CNT 4714: Enterprise Computing Fall 2011

Installing and Configuring Apache and PHP

Instructor :   Dr. Mark Llewellyn
                markl@cs.ucf.edu
                HEC 236, 407-823-2790
                http://www.cs.ucf.edu/courses/cnt4714/fall2011

Department of Electrical Engineering and Computer Science
Computer Science Division
University of Central Florida

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 5.3.8 (released August 23, 2011) 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 previous stable version which is compatible with the Apache HTTP Server. This is version 5.2.17 and it was released January 6, 2011.

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 2.2.21 which is a new major version change from the previous 2.0.xx versions (mostly in the areas of security) and was released on September 13, 2011.

- 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 Sserver and integrate both PHP and MySQL into it.

Installing Apache HTTP Server

- The current version of the Apache HTTP server is 2.2.21 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.
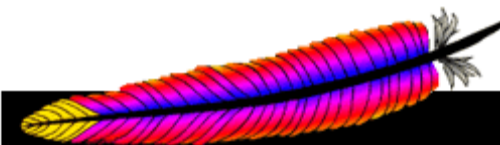
Welcome! - The Apache HTTP Server Project - Windows Internet Explorer

http://httpd.apache.org/   Live Search

File   Edit   View   Favorites   Tools   Help

⭐ Favorites   Suggested Sites ▾   Web Slice Gallery ▾

Welcome! - The Apache HTTP Server Project   🏠 ▾   🔊 ▾   ✉ ▾   🖨 ▾   Page ▾   Safety ▾   Tools ▾   ❓ ▾

Apache
HTTP SERVER PROJECT

The Number One HTTP Server On The Internet

Essentials

- About
- License
- FAQ
- Security Reports

Download!

- from a mirror

Documentation

- Version 2.3 (Beta)
- Version 2.2

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.

Apache HTTP Server 2.2.21 Released   2011-09-13

The Apache HTTP Server Project is proud to announce the release of version 2.2.21 of the Apache HTTP Server ("httpd"). This version is principally a security and bugfix release. Notably, it resolves

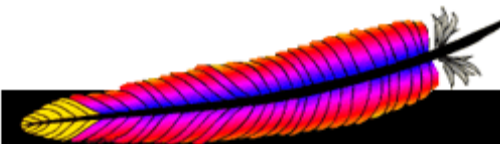http://httpd.apache.org/   🌐 Internet | Protected Mode: Off   🔍 100%

Start   Welcome! - The Apache ...   CNN.com - Breaking New...   2:10 PM

To direct input to this virtual machine, press Ctrl+G.   **vm**ware

Installing And Configuring Apache (cont.)

Installing And Configuring Apache (cont.)

Installing And Configuring Apache (cont.)

Apache HTTP Server 2.2 - Installation Wizard

Read This First

Read this Before Running Apache on Windows.

Apache HTTP Server

<u>What is it?</u>
The Apache HTTP Server is a powerful and flexible HTTP/1.1 compliant web server.
Originally designed as a replacement for the NCSA HTTP Server, it has grown to be
the most popular web server on the Internet. As a project of the Apache Software
Foundation, the developers aim to collaboratively develop and maintain a robust,
commercial-grade, standards-based server with freely available source code.

