TECHNICAL WHITE PAPER & ECONOMIC BLUEPRINT

BasementOps V3: The Anti-SaaS Architecture for Human Services

A Unified, Zero-Licensing Operations Engine Engineered on Native Google Workspace Infrastructure

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1. Executive Summary & The Commercial SaaS Dilemma

Commercial Off-The-Shelf (COTS) Electronic Health Record (EHR) and operations software vendors routinely exploit human services agencies through predatory per-seat user taxes. Standard commercial platforms (such as SetWorks, Therap, and Foothold) charge recurring fees ranging from $6,000 to over $40,000 annually, forcing non-profit service providers to pay an escalating tax every time they hire frontline support staff or onboarding job coaches.

Furthermore, these proprietary platforms trap sensitive participant data inside vendor-controlled relational databases, charge thousands of dollars in administrative extraction fees when agencies attempt to migrate, and fail to natively accommodate California-specific billing workflows. BasementOps V3 was architected from first principles to solve this structural exploitation.

> **CORE ARCHITECTURAL THESIS**
>
> The Anti-SaaS Paradigm: Eliminate recurring software licensing fees entirely ($0.00/month) by leveraging the client's existing enterprise Google Workspace tenant, achieving 100% data sovereignty and total audit readiness.

2. Economic Comparative Matrix: COTS EHR vs. BasementOps V3

Architectural Dimension	Commercial EHR (COTS Vendors)	BasementOps V3 (BasementGraphixs)
Annual Software Rent	$6,000 to $40,000+ / year recurring (per-seat user tax)	**$0.00 / year (Runs within existing Workspace licensing)**
Data Sovereignty & Portability	Locked in vendor database; proprietary export fees	**100% Client-Owned (Encrypted Google Sheets & Drive)**
California State Compliance	Generic Medicaid schemas requiring paid custom addons	**Native Integration: Alta Regional POS & DOR PIP/CIE**
Frontline Mobile Field Logging	Clunky multi-click portals; high field staff resistance	**Mobile Bento SPA: Instant deduplicated email receipts**
Multi-Entity Data Isolation	Requires separate paid instances for sub-agencies	**Universal Department Switcher: Multi-company schemas**

3. Technical Topology & Data Layer Architecture

BasementOps V3 employs an asynchronous serverless Single-Page Application (SPA) model. By executing within the native Google Apps Script V8 JavaScript runtime and binding directly to Google Sheets and Drive APIs, the architecture delivers sub-second response times without requiring idle virtual machines or costly cloud compute instances.

Architectural Layer	Component & Technical Implementation
Client Presentation Layer	HTML5 / CSS3 Responsive Bento Grid SPA with Chart.js visualization, Base64 avatar FileReader, and client-side PII regex sanitizer.
Serverless Compute Engine	Google Apps Script V8 Engine executing asynchronous Remote Procedure Calls (google.script.run) with event-driven clock triggers.
Persistence Database Layer	Centralized relational Google Sheets schema (Master_DB with 28 normalized columns, Daily_Service_Logs, Matrix_DB, and Staff_DB).
Document Vault & Storage	Google Drive API encrypted repository with automated folder routing, authorization document ingestion, and locked PDF generation.
Identity & Governance	Native Google Workspace Domain OAuth 2.0 with Session email verification and 5-tier Role-Based Access Control (RBAC).

4. The Multi-Entity Department Switcher Core

A critical engineering breakthrough in BasementOps V3 is the **Multi-Entity Dynamic Context Switcher**. Non-profit human services organizations frequently operate diverse operational divisions under one tax entity. BasementOps unifies three complete operating companies within a single pane of glass:

- **Southside Employment Services (SES):** Department of Rehabilitation (DOR) tracking across AWE, PVSA, CIE, and PIP funding streams; 7-digit NMED/UCI state authorization scrapers; and job coach field logging.
- **Passage (Adult Day Program):** California Alta Regional Center POS tracks (TDS 531, HA1282, 50 West vs. RiverPark sites); Person-Centered Roster 360 profiles; and deduplicated daily service notes.
- **Work of Art (Micro-Enterprise & Studio):** Creative studio shift telemetry; dual-stream Regional Center & DOR participant fusion; 10-factor progress evaluations; and art production tracking.

