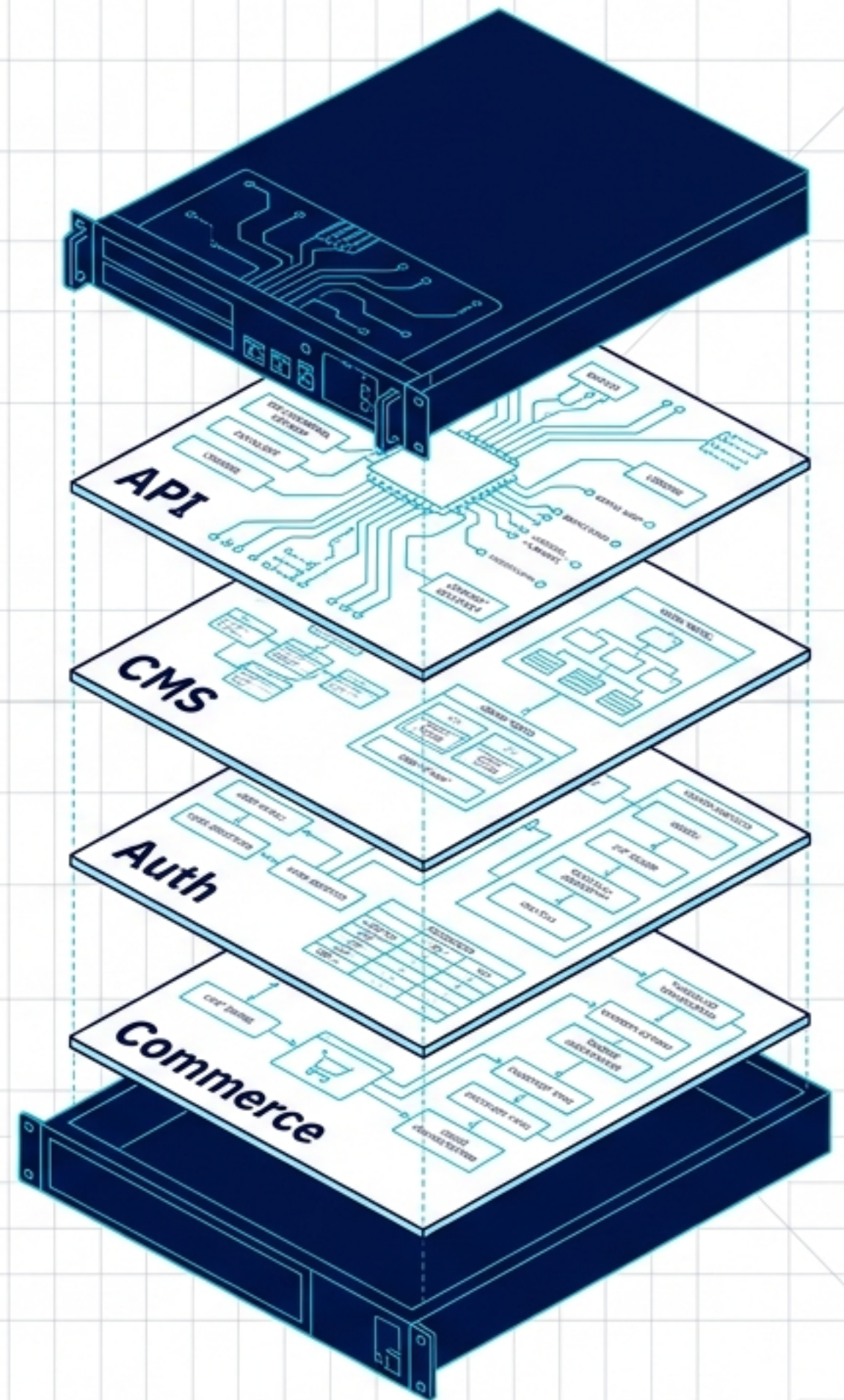


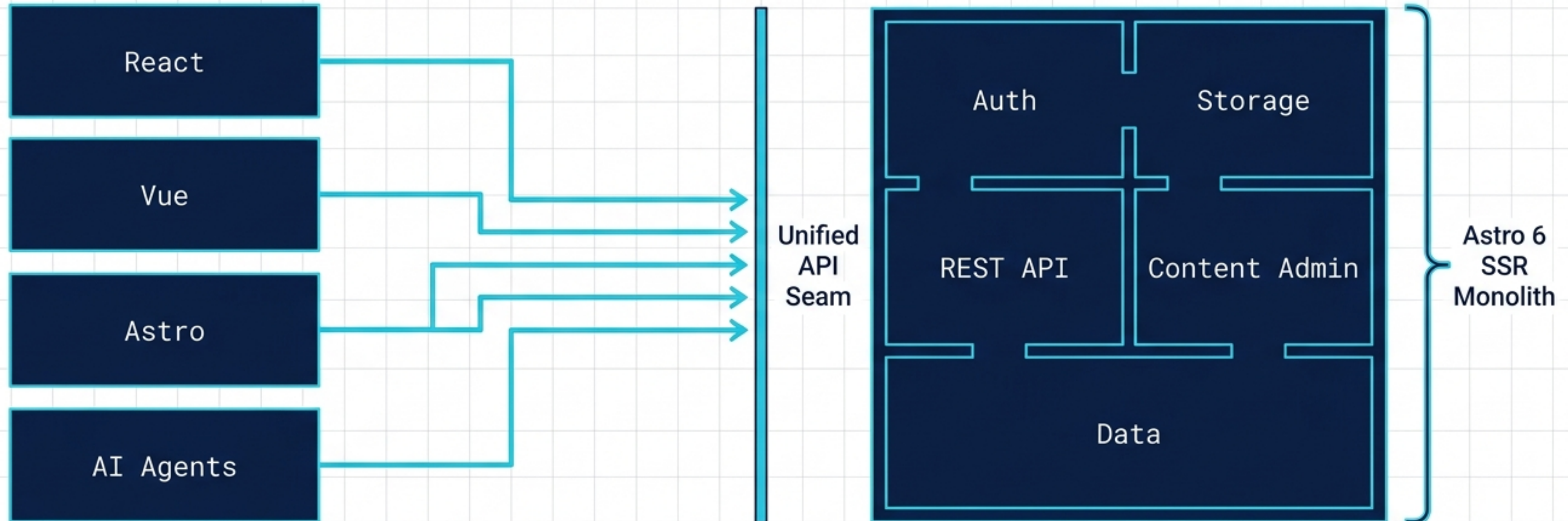
AstroBaaS: The Precision-Engineered Backend

A rigorously engineered, highly secure, and extensible architectural foundation for modern web applications.



