

# Proposing a new market

Important: always test proposals on testnets before submitting to any production environment .

## Proposal Messages

The proposal should consist of 4 messages to be executed atomically and in order when the proposal passes onchain.

Message Index Message Description Params Documentation 0 [MsgCreateOracleMarket\(opens in a new tab\)](#) Sets the oracle list and other parameters inx/prices , used by the protocol to track an oracle price [MarketParams\(opens in a new tab\)](#) 1 [MsgCreatePerpetual\(opens in a new tab\)](#) Sets the perpetual parameters inx/perpetuals , used by the protocol to represent a perpetual market. [Params\(opens in a new tab\)](#) 2 [MsgCreateClobPair\(opens in a new tab\)](#) Sets the orderbook parameters inx/clob , used by protocol to set up the market orderbook (inINITIALIZING status). [ClobPair\(opens in a new tab\)](#) 3 [MsgDelayMessage\(opens in a new tab\)](#) Transitions the orderbook created byMsgCreateClobPair toACTIVE status, after some amount of blocks [delay\\_blocks\(opens in a new tab\)](#) Notes:

- For guideline on choosing values for individual params, see next [section](#)
- .
- Liquidity tiers are mentioned throughout this page. The liquidity tier documentation can be found [here](#)
- .
- The exact ordering of messages above is necessary for successful onchain execution.
- Each of the 4 top-level messages should haveAuthority = dydx10d07y265gmmuv4z0w9aw880jnsr700jnmapky , the [gov module\(opens in a new tab\)](#)
- .
- TheMsgCreateClobPair
- message wrapped inmessages[3]: MsgDelayMessage
- should haveAuthority = dydx1mkkvp26dngu6n8rmalaxyp3gwkjuzztq5zx6tr
- , the [delaymsg module\(opens in a new tab\)](#)
- .
- The identifier fields must be consistent for a perpetual market:params.id
- ,params.market\_id
- ,clob\_pair.id
- ,clob\_pair.perpetual\_clob\_metadata.perpetual\_id
- . Anid
- value is valid as long as it's auint32
- unique from existing markets (they do not need to follow existing market ids).

## Choosing Values for Market Parameters

The following describes how to set various parameters for a new market and assumes that the market listed is:

- Safe (Not susceptible to market manipulation e.g.[Mango\(opens in a new tab\)](#))
- )
- Worth listing (Will this generate sufficient trading volume to consume throughput?)
- Oracle sources are known (Which spot exchanges should be selected when determining the oracle price?)

## Inputs

- Ticker Symbol (e.g.BTC-USD)
- )
- Reference price (e.g.40,000)
- ) andp
- value\* Defines the exponent on the reference price asp:=FLOOR(log10(reference\_price))
- - . For example:p:=FLOOR(log10(40,000))=4
- Exchanges required for oracles (exchange\_config\_json)
- )
- Liquidity Tier (can be updated through governance vote at a later date.)\* 0: Large Cap (BTC/ETH)
- - 1: Mid-Cap (Markets with at least 8 robust oracle sources with liquidity >= 50K on both sides and 30d daily spot trading volume >= 100M.)
- - 2: Long-tail (All others)

## Outputs

- See the [Parameter Calculator\(opens in a new tab\)](#)

- sheet to see an example of how output values are calculated from the input values of reference price and liquidity tier.
- Below formulas ensure that\* Tick size is in the range of[1, 10] bps
- - of thereference\_price
- - for markets in liquidity tier 1 and 2 and[0.1, 1] bps
- - for markets in liquidity tier 0.
- - Minimum order size is>= 1
- - and position size increments by approximately1
- - .

Message Type Field Description Value MsgCreateOracleMarket exponent Denotes the number of decimals a value should be shifted in the price daemon p-9 MsgCreateOracleMarket min\_exchanges Used for an index price to be valid. 3  
 MsgCreateOracleMarket min\_price\_change\_ppm The minimum amount the index price has to change for an oracle price update to be valid. Liquidity Tier 0:1000 Liquidity Tier 1:2500 Liquidity Tier 2:4000 MsgCreateOracleMarket exchange\_config\_json Spot exchange query configuration for the oracle price See[below](#) MsgCreatePerpetual atomic\_resolution L the exponent for converting an atomic amount (size = 1 ) to a full coin. -6 - p MsgCreatePerpetual default\_funding\_ppm The default funding payment if there is no price premium. In parts-per-million. 0  
 Msg[Update/Create]ClobPair quantum\_conversion\_exponent 10^quantum\_conversion\_exponent gives the number of quote quantum traded per base quantum. -9 Msg[Update/Create]ClobPair subticks\_per\_tick Defines the tick size of the orderbook by defining how many subticks are in one tick. Liquidity Tier 0:100000 Liquidity Tier 1 and 2 :1000000  
 Msg[Update/Create]ClobPair step\_base\_quantums (aka step size): min increment in the size of orders (number of coins) on the CLOB in base quantums. 1000000 MsgDelayMessage delay\_blocks number of blocks before which theMsgUpdateClobPair is executed and transitions the market toACTIVE 3600 (equal to an hour at1 sec blocktime)

