

JET  
BRAINS

*php*

# 升级指南

通过 PhpStorm、Qodana 及开源工具

范圣佑

JetBrains 码上道

2022/01/13

# 分享主题

—

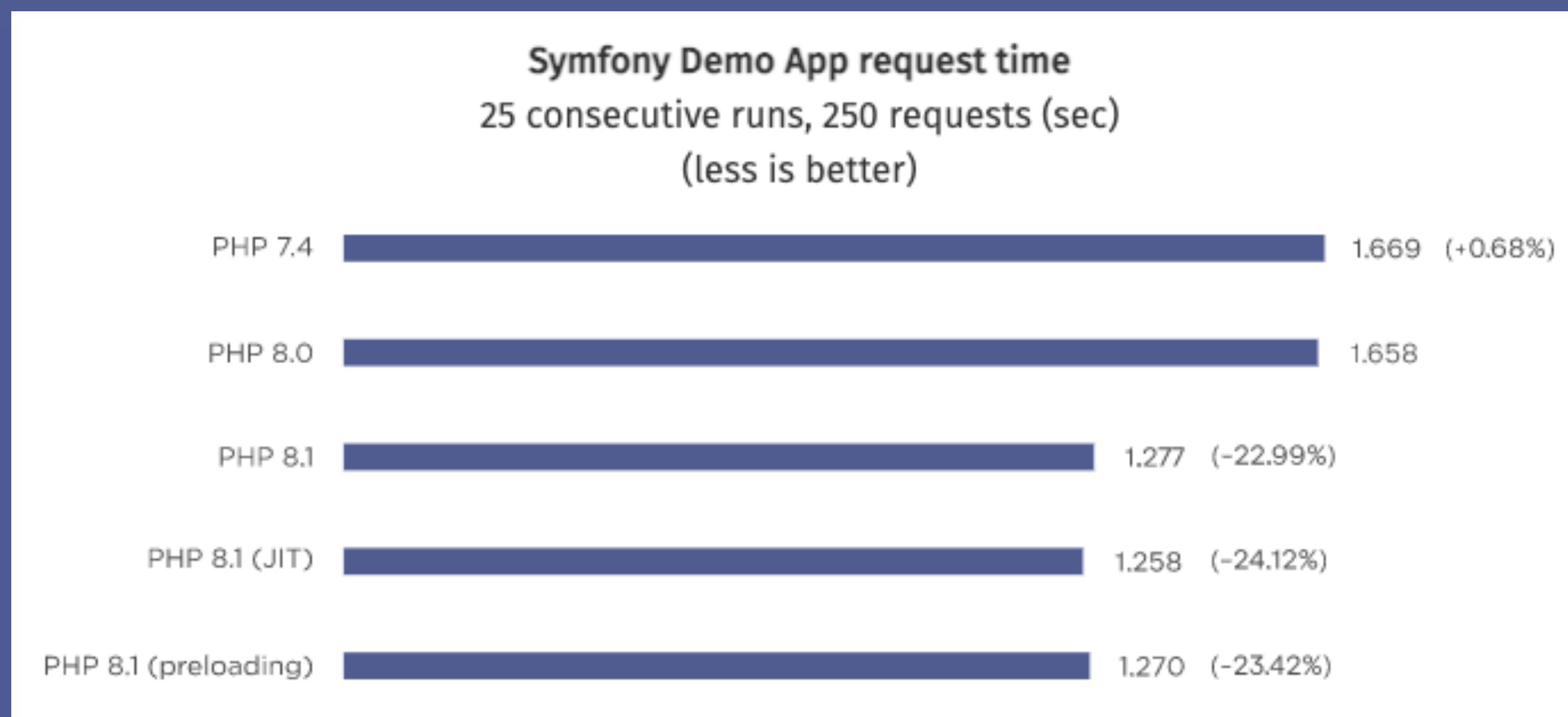
- 升级 PHP 的必要性
- PHP 版本时间表
- PhpStorm 的 PHP 及 Composer 设置
- PHP 升级指南
- 用 PhpStorm 协助升级
- 用 Qodana 维护代码质量