<u>The Latest Version</u>
Details of the latest version can be found on the Apache HTTP server project page
under:
    http://httpd.apache.org/
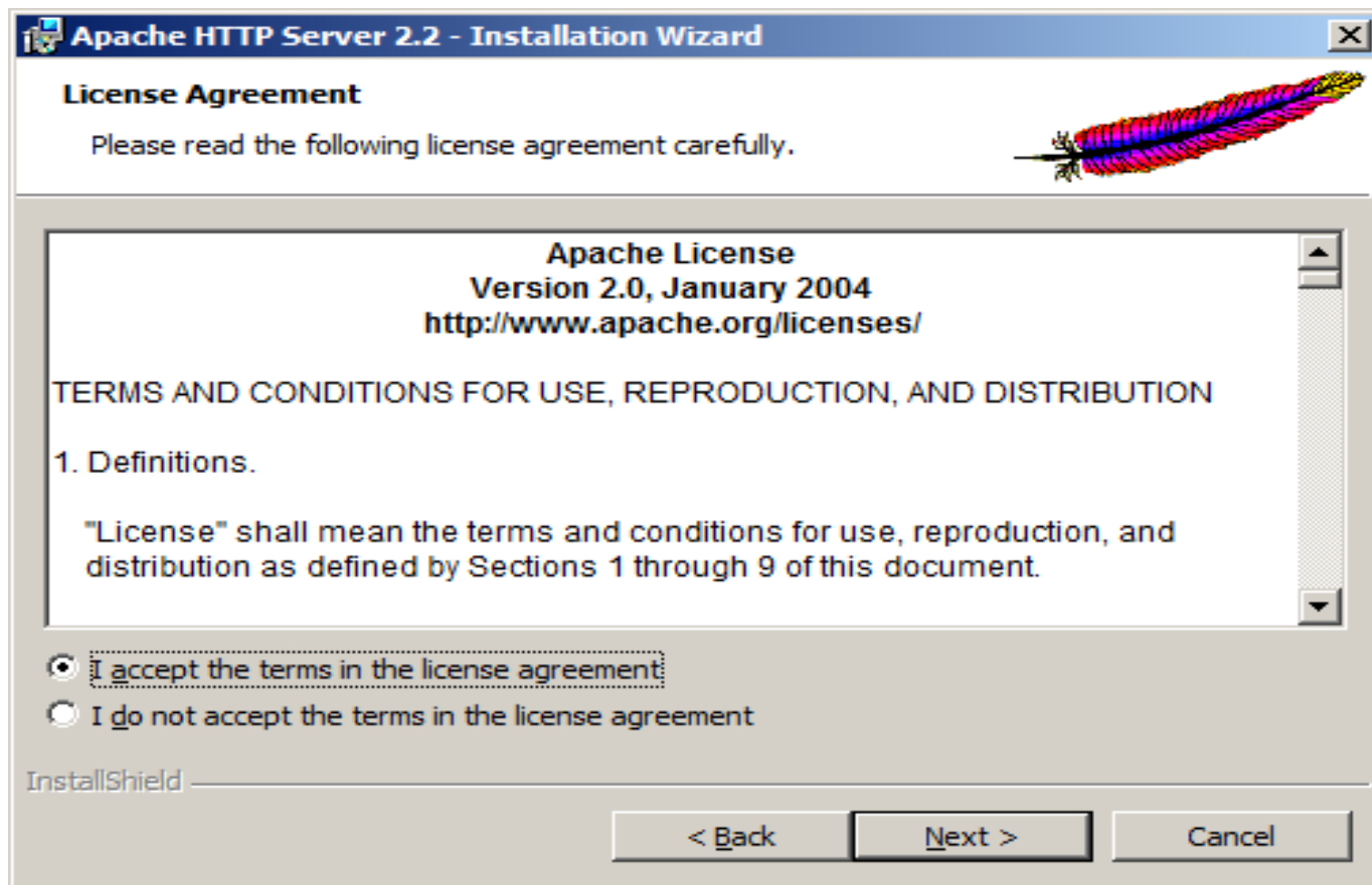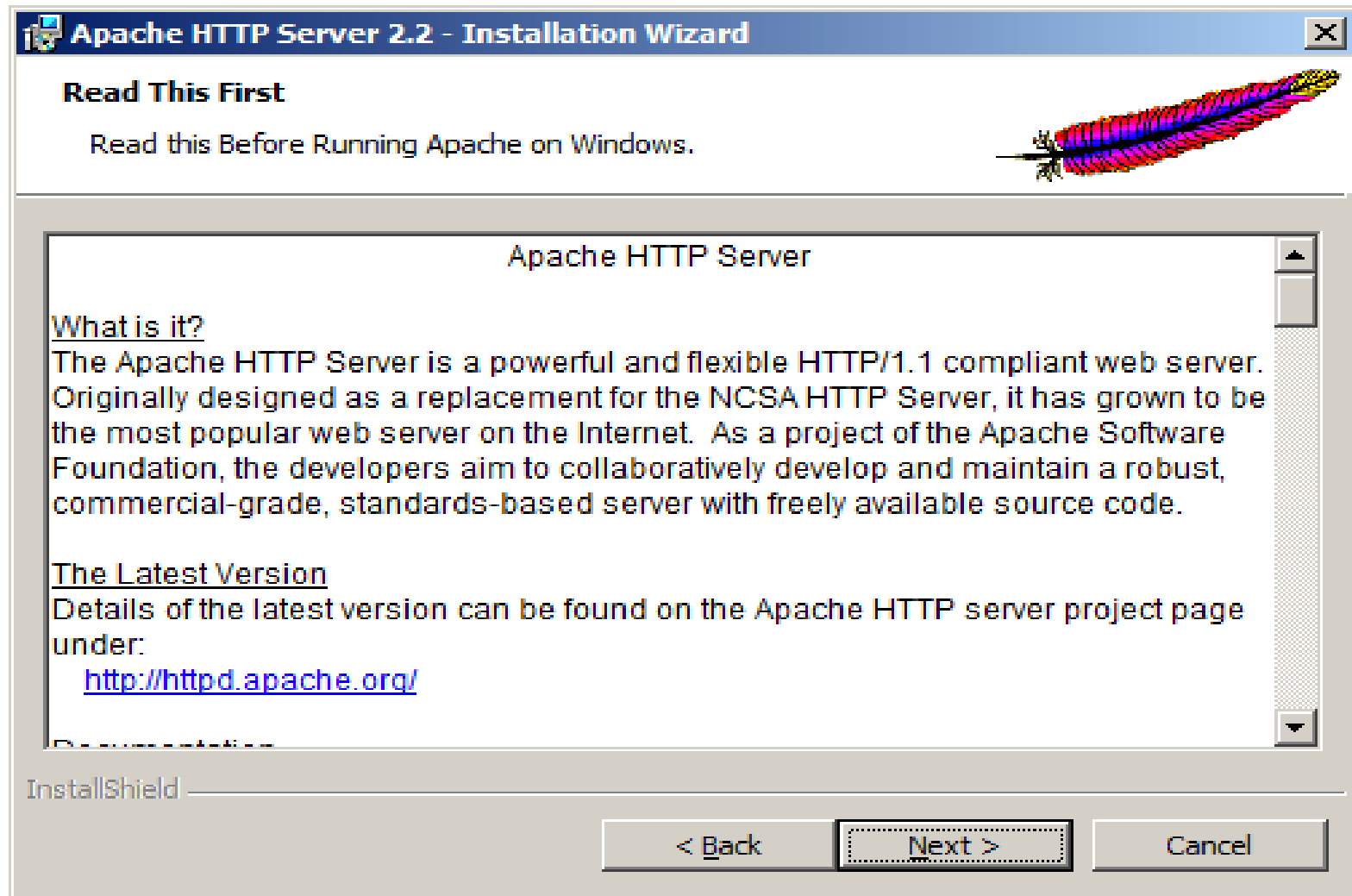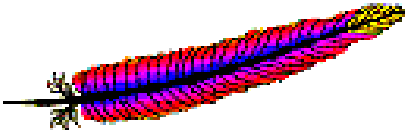
InstallShield

