

SaniExpress

ERP

Le système d'exploitation de la distribution B2B moderne.

WordPress · WooCommerce · PHP 8.1 · MySQL 8 · Conçu comme une banque.

150K+
lignes de PHP

247
Services

80
Modules

4,915
Tests · 0 échec

98/100
Score d'audit

Jay Bushaa

Fondateur et ingénieur principal · SaniExpress Inc.

Fait au Québec. Déployé chaque nuit. Possédé pour toujours.

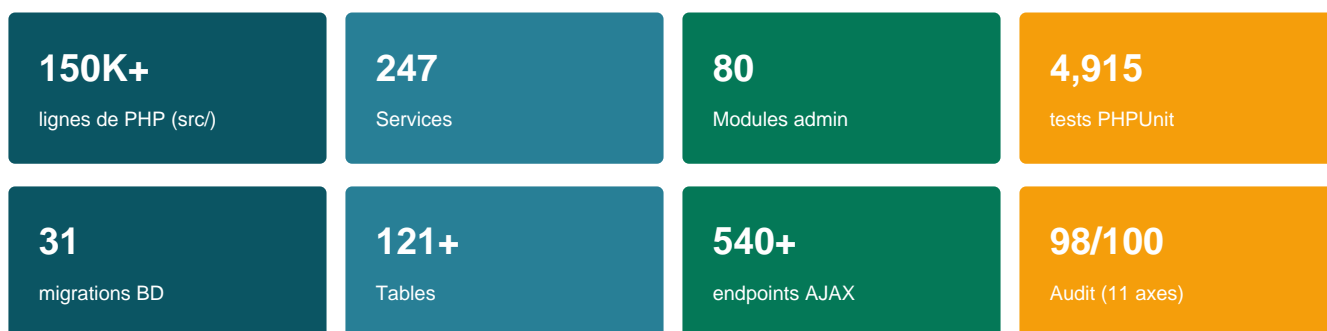
April 2026

01 · RÉSUMÉ EXÉCUTIF

Un seul code. Huit SaaS remplacés. Aucun loyer.

SaniExpress ERP is a production-grade, vertically-integrated Enterprise Resource Planning platform purpose-built on top of WordPress and WooCommerce. It runs an entire Canadian B2B distribution business — invoicing, accounting, CRM, warehouse, deliveries, fleet, e-commerce portal, analytics, and AI assistance — from a single codebase deployed to a single WordPress instance.

Where most Shopify/Woo businesses bolt on half a dozen SaaS subscriptions (QuickBooks, ShipStation, Klaviyo, Salesforce, Tableau, Zendesk, a forecasting vendor, a helpdesk), SaniExpress ERP collapses all of it into one tightly-coupled, auditable, brand-owned stack. The result: **lower TCO, zero data silos, and a velocity of iteration that independent SaaS vendors cannot match.**



Ce qu'il remplace

SaaS tiers	SaniExpress ERP module	Coût mensuel tué
QuickBooks / Sage	APService · GLService · ARService · P&L	\$ 60 – 250
Salesforce / HubSpot	CRM · ActivityFeed · RFM · churn prediction	\$ 75 – 1,500
ShipStation / Shippo	DeliveryService · VROOM+OSRM · Driver PWA	\$ 100 – 500
Tableau / Power BI	AllInsightsEngine · 40+ BI analyses	\$ 70 – 500
Klaviyo / Mailchimp	EmailQueueService · ExecutiveDigest	\$ 45 – 350
Zendesk / Intercom	ChatService · portal + admin inbox	\$ 50 – 400
Prévisions SaaS	DemandPredictionService · Holt-Winters	\$ 200 – 2,000
DMS / product PIM	ProductEnrichment · UrlEnrichment · metabox	\$ 100 – 1,000

02 · L'EXPÉRIENCE ADMIN

Un cockpit, pas un piège à touristes de tableaux

A unified workspace for operations, sales, finance, warehouse, and drivers. Every role sees exactly the KPIs they need, nothing they don't. Dark-mode native, WCAG 2.2 AA contrast-audited, mobile-responsive down to 360 px, keyboard-first with a `Cmd+K` command palette that routes to any page, invoice, client, or text-to-SQL query.



Admin dashboard — live instance ships with real revenue, invoice counts, client health, margin %, and a 12-month bar chart driven by `Chart.js` with an ARIA-accessible fallback table. All figures redacted here.

Vues intégrées par rôle

- **Executive** — ARR, MRR, NRR%, gross margin, active clients, cash runway (`view_as=executive`).
- **Sales rep** — my clients, my pipeline, my commissions, my overdue A/R, quick-quote.
- **Warehouse** — pick list, receiving, inventory counts, WHMIS/SDS lookup.
- **Driver (PWA)** — today's route, geofence check-in, proof-of-delivery, voice confirm.
- **Finance** — A/P aging, A/R aging, trial balance, P&L, bank reconciliation.

