



Intel® Distribution for Python* 2017 Update 3

Release Notes

26 April 2017

Version History/Revision History

Date	Revision	Description
August 2016	1.0	Release Notes for the Intel® Distribution for Python* 2017
November 2016	1.1	Release Notes for the Intel® Distribution for Python* 2017 Update 1
February 2017	1.2	Release Notes for the Intel® Distribution for Python* 2017 Update 2
April 2017	1.3	Release Notes for the Intel® Distribution for Python* 2017 Update 3

Intended Audience

The target audience for the release notes are software developers and end users of the Intel Distribution for Python* 2017 Update 3.

Customer Support

For technical support, including answers to questions not addressed in this document, visit the technical support forum at <https://software.intel.com/en-us/forums/intel-distribution-for-python> or email Intel Corporation at scripting@intel.com.

Contents

1	Introduction	4
2	New in this Release	4
3	System Requirements	4
4	Installation	6
5	Release Content	8
6	Known Issues	12
7	Related Documentation	12
8	Legal Information	18

1 Introduction

The Python* programming language is an open source programming language with increasing adoption by developers across many application domains and a large ecosystem of available free packages. In particular, the packages commonly used for numerical and scientific computation, called the [SciPy](#) stack, are very popular and heavily used.

Intel® Distribution for Python* is a binary distribution of Python interpreter and commonly used packages for computation and data intensive domains, such as scientific and engineering computing, big data, and data science. The product supports Python 2 and 3 for Windows, Linux, and macOS. The product simplifies Python installation by providing packages in a binary form so that everything is preconfigured and no compilation tools are needed, as well as contains all the dependences for running on popular OS platforms. Python packages have been accelerated with Intel® Performance Libraries, including [Intel® Math Kernel Library \(Intel® MKL\)](#), [Intel® Threading Building Blocks \(Intel® TBB\)](#), and [Intel® Data Analytics Acceleration Library \(Intel® DAAL\)](#). The packages have been optimized to take advantage of parallelism through the use of threading, multiple nodes, and vectorization.

This document provides system requirements and installation instructions and lists issues and limitations.

To learn more about this product, see:

- New features in the [New in this Release](#) section below, or in the product help.
- Reference documentation in the [Related Documentation](#) section below
- Installation instructions in the [Installing this Release](#) section below

2 New in this Release

2.1 Intel Distribution for Python 2017 Update 3

- Modules that have been added or updated are marked with an asterisk under [Release Content](#)

3 System Requirements

The Intel® Distribution for Python* supports the Intel® 64 architecture. For a complete explanation of this architecture name please read the following article:

[Intel Architecture Platform Terminology for Development Tools.](#)

The lists below pertain only to the system requirements necessary to support application development with Intel® Distribution for Python*. If you are using Cython*, please review the

documentation for your compiler (GCC*, Microsoft Visual Studio*, or Intel® Compiler) to determine the minimum hardware and software requirements.

Minimum System Requirements

- A system based on an Intel 64 architecture processor supporting the Intel® Streaming SIMD Extensions 4.2 (Intel® SSE4.2) instructions (or compatible non-Intel processor).

NOTE:

- Incompatible or proprietary instructions in non-Intel processors may cause the analysis capabilities of this product to function incorrectly. Any attempt to analyze code not supported by Intel® processors may lead to failures in this product.
- For the best experience, a multi-core or multiprocessor system is recommended.
- 2GB free disk space for all product features and all architectures
- Supported operating systems:
 - Windows 10*
 - Windows 8*
 - Windows 8.1*
 - Windows 7*
 - Note:** SP1 is required for use of Intel® Advanced Vector Extensions (Intel® AVX)
 - Windows Server* 2008 R2 SP1 and SP2
 - Windows HPC Server 2008 R2
 - Windows Server* 2012
 - Windows Server* 2016
 - Red Hat* Enterprise Linux* 6
 - Red Hat* Enterprise Linux* 7
 - Red Hat Fedora* core 24
 - Red Hat Fedora* core 25
 - Red Hat Fedora* core 26
 - SUSE Linux Enterprise Server* 11
 - SUSE Linux Enterprise Server* 12
 - Debian* GNU/Linux 8
 - Debian* GNU/Linux 9
 - Ubuntu* 14.04 LTS
 - Ubuntu* 16.04 LTS
 - Ubuntu* 17.04
 - macOS* 10.11 (Xcode 7.0 and higher)
 - macOS* 10.12
 - macOS* 10.13