< Back   Next >   Cancel

Installing And Configuring Apache (cont.)
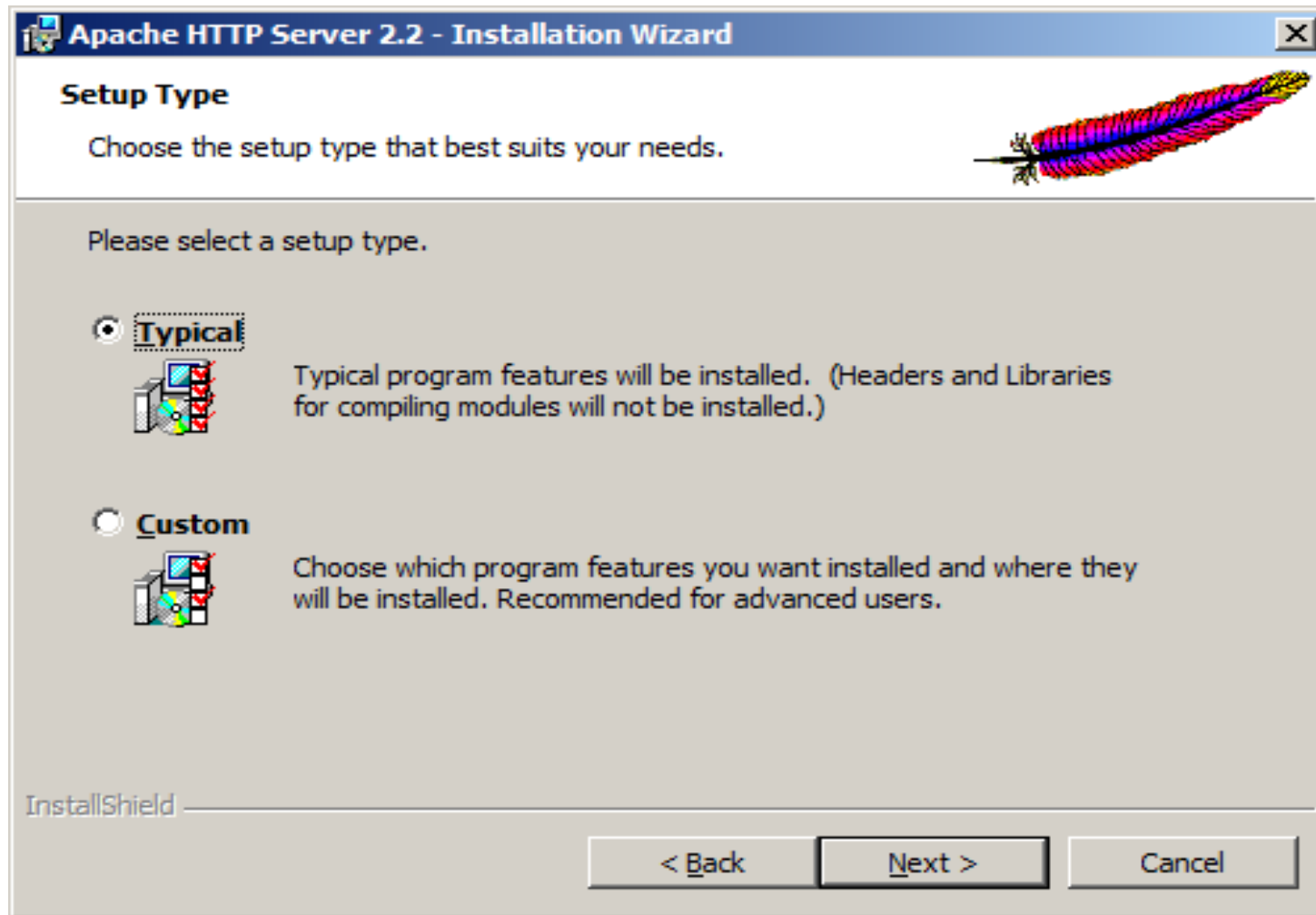
Installing And Configuring Apache (cont.)

