



GEM HUNTER · OFFICIAL \$GH DOCUMENT

Implementation Blueprint

Wiring version 3.1 onto the live platform

Document 4 of 4 · Engineering map

VERSION 3.1 · 9 SEPTEMBER 2026

One treasury · billing-crypto rails · Merkle claim
Any PR that breaks L1–L63 is rejected



1. Principle and live join points

Build on the existing platform, not beside it. The token may deploy on mainnet for transparency; an independent audit report is published before TGE (L63). No public trading or open claims until TGE. The June 2026 2.0 draft with `GH_PER_USD=400`, `max(plan, staked_tier)`, Pro/VIP staking, and buyback&burn must not be implemented.

Live payment rail today: `backend/src/services/billing-crypto.service.ts` + `billing_treasury_wallets` + the deposit watcher.

Existing GH presale: `offchain-presale.service.ts` + `gh_treasury_wallets` + a proven-wallet requirement. That rail is merged into `billing-crypto`. A second watcher is not built.

Live catalog: `subscription_plans` / GET /entitlements/public-catalog. Do not hard-code USD prices. Product access: `applyFeatureGate` and `users.plan` + `user_subscriptions.current_period_end`. Version 3 does not wire staking into that circuit.

Migrations 169–174 in the repo are already consumed. New work continues from the next real schema number. Do not re-run Blueprint 2.0 from 169. Platform pattern: `query()` from `utils/db/client`, `camelCase` and `snake_case` in controllers, mount in `src/index.ts`.

Chain confirmations: `BILLING_WATCH_CONFIRMATIONS` / `GH_WATCH_CONFIRMATIONS`; default 8.

Audience

This PDF is published so the market can see that the economy is implementable on the live product — not a second, disconnected presale. It is still an engineering map. File paths can move; locks L1–L63 cannot.

2. Version 3 architecture

Presale (token not yet deployed): `billing-crypto` invoice (USDT/USDC BSC) splits into `period_end` + `plan` (access) and `gh_credited` (asset until snapshot).

TGE: signed claim wallet → Merkle → `GHVestingClaim`. Locked PancakeSwap `GH/USDT` LP.

After TGE: direct GH pay, or `USDT × 1.05` → LP swap → GH, both into the payment vault → subscription. Then 7-day TWAP → company USDT.

Token source of truth after TGE: the chain. Access source of truth: DB (`plan` + `period_end`) updated from the payment event.

3. Data model

Concept	Store	Not this
Plan ticket	<code>user_subscriptions</code> + <code>users.plan</code>	GH balance
Presale asset	purchase rows keyed by <code>user_id</code> + sum per user	<code>from_address</code> as owner
SKU	<code>product_kind</code> : <code>site_plan</code> / <code>token_only</code> / <code>telegram_*</code>	one intent with two meanings
Claim wallet	signed link table, one wallet one user	forcing the paying wallet
Stage	<code>stage_index</code> 1..12 from <code>presale_starts_at</code> UTC + <code>price_usd_1e8</code> ; no monthly allocation	<code>calendar_month</code> ; 83.3M per stage
Caps	token-only order above \$1,000 = KYC; plans have no KYC	<code>maxUsdPerWallet</code> / 30-day cap

`gh_base` is stored apart from `gh_bonus`. Close when `sum(gh_base)` reaches $1e9 \times 1e18$ wei.

One open invoice/intent per user (L52). TTL: CEX 24h, wallet 60 min. Addresses always stored lowercase.

`period_end`: monthly = confirm or current period end + 30 days; yearly + 365 days (L33, L50).



4. Access resolver

If plan is free or period_end is past: Free. If now < period_end and plan is paid: that plan (KYC is not an access gate). Else Free.

Never: balance_gh >= X. Never: staked_gh >= X. Never: a trial field as a 7-day paid plan. Existing "trial" in code = Free (L44). Remove it from the resolver.

token_only writes only the asset. Telegram after TGE uses the same settlement circuit; in presale it is a crypto invoice + channel grant + GH asset without changing users.plan.

