

UGS Infinite Runner Plan (Decisions & Execution)

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Great—locking these in and updating the plan.

Decisions (Locked)

- **Tiers:** 4 (Bronze/Silver/Gold/Platinum)
- **Resets:** Weekly, **Mon 00:00 UTC**
- **Promotion Rule v1:** **Threshold-based** (not percentile)
- **Personal History Depth:** **12 weeks**
- **Leaderboard Fields:** **NOT limited** to score & distance → include curated metadata

Tiering (v1)

Tier	Threshold (Best Weekly Score)	Leaderboard ID	Notes
Bronze	0 – 19,999	<code>`runner_weekly_tier1`</code>	Default
Silver	20,000 – 49,999	<code>`runner_weekly_tier2`</code>	Mid
Gold	50,000 – 99,999	<code>`runner_weekly_tier3`</code>	High
Platinum	≥ 100,000	<code>`runner_weekly_tier4`</code>	Elite

Demotion: If current weekly best falls below tier min at rollover → re-evaluate down.

Promotion: Crossing a threshold immediately promotes (and posts to the new tier board).

Leaderboards (Public)

ID	Periodicity	Primary Metric	Required Metadata (per entry)
<code>`runner_global_best_score`</code>	Lifetime	Score	distance, duration, characterId, platform
<code>`runner_best_distance`</code>	Lifetime	Distance	duration, characterId
<code>`runner_weekly_tier{1..4}`</code>	Weekly (Mon 00:00 UTC)	Score	distance, duration, characterId, runVersion
<code>`runner_monthly_tier{1..4}`</code>	Monthly (1st 00:00 UTC)	Score	distance, duration, characterId, runVersion

Metadata policy: Small, fixed schema (strings/ints), no PII, versioned via ``runVersion``.

“Personal Leaderboards” (Private in Cloud Save)

- **Keys:** ``BestScoreAllTime``, ``BestScoreWeekly``, ``BestScoreMonthly``, ``HistoryWeekly[]`` (last **12** entries).
- **History entry:** `{ weekStartISO, score, distance, duration }`.
- **Rollover:** On weekly reset, archive current to history; trim >12.

Save/Sync Scope (No code—just what we store)

Cloud Save (authoritative for personal history/stats):

- ``Profile``: firstPlay, lastSession, totalRuns, totalPlaytime
- ``Progression``: bestScore, longestRun, totalDistance, mostCoinsInRun
- ``PersonalLeaderboards``: bests + 12-week history
- ``TierData``: currentTier, tierRank, lastUpdate, lifetimeHighestTier
- ``Challenges``: daily/weekly completed, lastClaim, nextReset
- ``Meta``: cloudSaveVersion, lastSaveUTC, integrityHash

- `Settings`: user prefs (synced)

****Economy (authoritative server-side; mirror in Cloud Save for UI):****

- Currencies: coins, gems
- Inventory: skins, boosts
- Upgrades: levels

Tasks & Priorities (Updated)

P0 (Launch-Critical)

- ****Tier Thresholds (config):**** Externalize values; read at runtime.
- ****Weekly Cron (Mon 00:00 UTC):**** Reset weekly boards; archive personal weekly; re-evaluate tiers; trim history to 12.
- ****Score Submission Path:**** Validate → update personal bests → threshold-based tier check → post to correct tier + lifetime boards with metadata.
- ****Cloud Save Versioning & Merge Rules:**** Max(best), append-trim(history 12), monotonic timestamps.
- ****Anti-Cheat Core:**** distance/duration sanity, per-run coin cap, one submission per completed run, metadata version gating.
- ****Economy Grants (run + daily):**** Server-authoritative; cooldown with UTC timestamps.
- ****UI Surfaces:**** Current tier badge; personal bests (lifetime/weekly/monthly); weekly countdown.

P1 (High-Value Next)

- ****Monthly Tier Boards:**** Reset on 1st 00:00 UTC; monthly history (keep 12 months).
- ****Remote Config:**** Tier thresholds, reward tables, reset messages.
- ****Anomaly Monitoring:**** Alert on rejected submissions, cron failures.
- ****Friend/Social Filters:**** Optional view over the same leaderboards.

P2 (Enhancements)

- ****Regional Partitions:**** `{board}_{region}` routing.
- ****Decay Mechanics:**** Weekly score decay to prevent idling at top.
- ****Streak Buffs:**** Promotion rewards for sustained top performance.

Timeline (6 Weeks, revised for decisions)

| Week | Deliverables | Exit Criteria |

|---|---|---|

| 1 | Cloud Save schema finalized; personal best/history (12w); Meta versioning | Cross-device sync; history trims to 12 |

| 2 | Score submission pipeline incl. metadata; anti-cheat checks | Invalid runs rejected; valid runs persist & display |

| 3 | Weekly tier boards (`tier1..4`), threshold promotion/demotion; Mon 00:00 UTC cron | Scores route to correct tier; rollover works |

| 4 | Economy grants (run/daily), cooldowns; UI mirrors; tier badge & countdown | No client-side grants; timers accurate |

| 5 | Global lifetime boards; analytics events (run lifecycle, rewards); anomaly alerts | Dashboards live; alerting wired |

| 6 | Polishing: personal dashboard, monthly board scaffolding, config panel | Soft-launch ready; rollback + runbooks |

Acceptance Criteria (Key)

- ****Tier correctness:**** Given a weekly best crossing a threshold, player appears on the higher tier board within 1 minute; demotion evaluated at weekly rollover.
- ****History retention:**** After 13th week, oldest entry is dropped; no duplicates.

- **Metadata integrity:** Every posted score includes the required metadata; missing/invalid metadata → rejected.
- **Reset fidelity:** Weekly reset executes at **Mon 00:00 UTC** precisely; audit log recorded.
- **Cheat rejection rate:** <1% false positives; 100% of synthetic known-bad payloads rejected in QA.
- **Economy safety:** No balance changes without server event; mirrors never override authoritative balances.

Test Matrix (Condensed)

- **Tier Threshold Boundaries:** 19,999↔20,000; 49,999↔50,000; 99,999↔100,000 (promotion/demotion).
- **Rollover:** Snapshot old weekly best, archive, trim to 12, set new week baseline.
- **Offline Queues:** Deferred submissions re-validated; out-of-order writes resolved by server timestamps + version.
- **Metadata Variants:** Missing `duration` or `characterId` → hard reject; mismatched `runVersion` → reject.
- **Cooldowns:** Daily claim before/after reset; ensure UTC behavior across time zones.

Reporting & Dashboards

- **Weekly Board Health:** participants per tier, median score, promotion/demotion counts.
- **Engagement:** weekly active players viewing leaderboards, time-on-board.
- **Integrity:** rejected vs. accepted submissions trend, top rejection reasons.
- **Economy:** coins granted per run, daily claim rate, average coins per active user.

Backlog (Optional Upgrades)

- **Percentile-Based Tiering v2:** Replace thresholds with rolling percentiles per region/tier.
- **Seasonal Pass Integration:** Uses personal history milestones (12-week window).
- **Anti-Cheat Plus:** Lightweight replay hash + timescale anomaly score.
- **A/B Tests:** Tier thresholds, reward sizes, metadata exposure (e.g., show character on boards).

Owner Assignments (suggested)

- **Backend:** Tiering/cron, submission validation, economy endpoints.
- **Client:** Stats & board UI, countdowns, error states.
- **Data/QA:** Dashboards, test fixtures for thresholds/rollovers, alert tuning.
- **Ops:** Schedules, runbooks, rollback procedures, config changes.