

4337 && Direct Execution

# 7702 OPF Account Gas Benchmarks

Openfort

Sept, 2025



## Benchmark Categories

Deploy Smart Contract

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Initialize Account

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Register-Key

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ERC20 Operations

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Native Transfer

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Batch Execution

# Openfort 7702 Delegator Smart Contract Benchmarks

<https://github.com/openfort-xyz/7702-Benchmark>

This benchmark suite provides comprehensive performance analysis of Openfort's EIP-7702 delegator smart contract across multiple blockchain networks. The benchmarks measure gas consumption, transaction costs, and performance characteristics for various operations including deployment, initialization, key registration, token transfers, and batch executions.

Benchmarks based on Alchemy's aa-benchmarks script and some data taken from ithacaxyz/account benchmarks. The comparison is between SCA with ERC-4337/Porto 7702 using an orchestrator versus Openfort's 7702 account implementation.

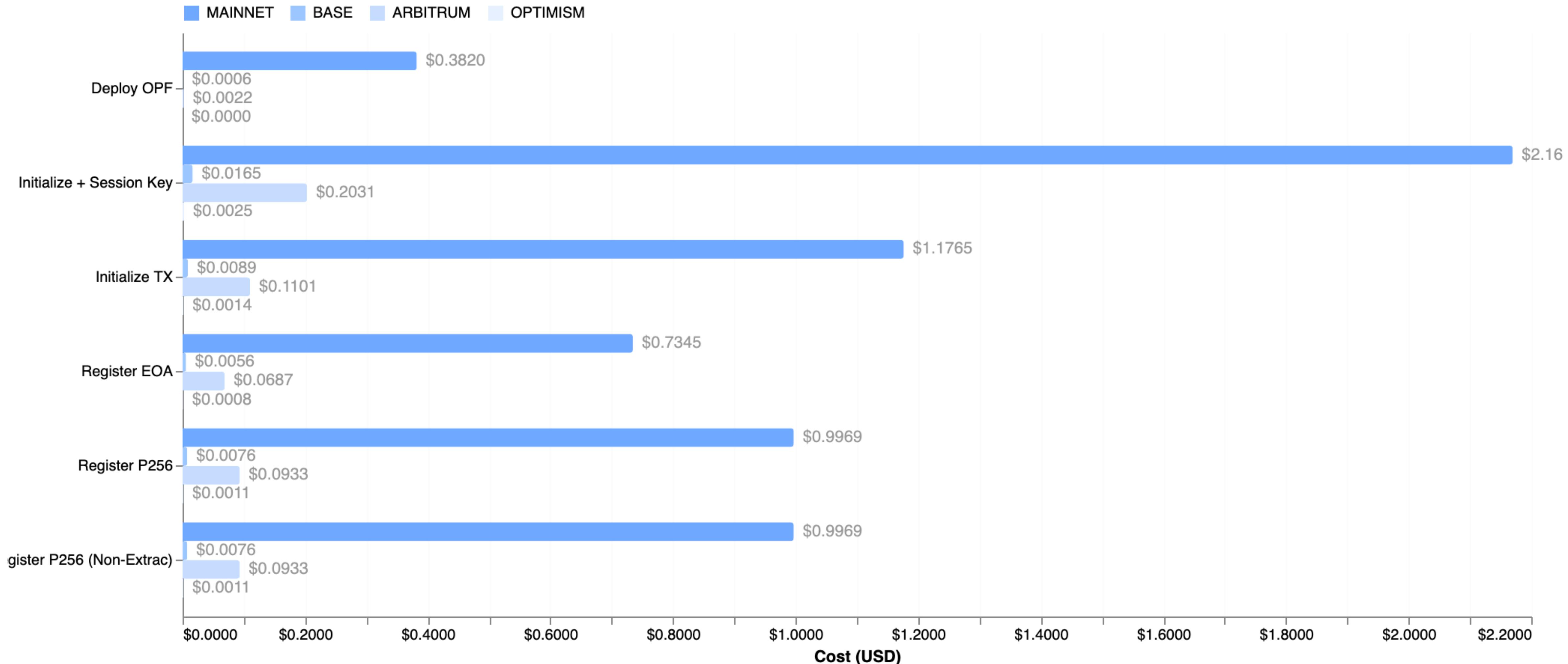
Ithaca: <https://github.com/ithacaxyz/account/blob/main/snapshots/BenchmarkTest.json>

Alchemy: <https://github.com/alchemyplatform/aa-benchmarks>

Disclaimer: We have prepared a comparison report between the Openfort 7702 Account and a standard Smart Contract Account (AA).

