

Project: Autopilot mode for Market Making

Specific proposal:

- Mitigating inventory risk
- Reducing negative PnL
- Enhance client capacity for traders

Google Collab File: [Autopilot Mode.ipynb](#)

Overview:

- The Autopilot Mode is a development from “(2008) [High Frequency Trading in a Limit Order Book](#)” Papers by Avellaneda and Stoikov. Here any few shortcoming from the paper that can be improved:
 - The paper only mentioned the closest bid and ask orders.
 - No mention of time variables like Order Refresh, Order Delay.
 - No mention of volatility variables like Volatility Sensitivity, Refresh Tolerance.
 - No mention of risk-management variables like Floor, Ceiling, and Net Spend.
 - The paper uses Numerical simulations to test its model performance.
- We created a model which automatically changes spreads and MM parameters to mitigate inventory risk and reduce PnL variance. We use a formula for determining the optimal spreads based on inventory skew and volatility with these improvements:
 - Automatically creating config for all of the order level.
 - Take into consideration time variables, volatility variables, and risk-management variables.
 - Live test the model to see real-life performance.

Project outcome: automate market making.

Expected Impact:

- The percentage of time when the inventory gets skewed heavily is reduced.
- Stop us burning money all the time due to being **overly skewed** and have to rebalance with unfavor prices.

Basic Spread Formulas:

- Here is the general formula from “(2008) [High Frequency Trading in a Limit Order Book](#)” Papers.

Reservation price (market price, adjusted toward your target inventory level):

$$r(s, q, t, \sigma) = s - q\gamma\sigma^2(T - t)$$

$$\ker f = \{g \in G : f(g) = e_H\}.$$

Optimal spread around reservation price:

$$\delta^a + \delta^b = \gamma\sigma^2(T - t) + \frac{2}{\gamma} \ln\left(1 + \frac{\gamma}{\kappa}\right)$$

Where:

- s [quote asset] = current mid price
- q [no unit] = quantity of stocks in inventory of base asset (could be positive/negative for long/short positions)
- γ [1/quote asset] = inventory risk aversion parameter
- σ [quote asset] = volatility
- T [no unit] = closing time (conveniently normalized to 1)
- t [no unit] = current time (T is normalized = 1, so t is a time fraction)
- δ^a, δ^b [quote asset] = Bid/Ask spread (they are symmetrical to reservation price $\rightarrow \delta^a = \delta^b$)
- κ [1/quote asset] = Order book *liquidity* parameter

- **Explanation:**

- **q**[no unit]: Current base position. Calculate by:

$$q = \frac{\text{current base} - \text{starting base}}{\text{starting base}}$$

- **γ** [1/quote]: Inventory risk aversion parameter

$$\gamma = \frac{1}{\text{current price}}$$

- **σ** [quote]: Volatility. Calculated by standard deviation of price of the asset over pre-define x period.
- **k**[1/quote]: Depth Factor

$$\text{depth_factor}(cp, \max_spread, \gamma, \text{volatility}) = \frac{\gamma}{\exp\left(\frac{\max_spread \cdot cp \cdot \gamma - \text{volatility}^2 \cdot \gamma^2}{2}\right) - 1}$$

- **Reservation price**

- When Skew Short: Reservation Price is higher ($q < 0$)
- When Skew Long: Reservation Price is lower ($q > 0$)

- **Optimal Spread**

$$\text{optimal_spread}(\gamma, \text{volatility}, t, k) = \gamma \cdot \text{volatility}^2 \cdot (1 - t) + \frac{2}{\gamma} \ln\left(1 + \frac{\gamma}{k}\right)$$

- **Best Bid, Best Ask**

$$\text{bbid} = \text{res_price} - \text{spread}$$

$$\text{bask} = \text{res_price} + \text{spread}$$

Adjusted Formulas:

- **Explanation:**

- **Reward_factor:** derived from the reward function which prioritises rebalancing if we are profitable

$$\text{reward} = \begin{cases} 1, & \text{if } s_{\text{base}} = c_{\text{base}} \text{ OR } s_{\text{quote}} = c_{\text{quote}} \\ \min \left(\max \left(1, \frac{cp - \text{avg_position}}{\text{avg_position}} \times 50 \right), 80 \right), & \text{if long position: } c_{\text{quote}} < s_{\text{quote}}, cp > \text{avg_position} \\ \min \left(\max \left(1, \frac{\text{avg_position} - cp}{\text{avg_position}} \times 50 \right), 80 \right), & \text{if short position: } c_{\text{quote}} \geq s_{\text{quote}}, cp < \text{avg_position} \\ 1, & \text{otherwise} \end{cases}$$

where

$$\text{avg_position} = \frac{s_{\text{quote}} - c_{\text{quote}}}{c_{\text{base}} - s_{\text{base}}}$$

- **IRA:** Inventory risk aversion parameter

- **IRA** $\in [0,1]$: Determines the speed and aggressiveness of rebalancing inventory.
 - **IRA** $\rightarrow 0$:
 - Traders are less concerned with inventory risk.
 - Higher potential returns, but also higher potential losses.
 - The standard deviation of PnL (Profit and Loss) is **larger**.
 - Higher risk of being **skewed** in one direction (long or short imbalance).
 - **IRA** $\rightarrow 1$:
 - Traders aggressively rebalance inventory.
 - Lower potential returns and lower potential losses.
 - The standard deviation of PnL is **smaller**.
 - Less risk of being **skewed** in inventory.

- **Adjusted γ [1/quote]:** Inventory risk aversion parameter

$$\gamma = \frac{IRA \times \text{reward_factor}}{cp}$$

- **Order Refresh Time**

$$\text{bid_orts} = \begin{cases} \text{round}(\text{default} \times 0.35, 2) & \text{if } \text{base_pos} > 0.65 \\ \text{round}(\text{default} \times (1 - |\text{base_pos} \times \text{IRA}|), 2) & \text{if } 0 < \text{base_pos} \leq 0.65 \end{cases}$$

$$\text{ask_orts} = \begin{cases} \text{round}(\text{default} \times 0.35, 2) & \text{if } \text{base_pos} < -0.65 \\ \text{round}(\text{default} \times (1 - |\text{base_pos} \times \text{IRA}|), 2) & \text{if } -0.65 \leq \text{base_pos} < 0 \end{cases}$$

- **Filled Order Delay**

$$\text{bid_fods} = \begin{cases} \text{round}(\text{default} \times (1 - 0.65), 2) & \text{if } \text{base_pos} < -0.65 \\ \text{round}(\text{default} \times (1 - |\text{base_pos} \times \text{IRA}|), 2) & \text{if } -0.65 \leq \text{base_pos} < 0 \end{cases}$$

$$\text{ask_fods} = \begin{cases} \text{round}(\text{default} \times 0.35, 2) & \text{if } \text{base_pos} > 0.65 \\ \text{round}(\text{default} \times (1 - |\text{base_pos} \times \text{IRA}|), 2) & \text{if } 0 < \text{base_pos} \leq 0.65 \end{cases}$$

- **Order Refresh Tolerances**

$$\text{bid_ort} = \begin{cases} 0.5 & \text{if } \text{base_pos} > 0.75 \\ \text{default} - (0.5 \times |\text{base_pos} \times \text{IRA}|) & \text{if } 0 < \text{base_pos} \leq 0.75 \\ \text{default} + (0.5 \times |\text{base_pos} \times \text{IRA}|) & \text{if } -0.75 \leq \text{base_pos} < 0 \end{cases}$$

$$\text{ask_ort} = \begin{cases} 2 & \text{if } \text{base_pos} > 0.75 \\ \text{default} + (0.5 \times |\text{base_pos} \times \text{IRA}|) & \text{if } 0 < \text{base_pos} \leq 0.75 \\ \text{default} - (0.5 \times |\text{base_pos} \times \text{IRA}|) & \text{if } -0.75 \leq \text{base_pos} < 0 \end{cases}$$

Note: The 3 formulas above are self derived and are open to suggestions for improvement

Parameter	Formula	Range	Effect
IRA	IRA = 0.5	[0.1, 2]	More aggressive rebalancing reduces potential P/L variance.
Amount Scaling	amount_sf = 2	[1.4, 2.2]	Higher value = less capital near the current price.
Spread Scaling	spread_sf = 0.4	[0, 1.5]	Lower value = tighter spread between closer orders.

Parameter	Description
Depth	Depth as a percentage
Amount	Total amount to allocate
Max Spread	Maximum allowable spread (as a percentage)
Levels	Number of levels for bid/ask distribution

Stoikov Model Benchmark

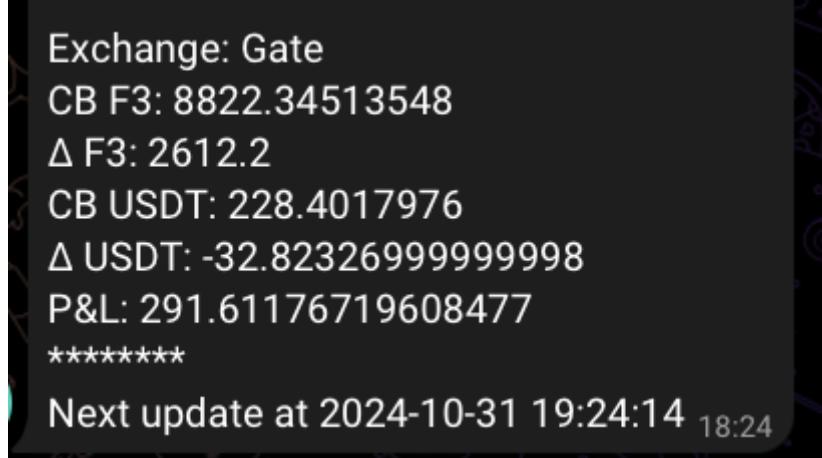
Average Skew from Start	29.22907727
Average PnL from Start	-9.523521596

Stoikov Model Testing

Live Testing Record: (Trader: Huy/Jamal)

Day 1 (17:00:00 - 31/10/2024):

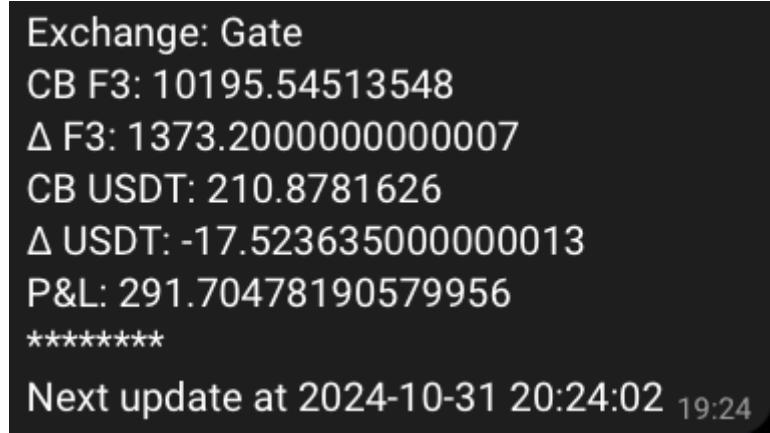
- (17:24)



▼ 2024-10-31T17:18:16.564Z 2024-10-31 17:18:16,564 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.157), np...

2024-10-31 17:18:16,564 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.157), np.float64(0.226),
np.float64(0.412), np.float64(0.86), np.float64(2.0)], [np.float64(0.443), np.float64(0.55),
np.float64(0.784), np.float64(1.213), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(22.6), np.float64(28.25), np.float64(33.9), np.float64(39.54), np.float64(45.19)], [np.float64(15.06),
np.float64(20.71), np.float64(26.36), np.float64(32.01), np.float64(37.66)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.123386975451926, 0.876613024548074]

- (18:24)



2024-10-31T18:47:08.724Z 2024-10-31 18:47:08,724 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.174), np...

2024-10-31 18:47:08,724 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.174), np.float64(0.247),
np.float64(0.439), np.float64(0.89), np.float64(2.0)], [np.float64(0.426), np.float64(0.532),
np.float64(0.765), np.float64(1.198), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(20.07), np.float64(25.09), np.float64(30.1), np.float64(35.12), np.float64(40.14)], [np.float64(13.38),
np.float64(18.4), np.float64(23.41), np.float64(28.43), np.float64(33.45)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.1655161838231725, 0.834483161768274]

- (19:24)

Exchange: Gate
CB F3: 10279.04513548
 Δ F3: 83.5
CB USDT: 209.8143726
 Δ USDT: -1.063789999999831
P&L: 291.6118341960848

Next update at 2024-10-31 21:24:16 20:24

2024-10-31 19:36:24,504 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.18), np.float64(0.254),
np.float64(0.448), np.float64(0.9), np.float64(2.0)], [np.float64(0.42), np.float64(0.525),
np.float64(0.759), np.float64(1.192), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(23.19), np.float64(28.99), np.float64(34.79), np.float64(40.59), np.float64(46.39)], [np.float64(15.46),
np.float64(21.26), np.float64(27.06), np.float64(32.86), np.float64(38.65)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.1134537027797997, 0.8865462972202002]

- (21:23)

Exchange: Gate
CB F3: 10279.04513548
 Δ F3: 0.0
CB USDT: 209.8143726
 Δ USDT: 0.0
P&L: 290.4664016795072

Next update at 2024-10-31 23:23:48 22:23

2024-10-31T21:55:54.620Z 2024-10-31 21:55:54,620 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.206), np...
2024-10-31 21:55:54,620 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.206), np.float64(0.286),
np.float64(0.487), np.float64(0.941), np.float64(2.0)], [np.float64(0.394), np.float64(0.498),
np.float64(0.729), np.float64(1.167), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(23.38), np.float64(29.23), np.float64(35.07), np.float64(40.92), np.float64(46.77)], [np.float64(15.59),
np.float64(21.43), np.float64(27.28), np.float64(33.13), np.float64(38.97)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.1102879460312405, 0.8897120539687595]

- (22:00)

Exchange: Gate
CB F3: 13039.74513548
 Δ F3: 2760.699999999999
CB USDT: 174.8572176
 Δ USDT: -34.957155
P&L: 290.25682302784946

Next update at 2024-11-01 00:24:06 23:24

2024-10-31T22:03:06.517Z

2024-10-31 22:03:06,517 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.301), np...

2024-10-31 22:03:06,517 INFO - [6723b680ddc482c31e834856_1] [[np.float64(0.301), np.float64(0.395),
np.float64(0.617), np.float64(1.067), np.float64(2.0)], [np.float64(0.299), np.float64(0.393),
np.float64(0.614), np.float64(1.065), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(29.65), np.float64(37.07), np.float64(44.48), np.float64(51.89),
np.float64(59.31)], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(20.0), np.float64(27.5), np.float64(35.0), np.float64(42.5), np.float64(50.0)], [np.float64(19.77),
np.float64(27.18), np.float64(34.6), np.float64(42.01), np.float64(49.42)], 0.9942203087852594, 1.0057796912147408]

Day 5 (4/11/2024):

- (18:00) We burned 100\$ due to technical issue where the automatic model went off and the default spread bot with 2 levels back on:

Exchange: Gate
CB F3: 9509.40364148
 Δ F3: -5871.1
CB USDT: 131.08554523227
 Δ USDT: 68.79057790867199
P&L: 194.28675188743478

Next update at 2024-11-04 18:23:20 17:23

Day 6 (5/11/2024):

- (15:40) After confirming with Akash, change the “default config” to “do-not-trade-at-all” config if there is something wrong with the automatic model and everything goes back to the default. This will prevent losing money to the unfavor skewness:

Edit Bot Config for f3_gate_devtest2

buys1 buy (2 levels, 0 created, 3 edited, 0 deleted) Floor: -1 Cel: 0.001 Vol. Sensitivity: 300 0.25 0.75 Refresh Tolerance: 0.5

ORDER LEVEL 0

Refresh Time	1	1
Amount	1	1
Spread	2	2
Order Delay	120	
Delay Random.	0.2	

ORDER LEVEL 1

Refresh Time	2	2
Amount	2	2
Spread	5	5
Order Delay	180	
Delay Random.	0.2	

sells1 sell (2 levels, 0 created, 3 edited, 0 deleted) Floor: 1 Cel: -1 Vol. Sensitivity: 300 0.25 0.75 Refresh Tolerance: 0.5

ORDER LEVEL 0

Refresh Time	1	1
Amount	1	1
Spread	2	2
Order Delay	120	
Delay Random.	0.2	

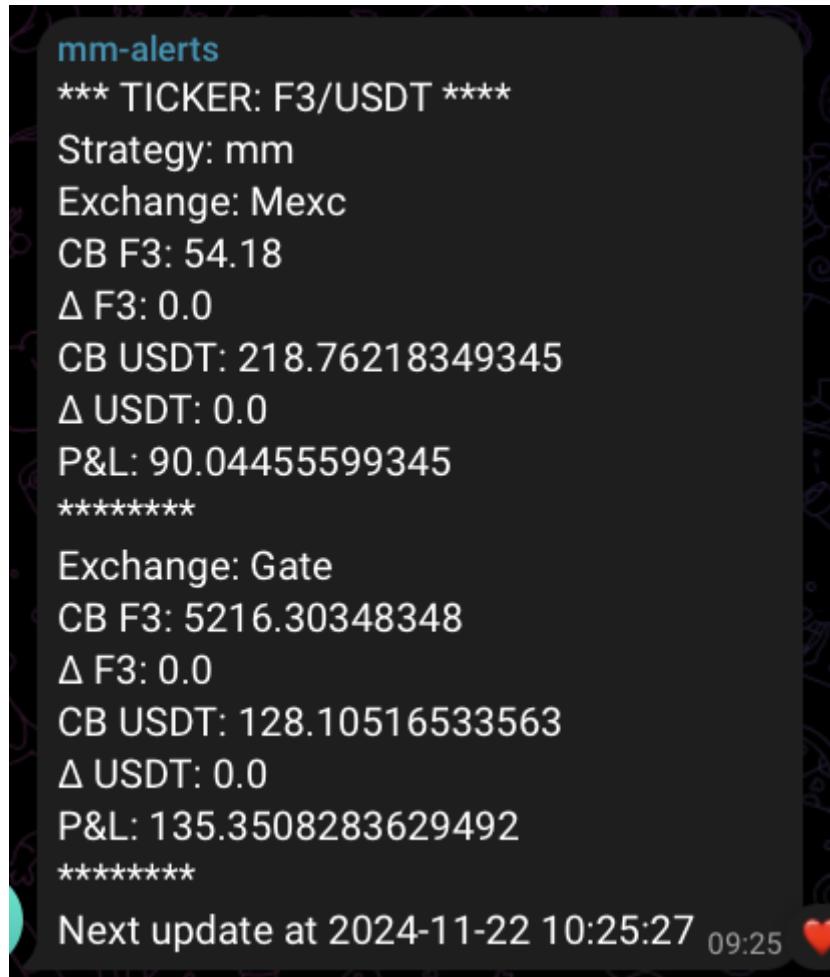
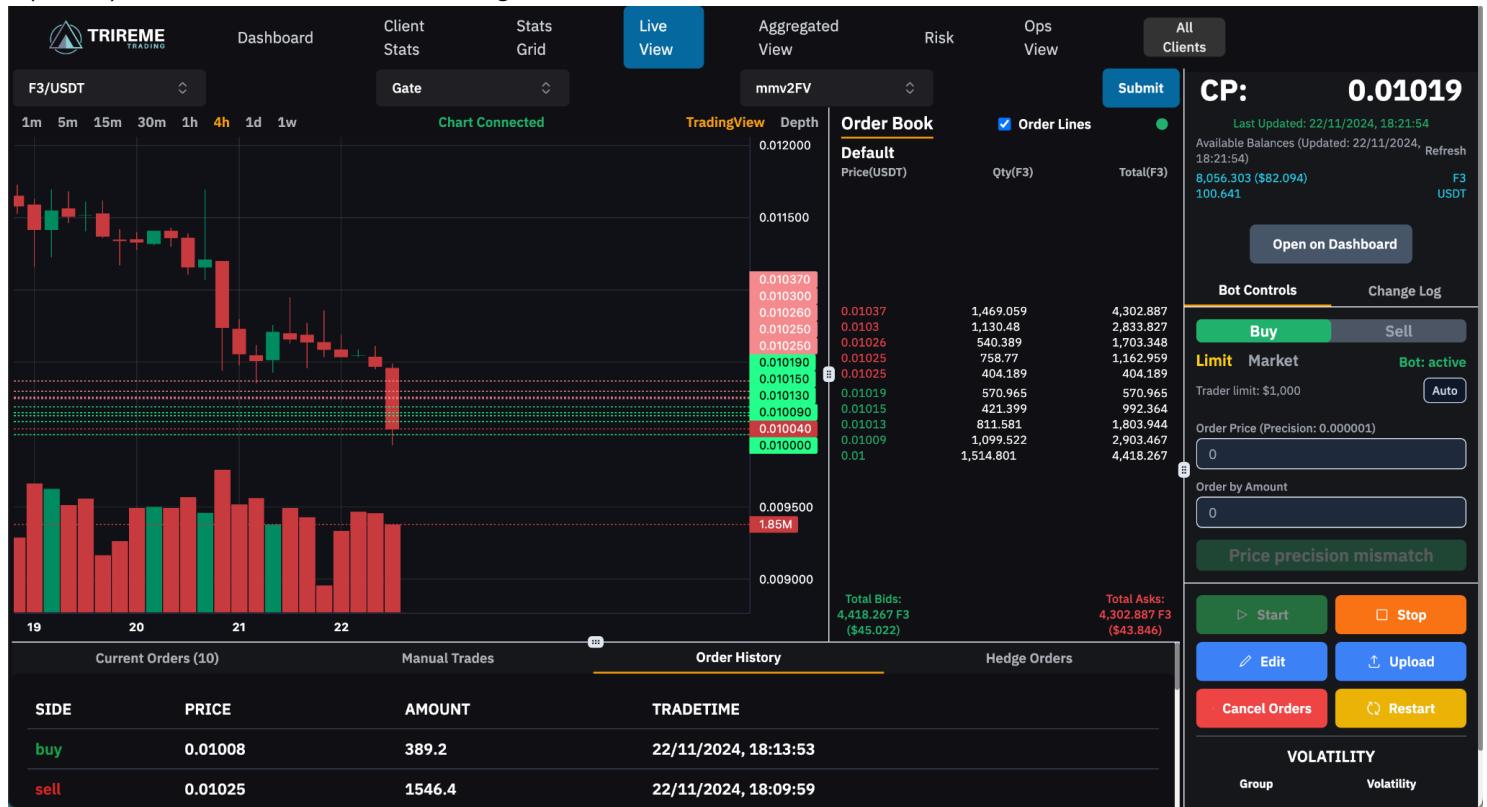
ORDER LEVEL 1

