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Admin Functionality - Functional Test Guide

Version: 1.0
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Purpose: This document provides comprehensive test case specifications for functional testing of the Admin Settings page in the GitHub Copilot Metrics Dashboard.

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Overview

Purpose of Admin Page

The Admin Settings page allows users to: - Configure GitHub API credentials (Enterprise/Organization name and Personal Access Token) - Download various types of Copilot

metrics data - Upload pre-downloaded report files - Manage stored data in browser localStorage - View current data status and last saved timestamp

Access URL

- **Path:** `/admin`
- **Navigation:** Accessible via sidebar menu

User Roles

- **Regular User:** Full access to all admin features in production mode
- **Demo Mode Viewer:** View-only access when `VITE_DEMO_MODE=true`

Test Environment Setup

Prerequisites

1. Modern web browser (Chrome, Firefox, Edge, Safari - latest versions)
2. Internet connectivity for GitHub API calls
3. GitHub organization/enterprise with:
   - 5+ active Copilot licenses
   - Copilot Metrics API access enabled
4. Valid GitHub Personal Access Token with required scopes
5. Clean browser state or ability to clear localStorage

Environment Variables

- **Demo Mode:** `VITE_DEMO_MODE=true` (for testing demo mode)
- **Pre-configured Settings:** `VITE_GITHUB_ORG`, `VITE_GITHUB_TOKEN` (optional)

Test Data Requirements

- Valid GitHub enterprise/organization name
- Valid Personal Access Token (PAT) with correct scopes
- Invalid credentials for negative testing
- Sample JSON files for upload testing

Admin Page Components

1. Page Header

Elements: - Page title: "Admin Settings" - Admin badge indicator - Demo mode indicator (when applicable) - Descriptive text

Visual Indicators: - Purple "ADMIN" badge - Yellow "DEMO MODE" badge (when active)

2. Current Data Status Section

Elements: - Blue information box - Enterprise metrics status (count, date range) - Organization metrics status (count, date range) - Last saved timestamp

Display Conditions: - Only visible when data exists in localStorage

3. GitHub API Configuration Form

Input Fields: - **Enterprise** (required): Text input - **Personal Access Token** (required): Password input - **Team Slug** (optional): Text input - **Since Date** (optional): Date input - **Until Date** (optional): Date input

Field Properties: - All fields disabled in demo mode - Token field is masked (password type) - Placeholder text provides guidance

4. Enterprise Copilot Data Section

Buttons: - "Download Metrics" - "Download Seats"

States: - Enabled when org and token are provided - Disabled in demo mode or when loading - Shows "Downloading…" text during API calls

5. Enterprise 28-Day Report Section

Buttons: - "Get Download Link" - "Upload Report File" (file input)

Features: - Opens download link in new tab - Accepts .json files - Validates file format before saving

6. User 28-Day Report Section

Buttons: - "Get Download Link" - "Upload Report File" (file input)

Features: - Opens download link in new tab - Accepts .json files in NDJSON format - Validates NDJSON structure

7. Organization Copilot Data Section

Buttons: - "Download Metrics" - "Download Seats"

States: - Enabled when org and token are provided - Disabled in demo mode or when loading

8. Data Management Section

Buttons: - "Clear All Local Data"

Features: - Confirmation dialog before clearing - Clears all localStorage data - Resets all result messages

9. API Documentation Section

Content: - Enterprise level endpoints and descriptions - Organization level endpoints and descriptions - General requirements - Token permissions - External documentation link

10. Result Message Sections

Types: - Enterprise Metrics Result (blue/red) - Enterprise Seats Result (blue/red) - Enterprise 28-Day Report Result (purple/red) - User 28-Day Report Result (indigo/red) - Organization Metrics Result (green/red) - Organization Seats Result (green/red)

Content: - Success/Error icon - Success/Error title - Message text - Record count (when applicable) - Date range (when applicable) - Error details (when applicable)

Test Cases by Feature

Feature 1: Page Load and Initialization

TC-ADM-001: Initial Page Load   Precondition: User navigates to `/admin` for the first time (no saved config)

Test Steps: 1. Navigate to `/admin` URL 2. Observe page rendering

Expected Results: -   Page title "Admin Settings" is displayed -   "ADMIN" badge is visible - All input fields are empty -   All download buttons are disabled -   "Clear All Local Data" button is enabled -   No data status section is visible -   No result messages are displayed

Test Data: None required

TC-ADM-002: Page Load with Saved Configuration   Precondition: User has previously saved configuration (org, date range, team_slug in localStorage)

Test Steps: 1. Save test configuration to localStorage 2. Navigate to `/admin` URL 3. Observe form fields

Expected Results: -   Organization field is pre-filled -   Date range fields are pre-filled (if previously saved) -   Team slug field is pre-filled (if previously saved) -   Token field is empty (not saved to localStorage) -   Download buttons are disabled (token missing)

Test Data:

```
{
  "org": "test-org",
  "since": "2025-10-01",
  "until": "2025-11-01",
  "team_slug": "engineering"
}
```

TC-ADM-003: Page Load with Existing Data   Precondition: LocalStorage contains previously downloaded metrics data

Test Steps: 1. Add test metrics data to localStorage 2. Navigate to `/admin` URL 3. Observe data status section

Expected Results: - "Local Data Available" info box is displayed - Enterprise metrics count is shown - Date range is displayed correctly - Last saved timestamp is visible

Test Data:

```
{
  "copilot_enterprise_metrics_data": [...],
  "copilot_enterprise_metrics_data_timestamp": "2025-11-19T10:00:00.000Z"
}
```

TC-ADM-004: Demo Mode Page Load Precondition: Application running with `VITE_DEMO_MODE=true`