One unified engine replaces the fragmented stack.

AstroBaaS is a self-hostable backend containing Auth, Data, REST API, Storage, and Content Admin built into a single **Astro 6 SSR** application. One install serves as a headless backend for any frontend, eliminating the overhead of wiring disparate microservices.



Absolute strictness prevents structural failures.

Integer Money



No floats in commerce. Prices are server-computed; client totals are never trusted.

```
amount_cents: 15900
```

Zero Inline Scripts



Production relies on a strict hash-based CSP with zero unsafe-inline.

```
script-src 'self' 'sha256-...'
```

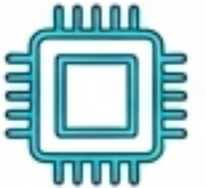
Deny-By-Default



Public endpoints require explicit allow-lists. Authenticated callers operate under strict resource constraints.

```
{"scopes":["posts:write"]}
```

Atomic Mutations

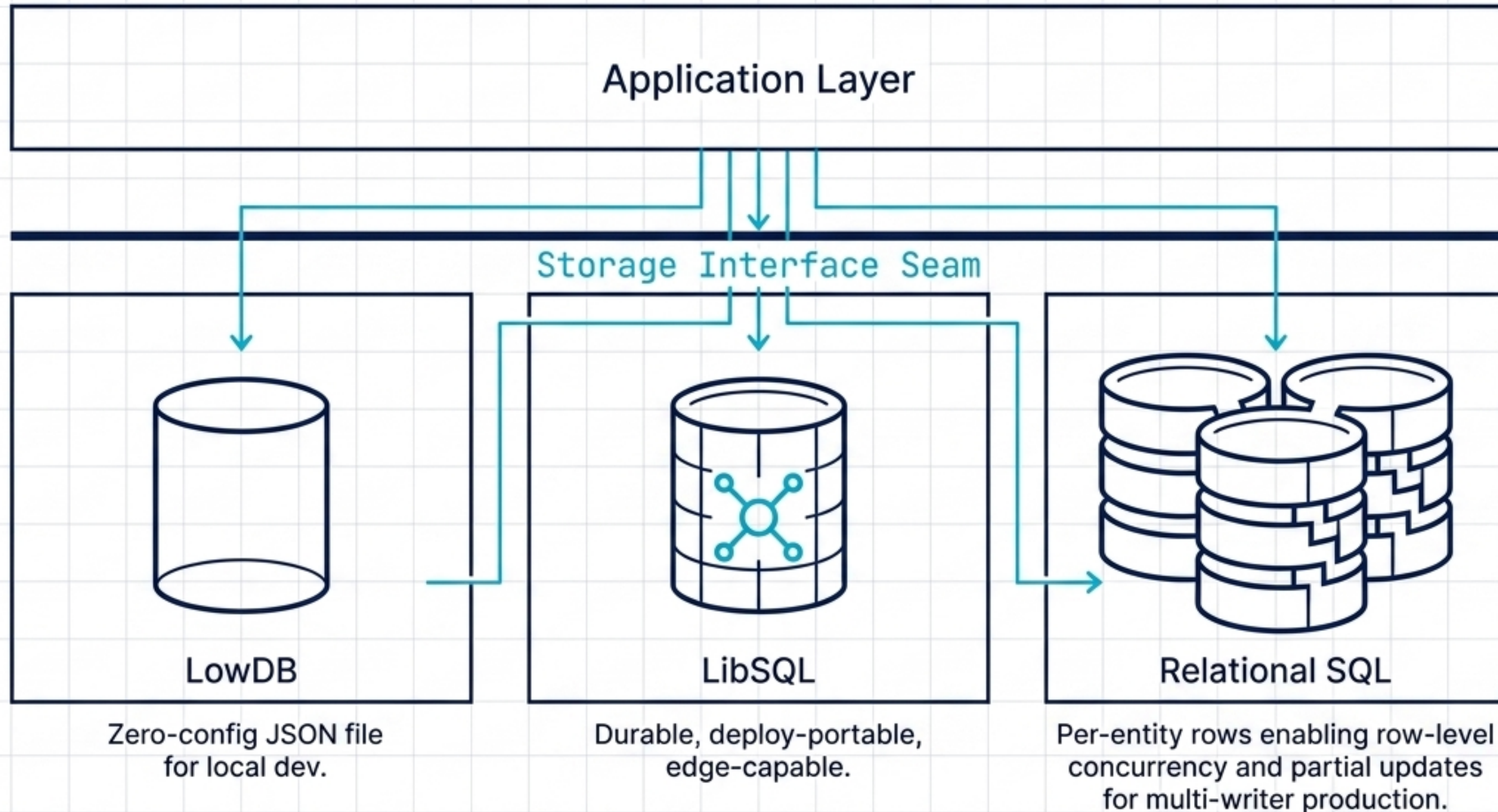


Check-and-mutate operations rely on **structural locks** to prevent concurrency oversells.

```
reserveStock(id)
```

A pluggable persistence seam scales with your deployment.

The architecture hides database complexity behind a unified Storage interface.



Defense-in-depth is built into the foundation.

