CNT 4714: Enterprise Computing
Fall 2010

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 5.3.3 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.
- All of the examples we'll be looking at use the latest stable version of PHP which is 5.3.3 and was released July 22, 2010.

Introduction to PHP (cont.)

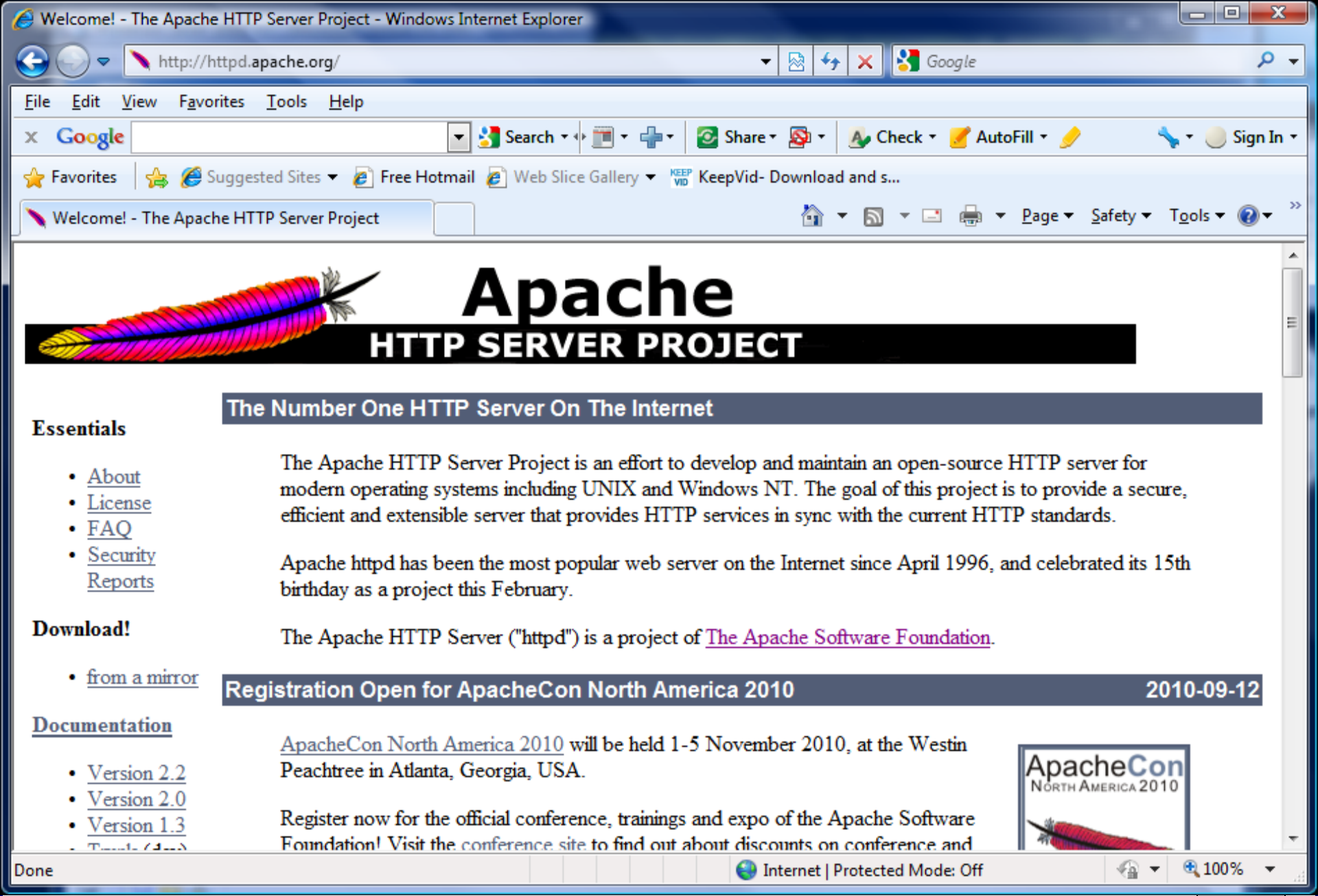
- The power of the Web resides not only in serving content to users, but also in responding to requests from users and generating Web pages with dynamic content.
- Interactivity between the user and the server has become a crucial part of Web functionality. While other languages can also perform these 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.

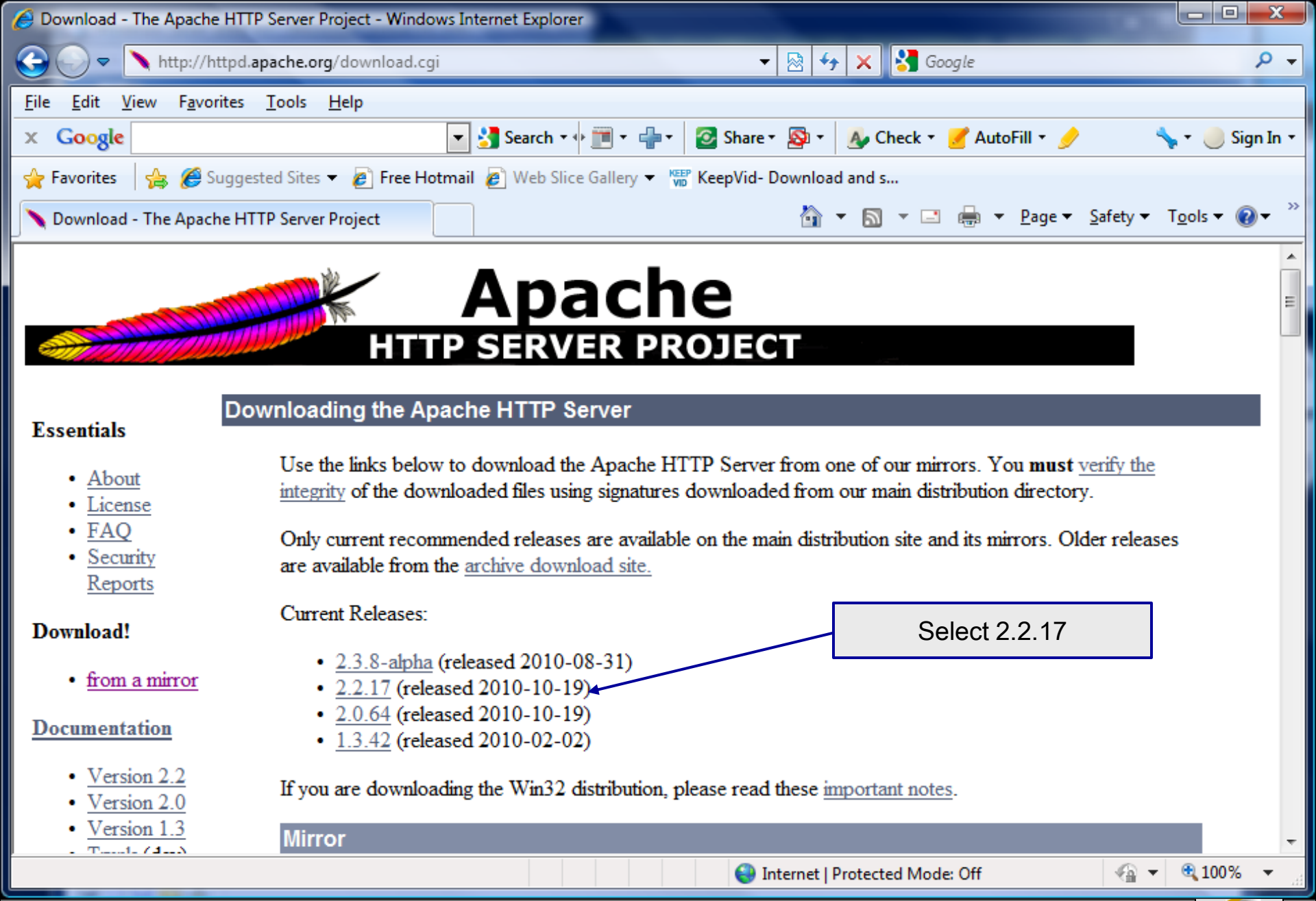
Introduction to PHP (cont.)

- 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. Download PHP 5.3.3 from www.php.net. (Most recent version is 5.3.3.)
- Although PHP can be used from the command line, a Web server is required to take full advantage of the scripting language. I would suggest the Apache server available from www.apache.org. (Note: this is not the Tomcat server you've already used.) Current version is 2.2.17 which is a new major version change from the previous 2.0.xx versions (mostly in the areas of security) and was released on October 19, 2010.
- 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 current version of the Apache HTTP server is 2.2.17 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.


Welcome! - The Apache HTTP Server Project - Windows Internet Explorer
http://httpd.apache.org/
Google
File Edit View Favorites Tools Help
Search Share Check AutoFill Sign In
Favorites Suggested Sites Free Hotmail Web Slice Gallery KeepVid- Download and s...
Welcome! - The Apache HTTP Server Project
Page Safety Tools
Apache
HTTP SERVER PROJECT
Essentials
About
License
FAQ
Security Reports
Download!
from a mirror
Documentation
Version 2.2
Version 2.0
Version 1.3
The Number One HTTP Server On The Internet
The Apache HTTP Server Project is an effort to develop and maintain an open-source HTTP server for modern operating systems including UNIX and Windows NT. The goal of this project is to provide a secure, efficient and extensible server that provides HTTP services in sync with the current HTTP standards.
Apache httpd has been the most popular web server on the Internet since April 1996, and celebrated its 15th birthday as a project this February.
The Apache HTTP Server ("httpd") is a project of The Apache Software Foundation.
Registration Open for ApacheCon North America 2010 2010-09-12
ApacheCon North America 2010 will be held 1-5 November 2010, at the Westin Peachtree in Atlanta, Georgia, USA.
Register now for the official conference, trainings and expo of the Apache Software Foundation! Visit the conference site to find out about discounts on conference and
ApacheCon
North America 2010
Done
Internet | Protected Mode: Off
100%