Refresh Time	2	2
Amount	2	2
Spread	5	5
Order Delay	180	
Delay Random.	0.2	

- (18:00) Error with the auto config, F3 testing paused

Day 23 (22/11/2024):

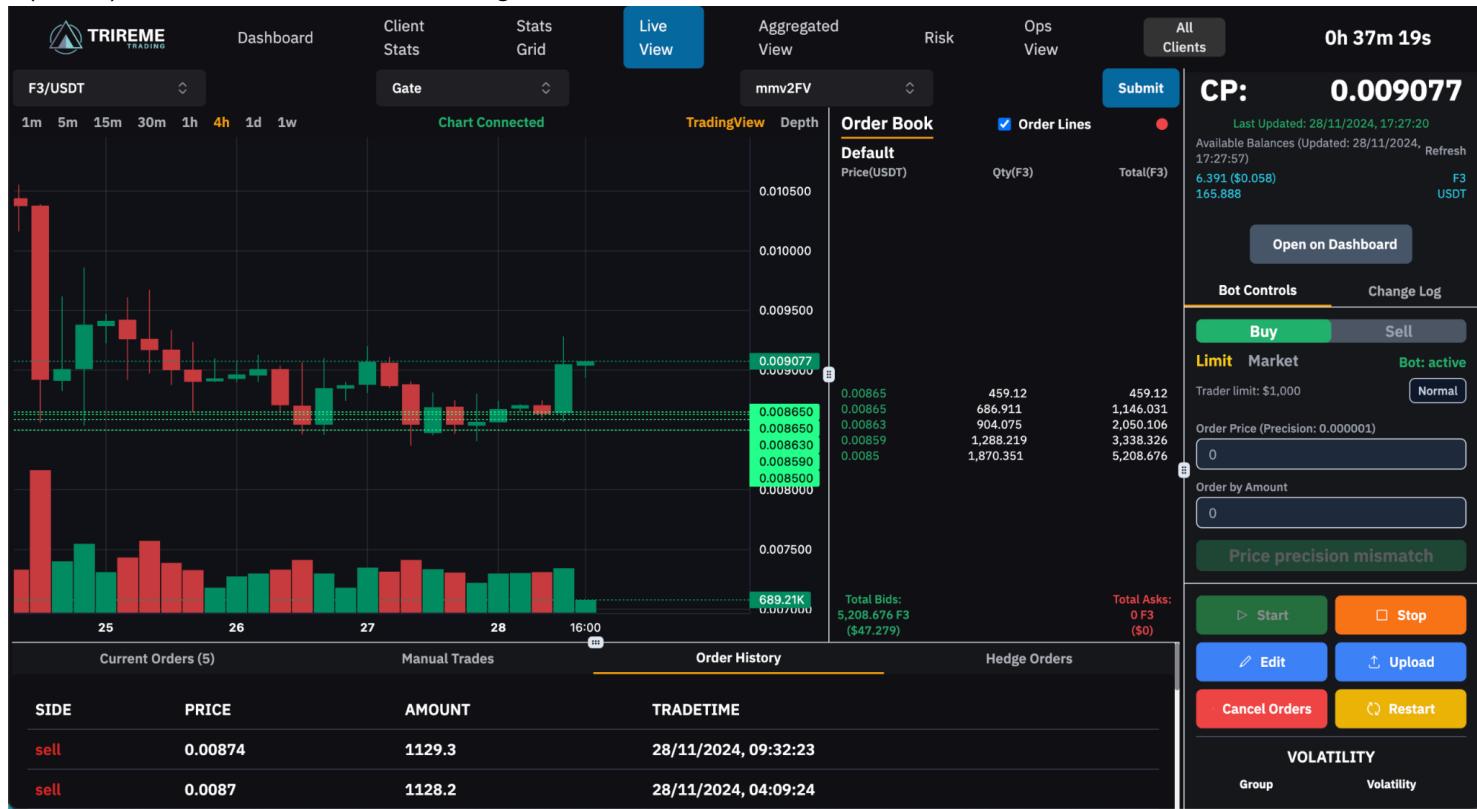
- (10:00) F3 Gate fixed, back to trading:



- (10:00) F3 Gate fixed, back to trading:

Day 29 (28/11/2024):

- (17:00) F3 Gate fixed, back to trading:



Exchange: Gate
CB F3: 6.39055848
Δ F3: -453.5
CB USDT: 165.88846800756
Δ USDT: 4.051046568000004
P&L: 119.28362886943839

Next update at 2024-11-28 18:26:12 17:26

```
optimalConfigGate = {
    "s_base": 13188,
    "s_quote": 170,
    "depth": 2,
    "amount": 45,
    "max_spread": 0.6/100,
    "levels": 5,
    "IRA": 1,
    "amount_sf": 1.4,
    "spread_sf": 1.4
}
```

this is what the bot is using 09:53

Day 35 (4/12/2024):

- (18:21) F3 Gate FIXED!!! Back to trading:



2024-12-04T18:17:50.476Z

2024-12-04 18:17:50,476 INFO - [67509c8c622c943f963de155_1] [[np.float64(0.3), np.flo...

2024-12-04 18:17:50,476 INFO - [67509c8c622c943f963de155_1] [[np.float64(0.3), np.float64(0.394),
np.float64(0.616), np.float64(1.066), np.float64(2.0)], [np.float64(0.3), np.float64(0.394),
np.float64(0.616), np.float64(1.066), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(16.89), np.float64(21.11), np.float64(25.33), np.float64(29.55), np.float64(33.77)], [np.float64(11.26),
np.float64(15.48), np.float64(19.7), np.float64(23.92), np.float64(28.15)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.218544336765241, 0.7814556632347589]

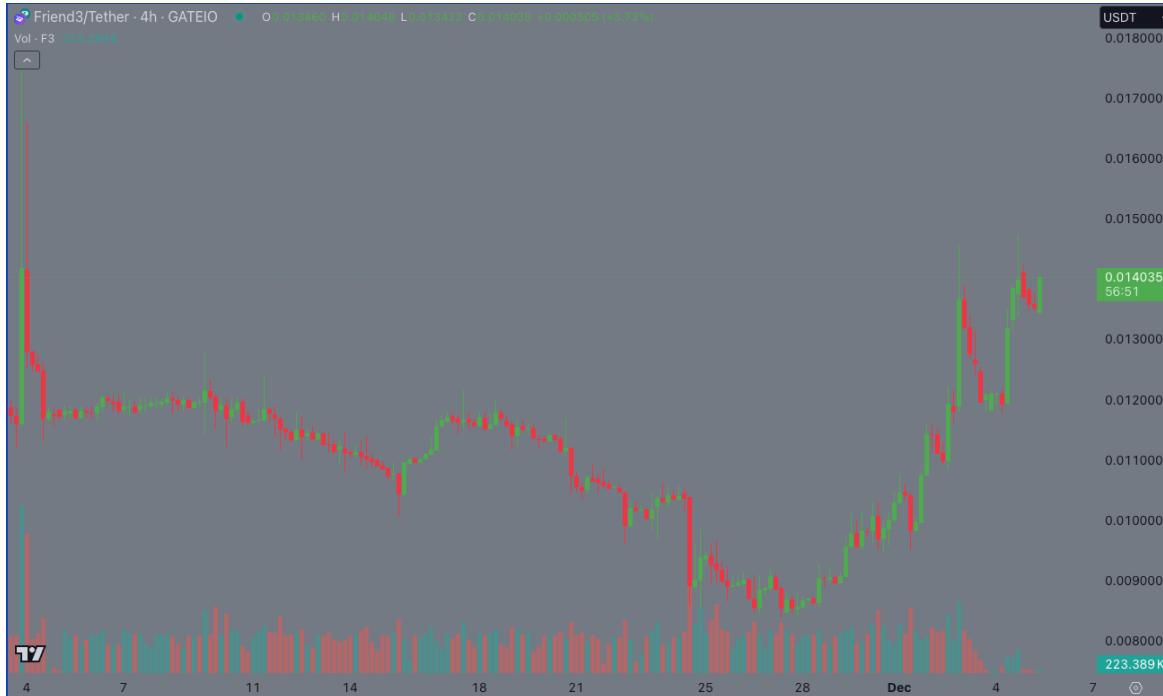
Exchange: Gate
CB F3: 12082.57742348
Δ F3: 4658.902849999995
CB USDT: 2.47889184745
Δ USDT: -66.0285032845
P&L: 121.16901182475884

Next update at 2024-12-04 20:25:08 19:25

- (18:21) Config is neutral because our inventory base (12,082 F3) is near target base (13,188 F3).

Day 36 (5/12/2024):

- (11:00):



TRIREME TRADING | 0h 38m 53s

F3/USDT	Gate	mmv2FV	Submit
Current Orders (9)	Manual Trades	Order History	Hedge Orders
SIDE	PRICE	AMOUNT	TRADETIME
sell	0.01403	394.1482	05/12/2024, 10:46:02
sell	0.01402	294.3244	05/12/2024, 10:46:00
sell	0.01395	407.4	05/12/2024, 10:34:50
sell	0.01394	290.4	05/12/2024, 10:34:50
sell	0.01402	425.3	05/12/2024, 10:29:16
sell	0.01401	299.2	05/12/2024, 10:29:16
sell	0.01401	306.7	05/12/2024, 10:28:41
buy	0.01392	304.1	05/12/2024, 10:28:22
sell	0.01399	766.9	05/12/2024, 10:23:49
sell	0.0139	399.7	05/12/2024, 10:23:48
buy	0.0138	305.1	05/12/2024, 10:14:40
buy	0.0138	312.6	05/12/2024, 10:07:49
sell	0.01388	0.002776	05/12/2024, 10:01:14
buy	0.01382	557.4	05/12/2024, 09:56:06
buy	0.01386	289.3	05/12/2024, 09:55:41

CP: 0.014035
Last Updated: 05/12/2024, 10:47:44
Available Balances (Updated: 05/12/2024, 11:04:29)
5,060.573 (\$71,025)
99.029 F3 USDT
[Open on Dashboard](#)

Bot Controls Change Log
Buy Sell
Limit Market Bot: active
Trader limit: \$1,000 Normal
Order Price (Precision: 0.000001)
0
Order by Amount
0
Price precision mismatch

Start Stop
Download Upload
Edit
Cancel Orders Restart

▼ 2024-12-05T10:46:04.357Z 2024-12-05 10:46:04,357 INFO - [67509c8c622c943f963de155_1] [[np.float64(0.252), np.f...

2024-12-05 10:46:04,357 INFO - [67509c8c622c943f963de155_1] [[np.float64(0.252), np.float64(0.339),
np.float64(0.552), np.float64(1.006), np.float64(2.0)], [np.float64(0.348), np.float64(0.447),
np.float64(0.675), np.float64(1.12), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(13.08), np.float64(16.35), np.float64(19.62), np.float64(22.89), np.float64(26.16)], [np.float64(8.72),
np.float64(11.99), np.float64(15.26), np.float64(18.53), np.float64(21.8)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.2820377326554444, 0.7179622673445556]

- (17:30):



2024-12-05T17:30:59.589Z

2024-12-05 17:30:59,589 INFO - [67509c8c622c943f963de155_1] [[np.float64(0.278), np.f...

2024-12-05 17:30:59,589 INFO - [67509c8c622c943f963de155_1] [[np.float64(0.278), np.float64(0.369),
np.float64(0.587), np.float64(1.04), np.float64(2.0)], [np.float64(0.322), np.float64(0.419),
np.float64(0.643), np.float64(1.092), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(24.09), np.float64(30.11), np.float64(36.13), np.float64(42.15), np.float64(48.17)], [np.float64(16.06),
np.float64(22.08), np.float64(28.1), np.float64(34.12), np.float64(40.14)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.0985730928313617, 0.9014269071686382]

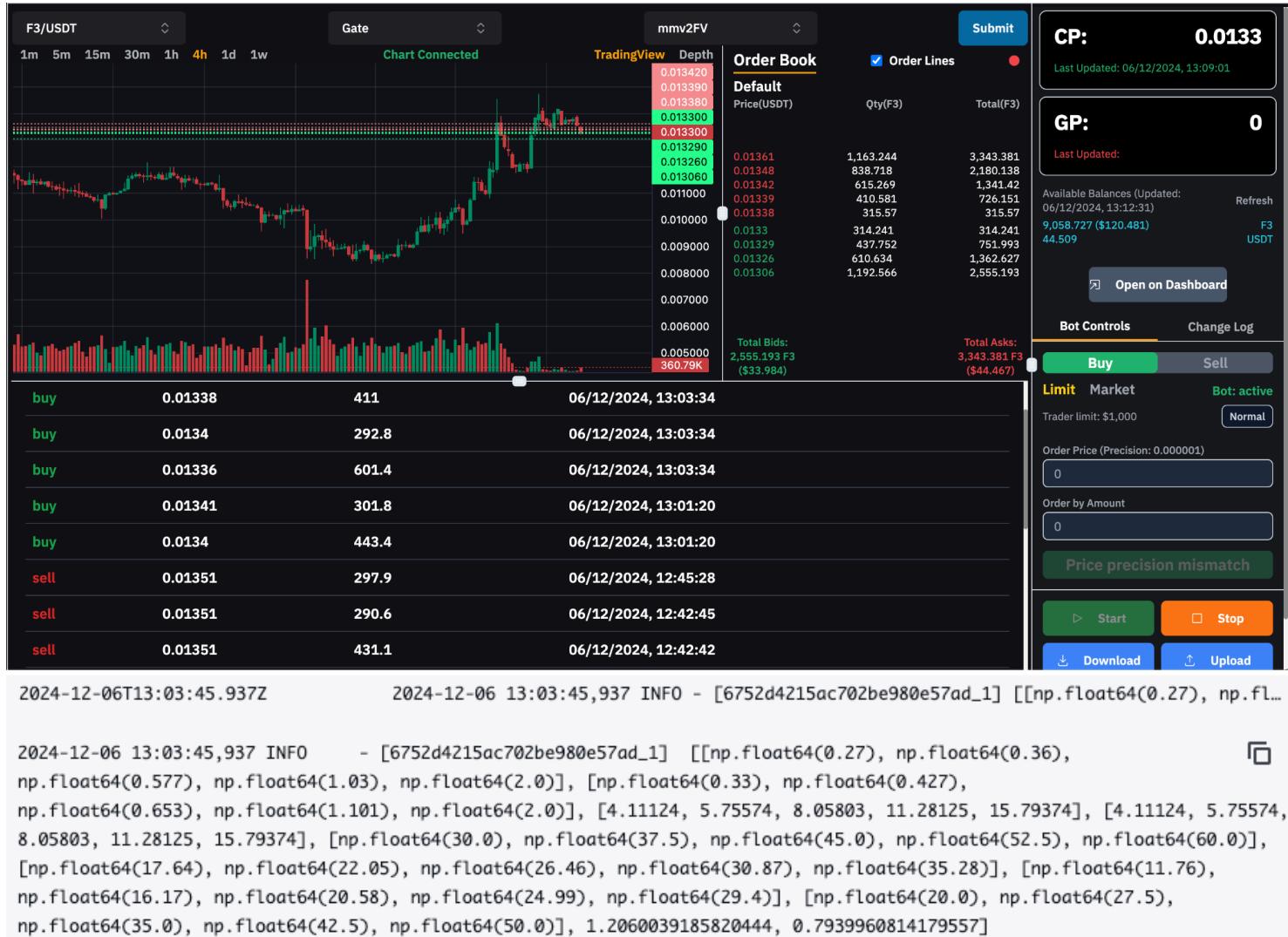
Exchange: Gate
CB F3: 10996.64987348
Δ F3: 716.69796000000013
CB USDT: 16.4138930405
Δ USDT: -9.8502390000000002
P&L: 117.1177230174708

Next update at 2024-12-05 19:25:44 18:25

- (17:30) Config is lightly aggressive on buy side because our inventory base (10,996 F3) is below target base (13,188 F3).

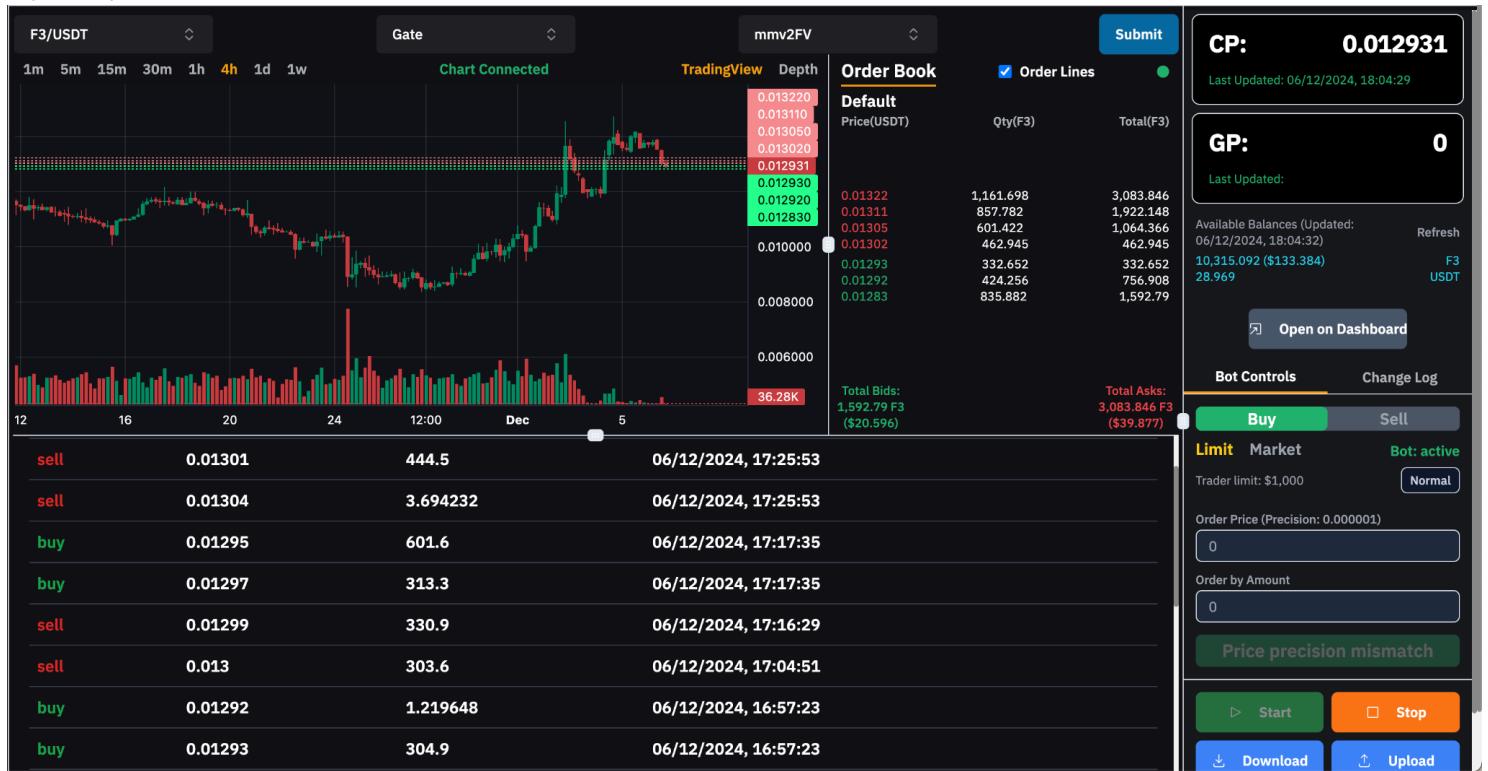
Day 37 (6/12/2024):

- (13:15):



- (13:15) Config is lightly aggressive on buy side because our inventory base (9,058 F3) is below target base (13,188 F3).

