

# Fees & Minimum Investment Size

## Non-Aperture Fees

The delta-neutral strategy interacts with protocols including Terraswap, Astroport, Anchor, Mirror, and Spectrum, and therefore is subject to fees from these protocols as part of the investment process.

Protocol Fee Description Context [Terraswap](#) Swap commission: 0.3% of the returned asset. (1)Position open &Rebalances : swaps between mAsset and UST; (2)Reinvest : swapping MIR / SPEC for UST (when Terraswap offers better rate than Astroport). [Astroport](#) Swap commission:0.3% of the returned asset. Reinvest : swapping MIR / SPEC for UST (when Astroport offers better rate than Terraswap). [Mirror Protocol](#) Collateralized debt position withdrawal fee:1.5% of the value of the returned (burned) mAsset. Position close & Rebalances: when mAsset short position is reduced or closed due to rebalancing needs or the position being closed. [Spectrum Protocol](#) (1) 0.1% of the mAsset-UST Terraswap LP tokens when deposited into Spectrum Mirror Farm; (2) 8% performance fees charged when LP tokens are auto-compounded (reinvested). (1)Reinvest: 0.1% deposit fee is incurred when UST and (long) mAsset are paired to form Terraswap tokens to be staked in Spectrum Mirror Farm (at two weeks after position open when long farm initiates, and later initiated by reinvestment events); (2)Ongoing: 8% performance fee is applicable on an ongoing basis as Spectrum auto-compounds the staked LP tokens.

## Aperture Fees & Minimum Investment Size

Aperture delta-neutral strategy initially charges a performance fee of 10%. The fee is calculated based on the net gain only, and not on the principal.

Example based on 2K investment with a 200% TCR:

- Invest
- 2,000 UST in a DNS pool
- Day 0 value = 1,998 UST (see[APR breakdown](#)
- section)
- Day 365 value = 2,600 UST
- Withdraw
- 100% of the position or 2,600 UST
- - Aperture Fee =60 UST
  - = (2,600 - 2,000) \* 10%
  - Mirror CDP Withdrawal Fee =13 UST
  - = 867 UST worth of returned mASSET \* 1.5%
  - Network Gas =3 UST
- \*
- Receive
- 2,527 UST (2,600 - 60 - 13 - 3 = 2,524 UST)
- 

The performance fee is partially used to cover controller costs. The controller is an off-chain service that monitors all delta-neutral positions and triggers the on-chain process for rebalance/reinvest as needed to protect all positions against possible liquidation events and to ensure the best possible capital efficiency. The rebalance gas cost ranges from 0.5 UST to 1.6 UST per contract call, depending on the specific circumstances (e.g. whether the collateral ratio falls outside the target range, and how much the position deviates from the neutral state).

Unlike the vault setup in many other protocols where funds from many users are aggregated and controller gas cost can therefore be amortized, Aperture's delta-neutral strategy individually services each and every position. Each position, regardless of its value (whether 500 UST or 5M UST), entails the same series of controller transaction costs during the lifetime of the position. As a result, the strategy requires a minimum investment size of 2,000 UST so a rebalance operation does not become a significant portion of the position value.

Performance fees are charged periodically during the lifetime of each position to fund the controller, and at position close. Note that the performance fee rate and fee collection behavior will be modifiable by Aperture DAO after the governance token and platform launches.

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