Test Steps: 1. Set environment variable `VITE_DEMO_MODE=true` 2. Build and run application 3. Navigate to `/admin` URL

Expected Results: - "DEMO MODE" yellow badge is displayed - All input fields are disabled - All buttons are disabled - Description text shows "Viewing in demo mode - all controls are disabled" - Form fields show placeholder text but are not editable

Test Data: None required

Feature 2: Form Input Validation

TC-ADM-005: Organization Field - Valid Input   Precondition: Admin page is loaded

Test Steps: 1. Click on "Enterprise" field 2. Enter valid organization name: "microsoft" 3. Tab to next field

Expected Results: - Text is accepted and displayed - No validation error appears - Field retains focus behavior correctly

Test Data: `microsoft`, `github`, `my-test-org`

TC-ADM-006: Organization Field - Empty Input   Precondition: Admin page is loaded

Test Steps: 1. Leave "Enterprise" field empty 2. Click "Download Metrics" button

Expected Results: - Validation error message appears - Error: "Organization name is required" - Download operation is not initiated - Result section shows validation errors

Test Data: Empty string

TC-ADM-007: Token Field - Valid Format   Precondition: Admin page is loaded

Test Steps: 1. Enter valid token starting with "ghp_": `ghp_abcdefghijklmnopqrstuvwxyz123456` 2. Attempt to download metrics

Expected Results: - Token is accepted - No format validation error - Download attempt proceeds (may fail with API error if token is invalid)

Test Data: `ghp_xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx`, `github_pat_xxxxxxxxxxxxxx`

TC-ADM-008: Token Field - Invalid Format   Precondition: Admin page is loaded

Test Steps: 1. Enter token not starting with "ghp_" or "github_pat_": `abc123xyz` 2. Click "Download Metrics" button

Expected Results: - Validation error appears - Error: "Token should start with 'ghp_' or 'github_pat_'" - Download is not initiated

Test Data: `abc123`, `token_12345`, `invalid_token`

TC-ADM-009: Token Field - Empty Input   Precondition: Admin page is loaded

Test Steps: 1. Fill organization field 2. Leave token field empty 3. Click "Download Metrics" button

Expected Results: - Validation error appears - Error: "Personal Access Token is required" - Download is not initiated

Test Data: Empty string

TC-ADM-010: Token Field - Masking   Precondition: Admin page is loaded

Test Steps: 1. Enter token: `ghp_abcdefghijklmnopqrstuvwxyz123456` 2. Observe display

Expected Results: - Token characters are masked (shown as dots/asterisks) - Actual token value is not visible on screen - Token can be copied from field (for testing purposes)

Test Data: Any valid token

TC-ADM-011: Date Field - Valid Format   Precondition: Admin page is loaded

Test Steps: 1. Enter "Since Date": `2025-10-01` 2. Enter "Until Date": `2025-11-01` 3. Click "Download Metrics"

Expected Results: - Dates are accepted - No validation error - Download proceeds (if other required fields are valid)

Test Data: - Since: `2025-10-01`, `2025-01-15` - Until: `2025-11-01`, `2025-02-15`

TC-ADM-012: Date Field - Invalid Format   Precondition: Admin page is loaded

Test Steps: 1. Fill required fields (org, token) 2. Manually enter invalid date in Since field: 10/01/2025 3. Click "Download Metrics"

Expected Results: -   Validation error appears -   Error: "Since date must be in YYYY-MM-DD format" -   Download is not initiated

Test Data: 10/01/2025, 2025/10/01, 01-10-2025, `invalid`

TC-ADM-013: Date Range - Invalid Range (Since > Until)   Precondition: Admin page is loaded

Test Steps: 1. Fill required fields (org, token) 2. Enter "Since Date": 2025-11-01 3. Enter "Until Date": 2025-10-01 4. Click "Download Metrics"

Expected Results: -   Validation error appears -   Error: "Since date must be before Until date" -   Download is not initiated

Test Data: - Since: 2025-11-01, Until: 2025-10-01 - Since: 2025-12-31, Until: 2025-01-01

TC-ADM-014: Date Range - Valid Range   Precondition: Admin page is loaded

Test Steps: 1. Fill required fields (org, token) 2. Enter "Since Date": 2025-10-01 3. Enter "Until Date": 2025-11-15 4. Observe validation

Expected Results: -   No validation error -   Fields are accepted -   Download button remains enabled

Test Data: - Since: 2025-10-01, Until: 2025-11-15 - Since: 2025-01-01, Until: 2025-01-31

TC-ADM-015: Team Slug - Optional Field   Precondition: Admin page is loaded

Test Steps: 1. Fill required fields (org, token) 2. Leave team slug empty 3. Click "Download Metrics"

Expected Results: -   No validation error -   Download proceeds without team filtering - Enterprise-wide metrics are fetched

Test Data: Empty string

TC-ADM-016: Team Slug - With Value   Precondition: Admin page is loaded

Test Steps: 1. Fill required fields (org, token) 2. Enter team slug: `engineering` 3. Click "Download Metrics"

Expected Results: -   Value is accepted -   Download proceeds with team filtering -   Team-specific metrics are fetched

Test Data: `engineering`, `qa-team`, `platform-team`

TC-ADM-017: Validation Error Display   Precondition: Admin page is loaded

Test Steps: 1. Click "Download Metrics" with all fields empty 2. Observe error display

Expected Results: -   Red error box appears at top of form -   Error icon (AlertCircle) is displayed -   Title "Configuration Errors" is shown -   All validation errors are listed -   Error: "Organization name is required" -   Error: "Personal Access Token is required"

Test Data: Empty form

TC-ADM-018: Validation Error Clearing   Precondition: Validation errors are displayed