- (18:00):



2024-12-06T18:05:47.610Z

2024-12-06 18:05:47,610 INFO - [6752d4215ac702be980e57ad_1] [[np.float64(0.247), np.f...

2024-12-06 18:05:47,610 INFO - [6752d4215ac702be980e57ad_1] [[np.float64(0.247), np.float64(0.334), np.float64(0.546), np.float64(1.0), np.float64(2.0)], [np.float64(0.353), np.float64(0.453), np.float64(0.681), np.float64(1.125), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)], [np.float64(23.46), np.float64(29.33), np.float64(35.2), np.float64(41.06), np.float64(46.93)], [np.float64(15.64), np.float64(21.51), np.float64(27.38), np.float64(33.24), np.float64(39.11)], [np.float64(20.0), np.float64(27.5), np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.108921302188353, 0.891078697811647]

- (18:00) Config is lightly aggressive than (13:15) on buy side eventhough our inventory base (10,315 F3) > (9,058 F3) because ... volatility/PnL/....

Day 40 (9/12/2024):

- (10:00):



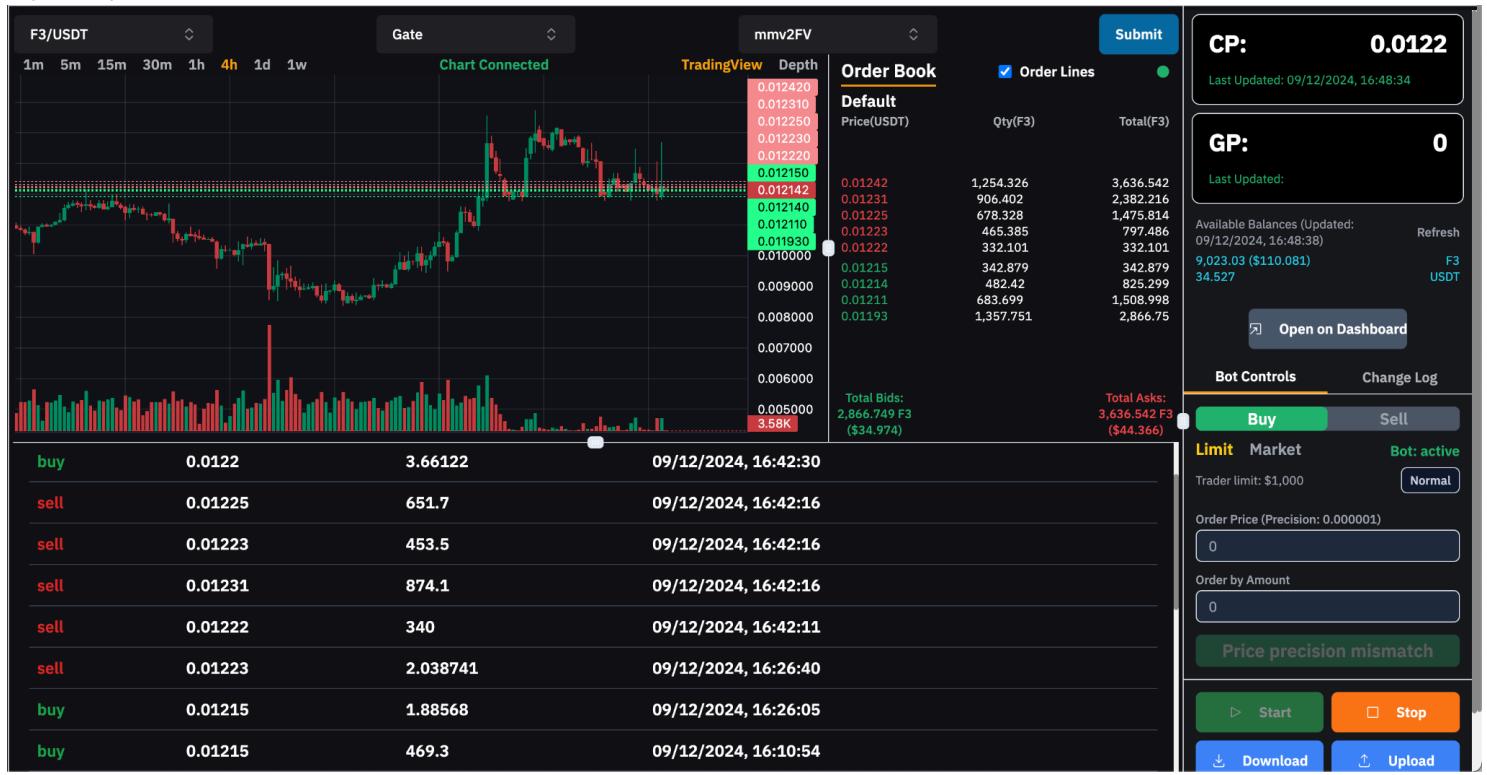
2024-12-09T09:09:24.726Z

2024-12-09 09:09:24,726 INFO - [6752d4215ac702be980e57ad_1] [[np.float64(0.276), np.f...

2024-12-09 09:09:24,726 INFO - [6752d4215ac702be980e57ad_1] [[np.float64(0.276), np.float64(0.367), np.float64(0.585), np.float64(1.037), np.float64(2.0)], [np.float64(0.324), np.float64(0.421), np.float64(0.646), np.float64(1.094), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)], [np.float64(26.63), np.float64(33.29), np.float64(39.95), np.float64(46.61), np.float64(53.27)], [np.float64(17.76), np.float64(24.42), np.float64(31.07), np.float64(37.73), np.float64(44.39)], [np.float64(20.0), np.float64(27.5), np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.0560864320412495, 0.9439135679587504]

- (10:00) Config is less aggressive on buy side because our inventory base (11,708 F3) is more than (18:00 6/12) base (10,315 F3).

- (16:42):



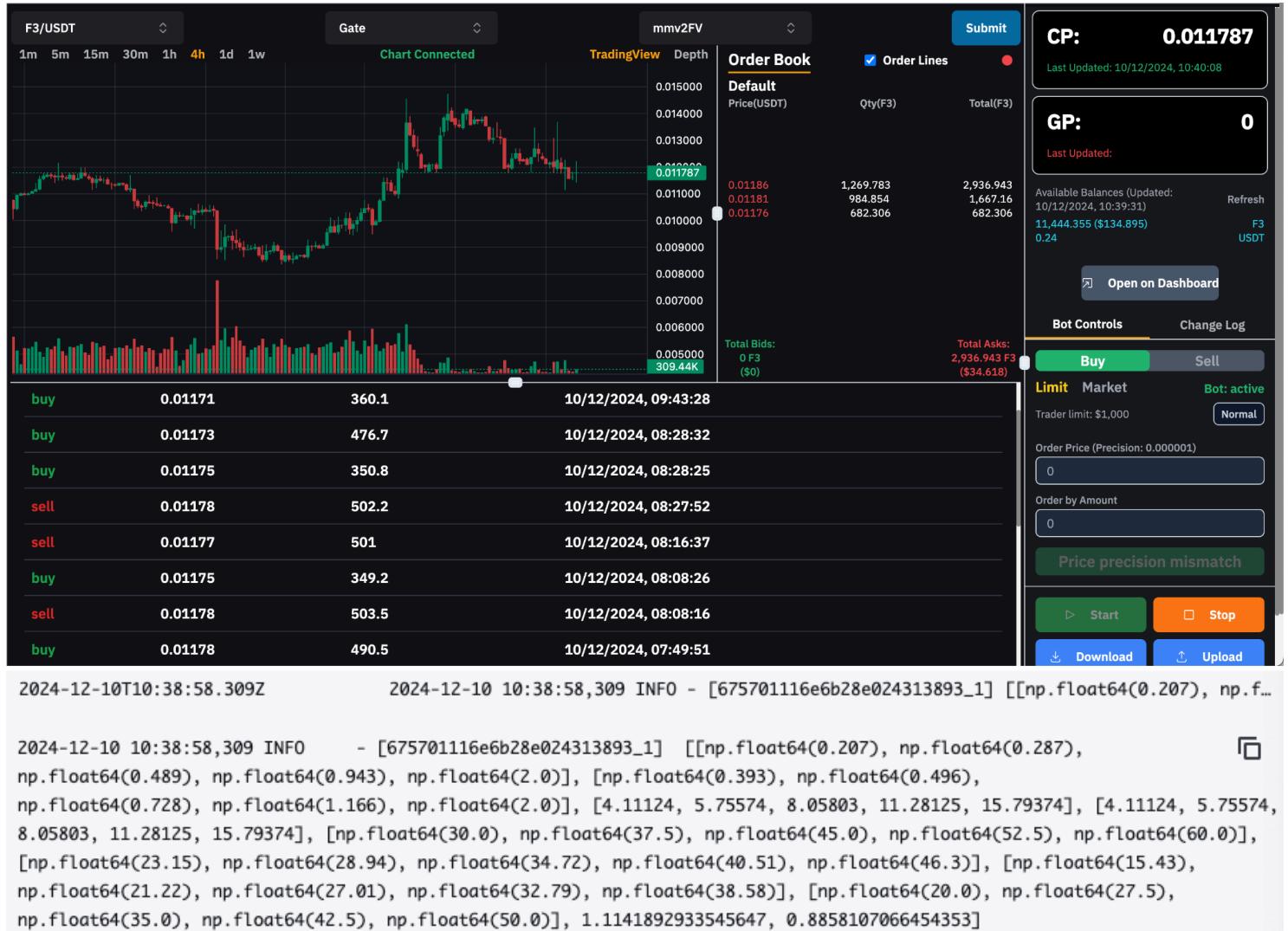
2024-12-09T16:42:13.749Z

2024-12-09 16:42:13,749 INFO - [675701116e6b28e024313893_1] [[np.float64(0.274), np.f...

2024-12-09 16:42:13,749 INFO - [675701116e6b28e024313893_1] [[np.float64(0.274), np.float64(0.365), np.float64(0.582), np.float64(1.035), np.float64(2.0)], [np.float64(0.326), np.float64(0.423), np.float64(0.648), np.float64(1.096), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)], [np.float64(25.12), np.float64(31.4), np.float64(37.68), np.float64(43.96), np.float64(50.24)], [np.float64(16.75), np.float64(23.03), np.float64(29.31), np.float64(35.59), np.float64(41.87)], [np.float64(20.0), np.float64(27.5), np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.0813451456445253, 0.9186548543554747]

Day 41 (10/12/2024):

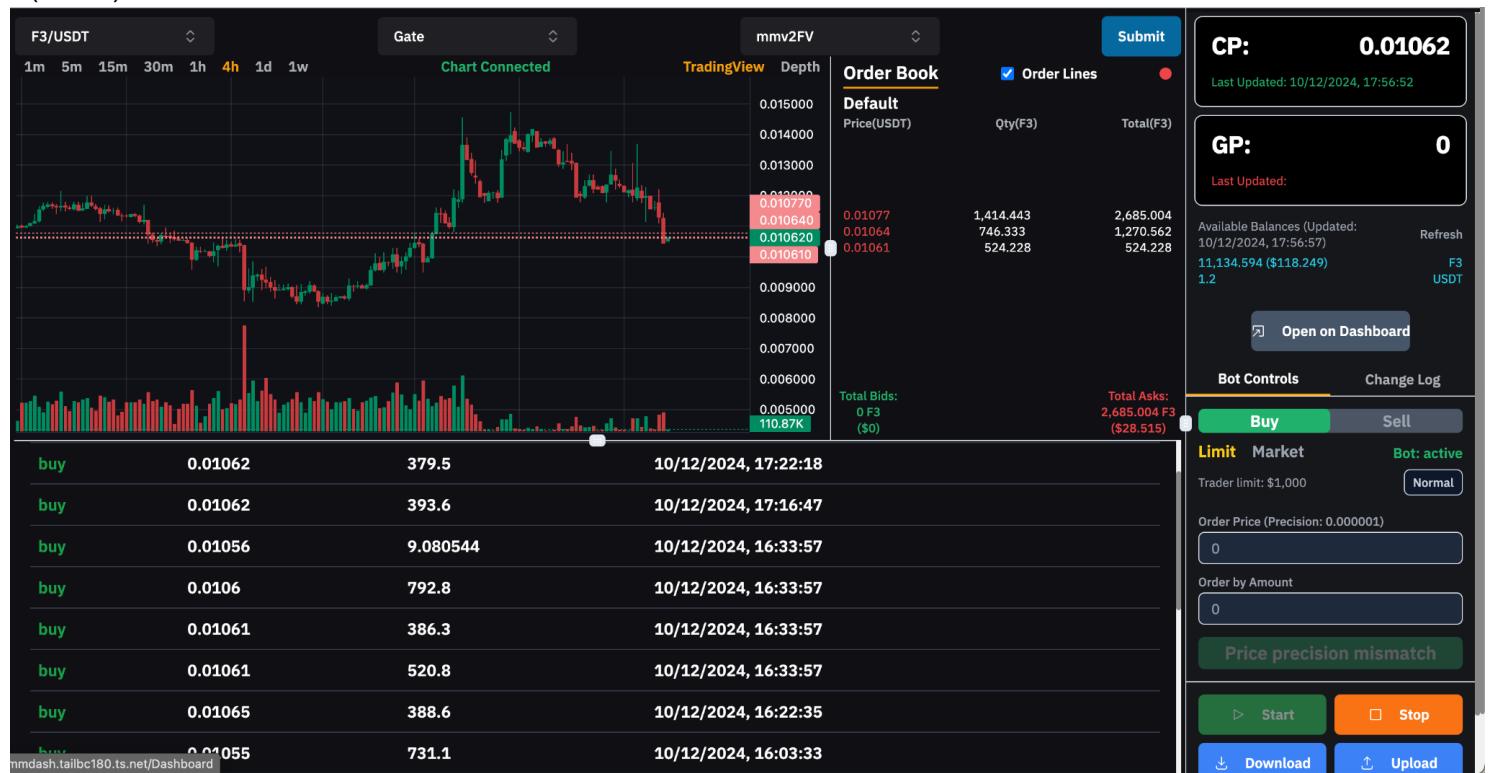
- (10:45):



- (10:45) Config is more aggressive on buy side although our inventory base (11,444 F3) is close to the target base (13,188 F3), because the volatility at this time is high: 0.0003. That means the bot is more aggressive to buy tokens to get to the target before the volatility goes again our favor.



- (17:22):



2024-12-10T17:22:20.990Z

2024-12-10 17:22:20,990 INFO - [675701116e6b28e024313893_1] -- volatility: 0.00040550...

2024-12-10 17:22:20,990 INFO

- [675701116e6b28e024313893_1] -- volatility: 0.0004055088300294878



2024-12-10T17:22:21.266Z

2024-12-10 17:22:21,266 INFO - [675701116e6b28e024313893_1] -- priceList: [0.01206, 0...

2024-12-10T17:22:21.563Z

2024-12-10 17:22:21,563 INFO - [675701116e6b28e024313893_1] [[np.float64(0.139), np.f...

2024-12-10 17:22:21,563 INFO

- [675701116e6b28e024313893_1] [[np.float64(0.139), np.float64(0.204),



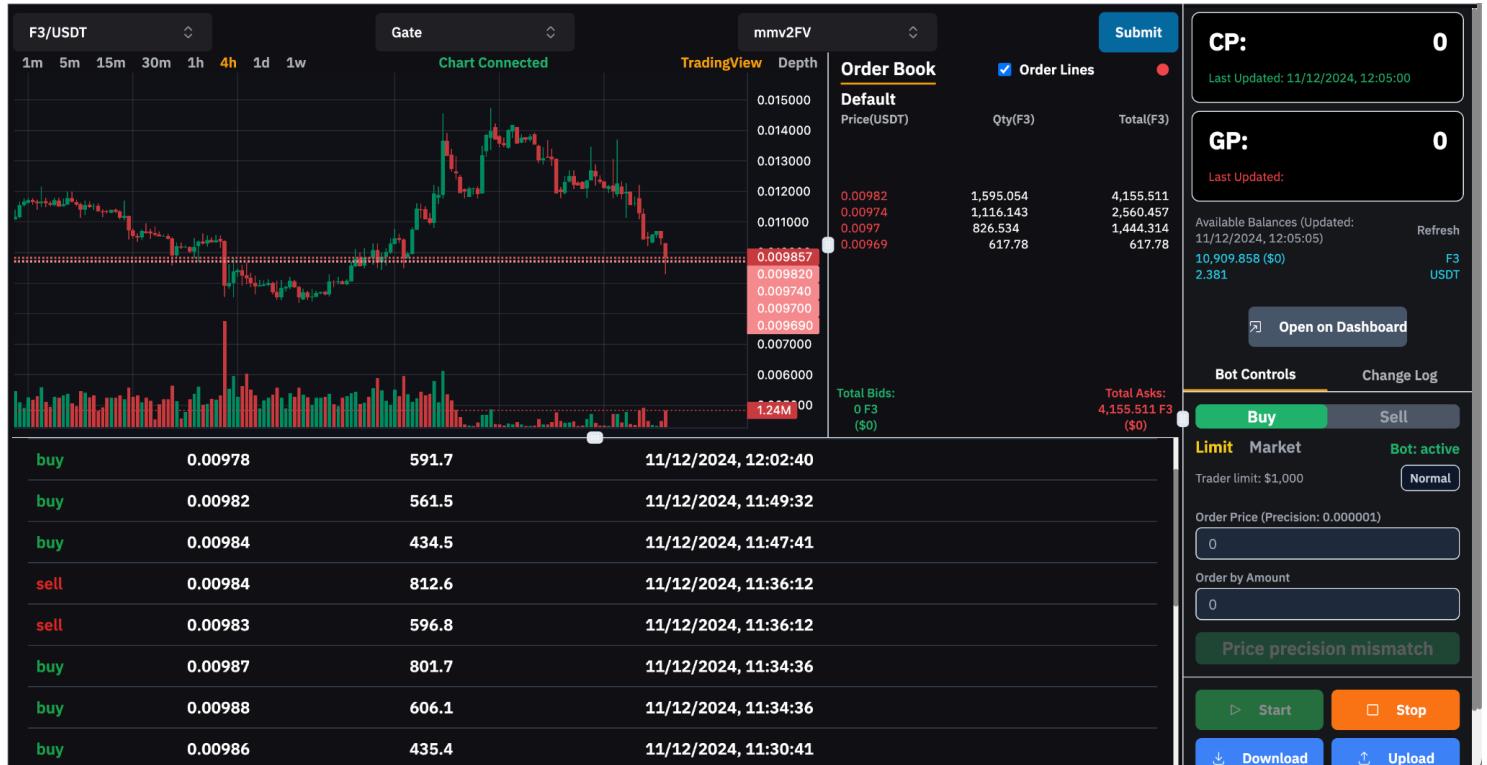
np.float64(0.382), np.float64(0.826), np.float64(2.0)], [np.float64(0.461), np.float64(0.569),
np.float64(0.804), np.float64(1.23), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(24.47), np.float64(30.58), np.float64(36.7), np.float64(42.82), np.float64(48.93)], [np.float64(16.31),
np.float64(22.43), np.float64(28.54), np.float64(34.66), np.float64(40.78)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.0922293183773126, 0.9077706816226873]

- (17:22) Config is more aggressive on buy side although our inventory base (11,134 F3) is close to the target base (13,188 F3), because the volatility at this time is high: 0.0004! That means the bot is more aggressive to buy tokens to get to the target before the volatility goes again our favor.



Day 42 (11/12/2024):

- (10:45):



2024-12-11T12:02:41.983Z

2024-12-11 12:02:41,983 INFO - [675701116e6b28e024313893_1] -- volatility: 0.00034877...

2024-12-11 12:02:41,983 INFO

- [675701116e6b28e024313893_1] -- volatility: 0.0003487740537650559



2024-12-11T12:02:42.301Z

2024-12-11 12:02:42,301 INFO - [675701116e6b28e024313893_1] -- priceList: [0.0111565,...

