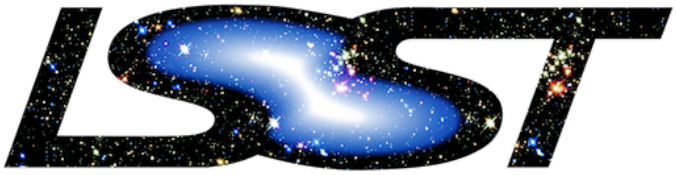

LARGE SYNOPTIC SURVEY TELESCOPE

Large Synoptic Survey Telescope (LSST)
Data Management

LDM-503-10a: (LSP with Authentication and TAP) Test Plan and Report

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DMTN-161

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DRAFT

Abstract

This is the test plan and report for LDM-503-10a: (LSP with Authentication and TAP), an LSST level 2 milestone pertaining to the Data Management Subsystem.

Change Record

Version	Date	Description	Owner name
	2019-09-09	Draft	G. Dubois-Felsmann

Document curator: Gregory Dubois-Felsmann
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Version from source repository: 8c418c0

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LDM-503-10a: (LSP with Authentication and TAP) Test Plan and Report

1 Introduction

1.1 Objectives

Verify the integration of federated authentication and authorization into the LSST science platform, and the availability of an IVOA TAP service.

Milestone Description

This test demonstrates the successful integration of a single-sign-on federated authentication system, and a basic authorization system, with the three Aspects of the LSST Science Platform (Portal, Notebook, and API), with the API Aspect containing at least a TAP service. It will be demonstrated on a Kubernetes cluster provided by NCSA. It is not required for authorization to be applied at the database level; it is sufficient for this milestone for it to apply at the TAP level. Data served will remain that from the original PDAC work, i.e., SDSS Stripe 82 and/or WISE.

1.2 Scope

The overall strategy for testing and verification within LSST Data Management is described in LDM-503.
This test plan specifically verifies successful completion of milestone LDM-503-10a.

1.3 System Overview

The LSST Science Platform (see LSE-319, LDM-554, and LDM-542) is the means of access for science users to the LSST data. It also serves project-internal users for a wide variety of data access needs during construction (using prototypes and early versions), commissioning, and operations.

1.4 Document Overview

This document was generated from Jira, obtaining the relevant information from the LVV-P48 Jira Test Plan and related Test Cycles (LVV-C85).

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 describes the configuration used for this test. 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 1, 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-P48 in Jira is Draft.

1.5 References

[1] **[LDM-542]**, Dubois-Felsmann, G., Lim, K.T., Wu, X., et al., 2017, *LSST Science Platform Design*, LDM-542, URL `https://ls.st/LDM-542`

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

[3] **[LSE-319]**, Jurić, M., Ciardi, D., Dubois-Felsmann, G., 2017, *LSST Science Platform Vision Document*, LSE-319, URL `https://ls.st/LSE-319`

[4] **[LDM-503]**, O'Mullane, W., Swinbank, J., Jurić, M., Economou, F., 2018, *Data Management Test Plan*, LDM-503, URL `https://ls.st/LDM-503`

2 Test Configuration

2.1 Data Collection

Observing is not required for this test campaign.

2.2 Verification Environment

The ”lsst-lsp-stable” instance of the LSP, hosted at the LDF.

3 Personnel

The following personnel are involved in this test activity:

- Test Plan (LVV-P48) owner: Gregory Dubois-Felsmann
- Test Cycles:
  - LVV-C85 owner: Gregory Dubois-Felsmann
    * Test case LVV-T1334 tester:
    * Test case LVV-T1436 tester:
    * Test case LVV-T1437 tester:
- Additional Test Personnel involved: None

4 Overview of the Test Results

4.1 Summary

Test Cycle **LVV-C85: LDM-503-10a: LSP with Authentication and TAP**			
test case	**status**	**comment**	**issues**
LVV-T1437	Not Executed		
LVV-T1436	Not Executed		
LVV-T1334	Not Executed		

Table 1: Test Results Summary

4.2 Overall Assessment

Not yet available.