Outer Ring: Hash-based CSP

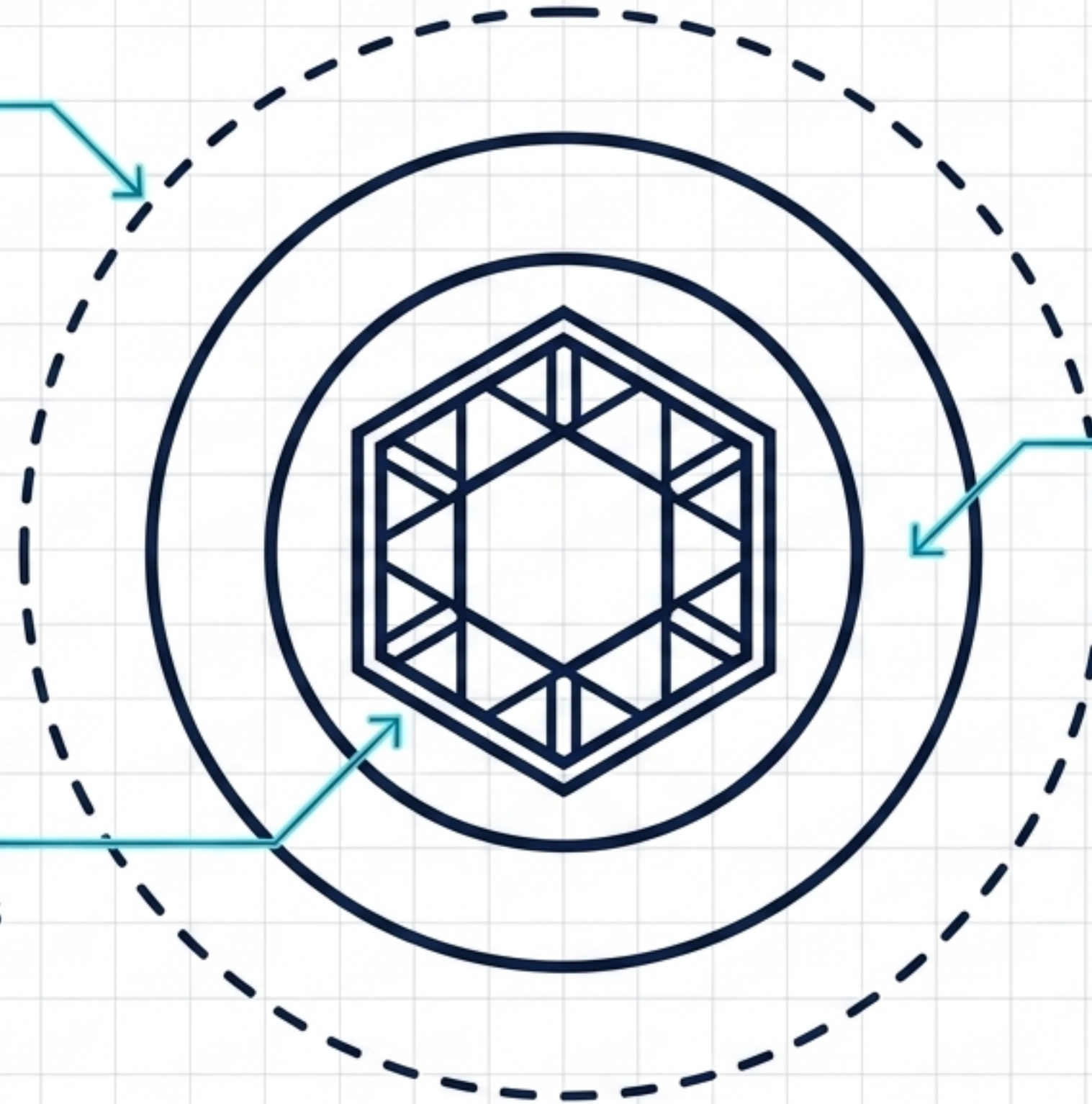
`script-src 'self' 'sha256-...'`

Inner Ring: 2FA/TOTP & Schemaless Settings

2FA required for admin access;
zero secrets stored in schemaless
settings tables.

Middle Ring: Scoped API Keys

Authenticated headless
callers operate under strict
resource/action constraints.

