

KING
FEET

3-Port Firewire
ACR Cards
\$1.00
NOTE: NO RETURN OR EXCHANGE

Cell Phones
Will Drive For Verizon
No Return No Exchange

SHOOP DOGG
SEZ:



RECYCLE

YOUR E-WASTE
AT THE END OF
THIS BUILDING.
MON-FRI (EXCEPT HOLIDAYS)
9:30am - 4:00pm

...FO SHIZZLE!!

Short T
R
Wheel

Additional
Base Rack
IN 45-15 S
OF THE S

HHVM
@richardtape



“It was a high-risk, high-reward bet. We now operate at such an enormous scale, we have to take enormous risks in order to survive”

Jay Parikh, Facebook engineer



HipHop for PHP (HPHPc)

- A PHP transpiler (a PHP whatnow?)
- Transpiles/Translates PHP into C++
- Then compiled into a binary
- Then run as an executable
- Regularly increased the speed of PHP Applications
by 6 times



Wait. Binary? Executable? What?

- **Caveat: IANAG** (it's a bit like I am not a lawyer)
- **Normal PHP**
- `<?php your_code(); ?>` -> opcodes -> interpreted (i.e. non-compiled, slow)
- **HPHPc**
- `your_code();` -> Transpiled (fast!) into C++ -> binary -> executed



YOU SAID COMPILE!!





A new challenger approaches



Hip Hop Virtual Machine

Seriously. That's actually what HHVM stands for.

HHVM is a “process virtual machine” using just-in-time compilation



YOU SAID COMPILE!!



Don't panic!

- The '*just-in-time*' before the word-we-no-longer say is key
- It means you don't have to do it yourself
- And you just write your PHP as you normally would

Process Virtual Machine?

AKA an *Application* Virtual Machine. (Oh that's much better.) Or a Managed Runtime Environment (Who makes these things up?)

In real words it means that your *code* is completely abstracted away from the *underlying platform* which in turn means the same code will give the same results, regardless of platform.

Hip Hop Byte Code

I promise you I'm not just making up words.
Again, that's actually it's name.

PHP (and '*Hack*') are converted into Hip Hop Byte Code (HHBC) which is then converted into machine code and then executed.

**STOP USING ACRONYMS
AND MADE-UP WORDS
AND SHOW ME
SOMETHING**

If you can write PHP, you can
use HHVM

If you can't write PHP, you can
learn *Hack* – a *gradual* typed
language – and use HHVM

- If you write PHP and it breaks HHVM, there's a very good chance you're not writing *good* PHP
- HHVM supports the vast majority of the PHP language (even **gasp** `eval()`)
- If you conform to the WordPress PHP Code Standards, you'll almost certainly have no issues whatsoever

"After all, facts are facts, and although we may quote one to another with a chuckle the words of the Wise Statesman, 'Lies—damned lies—and statistics,' still there are some easy figures the simplest must understand, and the astutest cannot wriggle out of."

Leonard Henry Courtney, 1895

- Performance-wise, comparing PHP 5.2.* to HHVM is, honestly, an unfair fight.
- So if your host is still forcing you to use PHP 5.2. Change host. Literally now. Leave the room. Go do it. I won't judge.
- (It's fun, nonetheless, so here's some quick numbers on a simple hello world script)
 - PHP 5.2.17: 445 requests per second
 - HHVM 3.8.0: 890 requests per second (! 2*)

- **OK, let's make this a bit more of a fair fight. Let's go with PHP 5.6.4**
- **Simple `<?php echo 'Hello world'; ?>`**
- **PHP 5.6.4 – RPS: 651 (a 50% + on PHP 5.2)**
- **HHVM 3.8.0 – RPS: 890**
- **Running default WordPress (wp-super-cached, you're welcome PHP)**
- **PHP 5.6.3 – RPS: 281 (non-cached 41, heh, bless)**
- **HHVM 3.8.0 – RPS: 566**

- But PHP 7 is out soon. And that's meant to be SUPER fast
- The current mainline is 11% faster than PHP 5.6.3
- That's pretty freaking awesome.
- It's still ~20% slower than HHVM which gets updated every 8 weeks. PHP 7 *may* be out later this year

OK, numbers are
good, but does
performance
REALLY matter?