Test Steps: 1. Display validation errors (submit empty form) 2. Start typing in any field 3. Observe error display

Expected Results: -   Error box disappears as soon as user starts typing -   Form becomes editable again -   Result messages are cleared

Test Data: Any character input

Feature 3: Enterprise Metrics Download

TC-ADM-019: Download Enterprise Metrics - Success   Precondition: Valid credentials configured, internet connection available

Test Steps: 1. Enter valid organization: `test-enterprise` 2. Enter valid token with correct scopes 3. Click "Download Metrics" in Enterprise section

Expected Results: -   Button text changes to "Downloading…" -   Button is disabled during download -   Success message appears after completion -   Message: "Enterprise metrics downloaded successfully" -   Record count is displayed -   Date range is shown -   Data is saved to localStorage key: `copilot_enterprise_metrics_data` -   Timestamp is saved -   Data status section updates -   Configuration is saved to localStorage (without token)

Test Data: Valid GitHub enterprise credentials

TC-ADM-020: Download Enterprise Metrics - API Error 401   Precondition: Invalid token configured

Test Steps: 1. Enter valid organization 2. Enter invalid/expired token 3. Click "Download Metrics"

Expected Results: -   Error message appears -   Error title: "Enterprise Metrics Error" -   Error contains status code 401 -   Error details displayed in monospace font -   No data is saved to localStorage -   Data status section does not update

Test Data: Organization: `test-org`, Token: `ghp_invalidtoken123456789`

TC-ADM-021: Download Enterprise Metrics - API Error 403   Precondition: Valid token but insufficient permissions

Test Steps: 1. Enter valid organization 2. Enter token without required scopes 3. Click "Download Metrics"

Expected Results: -   Error message appears -   Error status 403 Forbidden -   Suggests checking organization ownership -   No data is saved

Test Data: Token without `manage_billing:copilot` scope

TC-ADM-022: Download Enterprise Metrics - API Error 404   Precondition: Non-existent organization

Test Steps: 1. Enter non-existent organization: `nonexistent-org-xyz-123` 2. Enter valid token 3. Click "Download Metrics"

Expected Results: -   Error message appears -   Error status 404 Not Found -   Suggests verifying organization name -   No data is saved

Test Data: Organization: `nonexistent-org-xyz-123`

TC-ADM-023: Download Enterprise Metrics - Network Error   Precondition: No internet connection

Test Steps: 1. Disconnect internet connection 2. Fill valid credentials 3. Click "Download Metrics"

Expected Results: -   Error message appears -   Network error is displayed -   Timeout or connection error mentioned -   No data is saved

Test Data: Valid credentials, no network

TC-ADM-024: Download Enterprise Metrics - With Date Range   Precondition: Valid credentials, specific date range needed

Test Steps: 1. Fill valid credentials 2. Set "Since Date": `2025-10-01` 3. Set "Until Date": `2025-10-31` 4. Click "Download Metrics"

Expected Results: -   Download succeeds -   Returned data is within specified date range - Date range in result matches input -   Data is saved with date range metadata

Test Data: Date range covering active period

TC-ADM-025: Download Enterprise Metrics - With Team Filter **Precondition:** Valid credentials, team slug provided

Test Steps: 1. Fill valid credentials 2. Enter team slug: `engineering` 3. Click "Download Metrics"

Expected Results: - Download succeeds - Only team-specific metrics are returned - Team information is included in results - Data is saved with team context

Test Data: Valid team slug

TC-ADM-026: Download Enterprise Metrics - Button State During Download **Precondition:** Valid credentials

Test Steps: 1. Fill valid credentials 2. Click "Download Metrics" 3. Observe button state during API call

Expected Results: - Button shows "Downloading…" text - Button is disabled - Button has visual disabled state - Other download buttons remain enabled/disabled based on their state - After completion, button returns to "Download Metrics" text - Button is re-enabled

Test Data: Valid credentials

Feature 4: Enterprise Seats Download

TC-ADM-027: Download Enterprise Seats - Success **Precondition:** Valid credentials configured

Test Steps: 1. Enter valid organization 2. Enter valid token 3. Click "Download Seats" in Enterprise section

Expected Results: - Button text changes to "Downloading…" - Success message appears - Message: "Enterprise seats downloaded successfully" - Seat count is displayed - Data is saved to localStorage key: `copilot_enterprise_seats_data` - Data status may show seat information - Configuration is saved

Test Data: Valid GitHub enterprise credentials

TC-ADM-028: Download Enterprise Seats - Error Handling **Precondition:** Invalid credentials

Test Steps: 1. Enter invalid organization 2. Enter valid token 3. Click "Download Seats"

Expected Results: - Error message appears - Error title: "Enterprise Seats Error" - Appropriate error status and details shown - No data is saved

Test Data: Invalid organization name

TC-ADM-029: Concurrent Downloads - Metrics and Seats   Precondition: Valid credentials

Test Steps: 1. Fill valid credentials 2. Click "Download Metrics" 3. Immediately click "Download Seats" (during metrics download)

Expected Results: -   First download is blocked or prevented -   `loading` state prevents simultaneous downloads -   Or second download waits for first to complete -   Both downloads complete successfully (one after another) -   Both result messages appear

Test Data: Valid credentials

Feature 5: Enterprise 28-Day Report

TC-ADM-030: Get 28-Day Report Download Link - Success   Precondition: Valid credentials, API supports 28-day report

Test Steps: 1. Fill valid credentials 2. Click "Get Download Link" in Enterprise 28-Day Report section 3. Observe behavior

Expected Results: -   New browser tab opens with download link -   Success message appears in admin page -   Message explains file needs to be downloaded from new tab -   Instructions for uploading file are provided

Test Data: Valid credentials

TC-ADM-031: Upload 28-Day Report - Valid JSON File   Precondition: Downloaded 28-day report JSON file available