# 为什么要升级 PHP 版本?

—

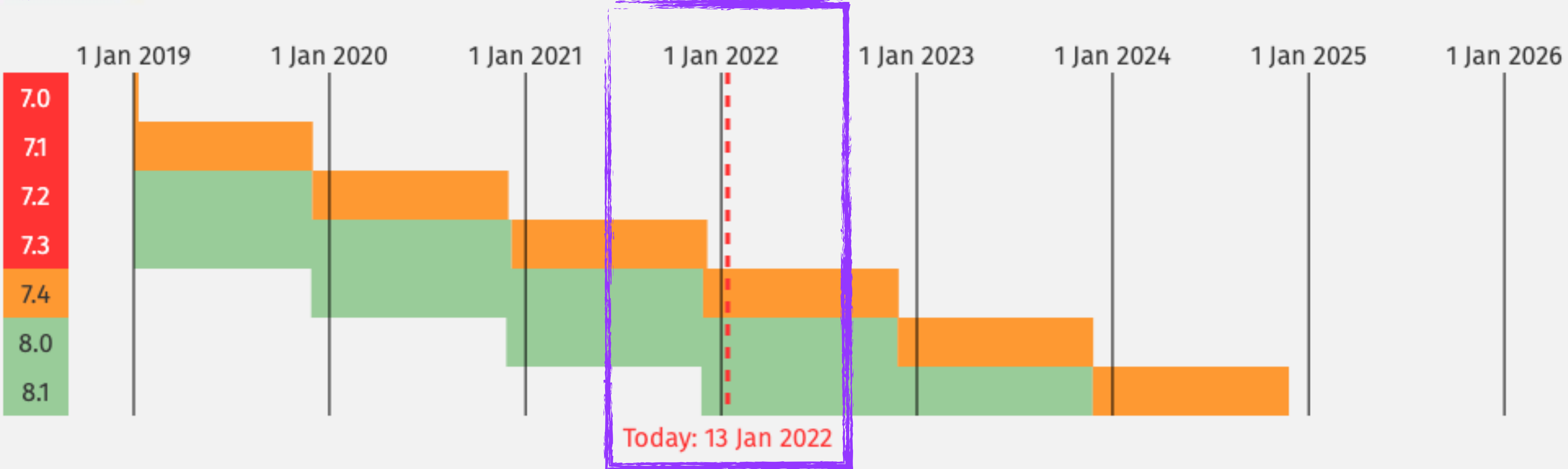
- 安全性
- 性能优化
- 新语法特性

# php 8.1



# PHP 版本时间表

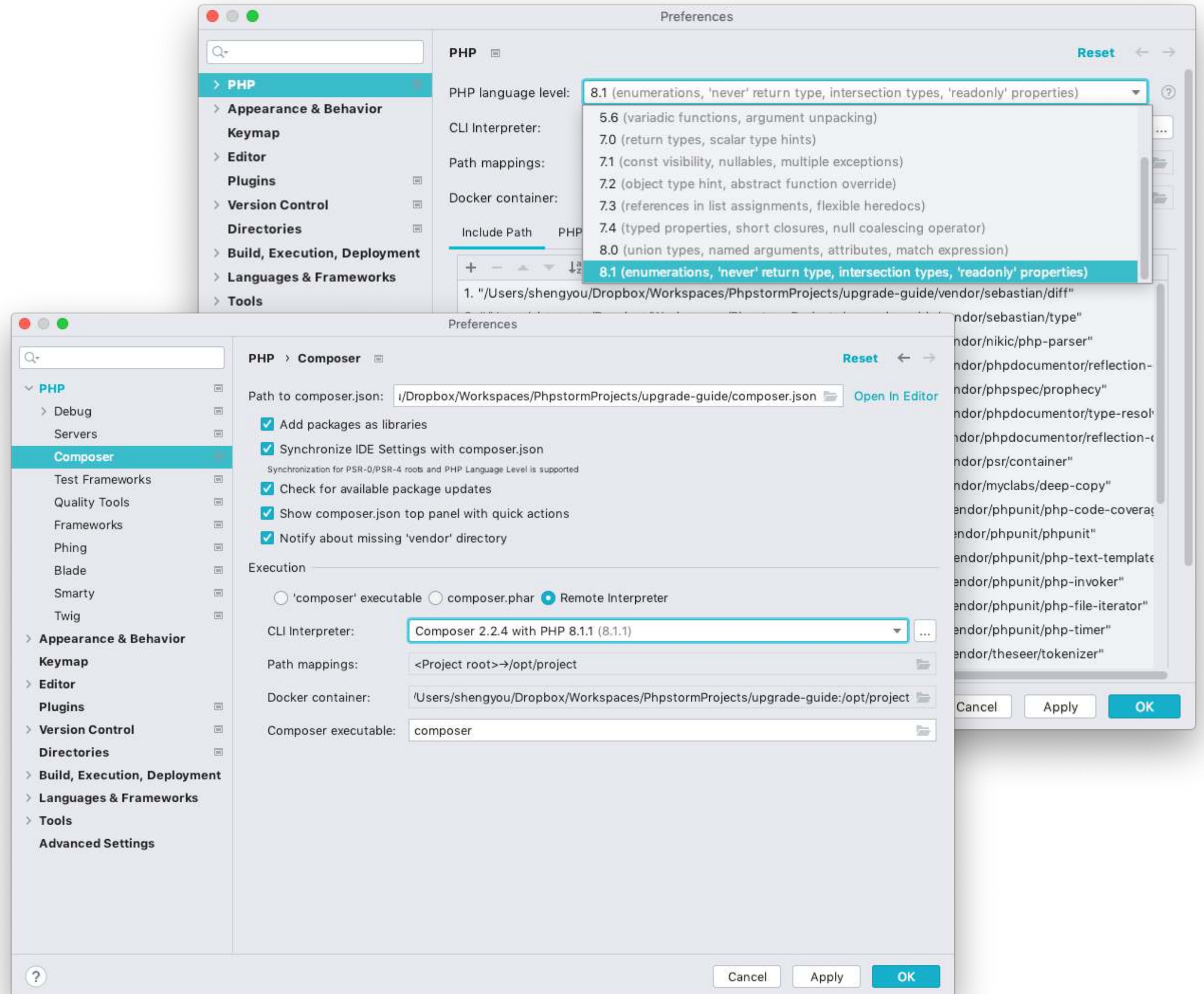
Branch	Initial Release		Active Support Until		Security Support Until	
<u>7.4</u>	28 Nov 2019	2 years, 1 month ago	28 Nov 2021	1 month ago	28 Nov 2022	in 10 months
<u>8.0</u>	26 Nov 2020	1 year, 1 month ago	26 Nov 2022	in 10 months	26 Nov 2023	in 1 year, 10 months
<u>8.1</u>	25 Nov 2021	1 month ago	25 Nov 2023	in 1 year, 10 months	25 Nov 2024	in 2 years, 10 months



<https://www.php.net/supported-versions.php>

# PhpStorm 的 PHP 相关设置

- composer.json
- PHP language level
- PHP Interpreter
- Composer Execution



# PhpStorm 支持的 Interpreter 安装方式

—

- 本地安装 (XAMPP、MAMP、手动安装)

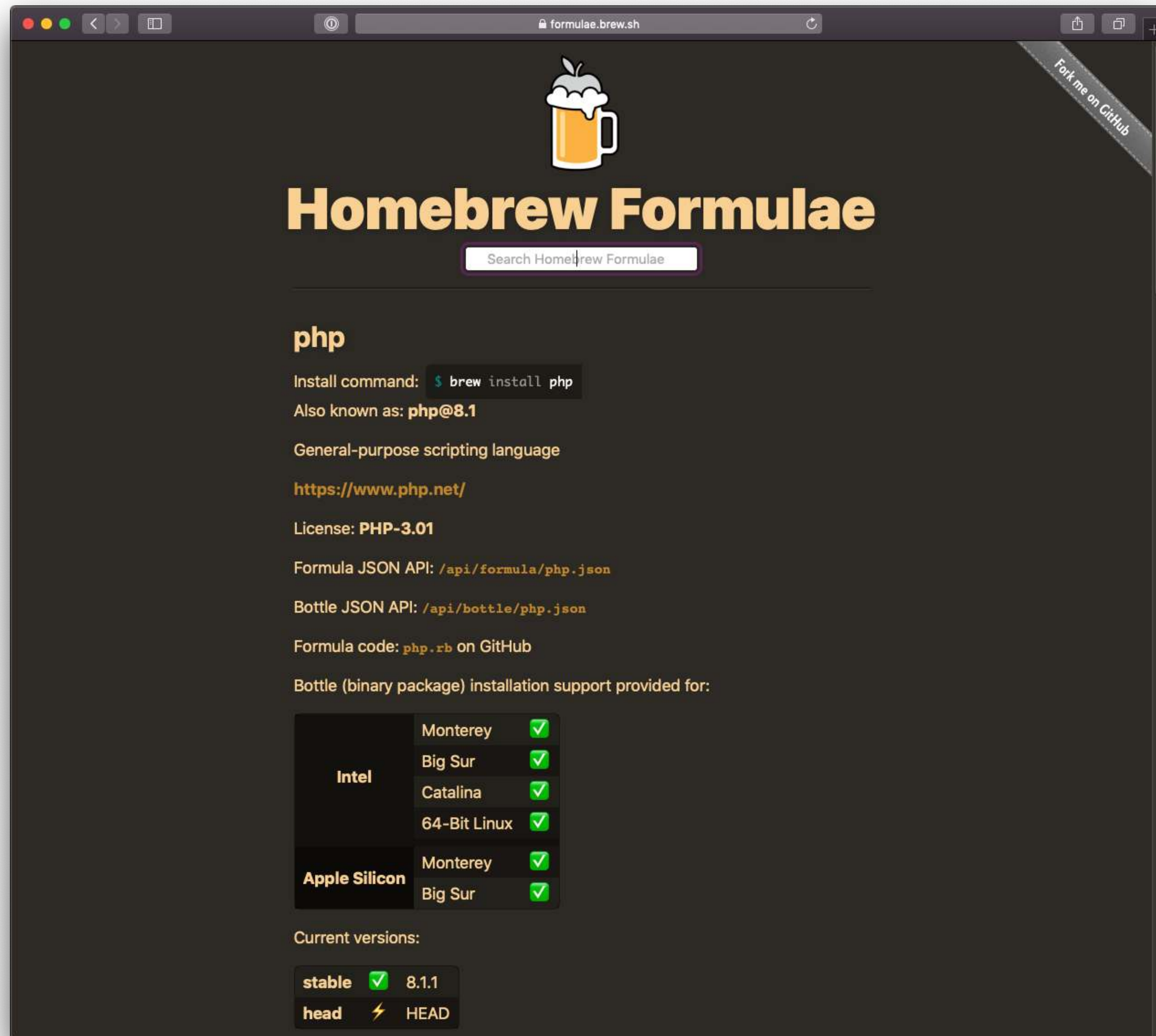
# PhpStorm 支持的 Interpreter 安装方式

—

- 本地安装 (XAMPP、MAMP、手动安装)
- Package Manager (Homebrew、Scoop、Apt)

