

Title: Tracking colored bitcoins in the transaction graph

Author: Daniel Stahr

Department: Department of Applied Mathematics

Supervisor: Mgr. Petr Baudiš, Department of Applied Mathematics

Abstract: This thesis describes a way to mark, track and trade particular funds in the Bitcoin transaction network and mentions several uses of the marked, so-called colored Bitcoins. An application demonstrating the principles has been developed. An unusual choice of storing all the data in the memory was made, making a positive impact on the overall performance. We supported its positive contribution by measuring the performance using real blockchain data.

Keywords: Bitcoin, transaction graphs, colored Bitcoins, in-memory databases