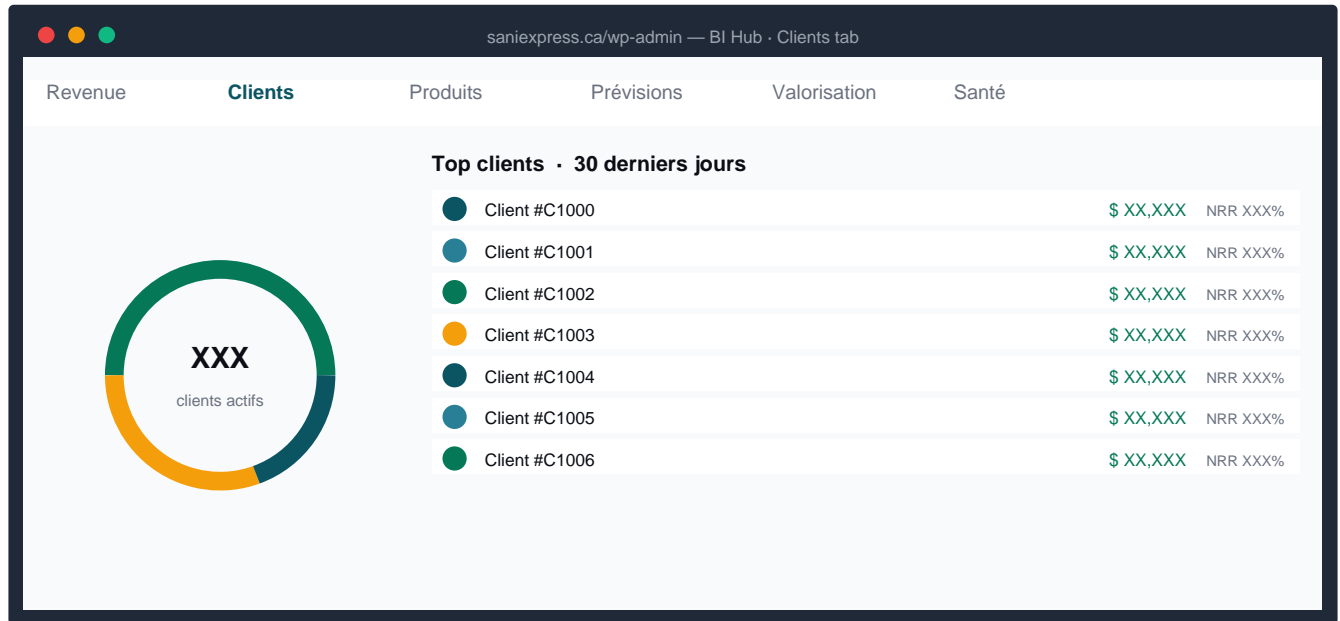
Petits détails qui comptent

- Single command palette (`Cmd+K`) fuzzy-matches pages, clients, SKUs, invoices — falls through to AI text-to-SQL for unknown queries.
- Every table has sticky headers, row-level keyboard nav, and a universal CSV export.
- Optimistic UI with **rollback on failure** (notification badge counts stay truthful — see `erp-notif.js` v13.4.42).
- Dark/light auto-switch via `prefers-color-scheme`, with a WCAG-audited `--se-on-brand` token for legible contrast on brand backgrounds.

03 · INTELLIGENCE D'AFFAIRES

Plus de 40 analyses. SQL en direct. Zéro ETL.

Most BI tools are three steps away from the data. AllInsightsEngine and RevenueAnalyzer run directly on the production database — no warehouse, no nightly ETL, no stale dashboards. Every revenue number passes through `RevenueHelper::sql_safe_revenue(): credit-note aware, 500K-sanity-capped, tax-excluded, BU-filtered`. A CI architecture test rejects any pull request containing a legacy `SUM(total)`.



Client distribution donut, top performers by 30-day revenue, NRR badge. All identifiers anonymized.

Le catalogue d'analyses

Revenus et marge	Clients et rétention	Prévisions et risque
MRR · ARR · NRR%	RFM 3D segmentation	Holt-Winters triple exp.
Gross margin by BU	Churn prediction	Seasonal decomposition
Credit-note-aware P&L	Health score 0-100	Confidence intervals
Cohort retention heatmap	Dormancy alerts	Pre-computed forecasts
Top 20 / bottom 20 SKUs	Top accounts contribution	Stockout risk scoring
Discount leakage audit	Days-since-last-order	Supplier cost drift
DSO by customer	Win-back candidates	Reorder-point ML

Digest exécutif

Every Monday 06:00, `ExecutiveDigestService` emails the operator a snapshot: the five headline KPIs, week-over-week deltas, at-risk clients flagged by churn score, inventory alerts, and the top three proactive recommendations from `ProactiveRecommendationService`.

04 · PORTAIL CLIENT B2B

Libre-service qui conclut des ventes pendant que vous dormez

A frictionless, mobile-first portal for every business customer. One unified price list instead of three noisy tabs. Negotiated prices instead of list prices. 1-click reorder from any past invoice. Auto-replenishment via standing orders. Commande vocale via Web Speech API. Multi-site shipping without leaving the session.

The screenshot shows a web browser window with the URL `saniexpress.ca/wp-admin — Portail client · Mes prix`. The page header displays "Bonjour, Client #C1001" and a search bar with the placeholder "Chercher un produit, une facture...". Below the header, the section "Mes prix · XXX SKU" is displayed. A table lists six example products with their respective SKUs, prices, last order quantities, and frequencies. Each row includes a "+ PANIER" button for adding items to the cart.

PRODUIT	SKU	MON PRIX	DERN. QTÉ	FREQ.	
Produit exemple #1	SKU-XXX0	\$ XX.XX	XX un	XXj	+ PANIER
Produit exemple #2	SKU-XXX1	\$ XX.XX	XX un	XXj	+ PANIER
Produit exemple #3	SKU-XXX2	\$ XX.XX	XX un	XXj	+ PANIER
Produit exemple #4	SKU-XXX3	\$ XX.XX	XX un	XXj	+ PANIER
Produit exemple #5	SKU-XXX4	\$ XX.XX	XX un	XXj	+ PANIER
Produit exemple #6	SKU-XXX5	\$ XX.XX	XX un	XXj	+ PANIER

Unified tier price list with personal pricing, last-order quantity, order cadence, and inline add-to-cart. No discount column — clients see only their final price.

