

Domain Understanding: Fajné Sklady (Storage Rental Platform)

Overview

Fajné 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

Role	Czech Name	Description
ROLE_USER	Nájemce (Tenant)	Customers who rent storage units
ROLE_LANDLORD	Pronajímateľ	Warehouse owners who list storage
ROLE_ADMIN	Administrátor	Platform administrators

Hierarchy: ROLE_ADMIN → ROLE_LANDLORD → ROLE_USER

Core Entities

User

- Registration with email verification (customers) or direct access (landlords)
- Billing info for invoicing (company, IČO, DIČ, 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)

Main Business Flows

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

Key Business Rules

- 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 \geq 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

Validation Rules Summary

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

Domain Events Architecture

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)

External Integrations

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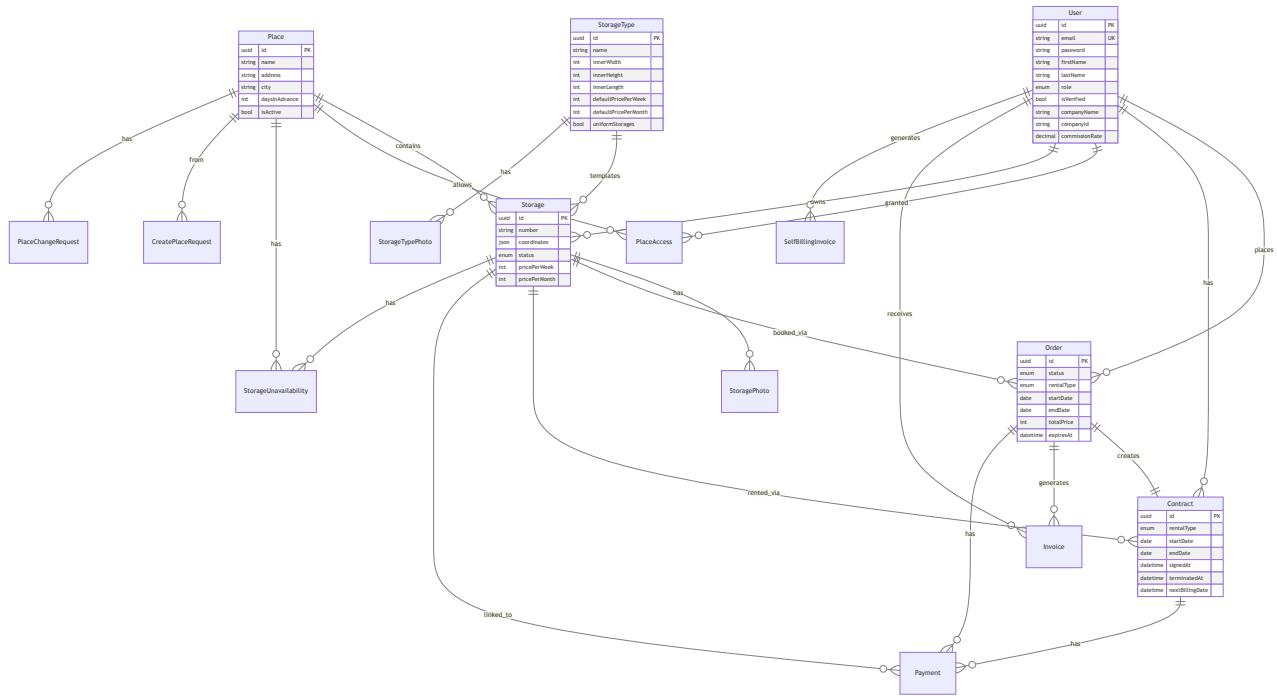
Visual Storage Map

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

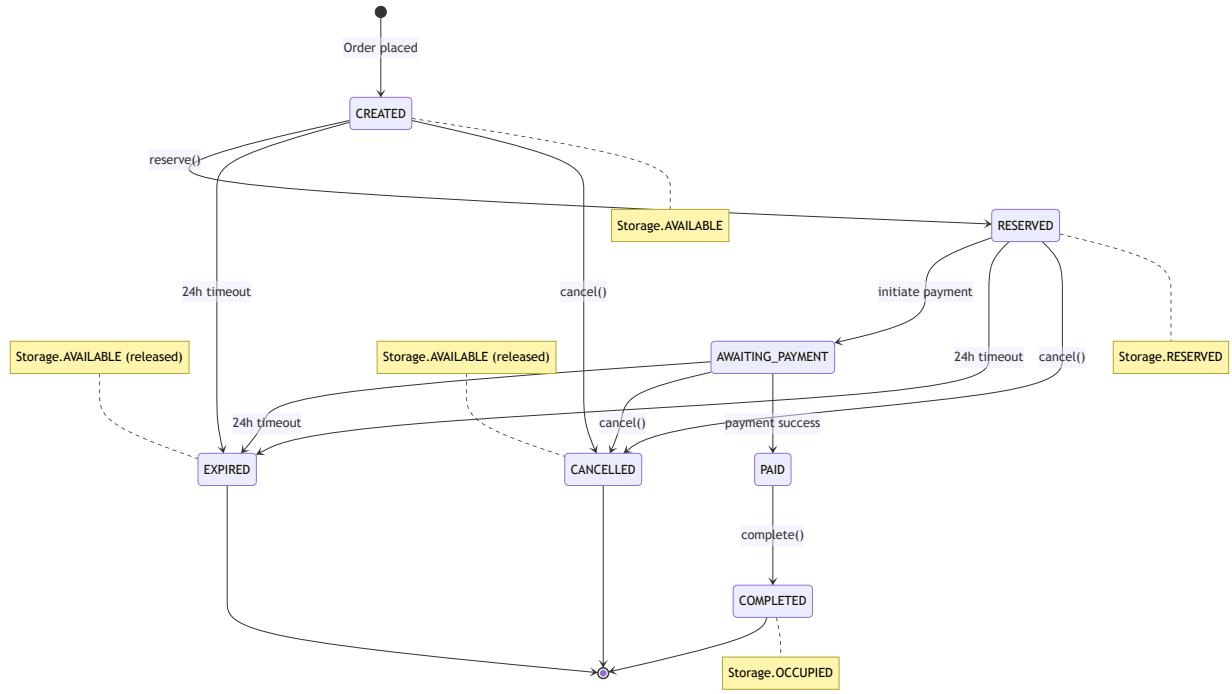
- Storage.coordinates: {x, y, width, height, rotation}
- Customers click to select specific unit
- Color-coded: available (green), occupied (red), unavailable (gray)

