

# Domain Understanding: Fajn  Sklady (Storage Rental Platform)

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## Overview

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**Fajn  Sklady** is a B2C marketplace for self-storage rental. It connects landlords (warehouse owners) with tenants (customers) who need storage space. The platform handles:

- Storage unit listings and availability
  - Order processing and payment (GoPay integration)
  - Recurring billing for unlimited rentals
  - Contract management
  - Invoicing (Fakturoid integration)
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## User Roles

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Role	Czech Name	Description
ROLE_USER	N�jemce (Tenant)	Customers who rent storage units
ROLE_LANDLORD	Pronaj�matel	Warehouse owners who list storage
ROLE_ADMIN	Administr�tor	Platform administrators

**Hierarchy:** ROLE\_ADMIN → ROLE\_LANDLORD → ROLE\_USER

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## Core Entities

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### User

- Registration with email verification (customers) or direct access (landlords)
- Billing info for invoicing (company, I O, DI , address)
- Landlord-specific: commission rate, self-billing prefix for invoice numbering

### Place

- Physical warehouse location (address, coordinates, map image)
- Contains multiple Storage units
- `daysInAdvance` : minimum booking lead time

## StorageType

- Template defining dimensions (inner/outer) and default pricing
- `uniformStorages` : if true, system auto-assigns; if false, customer picks from visual map

## Storage

- Individual rentable unit within a Place
- References a StorageType for dimensions
- Status: `AVAILABLE` → `RESERVED` → `OCCUPIED` → `AVAILABLE`
- Can override default pricing and commission rate
- Canvas coordinates for visual map placement

## Order

- Customer booking request
- Status flow: `CREATED` → `RESERVED` → `AWAITING_PAYMENT` → `PAID` → `COMPLETED`
- Terminal states: `COMPLETED` , `CANCELLED` , `EXPIRED`
- Expiration: 24 hours from creation
- Types: `LIMITED` (fixed dates) or `UNLIMITED` (ongoing)

## Contract

- Created when Order completes (`PAID` → `COMPLETED`)
- Handles recurring billing for `UNLIMITED` rentals
- Can be terminated early (releases storage)

## Invoice / SelfBillingInvoice

- Invoice: customer-facing (one-time orders)
- SelfBillingInvoice: landlord commission invoices (monthly aggregation)

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# Main Business Flows

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## 1. Customer Registration

Register → Email Verification → Welcome Email → Portal Access

- Validation: unique email, 8+ char password, terms acceptance

## 2. Landlord Registration

Register with Billing Info → Direct Portal Access

- No email verification required
- Must provide company info (IČO, address)

## 3. Order & Payment Flow

Select Storage → Create Order → Payment (GoPay) → Invoice Generated → Contract Created

### Key Events:

Event	Side Effect
OrderCreated	Confirmation email (24h expiry warning)
OrderPaid	Invoice generated, PDF emailed
OrderCompleted	Contract created, notification sent

## 4. Recurring Billing (Unlimited Rentals)

Monthly Charge → Success: Invoice sent  
→ Failure: Retry in 3 days (1 retry max)

## 5. Contract Termination

- User: can terminate UNLIMITED contracts only
- Admin: can terminate any contract
- Effect: releases storage, stops recurring billing

## Authorization Matrix

Action	Admin	Landlord	User
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<b>Places</b>			
View all	✓	✓	✗
Create/Edit/Delete	✓	✗	✗
Request changes	✓	✓ (if has access)	✗
<b>Storages</b>			
View all	✓	Own only	✗
Edit/Prices/Photos	✓	Own only	✗
Delete	✓	✗	✗
Assign owner	✓	✗	✗
<b>Storage Types</b>			
View	✓	✓	✗
Create/Edit/Delete	✓	✗	✗
<b>Orders</b>			
View all	✓	Own storages	Own only
Cancel	✓	✗	Own only
<b>Contracts</b>			
View	✓	Own storages	Own only
Terminate	✓	✗	Unlimited only

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## Key Business Rules

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- Storage Status Transitions** - Only AVAILABLE storages can be ordered - Order.reserve() → Storage.RESERVED - Order.complete() → Storage.OCCUPIED - Contract.terminate() or Order.cancel() → Storage.AVAILABLE
- Pricing Hierarchy** - Storage price overrides → StorageType default price - Prices stored in cents, displayed in CZK
- Advance Booking** - Place.daysInAdvance enforced at order creation - Start date must be ≥ today + daysInAdvance
- Order Expiration** - Orders expire 24 hours after creation if not paid - Expired orders release reserved storage

5. **Recurring Payment Retry** - First failure: retry after 3 days - Second failure: manual intervention required - Contract.failedBillingAttempts tracks retries
6. **Invoice Numbering** - SelfBillingInvoice format: {PREFIX}--{YEAR}--{XXXX} - Landlord must have selfBillingPrefix set - LandlordInvoiceSequence tracks per-year counter
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## Validation Rules Summary

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Entity	Rule
User.email	Unique, valid format
User.password	Min 8 characters
Company IČO	Exactly 8 digits
Company DIČ	Format: CZxxxxxxxx
Order.startDate	≥ today + place.daysInAdvance
Order.endDate	> startDate (if LIMITED rental)
Map image	JPEG/PNG/WebP, max 5MB

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## Domain Events Architecture

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All events are `final readonly class` with `occurredOn: DateTimeImmutable`

**Event Flow:** 1. Entity records event via `HasEvents` trait 2. `DomainEventsSubscriber` collects on persist/update 3. Events dispatched via event bus after Doctrine flush 4. Handlers execute side effects (emails, invoicing)

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## External Integrations

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- **GoPay:** Payment gateway for one-time and recurring payments
  - **Fakturoid:** Invoice generation and management
  - **Email:** Verification, notifications, invoices
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## Visual Storage Map

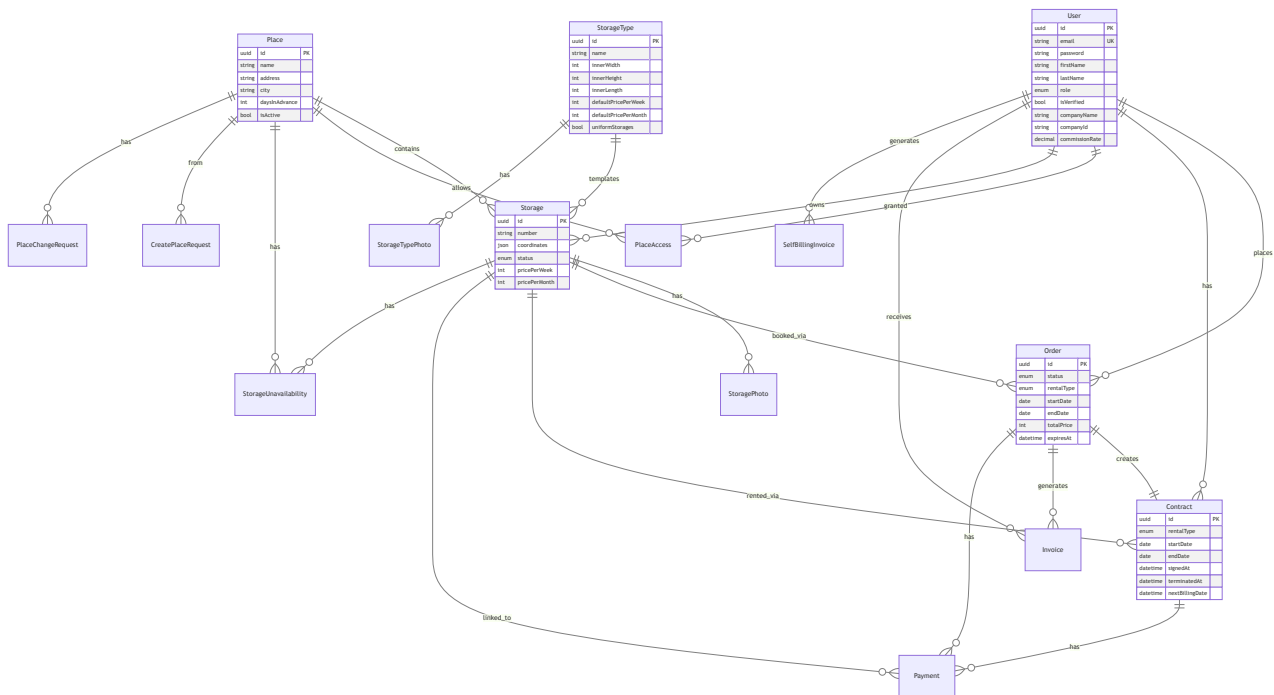
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Non-uniform storage types use canvas-based visual selection:

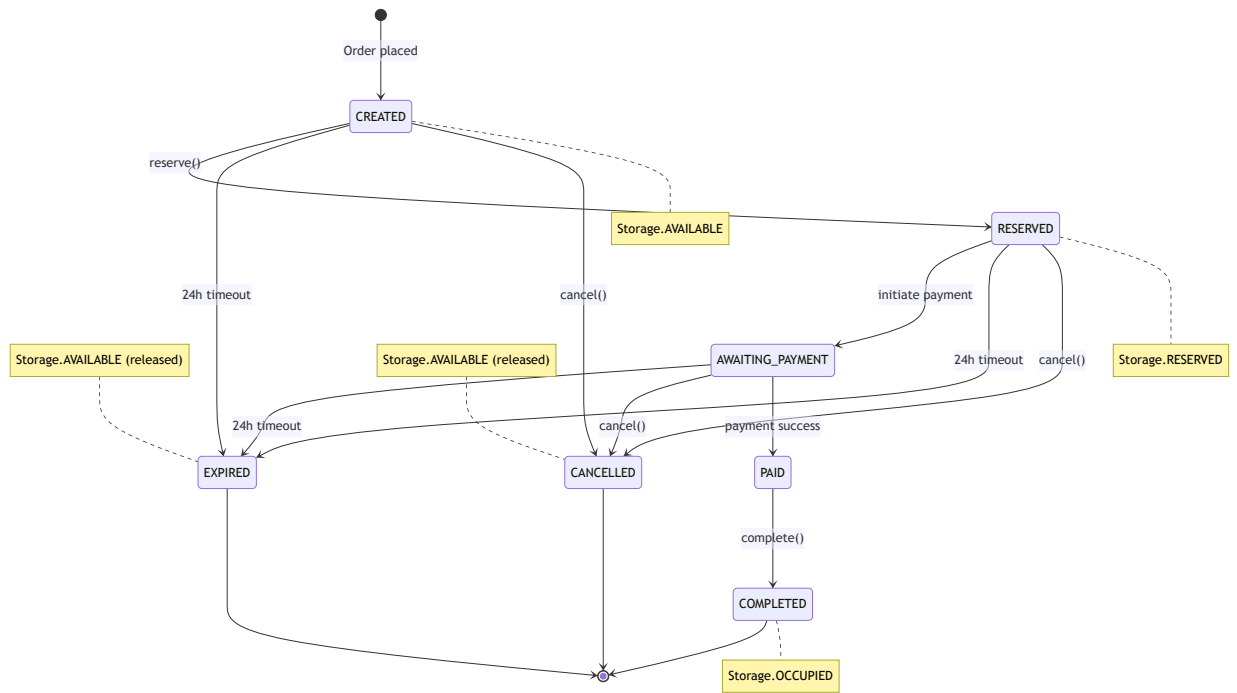
- Storage.coordinates: {x, y, width, height, rotation}
- Customers click to select specific unit
- Color-coded: available (green), occupied (red), unavailable (gray)