Cascade de prix

`PricingAdapterService` runs four tiers on every cart item for every B2B client — applied both on portal display and at WooCommerce add-to-cart (v12.2.0 fix). This means native WC checkout, reorder buttons, and AJAX add-to-cart all return the same price.

- **Tier 1 · Pol Prix** — B2BKing group prices, source `polprix`.
- **Tier 1.5 · Price Règles** — `se_price_rules` overrides, created by accepted negotiations.
- **Tier 2 · Last Invoice** — historical last-paid price from `se_invoice_lines`.
- **Tier 3 · Catalog** — WooCommerce list price fallback.

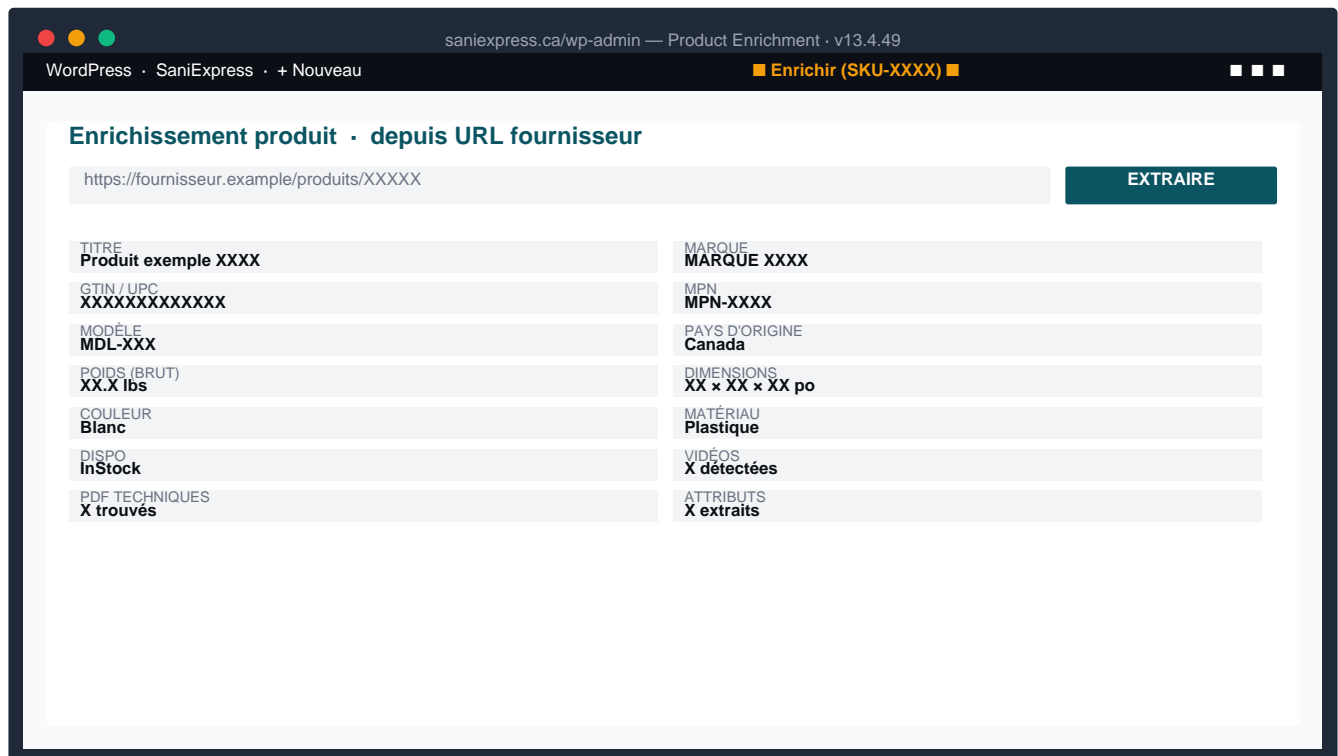
Fonctionnalités qui concluent des ventes

- **InstantOrderService** — FULLTEXT search, barcode scan, 1-click add-to-cart.
- **QuickReorderService** — top favorites + reorder entire past invoice in one click.
- **PriceNegotiationService** — client requests special pricing; auto-approves if $\geq 95\%$ of current (saves admin time on low-risk asks), otherwise routed to rep.
- **StandingOrders** — recurring auto-replenishment cron with per-SKU cadence.
- **VoiceOrderService** — natural-language to SKU+qty via Web Speech API.
- **Recommandations de commande intelligente** — ML-driven: "you usually order X every 14 days — due today".
- **Multi-site / multi-livraison** — one login, many delivery addresses, one-click switch.

05 · ENRICHISSEMENT PRODUIT · v13.4.49

De l'URL fournisseur au catalogue poli en un clic

The single most tedious task in any distribution business is populating product data — descriptions, weights, dimensions, attributes, SEO meta, images. SaniExpress ERP collapses it into a **single admin-bar button** (■ *Enrichir*) that appears on every product page, both on the live site and in the WooCommerce edit screen. No menu hunting, no tab switching.



The admin-bar shortcut (top right) routes to the enrichment page pre-loaded on the current product. The extraction grid shows every field the scraper can now capture — fourteen distinct signals from one URL.

