LINKHASH

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A Web3-native marketing, prediction & incubation platform on Solana

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Token: **LHX** · Solana SPL
link-hash.com

This document describes the LinkHash protocol, its native token LHX, and the on-platform products that route LHX through verified user engagement, prediction markets, and project incubation services.

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1. Abstract

LinkHash is a Web3-native marketing and incubation platform built on Solana. The protocol coordinates three otherwise separate flywheels — **prediction markets, paid promotional campaigns, and on-chain games** — through a single SPL token, **LHX**. Projects pay LHX (or SOL) to buy verified user engagement; users earn LHX by completing tasks, staking opinions in prediction markets, or participating in lotteries; creators earn through prediction-market platform fees and staked campaign budgets.

Where most marketing platforms treat reach as a black box, LinkHash treats every promotional unit as a settled transaction on Solana. Prediction markets resolve from authenticated, externally observable metrics (YouTube view counts, X follower counts, Instagram followers, stock and crypto closing prices). Campaign rewards only release after creators verify the submission. Markets, payouts, and platform fees all clear in LHX, denominated in 6-decimal base units, against a treasury wallet that disburses on a Celery-driven schedule.

This paper describes the platform's product surface, the LHX token and its sinks, the technical architecture (a Django + Channels + Celery + Solana stack), and the protocol's operational and settlement guarantees.

2. Background & the LinkHash Origin Story

LinkHash launched as a **crypto reward-based task platform**: users completed simple, verifiable online actions and were paid in cryptocurrency. The mental model came directly from how proof-of-work blockchains reward miners for finding valid hashes — but instead of mining blocks, LinkHash users mine **verified human attention**.

The name *LinkHash* combines **Link** (the connections, actions, and interactions across the web that the platform incentivises) with **Hash** (the cryptographic verification and crypto-native rewards that close the loop). After users submit proof of completing a task, LinkHash's manual and automated verification systems reconcile the submission before any LHX is released.

From this foundation, LinkHash has evolved into a full-stack growth engine for DEX projects:

- **Distribution** — projects that promote their token via LinkHash receive amplification across LinkHash channels, partner allocations, and a permanent landing surface inside the dApp.
- **Liquidity & market making** — the LinkHash team can support liquidity expansion and market-making activities for graduated projects.
- **End-to-end incubation** — from token design to launch, the LinkHash incubation arm partners with founders to ship Web3 projects.
- **Permissionless campaign marketplace** — anyone can launch a campaign by paying a small LHX or SOL fee.

3. Platform Overview

LinkHash is structured around five user-facing pillars and one infrastructure pillar. Each pillar consumes or emits LHX, ensuring the token has multi-directional utility rather than being a passive store of value:

Predictions	On-chain prediction markets resolved via authenticated metrics (YouTube views, X / Instagram followers, NVDA / TSLA / BTC / ETH closing prices). Time-weighted shares reward early conviction.
Campaigns	Permissionless promotional campaigns. Creators stake LHX to open a budget; submitters earn LHX for verified deliverables (content, retweets, posts).
Games	LHX-denominated lottery and FOMO-style games with deterministic, scheduler-driven settlement.
Partners	Paid sponsorship slots displayed on the Partners page. Slots rotate every 30 days at a flat 1 SOL price.
Leaderboard	Wallet-based leaderboard that surfaces the most active LHX earners, bettors, and creators.
Academy	Long-form educational content covering crypto, on-chain analysis, macro, and quantitative finance — produced and moderated by LinkHash staff.

All product surfaces share a single Solana login (Phantom-signed Ed25519 messages over a server-issued nonce), a single LHX balance, a single treasury, and a single settlement scheduler. The result is a vertically-integrated dApp where the same token rewards earned in Predictions can be staked in Campaigns or wagered in Games without an off-platform bridge.

4. The LHX Token

LHX is a Solana SPL token with 6 decimals. It launched on **pump.fun**, graduated, and is actively traded on the open Solana DEX ecosystem — primarily PumpSwap (the post-graduation AMM run by pump.fun) and routed through Jupiter for best execution. The mint and the platform contracts are publicly visible on Solscan and DEXscreener.