Download - The Apache HTTP Server Project - Windows Internet Explorer
http://httpd.apache.org/download.cgi
Google
File Edit View Favorites Tools Help
Search Share Check AutoFill Sign In
Favorites Suggested Sites Free Hotmail Web Slice Gallery KeepVid- Download and s...
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Page Safety Tools
Apache
HTTP SERVER PROJECT
Essentials
About
License
FAQ
Security Reports
Download!
from a mirror
Documentation
Version 2.2
Version 2.0
Version 1.3
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 are available from the archive download site.
Current Releases:
2.3.8-alpha (released 2010-08-31)
2.2.17 (released 2010-10-19)
2.0.64 (released 2010-10-19)
1.3.42 (released 2010-02-02)
Select 2.2.17
If you are downloading the Win32 distribution, please read these important notes.
Mirror
Internet | Protected Mode: Off
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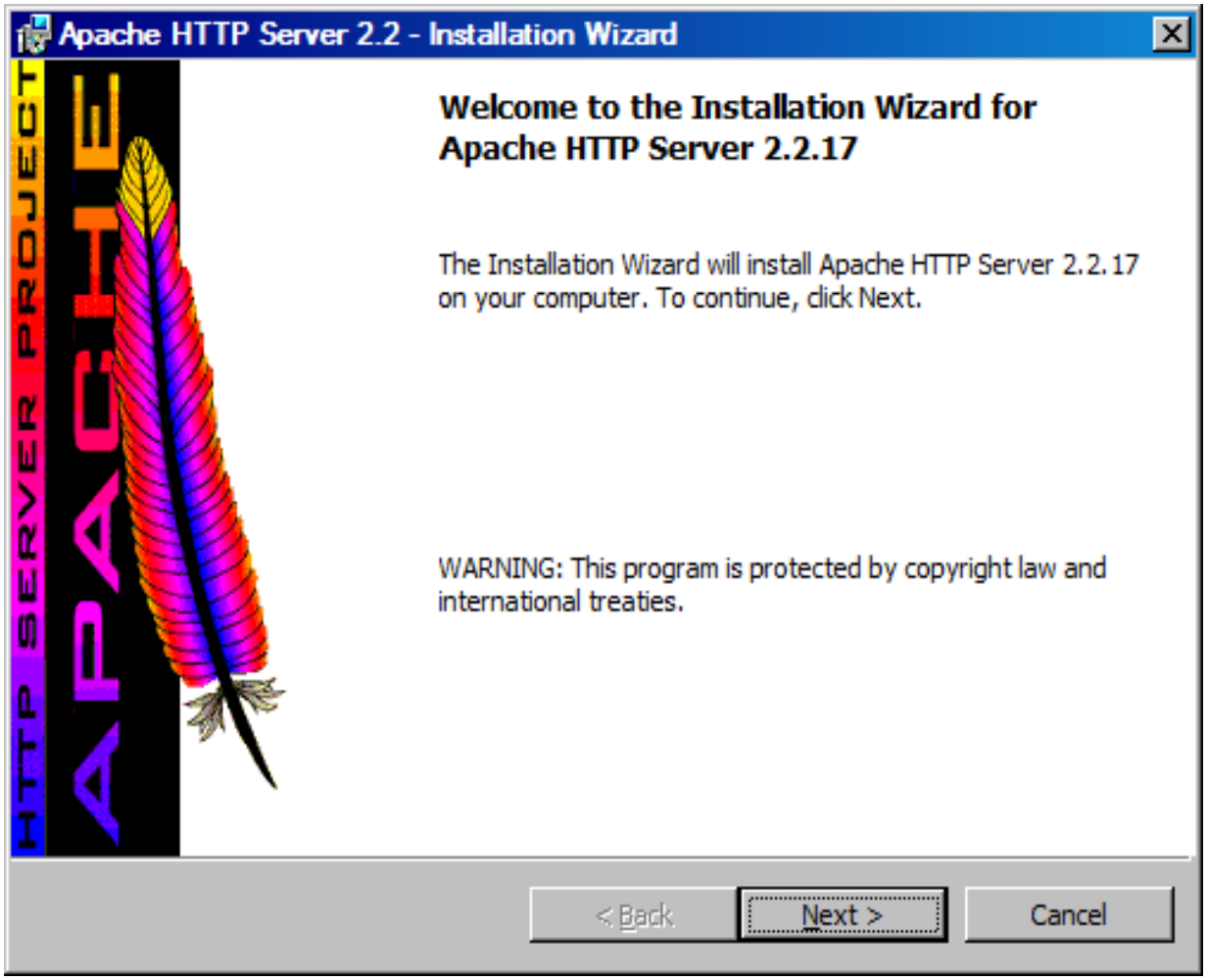
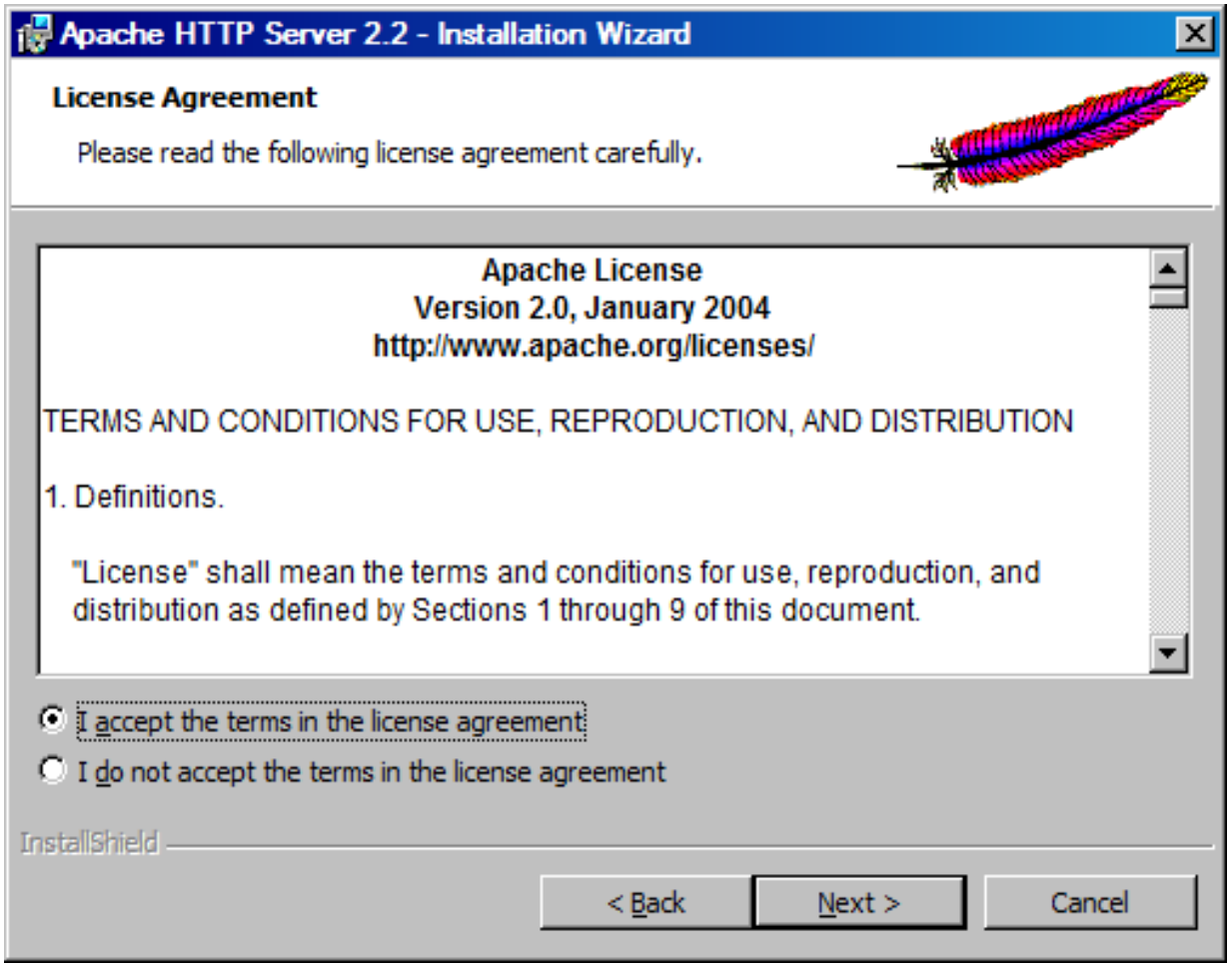
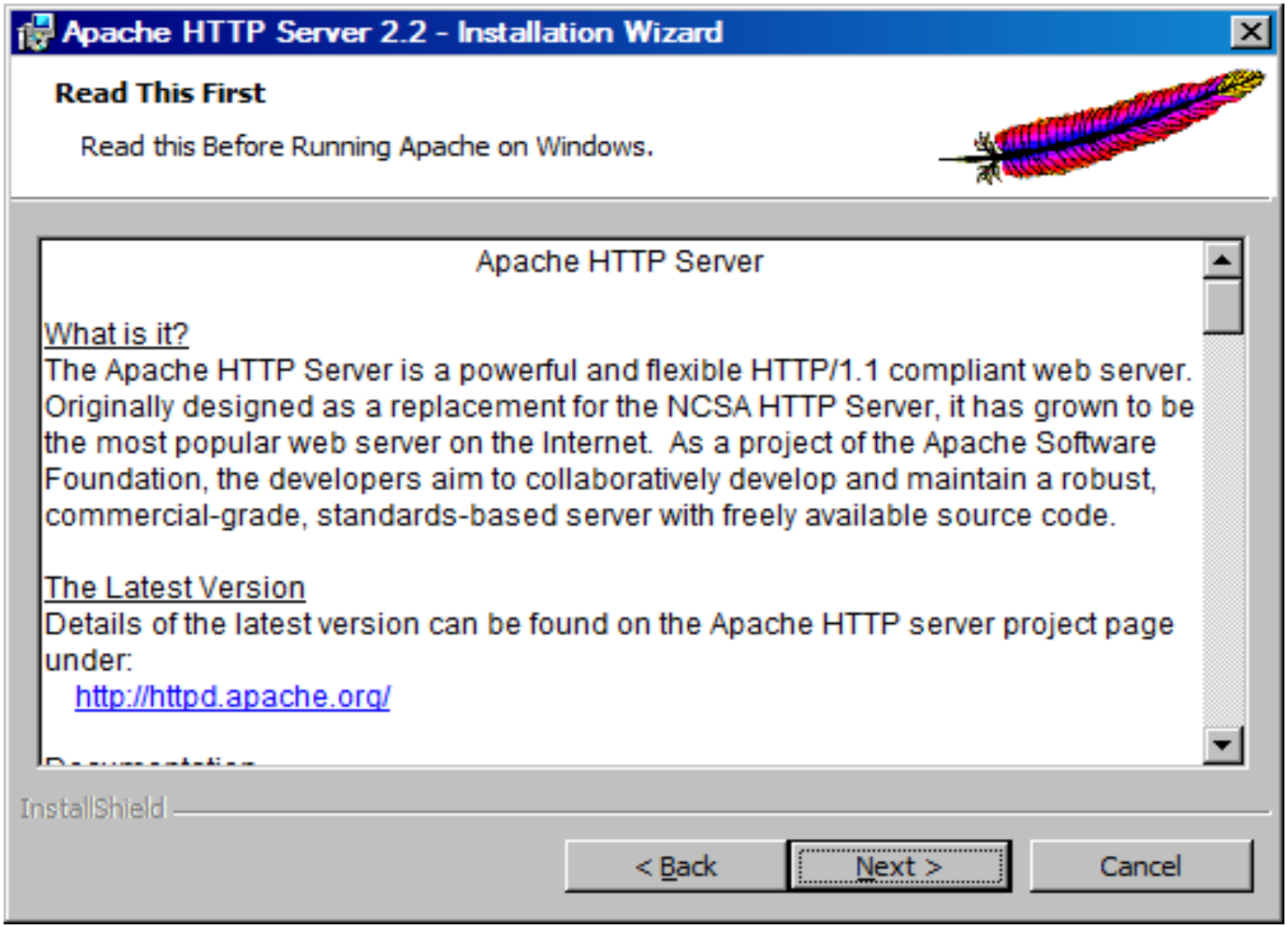
Installing And Configuring Apache (cont.)



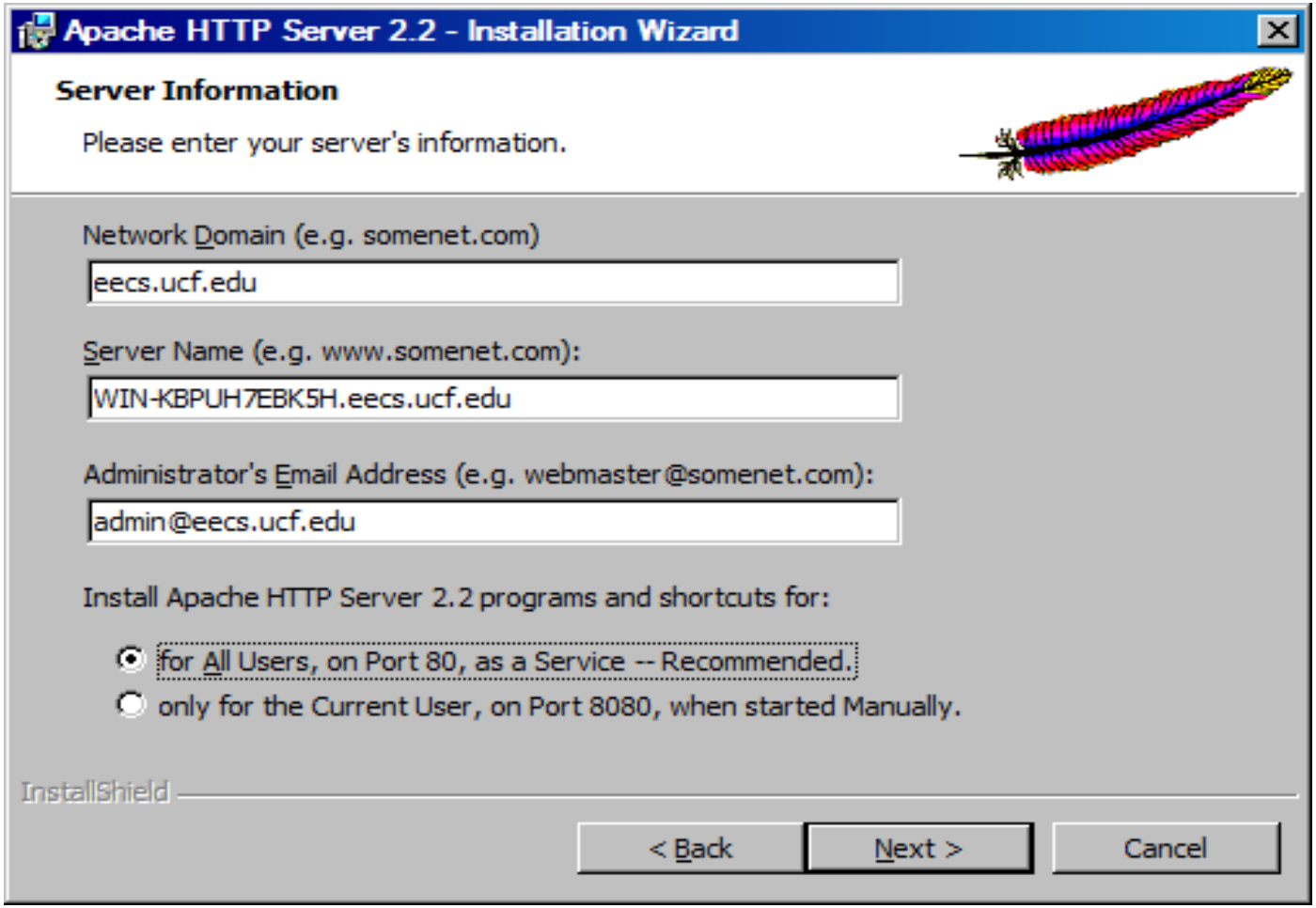
Installing And Configuring Apache (cont.)



