

CNT 4714: Enterprise Computing Fall 2012

Installing and Configuring Apache and PHP

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Introduction to PHP

- PHP is officially known as PHP: Hypertext Preprocessor and is very rapidly becoming the most popular server-side scripting language for creating dynamic web pages.
- PHP was created in 1994 by Rasmus Lerdorf (who currently works for Linuxcare, Inc. as a senior open-source researcher) to track users at his Web site. Lerdorf originally called it Personal Home Page Tools in a package he released in 1995. It eventually became an Apache Software Foundation project.
- PHP2 featured built-in database support and form handling. In 1997, PHP3 was released and featured a new parser which substantially increased performance and led to an explosion in PHP use.



Introduction to PHP (cont.)

- PHP4 featured the Zend Engine and was considerably faster and more powerful than its predecessors and further enhanced the popularity of PHP.
- The current release is PHP 5.4.8, released October 18, 2012 and features the Zend Engine 2, which provides further increases in speed and functionality. You can download the latest version of PHP at www.php.net. For more details on the Zend Engine 2 see www.zend.com.
- Today more than 20 million domains utilize PHP technology.



Introduction to PHP (cont.)

- The power of the Web resides not only in serving content to users, but also in responding to requests from users and generating Web pages with dynamic content.
- Interactivity between the user and the server has become a crucial part of Web functionality. While other languages can also perform these functions, PHP was written specifically for interacting with the Web.
- PHP code is embedded directly into XHTML documents. This allows the document author to write XHTML in a clear, concise manner, without having to use multiple `print` statements, as is necessary with other CGI-based languages.



Introduction to PHP (cont.)

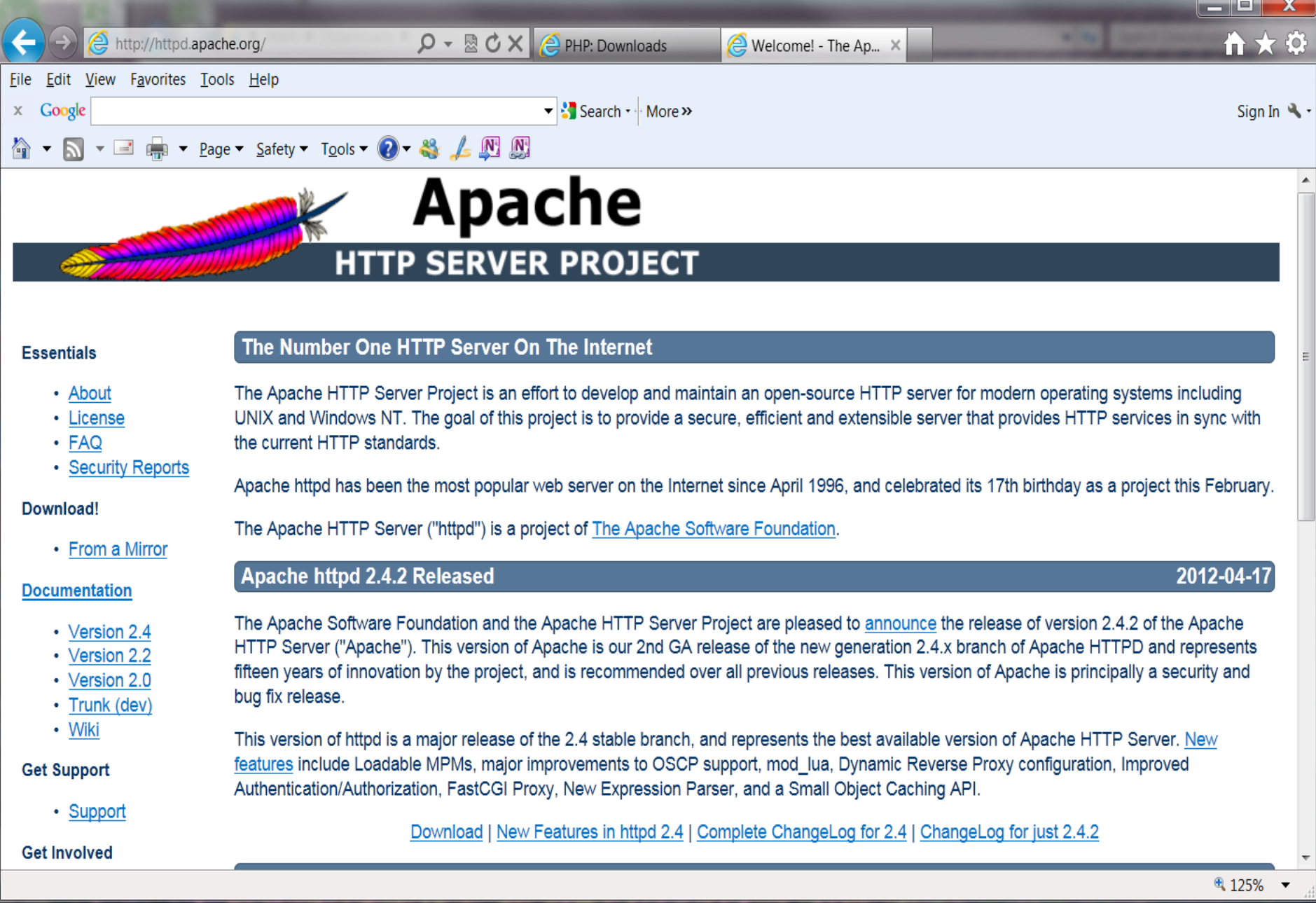
- PHP script file names usually end with `.php`, although a server can be configured to handle other file extensions.
- To run a PHP script, PHP must first be installed on your system.
- Although PHP can be used from the command line, a Web server is required to take full advantage of the scripting language. We will utilize the Apache HTTP Server available from www.apache.org. (Note: this is not the Tomcat server you've already used.) Current version is 2.4.1 which is a new major version change from the previous 2.2.xx versions (mostly in the areas of security) and was released on February 21, 2012. However, we will not use this latest version of Apache, but with either 2.2.22 or 2.2.21 (See page 23.)
- Although there are several different packages that bundle PHP with MySQL and various HTTP servers, as IT majors you need to experience the set-up and integration of this type of software, so I will show you how to setup the Apache HTTP Server and integrate both PHP and MySQL into it.



Installing Apache HTTP Server

- The version of the Apache HTTP server that we will use is 2.2.21 or 2.2.22 and it is available for download from www.apache.org.
- Go to the apache homepage at the link shown above and scroll way down the page to the listing of the apache projects. The HTTP Server is the first one on the list.
- Click on this link and you will be taken to the HTTP Server project main page. (See page 7.)
- Click the Download from a mirror link on the left hand side of the page. This will take you to the main download page. (See page 8.)
- Select the proper format for your platform and download it to your machine. Go to page 9 to begin the Apache install procedure.





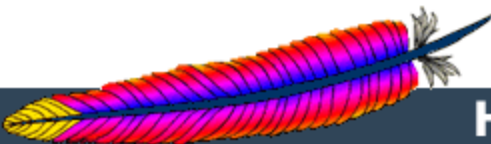
Download - The Apache HTTP Server Project - Windows Internet Explorer

http://httpd.apache.org/download.cgi

File Edit View Favorites Tools Help

★ Favorites | ★ Suggested Sites | Free Hotmail | Web Slice Gallery | KEEP VID KeepVid- Download and s...

Download - The Apache HTTP Server Project



Apache

HTTP SERVER PROJECT

Essentials

- [About](#)
- [License](#)
- [FAQ](#)
- [Security Reports](#)

Download!

- [From a Mirror](#)

Documentation

- [Version 2.4](#)
- [Version 2.2](#)
- [Version 2.0](#)
- [Trunk \(dev\)](#)
- [Wiki](#)

Get Support

Downloading the Apache HTTP Server

Use the links below to download the Apache HTTP Server from one of our mirrors. You **must** [verify the integrity](#) of the downloaded files using signatures downloaded from our main distribution directory.

Only current recommended releases are available on the main distribution site and its mirrors. Older releases, including the 1.3 family of releases, are available from the [archive download site](#).

Stable Release - Latest Version:

- [2.4.3](#) (released 2012-08-21)

Stable Release - 2.2 Branch:

- [2.2.23](#) (released 2012-09-13)

Legacy Release:

- [2.0.64](#) (released 2010-10-19)

If you are downloading the Win32 distribution, please read these [important notes](#).