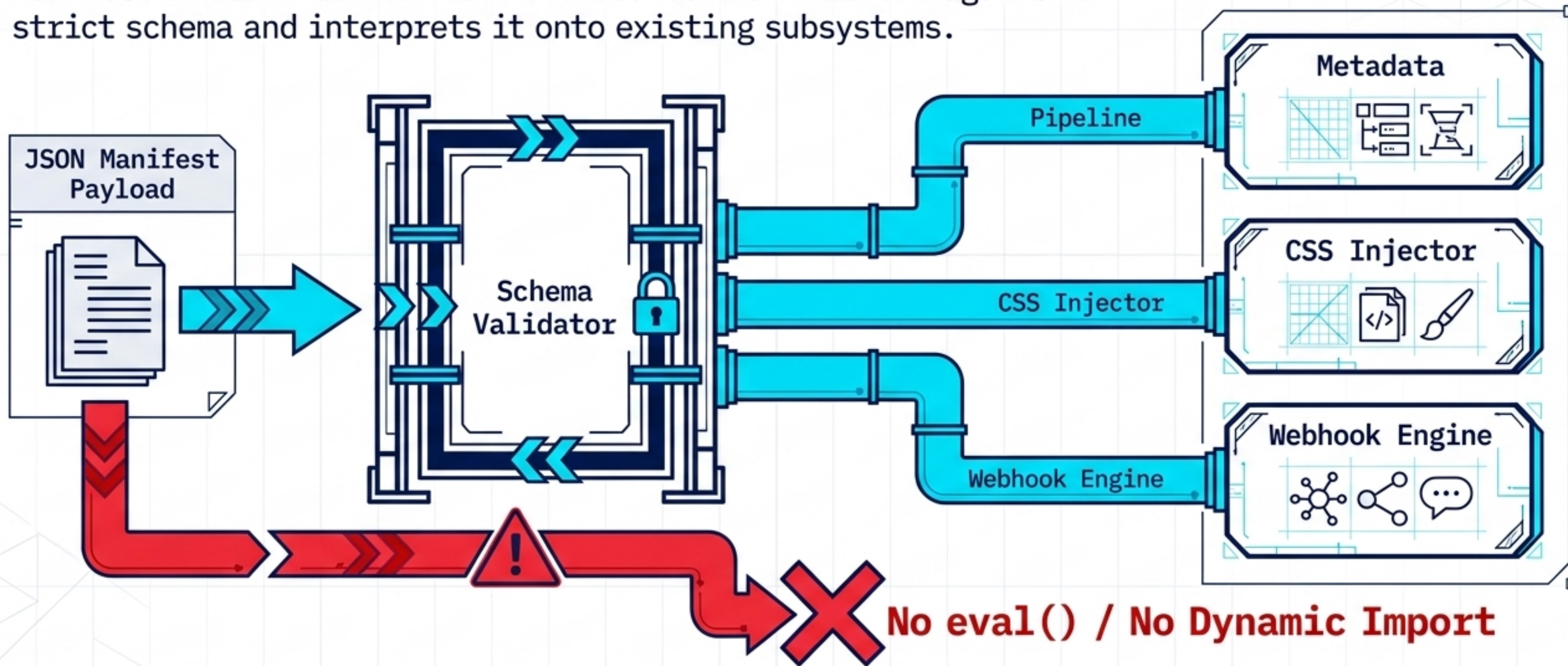


Extensibility splits by privilege and execution.

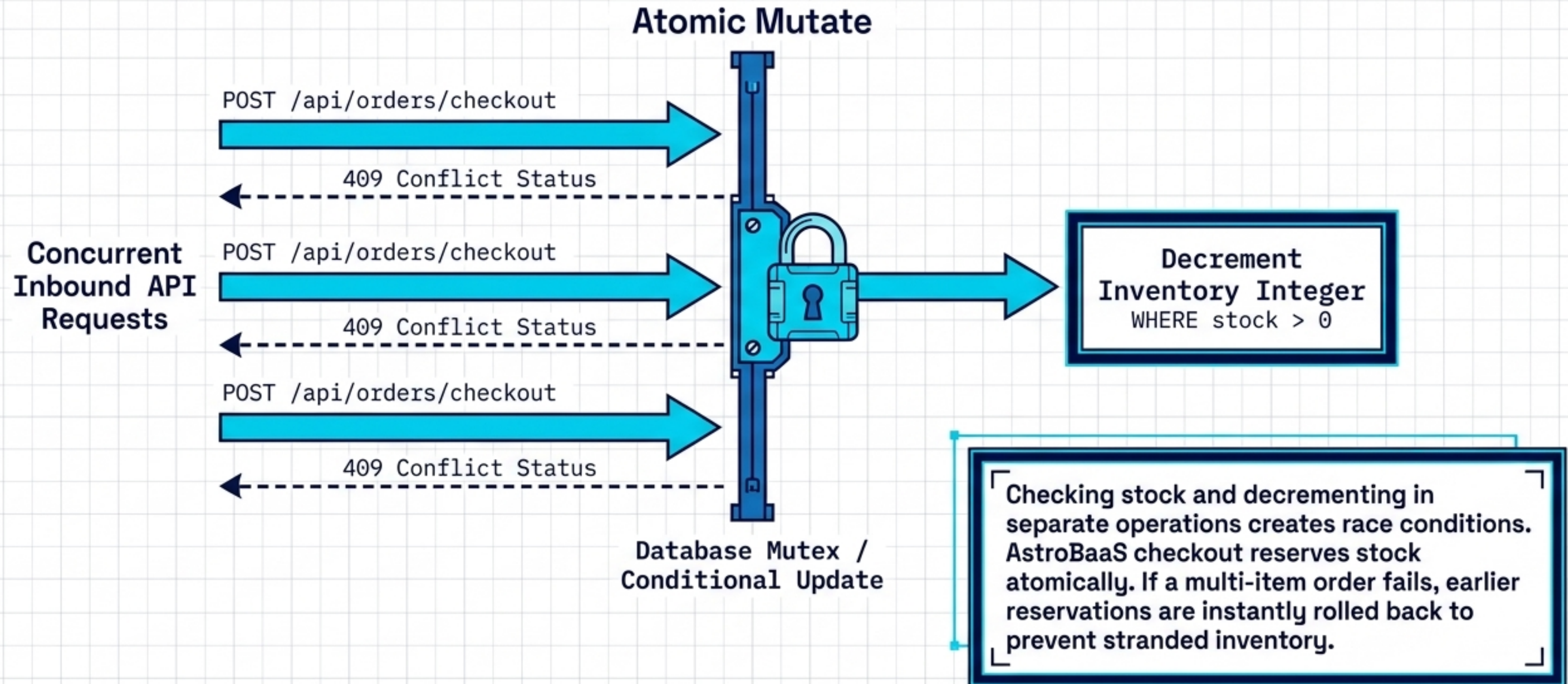
	Code Plugins	Declarative Plugins
Installation	 Build-time import	 Runtime UI install
Execution	 Full TypeScript logic	 JSON Manifests, zero execution
Capabilities	 Arbitrary logic & hooks	 CSS, webhooks, content types
Security Posture	 Requires full trust	 Zero arbitrary-code-upload risk

Extend the system without executing arbitrary code.

Declarative plugins are data, not code. An operator uploads a JSON manifest at runtime. The server validates the structure against a strict schema and interprets it onto existing subsystems.