When an executive or supervisor clicks the Department Switcher, the frontend dynamically rebinds the roster, filters billing codes, and enforces strict schema separation without cross-contaminating client case records.

5. State Compliance & Automated Billing Safeguards

In human services, billing integrity is paramount. Billing errors or duplicate entries trigger state audit clawbacks and regional center penalties. BasementOps V3 implements cryptographic safeguards directly at the point of capture:

A. Compound Hash Session Deduplication Algorithm

To prevent duplicate service entries from inflating billing totals, every shift log generates a deterministic compound cryptographic key: SessionKey = SHA256(ParticipantName | ServiceDate | Timestamp). A runtime Set() filter rejects duplicate submissions instantly, guaranteeing billing accuracy across all coaches.

B. 5-Column Automated Compliance Kanban

Participant records are sorted dynamically by internal clock triggers into five regulatory tiers: **Due in 60 Days, Due in 30 Days, Due in 14 Days, Due in 5 Days, and OVERDUE**. Background ticklers group approaching deadlines by facility site and dispatch automated HTML email alerts to program directors, maintaining 100% audit readiness.

C. Universal Intake OCR & Compliance Seeding

Upon intake, incoming state authorization PDFs are swept by optical character recognition (OCR) algorithms to extract 7-digit Client IDs (UCI / NMED) and validity dates. The system automatically seeds the participant's initial 60-day evaluation deadline (+60 days from authorized start), preventing administrative oversight.

6. Zero-Trust Security, Governance & Client-Side PII Redaction

Unlike commercial cloud vendors that store sensitive participant medical and developmental records in multi-tenant commercial server farms, BasementOps enforces an immutable in-tenant security posture:

- **5-Tier Role-Based Access Control (RBAC):** Strict role separation for Job Coaches (Tier 1), Department Assistants (Tier 2), Supervisors (Tier 3), Directors (Tier 4), and System Admins (Tier 5).
- **Client-Side PII Regex Redactor:** When staff click the Copy Notes utility, client-side scripts strip participant names, State UCIs, SSNs, phone numbers, and addresses to prevent HIPAA and state privacy breaches during case conferences.
- **Immutable System Audit Ledger:** Logs every database sync, manual record override, and verification action with a UTC timestamp and authenticated user email.

7. Enterprise Deployment & Implementation Blueprint

Deploying BasementOps V3 follows a structured 3-phase milestone roadmap designed to eliminate operational disruption while maintaining total data integrity:

Implementation Phase	Deliverables & Technical Milestones	Operational Impact
Phase 1: Multi-Entity Foundation	Deployment of Master_DB (28 columns), OAuth security routing, Department Switcher, and Passage Adult Day Program module.	Core database live; zero per-seat user taxes established.
Phase 2: Vocational Deployment (SES)	Southside Employment Services module setup; DOR authorization scrapers; job coach field logging; and 6-stage placement Kanban.	Vocational workflows synchronized with state tracks.
Phase 3: Studio & Compliance (Work of Art)	Work of Art micro-enterprise telemetry; dual-stream DOR/Regional Center fusion; 10-factor rubrics; and final staff training.	Complete agency migration achieved with 100% data ownership.

8. Architectural Conclusion & Enterprise Consultation

Human services organizations can no longer afford to treat software as a per-user tax. By decoupling enterprise compliance from proprietary SaaS subscriptions, BasementOps V3 proves that modern non-profits can achieve institutional reliability, total data sovereignty, and frontline agility at zero ongoing software licensing overhead.

Request an Architectural Consultation or Custom Demonstration:
To explore deploying BasementOps V3 within your Google Workspace tenant or to schedule an operational workflow audit, contact our engineering team directly:

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