Test Steps: 1. Click "Upload Report File" button 2. Select valid 28-day report JSON file 3. Observe upload process

Expected Results: -   File picker dialog opens -   File is read and parsed -   Success message appears -   Message shows day count (e.g., "28 days of data") -   Date range is displayed -   Data is saved to localStorage key: `enterprise_report_data` -   Timestamp is saved -   Data status section updates

Test Data: Valid JSON file with structure:

```
{
  "data": {
    "day_totals": [...],
    "report_start_day": "2025-10-01",
    "report_end_day": "2025-10-27"
  }
}
```

TC-ADM-032: Upload 28-Day Report - Invalid JSON Structure Precondition: Invalid JSON file available

Test Steps: 1. Click "Upload Report File" 2. Select JSON file without `day_totals` array 3. Observe result

Expected Results: - Error message appears - Error: "Invalid file format. Expected a 28-day report with day_totals array." - No data is saved - Data status does not update

Test Data: JSON file without required structure

TC-ADM-033: Upload 28-Day Report - Invalid JSON Syntax Precondition: Malformed JSON file available

Test Steps: 1. Click "Upload Report File" 2. Select file with JSON syntax errors 3. Observe result

Expected Results: - Error message appears - Parse error is displayed - No data is saved

Test Data: File with invalid JSON: `{ "data": [ missing bracket`

TC-ADM-034: Upload 28-Day Report - Non-JSON File Precondition: Text or other file type available

Test Steps: 1. Click "Upload Report File" 2. Select .txt or other non-JSON file 3. Observe result

Expected Results: - File picker may filter out non-.json files - If file is selected, parse error appears - No data is saved

Test Data: .txt, .csv, or other file types

TC-ADM-035: Upload 28-Day Report - Cancel File Selection Precondition: Admin page loaded

Test Steps: 1. Click "Upload Report File" 2. Click "Cancel" in file picker dialog

Expected Results: - File picker closes - No error message appears - No changes to data or UI

Test Data: None

Feature 6: User 28-Day Report

TC-ADM-036: Get User 28-Day Report Download Link - Success Precondition: Valid credentials

Test Steps: 1. Fill valid credentials 2. Click "Get Download Link" in User 28-Day Report section

Expected Results: -   New tab opens with download link -   Success message appears -   Instructions provided for downloading and uploading

Test Data: Valid credentials

TC-ADM-037: Upload User 28-Day Report - Valid NDJSON File Precondition: Downloaded user report NDJSON file available

Test Steps: 1. Click "Upload Report File" in User section 2. Select valid NDJSON file 3. Observe upload

Expected Results: -   File is parsed line by line (NDJSON format) -   Success message appears -   Message shows record count and unique user count -   Date range is displayed -   Data saved to localStorage key: `user_report_data` -   Timestamp is saved

Test Data: NDJSON file with format:

```
{"user_id": "123", "day": "2025-10-01", "user_login": "user1", ...}
{"user_id": "124", "day": "2025-10-01", "user_login": "user2", ...}
```

TC-ADM-038: Upload User 28-Day Report - Invalid NDJSON Format Precondition: Invalid NDJSON file available

Test Steps: 1. Click "Upload Report File" 2. Select file with invalid NDJSON (missing required fields)

Expected Results: -   Error message appears -   Error mentions expected format: NDJSON with user activity records -   No data is saved

Test Data: File without `user_id` or `day` fields

TC-ADM-039: Upload User 28-Day Report - Parse Error on Specific Line Precondition: NDJSON file with syntax error in one line

Test Steps: 1. Click "Upload Report File" 2. Select NDJSON file with malformed line

Expected Results: -   Error message appears -   Error indicates which line failed to parse - Example: "Failed to parse line 5: …" -   No data is saved

Test Data: NDJSON with invalid JSON on line 5

Feature 7: Organization Metrics Download

TC-ADM-040: Download Organization Metrics - Success Precondition: Valid credentials with organization access

Test Steps: 1. Enter valid organization name 2. Enter valid token 3. Click "Download Metrics" in Organization section

Expected Results: - Button shows "Downloading…" - Success message appears - Message: "Organization metrics downloaded successfully" - Record count and date range displayed - Data saved to localStorage key: `copilot_org_metrics_data` - Timestamp saved

Test Data: Valid organization credentials

TC-ADM-041: Download Organization Metrics - With Team Filter Precondition: Valid credentials, team slug provided

Test Steps: 1. Fill valid credentials 2. Enter team slug 3. Click "Download Metrics" in Organization section

Expected Results: - Download succeeds - Team-filtered metrics returned - Data reflects team scope

Test Data: Valid team slug

TC-ADM-042: Download Organization Metrics - Error Scenarios Precondition: Various invalid inputs

Test Steps: 1. Test with invalid org name 2. Test with wrong token 3. Test with expired token

Expected Results: - Appropriate error messages for each scenario - No data saved on errors - Helpful troubleshooting information provided

Test Data: Various invalid credentials

Feature 8: Organization Seats Download

TC-ADM-043: Download Organization Seats - Success Precondition: Valid organization credentials

Test Steps: 1. Fill valid credentials 2. Click "Download Seats" in Organization section

Expected Results: - Success message appears - Message: "Organization seats downloaded successfully" - Seat count displayed - Data saved to localStorage: `copilot_org_seats_data`

Test Data: Valid credentials

TC-ADM-044: Download Organization Seats - Pagination Precondition: Organization with many seats (>100)

Test Steps: 1. Fill valid credentials for large organization 2. Click "Download Seats" 3. Observe data completeness

Expected Results: - All pages of data are fetched - Complete seat list is saved - Total count matches expected number

