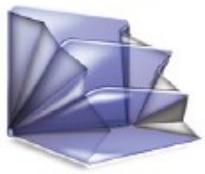
PHP for enterprise /business



White Paper

php.IE

BLACKNIGHT SOLUTIONS

> Why this whitepaper?

Commercial software publishers have strong marketing teams. They can advertise and inform – objectively or not – their current and potential customers, as well as media outlets.

Conversely, Open Source tools such as PHP often do not have the necessary resources to explain their advantages to interested parties.

The Irish PHP Users' Group, the PHP Group, and some .NET and J2EE experts have collaborated to produce this whitepaper to educate companies and the journalists on the quality of PHP.

Editors: Stéphane Lambert, Ken Guest, David Coallier

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> 1. PHP: Identity

PHP (PHP: Hypertext Preprocessor) is both a programming language (like J2EE and .NET) and a global platform language.

As a language, PHP has two syntaxes:

20,917,850
As of April 2007, PHP was used on 20,917,850 domain names, on 1,224,183 IP addresses

The first is a mix of C, Shell and PERL. This simple writing style is particularly well suited to the presentation layer.

The second is similar to Java, and is object oriented. This syntax is suited to business services development and complex architectures.

4,500,000
This is the estimated size of the community of PHP developers

With PHP, it is possible to develop:
. Dynamic Web applications (websites, intranets, extranets, etc.)
. Rich clients (PHP-XUL)
. Client-server applications (PHP-GTK and PHP4Delphi)
. Web services (SOAP, XML-RPC, REST)
. Command line scripts
. Background tasks (disk quota management, HTTP server, etc.)

4.8 billion
The PHP development market represents 4.8 billion Euros

PHP is developed and maintained by nearly 1,000 engineers centralised in the PHP Development Team. The user community has approximately 4,500,000 users.

Security
The PHP platform has had no security alerts in several years and is today's most reliable platform for Internet solutions

PHP is free software, distributed under a non-viral Open Source licence, protecting companies and their users by not forcing them to publish their code.

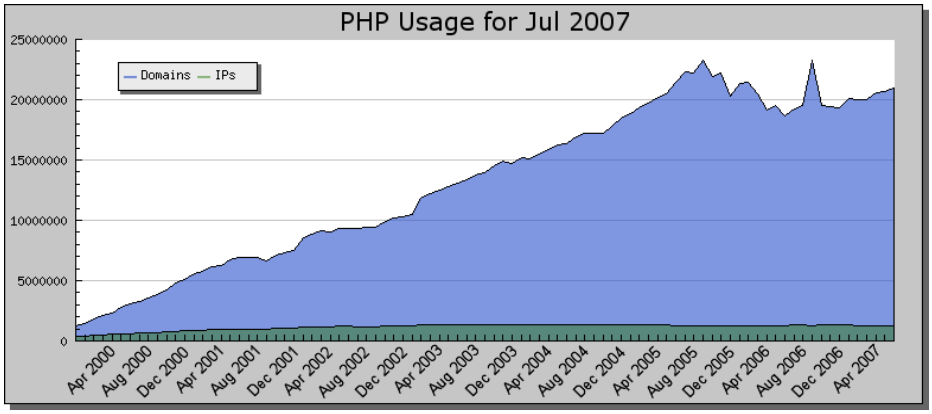
PHP is available for at least the following operating systems: Windows (Windows 2000 and up), Linux and Unix (most versions), IBM iSeries (AS/400), SGI IRIX 6.5.x, RISC OS, Netware Novell, Mac OS X, and AmigaOS.