## Diagrams

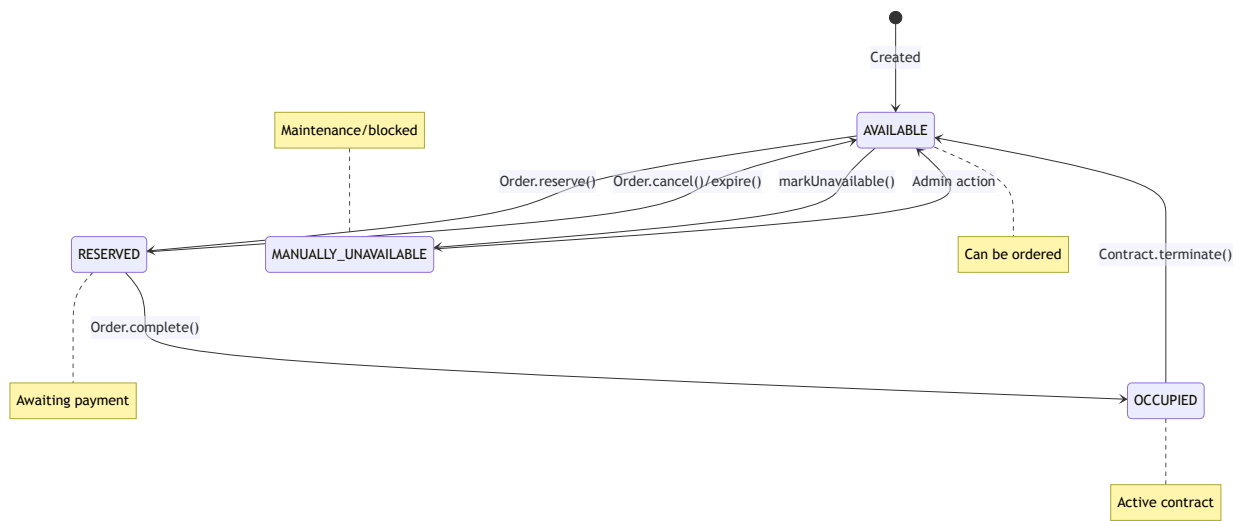
### Entity Relationship Diagram



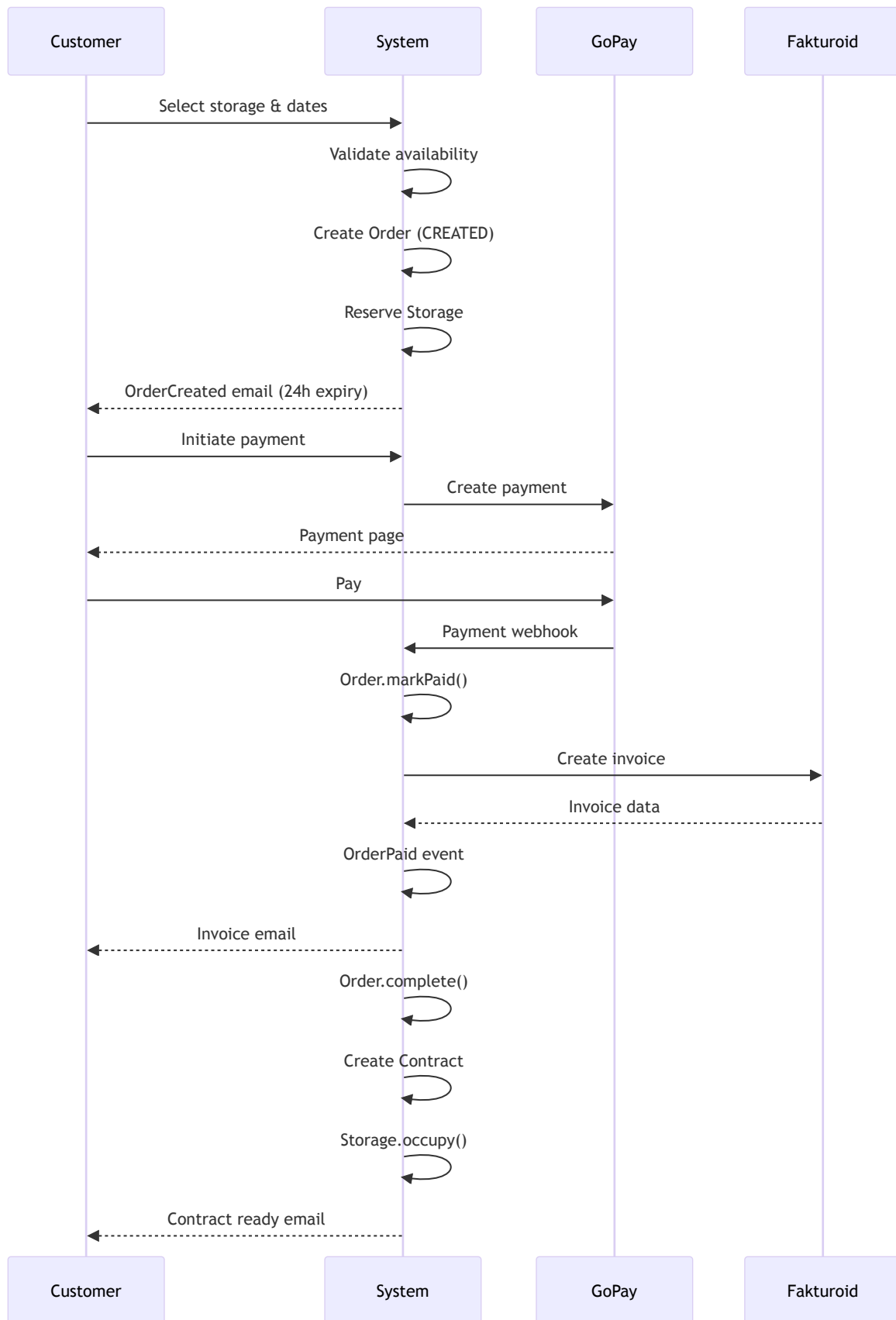
### Order Status State Machine



## Storage Status State Machine

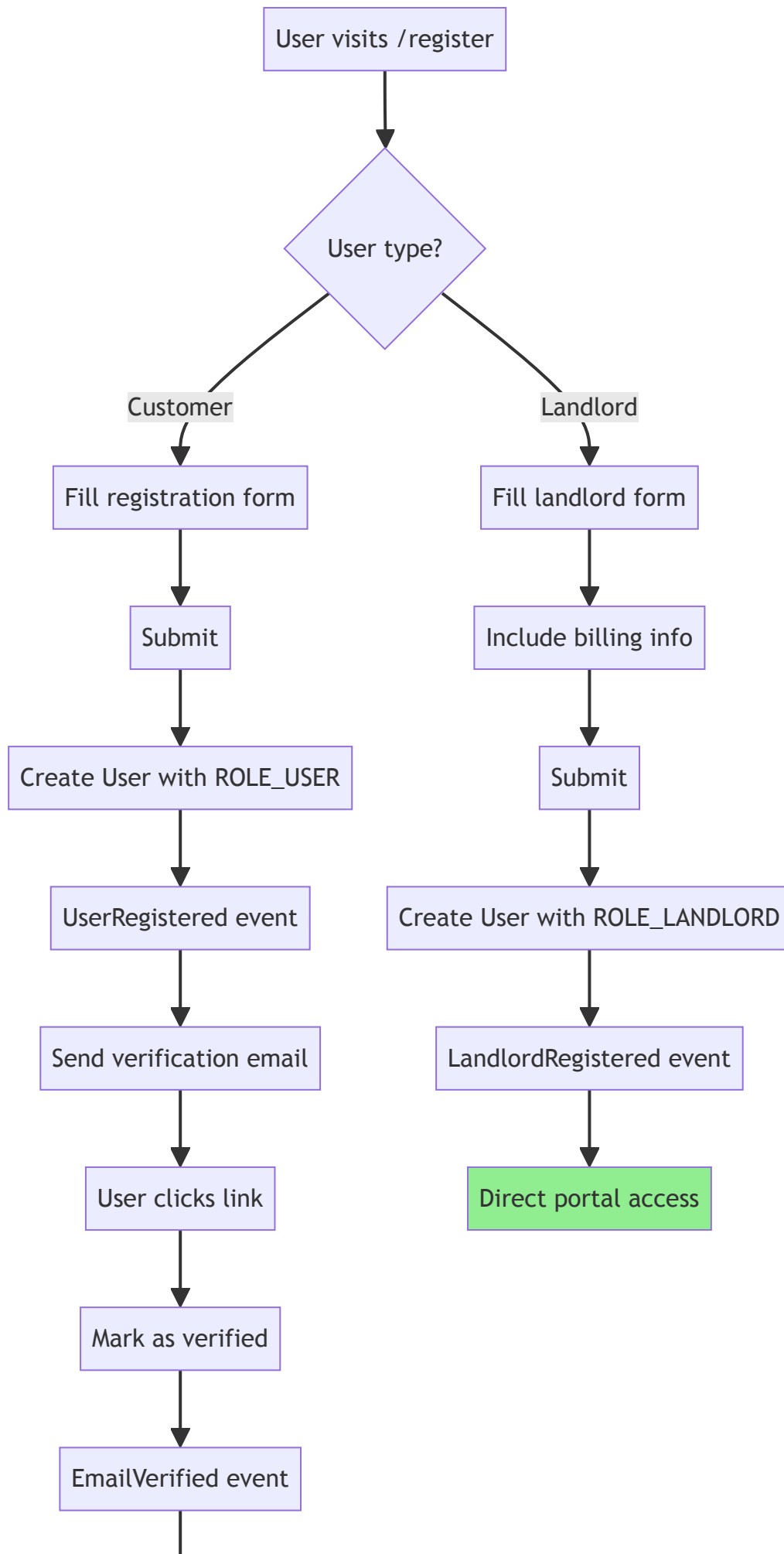


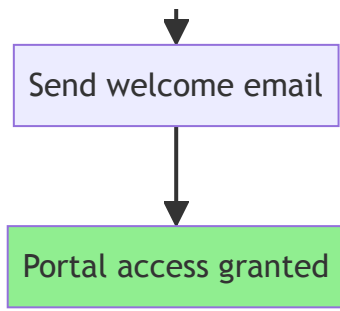
## Order & Payment Flow (Sequence)



