



Product Tools Library v.3.1.0

for the Planetary Data System

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1.1 Overview

About Product Tools Library

The Product Tools Library project supports design/generation, validation and submission of archival products to the PDS. This project consists of a library of software classes to support the development of tools to perform these functions and is designed to be utilized by developers from the Engineering Node, Discipline Nodes and the PDS community.

Please send comments, change requests and bug reports to the [PDS Operator](mailto:pds_operator@jpl.nasa.gov) at pds_operator@jpl.nasa.gov.

1.2 Release Notes

Release Notes

The purpose of this section is to provide a description of a Product Tools Library release including any impact that the new or modified capabilities will have on the Discipline Nodes or the PDS user community. A somewhat itemized list of changes for each release can be found on the [Release Changes](#) page. If viewing this document in PDF form, the release change details are not available.

Release 3.1.0

This maintenance release of the Product Tools Library software includes a number of corrections and modifications. These include:

- Corrected an issue dealing with how date/time values are validated.
- Corrected a couple of issues dealing with malformed messages.
- Corrected an issue involving value manipulation when matching values.
- Corrected an issue with following pointers.
- Added functionality back into the library that used to be in the 2.X.X version of the library that was utilized by the Catalog Ingest Tool.
- Corrected a number of issues related to support for the Volume Validator.
- Corrected other miscellaneous issues.

The liens for this release are as follows:

- Plural forms of valid unit names are not supported.
- Full checking of file characteristics not supported as of yet.

Release 3.0.2

This release of the Product Tools software includes corrections and modifications resulting from the beta test results of the Validation Tool integration. These include:

- Truncate long values when error messages get thrown for exceeding the acceptable maximum length of an element definition.
- Corrected the issue where memory overflows occurred with large attached labels.
- Corrected dictionary handling to support SPECIFIC_GROUPS and MAXIMUM values of UNK.

- Corrected handling of pointer statements that contain multiple file references.
- Corrected handling of required/optional nested objects with descriptor names.
- Corrected an issue calculating the start byte of the data in attached labels.
- Corrected to capture errors in nested fragment labels.
- Cleaned up some messages.

The liens for this release are as follows:

- Plural forms of valid unit names are not supported.
- Full checking of file characteristics not supported as of yet.

Release 3.0.1

This release of the Product Tools software supports the beta release of the Validation Tool and includes a number of updates and corrections including:

- Report line lengths greater than 80 characters (78 + <CR><LF>).
- Report when lines do not end in <CR><LF>.
- Combine attribute lists for identical elements when two dictionaries are merged.
- Allows required element checks in objects to pass if a description pointer with the required identifier exists.
- Fixed group definition lookup.
- Fixed an issue where "+" sign on integer caused an error.
- Fixed a problem with SFDU headers.
- Fixed some issues where the software was not handling certain exceptions.

The liens for this release are as follows:

- Memory problem with very large attached labels.
- Plural forms of valid unit names are not supported.
- Checking of file characteristics not supported as of yet.

Release 3.0.0

This release of the Product Tools software represents the reconciliation of the Ames and JPL versions of the library. The library has undergone significant enhancements to the grammar, message handling, support for Java 1.5 and fixes for a number of issues found in previous releases.

Release 2.0.2

This release of the Product Tools software supports the beta releases of the Catalog Ingest Tool with some

minor API enhancements.

Release 2.0.1

The operational release of the Product Tools software incorporating the Phase II capability supporting validation of catalog files. This release includes some minor modifications regarding how catalog pointers are handled based on beta testing results.

Release 2.0.0

This release of the Product Tools software incorporates the Phase II capability supporting validation of catalog files.

The major change for this release is the addition of support for validating catalog files, either standalone or as a set within a CATALOG directory. Modifications to support this capability included a general change with regard to how pointers are handled as well as relaxing some of the PDS Label constraints where catalog files do not conform to those constraints. The result is that catalog files are now validated correctly and the spurious messages that were previously produced have been eliminated.

The other change in this release involved correct validation of quoted date/time strings. Date/time strings may not be quoted when associated with an element that is defined with one of the DATE data types.

1.3 Installation

Installation

This section describes how to install the software contained in the *product-tools* package. The following topics can be found in this section:

- [System Requirements](#)
- [Unpacking the Tools Package](#)

System Requirements

The following sub-sections detail the system requirements for the tool.

Java Requirement

The Product Tools software was developed using Java and will run on any platform with a supported Java Runtime Environment (JRE). The tools were specifically developed under Sun Java version 1.6, so the tool will execute correctly under 1.6 and future versions.

Since the tools are developed using Sun's Java, this is the preferred Java environment for operation. The Sun Java package can be obtained from the [Sun Java](#) web site. Other Java environments are relatively compatible with Sun's Java.

Data Dictionary Requirement

Release *1r64* or later of the Planetary Science Data Dictionary (PSDD) is required for the tools to function properly. Release *1r66* of the PSDD supports the validation of explicit FILE objects. The latest version of the PDS data dictionary can be retrieved from the [PDS Data Dictionary](#) web page.

Unpacking the Tools Package

Download the *product-tools* package from the [Product Tools Library](#) web page. The binary distribution is available in identical zip or tar/gzip packages. Unpack the selected binary distribution file with one of the following commands:

```
% unzip product-tools-3.1.0-bin.zip
```

```
or
% tar -xzvf product-tools-3.1.0-bin.tar.gz
```

Note: Depending on the platform, the native version of *tar* may produce an error when attempting to unpack the distribution file because many of the file paths are greater than 100 characters. If available, the GNU version of *tar* will resolve this problem. If that is not available or cannot be installed, the zipped package will work just fine in a UNIX environment.

The commands above result in the creation of the *product-tools-3.1.0* directory with the following directory structure:

- **README.txt**

A README file directing the user to the available documentation for the project.

- **LICENSE.txt**

The copyright notice from the [California Institute of Technology](#) detailing the restrictions regarding the use and distribution of this software. Although the license is strictly worded, the software has been classified as Technology and Software Publicly Available (TSPA) and is available for *anyone* to download and use.

- **doc/**

This document directory contains a local web site with the Product Tools Library Guide, javadoc, unit test results and other configuration management related information. Just point your favorite browser to the *index.html* file in this directory.

- **lib/**

This directory contains the dependent jar files for the tool along with the jar file (product-tools-3.1.0.jar) containing the Product Tools Library software.

- **src/**

This directory contains the jar files with the source code for the Product Tools Library software.

1.4 Development

Development

This section describes how a user can utilize the Application Program Interface (API) of the *product-tools* package to develop their own tool. The following topics can be found in this section:

- [API Entry Points](#)

API Entry Points

We have not had a chance to document the entry points into the API as of the current release. The best source for this information currently is the [JavaDocs](#) documentation for this project.