Diagrams

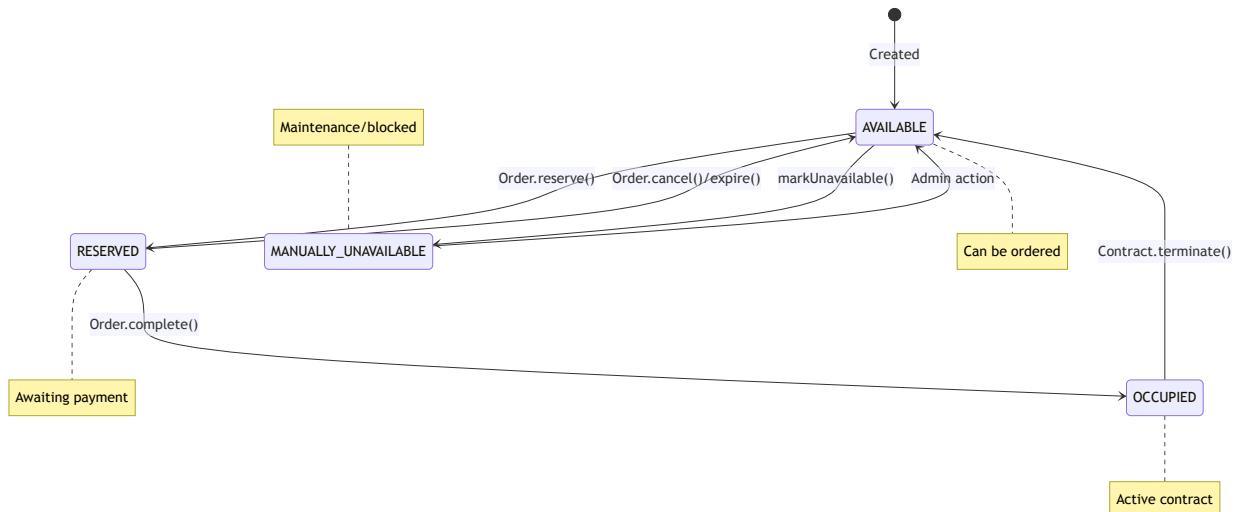
Entity Relationship Diagram



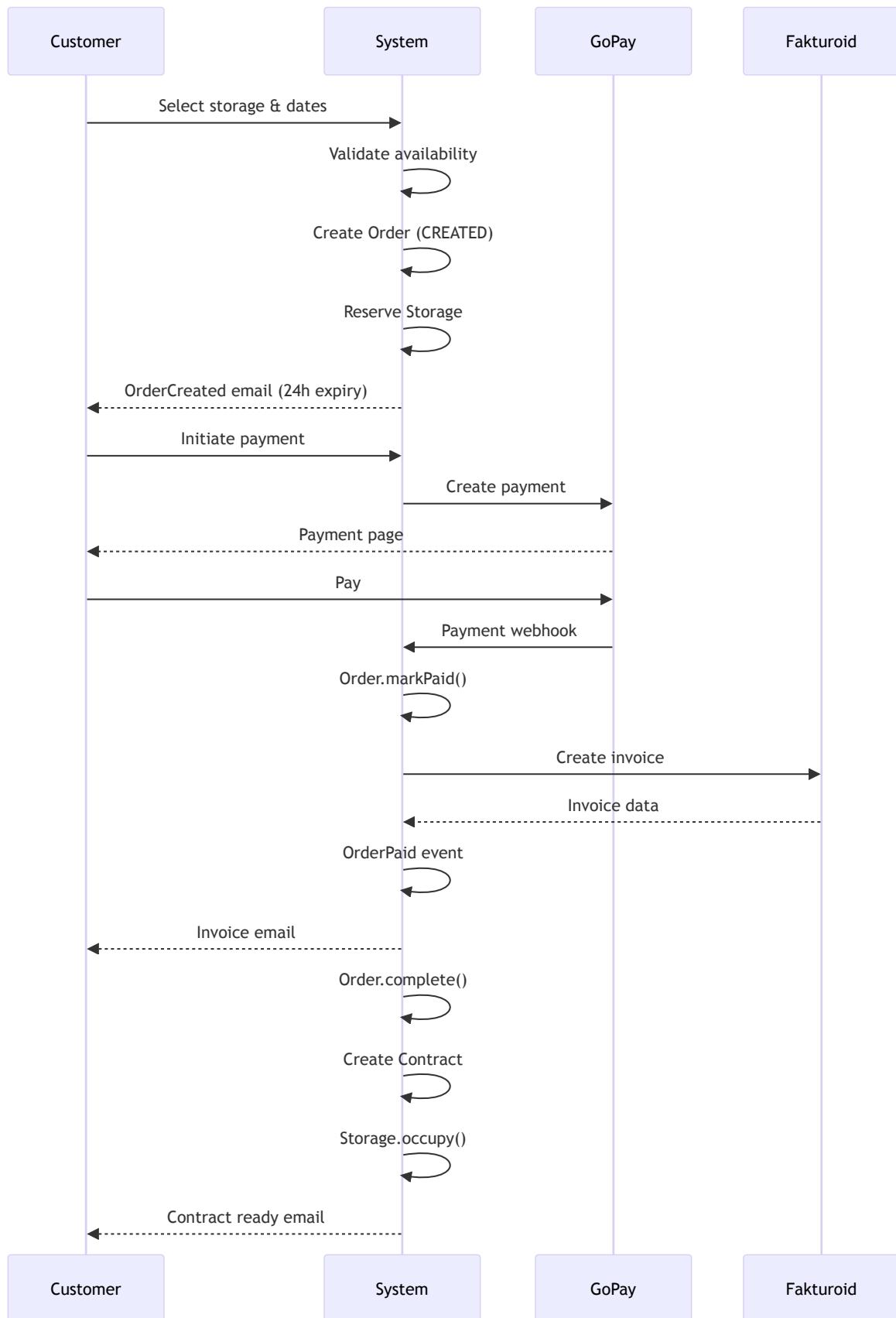
Order Status State Machine



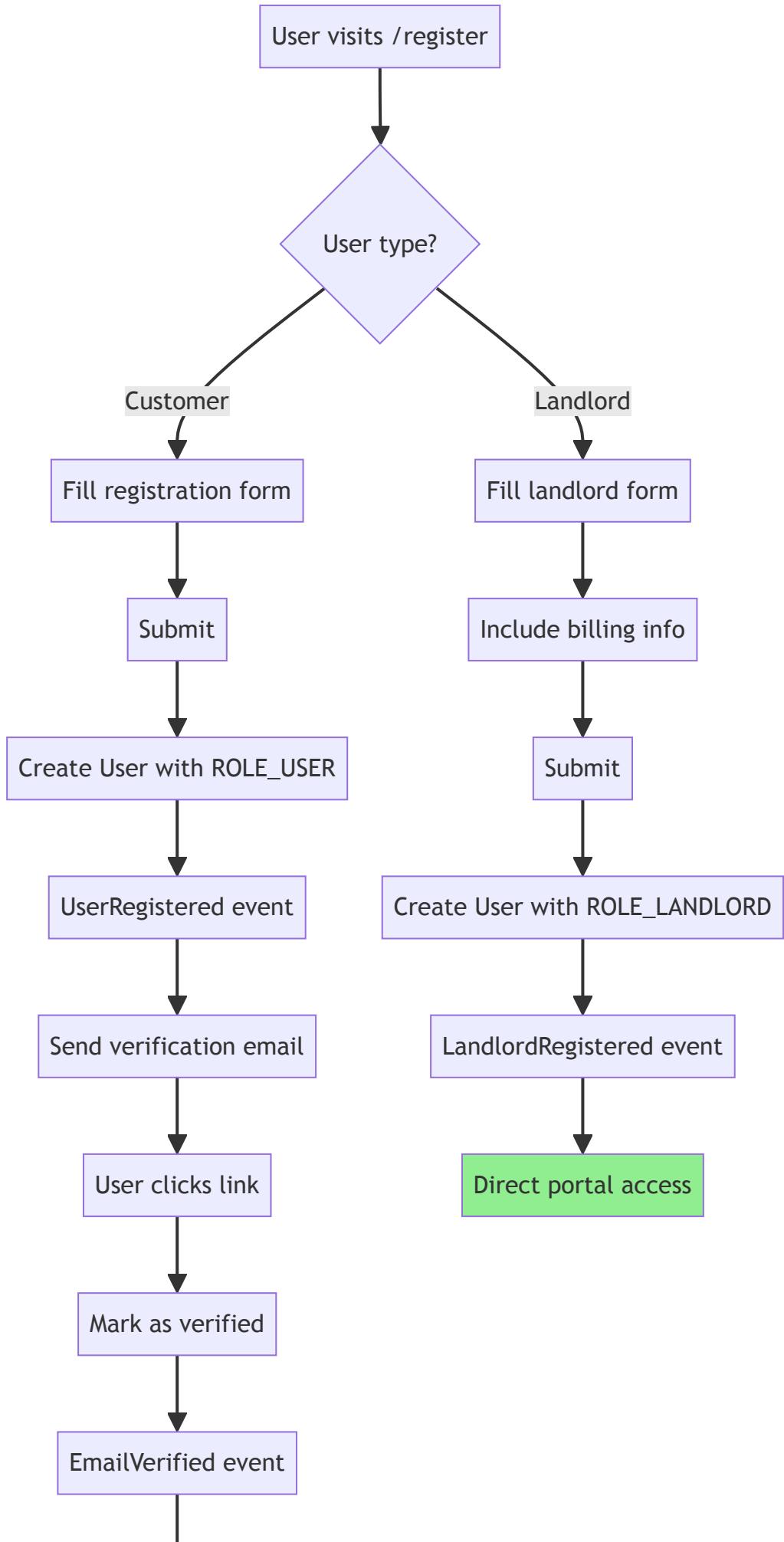
Storage Status State Machine

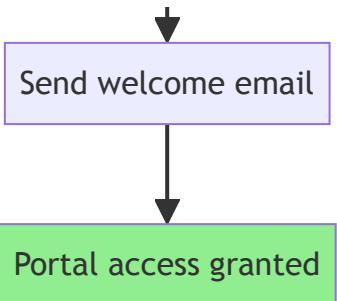


Order & Payment Flow (Sequence)

