smarts

Understanding MEV & the SMARTS MEV System

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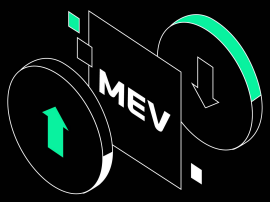
What is MEV?



MEV = Maximal Extractable Value — profits made by reordering, including, or excluding blockchain transactions.

Origin:
First discovered on Ethereum.

Mechanism:
Bots/block producers reorder pending transactions (mempool) for gains.

Why it matters:
- Zero-sum: one participant's gain = another's loss
- Fierce competition: success depends on speed, execution efficiency, and algorithms
- Highly complex: effective extraction requires deep system-level optimization

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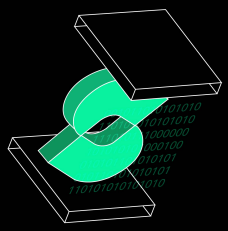
How a Profitable MEV Attack Works

1. Spot a big trade in the mempool
   - Bots monitor the mempool for large trades with high slippage tolerance.
2. Calculate frontrun parameters (gas fee + trade size)
   - Algorithm determines the ideal gas fee and trade size to influence token price.
3. Build a bundle
   - Frontrun buy (before victim)
   - Victim's trade (at higher price)
   - Backrun sell (profits immediately after)
4. Submit bundle on-chain
   - Bundles sent to miners/block builders and executed in order.



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SMARTS MEV System Architecture

SMARTS is a hybrid on-chain/off-chain infrastructure with four key modules:

- Mempool Detection (Hybrid) – sub-100ms latency, real-time detection algorithim for MEV opportunities.
- Bundle Construction (Off-chain) – identifies profitable transactions, then builds frontrun → victim → backrun sequence.
- Simulation (Hybrid) – tests trades locally before execution, verifies safe trading paths and avoid honeypots, predicts gas cost and post-trade state.
- Trade Execution (On-chain) – submits transaction bundle, optimizes gas for priority execution.

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SMARTS vs. Other Solana Bots

Other bots: Focus mainly on raw speed
SMARTS: Combines speed, intelligence, and usability

Ultra-low latency: Real-time monitoring at sub-100 ms.
Dynamic gas optimization: Adjusts fees dynamically to maximize profits.
Advanced detection: Algorithm continuously identifies profitable trades.
Full-Stack Infrastructure: Designed to scale consistent execution.

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Why We Need Capital

Funding allows SMARTS to scale and expand operations

- Run Private Validator Node: stake more SOL = higher chance to be block builder, full control of sequencing, no bribes/tips, higher margins.
- Scale Hardware: more nodes + compute power = faster and more reliable execution.
- More Aggressive Opportunity Targeting: capital allows loosening algorithmic filters, enables blind pre-orders to capture more opportunities.
- Cross-Chain Expansion: new blockchains + advanced MEV strategies (atomic arbitrage, backrun liquidations).

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Why SMARTS Is Not Open-Source

Keeping SMARTS closed-source protects its unique competitive edge

- Zero-sum competition: open code = lost advantage.
- Proprietary algorithms: Core system optimizations took years to refine.
- Open-source risks: public MEV bots often contain backdoors & are non-profitable.