

Embracing Change

How I Git Along

True Tales of Building PHP Microservices

Jumping Ship: A Holistic Approach to Changing Jobs—Part Two

ALSO INSIDE

Learning Machine Learning, Part One

Education Station:
An Introduction to Doctrine

Artisanal:
Uploading Files

The Dev Lead Trenches:
Dealing With People

Community Corner:
PHP TestFest Has Returned!

Security Corner:
A Cautionary Tale of a Rushed Release

finally{ }:
On Change

Free
Sample
Article





We're hiring PHP developers

15 years of experience with
PHP Application Hosting

SUPPORT FOR *php7* SINCE DAY ONE

Contact careers@nexcess.net for more information.

PHP[world] 2017

Five Awesome
Keynotes Announced!

This is a conference like no other. Designed to bring together all the communities linked by the PHP programming language.

November 15-16, 2017

world.phparch.com

Sponsored by:



RIPSTECH

AUTOMATTIC

nexmo®

The Vonage® API Platform



Magento®



php[architect]

CONTENTS

SEPTEMBER 2017

Volume 16 - Issue 9

Embracing Change

Features

- 3 Learning Machine Learning, Part One: Begin with What You Know**
Edward Barnard
- 9 How I Git Along**
Jason McCreary
- 14 True Tales of Building PHP Microservices**
Karl Hughes
- 21 Jumping Ship: A Holistic Approach to Changing Jobs—Part Two**
Andrew Koebbe

Columns

- 2 Embracing Change**
- 26 Education Station:**
An Introduction to Doctrine
Matthew Setter
- 32 Artisanal:**
Uploading Files
Joe Ferguson
- 38 The Dev Lead Trenches:**
Dealing With People
Chris Tankersley
- 41 August Happenings**
- 42 Security Corner:**
A Cautionary Tale of a Rushed Release
Eric Mann
- 45 Community Corner:**
PHP TestFest Returns!
James Titcumb
- 48 finally{}:**
On Change
Eli White

Editor-in-Chief: Oscar Merida

Editor: Kara Ferguson

Subscriptions

Print, digital, and corporate subscriptions are available. Visit <https://www.phparch.com/magazine> to subscribe or email contact@phparch.com for more information.

Advertising

To learn about advertising and receive the full prospectus, contact us at ads@phparch.com today!

Managing Partners

Kevin Bruce, Oscar Merida, Sandy Smith

php[architect] is published twelve times a year by: musketeers.me, LLC
201 Adams Avenue
Alexandria, VA 22301, USA

Although all possible care has been placed in assuring the accuracy of the contents of this magazine, including all associated source code, listings and figures, the publisher assumes no responsibilities with regards of use of the information contained herein or in all associated material.

php[architect], php[a], the php[architect] logo, musketeers.me, LLC and the musketeers.me, LLC logo are trademarks of musketeers.me, LLC.

Contact Information:

General mailbox: contact@phparch.com

Editorial: editors@phparch.com

Print ISSN 1709-7169

Digital ISSN 2375-3544

Copyright © 2017—musketeers.me, LLC
All Rights Reserved



PHP TestFest Returns!

James Titcumb

There is a new movement in the PHP community! Well, it isn't exactly new, but an event called *PHP TestFest*¹ is back. PHP TestFest is a global event organized by the PHP community at large, where an effort is made each time to increase the test coverage of the PHP engine itself. Around eight or nine years ago, user groups around the world coordinated to organize events spanning a few months each year, with some groups continuing events annually for several years after.

PHP itself is a massive project with over 200,000 lines of code, used by possibly millions of developers. To ensure it doesn't break in unexpected ways there needs to be a good coverage of tests. Now, before you run off, the thing that puts many people off is thinking they need to know C to contribute, but there's some great news: the tests for PHP are written in PHP—so you don't need to know C! PHP TestFest encourages user groups, conferences, or even just an ad-hoc gathering of developers to join forces to write these tests for the engine. PHP TestFest runs from September to December this year, so there's a good window of opportunity to get involved.

If you attend or organize a local user group, or want to plan one of these events, it's easy to get started. First, you'll need to set a date for your event. Agree on a date where as many interested folks can attend as possible—that might be on an evening during the week, or even during the weekend. If you're part of a PHP user group, it might be a cool change to replace your regular monthly meet up with a PHP TestFest event. If you're unsure, consider sending out a poll to anyone interested to see what works best for them. For the event, you'll need tables for laptops and so on, as well as a good, stable Wi-Fi connection—and don't forget you'll need more bandwidth the more attendees you have.