Installing And Configuring Apache (cont.)
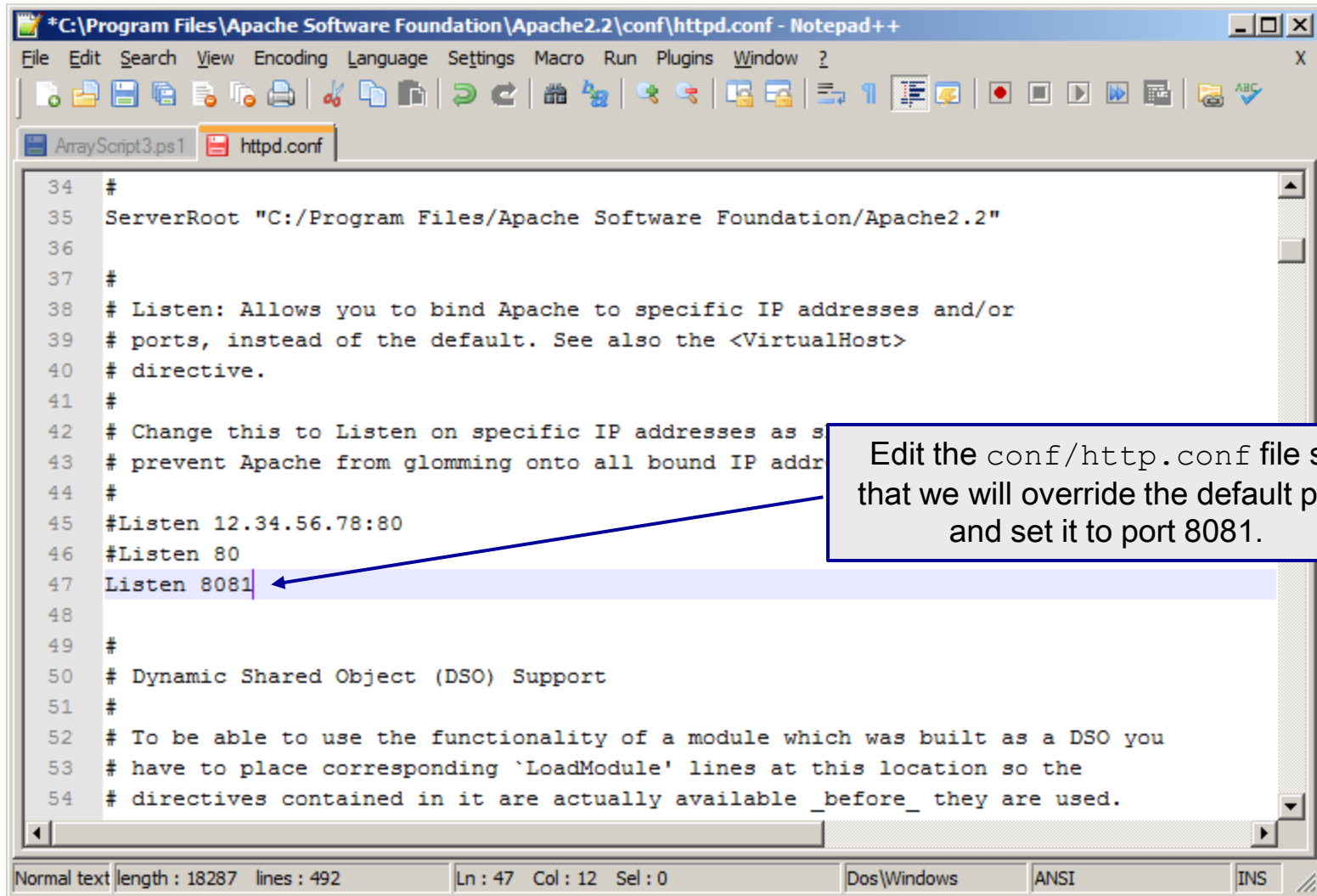
Installing And Configuring Apache (cont.)

