

Interns Desks (Anvil AMM) - Integration Guide

Version: 2026-09-28 (three chains: Robinhood Chain, Ethereum, ApeChain)

Interns desks are user run NFT order books with a price ladder, live on Robinhood Chain (chain id 4663), Ethereum mainnet (1) and ApeChain (33139). One router contract (InternExchange) per chain owns a registry of desk clones (InternPool). Anyone can open a desk for ANY ERC-721 on the chain, quoted in the chain's native coin or one of the allowlisted ERC-20 quote tokens, and traders buy from the cheapest ask or sell into the highest bid. This guide is for trading terminals, indexers and NFT teams that want their collection on the desk.

Live surface: <https://stonkbrosers.io/marketplace?tab=desks> (chain switch on the tab) Docs: <https://stonkbrosers.io/docs#desks>

The three deployments run the SAME bytecode and ABI (Sourcify exact match on every chain, Blockscout verified on Robinhood). Only the quote menu, the fee sinks and the listing floors differ per chain. ABIs ship next to this guide: InternExchange.abi.json and InternPool.abi.json.

Contracts (Robinhood Chain 4663)

Contract	Address
InternExchange (factory + registry + router)	0xDea32D8AEE85B41A0f320Ff823e4625AAB01f518 (deploy block 70008491)
InternPool implementation (EIP-1167 clone target, locked)	0x01CF86731Fbf668bA5A14bD2eF4DfE06fD77E303
StonkBrokers collection	0x539CdD042c2f3d93EbC5BE7DfF0c79F3B4fAbF0
Stonk Interns collection	0xFc4b0c4F464dC3037cF013934648a8A726d565A5
InternTransferValidator (interns operator allowlist)	0x36cdfAAC12e849bf27dCba6cBdFe35d35fEE9951

Quote tokens (address(0) = native ETH): ETH, STONKBROKER 0xe934e36A439C94017B64a3FecE66AF12099aBF50, USDG 0x5FC5360d0400A0FD4f2AF552Add042D716f1d168 (6 decimals), AAPL, AMZN, NVDA, GOOGL, SPCX, USAR, GME, TSLA, PLTR, AMD, GLD, cbBTC (8 decimals). Read allowedQuote(token) for the live menu. The 25% intern leg of ETH and STONKBROKER quoted trades goes straight to the intern Clock In engine; for every other quote it lands on the ops converter wallet and is sold and forwarded.

Contracts (Ethereum mainnet 1)

Contract	Address
InternExchange (Ethereum)	0xE272B47AF5d8de38E7D09c048a81480290478193 (deploy block 26036272)
InternPool implementation (Ethereum)	0x0020C1b3a52d136cc0f95Db6De6367Da4Ad7b518

Quotes: ETH (address(0)), WBTC 0x2260FAC5E5542a773Aa44fBCfeDf7C193bc2C599 (8), USDT 0xdAC17F958D2ee523a2206206994597C13D831ec7 (6), USDC 0xA0b86991c6218b36c1d19D4a2e9Eb0cE3606eB48 (6), APE 0x4d224452801ACed8B2F0aebE155379bb5D594381 (18), XAUt 0x68749665FF8D2d112Fa859AA293F07A622782F38 (6). No listing floors on Ethereum. The 25% intern leg is paid to the ops converter wallet 0xb668382cF44038a3E8140E789060F6A809787CDa and bridged to the Robinhood Chain intern engine.

Contracts (ApeChain 33139)

Contract	Address
InternExchange (ApeChain)	0xE272B47AF5d8de38E7D09c048a81480290478193 (deploy block 50227346; same address as Ethereum because the deployer nonce was 0 on both)
InternPool implementation (ApeChain)	0x0020C1b3a52d136cc0f95Db6De6367Da4Ad7b518

Quotes: APE (address(0) = native APE), WAPE 0x48b62137EdfA95a428D35C09E44256a739F6B557 (18), ApeUSD 0xA2235d059F80e176D931Ef76b6C51953Eb3fBEf4 (18), ApeETH 0xcF800F4948D16F23333508191B1B1591daF70438 (18), USDC.e 0xF1815bd50389c46847f0Bda824eC8da914045D14 (6). No listing floors. The 25% intern leg lands on the ops converter wallet and is bridged to the Robinhood Chain intern engine. USD marks in the stonkbrosers.io UI come from the Ethereum Chainlink APE/USD and ETH/USD feeds, never from an ApeChain feed. Explorer: apescan.io (Blockscout mirror)

apechain.calderaexplorer.xyz).

The HTTP routes below take &chain=robinhood|ethereum|apechain (aliases 4663|1|33139); the default is Robinhood.

