ethereum foundation

Fast Confirmation Rule for Exchanges.

The Fast Confirmation Rule (FCR) is a new Ethereum feature that decreases deposit time from Ethereum to exchanges 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. Ethereum 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. **In Q2, exchanges can already use FCR.**

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. Eventually, the rule automatically falls back to finality. This is a feature, not a bug: FCR falls back to a more secure confirmation rule when needed. A safety failure means that a fast-confirmed block is reorged. Most exchanges face this risk today as well, if they do not wait for finality. With FCR, reorg risk is extremely small.

Most exchanges today wait for a number of slots until they treat an Ethereum block as safe and thus also face reorg risk. The advantage of FCR is that exchanges typically only need to wait for a single slot. A confirmation rule that waits for a fixed number of slots has no provable security, unlike FCR.

Adopting FCR as an exchange is very easy. It only requires calling an API endpoint from an Ethereum node running FCR.

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