

Zero-Egress WASM Architecture & APP 8 Shield

How Redactorr enables safe enterprise LLM adoption without sending sensitive data across network perimeters.

01. CORE ARCHITECTURAL PARADIGM

LOCAL EXECUTION

100% In-Memory WASM Processing Documents, PDFs, and spreadsheets are ingested into isolated client RAM. The 15-Layer AEGIS detection engine evaluates patterns locally without sending a single byte over HTTP/WebSocket.	Zero Vendor Key Escrow & Custody The client generates and holds all mapping keys locally. Redactorr servers cannot decrypt, unmask, or view customer entity maps. US CLOUD Act subpoena immunity guaranteed.
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02. 15-LAYER AEGIS ENGINE CONTROLS

DETECTION STACK

LAYER	ENGINE SUBSYSTEM	TARGET ENTITIES & STANDARDS	EXECUTION BOUNDARY
01–05	Deterministic Core	TFNs (Mod-11), Medicare Numbers, BSB/Accounts, Passports, Phone Numbers.	Local WebAssembly Engine (<10ms)
06–09	Industry Rule Packs	Legal citations, Clinical ICD-10, Financial balance lines, HR personnel files.	Client-Side Rule Matrices
10–13	Spatial & Layout Engine	Preserves table structures, Markdown hierarchies, and visual reading flow.	Client Document Model (DOM)
14–15	Audit & Verification	SHA-256 proof generation, HMAC verification, and tamper-proof ledger logging.	Immutable Local Vault

03. COMPLIANCE MATRIX

STATUTORY ATTESTATION

FRAMEWORK	STATUTORY SCOPE	REDACTORR ARCHITECTURAL COMPLIANCE
Privacy Act 1988 (Cth)	APP 11 (Security of personal info) & APP 8 (Cross-border data transfers).	Eliminates exfiltration risk by sanitising entities before data leaves Australia.
HIPAA / HITECH	PHI de-identification (Safe Harbor & Expert Determination standard).	All 18 HIPAA statutory identifiers scrubbed automatically in local memory.
SOC 2 Type II Ready	Confidentiality, Processing Integrity, and Security trust criteria.	Zero central data persistence minimizes scope of third-party audit surface.

04. DEPLOYMENT TOPOLOGIES

ENTERPRISE OPTIONS

Commercial Web Application Zero installation; runs instantly in Chrome/Edge/Safari with client-side isolation.	Air-Gapped Private VPC / On-Prem Docker/Kubernetes image running inside enterprise private cloud with KMS integration.
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