

STEP 22: Notifications & Reminders Engine - Testing Guide

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Status:  Complete

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Overview

This testing guide provides comprehensive test scenarios for the Notifications & Reminders Engine. All tests should be performed to ensure the system works correctly for both buyers and suppliers.

Test Scenarios

1. Event-Based Notifications

Test 1.1: Supplier Response Submitted

Steps:

1. Log in as a supplier
2. Navigate to an RFP with open submission window
3. Fill out and submit a response
4. Log out and log in as the buyer (RFP owner)
5. Check the bell icon for unread count
6. Navigate to /dashboard/notifications

Expected Result:

- Buyer should see unread notification count badge
 - Notification should appear with title "Supplier Response Submitted"
 - Message should include supplier name and RFP title
 - Notification should be marked as unread (blue background, dot indicator)
 - Email should be sent to buyer (if email notifications enabled)
-

Test 1.2: Supplier Question Created

Steps:

1. Log in as a supplier
2. Navigate to RFP questions page
3. Submit a new question (during Q&A window)
4. Log out and log in as the buyer
5. Check notifications

Expected Result:

- Buyer receives "New Supplier Question" notification
 - Bell icon shows unread count
 - Clicking notification navigates to RFP detail page
-

Test 1.3: Supplier Question Answered (Non-Broadcast)

Steps:

1. Log in as a buyer
2. Navigate to RFP detail page
3. Go to Q&A panel and answer a specific supplier question
4. Ensure "broadcast" toggle is OFF
5. Log out and log in as the supplier (who asked the question)
6. Check notifications

Expected Result:

- Only the specific supplier receives notification
 - Notification title: "Your Question Was Answered"
 - Email sent to supplier if enabled
-

Test 1.4: Broadcast Created

Steps:

1. Log in as a buyer
2. Navigate to RFP detail page
3. Go to Q&A panel
4. Either:
 - Answer a question with "Broadcast to ALL suppliers" toggle ON
 - OR create a manual broadcast message
5. Log out and log in as multiple suppliers

Expected Result:

- ALL suppliers with portalUserId receive "New Buyer Announcement" notification
 - Each supplier can see their own notification
 - Suppliers cannot see each other's notifications
-

2. Timeline-Based Notifications

Test 2.1: Q&A Window Open

Steps:

1. As a buyer, create/edit an RFP
2. Set `askQuestionsStart` to today's date
3. Ensure suppliers are invited
4. Call the notification runner: `POST /api/notifications/run`
5. Log in as each supplier

Expected Result:

- Each supplier receives "Q&A Window Open" notification
 - Notification appears only once per day (idempotent)
-

Test 2.2: Q&A Window Closing Soon

Steps:

1. Set `askQuestionsEnd` to 3 days from today
2. Call notification runner
3. Check supplier notifications

Expected Result:

- Suppliers receive "Q&A Window Closing Soon" notification
-

Test 2.3: Submission Window Open

Steps:

1. Set `submissionStart` to today's date
2. Call notification runner
3. Check supplier notifications

Expected Result:

- Suppliers receive "Response Submission Window Open" notification
-

Test 2.4: Submission Deadline Soon

Steps:

1. Set `submissionEnd` to 3 days from today
2. Call notification runner
3. Check supplier notifications

Expected Result:

- Suppliers receive "Response Deadline Approaching" notification
-

Test 2.5: Submission Deadline Passed

Steps:

1. Set `submissionEnd` to yesterday

2. Call notification runner
3. Check buyer notifications

Expected Result:

- Buyer receives “Response Submission Deadline Passed” notification
-

Test 2.6: Demo Window Open**Steps:**

1. Set `demoWindowStart` to today
2. Call notification runner
3. Check buyer notifications

Expected Result:

- Buyer receives “Demo Window Open” notification
-

Test 2.7: Award Date Soon**Steps:**

1. Set `awardDate` to 3 days from today
2. Call notification runner
3. Check buyer notifications

Expected Result:

- Buyer receives “Award Date Approaching” notification
-

Test 2.8: Award Date Reached**Steps:**

1. Set `awardDate` to today
2. Call notification runner
3. Check buyer notifications

Expected Result:

- Buyer receives “Award Date Reached” notification
-

3. Notification Preferences**Test 3.1: Disable Email Only****Steps:**

1. Log in as a buyer
2. Navigate to `/dashboard/settings/notifications`
3. Turn OFF “Email Notifications”
4. Keep “In-App Notifications” ON
5. Trigger a notification event (e.g., supplier submits response)