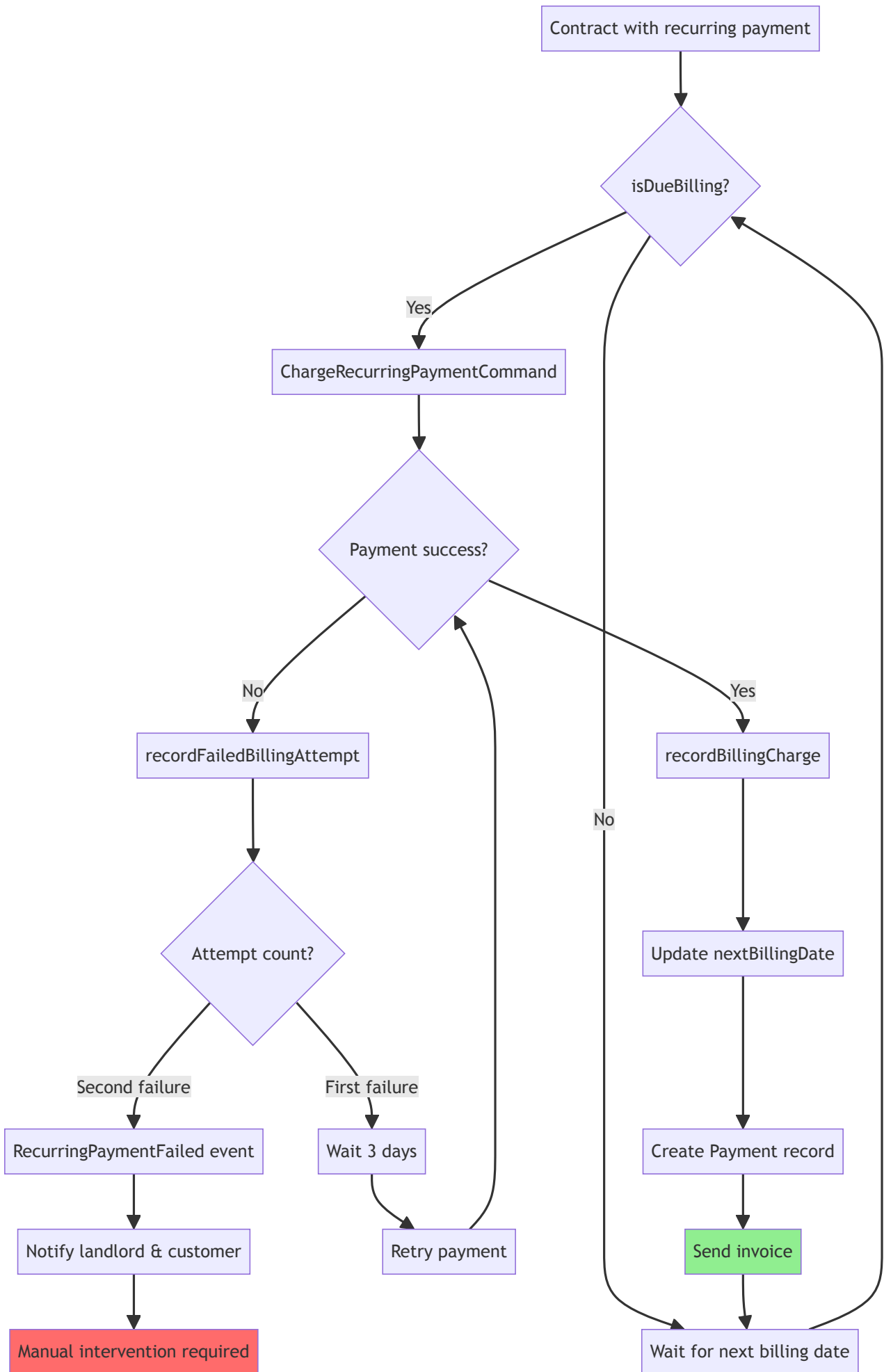
## User Registration Flow



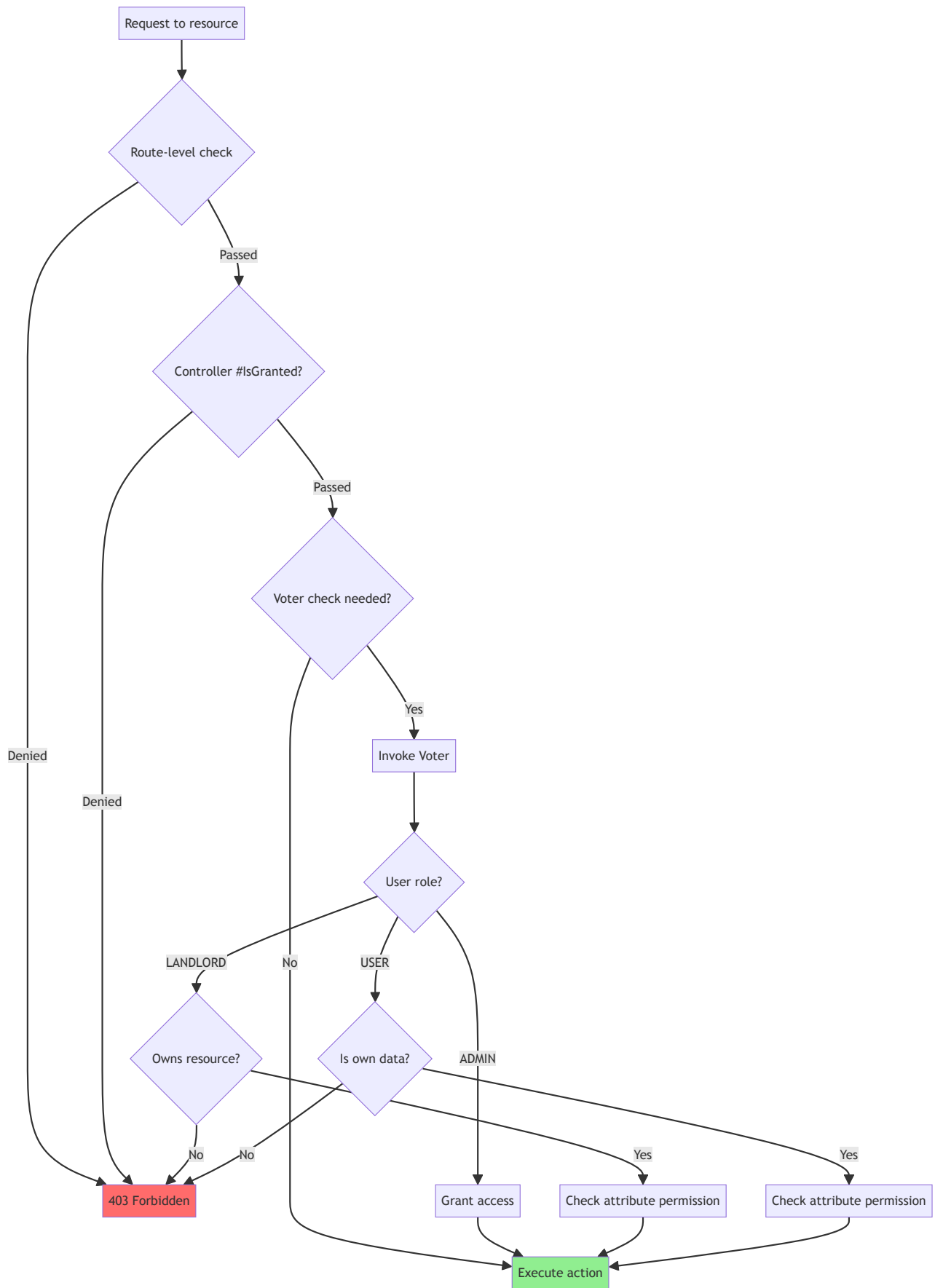




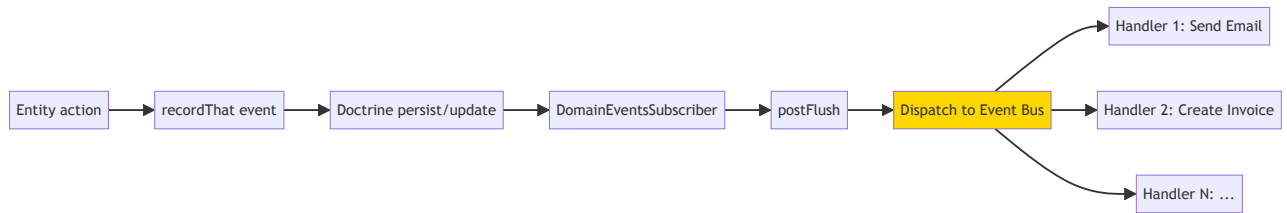
## Recurring Billing Flow



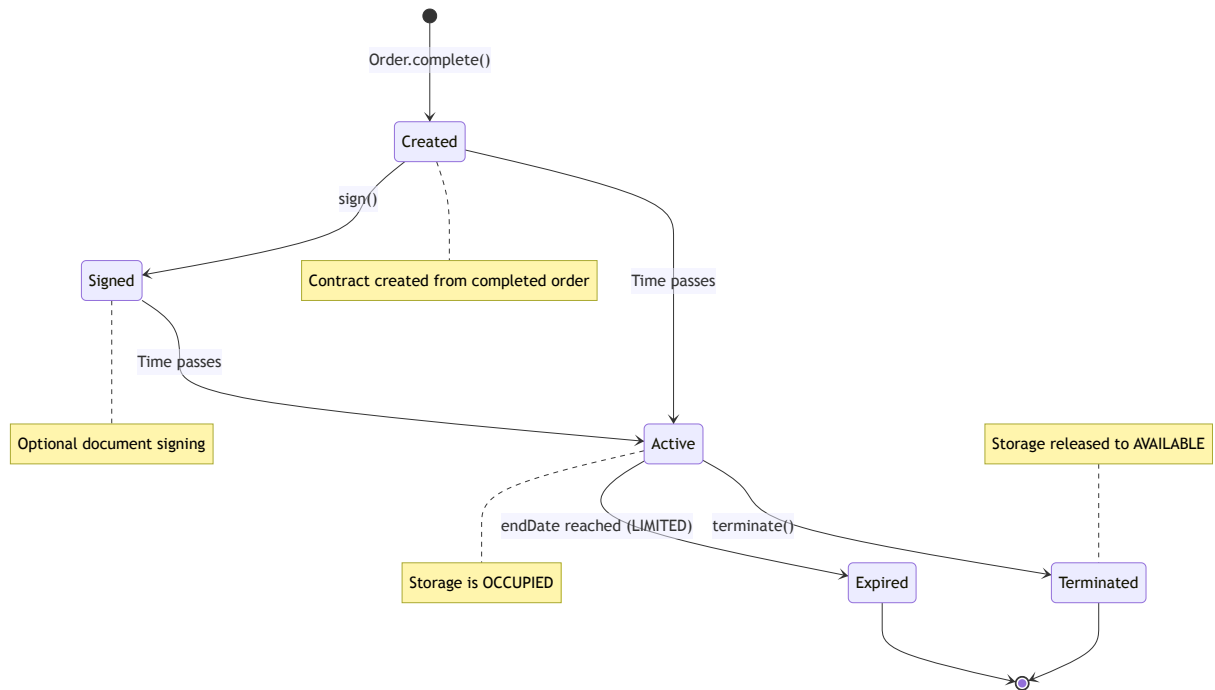
## Authorization Flow



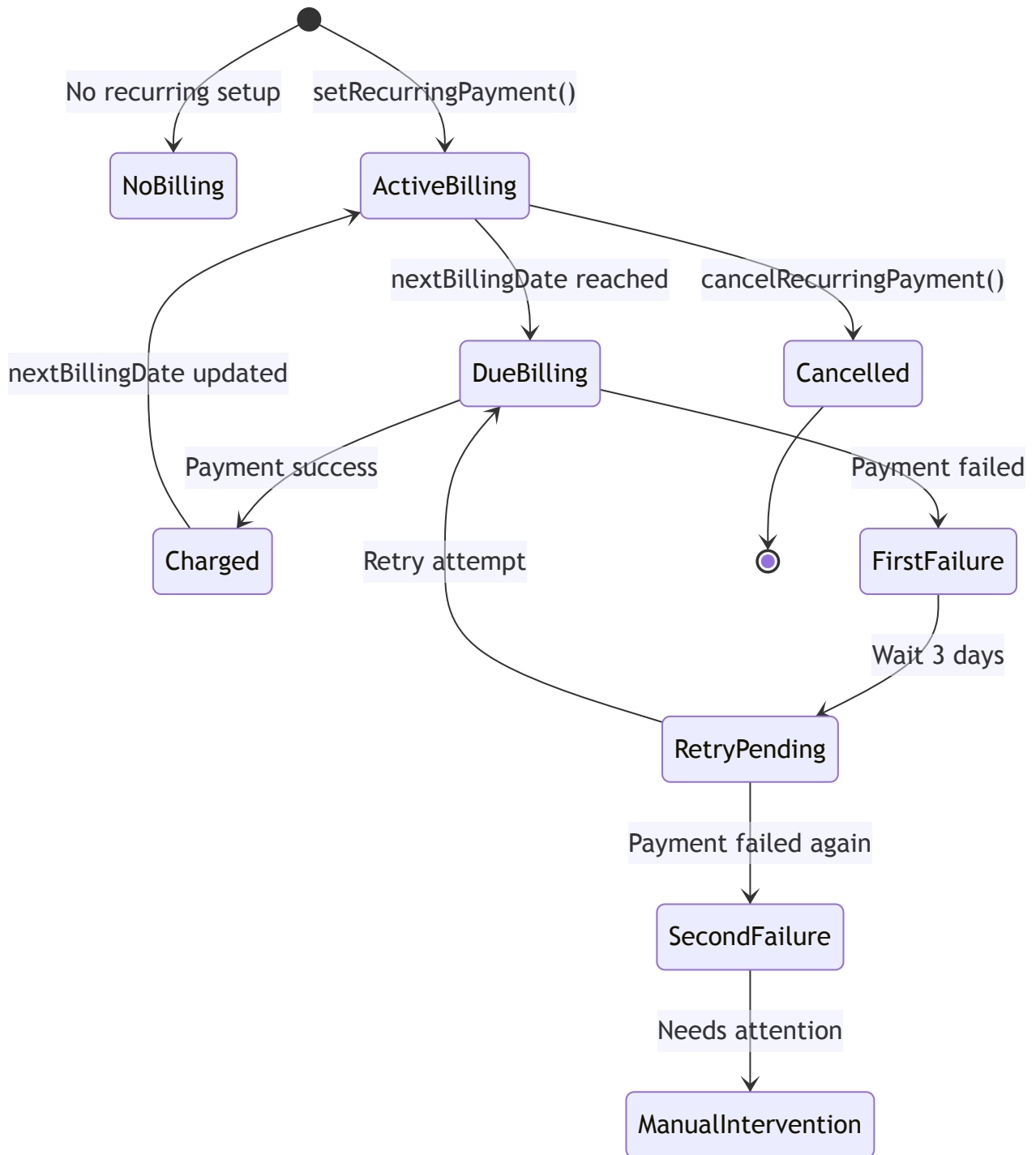