# Homebrew 安装多版本 PHP

```
$ brew install php
$ brew install php@8.1
$ brew install php@8.0
$ brew install php@7.4
```



The screenshot shows the Homebrew Formulae website for PHP. At the top, there is a logo of a beer mug with a slice of lime. Below the logo, the title "Homebrew Formulae" is displayed in a large, bold, orange font. A search bar is located below the title. The main content area is titled "php" and includes the following information:

- Install command: `$ brew install php`
- Also known as: **php@8.1**
- General-purpose scripting language
- <https://www.php.net/>
- License: **PHP-3.01**
- Formula JSON API: `/api/formula/php.json`
- Bottle JSON API: `/api/bottle/php.json`
- Formula code: `php.rb` on GitHub
- Bottle (binary package) installation support provided for:

Architecture	OS Version	Support
Intel	Monterey	✓
	Big Sur	✓
	Catalina	✓
	64-Bit Linux	✓
Apple Silicon	Monterey	✓
	Big Sur	✓

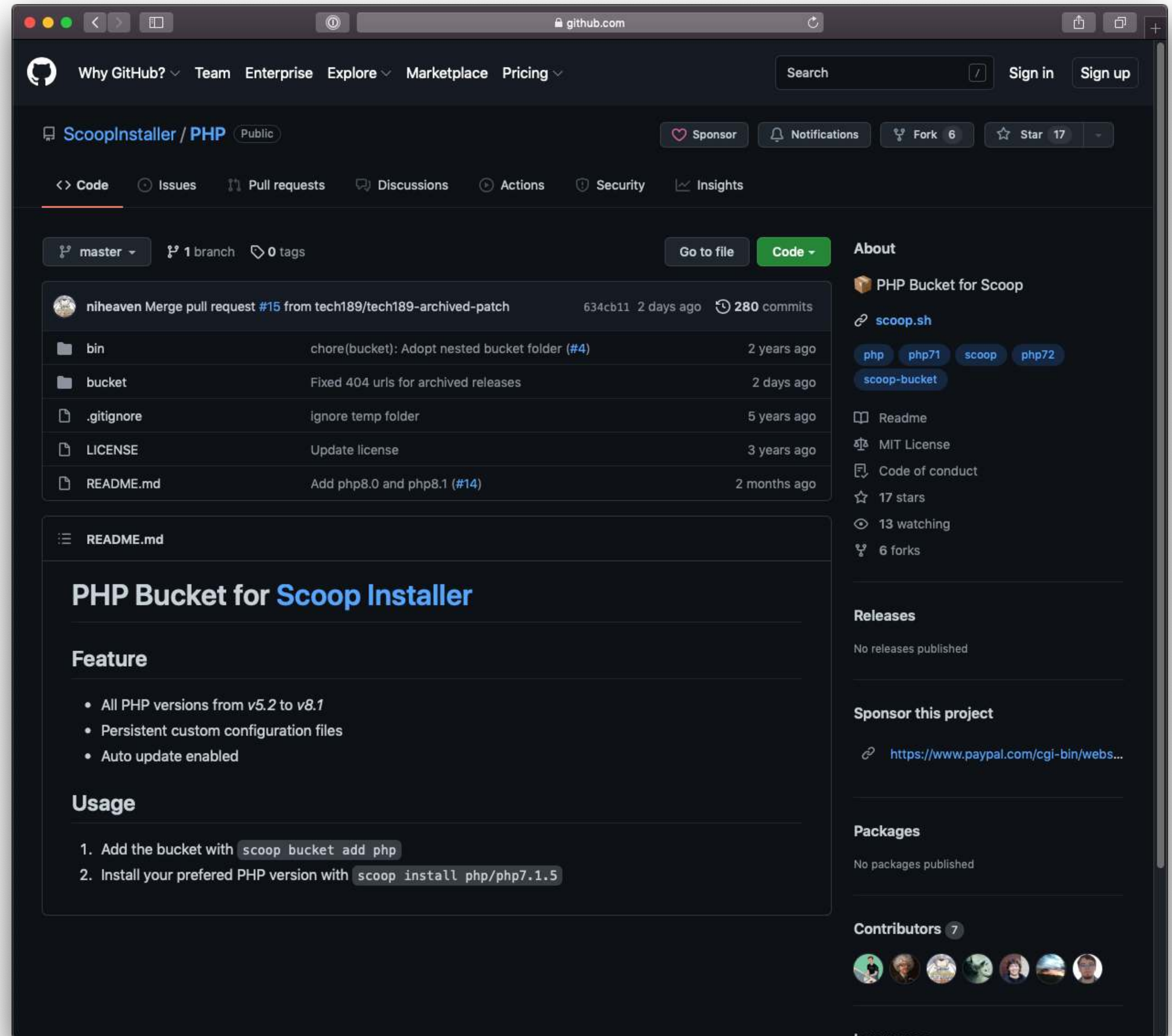
Current versions:

stable	✓	8.1.1
head	⚡	HEAD



# Scoop 安装多版本 PHP

```
$ scoop bucket add php
$ scoop install php/php8.1
$ scoop install php/php8.0
$ scoop install php/php7.4
```



The screenshot shows the GitHub repository page for 'ScoopInstaller / PHP'. The repository is public and has 17 stars, 6 forks, and 280 commits. The main content area displays the README for 'PHP Bucket for Scoop Installer'. The README includes a 'Feature' section with three bullet points: 'All PHP versions from v5.2 to v8.1', 'Persistent custom configuration files', and 'Auto update enabled'. The 'Usage' section lists two steps: '1. Add the bucket with `scoop bucket add php`' and '2. Install your preferred PHP version with `scoop install php/php7.1.5`'. The right sidebar shows project details, including the repository name 'PHP Bucket for Scoop', the website 'scoop.sh', and a list of tags: 'php', 'php71', 'scoop', 'php72', and 'scoop-bucket'. There are also sections for 'Releases' (no releases published), 'Sponsor this project' (with a PayPal link), 'Packages' (no packages published), and 'Contributors' (7 contributors).

# Apt 安装多版本 PHP

---

```
# 添加 repository
$ apt install software-properties-common
$ add-apt-repository ppa:ondrej/php
$ apt update

# 安装多版本 PHP
$ apt install php
$ apt install php8.0
$ apt install php7.4

# 指定使用的 PHP 版本
$ update-alternatives --config php
```

# PhpStorm 支持的 Interpreter 安装方式

—

- 本地安装 (XAMPP、MAMP、手动安装)
- Package Manager (Homebrew、Scoop、Apt)
- Vagrant

# PhpStorm 支持的 Interpreter 安装方式

—

- 本地安装 (XAMPP、MAMP、手动安装)
- Package Manager (Homebrew、Scoop、Apt)
- Vagrant
- SSH (远程机器)