2024-12-11T12:02:42.553Z

2024-12-11 12:02:42,553 INFO - [675701116e6b28e024313893_1] [[np.float64(0.133), np.f...

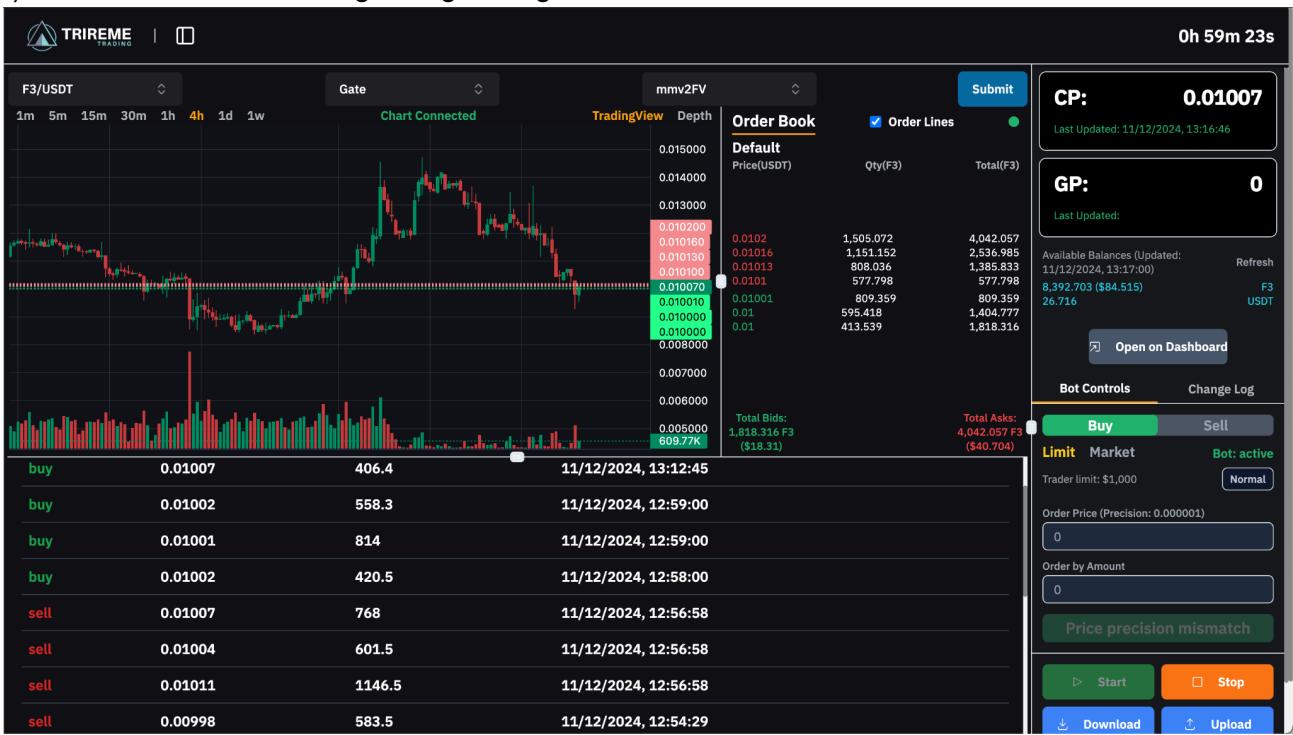
2024-12-11 12:02:42,553 INFO - [675701116e6b28e024313893_1] [[np.float64(0.133), np.float64(0.196),
np.float64(0.371), np.float64(0.814), np.float64(2.0)], [np.float64(0.467), np.float64(0.575),
np.float64(0.81), np.float64(1.235), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(23.47), np.float64(29.34), np.float64(35.21), np.float64(41.08), np.float64(46.95)], [np.float64(15.65),
np.float64(21.52), np.float64(27.38), np.float64(33.25), np.float64(39.12)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.1087882403139218, 0.8912117596860782]



- (17:22) Config is more aggressive on buy side although our inventory base (10,909 F3) is close to the target base (13,188 F3), because the volatility at this time is high: 0.000348. That means the bot is more aggressive to buy tokens to get to the target before the volatility goes again our favor.



- (13:15): State of F3 Before testing config editing:



2024-12-11T13:12:48.003Z	2024-12-11 13:12:48,003 INFO - [675701116e6b28e024313893_1] -- volatility: 0.00033797...
2024-12-11 13:12:48,003 INFO	- [675701116e6b28e024313893_1] -- volatility: 0.0003379704443974825
2024-12-11T13:12:48.260Z	2024-12-11 13:12:48,260 INFO - [675701116e6b28e024313893_1] -- priceList: [0.01115, 0...
2024-12-11T13:12:48.554Z	2024-12-11 13:12:48,554 INFO - [675701116e6b28e024313893_1] [[np.float64(0.05), np.fl...
2024-12-11 13:12:48,554 INFO	- [675701116e6b28e024313893_1] [[np.float64(0.05), np.float64(0.085), np.float64(0.202), np.float64(0.589), np.float64(2.0)], [np.float64(0.55), np.float64(0.662), np.float64(0.897), np.float64(1.304), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)], [np.float64(18.17), np.float64(22.71), np.float64(27.25), np.float64(31.79), np.float64(36.34)], [np.float64(12.11), np.float64(16.65), np.float64(21.2), np.float64(25.74), np.float64(30.28)], [np.float64(20.0), np.float64(27.5), np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.197201702362754, 0.802798297637246]

- (13:20): State of F3 After testing config editing:

AutoGenerateConfig ×

Target Base	Target Quote
5500	55
Depth	Amount
2	40
Max Spread	Levels
0.5	8
IRA	Amount Scale Factor
0.5	1.6
Spread Scale Factor	
1.6	<button style="background-color: green; color: white; padding: 5px;">Generate</button>



2024-12-11T13:43:32.011Z

2024-12-11 13:43:32,011 INFO - [675701116e6b28e024313893_1] -- volatility: 0.00031566...

2024-12-11 13:43:32,010 INFO

- [675701116e6b28e024313893_1] -- volatility: 0.00031566832067462223



2024-12-11T13:43:32.265Z

2024-12-11 13:43:32,265 INFO - [675701116e6b28e024313893_1] -- priceList: [0.010904, ...]

2024-12-11T13:43:32.549Z

2024-12-11 13:43:32,549 INFO - [675701116e6b28e024313893_1] [[np.float64(0.178), np.f...

2024-12-11 13:43:32,549 INFO

- [675701116e6b28e024313893_1] [[np.float64(0.178), np.float64(0.252),
np.float64(0.445), np.float64(0.897), np.float64(2.0)], [np.float64(0.422), np.float64(0.528),
np.float64(0.761), np.float64(1.194), np.float64(2.0)], [4.11124, 5.75574, 8.05803, 11.28125, 15.79374], [4.11124, 5.75574,
8.05803, 11.28125, 15.79374], [np.float64(30.0), np.float64(37.5), np.float64(45.0), np.float64(52.5), np.float64(60.0)],
[np.float64(23.92), np.float64(29.9), np.float64(35.88), np.float64(41.86), np.float64(47.84)], [np.float64(15.95),
np.float64(21.93), np.float64(27.91), np.float64(33.88), np.float64(39.86)], [np.float64(20.0), np.float64(27.5),
np.float64(35.0), np.float64(42.5), np.float64(50.0)], 1.1013568974264483, 0.8986431025735517]



- (13:20) Config is still aggressive on buy side although our inventory base (10,900 F3) is way more than the target base (5,500 F3) -> The editing config on Dashboard is for Traders is not ready yet, have to edit config on the back end.

- (14:28): State of F3 After Sus edit config in the back end:

AutoGenerateConfig ×

Target Base	Target Quote
5500	55
Depth	Amount
2	45
Max Spread	Levels
0.5	6
IRA	Amount Scale Factor
0.5	1.25
Spread Scale Factor	
1.25	Generate

SIDE	PRICE	AMOUNT	TRADETIME
buy	0.01003	351.4	11/12/2024, 14:28:33
sell	0.01005	1000.1	11/12/2024, 14:28:22
sell	0.01012	1585.8	11/12/2024, 14:28:22
sell	0.00999	382.3	11/12/2024, 14:28:22
sell	0.01001	628.7	11/12/2024, 14:28:22
buy	0.00998	419.2	11/12/2024, 13:43:28

2024-12-11T14:28:39.139Z 2024-12-11 14:28:39,139 INFO - [67599f2d92440a9cb65eda48_1] -- volatility: 0.00030516...

2024-12-11 14:28:39,139 INFO - [67599f2d92440a9cb65eda48_1] -- volatility: 0.00030516232242097386

2024-12-11T14:28:39.496Z 2024-12-11 14:28:39,496 INFO - [67599f2d92440a9cb65eda48_1] -- pricelist: [0.010573, ...]

2024-12-11T14:28:39.797Z 2024-12-11 14:28:39,797 INFO - [67599f2d92440a9cb65eda48_1] [[np.float64(0.55), np.fl...

```
2024-12-11 14:28:39,797 INFO - [67599f2d92440a9cb65eda48_1] [[np.float64(0.55), np.float64(0.616),
np.float64(0.72), np.float64(0.861), np.float64(1.045), np.float64(1.284), np.float64(1.595),
np.float64(2.0)], [np.float64(0.05), np.float64(0.069), np.float64(0.108), np.float64(0.18), np.float64(0.313),
np.float64(0.564), np.float64(1.048), np.float64(2.0)], [2.26793, 2.83492, 3.54364, 4.42956, 5.53695, 6.92118, 8.65148,
10.81435], [2.26793, 2.83492, 3.54364, 4.42956, 5.53695, 6.92118, 8.65148, 10.81435], [np.float64(10.5), np.float64(12.0),
np.float64(13.5), np.float64(15.0), np.float64(16.5), np.float64(18.0), np.float64(19.5), np.float64(21.0)],
[np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43),
np.float64(55.71), np.float64(60.0)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86),
np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], [np.float64(7.0), np.float64(8.5),
np.float64(10.0), np.float64(11.5), np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)], 0.5, 2]
```

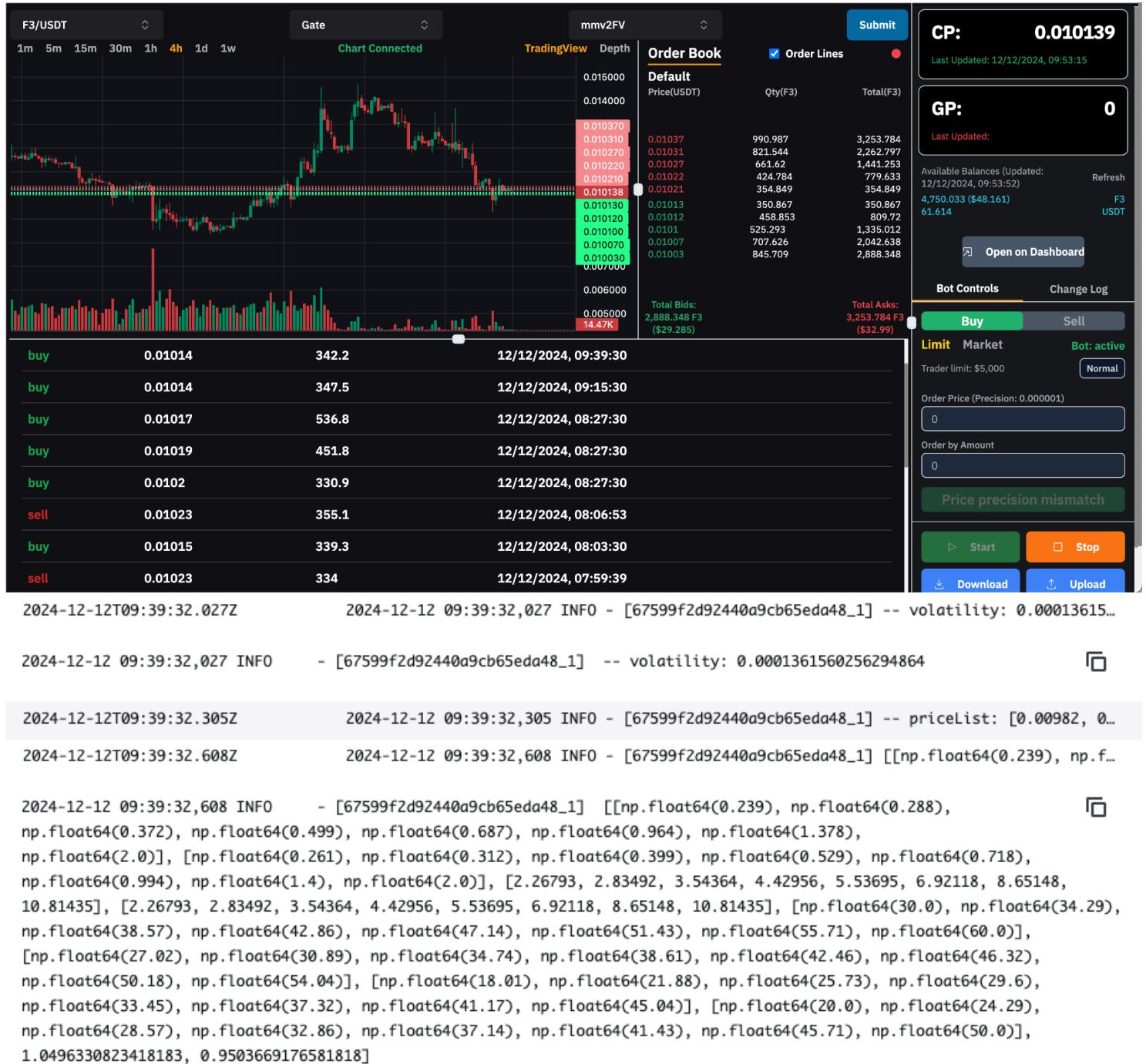
- (14:28) Config is aggressive on sell side because our inventory base (7,687 F3) is more than the target base (5,500 F3) -> The editing config on back end is working perfectly.

- Make sure the minimum amount of any orders have to be > 2\$

- Inventory: 33.971\$ - 7,687.733 F3

Day 43 (12/12/2024):

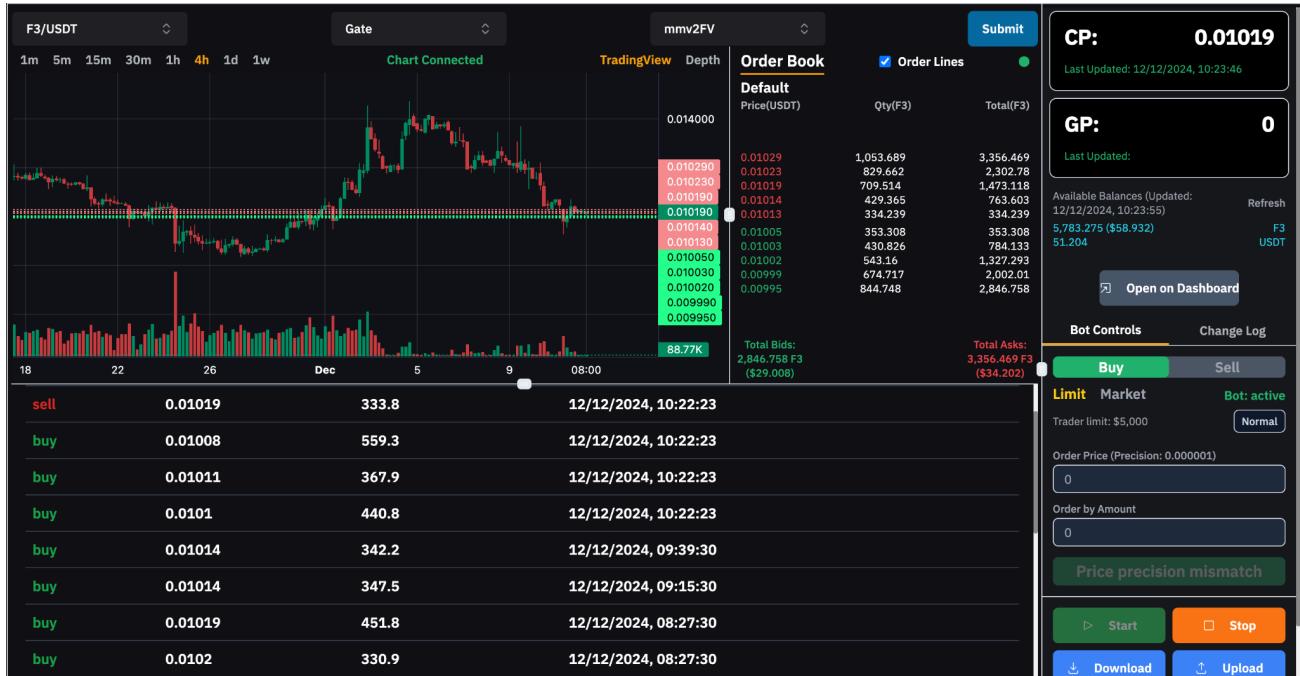
- (9:40):



- It took 2 seconds to update to new config after a filled order.

- (10:22): - Inventory: 51.204\$ - 5,783.275 F3

- (10:22): PnL: $(51.204 - 33.971) + (5,783.275 - 7,687.733) * 0.01019 = -2.17342702\$$



2024-12-12T10:22:26.003Z

2024-12-12 10:22:26,003 INFO - [67599f2d92440a9cb65eda48_1] -- volatility: 0.00013615...

2024-12-12 10:22:26,003 INFO

- [67599f2d92440a9cb65eda48_1] -- volatility: 0.0001361560256294864



2024-12-12T10:22:26.296Z

2024-12-12 10:22:26,296 INFO - [67599f2d92440a9cb65eda48_1] -- priceList: [0.00982, ...]

2024-12-12T10:22:26.616Z

2024-12-12 10:22:26,616 INFO - [67599f2d92440a9cb65eda48_1] [[np.float64(0.253), np.f...