## Domain Events Flow



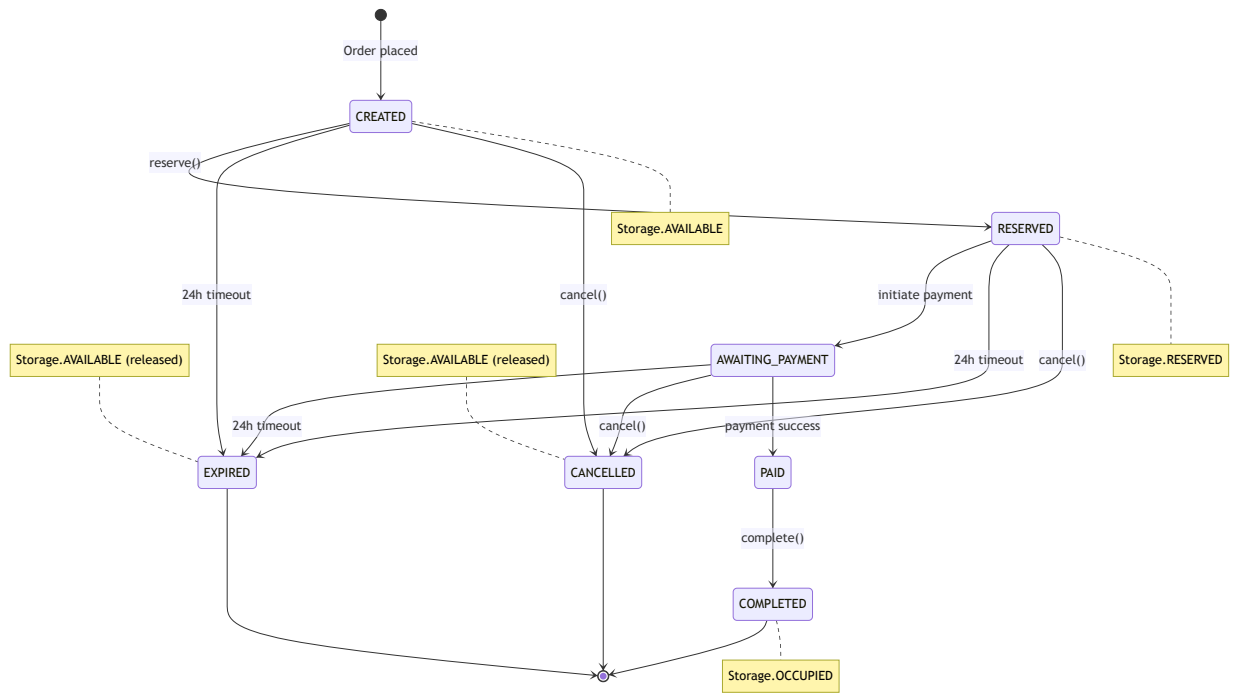
## Contract Lifecycle



## Contract Billing States (Unlimited Rentals)

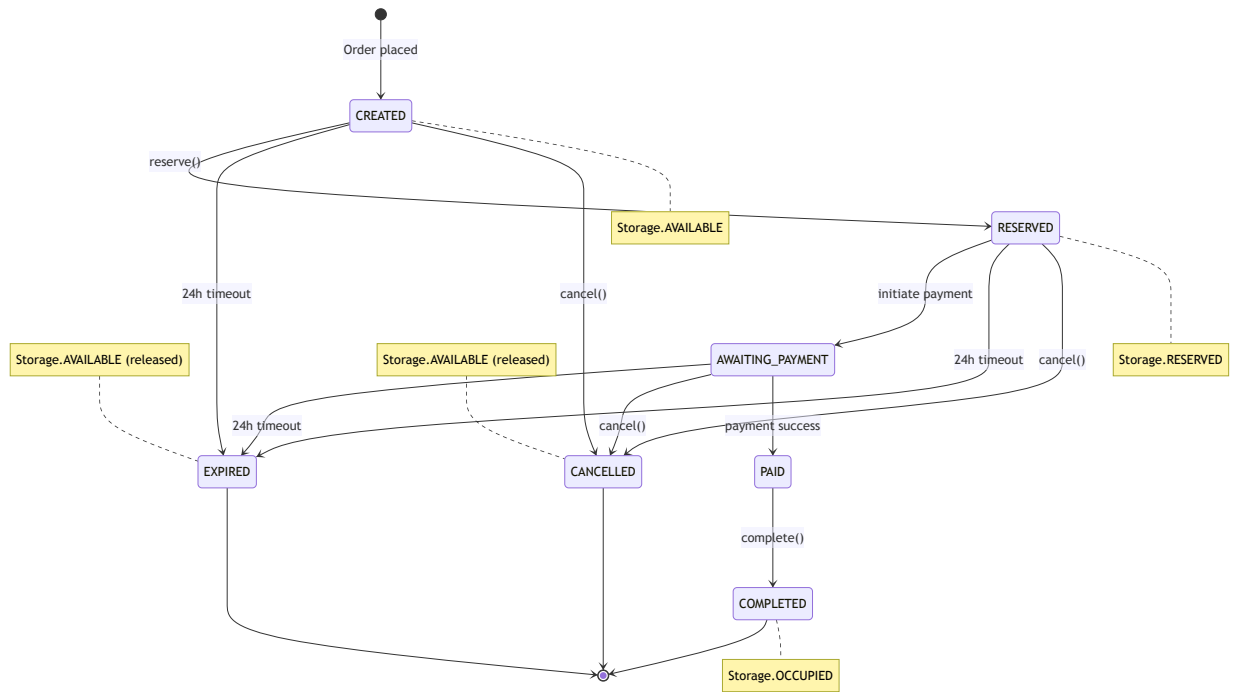


**Place & Storage Hierarchy**



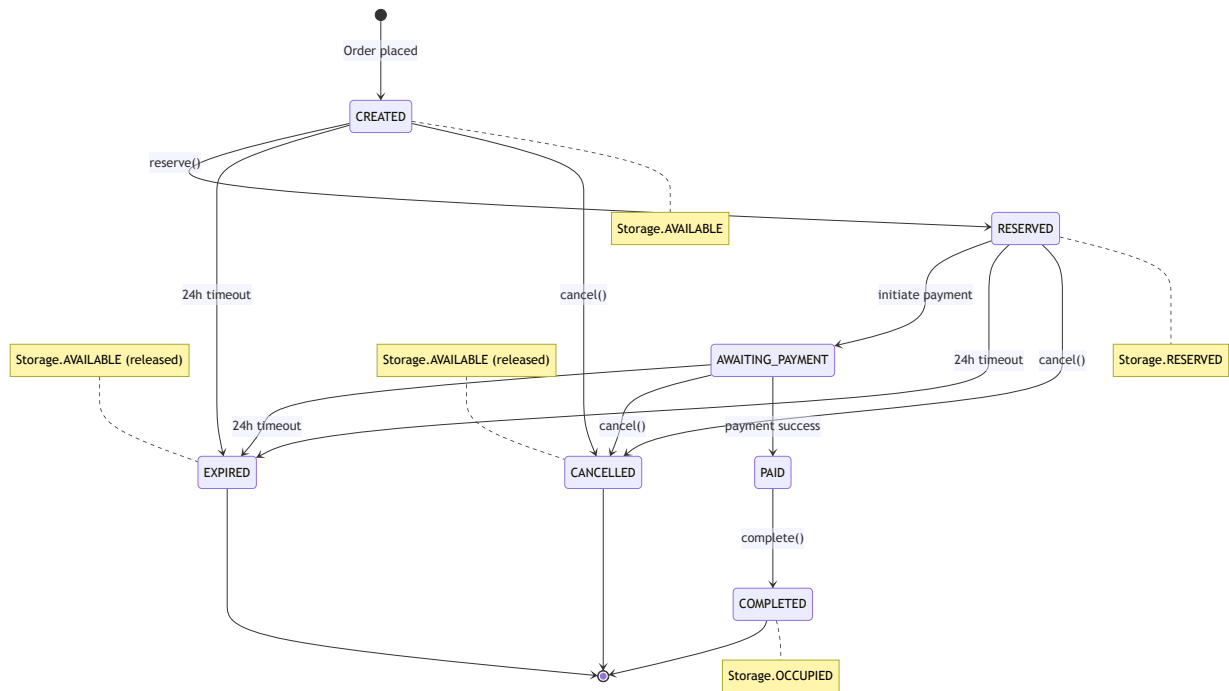
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## Invoice Types & Flow