Installing And Configuring Apache (cont.)
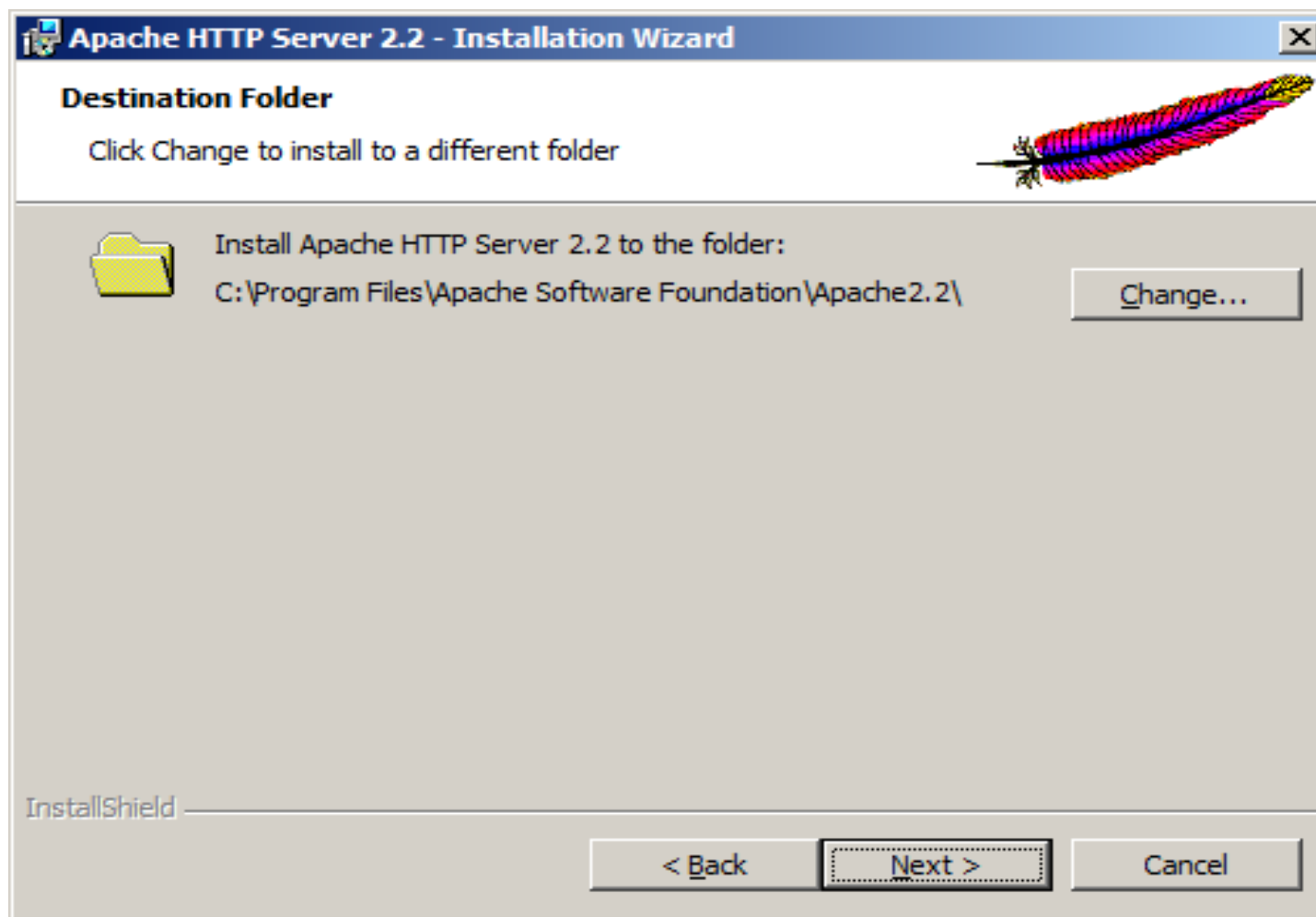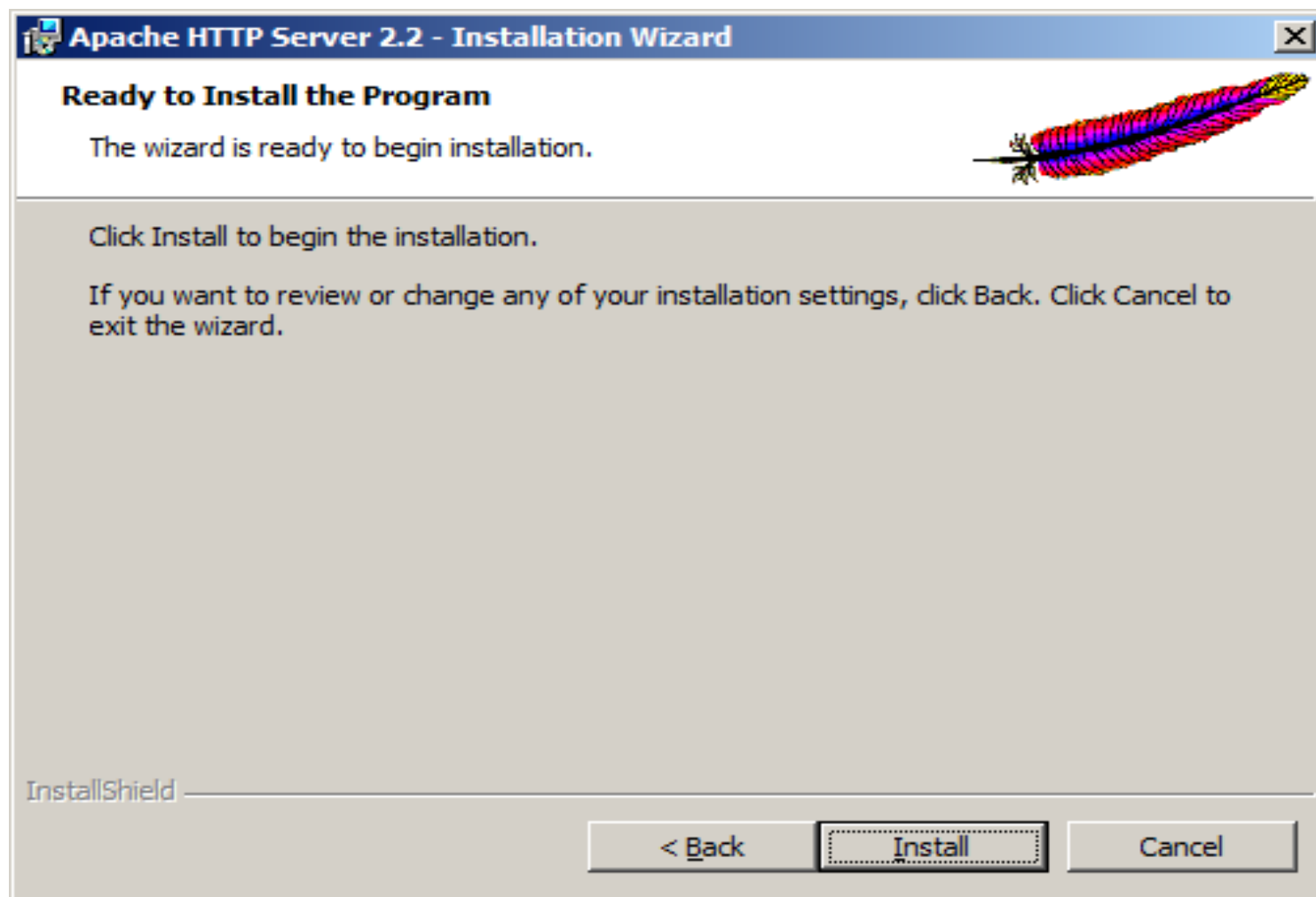