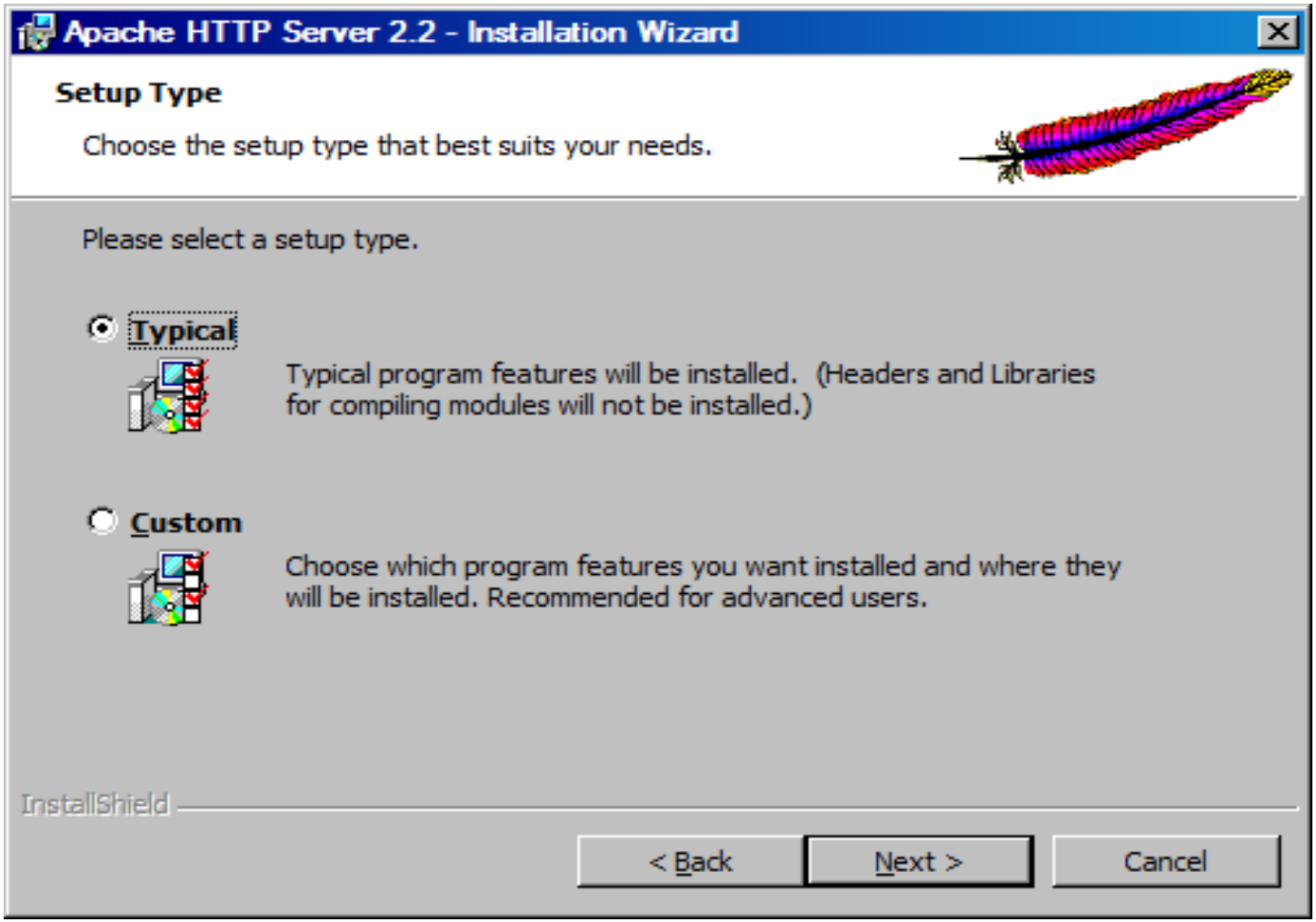
Installing And Configuring Apache (cont.)



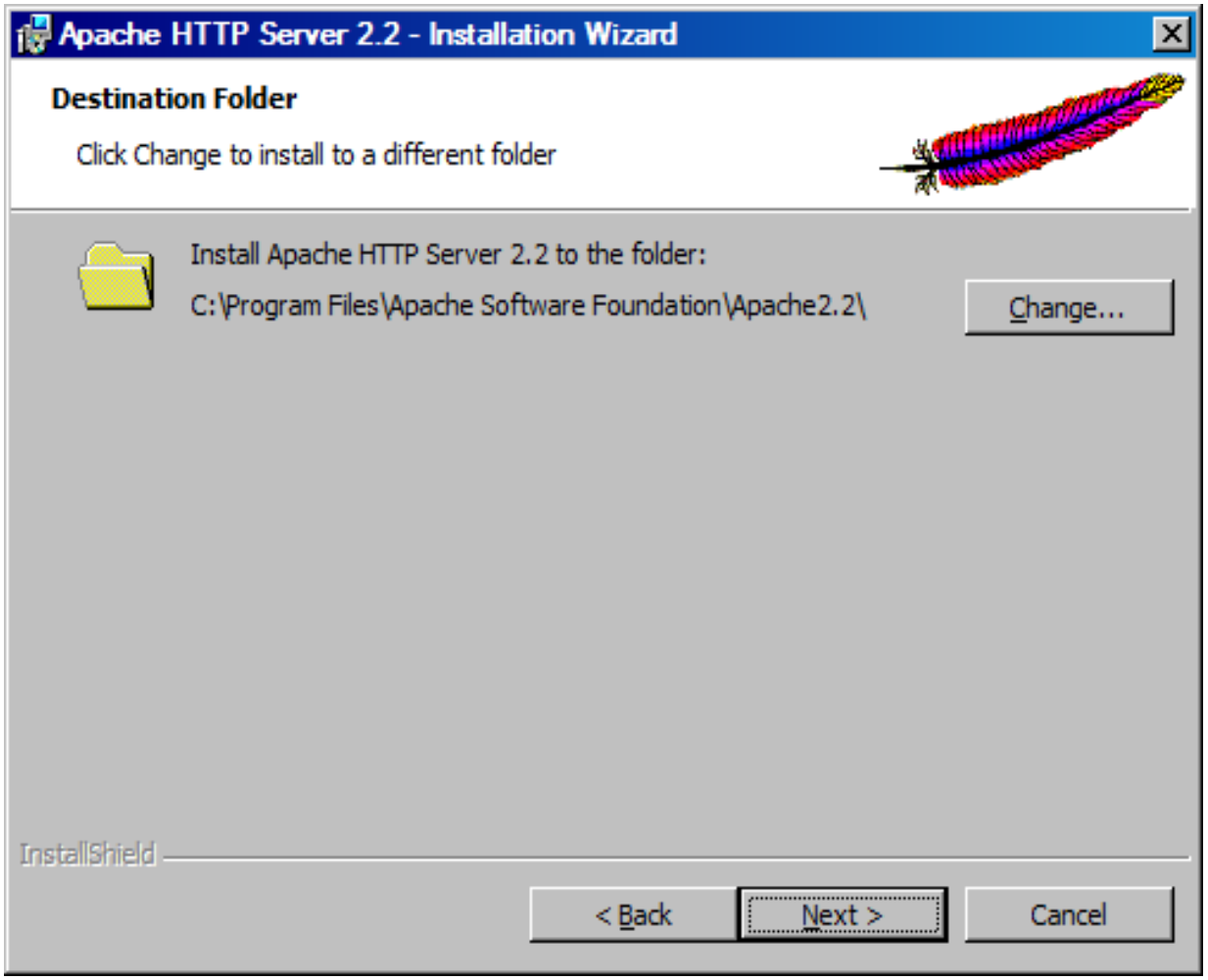
Installing And Configuring Apache (cont.)



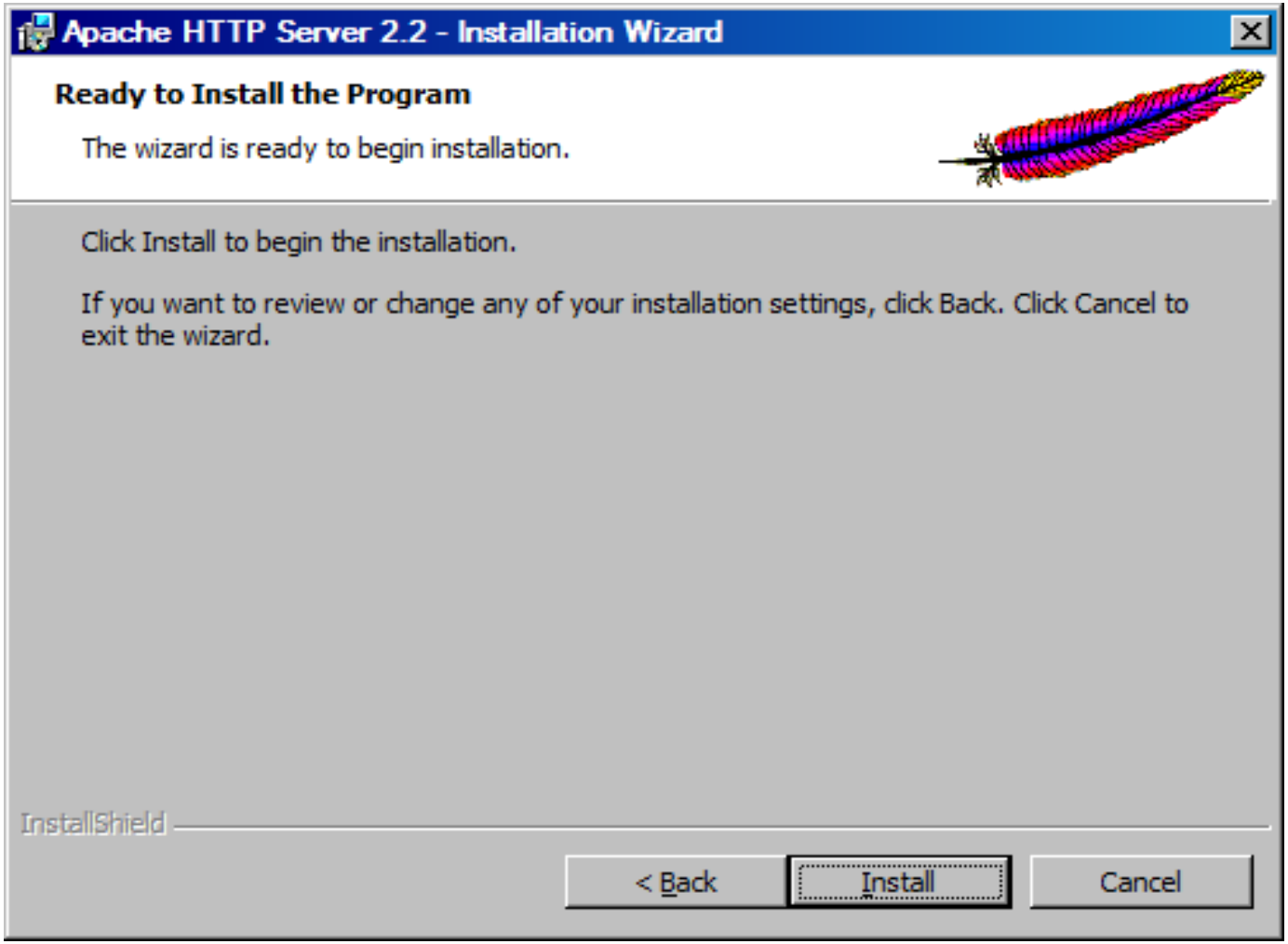
Installing And Configuring Apache (cont.)