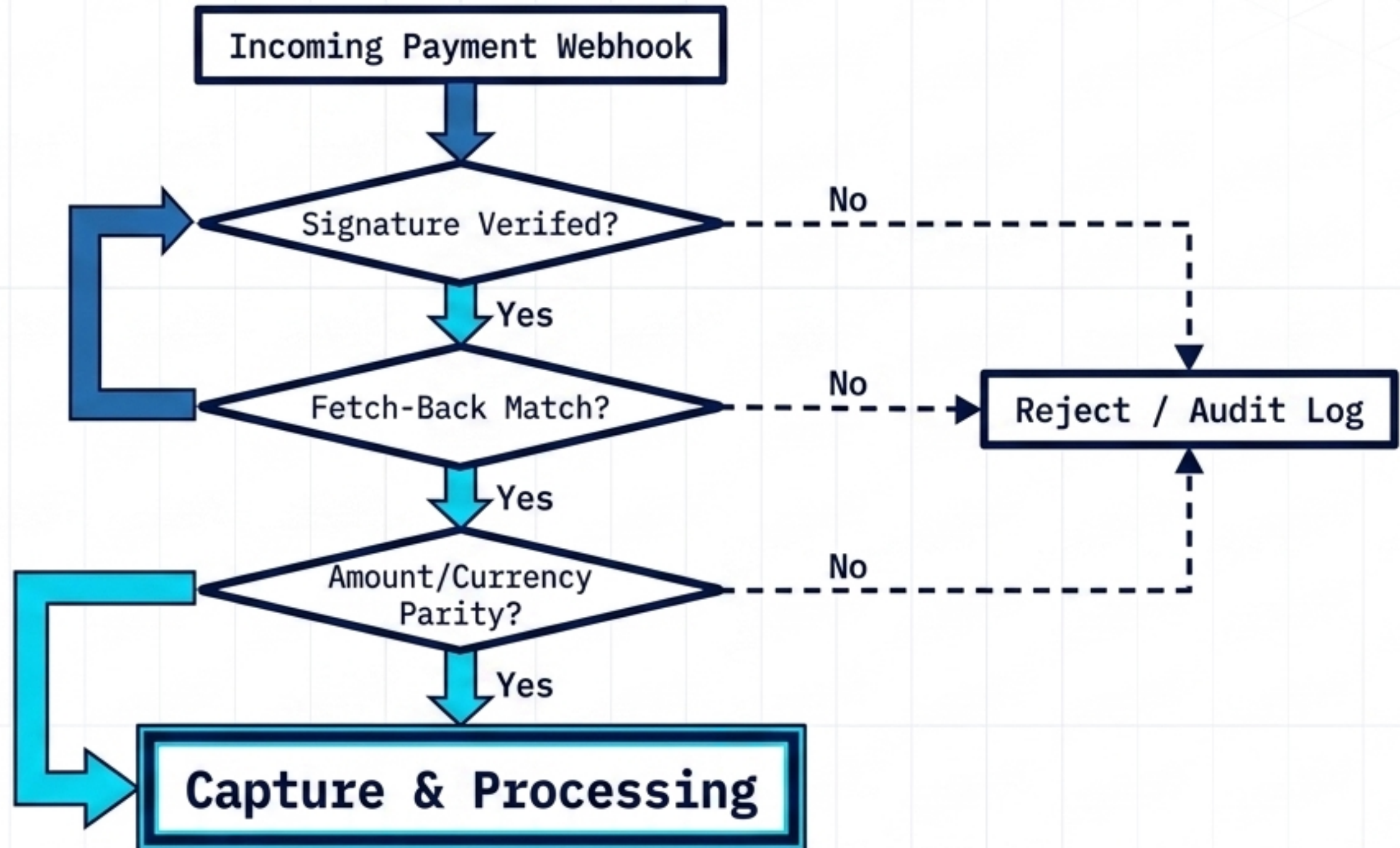


Atomic inventory mutations structurally prevent overselling.

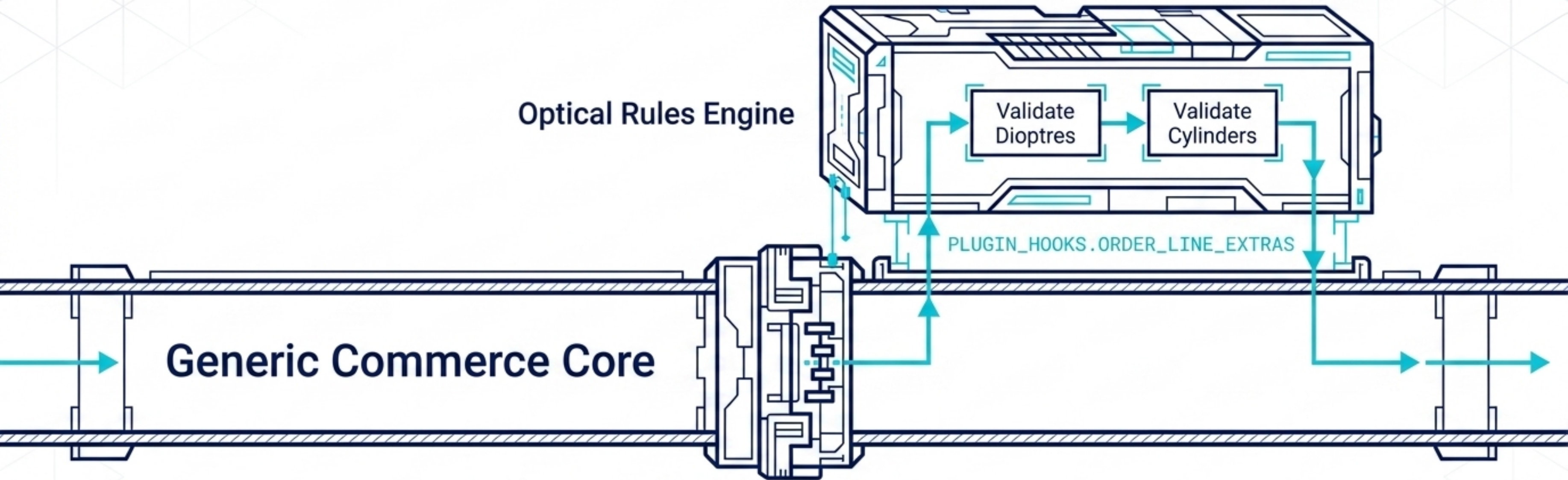


A strict validation state machine protects revenue.