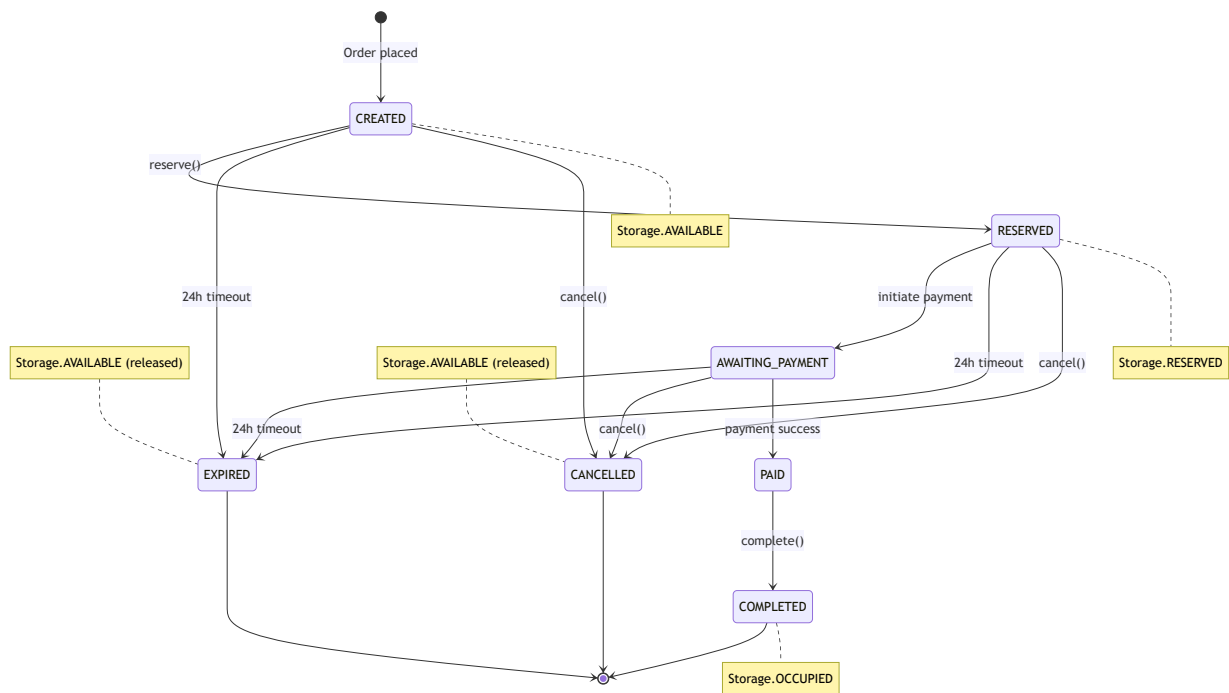
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## Password Reset Flow



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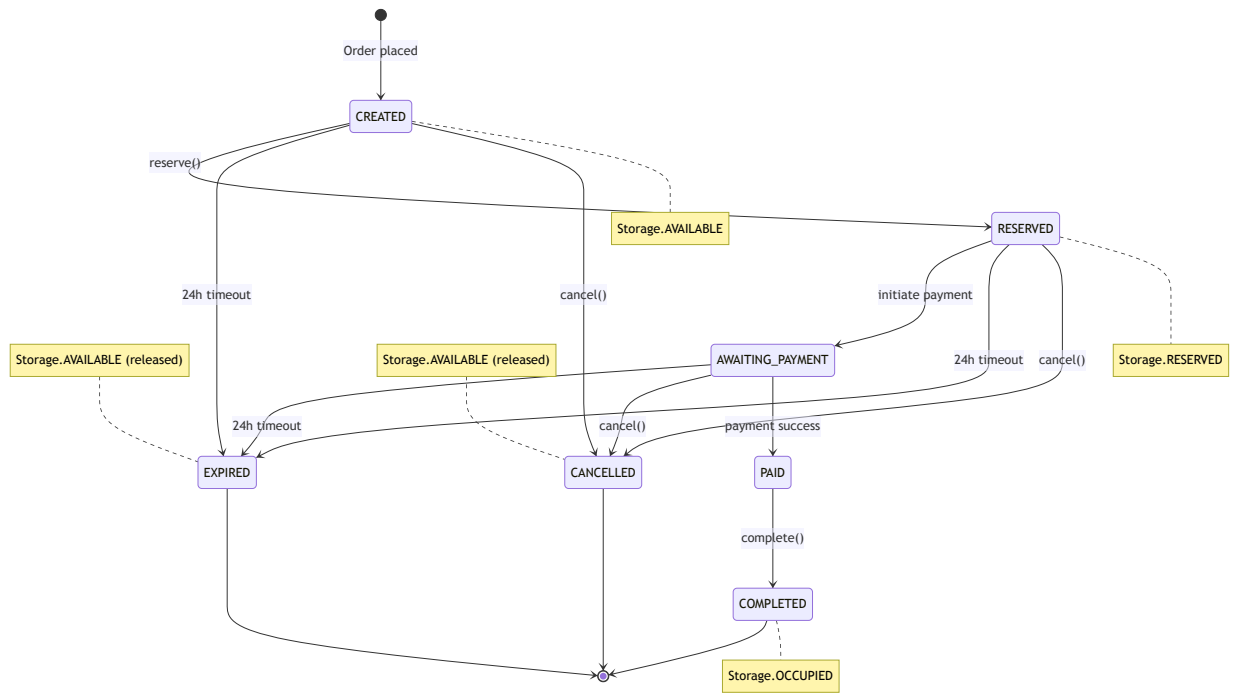
## Place Change Request Workflow



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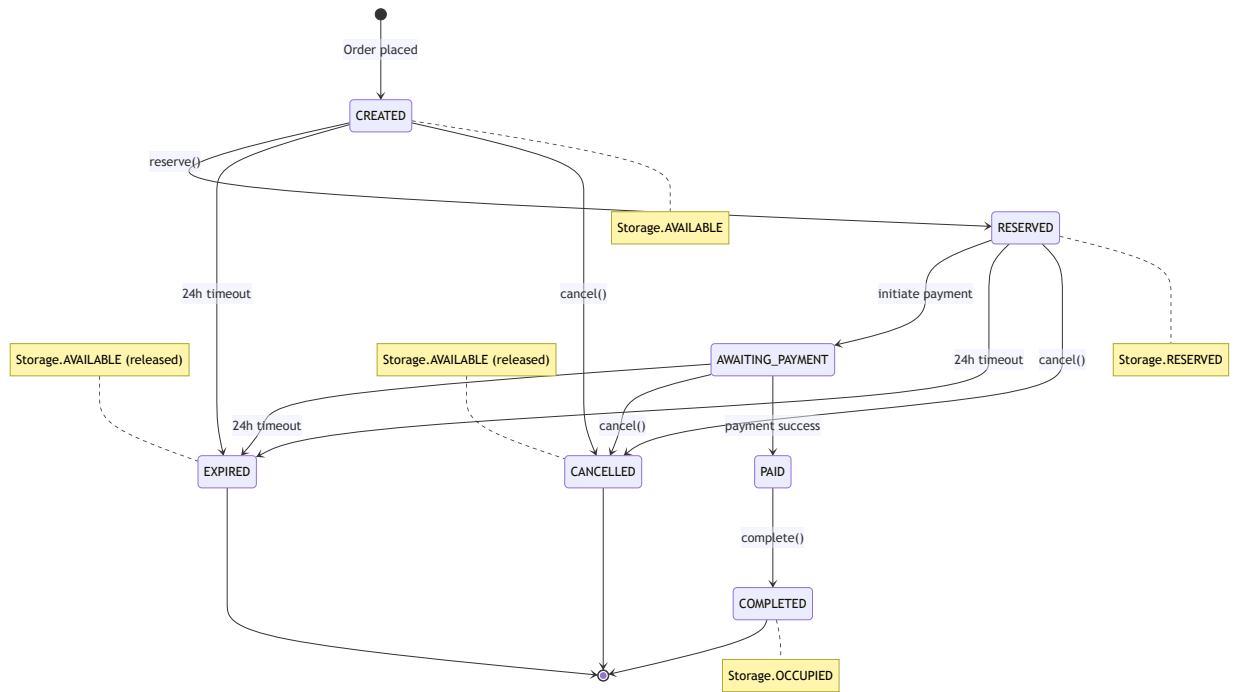
## Create Place Request Workflow