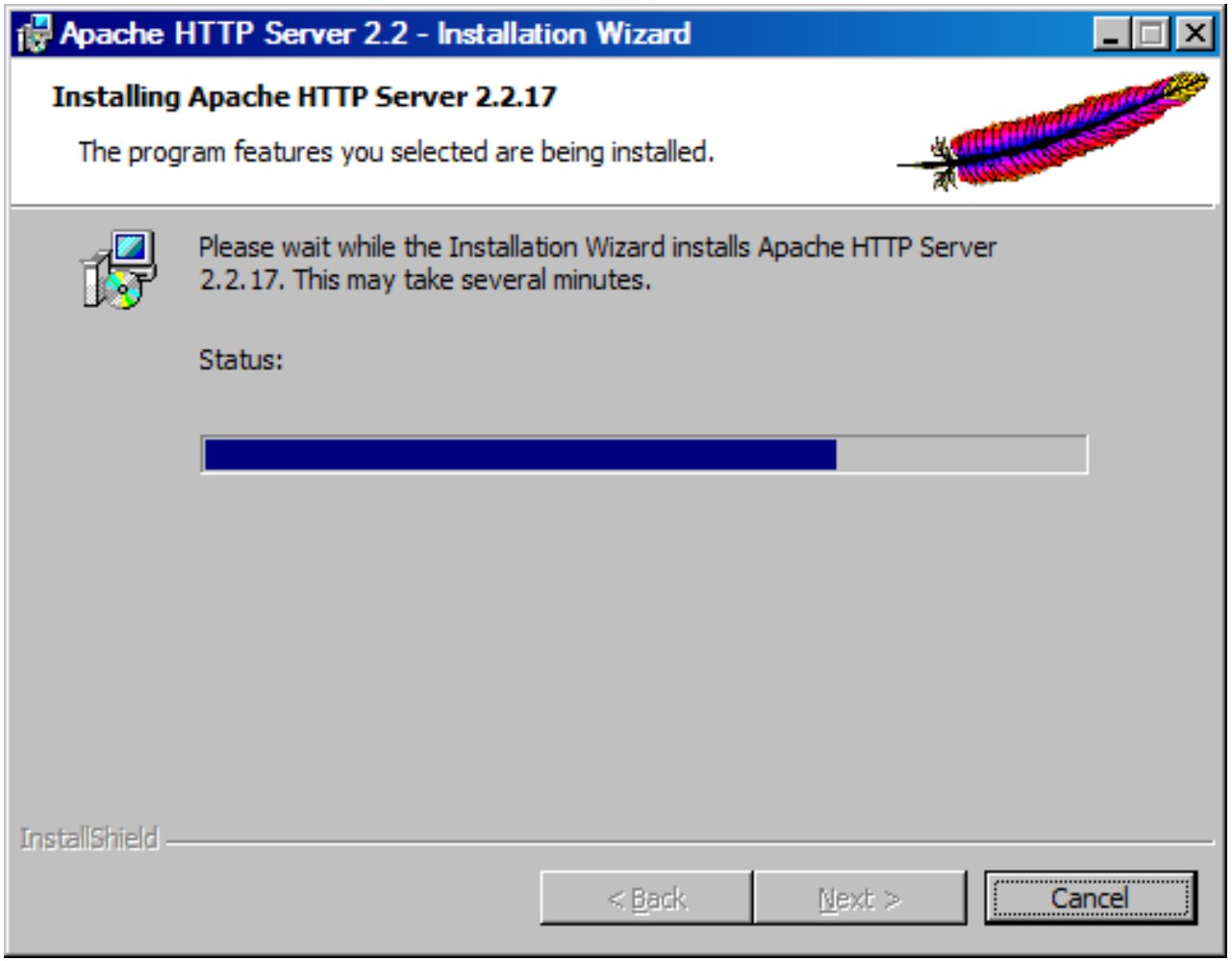
Installing And Configuring Apache (cont.)



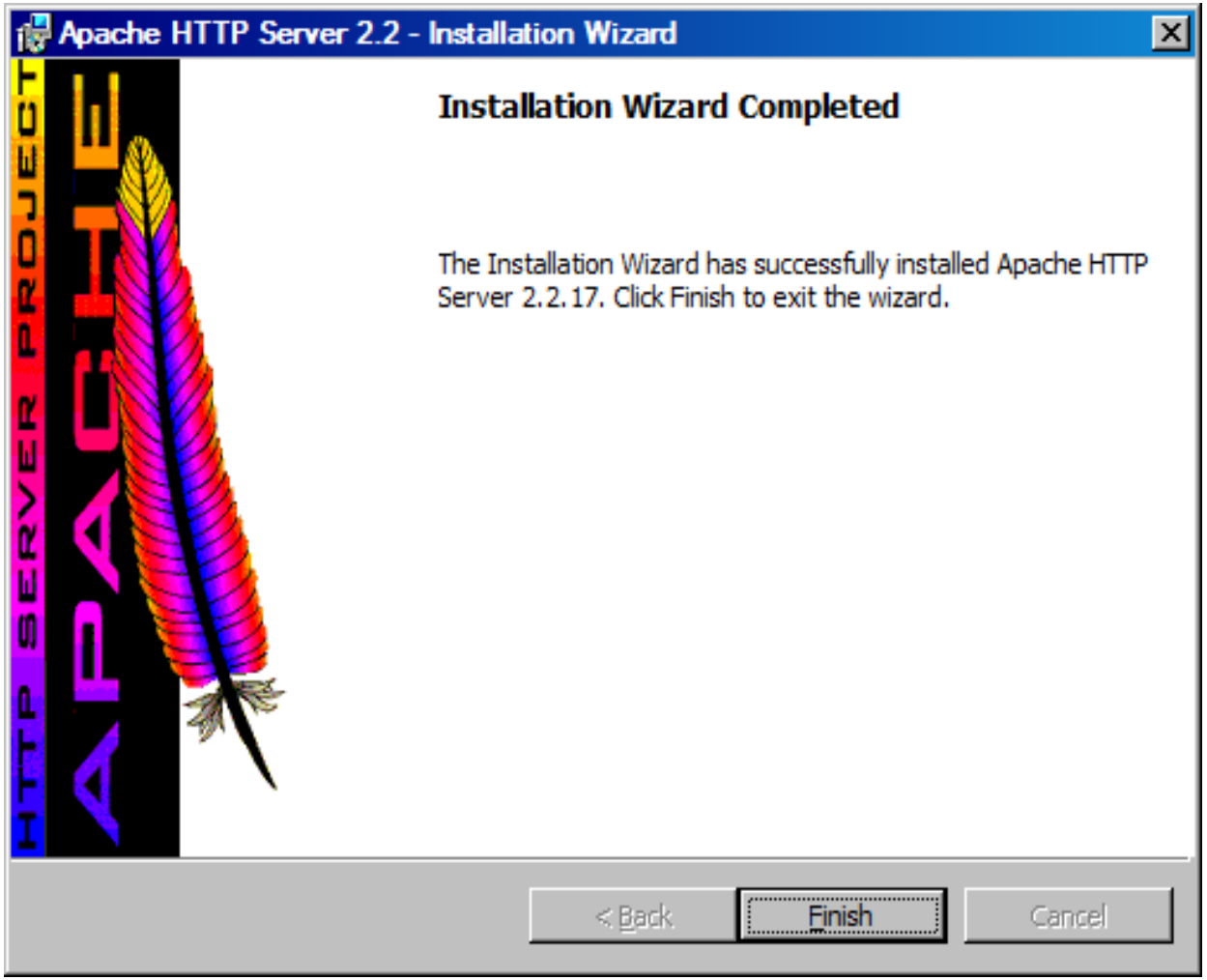
Installing And Configuring Apache (cont.)



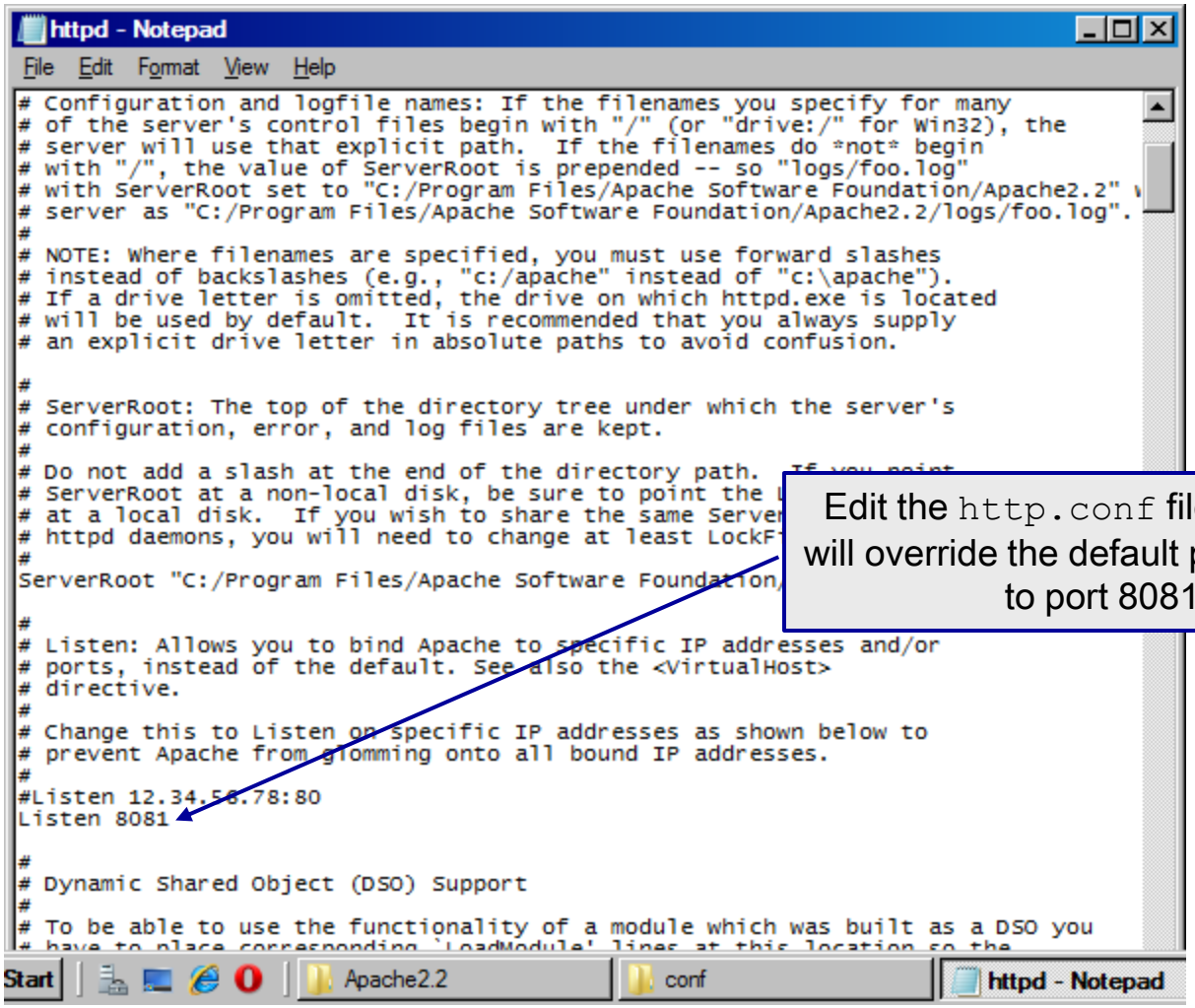
Installing And Configuring Apache (cont.)



Installing And Configuring Apache (cont.)