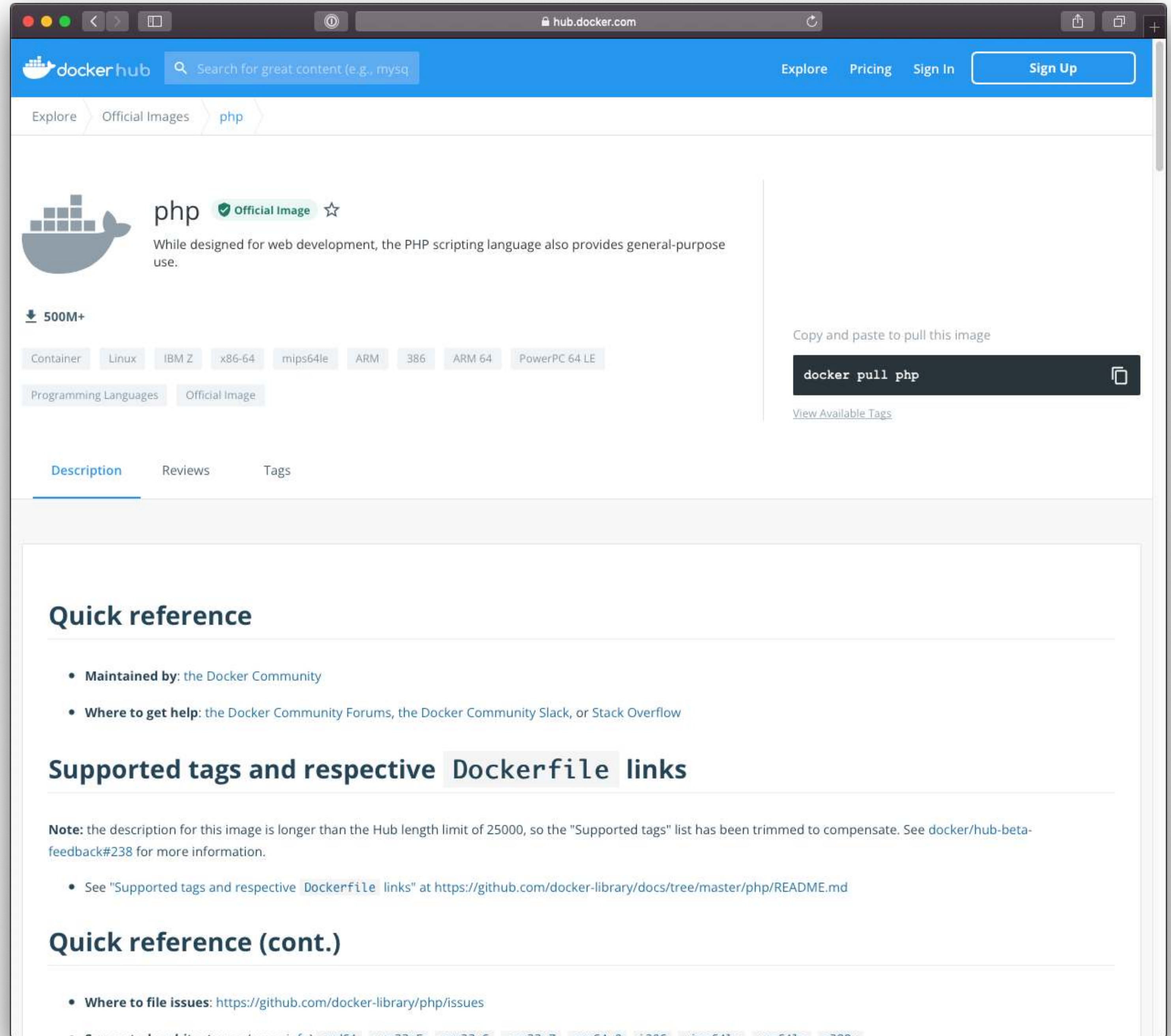
# PhpStorm 支持的 Interpreter 安装方式

—

- 本地安装 (XAMPP、MAMP、手动安装)
- Package Manager (Homebrew、Scoop、Apt)
- Vagrant
- SSH (远程机器)
- Docker (Docker、Docker Compose)

# 使用 Docker


```
$ docker pull php
$ docker pull php8.1*
$ docker pull php8.0*
$ docker pull php7.4*
```



The screenshot shows the Docker Hub interface for the 'php' official image. The page includes a search bar, navigation links, and a description of the image. The 'php' image is marked as an 'Official Image' and has over 500M downloads. It supports various architectures including Linux, IBM Z, x86-64, mips64le, ARM, 386, ARM 64, and PowerPC 64 LE. The page also features a 'Quick reference' section with links to the Docker Community and help resources, and a 'Supported tags and respective Dockerfile links' section with a note about the image description length and a link to the Dockerfile on GitHub.

docker hub Search for great content (e.g., mysql) Explore Pricing Sign In Sign Up

Explore Official Images php

 php Official Image ☆

While designed for web development, the PHP scripting language also provides general-purpose use.

↓ 500M+

Container Linux IBM Z x86-64 mips64le ARM 386 ARM 64 PowerPC 64 LE

Programming Languages Official Image

Description Reviews Tags

### Quick reference

- **Maintained by:** the Docker Community
- **Where to get help:** the Docker Community Forums, the Docker Community Slack, or Stack Overflow

### Supported tags and respective Dockerfile links

**Note:** the description for this image is longer than the Hub length limit of 25000, so the "Supported tags" list has been trimmed to compensate. See [docker/hub-beta-feedback#238](#) for more information.

- See "Supported tags and respective Dockerfile links" at <https://github.com/docker-library/docs/tree/master/php/README.md>

### Quick reference (cont.)

- **Where to file issues:** <https://github.com/docker-library/php/issues>
- **Supported architectures:** (more info) amd64 arm32v5 arm32v6 arm32v7 arm64v8 i386 mips64le ppc64le s390x

# PhpStorm 支持的 Composer 安装方式

—

- `composer` executable
- composer.phar
- Remote Interpreter

# 使用 Docker

```
$ docker pull composer
```

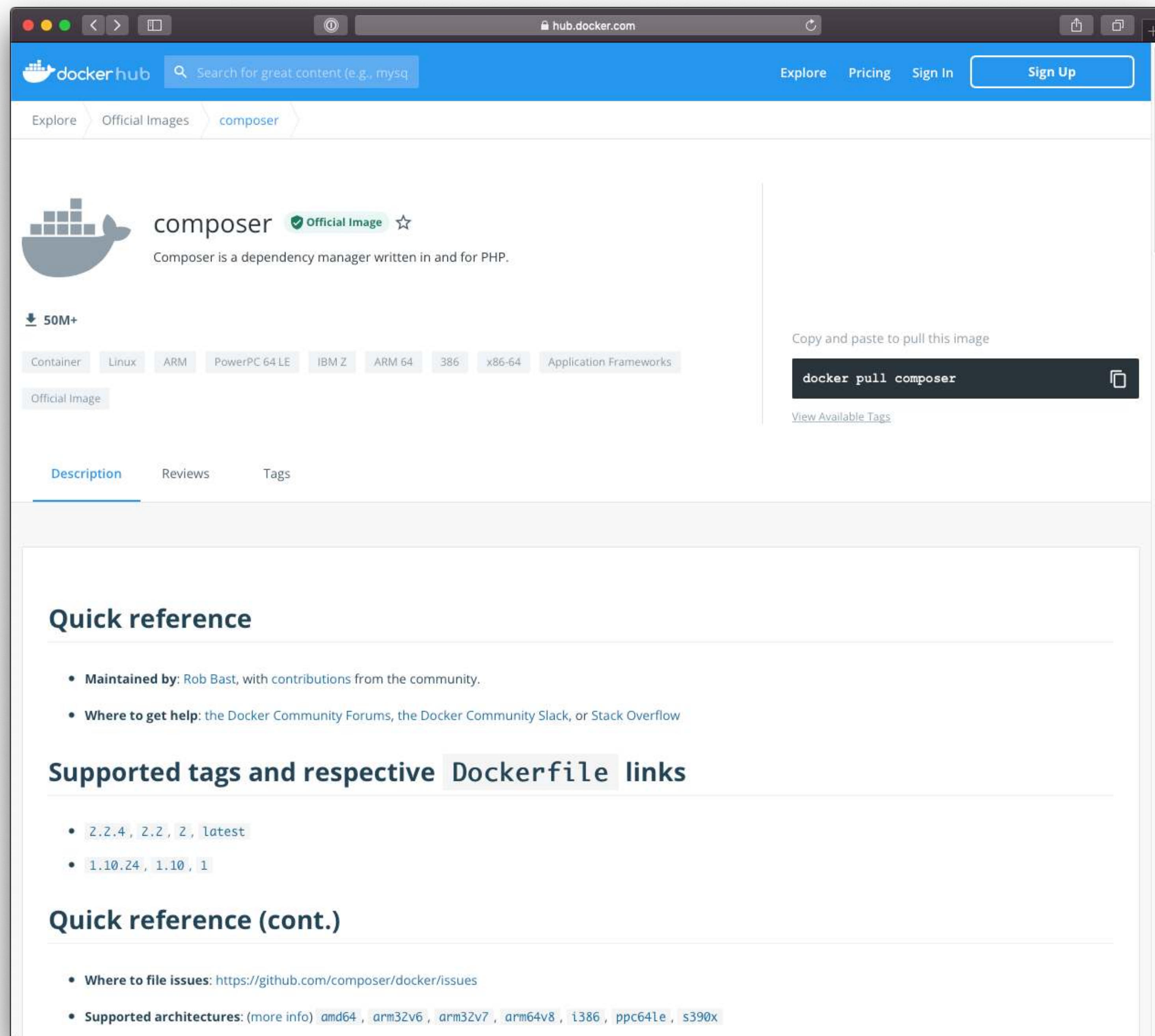
# 注意 Composer 内的 PHP 版本

```
composer:2.2.4 → PHP 8.1.1
```

```
composer:1.9.3 → PHP 7.4.11
```

```
composer:1.5.1 → PHP 7.1.9
```

```
composer:1.5.0 → PHP 7.1.8
```



