



Intel® Distribution for Python* 2018

Release Notes

15 May 2018

Version History/Revision History

Date	Revision	Description
March 2017	1.0	Release Notes for the Intel® Distribution for Python* 2018 Beta
May 2017	1.1	Release Notes for the Intel® Distribution for Python* 2018 Beta Update 1
August 2017	1.2	Release Notes for the Intel® Distribution for Python* 2018
March 2018	1.3	Release Notes for the Intel® Distribution for Python* 2018 Beta Update 2
May 2018	1.4	Release Notes for the Intel® Distribution for Python* 2018 Beta Update 3

Intended Audience

The target audience for the release notes are software developers and end users of the Intel Distribution for Python* 2018.

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.

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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 \(Intel® TBB\)](#), [Intel® Integrated Performance Primitives \(Intel® IPP\)](#), 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 2018

- 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
 - Fedora* core 25
 - 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* 10.12
 - 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* 2018 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 2018, 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* 2.7/3.6, 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
asn1crypto**	0.24.0	Windows, Linux, macOS
backcall*	0.1.0	Windows (3.6), Linux (3.6), macOS (3.6)
backports	1.0	Windows, Linux, macOS
backports.functools_lru_cache**	1.5	Windows (2.7), Linux (2.7), macOS (2.7)
backports_abc	0.5	Windows (2.7), Linux (2.7), macOS (2.7)
bleach**	2.1.3	Windows, Linux, macOS
boost**	1.65.1	Linux
bzip2	1.0.6	Windows, Linux, macOS
caffe	1.1.0	Linux
cairo**	1.14.12	Linux (2.7)
certifi	2018.1.18	Windows, Linux, macOS
cffi**	1.11.5	Windows, Linux, macOS
chradet	3.0.4	Windows, Linux, macOS
colorama*	0.3.9	Windows
conda	4.3.31	Windows, Linux, macOS
conda-env	2.6.0	Windows, Linux, macOS
configparser	3.5.0	Windows, Linux, macOS
cryptography**	2.2.2	Windows, Linux, macOS
cycler	0.10.0	Windows, Linux, macOS
cython**	0.28.2	Windows, Linux, macOS
daal**	2018.0.3.20180405	Windows (3.6), Linux, macOS
decorator**	4.3.0	Windows, Linux, macOS
entrypoints	0.2.3	Windows, Linux, macOS
enum34	1.1.6	Windows, Linux, macOS
fontconfig**	2.13.0	Linux
freetype**	2.9	Windows, Linux, macOS

funcsigns	1.0.2	Windows, Linux, macOS
functools32	3.2.3.2	Windows (2.7), Linux (2.7), macOS (2.7)
futures	3.2.0	Windows, Linux, macOS
get_terminal_size	1.0.0	Windows, Linux, macOS
gflags	2.2.1	Linux, macOS
glog	0.3.5	Linux, macOS
h5py**	2.7.1	Linux, macOS
hdf5	1.10.1	Windows, Linux, macOS
html5lib**	1.0.1	Windows, Linux, macOS
icc_rt**	2018.0.3	Windows, Linux, macOS
icu	59.1	Linux, macOS
idna	2.6	Windows, Linux, macOS
impi_rt**	2018.0.3	Windows, Linux
intelpython**	2018.0.3	Windows, Linux, macOS
ipaddress**	1.0.22	Windows (2.7), Linux (2.7), macOS (2.7)
ipp**	2018.0.3	Linux
ipykernel	4.6.1	Windows, Linux, macOS
ipyparallel	6.0.2	Windows, Linux, macOS
ipython**	5.6.0** (2.7) 6.3.1** (3.6)	Windows, Linux, macOS
ipython_genutils	0.2.0	Windows, Linux, macOS
ipywidgets	7.0.0	Windows, Linux, macOS
jinja2	2.9.6	Windows, Linux, macOS
jpeg**	9c	Linux, macOS
jsonschema	2.6.0	Windows, Linux, macOS
jupyter	1.0.0	Windows, Linux, macOS
jupyter_client	5.1.0	Windows, Linux, macOS
jupyter_console	5.1.0	Windows, Linux, macOS
jupyter_core**	4.4.0	Windows, Linux, macOS
kiwisolver*	1.0.1	Windows, Linux, macOS
leveldb	1.2	Linux, macOS
libffi	3.2.1	Linux
libpng**	1.6.34	Windows, Linux, macOS
libsodium**	1.0.16	Windows, Linux, macOS
libtiff**	4.0.9	Linux, macOS
libuuid*	1.0.3	Linux
libxml2	2.9.5	Linux
llvmlite**	0.23.0	Windows, Linux, macOS
lmdb**	0.9.22	Linux, macOS
markupsafe	1.0	Windows, Linux, macOS
matplotlib**	2.2.2	Windows, Linux, macOS
menuinst	1.4.1	Windows
mistune	0.7.4	Windows, Linux, macOS