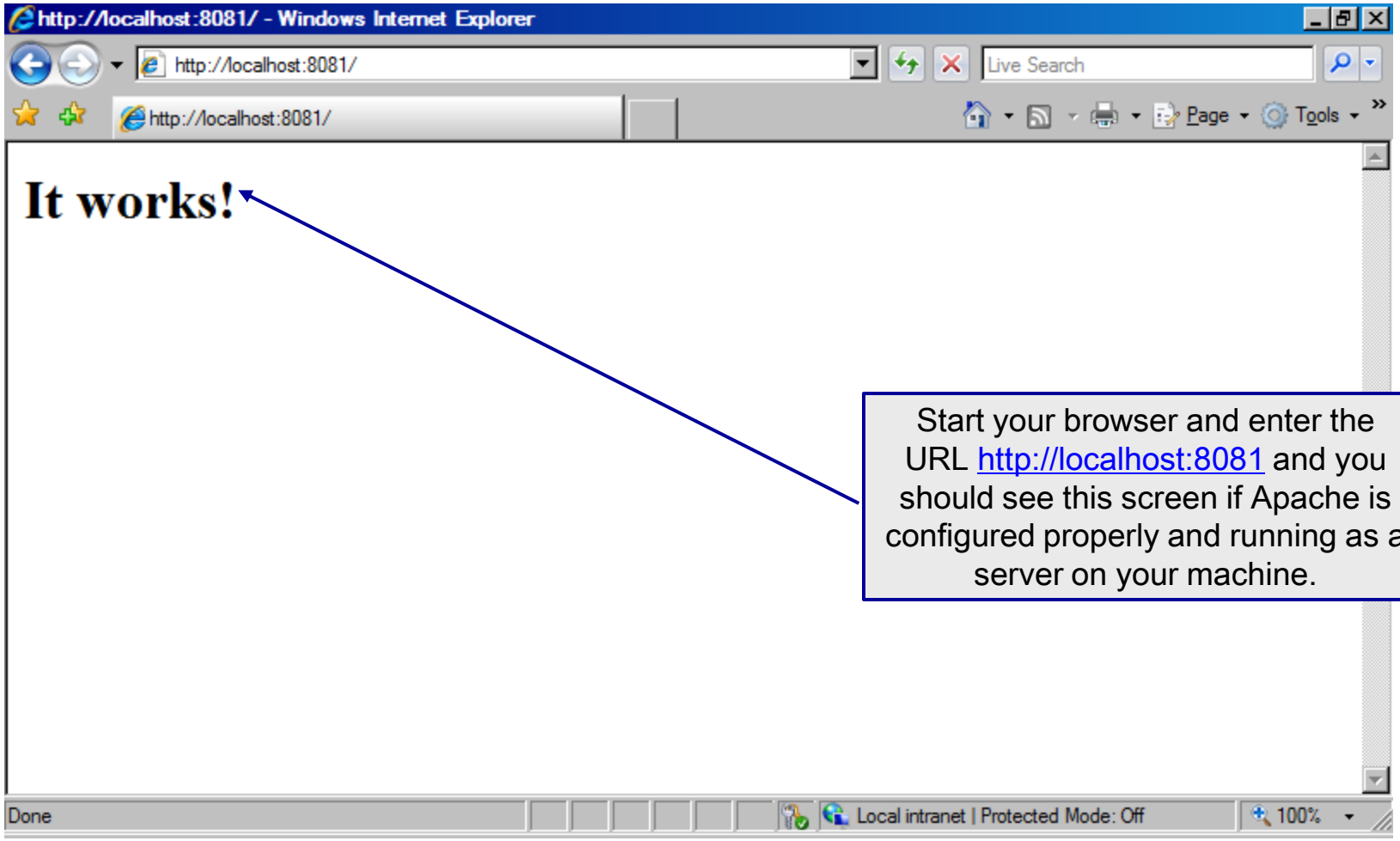


Installing And Configuring Apache (cont.)



Edit the `http.conf` file so that we will override the default port and set it to port 8081.

Installing And Configuring Apache (cont.)



Start your browser and enter the URL http://localhost:8081 and you should see this screen if Apache is configured properly and running as a server on your machine.

Installing and Configuring PHP

- The current version of PHP (PHP 5.3.3) can be downloaded from www.php.net. (See page 21.)
- 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: Hypertext Preprocessor - Windows Internet Explorer
http://www.php.net/
Google
File Edit View Favorites Tools Help
Search Share Check AutoFill Sign In
Favorites Suggested Sites Free Hotmail Web Slice Gallery KeepVid- Download and s...
PHP: Hypertext Preprocessor
Page Safety Tools
php
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 the introductory tutorial. After that, check out the online manual, and the example archive sites and some of the other resources available in the links section.
Ever wondered how popular PHP is? see the Netcraft Survey.
Calling for papers: Confoo
Upcoming conferences: PHP'n Rio 10
PHP 5.3.3 Released!
[22-Jul-2010] The PHP development team would like to announce the immediate availability of PHP 5.3.3. This release focuses on improving the stability and security of the PHP 5.3.x branch with over 100 bug fixes, some of which are security related. All users are encouraged to upgrade to this release.
Backwards incompatible change:
Methods with the same name as the last element of a namespaced class name will no longer be treated as constructor. This change doesn't affect non-namespaced classes.
<?php
namespace Foo;
Stable Releases
Current PHP 5.3 Stable: 5.3.3
Current PHP 5.2 Stable: 5.2.14
Upcoming Events [add]
November
Conferences
17. CodeWorks Orlando
20. PHP'n Rio 10
29. PHP SUMMIT Düsseldorf
User Group Events
16. PHP Brisbane Meetup Group
Internet | Protected Mode: Off
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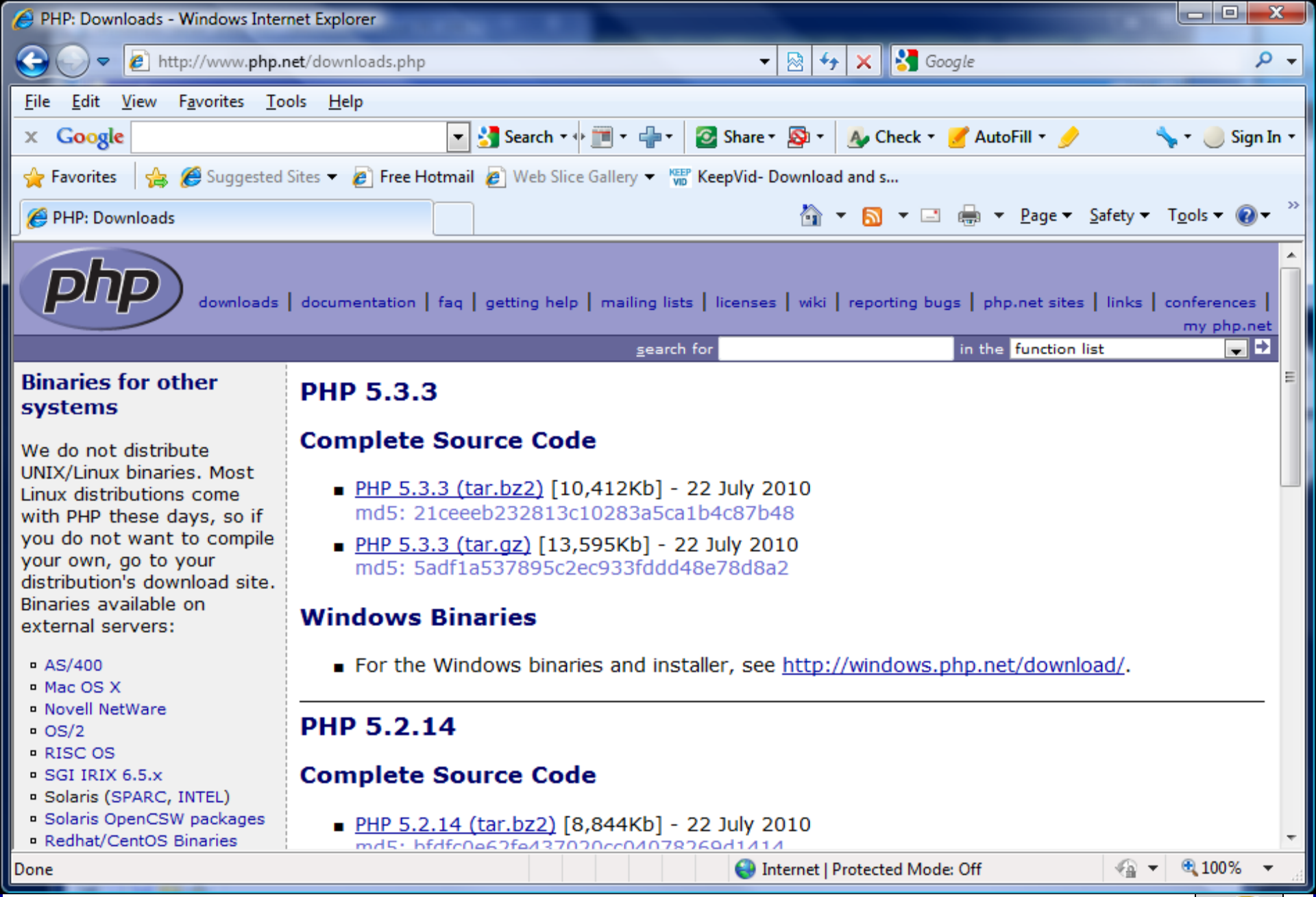
PHP: Downloads - Windows Internet Explorer
http://www.php.net/downloads.php
File Edit View Favorites Tools Help
Favorites
PHP: Downloads
downloads | documentation | faq | getting help | mailing lists | licenses | wiki | reporting bugs | php.net sites | links | conferences | my php.net
search for in the function list
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
Novell NetWare
OS/2
RISC OS
SGI IRIX 6.5.x
Solaris (SPARC, INTEL)
Solaris OpenCSW packages
Redhat/CentOS Binaries
PHP 5.3.3
Complete Source Code
PHP 5.3.3 (tar.bz2) [10,412Kb] - 22 July 2010
md5: 21ceeeb232813c10283a5ca1b4c87b48
PHP 5.3.3 (tar.gz) [13,595Kb] - 22 July 2010
md5: 5adf1a537895c2ec933fddd48e78d8a2
Windows Binaries
For the Windows binaries and installer, see http://windows.php.net/download/.
PHP 5.2.14
Complete Source Code
PHP 5.2.14 (tar.bz2) [8,844Kb] - 22 July 2010
Done
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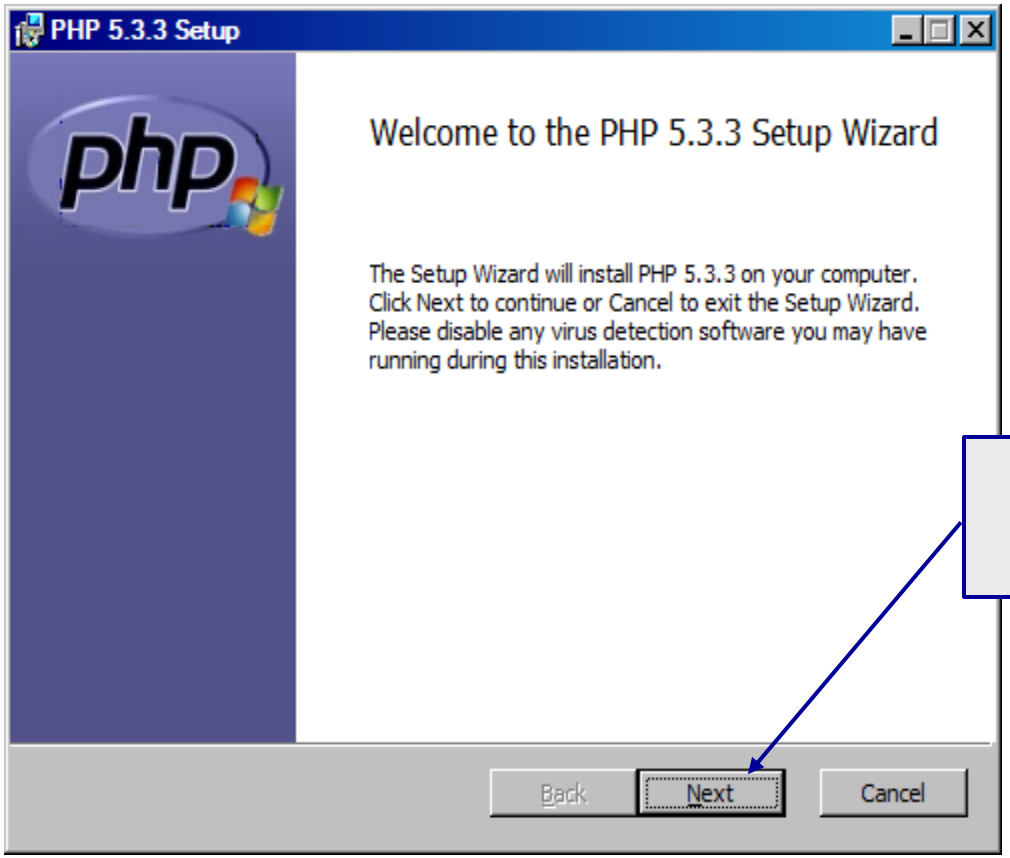
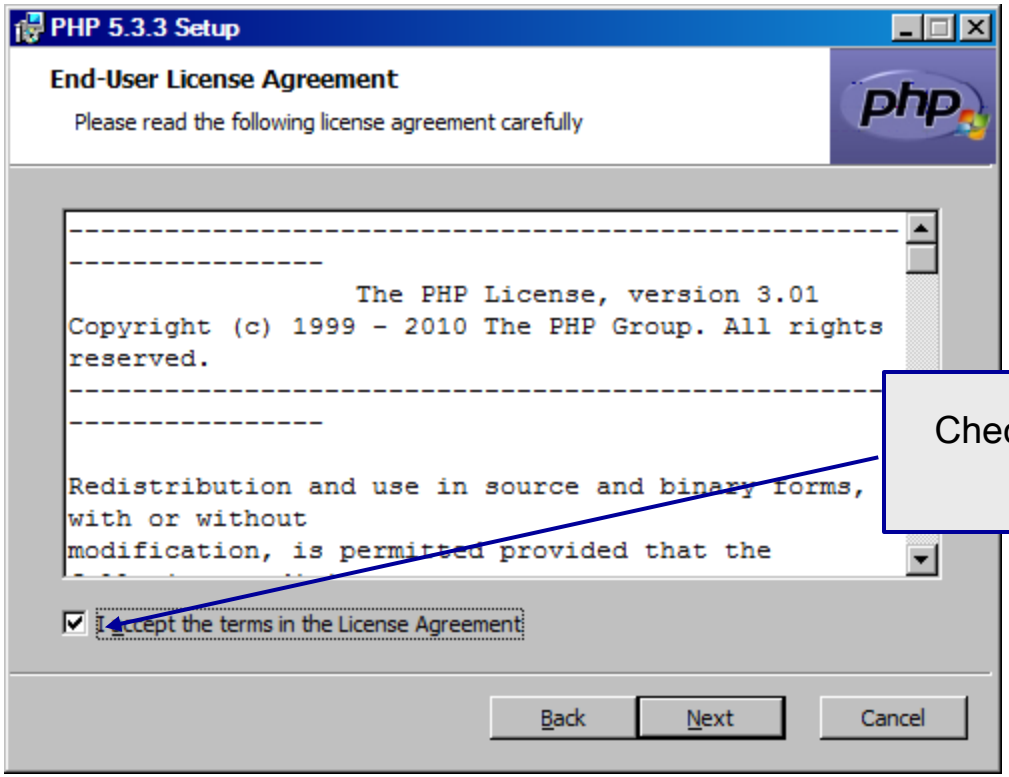
Installing And Configuring PHP (cont.)

