

Index

Zaxon Discussions are RFC/RFD-style design records for the paxos-zig monorepo: the Multi-Paxos library and the Zaxonlite embedded replicated SQLite package. Each ZDS is a standalone Typst source file with metadata, lifecycle state, area, and summary data surfaced in this index.

Placeholder drafts use the number XXXXX until maintainers assign the next permanent four-digit ZDS number.

ZDS 0001: The Zaxon Discussion Process

published

documentation

Defines the ZDS lifecycle, numbering workflow, Typst project layout, registry, and bundle export for the paxos-zig monorepo.

STATUS	Published	CREATED	2026-07-21
CATEGORY	Process Memo	UPDATED	2026-07-21

Source: docs/zds/records/0001-zds-process.typ

ZDS 0002: Zaxonlite: Product and Delivery Plan

published

architecture

Specifies the embeddable Zaxonlite library and zaxon CLI: in-process SQLite replicated by paxos.ReplicatedLog, WAL/page-change replication in slot order, the journal-authoritative durability model, cluster roles (voters, witnesses, standbys, read replicas, gateways), the Paxos safety argument, rqlite/dqlite incorporation reviews, mandatory integration tests, verification gates, and the milestone delivery plan.

STATUS	Published	CREATED	2026-07-19
CATEGORY	Architectural Specification	UPDATED	2026-07-21

Source: docs/zds/records/0002-zaxonlite-product-plan.typ

ZDS 0003: Zaxonlite Security and Trust Plan

committed

security

Documents the application-as-principal trust model, the supported deployment boundaries (embedded, Unix-domain socket, mTLS cluster), the revised risk register, the pre-remediation findings with their remediations, single-use token enrollment with locally generated CSRs, the encryption-at-rest deployment profile, the SQLite-style assurance strategy, the required security matrix, and release acceptance criteria.

STATUS	Remediated	CREATED	2026-07-21
CATEGORY	Security Assessment	UPDATED	2026-07-21

Source: docs/zds/records/0003-zaxonlite-security-remediation-plan.typ

ZDS 0004: Zaxonlite Format and Compatibility Contract

committed

architecture

Freezes the first-release formats and is normative for upgrade checks: network protocol v6 framing with PSK/mTLS profiles and enrollment records, the transaction descriptor and ZXPL payload format, the epoch journal, identity/snapshot/current-pointer formats, release limits, and the operator upgrade and disaster-recovery procedures.

STATUS	Normative	CREATED	2026-07-20
CATEGORY	Format Contract	UPDATED	2026-07-21

Source: docs/zds/records/0004-zaxonlite-format.typ

ZDS 0005: A Rich Interactive Shell for the zaxon CLI

discussion

Plans the rich zaxon interactive shell on the libvaxis terminal library: grapheme-aware cursor line editing, ctrl+r incremental history search, comptime-driven dot-command dispatch and SQL keyword highlighting, width-aware colored tables with expanded and paged views, first-class Windows support, and the extraction of all CLI presentation code out of main.zig.

cli

STATUS	Open for Discussion	CREATED	2026-07-21
CATEGORY	Engineering Discussion	UPDATED	2026-07-21

Source: docs/zds/records/0005-zaxon-interactive-shell.typ

ZDS 0006: Windows Durability and the Supported Platform Floor

published

States how an authoritative pathname transition is made durable on Windows, where no directory sync exists: NTFS records the change in a volume-wide write-ahead log that a file flush commits, so the barrier follows the rename instead of preceding it. Sets the supported floor at Windows 10 1809 on NTFS, enforced by a startup probe that replaces an open file rather than by a version check, amends the ZDS 0004 platform matrix, and records the log-ordering inference and the absent Windows test suite as the open limits.

zaxonlite

STATUS	Normative	CREATED	2026-07-25
CATEGORY	Format Contract	UPDATED	2026-07-25

Source: docs/zds/records/0006-windows-durability.typ

ZDS 0007: paxos-zig 0.1.x Safety Hardening

committed

A focused patch release that enforces the durability boundary in every build mode

paxos

STATUS	Implemented for 0.1.2	CREATED	2026-07-27
CATEGORY	Engineering Discussion	UPDATED	2026-07-28

Source: docs/zds/records/0007-paxos-zig-0-1-hardening.typ

ZDS 0008: zaxonlite Dynamic Voter Replacement

committed

A bounded membership change for replacing one data voter without rebuilding the database

zaxonlite

STATUS	Implemented for 0.1.2	CREATED	2026-07-27
CATEGORY	Engineering Discussion	UPDATED	2026-07-28

Source: docs/zds/records/0008-zaxonlite-voter-replacement.typ

ZDS 0009: Multimodal Search in zaxonlite

committed

Defines replicated FTS5 and sqlite-vec search, SQLite-managed mmap with chunked binary scans and Zig SIMD reranking, and allocation-free RRF and DBSF functions.

zaxonlite

STATUS	Implemented	CREATED	2026-07-28
CATEGORY	Engineering Discussion	UPDATED	2026-07-29

Source: docs/zds/records/0009-zaxonlite-multimodal-search.typ

ZDS 0010: zxlite: A Native Python SDK for zaxonlite

committed

Defines the native zxlite DB-API and SQLAlchemy package, Python-hosted Unix or loopback-test backends, redundant multi-seed cluster connections, exactly-once remote writes, and consistency-aware multi-threaded reads.

zaxonlite

STATUS	Implemented for 0.2.0	CREATED	2026-07-29
CATEGORY	Engineering Discussion	UPDATED	2026-07-30

Source: docs/zds/records/0010-zaxonlite-python-sdk.typ

ZDS 0011: Global Slots and Certified Log Trimming

committed

Remove the 2,044-commit rollover by separating Paxos progress, log retention, and SQLite state transfer

consensus

STATUS	Implemented for paxos-zig 0.6.0 and zaxonlite 0.6.0	CREATED	2026-08-26
CATEGORY	Engineering Discussion	UPDATED	2026-08-27

Source: docs/zds/records/0011-global-slots-certified-log-trimming.typ