mkl**	2018.0.3	Windows, Linux, macOS
mkl-dnn**	0.13	Linux
mkl_fft**	1.0.2	Windows, Linux, macOS
mkl_random	1.0.1	Windows, Linux, macOS
mlsl	1.0	Linux
mock	2.0.0	Windows, Linux, macOS
mpi4py**	3.0.0	Windows, Linux
mpmath	1.0.0	Windows, Linux, macOS
nbconvert	5.2.1	Windows, Linux, macOS
nbformat	4.4.0	Windows, Linux, macOS
networkx	2.0	Windows, Linux, macOS
nose	1.3.7	Windows, Linux, macOS
notebook	5.2.2	Windows, Linux, macOS
numba**	0.38.0	Windows, Linux, macOS
numexpr	2.6.4	Windows, Linux, macOS
numpy**	1.14.3	Windows, Linux, macOS
olefile	0.44	Windows, Linux, macOS
opencv	3.1.0	Linux
openmp**	2018.0.3	Windows, Linux, macOS
openssl**	1.0.2o	Windows, Linux, macOS
pandas	0.22.0	Windows, Linux, macOS
pandocfilters	1.4.1	Windows, Linux, macOS
parso*	0.2.0	Windows (3.6), Linux (3.6), macOS (3.6)
path.py**	11.0.1	Windows, Linux, macOS
pathlib2	2.3.0	Windows (2.7), Linux (2.7), macOS (2.7)
pbr**	4.0.2	Windows (2.7), Linux (2.7), macOS (2.7)
pexpect	4.2.1	Linux, macOS
pickleshare	0.7.4	Windows, Linux, macOS
pillow**	5.1.0	Linux
pip**	9.0.3	Windows, Linux, macOS
pixman	0.34.0	Linux, macOS
portpicker	1.1.1	Linux
prompt_toolkit	1.0.15	Windows, Linux, macOS
protobuf**	3.5.2	Linux, macOS
ptyprocess	0.5.2	Linux, macOS
pycairo	1.13.3	Linux, macOS
pycosat**	0.6.3	Windows, Linux, macOS
pycparser	2.18	Windows, Linux, macOS
pydaal**	2018.0.3.20180405	Windows (3.6), Linux, macOS
pygments	2.2.0	Windows, Linux, macOS
pyopenssl**	17.5.0	Windows, Linux, macOS
pyparsing	2.2.0	Windows, Linux, macOS
pysocks	1.6.7	Windows, Linux, macOS
pytables	3.4.2	Windows, Linux, macOS

