

# Notifications Flow

## Flow: Notifications

**Document:** LLD-005 **Version:** 1.0 **Date:** 2026-02-21 **Author:** Frontend Architect (AI Agent)  
**Status:** Draft **Scope:** Push notification delivery, in-app notification center, notification types, read/unread state, deep linking, and permission handling

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### 1. Overview

Drop's notification system provides users with transaction alerts, security notifications, and system updates. The current implementation consists of an in-app notification center (bell icon) with read/unread state management. Push notifications via Expo Push are planned for mobile but not yet implemented.

**Current state:**

- In-app notification center: Implemented (web)
  - Push notifications: Not yet implemented (planned via Expo Push for mobile)
  - Deep linking from notifications: Not yet configured
  - Notification preferences: Implemented (push/email toggles in settings)
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### 2. Push Notification Delivery (Planned Architecture)

#### 2.1 Sequence Diagram — Push Notification Flow

```
sequenceDiagram
    actor User
    participant Mobile as Expo App
```

```
participant API as Drop API
participant DB as Database
participant Push as Expo Push<br/>Service
participant APNS as APNS / FCM
```

Note over Mobile,APNS: Setup Phase (on login)

Mobile->>Mobile: Request notification permission

Mobile->>Push: Register for push token

Push-->>Mobile: { expoPushToken }

Mobile->>API: POST /api/push-token { token, platform }

API->>DB: INSERT push\_tokens (user\_id, token, platform)

Note over API,APNS: Trigger Phase (on event)

API->>API: Transaction completed / security event

API->>DB: INSERT notification (user\_id, type, title, body)

API->>DB: SELECT push\_tokens WHERE user\_id = ?

API->>Push: POST /send { to: expoPushToken, title, body, data }

Push->>APNS: Forward to APNs (iOS) / FCM (Android)

APNS-->>Mobile: Push notification delivered

Note over Mobile: Receive Phase

Mobile->>Mobile: Display system notification

User->>Mobile: Tap notification

Mobile->>Mobile: Deep link to relevant screen

Mobile->>API: PATCH /api/notifications { notificationIds: [id] }

API->>DB: UPDATE notifications SET read = 1

## 2.2 In-App Notification Center (Current Implementation)

```
sequenceDiagram
```

```
actor User
```

```
participant App as Drop App<br/>( /notifications)
```

```
participant API as Drop API
```

```
participant DB as Database
```

```
User->>App: Tap bell icon (dashboard) or navigate to /notifications
```

```
App->>App: useAuth() – verify authenticated
```

```
App->>API: GET /api/notifications
API->>DB: SELECT notifications WHERE user_id = ?<br/>ORDER BY created_at DESC
API-->>App: { data: [ { id, type, title, body, read, createdAt }, ... ] }

App->>App: Group by date (I DAG, I GAR, older)
App->>App: Render notification cards with icons

Note over App: Auto-mark as read on page load
App->>App: Collect unread notification IDs
App->>API: PATCH /api/notifications<br/>{ notificationIds: [unread IDs] }
API->>DB: UPDATE notifications SET read = 1<br/>WHERE id IN (?) AND user_id = ?
API-->>App: 200 OK (fire-and-forget)
```

## 3. Notification Center Components

### 3.1 Component Diagram

```
graph TD
  subgraph "Notification Center Page"
    Header["Header<br/>Back button + 'Varsler' title"]
    NotificationList["NotificationList"]
    EmptyState["EmptyState<br/>Bell icon + 'Ingen varsler enna'"]
  end

  subgraph "Notification List"
    DateGroup["DateGroupHeader<br/>('I DAG', 'I GAR', date)"]
    NotificationCard["NotificationCard"]
  end

  subgraph "Notification Card"
    TypeIcon["TypeIcon<br/>(colored circle + icon)"]
    Content["Content<br/>(title, body, timestamp)"]
    UnreadDot["UnreadDot<br/>(blue indicator)"]
  end

  subgraph "Dashboard Integration"
    BellIcon["Bell Icon<br/>(header, with badge count)"]
  end
```