Symbol	LHX
Network	Solana
Standard	SPL Token (Token Program)
Decimals	6
Mint (CA)	`9LrT8gAKJ5qUJA1wJoQRrVfapJGrNnU2ca5UYiJipump`
Initial venue	pump.fun (graduated)
Current venues	PumpSwap (post-graduation AMM) · routed via Jupiter · indexed on DEXscreener / Solscan

4.1 Distribution & Trust

LHX was fair-launched on pump.fun (no pre-sale, no insider discount), graduated from the bonding curve, and now trades on **PumpSwap** (pump.fun's post-graduation AMM) with order flow aggregated by Jupiter. Mint and freeze authorities were renounced at launch and the bonding-curve LP was permanently locked by the pump.fun protocol at graduation. The post-graduation distribution is broken down below and is fully verifiable on-chain via Solscan.

20% — Founder-coordinated early backers (~199.02M LHX)	Locked via Streamflow with cliff **2026-12-12 00:00 KST (2026-12-11 15:00 UTC)**. Contract is immutable: cannot be cancelled, transferred, or modified, by anyone. Lock enforced on-chain by the audited Streamflow program (`strmR…fmKg5m`). Contract: `d5x8JiQDCjxBAmzsSVXkf9GkeWSaQuBCqLnmLV6N1RP`

15% — Founder / dev operational reserve (~150M LHX)	Three dev-controlled wallets, transparent on-chain: • **Dev wallet** (~100M LHX): `GkWMcnSNQP4aTVZruJMSwjhzW3VvEza3iZXi3NEwzPKE`. Creates and seeds prediction markets, runs partnership ops, ad-hoc community grants. • **Market-making wallet** (~40M LHX): `92BG6hZiWjPhJ6ERAG3cpxggPgtcZPzDq8gYWgVUGKjX`. Provides two-sided liquidity on internal prediction markets so early bettors are never left without a counterparty. • **Operational treasury** (~10M LHX): `9CN6FmD81w1azLpwdkvvwp3J8FFL5xwXkZ4vzYbYFecK`. Pays prediction-market YES/NO winnings, campaign rewards, no-contest refunds, and game prize pools. Funded from sinks (creation fees, submission fees, 2% platform fee), so the balance is largely self-replenishing in normal operation. Combined, the 15% bucket is never used for OTC sales or insider distribution.
10% — Partnerships, listings & market making (~100M LHX)	Single dedicated wallet: `CW7nwyeskzu8j7XF3r1ME5TPXJMt2orKzmRkf99RHGAK`. Reserved for centralised-exchange listing fees, professional market-making engagements on those venues, and strategic partnership grants. Released only against signed agreements; every outflow is on-chain and self-evident on Solscan.
~55% — Public float (~549M LHX)	Held by community members and other early supporters; freely traded on PumpSwap and routed via Jupiter / DEXscreener. Not under team control. The exact float fluctuates with market activity and is the residual of total supply minus the four team-disclosed allocations above — verifiable any time by subtracting the four wallets' on-chain balances from the circulating supply.

Founder lock-up commitment. 20% of total supply is locked through Streamflow, a battle-tested Solana vesting program (audited by Halborn and Kudelski; live since 2022; used by Jupiter, Marinade, Drift, Wormhole, Pyth and dozens of other Solana projects). The lock is configured as **non-cancelable, non-transferable, single-cliff** — the entire amount unlocks in one event at the cliff date and not before. Mid-lock release is mathematically impossible.

Verifiable on-chain. Anyone can confirm the lock is real and untouchable, in three independent ways:

- Streamflow public contract page: `app.streamflow.finance/contract/d5x8JiQDCjxBAmzsSVXkf9GkeWSaQuBCqLnmLV6N1RP`
- Solana RPC: any client can query the contract account `d5x8J…6N1RP` directly and read the amount, cliff timestamp, and the cancelable=false flag from the raw account data.
- Solscan: `solscan.io/account/d5x8JiQDCjxBAmzsSVXkf9GkeWSaQuBCqLnmLV6N1RP`

At cliff expiry the team will publicly announce — at least 30 days in advance — whether the released allocation will be re-locked, extended, or used for ecosystem grants. No silent unlocks.