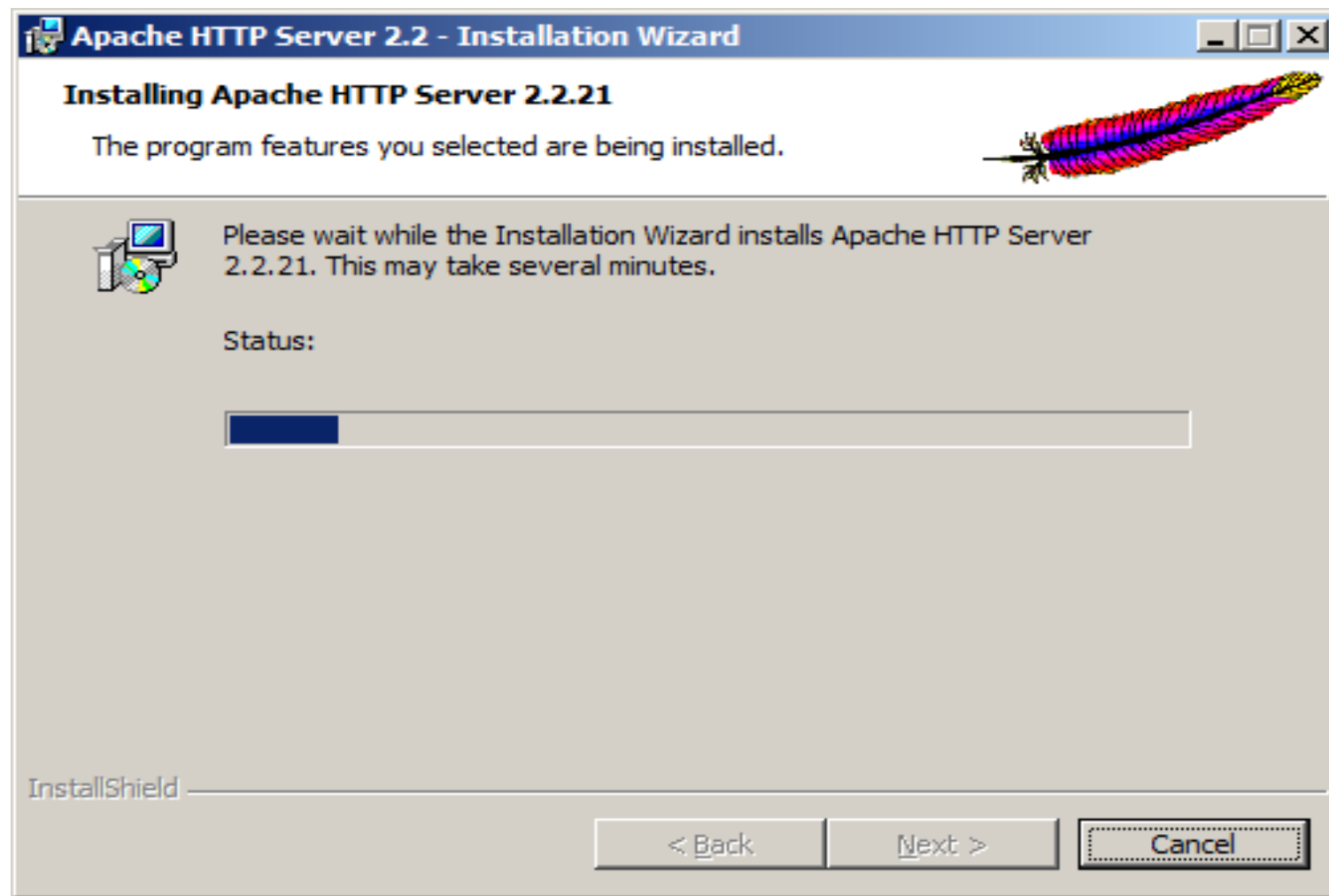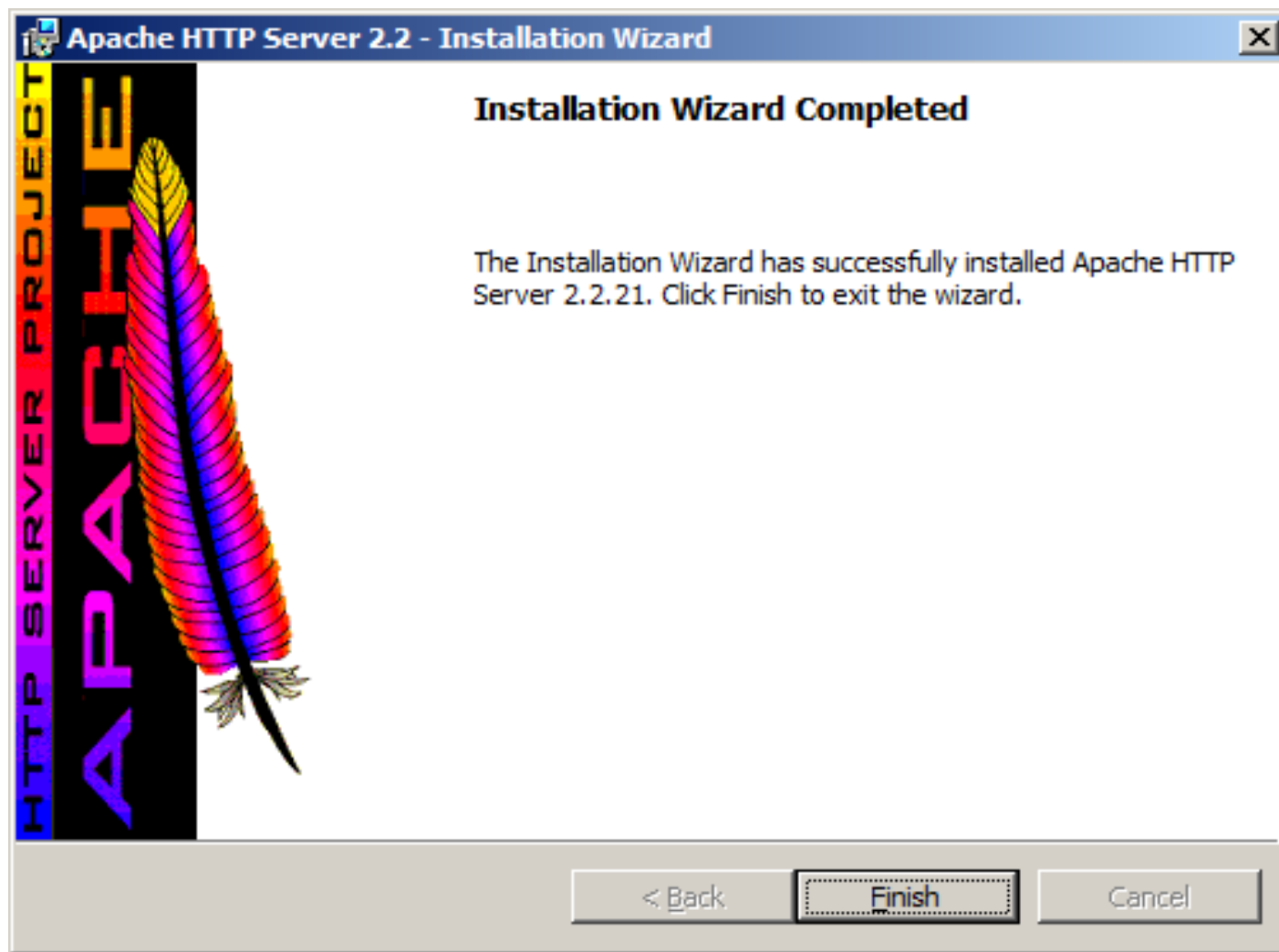
Installing And Configuring Apache (cont.)

