



Intel® Distribution for Python* 2017 Update 2

Release Notes

5 February 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 |

Intended Audience

The target audience for the release notes are software developers and end users of the Intel Distribution for Python* 2017 Update 2.

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 OS X. 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 2

- Upgraded packages:
 - conda 4.11.1 → 4.2.12
 - conda-env 2.5.2 → 2.6.0
 - hdf5 1.8.16 → 1.8.17
 - intelpython 2017.0.1 → 2017.0.2
 - ipywidgets 4.2.2 → 5.2.2
 - jupyter_console 4.1.1 → 5.0.0
 - libpng 1.6.22 → 1.6.28
 - libxml2 2.9.3 → 2.9.4
 - llvmlite 0.11.0 → 0.15.0
 - mkl 2017.0.1 → 2017.0.2

- numba 0.28.1 → 0.30.1
- openssl 1.0.2j → 1.0.2k
- pandas 0.19.0 → 0.19.2
- pydaal 2017.0.1.20161006 → 2017.0.2.20170126
- tbb 2017.2 → 2017.0.4
- zlib 1.2.8 → 1.2.11
- New packages:
 - appnope 0.1.0
 - boost 1.61.0
 - caffe 1.0.0
 - gflags 2.1.2
 - glog 0.3.4
 - h5py 2.6.0
 - icu 54.1
 - jpeg 8d
 - leveldb 1.18
 - libtiff 4.0.7
 - lmdb 0.9.18
 - networkx 1.11
 - pillow 3.4.2
 - prompt_toolkit 1.0.3
 - python-gflags 3.1.0
 - python-leveldb 0.193
 - ruamel_yaml 0.11.14
 - scikit-image 0.12.3
 - snappy 1.1.3
 - theano 1.0
 - wcwidth 0.1.7

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
- Red Hat* Enterprise Linux* 6
- Red Hat* Enterprise Linux* 7
- Red Hat Fedora* core 22
- Red Hat Fedora* core 23
- SUSE Linux Enterprise Server* 11
- SUSE Linux Enterprise Server* 12
- Debian* GNU/Linux 7
- Ubuntu* 14.04 LTS
- Ubuntu* 16.04 LTS
- OS X* 10.10
- OS X* 10.11 (Xcode 7.0 and higher)
- MacOS* 10.12

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 **OS X***: 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 **OS X**:

1. Download the Intel Distribution for Python* and extract the intelpython<27|35>-<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<27|35>

On **Linux*** or **OS X***:

/opt/intel/intelpython<27|35>

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 **OS X***: 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*/ OS X* 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>.

| Name | Version |
|-------------------|----------|
| appnope | 0.1.0 |
| backports | 1.0 |
| backports_abc | 0.4 |
| boost | 1.61.0 |
| bzip2 | 1.0.6 |
| caffe | 1.0.0 |
| cairo | 1.12.18 |
| conda | 4.2.12 |
| conda-env | 2.6.0 |
| configparser | 3.5.0 |
| cycler | 0.10.0 |
| cython | 0.24 |
| db | 4.7.25 |
| decorator | 4.0.10 |
| distarray | 0.6.0 |
| entrypoints | 0.2.2 |
| enum34 | 1.1.6 |
| fontconfig | 2.11.1 |
| freetype | 2.5.5 |
| funcsigs | 1.0.2 |
| functools32 | 3.2.3.2 |
| futures | 3.0.5 |
| get_terminal_size | 1.0.0 |
| gflags | 2.1.2 |
| glog | 0.3.4 |
| h5py | 2.6.0 |
| hdf5 | 1.8.17 |
| icc_rt | 16.0.3 |
| icu | 54.1 |
| impi_rt | 2017.0.1 |
| intelpython | 2017.0.2 |
| ipykernel | 4.5.0 |
| ipyparallel | 5.2.0 |
| ipython | 4.2.0 |
| ipython_genutils | 0.1.0 |
| ipywidgets | 5.2.2 |
| jinja2 | 2.8 |