The screenshot shows the Docker Hub page for the 'composer' image. The page includes a search bar, navigation links (Explore, Pricing, Sign In, Sign Up), and a breadcrumb trail (Explore > Official Images > composer). The main content area features the Docker logo, the image name 'composer' with an 'Official Image' badge, and a description: 'Composer is a dependency manager written in and for PHP.' Below this, there are statistics (50M+ downloads) and a list of supported architectures: Container, Linux, ARM, PowerPC 64 LE, IBM Z, ARM 64, 386, x86-64, and Application Frameworks. A 'Copy and paste to pull this image' section contains the command 'docker pull composer'. The page also has tabs for 'Description', 'Reviews', and 'Tags'. The 'Quick reference' section lists maintenance information and help resources. The 'Supported tags and respective Dockerfile links' section lists tags like '2.2.4', '2.2', '2', 'latest', '1.10.24', '1.10', and '1'. The 'Quick reference (cont.)' section lists issue reporting and supported architectures.

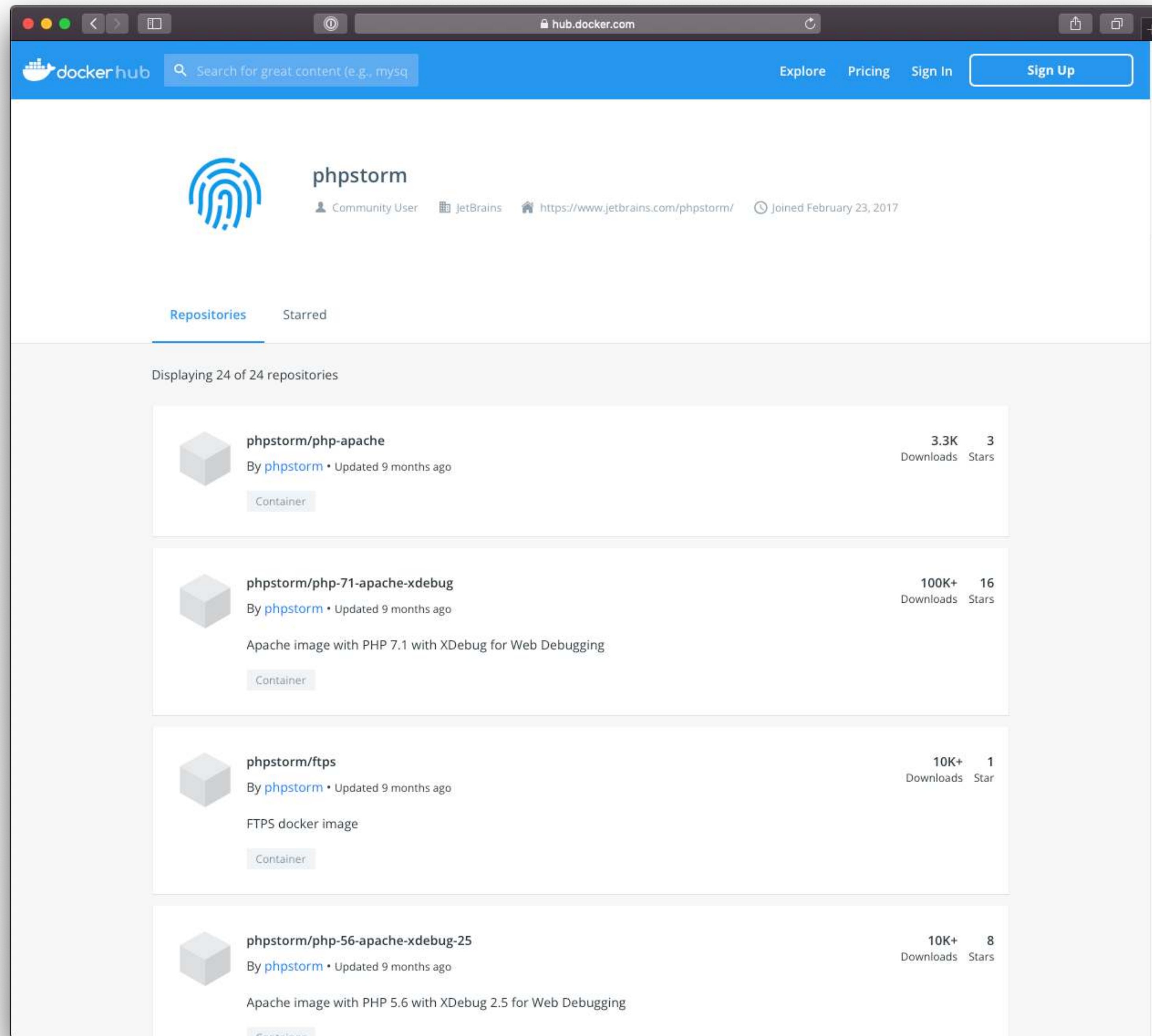


# PhpStorm 团队包好的 Docker Image

# 可以找到不同组合的 Image

phpstorm/php-73-cli-xdebug-27

phpstorm/php-73-apache-xdebug-27

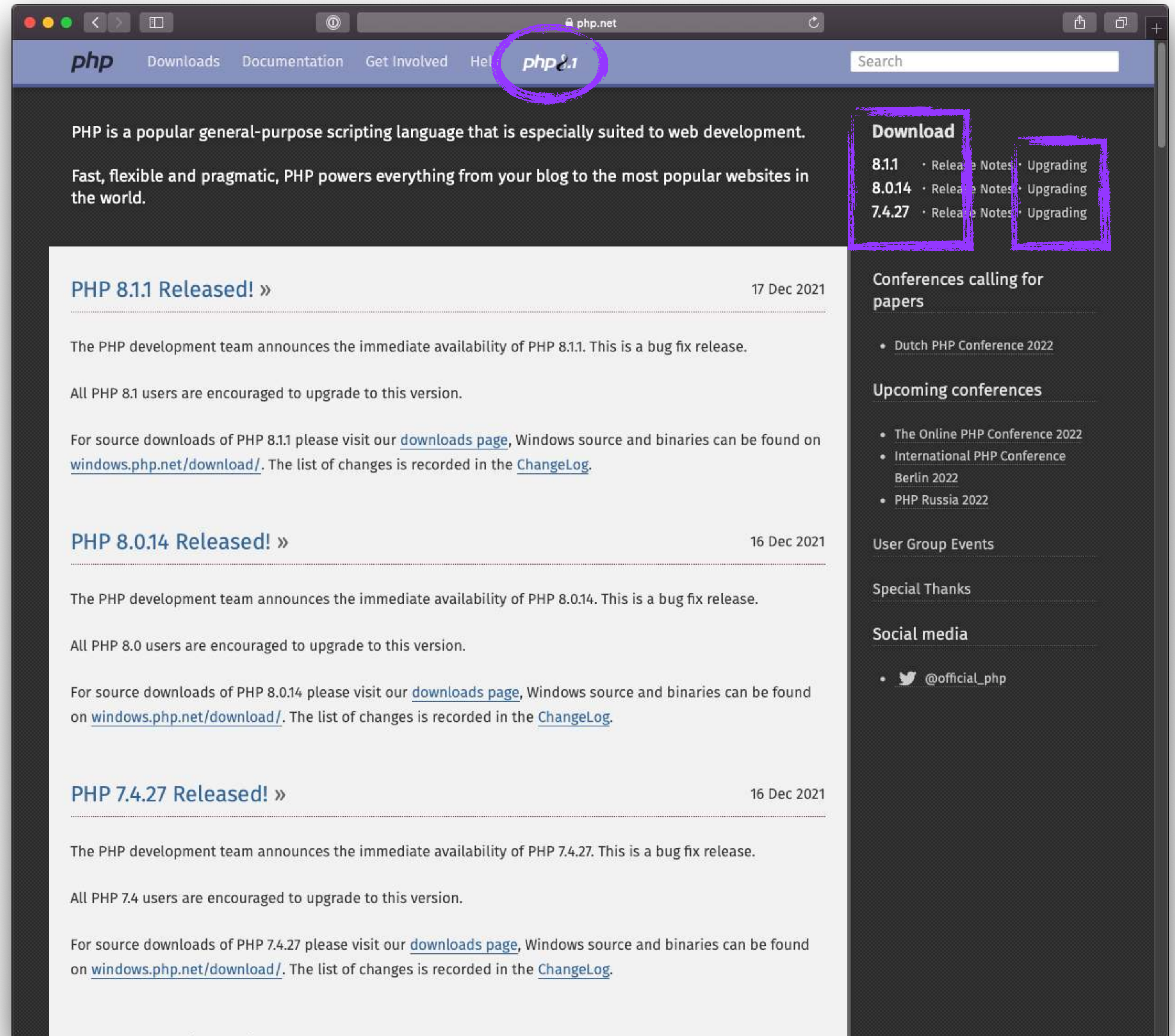


The screenshot shows the Docker Hub profile for the user 'phpstorm'. The profile includes a search bar, navigation links (Explore, Pricing, Sign In, Sign Up), and a list of repositories. The repositories listed are:

- phpstorm/php-apache**: 3.3K Downloads, 3 Stars. Updated 9 months ago. Container.
- phpstorm/php-71-apache-xdebug**: 100K+ Downloads, 16 Stars. Updated 9 months ago. Apache image with PHP 7.1 with XDebug for Web Debugging. Container.
- phpstorm/ftps**: 10K+ Downloads, 1 Star. Updated 9 months ago. FTPS docker image. Container.
- phpstorm/php-56-apache-xdebug-25**: 10K+ Downloads, 8 Stars. Updated 9 months ago. Apache image with PHP 5.6 with XDebug 2.5 for Web Debugging. Container.

# PHP 版本发布讯息

- 最新发布版本
- 最新语法特性
- 升级指南



# 官方升级指南

- 8.0.x → 8.1.x
- 5.x → 7.x → 8.x

Branch	Date	Last Release	Notes
7.3	6 Dec 2021 1 month ago	<a href="#">7.3.33</a>	<a href="#">A guide is available for migrating from PHP 7.3 to 7.4.</a>
7.2	30 Nov 2020 1 year, 1 month ago	<a href="#">7.2.34</a>	<a href="#">A guide is available for migrating from PHP 7.2 to 7.3.</a>
