INTEGRAL Science Data Centre (ISDC)

http://www.isdc.unige.ch/integral/

Release Note

Package: osa_sw
Version: 11.2
Rel. Date: 30-Mar-2022

Contents

1. Introduction

This is the release note for the ISDC 'Off-line Scientific Analysis (OSA)' software version 11.2

This release contains instrument specific analysis software for the four INTEGRAL instruments (IBIS, SPI, JEM-X and OMC), and some generic tools.

It runs on Linux and can be ported on different platforms using containers (Docker is supported). This Release Note gives some portability information and describes system requirements.

The software is available to the scientific community as downloadable binary tar files from the ISDC public release page at
http://www.isdc.unige.ch/integral/analysis#Software
or Docker container

OSA can be compiled and installed from the source code as well. The source code tar file is available via the above URL.

Information for user support is available at
http://www.isdc.unige.ch/integral/support/helpdesk

2. Portability

Binary Packages

The software was checked to correctly run on the following platforms:

- Linux

- CentOS_5.11 x86_64
- CentOS_6.10 x86_64
- CentOS_7.8.2003 x86_64
- Ubuntu_16.04 x86_64
- Ubuntu_20.04 x86_64

- Containers
  - Docker

The binary OSA software packages were built on the above platforms.
They are ready to use and contain everything you need to run the OSA software. If needed you may compile and link your own software using libraries included in the binary OSA packages.

In general, the OSA software could also run on a variety of other Linux platforms (Suse 42.2 and 42.3 have been used with the Ubuntu packages) and will be portable using containers.
See the convenience script:
https://gitlab.astro.unige.ch/savchenk/osa-docker

Depending on the particular choice of your Linux distribution you may miss specific system libraries when running OSA from a binary package. Please let us know in case you require additional libraries.

Source Code Package
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Before you consider building OSA from source, please consider using the supplied binary packages.

If you need to build the OSA software from the source code, note that the above platforms have been tested using:

GNU C/C++ (gcc) version 4.4.7
GNU Fortran (gfortran) version 4.4.7

3. System Requirements

Binary Packages
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- Linux

  The OSA software requires as run-time library the libgfortran.so.3 and the libc.so.6 libraries. Please refer to the Installation Guide for more details.

Source Code Package
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Before compiling and installing the osa_sw from the source code, you need to make sure that the following packages are installed:

- GNU make version 3.79.1 (or higher)

- ROOT version 5.34.34

  Since OSA version 3.0 you can choose between an installation
  with and without ROOT.

  If you choose to install without ROOT, you will NOT benefit from
  all OSA functionalities, i.e. GUI support is not available. To
  learn more about how to install OSA without ROOT please see
  Appendix B section 'Setting up the Environment' of the
  'Installation Guide for the INTEGRAL Offline Scientific Analysis'

  ROOT is available via the ISDC WWW-site at URL:
  http://www.isdc.unige.ch/integral/osa/current/developers

  Warning! : It is recommended to install
             ROOT from the source code. If you want to
             download ROOT as a binary package, you must make sure
             that the compiler used to compile ROOT is identical
             to the one you are using for the installation of the
             OSA SW. Otherwise, please download the ROOT source
             code package and compile and install it.
             Using different compilers may result in serious
             problems with your installation.

- X11

  On Mac OS X you have to have X11 available. You may install it
  from the Mac OS X installation disks.

- Disk space for installation

  The unpacked osa_sw binary package requires approximately
  2 GB depending on the operating system.

  The unpacked osa_sw source code package requires some 300 MB of
  disk space.

  Once the software is built and installed a total of some 2 GB
  of disk space is needed dependending on the operating system and
  compiler used.

  Note: After the successful installation from the source code,
        you may reduce the disk space needed by osa_sw by
        executing 'make distclean' in the same directory where
        you executed 'make global_install'. This will reduce the
        amount of disk space needed to some 890 MB. You may
        additionally remove the source code directories
        (support-sw, analysis-sw, contrib-sw). This will reduce
        the disk space needed to some 790 MB.

4. Acknowledgements

The OSA math library (isdcmath) includes code from the following

packages:

- BLAS / LINPACK
  http://www.netlib.org/blas/index.html

- CDFLIB90
  http://odin.mdacc.tmc.edu/anonftp/

- LAPACK
  http://netlib.org/lapack/index.html

- PORT from Bell Labs
  http://netlib.bell-labs.com/netlib/port/

- PDA from Starlink
  http://star-www.rl.ac.uk/static_www/soft_further_PDA.html

5. Changes since last Release

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OSA 11.1 -> OSA 11.2

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General

This release is compatible with rbnrmf distributed with heasoft < 6.28 only.
This affects both jemx_science_analysis and ibis_science_analysis.

cfitsio 3.02.6
Subverison update

lc_pick 3.4.3
It solves Bug documented in https://redmine.astro.unige.ch/issues/23983

JEM-X
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j_ima_iros 6.2.4
Correction of SOURCEID problem.
Plus Warning clean-up.

j_scripts 6.5.6
checks that heasoft version is before 6.28

IBIS
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dal3ibis 6.2.2
Fixes from Ibis team

ii_spectra_extract 2.9.6
Added an option to prevent background subtraction before fitting.
It has marginal effect on the output source spectra, slightly (<%1)
improving reconstruction based on simulated shadowgrams.
It has a major effect on the output background spectrum,
enabling inspection of background lines.

mimosa 5.4.4
Packed an alternative IBIS mosaic builder from Alexandra Gros (Paris)