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Setting Up Web Application Frameworks with xAMP

<http://upstateconsultants.com/uc/docs>

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"xAMP"?

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- *x* = Any Operating System
 - Windows, Linux, "UNIX-like" (AIX, Solaris, *BSD, ...)
 - Popular incarnations: LAMP, WAMP
- *A* = Apache (*Web Server*)
- *M* = MySQL (*Database*)
- *P* = PHP (*Programming Language*)

Apache → The Web Server

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- Most popular and most stable web server
- Encryption (SSL) built in → crucial for e-biz
- One (text) file for basic configuration: *httpd.conf*
 - Only minor modifications
 - Set web server name (*ServerName acme.com*)
 - Enable PHP (e.g., recognize *index.php* as index file)
 - Multiple domains hosted on same machine
 - Reference to site certificate (enables encryption)

Get Apache

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- Downloads and documentation

<http://httpd.apache.org>

- Windows

- Self-executing installer

- Linux

- Pre-loaded on virtually all distributions

- Other platforms (*27, incl. AIX, Solaris, Mac OS X, ...*)

- Binaries and source

PHP → The Programming Language

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- Modern, high-level programming language
- Tailor-made for the web
 - Built-in
 - Session management
 - Database access
 - Mix and match HTML and PHP code

- Embed **PHP** into HTML...

```
<?php require "timeFunctions.php" ?>
<html>
  <h1>Hello <?php echo $name ?>,</h1>
  Good <?php getDaytime(time()); ?>
</html>
```

- Or the other way around...

```
<?php  
require "timeFunctions.php"  
$dayTime = getDayTime(time());  
echo <<<EOT  
<html>  
  <h1>Hello $name,</h1>  
  Good $dayTime!  
</html>  
EOT; ?>
```

- "Perl light"
 - No type safety (e.g., *function print(\$value)*)
 - Rapid development ("quick and dirty")
 - Powerful regular expressions engine
 - $^{[0-9a-z]}([-_.]?[0-9a-z])^*@[0-9a-z]([-.]?[0-9a-z])^*\.[a-z]{2,3}$$
 - Some OO functionality
 - Manageable and reusable code for large projects

- "Java light"
 - Similar syntax, except *`$foo`* for variables and *`$this->foo`* for object members
 - Some OO functionality
 - No type safety → no method overloading
 - No namespaces
 - Code and API docs free and from one source

Get PHP

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- Downloads and documentation

<http://www.php.net>

- Windows

- Self-executing installer or zip archive

- Linux

- Pre-loaded on virtually all distributions

- Other platforms (*UNIX, Mac OS X, OS/2, ...*)

- Complete source (*plus binaries from external servers*)

MySQL → The Database

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- Most popular open-source database
- Pros:
 - Fast, reliable, available from most web hosters
 - Sufficient for most small to mid-size applications
- Cons:
 - Limited support for transactions, distributed use
 - Doesn't offer all functionality of, say, Oracle

- Downloads and documentation

<http://www.mysql.com>

- Windows

- Zip archive of installation files

- Linux

- Pre-loaded on virtually all distributions

- Other platforms (**BSD, Solaris, OS/2, ...*)

- Binaries and source

What's missing?

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- For e-biz
 - SSL certificate for encryption
 - Buy from VeriSign, Thawte, etc.
 - Use self-signed cert. (*free but less secure*)
 - Credit card transactions
 - Merchant account with PSP
 - Transaction transparent to user, usu. via "hidden" HTTPS call
 - PayPal etc.
 - Not transparent, less professional, low or no setup fee

Summary

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- Apache + PHP + MySQL
 - Setup
 - Ubiquitous availability
 - Largely automated installation
 - Some post-install configuration
 - Well-suited for many small to mid-size applications
 - OSS Alternatives (*slightly more complex, better scalable*)
 - EJB, PostgreSQL, Firebird