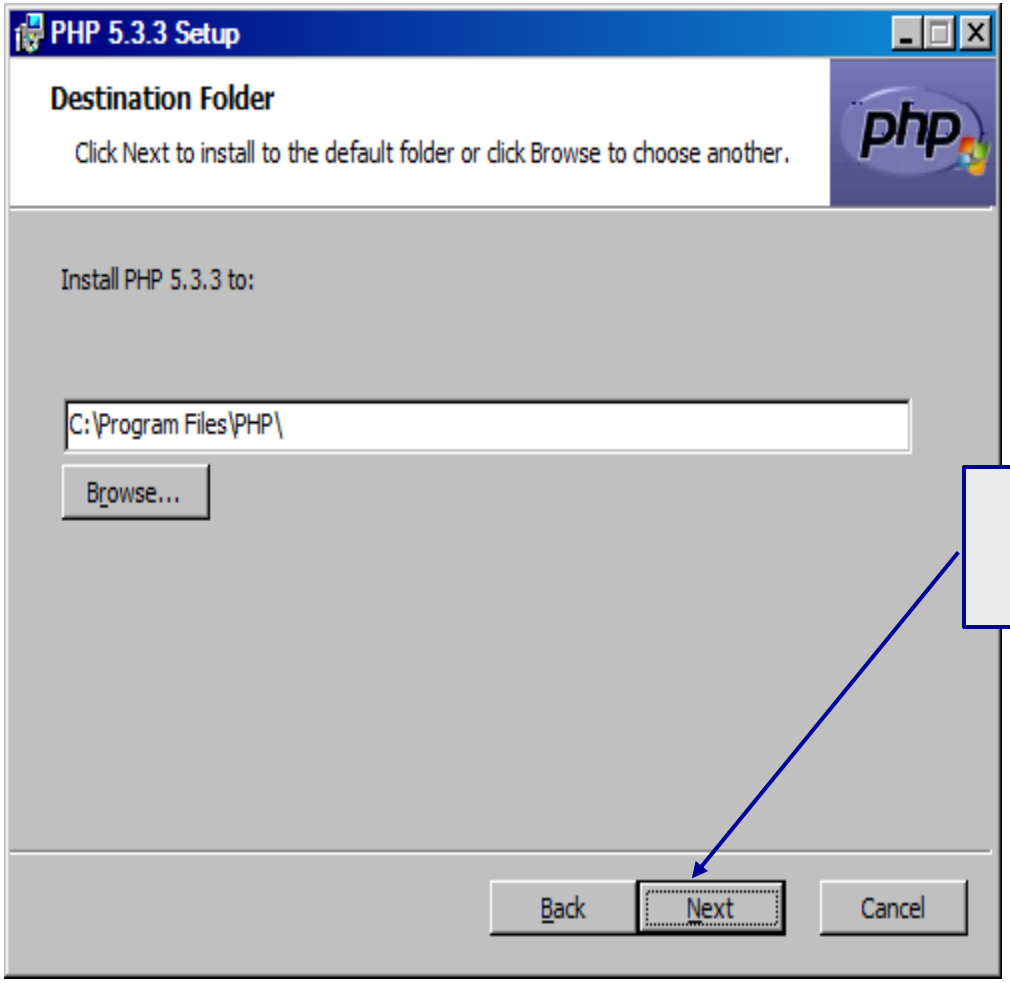


Installing And Configuring Apache (cont.)



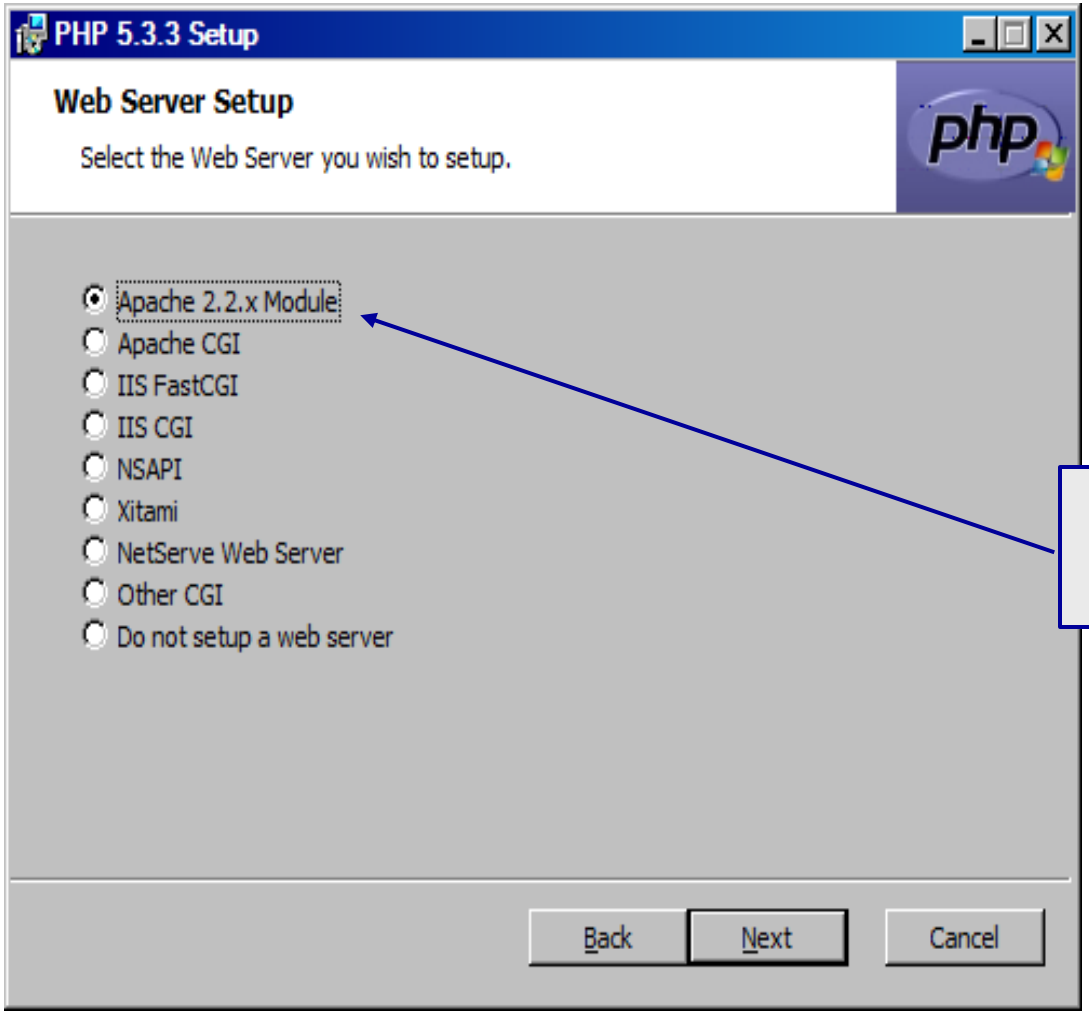
Check accept terms box and click Next.

Installing And Configuring Apache (cont.)



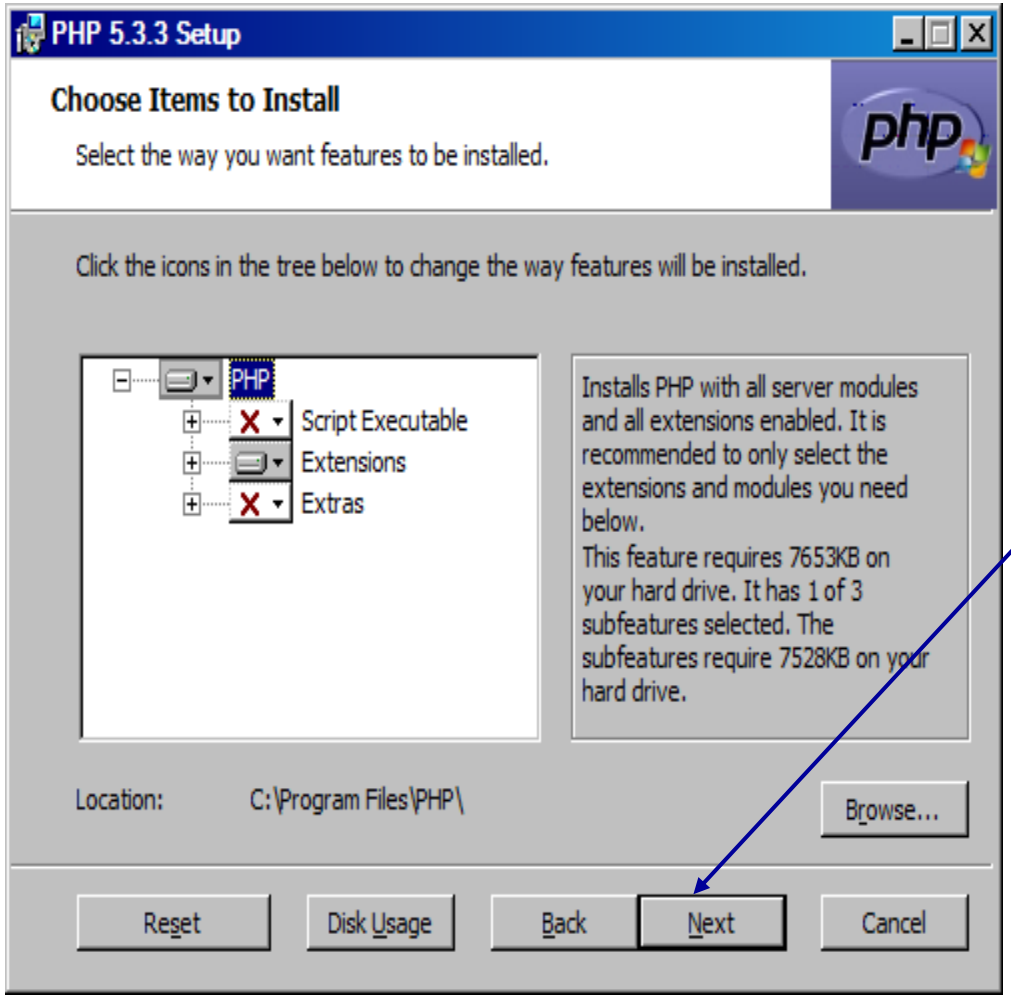
Set file path and click Next

Installing And Configuring Apache (cont.)



