TradeBot v1.0.4 — Detailed Guide

What's New in v1.0.4

- AutoTune (enhanced "choppy profile"): regime detection (uptrend / downtrend / choppy) with safe clamps; choppy pins thresholds to the proven v1.0.2 profile; tiny ±1 bps maker-offset nudges per asset; can suggest disabling laggards outside "choppy".
- Reconcile cadence: startup sweep (default 48h), mid-session sweep (default 90 min), optional quick sweep before SELLs, and a final reconcile on shutdown with CSV write.
- Dry run mode: full simulation against live data; orders are logged as (DRY RUN) and no live orders are sent.
- Optional one-time AutoTune refresh after 4h runtime (controlled in main.py).

Quickstart (PowerShell)

Run from the repo root:

```
python main.py
```

APIkeys.env (root):

```
COINBASE_API_KEY=your_key_here
COINBASE_API_SECRET="your_secret_here"
PORTFOLIO_ID=optional
```

Tip: You can set a custom env file path via ENV_PATH.

How It Works (strategy overview)

- Captain + Advisors: EMA crossover drives direction; RSI and MACD act as veto advisors.
- Signals: require confirm_candles consecutive closes beyond the EMA cross, plus an ema_deadband_bps to avoid whipsaws.
- Execution: prefers post-only maker limits (with maker offsets); BUYs respect a daily spend cap; SELLs require position; optional hard stop exits below cost basis.
- Persistence: runtime state lives under .state/ (portfolio, processed fills, daily spend, trades.csv, logs). trades.csv feeds AutoTune KPIs.

AutoTune (v1.0.4)

- When: runs once at startup if enabled; optional one-time refresh after ~4h runtime.
- Inputs: market snapshot (autotune_lookback_hours window) + recent KPIs from .state/trades.csv.

- Adjusts (bounded): confirm_candles, per_product_cooldown_s, RSI/MACD veto thresholds, ema_deadband_bps, and maker_offset_bps_per_product (±1 bps nudges within floors/ceilings).
- Choppy safeguard: in "choppy", parameters are pinned to the stable v1.0.2 profile.
- Disable logic: in non-choppy regimes, may suggest disabling poor performers (Majors exempt).
- Modes: autotune_preview_only=True logs proposals without mutating config; False applies changes for the session.

Reconcile Cadence (v1.0.4)

- Startup reconcile: default 48h sweep.
- Mid-session reconcile: default every 90 minutes.
- On SELL attempt: quick sweep before placing orders (optional).
- Shutdown: final sweep and CSV write so session P&L is accurate.

Run Lifecycle & Logs

- At start: AutoTune logs regime and tweaks; warm-up backfills indicators; startup reconcile runs.
- During session: signals fire on candle closes (respecting confirm_candles and cooldowns); mid-session reconcile logs on schedule; dry-run entries are clearly labeled.
- On Ctrl+C: final reconcile → session P&L footer in trade_log.txt → clean exit.

Key Settings (v1.0.4)

Note: Defaults shown are examples; your local bot/config.py may differ. If AutoTune is enabled, the parameters in the second table are overridden at runtime.

User-Configurable Parameters (always under user control)

Setting	Default (example)	Purpose
dry_run	True	Enable simulation mode (no live orders).
autotune_enabled	True	Enable AutoTune at startup.
autotune_preview_only	True	Log proposals only; no config changes.
autotune_lookback_hours	18	Candle window (hours) AutoTune uses for regime

		voting.
lookback_hours	48	Startup reconcile horizon (hours).
mid_reconcile_enabled	True	Toggle mid-session reconcile.
mid_reconcile_interval_minutes	90	Mid-session sweep cadence (minutes).
reconcile_on_sell_attempt	True	Quick sweep before SELL.
short_ema / long_ema	12 / 26	Global EMA lengths.
enable_advisors	True	Toggle RSI/MACD veto logic.
rsi_period	14	RSI length.
macd_fast/slow/signal	12 / 26 / 9	MACD parameters.
usd_per_order	20.0	USD size per BUY order.
daily_spend_cap_usd	100.0	Max BUY spend per day.
hard_stop_bps	None	Optional stop-loss trigger (bps below cost basis).
prefer_maker	True	Prefer post-only maker orders.
prefer_maker_for_sells	True	Prefer maker for SELLs too.
maker_offset_bps	10	Default maker offset if no per-product override.
maker_offset_bps_per_product	{...}	Per-asset maker offsets (AutoTune may nudge).
ema_params_per_product	{...}	Per-asset overrides (short, long, min candles).
use_backfill	True	Backfill candles on startup.
warmup_candles	200	Candles to seed indicators on startup.
log_level	INFO	Logging verbosity.

portfolio_id	optional	Override portfolio (or from ENV).

AutoTune-Controlled Parameters (overridden if autotune_enabled=True)

⚠ If AutoTune is enabled, these are dynamically adjusted each session. Values set in config.py are ignored unless autotune_enabled=False.

Setting	**Default (example)**	**AutoTune behavior**
confirm_candles	2	Tightened or relaxed based on regime.
per_product_cooldown_s	300	Lengthened/shortened based on volatility and regime.
rsi_buy_max	70	Lowered in overheated markets; relaxed in downtrend.
rsi_sell_min	30	Raised in oversold conditions.
macd_buy_min	-5	Adjusted within safe bounds depending on trend.
macd_sell_max	5	Adjusted within safe bounds depending on trend.
ema_deadband_bps	3	Widened in choppy conditions; narrowed in trends.
maker_offset_bps_per_product	{...}	Nudged ±1 bps per asset from 3-day KPIs; may suggest disabling poor performers (outside Majors).

Run Settings

Dry run with AutoTune preview:

```
dry_run = True
autotune_enabled = True
autotune_preview_only = True
```

Live run with active AutoTune:

```
dry_run = False
autotune_enabled = True
autotune_preview_only = False
```

Static (no AutoTune):

```
autotune_enabled = False
```

Release Safety Notes

- Start with dry_run=True to validate setup and data flow.
- Use conservative daily_spend_cap_usd until confident.
- Keep .state/ and APIkeys.env untracked (already in .gitignore).
- Tag releases (e.g., v1.0.4) for reproducibility.