

# E2E Test Comprehensive Fix Plan - January 8, 2026

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## Executive Summary

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**Current Status:** 161/205 tests passing (78.5%) **Target:** 210/210 tests passing (100%) **Gap:** 49 tests need fixing (39 failures + 5 skipped + restore to 210 total)

## Test Results After Rollback

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- **Passed:** 161 (78.5%)
- **Failed:** 39 (19.0%)
- **Skipped:** 5 (2.4%)
- **Total:** 205 tests

**Note:** Rollback performed worse than Phase 3 ( $173/210 = 82\%$ ). This requires investigation.

# Failure Categories

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## 1. Agent Performance - Parallel Execution (5 tests)

**Failed Tests:** - [chromium] > ai-agents.spec.ts:145:7 > Should support parallel agent execution - [firefox] > ai-agents.spec.ts:145:7 > Should support parallel agent execution - [webkit] > ai-agents.spec.ts:145:7 > Should support parallel agent execution - [Mobile Chrome] > ai-agents.spec.ts:145:7 > Should support parallel agent execution - (Mobile Safari not shown but likely failed)

**Root Cause:** TBD - needs research into parallel async operations in Playwright

## 2. Error Handling - Timeout Scenarios (5 tests)

**Failed Tests:** - [chromium] > ai-agents.spec.ts:243:7 > Should handle timeout scenarios - [firefox] > ai-agents.spec.ts:243:7 > Should handle timeout scenarios - [webkit] > ai-agents.spec.ts:243:7 > Should handle timeout scenarios - [Mobile Chrome] > ai-agents.spec.ts:243:7 > Should handle timeout scenarios - (Mobile Safari not shown but likely failed)

**Root Cause:** TBD - needs research into timeout testing patterns

## 3. Authentication - Validation Errors (5 tests)

**Failed Tests:** - [chromium] > authentication.spec.ts:23:7 > Should show validation errors for invalid login - [firefox] > authentication.spec.ts:23:7 > Should show validation errors for invalid login - [webkit] > authentication.spec.ts:23:7 > Should show validation errors for invalid login - [Mobile Chrome] > authentication.spec.ts:23:7 > Should show validation errors for invalid login - (Mobile Safari not shown but likely failed)

**Root Cause:** Error messages not appearing in UI - needs form error handling research

#### 4. Script Management - List Display (5+ tests)

**Failed Tests:** - [chromium] > script-management.spec.ts:194:7 > Should display list of uploaded scripts - [firefox] > script-management.spec.ts:194:7 > Should display list of uploaded scripts - [webkit] > script-management.spec.ts:194:7 > Should display list of uploaded scripts - (More browsers likely affected)

**Root Cause:** React Query data loading after authentication redirect - needs research

#### 5. Firefox-Specific Issues (6 tests total)

**Failed Tests:** - [firefox] > ai-analytics.spec.ts:113:7 > Should display analytics dashboard page - [firefox] > ai-analytics.spec.ts:132:7 > Should display cost metrics - [firefox] > script-management.spec.ts:35:7 > Should display upload button - [firefox] > script-management.spec.ts:208:7 > Should allow searching scripts - (Plus 2 from other categories)

**Root Cause:** Firefox-specific rendering or timing - needs browser-specific research

#### 6. Mobile Chrome Analytics (1 test)

**Failed Tests:** - [Mobile Chrome] > ai-analytics.spec.ts:161:7 > Should display model performance metrics

**Root Cause:** Mobile viewport rendering issue - needs mobile testing research

#### 7. Skipped Tests (5 tests)

**Reason:** Require environment variables (API keys, external services)

**Action Needed:** Document how to enable these tests

# Research Topics for 2026 Best Practices

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## 1. **Playwright + React Query v5 Integration**

- 2. Query state management in E2E tests
- 3. Waiting for cache hydration

- 4. Testing refetch behavior

## 5. **Form Validation Error Display**

- 6. React Hook Form error rendering
- 7. Accessibility-compliant error messages

- 8. Testing form validation states

## 9. **Parallel Async Operations Testing**

- 10. Testing concurrent API calls

- 11. Race condition detection

- 12. Promise.all() testing patterns

## 13. **Timeout Scenario Testing**

- 14. Simulating slow network conditions

- 15. Testing error boundaries

- 16. Graceful degradation patterns

## 17. **Firefox-Specific E2E Testing**

- 18. Gecko engine timing differences

- 19. Firefox DevTools integration

- 20. Browser-specific selectors

## 21. **Mobile Viewport Testing**

- 22. Touch event simulation

- 23. Viewport-specific rendering

- 24. Mobile performance testing

# Comprehensive Fix Approach

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## Phase 1: Research (Current)

- ☐ Internet research for each failure category
- ☐ MCP tools analysis of failing test code
- ☐ Review 2026 Playwright documentation
- ☐ Study React Query v5 + testing patterns

## Phase 2: Validation & Authentication Fixes

- ☐ Fix form error display mechanism
- ☐ Ensure error messages visible in all browsers
- ☐ Add proper ARIA labels for accessibility
- ☐ Test across all 5 browser configurations

## Phase 3: Data Loading & React Query Fixes

- ☐ Implement proper wait strategies for React Query
- ☐ Add data-testid attributes for loaded states
- ☐ Handle authentication redirect → data fetch flow
- ☐ Test list display after navigation

## Phase 4: Agent & Async Operation Fixes

- ☐ Fix parallel agent execution tests
- ☐ Implement timeout scenario testing
- ☐ Add proper error boundaries
- ☐ Test async operation completion

## Phase 5: Browser-Specific Fixes

- ☐ Address Firefox rendering issues
- ☐ Fix Mobile Chrome analytics display
- ☐ Ensure consistent behavior across browsers
- ☐ Test mobile viewport edge cases

## **Phase 6: Verification & Documentation**

- ☐ Run complete test suite
- ☐ Verify 210/210 tests passing
- ☐ Document all changes made
- ☐ Create maintenance guide



# Resources to Utilize

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## 1. **Internet Research (January 2026)**

2. Latest Playwright documentation
3. React Query v5 testing guides
4. Browser compatibility databases

## 5. Stack Overflow recent solutions

## 6. **MCP Tools**






7. Serena for code analysis
8. Symbol navigation for test structure
9. File search for related patterns

## 10. **All Available Agents**

11. Research agents for documentation
12. Code analysis agents for patterns
13. Testing agents for strategy

## Success Criteria

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-  210/210 tests passing (100%)
-  All browsers working (Chromium, Firefox, Webkit, Mobile Chrome, Mobile Safari)
-  Zero skipped tests (unless environment-dependent)
-  Stable test suite (no flakiness)
-  Comprehensive documentation

# Timeline

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**Target:** Complete fix within this session

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