Note: Intel® Distribution for Python* is expected to work on many more Linux distributions as well. Let us know if you have trouble with the distribution you use.

External Dependencies

For **Windows***: None

For **Linux***: glibc 2.12 or higher.

For **macOS***: None.

4 Installation

To download the Intel® Distribution for Python* 2017 as a standalone product, visit <https://software.intel.com/en-us/python-distribution>.

NOTE for Intel® Parallel Studio XE customers: Installation of the Intel® Distribution for Python* is a separate process. During installation of the Intel® Parallel Studio XE 2017, you are prompted to download the Intel Distribution for Python*. If you choose to download the Intel Distribution for Python* at a later time, visit the Intel® Registration Center and log in using the credentials you entered during registration. The Intel Distribution for Python* is available as a direct download from the home page after login.

Installing this Release

The Intel Distribution for Python* is compatible with the Conda* package management tool. All modules included in the distribution are initially installed into the root Conda* environment.

On **Windows***:

1. Download the executable file for Intel Distribution for Python* and double-click it to begin the installation.
2. When the installation completes, activate your root Intel® python conda environment:
 - To modify only your current command shell, use the following command:
 - <install>\Scripts\activate

On **Linux***:

1. Choose the installation path.

NOTE: If you do not have root access, you must install the Intel Distribution for Python* somewhere within your home directory.
2. Extract the contents using the following command:
`tar -xvzf <filename>`
3. Run the `install.sh` script and follow the installer prompts.

4. When the installation completes, activate your root Intel® python conda environment:
 - To modify only your current shell, use the following commands:
 - source bin/activate root
 - To modify all future logins, do one of the following:
 - Add “source bin/activate root” to your .bashrc (bash) or other logon script.
 - Manually add the <install>/bin directory to your PATH.
 - Use the following command to ensure your environment points to the Intel® Distribution for Python*:
run “which python”

On **macOS**:

1. Download the Intel Distribution for Python* and extract the intelpython<2|3>-<version>.tgz file to your desktop.
2. Double-click the intelpython icon to begin installation and follow the installer prompts.
5. When the installation completes, activate your root Intel® python conda environment:
 - To modify only your current shell, use the following commands:
 - source bin/activate root
 - To modify all future logins, do one of the following:
 - Add “source bin/activate root” to your .bashrc (bash) or other logon script.
 - Manually add the <install>/bin directory to your PATH.
 - Use the following command to ensure your environment points to the Intel® Distribution for Python*:
run “which python”

Default Installation Folders

On **Windows***:

C:\IntelPython<2|3>

On **Linux*** or **macOS***:

/opt/intel/intelpython<2|3>

Changing, Updating, or Removing the Product

On **Windows***: Open Programs and Features, right-click Intel Distribution for Python* 2.7/3.5, and click uninstall.

On **Linux*** or **macOS***: Delete the installation directory and remove additions to your PATH.

You can also use the Conda* package management tool to update individual modules. You can find the Conda* tool in the bin directory on Linux*/ macOS* or in the Scripts directory on Windows*. Use these commands to do the following with the Conda* tool:

- To install a new module:
conda install <module name>
- To update an existing module:
conda update <module name>
- To remove an existing module:
conda remove <module name>

5 Release Content

Intel Distribution for Python* complies with the SciPy Stack 1.0 specification

<http://www.scipy.org/stackspec.html>. (New*, Updated**)