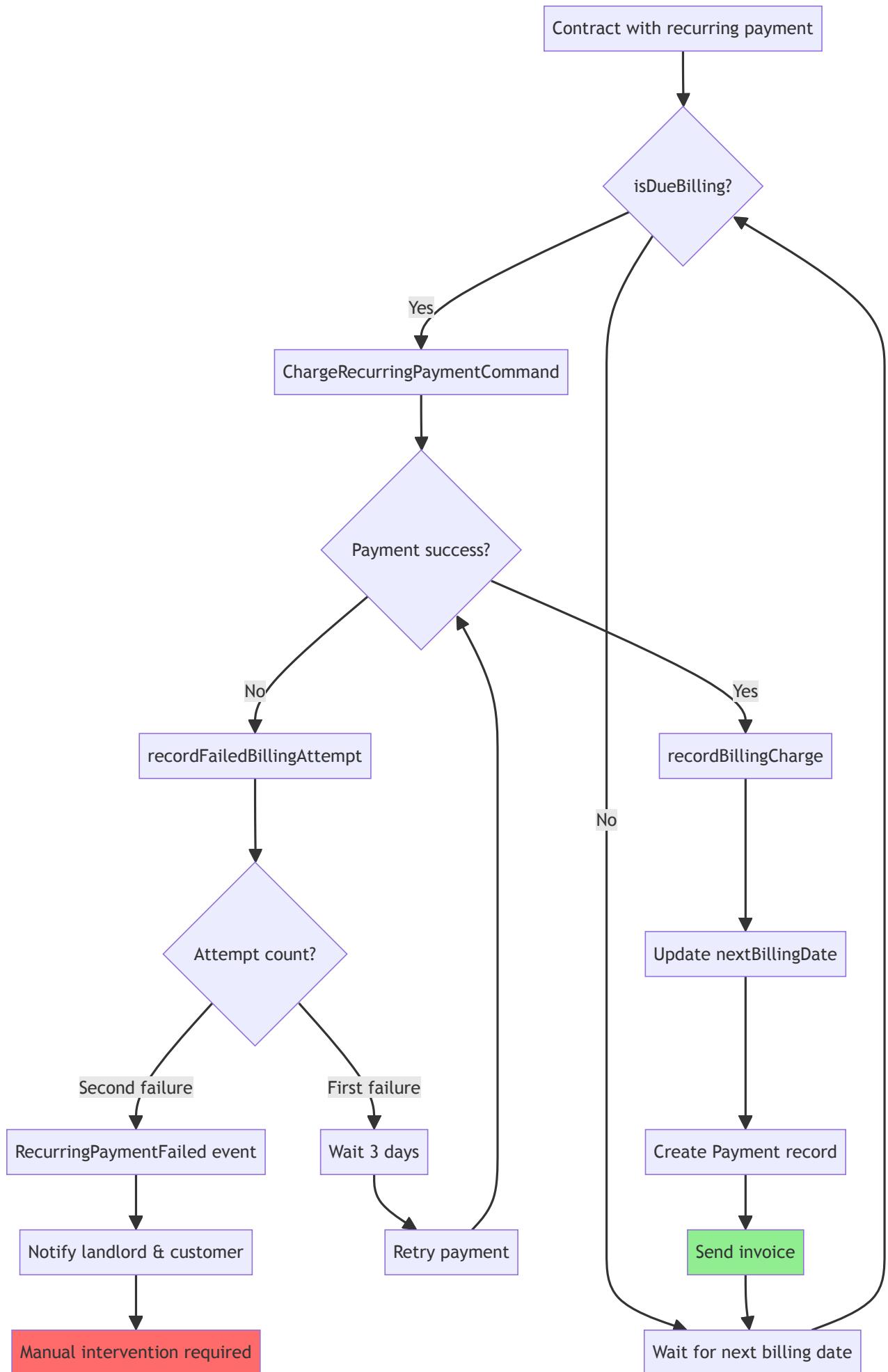


User Registration Flow

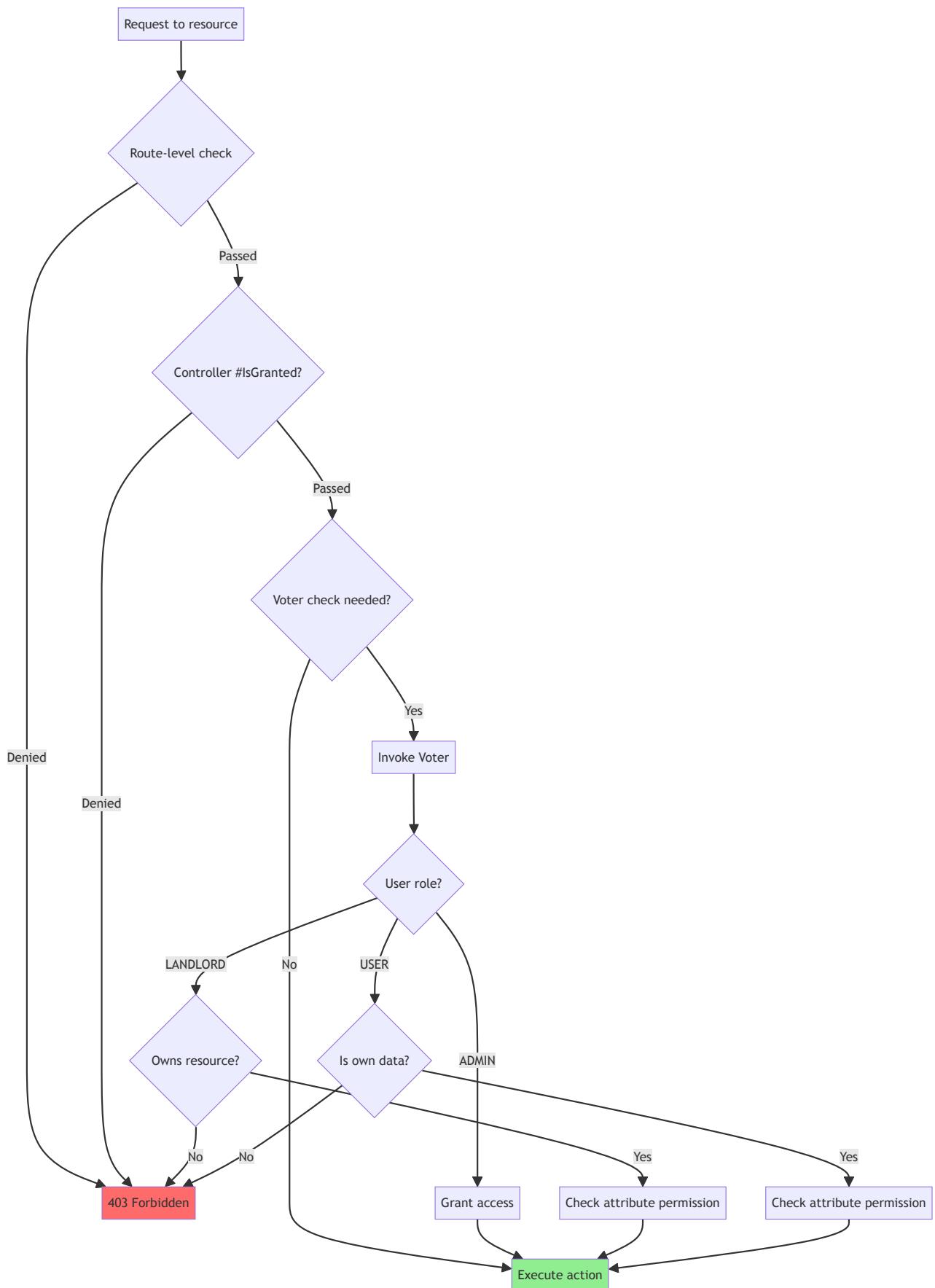




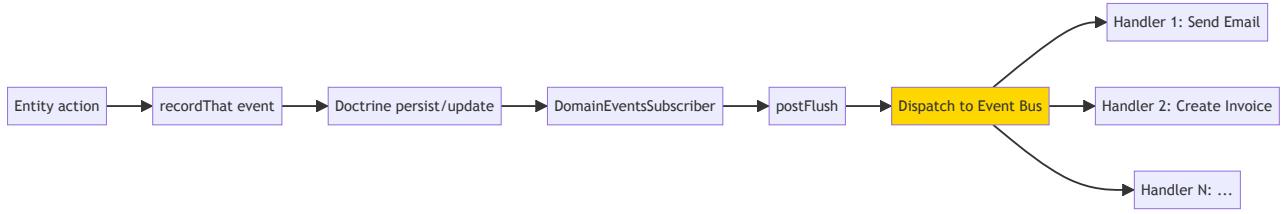
Recurring Billing Flow



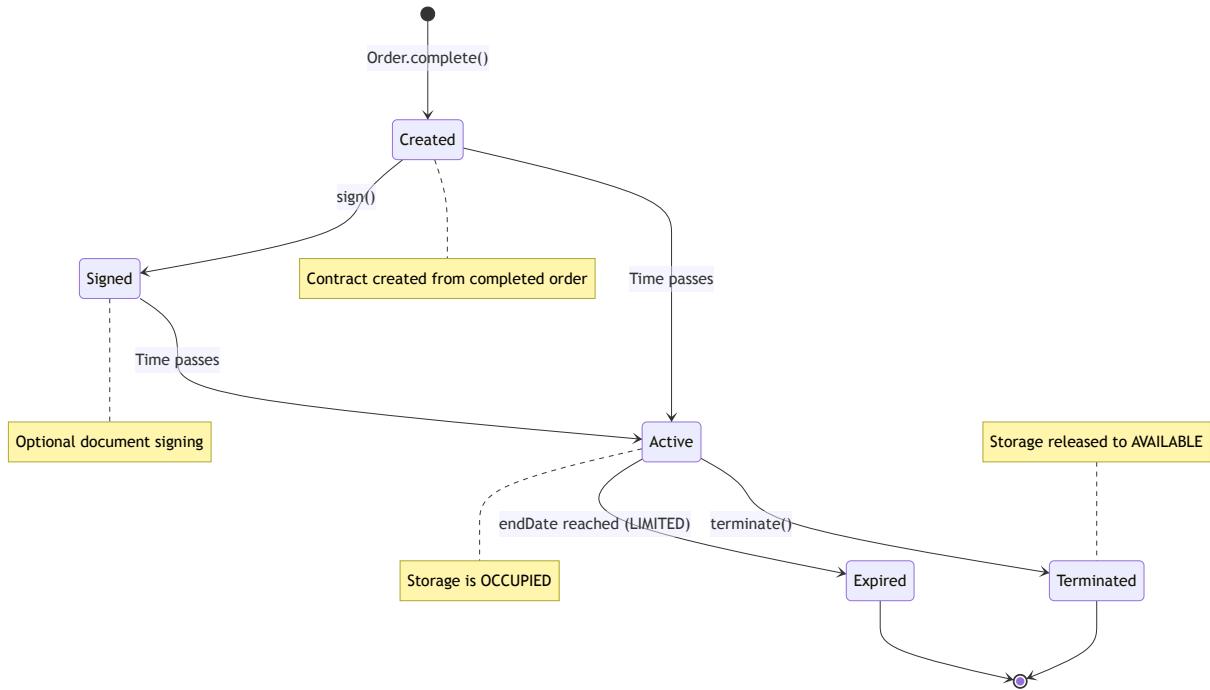
