LARGE SYNOPTIC SURVEY TELESCOPE

Large Synoptic Survey Telescope (LSST)
Data Management

LVV-P15 (Lvv-p15) Test Plan and Report

John Swinbank

DMTR-111

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DRAFT

Abstract

This is the test plan and report for LVV-P15 (Lvv-p15), an LSST DM level 1 milestone pertaining to the Science Pipelines SW.

Change Record

Version	Date	Description	Owner name
	2018-11-19	First Draft	Swinbank, Comoretto

Document curator: John Swinbank
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1 Introduction

1.1 Objectives

This test plan checks for the successful release of the Fall 2018 release of the LSST Science Pipelines (Pipelines release version 17.0).

It will demonstrate that:

- The release has been tagged, build and made available through standard distribution channels;
- Release documentation, including release notes and a characterization report, are available on the LSST Pipelines documentation website (https://pipelines.lsst.io/);
- An end-user can follow standard instructions to install the release onto some representative system;
- The release is installed into the "shared stack" on the lsst-dev shared developer systems and the Verification Cluster at the LSST Data Facility;
- That lsst_dm_stack_demo test package executes successfully in the context of the release.

Scope

The overall strategy for testing and verification within LSST Data Management is described in LDM-503.
This test plan specifically tests the milestone LDM-503-09a, which refers to the Fall 2018 release of the LSST Science Pipelines.

1.2 System Overview

The LSST Science Pipelines comprise the scientific algorithms which will be used to process LSST data, arranged into executable pipelines by means of the LSST "task" framework. They also include execution middleware which is common across execution environment (for example, the "Data Butler" I/O abstraction is included, but schedulers or workflow management for specific clusters is not), and "camera packages" which adapt and configure the algorithms for use with specific instrumentation.

Applicable Documents

LDM-503 Data Management Test Plan
LDM-151 Data Management Science Pipelines Design
LSE-61 Data Management System Requirements

1.3 References

[1] **[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] **[LDM-151]**, Swinbank, J.D., et al., 2017, *Data Management Science Pipelines Design*, LDM-151, URL `https://ls.st/LDM-151`

1.4 Document Overview

The following planning sections are completed before the start of the test activity. Section 2 of this document provides details of the Science Pipelines SW baseline used for this test, including relevant hardware and software configurations. Section 3 lists the individuals involved in performing the tests. Section 4 provides a descriptive list of planned test cases. Once the above sections are completed, this document can be reviewd in order to ensure that the test activity can start.

Section 5 is filled after the test activity is completed. Its includes an overview of the resulta in 5.1 while 5.2 provides more detailed results from each individual test case.

2 Test Configuration

Observing is not required for this test campaign.

2.1 Verification Environment

Several of the tests described in this plan are agnostic of environment: they involve checking that certain content has been properly published. This can be performed from any internet-connected system with a web browser, and will, in this case, likely be executed from the tester's laptop.

Where tests require installation or execution of specific Science Pipelines components, this will be carried out on the "lsst-dev" shared developer infrastructure at the LSST Data Facility. This infrastructure provides a number of powerful (high core count, high RAM) systems accessible to LSST developers. At time of writing, they are running CentOS 7.5.1804; in practice, any version of CentOS (or a similar operating system) is appropriate for this test plan, as long as it complies with the published installation prerequisites of the LSST pipelines.

3 Personnel

Following personnel is involved in the test activity:

- Test Plan (LVV-P15) owner: John Swinbank (swinbank)
- Test Cycles:
  - LVV-C18: John Swinbank (swinbank)
    * Test case LVV-T362: (swinbank)
    * Test case LVV-T363: (swinbank)
- Additional Test Personel involved: None

4 Planned Test Activities

4.1 Test Cycle LVV-C18

LDM-503-09a: Science Pipelines Fall 2018 Release

This test cycle describes tests performed on the Science Pipelines Fall 2018 (v17.0) release, ensuring that the release is properly identified, documented, distributed, installable and tested.

4.1.1 LVV-T362

This test will check:

- That the Alert Production Pipeline payload is available for installation from documented channels;
- That the Data Release Production Pipeline payload is available for installation from documented channels;
- That the Calibration Products Production Pipeline payload is available for installation from documented channels;
- That these payloads can be installed on systems at the LSST Data Facility following available documentation;
- That the installed pipeline payloads are capable of successfully executing basic integration tests.

Note that this test assumes a 2018-era packaging of the Science Pipelines software, in which all the above payloads are represented by a single “meta-package”, lsst_distrib.

Step	Description
1	The LSST Science Pipelines, described by the lsst_distrib meta-package, should be installed following the documentation available at https://pipelines.lsst.io/. The suggested Conda environment will be used to ensure that a supported execution environment is available.

Step	Description

2	The lsst_distrib top-level metapackage will be enabled. Assuming that the software has been installed at $LSST_DIR:
	`source ${LSST_DIR}/loadLSST.bash`
	`setup lsst_distrib`

3	The "LSST Stack Demo" package will be downloaded onto the test system from `https://github.com/lsst/lsst_dm_stack_demo/releases`. The version corresponding to to the version of the Science Pipelines under test should be chosen.
4	The stack demo package is uncompressed into a directory `${DEMO_DIR}`
5	The demo package will be executed by following the instructions in its README file. Successful execution will result in the string "Ok" being returned.

4.1.2 LVV-T363

This test will check:

- That a particular Science Pipelines release is adequately described by documentation at the https://pipelines.lsst.io/ site;
- That the Science Pipelines release is accompanied by a characterization report which describes its scientific performance.

Step	Description
1	Load the Science Pipelines website at https://pipelines.lsst.io/.
2	Identify documentation for the release under test. This should be clearly labelled on the documentation site. If the latest release is being tested, the default page loaded when visiting https://pipelines.lsst.io/ should be the documentation required. If this test is for another release, the site should present clear instructions for changing the edition (or version) of the documentation being examined, and documentation for the release under test should be available.

Step	Description
3	Inspect the documentation to ensure that it refers to the release under test, and that it provides: • Release notes, describing changes in this release relative to the previous; • Installation instructions, together with a list of supported platforms and prerequisites; • Getting started information.
4	Locate the Characterization Metric Report corresponding to this release. It should be linked from the main release documentation.
5	Verify that the characterization metric report describes the scientific performance of the release in terms of metrics referring to high-level requirements documentation (the Science Requirements Document, LPM-17; the LSST System Requirements, LSE-29; and/or the Observatory System Specifications, LSE-30).

5 Test Results

5.1 Overview of the Test Results

5.1.1 Summary Table

TEST CASE ID	PASS/FAIL	COMMENTS
LVV-T362	Not Run	
LVV-T363	Not Run	

5.1.2 Overall Assessment

5.1.3 Recommended Improvements

5.2 Detailed Test Results