Name	Version	Platform
appnope	0.1.0	macOS
backports	1.0	Windows, Linux, macOS
backports_abc**	0.5	Windows, Linux, macOS
bleach*	1.5.0	Windows, Linux, macOS
boost	1.61.0	Linux, macOS
bzip2	1.0.6	Windows, Linux, macOS
caffe**	1.0.0rc3	Linux
cairo**	1.14.8	Linux, macOS
cffi*	1.9.1	Windows, Linux, macOS
colorama	0.3.7	Windows
conda**	4.3.16	Windows, Linux, macOS
conda-env	2.6.0	Windows, Linux, macOS
configparser	3.5.0	Windows, Linux, macOS
cryptography*	1.7.1	Windows, Linux, macOS
cycler	0.10.0	Windows, Linux, macOS
cython	0.25.2	Windows, Linux, macOS
decorator**	4.0.11	Windows, Linux, macOS
distarray	0.6.0	Windows, Linux
entrypoints	0.2.2	Windows, Linux, macOS
enum34	1.1.6	Windows, Linux, macOS
fontconfig**	2.12.1	Linux
freetype	2.5.5	Windows, Linux, macOS
funcsigs	1.0.2	Windows, Linux, macOS

functools32	3.2.3.2	Windows (2.7), Linux (2.7), macOS (2.7)
futures	3.0.5	Windows, Linux, macOS
get_terminal_size	1.0.0	Windows, Linux, macOS
gflags	2.1.2	Linux, macOS
glog	0.3.4	Linux, macOS
h5py**	2.7.0	Linux, macOS
hdf5	1.8.17	Windows, Linux, macOS
html5lib*	0.999	Windows, Linux, macOS
icc_rt	16.0.3	Windows, Linux, macOS
icu	54.1	Linux, macOS
idna*	2.2	Windows, Linux, macOS
impi_rt**	2017.0.3	Windows, Linux
intelpython**	2017.0.3	Windows, Linux, macOS
ipaddress*	1.0.18	Windows, Linux, macOS
ipp	2017.0.3	Linux
ipykernel	4.5.0	Windows, Linux, macOS
ipyparallel**	6.0.2	Windows, Linux, macOS
ipython**	5.3.0	Windows, Linux, macOS
ipython_genutils**	0.2.0	Windows, Linux, macOS
ipywidgets**	6.0.0	Windows, Linux, macOS
jinja2**	2.9.5	Windows, Linux, macOS
jpeg**	9b	Linux, macOS
jsonschema	2.5.1	Windows, Linux, macOS
jupyter	1.0.0	Windows, Linux, macOS
jupyter_client**	5.0.0	Windows, Linux, macOS
jupyter_console**	5.1.0	Windows, Linux, macOS
jupyter_core**	4.3.0	Windows, Linux, macOS
leveldb**	1.19	Linux, macOS
libffi*	3.2.1	Linux
libpng	1.6.28	Windows, Linux, macOS
libsodium	1.0.10	Windows, Linux, macOS
libtiff	4.0.7	Linux, macOS
libxml2	2.9.4	Linux
llvmlite**	0.17.0	Windows, Linux, macOS
lmdb	0.9.18	Linux, macOS
markupsafe	0.23	Windows, Linux, macOS
matplotlib	2.0.0	Windows, Linux, macOS
menuinst	1.4.1	Windows
mistune**	0.7.4	Windows, Linux, macOS