4.2 Token Sinks & Faucets

LHX flows through three deterministic sinks and three faucets:

Sinks (LHX leaves the open market):

- **Prediction-market creation** — 10,000 LHX per market, paid into the platform treasury at creation time.
- **Campaign submission fee** — 100 LHX per submission, capped to keep spam down without throttling legitimate creators.
- **Platform fee on prediction settlement** — 2% of each market's losers' pool, retained by the treasury.
- **Promotional ad slots** — 100,000 LHX (Basic, 14 days) or 250,000 LHX (Premium, 60 days) for in-app placements.

Faucets (LHX returns to users):

- **Prediction winnings** — losers' pool, minus the 2% platform fee, distributed to winners proportional to their time-weighted bet share, plus their original bet refunded.
- **Campaign rewards** — creators stake LHX up front; verified submitters claim it after creator approval.
- **Game prize pools** — lottery and FOMO games pay out their LHX prize pots to winners on schedule.

5. Product Pillars

5.1 Prediction Markets

Prediction markets are LinkHash's flagship product. Users bet LHX on the outcome of a real-world, externally observable metric. Each market has a clear resolution criterion, a deadline, and a deterministic settlement path that pulls data from a third-party API.

Categories

- **YouTube views** — "Will video X reach N views by date Y?" Resolved via the YouTube Data API v3 `videos.list` endpoint, with an HTML scrape fallback for legacy keys.
- **X (Twitter) followers** — "Will @handle reach N followers by date Y?" Resolved via the X v2 API, `users/by/username` with `public_metrics`.
- **Instagram followers** — "Will @handle reach N followers by date Y?" Resolved via Apify's `instagram-followers-count-scraper` actor.
- **Daily price (crypto)** — "Will BTC / ETH close higher today than yesterday?" Reference and settlement closes are read directly from a centralised exchange via CCXT (Bitget by default).
- **Daily price (US stocks)** — "Will NVDA / TSLA close higher today than yesterday?" Reference price uses Polygon.io's `/prev` endpoint; settlement uses the next NYSE close, holiday- and early-close-aware.

Time-weighted shares

Naive parimutuel pools reward late piling-on as much as early conviction. LinkHash applies a **time-weighted share** to each bet: the closer to the deadline a bet is placed, the smaller its weight, even though the LHX amount is identical. Earlier participants therefore earn a strictly larger share of the prize pool, which correctly prices early information.

Settlement & payout formula

Once a market's deadline passes and the settles-at buffer elapses (immediate for crypto, +5 minutes; +90 minutes for US stocks to absorb Polygon's end-of-day publishing latency), the resolver fetches the observed metric and computes:

```
fee = losers_pool × 2%
distributable = losers_pool − fee
winnings(user) = distributable × (user.weighted_amount / Σ winners.weighted_amount)
payout(user) = user.original_bet + winnings(user)
```

Edge cases are handled explicitly: if no one bet on the losing side, winners simply get their original bet refunded; if no one bet on the winning side, losers are refunded with no platform fee. If the external metric source is permanently unreachable past a retry horizon, the market resolves as **NO-CONTEST** and every bet is refunded — protecting users from oracle outages without blocking the rest of the platform.

Auto-open daily price markets

For active **PriceAsset** rows (BTC, ETH, NVDA, TSLA, ETH), LinkHash opens today's market automatically. The auto-open pass runs from both the in-process scheduler (every minute) and from Celery beat (every 5 minutes), and is wrapped in a Redis-backed `cache.add()` mutex so concurrent Daphne workers cannot race on the `.exists()` check and produce duplicates.

5.2 Campaigns

Campaigns convert LHX into **verified human engagement**. A creator opens a campaign by paying a small fee, attaches a budget (LHX or SOL), and writes a deliverable spec — typically a content task such as posting a thread on X, recording a short video, or publishing a long-form review.

Submitters complete the task off-platform, then file a **Submission** on LinkHash with their proof URL. The creator reviews each submission from a Creator Dashboard and either approves or rejects it. Approved submissions enter the payout queue, which the Celery scheduler drains every three minutes by issuing on-chain LHX transfers from the campaign treasury wallet.

Because both the campaign budget and the rewards are held in a wallet the creator does not custody, LinkHash provides trustlessness in the direction users care about: *creators cannot rug submitters once a campaign is funded*.