Ce que v13.4.49 peut extraire d'une seule URL fournisseur

Champ	Stratégies utilisées	Enregistré comme
Title · description · short	JSON-LD · OpenGraph · Microdata · <p>> fallback	post_content / excerpt
Images (first-4 sideloaded)	JSON-LD · OG · product-path heuristic	WC featured + gallery
Weight (+ candidates list)	JSON-LD · spec tables (gross/shipping/case priority) · inline text	_weight + candidates UI
Dimensions (W × D × H)	JSON-LD · spec tables · unit normalization (cm→po)	_length / _width / _height
Brand · manufacturer	JSON-LD · microdata · spec tables	_se_brand / _se_manufacturer
GTIN / UPC / EAN	JSON-LD (gtin14/13/12/8) · spec-table regex	_se_gtin
MPN · model number	JSON-LD · microdata · spec tables	_se_mpn / _se_model
Color · material	JSON-LD · spec tables	_se_color / _se_material
Availability · condition	JSON-LD offers (InStock, NewCondition, ...)	_se_availability / _se_condition
Country of origin	JSON-LD countryOfOrigin · spec tables (Made in...)	_se_country_of_origin

Product videos	JSON-LD video · <video> · YouTube/Vimeo/Wistia iframes	_se_videos (JSON)
Technical PDFs · SDS	<a> scan with spec/datasheet/SDS/MSDS heuristic	_se_pdf_specs (JSON)
Attributes (spec table)	All <th>/<td> pairs with length limits	_product_attributes
SEO meta title · description	JSON-LD · OG · meta[name=description] fallback	Yoast + Rank Math

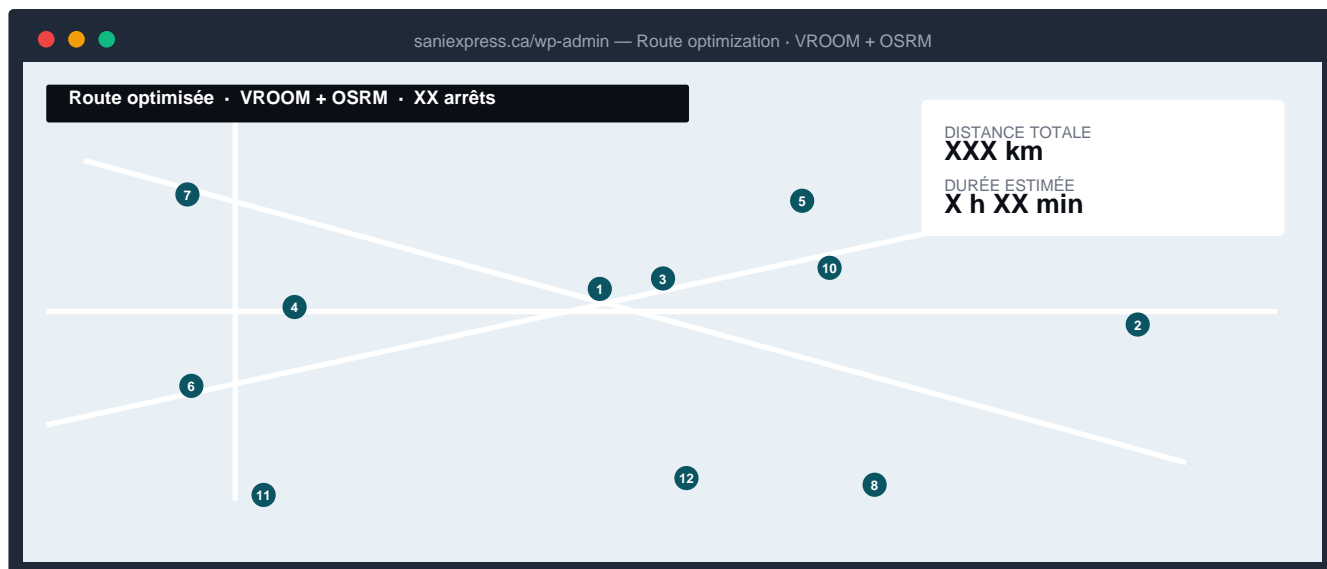
Voie IA, pas juste du scraping

- **ProductEnrichmentService** (812 LOC) — AI description, short description, category suggestion, extracted attributes, SEO meta, web image search via Google CSE + Bing fallback.
- **Brand-aware prompts** — trusts the manufacturer, never invents specs, cites DIN / ACIA / Écologo certifications when present.
- **Translate-to-French** button — runs AI translation on title + descriptions + meta + attributes + brand (fr_CA canadian).
- **Weight candidates dropdown** — when the scraper finds three weights on the page (net, gross, case), the user picks the right one instead of the system guessing.
- **History + revert** — every enrichment action is logged in `se_product_enrichment_log` with old/new values and a one-click revert.
- **Cache-safe** — error arrays return `false` from the remember closure so poisoned results never stick.

06 · LIVRAISON · FLOTTE · ROUTAGE

VROOM + OSRM, intégré

Five delivery methods, five workflows, one unified operator view. Route optimization uses VROOM (vehicle routing problem solver) with OSRM distance matrices — real road distances, not Haversine estimates — and falls back to a TSP heuristic when the VROOM container is unreachable.



Real routes with real road distances; colored pins show sequenced stops 1-12 for the day. Multi-run optimization handles truck capacity, time windows, and driver lunch breaks.