Expected Result:

- In-app notification is created

- NO email is sent
 - Notification appears in notification center
-

Test 3.2: Disable Both Email and In-App

Steps:

1. Turn OFF both “Email Notifications” and “In-App Notifications”
2. Trigger a notification event

Expected Result:

- NO notifications are created
 - No email is sent
 - Bell icon shows 0 unread
-

Test 3.3: Disable Specific Category

Steps:

1. Turn OFF “Supplier Responses” notifications
2. Keep other categories enabled
3. Trigger supplier response submission

Expected Result:

- NO notification created for supplier response
 - Other categories still work
-

Test 3.4: Supplier Preferences

Steps:

1. Log in as a supplier
2. Navigate to /supplier/settings/notifications
3. Disable “Q&A Timeline”
4. Trigger Q&A window opening event

Expected Result:

- Supplier does NOT receive Q&A window notification
 - Other notification types still work
-

4. Notification Center UI

Test 4.1: View Notification List

Steps:

1. Log in as a buyer with several notifications
2. Navigate to /dashboard/notifications

Expected Result:

- Notifications displayed in reverse-chronological order
- Unread notifications have blue background and dot indicator

- Read notifications have normal background
 - Relative time displayed (e.g., "2 hours ago")
 - Category badges color-coded correctly
-

Test 4.2: Mark as Read

Steps:

1. Click the check button on an unread notification
2. Observe the UI update
3. Check bell icon unread count

Expected Result:

- Notification immediately marked as read (optimistic update)
 - Blue background and dot removed
 - Unread count decreases by 1
-

Test 4.3: Navigate to RFP

Steps:

1. Click on a notification with associated rfpld
2. Observe navigation

Expected Result:

- Automatically navigates to RFP detail page
 - Notification marked as read
 - URL is correct (/dashboard/rfps/[id])
-

Test 4.4: Empty State

Steps:

1. Create a new buyer account with no notifications
2. Navigate to /dashboard/notifications

Expected Result:

- Empty state message displayed
 - Bell icon shows
 - "Back to RFPs" button visible
-

5. Bell Icon Functionality

Test 5.1: Unread Count Display

Steps:

1. Create 3 unread notifications
2. Check bell icon in header

Expected Result:

- Red badge shows "3"
 - BellDot icon displayed (instead of plain Bell)
-

Test 5.2: Unread Count Updates**Steps:**

1. Mark one notification as read
2. Wait a few seconds for poll
3. Check bell icon

Expected Result:

- Badge updates to "2"
 - Polls every 30 seconds
-

Test 5.3: Bell Icon Navigation**Steps:**

1. Click the bell icon
2. Observe navigation

Expected Result:

- Navigates to /dashboard/notifications (buyer)
 - Navigates to /supplier/notifications (supplier)
-

6. Readiness Indicator Updates (Optional)**Test 6.1: Readiness Recalculation****Steps:**

1. As a buyer, run readiness calculation: `POST /api/dashboard/rfps/[id]/comparison/readiness`
2. Check notifications

Expected Result:

- Buyer receives "Supplier Readiness Updated" notification
-

7. Comparison Report Ready (Optional)**Test 7.1: Report Generation****Steps:**

1. As a buyer, generate comparison report: `POST /api/rfps/[id]/compare/report`
2. Check notifications

Expected Result:

- Buyer receives "Comparison Report Ready" notification
 - Clicking notification navigates to RFP detail page
-

API Testing

Test Notification Runner

```
# Log in as buyer, then:
curl -X POST https://[your-domain]/api/notifications/run \
  -H "Cookie: [your-session-cookie]" \
  -H "Content-Type: application/json"

# Expected Response:
{
  "success": true,
  "processedRfps": 5,
  "notificationsCreated": 3,
  "timestamp": "2025-11-30T...",
  "message": "Processed 5 RFPs and created 3 notifications"
}
```

Test Unread Count

```
curl -X GET https://[your-domain]/api/notifications/unread-count \
  -H "Cookie: [your-session-cookie]"

# Expected Response:
{
  "count": 5
}
```

Test Mark as Read

```
curl -X PATCH https://[your-domain]/api/notifications/[id]/read \
  -H "Cookie: [your-session-cookie]"

# Expected Response:
{
  "success": true,
  "notification": { ... }
}
```