Select 2.2.23

Internet | Protected Mode: Off

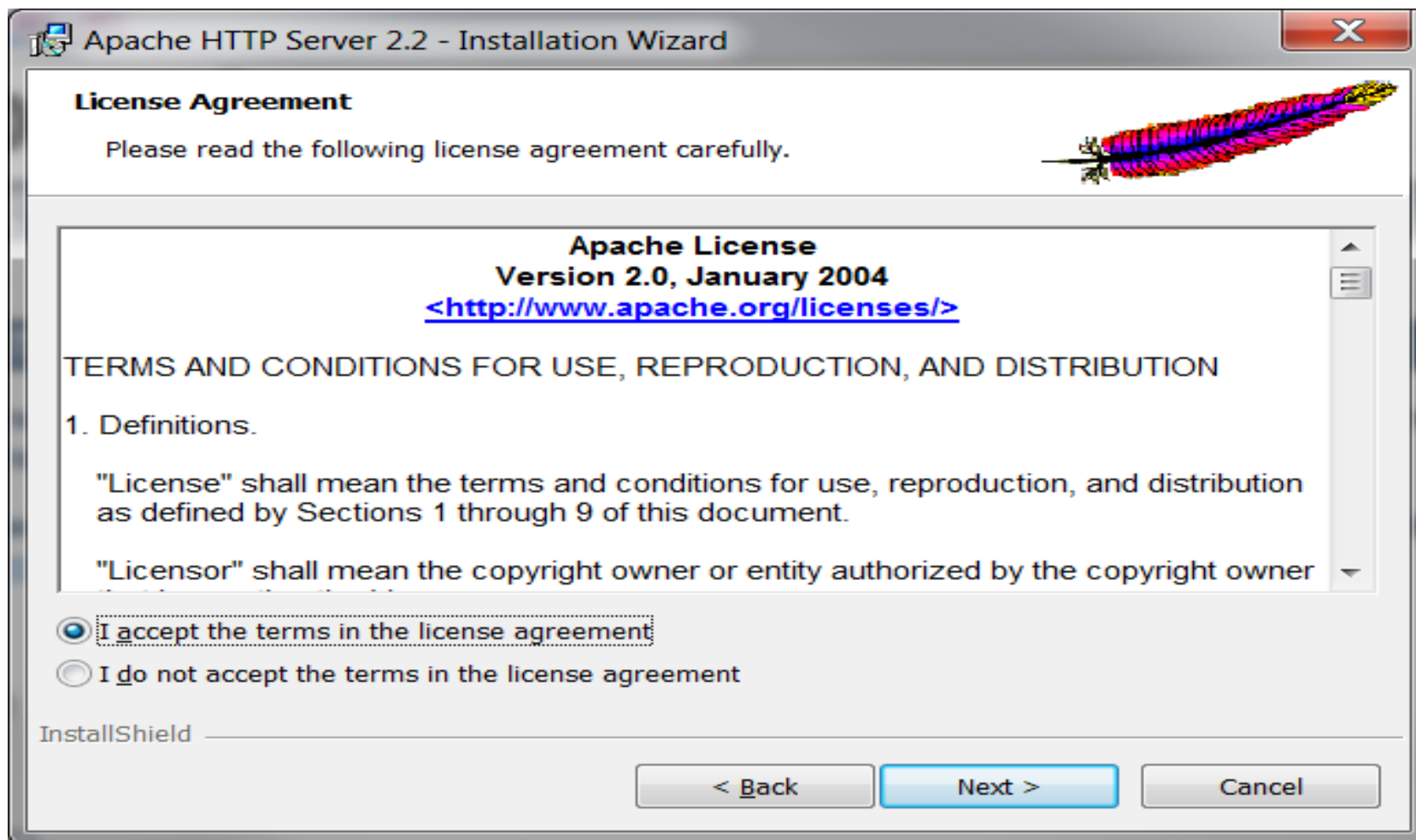
100%



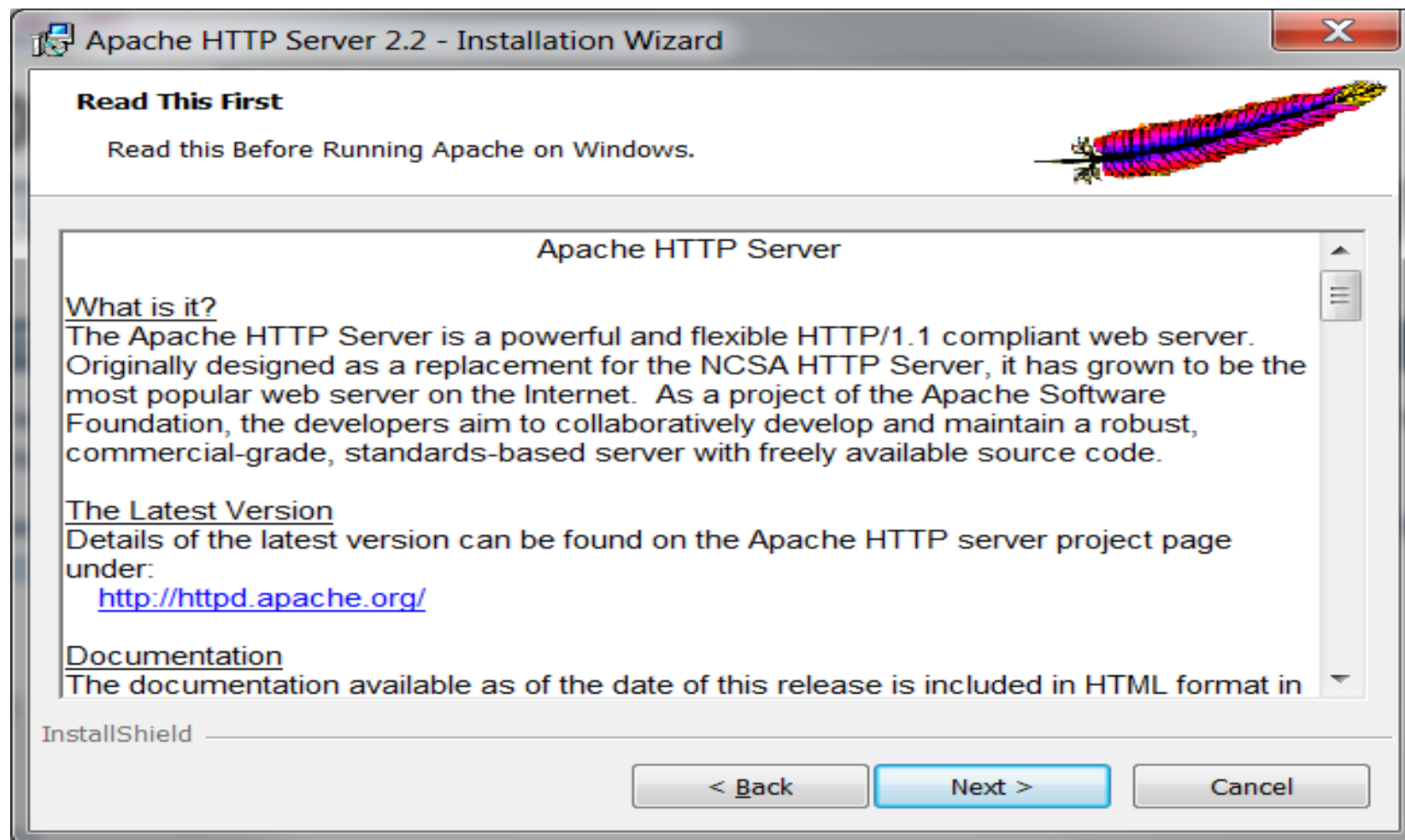
Installing And Configuring Apache (cont.)



Installing And Configuring Apache (cont.)



Installing And Configuring Apache (cont.)



Installing And Configuring Apache (cont.)

Apache HTTP Server 2.2 - Installation Wizard

Server Information

Please enter your server's information.

Network Domain (e.g. somenet.com)
myserver.local

Server Name (e.g. www.somenet.com):
myserver.local

Administrator's Email Address (e.g. webmaster@somenet.com):
markl@cs.ucf.edu

Install Apache HTTP Server 2.2 programs and shortcuts for:

for All Users, on Port 80, as a Service -- Recommended.

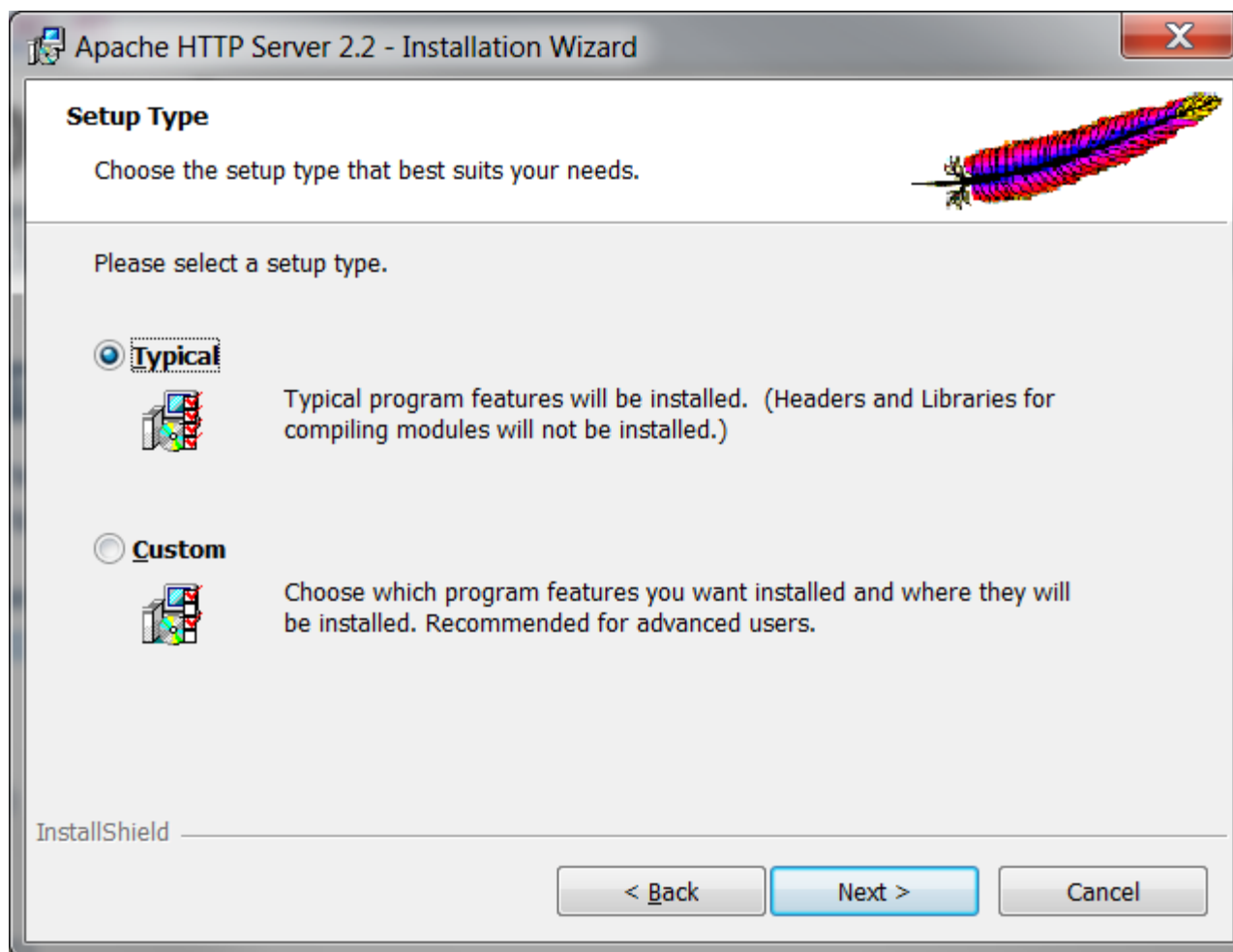
only for the Current User, on Port 8080, when started Manually.

