ZNotice — Documentation

ZNotice is a multi-tenant WhatsApp messaging gateway (SaaS) that turns a paired WhatsApp session into a simple REST API. Customers sign up, connect their WhatsApp number by scanning a QR code, buy prepaid message credits, send messages over `POST /api/v1/send` — immediately or scheduled, plus bulk sends via `POST /api/v1/bulk` — and review delivery/credit usage analytics from the dashboard or `GET /api/v1/usage`.

This directory is the canonical technical and operational documentation set. A client-facing downloadable PDF set (a combined volume plus per-chapter PDFs) is also available under `./pdf/` and served at `/docs/pdf/`.

Document	Description
ARCHITECTURE.md	Components, ports, processes, database schema (incl. `password_resets`, `message_templates` and the sender-name columns), session naming, payment adapter design (incl. the sender-name entitlement extension), capacity guard, the scheduler/queue design, the password-reset flow, the sender-name + add-on flow (and the admin override), message templates + `?template=` prefill, the read-only usage-analytics layer (CSP-safe SVG charts), the test-suite layout, and the core request/data flows.
OPERATIONS.md	Runbook: service control, logs, database access, migrations (incl. `011_message_templates.sql`), backup/restore, health checks, TLS renewal, adding payment adapters, admin settings, scheduled-queue operations, sender-name add-on approval/verification/comps and the admin override procedure, message-template troubleshooting, analytics sanity checks, SMTP/email + password-reset procedures, the test suite, host hardening, and common failure fixes.
API.md	Customer REST API v1 reference: authentication, endpoints (immediate, scheduled, bulk, usage analytics, queue/batch management), request/response examples, phone normalization, limits, error codes, webhooks, and a Node.js integration snippet. Message templates are dashboard-only — API v1 is unchanged.
BUSINESS.md	Pricing model (message credits, the dedicated sender-name add-on and the integration service), manual payment workflow, integration service orders, admin-editable payment instructions, and refund/suspension policy notes.
SECURITY.md	Security posture, controls (incl. password-reset, session/cache hardening, the sender-name add-on entitlement gate, the admin sender-name override and the message-template controls), clearly stated known risks, and the incident response checklist.
CHANGELOG.md	Phase-by-phase build history (Phase 1–15 + follow-ups through 2026-09-18) with dates and key files.
PDF set	./pdf/ — client-facing PDF exports (combined + per-chapter) of this documentation set, built from the markdown sources by ./pdf-src/build.sh (pandoc + weasyprint). Served at /docs/pdf/.

Quick facts

Item	Value
Production domain	`https://znotice.consultbofa.com`
Application root	`/var/www/znotice.consultbofa.com`

Item	Value
Runtime	Node.js >= 22, Express 4, EJS, MariaDB-backed sessions
App bind address	`127.0.0.1:5071` (behind NGINX)
WhatsApp engine	WPPConnect Server v2.10.10, container `wppconnect`, `127.0.0.1:21465`
systemd unit	`znotice.service` (user `www-data`)
Database	MariaDB, database `znotice`
Messaging	Immediate, scheduled (up to 90 days ahead) and bulk (up to 1,000 recipients/job)
Pricing	0.01*permessagecredit*(10 = 1,000); $10.00 / 30-day dedicated sender-name add-on (manual renewal); $20 one-time integration service; credit top-ups payable instantly via MTN MoMo / Airtel Money (IntouchPay, RWF at operator rate)
IntouchPay	Live mobile-money gateway (Rwanda MTN MoMo / Airtel Money) for instant credit top-ups. RWF converted at the admin-editable `intouch_rwf_rate` (default 1477.29). Auto-confirmed by cross-check: unsigned webhook `POST /payments/intouch/webhook` + 5-minute sweep. Keys in `.env` (`INTOUCH_*`)
KitovuPay	Live mobile-money gateway (Rwanda MTN MoMo) for instant credit top-ups. RWF converted at the admin-editable `kitovu_rwf_rate` (default 1477.29). Auto-confirmed by cross-check: unsigned webhook `POST /payments/kitovu/webhook` + 5-minute sweep. HMAC-signed collection requests (`x-api-signature`). Keys in `.env` (`KITOVUPAY_*`)
Sender name	Customers: Dashboard → WhatsApp, gated by the paid add-on (`users.sender_name_until`). Admins: override any tenant from **Admin → Sessions** (support tooling; requires a connected session but **not** the add-on). Dashboard-only — **no API v1 changes**. Attachments/media are not gated
Message templates	Dashboard → Templates (create/edit/delete); prefill WhatsApp & scheduled forms via `?template=<id>`. Per-user cap `templates_max_per_user` (default 200, admin-editable). Dashboard-only — **no API v1 changes**
Account recovery	Self-service password reset via email; 30-minute single-use tokens (`password_resets`)
Email (SMTP)	nodemailer; configured via `SMTP_*` in `.env`. **Configured** in production (Hostinger `smtp.hostinger.com:465`, implicit TLS) — password-reset and password-changed emails are delivered (see OPERATIONS.md §12).
Register share link	Scan-to-register QR: short link `/join` (302 → `/register`), share page `/join/qr`, images `/join/qr.png` + `/join/qr.svg`; public, same-origin
PDF docs	/docs/pdf/*.pdf — client download set (combined + per-chapter), rebuilt from docs/ sources via docs/pdf-src/build.sh (see OPERATIONS-style note below)
Tests	`npm test` (164 unit), `npm run test:integration` (174 DB-backed), `npm run test:all`; Node's built-in `node:test`
Operator config	`/var/www/znotice.consultbofa.com/.env` (see `.env`; never committed)

> **Note on secrets:** this documentation deliberately contains **no** credentials. Database passwords, `SESSION_SECRET`, `WEBHOOK_SECRET`, `WPPCONNECT_SECRET_KEY`, API keys and admin passwords live only in the application `.env` or the database, and are referred to as "see `.env`" / "admin settings".