



# Entity Relationship Diagram (ERD) Summary

The FreightShare ERD illustrates the core relational data model that powers the hybrid freight management platform. It captures the interaction between key entities involved in the shipment, payment, and verification workflows for both Shippers and Carriers.

## 1. User

The central entity representing all platform participants—Shippers, Carriers, and Admins. Each user has identifying attributes such as name, email, and phone, and is associated with authentication details.

- Relationships:

- One-to-One with Wallet (financial account)
- One-to-One (optional) with CarrierProfile (if user is a carrier)
- One-to-Many with Shipment (as a shipper or carrier)

## 2. Wallet

Represents the digital wallet associated with a user. It maintains the user's financial balance and links to all transactions performed on the platform.

- Relationships:

- One-to-One with User
- One-to-Many with Transaction

## 3. Transaction

Records every financial operation—credits, debits, COD settlements, online payments, and withdrawals. Each transaction is tied to a specific wallet.

- Key Attributes: Transaction type, mode, amount, reference ID.

- Relationships:

- Many-to-One with Wallet

## 4. CarrierProfile

Contains operational and compliance details of a carrier (truck owner/driver). This includes truck type, carrying capacity, verification status, and uploaded legal documents (e.g., RC, permit, license, PAN).

- Relationships:

- One-to-One with User
- One-to-One with AdminVerification

## 5. Shipment

Defines each shipment created by a shipper and fulfilled by a carrier. It includes details like cargo type, load type (PTL/FTL), route, pricing, payment method, and status updates through the shipment lifecycle.

- Relationships:

- Many-to-One with User (as shipper)
- Many-to-One with User (as carrier)

## 6. AdminVerification

Represents the verification workflow managed by the admin team for carriers.

Admins validate driver documents and approve or reject carrier profiles based on compliance.

- Relationships:
  - One-to-One with CarrierProfile
  - Many-to-One with User (as the verifying admin)

## Summary Insight

The FreightShare ERD establishes a normalized, relational data structure built for scalability and trust:

- Ensures financial transparency through Wallet–Transaction linkage.
- Supports compliance and safety via carrier verification mechanisms.
- Enables operational efficiency through clear relationships between shippers, carriers, and shipments.

Together, these entities form the foundation for seamless freight booking, tracking, and payment settlement across the FreightShare ecosystem.