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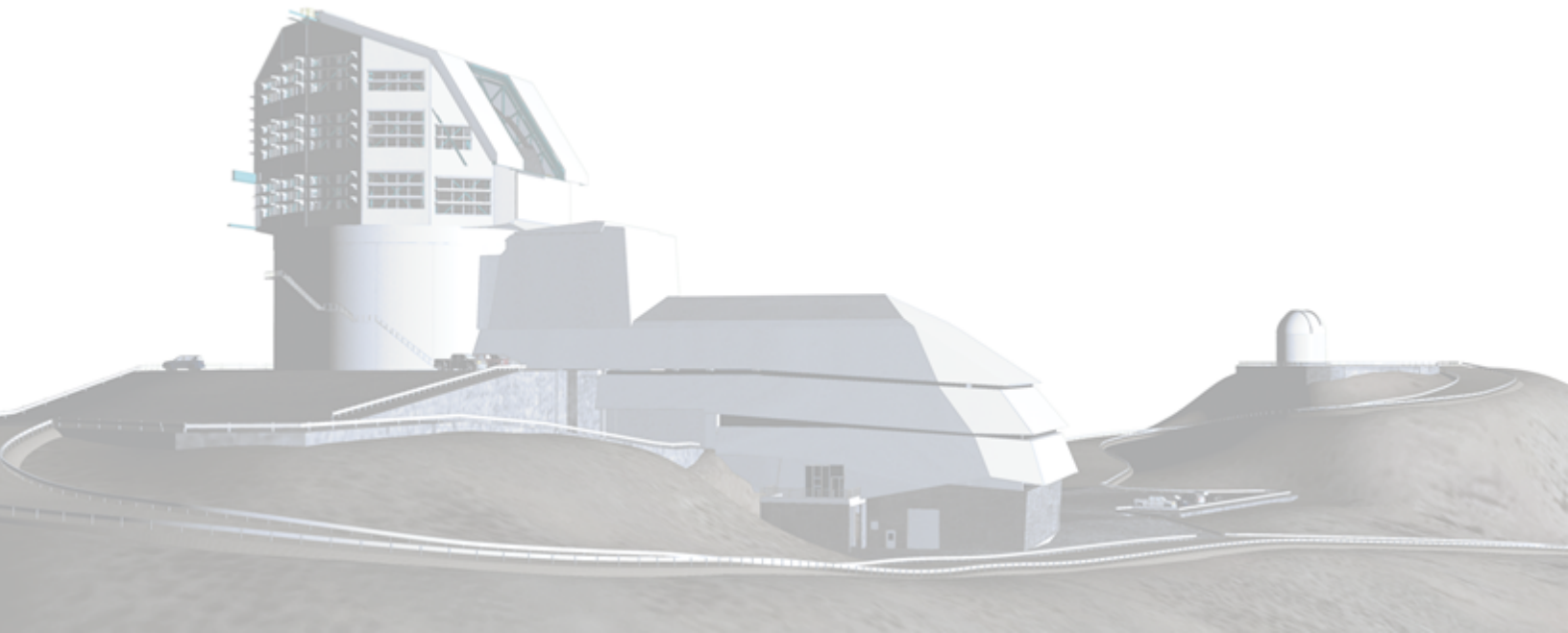
Data Management

DM-SUIT-8: Portal Integrated with Workspace Test Plan and Report

Gregory Dubois-Felsmann

DMTR-211

Latest Revision: 2020-05-13



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Abstract

This is the test plan and report for DM-SUIT-8 (Portal Integrated with Workspace), an LSST milestone pertaining to the Data Management Subsystem.

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Change Record

Version	Date	Description	Owner name
2.0	2020-05-13	LVV-P69 completed and test report approved (DM-22559).	G. Dubois-Felsmann
1.0	2020-03-31	LVV-P69 approved.	G. Dubois-Felsmann
	2020-03-19	First Draft	G. Dubois-Felsmann

Document curator: G. Dubois-Felsmann
Document source location: `https://github.com/lsst-dm/DMTR-211`
Version from source repository: c2c4de1

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1 Introduction

1.1 Objectives

Demonstrate that the Portal Aspect software has the ability to read from and write to a Web-DAV server in the LSP.
This test plan performs only a partial verification of the applicable requirements, as this Level 3 milestone was understood to represent demonstration of the ability to interface with a Web-DAV service, not the LSP-system-level test of the full role of the User File Workspace in the LSP design, and also because several of the relevant requirements also address the User Database Workspace, which is not yet available.