end

NotificationList --> DateGroup

DateGroup --> NotificationCard

NotificationCard --> TypeIcon

NotificationCard --> Content

NotificationCard --> UnreadDot

BellIcon -->|navigate| Header

## 4. Notification Type Table

| Type                 | Icon         | Icon Color         | Background | Title Example                          | Body Example                   | Priority |
|----------------------|--------------|--------------------|------------|--|--------------------------------|----------|
| transaction_complete | ArrowUpRight | #0B6E35<br>(green) | #F0FDF4    | "Overføring til Mama Jasmina fullfort" | "2 000 kr sendt til Serbia"    | Normal   |
| qr_payment           | ScanLine     | #D4A017<br>(gold)  | #FEF3C7    | "QR-betaling hos Ahmetov Kebab"        | "129 kr betalt"                | Normal   |
| security             | Smartphone   | #3B82F6<br>(blue)  | #EFF6FF    | "Ny pålogging fra iPhone"              | "Oslo, Norge"                  | High     |
| rate_update          | TrendingUp   | #D4A017<br>(gold)  | #FEF3C7    | "Valutakurs oppdatert"                 | "1 NOK = 11.70 RSD"            | Low      |
| system               | Bell         | #6B7280<br>(gray)  | #F3F4F6    | "Systemoppdatering"                    | "Drop er oppdatert til v0.2.0" | Low      |
| promotional          | —            | #6B7280<br>(gray)  | #F3F4F6    | "Nytt tilbud"                          | "0% gebyr denne uken!"         | Low      |

### 4.1 Priority Levels

| Priority | Behavior                         | Push                       | In-App                    |
|----------|----------------------------------|----------------------------|---------------------------|
| High     | Immediate delivery, sound, badge | Yes (when implemented)     | Top of list, bold styling |
| Normal   | Standard delivery                | Yes (when implemented)     | Normal styling            |
| Low      | Batched delivery                 | Optional (user preference) | Normal styling            |

# 5. Deep Link Routing Table (Planned)

| Notification Type                 | Deep Link Target        | Web Route                            | Mobile Route                           |
|-----------------------------------|-------------------------|--------------------------------------|--|
| <code>transaction_complete</code> | Transaction detail      | <code>/transactions?id={txId}</code> | <code>/(tabs)/history?id={txId}</code> |
| <code>qr_payment</code>           | Transaction detail      | <code>/transactions?id={txId}</code> | <code>/(tabs)/history?id={txId}</code> |
| <code>security</code>             | Security settings       | <code>/profile/security</code>       | <code>/(tabs)/profile</code>           |
| <code>rate_update</code>          | Send money (with rate)  | <code>/send</code>                   | <code>/(tabs)/send</code>              |
| <code>system</code>               | Notification center     | <code>/notifications</code>          | <code>/notifications</code>            |
| <code>promotional</code>          | Landing or feature page | <code>/</code> or feature URL        | App home                               |

## 5.1 Deep Link Format

| Platform         | Format        | Example   |
|------------------|---------------|---|
| Web              | URL path      | <code>https://getdrop.no/transactions?id=tx_rem_1</code>                |
| Mobile (planned) | Custom scheme | <code>drop://transactions/tx_rem_1</code>                               |
| Expo push data   | JSON payload  | <code>{ "type": "transaction_complete", "targetId": "tx_rem_1" }</code> |

# 6. Permission Handling

## 6.1 Notification Permission Flow

| Platform       | Permission Request                                   | First Time   | Denied                                       | Settings Redirect                   |
|----------------|--|--|--|-------------------------------------|
| iOS (Expo)     | <code>Notifications.requestPermissionsAsync()</code> | System dialog: "Drop would like to send you notifications"           | Returns <code>{ status: 'denied' }</code>    | <code>Linking.openSettings()</code> |
| Android (Expo) | <code>Notifications.requestPermissionsAsync()</code> | System dialog (Android 13+): "Allow Drop to send you notifications?" | Returns <code>{ status: 'denied' }</code>    | <code>Linking.openSettings()</code> |
| Web            | <code>Notification.requestPermission()</code>        | Browser prompt: "getdrop.no wants to show notifications"             | Blocked; user must reset in browser settings | Site settings via address bar       |