To learn more:
www.php.net
www.php.ie

>2. PHP: Key statistics

45%
Almost half of Apache servers are deployed with PHP

1 out of 3 websites



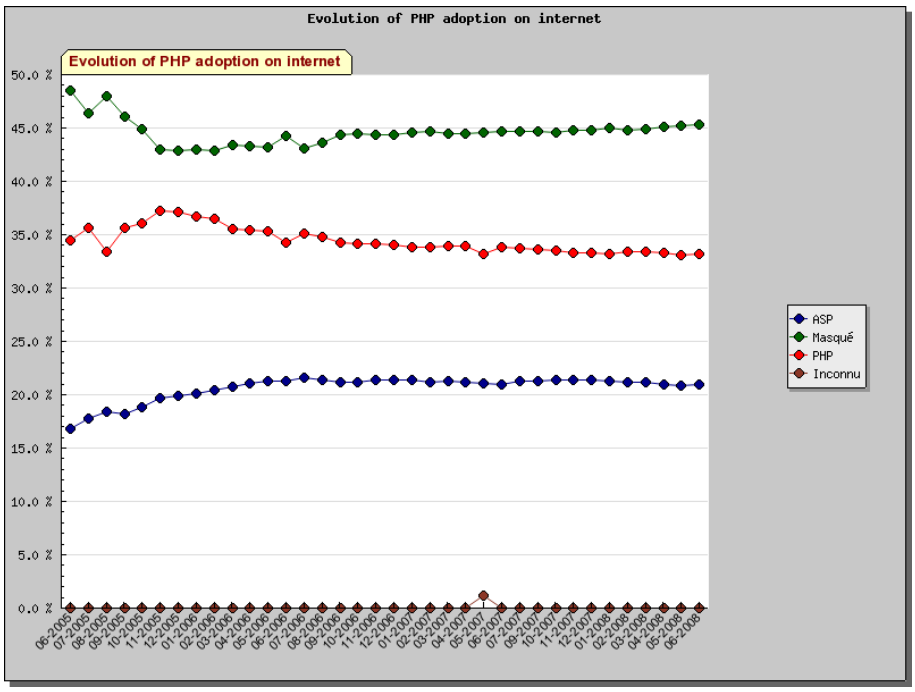
PHP is used on more than one out of every three websites. This represents more than 20 million domain names and 1.3 million IP addresses (Source: Netcraft - November 2006). Almost half of Apache Servers (40% as of January 1, 2007) run PHP. Apache is used by more than two thirds of all websites (69% as of September 1, 2005).

Source : Netcraft – 1 April 2007

150,000
The number of simultaneous users supported by one of the biggest PHP platforms in the world (220 clustered servers - Yahoo)

PHP runs 35% of the Internet
The survey involves 20 million domain names.

35%
More than a third of websites are made with PHP



Source : NeXen - July 2008

To learn more:
www.php.net
www.php.ie

> 3. PHP for your company

Simplicity:
PHP is a language and a very simple development model. The original purpose of PHP was to make it possible to quickly develop data processing Web applications without any preliminary training. This was so successful that all the major hosting companies offer PHP.

"PHP is now inside our strategy; we just doubled our productivity with it."
David Coallier
PHP Group Member

Adaptability:
PHP uses two syntaxes: one is procedural, the other is object oriented. Each of these syntaxes makes it possible to implement the same functionalities but target a different audience. The procedural syntax is used commonly by webmasters and data processing specialists who work on an application's user interface. The second syntax, Object Oriented Programming, is purposely similar to Java and C#, in order to reduce training costs and to encourage the migration to PHP. A Java or C# developer will be able to learn PHP 5 with little training, as the key concepts and syntax are identical.

"The many available frameworks for PHP make this technology even more efficient for RAD."
Ken Guest
PHP Expert

Interoperability:
PHP can instantiate COM, .NET and Java objects. PHP has middleware and drivers for all of the main relational databases, as well as for LDAP, XML, Web services, Lotus Notes, SAP, and more. PHP does not exist to replace these technologies, but to facilitate interoperability between them. This offers companies a single platform with which to incorporate and generate presentations of data obtained from these diverse technonogies.

To learn more:
www.php.net
www.php.ie

Portability:
PHP is available on all of the major operating systems. The technical approach of PHP is identical to a Java Virtual Machine (JVM). You just have to deploy PHP on a station client or server, and the application will work immediately, without recompiling, no matter which operating system is used.

"PHP is just the best choice: fast and reliable, with strong results. The Linux Apache PHP platform is just the strongest and the most secure in the world."
Stéphane Lambert
Vediovis
Productions

Durability:
The durability of an IT technology depends primarily on its number of users. PHP is used by more than 4,500,000 developers throughout the world. More than 20 million websites use this technology. Moreover, the Open Source code and the membership of this Open Source community in the Apache foundation ensure the durability of PHP.