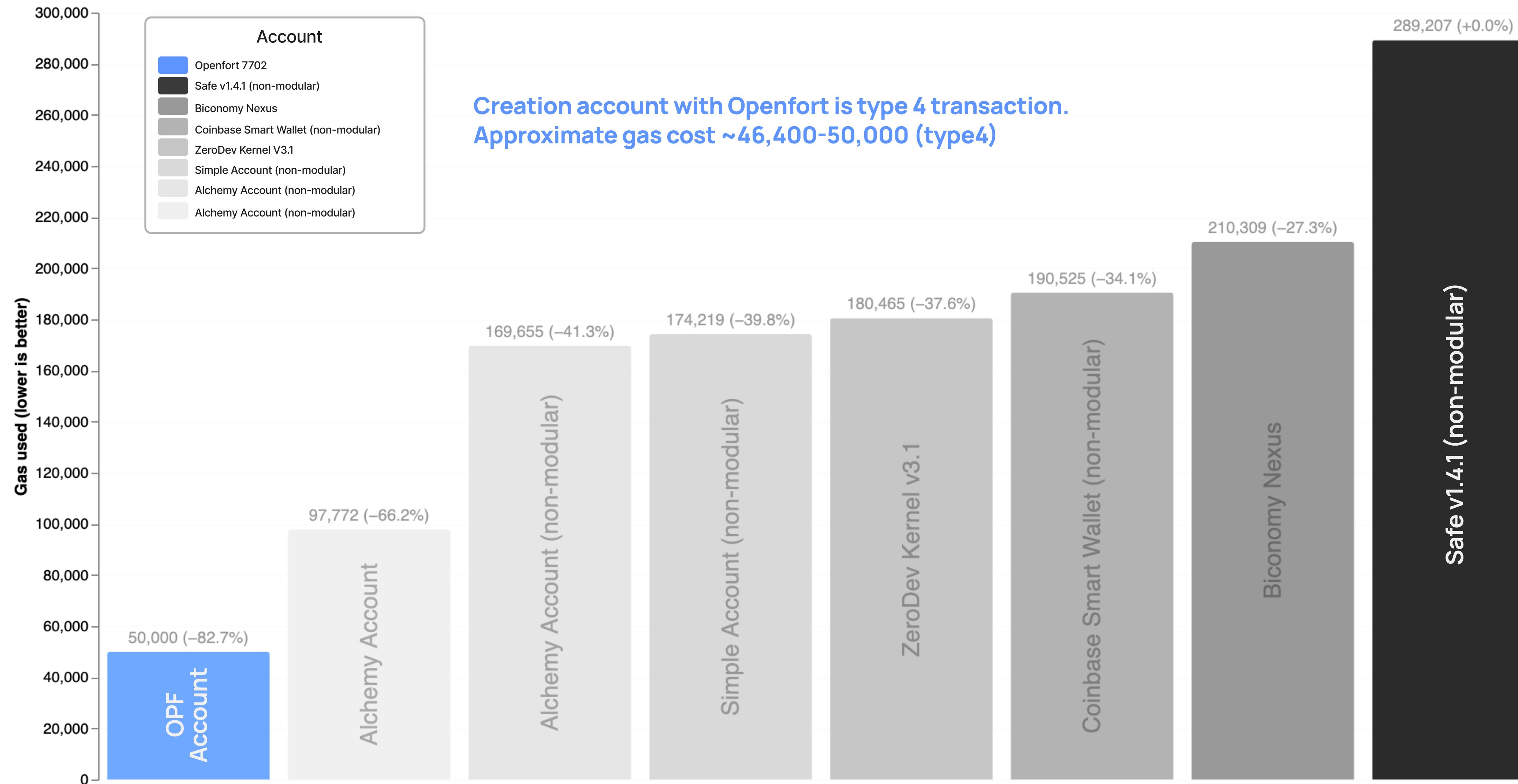
# Cost Comparison (USD)

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# Account Creation/Deployment