2024-12-12 10:22:26,616 INFO - [67599f2d92440a9cb65eda48_1] [[np.float64(0.253), np.float64(0.303),
np.float64(0.39), np.float64(0.518), np.float64(0.707), np.float64(0.983), np.float64(1.392),
np.float64(2.0)], [np.float64(0.247), np.float64(0.297), np.float64(0.382), np.float64(0.51), np.float64(0.698),
np.float64(0.975), np.float64(1.386), np.float64(2.0)], [2.26793, 2.83492, 3.54364, 4.42956, 5.53695, 6.92118, 8.65148,
10.81435], [2.26793, 2.83492, 3.54364, 4.42956, 5.53695, 6.92118, 8.65148, 10.81435], [np.float64(29.23),
np.float64(33.41), np.float64(37.58), np.float64(41.76), np.float64(45.93), np.float64(50.11), np.float64(54.28),
np.float64(58.45)], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14),
np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(20.0), np.float64(24.29), np.float64(28.57),
np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], [np.float64(19.48),
np.float64(23.66), np.float64(27.83), np.float64(32.01), np.float64(36.18), np.float64(40.36), np.float64(44.53),
np.float64(48.71)], 0.9871238614327272, 1.0128761385672727]

- (10:22) Config is PERFECTLY NEUTRAL on both sides (max spread: 0.5) because our inventory base (5,783 F3) is close target base (5,500 F3)



- (11:37): - Inventory: 109.481\$ - 62.019 F3

- (11:37): PnL: $(109.481 - 33.971) + (62.019 - 7,687.733) * 0.010471 = -4.338851294\$$



```

2024-12-12T11:37:36.910Z      2024-12-12 11:37:36,910 INFO - [67599f2d92440a9cb65eda48_1] -- volatility: 0.00011601141365325256
2024-12-12 11:37:36,910 INFO - [67599f2d92440a9cb65eda48_1] -- volatility: 0.00011601141365325256
2024-12-12T11:37:36.996Z      2024-12-12 11:37:36,996 INFO - [67599f2d92440a9cb65eda48_1] trying to cancel order: i...
2024-12-12T11:37:37.021Z      2024-12-12 11:37:37,021 INFO - [67599f2d92440a9cb65eda48_1] trying to cancel order: i...
2024-12-12T11:37:37.198Z      2024-12-12 11:37:37,198 INFO - [67599f2d92440a9cb65eda48_1] order 751241185048 cancel...
2024-12-12T11:37:37.333Z      2024-12-12 11:37:37,333 INFO - [67599f2d92440a9cb65eda48_1] trying to cancel order: i...
2024-12-12T11:37:37.905Z      2024-12-12 11:37:37,905 INFO - [67599f2d92440a9cb65eda48_1] [[np.float64(0.212), np.f...
2024-12-12 11:37:37,905 INFO - [67599f2d92440a9cb65eda48_1] [[np.float64(0.258), np.float64(0.339), np.float64(0.462), np.float64(0.647), np.float64(0.926), np.float64(1.35), np.float64(2.0)], [np.float64(0.288), np.float64(0.341), np.float64(0.432), np.float64(0.564), np.float64(0.754), np.float64(1.028), np.float64(1.424), np.float64(2.0)], [2.26793, 2.83492, 3.54364, 4.42956, 5.53695, 6.92118, 8.65148, 10.81435], [2.26793, 2.83492, 3.54364, 4.42956, 5.53695, 6.92118, 8.65148, 10.81435], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(10.5), np.float64(12.0), np.float64(13.5), np.float64(15.0), np.float64(16.5), np.float64(18.0), np.float64(19.5), np.float64(21.0)], [np.float64(7.0), np.float64(8.5), np.float64(10.0), np.float64(11.5), np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 2, 0.5]

```

- (11:37) Config is slightly aggressive on buy side (max spread: 0.5) although we are completely skewed Short, our inventory base (62 F3) is way too small than target base (5,500 F3), because two reasons:

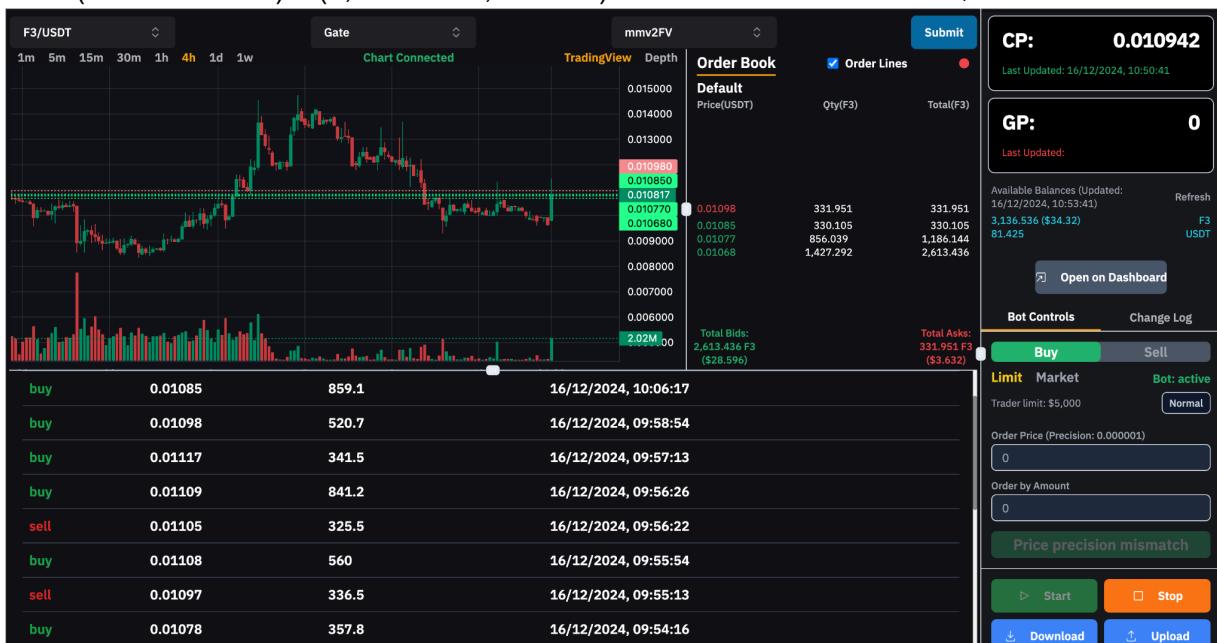
1. IRA = 0.5 → the bot less likely to rebalance quickly to the target base

2. The volatility is really small: 0.00011601141365325256



Day 47 (16/12/2024):

- (10:06): - Inventory: 81.425\$ - 3,136.536 F3
- (10:06): PnL: $(81.425 - 33.971) + (3,136.536 - 7,687.733) * 0.010942 = -2.345197574\$$



- (10:06) Config is aggressive on buy side (max spread: 0.5) because our inventory base (3,136 F3) is smaller than target base (5,500 F3)

Day 49 (18/12/2024):

- (12:50): - Inventory: 82.249\$ - 2,773.199 F3
- (12:50): PnL: $(82.249 - 33.971) + (2,773.199 - 7,687.733) * 0.009581 = 1.191849746\$$



2024-12-18T12:50:49.891Z 2024-12-18 12:50:49,891 INFO - [6761f6478b31bee74bceb463_1] -- volatility: 0.00023046...

2024-12-18 12:50:49,891 INFO - [6761f6478b31bee74bceb463_1] -- volatility: 0.00023046988469998248

2024-12-18T12:50:50.153Z 2024-12-18 12:50:50,153 INFO - [6761f6478b31bee74bceb463_1] -- priceList: [0.010189, ...]

2024-12-18T12:50:50.204Z 2024-12-18 12:50:50,204 INFO - [6761f6478b31bee74bceb463_1] could not create sell ord...

2024-12-18T12:50:50.305Z 2024-12-18 12:50:50,305 INFO - [6761f6478b31bee74bceb463_1] created sell order with o...

2024-12-18T12:50:50.466Z 2024-12-18 12:50:50,466 INFO - [6761f6478b31bee74bceb463_1] [[np.float64(0.05), np.fl...

2024-12-18 12:50:50,466 INFO - [6761f6478b31bee74bceb463_1] [[np.float64(0.05), np.float64(0.059),
np.float64(0.082), np.float64(0.129), np.float64(0.226), np.float64(0.431), np.float64(0.893),
np.float64(2.0)], [np.float64(0.55), np.float64(0.582), np.float64(0.654), np.float64(0.767), np.float64(0.932),
np.float64(1.168), np.float64(1.508), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848,
15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29),
np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)],
[np.float64(24.33), np.float64(27.81), np.float64(31.28), np.float64(34.76), np.float64(38.23), np.float64(41.71),
np.float64(45.18), np.float64(48.66)], [np.float64(16.22), np.float64(19.7), np.float64(23.17), np.float64(26.65),
np.float64(30.12), np.float64(33.6), np.float64(37.07), np.float64(40.55)], [np.float64(20.0), np.float64(24.29),
np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)],
1.0945091462054546, 0.9054908537945454]

- (12:50) Config is aggressive on buy side (max spread: 0.5) because our inventory base (2,773 F3) is smaller than target base (5,500 F3)

- Weird thing happened on the log, max spread was supposed to be 0.5 while on the log, buy spread is 0.05 plus sell spread 0.55 equal to 0.6.

Day 50 (19/12/2024):

- (10:48): - Inventory: 29.838\$ - 8,433.816 F3

- (10:48): PnL: $(29.838 - 33.971) + (8,433.816 - 7,687.733) * 0.00888 = 2.49221704\$$



2024-12-19T10:48:58.323Z

2024-12-19 10:48:58,323 INFO - [676356b3b1dbf7df4469dda2_1] -- volatility: 0.00019227...

2024-12-19 10:48:58,323 INFO

- [676356b3b1dbf7df4469dda2_1] -- volatility: 0.00019227329960015365



2024-12-19T10:48:58.627Z

2024-12-19 10:48:58,627 INFO - [676356b3b1dbf7df4469dda2_1] -- priceList: [0.009584, ...]

2024-12-19T10:48:58.925Z

2024-12-19 10:48:58,925 INFO - [676356b3b1dbf7df4469dda2_1] [[np.float64(0.374), np.f...

2024-12-19 10:48:58,925 INFO

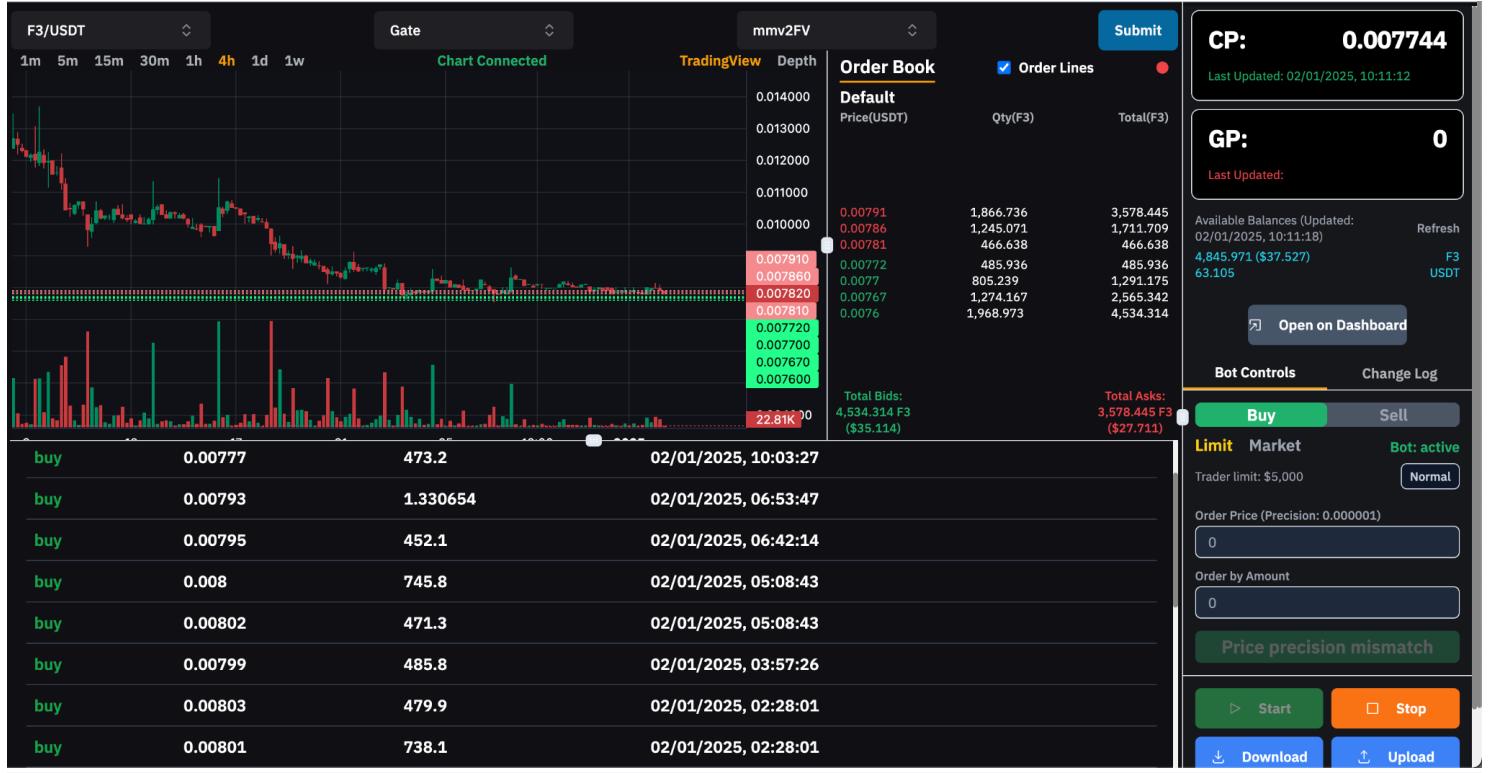
- [676356b3b1dbf7df4469dda2_1] [[np.float64(0.374), np.float64(0.403),
np.float64(0.469), np.float64(0.576), np.float64(0.742), np.float64(0.995), np.float64(1.386),
np.float64(2.0)], [np.float64(0.126), np.float64(0.142), np.float64(0.183), np.float64(0.257), np.float64(0.39),
np.float64(0.633), np.float64(1.093), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848,
15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(21.68),
np.float64(24.78), np.float64(27.88), np.float64(30.98), np.float64(34.07), np.float64(37.17), np.float64(40.26),
np.float64(43.36)], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14),
np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(20.0), np.float64(24.29), np.float64(28.57),
np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], [np.float64(14.45),
np.float64(17.56), np.float64(20.65), np.float64(23.75), np.float64(26.84), np.float64(29.94), np.float64(33.04),
np.float64(36.14)], 0.8613719809781818, 1.138628019021818]



- (10:48) Config is aggressive on sell side (max spread: 0.5) because our inventory base (8,433 F3) is bigger than target base (5,500 F3)

Day 64 (2/1/2025):

- (10:00): - Inventory: 63.105\$ - 4,845.971 F3
- (10:00): PnL: $(63.105 - 33.971) + (4,845.971 - 7,687.733) * 0.007744 = 7.127395072\$$



```

2025-01-02T10:03:30.958Z      2025-01-02 10:03:30,958 INFO - [6775f502ab76a600ccc4fcfa6_1] -- volatility: 9.317865028838558e-05
2025-01-02 10:03:30,958 INFO - [6775f502ab76a600ccc4fcfa6_1] -- volatility: 9.317865028838558e-05
2025-01-02T10:03:31.332Z      2025-01-02 10:03:31,332 INFO - [6775f502ab76a600ccc4fcfa6_1] -- priceList: [0.007843, 0.007843, 0.007843, 0.007802, 0.00...
2025-01-02T10:03:31.629Z      2025-01-02 10:03:31,629 INFO - [6775f502ab76a600ccc4fcfa6_1] [[np.float64(0.136), np.float64(0.153), np.float64(0.195), ...
2025-01-02 10:03:31,629 INFO - [6775f502ab76a600ccc4fcfa6_1] [[np.float64(0.136), np.float64(0.153), np.float64(0.195),
np.float64(0.272), np.float64(0.408), np.float64(0.653), np.float64(1.111), np.float64(2.0)], [np.float64(0.364), np.float64(0.393),
np.float64(0.458), np.float64(0.565), np.float64(0.73), np.float64(0.984), np.float64(1.378), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941,
5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29),
np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(26.93), np.float64(30.78),
np.float64(34.62), np.float64(38.47), np.float64(42.31), np.float64(46.16), np.float64(50.0), np.float64(53.85)], [np.float64(17.95), np.float64(21.8),
np.float64(25.64), np.float64(29.49), np.float64(33.34), np.float64(37.19), np.float64(41.03), np.float64(44.88)], [np.float64(20.0), np.float64(24.29),
np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.0512215355236363, 0.9487784644763636]

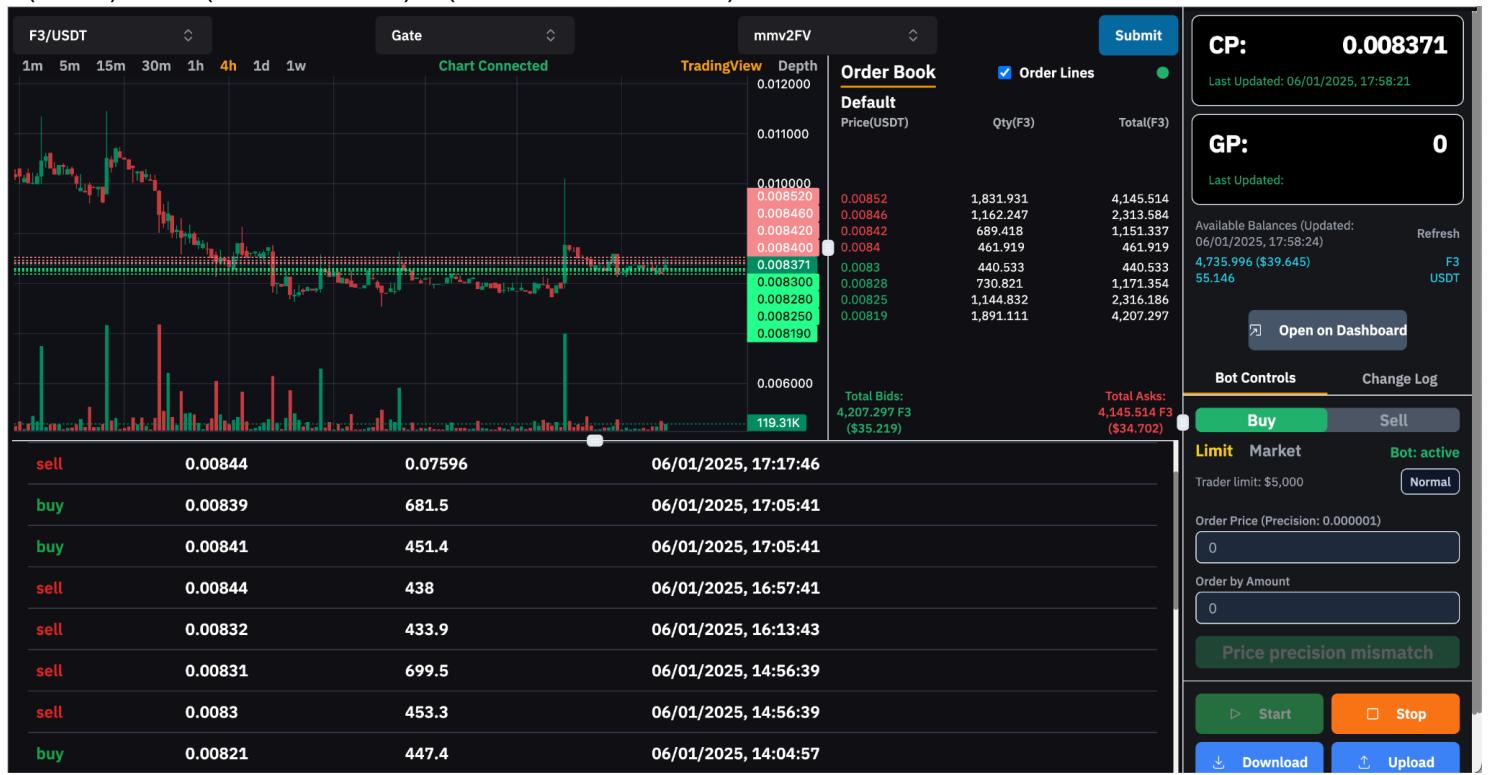
```

- (10:00) Config is aggressive on buy side (max spread: 0.5) because our inventory base (4,845 F3) is smaller than target base (5,500 F3) and we are in profit (7\$), so the config can be easily favored aggressive.

- Volatility is relatively small: 0.000095

Day 68 (6/1/2025):

- (17:20): - Inventory: 55.146\$ - 4,735.996 F3
- (17:20): PnL: $(55.146 - 33.971) + (4,735.996 - 7,687.733) * 0.008371 = -3.533990427\$$



2025-01-06T17:17:48.369Z

2025-01-06 17:17:48,369 INFO - [677b1ec246fe4cb701f133e5_1] -- volatility: 6.26868800...

2025-01-06 17:17:48,369 INFO

- [677b1ec246fe4cb701f133e5_1] -- volatility: 6.26868800271334e-05



2025-01-06T17:17:48.699Z

2025-01-06 17:17:48,699 INFO - [677b1ec246fe4cb701f133e5_1] -- priceList: [0.00837, 0...

2025-01-06T17:17:49.000Z

2025-01-06 17:17:49,000 INFO - [677b1ec246fe4cb701f133e5_1] [[np.float64(0.248), np.f...

