR does not require a hardfork. The first consensus clients are expected to be production-ready around the end of Q1. **FCR will be integrated into clients in Q2.**

FCR comes with two core assumptions. First, it assumes the network is synchronous, meaning attestations are delivered within about 8 seconds. Second, it assumes there is no adversary with more than 25% stake, slightly less than the 33% maximum adversarial stake that finality can withstand. **If these assumptions hold, any fast-confirmed block will, with certainty, be finalized.**

These assumptions are reasonable and usually hold. In the rare case that they do not, it can cause either a liveness or a safety failure. A liveness failure means it may take longer than 13 seconds to fast-confirm a block. This is a feature, not a bug, because the rule falls back to more security when needed. Eventually, the rule automatically falls back to finality. A safety failure means that a fast-confirmed block is reorged, which only occurs under very extreme network conditions.

Consensus clients' JSON-RPC APIs currently support three block tags: `finalized`, `safe`, and `latest`. The `safe` tag currently returns the last justified block. Clients will repurpose `safe` to be used for the last fast-confirmed block. **RPCs should be aware of the change as it may impact customers, however, no implementation is necessary: RPCs automatically support FCR.**

We encourage RPC teams to start testing FCR once live on testnets. For support, contact fastconfirm@ethereum.org.