Performance and loading:
If 80% of the busiest websites use PHP, it is primarily for its performance and stability. The Linux/Apache/PHP combination is very strong. You do not have to reboot your servers twice a day.

Investment return:
The above-mentioned points result in a very fast return on investment. Among other things, this is due to: the absence of any licence costs; only a small need for specific training; the most competitive, capable hosting market; widespread competence among software firms; and much more.

To learn more:
www.php.net
www.php.ie

> 4. Technical architecture

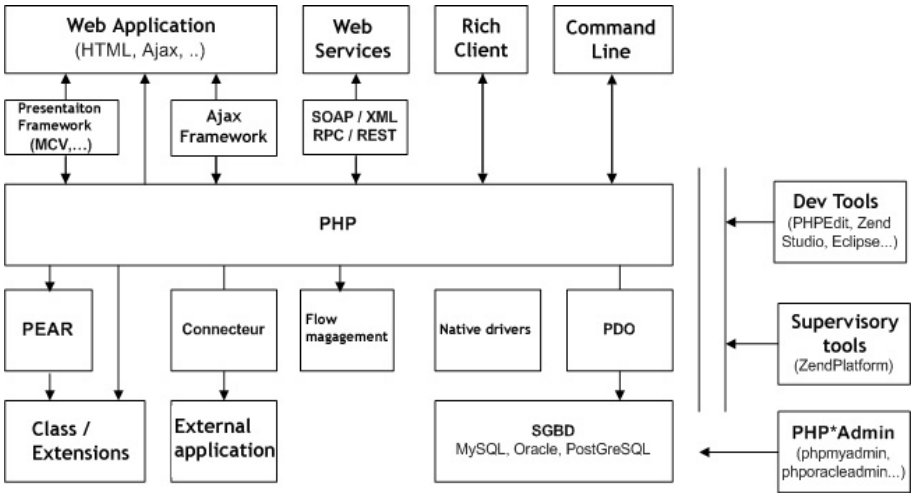
Most of the time, PHP is used with:

- A web server: Apache or Microsoft IIS
- An RDBMS (database): MySQL, PostgreSQL, Oracle or SQL Server

The majority of production platforms use Linux, Apache, MySQL and PHP (the "LAMP" platform).

Thanks to the support and many connectors for Java, COM and .NET, PHP is able to connect to most existing projects of any company. Then, the platform can use the following interfaces:

- Web (HTML, WML, etc.)
- Web services using SOAP
- Rich clients, client/server (PHP/GTK, PHP/XUL, etc.)
- Command line (CLI)
- Office documents (Open Documents, Open XML), PDF, Flash, etc.)



To learn more:
www.php.net
www.php.ie

Internal mechanism:
The PHP 5 internal core is the Zend Engine 2. PHP is made with a modular architecture - the ZE 2 (PHP virtual machine) uses the same concepts as Java and .NET. A pre-compiler compiles the source code and sends it to the runtime for execution.

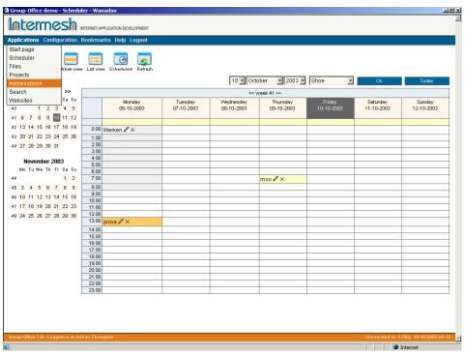
This architecture allows engineers to add optimisation tools for execution (opcode cache). They can cut a script's execution time by 66%. As well, PHP offers an API to extend its functionalities with additional modules. These modules enable you to connect to a database or to LDAP, to execute COM or Java components, to talk to Web Services using SOAP, and so on. PHP can also be extended and automatically updated via PEAR and PECL.