Note that at the time of testing, only a demonstration-level WebDAV service was available, not integrated with the Notebook Aspect user file system.

1.2 System Overview

Applicable Documents:

LDM-554 Data Management LSST Science Platform Requirements

1.3 Document Overview

This document was generated from Jira, obtaining the relevant information from the LVV-P69 Jira Test Plan and related Test Cycles (LVV-C151).

Section 1 provides an overview of the test campaign, the system under test (LSP Services), the applicable documentation, and explains how this document is organized. Section 2 provides additional information about the test plan, like for example the configuration used for this test

or related documentation. Section 3 describes the necessary roles and lists the individuals assigned to them.

Section 4 provides a summary of the test results, including an overview in Table 3, an overall assessment statement and suggestions for possible improvements. Section 5 provides detailed results for each step in each test case.

The current status of test plan LVV-P69 in Jira is **Completed** .

1.4 References

[1] **[LDM-554]**, Dubois-Felsmann, G., Ciardi, D., Mueller, F., Economou, F., 2018, *Science Platform Requirements*, LDM-554, URL `https://ls.st/LDM-554`

2 Test Plan Details

2.1 Data Collection

Observing is not required for this test campaign.

2.2 Verification Environment

An LDF-hosted instance of the Science Platform

2.3 Related Documentation

The documentation related to this test campaign should be provided in the following DocuShare Collection (as per Verification Artifacts in Jira test plan LVV-P69).

- DocuShare Collection Not Specified

Jira Attachments	
To LVV-C151 results	LVV-T1818-ufw-table-w1m8.csv
To LVV-C151 results	LVV-T1818-ufw-table.csv
To LVV-C151 results	LVV-T1818-ufw-table-saved.png
To LVV-C151 results	LVV-T1818-ufw-image-display.png

All documents provided as attachments in Jira are downloaded to Github and linked here for convenience. However, since they are not properly versioned, they should be considered informal and therefore not be part of the verification baseline.

2.4 PMCS Activity

Primavera milestones related to the test campaign.

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3 Personnel

The personnel involved in the test campaign is shown in the following table.

	T. Plan LVV-P69 owner:	**Gregory Dubois-Felsmann**	
	T. Cycle LVV-C151 owner:	**Gregory Dubois-Felsmann**	
Test Cases	**Assigned to**	**Executed by**	**Additional Test Personnel**
LVV-T1818	Gregory Dubois-Felsmann	Gregory Dubois-Felsmann	An authorized user of the LSP instance under test

4 Test Campaign Overview

4.1 Summary

T. Plan LVV-P69:	**DM-SUIT-8: Portal Integrated with Workspace**			Completed
T. Cycle LVV-C151:	**DM-SUIT-8: Portal Integrated with Workspace**			Done
Test Cases	**Ver.**	**Status**	**Comment**	**Issues**
LVV-T1818	1	Pass w/ Deviation	Executed on lsst-lsp-int.ncsa.illinois.edu, from a personally-owned Apple Macbook Air laptop, via the NCSA VPN.	DM-24849

Table 3: Test Campaign Summary

4.2 Overall Assessment

This test was first carried out, successfully, in November 2019. At that time the test was not modeled in Jira. In May 2020, after the creation of Jira artifacts representing it, the test was repeated and the results are logged here.

The Portal application was verified to be able to be used to save both images and tables to the user file workspace, and to browse and visualize images and tables in the workspace. In addition (beyond the scope of the milestone) the ability to create and use directories in the workspace was observed, as well as the ability to download workspace files through the client Web browser.

The capability is sufficiently useful that on the back end it is now appropriate for the WebDAV service to be attached to persistent storage visible in the Notebook Aspect.

4.3 Recommended Improvements

A minor issue with consistency of the file-naming UI between different Portal screens was observed (whether the extension corresponding to a specified filetype is shown with the file-name typed by the user) and should be made uniform across the Firefly application (DM-

24849).

