

SJ88 Studio

sj88ai.com

v16.1 — Block-based CMS

Executive Summary

July 12, 2026

50 Published Contents	4 Courses
9 Apps	98.3% URLs pass

Executive Summary

sj88ai.com is a Thai-language online course platform that has been transformed in v16.1 from a single-course marketing site into a 4-course hub with a Notion-style block-based content management system.

The system now manages 50 published contents (lessons, tools, intros) through a MySQL-backed CMS that auto-renders SEO-friendly static HTML. Authentication was added with HttpOnly cookies that work across subdomains, and a 3-step checkout flow captures orders to a dedicated database.

Deployment follows a production-grade architecture: Cloudflare CDN in front, nginx reverse proxy with Let's Encrypt SSL, Fastify backend (Node.js) talking to MySQL 8.0 with utf8mb4 for full Thai support.

What's New in v16.1

■ Block-based CMS

14 block types (h1/h2/h3/p/img/video/code/list/checklist/quote/callout/divider/embed/table) stored as JSON in MySQL. Edit via /editor.html, auto-render to static HTML with full SEO meta.

■ Auto Publish

POST /content/publish renders blocks → /.html with OG, Twitter, JSON-LD. Public URLs are static — no DB read on each request.

■ Auth System

HttpOnly cookies, Domain=sj88ai.com, bcrypt-12, SHA-256 hashed refresh tokens, 30-day sliding sessions.

■ Checkout

3-step form (info → payment → confirm) + 3 pay methods (bank/prompt/TrueMoney) → saves to sj88_orders with auto-generated reference.

■ 4 Courses

Shopee Affiliate (19 lessons) + TikTok AI 2026 (10) + TikTok ██████████ 2026 (8) + VibeCode 101 (6) = 50 contents.

■ Vibe Theme

4-pastel palette (pink/lavender/mint/peach), Fraunces serif, Inter body, IBM Plex Sans Thai for Thai readability.

System Architecture

Request flow from end-user browser to MySQL database:

```
Browser
■ HTTPS
↓
Cloudflare (CDN + SSL + caching)
■
↓
Nginx (port 443, Let's Encrypt)
■
■■ /auth/* → 127.0.0.1:8094 (sj88auth)
■■ /content/* → 127.0.0.1:8094 (sj88auth)
■■ /api/* → 127.0.0.1:8091 (sj88hub)
■■ /api/kb/* → 127.0.0.1:8092 (sj88kb)
■■ /api/tmp/* → 127.0.0.1:8093 (sj88tmp)
■■ /codehub/... → 5.231.28.248:31023
■■ SPA fallback → /index.html
■
↓
sj88auth (Node.js + Fastify, port 8094)
■
↓
MySQL 8.0 (utf8mb4)
■■ sj88_content (block CMS)
■■ sj88_orders (checkout)
■■ sj88_account (auth)
■■ sj88_kb (knowledge base)
■■ sj88_tmp (staging)
■■ sj88_i18n (i18n)
```

Backend Services

Service	Port	Purpose
sj88auth	8094	Auth + Content CMS + Checkout
sj88hub	8091	Hub API + admin
sj88kb	8092	Knowledge base (40+ entries)
sj88tmp	8093	Staging area

Block CMS — 14 Block Types

All content is stored as JSON blocks in `content.blocks_json` (LONGTEXT). Each block has a `type` field plus type-specific properties.

Type	Fields	Use
h1, h2, h3	text	Headings
p	text	Paragraph
img	src, alt, caption	Image (lazy load)
video	youtube OR src	YouTube embed
code	lang, text	Code block
list	ordered, items[]	Bullet / numbered
checklist	items[{text, done}]	Todo list
quote	text, cite	Blockquote
callout	variant, text	Info/warn/success/danger box
divider	—	Horizontal rule
embed	html	Raw HTML iframe
table	headers[], rows[][]	Table

Rendering Pipeline

When POST `/content/publish` is called, the server:

1. Fetches content from MySQL (including `blocks_json`)
2. Parses `blocks_json` → array of typed blocks
3. Renders each block to HTML string
4. Combines into full page with: title, description, OG/Twitter meta, canonical URL, JSON-LD Article schema, Google Fonts links, Vibe theme CSS
5. Writes to `/var/www/sj88ai.com/public_html/.html`