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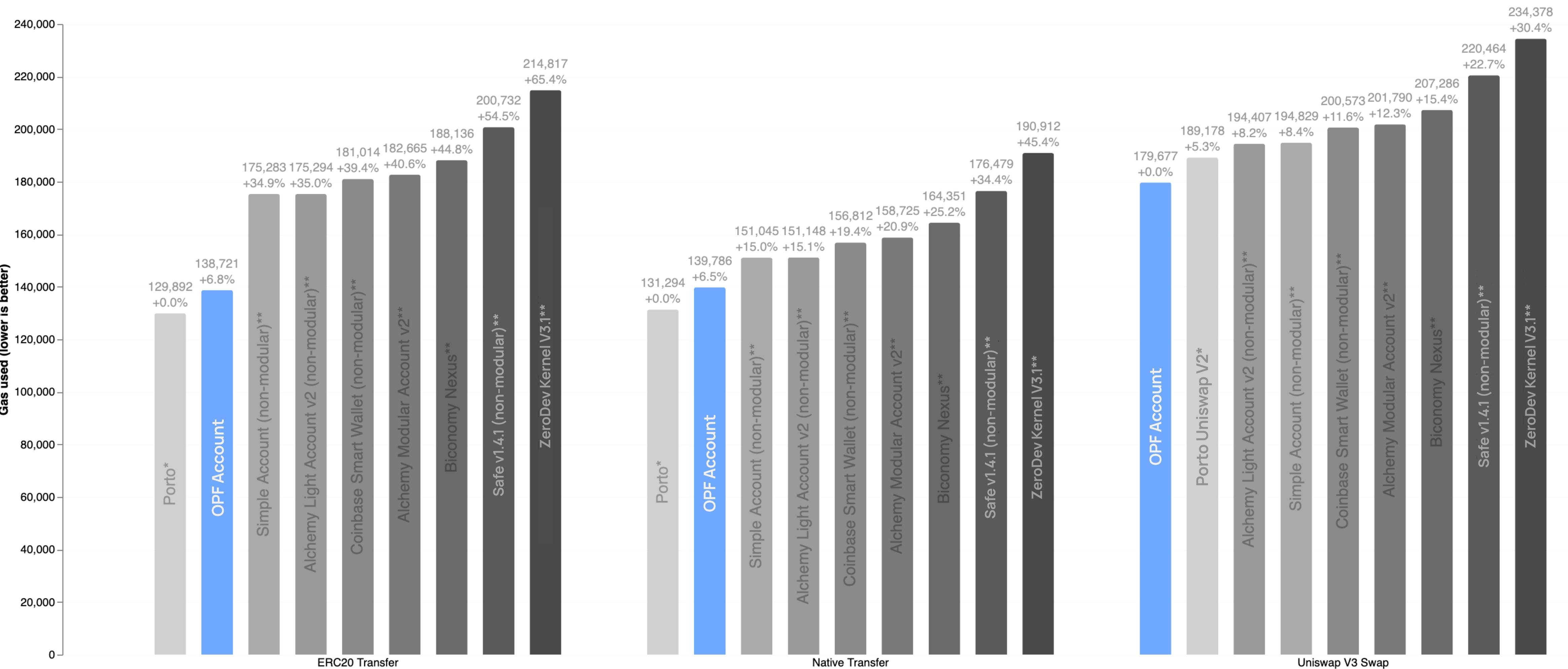


# Comparison Gas Usage

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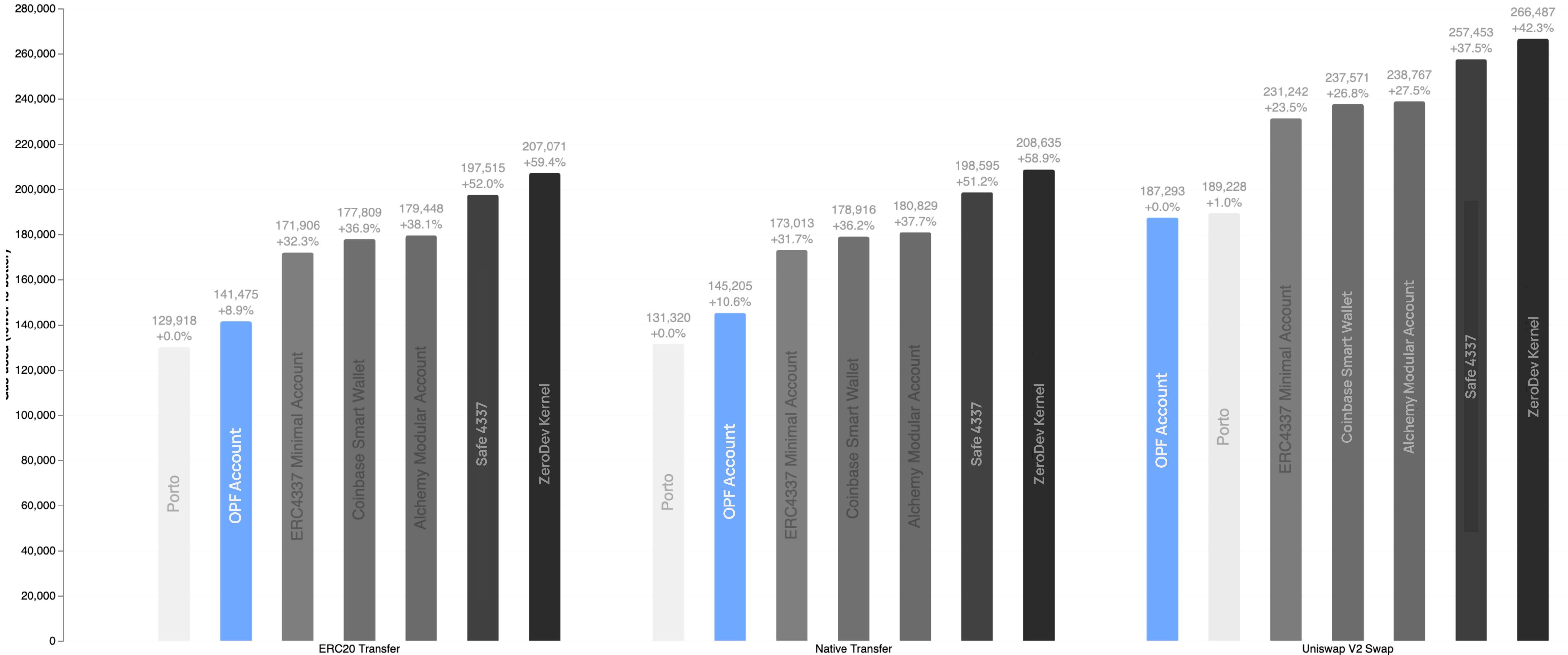
\*Porto method <https://github.com/ithacaxyz/account/blob/main/snapshots/BenchmarkTest.json>