python	2.7.14, 3.6.3	Windows, Linux, macOS
python-dateutil	2.6.0	Windows, Linux, macOS
python-gflags	3.1.1	Linux, macOS
python-leveldb	0.194	Linux, macOS
pytz**	2018.4	Windows, Linux, macOS
pywavelets	0.5.2	Windows, Linux, macOS
pyyaml	3.12	Windows, Linux, macOS
pyzmq	16.0.2	Windows, Linux, macOS
requests	2.18.4	Windows, Linux, macOS
ruamel_yaml	0.11.14	Windows, Linux, macOS
scandir**	1.7	Windows (2.7), Linux (2.7), macOS (2.7)
scikit-image	0.13.1	Linux
scikit-learn**	0.19.1	Windows, Linux, macOS
scipy**	1.0.1	Windows, Linux, macOS
setuptools**	39.0.1	Windows, Linux, macOS
singledispatch	3.4.0.3	Windows, Linux, macOS
six**	1.11.0	Windows, Linux, macOS
snappy	1.1.7	Linux, macOS
sqlite**	3.23.1	Windows, Linux, macOS
ssl_match_hostname	3.5.0.1	Windows, Linux, macOS
sympy	1.1.1	Windows, Linux, macOS
tbb**	2018.0.4	Windows, Linux, macOS
tbb4py*	2018.0.4	Windows, Linux, macOS
tcl	8.6.4	Windows, Linux, macOS
tensorflow	1.3.1	Linux
terminado**	0.8.1	Linux, macOS
testpath	0.3.1	Windows, Linux, macOS
theano	1.1	Linux
tk	8.6.4	Windows, Linux, macOS
tornado	4.5.2	Windows, Linux, macOS
traitlets	4.3.2	Windows, Linux, macOS
urllib3	1.22	Windows, Linux, macOS
vc	14.0	Windows
vs2008_runtime	9.00.30729.6161	Windows
vs2015_runtime	14.0.25420	Windows
wcwidth	0.1.7	Windows, Linux, macOS
weakref	1.0.post1	Linux
webencodings	0.5.1	Windows, Linux, macOS
werkzeug**	0.14.1	Linux
wheel**	0.31.0	Windows, Linux, macOS
widgetsnextension**	3.2.0	Windows, Linux, macOS
win_inet_pton	1.0.1	Windows
win_unicode_console	0.5	Windows
wincertstore	0.2	Windows

xgboost	0.7	Linux
xz	5.2.3	Windows, Linux, macOS
yaml	0.1.7	Windows, Linux, macOS
zeromq**	4.2.3	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
asn1crypto	https://github.com/wbond/asn1crypto
backports_abc	https://pypi.python.org/pypi/backports_abc
backports.functools_lru_cache	https://github.com/jaraco/backports.functools_lru_cache
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/
certifi	https://certifi.io
cfffi	http://cfffi.readthedocs.org
chardet	https://github.com/chardet/chardet
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/
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/philhag/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/
kiwisolver	https://github.com/nucleic/kiwi
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
libuuid	http://sourceforge.net/projects/libuuid
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
mkl_fft	http://github.com/IntelPython/mkl_fft
mkl_random	http://github.com/IntelPython/mkl_random
mlsl	https://github.com/01org/MLSL
mock	https://docs.python.org/dev/library/unittest.mock.html
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.decalage.info/python/olefileio
opencv	http://opencv.org/
openmp	http://software.intel.com
openssl	http://www.openssl.org/
packaging	https://github.com/pypa/packaging
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/
pbr	http://docs.openstack.org/developer/pbr/
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/
portpicker	https://pypi.python.org/pypi/portpicker
prompt_toolkit	https://github.com/jonathanslenders/python-prompt-toolkit
protobuf	https://developers.google.com/protocol-buffers/
ptyprocess	https://github.com/pexpect/ptyprocess
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
pysocks	https://github.com/Anorov/PySocks
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
tbb	http://www.threadingbuildingblocks.org
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/
urllib3	https://urllib3.readthedocs.io/
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
weakref	https://pypi.python.org/pypi/backports.weakref/1.0rc1
webencodings	https://github.com/gsnedders/python-webencodings
werkzeug	http://werkzeug.pocoo.org/docs/0.11/
wheel	http://wheel.readthedocs.org/en/latest/
widgetsnbextension	http://ipython.org
win_inet_pton	https://github.com/hickeroar/win_inet_pton
win_unicode_console	https://github.com/Drekin/win-unicode-console
wincertstore	https://bitbucket.org/tiran/wincertstore
xgboost	https://github.com/dmlc/xgboost
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

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