InstallShield

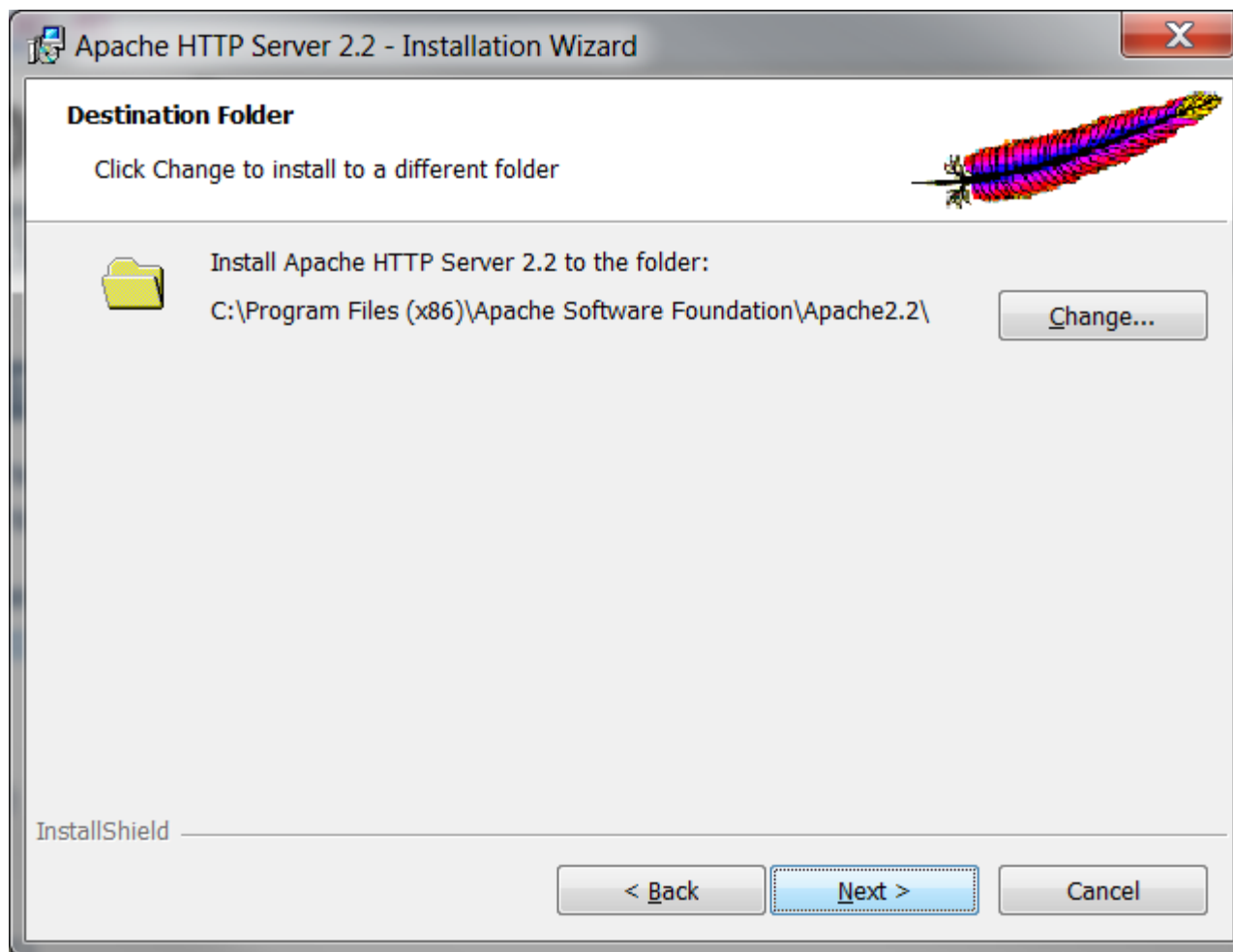
< Back Next > Cancel



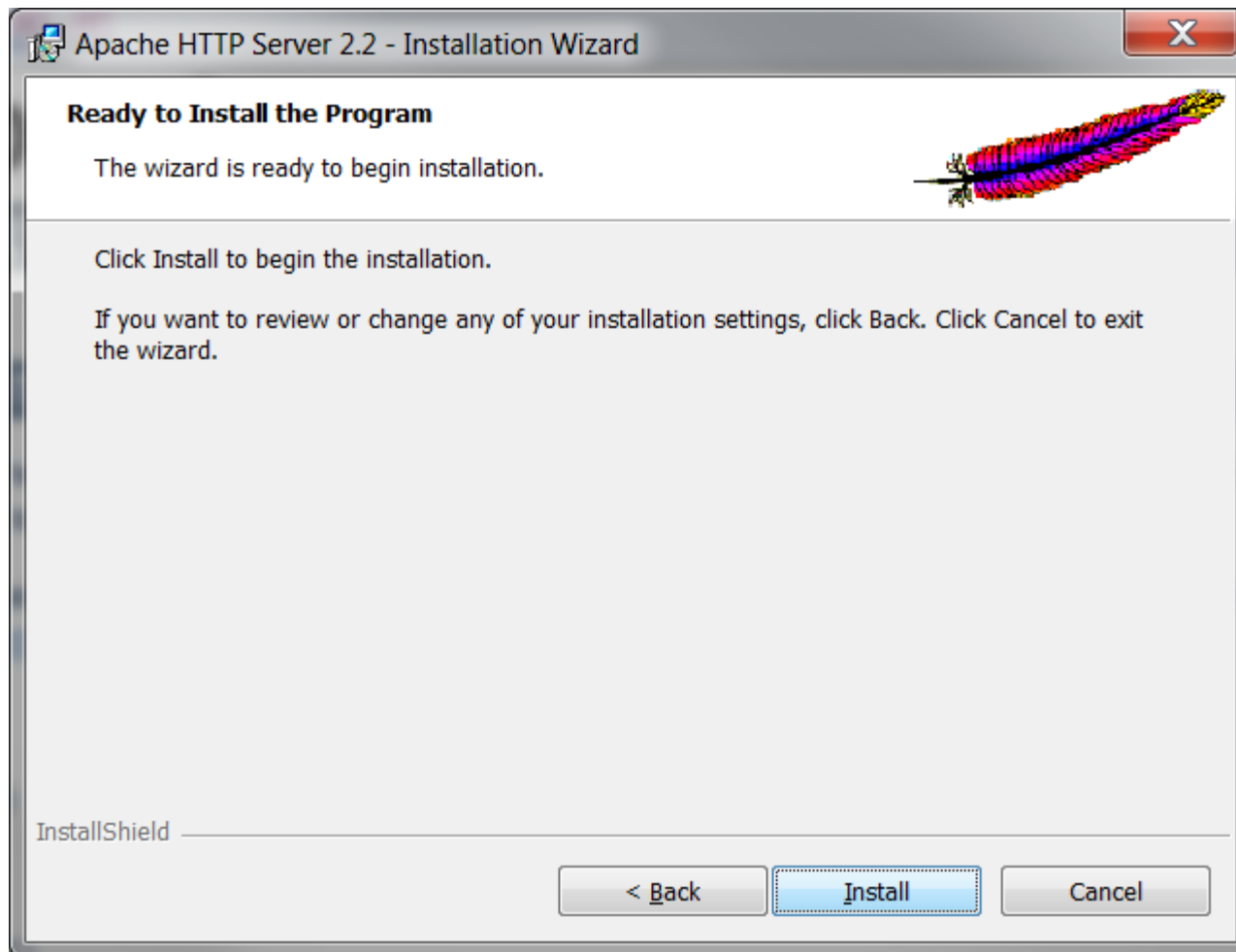
Installing And Configuring Apache (cont.)



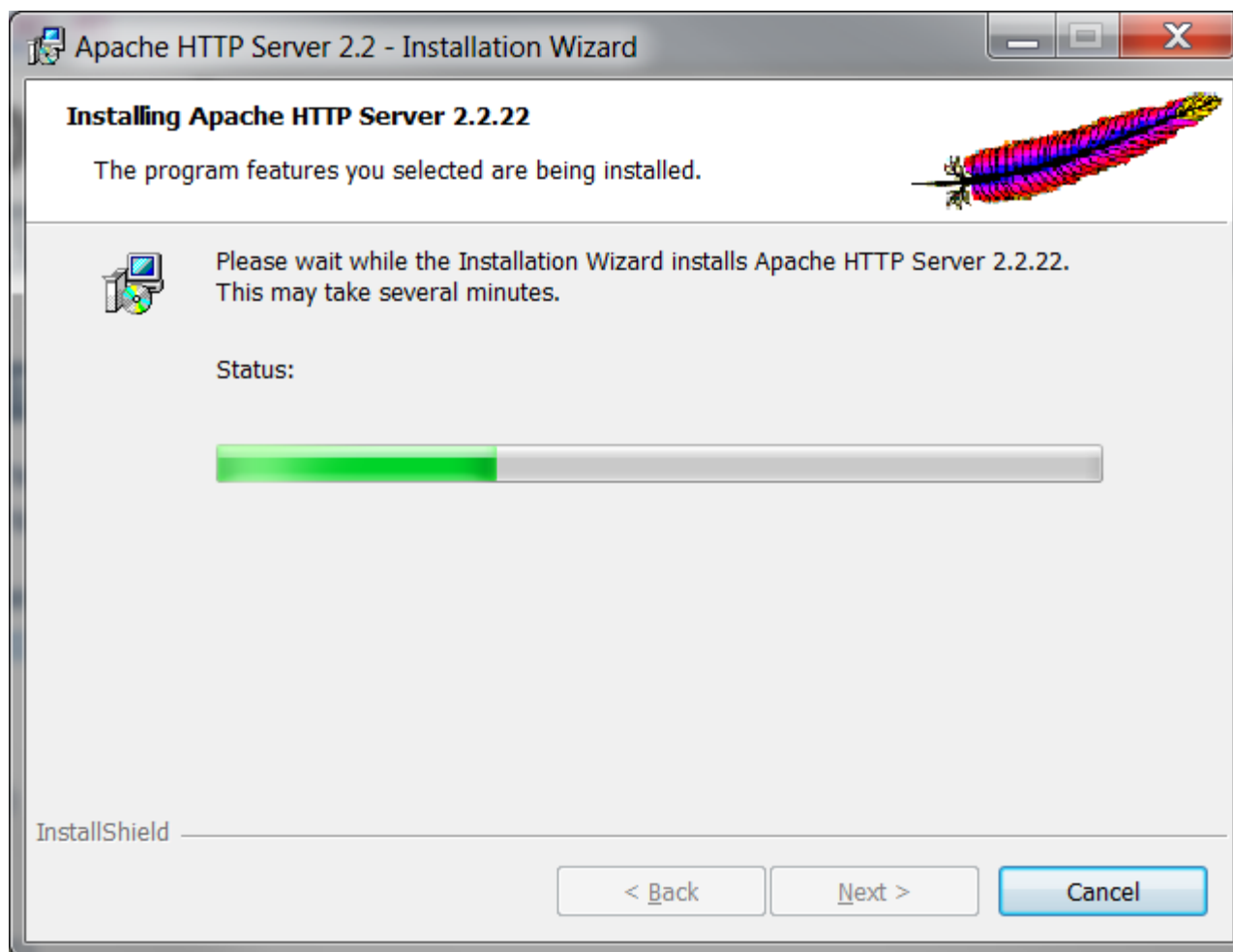
Installing And Configuring Apache (cont.)



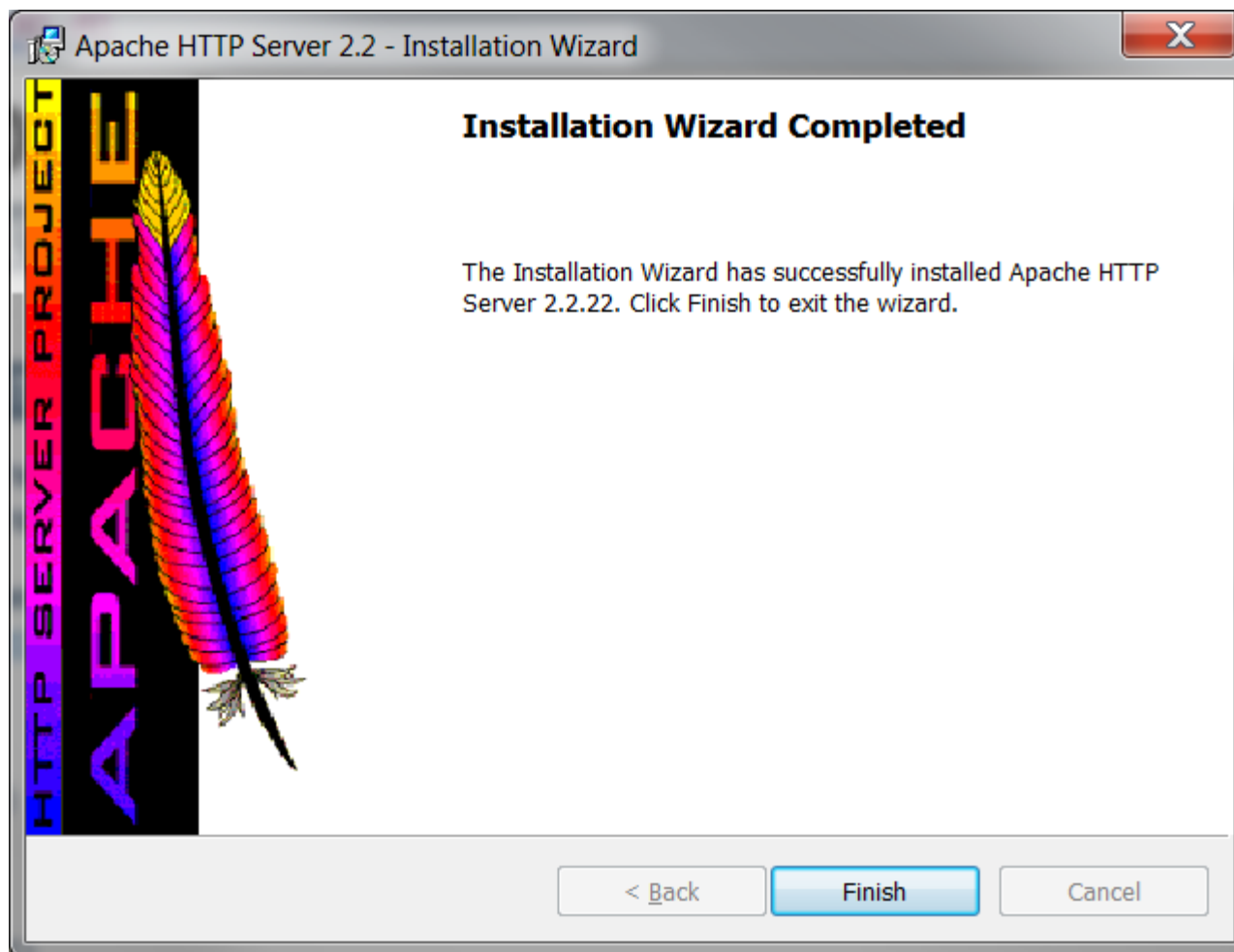
Installing And Configuring Apache (cont.)