\*\* AA Benchmark by Alchemy <https://github.com/alchemyplatform/aa-benchmarks/tree/master>



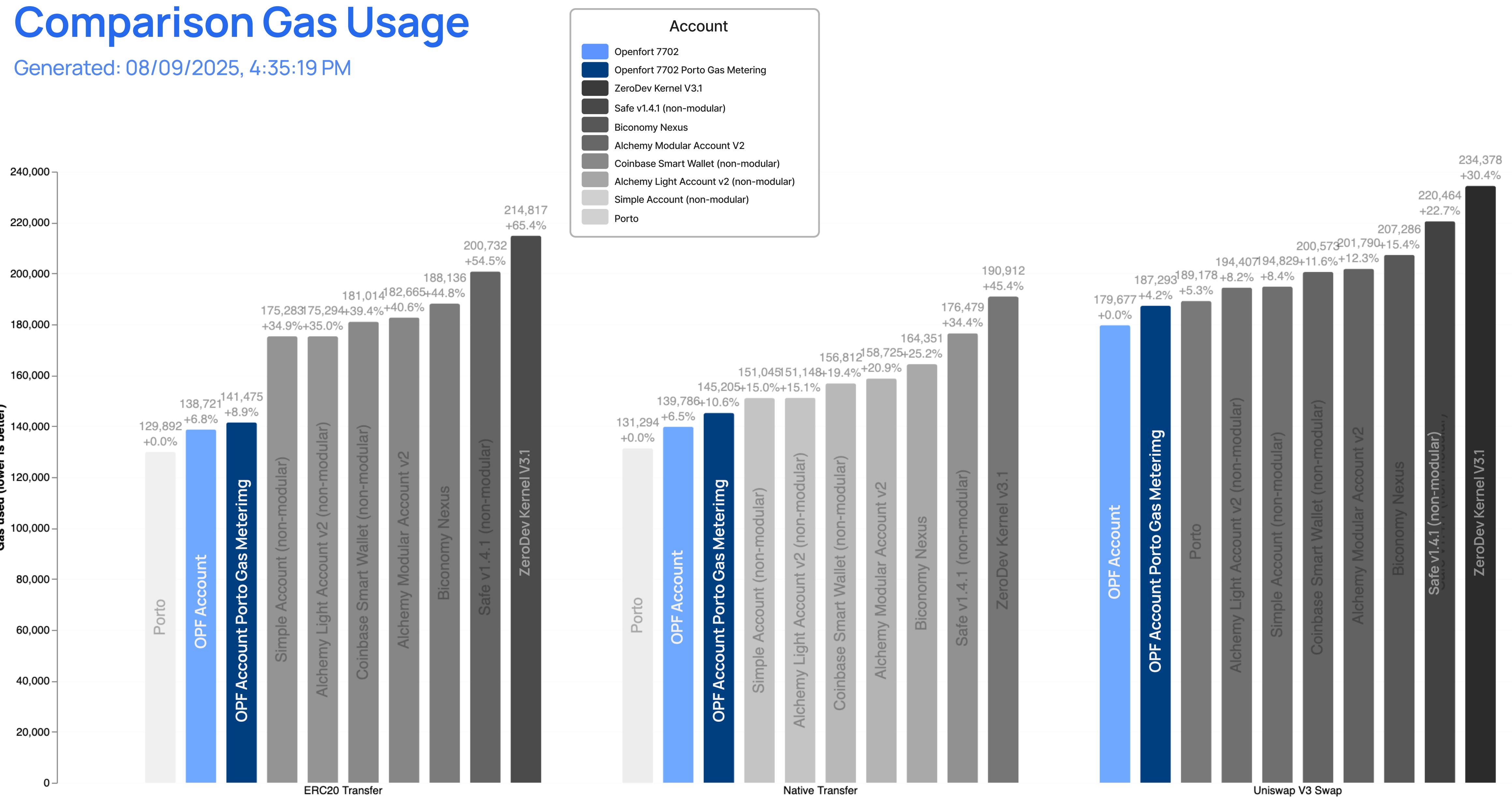
# Comparison Gas Usage (Porto Methodology)