Note on ERC-721C collections on ApeChain and Ethereum: many top collections run a LimitBreak or OpenSea operator validator. Those collections trade on a desk only after the validator allowlists the exchange and its clones (see "Open a desk"); the stonkbrosers.io featured picker lists validator free collections first for that reason.

Model

- A desk has one owner, one collection, one quote asset, a type (Buy = bids only, Sell = asks only, Trade = both, may add an LP spread up to 20%), a curve (Linear or Exponential), a spot and a delta.
- Linear: buying the first NFT costs spot + delta, the n-th costs spot + n * delta; selling the first pays spot, the n-th pays spot - (n - 1) * delta. Exponential: the same with a 1e18 multiplier (delta >= 1e18): asks multiply, bids divide.
- Buying n at once costs exactly the sum of the n single rungs; the spot moves once per NFT.
- The ladder is per DESK, not per token id: quoteBuy(pool, n) prices rungs 1..n from the current spot no matter WHICH ids the buyer picks, so the n-th id in a batch always costs the n-th rung. A cart that pulls several ids from one desk must price row k at rung k (the stonkbrosers.io floor projects rungs over held ids in ascending id order and labels them rung N); showing every id at the first rung under quotes the batch.
- A Trade (two way) desk that fills a bid re lists the bought NFT immediately: its ask side now holds the id and the next ask sits one delta above the new spot (floored collections stay at the floor). A Buy desk only holds what it bought until the owner withdraws it; nothing on a Buy desk is for sale, so do not render its inventory as listings.
- Fee: protocolFeeBps (999 = 9.99%) of the curve value, taken in the quote asset on every trade, split deskShareBps (6600) back into the desk that filled it, engineShareBps (2500) to the intern Clock In engine (or a converter for stock / USDG quotes) and the remainder (900) to the treasury. Buyers pay input + lpFee + protocolFee; sellers receive output - lpFee - protocolFee.
- Listing floors: listingFloor(collection, quote) is the minimum spot of a Sell / Trade desk. StonkBrokers is pinned at 733,332 STONKBROKER (666,666 + 66,666) and floorGuarded, so broker asks are STONKBROKER only until another quote gets a floor. Bids are never floor gated. A Trade desk that buys a floored NFT keeps its next ask at the floor.
- Open collections: collectionOpen(collection) is true for any ERC-165 ERC-721 unless the owner blocked it. The exchange owner can lower the fee, steer the split (interns keep at least 25%), repoint sinks after a 24h delay, pause trading (desk withdrawals never pause) and block a collection. No owner path reaches desk inventory or trader funds.

Reads

```
uint256 n = exchange.poolCount();
address[] memory page = exchange.pools(start, count);           // paged registry
address[] memory mine = exchange.poolsOfOwner(owner);
address[] memory forC = exchange.poolsOfCollection(collection);

InternPool d = InternPool(pool);
d.owner(); d.collection(); d.quote(); d.poolType(); d.curve(); d.spotPrice(); d.delta(); d.lpFeeBps();
d.heldIds(); d.quoteBalance(); d.tradeCount();

(uint256 total, uint256 protocolFee) = exchange.quoteBuy(pool, count); // trader pays total
(uint256 net, uint256 protocolFee2) = exchange.quoteSell(pool, count); // trader receives net
```

quoteSell returns net = 0 when the ladder cannot pay; a Buy / Trade desk can fill a sale only while quoteBalance() >= net + protocolFee.

Trades

```
// Buy specific ids off one desk. ETH desk: msg.value = maxTotal (surplus refunded).
// ERC-20 desk: approve(exchange, maxTotal) first, msg.value must be 0.
exchange.buy{value: maxTotal}(pool, ids, maxTotal, recipient);

// Several desks in one tx, all sharing the same quote asset.
InternExchange.Swap[] memory swaps = ...; // { pool, ids }
exchange.buyMany{value: maxTotal}(swaps, maxTotal, recipient);

// Sell into a bid: the trader must own the ids and have setApprovalForAll(exchange, true).
exchange.sell(pool, ids, minNet, recipient);
```

Limits: MAX_BATCH = 20 ids per desk per call. Slippage guards are mandatory (maxTotal, minNet); a desk repriced between quote and inclusion reverts SlippageExceeded and nothing moves. Buying a token the desk no longer holds reverts NotHeld(id).

