

AstralSaints — Technical Implementation Plan (with 2D Art Sources)

1) Development Overview

AstralSaints will be developed as a browser-first game in Phase 1, with a clean migration path to mobile. The primary goals are skill-based competitive gameplay, low latency, and responsive controls. All infrastructure choices prioritize fast iteration and future scalability without over-engineering for the initial player base.

2) Tech Stack

- 1 Core Engine: Phaser 3 (JavaScript/HTML5) for browser-first compatibility.
- 2 Backend: Firebase (Authentication, Firestore, Cloud Functions, Hosting).
- 3 Leaderboard: Firebase Firestore + Cloud Functions for seasonal and daily boards.
- 4 Asset Delivery: Firebase Hosting during dev; CDN integration planned for production.
- 5 Version Control: GitHub repository — monorepo structure for game, admin panel, assets.

3) Core Systems

- 1 Scoring Formula: Weighted on kills, kill speed, near-miss accuracy formula, combo multiplier, and par time.
- 2 Ranks & Tiers: Bronze–Diamond with tiers I–V; hidden rank-based difficulty handicap.
- 3 Game Modes: Normal (Ranked), Endless (Ranked), Story (scaffolded).
- 4 Special Form System: Unlock from 2nd evolution; triggered via in-run conditions; tutorial pop-ups for player guidance.
- 5 Difficulty Management: Admin panel configurable; seasonal tuning via thresholds.

4) Asset Pipeline

Assets will be managed in an /assets directory within the monorepo, segmented into categories: ships, enemies, weapons, UI/HUD, effects, maps, and story elements. During development, placeholder assets will be used to validate gameplay before final art integration.

Confirmed Primary Asset Source

- 1 Artist: bdragon1727 (itch.io) — High-quality pixel art for HUD, UI, effects, misc items.
- 2 Profile: <https://bdragon1727.itch.io/>
- 3 Example Pack — Basic Pixel Health Bar: <https://bdragon1727.itch.io/basic-pixel-health-bar>
- 4 Example Pack — Pixel Scroll Bar: <https://bdragon1727.itch.io/pixel-scroll-bar>

To Source Separately

- 1 Ships: High-quality, non-pixel-art ships or matching pixel style — potential commission.
- 2 Enemies: Variety-focused, distinct silhouettes, thematic escalation post-universe shift.

Previously Considered but Discarded

- 1 Kenney.nl — Rejected for generic, non-original style.
- 2 CraftPix — Rejected for ship/enemy/weapon style mismatch.

5) Suggested File Structure

- 1 /src — Game source code (Phaser scenes, UI, game logic).

- 2 /assets — All static assets (subfolders by category).
- 3 /admin — Admin panel source code.
- 4 /functions — Firebase Cloud Functions.
- 5 /config — Environment configs.
- 6 /docs — Design docs, reference materials.