Writing Tests

So how does one actually write these tests? In brief, it's a text file with a few sections: TEST, FILE, and an EXPECT or EXPECTF. The TEST section is the description of the test, and it helps to explain what behavior you're trying to test here. The FILE section contains the PHP code that will be run. Finally, the EXPECT or EXPECTF section is for the expected output; the latter, EXPECTF, allowing for formatting marks. For example:

```
--TEST--
Trivial "Hello World" test
--FILE--
<?php echo "Hello world" ?>
--EXPECT--
Hello World
```

This is a very trivial example but also knowing how EXPECTF works proves very useful. For example, if you are writing out a file path where the document root will be different on each system, you can replace the root path with %s:

```
--TEST--
Example using EXPECTF
--FILE--
<?php
echo sys_get_temp_dir() . "/foo\n";
?>
--EXPECTF--
%s/foo
```

All the pain of running tests has been eliminated too, with the new



`docker-phpqa`² open source tool specifically designed to help create PHPT test files and run them against multiple versions of PHP simultaneously. As the name suggests, you do need Docker installed on your machine, but assuming that's the case, it should be pretty quick to get up and running to write PHPT tests. Running the commands to test against multiple versions of PHP, seems to be immensely helpful here, for example, running:

```
phpqa run path/to/my/test.phpt all
```

will run the test against all versions of PHP the tool supports, which is currently 7.2, 7.1, 7.0, 5.6 and 5.5.

The nice thing about this process is there are a wealth of articles, videos, tutorials, and so on which document how to write, run, and contribute these tests back to PHP core. For quite some time, <https://qa.php.net> has existed and served as a great starting point for writing tests—including links to test result coverage on PHP's GCOV site, guides on writing tests, running them, and more.

¹ PHP TestFest: <https://phptestfest.org>

² docker-phpqa: <https://github.com/herdphp/docker-phpqa>



This year, however, Ben Ramsey and Sammy Kaye Powers have been leading an effort to re-ignite this tradition in the PHP community and has launched a shiny new site, <https://phptestfest.org>, which collates a huge amount of these resources. At the time of writing this, there is some basic information on how to organize an event and a list of user groups from around the world who have already opted to participate in the

activity. There is a new fully comprehensive six-part video series from Sammy Kaye Powers demonstrating how to build PHP from source, running the test suite, a look into the PHPT file format and debugging, all the way to submitting a PR to the PHP repository itself. He does a fantastic job of working through the tutorial and explains everything in an easy to understand way, so I highly recommend checking this out.

Head on over to the PHP TestFest website now and check out all the useful resources and links, as well as ways to get involved, such as organizing a meetup, chatting on the IRC channel (#phptestfest on freenode), or joining the Google Group. Finally, big thanks to Ben Ramsey for leading this renewed effort, as well as the many contributors to this awesome PHP TestFest venture!

Upcoming Events

September

WordCamp Nijmegen 2017

September 1–2, Nijmegen, The Netherlands

2017.nijmegen.wordcamp.org

Pacific Northwest PHP Conference

September 7–9, Seattle, Washington

pnwphp.com

Mage Titans, Austin

September 14–16, Austin, TX

<https://usa.magetitans.com>

PHP Developer Day 2017

September 22, Dresden, Germany

<http://bit.ly/PHPDD17DE>

SymfonyLive London 2017

September 21–22, London, U.K.

london2017.live.symfony.com

Madison PHP Conference 2017

September 22–23, Madison, WI

2017.madisonphpconference.com

PHP South Africa

September 27–29, Cape Town, South Africa

phpsouthafrica.com

PHPNW17

September 30–October 1, Manchester, U.K.

conference.phpnw.org.uk/phpnw17/

October

Japan PHP Conference 2017

October 8, Tokyo, Japan

phpcon.php.gr.jp

SymfonyLive San Francisco 2017

October 19–20, San Francisco, CA

sanfrancisco2017.live.symfony.com

ZendCon 2017

October 23–26, Las Vegas, Nevada

zendcon.com

International PHP Conference

October 23–27, Munich, Germany

phpconference.com/en/

Forum PHP 2017

October 26–27, Paris, France

event.afup.org

November

php Central Europe Conference

November 3–5, Raw Mazowiecka, Poland

2017.phpce.eu

ScotlandPHP 2017

November 4, 2017, Edinburgh, Scotland

conference.scotlandphp.co.uk

php[world] 2017

November 15–16, Washington, D.C.

world.phparch.com

SymfonyCon Cluj 2017

November 16–18, Cluj, Romania

clujcon2017.symfony.com

December

ConFoo Vancouver 2017

December 4–6, Vancouver, Canada

confoo.ca/en/yvr2017/

January

PHPBenelux Conference 2018

January 26–27, Antwerp, Belgium

conference.phpbenelux.eu/2018

February

SunshinePHP 2017

February 8–10, Miami, Florida

sunshinephp.com

March

ConFoo Montreal 2018

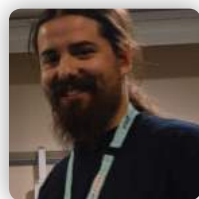
March 7–9, Montreal, Canada

confoo.ca/en/yul2018

Midwest PHP 2018

March 9–10, Bloomington, Minnesota

2018.midwestphp.org



James is a consultant, trainer and developer at Roave. He is a prolific contributor to various open source projects and is a Zend Certified Engineer. He also founded the UK based PHP Hampshire user group and PHP South Coast conference.

[@asgrim](https://twitter.com/asgrim)



Borrowed this magazine?

Get php[architect] delivered to your doorstep or digitally every month!

Each issue of php[architect] magazine focuses on an important topic that PHP developers face every day.

We cover topics such as frameworks, security, ecommerce, databases, scalability, migration, API integration, devops, cloud services, business development, content management systems, and the PHP community.



**Digital and Print+Digital
Subscriptions
Starting at \$49/Year**

http://phpa.me/mag_subscribe