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Ethereum2: Cross-shard User-level Atomic ETH transfer algorithm

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1   Introduction

The execution in Ethereum 1 happens in a fixed fashion using EVM and fixed notion of account id and balances. The plan is to generalise this notion of execution environment (EE) in Ethereum 2. For instance, an environment similar to Bitcoin can be hosted on Ethereum 2 as one execution environment. Some EEs could use another virtual machine instead of EVM. In such a scenario, the cross-shard cross execution environment ETH transfers become necessary. This paper presents an algorithm for atomic user-level ETH transfers between two execution environments hosted on two different shards.

2   Netted balance approach