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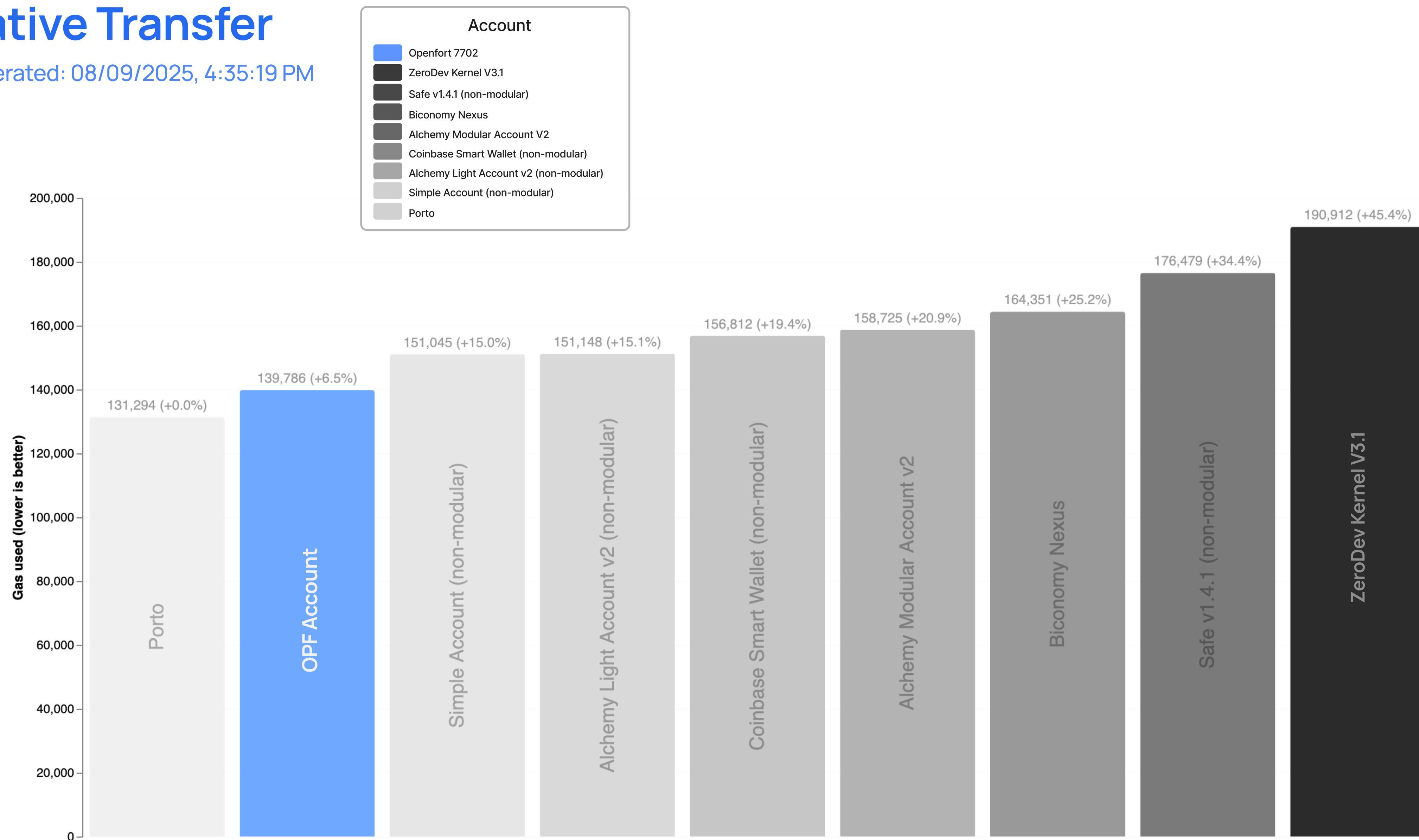
# Comparison Gas Usage