2025-01-06 17:17:49,000 INFO - [677b1ec246fe4cb701f133e5_1] [[np.float64(0.248), np.float64(0.272),
np.float64(0.329), np.float64(0.425), np.float64(0.582), np.float64(0.839), np.float64(1.267),
np.float64(2.0)], [np.float64(0.252), np.float64(0.276), np.float64(0.333), np.float64(0.43), np.float64(0.587),
np.float64(0.844), np.float64(1.272), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848,
15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29),
np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)],
[np.float64(27.92), np.float64(31.91), np.float64(35.89), np.float64(39.88), np.float64(43.87), np.float64(47.86),
np.float64(51.84), np.float64(55.83)], [np.float64(18.61), np.float64(22.6), np.float64(26.59), np.float64(30.58),
np.float64(34.56), np.float64(38.55), np.float64(42.54), np.float64(46.53)], [np.float64(20.0), np.float64(24.29),
np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)],
1.0347274548418182, 0.9652725451581818]

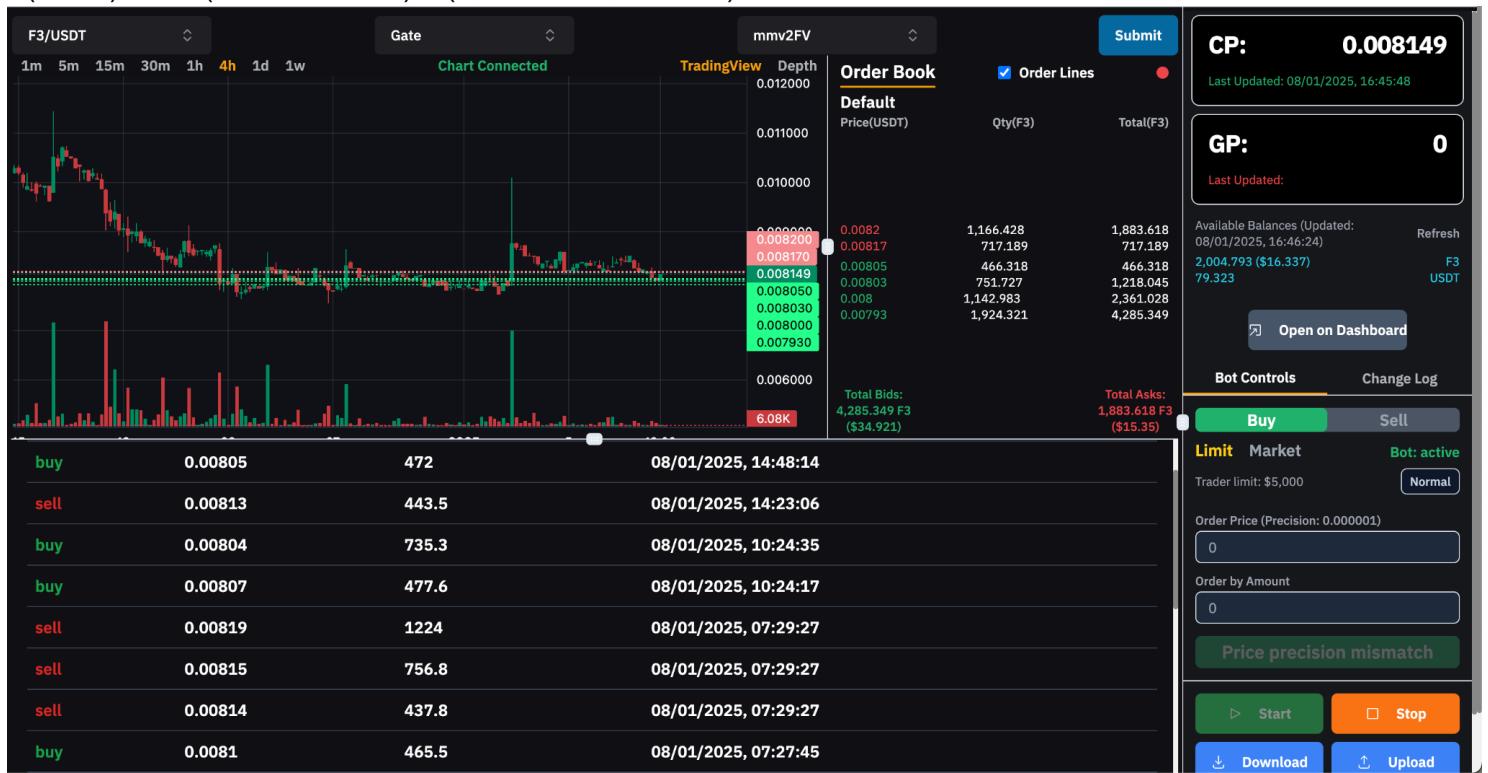


- (17:20) Config is neutral (max spread: 0.5) because our inventory base (4,7435 F3) is near the target base (5,500 F3). We are in loss(-3\$), so the config don't too aggressive on the buy side to get tokens to the target. Also because the volatility is small.

- Volatility: 0.000068

Day 70 (8/1/2025):

- (16:45): - Inventory: 79.323\$ - 2,004.793 F3
- (16:45): PnL: $(79.323 - 33.971) + (2,004.793 - 7,687.733) * 0.008149 = -0.95827806\$$



2025-01-08T14:48:17.833Z

2025-01-08 14:48:17,833 INFO - [677e5d25c3814ceb883d7c4a_1] [[np.float64(0.217), np.f...

2025-01-08 14:48:17,833 INFO - [677e5d25c3814ceb883d7c4a_1] [[np.float64(0.217), np.float64(0.24), np.float64(0.293), np.float64(0.385), np.float64(0.538), np.float64(0.793), np.float64(1.231), np.float64(2.0)], [np.float64(0.283), np.float64(0.309), np.float64(0.368), np.float64(0.468), np.float64(0.629), np.float64(0.886), np.float64(1.304), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(10.5), np.float64(12.0), np.float64(13.5), np.float64(15.0), np.float64(16.5), np.float64(18.0), np.float64(19.5), np.float64(21.0)], [np.float64(7.0), np.float64(8.5), np.float64(10.0), np.float64(11.5), np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.1803114855236363, 0.8196885144763636]

Day 71 (9/1/2025):

- (16:00): - Inventory: 86.716\$ - 1,121.851 F3
- (16:00): PnL: $(86.716 - 33.971) + (1,121.851 - 7,687.733) * 0.00801 = +0.15228518\$$



2025-01-09T14:14:29.043Z

2025-01-09 14:14:29,043 INFO - [677fca7c901d5a94c22736be_1] -- volatility: 5.64265426...

2025-01-09 14:14:29,043 INFO

- [677fca7c901d5a94c22736be_1] -- volatility: 5.642654260314841e-05



2025-01-09T14:14:29.324Z

2025-01-09 14:14:29,324 INFO - [677fca7c901d5a94c22736be_1] -- priceList: [0.008042, ...]

2025-01-09T14:14:29.626Z

2025-01-09 14:14:29,626 INFO - [677fca7c901d5a94c22736be_1] [[np.float64(0.238), np.f...

2025-01-09 14:14:29,626 INFO

- [677fca7c901d5a94c22736be_1] [[np.float64(0.238), np.float64(0.262),
np.float64(0.317), np.float64(0.412), np.float64(0.568), np.float64(0.824), np.float64(1.256),
np.float64(2.0)], [np.float64(0.262), np.float64(0.287), np.float64(0.345), np.float64(0.442), np.float64(0.601),
np.float64(0.858), np.float64(1.283), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848,
15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29),
np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)],
[np.float64(10.5), np.float64(12.0), np.float64(13.5), np.float64(15.0), np.float64(16.5), np.float64(18.0),
np.float64(19.5), np.float64(21.0)], [np.float64(7.0), np.float64(8.5), np.float64(10.0), np.float64(11.5),
np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)], [np.float64(20.0), np.float64(24.29),
np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 2, 0.5]



- (16:00) Config is pretty neutral (max spread: 0.5) although our inventory base (1,121 F3) is way less than the target base (5,500 F3) because the volatility is too small (0.000056).

Day 76 (14/1/2025):

- (15:45): - Inventory: 75.478\$ - 1,092.992 F3
- (15:45): PnL: $(75.478 - 33.971) + (1,092.992 - 7,687.733) * 0.007015 = -4.755108115\$$



2025-01-14T15:40:39.195Z

2025-01-14 15:40:39,195 INFO - [67863ac1bea788e28b955ed7_1] -- volatility: 0.00...

2025-01-14 15:40:39,195 INFO - [67863ac1bea788e28b955ed7_1] -- volatility: 0.00016906307110327082



2025-01-14T15:40:39.500Z

2025-01-14 15:40:39,500 INFO - [67863ac1bea788e28b955ed7_1] -- priceList: [0.00...

2025-01-14T15:40:39.802Z

2025-01-14 15:40:39,802 INFO - [67863ac1bea788e28b955ed7_1] [[np.float64(0.125)...

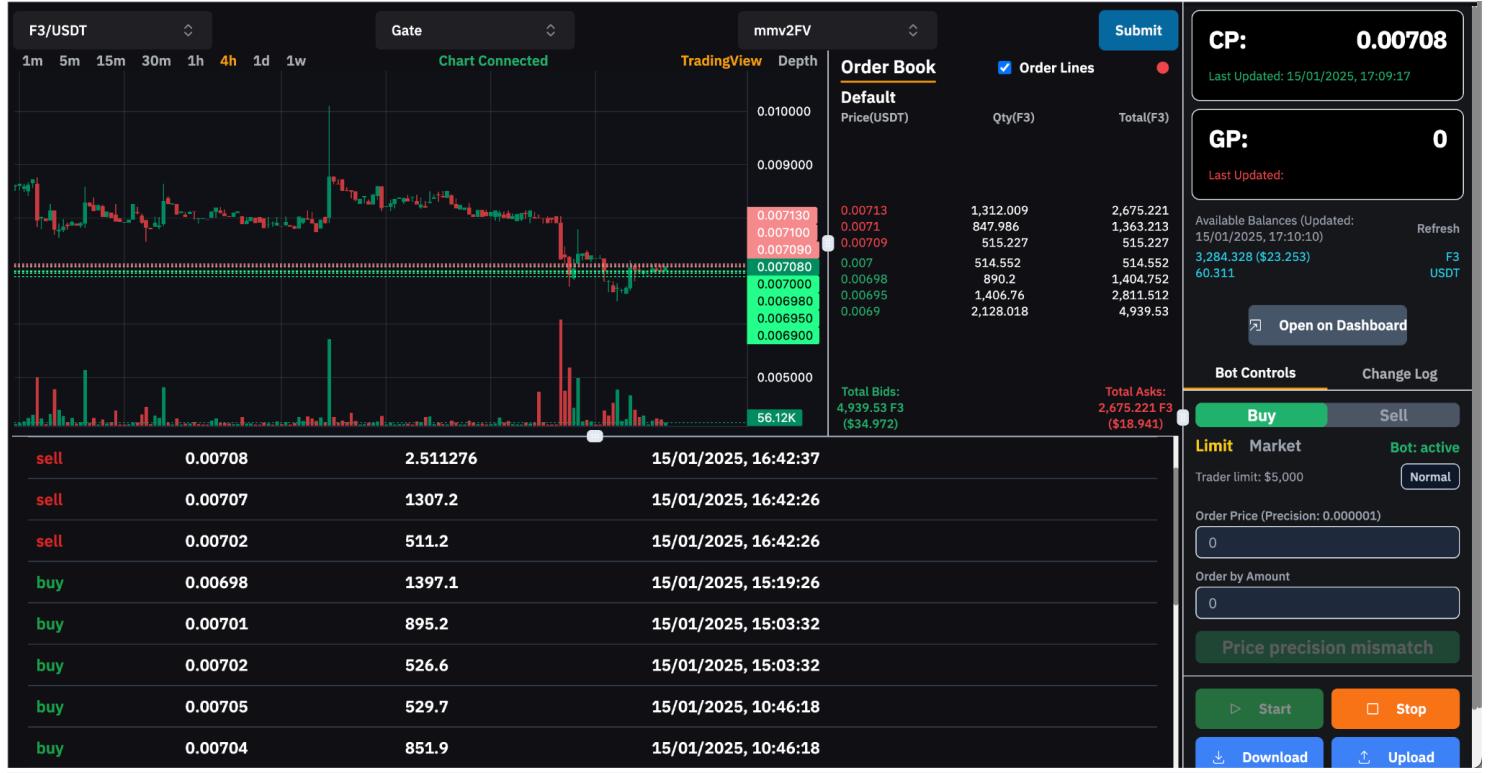
2025-01-14 15:40:39,802 INFO - [67863ac1bea788e28b955ed7_1] [[np.float64(0.125), np.float64(0.141), np.float64(0.182), np.float64(0.255), np.float64(0.388), np.float64(0.631), np.float64(1.091), np.float64(2.0)], [np.float64(0.375), np.float64(0.404), np.float64(0.47), np.float64(0.577), np.float64(0.743), np.float64(0.996), np.float64(1.387), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(10.5), np.float64(12.0), np.float64(13.5), np.float64(15.0), np.float64(16.5), np.float64(18.0), np.float64(19.5), np.float64(21.0)], [np.float64(7.0), np.float64(8.5), np.float64(10.0), np.float64(11.5), np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.17610037416, 0.82389962584]

- (15:45) Config is aggressive on the buy side (max spread: 0.5) because our inventory base 1,092.992 (F3) is way below the target base (5,500 F3).

- Volatility: 0.000169

Day 77 (15/1/2025):

- (16:45): - Inventory: 60.311\$ - 3,284.328 F3
- (16:45): PnL: $(60.311 - 33.971) + (3,284.328 - 7,687.733) * 0.00708 = -4.8361074\$$



2025-01-15T16:42:40.939Z

2025-01-15 16:42:40,939 INFO - [6787ba05c8b7bb3a1cc09ff0_1] -- volatility: 5.42...

2025-01-15 16:42:40,939 INFO
05

- [6787ba05c8b7bb3a1cc09ff0_1] -- volatility: 5.425479592105001e-



2025-01-15T16:42:41.223Z

2025-01-15 16:42:41,223 INFO - [6787ba05c8b7bb3a1cc09ff0_1] -- priceList: [0.00...

2025-01-15T16:42:41.497Z

2025-01-15 16:42:41,497 INFO - [6787ba05c8b7bb3a1cc09ff0_1] [[np.float64(0.25),...

2025-01-15 16:42:41.497

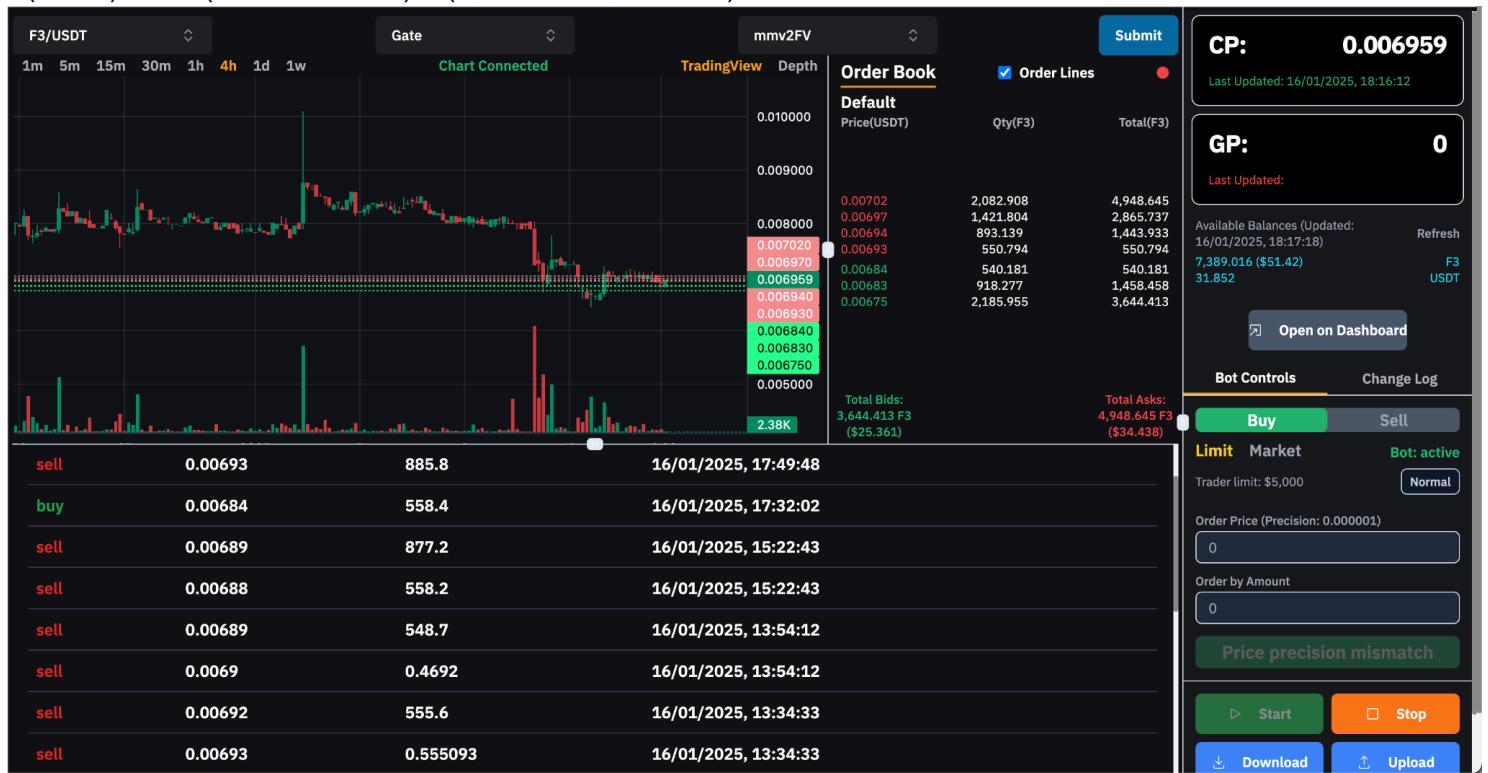
- [6787ba05c8b7bb3a1cc09ff0_1] [[np.float64(0.25),
np.float64(0.274), np.float64(0.331), np.float64(0.427), np.float64(0.585), np.float64(0.842),
np.float64(1.27), np.float64(2.0)], [np.float64(0.25), np.float64(0.274), np.float64(0.331), np.float64(0.427),
np.float64(0.585), np.float64(0.842), np.float64(1.27), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338,
3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757],
[np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43),
np.float64(55.71), np.float64(60.0)], [np.float64(29.88), np.float64(34.16), np.float64(38.42), np.float64(42.69),
np.float64(46.96), np.float64(51.23), np.float64(55.49), np.float64(59.77)], [np.float64(19.92), np.float64(24.2),
np.float64(28.46), np.float64(32.73), np.float64(37.0), np.float64(41.27), np.float64(45.53), np.float64(49.81)],
[np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43),
np.float64(45.71), np.float64(50.0)], 1.0019350912054545, 0.9980649087945455]



- (16:45) Config is pretty neutral (max spread: 0.5) although our inventory base (3,284.328 F3) is less than the target base (5,500 F3) because the volatility is too small (0.0000542).

Day 78 (16/1/2025):

- (18:00): - Inventory: 31.852\$ - 7,389.016 F3
- (18:00): PnL: $(31.852 - 33.971) + (7,389.016 - 7,687.733) * 0.006959 = -4.197771603\$$



Day 79 (17/1/2025):

- (13:00): - Inventory: 72.612\$ - 1,524.496 F3
- (13:00): PnL: $(72.612 - 33.971) + (1,524.496 - 7,687.733) * 0.006913 = -3.965457381\$$



▼ 2025-01-17T12:17:34.017Z 2025-01-17 12:17:34,017 INFO - [678904c124baff353737780d_1] -- volatility: 3.23...

2025-01-17 12:17:34,017 INFO - [678904c124baff353737780d_1] -- volatility: 3.239036692544906e-05 □

► 2025-01-17T12:17:34.268Z 2025-01-17 12:17:34,268 INFO - [678904c124baff353737780d_1] -- priceList: [0.00...

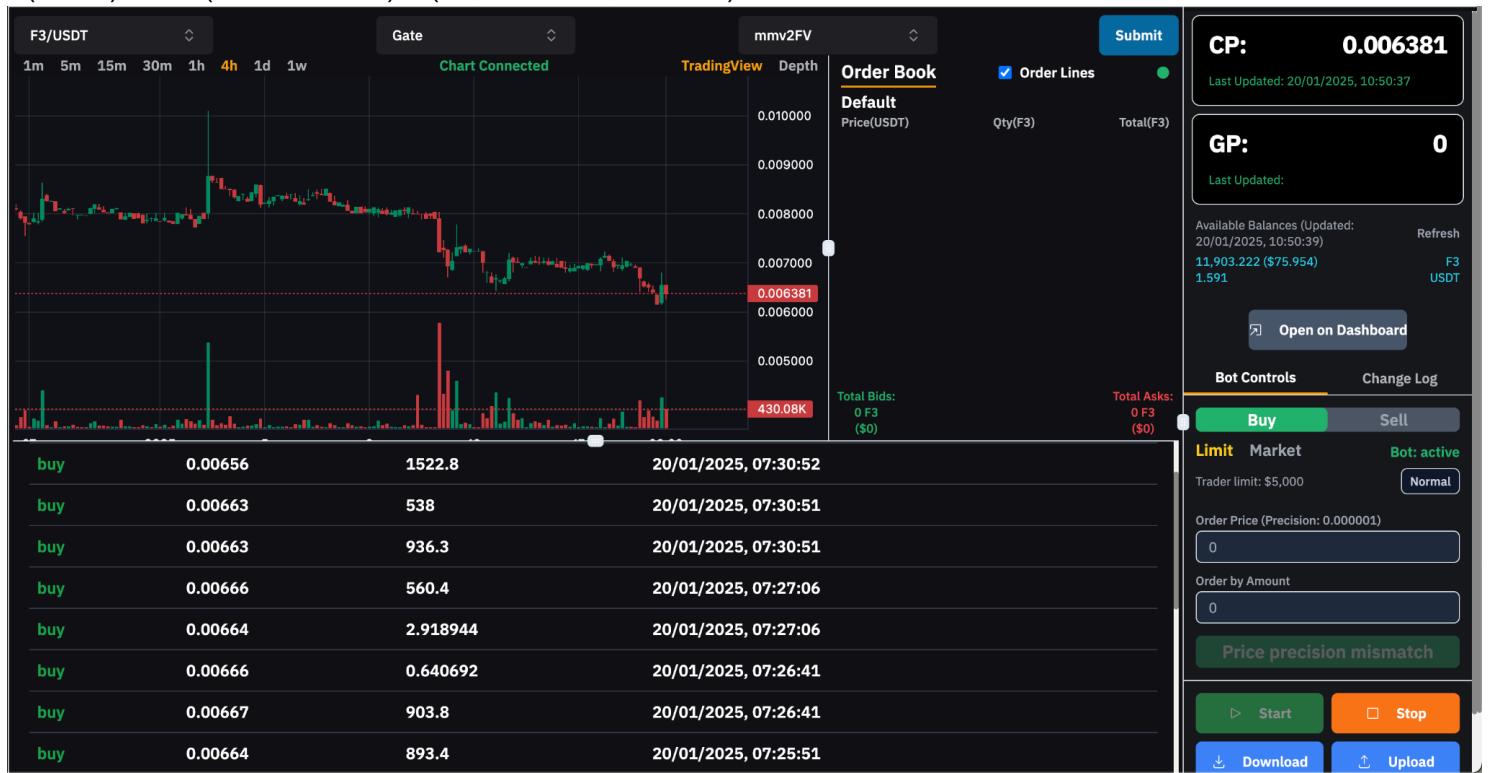
▼ 2025-01-17T12:17:34.518Z 2025-01-17 12:17:34,518 INFO - [678904c124baff353737780d_1] [[np.float64(0.247)...