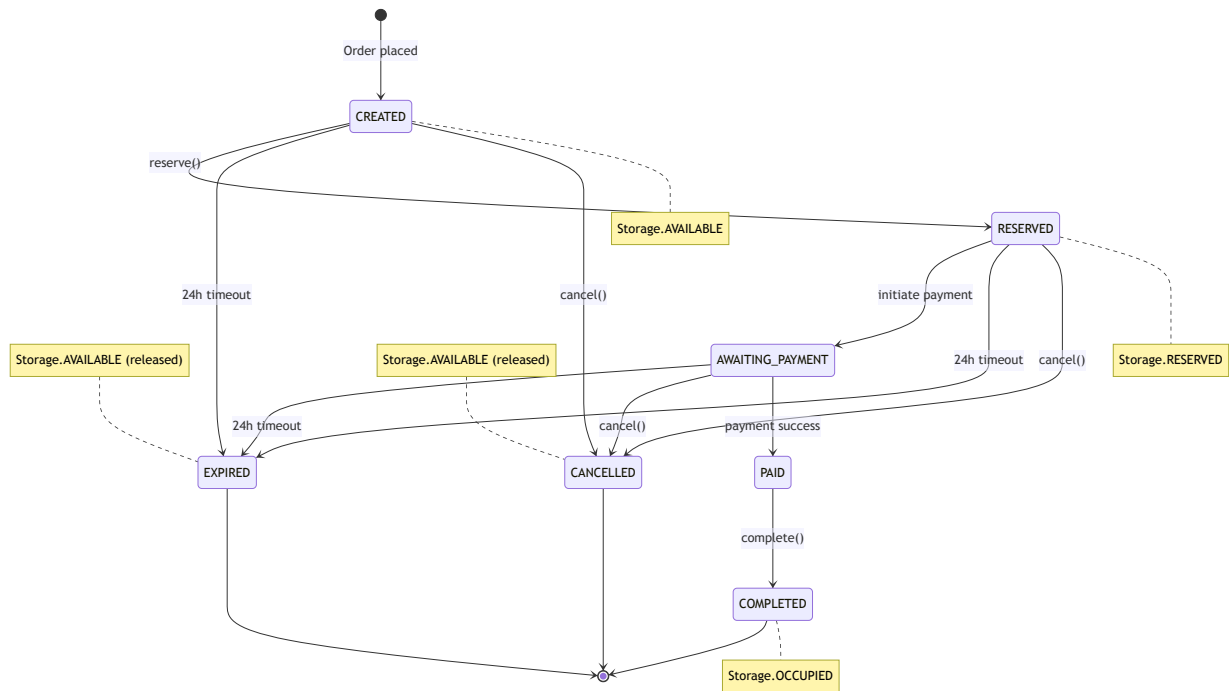
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## Dashboard Views by Role



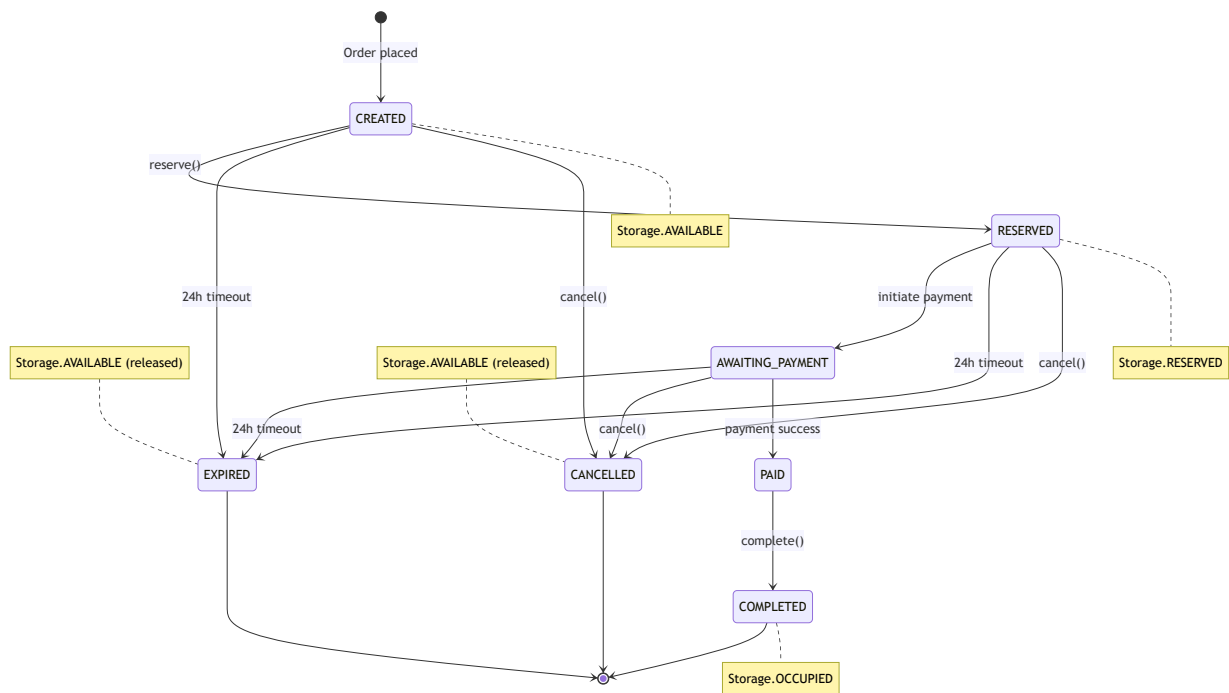
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## Email Verification Flow



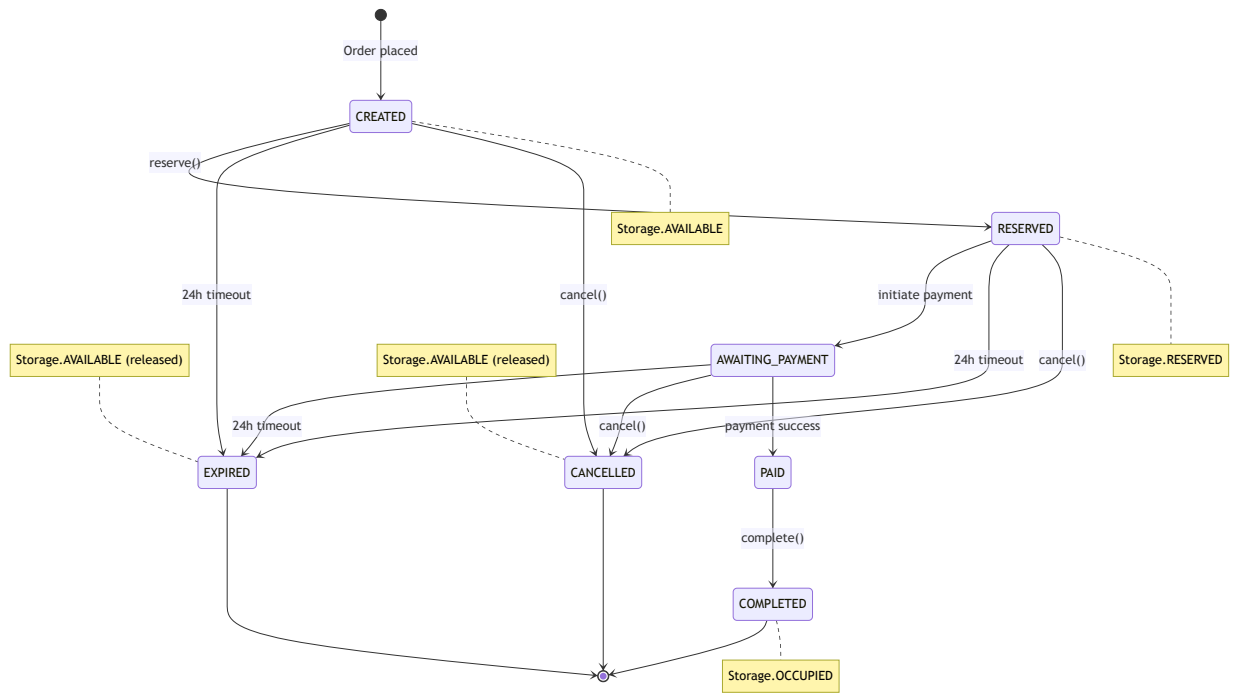
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## Storage Selection Modes