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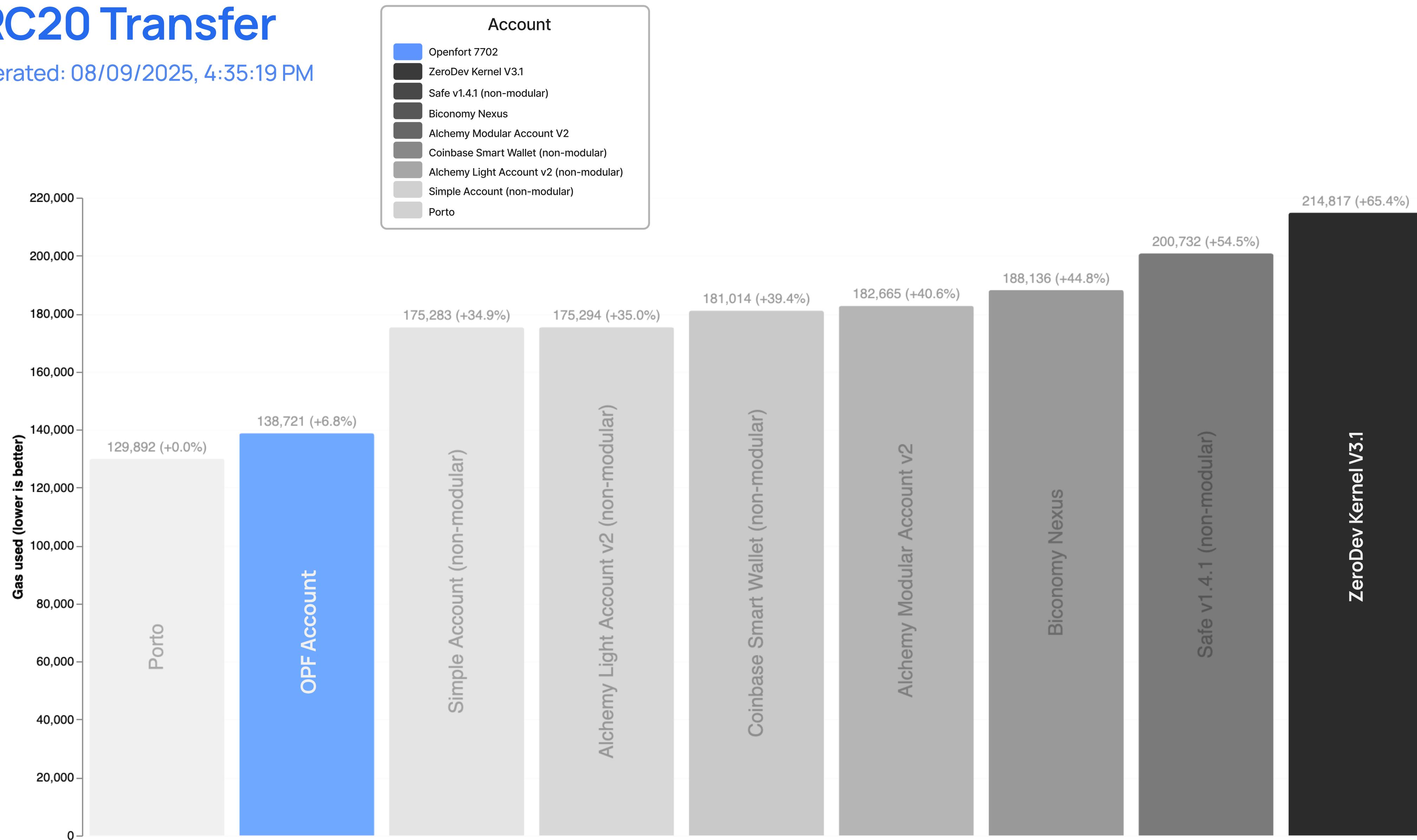
# Native Transfer

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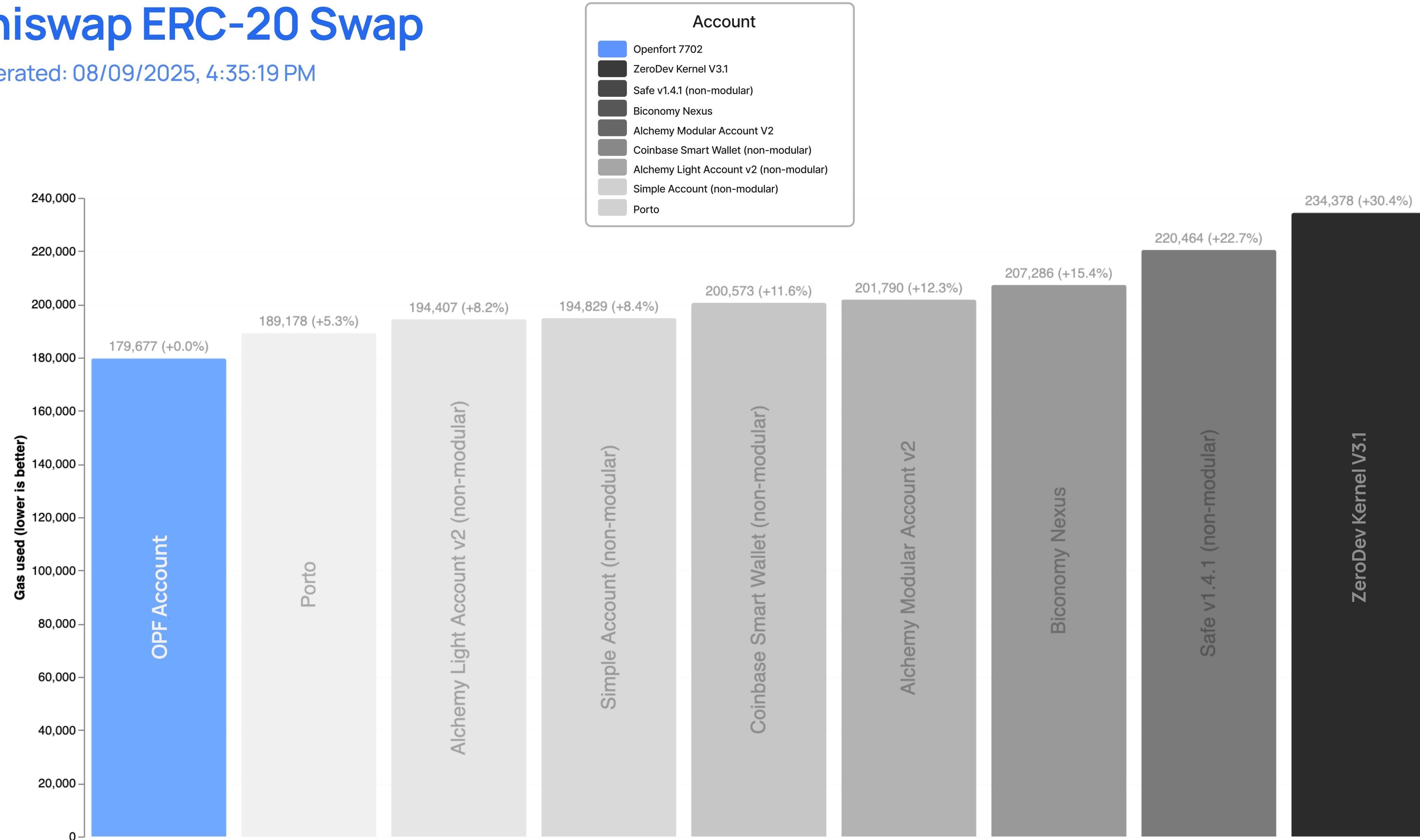
# ERC20 Transfer

