Uniswap DEX

Uniswap versions compare

Uniswap V1

Useful links

- Doc https://docs.uniswap.org/contracts/v1/overview
- Factory Contract
  https://etherscan.io/address/0xc0a47dFe034B400B47bDaD5FecDa2621de6c4d95#code
- Create Pair(“Exchange”) Tx Example (~240K of GAS)
  https://etherscan.io/tx/0x95ce4110bcd082f555b6a9d3f4f82dbd396730e08c6c2bd18b8c86adebad4a2f
- Swap Tx Example (~70K of GAS)
  https://etherscan.io/tx/0x0b8ba2f2196ab671ffff8dae64921582c1b20b1ee343aec346f22d59653c12c4

Uniswap V2

Useful links

- Doc https://docs.uniswap.org/contracts/v2/overview
- Amazing Info Graphic
  https://docs.uniswap.org/contracts/v2/concepts/protocol-overview/how-uniswap-works
- Create Pair Tx Example (~2 500 K of GAS)
  https://etherscan.io/tx/0xbd01499792420f20e6a7f6ae0e9e84ca86ec3bea7be0769bba13cdcd106ee3d8
- Swap Tx Example (~100K of GAS)
  https://etherscan.io/tx/0x659c8f49b983cee3d5917b970dd7deb88e9715ee278c363053b436b5458f5422

Uniswap V3

Useful links

- Doc https://docs.uniswap.org/contracts/v3/reference/overview
- Create Pair(“Pool”) Tx Example (~4 500 K of GAS)
  https://etherscan.io/tx/0x58cd60c55c43d0565f56849fc8fdfb0919e1ee28091bcd9194527c4ed5eb1c27
- Swap Tx Example (~100K of GAS)
  https://etherscan.io/tx/0xe2bb3ff94689addad8bda3fd5bb4f91b419477a5bfb029ebf9627131cb11e631

Uniswap V4

Useful links

- Doc https://docs.uniswap.org/contracts/v4/overview
- Create Pair(“Pool”) Tx Example (~**50 K** of GAS)
  https://etherscan.io/tx/0xdbc132ce6a3f13d01bd77831c4dbc3f40602af86bf8b837d0b30eccf7ba9ac2f
- Swap Tx Example (~130K* of GAS)

  https://etherscan.io/tx/0xbfb8104f4252d761a4a32ab56648d7c508cdabe85001e16d1387ce7258f2c600

Compare main features

	Uniswap V1	**Uniswap V2**	**Uniswap V3**	**Uniswap V4**
Pair Types	Only ETH ↔ ERC-20	ERC-20 ↔ ERC-20	ERC-20 ↔ ERC-20	ERC-20 ↔ ERC-20
Liquidity	Uniform distribution	Uniform distribution	Concentrated	Concentrated + Hook functions
Fees	Fixed	Fixed	Multiple tiers	Dynamic
Oracles	None	TWAP	TWAP	Enhanced
Capital Efficiency	Low	Medium	High	Very high
Flexibility	Minimal	Medium	High	Very high

Each version of Uniswap introduced significant improvements to decentralized exchanges, making them more efficient, secure, and user-friendly.

- v1 laid the foundation for AMM mechanisms.
- v2 added support for ERC-20 ↔ ERC-20 pairs and built-in oracles.
- v3 revolutionized liquidity management with concentrated positions and multiple fee tiers.
- v4 more flexible and efficient platform thanks to hook functions