Test Data: Large organization credentials

Feature 9: Data Management

TC-ADM-045: Clear All Local Data - With Confirmation   Precondition: Local data exists in localStorage

Test Steps: 1. Ensure data exists (check data status section) 2. Click "Clear All Local Data" 3. Click "OK" in confirmation dialog

Expected Results: -   Confirmation dialog appears with warning message -   All localStorage keys are cleared: - `copilot_enterprise_metrics_data` - `copilot_enterprise_seats_data` - `enterprise_report_data` - `user_report_data` - `copilot_org_metrics_data` - `copilot_org_seats_data` - Timestamps -   Success message appears -   Data status section disappears -   All result messages are cleared

Test Data: Existing localStorage data

TC-ADM-046: Clear All Local Data - Cancel Confirmation   Precondition: Local data exists

Test Steps: 1. Click "Clear All Local Data" 2. Click "Cancel" in confirmation dialog

Expected Results: -   Dialog closes -   No data is cleared -   Data status section remains unchanged -   No changes to localStorage

Test Data: Existing localStorage data

TC-ADM-047: Clear All Local Data - No Data Exists   Precondition: No data in localStorage

Test Steps: 1. Ensure localStorage is empty 2. Click "Clear All Local Data" 3. Confirm action

Expected Results: -   Success message appears -   Message: "Local data cleared successfully" - No errors occur -   Page state remains stable

Test Data: Empty localStorage

TC-ADM-048: Clear Data - Button State   Precondition: Admin page loaded

Test Steps: 1. Observe "Clear All Local Data" button state in various scenarios

Expected Results: -   Button is enabled when not in demo mode -   Button is disabled in demo mode -   Button is disabled during download operations (loading state) -   Button has red color indicating destructive action

Test Data: Various application states

Feature 10: Demo Mode Behavior

TC-ADM-049: Demo Mode - All Controls Disabled   Precondition: Demo mode enabled
(`VITE_DEMO_MODE=true`)

Test Steps: 1. Load admin page in demo mode 2. Attempt to interact with each input and button

Expected Results: -   All text inputs are disabled -   All date inputs are disabled -   All download
buttons are disabled -   All upload buttons are disabled -   Clear data button is disabled -   Cursor
shows "not-allowed" on disabled elements -   Visual opacity indicates disabled state

Test Data: Demo mode configuration

TC-ADM-050: Demo Mode - View Configuration Display   Precondition: Demo mode
enabled with pre-configured values

Test Steps: 1. Set environment variables for demo org and dates 2. Load admin page 3. Observe
displayed values

Expected Results: -   Pre-configured values are visible in form fields -   Fields are displayed but
not editable -   Token field shows placeholder but no actual token -   Data status may show demo
data information

Test Data: Environment variables set

TC-ADM-051: Demo Mode - Documentation Accessibility   Precondition: Demo mode
enabled

Test Steps: 1. Load admin page in demo mode 2. Scroll to documentation section 3. Click
external documentation link

Expected Results: -   Documentation section is visible and readable -   External link works
correctly -   Link opens in new tab

Test Data: None

Feature 11: UI State Management

TC-ADM-052: Multiple Result Messages   Precondition: Multiple download operations
completed

Test Steps: 1. Download enterprise metrics (success) 2. Download enterprise seats (success) 3.
Download 28-day report (success) 4. Observe all result messages

Expected Results: -   Each result message appears in its own section -   Messages are color-coded
by data type -   All messages are visible simultaneously -   Each message shows appropriate success
information

Test Data: Valid credentials

TC-ADM-053: Result Message Persistence   Precondition: Result message displayed

Test Steps: 1. Perform successful download 2. Observe success message 3. Change form input 4. Observe message behavior

Expected Results: -   Success message remains visible after download -   Message persists when editing form -   Message clears when attempting new download

Test Data: Valid credentials

TC-ADM-054: Loading State - Button Interaction   Precondition: Download in progress

Test Steps: 1. Click "Download Metrics" 2. During loading, attempt to click same or different buttons

Expected Results: -   Clicked button shows "Downloading…" text -   Clicked button cannot be clicked again -   Other buttons' states depend on `loading` global state -   No duplicate API calls initiated

Test Data: Valid credentials

TC-ADM-055: Data Status Updates   Precondition: No initial data

Test Steps: 1. Perform successful download 2. Observe data status section appearance 3. Perform another download 4. Observe data status updates

Expected Results: -   Data status section appears after first download -   Counts and date ranges update correctly -   Last saved timestamp updates -   Multiple data types shown if available

Test Data: Valid credentials

Feature 12: Configuration Persistence

TC-ADM-056: Configuration Saved After Download   Precondition: First time user, no saved config

Test Steps: 1. Fill form with: org, token, dates, team_slug 2. Click "Download Metrics" 3. Wait for success 4. Refresh page 5. Observe form fields

Expected Results: -   Organization name is restored -   Date fields are restored -   Team slug is restored -   Token field is empty (security) -   localStorage contains config (check with DevTools)

Test Data:

```
{
  "org": "test-org",
  "since": "2025-10-01",
  "until": "2025-11-01",
  "team_slug": "engineering"
}
```

TC-ADM-057: Token Not Persisted   Precondition: Successful download with token

Test Steps: 1. Perform download with token 2. Open browser DevTools → Application → Local Storage 3. Check `copilot_api_config` key

Expected Results: -   Config is saved to localStorage -   Token field is NOT present in saved config -   Only non-sensitive fields are persisted

Test Data: Any valid token

TC-ADM-058: Configuration Override   Precondition: Saved configuration exists

Test Steps: 1. Load page with saved config 2. Change organization name 3. Perform new download 4. Refresh page