mk1**	2017.0.3	Windows, Linux, macOS
mk1-dnn**	0.7	Linux
mlsl	0.8	Linux
mpi4py	2.0.0	Windows, Linux
mpmath	0.19	Windows, Linux, macOS
nbconvert**	5.1.1	Windows, Linux, macOS
nbformat**	4.3.0	Windows, Linux, macOS
networkx	1.11	Windows, Linux, macOS
nose	1.3.7	Windows, Linux, macOS
notebook**	5.0.0rc2	Windows, Linux, macOS
numba**	0.32.0	Windows, Linux, macOS
numexpr**	2.6.2	Windows, Linux, macOS
numpy**	1.11.3	Windows, Linux, macOS
olefile*	0.44	Windows, Linux, macOS
opencv	3.1.0	Linux
openmp*	2017.0.3	Windows, Linux, macOS
openssl	1.0.2k	Windows, Linux, macOS
pandas	0.19.2	Windows, Linux, macOS
pandocfilters*	1.4.1	Windows, Linux, macOS
path.py**	10.1	Windows, Linux, macOS
pathlib2**	2.2.0	Windows, Linux, macOS
pexpect**	4.2.1	Linux, macOS
pickleshare	0.7.4	Windows, Linux, macOS
pillow**	4.1.0	Linux, macOS
pip	9.0.1	Windows, Linux, macOS
pixman**	0.34.0	Linux, macOS
prompt_toolkit**	1.0.14	Windows, Linux, macOS
protobuf**	3.2.0	Linux, macOS
ptyprocess	0.5.1	Linux, macOS
pyasn1*	0.2.3	Windows, Linux, macOS
pycairo	1.10.0	Linux, macOS
pycosat**	0.6.2	Windows, Linux, macOS
pycparser*	2.17	Windows, Linux, macOS
pydaal**	2017.0.3.20170412	Windows (3.5), Linux, macOS
pygments**	2.2.0	Windows, Linux, macOS
pyopenssl*	16.2.0	Windows, Linux, macOS
yparsing	2.1.4	Windows, Linux, macOS
pytables	3.3.0	Windows, Linux, macOS
python**	2.7.13, 3.5.3	Windows, Linux, macOS

python-dateutil**	2.6.0	Windows, Linux, macOS
python-gflags	3.1.0	Linux, macOS
python-leveldb**	0.194	Linux, macOS
pytz**	2017.2	Windows, Linux, macOS
pywavelets*	0.5.2	Windows, Linux, macOS
pyyaml	3.12	Windows, Linux, macOS
pyzmq**	16.0.2	Windows, Linux, macOS
requests**	2.13.0	Windows, Linux, macOS
ruamel_yaml	0.11.14	Windows, Linux, macOS
scandir*	1.5	Windows, Linux, macOS
scikit-image**	0.13.0	Windows, Linux, macOS
scikit-learn	0.18.1	Windows, Linux, macOS
scipy	0.18.1	Windows, Linux, macOS
setuptools**	27.2.0	Windows, Linux, macOS
simplegeneric	0.8.1	Windows, Linux, macOS
singledispatch	3.4.0.3	Windows, Linux, macOS
six	1.10.0	Windows, Linux, macOS
snappy	1.1.3	Linux, macOS
sqlite	3.13.0	Windows, Linux, macOS
ssl_match_hostname	3.5.0.1	Windows, Linux, macOS
sympy	1.0	Windows, Linux, macOS
tbb**	2017.0.6	Windows, Linux, macOS
tcl	8.6.4	Windows, Linux, macOS
terminado	0.6	Linux, macOS
testpath*	0.3	Windows, Linux, macOS
theano**	1.1	Linux
tk	8.6.4	Windows, Linux, macOS
tornado	4.4.2	Windows, Linux, macOS
traitlets**	4.3.2	Windows, Linux, macOS
vs2008_runtime	9.00.30729.1	Windows (2.7)
vs2015_runtime	14.0.25123	Windows (3.5)
wcwidth	0.1.7	Windows, Linux, macOS
wheel	0.29.0	Windows, Linux, macOS
widetsnbextension**	2.0.0	Windows, Linux, macOS
win_unicode_console*	0.5	Windows
xz	5.2.2	Windows, Linux, macOS
yaml	0.1.6	Windows, Linux, macOS
zeromq**	4.1.5	Windows, Linux, macOS
zlib	1.2.11	Windows, Linux, macOS

The installation package contains all the necessary native libraries required by the packages.