Authorization Flow



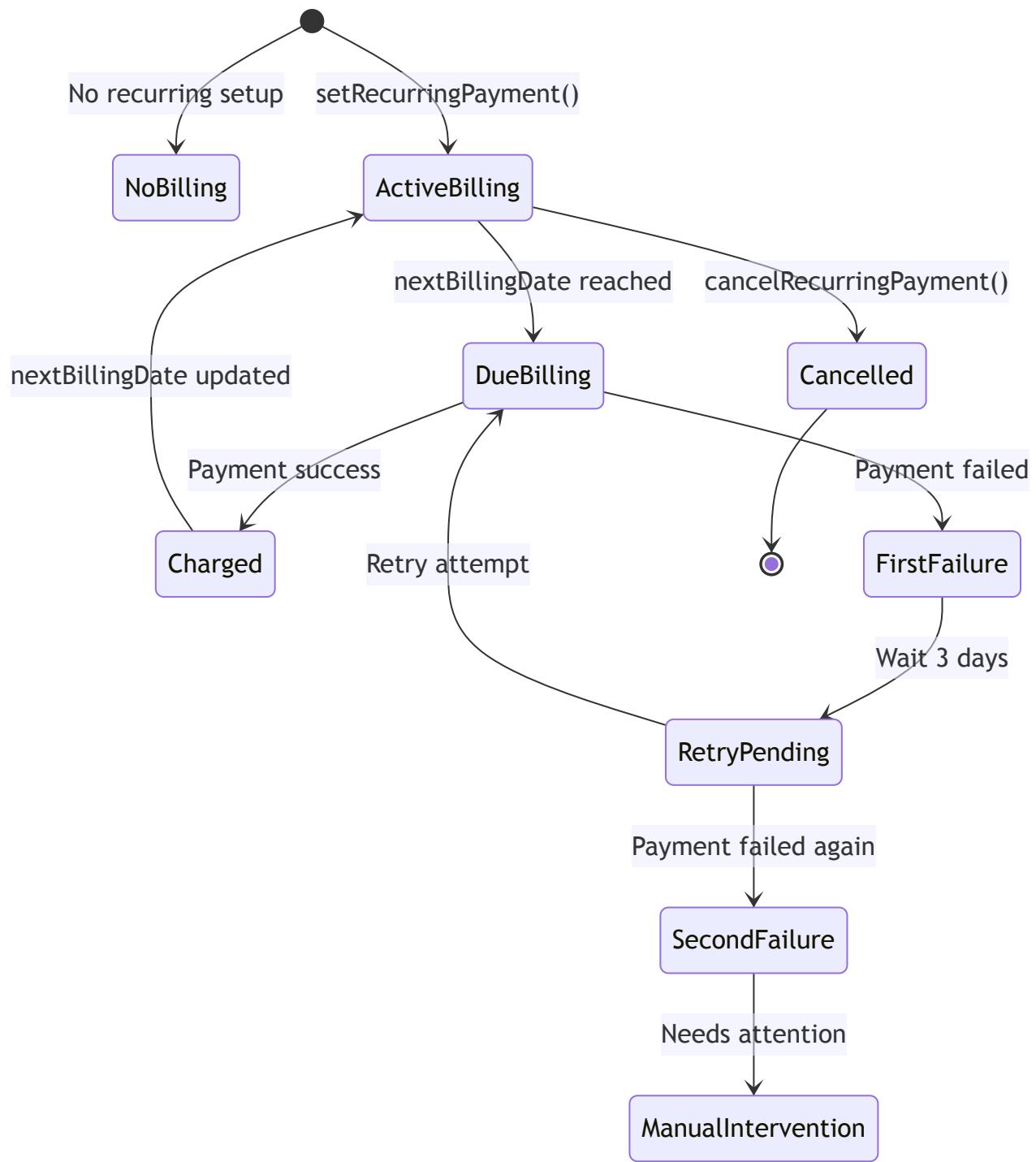
Domain Events Flow



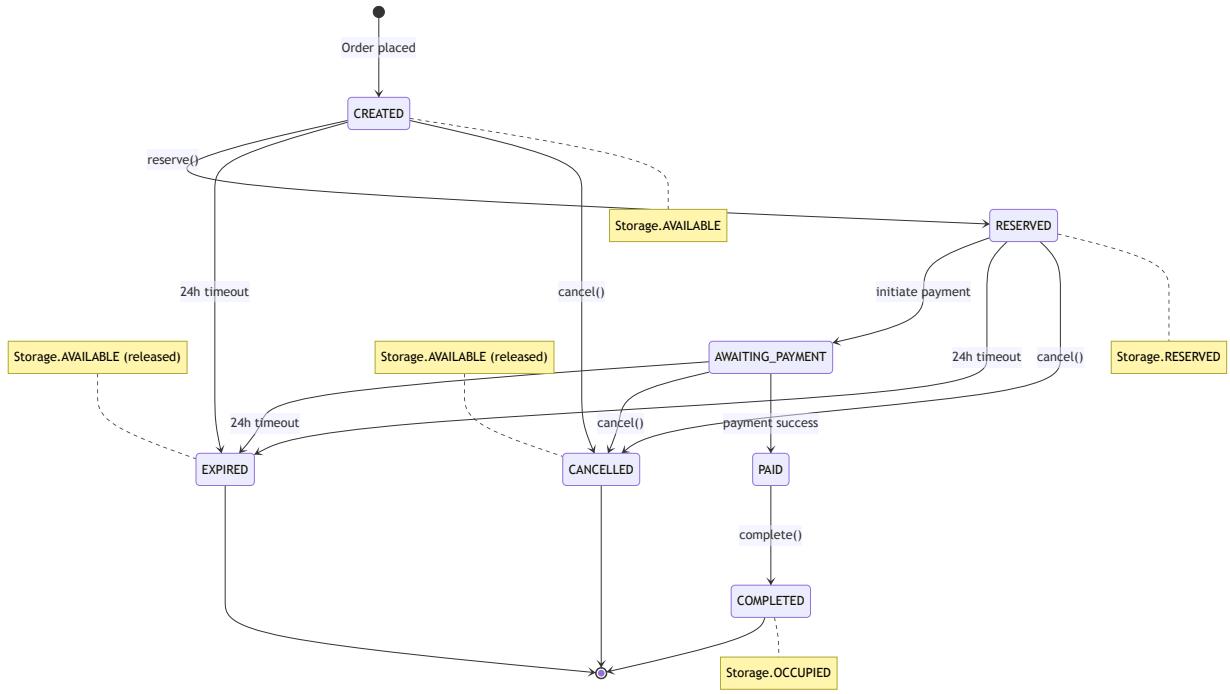
Contract Lifecycle



Contract Billing States (Unlimited Rentals)