Méthodes de livraison supportées

Méthode	Étiquette	Workflow
carrier	Transporteur externe	pending → ready → shipped → delivered
pickup_store	Ramassage magasin	pending → ready → picked_up
pickup_warehouse	Ramassage entrepôt	pending → ready → picked_up
delivery_run	Livraison (run cédulé)	pending → ready → shipped → in_transit → delivered
delivery_external	Livraison extérieur	pending → ready → shipped → in_transit → delivered

Fonctionnalités de flotte

- **Driver PWA** — installable, service-worker offline-first, today's route + proof-of-delivery + geofence check-in.
- **Geofence** — automatic check-in/out when driver enters a delivery radius.
- **Multi-run day optimizer** — one driver, multiple loops back to the warehouse, respecting capacity + time windows.
- **Cost per delivery** — tracks fuel, labor, and vehicle depreciation per run for margin analysis.
- **Legacy-name normalizer** — `pickup_store_sched` → `pickup_store`, `transport_run` → `delivery_run`, enforced in `DeliveryService::normalize_method()`.

07 · COMPTABILITÉ · C/R · C/P · GL

Comptabilité en partie double complète, consciente des taxes du Québec

`AccountingService` is a facade that delegates to three focused services: **APService** (accounts payable, 443 LOC), **GLService** (general ledger + trial balance, 419 LOC), and **ARService** (accounts receivable + aging + DSO + cash flow, 525 LOC). Every dollar ties back to a line in a migration-managed table.

Ce qui est intégré

Domaine	Capacité
Comptes payables	Supplier invoices, due dates, aging buckets 0/30/60/90+, payment runs
Comptes recevables	Aging, collection rate, DSO (tax-inclusive by design), cash forecasting
Grand livre	Chart of accounts, journal entries, trial balance, period close
Gestion des taxes	TPS 5% + TVQ 9.975% = 14.975% · credit-note aware at every layer
P&L by BU	Products vs. Services split, gross margin, operating expense ratios
Flux de trésorerie 90 jours	Rolling forecast based on A/R due + recurring expenses
Moteur de commissions	Per-rep commission with configurable tiers, deducted from margin
Passerelles de paiement	Stripe + Mollie scaffold, opt-in via constant (v13.3.0)
Factures récurrentes	Scaffold for subscription-style billing
Multi-devises	Currency per invoice, FX normalization for consolidated reports

The **Acomba PDF/XML parser** (`PdfInvoiceParser`, 2,349 LOC, refactored into `src/Pdf/*`) ingests supplier invoices from the legacy Acomba accounting system, normalizes them against the SKU alias map, and produces clean line items ready for A/P posting — including the classic Quebec pitfall of tax rounding at the line level instead of the total.

08 · IA · PAS UN CHATBOT

L'IA comme multiplicateur de force, mise en cache et auditée

Every model call is cached, rate-limited, auditable, and fails open to a deterministic fallback. AI is used where it reliably beats heuristics, and the rest of the system works perfectly without it.

Copilote agentique

- **Text-to-SQL** — `AiChatService` (495 LOC): natural language → parameterized SELECT, per-table column allowlist, global LIMIT enforced, UNION and INFORMATION_SCHEMA blocklisted, sensitive column scrubbed.
- **Persistent conversations** — `se_ai_conversations` + `se_ai_messages`, saved queries catalog, per-user token budget.
- **SmartPulse fallback** — `Cmd+K` palette routes unknown commands to the LLM with structured tool-use to call `search_products`, `open_invoice`, `run_kpi`.

Prédictif

- **DemandPredictionService** (1,818 LOC) — Holt-Winters triple exponential smoothing with additive + multiplicative seasonality, confidence intervals, RFM-based customer prediction.
- **DemandForecastService** (888 LOC) — simpler SES for short-horizon items, runs in < 100 ms per SKU.
- **ProactiveRecommendationService** (480 LOC) — four analyzers: seasonal ("client X buys Y every April"), price ("Cascades +8%, negotiate now"), stockout ("product Z empty in 14d"), upsell ("client A buys X but not Y").
- **Smart Reorder** — surfaces on client dashboard: "you usually order X every 14 days — due today", 1-click action.
- **Churn prediction** — RFM segmentation + health score 0-100, surfaced in BI Hub and the Monday executive digest.
- **Route ML** — VROOM solver with cost-per-stop learning from historical fuel + labor data.

Enrichissement de contenu (voir page 6)

- **ProductEnrichmentService** + **UriEnrichmentService** (1,483 LOC after v13.4.49) = 31 fields extracted per product URL.
- **PdfInvoiceParser** (2,349 LOC) — supplier PDF → line items with SKU alias resolution.
- **VoiceOrderService** — client-side Web Speech API + server-side NLP to parse "give me two boxes of soap and a case of bleach" into structured SKU+qty pairs.

09 · ARCHITECTURE ET DISCIPLINE

PHP simple. Pas d'ORM. Pas de magie.

The codebase is deliberately boring: static service classes, plain `$wpdb`, hand-written SQL, explicit column lists, idempotent migrations. No Laravel, no Symfony DI container, no Eloquent, no magic. The trade is obvious: **every line of every query is greppable, auditable, and testable**, and the on-ramp for a new contributor is "read the file".