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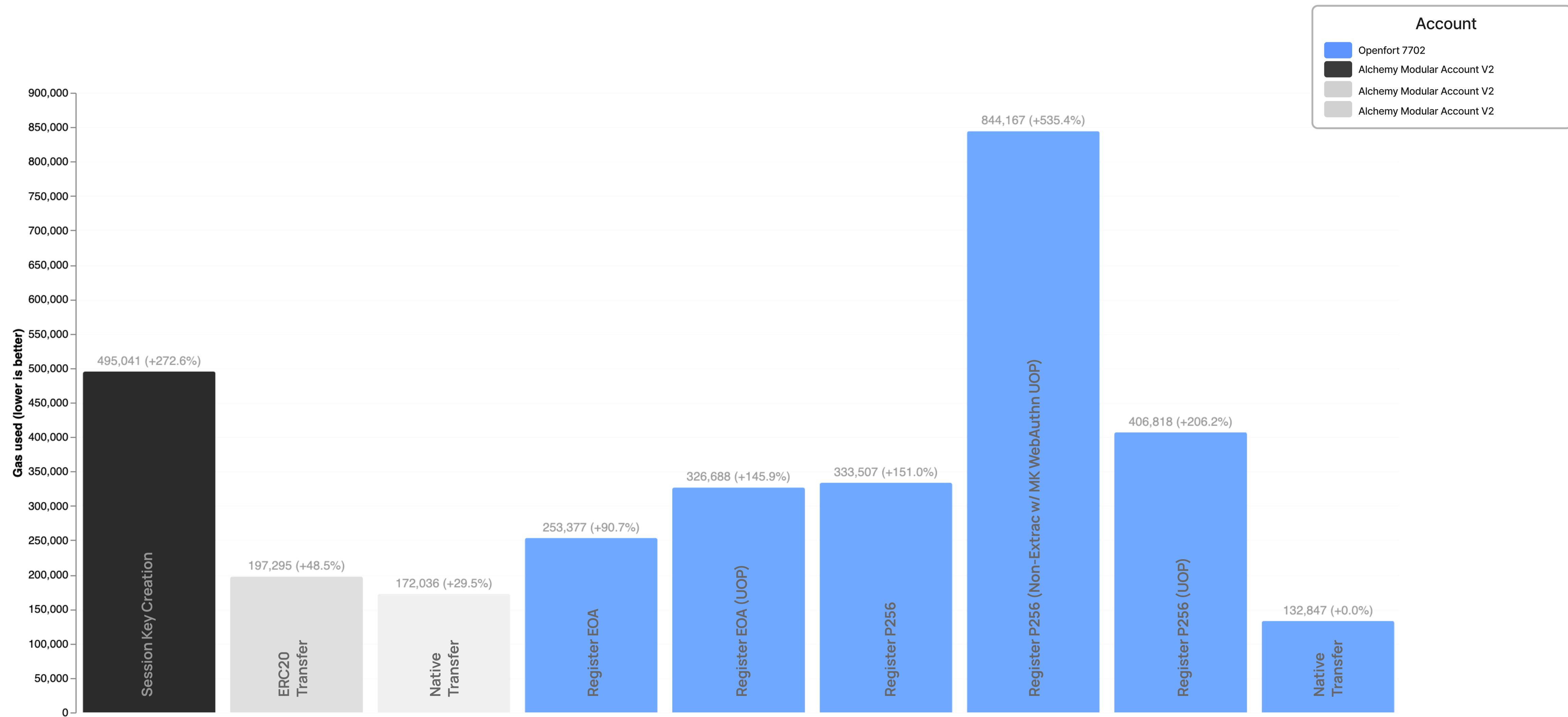
# Uniswap ERC-20 Swap