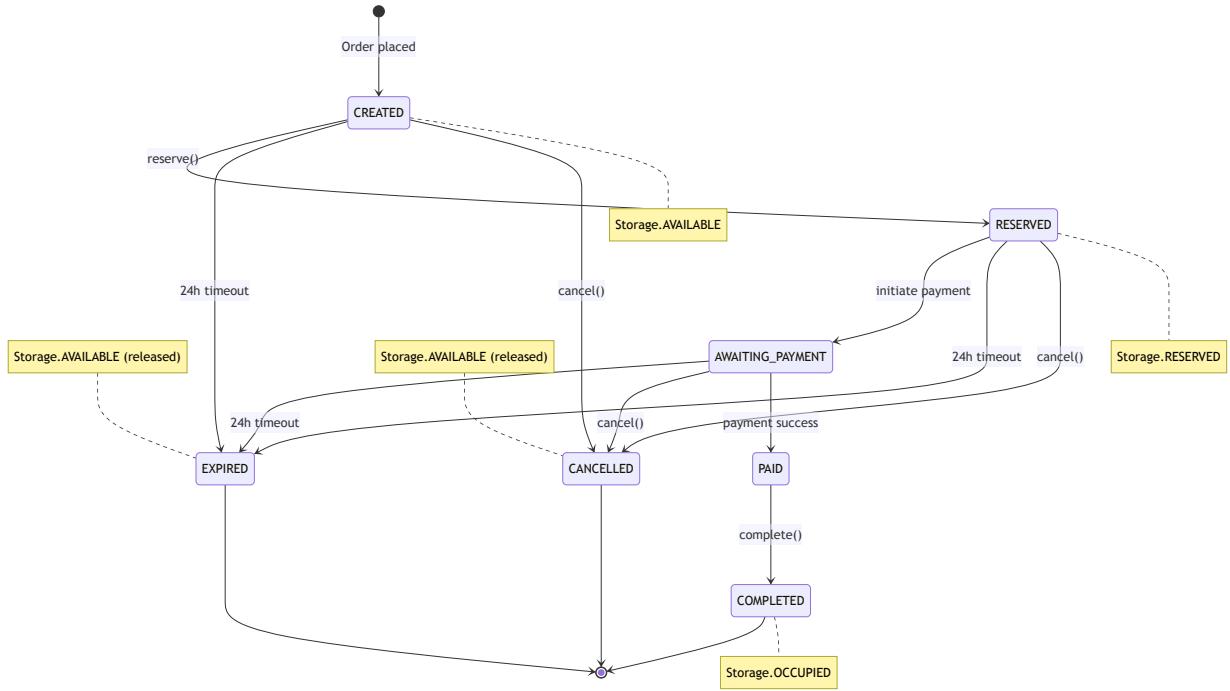


Place & Storage Hierarchy



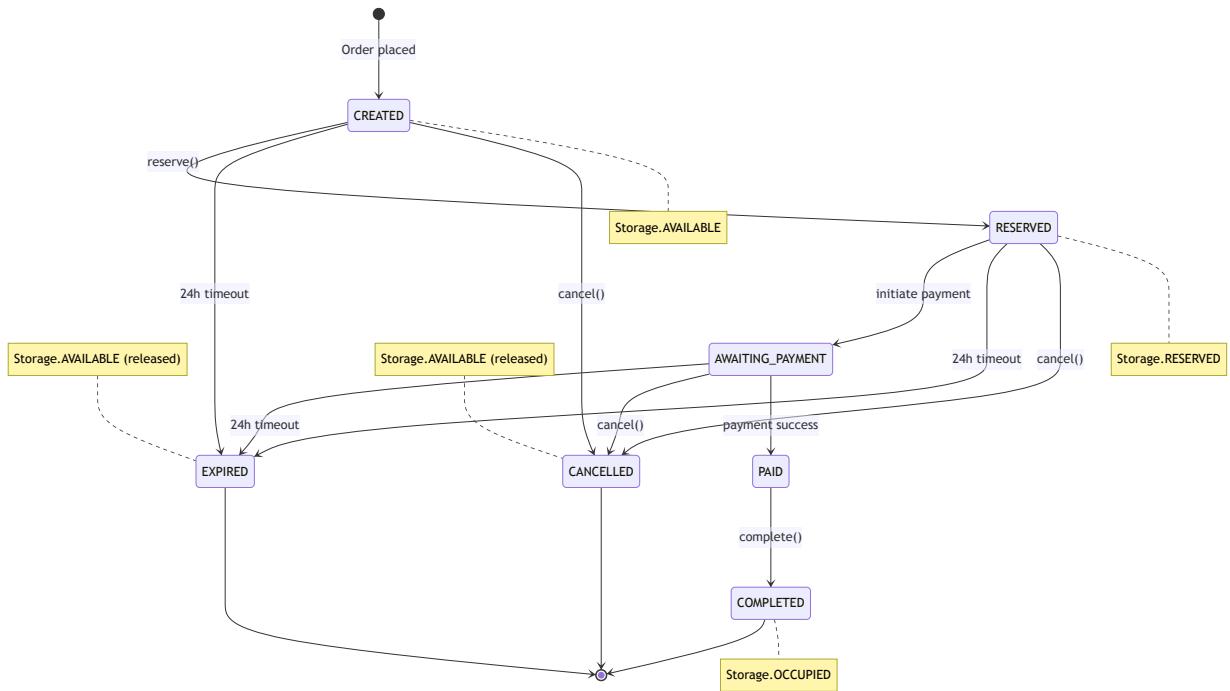
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Invoice Types & Flow