| | |
|-----------------|-------------------|
| jpeg | 8d |
| jsonschema | 2.5.1 |
| jupyter | 1.0.0 |
| jupyter_client | 4.4.0 |
| jupyter_console | 5.0.0 |
| jupyter_core | 4.2.0 |
| leveldb | 1.18 |
| libpng | 1.6.28 |
| libsodium | 1.0.10 |
| libtiff | 4.0.7 |
| libxml2 | 2.9.4 |
| llvmlite | 0.15.0 |
| lmdb | 0.9.18 |
| markupsafe | 0.23 |
| matplotlib | 1.5.3 |
| menuinst | 1.4.1 |
| mistune | 0.7.3 |
| mkl | 2017.0.2 |
| mpi4py | 2.0.0 |
| mpmath | 0.19 |
| nbconvert | 4.2.0 |
| nbformat | 4.1.0 |
| networkx | 1.11 |
| nose | 1.3.7 |
| notebook | 4.2.3 |
| numba | 0.30.1 |
| numexpr | 2.6.1 |
| numpy | 1.11.2 |
| openssl | 1.0.2k |
| pandas | 0.19.2 |
| path.py | 8.2.1 |
| pathlib2 | 2.1.0 |
| pexpect | 4.0.1 |
| pickleshare | 0.7.4 |
| pillow | 3.4.2 |
| pip | 8.1.2 |
| pixman | 0.32.6 |
| prompt_toolkit | 1.0.3 |
| protobuf | 3.0.0 |
| ptyprocess | 0.5.1 |
| pycairo | 1.10.0 |
| pycosat | 0.6.1 |
| pydaal | 2017.0.2.20170126 |
| pygments | 2.1.3 |
| pyparsing | 2.1.4 |

| | |
|--------------------|-----------------------|
| pytables | 3.2.3.1 |
| python-2.7 | 2.7.12, 3.5.2 |
| python-dateutil | 2.5.3 |
| python-gflags | 3.1.0 |
| python-leveldb | 0.193 |
| pytz | 2016.6.1 |
| pyyaml | 3.12 |
| pyzmq | 15.4.0 |
| requests | 2.11.1 |
| ruamel_yaml | 0.11.14 |
| scikit-image | 0.12.3 |
| scikit-learn | 0.18.1 |
| scipy | 0.18.1 |
| setuptools | 23.0.0 |
| simplegeneric | 0.8.1 |
| singledispatch | 3.4.0.3 |
| six | 1.10.0 |
| snappy | 1.1.3 |
| sqlite | 3.13.0 |
| ssl_match_hostname | 3.5.0.1 |
| sympy | 1.0 |
| tbb | 2017.0.4 |
| tcl | 8.6.4 |
| terminado | 0.6 |
| theano | 1.0 |
| tk | 8.6.4 |
| tornado | 4.4.1 |
| traitlets | 4.2.2 |
| vc (Windows only) | 9.0 (2.7), 14.0 (3.5) |
| vs2008_runtime | 9.00.30729.1 |
| vs2015_runtime | 14.0.25123 |
| wcwidth | 0.1.7 |
| wheel | 0.29.0 |
| widetsnbextension | 1.2.6 |
| xz | 5.2.2 |
| yaml | 0.1.6 |
| zeromq | 4.1.4 |
| zlib | 1.2.11 |

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 | Version | Documentation |
|---------------|---------|---|
| appnope | 0.1.0 | https://pypi.python.org/pypi/appnope/0.1.0 |
| backports_abc | 0.4 | https://pypi.python.org/pypi/backports_abc |
| boost | 1.61.1 | http://www.boost.org/ |
| bzip2 | 1.0.6 | http://www.bzip.org/docs.html |
| caffe | 1.0.0 | http://caffe.berkeleyvision.org/ |
| cairo | 1.12.18 | http://cairographics.org/documentation/ |
| conda | 4.2.12 | http://conda.pydata.org/ |
| conda-env | 2.6.0 | http://conda.pydata.org/docs/ |
| configparser | 3.5.0 | http://docs.python.org/3/library/configparser.html |
| cycler | 0.10.0 | http://matplotlib.org/cycler/ |
| cython | 0.24 | http://cython.org/#documentation |
| db | 4.7.25 | http://www.oracle.com/technetwork/database/database-technologies/berkeleydb/documentation/index.htmlx |
| decorator | 4.0.10 | http://pythonhosted.org/decorator/ |
| distarray | 0.6.0 | http://docs.enthought.com/distarray |
| entrypoints | 0.2.2 | https://github.com/takluyver/entrypoints |
| enum34 | 1.1.6 | https://pypi.python.org/pypi/enum34 |
| fontconfig | 2.11.1 | https://www.freedesktop.org/software/fontconfig/fontconfig-user.html |

