

## NowVibin Logging & Audit SOP (Authoritative)

### Purpose

Consistent, auditable logging across all services. Fire-and-forget. Filesystem is a cache, not the final sink.

### Channels

- LogSvc – Log microservice (DB sink)
- FS – Append-only NDJSON cache (fallback only)
- Pino – Structured stdout (runtime telemetry)
- Notify – Stubbed notification (prod only, after grace period)

### Environment Variables (names only)

- NODE\_ENV = development | test | production
- LOG\_LEVEL (pino required)
- LOG\_SERVICE\_URL, LOG\_SERVICE\_TOKEN\_CURRENT
- LOG\_FS\_DIR (required)
- LOG\_PING\_INTERVAL\_MS (e.g., 15000)
- LOG\_BREAKER\_COOLDOWN\_MS (e.g., 30000)
- LOG\_FLUSH\_BATCH\_SIZE (e.g., 50)
- LOG\_FLUSH\_CONCURRENCY (e.g., 4)
- LOG\_CACHE\_MAX\_MB (e.g., 256)
- LOG\_CACHE\_MAX\_DAYS (e.g., 7)
- LOG\_ENABLE\_INFO\_DEBUG ("true" enables Pino info/debug in prod)
- NOTIFY\_STUB\_ENABLED ("true" enables stub in prod)
- NOTIFY\_GRACE\_MS (how long LogSvc must remain down before stub fires, e.g., 300000)

### Routing Matrix

Case | dev / test | production

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AUDIT | LogSvc; on failure → FS + Pino | LogSvc; on failure → FS, and Notify(stub) only if down ≥ NOTIFY\_GRACE\_MS

ERROR | LogSvc + Pino; on failure → FS + Pino | LogSvc only; on failure → FS, and Notify(stub) only if down ≥ NOTIFY\_GRACE\_MS

INFO/DEBUG | Pino | Discard (bit bucket) unless LOG\_ENABLE\_INFO\_DEBUG=true → Pino

All emissions are non-blocking. No retries that stall requests.

### FS Cache (fallback) Rules

- Format: NDJSON (one JSON object per line). Fields include: v, channel, eventId, timeCreated, service, level, payload, sourceFile, sourceLine, sourceFunction, requestId, userId, retry.
- Filenames:
  - audit-YYYY-MM-DD.log
  - error-YYYY-MM-DD.log
- Rotation/limits: total size ≤ LOG\_CACHE\_MAX\_MB, age ≤ LOG\_CACHE\_MAX\_DAYS. On exceed, drop oldest files first and bump a drop counter.
- Flush: when LogSvc deep-ping succeeds, read .replay files streamingly, re-emit to LogSvc in bounded batches; keep only failed lines; delete empty .replay. Never block request path.
- Circuit breaker: when LogSvc call fails, open breaker; deep-ping no more often than LOG\_PING\_INTERVAL\_MS. On success, close breaker and trigger flush.

#### Notification Stub (prod only)

- Only enabled if NOTIFY\_STUB\_ENABLED=true.
- Fires only if LogSvc has remained down continuously for at least NOTIFY\_GRACE\_MS.
- Emit a single WARN per outage window ("NOTIFY\_STUB: audit fallback" / "error fallback"), then back off until the breaker closes or the grace window lapses again. No external calls yet.

#### Event Shapes

- Audit: { type, entity, entityId, message?, data?, requestId?, userId?, service, sourceFile, sourceLine, sourceFunction, timeCreated }
- Error: { code?, message, err?, requestId?, service, sourceFile, sourceLine, sourceFunction, path?, method?, status? }
- Telemetry: { level, message, meta?, requestId?, service }

All include service; Audit/Error include caller metadata from logMeta.

#### How To Use (do this, not that)

##### Controllers & Business Events

- Do push business actions to req.audit[] during the request.
- Do rely on the shared audit middleware to flush via auditSink.emit(req.audit).
- Don't call the Log Service directly from controllers.

##### Errors

- Do let the global error middleware emit via errorSink.emit(...).
- Do not sprinkle logger.error in handlers unless you also propagate an error response (avoid duplicates).

##### Telemetry

- Do use telemetry/info/debug sparingly; it goes to Pino (or is discarded in prod).
- Don't log secrets; redaction is on, but don't tempt fate.

##### Process Level

- Do trap unhandledRejection / uncaughtException once in index.ts, and emit via error sink (not raw logger). Exit process after logging if appropriate.

##### NEVER

- Bypass the shared logger utilities.
- Write arbitrary files under LOG\_FS\_DIR.
- Emit more than once for the same error event.
- Add "temporary" console logs in production code.

##### Acceptance Tests (per service)

- LogSvc healthy: audit/error reach LogSvc; no FS growth.
- LogSvc down: audit/error write to FS; in dev/test also see Pino; after deep-ping success, FS flushes and shrinks.
- Prod: error not printed to Pino; info/debug discarded unless flag enabled.
- Notification stub: in prod, only after NOTIFY\_GRACE\_MS continuous outage; one WARN per outage window.

##### Operational Guardrails

- Ensure LOG\_FS\_DIR exists and is writable at boot; fail fast if missing.
- Monitor disk usage; alert at ≥80%.
- Surface a metric/counter for: breaker open time, FS append count, flush success/fail, dropped lines.