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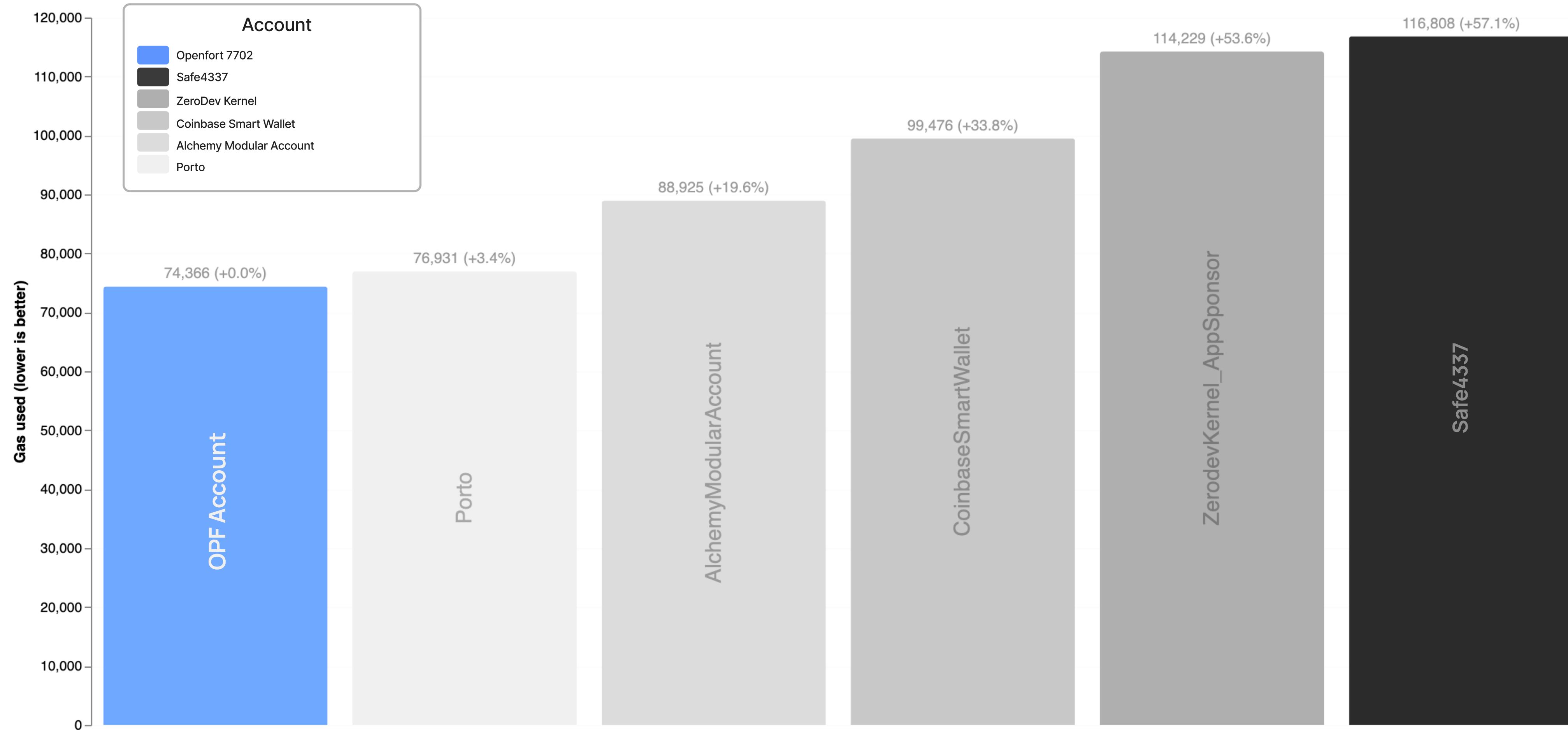
# Session Key Operations

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# Batch Execution

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# Key Insights

- **OPF Account** leader across the 3 head-to-head comparisons
- **OPF Account** delivers the best overall gas performance across ERC20 Transfer, Native (Send ETH), and Batch: it's #1 in 2/3 categories (Native, Batch) and #2 in ERC20 Transfer by a small margin, which makes its aggregate performance the strongest among providers.
- **Native Transfer (Send ETH)** – Best
  - **OPF Account**: 139,786 gas (lowest).
  - Next-best (Porto): 142,757 → **OPF Account** is ~2.1% lower.
  - Versus the slowest (ZeroDev Kernel v3.1, 190,912): Openfort is ~26.8% lower.
- **Batch Transaction** – Best
  - **OPF Account**: 74,366 gas (lowest).
  - Next-best (Porto/Ithaca): 76,931 → **OPF Account** is ~3.3% lower.
  - Versus Safe4337 (116,808): Openfort is ~36.3% lower.
- **ERC20 Transfer** – Runner-up, very close
  - Best is Porto: 129,892 gas.
  - **OPF Account**: 138,721 gas → ~6.8% above Porto, but beats every other provider (Alchemy LA v2, Simple, Alchemy Modular, Coinbase SW, Biconomy, Safe, ZeroDev).
- **Uniswap V3 Swap** – Best by a wide margin
  - **OPF Account**: 121,405 gas (lowest).
  - Next-best (Porto): 189,178 → **OPF Account** is ~35.8% lower; vs others (194k–234k), Openfort is ~38–48% lower.
- **Consistency & ranking**
  - **OPF Account** is top-ranked or second in every task you benchmarked, with especially strong wins in Swap, Native, and Batch.
  - This consistency indicates best overall account gas efficiency across common operations.

Thank You

