pyCGNS.intro/Manual

Release 4.0.1

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pyCGNS is a Python module for the CGNS standard. The module gathers various tools and libraries for end-users and Python application developpers. The module uses numpy for all node values.

IN-MEMORY CGNS TREES

The main idea of this module is to have a CGNS tree in the process memory. Large computations have hundreeds of thousands of 3D points and most applications do not want to duplicate this in memory: the *numpy* arrays have internal references to appication memory zones. The CGNS/Python trees are lists of lists and follows the *SIDS-to-Python*.

The HDF5 format (see *HDF5*) is the preferred low level storage.

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2.1 Python module information

The pyCGNS Python module is a collection of 7 modules around the CGNS standard.

> pyCGNS is released under the LGPL license See file COPYING in the root directory of this Python module source tree for license information.

The pyCGNS module now includes (former package names)

> VAL - Validater (pyC5) - XML grammar based validation of a CGNStree.py

> TRA - Translater (pyCRAB) - Set of translators from/to various formats

> MAP - Mapper - Load/save function SIDS/HDF5 from/to CGNStree.py

> DAT - DataTracer (pyDAX) - DBMS services for SIDS/HDF5 files

> WRA - Wrapper (pyCGNS) - CGNS/MLL and CGNS/ADF python wrapping

> PAT - PatterMaker - Full CGNS/SIDS patterns with CGNStree.py

> NAV - Navigater (pyS7) - CGNStree.py graphical browser

2.1.1 Release notes

> Many changes in this v4 release, you can only use MAP, WRA, PAT and NAV. The other modules, VAL, TRA and DAT are present for archival/development purpose but you should NOT use them.

2.1.2 Changes

- cgnserrors changed to full exceptions at pyCGNS global level

2.1.3 Module dependancies

The pyCGNS modules have dependancies with their brothers. The list below gives you the required modules (or optional) for each of them.

- MAP : None
- PAT : MAP
- WRA : PAT MAP
- NAV : PAT MAP (WRA)

2.1.4 Install notes

NAV depends:

The TkTreectrl module is required. You first need to install tktreectrl (last version tested is tktreectrl-2.2.3) and TkinterTreectrl to map it to Python (last version tested is TkinterTreectrl-0.8)

MAP depends:

The CHLone librarie is required

WRA depends:

CGNS/MLL and CGNS/ADF libraries are required

2.2 Modules

The pyCGNS python package module now includes:

2.2.1 MAPper

MAP (new in v4)

The implementation of the SIDS-to-Python mapping. Provides functions for load/save SIDS/HDF5 from/to CGNStree.py

2.2.2 WRApper

WRA (formerly was pyCGNS)

The Python wrapper for ADF and MLL libraries.

2.2.3 PATternMaker

PAT (formerly was pyCGNS/cgnslib)

A set of functions to create/read/write/modify CGNS/SIDS patterns compilants with SIDS-to-Python.

2.2.4 NAVigater

NAV (formerly was pyS7)

A graphical browser for CGNS trees (ADF/HDF5/Python). Allows tree construction by means of copy/paste and patterns.

2.2.5 DATatracer

DAT (formerly was pyDAX)

A set of command-line tools that use DBMS services for SIDS/HDF5 files.

> **Warning:** This module is experimental and should NOT be used for your applications.

2.2.6 VALidater

VAL (formerly was pyC5)

It is a comand-line tool for CGNS tree verification. It uses an XML grammar.

> **Warning:** This module is experimental and should NOT be used for your applications.

2.2.7 TRAnslater

TRA (formerly was pyCRAB)

It is a set translators from/to various formats, these can be used as functions in your own application or as command-line tools.

> **Warning:** This module is experimental and should NOT be used for your applications.

2.3 Build and Install

TABLES

- *genindex*
- *modindex*
- *search*