



ProSentinel

Mobile Experience, Behavior Analysis and Observability Platform

ProSentinel is an end-to-end **Mobile Analytics and Observability** solution that tracks user journeys in real-time, proactively detects technical errors and makes user behavior visible through data.

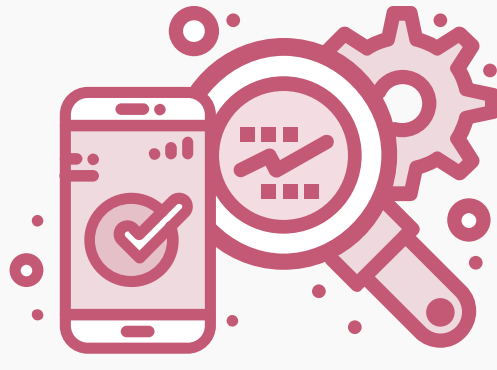
While traditional analytics tools only tell you "what happened" (e.g., page views), ProSentinel explains "**why it happened**". It acts like an X-ray for your mobile application, powered by a React Native SDK, a robust NestJS backend and a comprehensive data visualization dashboard.

Core Needs Met (Problem & Solution)

- **Invisible Errors:** Instantly detects JavaScript errors and crashes that users experience but may not report.
- **Data Over Guesswork:** Provides concrete answers to questions like "Why did the user get stuck at the payment step?" using masked session tracking.
- **Performance Monitoring:** Monitors bottlenecks by tracking slow network requests or screen transition times.
- **Security & Privacy:** Ensures data is stored safely within your internal network (on-premise / private cloud) without leaving for external cloud services.

Technical Architecture and Components

ProSentinel is built on a modern technology stack consisting of three main layers:



1. Mobile SDK Layer (React Native)



Native Integration:
Deep integration with iOS and Android native layers.



Auto-Tracking:
Monitors screen transitions (navigation), touch events and network traffic without requiring code changes.



Error Capture:
Collects JS-based errors and native crashes with full stack-trace details.

2. Backend & Analytics Layer (NestJS & PostgreSQL)



High Scalability:
Capable of accepting thousands of events per second via NestJS architecture.



Flexible Data Structure:
Stores raw event data in JSONB format for flexible querying.



Configuration Management:
Dynamically manages SDK behaviors (log levels, sampling rates, etc.) directly through the dashboard.

3. Dashboard & Visualization (React / Vite)



Real-Time Monitoring:
Tracks app health and user metrics instantly.



Timeline Analysis:
Displays every step a user took leading up to an error (screens, clicks, network requests) in a single flow.



Heatmaps:
Analyzes click density on a screen-by-screen basis.

Key Technical Features



Session Replay & Timeline

Reviewing user sessions chronologically based on their actions.



Network Monitoring

Tracking API response times, error codes and payload details.



Custom Event Tracking

Defining specific business events, such as "Loan application completed."



No-Code Configuration

Changing which data the SDK collects without having to release a new version of the app.

Benefits by Stakeholder

Stakeholder	Key Benefit
Developers (Dev)	No more struggling to "reproduce" bugs; the full history of the error is ready.
Product & UX Teams	Identifies drop-off points; design decisions are backed by data.
Management & Security	Data stays in-house, ensuring full compliance with regulations (GDPR/ BRSA).

Enterprise Integration and Security

ProSentinel is designed for high-security environments like banking and finance:

- **On-Premise Operation:** Data control remains entirely with the institution.



- **Role-Based Access:** Strict authorization hierarchy for dashboard users.

- **Lightweight SDK:** Minimal impact on app performance and battery consumption.

In summary, ProSentinel transforms your mobile app from just a piece of software into a living ecosystem where every step is measured and continuously improved.