7.1	1 Dec 2019 2 years, 1 month ago	<a href="#">7.1.33</a>	<a href="#">A guide is available for migrating from PHP 7.1 to 7.2.</a>
7.0	10 Jan 2019 3 years ago	<a href="#">7.0.33</a>	<a href="#">A guide is available for migrating from PHP 7.0 to 7.1.</a>
5.6	31 Dec 2018 3 years ago	<a href="#">5.6.40</a>	<a href="#">A guide is available for migrating from PHP 5.6 to 7.0.</a>
5.5	21 Jul 2016 5 years, 5 months ago	<a href="#">5.5.38</a>	<a href="#">A guide is available for migrating from PHP 5.5 to 5.6.</a>
5.4	3 Sep 2015 6 years, 4 months ago	<a href="#">5.4.45</a>	<a href="#">A guide is available for migrating from PHP 5.4 to 5.5.</a>
5.3	14 Aug 2014 7 years, 4 months ago	<a href="#">5.3.29</a>	<a href="#">A guide is available for migrating from PHP 5.3 to 5.4.</a>
5.2	6 Jan 2011 11 years ago	<a href="#">5.2.17</a>	<a href="#">A guide is available for migrating from PHP 5.2 to 5.3.</a>
5.1	24 Aug 2006 15 years, 4 months ago	<a href="#">5.1.6</a>	<a href="#">A guide is available for migrating from PHP 5.1 to 5.2.</a>
5.0	5 Sep 2005 16 years, 4 months ago	<a href="#">5.0.5</a>	<a href="#">A guide is available for migrating from PHP 5.0 to 5.1.</a>
4.4	7 Aug 2008 13 years, 5 months ago	<a href="#">4.4.9</a>	<a href="#">A guide is available for migrating from PHP 4 to PHP 5.0.</a> The end of life for PHP 4.4 also marks the end of life for PHP 4 as a whole.
4.3	31 Mar 2005 16 years, 9 months ago	<a href="#">4.3.11</a>	
4.2	6 Sep 2002 19 years, 4 months ago	<a href="#">4.2.3</a>	
4.1	12 Mar 2002 19 years, 10 months ago	<a href="#">4.1.2</a>	
4.0	23 Jun 2001 20 years, 6 months ago	<a href="#">4.0.6</a>	
3.0	20 Oct 2000 21 years, 2 months ago	<a href="#">3.0.x (latest)</a>	

## Migrating from PHP 8.0.x to PHP 8.1.x

### Table of Contents

- [New Features](#)
- [New Classes and Interfaces](#)
- [New Functions](#)
- [New Global Constants](#)
- [Backward Incompatible Changes](#)
- [Deprecated Features](#)
- [Other Changes](#)

This new minor version brings with it a number of [new features](#) and a [few incompatibilities](#) that should be tested for before switching PHP versions in production environments.

See also the migration guides for PHP versions [7.1.x](#), [7.2.x](#), [7.3.x](#), [7.4.x](#), [8.0.x](#).

### User Contributed Notes

There are no user contributed notes for this page.

