Bootstrapping a Builder

Is it possible?

Sean Anderson

σ' **sigma** prime

MEV-Boost Analytics

Updated at slot 10374724 (5 minutes ago)

Overview · Builder Profitability

7d · **24h** · 12h · 1h

Relay	Payloads	Percent
relay.ultrasound.money	4,332	28.91 %
bloxroute.max-profit.blxrbdn.com	4,125	27.53 %
bloxroute.regulated.blxrbdn.com	3,558	23.75 %
titanrelay.xyz	1,413	9.43 %
boost-relay.flashbots.net	703	4.69 %
agnostic-relay.net	637	4.25 %
aestus.live	212	1.42 %
mainnet-relay.securerpc.com	2	0.01 %

| Builder (extra_data)	Blocks	Percent
beaverbuild.org	3,829	57.78 %
Titan (titanbuilder.xyz)	2,527	38.13 %
rsync-builder.xyz ⓘ	197	2.97 %
Illuminate Dmocratize Dstribute	25	0.38 %
Builder+ www.btcs.com/builder	11	0.17 %
Illuminate Dmocrtz Dstrib Prtct	9	0.14 %
builder0x69 ⓘ	6	0.09 %
jetbldr.xyz	3	0.05 %

I SHOULD START A BUILDER
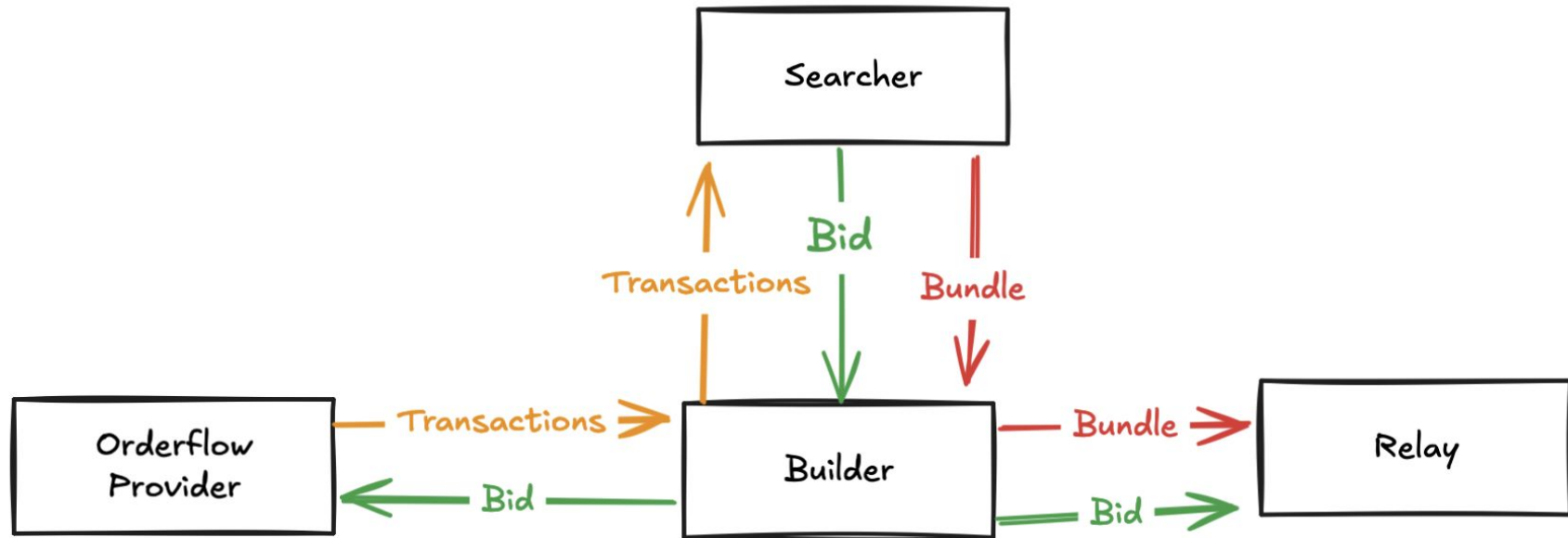
The role of the builder

