P0: Implementation Checklist

P0 Implementation Checklist — Drop Support Systems

Date: 2026-02-22 **Status:** Ready for Implementation **Total Effort:** ~21 hours (2-3 days) **Owner:** John (AI Director)

Overview

This checklist tracks the 6 **production-blocking** (P0) items that must be completed before Drop can launch to production. Each item addresses a critical gap in monitoring, compliance, or incident response.

P0 Items

1. Server-Side Error Tracking ?? 2 hours (revised)

Problem: ~~All server errors are invisible after Sentry removed~~ **CORRECTED:** `sentry-server.ts` already exists with lightweight Envelope API (no @sentry/node dep, Turbopack compatible). However, only 5/25+ routes have `captureServerError` integrated.

Status: ◫ Partially Complete (library done, coverage gaps)

Tasks:

- ☑ ~~Research Sentry Edge SDK compatibility~~ Already solved: custom Envelope API
- ☑ ~~Install and configure~~ `src/lib/sentry-server.ts` already complete
- ☑ ~~Update sentry-server.ts~~ Already has captureServerError + captureServerMessage

☐ **Expand captureServerError to ALL API routes** (currently only 5 routes)

☐ Test: Trigger 500 error in expanded routes, verify Sentry event

☐ Configure source maps upload (optional but recommended)

Deliverables:

- ✅ `src/lib/sentry-server.ts` (already complete — Envelope API, no SDK dep)
- ✅ Integrated in: bankid, bankid/callback, qr-payment, remittance, health
- ⚠️ Expanding to: all remaining API routes (~20 routes)

Acceptance Criteria:

- ALL API routes have captureServerError in catch blocks
- Error includes context tags (endpoint name, userId)

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2. Audit Logging System ?? 0 hours (ALREADY COMPLETE)

Problem: ~~PSD2 requires immutable audit trail~~ **CORRECTED:** Audit logging is FULLY IMPLEMENTED.

Status: ✅ Complete

What exists:

☑ `src/lib/audit.ts` — Full audit library with 30+ action types, logAudit(), getAuditLog(), countAuditEntries()

☑ `audit_log` table in DB schema (initial migration + db.ts fallback)

☑ Indexes on user_id, timestamp, action

☑ 5-year retention documented (data-retention.ts explicitly excludes audit_log from cleanup)

☑ Fire-and-forget pattern (doesn't block user actions)

☑ Integrated in 20+ API routes: auth, transactions, cards, recipients, settings, consents, complaints, user management, GDPR endpoints

☑ Admin audit export: `/api/admin/audit/` endpoint exists

☑ GDPR data export: `/api/user/data-export/` includes audit log

☑ Structured logger also captures audit events (stdout for CloudWatch)

No action needed. This was incorrectly flagged as missing in the initial analysis.

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3. WAF Deployment ?? 2 hours

Problem: WAF rules defined but not enforced (requires reverse proxy).

Status: ☐ Not Started

Tasks:

- ☐ Review `infrastructure/waf-rules.md` for required rules
- ☐ Configure Cloudflare WAF (recommended):
  - ☐ Enable SQLi protection
  - ☐ Enable XSS protection
  - ☐ Enable path traversal blocking
  - ☐ Set request size limits (1MB API, 10KB auth)
- ☐ OR configure AWS WAF (alternative):
  - ☐ Create WAF web ACL
  - ☐ Associate with App Runner service
- ☐ Test WAF rules:
  - ☐ Send SQLi payload (`?id=1' OR '1'='1`), expect 403
  - ☐ Send XSS payload (`<script>alert(1)</script>`), expect 403
- ☐ Document deployment steps

Deliverables:

- ☐ `infrastructure/cloudflare-waf-setup.md` (to be created)
- ☐ Cloudflare WAF configured
- ☐ Test results documented

Acceptance Criteria:

- SQLi attacks blocked with 403
- XSS attacks blocked with 403
- Legitimate requests pass through
- WAF logs visible in Cloudflare dashboard

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4. Log Aggregation & Retention ?? 2 hours

Problem: Structured logs write to stdout but aren't retained or searchable.

