

Waste Container Rental Platform

Introduction:

We developed a custom waste container rental platform for a leading Waste Management company in Germany. The platform streamlines the entire rental journey from customer onboarding to container delivery, ensuring a seamless digital experience.

Customers can easily log in, browse available containers, and book them for specific durations. Each customer organization is empowered with a Customer Admin role, allowing them to manage sub-users and multiple delivery locations.

At the management level, Super Admins have full oversight of the platform, including container availability, special container types, holiday schedules, and delivery configurations. The backend for the system is developed using Laravel, which implements REST APIs and provides an admin portal for managing customers and containers.

Client Details:

Client Name: Confidential | **Industry:** Software | **Location:** Germany

Technologies:

Web Frontend: PHP, MySQL, Laravel, HTML, CSS, JavaScript, REST APIs, XML

Admin: PHP, Laravel, Doctrine and MySQL, Data Tables, REST APIs, ERP.

Others: AWS EC2, RDS.

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Challenges:

- Matching container availability without unique container IDs.
- Finding and grouping similar containers by type and location.
- Helping users identify which container to replace by adding container images in the interface.
- Using EU Waste Codes to standardize and classify containers by waste type.
- Implementing branch-specific holiday management in the booking calendar.
- Onboarding new users effectively with a guided tour feature.
- Ensuring seamless registration with Thank You page and email notifications.
- Designing a secure first-time login flow with mandatory password change.

Benefits:

- Customers can route container replacement or new container requests directly via the platform, reducing time spent by Customer Service Reps on phone calls.
- Orders are more reliable since customers place them directly into the ERP, minimizing manual errors.
- A subscription option enables containers to be exchanged automatically without requiring reordering.
- Special container visibility is managed by Super Admins and Admins, ensuring only the right customers see specific containers.
- Branch-specific holiday management simplifies scheduling by automatically blocking unavailable dates in the booking calendar.
- A guided tour improves onboarding by helping new users quickly understand how to use the platform.
- The enhanced registration flow (with Thank You page and email notifications) improves user experience and communication.
- Improved form submission process ensures branch owners receive emails with additional details for better data tracking.
- A secure first-time login flow with mandatory password change strengthens overall account security.

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ERP Integration via API:

As part of the platform, we exposed a robust API that allows the ERP system to communicate with our portal seamlessly. Key highlights include:

- **Order Synchronization:** Customer orders created on the portal are automatically pushed to the ERP system for processing.
- **Container Management:** Containers can be created from the ERP and are synced to the portal automatically, ensuring accurate inventory and availability.
- **Container Status Updates:** The ERP sends back updates on container availability, delivery status, and completion, keeping the portal data current in real time.
- **Branch-Specific Handling:** The API supports multiple branches, synchronizing orders, holidays, and container availability per branch.
- **Secure & Efficient:** All API endpoints are authenticated, ensuring secure and reliable data transfer between the portal and ERP.

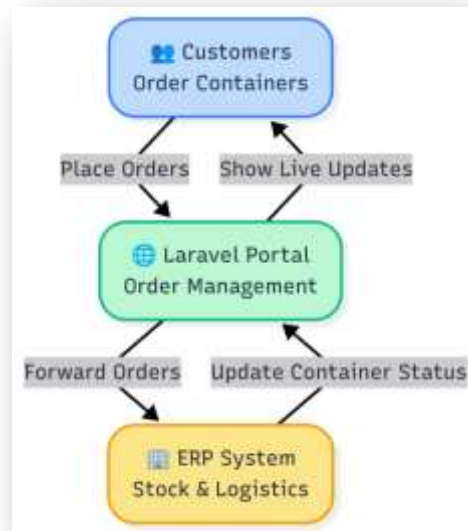
This API ensures end-to-end automation of container rentals, reduces manual effort, and keeps both the ERP and portal fully in sync.