2025-01-17 12:17:34,518 INFO - [678904c124baff353737780d_1] [[np.float64(0.247), np.float64(0.271), np.float64(0.327), np.float64(0.423), np.float64(0.58), np.float64(0.837), np.float64(1.266), np.float64(2.0)], [np.float64(0.253), np.float64(0.277), np.float64(0.334), np.float64(0.431), np.float64(0.589), np.float64(0.846), np.float64(1.273), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(22.98), np.float64(26.26), np.float64(29.54), np.float64(32.83), np.float64(36.1), np.float64(39.39), np.float64(42.67), np.float64(45.95)], [np.float64(15.32), np.float64(18.6), np.float64(21.88), np.float64(25.17), np.float64(28.45), np.float64(31.73), np.float64(35.01), np.float64(38.29)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.1170547127963637, 0.8829452872036364]

- (13:00) Config is pretty neutral (max spread: 0.5) although our inventory base (1,524.496 F3) is less than the target base (5,500 F3) because the volatility is too small (0.00003239).

Day 82 (20/1/2025):

- (11:00): - Inventory: 1.591\$ - 11,903.222 F3
- (11:00): PnL: $(1.591 - 33.971) + (11,903.222 - 7,687.733) * 0.006381 = -5.480964691\$$



2025-01-20T07:30:55.122Z

2025-01-20 07:30:55,122 INFO - [678df62b22d828503286cdfd_1] -- volatility: 0.00...

2025-01-20 07:30:55,120

- [678df62b22d828503286cdfd_1] -- volatility: 0.000175367315082587



2025-01-20T07:30:55.417Z

2025-01-20 07:30:55,417 INFO - [678df62b22d828503286cdfd_1] -- priceList: [0.00...

2025-01-20T07:30:55.659Z

2025-01-20 07:30:55,659 INFO - [678df62b22d828503286cdfd_1] [[np.float64(0.185)...]

2025-01-20 07:30:55,659 INFO - [678df62b22d828503286cdfd_1] [[np.float64(0.185),
np.float64(0.206), np.float64(0.255), np.float64(0.342), np.float64(0.489), np.float64(0.742),
np.float64(1.189), np.float64(2.0)], [np.float64(0.315), np.float64(0.342), np.float64(0.404), np.float64(0.507),
np.float64(0.67), np.float64(0.927), np.float64(1.335), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338,
3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757],
[np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43),
np.float64(55.71), np.float64(60.0)], [np.float64(25.4), np.float64(29.04), np.float64(32.66), np.float64(36.29),
np.float64(39.92), np.float64(43.55), np.float64(47.18), np.float64(50.81)], [np.float64(16.94), np.float64(20.57),
np.float64(24.19), np.float64(27.83), np.float64(31.45), np.float64(35.08), np.float64(38.71), np.float64(42.34)],
[np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43),
np.float64(45.71), np.float64(50.0)], 1.0765898855236364, 0.9234101144763637]

- (11:00) **BIG ALERT:** Config is aggressive on the buy side (max spread: 0.5) although our inventory base (11,903.222 F3) is **WAY MORE** than the target base (5,500 F3) and we have no \$. The volatility is High: 0.00003239.

- The config supposed to look like this:

```
Average_position 0.008340957099410266
long
Reward factor 1
kappa:103754.82444571577
Current skew from starting
116.42221818181817 %

Spreads on bids: [0.494, 0.596, 0.771, 1.034, 1.423, 2.0]
Spreads on asks: [0.006, 0.013, 0.038, 0.129, 0.486, 2.0]

Bid Amounts: [23.81, 47.62, 95.24, 190.48, 380.95, 761.9]
Ask Amounts: [23.81, 47.62, 95.24, 190.48, 380.95, 761.9]

Bid Order Refresh Times: [10.5, 12.6, 14.7, 16.8, 18.9, 21.0]
Ask Order Refresh Times: [30.0, 36.0, 42.0, 48.0, 54.0, 60.0]

Bid Filled Order Delays: [20.0, 26.0, 32.0, 38.0, 44.0, 50.0]
Ask Filled Order Delays: [7.0, 9.1, 11.2, 13.3, 15.4, 17.5]

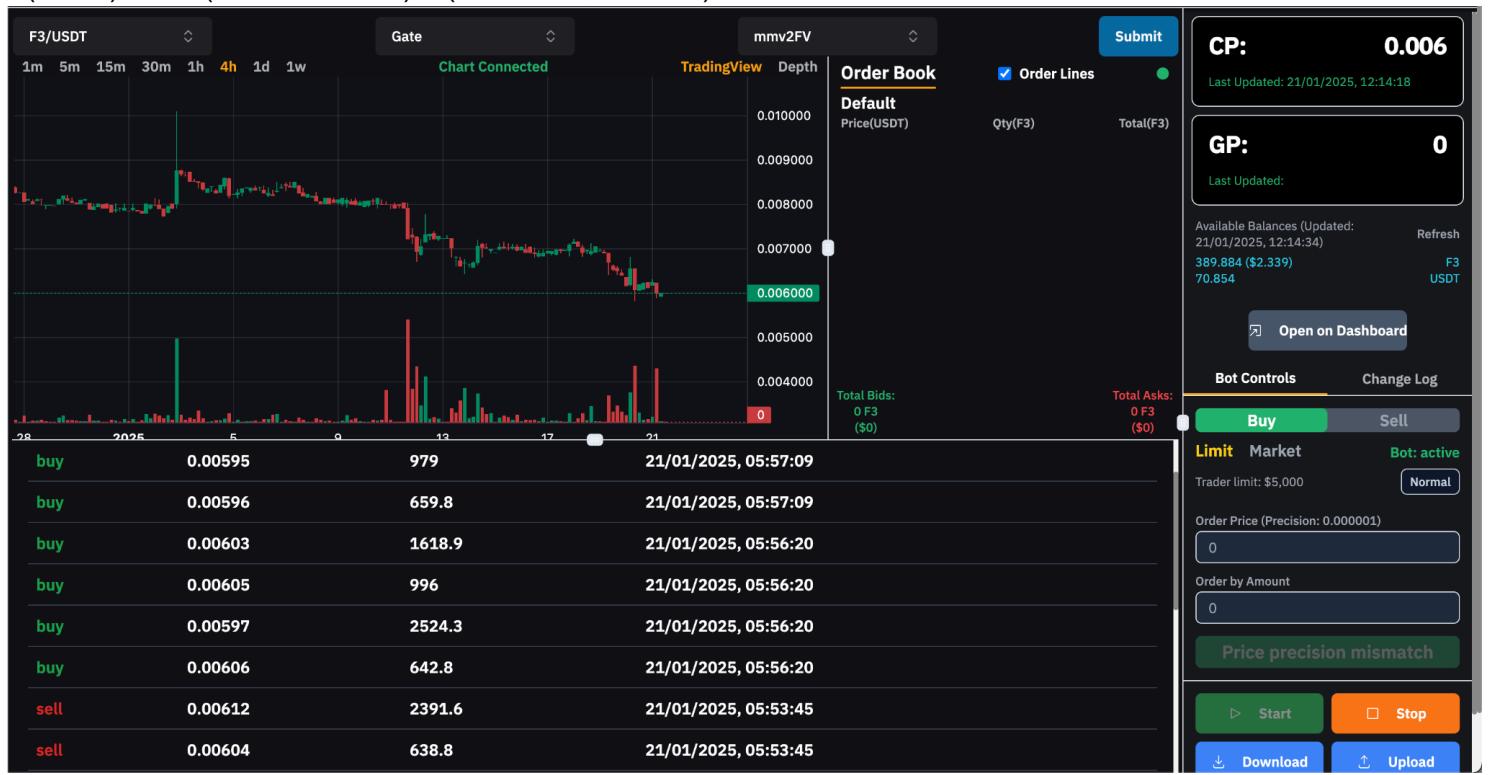
Bid Order Refresh Tolerance: 0.5
Ask Order Refresh Tolerance: 2

Avg Price on 100 % of Bids Filled: 0.0065249621533459996
Buy Amount: 1500.0

Avg Price on 100 % of Asks Filled: 0.006706814943972
Sell Amount: 1500.0
```

Day 83 (21/1/2025):

- (12:00): Inventory: 70.854\$ - 389.884 F3
- (12:00): PnL: $(70.854 - 33.971) + (389.884 - 7,687.733) * 0.006 = -6.904094\$$



2025-01-21T05:57:12.701Z

2025-01-21 05:57:12,701 INFO - [678f333bc8790f9c5cf072b0_1] [[np.float64(0.215)...]

2025-01-21 05:57:12,701 INFO - [678f333bc8790f9c5cf072b0_1] [[np.float64(0.215), np.float64(0.237), np.float64(0.29), np.float64(0.382), np.float64(0.535), np.float64(0.79), np.float64(1.228), np.float64(2.0)], [np.float64(0.285), np.float64(0.311), np.float64(0.371), np.float64(0.471), np.float64(0.632), np.float64(0.889), np.float64(1.306), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(25.9), np.float64(29.6), np.float64(33.3), np.float64(37.0), np.float64(40.69), np.float64(44.4), np.float64(48.09), np.float64(51.8)], [np.float64(17.27), np.float64(20.97), np.float64(24.66), np.float64(28.37), np.float64(32.06), np.float64(35.77), np.float64(39.46), np.float64(43.16)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.0683659246145454, 0.9316340753854545]

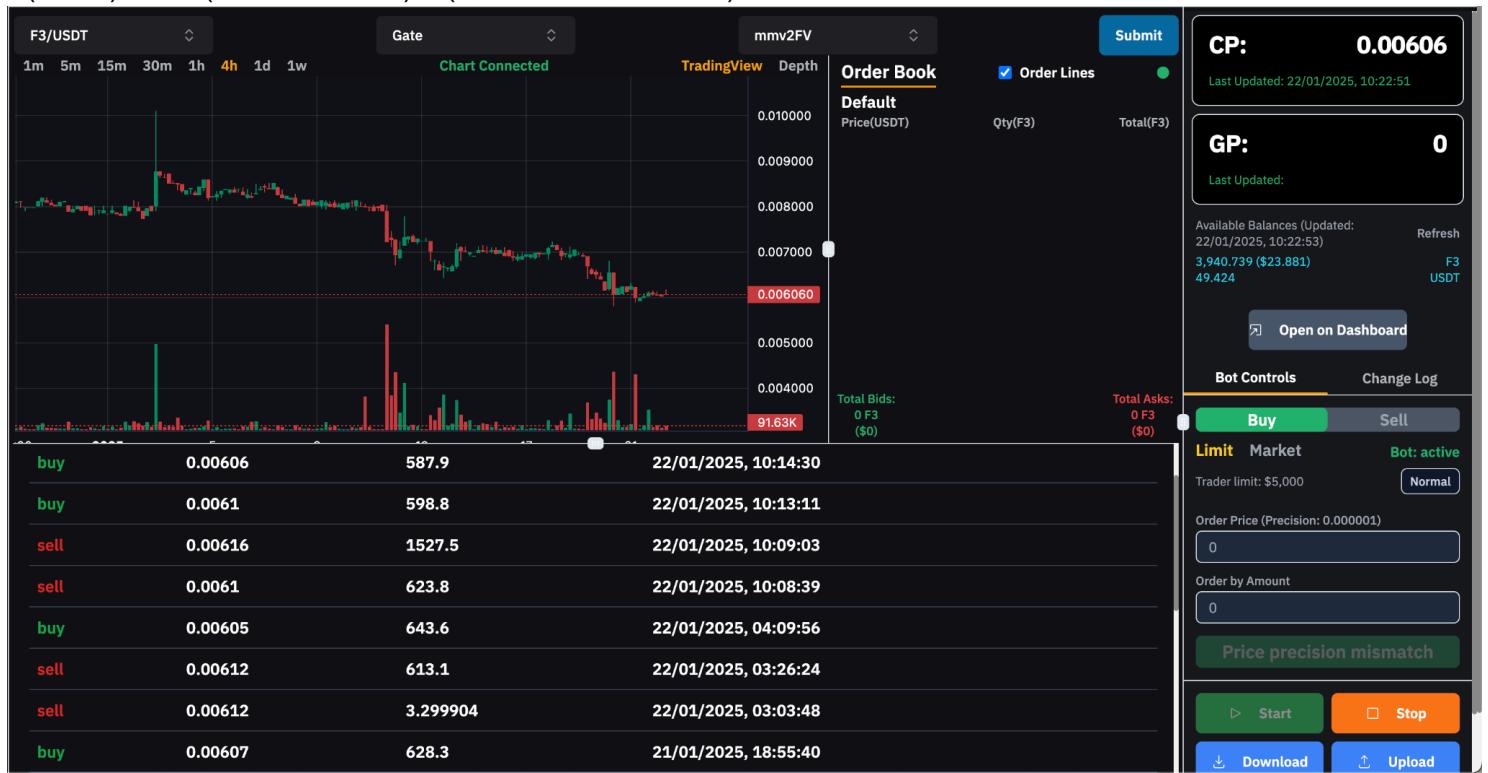
- (12:00) Config is slightly aggressive on the buy side (max spread: 0.5) (It should be super aggressive on the buy side) although our inventory base 389.884 (F3) is WAY BELOW the target base (5,500 F3) because of two reasons: 1. We're losing -\$6. The volatility is small.

- Volatility: 0.000153



Day 84 (22/1/2025):

- (10:24): Inventory: 49.424\$ - 3,940.739 F3
- (10:24): PnL: $(49.424 - 33.971) + (3,940.739 - 7,687.733) * 0.00606 = -7.25378364$$



2025-01-22T10:14:33.015Z

2025-01-22 10:14:33,015 INFO - [6790bcb2e282d1b18c1e5830_1] -- volatility: 3.79...

2025-01-22 10:14:33,015 INFO
05

- [6790bcb2e282d1b18c1e5830_1] -- volatility: 3.7966941903927794e-

2025-01-22T10:14:33.355Z

2025-01-22 10:14:33,355 INFO - [6790bcb2e282d1b18c1e5830_1] -- priceList: [0.00...

2025-01-22T10:14:33.597Z

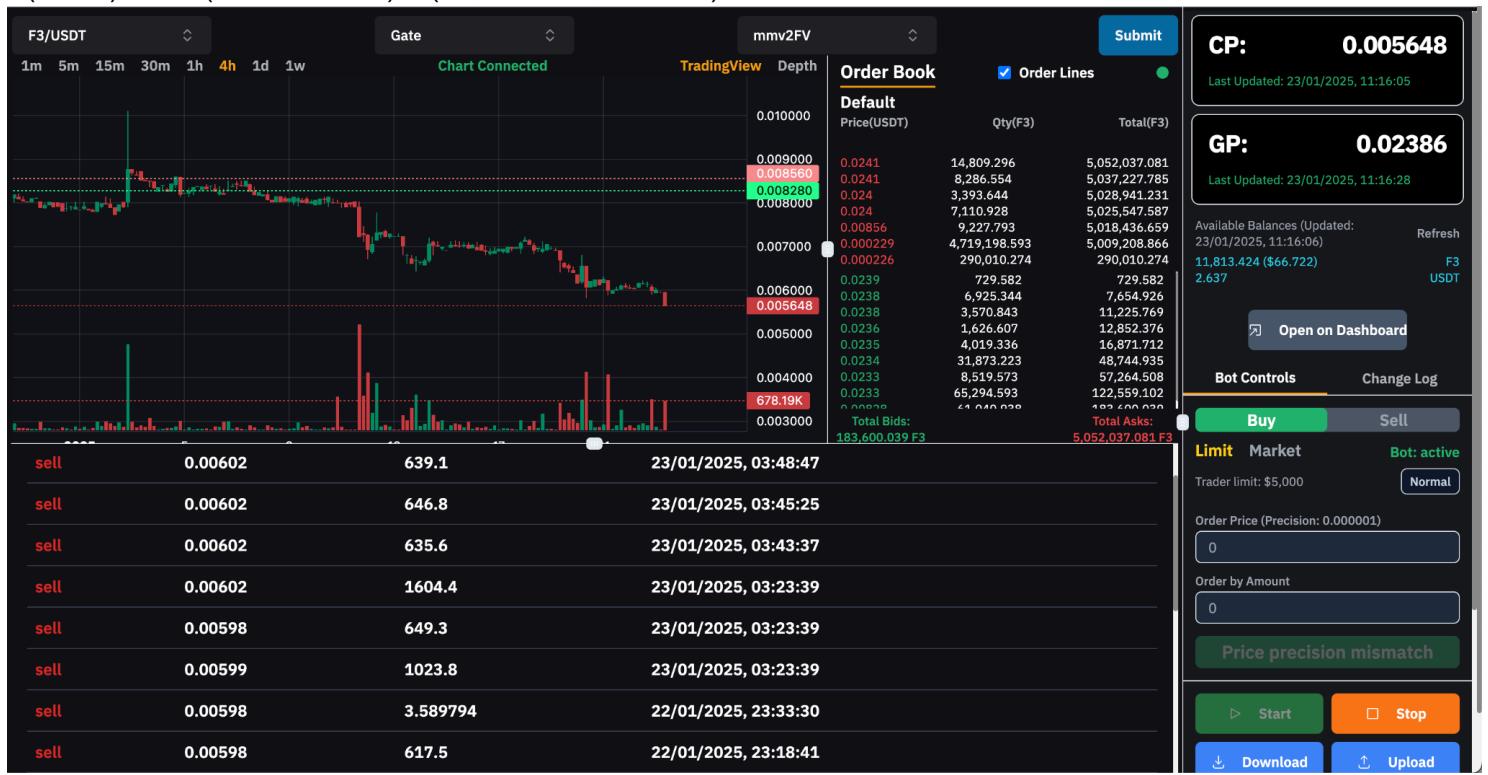
2025-01-22 10:14:33,597 INFO - [6790bcb2e282d1b18c1e5830_1] [[np.float64(0.247)...

2025-01-22 10:14:33,597 INFO
- [6790bcb2e282d1b18c1e5830_1] [[np.float64(0.247),
np.float64(0.271), np.float64(0.327), np.float64(0.423), np.float64(0.58), np.float64(0.837),
np.float64(1.266), np.float64(2.0)], [np.float64(0.253), np.float64(0.277), np.float64(0.334), np.float64(0.431),
np.float64(0.589), np.float64(0.846), np.float64(1.273), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338,
3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757],
[np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43),
np.float64(55.71), np.float64(60.0)], [np.float64(25.75), np.float64(29.43), np.float64(33.1), np.float64(36.78),
np.float64(40.46), np.float64(44.14), np.float64(47.81), np.float64(51.49)], [np.float64(17.16), np.float64(20.85),
np.float64(24.52), np.float64(28.2), np.float64(31.88), np.float64(35.56), np.float64(39.23), np.float64(42.91)],
[np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43),
np.float64(45.71), np.float64(50.0)], 1.0708754837054546, 0.9291245162945455]

- (10:24) Config is pretty neutral (max spread: 0.5) although our inventory base (3,940.739 F3) is less than the target base (5,500 F3) because the volatility is too small (0.000037966).

Day 85 (23/1/2025):

- (11:15): Inventory: 2.637\$ - 11,813.424 F3
- (11:15): PnL: $(2.637 - 33.971) + (11,813.42 - 7,687.733) * 0.005648 = -8.032119824\$$



2025-01-23T03:48:50.833Z

2025-01-23 03:48:50,833 INFO - [67919dd8f8066d99d31b5ed0_1] [[np.float64(0.211)...]]