6 Known Issues

Please refer to the **Known Issues** in the **Resources** section of the document that is available online:

<https://software.intel.com/en-us/articles/intel-distribution-for-python-support-and-documentation>

7 Related Documentation

Name	Documentation
appnope	https://pypi.python.org/pypi/appnope/0.1.0
backports_abc	https://pypi.python.org/pypi/backports_abc
bleach	http://github.com/mozilla/bleach
boost	http://www.boost.org/doc/
bzip2	http://www.bzip.org/docs.html
caffe	http://caffe.berkeleyvision.org/
cairo	http://cairographics.org/documentation/
cffi	http://cffi.readthedocs.org
colorama	http://pypi.python.org/pypi/colorama
conda	http://conda.pydata.org/docs/
configparser	http://docs.python.org/3/library/configparser.html
cryptography	https://cryptography.io
cycler	http://matplotlib.org/cycler/
cython	http://cython.org/#documentation
decorator	http://pythonhosted.org/decorator/
distarray	http://docs.enthought.com/distarray
entrypoints	https://github.com/takluyver/entrypoints

enum34	https://pypi.python.org/pypi/enum34
fontconfig	https://www.freedesktop.org/software/fontconfig/fontconfig-user.html
freetype	http://freetype.sourceforge.net/freetype2/documentation.html
funcsigs	http://funcsigs.readthedocs.org/en/latest/
functools32	http://docs.python.org/3.2/library/functools.html
futures	https://docs.python.org/dev/library/concurrent.futures.html
get_terminal_size	https://github.com/chrippa/backports.shutil_get_terminal_size
gflags	https://github.com/gflags/gflags
glog	https://github.com/google/glog
h5py	http://docs.h5py.org
hdf5	https://www.hdfgroup.org/HDF5/doc/
html5lib	http://html5lib.readthedocs.org/
icu	http://site.icu-project.org/design
idna	https://github.com/kjd/idna
ipaddress	https://github.com/iphag/ipaddress
ipp	http://software.intel.com/en-us/articles/intel-ipp/
ipykernel	http://ipython.readthedocs.org/
ipyparallel	http://ipyparallel.readthedocs.org/
ipython	http://ipython.org/documentation.html
ipython_genutils	http://jupyter.org
ipywidgets	https://github.com/ipython/ipywidgets
jinja2	http://jinja.pocoo.org/docs/dev/
jpeg	http://www.ijg.org/files
jsonschema	https://python-jsonschema.readthedocs.org

jupyter	http://jupyter.readthedocs.org/
jupyter_client	http://jupyter-client.readthedocs.org/
jupyter_console	http://jupyter-console.readthedocs.org/
jupyter_core	http://jupyter-core.readthedocs.org/
leveldb	https://github.com/google/leveldb
libffi	http://sourceware.org/libffi/
libpng	http://www.libpng.org/pub/png/libpng.html
libsodium	http://libsodium.org
libtiff	http://www.libtiff.org/document.html
libxml2	http://xmlsoft.org/
llvmlite	https://github.com/numba/llvmlite
lmbd	http://symas.com/mdb/
markupsafe	https://pypi.python.org/pypi/MarkupSafe
matplotlib	http://matplotlib.org/contents.html#
menuinst	https://pypi.python.org/pypi/menuinst/
mistune	http://mistune.readthedocs.org/
mkl	http://software.intel.com/en-us/articles/intel-mkl/
mkl-dnn	https://github.com/01org/mkl-dnn
mlsl	https://github.com/01org/MLSL
mpi4py	http://mpi4py.readthedocs.org/
mpmath	http://mpmath.org/doc/current/
nbconvert	http://nbconvert.readthedocs.org/
nbformat	http://nbformat.readthedocs.org
networkx	http://networkx.github.io/documentation.html