5. Presale and invoices

Extend createCryptoIntent:

- site_plan + cycle → catalog USD, gh_base = floor(USD / stage_price), period_end after confirm per L50.
- telegram_* + cycle → live-catalog USD, GH the same way, no site plan change.
- token_only + usdAmount ≥ 10 → GH, no period.
- CEX: withUniqueMicroTag, exact match (not 1%).
- Wallet: sender = intent wallet, amount exact (not 1% tolerance).
- GH_REQUIRE_INTENT = true: no open intent, no credit.
- BSC only; UI must shout a wrong network.
- If remaining_base < gh_base, do not create the intent (L36).
- If stable depeg >2% or emergency pause: do not create intents (L58, L59).

Today's confirm path that marks unmatched when a claim wallet is missing must, for the new presale, match the invoice (amount/intent) and must not require gh_wallet_links as a payment condition.

Stage price from document 2's table; automatic switch when now crosses presale_starts_at + n×30d. Manual advanceStage is not the primary path. After stage 12: L14 state.

Bonus: if paid_at is inside the first 48 hours of that stage and Marketing pool remains, +10% on base. FIFO. Cap 50M.

Site plans need no KYC. token_only under \$1,000 in one order: no KYC, no daily cap. One order above \$1,000: base KYC. One order above \$100,000: enhanced. Approved KYC credits 10,000 GH once (source=kyc_reward, gh_base=0).

Deposit surplus vs intent: credit as token_only at that intent's locked price if caps and remaining 1B allow; else refund queue.

Upgrade / lateral / downgrade: L38 and L51. After close: do not create these SKUs (L55).

6. Claim wallet and Merkle

Link with personal_sign, one wallet one user_id. Changeable until TGE-7×24h with the new wallet's signature plus 2FA/email. Snapshot at that instant.

Snapshot: SUM(gh_base+gh_bonus) GROUP BY user_id → linked wallet. Unlinked users are not in the first Merkle; if they still have a period, the panel stays.

First root ≥48 hours before TGE. Second root within 90 days after TGE is optional, not guaranteed.

getUserPurchases?wallet= must not attach rows that have no user_id to whoever is logged in — close that.

Claim contract: Merkle 15% / 365 days. sweep without timelock is removed or becomes multisig+delay. setTgeTime may only move backward.



7. After TGE — GH and USDT

Oracle: PancakeSwap GH/USDT pair, 10-minute TWAP. If last deviates more than 2%, TWAP (L41).

Path A: user sends at least $gh_required = \text{ceil}(\text{plan_usd} / \text{spot_twap})$ wei to the payment address/contract. Less = fail. More stays in the vault and does not enlarge the plan.

Path B: UI takes $\text{plan_usd} * 1.05$, preferably USDT, swaps on the LP, all GH to the same payment vault. User receives no GH in a personal wallet. If this order's slippage > 3% vs TWAP, or GH received < $gh_required$, fail and return USD. Button health uses a DEX-monthly sized quote.

Both paths advance period_end per L50. Do not read wallet balance to decide the next renewal.

"Buy tokens" after TGE: swap to the user's wallet, not a plan renewal and not the Presale pool. If USDC is accepted in the UI after TGE: convert first, then path B (L45).

8. TWAP and income

Separate service: sell payment-vault GH across 7×24 hours in scheduled slices on the same LP. Not in the same block as a path-B buy. Public payment_recycles report (tx, amount, price).

This wallet ≠ Team/Treasury/Ecosystem (L43). Company income = USDT out of this service. Do not "fill in" path B with Team/Treasury GH.

9. KYC

Site/Telegram plans do not need KYC. token_only under \$1,000 in one order is open. Above \$1,000: document upload on /settings, admin queue, emails received/approved/rejected. Above \$100k in one order: enhanced. Thank-you: 10,000 GH once. Geo from system_settings .

