Bitcoin: Guide 7 Peer-to-Peer Networks

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Overview

The Bitcoin network protocol allows full nodes (peers) to collaboratively maintain a Peer-to-Peer (P2P) network for block and transaction exchange. P2P Network Guide

Introduction

Full nodes download and verify every block and transaction prior to relaying them to other nodes. Archival nodes are full nodes which store the entire blockchain and can serve historical blocks to other nodes. Pruned nodes are full nodes which do not store the entire blockchain. Many Simple Payment Verification (SPV) clients also use the Bitcoin network protocol to connect to full nodes.

Consensus rules do not cover networking, so Bitcoin programs may use alternative networks and protocols, such as the high-speed block relay network used by some miners and the dedicated transaction information servers used by some wallets that provide SPV-level security.

To provide practical examples of the Bitcoin peer-to-peer network, this section uses Bitcoin Core as a representative full node and BitcoinJ as a representative SPV client. Both programs are flexible, so only default behavior is described. Also, for privacy, actual IP addresses in the example output below have been replaced with RFC5737 reserved IP addresses.

Topics

BETA
This documentation uses information provided in Bitcoin P@P Network Guide and has not been approved by Bitcoin experts.