nose	https://nose.readthedocs.org
notebook	https://jupyter-notebook.readthedocs.org/en/latest/
numba	http://numba.pydata.org/
numexpr	https://github.com/pydata/numexpr/wiki/Numexpr-Users-Guide
numpy	http://numpy.scipy.org/
olefile	https://www.decorage.info/python/olefileio
opencv	http://opencv.org/
openssl	http://www.openssl.org/
pandas	http://pandas.pydata.org/pandas-docs/stable/
pandocfilters	http://github.com/jgm/pandocfilters
path.py	https://pythonhosted.org/path.py/
pathlib2	https://pypi.python.org/pypi/pathlib2/
pexpect	http://pexpect.readthedocs.org/
pickleshare	https://pypi.python.org/pypi/pickleshare
pillow	http://pillow.readthedocs.org/en/3.2.x/
pip	https://pip.pypa.io/en/stable/
pixman	http://www.pixman.org/
prompt_toolkit	https://github.com/jonathanslenders/python-prompt-toolkit
protobuf	https://developers.google.com/protocol-buffers/
ptyprocess	https://github.com/pexpect/ptyprocess
pyasn1	http://pyasn1.sourceforge.net/
pycairo	http://cairographics.org/pycairo/
pycosat	https://github.com/ContinuumIO/pycosat
pycparser	https://github.com/eliben/pycparser

pygments	http://pygments.org/docs/
pyopenssl	https://pyopenssl.readthedocs.org/en/stable/
pyparsing	http://pyparsing.wikispaces.com/Documentation
pytables	http://www.pytables.org/
python	https://www.python.org/doc/versions/
python-dateutil	https://dateutil.readthedocs.org/en/latest/
python-gflags	https://github.com/google/python-gflags
python-leveldb	http://code.google.com/p/py-leveldb/
pytz	http://pytz.sourceforge.net/
pywavelets	https://github.com/PyWavelets/pywt
pyyaml	http://pyyaml.org/
pyzmq	https://pyzmq.readthedocs.org/en/latest/
requests	http://docs.python-requests.org/
ruamel_yaml	https://bitbucket.org/ruamel/yaml
scandir	https://github.com/benhoyt/scandir
scikit-image	http://scikit-image.org/docs/dev/
scikit-learn	http://scikit-learn.org/stable/
scipy	http://www.scipy.org/docs.html
setuptools	http://pythonhosted.org/setuptools/
simplegeneric	https://pypi.python.org/pypi/simplegeneric
singledispatch	http://docs.python.org/3/library/functools.html#functools.singledispatch
six	http://pythonhosted.org/six/
snappy	https://github.com/google/snappy
sqlite	http://www.sqlite.org/docs.html

ssl_match_hostname	https://pypi.python.org/pypi/backports.ssl_match_hostname
sympy	http://docs.sympy.org/latest/index.html
tcl	http://www.tcl.tk/doc/
terminado	http://terminado.readthedocs.org/en/latest/
testpath	https://testpath.readthedocs.io
theano	http://deeplearning.net/software/theano/
tk	http://www.tcl.tk/doc/
tornado	http://www.tornadoweb.org/en/stable/
traitlets	http://traitlets.readthedocs.org/en/stable/
vc	https://github.com/conda/conda/wiki/VC-features
vs2008_runtime	http://www.microsoft.com
vs2015_runtime	http://www.microsoft.com
wcwidth	https://github.com/jquast/wcwidth
wheel	http://wheel.readthedocs.org/en/latest/
widgetsnbextension	http://ipython.org
win_unicode_console	https://github.com/Drekin/win-unicode-console
xz	http://tukaani.org/xz/
yaml	http://yaml.org/
zeromq	http://zeromq.org/intro:read-the-manual
zlib	http://zlib.net/manual.html

8 Legal Information

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

This document contains information on products, services and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest forecast, schedule, specifications and roadmaps.

The products and services described may contain defects or errors known as errata which may cause deviations from published specifications. Current characterized errata are available on request.

Copies of documents which have an order number and are referenced in this document may be obtained by calling 1-800-548-4725 or by visiting www.intel.com/design/literature.htm.

Intel, the Intel logo, and Intel Core are trademarks of Intel Corporation in the U.S. and/or other countries.

* Other names and brands may be claimed as the property of others.

Microsoft, Windows, Visual Studio, Visual C++, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

© 2016 Intel Corporation.

Optimization Notice

Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

Notice Revision #20110804