10. Contracts

Contract	Version 1	Not this
GHToken	Mint once, burnable, 5B cap; multisig owner	Mint again
Merkle vesting/claim	15% / 365 days, root locked	Free sweep, TGE forward
LP lock	3 years on GH/USDT	—
Payment receiver	Auditable GH intake; multisig	—
GHStaking	Must not gate plans in v1	Access thresholds
On-chain GHPresale	Not the live path	A parallel sale

Do not build the version-2 buyback&burn worker.

11. Frontend

- /gh-presale or dashboard equivalent: two separate cards, Subscribe vs Buy tokens.
- Invoice: amount, BSC, TTL (24h CEX / 60 min wallet), sentence that the asset ≠ renewal.
- Claim-wallet link from the same dashboard.
- After TGE: "Pay with GH" and "Pay with USDT (+5%)"; the second depends on LP health.
- Public /presale /tokenomics /gh-token: no "exactly twelve civil months", no Pro/VIP, no dead PDFs; countdown and stage from API (stage_index , not calendar month).
- CTA to the real dashboard path, not a broken /presale-buy.



- Show the raise as a range, not a guaranteed \$2.53M.

12. Do not build

resolveEffectiveTier = max(plan, stake); STAKE_TIER_PRO_MIN and VIP/Enterprise equivalents; GH_PER_USD = 400; BNB presale tender; staking wired into applyFeatureGate; a buyback&burn dashboard as the v1 engine; Telegram USD SKUs after TGE without swap/GH; issuing a plan from gh_balance; Stripe/card for site plans in v1; two watchers / two treasuries; calendar_month as the price key.

13. Current-code bugs to kill before production

Issue	Action
Two treasuries: billing vs gh	One
45-minute TTL for CEX	24 hours
Wallet TTL unspecified	60 minutes
Confirm unmatched if claim wallet missing	Match the intent
GH_REQUIRE_INTENT defaults false	true
1% amount tolerance	Exact for cex and wallet
Attach purchases via ?wallet=	Remove
Checksum vs lowercase addresses	One canonical form
Listener ON CONFLICT then increment again	Idempotent
Archive RPC that skips blocks	No silent skip
sweep() on claim	Close it
setTgeTime forward	Close it
Staking without user_id / without a gate	Do not gate v1
Public countdown in the past / sold=0 hardcoded	From API
Resolver with trial	Treat as Free

14. Build order

1. Data migration: two semantic columns for access vs asset; one treasury.
2. Two/three SKU invoices + 30-day stage calendar + mandatory intent + KYC caps.
3. Invoice UI, two buttons, claim-wallet link.
4. Public pages matching pack 3.1.
5. Kill the bugs in section 13.
6. Merkle, lock the root, fund claim after audit; multisig. Token may already be on mainnet under L63.
7. GH/USDT LP and lock.
8. 5% swap module + 10-minute oracle + 7-day sale TWAP.
9. Turn off obsolete paths (wallet-mandatory old presale, stake gate).

Mandatory tests

Free buys tokens and does not become DEX. Period 2 is not renewed from a GH balance. Mid-period renewal starts from the current period_end, not from now. CEX round amount is unmatched. Wallet unequal amount is unmatched. USDT



without a swap does not create a plan. Slippage >3% fails path B. Intent is refused when remaining 1B is insufficient. DEX→CEX mid-cycle with \$0 extra. Mid-cycle downgrade is rejected.

15. Release checklist

- Document 1 lock table (L1–L63) is reflected in system_settings.
- Live catalog is the only plan-price source.
- One watcher, one treasury, mandatory intent.
- Site PDFs only after this pack is frozen (this English edition).
- Legal counsel before a public presale.
- Team / treasury / TWAP wallets are separate and public.

Document control

Pack 3.1 · 9 September 2026 · Document 4 of 4 · Governed by Token Economy Design 3.1 L1–L63 · Site path: /docs/gh-implementation-blueprint.pdf · Any PR that breaks L1–L63 is rejected.