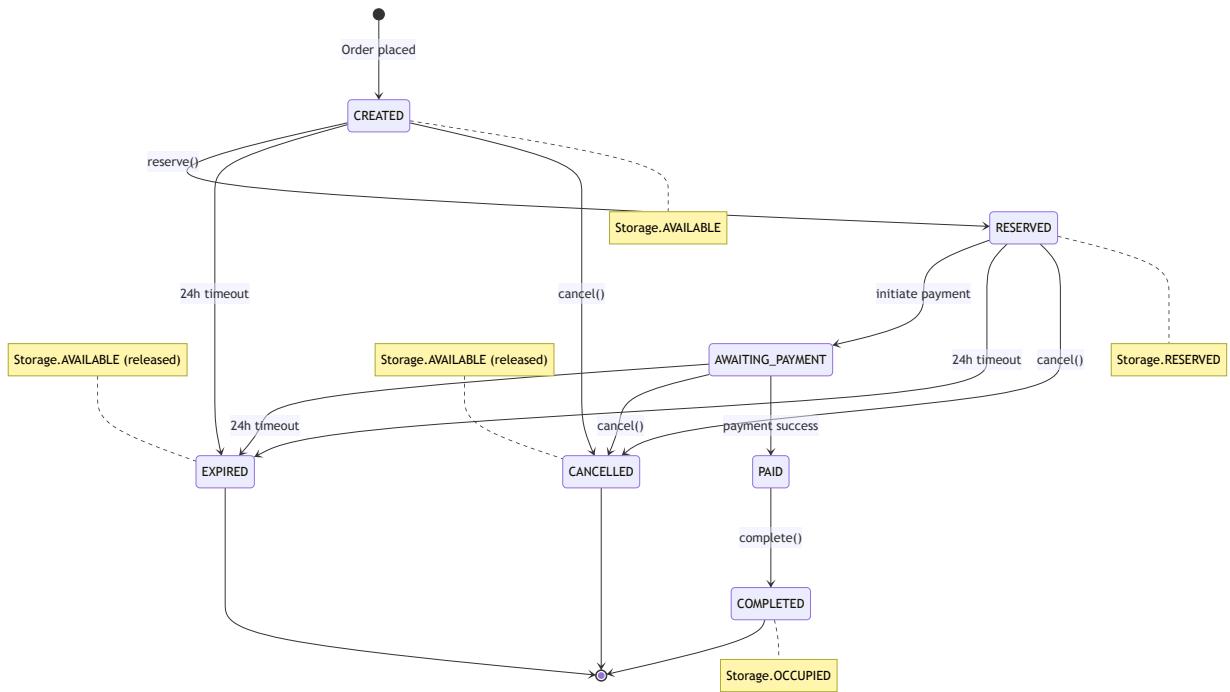
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Password Reset Flow



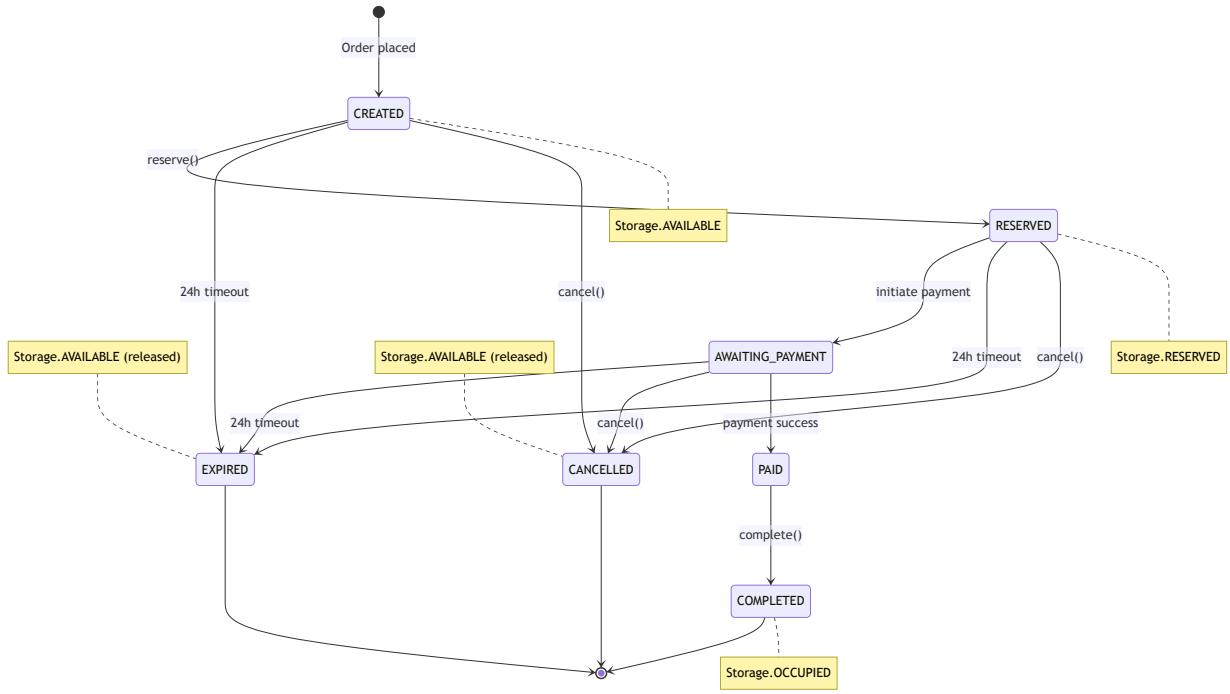
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Place Change Request Workflow



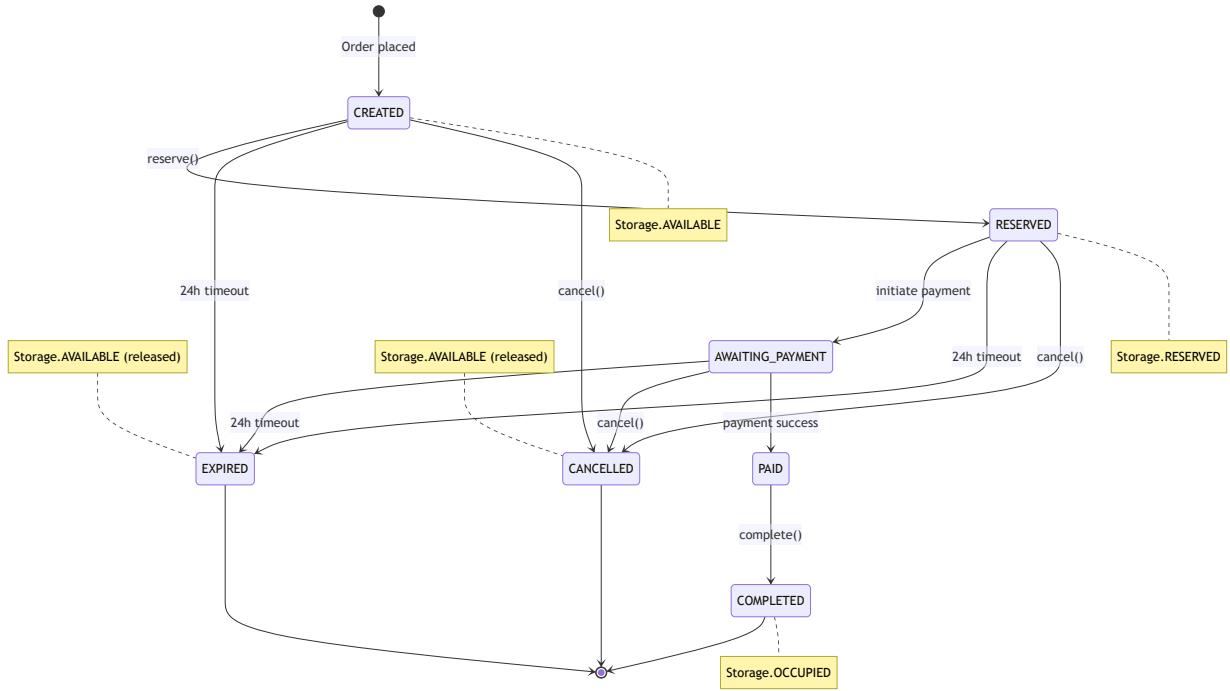
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Create Place Request Workflow



