DWeb Server: Anonymous Publishing for the Decentralized Web

The Problem: Internet Archive under attack (40+ lawsuits, Oct 2024 hack), rising censorship, no safe way for whistleblowers to publish anonymously.

The Solution: Five 2016 DWeb Summit technologies (OIP, IPFS, WebTorrent, GUN, DIDs) + Tor + WordPress + AI + decentralized DNS. Zero central points of failure.

Key Features

Anonymity: Tor + no registration (self-hosted) or username-only (gateway) • Air-gapped signing
Deploy: Pi image or Docker • 10 min • $35-200 hardware, $0/month
Author: WordPress + local signing + export packages
Moderation: Gateway-scoped, no global censorship
AI: Local Alfred (no cloud) + voice interface
Names: ENS (fast) or GNS (private) • No ICANN
Persistent: Survives gateway/publisher failures • Multi-gateway + P2P + blockchain

Flow: Author → Sign (DID) → Submit (Tor) → Index → P2P → Blockchain → Discover → Verify

Deploy Options: (1) Self-hosted Pi ($35-200, zero registration) or (2) Gateway registration (username only, $0, multi-device). Identity portable between models.

Status & Timeline

Built (OIP 0.8): Docker, BitTorrent/IPFS, Alfred AI, Elasticsearch, GUN, moderation, HD wallets.

18 Weeks to 1.0: DID system (3w) → WordPress+Tor (5w) → ENS/GNS (5w) → Pi image+Archive.org (5w)

Track Record: 2016 DWeb Summit, Tim Berners-Lee endorsement • Caltech, Wyoming,

Imogen Heap pilots • DIDs = W3C standard (2022) • Brewster Kahle vision: *"Censorship resistant WebServer. Easy and fun, no monthly fee."*

Tech: DIDs = Dewey Decimal for dweb (universal identifiers across all gateways) • Index storage blockchain-agnostic (Arweave, Bitcoin, Ethereum, any chain) • W3C standards, not blockchain hype

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Comparison: What Exists vs. What We're Building

Feature	DWeb Server	Medium/Substack	SecureDrop	ZeroNet
Anonymity	Tor built-in	Email required	Tor (complex)	Tor optional
Authoring	WordPress	Web editor	N/A	HTML editing
Persistence	Blockchain + P2P	Centralized	Temporary	DHT only
Setup	10 minutes	Instant	Days (IT staff)	Complex
Cost	$0/month	$0-50/month	$500+ setup	$0/month
Moderation	Gateway-scoped	Platform-wide	N/A	None
Discovery	Full-text search	Platform	N/A	Hard
Status	Production	Active	Active	Inactive

Use Cases & Why It Works

Journalist: WordPress+Tor publishing survives SLAPP suits • **Whistleblower:** Air-gapped signing→courier→submission = complete anonymity • **Researcher:** Cryptographic provenance prevents suppression

Success Factors: WordPress (familiar) + Tor (built-in) + Pi (one-click) + $0/month + Gateway moderation (safe harbors) + 9 years proven + W3C standards

Risks Mitigated: Timing attacks (batched) • Liability (gateway moderation) • Exhaustion (caps/limits) • Spam (denylists) • Key loss (backup) • Blockchain failure (portable) • Tor blocking (air-gap) • Adoption (WordPress integration)

The Vision & Call to Action

Whistleblowers, journalists, researchers, activists publish without fear. Information persists beyond any entity's control. **80% built. 4.5 months to 1.0.**

Join: Stakeholders (partnerships: Internet Archive, FPF, EFF) • Developers (github.com/DevonJames/oip-arweave-indexer) • Operators ($35 Pi, control moderation, support free speech)

Contact: amy@alexandria.io • based on v2.5 of PRD • Nov 2025 • 18 weeks to 1.0

High-Level System Architecture Diagram

PUBLISHER LAYER

WordPress (Authoring)	Tor Onion Service	Gateway (Publish & Ingest)
Air-Gapped Signing	Export .lopkg (Offline)	Status API

PERSISTENCE LAYER

Arweave (or BTC, ETH, etc) (public records)	Open Index Protocol (composable schema for records)	GUN (private records)

Note: DID spec means metadata can live anywhere

DISTRIBUTION LAYER

BitTorrent (WebTorrent)	IPFS (& Filecoin)	HTTP (Fallback)

Peer-to-peer distribution reduces reliance on publishers

DISCOVERY LAYER

Elasticsearch (Index)	Gateway Node A (Moderated)	Gateway Node B (Moderated)

Each gateway independently indexes and serves records

NAME RESOLUTION LAYER

ENS (Ethereum Name Service)	GNS (GNUnet Name System)	Resolver Helper Service (127.0.0.1)

Human-readable names resolve to gateway endpoints: Fast mode (ENS) or Private mode (GNS)

CONSUMER LAYER

Web UI (Browser)	Desktop Apps	Mobile Apps

Readers discover and verify content across gateways