The Portal provides basic directory browsing, file reading, file creation, and directory creation functions. It does not provide file deletion, renaming, moving, or copying, nor directory deletion, renaming, or moving. In the LSST design phase we had not decided how to support these functions, partly because of some reluctance at an early phase to commit to delegating this capability to JupyterLab. At this point JL seems to have become pretty stable and has a lot of takeup, so it may be time at this point to make this commitment.

5 Detailed Test Results

5.1 Test Cycle LVV-C151

Open test cycle *DM-SUIT-8: Portal Integrated with Workspace* in Jira.

Test Cycle name: DM-SUIT-8: Portal Integrated with Workspace
Status: Done

This test cycle contains a single test case which demonstrates several of the Portal Aspect features of interaction with the User File Workspace.

5.1.1 Software Version/Baseline

Not provided.

5.1.2 Configuration

Not provided.

5.1.3 Test Cases in LVV-C151 Test Cycle

5.1.3.1 LVV-T1818 - DM-SUIT-8: Verify Portal integration with workspace (via WebDAV)

Version **1**. Open *LVV-T1818* test case in Jira.

This test case verifies that the Portal Aspect software is capable of accessing a file-oriented workspace via the WebDAV protocol.

In so doing, it partially verifies several Portal Aspect requirements that relate to this capability - "partially" because some of these requirements depend on workspace capabilities which were not present in the prototype WebDAV service delivered by the DAX group, because some of

the requirements also cover the User Database Workspace (not relevant to this milestone, and not yet available), and also because the milestone was not envisioned as an exhaustive test covering edge cases:

- DMS-PRTL-REQ-0003 (LVV-9846, Portal access to workspace) is covered at "demonstration" level, with basic tests of saving image and tabular data to the workspace, and only for the User File Workspace (there is currently no User Database Workspace prototype available);
- DMS-PRTL-REQ-0046 (LVV-9886, Visualization of workspace data) is covered at "demonstration" level for a couple of FITS image and table files, and only for the User File Workspace;
- DMS-PRTL-REQ-0110 (LVV-9954, Tabular data download) is covered at "demonstration" level, only for catalog data (there was no image metadata in the LSP deployment at the time of test), and only for the User File Workspace;
- DMS-PRTL-REQ-0095 (LVV-9932, Saving Displayed Tabular Data) is covered at "demonstration" level for a simple subset operation in the table browser; and
- DMS-PRTL-REQ-0111 (LVV-9951, Image data download) is covered at "demonstration" level, and only for download from an image display screen itself (as LSST-style image metadata services, e.g., ObsTAP, were not available in the LSP at the time of testing).

Preconditions:
A read/write WebDAV service, accessible to the user performing the test, must be available and under the same authentication redirect coverage as the Portal Aspect and the TAP service used for the test.

Execution status: **Pass w/ Deviation**

Final comment:
Executed on lsst-lsp-int.ncsa.illinois.edu, from a personally-owned Apple Macbook Air laptop, via the NCSA VPN.

Detailed steps results:

Step	Step Details
1	Description

Using a web browser, navigate to the home page of the selected instance of the LSP at the LDF. From the displayed page, navigate to the Portal Aspect and log in with valid credentials for the instance under test.

Expected Result

Successful login to the Portal should display the TAP search screen by default.

Actual Result

Logged in to lsst-lsp-int LSP instance. Logged in with NCSA VPN (from home) and Caltech credentials (federated with NCSA ID). "Gregory Dubois-Felsmann" displayed in upper right of Portal screen. "TAP Searches" Portal screen displayed by default.

Status: **Pass**

2	Description

Navigate to the TAP search screen, if necessary (in case the default Portal screen was changed since this test was written), and ensure that the LSST TAP service associated with the chosen LSP instance is selected.

Expected Result

The lists of schemas and tables available in the services should be displayed as selectable menus.

Actual Result

Reached this screen by default.

Status: **Pass**

3	Description

Perform a TAP search on the AllWISE source catalog around the equatorial coordinates (2, 0) (degrees), with a 30 arcminute radius, using the Portal UI to specify the query (select the "Single Table" radio button).
To find the AllWISE source catalog, select the "wise_00" schema from the schema menu, and then the "wise_00.allwise_p3as_psd" table from the table menu. Use the column selector pane of the search screen to select the "ra, decl, source_id, w1mpro, w2mpro, w3mpro, w4mpro" columns for retrieval.
When the query completes, note the total number of rows in the table, as displayed in the table header, and record it.