Expected Results: -   New organization name is saved -   Old organization name is replaced - Other fields remain unchanged if not edited

Test Data: Different organization names

Validation Rules

Input Validation Summary

Field	Required	Format	Validation
Enterprise	Yes	Text	Non-empty string
Personal Access Token	Yes	Text	Starts with `ghp_` or `github_pat_`
Team Slug	No	Text	Any string
Since Date	No	Date	YYYY-MM-DD format, < Until Date
Until Date	No	Date	YYYY-MM-DD format, > Since Date

API Response Validation

Successful Response

- HTTP Status: 200
- Content-Type: application/json
- Body: Array of metrics objects or seats objects

Error Responses

Status Code	Meaning	Common Causes
400	Bad Request	Invalid parameters
401	Unauthorized	Invalid/expired token, wrong permissions
403	Forbidden	Insufficient permissions, API access disabled
404	Not Found	Organization doesn't exist, Copilot not enabled
422	Unprocessable Entity	Invalid date format, invalid date range
429	Rate Limit Exceeded	Too many requests
500	Server Error	GitHub API internal error

Data Format Validation

Enterprise/Organization Metrics

```json
[
  {
    "date": "2025-10-01",
    "total_suggestions_count": 1000,
    "total_acceptances_count": 750,
    "total_lines_suggested": 5000,
    "total_lines_accepted": 3500,
    "total_active_users": 50,
    ...
  }
]
```

Seats Data

```json
{
  "total_seats": 100,
  "seats": [
    {
      "assignee": {
        "login": "username",
        "id": 12345
      },
      "created_at": "2025-01-01T00:00:00Z",
      "last_activity_at": "2025-10-31T23:59:59Z",
      ...
    }
  ]
}
```

28-Day Report

```
{
  "data": {
    "report_start_day": "2025-10-01",
    "report_end_day": "2025-10-27",
    "day_totals": [
      {
        "day": "2025-10-01",
        "total_active_users": 45,
        "total_engaged_users": 40,
        ...
      }
    ]
  }
}
```

User 28-Day Report (NDJSON)

```
{"user_id":"123","day":"2025-10-01","user_login":"user1",...}
{"user_id":"123","day":"2025-10-02","user_login":"user1",...}
```

Error Scenarios

Critical Error Scenarios

ERR-001: Network Connection Lost During Download Trigger: Disconnect internet during API call

Expected Behavior: - Error message displayed - No partial data saved - Button returns to enabled state - User can retry download

---

ERR-002: Browser Crashes During Data Save Trigger: Close browser/tab during localStorage write

Expected Behavior: - On reload, either all data saved or none saved (atomic) - No corrupted data in localStorage - User can retry download

---

ERR-003: LocalStorage Quota Exceeded Trigger: Download very large dataset

Expected Behavior: - Error message: "Storage quota exceeded" - Suggestion to clear old data - Data is not saved - Button returns to enabled state

---

ERR-004: LocalStorage Disabled   Trigger: Browser privacy mode or localStorage disabled

Expected Behavior: - Warning message on page load - Download functionality may work but data won't persist - Clear error explanation to user

---

ERR-005: Malformed API Response   Trigger: GitHub API returns unexpected format

Expected Behavior: - Error message displayed - Parse error caught and handled - No application crash - No corrupted data saved

---

Edge Cases

EDGE-001: Empty Response from API   Scenario: Valid request but no data in date range

Expected Behavior: - Success message with 0 records - Or informational message: "No data available for date range" - No data saved or empty array saved

---

EDGE-002: Very Large Dataset   Scenario: Download returns thousands of records

Expected Behavior: - All data processed correctly - UI remains responsive - Download completes within reasonable time - Data successfully saved

---

EDGE-003: Special Characters in Organization Name   Scenario: Org name with spaces, dashes, underscores

Expected Behavior: - Characters accepted - API call uses proper encoding - Download succeeds if org name is valid

Test Data: `my-org`, `my_org`, `my org` (if allowed by GitHub)

EDGE-004: Date Range Spanning Months/Years   Scenario: Since: 2025-01-01, Until: 2025-12-31
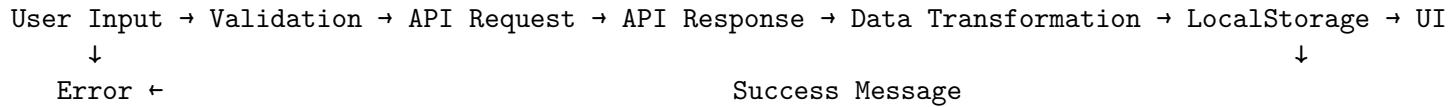
Expected Behavior: - Full year of data requested - API handles pagination if needed - All data returned and saved

---

EDGE-005: Simultaneous Users   Scenario: Multiple tabs/users with same credentials

Expected Behavior: - Each tab operates independently - Downloads succeed in each tab - LocalStorage may be overwritten by last save

---

Data Flow Testing

Data Flow Diagram

```
User Input → Validation → API Request → API Response → Data Transformation → LocalStorage → UI
     ↓                                                                                      ↓
   Error ←                                          Success Message
```

Flow Test Cases

FLOW-001: Complete Success Flow **Steps:** 1. User enters valid credentials 2. Validation passes 3. API request sent 4. GitHub API responds with data 5. Data transformed to expected format 6. Data saved to localStorage 7. Success message displayed 8. Data status section updated 9. Configuration saved (without token)

Verification Points: - Check console for debug logs - Verify localStorage keys using DevTools - Confirm timestamp is set - Verify data structure in localStorage

---

FLOW-002: Complete Error Flow **Steps:** 1. User enters invalid credentials 2. Validation passes format check 3. API request sent 4. GitHub API responds with error 5. Error caught and parsed 6. Error message displayed 7. No data saved 8. Button returns to enabled state