## Choosing oracle sources

One way of evaluating whether a new market is optimally compatible with the software is based on the number of 1. robust oracles and 2. queryable oracles. A market should have at least 6 robust oracles to deter oracle manipulation attacks and 5 queryable oracles to prevent consensus failures.

To select robust oracle sources, follow the procedure below:

1. Find spot market tickers from eligible exchanges with the desired symbol as the base asset. The quote asset should be USD, USDT, BTC, or ETH. See[below](#)
2. for a list of eligible exchanges. Note that pools in certain DEXes are eligible to be considered a robust source but no DEXes is queryable as of 3/5/24.
3. If the quote asset is not USD, add the following flag"adjustByMarket":"quote\_asset-USD"
4. . This flag ensures that the base asset oracle price is adjusted by the oracle price of the quote asset.
5. Currently the software supports only one source from an exchange per market. Among the tickers from an exchange, choose the most liquid spot market with the highest trading volume. If one market is more liquid but another has more trading volume, choose the one with deeper liquidity.
6. When counting the number of robust oracles, two pools with different quote assets from one DEX can be considered as two independent sources. DEX pools can have quote assets that are not specified above.
7. Exclude oracle sources that do not meet the depth and daily trading volume threshold over the past month.
8. Both sides of liquidity at 2% from the midprice should be at least50,000
9. .
10. The average daily trading volume should be at least100,000
11. .
12. Ensure there are at least 6 robust sources that meet the depth and trading volume requirement and 5 of them are queryable. If there are less than 6 sources, this market should not be added to prevent potential market manipulation attacks and consensus failures from oracle price updates unless more robust oracle sources are available and/or queryable.

## List of eligible exchanges

## Recommended Exchanges:

- Binance
- Coinbase
- OKX
- Bybit
- Gate
- Kraken
- Kucoin
- MEXC

## Only use if necessary:

- HTX (previously Huobi)
- Bitstamp

## Not recommended:

- Bitfinex
- BinanceUS
- Crypto.com

## Recommended DEX sources (can be considered for robust oracles but are not queryable):

- Uniswap V2/V3
- Raydium
- Orca
- Osmosis

Exchanges not included in the above list are not currently supported by the software.

## Recently listed markets

If a market is relatively new, one month of past liquidity and volume data may not be available. If the underlying token launched within 1 day, one can consider the modified requirement below to ensure compatibility and relevance without sufficient data.

1. There should be at least 4 oracle sources that meet the following criteria:
2. Both sides of liquidity at 2% from the midprice should be at least 50,000
3. .
4. The 24 hour trading volume should be at least 1,000,000
5. .
6. Additionally, there should be 2 oracle sources that meet the following criteria:
7. Both sides of liquidity at 2% from the midprice should be at least 30,000
8. .
9. The 24 hour trading volume should be at least 1,000,000
10. .
11. At least 5 of the oracle sources should be queryable.

## Example

### Example of markets with robust oracle sources

Here is a [list \(opens in a new tab\)](#) of certain markets and their oracle sources, likely compatibility with optimal software performance, and parameters, based on the methodology above.

### exchange\_config.json

Below is an example json string for exchange\_config.json . To convert this string into a single-line, quote-escaped string:

```
cat exchange_config.json
```

```
| jq -c
```

```
| sed 's/"^"/g' { "exchanges" : [ { "exchangeName" : "Binance" , "ticker" : "BTCUSDT" , "adjustByMarket" : "USDT-USD" } , {
"exchangeName" : "Bybit" , "ticker" : "BTCUSDT" , "adjustByMarket" : "USDT-USD" } , { "exchangeName" : "CoinbasePro" ,
"ticker" : "BTC-USD" } , { "exchangeName" : "Huobi" , "ticker" : "btcusdt" , "adjustByMarket" : "USDT-USD" } , {
"exchangeName" : "Kraken" , "ticker" : "XXBTZUSD" } , { "exchangeName" : "Kucoin" , "ticker" : "BTC-USD" ,
"adjustByMarket" : "USDT-USD" } , { "exchangeName" : "Mexc" , "ticker" : "BTC_USDT" , "adjustByMarket" : "USDT-USD" }
, { "exchangeName" : "Okx" , "ticker" : "BTC-USDT" , "adjustByMarket" : "USDT-USD" } ] }
```

