

■ Profile Doctor — Product Requirements Document (2025 Edition)

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Executive Summary:

Profile Doctor is a cross-platform, intelligent automation suite that scans, detects, and repairs Chrome profile synchronization issues. It ensures data integrity, user privacy, and performance through modern backend, frontend, and diagnostic services.

1. Goals & Objectives

Goal	Description	Success Metric
Conflict-Free Sync	Auto-detect and fix Chrome sync issues	95% conflicts resolved automatically
Profile Integrity	Preserve data consistency across devices	99.9% data integrity
User Experience	Simple UI for complex fixes	NPS > 70
Security	Encrypted, offline-safe data handling	AES-256 compliance
Maintainability	Modular, CI-tested design	85% code coverage

2. System Architecture

Profile Doctor follows a layered architecture integrating front-end interfaces, backend APIs, and core diagnostic services.

Core Layers:

- Frontend: React + Flask Dashboard
- Backend: FastAPI + Python Services
- Database: PostgreSQL, Redis for caching
- Scheduler: Celery + APScheduler
- Security: OAuth2 + AES-256 Encryption

3. Tech Stack

Category	Technology	Description
Backend Framework	FastAPI (Python 3.11+)	Asynchronous REST API
Frontend Framework	React 18 + TailwindCSS	Responsive dashboard UI
Database	PostgreSQL 15	Persistent relational storage
Cache/Queue	Redis 7	Task queue and caching
Scheduler	Celery + APScheduler	Automated background jobs
Security	Cryptography, JWT	Encryption & access control

4. Database Schema Overview

Entities include users, profiles, conflicts, repairs, and backups, with relationships maintained in PostgreSQL.

5. Functionalities Overview

Category	Example Features	Benefit
User-Friendly Design	Minimal dashboard, guided setup	Faster onboarding
Smart Automation	One-click repair, scheduling	Reduced manual effort
Transparency	Logs, conflict viewers	Builds user trust
Accessibility	Dark mode, localization	Inclusive experience
Security	Offline processing, AES encryption	Data protection
Performance	Lightweight scanning, real-time detection	Maintains browser speed
Cross-Integration	Chrome Extension, APIs	Platform adaptability

6. Functional Requirements

ID	Requirement	Priority
FR1	Scan Chrome profiles and detect corruptions	High
FR2	Validate JSON structure and sync status	High
FR3	Backup profile before repair	Critical
FR4	Auto-fix damaged files	High
FR5	Manual repair via dashboard	Medium
FR6	Comprehensive logging	High
FR7	Scheduled scans	Medium

7. Non-Functional Requirements (Four Pillars)

Pillar	Objective	Implementation
Performance	Sub-2 minute scan times	Async I/O, caching
Reliability	No data loss	Auto-backups and rollback
Security	Encrypted backups and auth	AES-256 + OAuth2
Maintainability	Modular CI/CD-ready design	Unit tests, automation

8. API Overview

Method	Endpoint	Description
GET	/api/v1/profiles	List user profiles
POST	/api/v1/scan	Trigger profile scan
GET	/api/v1/conflicts	Fetch conflict data
POST	/api/v1/repair	Start auto/manual repair
GET	/api/v1/backups	Retrieve backup metadata

9. Future Roadmap

Phase	Feature	Target
Q2 2026	Multi-browser support	Beta
Q3 2026	Enterprise Admin Console	Alpha
Q4 2026	AI-assisted conflict prediction	Prototype

10. Summary

Profile Doctor delivers an automated, scalable, and secure solution for Chrome profile integrity management, combining advanced backend automation with an intuitive web dashboard.

It adheres to the four pillars of software engineering: Performance, Reliability, Security, and Maintainability.