

# Rad Link: Enterprise Traffic Intelligence

Scalable. Serverless. Live Production Asset.

RazaSoft Tech | Semester Project 2025

## 1. The Vision: Radical Transparency

Rad Link is a high-performance traffic intelligence engine. We moved beyond localhost development to deploy a fully resolvable, brand-ready product available to the global market.

### Market Differentiators:

- Stupidity Dashboard:** Real-time aggregation of OS wars and traffic heatmaps.
- Zero-Cost Idle:** Serverless architecture ensures we pay nothing when traffic is low.

## 2. THE CROWN JEWELS: LIVE ECOSYSTEM

The defining achievement of this project is the successful acquisition and deployment of premium digital real estate. We didn't just build an app; we launched a brand.

The Production Domain:  
**razasoft.tech**

A fully optimized Flutter Web Application delivered via custom DNS.

The Backbone API:  
**api.razasoft.tech**

This endpoint represents a triumph over AWS Academy constraints. By routing traffic through a custom EC2 SSL termination layer, we achieved a secure, verified HTTPS handshake for our custom API domain—something typically impossible in student environments.

## 3. Unified Compute Architecture

We utilize a **Monolithic Lambda** (Node.js 20.x) to handle all traffic hitting **api.razasoft.tech**.

**DynamoDB Single Table Design:** We maximized efficiency by overloading keys in a single table.

| Entity    | PK        | SK           |
|-----------|-----------|--------------|
| Link Meta | LINK#<id> | META         |
| Analytics | LINK#<id> | STATS#<date> |
| Global    | SYSTEM    | GLOBAL       |

**Atomic Transactions:** Using `TransactWriteItems`, a single click triggers three atomic updates simultaneously: the link count, the user's stats, and the global dashboard.

## 4. Frontend: The 0ms Latency UI

Hosted at **razasoft.tech**, the frontend is built with Flutter 3.x and Riverpod. It implements an **Optimistic UI** pattern to eliminate perceived network latency.

### The “Cyber-Glass” Experience:

- Instant Feedback:** When a user interacts with the domain, the UI updates instantly while the API synchronizes in the background.
- Mega-Sync Engine:** A single call to the API hydrates the entire dashboard state in one frame.

## 5. Business Value & Scalability

The ability to secure and deploy **custom domains** transforms this from a coding project into a marketable SaaS product.

### Key Deliverables:

- Brand Identity:** Full control over DNS allows for professional branding via **razasoft.tech**.
- Infinite Scalability:** DynamoDB On-Demand capacity handles viral traffic spikes hitting the domain without manual sharding.
- Cost Optimization:** By decoupling SSL from managed services, we reduced infrastructure overhead significantly.

## System Visualization

[Insert Dashboard Screenshot]

Fig 1. Live traffic analysis on **razasoft.tech**