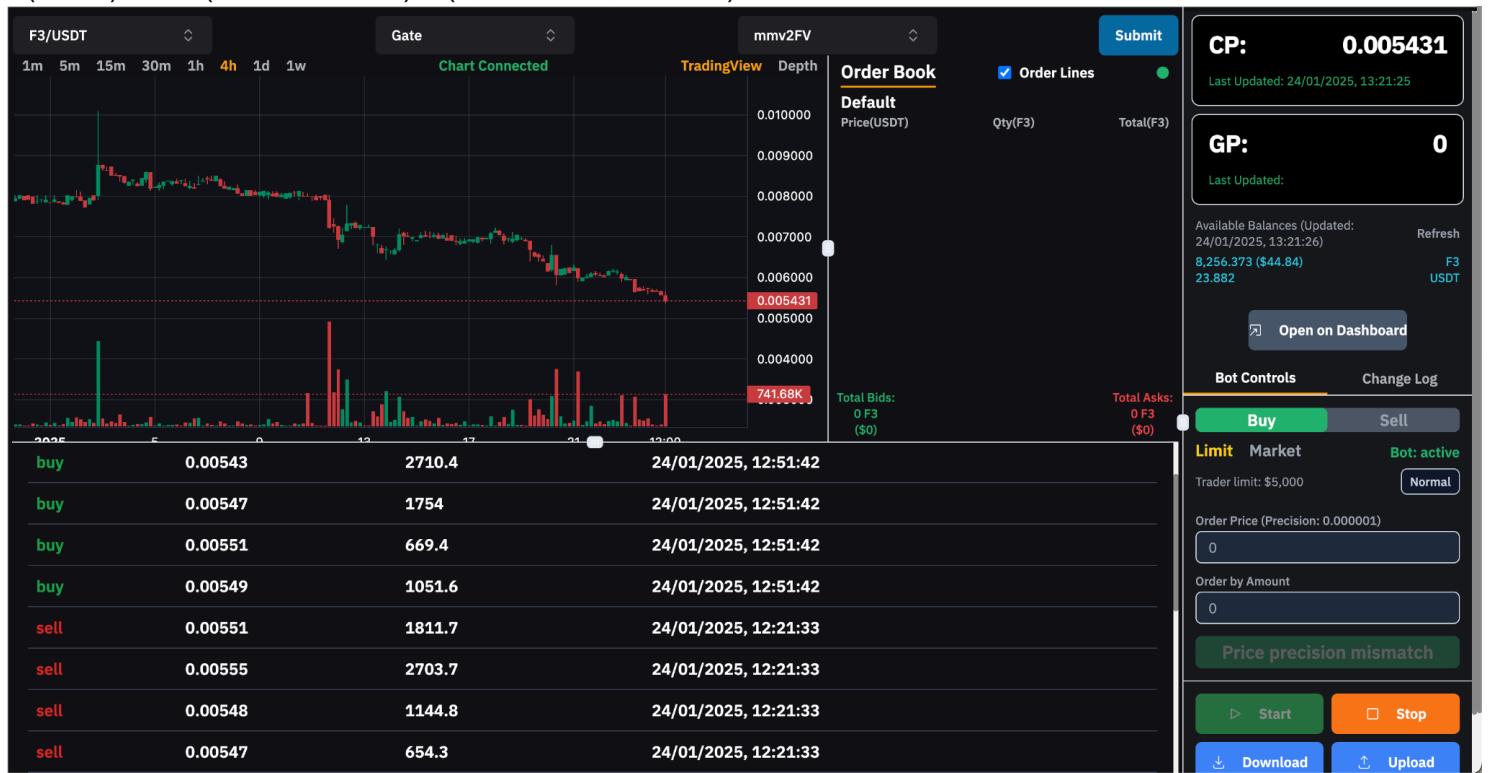
2025-01-23 03:48:50,833 INFO - [67919dd8f8066d99d31b5ed0_1] [[np.float64(0.211), np.float64(0.233), np.float64(0.286), np.float64(0.377), np.float64(0.529), np.float64(0.784), np.float64(1.223), np.float64(2.0)], [np.float64(0.289), np.float64(0.315), np.float64(0.375), np.float64(0.476), np.float64(0.637), np.float64(0.894), np.float64(1.31), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(10.5), np.float64(12.0), np.float64(13.5), np.float64(15.0), np.float64(16.5), np.float64(18.0), np.float64(19.5), np.float64(21.0)], [np.float64(7.0), np.float64(8.5), np.float64(10.0), np.float64(11.5), np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.16562375416, 0.83437624584]

- (11:15) Config is slightly aggressive on the buy side (max spread: 0.5) (it should be aggressive on the sell side) although our inventory base 11,813.42 (F3) is WAY ABOVE the target base (5,500 F3) because of two reasons:
- 1. We're losing -\$8. The volatility is small (0.000068).



Day 86 (24/1/2025):

- (13:30): Inventory: 23.882\$ - 8,256.373 F3
- (13:30): PnL: $(23.882 - 33.971) + (8,256.373 - 7,687.733) * 0.005431 = -7.00071616\$$

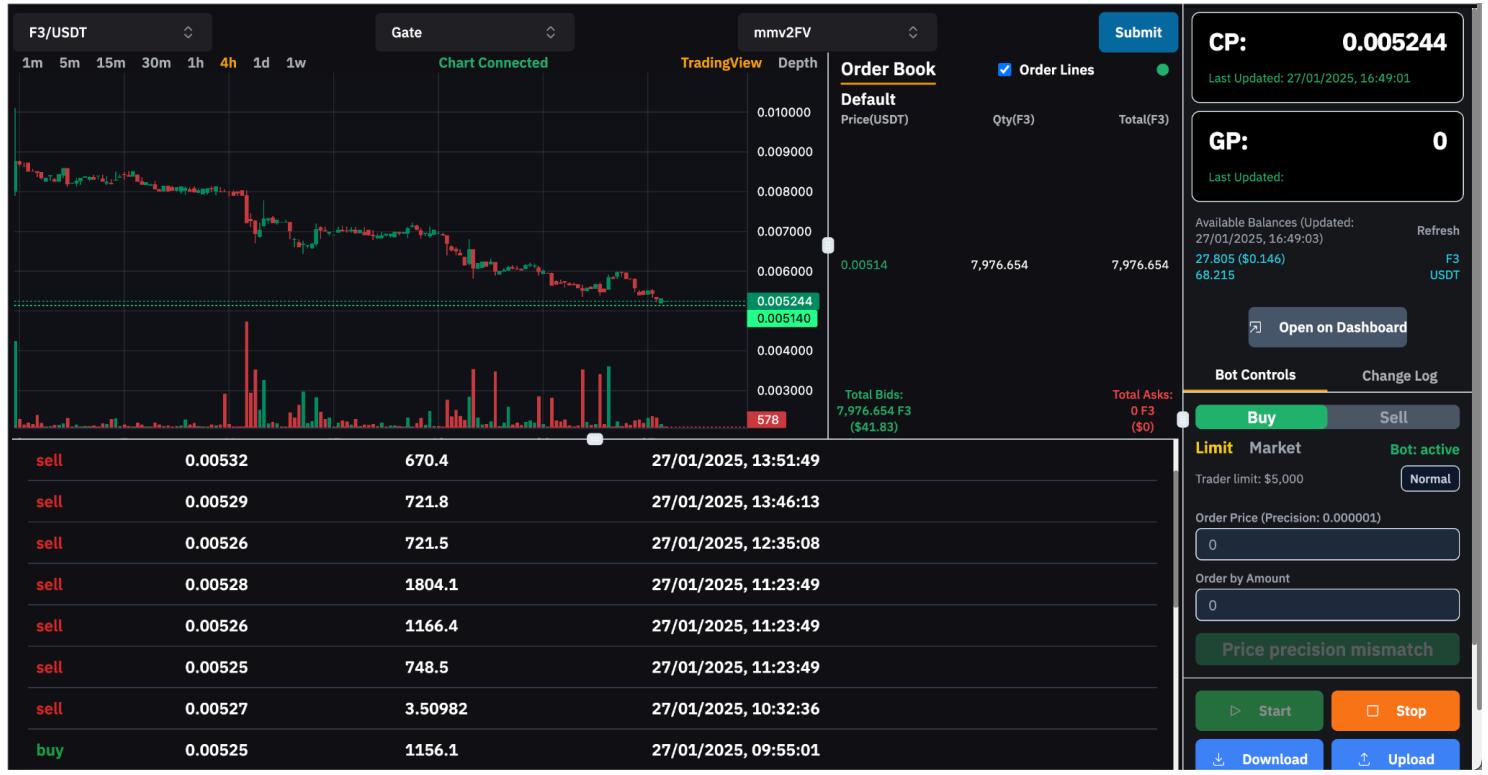


2025-01-24T12:51:45.010Z	- [67937479fabbb4d70a4cf0c2a_1] -- volatility: 6.16...
2025-01-24 12:51:45,010 INFO	- [67937479fabbb4d70a4cf0c2a_1] -- volatility: 6.166006256254843e-05
2025-01-24T12:51:45.095Z	2025-01-24 12:51:45,095 INFO - [67937479fabbb4d70a4cf0c2a_1] trying to cancel or...
2025-01-24T12:51:45.297Z	2025-01-24 12:51:45,297 INFO - [67937479fabbb4d70a4cf0c2a_1] -- priceList: [0.00...
2025-01-24T12:51:45.602Z	2025-01-24 12:51:45,602 INFO - [67937479fabbb4d70a4cf0c2a_1] fetched filled order...
2025-01-24T12:51:45.901Z	2025-01-24 12:51:45,901 INFO - [67937479fabbb4d70a4cf0c2a_1] [[np.float64(0.226),
2025-01-24 12:51:45,901 INFO	- [67937479fabbb4d70a4cf0c2a_1] [[np.float64(0.226), np.float64(0.249), np.float64(0.303), np.float64(0.396), np.float64(0.551), np.float64(0.807), np.float64(1.242), np.float64(2.0)], [np.float64(0.274), np.float64(0.299), np.float64(0.358), np.float64(0.457), np.float64(0.617), np.float64(0.874), np.float64(1.295), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757], [np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43), np.float64(55.71), np.float64(60.0)], [np.float64(20.66), np.float64(23.62), np.float64(26.56), np.float64(29.52), np.float64(32.46), np.float64(35.42), np.float64(38.37), np.float64(41.32)], [np.float64(13.77), np.float64(16.73), np.float64(19.68), np.float64(22.63), np.float64(25.58), np.float64(28.53), np.float64(31.48), np.float64(34.43)], [np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43), np.float64(45.71), np.float64(50.0)], 1.1556539882509091, 0.8443460117490909]

- (13:30) **ALERT**: Config is aggressive on the buy side (max spread: 0.5) although our inventory base (8,256.373 F3) is **MORE** than the target base (5,500 F3). The volatility is Low: 0.00006166.

Day 86 (24/1/2025):

- (16:50): Inventory: 68.215\$ - 27.805 F3
- (16:50): PnL: $(68.215 - 33.971) + (27.805 - 7,687.733) * 0.005244 = -5.924662432\$$



2025-01-27T13:51:51.562Z

2025-01-27 13:51:51,562 INFO - [679773b640bc586b773346fc_1] [[np.float64(0.115)...]

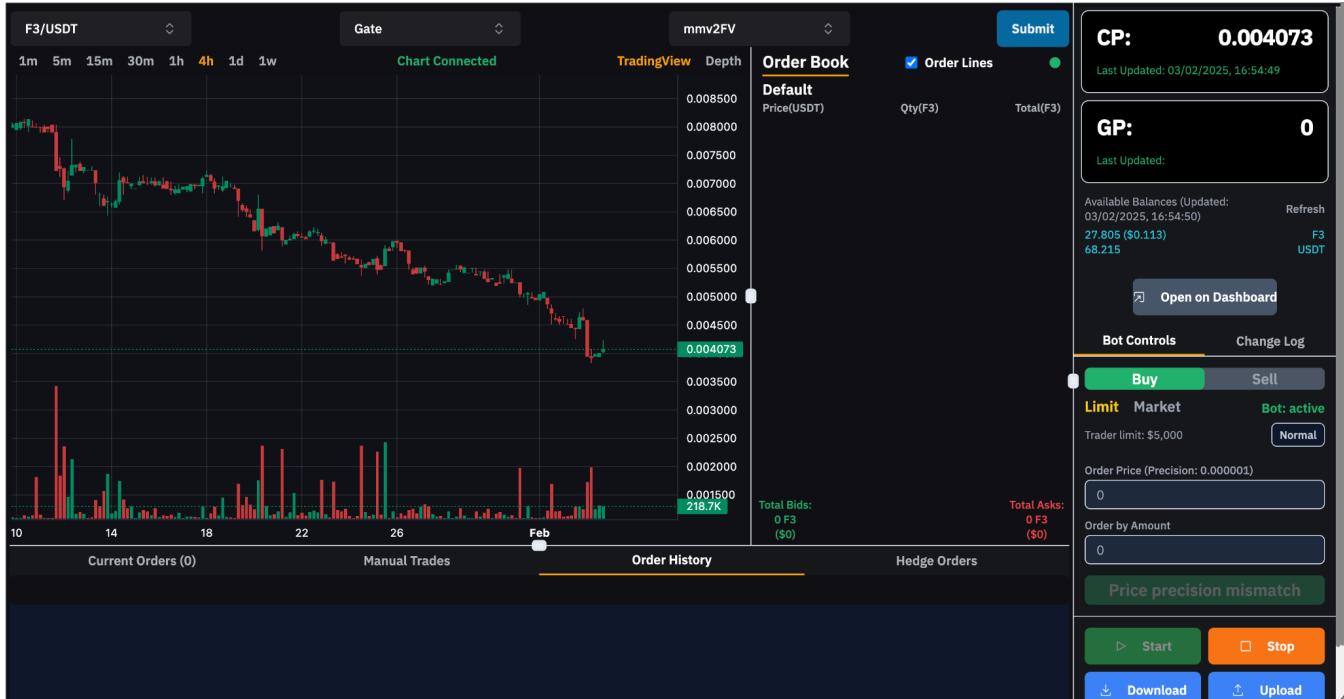
2025-01-27 13:51:51,562 INFO - [679773b640bc586b773346fc_1] [[np.float64(0.115),
np.float64(0.131), np.float64(0.169), np.float64(0.24), np.float64(0.369), np.float64(0.609),
np.float64(1.071), np.float64(2.0)], [np.float64(0.385), np.float64(0.414), np.float64(0.481), np.float64(0.589),
np.float64(0.755), np.float64(1.007), np.float64(1.395), np.float64(2.0)], [0.57211, 0.91538, 1.46461, 2.34338,
3.74941, 5.99905, 9.59848, 15.35757], [0.57211, 0.91538, 1.46461, 2.34338, 3.74941, 5.99905, 9.59848, 15.35757],
[np.float64(30.0), np.float64(34.29), np.float64(38.57), np.float64(42.86), np.float64(47.14), np.float64(51.43),
np.float64(55.71), np.float64(60.0)], [np.float64(10.5), np.float64(12.0), np.float64(13.5), np.float64(15.0),
np.float64(16.5), np.float64(18.0), np.float64(19.5), np.float64(21.0)], [np.float64(7.0), np.float64(8.5),
np.float64(10.0), np.float64(11.5), np.float64(13.0), np.float64(14.5), np.float64(16.0), np.float64(17.5)],
[np.float64(20.0), np.float64(24.29), np.float64(28.57), np.float64(32.86), np.float64(37.14), np.float64(41.43),
np.float64(45.71), np.float64(50.0)], 2, 0.5]

- (16:50) Config is aggressive on the buy side (max spread: 0.5) because our inventory base 27.805 (F3) is way below the target base (5,500 F3).

- Volatility: 0.000150

Day 96 (3/2/2025):

- (16:50): Inventory: 68.215\$ - 27.805 F3
- (16:50): PnL: $(68.215 - 33.971) + (27.805 - 7,687.733) * 0.005244 = -5.924662432\$$



```

> mm-bots-logs > gate-f3-mm
▼ 2025-02-03T16:42:04.008Z      2025-02-03 16:42:04,008 INFO - [67a0f19fd16d03b3f10ad9e8_1] ['buys1', 'sells1']

2025-02-03 16:42:04,008 INFO      - [67a0f19fd16d03b3f10ad9e8_1] ['buys1', 'sells1']

▼ 2025-02-03T16:42:04.307Z      2025-02-03 16:42:04,307 INFO - [67a0f19fd16d03b3f10ad9e8_1] order: {'0': {'acti...
2025-02-03 16:42:04,307 INFO      - [67a0f19fd16d03b3f10ad9e8_1] order: {'0': {'activeTrade': None,
'ordername': 'buys1_0', 'og': 'buys1', 'side': 'buy', 'currency_mode': 'quote',
'amount_randomisation': 5, 'spread_randomisation': 5, 'fail_chance': 3, 'order_refresh_time_randomisation': 0,
'tangled': True, 'price_ceil': -1, 'price_floor': -1, 'order_refresh_time': [10, 6],
'filled_order_delay_randomization': 0.2, 'filled_order_delay_range': (12.0, 18.0), 'order_refresh_tolerance': 0.6,
'price_mode': 'fair_price', 'ks_min_Quote': -1, 'ks_max_Quote': -1, 'ks_min_Base': -1, 'ks_max_Base': -1, 'amount': [10, 10],
'level_amount': 0, 'spread': [1, 1], 'level_spread': 0}, '1': {'activeTrade': None, 'ordername': 'buys1_1',
'og': 'buys1', 'side': 'buy', 'currency_mode': 'quote', 'amount_randomisation': 5, 'spread_randomisation': 5,
'fail_chance': 3, 'order_refresh_time_randomisation': 0, 'tangled': True, 'price_ceil': -1, 'price_floor': -1,
'order_refresh_time': [15, 10], 'filled_order_delay_randomization': 0.2, 'filled_order_delay_range': (48.0, 72.0),
'order_refresh_tolerance': 0.6, 'price_mode': 'fair_price', 'ks_min_Quote': -1, 'ks_max_Quote': -1, 'ks_min_Base': -1,
'ks_max_Base': -1, 'amount': [20, 20], 'level_amount': 0, 'spread': [1.5, 1.5], 'level_spread': 0}}
▼ 2025-02-03T16:42:04.606Z      2025-02-03 16:42:04,606 INFO - [67a0f19fd16d03b3f10ad9e8_1] order: {'0': {'acti...
2025-02-03 16:42:04,606 INFO      - [67a0f19fd16d03b3f10ad9e8_1] order: {'0': {'activeTrade': None,
'ordername': 'sells1_0', 'og': 'sells1', 'side': 'sell', 'currency_mode': 'quote',
'amount_randomisation': 5, 'spread_randomisation': 5, 'fail_chance': 3, 'order_refresh_time_randomisation': 0,
'tangled': True, 'price_ceil': -1, 'price_floor': -1, 'order_refresh_time': [10, 5],
'filled_order_delay_randomization': 0.2, 'filled_order_delay_range': (12.0, 18.0), 'order_refresh_tolerance': 0.2,
'price_mode': 'fair_price', 'ks_min_Quote': -1, 'ks_max_Quote': -1, 'ks_min_Base': -1, 'ks_max_Base': -1, 'amount': [10, 10],
'level_amount': 0, 'spread': [0.5, 0.5], 'level_spread': 0}, '1': {'activeTrade': None, 'ordername': 'sells1_1',
'og': 'sells1', 'side': 'sell', 'currency_mode': 'quote', 'amount_randomisation': 5, 'spread_randomisation': 5,
'fail_chance': 3, 'order_refresh_time_randomisation': 0, 'tangled': True, 'price_ceil': -1, 'price_floor': -1,
'order_refresh_time': [15, 10], 'filled_order_delay_randomization': 0.2, 'filled_order_delay_range': (48.0, 72.0),
'order_refresh_tolerance': 0.2, 'price_mode': 'fair_price', 'ks_min_Quote': -1, 'ks_max_Quote': -1, 'ks_min_Base': -1,
'ks_max_Base': -1, 'amount': [20, 20], 'level_amount': 0, 'spread': [1, 1], 'level_spread': 0}}
▼ 2025-02-03T16:42:04.907Z      2025-02-03 16:42:04,907 INFO - [67a0f19fd16d03b3f10ad9e8_1] [{"total": 2, "ceil": ...
2025-02-03 16:42:04,907 INFO      - [67a0f19fd16d03b3f10ad9e8_1] [{"total": 2, "ceil": -1, "floor": -1}, {"total": 2, "ceil": -1, "floor": -1}]
▼ 2025-02-03T16:42:05.207Z      2025-02-03 16:42:05,207 INFO - [67a0f19fd16d03b3f10ad9e8_1] config flattened
2025-02-03 16:42:05,207 INFO      - [67a0f19fd16d03b3f10ad9e8_1] config flattened

```

- The bot is not running, same quote and base as day 86.