Installing And Configuring Apache (cont.)

Screenshot of Notepad++ editing `*C:\Program Files\Apache Software Foundation\Apache2.2\conf\httpd.conf`

```
34  #
35  ServerRoot "C:/Program Files/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 s
43  # prevent Apache from glomming onto all bound IP addr
44  #
45  #Listen 12.34.56.78:80
46  #Listen 80
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.
```

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

Status bar: Normal text | length : 18287   lines : 492 | Ln : 47   Col : 12   Sel : 0 | Dos\Windows | ANSI | INS

It works!

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.
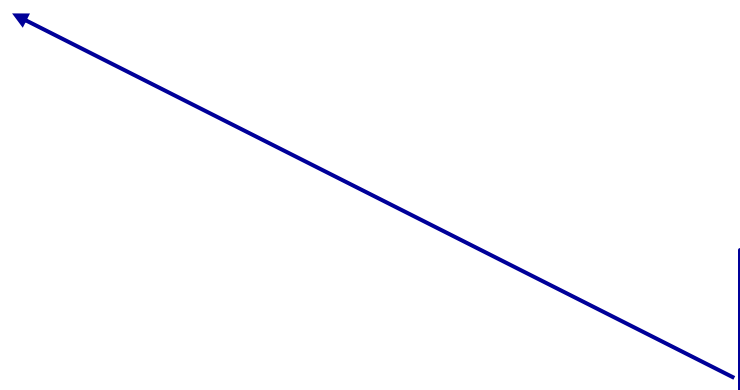
Installing and Configuring PHP

- The current stable version of PHP (PHP 5.3.3) can be downloaded from www.php.net.   Note however, that since we are using Apache that we will not be able to use the latest version of PHP, but need to go back to an earlier stable version. Be sure you are installing the correct version of PHP 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

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

Upcoming conferences: PHP'n Rio 11 PHP Barcelona 2011

PHP 5.4 beta2 released

[26-Oct-2011] The PHP development team is proud to announce the second beta release of PHP 5.4. PHP 5.4 includes new language features and removes several legacy (deprecated) behaviours. Windows binaries can be downloaded from the Windows QA site.

THIS IS A DEVELOPMENT PREVIEW - DO NOT USE IT IN PRODUCTION!

Please help us to identify bugs by testing new features and looking for unintended backward compatibility breaks, so we can fix the problems and fully document intended changes before PHP 5.4.0 is released. Report findings to the QA mailing list and/or the PHP bug tracker.

This release includes numerous bug fixes and improvements since the

Stable Releases

Current PHP 5.3 Stable: 5.3.8

Release Candidates

5.4.0beta2 (20 October 2011)

Upcoming Events [add]

October

Conferences

28. Adobe Tech Summit 2011
28. PHP Barcelona Conference

PHP: Downloads - Windows Internet Explorer

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

PHP Download Page

File   Edit   View   Favorites   Tools   Help

⭐ Favorites   👍 🔵 Suggested Sites ▾   🔵 Web Slice Gallery ▾

🔵 PHP: Downloads   🏠 ▾ 📶 ▾ 🖃 🖶 ▾ Page ▾ Safety ▾ Tools ▾ ❓ ▾

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

Development and archive versions

Regular source and binary snapshots are available from snaps.php.net. These

Complete Source Code

- **PHP 5.3.8 (tar.bz2)** [10,928Kb] - 23 August 2011
  md5: 704cd414a0565d905e1074ffdc1fadfb

- **PHP 5.3.8 (tar.gz)** [14,443Kb] - 23 August 2011
  md5: f4ce40d5d156ca66a996dbb8a0e7666a

PHP 5.2.17 (Old stable)

This version is no longer supported by PHP.net

Complete Source Code

- **PHP 5.2.17 (tar.bz2)** [8,879Kb] - 06 January 2011
  md5: b27947f3045220faf16e4d9158cbfe13

- **PHP 5.2.17 (tar.gz)** [11,525Kb] - 06 January 2011
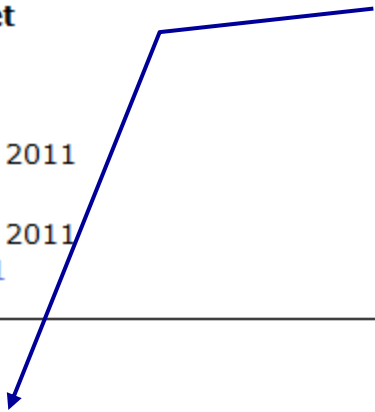 md5: 04d321d5aeb9d3a051233dbd24220ef1

Windows Binaries

For the Windows binaries and installer, see http://windows.php.net/download/.