## 6.2 Permission State Machine

stateDiagram-v2

[\*] --> NotDetermined: First launch

NotDetermined --> Requesting: App requests permission

Requesting --> Granted: User allows

Requesting --> Denied: User denies

Granted --> Active: Push token registered

Active --> Disabled: User toggles off in Drop settings

Disabled --> Active: User toggles on in Drop settings

Denied --> SettingsRedirect: App shows "enable in settings" prompt

SettingsRedirect --> Granted: User enables in OS settings

SettingsRedirect --> Denied: User keeps disabled

## 7. Notification Preferences (Settings Integration)

Users control notification delivery via `/profile/notifications`:

| Setting                 | API Field                        | Effect   |
|-------------------------|----------------------------------|--|
| Push notifications ON   | <code>pushEnabled: true</code>   | Push tokens active, notifications delivered    |
| Push notifications OFF  | <code>pushEnabled: false</code>  | Push tokens retained but not used for delivery |
| Email notifications ON  | <code>emailEnabled: true</code>  | Email alerts sent for high-priority events     |
| Email notifications OFF | <code>emailEnabled: false</code> | No email alerts                                |

**API:** `PATCH /api/settings { pushEnabled: boolean, emailEnabled: boolean }`

## 8. Time Formatting

| Condition | Format                 | Example                |
|-----------|------------------------|------------------------|
| Today     | "I dag kl. HH:MM"      | "I dag kl. 14:32"      |
| Yesterday | "I gar kl. HH:MM"      | "I gar kl. 18:45"      |
| Older     | "DD.MM.YYYY kl. HH:MM" | "19.02.2026 kl. 09:00" |

## 9. Platform Differences

| Feature               | Web   | Mobile                              |
|-----------------------|---|-------------------------------------|
| Notification center   | <code>/notifications</code> page with BottomNav | Not implemented                     |
| Bell icon badge       | Dashboard header (unread count)                 | Not implemented                     |
| Push notifications    | Not applicable (web push planned)               | Not implemented (Expo Push planned) |
| Auto-read on view     | Yes (marks all unread as read on page load)     | N/A                                 |
| Deep linking          | URL-based routing                               | Not configured                      |
| Notification grouping | Date-based (I DAG, I GAR)                       | N/A                                 |
| Permission handling   | Browser Notification API                        | Expo Notifications API              |

## 10. Data Schema

### 10.1 Notifications Table

| Column                  | Type    | Description  |
|-------------------------|---------|--|
| <code>id</code>         | TEXT PK | Format: <code>noti_</code> + 16 hex chars  |
| <code>user_id</code>    | TEXT FK | References <code>users(id)</code>  |
| <code>type</code>       | TEXT    | <code>transaction_complete</code> , <code>qr_payment</code> , <code>security</code> , <code>rate_update</code> |
| <code>title</code>      | TEXT    | Notification title (Norwegian)   |
| <code>body</code>       | TEXT    | Notification body text   |
| <code>read</code>       | INTEGER | 0 = unread, 1 = read   |
| <code>created_at</code> | TEXT    | ISO timestamp  |

## 10.2 API Endpoints

| Method | Endpoint                        | Purpose                                  |
|--------|---------------------------------|--|
| GET    | <code>/api/notifications</code> | List all notifications for user          |
| PATCH  | <code>/api/notifications</code> | Mark notifications as read (max 100 IDs) |

## 11. Accessibility Considerations (WCAG 2.1 AA)

| Requirement       | Implementation   |
|-------------------|--|
| Badge count       | Bell icon badge uses aria-label "X uleste varsler"                   |
| Read/unread       | Unread dot uses both visual indicator (blue dot) and aria attributes |
| Notification list | Semantic list markup with role="list"                                |
| Empty state       | Descriptive text "Ingen varsler enna" with Bell icon                 |
| Time formatting   | Relative time ("I dag kl. 14:32") for recent, absolute for older     |
| Auto-read         | Fire-and-forget PATCH does not interrupt user reading                |
| Push permission   | Clear explanation before requesting system permission                |

## 12. Cross-References

- **Notifications API:** `GET/PATCH /api/notifications` — See [API Reference](#)
- **Settings API:** `PATCH /api/settings` (push/email toggles) — See [API Reference](#)
- **Notifications schema:** `notifications` table — See [Database Schema](#)
- **Settings schema:** `settings` table — See [Database Schema](#)
- **Component overview:** See [component-overview.md](#)
- **Figma notifications screen:** `mockups/figma-make-export/src/app/screens/Notifications.tsx`
- **Web notifications page:** `src/drop-app/src/app/notifications/page.tsx` — See [PAGES.md](#)
- **Profile settings flow:** See [flow-profile-settings.md](#)

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