

# V4 dYdX Orderbook

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Tested on: Ubuntu Server 20.04.6 LTS

1. Please see the V3 orderbook.pdf first at <https://github.com/chiwalfm/dydxexamples>
2. The following are the V4 files with their V3 equivalents. They work exactly the same except on V4 dYdX-Testnet-2

V4 program	V3 program
v4dydxob.py	dydxob.py
v4dydxtrades.py	dydxtrades.py
v4dydxv4markets.py	dydxv3markets.py
v4dydxob2.py	dydxob2.py

3. In addition, the program `v4dydxmarkets.py` can be used to list every market and their status (equivalent to `dydxmarkets.py` for V3). There's currently 33 total.

```
vmware@v4dydxorderbooks:~/extra$ python3 v4dydxmarkets.py
BTC-USD ACTIVE
ETH-USD ACTIVE
LINK-USD ACTIVE
MATIC-USD ACTIVE
CRV-USD ACTIVE
SOL-USD ACTIVE
ADA-USD ACTIVE
AVAX-USD ACTIVE
FIL-USD ACTIVE
AAVE-USD ACTIVE
LTC-USD ACTIVE
DOGE-USD ACTIVE
ICP-USD ACTIVE
ATOM-USD ACTIVE
DOT-USD ACTIVE
XTZ-USD ACTIVE
UNI-USD ACTIVE
BCH-USD ACTIVE
EOS-USD ACTIVE
TRX-USD ACTIVE
ALGO-USD ACTIVE
NEAR-USD ACTIVE
SNX-USD ACTIVE
MKR-USD ACTIVE
SUSHI-USD ACTIVE
XLM-USD ACTIVE
XMR-USD ACTIVE
ETC-USD ACTIVE
1INCH-USD ACTIVE
COMP-USD ACTIVE
ZEC-USD ACTIVE
ZRX-USD ACTIVE
YFI-USD ACTIVE
vmware@v4dydxorderbooks:~/extra$
```

4. Because V4 does not have a centralized order book, there is no longer a global 'offset' parameter for order book price updates. At any given time, the 'correct' order book is sitting in the mempool of the current block proposer. The block proposer changes every block, so that means a new canonical mempool and therefore a new canonical order book every block, therefore you may see crossed prices. The way we deal with that is

we assign every order book price update our own local offset (using the websocket's message\_id) and we assume the later prices have higher precedence. If you do not want to remove crossed prices, you can change v4dydxob2.py's remove\_crossed\_prices to False

```
import os
import signal
import sys
import time
from datetime import datetime
remove_crossed_prices = True

widthmarketstats = 24
widthprice = 10
widthsize = 10
widthoffset = 11
```