PEAR
PEAR offers more than 300 additional components, which are easy to install and to update with a single command line

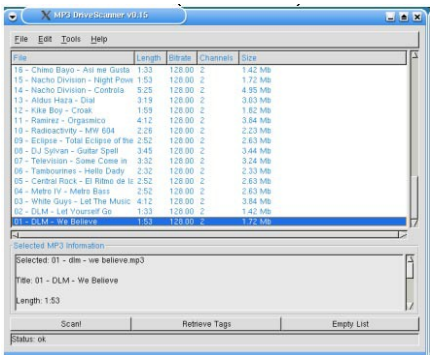
Whatever the interface used (web, client/server, Web service), execution always follows the same process. First, the PHP “script” is interpreted by the Zend engine. It is at this point that PHP would, for example, connect to a database. Next, the contextual flow (HTML, SOAP, etc.) is transmitted to the web server or GTK-server to send it to the final client.

Requests x 3
With an accelerator, your project can accept 3 times the number of concurrent requests with the same hardware

Examples of Web and client/server interfaces



Web (HTML)



Client/Server (PHP-GTK)

To learn more:
www.php.net
www.php.ie

> 5. A platform that solves integration issues

Many technical connectors

According to the consulting firm IDC, nearly 40% of development costs are due to the integration of existing applications or data sources. To reduce these costs, PHP can directly connect to most databases (Oracle, SQL Server, MySQL, dBase, ODBC, XML, etc.), directories (LDAP, etc.), online payment systems (Verisign, Cybercash, Realex, etc.) and protocols (SMTP, IMAP, FTP, HTTP, TCP, SSH, etc.).

"Our company uses SAP with PHP. We developed two distinct applications and they completed the first part we had with SAP. We use them for our 2000 employees. We use the SAPRFC extension module."

Arnaud Lahaye
Fm Logistic
IT Team Leader

XML Example with SimpleXML: RSS reading

```
<?php
header('Content-Type: text/html; charset=UTF-8' );
$rssFile = 'http://www.php.ie/backend.php';
$root = simplexml_load_file($rssFile);
foreach($root->channel->item as $news)
{
    echo (string) $news->title, '<br />';
}
?>
```

PHP can interface with SAP, Lotus Notes, and almost every enterprise software.

SAP example: connect and read

```
<?php
$login = array('ASHOST' =>'garfield',
                        'SYSNR' => '30',
                        'CLIENT' => '900',
                        'USER' => 'rfctest',
                        'PASSWD' => '*****',
                        'CODEPAGE'=> '1404');
$system = saprfc_export($fce,'SYSTEM');
$trdir = saprfc_export($fce,'TRDIR');
$rows = saprfc_table_rows($fce,'QTAB');
echo '<PRE>';
for ($i=1; $i<=$rows; $i++) `
{
   $QTAB = saprfc_table_read($fce,'QTAB',$i);
   echo $QTAB[LINE]."\n";
}
echo '</PRE>';
saprfc_function_free($fce);
saprfc_close($rfc);
?>
```

To learn more:
www.php.net
www.php.ie

PDF and Flash
The FPDF class makes complex PDF documents with just a few code lines.
The Ming extension, delivered with PHP creates complex Flash animations on the fly.

Word and Excel
Thanks to its COM interface, PHP can create any type of office document. Of course, the client needs to have the reader installed.

PHP4Delphi
This framework enables you to add existing Delphi components as PHP extensions. Or, you can add PHP scripts to Delphi software.

To learn more:
www.php.net
www.php.ie

Communicating via COM, .NET, Java and Web services

PHP is the champion of low level integration: the platform can instantiate COM objects, Java (classes) and .NET. PHP 5 with SOAP has a high level layer to read or create Web services. SOAP enables you to show a PHP class with a few code lines; accepts dynamic SOAP proxy generation with WSDL contracts; and enables inversely dynamic WSDL contract generation from a PHP class.