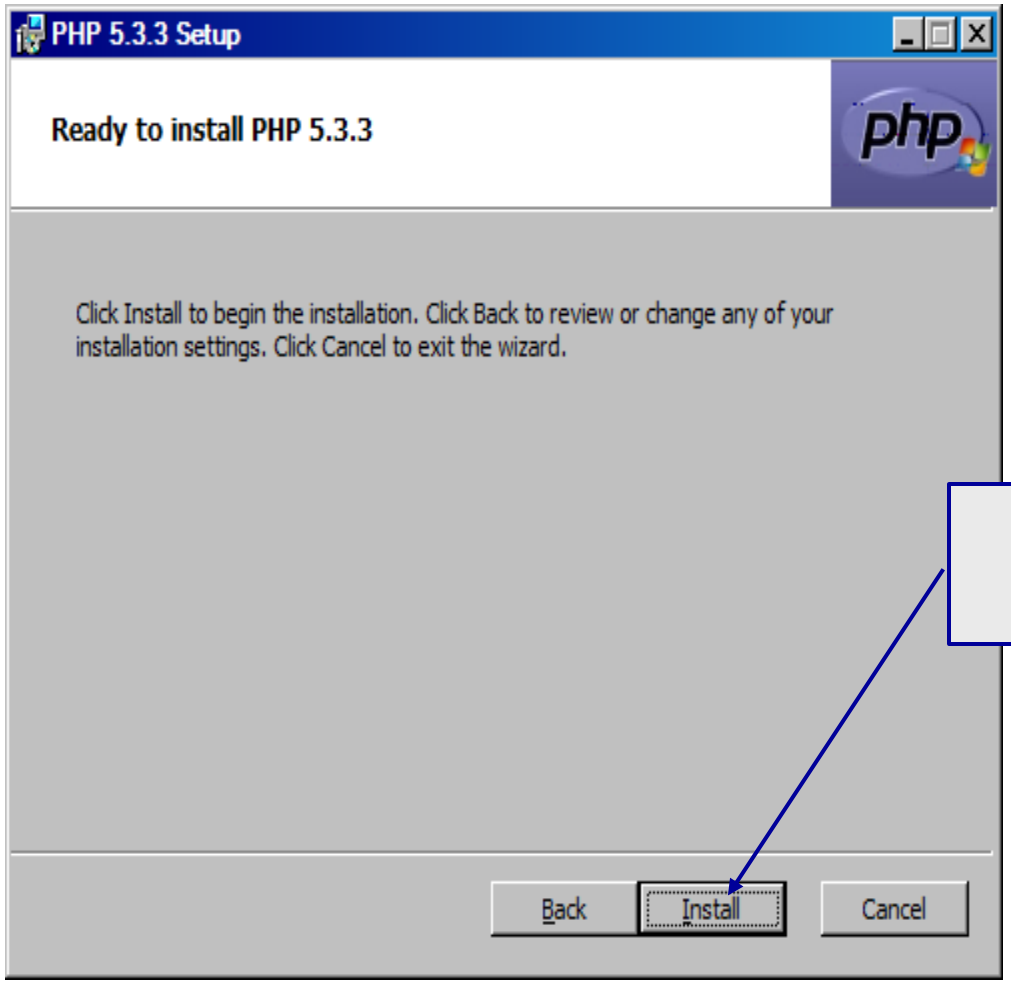
We'll be running PHP as a module within the Apache 2.2.x server so check this box. Then click Next.

Installing And Configuring Apache (cont.)



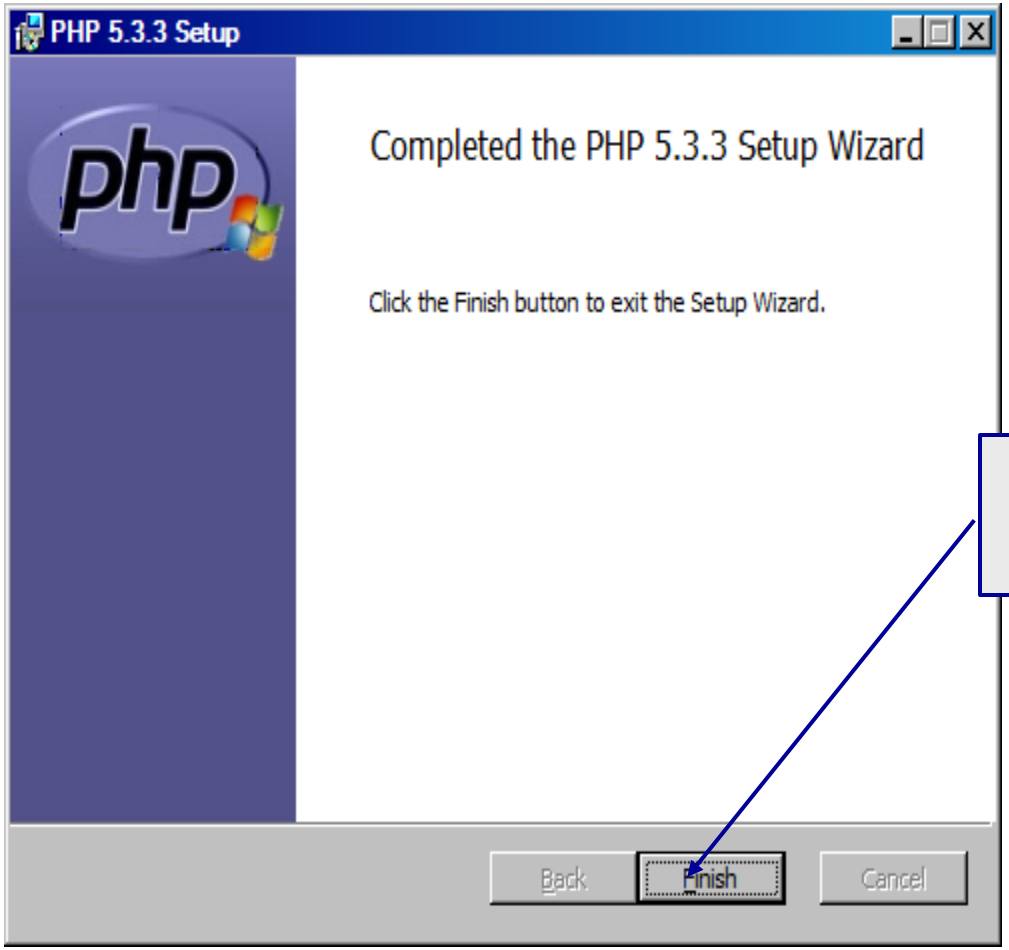
Do not allow all extensions to be loaded automatically – this will lead to very erratic behavior of your server and PHP as many are mutually exclusive and/or conflict with each other. Hand tuning the configuration files and extension libraries is required. (See the box on the right hand side of this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

Installing And Configuring Apache (cont.)



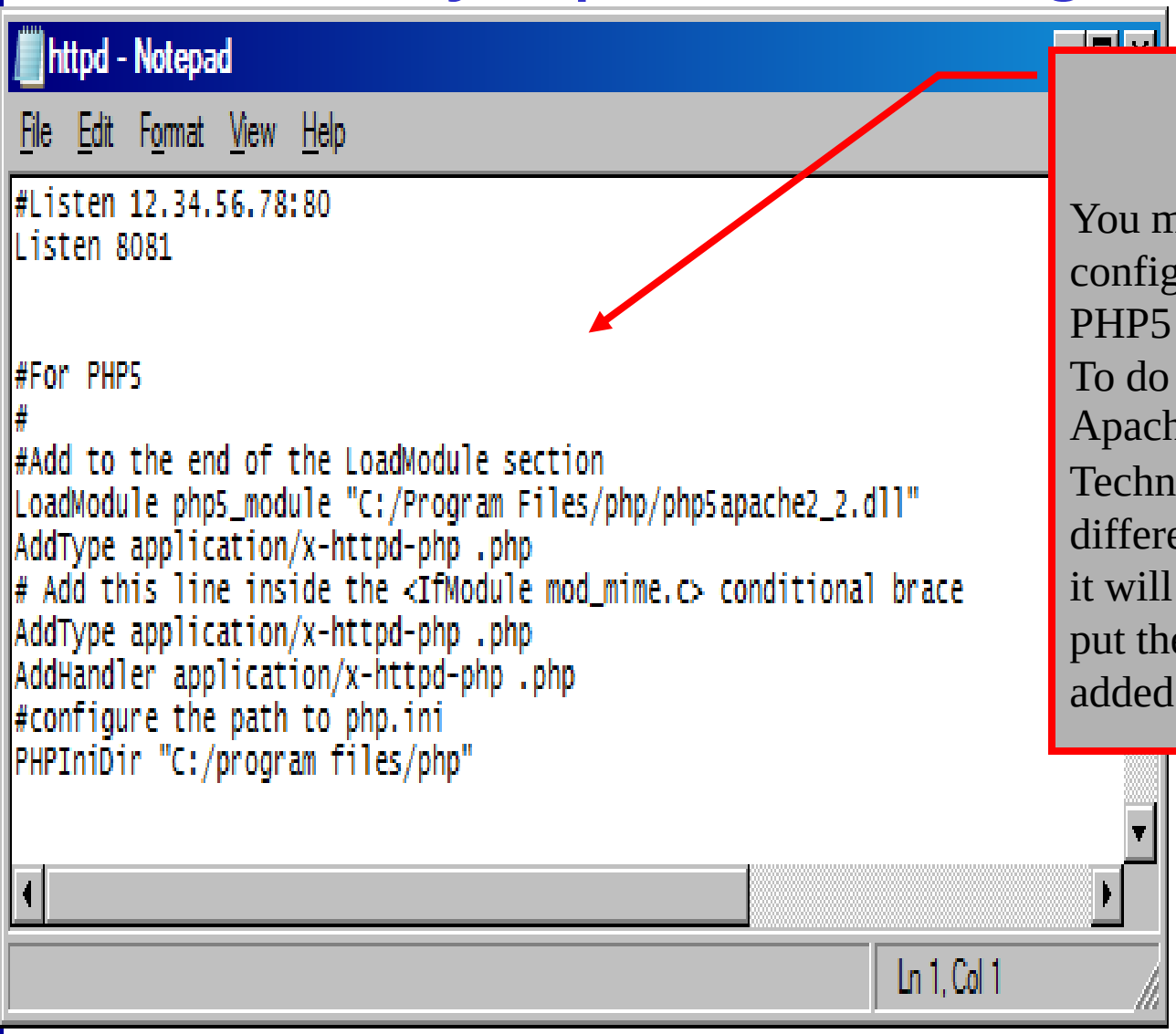
Click Install

Installing And Configuring Apache (cont.)