Open a desk for your collection

```
address desk = exchange.createPool(
    collection,                // any ERC-721 on the chain (ERC-165 checked)
    quote,                     // address(0) for ETH or an allowlisted ERC-20
    InternPool.PoolType.Trade,  // Buy | Sell | Trade
    InternCurve.Kind.Linear,    // Linear | Exponential
    spot, delta, lpFeeBps,     // ladder; lpFeeBps only on Trade desks (<= 2000)
    initialQuote               // optional bid funding; ETH via msg.value, ERC-20 pulled (approve first)
);
IERC721(collection).setApprovalForAll(desk, true);
InternPool(desk).depositNFTs(ids);           // asks go live
InternPool(desk).depositQuote(amount);       // fund bids (payable on ETH desks)
InternPool(desk).setParams(spot, delta, lpFeeBps);
InternPool(desk).withdrawNFTs(ids); InternPool(desk).withdrawQuote(amount);
InternPool(desk).transferOwnership(to);      // only with zero NFTs on the desk; then
exchange.reindexOwner(desk, oldOwner)
```

Collections with an operator allowlist (ERC-721C style transfer validators) must allow the exchange AND its desk clones as operators. A registry style validator can consult InternExchange.isPool(address), which returns true for the exchange and every clone, so no per desk allowlisting is needed. Plain ERC-721 collections need nothing.

Collection logo: the collection's owner() binds a logo by signing the message returned by GET /api/desks/collection?address=<c>&message=1&logo=<https url>&nonce=<ms> and posting { collection, logo, nonce, signature, signer } to POST /api/desks/collection. Without a bind the desk shows the Blockscout token icon or the first listed NFT's image.

Events

InternExchange:

- PoolCreated(pool, owner, collection, quote, poolType, curve, spot, delta, lpFeeBps)
- Buy(trader, pool, count, paid, protocolFee) / Sell(trader, pool, count, received, protocolFee)
- FeeRouted(quote, pool, toDesk, toEngine, toTreasury), FeeParked, FeeFlushed
- ListingFloor(collection, quote, floor, guarded), CollectionBlocked, FeeConfig, Wiring

InternPool (per desk):

- Bought(recipient, ids, input, protocolFee, lpFee, newSpot) / Sold(recipient, ids, output, protocolFee, lpFee, newSpot)
- NftsDeposited(ids), NftsWithdrawn(ids), QuoteDeposited(amount), QuoteWithdrawn(amount)
- ParamsUpdated(spot, delta, lpFeeBps), OwnershipTransferred(from, to)

Indexer recipe: scan PoolCreated on the exchange from the deploy block in the contracts table (70008491 on Robinhood, 26036272 on Ethereum, 50227346 on ApeChain) to learn every desk, then Buy / Sell on the exchange for volume and fees (paid and received are in the desk's quote asset, protocolFee is the 9.99% leg; the LP spread stays inside the desk and shows up only in the per desk Bought / Sold events). Discovery needs no logs at all: poolCount() + pools(start, count) enumerates the registry. Total value locked of a desk = quoteBalance() plus the held NFTs marked at the desk's own next ask. DefiLlama lists the venue as the stonkbroskers-desks child of StonkBrokers (TVL + fees/volume adapters) on Robinhood and Ethereum.

Revert selectors (plain copy in the desk UI)

CollectionNotAllowed, NotErc721, QuoteNotAllowed, BelowFloor, FloorNotSet, NotAPool, BatchTooLarge, EmptyBatch, SlippageExceeded, EthMismatch, EthNotAccepted, TransferFailed, EnforcedPause (exchange); NotOwner, NotExchange, WrongType, NotHeld(id), NotReceived(id), InsufficientQuote, InventoryHeld, BelowFloor, InvalidDelta, CurveExhausted (desk).

HTTP read routes (stonkbrowsers.io, server aggregated, edge cached)

- GET /api/desks/floor?chain=robinhood|ethereum|apechain -> every desk, every listing (per NFT ask with rung + USD), every bid (net for the next NFT + depth), collection metadata with logos, USD marks per quote, and an images map of CDN cached NFT art.
- GET /api/desks/collection?address=0x...&chain=... -> ERC-721 check, name, symbol, logo, owner, floors.
- GET /api/desks/holdings?wallet=0x...&collection=0x...&chain=... -> token ids the wallet holds (ownerOf verified).
- GET /api/desks/nft-image/<collection>/<id>?chain=... -> the NFT image, resized to 512px webp and cached on a CDN (IPFS hosted collections are fetched server side; on chain data URIs decoded).
- GET /api/desks/nft-meta/<collection>/<id>?chain=... -> decoded metadata / traits for the Buy popup.

These are conveniences for UIs; nothing about the protocol depends on them. Prefer the contract views for anything that signs.

Notes for StonkBrokers and Stonk Interns

- Moving an activated broker or intern into a desk, or selling it into a bid, clears its activation (the buyer re activates). Dormant interns cannot move at all.
- Interns trade through desks once the collection owner registers the exchange on the InternTransferValidator (setPoolRegistry(interns, exchange, true)).
- Desk fees are the only fee on this venue: no second royalty layer is charged on desk trades.

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