

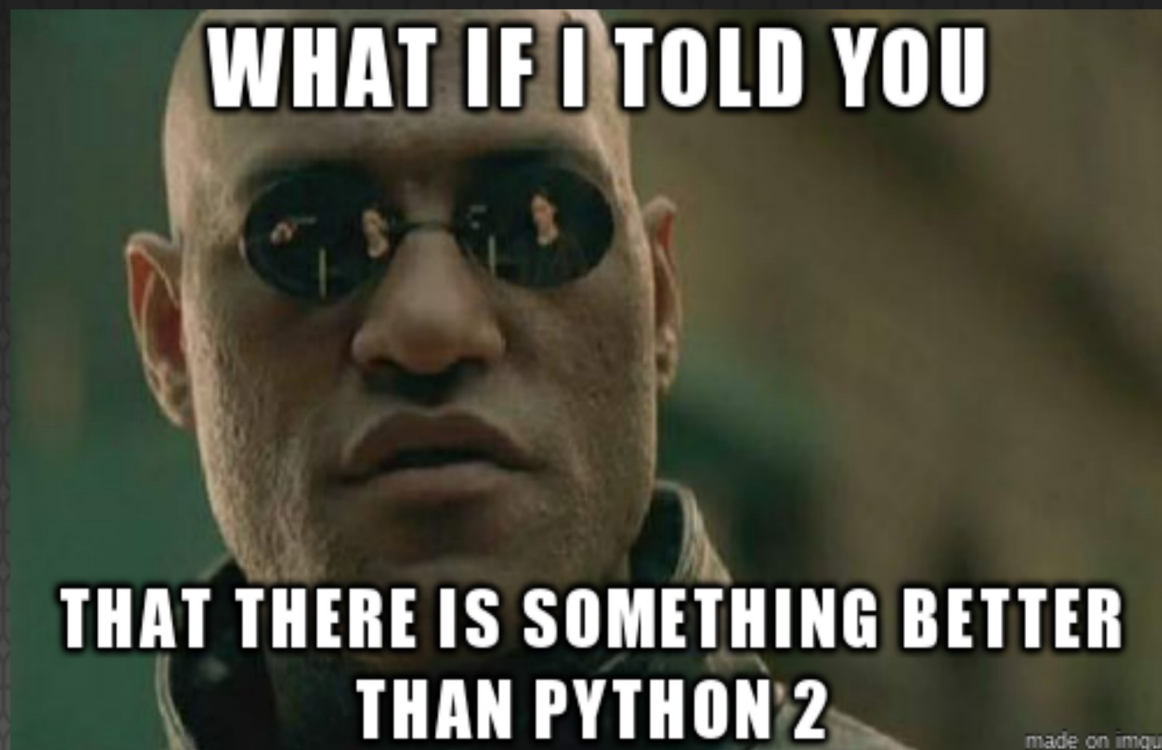


Python 3 as a Default in Fedora 22

Presented by

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Agenda

- What? Python 3?
- What's new?
- Porting
- What does Python 3 as a default mean?
- Helping out
- Q & A, discussion

What? Python 3?

Python 3: the programming
language the creators of Python 2
prefer to use :)

Nick Coghlan @ twitter

https://twitter.com/ncoghlan_dev/status/487250116433039360

Python 3 is...

- Also known as Python 3000 or Py3k
- Not fully compatible with Python 2.x
 - But you ***can*** write code that runs on both
- More Pythonic
- The present and future of the Python language

What's Different? (1/6)

- Print is no longer statement
- `from __future__ import print_function`
- `print 'foo' => print('foo')`

What's Different? (2/6)

- `dict.has_key('foo')` \Rightarrow `'foo' in dict`
- `dict.iter<what>()` \Rightarrow `dict.<what>()`

What's Different? (3/6)

- `basestring` => no longer exists
- `str` => `bytes`
- `unicode` => `str`
- `long/int` => `int`

What's Different? (4/6)

- `map()`, `filter()` and `zip()` return iterators
- `range()/xrange()` => `range()`

What's Different? (5/6)

- `except MyException, foo`
- `=>`
- `except MyException as foo`

What's Different? (6/6)

- `import foo` => always absolute
- To import from current package, use relative import:
 - `from . import foo`

And more...

