

PRD EKSEKUSI – TEAM FILE MANAGER (AI-READY)

Produk ini adalah file manager internal berbasis tim dengan Cloudflare R2 sebagai storage utama. Dokumen ini ditulis dengan tujuan utama: langsung bisa dieksekusi oleh AI agent atau engineer tanpa asumsi tambahan.

1. Constraint & Keputusan Final (Non-Negotiable)

- Direct link bersifat PERMANEN (tanpa expired)
- Semua file harus melalui QUEUE processing
- Cloudflare R2 sebagai storage
- Image wajib dikonversi ke WebP
- Login hardcoded hanya untuk development
- Tidak ada public sharing luar tim

2. Role & Auth

Role:

- Admin: akses semua tim & file
- Tim: hanya file tim sendiri

Login (DEV ONLY):

- admin / admin
- tim / tim

3. File State Machine

PENDING_UPLOAD

UPLOADED

PROCESSING

DONE

FAILED

4. Upload & Processing Flow (SYSTEM VIEW)

1. Client request presign URL
2. Client upload file ke R2 path temp/
3. Client call finalize API
4. Backend create DB record + enqueue job
5. Queue worker process file
6. Upload hasil ke final path
7. Update DB status DONE
8. Client refresh status & show link

5. Queue Job Definition

Job Payload:

- file_id

- team_id
- temp_path
- mime_type

Retry:

- max 3x
- exponential backoff

Failure:

- set status FAILED
- original file tetap tersimpan

6. File Processing Rules

IMAGE:

- Convert ke WebP
- Quality: 80
- Max width: 2560px

PDF:

- Optimize object
- Compress embedded images
- Fallback: original

ZIP/RAR:

- Best-effort recompress
- Skip jika tidak signifikan

LAINNYA:

- Upload langsung tanpa compress

7. Preview Rules

Image:

- Preview WebP langsung

PDF:

- Embedded PDF viewer

ZIP/RAR:

- Metadata only (name, size, created_at)

8. API Contract (Minimum Required)

```
POST /auth/login
POST /files/presign
POST /files/finalize
GET /files
GET /files/{id}
DELETE /files/{id}
```

9. Permission Matrix

Admin:

- upload, preview, delete, view all

Tim:

- upload, preview, delete own file

10. Edge Case Handling

- Compression gagal → fallback original
- Queue gagal → retry
- Duplicate upload → create new record
- Refresh page saat processing → polling status

11. Acceptance Criteria

Upload:

- Status DONE
- Link aktif
- Preview bisa dibuka

Queue:

- Retry jalan
- Tidak duplicate processing

12. Tech Stack Final

Frontend:

- Next.js + TypeScript
- Tailwind
- Framer Motion

Backend:

- Cloudflare Workers
- Cloudflare Queues

Processing:

- Node.js Worker
- Sharp
- Ghostscript

DB:

- PostgreSQL