AstroBaaS never trusts client-supplied totals. The server cross-references the paid amount against the server-computed basket total. Any mismatch triggers an immediate rejection.

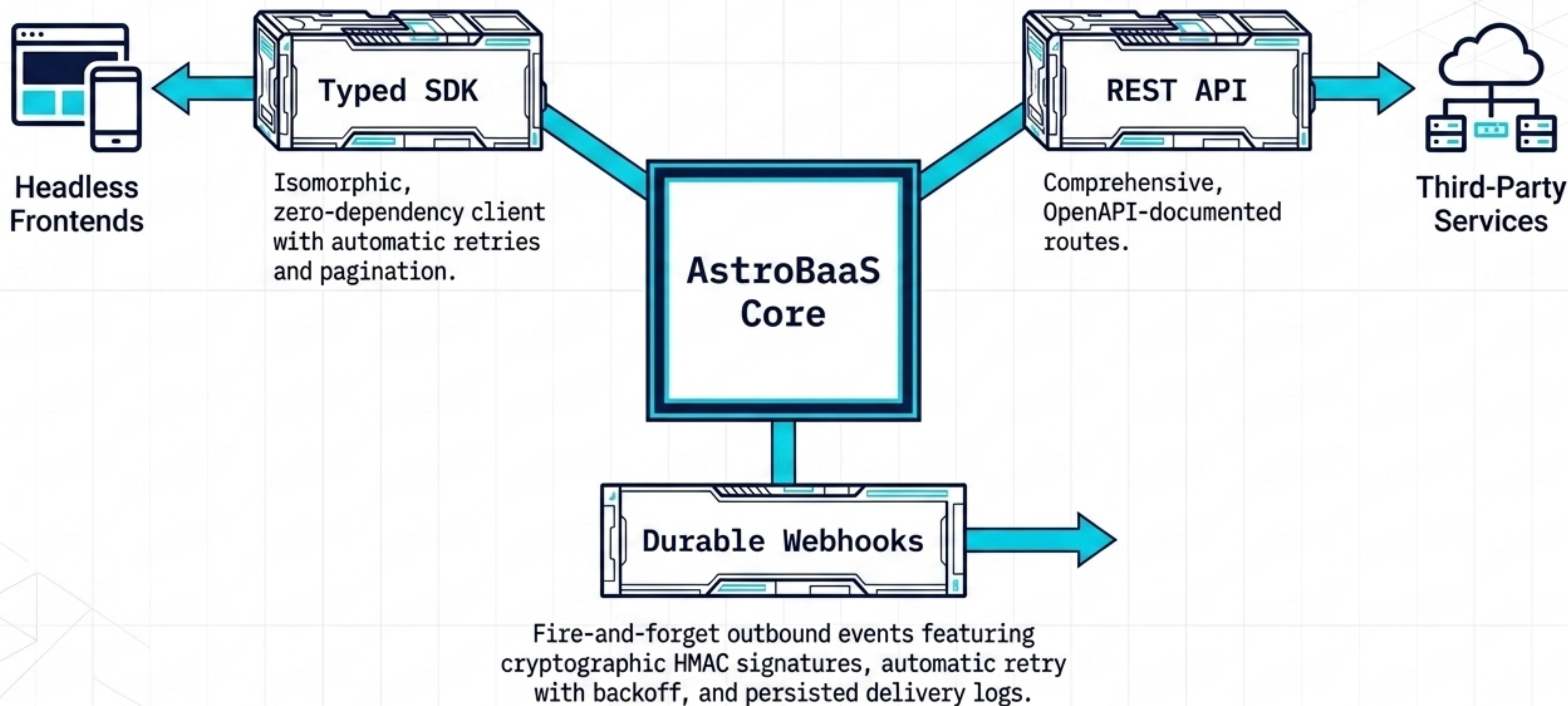


Complex domain logic docks into a pristine generic core.



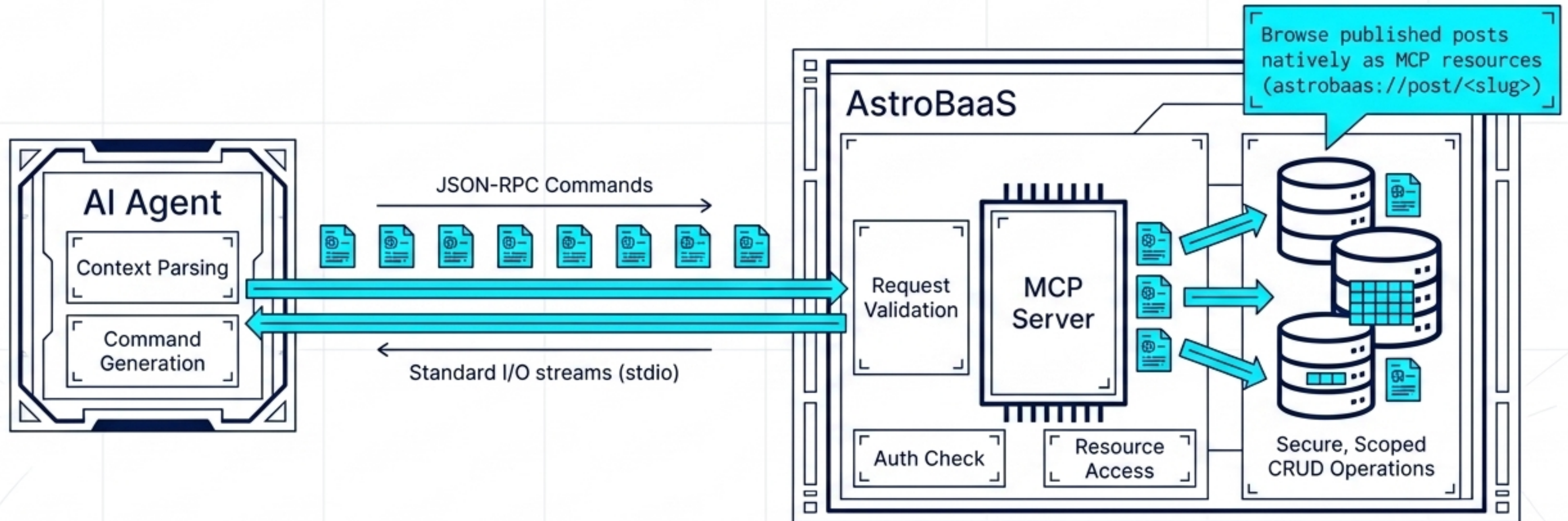
Industry-specific requirements—like clinical optometry rules—do not belong in a generic checkout flow. The Optical Module intercepts the checkout pipeline to enforce validation. If removed, the core degrades gracefully to standard commerce.