Click Finish

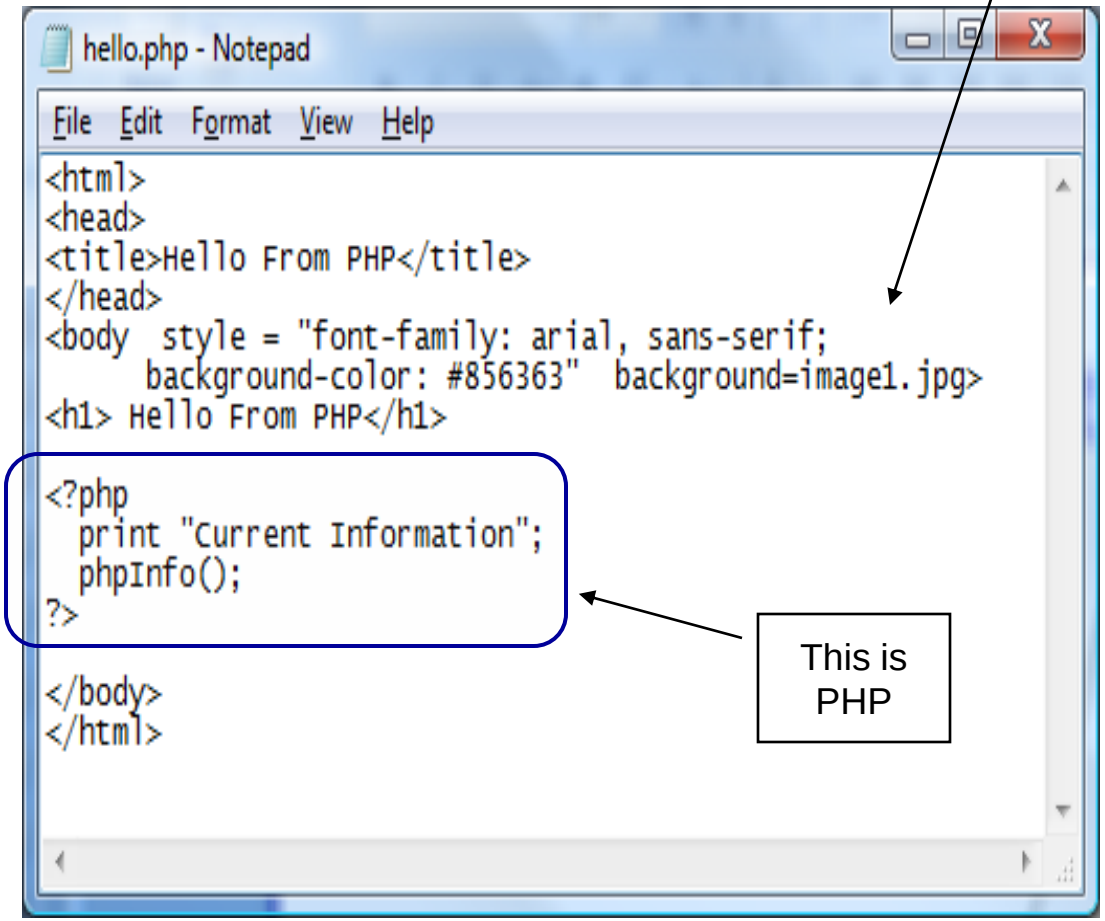
Modify Apache Configuration File



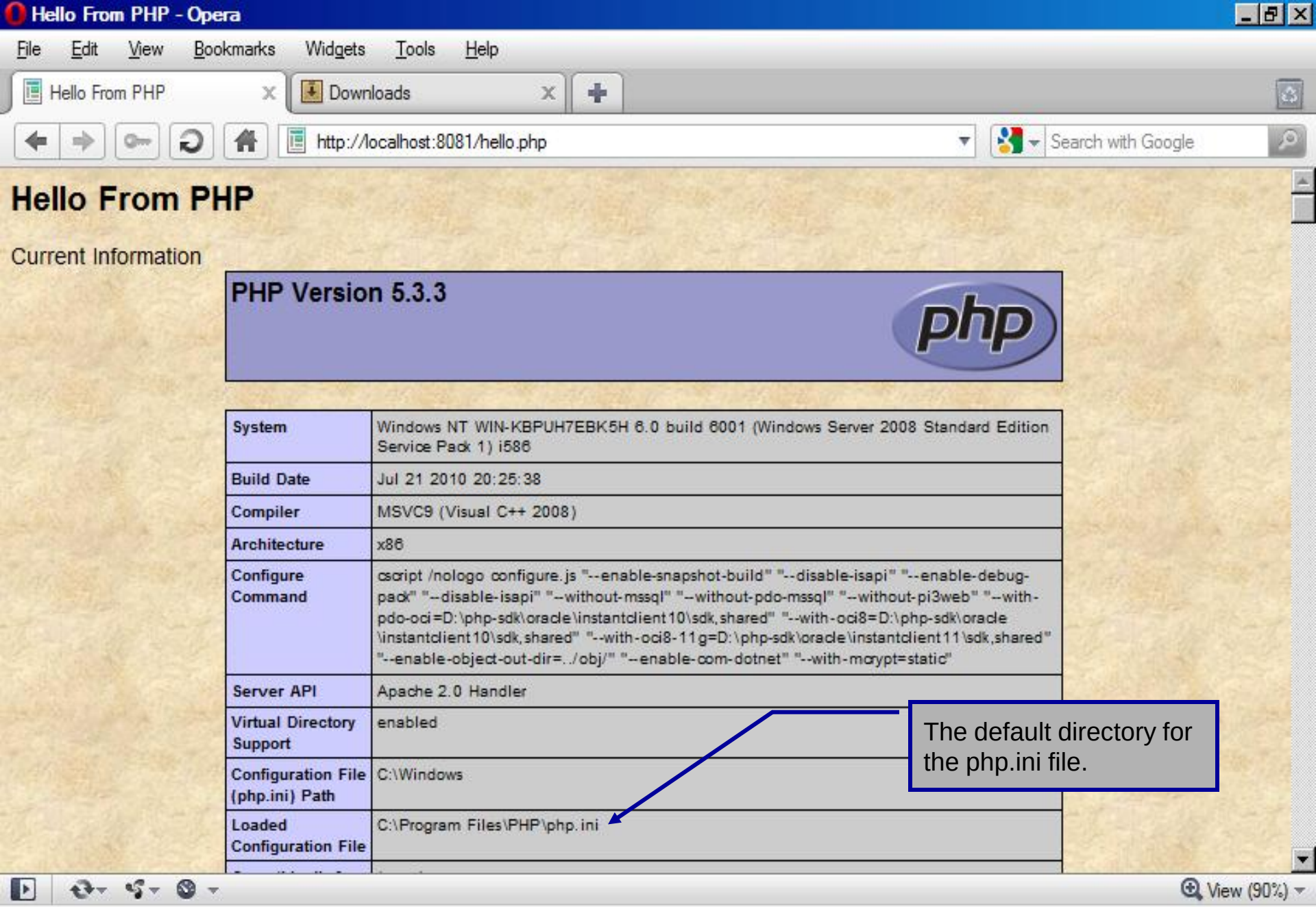
IMPORTANT ! ! !

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.


Hello From PHP - Opera
File Edit View Bookmarks Widgets Tools Help
Hello From PHP
Downloads
http://localhost:8081/hello.php
Search with Google
Hello From PHP
Current Information
PHP Version 5.3.3
php
System
Windows NT WIN-KBPUH7EBK5H 6.0 build 6001 (Windows Server 2008 Standard Edition Service Pack 1) i586
Build Date
Jul 21 2010 20:25:38
Compiler
MSVC9 (Visual C++ 2008)
Architecture
x86
Configure Command
cscript /nologo configure.js "--enable-snapshot-build" "--disable-isapi" "--enable-debug-pack" "--disable-isapi" "--without-mssql" "--without-pdo-mssql" "--without-pi3web" "--with-pdo-oci=D:\php-sdk\oracle\instantclient10\sdk,shared" "--with-oci8=D:\php-sdk\oracle\instantclient10\sdk,shared" "--with-oci8-11g=D:\php-sdk\oracle\instantclient11\sdk,shared" "--enable-object-out-dir=../obj/" "--enable-com-dotnet" "--with-mcrypt=static"
Server API
Apache 2.0 Handler
Virtual Directory Support
enabled
Configuration File (php.ini) Path
C:\Windows
Loaded Configuration File
C:\Program Files\PHP\php.ini
The default directory for the php.ini file.
View (90%)

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 Example

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<!-- welcome.php -->
<!-- XHTML file containing a PHP script. -->

<?php
    $name = "Mark";    //php declaration and assignment
?>

<html xmlns = "http://www.w3.org/1999/xhtml">

   <!-- head section of document -->
   <head>
      <title>A Simple PHP Document</title>
   </head>

   <!-- body section of document -->
   <body style = "font-size: 2em">
    <hr>
    <font color = blue><h1> Generating HTML From PHP </h1></font color>
     <p>
```

PHP code declaring a variable.

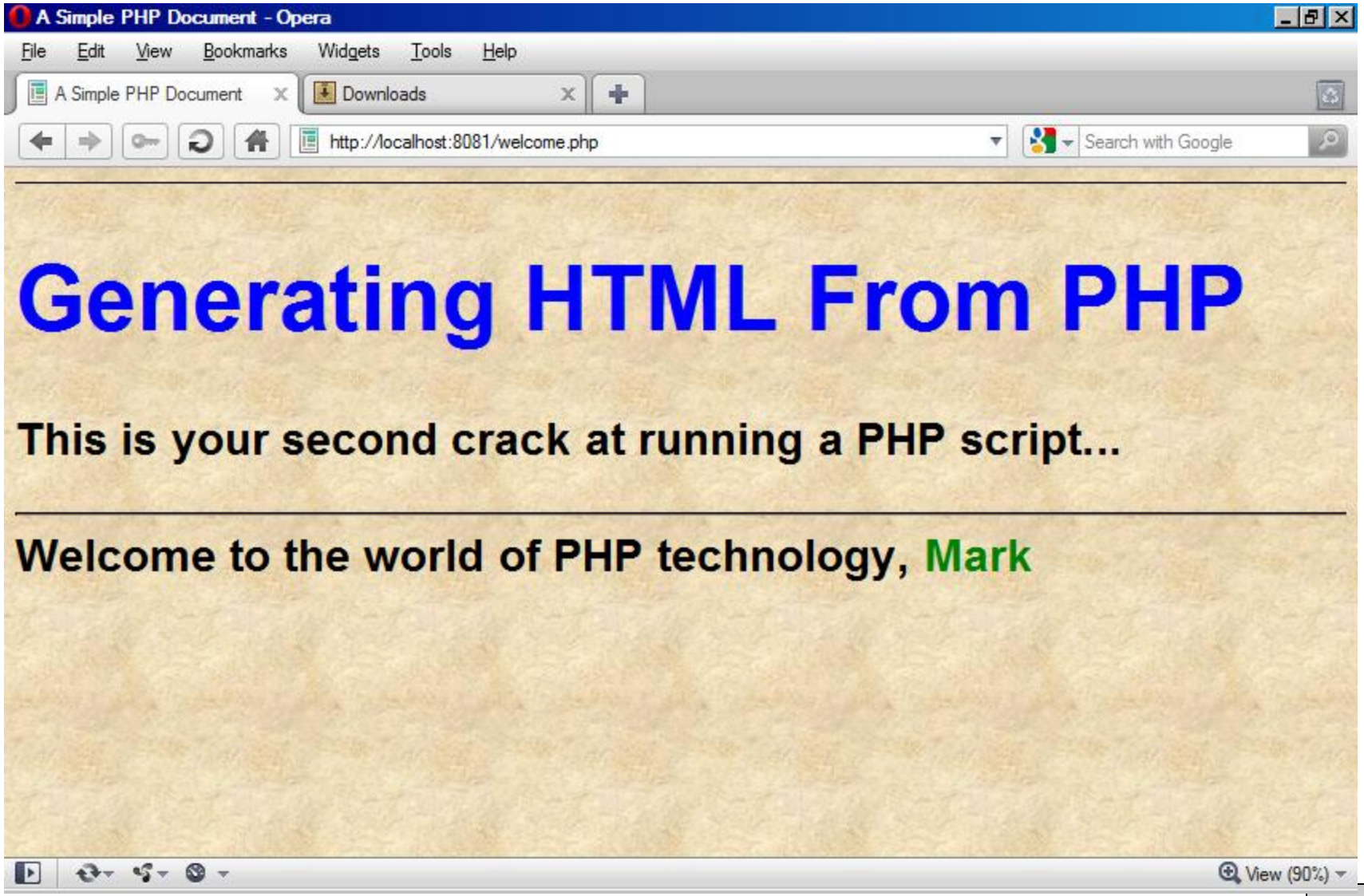
welcome.php Example

```
        <strong>
          <!---print variable name's value in the message-->
            <?php
                print("This is your second crack at running a PHP script...");
                print("<HR>");
                print("Welcome to the world of PHP technology, ");
            ?>
                <font color = green>
                <?php
                        print("$name");
                ?>
                </font color>
          </strong>
        </p>
    </body>
</html> <!-- end XHTML document -->
```

PHP code

PHP code

welcome.php Example Output



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 39 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
$_SERVER	Data about the currently running server.
$_ENV	Data about the client's environment.
$_GET	Data posted to the server by the `get` method.
$_POST	Data posted to the server by the `post` method.
$_COOKIE	Data contained in cookies on the client's computer.
$GLOBALS	Array containing all global variables.

server.php Example

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<!-- server.php                    -->
<!-- Program to display $_SERVER variables -->
<html xmlns = "http://www.w3.org/1999/xhtml">
  <head>
    <title>SERVER Variables Display</title>
  </head>

  <body style = "font-family: arial, sans-serif;
    background-color: #856363"  background=image1.jpg>

    <table border = "0" cellpadding = "2" cellspacing = "0"
      width = "100%">
    <?php
      // print the key and value for each element
      // in the $_SERVER array
      foreach ( $_SERVER as $key => $value )
        print( "<tr><td bgcolor = \"#11bbff\">
          <strong>$key</strong></td> <td>$value</td></tr>" );
    ?>
    </table>
  </body>
</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

File Edit View Bookmarks Widgets Tools Help

SERVER Variables Display | Downloads

http://localhost:8081/server.php

Output from executing server.php

HTTP_USER_AGENT	Opera/9.80 (Windows NT 6.0; U; en) Presto/2.6.30 Version/10.63
HTTP_HOST	localhost:8081
HTTP_ACCEPT	text/html, application/xml;q=0.9, application/xhtml+xml, image/png, image/jpeg, image/gif, image/x-xbitmap, */*;q=0.1
HTTP_ACCEPT_LANGUAGE	en-US,en;q=0.9
HTTP_ACCEPT_CHARSET	iso-8859-1, utf-8, utf-16, *;q=0.1
HTTP_ACCEPT_ENCODING	deflate, gzip, x-gzip, identity, *;q=0
HTTP_CONNECTION	Keep-Alive, TE
HTTP_TE	deflate, gzip, chunked, identity, trailers
PATH	C:\Program Files\PHP\;C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\
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/2.2.17 (Win32) PHP/5.3.3
SERVER_NAME	localhost
SERVER_ADDR	127.0.0.1
SERVER_PORT	8081
REMOTE_ADDR	127.0.0.1

View (90%)