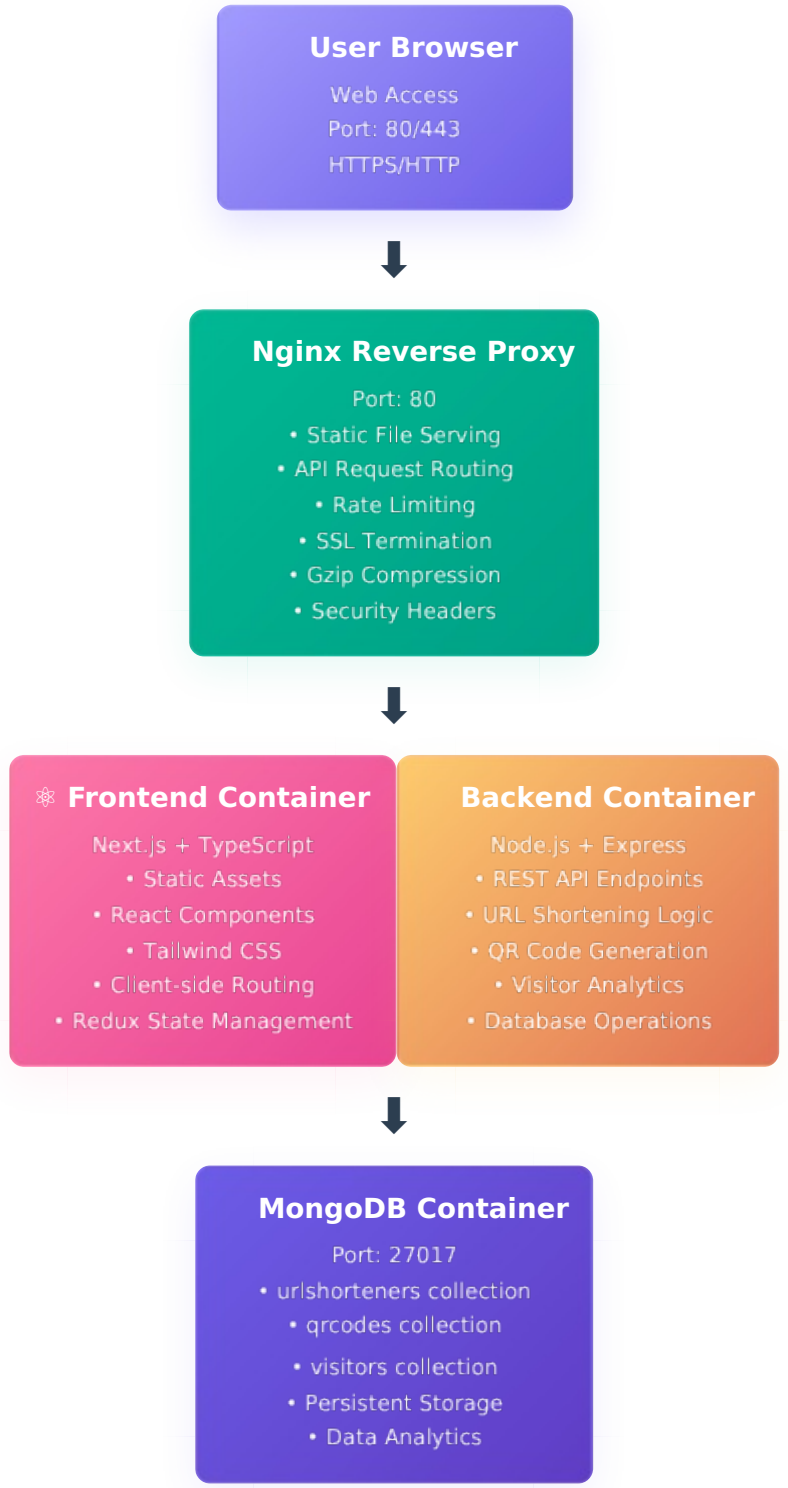
URL Shortener

Production Architecture with Docker & Nginx



Request Flow

User → Nginx (Port 80) → Frontend (Static) / Backend (API) → MongoDB (Data)

Performance Optimization

Nginx serves static files 10x faster than Node.js, with 70% bandwidth reduction through gzip compression and intelligent caching strategies.

Security & Protection

Multi-layered security with rate limiting, security headers, container isolation, and proper access controls for production environments.

Horizontal Scalability

Each service can be scaled independently based on demand, with load balancing capabilities and container orchestration support.

Maintainable Architecture

Clear separation of concerns with microservices architecture, containerized deployment, and environment-based configuration management.

Single Port Access

Everything accessible via port 80, eliminating CORS issues, providing clean URLs, and simplifying deployment and SSL management.

DevOps Ready

Production-ready with health checks, comprehensive logging, monitoring capabilities, and CI/CD pipeline integration support.

Technology Stack

Next.js 14 | TypeScript | Tailwind CSS | Node.js 20 | Express.js | MongoDB 7 | Mongoose ODM | Nginx | Docker | Docker Compose | Redux Toolkit | Axios