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|-------------------|---------|---|
| freetype | 2.5.5 | http://freetype.sourceforge.net/freetype2/documentation.html |
| funcsigs | 1.0.2 | http://funcsigs.readthedocs.org/en/latest/ |
| functools32 | 3.2.3.2 | http://docs.python.org/3.2/library/functools.html |
| futures | 3.0.5 | https://docs.python.org/dev/library/concurrent.futures.html |
| get_terminal_size | 1.0.0 | https://github.com/chrippa/backports.shutil_get_terminal_size |
| gflags | 2.1.2 | https://gflags.github.io/gflags/ |
| glog | 0.3.4 | https://github.com/google/glog |
| h5py | 2.6.0 | http://docs.h5py.org |
| hdf5 | 1.8.17 | https://www.hdfgroup.org/HDF5/doc/ |
| icu | 54.1 | http://site.icu-project.org/design |
| ipykernel | 4.5.0 | http://ipython.readthedocs.org/ |
| ipyparallel | 5.2.0 | http://ipyparallel.readthedocs.org/ |
| ipython | 4.2.0 | http://ipython.org/documentation.html |
| ipython_genutils | 0.1.0 | http://jupyter.org |
| ipywidgets | 5.2.2 | http://github.com/jakevdp/ipywidgets |
| jinja2 | 2.8 | http://jinja.pocoo.org/docs/dev/ |
| jpeg | 8d | http://www.ijg.org/files |
| jsonschema | 2.5.1 | https://python-jsonschema.readthedocs.org |
| jupyter | 1.0.0 | http://jupyter.readthedocs.org/ |
| jupyter_client | 4.4.0 | http://jupyter-client.readthedocs.org/ |
| jupyter_console | 5.0.0 | http://jupyter-console.readthedocs.org/ |
| jupyter_core | 4.2.0 | http://jupyter-core.readthedocs.org/ |
| leveldb | 1.18 | https://rawgit.com/google/leveldb/master/doc/index.html |
| libpng | 1.6.28 | http://www.libpng.org/pub/png/libpng.html |

| | | |
|------------|----------|---|
| libsodium | 1.0.10 | http://libsodium.org |
| libtiff | 4.0.7 | http://www.libtiff.org/ |
| libxml2 | 2.9.4 | http://xmlsoft.org/ |
| llvmlite | 0.15.0 | https://github.com/numba/llvmlite |
| lmbd | 0.9.18 | http://symas.com/mdb/ |
| markupsafe | 0.23 | https://pypi.python.org/pypi/MarkupSafe |
| matplotlib | 1.5.3 | http://matplotlib.org/contents.html# |
| menuinst | 1.4.1 | https://pypi.python.org/pypi/menuinst/ |
| mistune | 0.7.3 | http://mistune.readthedocs.org/ |
| mkl | 2017.0.2 | http://software.intel.com/en-us/articles/intel-mkl/ |
| mpi4py | 2.0.0 | http://mpi4py.readthedocs.org/ |
| mpmath | 0.19 | http://mpmath.org/doc/current/ |
| nbconvert | 4.2.0 | http://nbconvert.readthedocs.org/ |
| nbformat | 4.1.0 | http://nbformat.readthedocs.org |
| networkx | 1.11 | http://networkx.github.io/documentation.html |
| nose | 1.3.7 | https://nose.readthedocs.org |
| notebook | 4.2.3 | https://jupyter-notebook.readthedocs.org/en/latest/ |
| numba | 0.30.1 | http://numba.pydata.org/ |
| numexpr | 2.6.1 | https://github.com/pydata/numexpr/wiki/Numexpr-Users-Guide |
| numpy | 1.11.2 | http://numpy.scipy.org/ |
| openssl | 1.0.2k | http://www.openssl.org/ |
| pandas | 0.19.2 | http://pandas.pydata.org/pandas-docs/stable/ |
| path.py | 8.2.1 | https://pythonhosted.org/path.py/ |
| pathlib2 | 2.1.0 | https://pypi.python.org/pypi/pathlib2/ |