5.3 Games

Two on-platform games denominated in LHX:

- **Lottery** — Players buy tickets in LHX. At a fixed deadline, a winner is drawn deterministically from on-chain randomness derived from a pinned slot hash, and the prize pool (minus a small platform fee) is paid out.
- **FOMO** — A timer-driven game where each ticket purchase resets the countdown. The last buyer at the moment of expiry wins the pot. The dynamic-timer settlement is enforced by Celery: every minute, expired sessions are auto-advanced to the payout state.

5.4 Partners

The Partners page rotates 10 paid sponsorship slots, each costing 1 SOL for a 30-day window. Slots are claimed on a first-come / first-served basis and are SOL-priced rather than LHX-priced specifically to capture demand from non-LHX-holders evaluating LinkHash for the first time.

5.5 Academy

Academy is a long-form content surface inside the dApp. Articles cover crypto market structure, on-chain forensic techniques, macro primers, and quantitative finance topics (factor models, options Greeks, walk-forward backtesting). Academy serves three goals: (1) onboarding new users to the prediction markets they will then trade, (2) signalling LinkHash's technical credibility to project founders evaluating a partnership, and (3) extending session time without inflating campaign costs.

5.6 LinkHash AI

Every page on the dApp ships an embedded **LinkHash AI** assistant — a popup chatbot powered by OpenAI's Responses API. The assistant answers two distinct classes of question:

- **Project questions.** The system prompt encodes an authoritative description of LinkHash, the LHX token, prediction-market mechanics, campaigns, games, partners, and the official contact channels.
- **Domain-expert questions.** The same prompt scopes the assistant as a senior crypto / blockchain / macro / quantitative-finance specialist, so the user can move from "what is LinkHash?" to "explain options Greeks" without leaving the widget.

An optional **Web search** toggle activates the OpenAI `web_search` tool for live data; the widget surfaces the cited sources beneath the answer.

6. Technical Architecture

LinkHash is implemented as a single Django 6 monolith deployed on AWS Lightsail, fronted by Nginx with TLS termination and four Daphne ASGI workers behind a load-balanced unix-socket pool.

Web framework	Django 6 (ASGI via Daphne, channels for WebSockets)
Database	SQLite (single-host) with Django migrations
Async / queue	Celery worker + Celery beat scheduler, Redis broker
Cache / lock	Redis-backed Django cache (DB index 3) — also the cross-process lock for the auto-open price-market pass
Auth	Phantom wallet · server-issued nonce · client-signed Ed25519 message · server-side `nacl.signing.VerifyKey`
On-chain RPC	Helius (server-side full-access) + a domain-allowlisted Helius key for the browser fallback
Off-chain data	Polygon.io (US stocks), CCXT/Bitget (crypto OHLCV), YouTube Data API v3, X v2, Apify (Instagram)
AI	OpenAI Responses API (GPT-5.2) — chatbot + market analysis
Front-end	Server-rendered Django templates, HTMX, Bootstrap 5, custom theme (theme.css), Solana web3.js + Buffer polyfill

6.1 Settlement Pipeline

The market settlement pipeline is split into idempotent stages so any of them can re-run after a crash or restart without producing double payouts:

- **Lock-on-deadline.** Bets cannot be placed past `deadline_at`; the in-process scheduler flips eligible markets to LOCKED.
- **Wait for settles-at.** Crypto markets resolve almost immediately after deadline; stock markets wait 90 minutes for Polygon EOD.
- **Fetch metric.** The category-specific resolver pulls the observed metric. On retriable failure, the market is left in LOCKED state and re-tried by the next scheduler tick.
- **Compute payouts.** `_settle_market` writes `payout_lhx` on every winning bet and marks losers as LOST.
- **Disburse.** The `disburse_prediction_payouts` Celery task drains the queue, transferring LHX from the treasury wallet to each winner. Up to 8 transfers are issued in parallel; this is clamped to keep public RPC rate limits in scope.

6.2 Replay Safety

Every long-running task is designed so that a duplicate run wastes an external API call at worst — it cannot double-pay. The auto-open price-market pass is now further hardened by a Redis mutex (`cache.add(LOCK_KEY, '1', timeout=50)`); the disbursal task selects payout rows with `SELECT … FOR UPDATE SKIP LOCKED` semantics; settlement marks bets PAID atomically inside a transaction so a half-disbursed market cannot be observed externally.