Example COM: Word .doc creation on the fly

```
<?php
echo header('Content-Type: application/msword');
$word = new COM('word.application');
$word->Visible = 1;
$word->Documents->Add();
$word->Selection->TypeText('This is a test...');
$word->Documents[1]->SaveAs('test.doc');
$word->Quit();
$word->Release();
?>
```

Example Java: playing with an AWT class

```
<?php
$frame = new Java('java.awt.Frame', 'PHP');
$button = new Java('java.awt.Button', 'Hello Java');
$frame->add('North', $button);
$frame->validate();
$frame->pack();
$frame->visible = True;
$thread = new Java('java.lang.Thread');
$thread->sleep(10000);
$frame->dispose();
?>
```

Example SOAP: using a Web Service (weather) and displaying the result

```
<?php
$wsdl = new SoapClient('http://url/meteo.php?wsdl');
$dubinWeather = $wsdl->GetWeather('Dublin');
echo $ dubinWeather ->temperature;
?>
```

> 6. PHP, J2EE and .NET: Concurrent usage

PHP can be used similarly to Java/J2EE and C#/.NET. However, it can also be used alongside these different platforms if needed.

Thanks to its ability to work well with COM and Java, PHP is increasingly becoming the standard to manage the graphical layer for applications that use multiple programming languages. For example, Lufthansa uses PHP to display the visual front-end, and J2EE for the business layer.

MVC
With PHP, you can implement design patterns like MVC (Model, View, Controller), Decorator, Observer, and more

Enterprises can therefore re-use their existing components instead of re-developing them when migrating from one technology to another.

Example: using a Java component (email validation)

```
<?php
$ev = new Java('com.cfdev.mail.verify.EmailCheck');
if ( $ev->validateEmailAddress('fake@yahoo.com'))
{
   print 'valid email address';
}
 else
{
   print 'invalid email address';
}
?>
```

SOAP
With SOAP, COM and Java, PHP enables you to deploy service-oriented architectures. PHP is not limited to pure Web architectures.

.NET communication in progress
PHP supports the instantiation of COM components. The (still experimental) class dotnet_load() enables you to instantiate a Microsoft .NET assembly from PHP. Some compilers from PHP to MSIL (.NET intermediate code) are in development (PHP Sharp). There is also an implementation for the Open Source .NET platform Mono.

To learn more:
www.php.net
www.php.ie

Java developers integrate PHP in their platforms

The JSR 223 working group (for calling Java objects from other languages) is led by Zend Technologies. At the latest JavaOne 2003, Zend Technologies was the only "non-Java" company to have a spot in the conference schedule.

IBM offers several resources for PHP, such as: “Bringing PHP to Your IBM iSeries Server” (red book), and “Developing PHP Application for IBM Data Servers”.

A guidance note available on the Oracle Technology Network says that Oracle will include PHP in the Oracle Application Server. The publisher also released a set of resources about Open Source. 80% of this content is related to PHP and about the interactions between PHP and Oracle technologies.

PHP is available for Netware 6.x platforms. During the last annual meeting, Brainshare, Novell focused on PHP. The keynote was about the groupware software PHProjekt.

To learn more:
www.php.net
www.php.ie

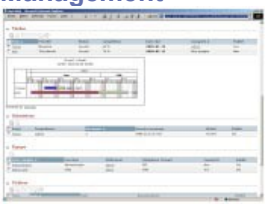
> 7. PHP ecosystem

After more than 10 years, PHP has developed a strong ecosystem. Some tools make development easier and faster, while others are about deployment and administration.

Groupware

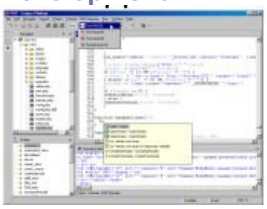
The Open Source community has produced business applications for years. These applications help groupware enterprises meet their needs. For example, eGroupware (enterprise groupware) or SPIP (content management) are used by many governments, public organisations and international companies.

Management



Some software components that are easy to integrate can help a lot of projects to go faster and further. These components are more and more object-oriented, such as phpBB (for forums), and SquirrelMail and IMP (for webmail).

Development



More and more professional tools are available for all sizes of companies: Dolibarr, Study, PHP Surveyor, GeStock, SugarCRM, etc.

