Kiaan WMS - Client Delivery Report

Warehouse Management System

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Executive Summary

The Kiaan Warehouse Management System (WMS) is a comprehensive, enterprise-grade solution built for multi-channel e-commerce operations. The system provides end-to-end warehouse management including inventory tracking, order fulfillment, pick/pack operations, and analytics.

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1. System Architecture

Technology Stack

Component	Technology
Frontend	Next.js 15, React 18, Ant Design, TypeScript
Backend	Node.js, Express, GraphQL, Prisma ORM
Database	PostgreSQL
Authentication	JWT with RBAC
Deployment	Dokploy on Azure

Infrastructure

- **Frontend:** https://wms.alexandratechlab.com
- **Backend API:** Port 8010 (internal)
- **Database:** PostgreSQL on port 5435

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2. Completed Features

2.1 Authentication & Authorization

Feature	Status	Description
User Login	DONE	Secure JWT-based authentication
Role-Based Access (RBAC)	DONE	7 user roles with granular permissions
Session Management	DONE	Secure session handling with auto-logout
Password Security	DONE	Bcrypt hashing, secure password policies

User Roles Implemented: - Super Admin - Full system access - Company Admin - Company management - Warehouse Manager - Warehouse operations - Inventory Manager - Inventory control - Picker - Pick list operations only - Packer - Packing and shipment operations - Viewer - Read-only access to reports

2.2 Dashboard & Analytics

Feature	Status	Description
Main Dashboard	DONE	KPIs, charts, recent activity
Picker Dashboard	DONE	Role-specific metrics for pickers
Packer Dashboard	DONE	Role-specific metrics for packers
Margin Analysis	DONE	Profitability analysis per product
Channel Analytics	DONE	Performance by sales channel
Price Optimizer	DONE	AI-based pricing recommendations
Revenue Reports	DONE	Revenue tracking and trends

2.3 Product Management

Feature	Status	Description
Product Catalog	DONE	Full CRUD operations
Product Variants	DONE	Support for product variations
Bundle Products	DONE	Create product bundles

Feature	Status	Description
Barcode Support	DONE	Barcode generation and scanning
Brand Management	DONE	Brand organization
Category Management	DONE	Category hierarchy
Product Images	DONE	Multiple image support
Dimensions & Weight	DONE	For shipping calculations

2.4 Inventory Management

Feature	Status	Description
Stock Levels	DONE	Real-time stock tracking
Multi-Location	DONE	Track stock across locations
Lot/Batch Tracking	DONE	FEFO/FIFO support
Best Before Dates	DONE	Expiry date management
Low Stock Alerts	DONE	Configurable thresholds
Stock Adjustments	DONE	Manual adjustments with audit
Stock Transfers	DONE	Between locations/warehouses
Inventory Reports	DONE	Stock valuation, aging

2.5 Warehouse Management

Feature	Status	Description
Multi-Warehouse	DONE	Support multiple warehouses
Zone Management	DONE	Define zones within warehouse
Location Management	DONE	Aisle/Rack/Shelf/Bin structure
Location Types	DONE	Picking, storage, dispatch zones

2.6 Order Management

Feature	Status	Description
Sales Orders	DONE	Full order lifecycle management
Order Status Tracking	DONE	Pending to Delivered states
Order Priority	DONE	Low, Medium, High, Urgent
Customer Management	DONE	B2B and B2C customers
Order History	DONE	Full audit trail
Wholesale Orders	DONE	B2B bulk ordering

2.7 Pick, Pack & Ship

Feature	Status	Description
Pick List Generation	DONE	Auto-generate from orders
FEFO/FIFO Picking	DONE	Expiry-based picking algorithm
Batch Picking	DONE	Multi-order picking
Packing Station	DONE	Pack verification UI
Shipment Creation	DONE	Create shipments from packed orders
Shipping Labels	DONE	Label generation

2.8 Barcode Scanner

Feature	Status	Description
Product Lookup	DONE	Scan to find product
Inventory Lookup	DONE	Scan to check stock
Pick Verification	DONE	Scan to verify picks
Receiving	DONE	Scan for goods receipt
Mobile Optimized	DONE	Works on mobile devices

2.9 Reports

Feature	Status	Description
Inventory Reports	DONE	Stock levels, valuation
Sales Reports	DONE	Revenue, orders
Picking Reports	DONE	Picker performance
Expiry Reports	DONE	Items expiring soon
Custom Date Ranges	DONE	Flexible reporting periods

2.10 Integrations - SKU Mappings

Feature	Status	Description
SKU Mapping UI	DONE	Map internal SKUs to channel SKUs
Alternative SKUs	DONE	Multiple SKU aliases
Channel Configuration	DONE	Setup marketplace connections

2.11 Mobile & Responsive

Feature	Status	Description
Mobile Bottom Nav	DONE	Touch-friendly navigation
Responsive Layout	DONE	Works on all screen sizes
Touch Scanner	DONE	Mobile barcode scanning
Role-Based Mobile UI	DONE	Different nav for different roles

2.12 Settings

Feature	Status	Description
General Settings	DONE	Company info, currency, timezone
Notification Settings	DONE	Email alerts configuration
Inventory Settings	DONE	Thresholds, tracking options
VAT/Tax Rates	DONE	Tax configuration
Scanner Settings	DONE	Scanner behavior options

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3. Features In Progress / Pending