- Winning the block auction
- Privacy guarantees
- non-frontrunning guarantees
- execution guarantor
    - Position within block
    - guaranteed atomicity of a bundle of txs
    - non-revert
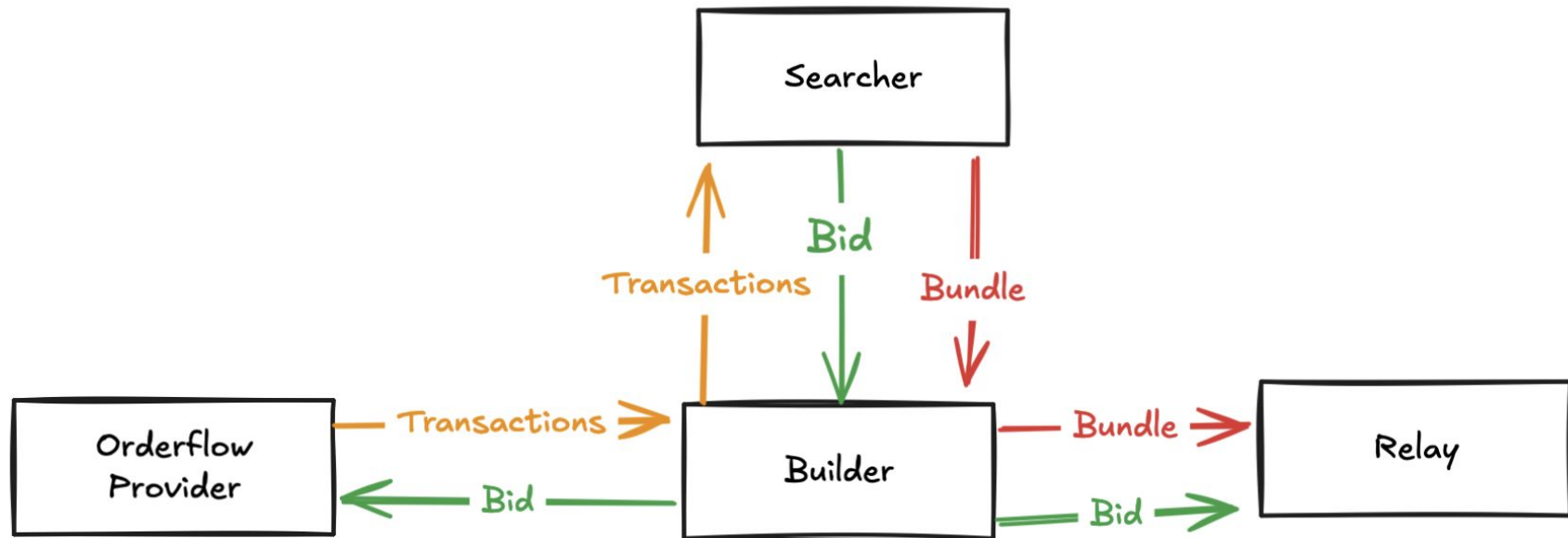
Barrier to entry: Order Flow

- diversity of order flow is key
- exclusive flow is key

Who Wins Ethereum Block Building Auctions and Why?

Burak Öz[1], Danning Sui[2], Thomas Thiery[3], and Florian Matthes[1]

[1] Technical University of Munich, Garching, Germany
[2] Flashbots, San Francisco, CA, USA
[3] Ethereum Foundation, Lisbon, Portugal

Abstract

The MEV-Boost block auction contributes approximately 90 % of all Ethereum blocks. Between October 2023 and March 2024, only three builders produced 80 % of them, highlighting the concentration of power within the block builder market. To foster competition and preserve Ethereum's decentralized ethos and censorship-resistance properties, understanding the dominant players' competitive edges is essential.

In this paper, we identify features that play a significant role in builders' ability to win blocks and earn profits by conducting a comprehensive empirical analysis of MEV-Boost auctions over a six-month period. We reveal that block market share positively correlates with order flow diversity, while profitability correlates with access to order flow from Exclusive Providers, such as integrated searchers and external providers with exclusivity deals. Additionally, we show a positive correlation between market share and profit margin among the top ten builders, with features such as exclusive signal, non-atomic arbitrages, and Telegram bot flow strongly correlating with both metrics. This highlights a "chicken-and-egg" problem where builders need differentiated order flow to profit, but only receive such flow if they have a significant market share. Overall, this work provides an in-depth analysis of the key features driving the builder market towards centralization and offers valuable insights for designing further iterations of Ethereum block auctions, preserving Ethereum's censorship resistance properties.

How is order flow acquired?

- winning an order flow auction
- feature richness
- Subsidization
- business development

Can we get rid of off-chain contracts?

- TEEs
- threshold encryption
- FHE

Builder Software

Options:

- Open source options
    - rbuilder
    - mev-rs
- Extend these options
- Start from the ground up

Infrastructure

-   latency minimization
    -   tx propagation
    -   relay submission
-   Flexibility
-   High cost

Projecting the role of the builder

- based sequencing
- pre confirmations
- ePBS

(?)	Gas Used:	5,056,396(16.85%)	-66% Gas Target
(?)	Gas Limit:	30,000,000	
(?)	Base Fee Per Gas:	8 wei (0.000000008 Gwei)	
(?)	Burnt Fees:	🔥 0.000000000040451168 ETH	
(?)	Extra Data:	sigp/lynx (Hex:0x736967702f6c796e78)	

Thank You