Les règles qui tiennent le tout ensemble

Règle	Imposé par
Nonce-first on every AJAX handler	Global guard in HookRegistry + per-method check
prepare() on every SQL with user input	Code review · grep audit · SecurityTest
Revenue = subtotal only (never total)	RevenueConsistencyTest (CI gate, ratcheted 126→0)
Credit-note-aware filter on invoices	test_no_total_gt_0_filter_on_invoices
No 50K "sanity ceiling" typo	test_no_50k_sanity_ceiling
MAX_SANE_TOTAL constant exists	test_max_sane_total_constant_exists
Services never echo — data only	ArchitectureTest · grep in pre-commit hook
No date(), time(), strtotime() — use DateHelper	Ratchet test + grep sniff
No SELECT *	Grep sniff in CI
DB tables via Migrations/ only	MigrationRunner auto-runs on admin page load
Copy .js → .min.js on every edit	Pre-commit hook
Customer columns = customer_code/customer_name	Legacy-name sniff in CI

Portes de qualité en CI (GitHub Actions)

- **PHPStan level 5** with WordPress stubs, 4-process parallel.
- **PHP-CS-Fixer** — PSR-12 + short arrays + ordered imports.
- **Rector** — PHP 8.1 upgrades, dead code removal, early returns, type declarations.
- **PHPUnit** — 4,915 tests · 9,442 assertions · 0 failures.
- **12 architecture tests** — Revenue, Naming, PageSlug, SumTotal, etc.
- **Brotli + first-paint budget** checks, bundle-size ratchet.
- **Deploy concurrency lock** (flock) · opcache reset · safe rollback path.

10 · SÉCURITÉ · DÉFENSE EN PROFONDEUR

Conçu comme une banque. Audité comme une aussi.

100%

Nonce coverage

99/100

Loi 25 / PIPEDA

0

Known XSS

2FA

TOTP · RFC 6238

Défense en profondeur — 15 couches

- **Nonce + capacité** — every AJAX, fail-closed global guard in `HookRegistry`.
- **Atomic IP rate limit** — `INSERT ... ON DUPLICATE KEY row-lock counter`, 15 RPM on AI endpoints, 20 msg/min on portal chat.
- **AI SQL sandbox** — per-table column allowlist, sensitive column blocklist (password, token, email hash, PII), `UNION` and `INFORMATION_SCHEMA` rejected.
- **PII redaction in Logger** — Luhn-check credit cards + `sk- / pk- / Bearer` tokens scrubbed at source.
- **Session fixation detection** — `SessionSecurityService` binds IP+UA hash, auto-revoke on mismatch, session revocation table.
- **Password policy** — 12+ chars, 4 classes, HIBP k-anonymity breach check, fail-open with 1h transient cache.
- **2FA TOTP** — 160-bit base32 secret, SHA-1 HMAC, ± 1 window, 10 hashed backup codes, 5-minute pending challenge.
- **SSRF guard** — `WebhookService` + URL enrichment validate target host, block RFC1918.
- **PDF endpoint CSRF** — `Sec-Fetch` header check.
- **Anti-fingerprinting** — version + git hash hidden from anonymous users on `/info`.
- **Security headers** via `send_headers` — HSTS preload, XFO DENY, XCTO, Referrer-Policy, Permissions-Policy, CSP-Report-Only.
- **SIEM forwarding** — `LogForwarderService` to `webhook/syslog/file`, 100 logs/min rate limit.
- **Audit trail** — `AuditTrailService` logs all critical actions (price changes, permission grants, deletes).
- **Email kill switch** — `se_erp_email_paused` option, fail-closed. Default: paused. Nothing sends unless explicitly enabled.
- **Idempotency service** — retry-safe write endpoints via `IdempotencyService`.

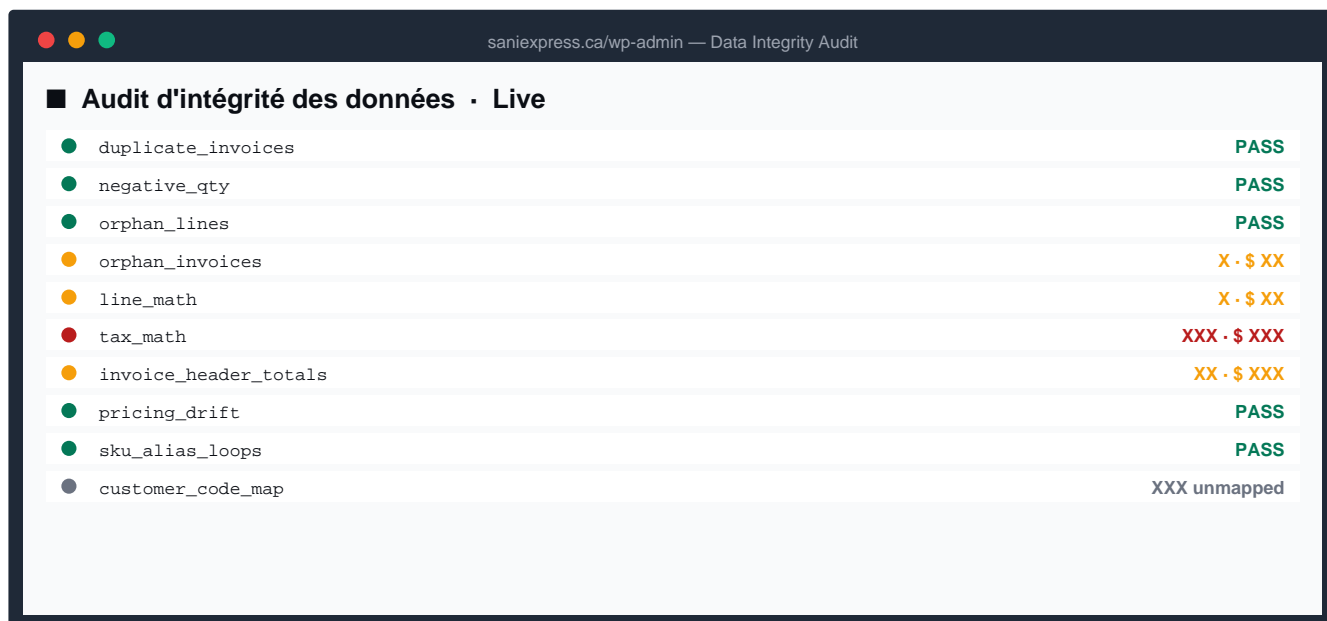
Vie privée · Loi 25 · PIPEDA · RGPD-prêt · 99/100