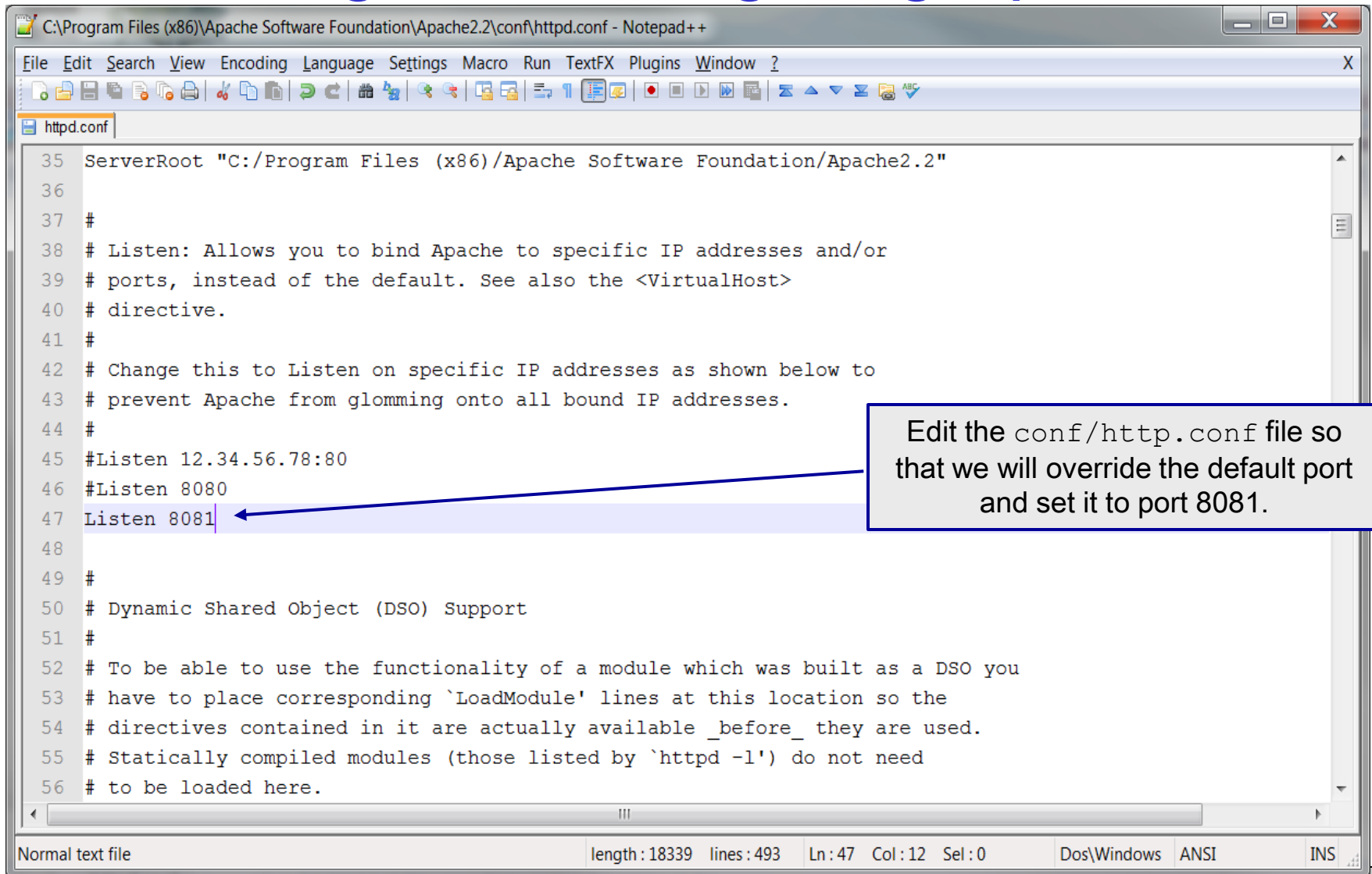
Installing And Configuring Apache (cont.)



Installing And Configuring Apache (cont.)



Installing And Configuring Apache (cont.)



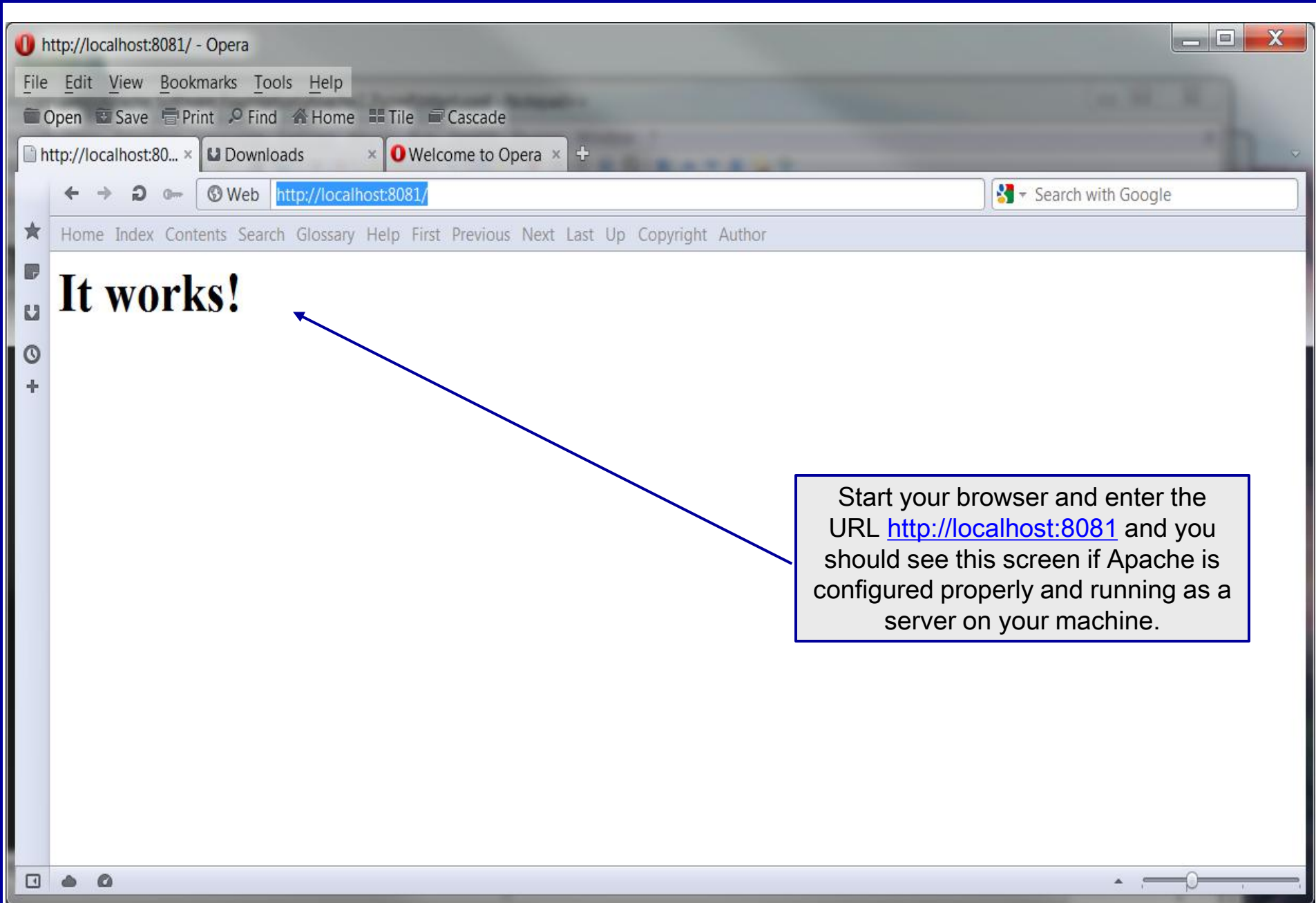
The screenshot shows a Notepad++ window titled "C:\Program Files (x86)\Apache Software Foundation\Apache2.2\conf\httpd.conf - Notepad++". The window contains the following text:

```
35 ServerRoot "C:/Program Files (x86)/Apache Software Foundation/Apache2.2"
36
37 #
38 # Listen: Allows you to bind Apache to specific IP addresses and/or
39 # ports, instead of the default. See also the <VirtualHost>
40 # directive.
41 #
42 # Change this to Listen on specific IP addresses as shown below to
43 # prevent Apache from glomming onto all bound IP addresses.
44 #
45 #Listen 12.34.56.78:80
46 #Listen 8080
47 Listen 8081
48
49 #
50 # Dynamic Shared Object (DSO) Support
51 #
52 # To be able to use the functionality of a module which was built as a DSO you
53 # have to place corresponding 'LoadModule' lines at this location so the
54 # directives contained in it are actually available _before_ they are used.
55 # Statically compiled modules (those listed by 'httpd -l') do not need
56 # to be loaded here.
```

A blue callout box with a white background and a blue border is positioned to the right of the text. It contains the text: "Edit the conf/http.conf file so that we will override the default port and set it to port 8081." A blue arrow points from the callout box to the line "Listen 8081" in the code.

Normal text file length: 18339 lines: 493 Ln: 47 Col: 12 Sel: 0 Dos\Windows ANSI INS





Installing and Configuring PHP

- The current stable version of PHP (PHP 5.4.8 can be downloaded from www.php.net).
- Note that since we are using the Apache HTTP Server that we will need to be sure and install the correct version of PHP which will not be 5.4.4, but rather 5.2.17 so that it will integrate into the Apache HTTP Server. (See page 23.)
- Click on the downloads link at the top of the PHP home page and select the proper format for your machine. (See page 22.)
- Then download PHP to your machine and install it using the instructions beginning on page 23.



PHP Home page

Browser navigation bar with address bar showing <http://www.php.net/>, search bar with "apache 2.4 and php", and various utility icons.



downloads | documentation | faq | getting help | mailing lists | licenses | wiki | reporting bugs | php.net sites | links | conferences | my php.net

search for in the function list

What is PHP?

PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. If you are new to PHP and want to get some idea of how it works, try

Upcoming conferences: [Northeast PHP Conference](#)
 Calling for papers: [Northeast PHP conference](#)

PHP 5.4.4 and PHP 5.3.14 released!

14-Jun-2012 The PHP development team would like to announce the immediate availability of PHP 5.4.4 and PHP 5.3.14. All users of PHP are encouraged to upgrade to PHP 5.4.4 or PHP 5.3.14.

The release fixes multiple security issues: A weakness in the DES implementation of [crypt](#) and a heap overflow issue in the phar extension

PHP 5.4.4 and PHP 5.3.14 fixes over 30 bugs. Please note that the use of `php://fd` streams is now restricted to the CLI SAPI

For source downloads of PHP 5.4.4 and PHP 5.3.14 please visit our [downloads page](#), Windows binaries can be found on [windows.php.net/download/](#). The list of changes are recorded in the [ChangeLog](#).

Stable Releases

Current PHP [5.4](#)
 Stable: [5.4.4](#)

Current PHP [5.3](#)
 Stable: [5.3.14](#)

Upcoming Events [\[add\]](#)

July

Conferences

02. PHP with YTT



PHP: Downloads - Windows Internet Explorer

http://www.php.net/downloads.php

File Edit View Favorites Tools Help

★ Favorites | ★ Suggested Sites | Free Hotmail | Web Slice Gallery | KEEP VID KeepVid- Download and s...

PHP: Downloads

Page Safety Tools

PHP 5.4.8 (Current stable)

Complete Source Code

- [PHP 5.4.8 \(tar.bz2\)](#) [10,797Kb] - 18 Oct 2012
md5: bb8c816a9299be8995255ef70c63b800
- [PHP 5.4.8 \(tar.gz\)](#) [13,650Kb] - 18 Oct 2012
md5: b25b735f342efbfdcdfaf00b83189f183
- [Windows 5.4.8 binaries and source](#)

PHP 5.3.18 (Old stable)

Complete Source Code

- [PHP 5.3.18 \(tar.bz2\)](#) [11,070Kb] - 18 Oct 2012
md5: 52539c19d0f261560af3c030143dfa8f
- [PHP 5.3.18 \(tar.gz\)](#) [14,477Kb] - 18 Oct 2012
md5: ff2009aadc7c4d1444f6cd8e45f39a41
- [Windows 5.3.18 binaries and source](#)

GPG Keys

The releases are tagged and signed in the [PHP Git Repository](#). The following official GnuPG keys of the current PHP Release Manager can be used to verify the tags:

Binaries for other systems

We do not distribute UNIX/Linux binaries. Most Linux distributions come with PHP these days, so if you do not want to compile your own, go to your distribution's download site. Binaries available on external servers:

- AS/400
- Mac OS X (AMPPS)
- Mac OS X (MAMP)
- Novell NetWare
- OS/2
- RISC OS
- SGI IRIX 6.5.x
- Solaris (SPARC, INTEL)
- Solaris OpenCSW packages
- Redhat/CentOS Binaries (IUS)
- Fedora/Redhat/CentOS Binaries (Remi)

Development and archive versions

Done

Internet | Protected Mode: Off

100%

PHP Download Page

Click here to go to the download page for Windows machines



Read This!

Scroll down this page to get to the proper version for Click here to go the download page for Windows machines

Which version do I choose?
If you are using PHP with Apache 1 or Apache2 from apache.org you need to use the VC6 versions of PHP

If you are using PHP with IIS you should use the VC9 versions of PHP

VC6 Versions are compiled with the legacy Visual Studio 6 compiler

VC9 Versions are compiled with the Visual Studio 2008 compiler and have improvements in performance and stability. The VC9 versions require you to have the [Microsoft 2008 C++ Runtime \(x86\)](#) or the [Microsoft 2008 C++](#)



http://windows.php.net/download/ PHP For Windows: B... Download - The Apach...