7. Operational Model

LinkHash runs as a single-tenant production environment with two complementary scheduling systems:

- **In-process scheduler (per Daphne worker).** A daemon thread inside each ASGI process ticks every 30 seconds, settling overdue markets, disbursing payouts, and (under lock) attempting auto-open. It exists so that the platform does not *require* Celery for users to be paid on time — even a degraded deploy keeps clearing markets.
- **Celery beat + worker.** The same logic runs as periodic Celery tasks, optionally on a different host. This is the canonical scheduler in production. Both schedulers act on the same idempotent helpers, so running them simultaneously is safe by design.

Treasury custody is multi-keyed: distinct labels for `prediction_treasury` and `campaign_treasury` exist so the team can split signing wallets without changing application code. Every payout writes a structured PayoutLine row before signing, creating an audit trail that maps every on-chain LHX outflow back to a specific bet, submission, or refund.

7.1 Risk & Failure Modes

Oracle outage	Settlement is retried until the per-market retry budget is exhausted, after which the market resolves as NO-CONTEST and every bet is refunded. No bet ever goes to “stuck”.
Datacenter scraping	YouTube serves stripped HTML to AWS IPs. The hardened scraper uses the CONSENT cookie and m.youtube.com fallback; the permanent fix is a YouTube Data API v3 key — both paths are supported.
Phantom warning	New domains and wallets trigger Phantom’s Blowfish heuristics. LinkHash registers the LHX mint and treasury wallets with Blowfish and applies for verification through Phantom’s dApp directory.
Replay / dup runs	All schedulers are idempotent; the auto-open pass is mutexed via Redis.
Database growth	Token snapshots and per-market metric history grow linearly. Snapshot cleanup tasks run on a daily Celery schedule.

8. Roadmap

The roadmap is sequenced so that every shipped feature either increases LHX velocity, deepens campaign supply, or improves settlement reliability:

Phase 1 — Foundation (shipped)

- Phantom-signed wallet auth
- Prediction markets (YouTube, X, Instagram, BTC, ETH, NVDA, TSLA)
- Permissionless Campaigns + Creator Dashboard
- Lottery and FOMO Games
- Partners sponsorship slots
- Academy publishing surface
- LinkHash AI assistant

Phase 2 — Reliability & Reach (in progress)

- Multi-host Celery + Redis with cross-process auto-open lock
- YouTube Data API key path + datacenter-resilient scrape fallback
- Phantom dApp verification & Blowfish whitelist for LHX + treasury
- Polygon early-close / NYSE holiday calendar awareness

Phase 3 — Liquidity & Programmable Campaigns

- LHX/USDC auto-market-making module
- Programmable campaign templates (referral graphs, retroactive milestones)
- Price-market parlays / multi-leg markets
- Mobile-first staking flow

Phase 4 — Open Marketplace

- Permissionless prediction-market creation by any wallet
- Open campaign marketplace SDK / API
- Cross-chain settlement bridges (LHX wrapped on EVM L2s)
- DAO-curated Academy tracks

9. Team & Contact

LinkHash is built by an independent team of Web3 engineers and quantitative researchers operating under **LINKHASH CORP** (Dover, DE). The team handles product, smart-contract integration, settlement infrastructure, market making, and partner relations.

Website	link-hash.com
X (Twitter)	@linkhash11235

Telegram channel	t.me/linkhashnews
Telegram group	t.me/projectlinkhash
Instagram	@lhx11235
Kick	kick.com/linkhash
Business / partnerships (Telegram)	@lhxluke
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10. Disclaimer

This document is provided for informational purposes only and does not constitute investment advice, an offer to sell, or a solicitation of an offer to buy any security or token. The LHX token is a utility token used to access products on the LinkHash platform; it does not represent equity, debt, or any claim on the company.

Cryptocurrency markets are volatile and prediction markets carry the risk of total loss of staked LHX. Users are responsible for ensuring their participation complies with local law. LinkHash reserves the right to refund or refuse markets that violate its terms of service.

Forward-looking statements in this paper reflect current intent. Roadmap items are aspirational and may be reordered, accelerated, or removed as the product evolves.