4.3 Recommended Improvements

Not yet available.

5 Detailed Test Results

5.1 Test Cycle LVV-C85

Open test cycle *LDM-503-10a: LSP with Authentication and TAP* in Jira.

LDM-503-10a: LSP with Authentication and TAP
Status: Not Executed

Execute the test cases associated with the DM milestone LDM-503-10a.

5.1.1 Software Version/Baseline

Not provided.

5.1.2 Configuration

Not provided.

5.1.3 Test Cases in LVV-C85 Test Cycle

5.1.3.1 Test Case LVV-T1437

Open *LVV-T1437* test case in Jira.

This test case verifies that the TAP service in the API Aspect of the Science Platform is accessible to authorized users through a login process, and that TAP searches can be performed using the IVOA TAP protocol from remote sites.

Preconditions:
Test case LVV-T1334 must have already been executed and the prescribed outputs saved, notably including the ”LVV-T1334-output.csv” file.

Execution status: **Not Executed**

Final comment:

Detailed step results:

Step		Description, Results and Status
1	Description	On the local computer, clone the TBD test notebook for LDM-503-10a into the user environment from the TBD tag of the TBD Github repository. Note the SHA that applies to the version of the test notebook that has been cloned.
	Expected Result	
	Actual Result	
	Status	Not Executed
2	Description	Launch a LOCAL instance of JupyterLab (i.e., by running "jupyter lab") on the computer to be used for testing. Ensure that the test notebook is visible from within JupyterLab.
	Expected Result	
	Actual Result	
	Status	Not Executed
3	Description	Obtain an access token for the TAP service from the LSP instance under test, by navigating to the XXX endpoint in a web browser and logging in. NCSA credentials for the tester should be used.
	Expected Result	
	Actual Result	
	Status	Not Executed

4	Description	Open the test notebook and paste the access token into the appropriate cell in the notebook. The text "LVV-T1437" should be found in the notebook just before the appropriate line of code.
	Expected Result	
	Actual Result	
	Status	Not Executed
5	Description	Execute the entire notebook.
	Expected Result	
	Actual Result	
	Status	Not Executed
6	Description	Note the success and/or failure indications that appear in the output of the notebook.
	Expected Result	
	Actual Result	
	Status	Not Executed
7	Description	Delete the access token from the test notebook.
	Expected Result	
	Actual Result	

	Status	Not Executed
8	Description	Save and close the test notebook. Save the fully-executed notebook in TBD location as a record of the test.
	Expected Result	
	Actual Result	
	Status	Not Executed

5.1.3.2 Test Case LVV-T1436

Open *LVV-T1436* test case in Jira.

This test case verifies that the Notebook Aspect of the Science Platform is accessible to authorized users through a login process, and that TAP searches can be performed from Python code in the Notebook Aspect.

Preconditions:
Test case LVV-T1334 must have already been executed and the prescribed outputs saved, notably including the ”LVV-T1334-output.csv” file.

Execution status: **Not Executed**

Final comment:

Detailed step results:

Step	Description, Results and Status

1	Description	If LVV-T1334 (1.0) has just been carried out, the tester will already be logged in to the Portal Aspect. Otherwise, use a Web browser to navigate to the landing page of the LSP instance under test, and click through to the Portal Aspect link. This should trigger a login process; the tester should log in. Non-NCSA credentials should be used (or have been used) to log in to the Portal Aspect.
	Expected Result	The web browser should display a Portal Aspect page with the user's name noted in the upper right hand corner.
	Actual Result	
	Status	Not Executed
2	Description	Use the same Web browser (in a new page or tab) to navigate to the landing page of the LSP instance under test, and click through to the Notebook Aspect link.
	Expected Result	No login credentials should be requested. A page allowing the creation of a Notebook Aspect session should be visible.
	Actual Result	
	Status	Not Executed
3	Description	Use the Notebook Aspect UI to create a "small" session using the most recent "recommended" (weekly) release image.
	Expected Result	The main JupyterLab UI should appear.
	Actual Result	
	Status	Not Executed
4	Description	Close any Portal Aspect window/tab(s) that are open.
	Expected Result	