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# 用 PhpStorm 协助升级

—

- Refactoring + Quick Fix
- Code Inspection
- Code Sniffer

# 使用开源工具

```
# composer.json 设置
"require-dev": {
    "phpcompatibility/php-compatibility": "*"
},
"scripts": {
    "post-install-cmd": "...",
    "post-update-cmd" : "...",
}
```

```
# 运行命令
$ ./vendor/bin/phpcs . \
  --standard=PHPCompatibility \
  --runtime-set testVersion 8.1
```

The screenshot shows the GitHub repository page for PHPCompatibility / PHPCompatibility. The repository is public and has 155 forks and 1.7k stars. The main branch is 'develop'. The repository contains 10 branches and 31 tags. The repository description is 'PHP Compatibility check for PHP\_CodeSniffer'. The repository has 68 issues, 8 pull requests, and 2,594 commits. The repository is licensed under LGPL-3.0 License. The repository has 1.7k stars, 52 watching, and 155 forks. The repository has 31 releases, with the latest release being PHPCompatibility 9.3.5 on Dec 27, 2019. The repository has 41 contributors. The repository has a README.md file. The repository has a composer.json file. The repository has a phpcs.xml.dist file. The repository has a phpunit-bootstrap.php file. The repository has a phpunit.xml.dist file. The repository has a CHANGELOG.md file. The repository has a LICENSE file. The repository has a README.md file. The repository has a composer.json file. The repository has a phpcs.xml.dist file. The repository has a phpunit-bootstrap.php file. The repository has a phpunit.xml.dist file. The repository has a CHANGELOG.md file. The repository has a LICENSE file. The repository has a README.md file.

File	Commit Message	Time Ago
.github	GH Actions: always use --no-interaction for Composer	18 days ago
PHPCompatibility	Merge pull request #1279 from PHPCompatibility/php-8.0/new-ne...	8 months ago
bin	CS: fix short array in test generation script	17 months ago
.coveralls.yml	CI: switch to GitHub Actions - step 3: test and coverage stage	13 months ago
.gitattributes	CI: switch to GitHub Actions - step 3: test and coverage stage	13 months ago
.gitignore	PHPCS: enable caching	17 months ago
.scrutinizer.yml	Update QA/CI/Dev related files for the changed repo structure	3 years ago
CHANGELOG.md	Changelog for PHPCompatibility 9.3.5	2 years ago
LICENSE	Add license file to the repo	5 years ago
PHPCSAliases.php	Clean up: remove now redundant documentation	17 months ago
README.md	Adding Moodle's codechecker to extending projects	11 months ago
composer.json	Composer: use PHPCSDevCS v 1.1.3	18 days ago
phpcs.xml.dist	PHPCS: enable caching	17 months ago
phpunit-bootstrap.php	Tests: Xdebug 3 compatibility fix	14 months ago
phpunit.xml.dist	PHPUnit: update configuration	4 months ago

**PHP Compatibility Coding Standard for PHP CodeSniffer**

stable 9.3.5 unstable dev-develop awesome? yes! license LGPL-3.0-or-later Donate

# 更多 PHP 8.1 特性介绍

## WHAT'S NEW IN PHP 8.1



The screenshot shows the PHP 8.1 release announcement page. The page features a dark blue header with the PHP logo and navigation links. The main content area has a dark blue background with the text "php 8.1 Released!" in large white font. Below this, a paragraph describes the update, and a white button with the text "Upgrade to PHP 8.1 now!" is centered. The bottom section, titled "Enumerations", compares the old class-based status constants with the new enum syntax.

php Downloads Documentation Get Involved Help php 8.1 Search

Change language: English

# php 8.1

## Released!

PHP 8.1 is a major update of the PHP language. It contains many new features, including enums, readonly properties, first-class callable syntax, fibers, intersection types, performance improvements and more.

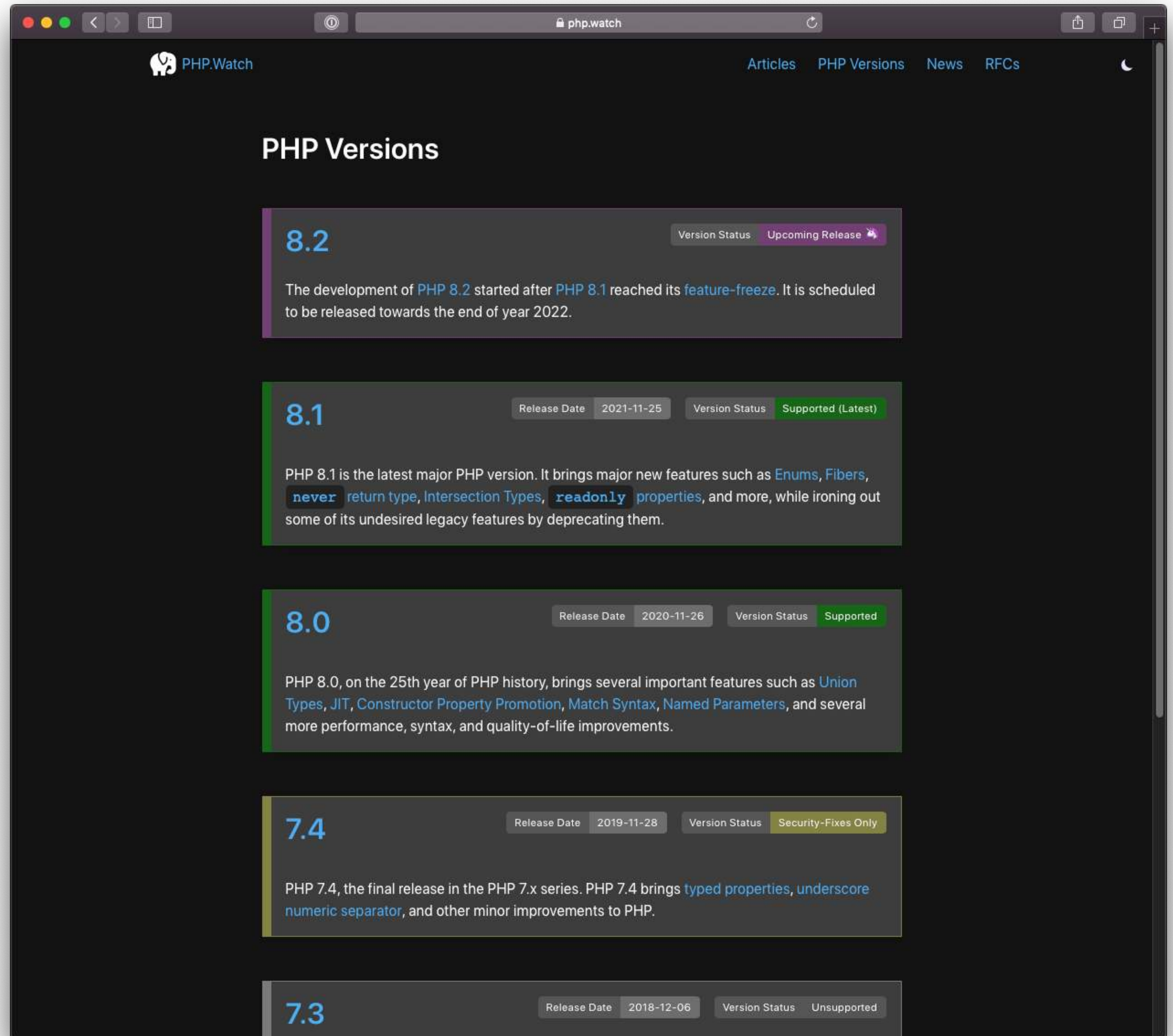
[Upgrade to PHP 8.1 now!](#)

### Enumerations [RFC](#) [Doc](#)

```
PHP < 8.1
class Status
{
    const DRAFT = 'draft';
    const PUBLISHED = 'published';
    const ARCHIVED = 'archived';
}

PHP 8.1
enum Status
{
    case Draft;
    case Published;
    case Archived;
}
```

# 社区版升级指南



The screenshot shows the PHP Watch website with the following content:

- PHP Versions**
- 8.2** (Upcoming Release): The development of PHP 8.2 started after PHP 8.1 reached its feature-freeze. It is scheduled to be released towards the end of year 2022.
- 8.1** (Supported (Latest), Release Date: 2021-11-25): PHP 8.1 is the latest major PHP version. It brings major new features such as Enums, Fibers, never return type, Intersection Types, readonly properties, and more, while ironing out some of its undesired legacy features by deprecating them.
- 8.0** (Supported, Release Date: 2020-11-26): PHP 8.0, on the 25th year of PHP history, brings several important features such as Union Types, JIT, Constructor Property Promotion, Match Syntax, Named Parameters, and several more performance, syntax, and quality-of-life improvements.
- 7.4** (Security-Fixes Only, Release Date: 2019-11-28): PHP 7.4, the final release in the PHP 7.x series. PHP 7.4 brings typed properties, underscore numeric separator, and other minor improvements to PHP.
- 7.3** (Unsupported, Release Date: 2018-12-06)

# PhpStorm 2021.3 新特性视频

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# Qodana

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A code quality monitoring platform that allows you to evaluate the integrity of code. It brings into your CI/CD pipelines all the smart features you love in the JetBrains IDEs as well as project-level checks like clone detection and license audit.

