

Django and PyPy: performant is a word

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Django and PyPy

- *Django and PyPy core developer*
- *I like making your code faster*
- *Working at Quora making their codebase run on PyPy, fast.*

What is Django?

- *Anyone knows here?*

What is PyPy?

- *An implementation of Python 2.7.1*
- *A very fast implementation*
- *A very compliant implementation*

What is PyPy? (2)

- *Python written in Python*
- *Open source (MIT licensed)*
- *8 years old*
- *Over 150,000 lines of test code (that's more than all of Django)*
- *A successor to Psyco*

- *Faster than CPython on almost every benchmark we have.*
- *<http://speed.pypy.org/>*
- *A very actively developed project:*
<http://speed.pypy.org/timeline/?exe=1&base=2%2B35&ben=django&env=tannit&revs=1000>

World's shortest introduction to JITing

- *Run interpreter*
- *Find frequently executed loops*
- *Turn those loops into efficient assembler, by specializing for the types of variables and other things.*

Case studies

- *Production ready*
- *Real people are using this to speed up their apps.*

- *Parse the output of `git log` and generate data/reports*
- *CPython: 63 seconds*
- *PyPy: 21 seconds*

Some guy on IRC

- *Query PostgreSQL and generate reports.*
- *CPython: 2 minutes*
- *PyPy: 8 seconds*

Why isn't everyone using PyPy?

- *C extensions*
- *C-API tightly coupled to CPython implementation details*

Solutions

- *CPyExt*
- *Pure Python/ctypes*
- *Cython (GSOC)*

But web apps are I/O bound...

- *Eh, maybe they should be, but they often aren't.*

The Wild Wild Web (WWW for short)

- *To run a Django site you need a handful of things*
- *Web server*
- *Database*
- *Random other libraries (PIL, lxml, etc.)*

Web server

- WSGI
- *Any pure Python server will do*
- *I like gunicorn, you can use whatever you like*
- *Not mod_wsgi*

Database

- *Use any database you like, so long as there's an adapter for it that works with both Django and PyPy!*

- *Standard library, just works!*

PostgreSQL

- *RPython `psycopg2` compatible lib, requires compiling your own PyPy*
- *`pg8000` and tons of other random libraries, Django doesn't work with them, but if they're pure Python they'll work with other stuff (e.g. SQLAlchemy)*

- *(various expletives censored)*
- *Nothing that works with Django ATM*
- *I'm working on a `ctypes` based MySQLdb dropin replacement, hopefully open source soonish.*

- *We have an RPython `cx_Oracle`*
- *I know nothing about its status*

Other databases

- *There are other databases?*
- *Uhh, talk to me later?*

Random other libs

- *PIL* - works under CPyExt
- *lxml* - doesn't work :(
- *Others* - how should I know? Others isn't very specific.

Benchmarking!

- *Lies, damned lies, and statistics!*
- *And benchmarks*
- *Ignore them, you need to test your app.*
- *But if you need to convince your boss...*

Django template benchmark

- *Part of the Unladen Swallow benchmark suite*
- *PyPy 1.5: almost 10x faster than CPython*
- *PyPy trunk: almost 12x faster*

Rietveld benchmark

- *Another part of the Unladen Swallow benchmark suit*
- *PyPy trunk: about 1.35x faster than CPython*

Tornado web app

- *2x as many requests per second*

- *A better platform for developing Python itself*
- *A faster Python for your apps*

Questions?

- `http://alexgaynor.net/`
- `http://pypy.org/`
- Thank you!
 - *Dank je wel!*