Every -100ms = +1% in revenue (Amazon, Walmart). Case closed.

- **Who is using/supporting HHVM already?**
- Well, unsurprisingly, Facebook. So you can consider it battle-tested.
- Etsy are experimenting (and it's going *well*)
- Me! **ahem**

Who in the WordPress managed-hosting world is supporting HHVM?

- *WP Engine*
- *Pagely*
- *Siteground*
- *Dreamhost*

**But, what if I'm running my own
good ship lollipop?**

**Well, calm down Shirley Temple.
You're almost certainly covered.**

**Pretty much every main Linux distro
is supported**

Q: How easy is it to set up from scratch?

A: Very. 15 minutes. If you're using nginx or apache, the HHVM setup routine "just works" out of the box.

Q: How easy is it to switch from PHP-FPM?

A: Depends. But probably very. 15 minutes. The 'hard' part will be adjusting your existing config, but HHVM's default config is an almost drop-in replacement.

What about my PHP Extensions?

<https://github.com/facebook/hhvm/wiki/Extensions>

A lot of commonly used extensions (most, I would say) are supported out of the box. The big one not supported ootb is pgsql but this has a third-party extension (yay open source)

I haven't run into any extension issues, but they have an API for you to write your own:

<https://github.com/facebook/hhvm/wiki/Extension-API>

Any gotchas with WordPress-y stuff?

Yes. Sadly. But they're becoming fewer and fewer. These 3 commits fix a whole bunch of things:

<https://core.trac.wordpress.org/ticket/27231>

<https://core.trac.wordpress.org/ticket/29217>

<https://github.com/facebook/hhvm/commit/516e149377edcd10cbb8f208a2f9545485488603>

The big gotchas are mainly plugin/theme based (surprise!)

How about Plugins / Themes?

HHVM does not have 100% compatibility with every PHP function/class yet. It's aim is for parity. So, if a plugin uses some unsupported stuff then the world ends.

That being said, if it isn't supported, it's probably not the best code out there so may be worth considering a different option.

Basic gotcha: long-running tasks on a wp-cron seem to break things. i.e. backup plugins. *on cheap hosting

How about Plugins / Themes?

<https://wordpress.org/plugins/wordpress-backup-to-dropbox/> (long wp-crons)

<https://wordpress.org/plugins/wp-all-import/>
(php://filter usage ... bit weird)

Can bring your site down on HHVM. Sad Panda. (But you can run PHP-FPM as a fallback...)

Is it ready for prime-time?

Facebook think so. But then they would, wouldn't they?

My personal opinion;

On a small site where you control everything: yes

On a managed host where it's controlled for you: yes

Everywhere else: it needs some serious consideration right now. But as time goes on, it becomes more and more a genuinely viable option.

Who are you?

Richard Tape, a developer at UBC
@richardtape on Twitter

Managed WordPress hosts with HHVM available

<http://wpengine.com/mercury/>

<https://github.com/wpengine/hgv>

<https://pagely.com/blog/2014/06/run-hhvm-pagely/>

<https://www.siteground.com/blog/hhvm/>

<https://www.dreamhost.com/hosting/wordpress/>

Or DIY

From scratch:

<https://richardtape.com/2015/02/14/setting-wordpress-hhvm-digital-ocean/>

If you already have PHP-FPM:

<https://richardtape.com/2015/03/07/from-php-to-hhvm/>

References;

HHVM

<https://github.com/facebook/hhvm>

<http://hhvm.com/> (how much did THAT cost?!)

Hack

<https://github.com/facebook/hhvm/tree/master/hphp/hack>

WordPress

<https://make.wordpress.org/core/handbook/best-practices/coding-standards/php/>

Other

<https://codeascraft.com/2015/04/06/experimenting-with-hhvm-at-etsy/>

http://www.phoronix.com/scan.php?px=MTg30DY&page=news_item

<http://radar.oreilly.com/2009/06/bing-and-google-agree-slow-pag.html>

<http://alistapart.com/column/performance-matters>

<https://rtcamp.com/tutorials/php/hhvm-with-fpm-fallback/>