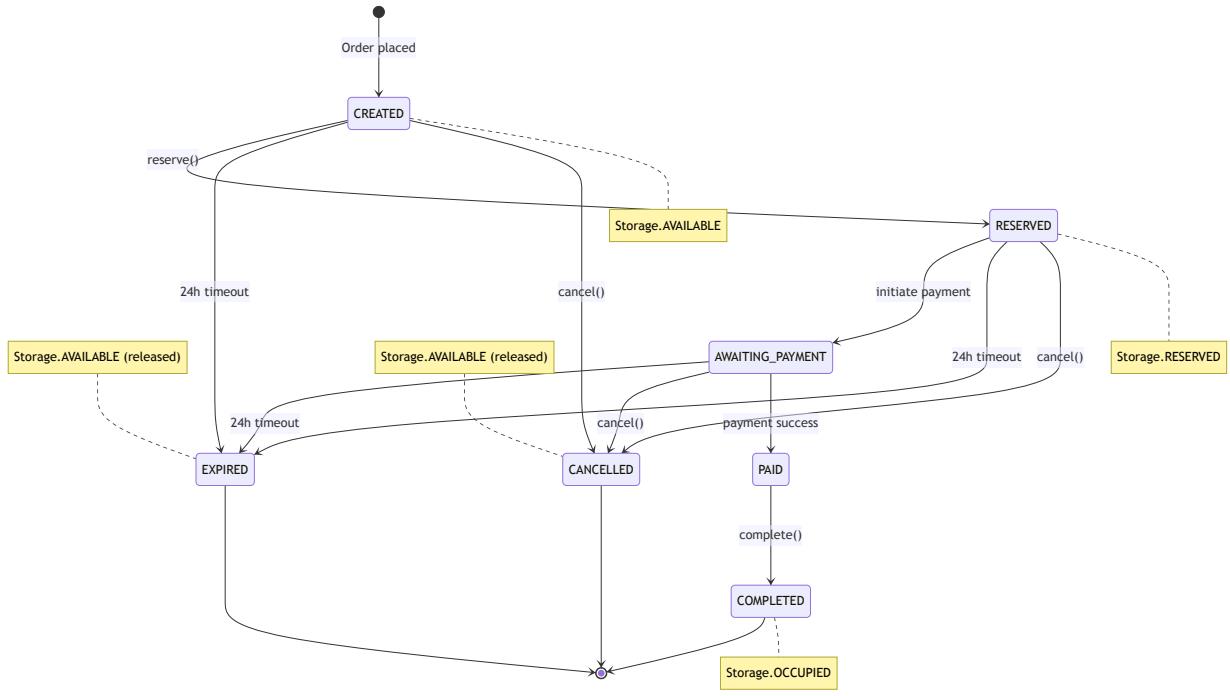
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Dashboard Views by Role



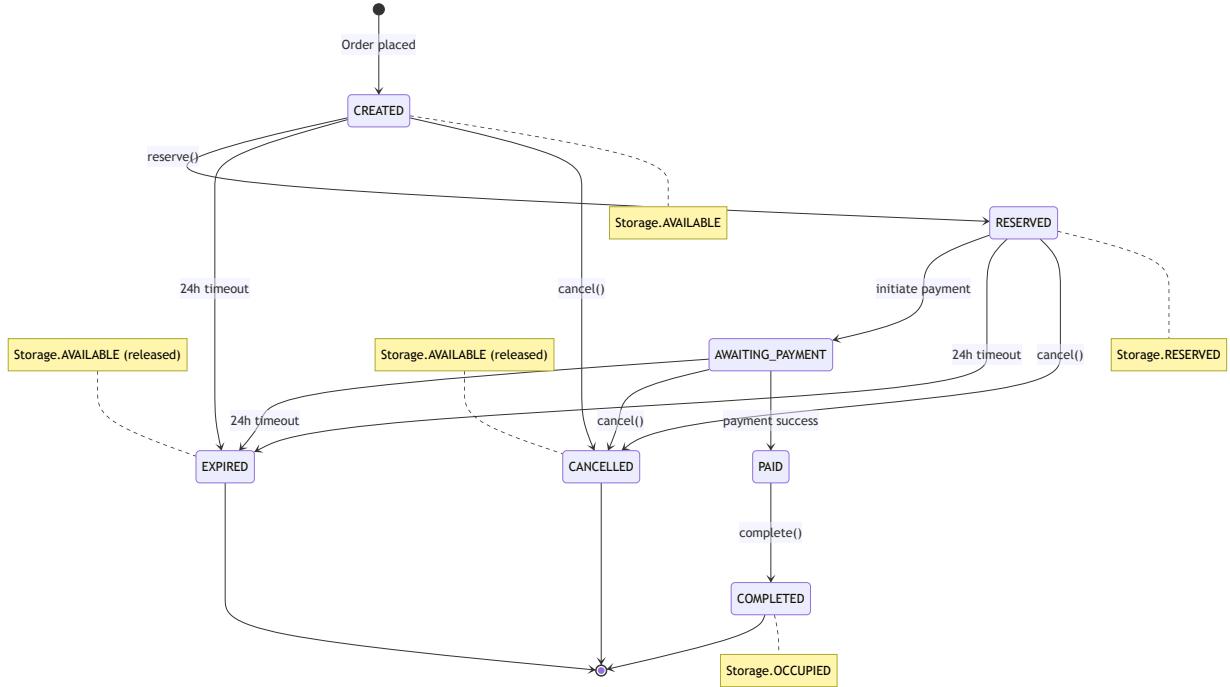
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Email Verification Flow



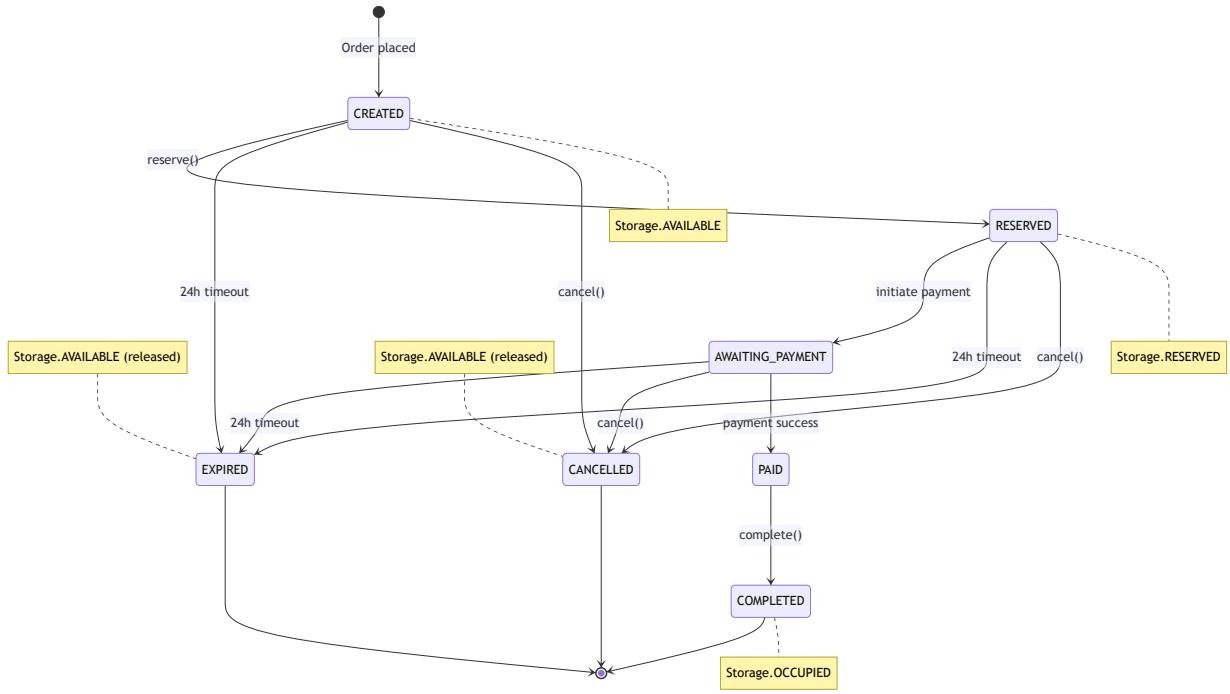
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Storage Selection Modes