Verification Points: - Error message contains status code - Error message contains helpful information - LocalStorage unchanged - UI returns to idle state

---

FLOW-003: Validation Error Flow **Steps:** 1. User enters invalid format data 2. Validation fails 3. Validation errors displayed 4. No API request sent 5. User corrects input 6. Validation errors clear 7. User submits again 8. Validation passes 9. API request proceeds

Verification Points: - No network requests when validation fails - Error messages clear on input change - Form remains editable

---

FLOW-004: Upload File Flow **Steps:** 1. User clicks "Upload Report File" 2. File picker opens 3. User selects JSON file 4. File is read by FileReader 5. JSON is parsed 6. Data structure validated 7. Data saved to localStorage 8. Success message displayed 9. Data status section updated

Verification Points: - File is read completely - Parsing handles large files - Invalid files rejected gracefully - UI updates immediately after save

---

UI/UX Testing

Visual Testing

VIS-001: Layout Consistency   Test: Navigate admin page on different screen sizes

Expected: -   Responsive design works on desktop (1920x1080) -   Works on tablet (768x1024) -   Works on mobile (375x667) -   All elements visible without horizontal scroll -   Buttons stack appropriately on small screens

---

VIS-002: Color Coding   Test: Observe result message colors

Expected: -   Enterprise Metrics: Blue (success) / Red (error) -   Enterprise Seats: Blue (success) / Red (error) -   28-Day Report: Purple (success) / Red (error) -   User Report: Indigo (success) / Red (error) -   Organization Metrics: Green (success) / Red (error) -   Organization Seats: Green (success) / Red (error)

VIS-003: Accessibility - Color Contrast   Test: Use accessibility tools to check contrast

Expected: -   All text meets WCAG AA standards (4.5:1 for normal text) -   Button text is readable -   Error messages have sufficient contrast

---

VIS-004: Accessibility - Keyboard Navigation   Test: Navigate page using only keyboard

Expected: -   Tab order is logical -   All interactive elements are reachable -   Focus indicators are visible -   Enter key activates buttons -   Escape key cancels file picker

---

VIS-005: Loading Indicators   Test: Observe visual feedback during operations

Expected: -   Button text changes during loading -   Button cursor changes to not-allowed when disabled -   Clear visual distinction between enabled/disabled states

---

Usability Testing

USE-001: First-Time User Experience   Scenario: New user visits admin page

Evaluation Points: - Is purpose of page clear? - Are required fields obvious? - Is error feedback helpful? - Are next steps clear after download? - Is documentation easily accessible?

USE-002: Error Recovery   Scenario: User encounters error

Evaluation Points: - Is error message understandable? - Are corrective actions suggested? - Can user easily retry? - Is error persistent or dismissible?

USE-003: Success Feedback   Scenario: User completes successful download

Evaluation Points: - Is success clearly communicated? - Is next action obvious? - Can user verify data was saved? - Is timestamp visible and clear?

Security Testing

Security Test Cases

SEC-001: Token Masking   Test: Enter token in field

Verification: -   Token characters are masked -   Token not visible in DOM (inspect element) - Token not visible in screenshots -   Token not logged to console

---

SEC-002: Token Storage   Test: Perform download and check localStorage

Verification: -   Token is NOT saved to localStorage -   Token is NOT saved in cookies -   Token is NOT saved in session storage -   Only non-sensitive config is persisted

---

SEC-003: Token in Network Traffic   Test: Monitor network requests during download

Verification: -   Token is sent only in Authorization header -   Token is not in URL parameters - HTTPS is used for API calls -   Token is not logged in browser DevTools Network tab (except in headers)

SEC-004: XSS Prevention   Test: Enter malicious scripts in form fields

Test Data: `<script>alert('XSS')</script>`, `<img src=x onerror=alert('XSS')>`

Verification: -   Scripts are not executed -   Input is sanitized or escaped -   No JavaScript injection possible

---

SEC-005: Data Validation - Injection Attacks   **Test:** Enter special characters and SQL-like syntax

Test Data: `'; DROP TABLE users;--`, `admin' OR '1'='1`

Verification: -   Input is validated -   Special characters handled safely -   No injection possible (though this is client-side, backend must also validate)

SEC-006: CORS Configuration   **Test:** Observe API call behavior

Verification: -   CORS errors handled gracefully -   User-friendly error messages -   No security bypass attempts suggested

---

SEC-007: Demo Mode Security   **Test:** Attempt to bypass demo mode restrictions

Verification: -   Cannot edit fields by manipulating DOM -   Cannot submit form by calling JS functions -   Server-side checks prevent unauthorized access (if applicable)

Test Data

Valid Test Data

Organization/Enterprise Names

- `microsoft`
- `github`
- `google`
- `my-test-org`
- `test_organization`

Valid Token Formats

- `ghp_1234567890abcdefghijklmnopqrstuvwx`
- `github_pat_11ABCDEFGHIJKLMNOPQRSTUVWXYZ123456789`

Valid Date Ranges

- Since: `2025-10-01`, Until: `2025-10-31` (1 month)
- Since: `2025-10-01`, Until: `2025-10-27` (28 days)
- Since: `2025-01-01`, Until: `2025-12-31` (1 year)

Valid Team Slugs

- `engineering`
- `qa-team`
- `platform-engineering`

- `frontend-devs`

Invalid Test Data

Invalid Organization Names

- " (empty string)
- (whitespace only)
- `org with invalid chars!@#`

Invalid Tokens

- " (empty)
- `abc123xyz` (wrong format)
- `token_invalid` (wrong prefix)
- `ghp_short` (too short)