A hardened perimeter connects the backend to the outside world.



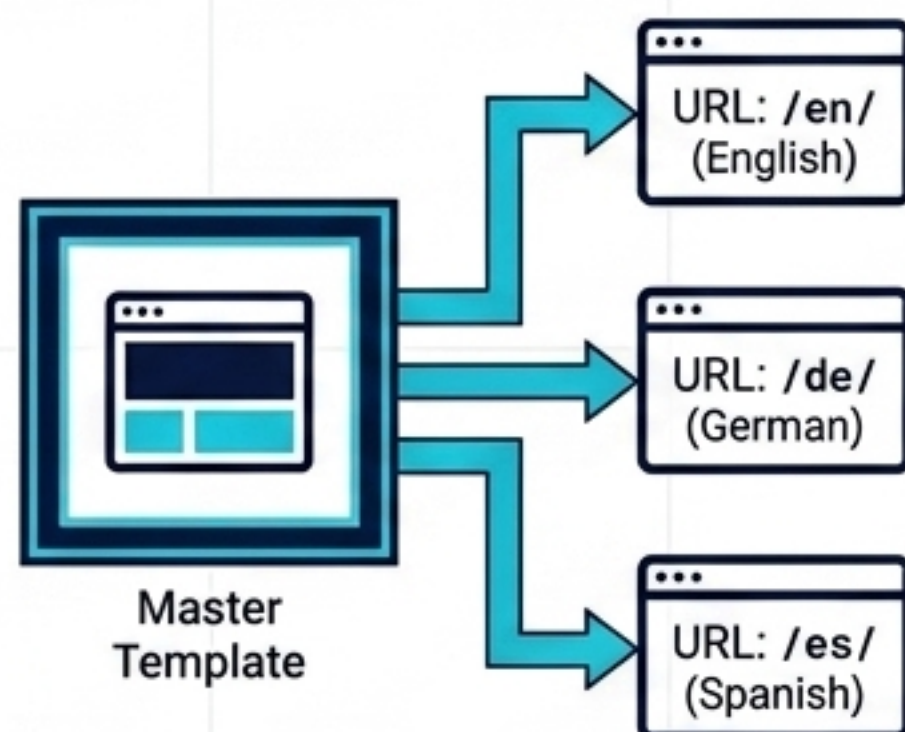
AI models read and operate the backend natively.

AstroBaaS is built for the autonomous web. A public `/llms.txt` and **OpenAPI spec** provide immediate context. A bundled **Model Context Protocol (MCP)** server allows **AI agents to securely execute full CRUD operations**.



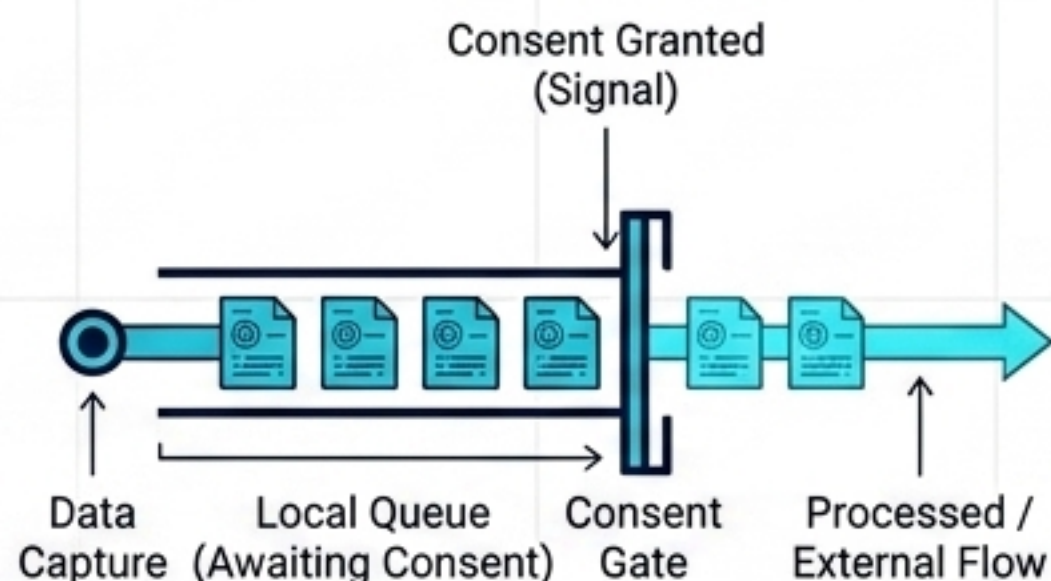
Localization and privacy compliance operate flawlessly at scale.