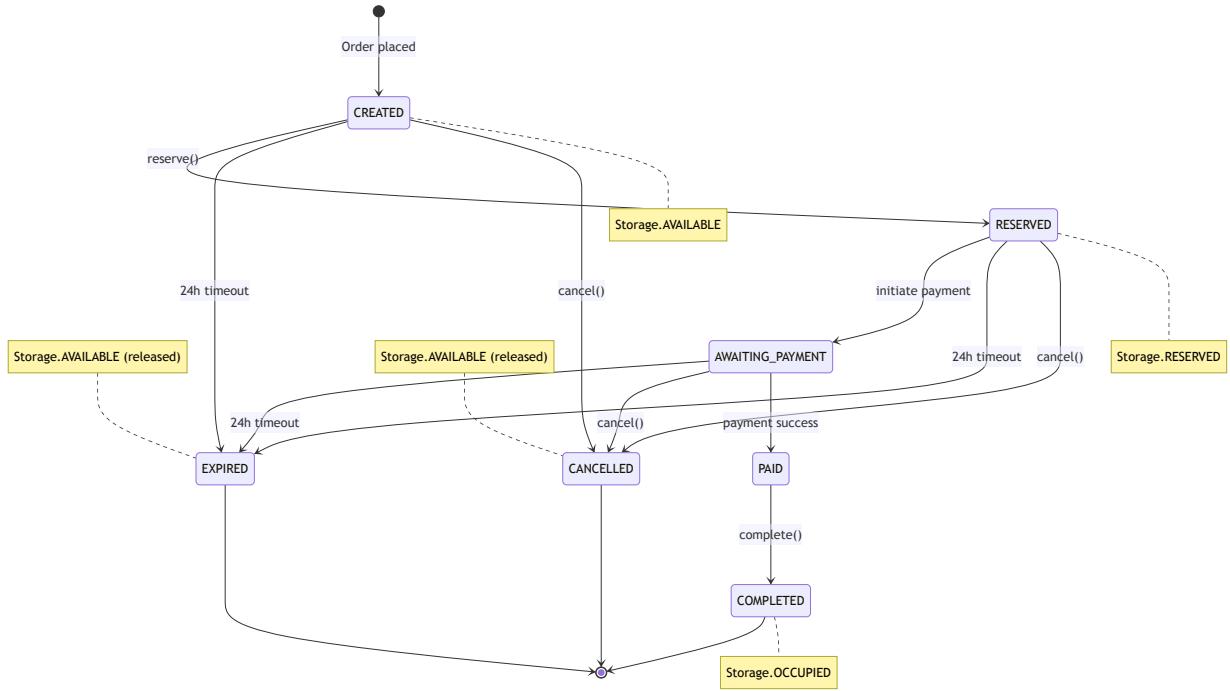
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Pricing Resolution



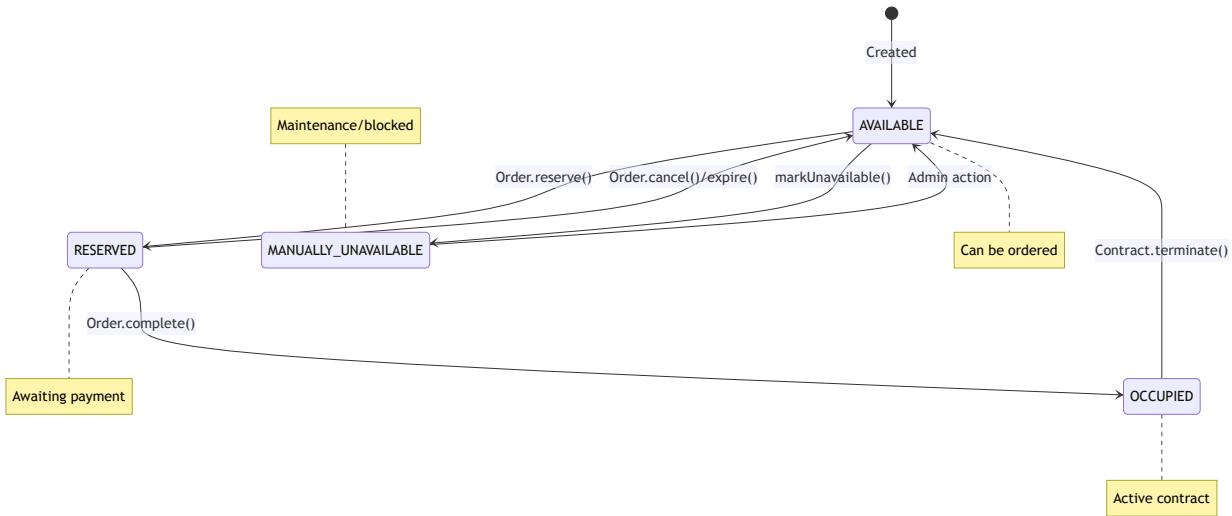
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Commission Rate Resolution



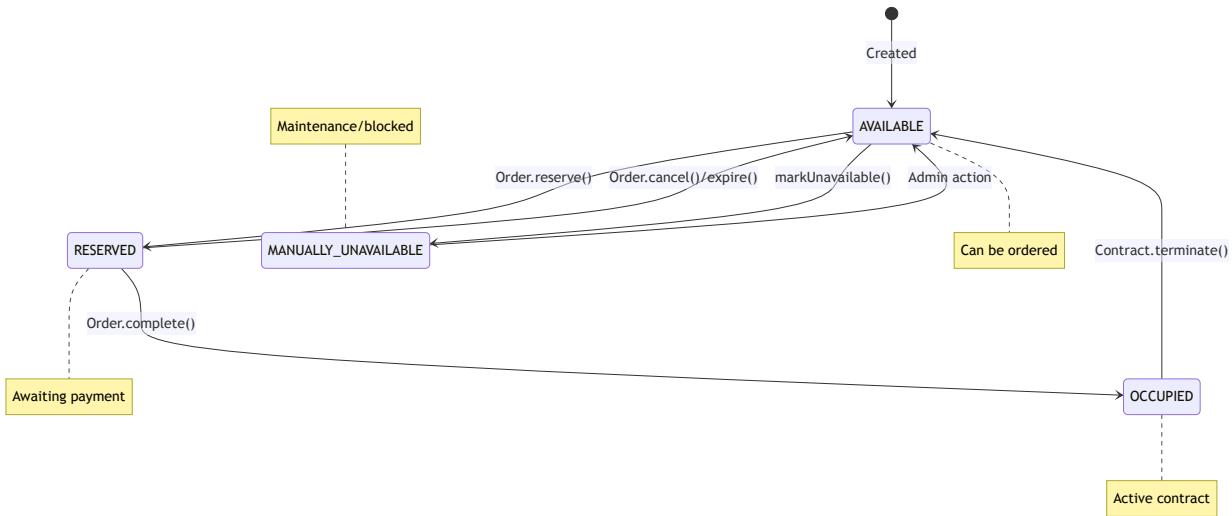
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Audit Log Recording



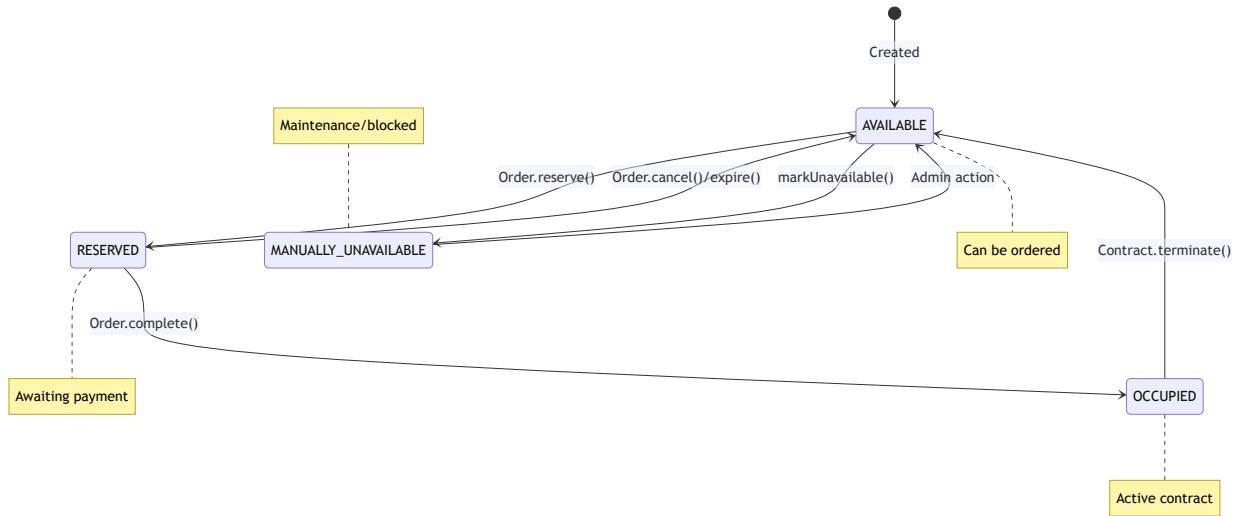
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Full Order Journey



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Storage Unavailability Handling



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