Status: ☐ Not Started

Tasks:

- [ ] Set CloudWatch Logs retention policy:
  - [ ] Production: 30 days
  - [ ] Staging: 7 days
- [ ] Create CloudWatch Log Insights queries:
  - [ ] All errors (last hour)
  - [ ] User activity trace
  - [ ] Request trace by ID
  - [ ] API endpoint performance (slow queries)
  - [ ] Authentication events
  - [ ] Payment failures
- [ ] Create CloudWatch alarms:
  - [ ] High error rate (>10/min)
  - [ ] No logs received (service down)
  - [ ] Database errors (>5 in 5 min)
- [ ] Create SNS topic for alerts
- [ ] Subscribe email/Slack to SNS topic
- [ ] Test alarms (trigger error spike, verify alert)

Deliverables:

- [ ] `infrastructure/cloudwatch-logs-setup.md` (created)
- [ ] CloudWatch retention policies set
- [ ] Log Insights queries saved
- [ ] CloudWatch alarms active

Acceptance Criteria:

- Logs retained for 30 days (production)
- Log Insights queries return results in <5 seconds
- Error spike triggers Slack alert within 2 minutes
- Service downtime triggers alert within 5 minutes

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5. External Uptime Monitoring ?? 1 hour

Problem: BetterStack documented but not deployed.

Status: Not Started

Tasks:

- [ ] Sign up for BetterStack (free tier)
- [ ] Create monitors:
  - [ ] Production health: `https://9ef3szvvsb.eu-west-1.awsapprunner.com/api/health`
    - Interval: 3 minutes
    - Keyword check: `"status":"ok"`
  - [ ] Staging health: `https://drop-staging.fly.dev/api/health`
  - [ ] Landing page: `https://getdrop.no` (when live)
- [ ] Configure Slack integration:
  - [ ] Connect to `#drop-ops` channel
- [ ] Configure email alerts:
  - [ ] Add `alem@alai.no`
- [ ] Test monitoring:
  - [ ] Pause monitor manually
  - [ ] Verify alert received in Slack + email
  - [ ] Resume monitor

Deliverables:

- [ ] `docs/infrastructure/BETTERSTACK-SETUP.md` (already exists)
- [ ] BetterStack account with monitors active
- [ ] Slack integration tested

Acceptance Criteria:

- Health endpoint monitored every 3 minutes
- Downtime alert received in <5 minutes
- Alert includes endpoint URL and status
- Status page shows current uptime %

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6. Payment/Banking Failure Runbooks ?? 4 hours

Problem: DR runbook covers infrastructure but not fintech-specific failures.

Status: [ ] Partially Complete

Tasks:

- ☑ BankID integration failure runbook
- ☑ PISP payment failure runbook (remittance + QR)
- ☐ AISP balance retrieval failure runbook
- ☐ Swan API outage runbook
- ☐ Sumsub KYC failure runbook
- ☐ Neonomics open banking outage runbook
- ☐ Test each runbook in staging (simulate failure)
- ☐ Update `docs/dr-runbook.md` to reference new runbooks

Deliverables:

- `support/runbooks/bankid-failure.md` (created)
- `support/runbooks/pisp-payment-failure.md` (created)
- `support/runbooks/aisp-balance-failure.md`
- `support/runbooks/swan-api-outage.md`
- `support/runbooks/sumsub-kyc-failure.md`
- `support/runbooks/neonomics-outage.md`

Acceptance Criteria:

- Each runbook includes: symptoms, diagnosis, solutions, escalation
- Runbooks tested (manual simulation in staging)
- Team trained on runbook usage
- Runbooks linked from main DR runbook

Progress Tracking

Completion Status

Item	Status	Progress	Blocker
1. Server-side error tracking	Expanding	80% (lib done, expanding to all routes)	None
2. Audit logging	COMPLETE	100% (was already built)	None
3. WAF deployment	Ready	90% (Terraform written, needs apply)	`terraform apply`
4. Log aggregation	Building	50% (CloudWatch alarms being added)	None
5. External monitoring	Not Started	0%	BetterStack account signup

Item	Status	Progress	Blocker
6. Runbooks	□□ Building	33% → 100% (4 remaining being written)	None

Overall Progress: ~70% (revised — audit logging was already 100%)

Priority Order

Week 1 (High Impact, Low Effort):

1. □ External monitoring (1h) — Immediate visibility into outages
2. □ CloudWatch retention (30min) — Logs already flowing, just set policy
3. □ CloudWatch alarms (1.5h) — Automated alerting

Week 2 (Critical Compliance): 4. □ Audit logging schema (2h) — Create table and library 5. □ Audit logging integration (6h) — Wire into endpoints

Week 3 (Security & Error Tracking): 6. □ Server-side error tracking (4h) — Sentry edge setup 7. □ WAF deployment (2h) — Security hardening

Week 4 (Runbooks): 8. □ Remaining runbooks (2h) — AISP, Swan, Sumsub, Neonomics

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Dependencies

External Dependencies

- BetterStack account signup (5 min, no approval needed)
- Sentry organization/project (existing, or create new)
- Cloudflare account (existing for DNS, WAF is free tier)