Future Work:

- To implement tracking of the containers from shipped to delivered at the user's location and enable tracking on delivery trucks so that customers and the business can be notified.
- To implement a real-time ERP connection. Update the current Laravel.
- To implement a REST API to update the containers and customers from the ERP instead of using daily XML imports.
- To Implement Invoices to show billing details of users.
- To add orders made on the phone by fetching data from the REST API.
- To implement a mobile app for customers for a better experience.

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Customer to ERP Order Flow:

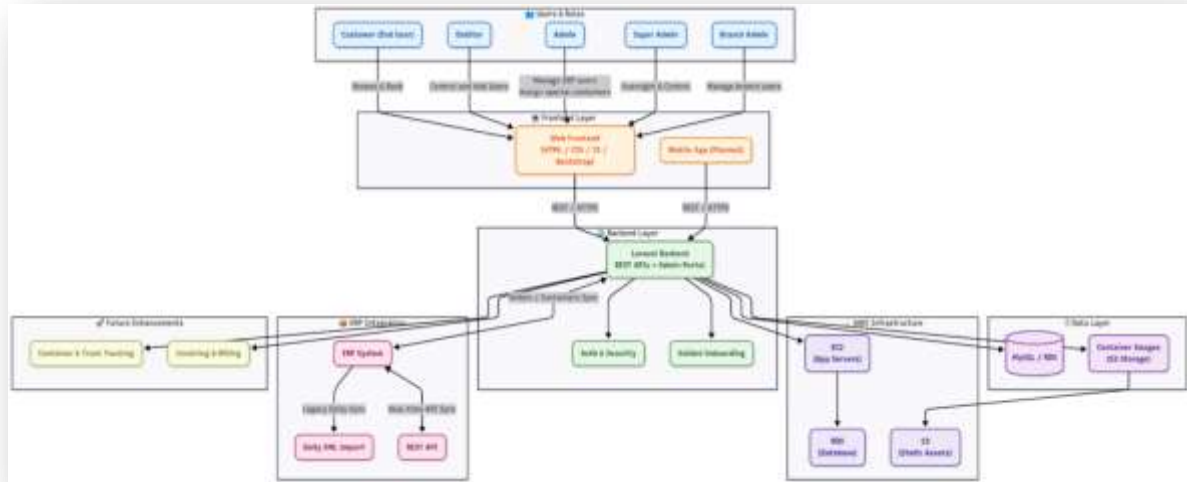


Role Hierarchy & Permissions:



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Architecture Diagram:



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Screenshots:



This screenshot shows the main dashboard of the Waste Container Rental Platform. It features a dark green sidebar with navigation options: Home, Containers, Orders, Reports, and Settings. The main content area displays a table of containers with columns for ID, Container Type, Location, Status, and Actions. A modal window is open, showing details for a specific container.

ID	Container Type	Location	Status	Actions
1	20' Dry Van	1234 Main St, New York, NY	Available	View Edit Delete
2	40' Dry Van	5678 Main St, New York, NY	Available	View Edit Delete
3	20' Dry Van	9012 Main St, New York, NY	Available	View Edit Delete
4	40' Dry Van	3456 Main St, New York, NY	Available	View Edit Delete
5	20' Dry Van	7890 Main St, New York, NY	Available	View Edit Delete
6	40' Dry Van	2345 Main St, New York, NY	Available	View Edit Delete
7	20' Dry Van	6789 Main St, New York, NY	Available	View Edit Delete
8	40' Dry Van	1011 Main St, New York, NY	Available	View Edit Delete
9	20' Dry Van	5432 Main St, New York, NY	Available	View Edit Delete
10	40' Dry Van	9876 Main St, New York, NY	Available	View Edit Delete



This screenshot shows the 'Container Details' form in the Waste Container Rental Platform. The form is divided into two main sections: 'Container Information' and 'Order Information'. The 'Container Information' section includes fields for Container ID, Container Type, Location, and Status. The 'Order Information' section includes fields for Order ID, Order Date, and Order Status. A 'Save' button is visible at the bottom right of the form.

Field	Value
Container ID	1234
Container Type	20' Dry Van
Location	1234 Main St, New York, NY
Status	Available
Order ID	5678
Order Date	2023-10-27
Order Status	Pending