Invalid Date Formats

- `10/01/2025` (MM/DD/YYYY)
- `2025/10/01` (slashes instead of dashes)
- `01-10-2025` (DD-MM-YYYY)
- `2025-13-01` (invalid month)
- `2025-02-30` (invalid day)
- `invalid` (non-date string)

Invalid Date Ranges

- Since: `2025-11-01`, Until: `2025-10-01` (since > until)
- Since: `2025-12-31`, Until: `2025-01-01` (reversed)

Sample JSON Files for Upload Testing

Valid 28-Day Report JSON

```json
{
  "data": {
    "report_start_day": "2025-10-01",
    "report_end_day": "2025-10-27",
    "day_totals": [
      {
        "day": "2025-10-01",
        "total_active_users": 45,
        "total_engaged_users": 40,
        "copilot_ide_code_completions": {
          "total_engaged_users": 38
        },
```

```json
      "copilot_ide_chat": {
        "total_engaged_users": 25
      },
      "copilot_dotcom_chat": {
        "total_engaged_users": 15
      },
      "copilot_dotcom_pull_requests": {
        "total_engaged_users": 10
      }
    }
  ]
 }
}
```

Invalid 28-Day Report JSON (missing day_totals)

```json
{
  "data": {
    "report_start_day": "2025-10-01",
    "report_end_day": "2025-10-27"
  }
}
```

Valid User 28-Day Report NDJSON

```
{"user_id":"12345","day":"2025-10-01","user_login":"user1","total_chat_turns":50,"total_chat_in
{"user_id":"12345","day":"2025-10-02","user_login":"user1","total_chat_turns":45,"total_chat_in
{"user_id":"67890","day":"2025-10-01","user_login":"user2","total_chat_turns":60,"total_chat_in
```

Invalid User 28-Day Report (missing required fields)

```
{"user_id":"12345","user_login":"user1"}
{"day":"2025-10-01","user_login":"user2"}
```

Test Execution Guidelines

Pre-Test Setup

1. Clear browser cache and localStorage
2. Verify network connectivity
3. Prepare valid and invalid test credentials
4. Prepare sample JSON/NDJSON files
5. Document browser version and OS

Test Execution Order

1. Start with positive test cases (happy paths)
2. Then execute negative test cases (error scenarios)

3. Then execute edge cases
4. Finally, execute security and performance tests

Test Recording

- Record test execution date and time
- Note browser and version
- Capture screenshots of failures
- Save console logs for errors
- Document any deviations from expected results

Pass/Fail Criteria

- **Pass:** All expected results achieved, no unexpected behavior
- **Fail:** Any expected result not achieved, or unexpected error occurs
- **Blocked:** Test cannot be executed due to dependency failure
- **Skipped:** Test intentionally not executed (with reason)

Bug Reporting

When a test fails, report: 1. Test Case ID 2. Steps to reproduce 3. Expected result 4. Actual result 5. Screenshots/videos 6. Console errors 7. Network requests (if applicable) 8. Environment details

---

Appendix

API Endpoints Reference

Enterprise Metrics

```
GET /enterprises/{enterprise}/copilot/metrics
GET /enterprises/{enterprise}/team/{team_slug}/copilot/metrics
```

Enterprise Seats

```
GET /enterprises/{enterprise}/copilot/billing/seats
```

Enterprise 28-Day Report

```
GET /enterprises/{enterprise}/copilot/metrics/28d_report
```

Enterprise User 28-Day Report

```
GET /enterprises/{enterprise}/copilot/metrics/user/28d_report
```

Organization Metrics

```
GET /orgs/{org}/copilot/metrics
GET /orgs/{org}/teams/{team_slug}/copilot/metrics
```

Organization Seats

`GET /orgs/{org}/copilot/billing/seats`

---

localStorage Keys Reference

Key	Content	Type
`copilot_api_config`	API configuration (without token)	Object
`copilot_enterprise_metrics_data`	Enterprise metrics	Array
`copilot_enterprise_metrics_data_timestamp`	Timestamp	String (ISO)
`copilot_enterprise_seats_data`	Enterprise seats	Object
`copilot_enterprise_seats_data_timestamp`	Timestamp	String (ISO)
`enterprise_report_data`	28-day report	Object
`enterprise_report_data_timestamp`	Timestamp	String (ISO)
`user_report_data`	User 28-day report	Object
`user_report_data_timestamp`	Timestamp	String (ISO)
`copilot_org_metrics_data`	Organization metrics	Array
`copilot_org_metrics_data_timestamp`	Timestamp	String (ISO)
`copilot_org_seats_data`	Organization seats	Object
`copilot_org_seats_data_timestamp`	Timestamp	String (ISO)

GitHub Token Scopes

Scope	Description	Required For
`manage_billing:copilot`	Access Copilot billing data	Enterprise/Org metrics and seats
`read:org`	Read organization data	Organization metrics
`read:enterprise`	Read enterprise data	Enterprise metrics

Troubleshooting Common Issues

Issue: "No Data Available" **Cause:** Data not downloaded yet **Solution:** Go to Admin page and download data

Issue: "401 Unauthorized" **Cause:** Invalid/expired token **Solution:** Generate new token with correct scopes

Issue: "403 Forbidden" **Cause:** Insufficient permissions **Solution:** Verify you're an org owner and have correct scopes

Issue: "404 Not Found" **Cause:** Invalid org name or Copilot not enabled **Solution:** Check org name and Copilot enablement

Issue: Demo Mode Active   **Cause:** `VITE_DEMO_MODE=true` in environment **Solution:** Remove environment variable or set to `false`

End of Document

Document History

Version	Date	Author	Changes
1.0	November 2025	Test Documentation Team	Initial release

Feedback and Updates

For feedback or updates to this test guide, please contact the development team or create an issue in the project repository.