

Solidity Compatibility

OP Mainnet is designed to be [EVM equivalent\(opens in a new tab\)](#) , which means OP Mainnet looks exactly like Ethereum in every way possible. Almost all Ethereum tooling works out of the box on OP Mainnet, including the [Solidity\(opens in a new tab\)](#) smart contract language. However, there are a few minor differences between OP Mainnet and Ethereum that you should be aware of when building Solidity contracts.

EVM/Opcode Differences

Most smart contracts will work on OP Mainnet without any changes. Check out the [Differences Between Ethereum and OP Mainnet](#) page for a detailed list of the few differences you should know about.

Gas Differences

OP Mainnet uses the same gas costs as Ethereum. However, OP Mainnet also charges an [L1 Data Fee](#) for the cost of publishing an L2 transaction to L1. This fee is charged based on the size of a transaction in bytes. As a result, smart contract optimization techniques can differ slightly on OP Mainnet. Refer to the [Contract Optimization guide](#) for more information.

[Triggering OP Mainnet Transactions From Ethereum System Contracts](#)