Administration

Here is a short list of examples:

Development
Dreamweaver, Eclipse, PHPEdit, Zend Studio

Optimisation
APC, eAccelerator, Smarty, JpCache

Administration
phpMyAdmin, phpOracleAdmin, phpSybaseAdmin

Content management
Spip, eZ Publish, Joomla, Typo 3

Framework
PEAR, Symphony, CakePHP, Prado, Seagull, Zend Framework, eZ Components

ERP, webshops
Dolibarr (ERP), GeStock (stock management), osCommerce (online shop), SugarCRM (CRM)

PHP has more than 2,500 classes and extensions and more than 500 business applications for ERP, accounting, sales management, CMS, CRM, and more.

With over 230 developers and over 300 packages, PEAR has been the components framework of choice for many years. With over 200M downloads a month, the PEAR installer has proven to be fast and reliable and has been the choice of installer for many frameworks out there (ezc, ZF, Symfony, etc).

To learn more:
www.php.net
www.php.ie

As the PHP platform currently dominates the Internet, it is very important to have access to a large number of resources, companies and developers.

Most competent web agencies can offer PHP solutions to their customers.

There are more than 4,500,000 PHP developers, and they keep current with best practices.

4.8 billion
The PHP development market represents 4.8 billion Euros

Zend PHP 5 Certification (through PearsonVue testing centres) can certify that a PHP engineer is fully trained, experienced, and uses best practices: http://www.zend.com/en/services/certification/

In Ireland, the Irish PHP Users' Group can help you to find information about PHP. It also provides reliable resources to help with your PHP projects.

PHP itself has had very few security warning for years. Used with Linux and Apache, the resulting platform is the most secure Internet front-end technology. As the source code is available and continuously being improved by community, this is also the best technology to protect important and private data.

4,500,000
This is the estimated size of the community of PHP developers

Be PHP active with PHP.ie,

Join the Irish PHP Users' Group

To learn more:
www.php.net
www.php.ie

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> 8. What companies think

Yahoo

Yahoo is the first website in the world with more than 1.5 billion page views per day. They use PHP and they hired Rasmus Lerdorf, the creator of PHP.

High-volume websites

Many high-volume websites are PHP-based, such as AlltheWeb.com (a search engine), which has more than 30 million SQL queries per day.

Industrials, Automobile, Governments, Televisions, Newspapers, Banks, Public Services, etc.
PHP is used in every economic sector

Testimonials:

PHP developers usually love the language. Engineers and project managers like to say good things about PHP when they use it for their infrastructure.

Facebook, Daft.ie, etc.
Successful companies use PHP

We handle, on average, just over 2.5 million page impressions every day. PHP handles things just fine, but we are using an opcode cache to help it. Until recently we were using mmcache, but the shift to PHP5 meant that we moved to eAccelerator for opcode caching.
Charles Von Metzradt
Software Engineer
www.daft.ie

3,000,000
Daft.ie's PHP platform can easily generate more than 3 million dynamic pages per day. Daft.ie is Ireland's biggest property website.

We've used PHP since the company began 8 years ago. Our most successful project is a content management system used by 200+ clients. It's scalable, adaptable to changing client requirements, and because it's written in PHP, installation and development are both painless and fun!
Kae Verens
Lead Developer
webworks.ie

More than 1.5 billion
Yahoo's PHP platform is the first PHP website with more than 1.5 billion page views per day

Open Solutions has used PHP for all web application projects for over five years. One of the largest deployments has been a customer portal for the imagine Group supporting their entire customer base of over 100,000 (https://my.imagine.ie/). We use PHP because it allows us to build scalable, robust and secure applications quickly and efficiently.
Barry O'Donovan
Managing Director
Open Source Solutions Ltd
www.opensolutions.ie

To learn more:
www.php.net
www.php.ie

> Sources:

AFUP (French PHP User Group)

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> Greetings

The Irish PHP Users' Group thanks the French PHP Users' Group AFUP for their help and the work in making the French version of this document. Cheers to Blacknight Solutions for sponsoring us. Thanks also to Derick Rethans and colleagues for proofreading and validation.

Don’t be blind:

PHP is often the best solution to your projects

USE THE BEST PLATFORM: USE PHP

php .IE

PHP Ireland

Irish PHP Users' Group

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