- Renamed/split libraries (`configparser`, `urllib`, ...)
- New IO library
- No `cmp()`
- No ``12``
- Changes in C bindings

NOT SURE IF PY3K PORTING



IS WORTH THE EFFORT

made on imgur

What's new?
(or Python 3 Goodies)

Keyword Only Arguments

- `def foo(a, b, *, beep=False, explode=False)`
 - `foo(1, 2, 3) => TypeError`
 - `foo(1, 2, explode=True) => correct`
- Prevents accidental passing of more arguments
- Prevents errors when reordering arguments
- Helps get rid of `**kwargs` in some situations

Chained Exceptions

- `raise SomeException from e`
- Allows chaining tracebacks => preserves the original error

Matrix Multiplication

- Coming in Python 3.5
- `a @ b`

Advanced Unpacking

- `first, *x, last = file.readlines()`
- `*zero_to_eight, nine = range(10)`

Subgenerators

- `yield from other_generator()`
- `yield from range(10)`
- `yield from [1, 2, 3]`

And more...

- asyncio
- faulthandler
- Enum (!)
- Fine grained OSError subclasses
- No more funny comparisons
 - `'abc' > 42 => TypeError`

MUCH PYTHON 3

SUCH FEATURES

memegenerator.net

Porting

How to Port?

- Decide if you want to keep backwards compatibility
 - If yes, don't go below Python 2.6
 - Ideally, port to 3.3+
- Good test coverage is a must
- Useful tools:
 - 2to3
 - python-modernize
 - python-six
 - Other tools like pyflakes, pep8, ...

Resources

- <https://docs.python.org/3/howto/pyporting.html>
- <https://docs.python.org/3/howto/cporting.html>
- <http://lucumr.pocoo.org/2013/5/21/porting-to-python-3-redux/>
- <http://python3porting.com/>
- <https://pythonhosted.org/six/>
- <https://wiki.gnome.org/action/show/Projects/PyGObject/IntrospectionPorting>
- bkabrda@redhat.com

What Does Python 3
as a Default Mean?

Libraries vs. Applications

- Libraries

- If at all possible, maintain Python 2 compatibility => build both python-foo and python3-foo subpackages

- Applications

- Based on what your users want, either support both or move to Python 3

It means ...

- Python 3 is the only Python on LiveCDs
- Prefer Python 3 for applications
- Hopefully new guidelines

It doesn't mean ...

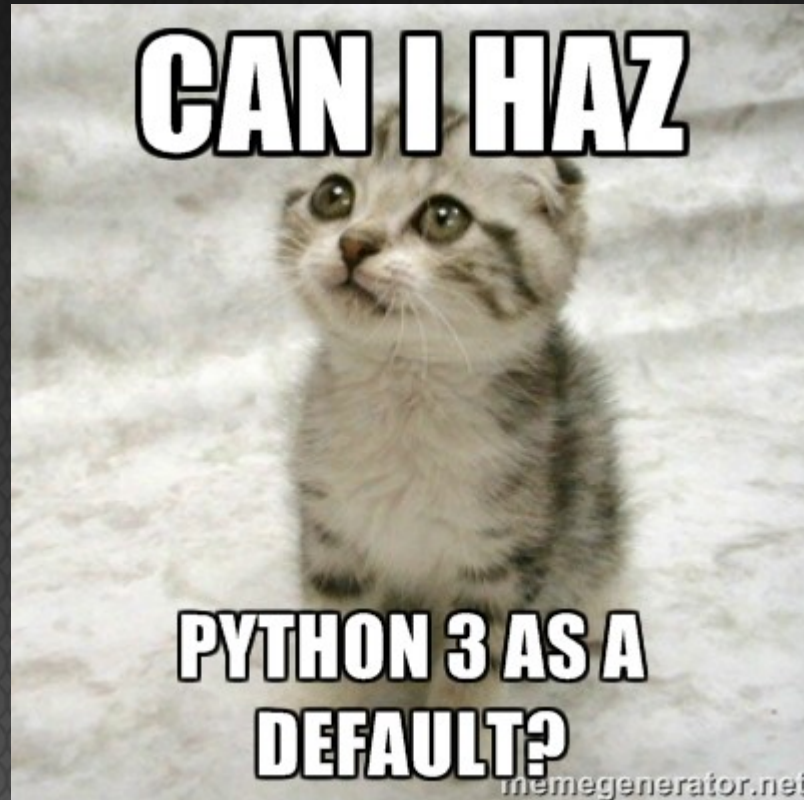
- Dropping Python 2
- Forcing people to write downstream-only patches
- Pointing `/usr/bin/python` to `python3`

Helping out

We Need Your Help!

- http://fedoraproject.org/wiki/Changes/Python_3_as_Default
- <https://fedoraproject.org/wiki/User:Churchyard/python3>
- Or anything else that's in Fedora and it's Python 2 only
- Python 3 in EPEL 7?
- Remember, upstream is first

Questions?



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