File Edit View Favorites Tools Help

Google apache 2.4 and php Search More >>

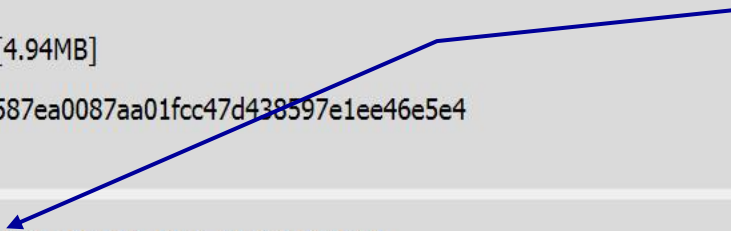
- [Installer](#) [20.24MB]
sha1: 2145f6adf72ab5f9a067c52163c6b1c18c47eedd
- [Debug Pack](#) [4.94MB]
sha1: 771b2587ea0087aa01fcc47d438597e1ee46e5e4

VC6 x86 Thread Safe (2011-Mar-22 13:29:30)

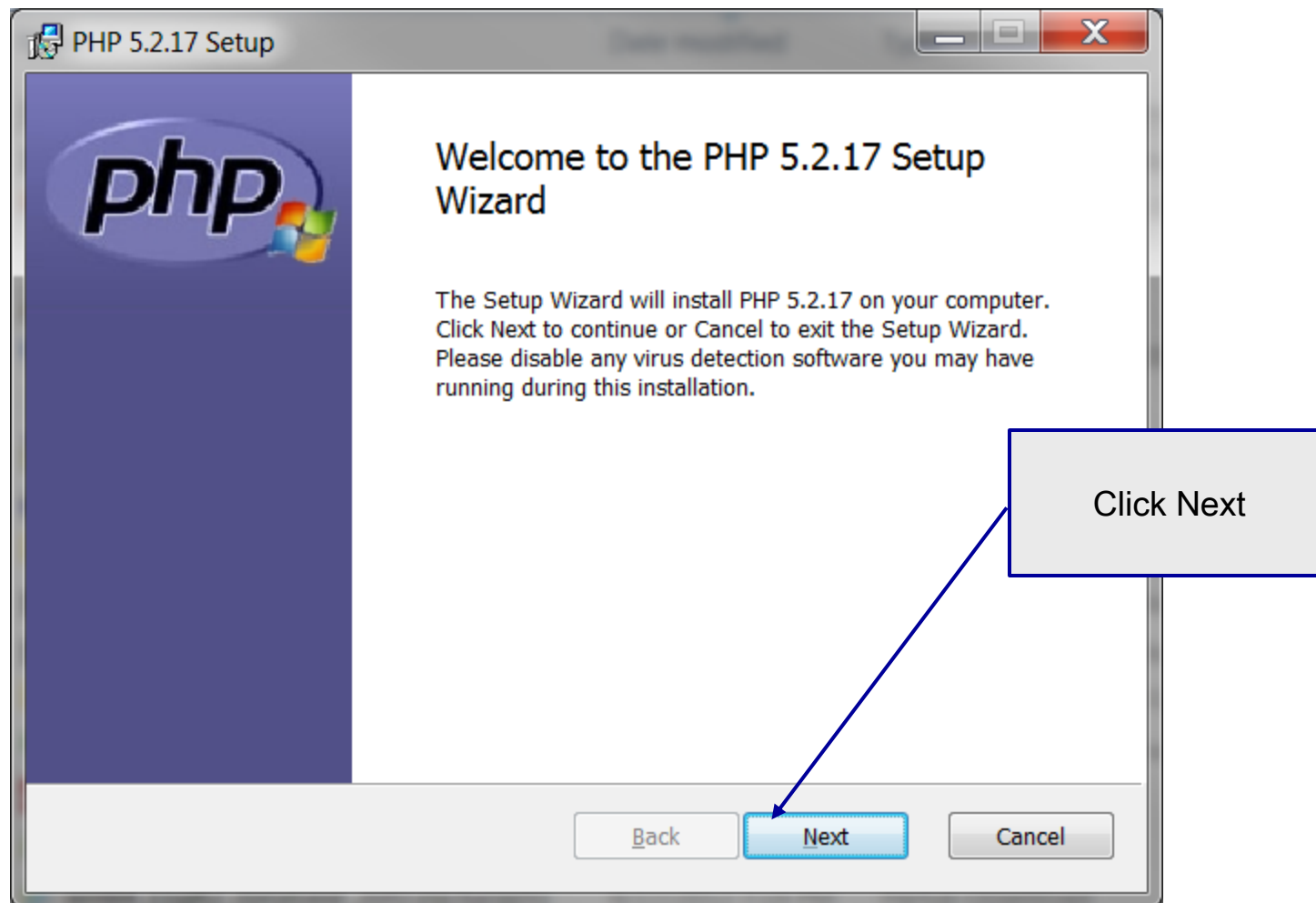
- [Zip](#) [10.06MB]
sha1: 23e1cf2f6e1bf64585ae921462340e5748fcc939
- [Installer](#) [20.41MB]
sha1: 710a69733aa280f22c86e8b868c51f5796f0a390
- [Debug Pack](#) [4.99MB]
sha1: 027c38420ee21c049345b3baea149d083e558a4c

125%

Scroll down this page to get to the proper version for Click here to go the download page for Windows machines



Installing And Configuring PHP (cont.)



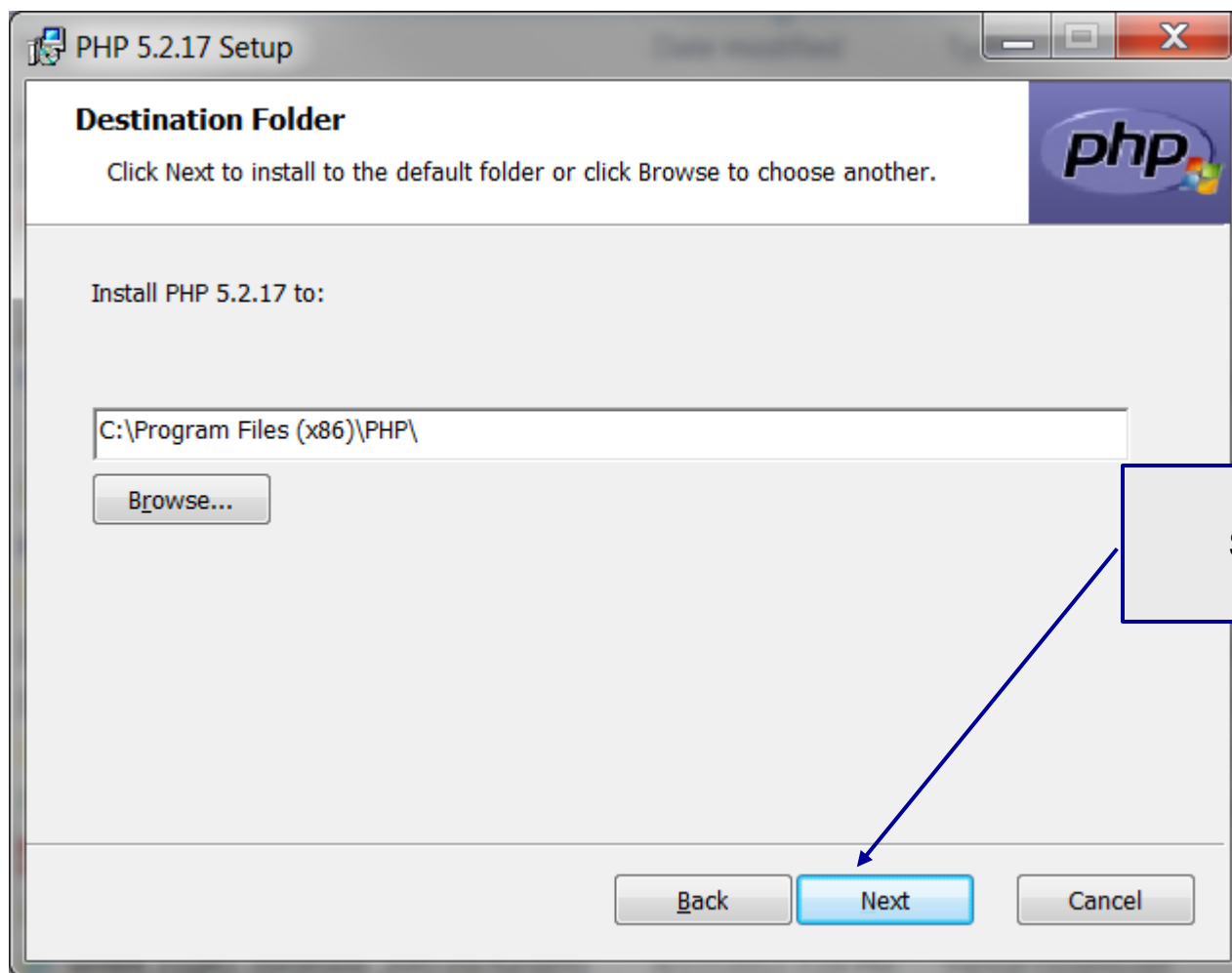
Installing And Configuring Apache (cont.)



Check accept terms box and click Next.



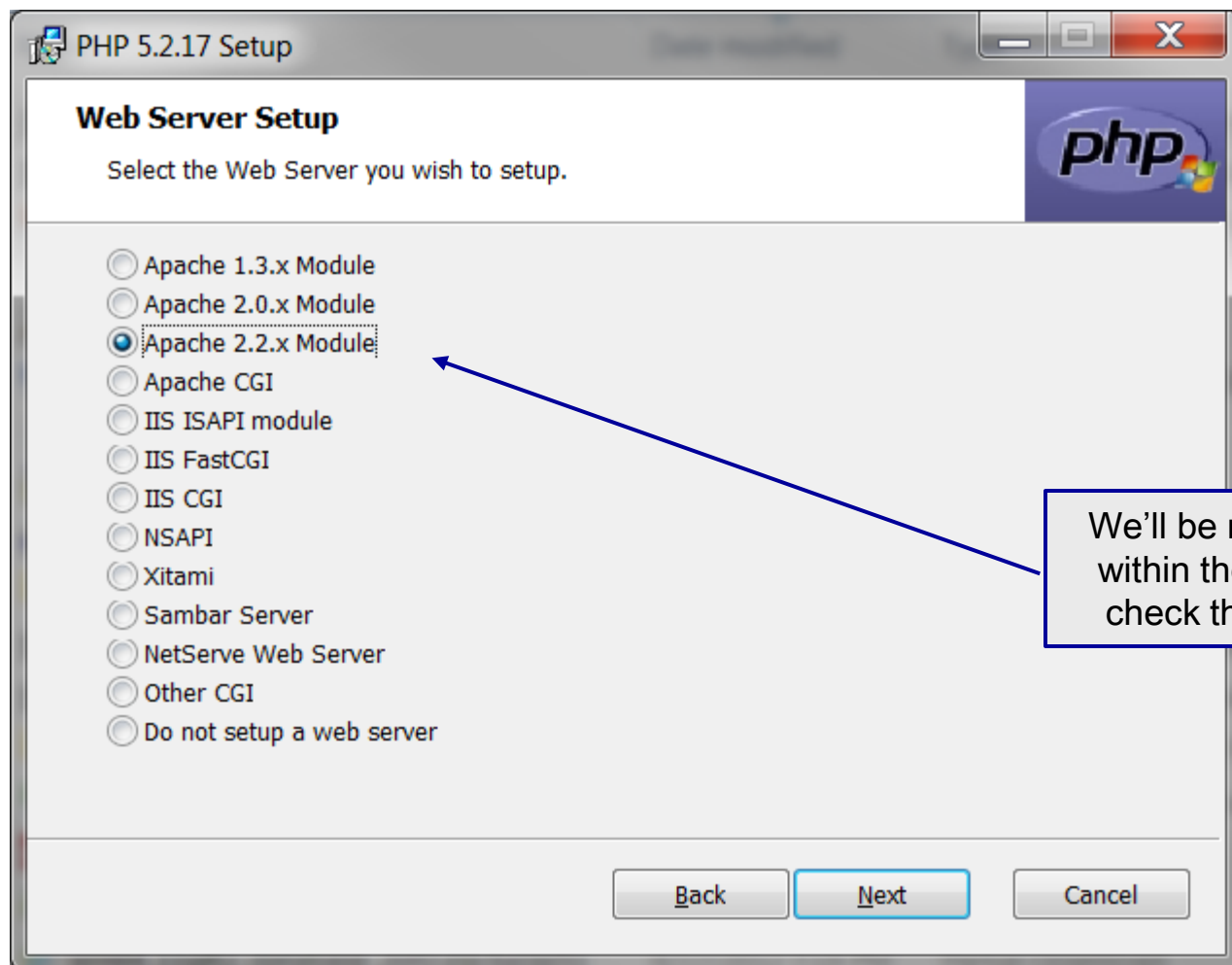
Installing And Configuring Apache (cont.)