Test Data

Equatorial coordinates: (2, 0), cone radius 30 arcmin

Expected Result

This query should return about 12,000 rows of data. It should be displayed in a table, as an overlay on a context image, and as a configurable 2D density plot.

Actual Result

Schema "wise_00", table "wise_oo.allwise_p3as_psd". Query returned 12,717 rows.

Status: **Pass**

4	Description

Using the table viewer UI, save the result of this search as a text file in CSV format, specifying that the file be saved to the "workspace". Ensure that the CSV file's name is "LVV-T1818-ufw-table.csv".

Expected Result

A UI indication that the file has been successfully saved to the workspace.

Actual Result

The UI was straightforward to use to choose (and create, if desired) a destination folder and save the file, but it did not provide an immediate positive indication of successful saving. Clicking the "save" button again, however, to bring up the save-to-workspace UI again, did display the just-saved file name and its size and date (see included image).

The LSP team should think about whether a "file xxx.yyy successfully saved" dialog requiring an "OK" action, or a transient on-screen notification, would be desirable. (Such work would need to be deferred until the restart of Portal effort.)

It was observed that, upon revisiting the save-to-workspace UI, the file name was a link to a simple URL which could be used to download the saved file to the client browser.

Status: **Pass**

5 Description

In the table viewer UI, use the "funnel" icon in the table toolbar, if necessary, to make the column-header filtering text boxes visible. Locate the "w1mpro" column (band W1 magnitude), enter the filter expression "<8", and hit TAB or RETURN to apply the filter. Note the number of rows remaining following the application of the filter.

Test Data

Filter expression "< 8" for the "w1mpro" column.

Expected Result

Approximately 10 rows should remain visible.

Actual Result

The column-header filter boxes were visible by default; it was not necessary to use the "funnel" button.

Filtering on 'w1mpro' as directed yielded 10 rows of data.

Status: **Pass**

6 Description

Using the table viewer UI, save the result of this search as a text file in CSV format, specifying that the file be saved to the "workspace". Ensure that the CSV file's name is "LVV-T1818-ufw-table-w1m8.csv".

Expected Result

A UI indication that the file has been successfully saved to the workspace.

Actual Result

This was successful; the same comments as above apply to the "UI indication" of success; it was necessary to select the "save" button again to get a dialog confirming the save.

Status: **Pass**

7 Description

Navigate to the legacy IRSA image access screen, using the blue "External Images" button at the top of the screen.

Note that this and the following step are being done exclusively to load an image into the viewer, not itself to demonstrate an LSP-Portal-specific capability; these steps simply bypass the lack of a current image query service in the LSP.

Expected Result

The "IRSA Viewer" image-search screen will be displayed.

Actual Result

Operated as expected.

Status: **Pass**

8 Description

Use the UI to load a WISE band W1 image for the coordinates (2,0) without a cutout size limit:

1. Choose Image Type: "View FITS Images"
2. Select Image Source: "Search"
3. Select Target: "Name or Position" set to "2 0"; "Cutout size" left blank
4. Select Data Set:
    a. If "WISE AllWISE Atlas" is not immediately visible under "Selection", use the "MISSION" checkbox on the left to narrow the scope to "WISE".
    b. Use the disclosure triangle to the left of "WISE AllWISE Atlas" to reveal the filter band selection boxes, and select "W1".
5. Click on the "Search" button at the bottom of the screen.

Test Data

Equatorial coordinates (2, 0) expressed as "2 0" ("2, 0" will also work).

Expected Result

An image for the selected region of sky should be displayed. As the chosen coordinates are not centered in one of the WISE coadded atlas sky tiles, a "target" glyph will be seen displayed off-center at the (2,0) coordinates.

Actual Result

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Results obtained as described.

(As expected, markers for the 10 catalog rows remaining after the filter are displayed over the image. They do correspond to bright visible sources.)