Test Preferences API

```
# GET preferences
curl -X GET https://[your-domain]/api/settings/notifications \
  -H "Cookie: [your-session-cookie]"

# POST preferences
curl -X POST https://[your-domain]/api/settings/notifications \
  -H "Cookie: [your-session-cookie]" \
  -H "Content-Type: application/json" \
  -d '{
    "emailEnabled": false,
    "inAppEnabled": true,
    "buyerRfpTimeline": true
  }'
```

Database Verification

Check Notification Records

```
SELECT
  id,
  userId,
  type,
  category,
  title,
  message,
  readAt,
  createdAt,
  rfpId
FROM "Notification"
ORDER BY createdAt DESC
LIMIT 10;
```

Check Notification Preferences

```
SELECT
  userId,
  emailEnabled,
  inAppEnabled,
  buyerRfpTimeline,
  buyerSupplierResponses,
  supplierQATimeline,
  supplierSubmissionTimeline
FROM "NotificationPreference"
WHERE userId = '[user-id]';
```

Check Duplicate Prevention

```
-- Should return 0 or 1 for a given user/rfp/type on the same day
SELECT COUNT(*) as duplicate_count
FROM "Notification"
WHERE userId = '[user-id]'
      AND rfpId = '[rfp-id]'
      AND type = 'RFP_TIMELINE_QA_WINDOW_OPEN'
      AND createdAt >= CURRENT_DATE;
```

Validation Checklist

Schema Changes

- [] Notification model created with all fields
- [] NotificationPreference model created with all toggles
- [] User model updated with relations
- [] Prisma migration successful

API Endpoints

- [] POST /api/notifications/run works
- [] GET /api/notifications/unread-count returns correct count
- [] PATCH /api/notifications/[id]/read marks as read
- [] GET /api/settings/notifications returns preferences
- [] POST /api/settings/notifications updates preferences

Event Hooks

- [] Supplier response submission triggers notification
- [] Supplier question creation triggers notification
- [] Buyer answering question triggers notification
- [] Broadcast creation triggers notifications to all suppliers
- [] Readiness update triggers notification (optional)
- [] Report generation triggers notification (optional)

Timeline Reminders

- [] Q&A window open notifications sent
- [] Q&A window closing soon notifications sent
- [] Submission window open notifications sent
- [] Submission deadline soon notifications sent
- [] Submission deadline passed notification sent
- [] Demo window open notification sent

- [] Award date soon notification sent
 - [] Award date reached notification sent
-

UI Components

- [] Buyer notification center displays correctly
 - [] Buyer preferences page works
 - [] Supplier notification center displays correctly
 - [] Supplier preferences page works
 - [] Buyer bell icon shows unread count
 - [] Supplier bell icon shows unread count
-

Security

- [] Notifications are user-scoped (no data leakage)
 - [] API endpoints verify authentication
 - [] API endpoints verify ownership
 - [] Suppliers cannot access buyer-only routes
 - [] Buyers cannot see supplier portal notifications
-

No Breaking Changes

- [] All existing RFP flows still work
 - [] Supplier response submission unchanged
 - [] Q&A system unchanged
 - [] Comparison engine unchanged
 - [] No API response format changes
-

Common Issues & Fixes

Issue: Notifications not appearing

Fix:

- Check user preferences (may be disabled)
 - Verify API authentication
 - Check browser console for errors
-

Issue: Duplicate notifications

Fix:

- Verify `checkIfNotificationSentToday()` logic
- Check date comparison functions
- Ensure notification runner not called multiple times

Issue: Bell icon unread count not updating

Fix:

- Wait for 30-second poll interval
 - Check network tab for API calls
 - Verify session is active
-

Issue: Email notifications not sent

Fix:

- Check `RESEND_API_KEY` in `.env`
 - Verify `sendEmail()` function works
 - Check user email preferences
-

Performance Checks

Load Testing

- ☐ Create 100+ notifications for a user
 - ☐ Page loads in < 2 seconds
 - ☐ Bell icon updates in < 500ms
 - ☐ No memory leaks from polling
-

Database Indexing

- ☐ Index on `(userId, createdAt)` exists
 - ☐ Index on `rfpId` exists
 - ☐ Queries complete in < 100ms
-

Next Steps

After completing all tests:

1. Document any issues found
 2. Fix critical bugs before deployment
 3. Schedule regular notification runner via cron
 4. Monitor notification delivery rates
 5. Collect user feedback on notification frequency
-

Testing Complete: [Date]

Tested By: [Name]

Issues Found: [Count]

Status: [Pass/Fail]