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| pexpect | 4.0.1 | http://pexpect.readthedocs.org/ |
| pickleshare | 0.7.4 | https://pypi.python.org/pypi/pickleshare |
| pillow | 3.4.2 | http://pillow.readthedocs.org/en/3.2.x/ |
| pip | 8.1.2 | https://pip.pypa.io/en/stable/ |
| pixman | 0.32.6 | http://www.pixman.org/ |
| prompt_toolkit | 1.0.3 | http://python-prompt-toolkit.readthedocs.io/en/stable/ |
| protobuf | 3.0.0 | https://developers.google.com/protocol-buffers/ |
| ptyprocess | 0.5.1 | https://github.com/pexpect/ptyprocess |
| pycairo | 1.10.0 | http://cairographics.org/pycairo/ |
| pycosat | 0.6.1 | https://github.com/ContinuumIO/pycosat |
| pygments | 2.1.3 | http://pygments.org/docs/ |
| pyparsing | 2.1.4 | http://pyparsing.wikispaces.com/Documentation |
| pytables | 3.2.3.1 | http://www.pytables.org/ |
| python | 2.7.12, 3.5.2 | https://www.python.org/doc/versions/ |
| python-dateutil | 2.5.3 | https://dateutil.readthedocs.org/en/latest/ |
| python-gflags | 3.1.0 | https://github.com/google/python-gflags |
| python-leveldb | 0.193 | https://code.google.com/archive/p/py-leveldb/ |
| pytz | 2016.6.1 | http://pytz.sourceforge.net/ |
| pyyaml | 3.12 | http://pyyaml.org/ |
| pyzmq | 15.4.0 | https://pyzmq.readthedocs.org/en/latest/ |
| requests | 2.11.0 | http://docs.python-requests.org/ |
| ruamel_yaml | 0.11.14 | https://bitbucket.org/ruamel/yaml |
| scikit-image | 0.12.3 | http://scikit-image.org/docs/dev |
| scikit-learn | 0.18.1 | http://scikit-learn.org/stable/ |

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|--------------------|--------------|---|
| scipy | 0.18.1 | http://www.scipy.org/docs.html |
| setuptools | 23.0.0 | http://pythonhosted.org/setuptools/ |
| simplegeneric | 0.8.1 | https://pypi.python.org/pypi/simplegeneric |
| singledispatch | 3.4.0.3 | http://docs.python.org/3/library/functools.html#functools.singledispatch |
| six | 1.10.0 | http://pythonhosted.org/six/ |
| sqlite | 3.13.0 | http://www.sqlite.org/docs.html |
| ssl_match_hostname | 3.5.0.1 | https://pypi.python.org/pypi/backports.ssl_match_hostname |
| sympy | 1.0 | http://docs.sympy.org/latest/index.html |
| tcl | 8.6.4 | http://www.tcl.tk/doc/ |
| terminado | 0.6 | http://terminado.readthedocs.org/en/latest/ |
| theano | 1.0 | http://deeplearning.net/software/theano/ |
| tk | 8.6.4 | http://www.tcl.tk/doc/ |
| tornado | 4.4.1 | http://www.tornadoweb.org/en/stable/ |
| traitlets | 4.2.2 | http://traitlets.readthedocs.org/en/stable/ |
| vs2008_runtime | 9.00.30729.1 | http://www.microsoft.com |
| vs2015_runtime | 14.0.25123 | http://www.microsoft.com |
| wcwidth | | https://github.com/jquast/wcwidth |
| wheel | 0.29.0 | http://wheel.readthedocs.org/en/latest/ |
| widgetsnbextension | 1.2.6 | http://ipython.org |
| xz | 5.2.2 | http://tukaani.org/xz/ |
| yaml | 0.1.6 | http://yaml.org/ |
| zeromq | 4.1.4 | http://zeromq.org/intro:read-the-manual |
| zlib | 1.2.11 | http://zlib.net/manual.html |

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Notice Revision #20110804