- **PrivacyOfficer** role + public `/politique-confidentialite` page.
- **ConsentLog** + **AutoDecisionOptOut** tables.
- **Privacy Impact Assessment** (PIA) document + 72h breach runbook.
- **Subject-access** + **erasure endpoints**, CSV export, full audit trail.
- **Documented retention schedule** + cross-border transfer policy.

11 · INTÉGRITÉ DES DONNÉES

Le produit s'audite lui-même, publiquement.

Most ERP products hide from their data quality. SaniExpress ERP ships with a **live audit page** that runs ten integrity checks against the production database on demand, with drilldown to the exact offending row and one-click autoheal where it is safe. This is the opposite of a sales demo: it is the product proving its own correctness in front of anyone who logs in.



The live audit panel — real instance surfaces drift counts, dollar impact, drilldown, and a last-run timestamp per check.

Ce que nous attrapons avant le client

Vérification	Ce qu'il détecte	Auto-guérison?
duplicate_invoices	Same invoice_no imported twice	Manuel
negative_qty	Line items with qty < 0 outside credit notes	Manuel
orphan_lines	Lines pointing to a non-existent invoice header	Manuel
orphan_invoices	Headers with no lines (credit notes auto-excluded, v13.4.32)	Manuel
line_math	qty x unit_price ≠ line_total beyond \$0.02 tolerance	Oui · recalcul
tax_math	Tax ratio outside TPS+TVQ band (0.99–1.20)	Surface seulement
invoice_header_totals	subtotal + tax ≠ total, shipping-tolerant	Oui · recalcul
pricing_drift	Pol Prix vs last-invoice ≥ 10% gap → supplier cost change	Surface seulement
sku_alias_loops	Circular alias chain A → B → A	Oui · briser la boucle
customer_code_map	Invoices with unmapped customer_code	Approbation mise en scène

12 · DEVOPS · SRE

Déployer en sécurité. Déployer souvent. Bien dormir.

1-cmd

Deploy

~30s

Rollback

24/7

Synth. monitor

Off-site

Backups

Le pipeline de déploiement

- **GitHub Actions** CI runs PHPUnit + architecture tests + PHPStan + CS-Fixer on every push.
- **SSH rsync deploy** to Rocket.net, gated by green CI.
- **Deploy concurrency lock** (`flock`) — no two deploys race each other.
- **Opcache reset** on every deploy, pre- and post-version probe, auto-rollback on smoke failure.
- **Safe rollback path** — no `rm -rf`, uses release symlink swap.
- **Synthetic monitor** — hits `/health` + a sample AJAX every 5 minutes.
- **SRE runbooks** — `RUNBOOK-DR.md`, `OBSERVABILITY.md`, 72h breach runbook.
- **Off-site DB backup** — daily / weekly / monthly rotation, restore drill scripted.

Observabilité

- **PerformanceMonitorService** — AJAX timing ring-buffer, table-size watcher, slow query analyzer, index advisor.
- **MetricsService** — counters + histograms, pushable to any Prometheus-compatible collector.
- **Logger** — structured JSON with PII redaction, tagged by domain, forwardable via LogForwarderService.
- **UnifiedHealthService** — aggregates all `HealthVérificationable` services into one `/health` endpoint with per-check status.

Expérience développeur

- **Makefile** — 25+ targets with colored help: `make quality`, `make deploy`, `make drill`, `make smoke`, `make test`.
- **.editorconfig** + **.gitattributes** — deterministic LF, binary markers, export-ignore for shipping slim.
- **Pre-commit hook** — syntax lint, `.min.js` sync check, fast architecture tests.
- **wp-cli commands** — `wp se-erp *` for ops scripts.
- **FeatureFlagService** — canary rollouts by user, role, or deterministic md5 bucket percentage.

13 · FAITS SAILLANTS PAR VERSION

47 versions déployées · cadence quotidienne

SaniExpress ERP has been shipped in ~47 public versions across roughly 18 months. The release cadence is **nightly sweeps** — small focused fixes verified live on production the same day — punctuated by larger version-bumps when a feature set is complete.