Status: **Pass**

9 Description

Use the “save” action from the image toolbar - the “floppy disk” icon at the far left of the toolbar (in the version of Firefly current at the time of writing) to save the image in FITS format to the workspace. Ensure that the image name is “LVV-T1818-ufw-image.fits”.

Expected Result

A UI indication of a successful file-save action.

Actual Result

The operation was successful, with the same note about success-indication as above.

A flaw in the UI appears to be that the table-saving dialog supplies the file extension, while the image-saving dialog does not; the initial attempt to save the file produced a file without the “.fits” extension, which had to be supplied explicitly in a second attempt.

Issues found executing this step:

DM-24849 Firefly save/download dialogs are inconsistent in whether the file type extension is added

Status: **Pass w/ Deviation**

10 Description

Close the web browser tab or window being used for the test, but do not quit the browser or clear credentials. (That is only for convenience; it is also acceptable to log out entirely and log in again.)

Expected Result

Actual Result

Done

Status: **Pass**

11 Description

Using the same web browser, navigate to the home page of the selected instance of the LSP at the LDF. From the displayed page, navigate to the Portal Aspect.

Expected Result

No credentials should be needed unless an explicit logout or credential-clearing action was performed.

The Portal Aspect UI should be displayed with the TAP search screen in the foreground and no image or tabular search results present.

Actual Result

Done, displayed as expected.

Status: **Pass**

12 Description

Select the blue “Upload” button at the top of the screen. On the resulting screen, choose to upload from the workspace. Verify that the image file saved in Step 9 above, “LVV-T1818-ufw-image.fits”, is visible. Select the file and open it with the UI. Verify qualitatively that it seems to be the same image as displayed above in Step 8.

Expected Result

The saved image should be displayed. Depending on the Portal Aspect software version deployed at the time of test, the image may be displayed immediately, or it may be necessary to navigate through a UI for choosing which extension in the file to display.

Actual Result

Successful. The second version in the “expected result” above was observed. The UI displayed a list of extensions in the file, and then displayed the image when the extension was opened.

Status: **Pass**

13 Description

Select “Upload” again. This time choose the filtered table file, “LVV-T1818-ufw-table-w1m8.csv”. Note the number of rows displayed and verify qualitatively that the sky coordinates correspond to the region around the original (2,0) search center.

Expected Result

The small, filtered table should be displayed, with the same number of rows as previously.

Actual Result

The table was displayed as expected, and overplotted appropriately on the image. 10 rows were retrieved.

Status: **Pass**

14 Description

Select “Upload” again. This time choose the full table file, “LVV-T1818-ufw-table.csv”. Note the number of rows displayed and verify qualitatively that the sky coordinates correspond to the region around the original (2,0) search center.

Expected Result

The original query table should be displayed, with the same number of rows as previously.

Actual Result

Successful

Status: **Pass**

A Traceability

Test Case	VE Key	VE Summary
LVV-T1818	LVV-9886	DMS-PRTL-REQ-0046-V-01: Visualization of Workspace Data_1
	LVV-9846	DMS-PRTL-REQ-0003-V-01: Portal Access to Workspace_1
	LVV-9932	DMS-PRTL-REQ-0095-V-01: Saving Displayed Tabular Data_1
	LVV-9951	DMS-PRTL-REQ-0111-V-01: Image Data Download_1
	LVV-9954	DMS-PRTL-REQ-0110-V-01: Tabular Data Download_1

B Acronyms used in this document

Acronym	Description
2D	Two-dimensional
CSV	Comma Separated Values
DAX	Data Access Services
DM	Data Management
DMS	Data Management Subsystem
FITS	Flexible Image Transport System
IRSA	Infrared Science Archive
LDF	LSST Data Facility
LDM	LSST Data Management (Document Handle)
LSP	LSST Science Platform
LSST	Legacy Survey of Space and Time (formerly Large Synoptic Survey Telescope)
NCSA	National Center for Supercomputing Applications
PMCS	Project Management Controls System
SUIT	Science User Interface and Tools (LSST Data Management WBS element and team, responsible for LSP Portal Aspect)
TAP	Table Access Protocol
UI	User Interface
URL	Universal Resource Locator
WISE	Wide-field Survey Explorer
arcmin	arcminute minute of arc (unit of angle)