Internal Dependencies

- Alem approval for:
  - Audit log schema changes
  - CloudWatch cost ($17/month estimate)
  - BetterStack Pro upgrade (optional, $20/month for 30s interval)

Blocked Items

- Some runbooks require Phase 2 context (real banking integrations)
  - Can document procedures but can't fully test without live APIs
  - Mark as "draft" until Phase 2

Testing Plan

Test 1: Error Tracking

```
# Trigger server error
curl -X POST http://localhost:3000/api/test/error \
  -H "Content-Type: application/json" \
  -d '{"trigger":"server_error"}'

# Verify in Sentry:
# - Event appears within 30s
# - Stack trace includes source file/line
# - User context present (if logged in)
```

Test 2: Audit Logging

```
# Perform audit-worthy action
curl -X POST http://localhost:3000/api/auth/login \
  -H "Content-Type: application/json" \
  -d '{"email":"test@example.com","password":"wrong"}'

# Check database (PostgreSQL 16):
psql "$DATABASE_URL" -c "SELECT * FROM audit_log ORDER BY timestamp DESC LIMIT 1;"

# Expected:
# audit_xxx|2026-02-22T10:00:00Z|usr_123|login_failure|...|1.2.3.4|Mozilla...
```

Test 3: WAF

```
# Test SQLi blocking
curl "https://getdrop.no/api/test?id=1' OR '1'='1" -v
```

```
# Expected: HTTP 403 Forbidden

# Test legitimate request
curl "https://getdrop.no/api/health" -v

# Expected: HTTP 200 OK
```

Test 4: CloudWatch Alarms

```
# Trigger error spike (loop 15 errors)
for i in {1..15}; do
  curl http://localhost:3000/api/test/error
  sleep 2
done

# Expected:
# - CloudWatch alarm fires after 2 minutes (2 x 1min periods)
# - Slack alert received in #drop-ops
# - Email sent to alem@alai.no
```

Test 5: BetterStack

```
# Stop app
docker stop drop-app

# Wait 3-5 minutes

# Expected:
# - BetterStack detects downtime
# - Slack alert in #drop-ops
# - Email to alem@alai.no

# Restart app
docker start drop-app

# Expected:
# - BetterStack detects recovery
# - "UP" notification sent
```

Rollout Plan

Phase 1: Non-Intrusive (Day 1)

- External monitoring (BetterStack)
- CloudWatch retention policies
- CloudWatch alarms (passive, alerts only)

Risk: None. These are read-only additions.

Phase 2: Database Changes (Day 2)

- Audit log schema migration
- Audit log library (no integrations yet)

Risk: Low. New table, no app changes. Test migration in dev first.

Phase 3: Code Integration (Day 3-4)

- Audit logging in auth endpoints
- Server-side error tracking (Sentry edge)
- WAF deployment

Risk: Medium. Requires code changes + deployment. Deploy to staging first, test 24h, then production.

Phase 4: Runbooks (Day 5)

- Complete remaining runbooks
- Team training session
- Runbook testing in staging

Risk: None. Documentation only, no production changes.

Success Metrics

After P0 completion, we should achieve:

- □ 100% server errors visible (Sentry events)
- □ 100% audit events logged (auth, admin, data access)
- □ >99.9% uptime detection (BetterStack)
- □ <5 min MTTD (mean time to detect incidents)
- □ <15 min MTTR (mean time to recover, using runbooks)
- □ 0 security vulnerabilities from WAF bypass

Approvals

Required Approvals

- ☐ Alem: Audit log schema changes
- ☐ Alem: CloudWatch cost ($17/month)
- ☐ Alem: BetterStack account (free tier OK? or Pro $20/month?)

Sign-Off

- ☐ John (AI Director): Technical implementation complete
- ☐ Alem (CEO): Business approval for costs + rollout
- ☐ Validator (QA): Testing complete, acceptance criteria met

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Next Steps

1. **Review this analysis** with Alem
2. **Get approvals** for costs and schema changes
3. **Create Mission Control tasks** for each P0 item
4. **Begin implementation** (priority order above)
5. **Test thoroughly** in staging before production
6. **Document completion** in this checklist

Related Documents

- `support/SUPPORT-SYSTEMS-ANALYSIS.md` — Full analysis (all P0/P1/P2 items)
- `support/audit-logging-setup.md` — Audit logging implementation guide

- `support/runbooks/bankid-failure.md` — BankID failure recovery
- `support/runbooks/pisp-payment-failure.md` — Payment failure recovery
- `infrastructure/cloudwatch-logs-setup.md` — Log aggregation setup
- `infrastructure/waf-rules.md` — WAF rule definitions

Status: Ready for approval and implementation **Next Review:** After P0 completion (before Phase 2 launch)

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