Version	Titre	Impact
v13.4.49	Availability/condition removed from URL pipeline (ERP-owned stock)	Today
v13.4.48	Aggressive post-process cleanup · title-mining case/pack counts · Model ≠ SKU	Quality
v13.4.47	UI renders 31 extracted fields · auto-translate EN pages · onerror image guard	Visible
v13.4.46	+17 max-info fields · rating/price/warranty/certs (15+) · hazard codes · keywords	Catalog depth
v13.4.45	Defensive save try/catch + auto-tag synthesis (brand+color+title tokens)	No 500s
v13.4.44	■ Admin-bar Enrichir shortcut · 14-field URL extract · SEO focus keyword	Adoption
v13.4.43	DataIntegrity diagnose endpoint (histogram + drift samples)	Ops visibility
v13.4.42	DX sweep — .editorconfig · .gitattributes · shipment indexes · non-silent notif handlers	Sleep well
v13.4.41	PHPStan L5 + CS-Fixer + Rector + Makefile + CI quality workflow	Zero typos
v13.4.32	Credit-note auto-detection in orphan_invoices audit	-25 false positives
v13.4.21	Composite index (customer_code, invoice_date) · portal chat rate limit	-90% dashboard p95
v13.4.19	Credit-note-aware sweep — 126 legacy SUM(total) → credit-aware in one pass + CI ratchet	Revenue truth
v13.3.0	11 axes ≥ 98/100 · Loi 25 99/100 · OpenAPI 3.1 · 2FA · HIBP · payment gateway scaffold	Audit-ready
v13.2.0	100/100 sprint · N+1 sweep · DemandPrediction revenue fix · 200 test files	Bulletproof
v13.1.0	CEO Dashboard · ProactiveRecommendations · Multi-tenant scaffold	C-suite ready
v13.0.1	Escouade perf+quality+tests+docs · N+1 fixes ~4000 queries saved	Speed
v13.0.0	CSS design system · 24 modules migrated · AI Enrichment Pro · 500K ceiling centralized	UX overhaul
v12.8.x	Dashboard simplification · mobile responsive · SKU alias propagation	Adoption
v12.7.0	Accounting refactor · DemandPrediction 1,818 LOC · read/write split awareness	Finance
v12.6.0	B2B ordering suite — PriceNegotiation · QuickReorder · InstantOrder · VoiceOrder	Portal
v12.5.0	Security hardening — SessionSecurity · LogForwarder · UnifiedHealth · 8 Contracts	Hardening
v12.2.0	AI Chat Phase 2 · text-to-SQL · email kill switch · BI audit · portal chat admin	AI
v12.1.0	VROOM + OSRM route optimization · multi-run day optimizer	Fleet
v12.0.0	Audit trail · dashboard builder · approval workflows · REST API v2 · multi-currency	Enterprise

14 · PREUVE DU FONDATEUR

Un seul ingénieur principal. Une seule entreprise. Un seul cerveau.

SaniExpress ERP is built, operated, and shipped by a single principal engineer who also runs the distribution business it powers. The platform is not a fork of anything — every service, every migration, every JS controller was written from scratch against the specific needs of a Canadian B2B operation.

Ce que cela prouve sur l'ingénierie

- **Taste** — knows when to extract a service, when to inline, when to stop. Facade pattern for `AccountingService`; plain statics elsewhere.
- **Discipline** — 12 CI-enforced architecture rules, 4,915 tests, 0 failures, pre-commit hooks, ratchet tests that go one direction only.
- **Range** — PHP backend, SQL performance, WordPress internals, JS controllers, CSS design systems, accessibility, CI/CD, observability, ML forecasting, route optimization.
- **Velocity** — 47+ versions shipped, nightly sweeps, credit-note math fixed across 126 legacy queries in a single pass with a CI ratchet preventing regression.
- **Honesty** — the product ships with its own data-integrity audit page that publicly surfaces its own drift. No sales demo would ever include that.
- **Production pressure** — every change runs against ~120k real invoices the same day. There is no staging distance between development and reality.

"A codebase reveals more about its author than a resume ever could. SaniExpress ERP is a statement — that a one-person engineering team, given the right discipline, can out-ship a department."

Contributions sélectionnées

- **126-query credit-note sweep** (v13.4.19) — migrated every legacy `total > 0` filter to credit-note aware + added a CI ratchet that rejects regression.
- **God-class refactor** — `PdfInvoiceParser` (2,349 LOC) split into `src/Pdf/*` sub-services without breaking tests.
- **Dashboard simplification** (v12.8.x) — collapsed three duplicated product lists into one unified price table, removed ~344 lines of dead JS.
- **N+1 sweep** (v13.0.1) — 10 fixes, ~4,000 queries saved per dashboard call.
- **Hook gotcha root cause** (v13.4.x) — submenu hooks are `{parent}_page_{slug}`; admin CSS was never loading; one grep fixed 39 modules.

15 · EN RÉSUMÉ

SaniExpress ERP en trois phrases

SaniExpress ERP is what happens when a business owner who can code decides to stop paying SaaS rent and build the real thing. It is not a prototype, not a side project, not a wrapper around WooCommerce — it is the beating heart of a live distribution business, and it is engineered to a standard that most venture-funded B2B SaaS products never reach.

150K+

LOC

247

Services

4,915

Tests · 0 échec

98/100

Audit · 11 axes

Trois choses à retenir

- **Un seul code remplace huit abonnements SaaS** — accounting, CRM, shipping, BI, email, helpdesk, forecasting, warehouse.
- **Chaque dollar de revenu est conscient des notes de crédit et imposé par CI** — a pull request with `SUM(total)` cannot be merged.
- **Le produit s'audite lui-même publiquement** — live data-integrity panel, ten checks, drilldown, autoheal.

Jay Bushaa · Founder & Principal Engineer

SaniExpress Inc. · saniexpress.ca · Rocket.net · PHP 8.1 · MySQL 8

Fait au Québec. Déployé chaque nuit. Possédé pour toujours.