<https://www.jetbrains.com/qodana/>

# Qodana 提供的 Linters

---

- JVM (Java, Kotlin)
- PHP (EAP)
- Python (EAP)
- JavaScript (EAP)
  
- Clone Finder (Experimental)
- License Audit (Experimental)

## 本地使用 (Docker)

# 下载 Docker Image

```
$ docker pull jetbrains/qodana-php
```

# 设置 PHP language level

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<project version="4">
```

```
  <component name="PhpProjectSharedConfiguration"
    php_language_level="<desired level>" />
```

```
</project>
```

# 执行检查并显示报告

```
$ docker run --rm -it -v <source>/:/data/project/ \
  -p 8080:8080 jetbrains/qodana-php --show-report
```

# 集成 CI 服务器

```
# qodana.yaml 设置
script:
  name: php-migration
parameters:
  fromLevel: 7.0
  toLevel: 8.1
```

Build / #1 at 13 Jan 17:39 — Te x +

kungfupanda.teamcity.com/buildConfiguration/PhpUpgradeGuide\_Build/401?buildTab=Qodana&genericFilters...

TC Projects + Changes Agents Queue 0 39,960 Administration ? SH

Jump to...

FAVORITES

- ★ Projects
- ★ Builds

PROJECTS

- > Kotlin Library For Teamcity
- > Kotlin Library Sample
- > Kotlin Toolbox
- > Laravel App For Teamcity
- > Laravel Teamcity
- PHP Upgrade Guide
  - Build
  - > Shopping Cart
  - > ShoppingWhale
  - > Teamcity Gradle
  - > Teamcity Kotlin Dsl

PHP Upgrade Guide / Build

#1 at 13 Jan 17:39 ★

Problems reported: 7; tools: Code Inspection

master Actions Details

Overview Changes Build Log Artifacts Parameters PerfMon Qodana

ACTUAL PROBLEMS 7 TECHNICAL DEBT 0 CHECKS 109 In 15 categories

Non-installed Composer packages  
Composer Moderate  
Class hierarchy...  
General  
Critical  
Property usages have same access  
High  
Code smell  
Deprecated 'Ser...  
General

7  
Tool: Code Inspection  
Zoom Out

Files and folders: All  
Tool: Code Inspection  
Severity: All  
Category: All  
Type: All

Save as...

Problems 7 Files 3 Search Group by: File Move to Technical debt

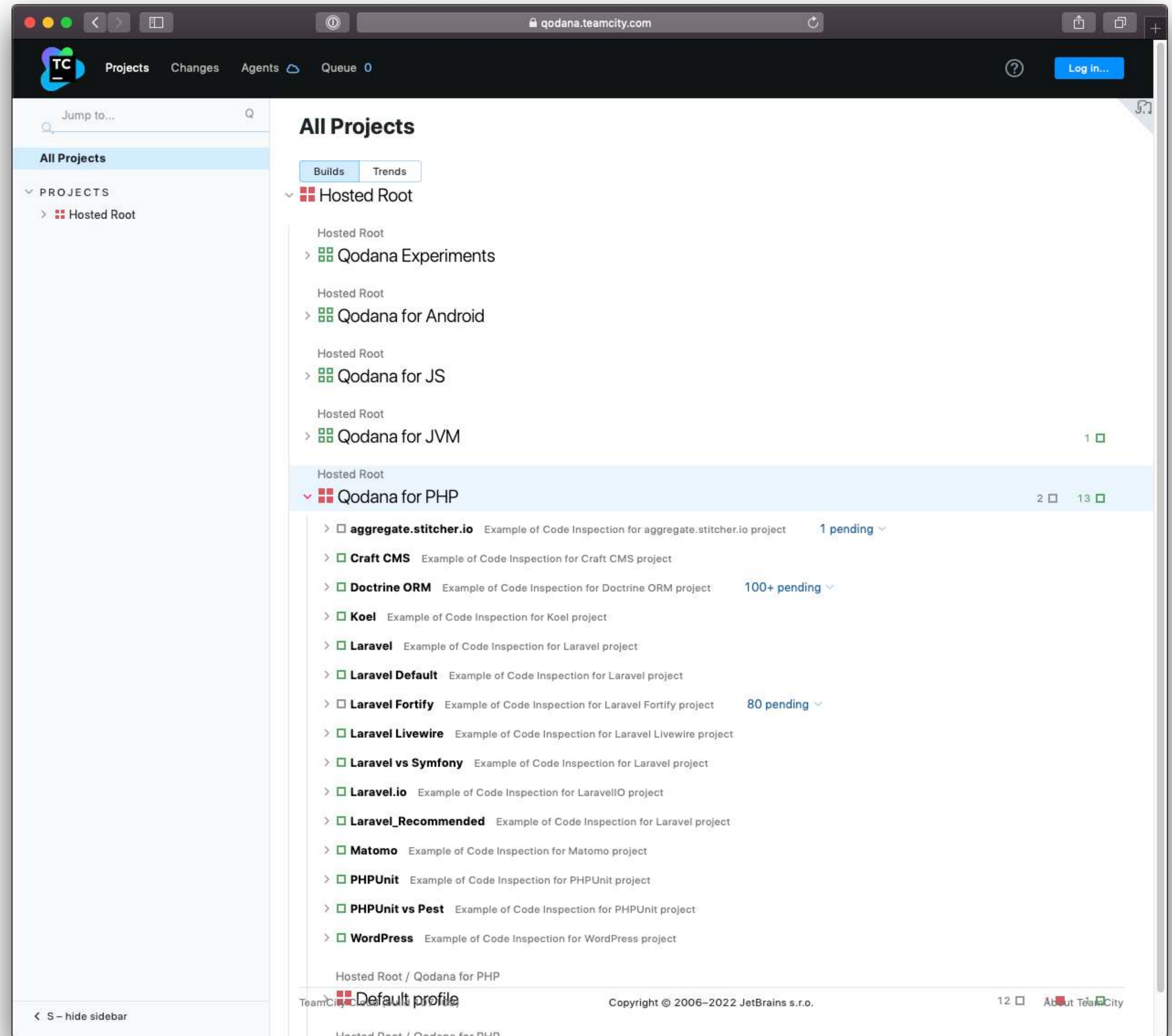
Problems	Category	Type
<b>deprecated-serializable.php</b>		
✖ Class must be declared abstract or implement methods 'serialize', 'uns...	General	Class hierarchy checks
ⓘ Implementing 'Serializable' interface without '__serialize()'/'__unserializ...	General	Deprecated 'Serializa...
<b>Fruit.php</b>		

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< S – hide sidebar

# Qodana Playground

Qodana 团队演示扫描各开源项目



# 回顧

—

- PHP 版本时间表及升级指南
- 用 PhpStorm 协助升级
  - Refactoring & Quick Fix
  - Code Inspection
  - 开源工具
- 用 Qodana 维护代码质量

Q&A

—

# PHP 升级指南



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