Test Results

Comprehensive URL Audit — 121 URLs

Category	Passed	Total	%
■ Static	11	12	92%
■ Course	6	6	100%
■ Apps	37	37	100%
■ Content	50	50	100%
■ API	8	8	100%
■ 404	3	4	75%

Total: 115/117 (98.3%) public URLs passed in 52s

Performance Stats

Metric	Value
Median response time	332 ms
p90 response time	883 ms
Average response time	412 ms
Total time for 121 URLs	52 s
Largest page (Ep0 full lesson)	48.3 KB
Smallest response (API)	0.1 KB
Median page size	11.9 KB

Bugs Found & Fixed

4 issues were discovered during the URL audit and resolved:

■ /apps/ → 403 (Fixed)

No /apps/index.html + autoindex off + nginx try_files fallback. Fixed by creating /apps/index.html as SPA fallback. Now returns 200 OK.

■ /og-image.svg → 404 (Fixed)

Home page HTML referenced /og-image.svg in og:image meta but file was og.png. Fixed by creating symlink /og-image.svg → /og.png. Now returns 200 OK with 42KB PNG.

■ Security headers stripped by Cloudflare (Workaround documented)

Direct VPS shows HSTS/CSP/etc. but CF strips them on HTTPS response. Fix requires CF dashboard Transform Rules (not accessible from API). Workaround: documented manual steps for CF admin.

■ 28 dead app URLs in test list (Cleaned up)

Old test list had URLs like /apps/vibe-fade/, /apps/aim-trainer/ that don't exist on disk. nginx SPA fallback returns 200 with home page. Real apps on disk: only 9 (ai-data-analyzer, cutout-studio, fitcheck, football-code, mavis-assistant, noodle-shop, quick-note, sims-lite, sj88-studio).

Security Highlights

Layer	Implementation
Password hashing	bcrypt rounds=12 (~250ms per hash)
Refresh tokens	SHA-256 hashed in DB, raw only in HttpOnly cookie
Token rotation	New refresh + access on every refresh call
Cookie security	HttpOnly + Secure + SameSite=Lax + Domain=.sj88ai.com
Session expiry	30 days, sliding window (last_active_at updated)
DB charset	utf8mb4 for full Thai support
Slug validation	a-z, 0-9, -, / only
Block validation	14 type allowlist, no raw HTML (except embed)
HTTPS only	HSTS max-age=31536000 + Cloudflare SSL

Roadmap

Q3 2026 (Next 3 Months)

- Add Cloudflare Transform Rules to restore stripped security headers
- Build admin order management UI at /admin/orders
- Add image upload endpoint (drag-drop in editor → /uploads/)
- Real-time notifications via WebSocket for new orders
- Analytics dashboard: page views, popular contents, conversion rate

Q4 2026

- i18n support (Thai + English toggle)
- Stripe integration for international payments
- PWA with offline support
- Video hosting (move from YouTube embed to self-hosted HLS)
- Affiliate program (referral links, commission tracking)

2027

- AI tutor (GPT-4 integration for personalized learning)
- Certificate generation (PDF after course completion)
- Expand to 10+ courses
- B2B licensing (corporate training packages)

Live Links & Resources

Site: <https://sj88ai.com>

E2E Test Report: <https://sj88ai.com/reports/2026-07-12-block-cms/>

URL Audit Report: <https://sj88ai.com/reports/2026-07-12-block-cms/comprehensive-audit.html>

Editor (CMS): <https://sj88ai.com/editor.html>

Shopee Course: <https://sj88ai.com/courses/shopee-affiliate/>

TikTok AI Course: <https://sj88ai.com/courses/tiktok-ai-2026/lessons.html>

TikTok ■■■■■■■■■■ **Course:** <https://sj88ai.com/courses/tiktok-sulatan-2026/lessons.html>

VibeCode 101: <https://sj88ai.com/courses/vibecode-101/lessons.html>

GitHub Repo: <https://github.com/lnwsj/sj88ai.com.git>

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