## Example Proposal Json

Below is an example proposal JSON file to propose adding BTC-USD as a new perpetual market (if it had not been added yet).

```
{ "title" :
```

```
"Add BTC-USD perpetual market" , "deposit" :
```

```
"10000000000000000000adv4tnt" , "summary" :
```

```
"Add the x/prices, x/perpetuals and x/clob parameters needed for a BTC-UTC perpetual market. Create the market in INITIALIZING
status and transition it to ACTIVE status after 3600 blocks." , "messages" : [ { "@type" :
```

```
"/dydxprotocol.prices.MsgCreateOracleMarket" , "authority" :
```

```
"dydx10d07y265gmmuv4z0w9aw880jnsr700jnmapky" , "params" : { "exchange_config_json" :
```

```
"{"exchanges":[{"exchangeName":"Binance","ticker":"BTCUSDT","adjustByMarket":"USDT-USD"},
{"exchangeName":"Bybit","ticker":"BTCUSDT","adjustByMarket":"USDT-USD"},
{"exchangeName":"CoinbasePro","ticker":"BTC-USD"},
{"exchangeName":"Huobi","ticker":"btcusdt","adjustByMarket":"USDT-USD"},
{"exchangeName":"Kraken","ticker":"XXBTZUSD"}, {"exchangeName":"Kucoin","ticker":"BTC-
USDT","adjustByMarket":"USDT-USD"}, {"exchangeName":"Mexc","ticker":"BTC_USDT","adjustByMarket":"USDT-
USD"}, {"exchangeName":"Okx","ticker":"BTC-USDT","adjustByMarket":"USDT-USD"}]"}" , "exponent" :
```

```
-5 , "id" :
```

```
1001 , "min_exchanges" :
```

```
3 , "min_price_change_ppm" :
```

```
1000 , "pair" :
```

```
"BTC-USD" } } , { "@type" :
```

```
"/dydxprotocol.perpetuals.MsgCreatePerpetual" , "authority" :
```

```
"dydx10d07y265gmmuv4z0w9aw880jnsr700jnmapky" , "params" : { "atomic_resolution" :
```

```
-10 , "default_funding_ppm" :
```

```
0 , "id" :
```

```
1001 , "liquidity_tier" :
```

```
0 , "market_id" :
```

```
1001 , "ticker" :
```

```
"BTC-USD" } } , { "@type" :
```

```
"/dydxprotocol.clob.MsgCreateClobPair" , "authority" :
```

```
"dydx10d07y265gmmuv4z0w9aw880jnsr700jnmapky" , "clob_pair" : { "id" :
```

```
1001 , "perpetual_clob_metadata" : { "perpetual_id" :
```

```
1001 } , "quantum_conversion_exponent" :
```

```
-9 , "status" :
```

```
"STATUS_INITIALIZING" , "step_base_quantums" :
```

```
1000000 , "subticks_per_tick" :  
100000 } } , { "@type" :  
"/dydxprotocol.delaymsg.MsgDelayMessage" , "authority" :  
"dydx10d07y265gmmuv4z0w9aw880jnsr700jnmapky" , "msg" : { "@type" :  
"/dydxprotocol.clob.MsgUpdateClobPair" , "authority" :  
"dydx1mkkvp26dngu6n8rmalaxyp3gwkjuzztq5zx6tr" , "clob_pair" : { "id" :  
1001 , "perpetual_clob_metadata" : { "perpetual_id" :  
1001 } , "quantum_conversion_exponent" :  
-9 , "status" :  
"STATUS_ACTIVE" , "step_base_quantums" :  
1000000 , "subticks_per_tick" :  
100000 } } , "delay_blocks"  
:  
3600 } } }
```

## Submitting an Onchain Proposal

Follow instructions[here](#) to submit an onchain proposal.

### Disclaimer

Users considering using the permissionless markets function of the dYdx v4 software are encouraged to consult qualified legal counsel to ensure compliance with the laws of their jurisdiction. The information on this page does not constitute and should not be relied on as investment, legal, or any other form of professional advice. This page does not recommend any specific market, and analyzes only compatibility and functionality from a technical standpoint. Use of the v4 software is prohibited in the United States, Canada, and sanctioned jurisdictions as described in the [v4 Terms of Use](#)[\(opens in a new tab\)](#) .

Last updated on May 30, 2024 [Trading Rewards Slashing a Validator](#)