Set file path and click Next



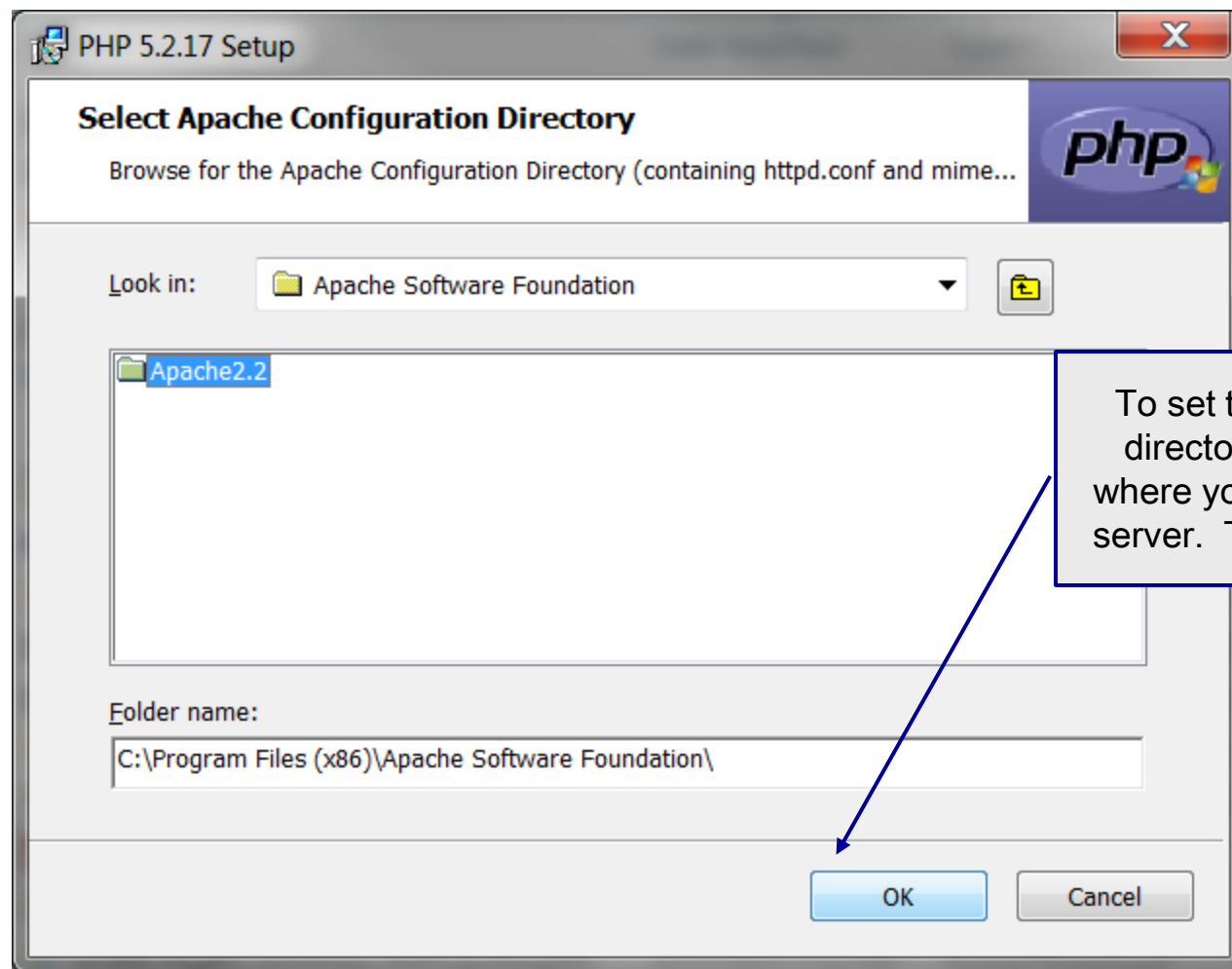
Installing And Configuring Apache (cont.)



We'll be running PHP as a module within the Apache 2.2.x server so check this box. Then click Next.



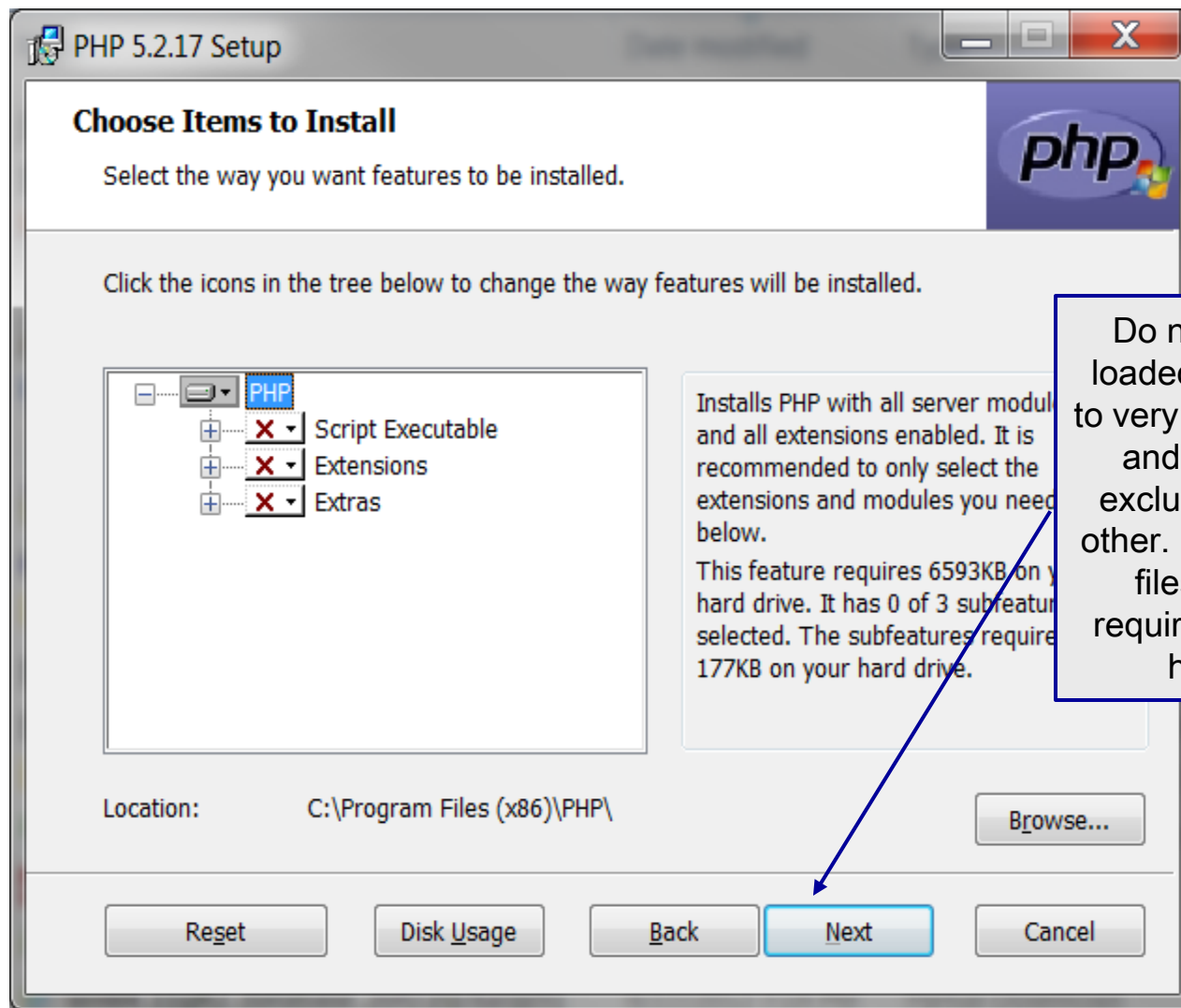
Installing And Configuring Apache (cont.)



To set the Apache Configuration directory browse to the location where you setup the Apache HTTP server. Then click OK. Then Next.



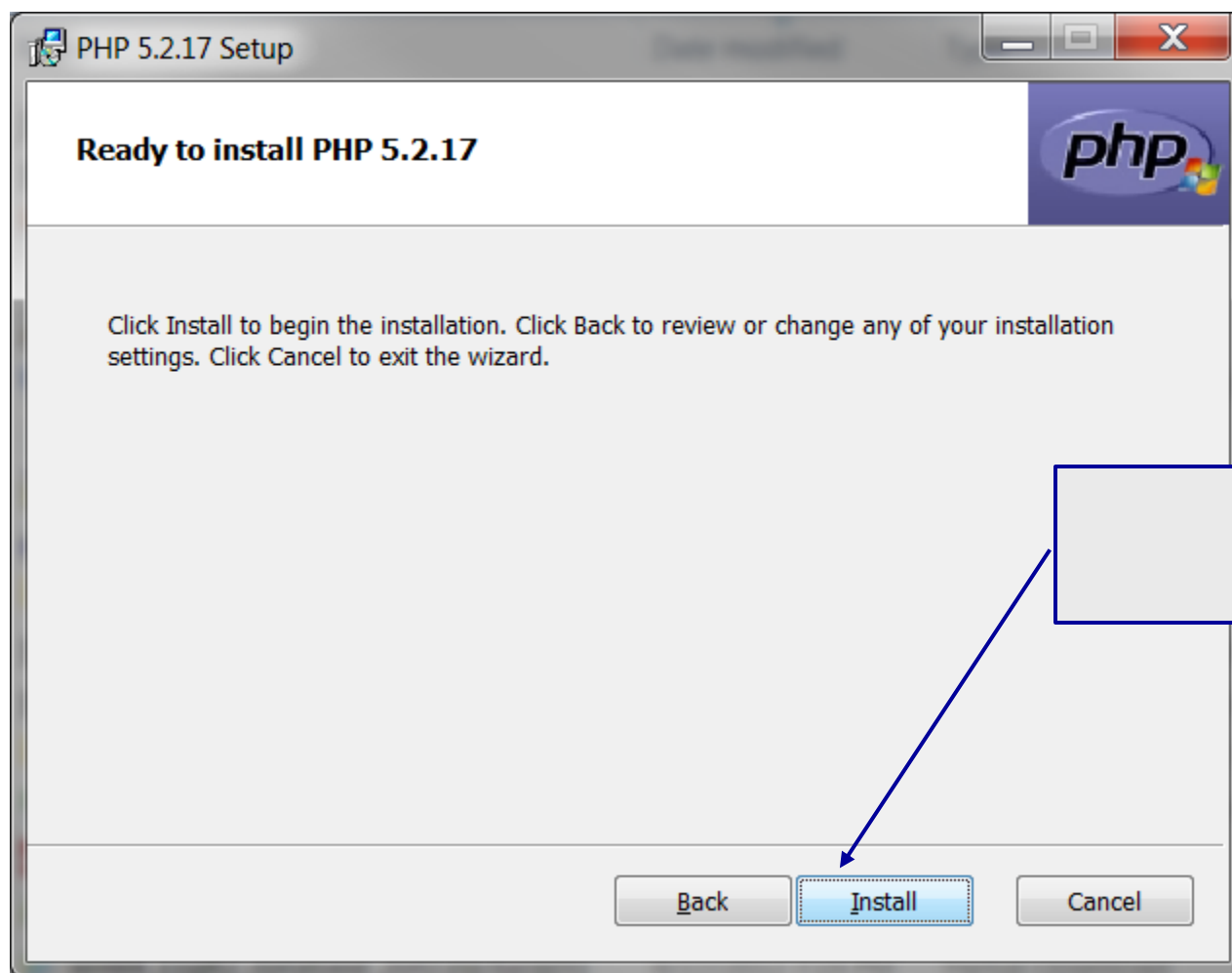
Installing And Configuring Apache (cont.)