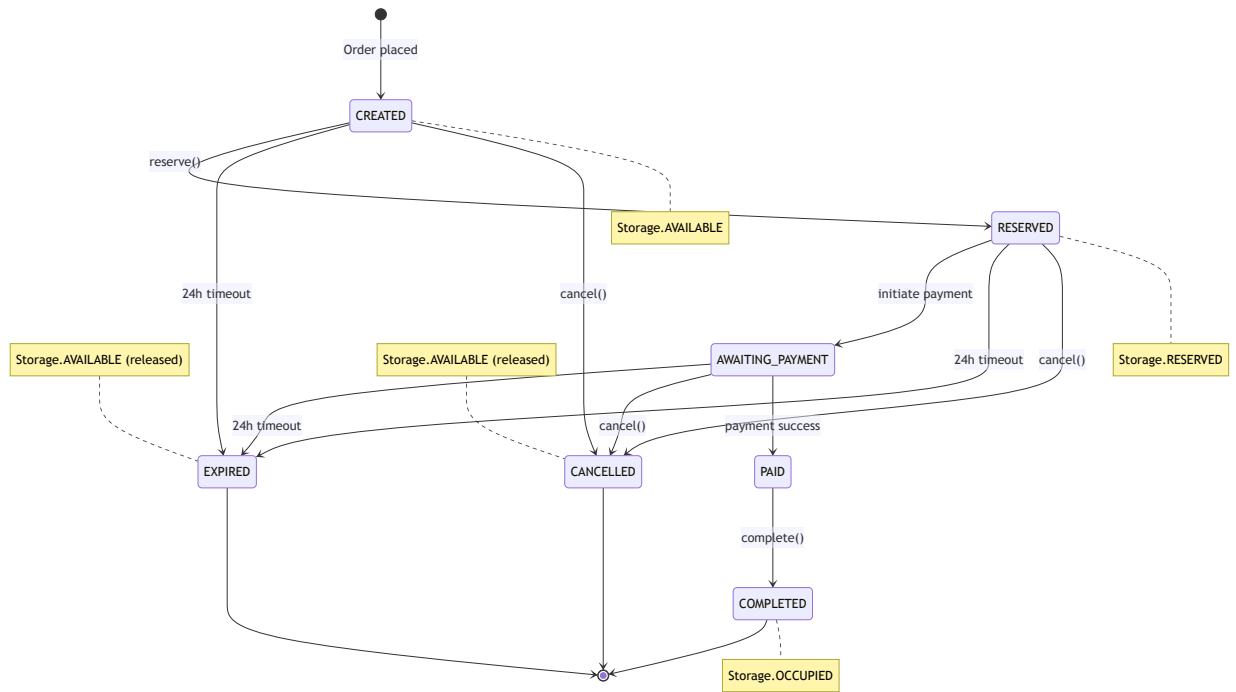
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## Pricing Resolution



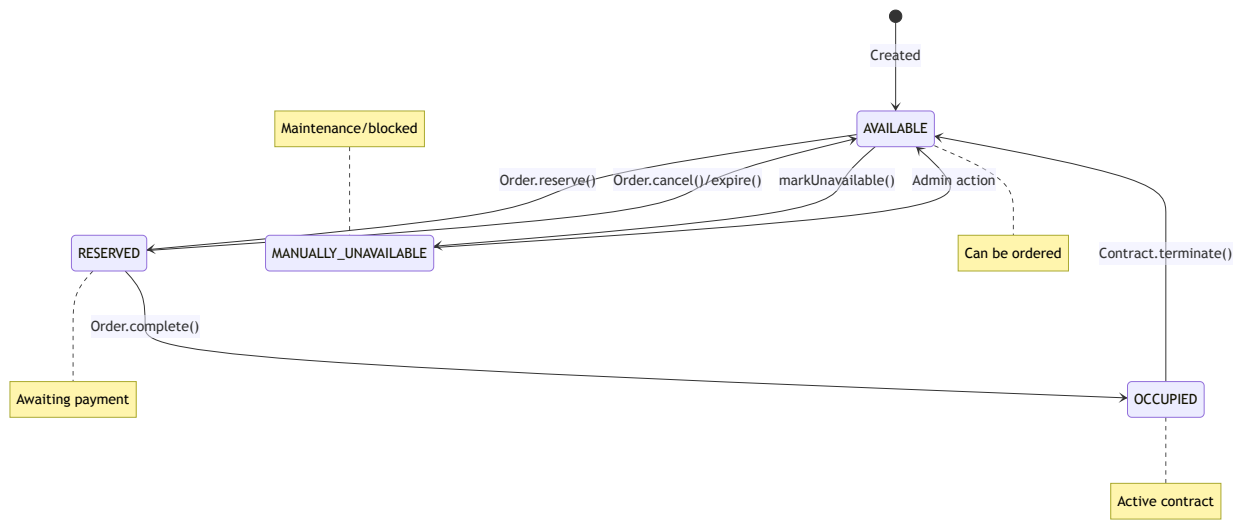
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## Commission Rate Resolution



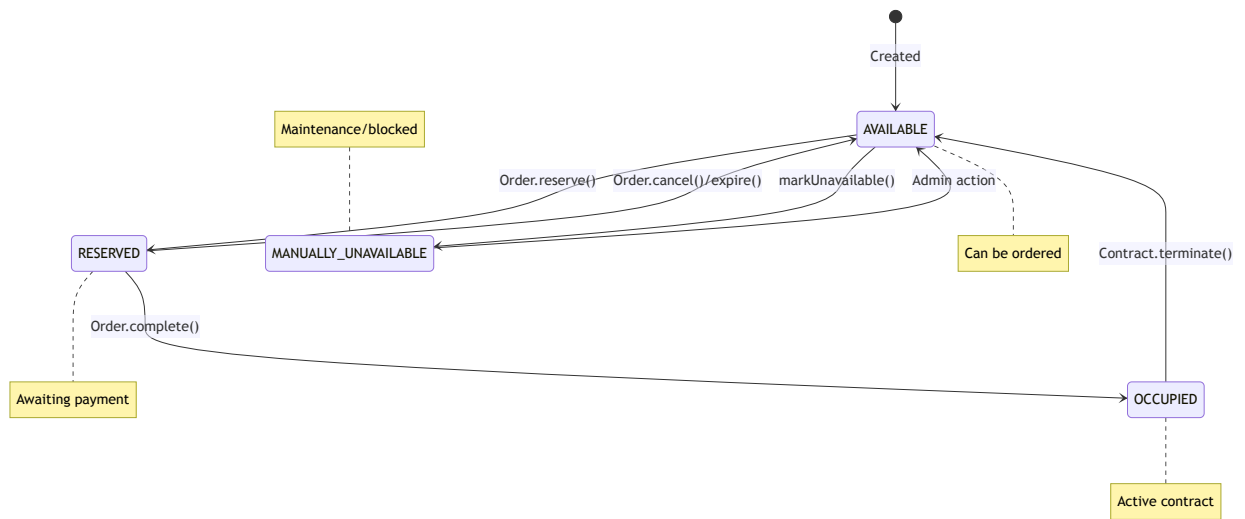
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## Audit Log Recording



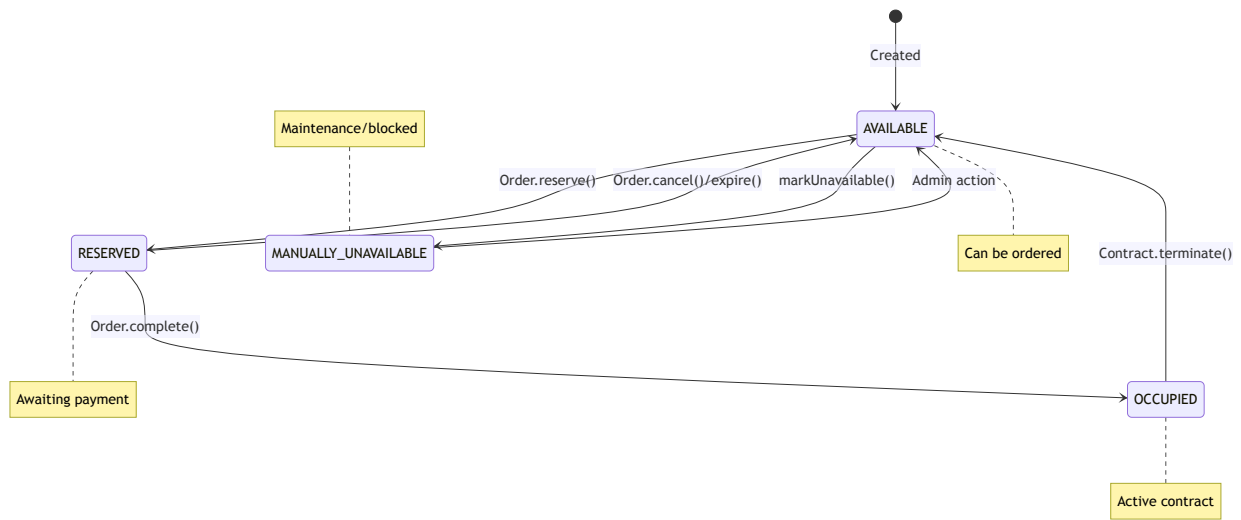
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## Full Order Journey



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## Storage Unavailability Handling



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This documentation provides a complete domain understanding for development, testing, and onboarding.