3.1 Payment Integration

Feature	Status	Priority
Stripe Integration	PENDING	HIGH
Invoice Generation	PENDING	HIGH
Payment Processing	PENDING	HIGH
Subscription Billing	PENDING	MEDIUM

3.2 Marketplace Integrations

Feature	Status	Priority
Amazon FBA Sync	PENDING	HIGH
eBay Integration	PENDING	HIGH
Shopify Sync	PENDING	HIGH
TikTok Shop	PENDING	MEDIUM
WooCommerce	PENDING	LOW

3.3 Shipping Carrier Integrations

Feature	Status	Priority
Royal Mail API	PENDING	HIGH
DPD Integration	PENDING	HIGH
UPS Integration	PENDING	MEDIUM
FedEx Integration	PENDING	MEDIUM
Evri (Hermes)	PENDING	MEDIUM

3.4 Advanced Features

Feature	Status	Priority
Purchase Orders	PARTIAL	HIGH
Supplier Management	PARTIAL	HIGH
Goods Receipt (GRN)	PARTIAL	HIGH
Returns Processing	PENDING	HIGH
Cycle Counting	PENDING	MEDIUM
Demand Forecasting	PENDING	LOW
Automated Reordering	PARTIAL	MEDIUM

3.5 Notifications

Feature	Status	Priority
Email Notifications	PENDING	HIGH
SMS Alerts	PENDING	MEDIUM
Push Notifications	PENDING	LOW
Webhook Integration	PENDING	MEDIUM

4. Database Schema

Core Tables

- **Company** - Multi-tenant company data
- **User** - User accounts with roles
- **Warehouse** - Warehouse definitions
- **Zone** - Warehouse zones
- **Location** - Storage locations
- **Product** - Product catalog
- **Brand** - Product brands
- **Inventory** - Stock records with lots
- **SalesOrder** - Customer orders
- **SalesOrderItem** - Order line items
- **Customer** - B2B/B2C customers
- **PickList** - Picking instructions
- **PickItem** - Pick line items
- **Transfer** - Stock transfers
- **Supplier** - Vendor/supplier data
- **SalesChannel** - Marketplace channels
- **ChannelPrice** - Channel-specific pricing

5. API Endpoints

GraphQL API

- Full GraphQL schema with queries and mutations
- Real-time subscriptions support
- Introspection enabled for development

REST Endpoints

- `/api/auth/*` - Authentication
- `/api/products/*` - Product CRUD
- `/api/inventory/*` - Stock management
- `/api/orders/*` - Order processing
- `/api/picking/*` - Pick operations
- `/api/reports/*` - Report generation

6. Security Features

Feature	Implementation
Password Hashing	Bcrypt with salt
JWT Tokens	Short-lived access tokens
RBAC	Role-based route protection
Input Validation	Zod schema validation
SQL Injection	Prisma parameterized queries
XSS Protection	React automatic escaping
CORS	Configured allowed origins
HTTPS	SSL/TLS encryption

7. User Credentials (Demo)

Role	Email	Password
Super Admin	admin@kiaan-wms.com	Admin@123
Company Admin	companyadmin@kiaan-wms.com	Admin@123

Warehouse Manager	warehousemanager@kiaan-wms.com	Admin@123
Inventory Manager	inventorymanager@kiaan-wms.com	Admin@123
Picker	picker@kiaan-wms.com	Admin@123
Packer	packer@kiaan-wms.com	Admin@123
Viewer	viewer@kiaan-wms.com	Admin@123

8. Deployment Information

Current Deployment

- **Platform:** Dokploy on Azure
- **Region:** West Europe
- **URL:** https://wms.alexandratechlab.com
- **SSL:** Let's Encrypt auto-renewal
- **Uptime:** 99.9% target

Scaling

- Horizontal scaling ready
- Database connection pooling
- CDN-ready static assets

9. Next Steps / Recommendations

Immediate (Week 1-2)

1. Run database seed for demo data
2. Configure email notifications
3. Set up Stripe integration
4. Connect first marketplace (Amazon/eBay)

Short-term (Month 1)

1. Royal Mail API integration
2. Full purchase order workflow
3. Returns processing module
4. Advanced reporting

Medium-term (Month 2-3)

1. Multi-carrier shipping
2. Demand forecasting
3. Mobile app (React Native)
4. Customer portal

10. Support & Maintenance

Included

- Bug fixes for 3 months
- Security updates
- Minor feature adjustments

Available Add-ons

- 24/7 support package
- Custom integrations
- Training sessions
- Dedicated account manager

11. Screenshots

Dashboard

The main dashboard displays: - Total Orders KPI - Revenue metrics - Inventory status - Recent orders table - Activity charts

Products Page

Product management showing: - Product list with images - SKU, barcode, brand columns - Stock levels - Quick actions (edit, delete) - Search and filters

Inventory Page

Inventory overview with: - Stock by location - Lot/batch numbers - Best before dates - Low stock highlights - Transfer actions

Pick List Generation

FEFO/FIFO picking showing: - Order selection - Auto-generated pick routes - Expiry prioritization - Location guidance

Analytics - Margin Analysis

Profitability view with: - Product margins - Channel comparison - Cost breakdown - Optimization suggestions

Mobile Navigation

Bottom navigation bar for: - Quick access to key pages - Role-specific menu items - Touch-friendly buttons

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12. Technical Documentation

Full technical documentation available: - API Reference (GraphQL schema) - Database ERD - Deployment guide - Integration guides

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Contact

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