i18n URL Routing



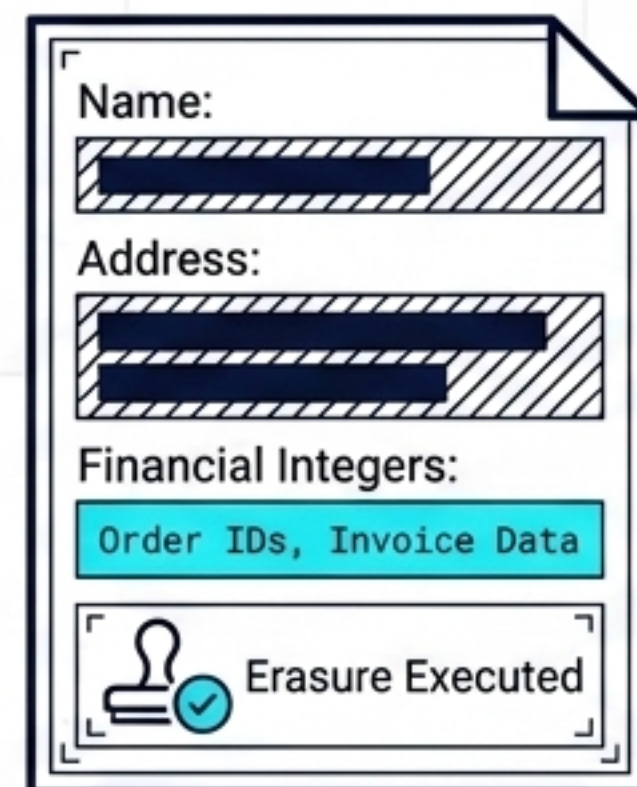
Native i18n routing rewrites URLs in middleware, serving multiple languages from a single template set.

Consent Mode v2



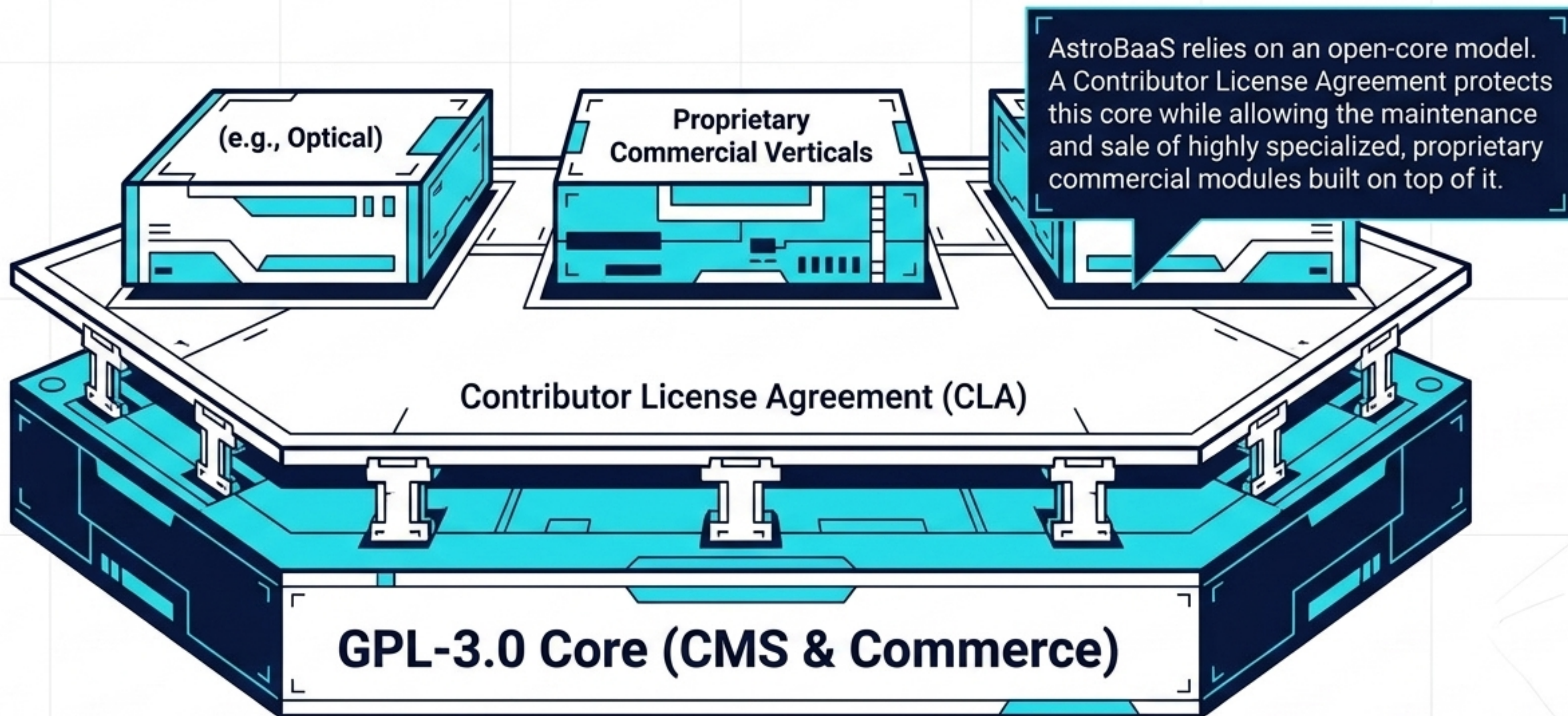
Consent Mode v2 signals queue locally. Zero third-party scripts load until explicit consent is granted.

GDPR Erasure



GDPR data subject erasure scrubs PII instantly but anonymizes orders to retain legally required accounting integrity.

Structural synergy between open-source and commercial viability.



A meticulously engineered foundation, ready for deployment.

AstroBaaS combines the flexibility of headless architecture with the rigor of a production-grade, secure-by-default monolith. Built for developers, operators, and the AI-native future.