Do not allow all extensions to be loaded automatically – this will lead to very erratic behavior of your server and PHP as many are mutually exclusive and/or conflict with each other. Hand tuning the configuration files and extension libraries is required. (See the box on the right hand side of this screen.)



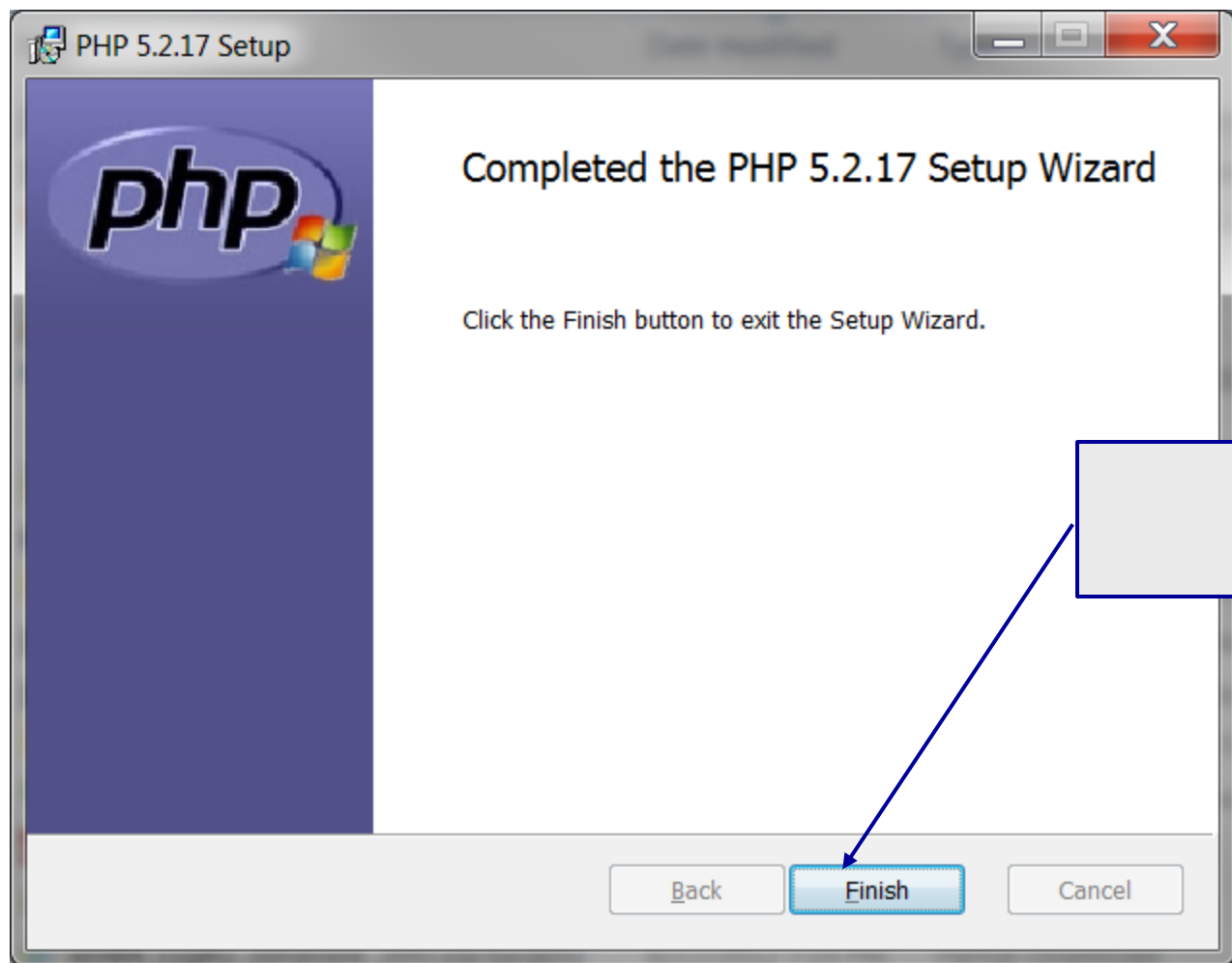
Installing And Configuring Apache (cont.)



Click Install



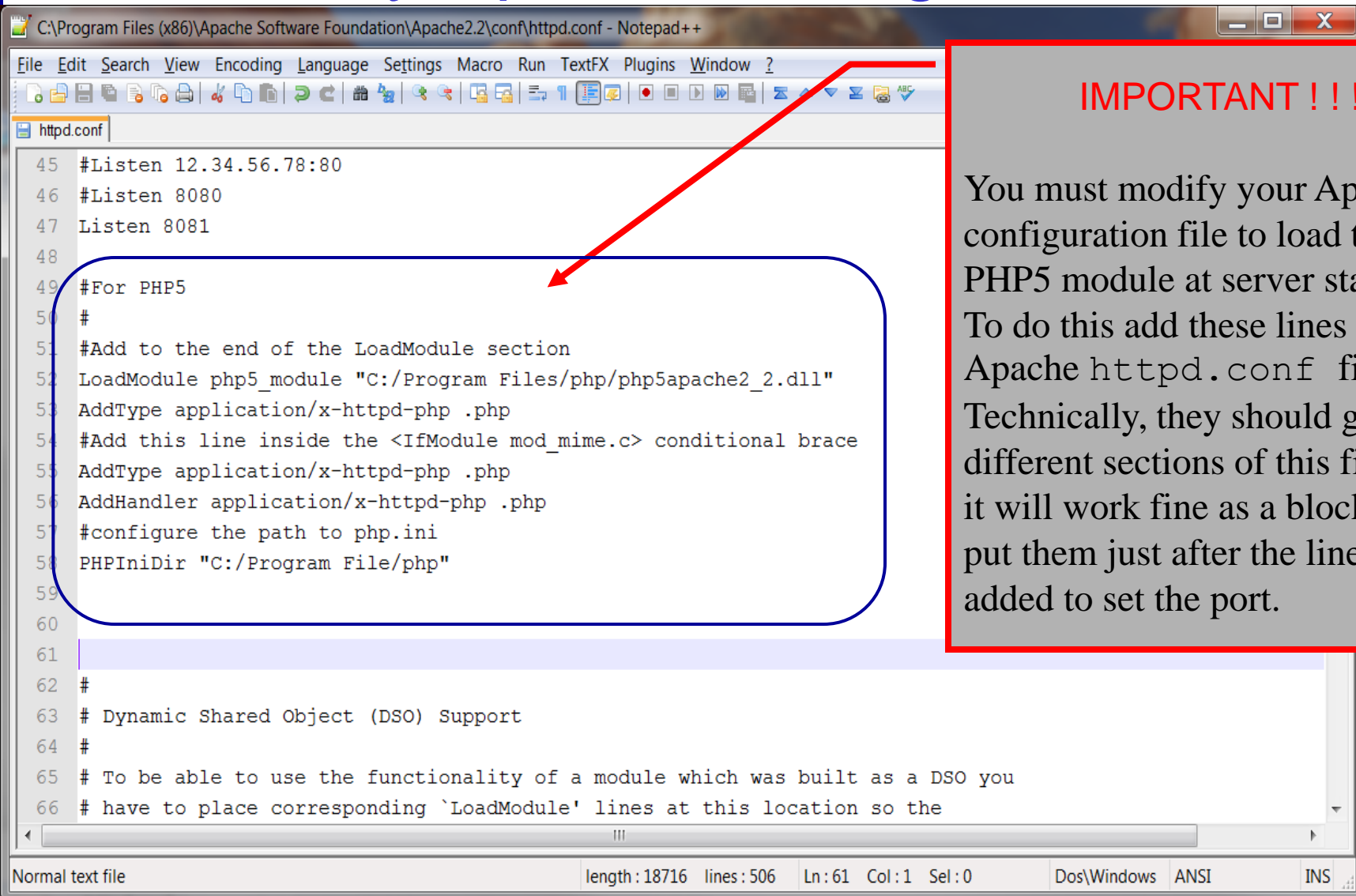
Installing And Configuring Apache (cont.)



Click Finish



Modify Apache Configuration File



```
C:\Program Files (x86)\Apache Software Foundation\Apache2.2\conf\httpd.conf - Notepad++
File Edit Search View Encoding Language Settings Macro Run TextFX Plugins Window ?
httpd.conf
45 #Listen 12.34.56.78:80
46 #Listen 8080
47 Listen 8081
48
49 #For PHP5
50 #
51 #Add to the end of the LoadModule section
52 LoadModule php5_module "C:/Program Files/php/php5apache2_2.dll"
53 AddType application/x-httpd-php .php
54 #Add this line inside the <IfModule mod_mime.c> conditional brace
55 AddType application/x-httpd-php .php
56 AddHandler application/x-httpd-php .php
57 #configure the path to php.ini
58 PHPIniDir "C:/Program File/php"
59
60
61
62 #
63 # Dynamic Shared Object (DSO) Support
64 #
65 # To be able to use the functionality of a module which was built as a DSO you
66 # have to place corresponding 'LoadModule' lines at this location so the
67
Normal text file length: 18716 lines: 506 Ln: 61 Col: 1 Sel: 0 Dos\Windows ANSI INS
```

IMPORTANT !!!

You must modify your Apache configuration file to load the PHP5 module at server startup. To do this add these lines to your Apache `httpd.conf` file. Technically, they should go in different sections of this file, but it will work fine as a block, so put them just after the line you added to set the port.



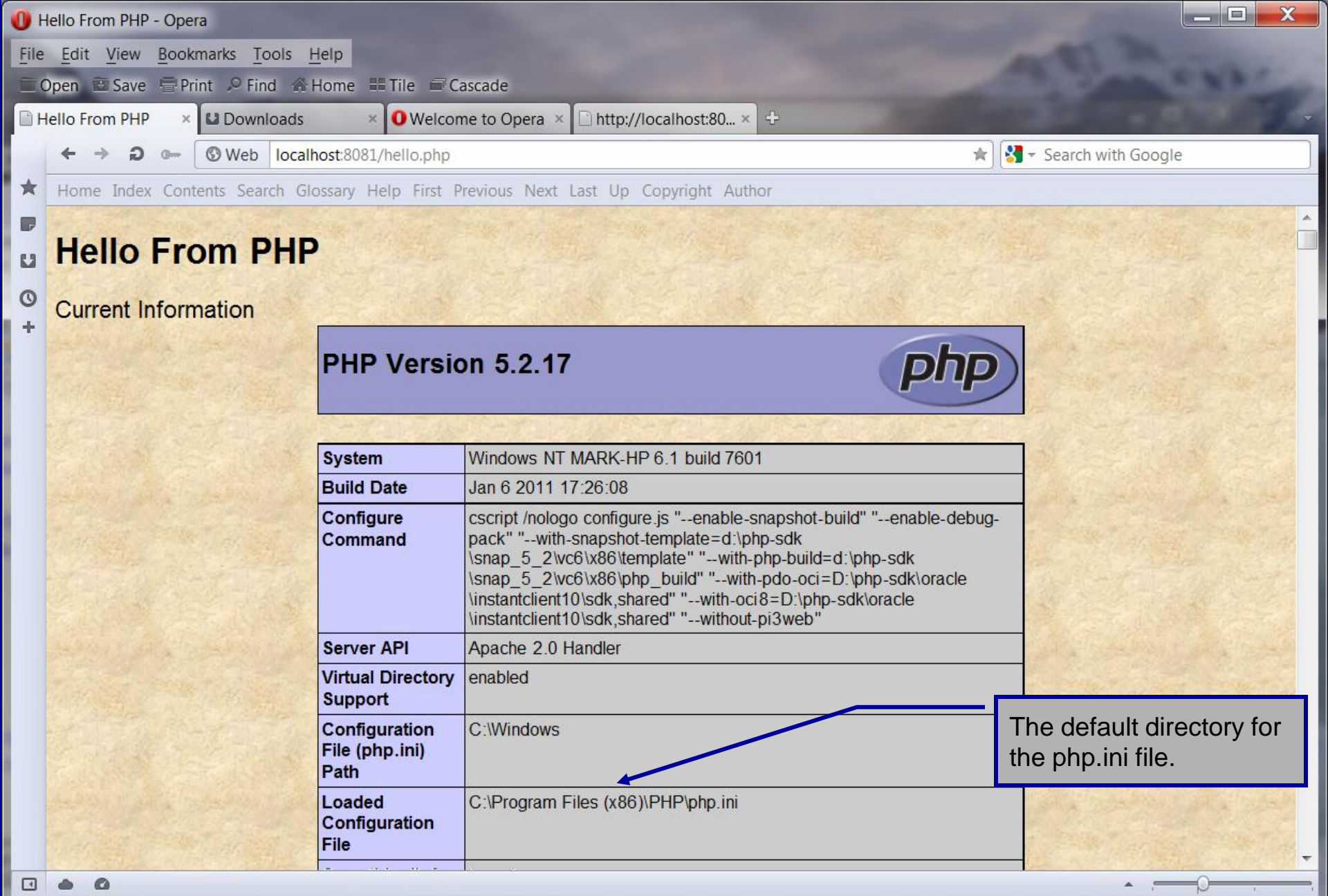
A PHP Test Example

Create this file named `hello.php` and save it to the `htdocs` folder in the Apache server directory. Then start your browser and enter the URL: <http://localhost:8081/hello.php> and you should see output similar to that shown on the next slide.

```
C:\Program Files (x86)\Apache Software Foundation\Apache2.2\htdocs\hello.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run TextFX Plugins Window ?
httpd.conf hello.php
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
3 <html xmlns="http://www.w3.org/1999/xhtml">
4 <head>
5 <title>Hello From PHP</title>
6 </head>
7 <body style = "font-family: arial, sans-serif;
8 background-color: #856363" background=image1.jpg>
9 <h1> Hello From PHP</h1>
10 <?php
11 print "Current Information";
12 phpInfo ();
13 ?>
14 </body>
15 </html>
PHP Hypertext Preprocessor file length: 424 lines: 15 Ln: 1 Col: 1 Sel: 0 Dos\Windows ANSI INS
```