	Actual Result	
	Status	Not Executed
5	Description	Use the JupyterLab Terminal application to create a small file in the user's home directory.
	Expected Result	The test file should be visible in the JupyterLab file browser.
	Actual Result	
	Status	Not Executed
6	Description	Log out of the Notebook Aspect.
	Expected Result	
	Actual Result	
	Status	Not Executed
7	Description	Navigate to the landing page for the LSP instance under test. Navigate to the Portal Aspect from that page. (Do not log in if a login is requested.)
	Expected Result	A login should be requested when the Portal Aspect is accessed. (This verifies that *logout* is cross-Aspect.)
	Actual Result	
	Status	Not Executed
8	Description	Close the login window and quit the web browser in use.
	Expected Result	

	Actual Result	
	Status	Not Executed
9	Description	Launch a web browser and navigate to the landing page for the LSP instance under test. Navigate to the Notebook Aspect. When prompted for a login, use NCSA credentials (for the same user as the non-NCSA credentials used above). Request a session of the "medium" category with the most recent "recommended" (weekly) release image.
	Expected Result	The usual JupyterLab UI should be displayed.
	Actual Result	
	Status	Not Executed
10	Description	Examine the JupyterLab file browser for the file created in **Step 5** above. If convenient (e.g., based on other distinctive files or persistent settings), verify further that the same user environment has been reached as with the non-NCSA credentials above.
	Expected Result	The same file should be visible. (This verifies that the two sets of credentials lead to the same Notebook Aspect user environment.)
	Actual Result	
	Status	Not Executed
11	Description	Clone the TBD test notebook for LDM-503-10a into the user environment from the TBD tag of the TBD Github repository. Note the SHA that applies to the version of the test notebook that has been cloned.
	Expected Result	
	Actual Result	
	Status	Not Executed

12	Description	Open the test notebook and execute all of its steps.
	Expected Result	
	Actual Result	
	Status	Not Executed
13	Description	Note the success and/or failure indications that appear in the output of the notebook.
	Expected Result	
	Actual Result	
	Status	Not Executed
14	Description	Save and close the test notebook. Save the fully-executed notebook in TBD location as a record of the test.
	Expected Result	
	Actual Result	
	Status	Not Executed
15	Description	Without logging out, open a new browser window or tab, and navigate to the Portal Aspect of the LSP instance under test. Verify that the Portal Aspect can be accessed without a further login. Verify that the username displayed at the upper right is the same one as in **Step 1** above.
	Expected Result	

	Actual Result	
	Status	Not Executed
16	Description	Log out of the Notebook Aspect, close the Portal Aspect windows, and quit the Web browser in use.
	Expected Result	
	Actual Result	
	Status	Not Executed

5.1.3.3 Test Case LVV-T1334

Open *LVV-T1334* test case in Jira.

This test case verifies that the Portal Aspect of the Science Platform is accessible to authorized users through a login process, and that TAP searches can be performed from the Portal Aspect UI.

In so doing and in conjunction with the other LDM-503-10a test cases collected under LVV-P48, it addresses all or part of the following requirements:

- DMS-LSP-REQ-0002, DMS-LSP-REQ-0005, DMS-LSP-REQ-0006, DMS-LSP-REQ-0020, DMS-LSP-REQ-0022, DMS-LSP-REQ-0023, DMS-LSP-REQ-0024
- DMS-PRTL-REQ-0001, DMS-PRTL-REQ-0015, DMS-PRTL-REQ-0016, DMS-PRTL-REQ-0017, DMS-PRTL-REQ-0020, DMS-PRTL-REQ-0023, DMS-PRTL-REQ-0026, DMS-PRTL-REQ-0049, primarily

Preconditions:

Execution status: **Not Executed**

Final comment:

Detailed step results:

Step		Description, Results and Status
1	Description	Navigate to the `https://lsst-lsp-stable.ncsa.illinois.edu/` endpoint of the LSP at the LDF. From the displayed page, navigate to the Portal Aspect.
	Expected Result	A login screen should be displayed.
	Actual Result	
	Status	Not Executed
2	Description	Log in to the Portal Aspect with NCSA credentials. Verify that a Portal TAP search screen comes up. Note the user name displayed in the upper left of the Portal. Log out.
	Expected Result	Following login, the Portal Aspect TAP search screen should be displayed, or a clearly visible UI element allowing one-click access to that screen. A user name corresponding to the credentials entered should be displayed.
	Actual Result	
	Status	Not Executed
3	Description	Log in to the Portal Aspect with alternate credentials that are associated with the same identity.
	Expected Result	The Portal application should come up just as in the previous step; the user name displayed in the upper left of the Portal should be the same as in the previous step.
	Actual Result	
	Status	Not Executed

4	Description	Navigate to the TAP search screen, if necessary, and ensure that the LSST TAP service associated with the chosen LSP instance is selected.
	Expected Result	A TAP search screen should either already be displayed after the previous step, or should be displayed after a one-click action from the Portal's initial page. On the TAP screen, a UI element allowing the choice of TAP service to user should be available, and an LSST TAP service associated with the LSP instance under test should be pre-selected as the default.
	Actual Result	
	Status	Not Executed
5	Description	Verify that the same WISE and SDSS catalog tables that were explored in DMTR-52 are now visible in the TAP service.
	Expected Result	The SDSS Stripe 82 2013 processing's deep detection and forced photometry catalogs, and the WISE mission's principal catalog, forced photometry catalog, and single-epoch source catalog should be accessible.
	Actual Result	
	Status	Not Executed
6	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.
	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	
	Status	Not Executed

A Acronyms used in this document

Acronym	Description
2D	Two-dimensional
API	Application Programming Interface
DM	Data Management
DMS	Data Management Subsystem
DMTN	DM Technical Note
DMTR	DM Test Report
Data Management	The LSST Subsystem responsible for the Data Management System (DMS), which will capture, store, catalog, and serve the LSST dataset to the scientific community and public. The DM team is responsible for the DMS architecture, applications, middleware, infrastructure, algorithms, and Observatory Network Design. DM is a distributed team working at LSST and partner institutions, with the DM Subsystem Manager located at LSST headquarters in Tucson.
Data Management Subsystem	The subsystems within Data Management may contain a defined combination of hardware, a software stack, a set of running processes, and the people who manage them: they are a major component of the DM System operations. Examples include the 'Archive Operations Subsystem' and the 'Data Processing Subsystem'".”
IVOA	International Virtual-Observatory Alliance
LDF	LSST Data Facility
LDM	LSST Data Management (Document Handle)
LSE	LSST Systems Engineering (Document Handle)
LSP	LSST Science Platform
LSST	Large Synoptic Survey Telescope
NCSA	National Center for Supercomputing Applications
PDAC	Prototype Data Access Center
SDSS	Sloan Digital Sky Survey
Science Platform	A set of integrated web applications and services deployed at the LSST Data Access Centers (DACs) through which the scientific community will access, visualize, and perform next-to-the-data analysis of the LSST data products.
Scope	The work needed to be accomplished in order to deliver the product, service, or result with the specified features and functions

Stripe 82	A 2.5° wide equatorial band of sky covering roughly 300 square degrees that was observed repeatedly in 5 passbands during the course of the SDSS, In part for calibration purposes.
TAP	Table Access Protocol
TBD	To Be Defined (Determined)
UI	User Interface
WISE	Wide-field Survey Explorer
epoch	Sky coordinate reference frame, e.g., J2000. Alternatively refers to a single observation (usually photometric, can be multi-band) of a variable source.
forced photometry	A measurement of the photometric properties of a source, or expected source, with one or more parameters held fixed. Most often this means fixing the location of the center of the brightness profile (which may be known or predicted in advance), and measuring other properties such as total brightness, shape, and orientation. Forced photometry will be done for all Objects in the Data Release Production.