This is
PHP





PHP Version 5.2.17

System	Windows NT MARK-HP 6.1 build 7601
Build Date	Jan 6 2011 17:26:08
Configure Command	cscript /nologo configure.js "--enable-snapshot-build" "--enable-debug-pack" "--with-snapshot-template=d:\php-sdk\snap_5_2\vc6\x86\template" "--with-php-build=d:\php-sdk\snap_5_2\vc6\x86\php_build" "--with-pdo-oci=D:\php-sdk\oracle\instantclient10\sdk,shared" "--with-oci8=D:\php-sdk\oracle\instantclient10\sdk,shared" "--without-pi3web"
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	C:\Windows
Loaded Configuration File	C:\Program Files (x86)\PHP\php.ini

The default directory for the php.ini file.



A Second PHP Example

- The following two pages illustrate another simple PHP “hello world” program.
- In PHP, code is inserted between the scripting delimiters `<?php` and `?>`. PHP code can be placed anywhere in XHTML markup, as long as the code is enclosed in these scripting delimiters.
- Place all of your XHTML and PHP files inside the `htdocs` directory of the Apache server directory.



welcome.php

```

3  <!-- welcome.php -->
4  <!-- XHTML file containing a PHP script. -->
5  <?php
6      $name = "Mark"; //php declaration and assignment
7  ?>
8  <html xmlns = "http://www.w3.org/1999/xhtml">
9      <!-- head section of document -->
10     <head>
11         <title>A Simple PHP Document</title>
12     </head>
13     <!-- body section of document -->
14     <body style = "font-size: 2em; font-family: arial, sans-serif;
15         background-color: #856363" background=imagem1.jpg>
16     <hr>
17     <font color = blue><h1> Generating HTML From PHP </h1></font color>
18     <p>
19         <strong>
20             <!--print variable name's value in the message-->
21             <?php
22                 print("This is your first crack at running a PHP script...");
23                 print("<HR>");
24                 print("Welcome to the world of PHP technology, ");
25             ?>
26             <font color = green>
27             <?php
28                 print("$name");
29             ?>
30             </font color>
31         </strong>
32     </p>
33 </body>

```

PHP code declaring a variable.



welcome.php

```

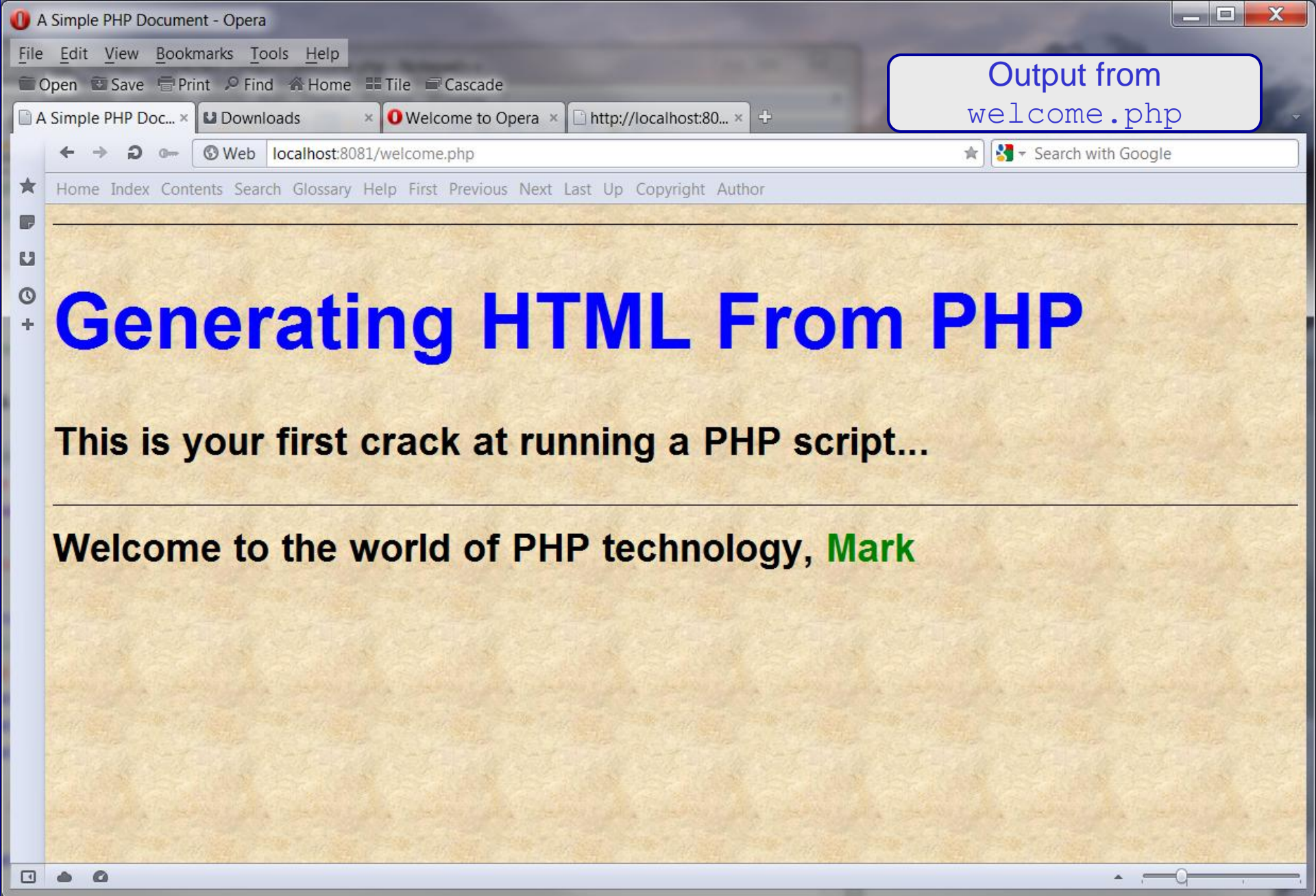
3 <!-- welcome.php -->
4 <!-- XHTML file containing a PHP script. -->
5 <?php
6     $name = "Mark"; //php declaration and assignment
7 ?>
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <!-- head section of document -->
10 <head>
11     <title>A Simple PHP Document</title>
12 </head>
13 <!-- body section of document -->
14 <body style = "font-size: 2em; font-family: arial, sans-serif;
15     background-color: #856363" background=imagem1.jpg>
16 <hr>
17 <font color = blue><h1> Generating HTML From PHP </h1></font color>
18 <p>
19     <strong>
20     <!--print variable name's value in the message-->
21     <?php
22         print("This is your first crack at running a PHP script...");
23         print("<HR>");
24         print("Welcome to the world of PHP technology, ");
25     ?>
26     <font color = green>
27     <?php
28         print("$name");
29     ?>
30     </font color>
31     </strong>
32 </p>
33 </body>

```

PHP code

PHP code





Viewing Client/Server Environment Variables

- Knowledge of a client's execution environment is useful to system administrators who want to provide client-specific information.
- Environment variables contain information about a script's environment, such as the client's web browser, the HTTP host and the HTTP connection.
 - The table on the next page summarizes some of the superglobal arrays defined by PHP.
- The XHTML document on page 42 displays the values of the server's environment variables in a table. PHP stores the server variables and their values in the `$_SERVER` array. Iterating through the array allows one to view all of the server's environment variables.



Some Superglobal Environment Arrays

Variable Name	Description
<code>\$_SERVER</code>	Data about the currently running server.
<code>\$_ENV</code>	Data about the client's environment.
<code>\$_GET</code>	Data posted to the server by the <code>get</code> method.
<code>\$_POST</code>	Data posted to the server by the <code>post</code> method.
<code>\$_COOKIE</code>	Data contained in cookies on the client's computer.
<code>\$GLOBALS</code>	Array containing all global variables.



```
C:\Program Files (x86)\Apache Software Foundation\Apache2.2\htdocs\server.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run TextFX Plugins Window
server.php
httpd.conf hello.php welcome.php server.php
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
3 <html xmlns="http://www.w3.org/1999/xhtml">
4   <!-- server.php -->
5   <!-- Program to display $_SERVER variables -->
6 <head>
7   <title>SERVER Variables Display</title>
8 </head>
9 <body style = "font-family: arial, sans-serif;
10   background-color: #856363" background=imagem1.jpg>
11   <table border = "0" cellpadding = "2" cellspacing = "0"
12     width = "100%">
13     <?php
14       // print the key and value for each element
15       // in the $_SERVER array
16       foreach ( $_SERVER as $key => $value )
17         print( "<tr><td bgcolor = \"#11bbff\">
18           <strong>$key</strong></td>
19           <td>$value</td></tr>" );
20     ?>
21   </table>
22 </body>
23 </html>
```

Iterate through the `$_SERVER` array to list all of the SERVER variables for the current server on which PHP is running.



SERVER Variables Display - Opera

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Web localhost:8081/server.php

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HTTP_USER_AGENT	Opera/9.80 (Windows NT 6.1; WOW64; U; en) Presto/2.10.289 Version/12.00
HTTP_HOST	localhost:8081
HTTP_ACCEPT	text/html, application/xml;q=0.9, application/xhtml+xml, image/png, image/webp, image/jpeg, image/gif, image/x-xbitmap, */*;q=0.1
HTTP_ACCEPT_LANGUAGE	en-US,en;q=0.9
HTTP_ACCEPT_ENCODING	gzip, deflate
HTTP_CONNECTION	Keep-Alive
PATH	C:\app\Mark\product\11.1.0\db_1\bin;C:\Program Files\Common Files\Microsoft Shared\Windows Live;C:\Program Files (x86)\Common Files\Microsoft Shared\Windows Live;C:\Program Files (x86)\ATI Stream\bin\x86_64;C:\Program Files (x86)\ATI Stream\bin\x86;C:\Windows\system32;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Program Files (x86)\ATI Technologies\ATI.ACE\Core-Static;c:\Program Files (x86)\Common Files\Roxio Shared\DLLShared\;c:\Program Files (x86)\Common Files\Roxio Shared\DLLShared\;C:\Program Files (x86)\Windows Live\Shared;C:\Program Files (x86)\QuickTime\QTSystem\;C:\Program Files (x86)\MySQL\MySQL Server 5.5\bin
SystemRoot	C:\Windows
COMSPEC	C:\Windows\system32\cmd.exe
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
WINDIR	C:\Windows
SERVER_SIGNATURE	
SERVER_SOFTWARE	Apache/2.2.22 (Win32) PHP/5.2.17
SERVER_NAME	localhost
SERVER_ADDR	127.0.0.1
SERVER_PORT	8081
REMOTE_ADDR	127.0.0.1

Output from
executing
server.php