Click here to go the download page for Windows machines

Done   🔵 Internet | Protected Mode: Off   🔍 100%

To direct input to this virtual machine, press Ctrl+G.   **vmware**

PHP For Windows: Binaries and sources Releases - Windows Internet Explorer

http://windows.php.net/download/

Live Search

File   Edit   View   Favorites   Tools   Help

Favorites   Suggested Sites ▾   Web Slice Gallery ▾

PHP For Windows: Binaries and sources Releases

Page ▾   Safety ▾   Tools ▾

Read This!

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

■ Debug Pack [7.91MB]

sha1: bc31af9407d81135617969de4a3f5ae452acb76e

VC9 x86 Thread Safe (2011-Aug-23 12:01:10)

■ Zip [15.06MB]

sha1: 364274fb75af73c649e37ae90282ad4c34ac6504

■ Installer [38.43MB]

sha1: 862212ecf6e84ea23234ef287d75a46c69d94b02

■ Debug Pack [8.25MB]

sha1: 815ed78bfd2342d8b2711ea6290ccaf774481cca

PHP 5.2 (5.2.17)

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

Done   Internet | Protected Mode: Off   100%

Start   PHP For Windows: Bin...   Downloads   PHP 5.3.8 Setup   2:32 PM

To direct input to this virtual machine, press Ctrl+G.   vmware

Installing And Configuring PHP (cont.)

PHP 5.2.17 Setup

Welcome to the PHP 5.2.17 Setup Wizard

The Setup Wizard will install PHP 5.2.17 on your computer. Click Next to continue or Cancel to exit the Setup Wizard. Please disable any virus detection software you may have running during this installation.

Back | Next | Cancel
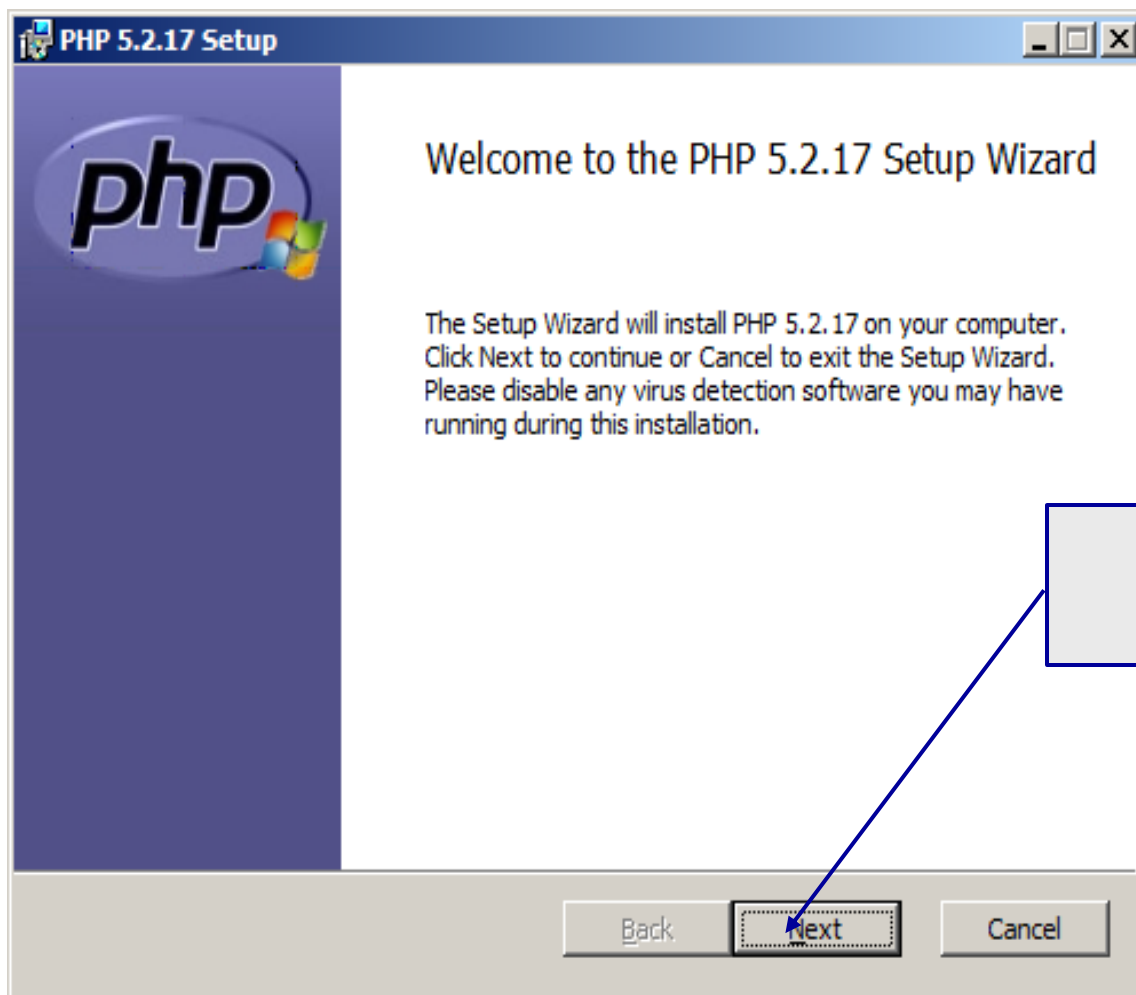
Click Next

Installing And Configuring Apache (cont.)
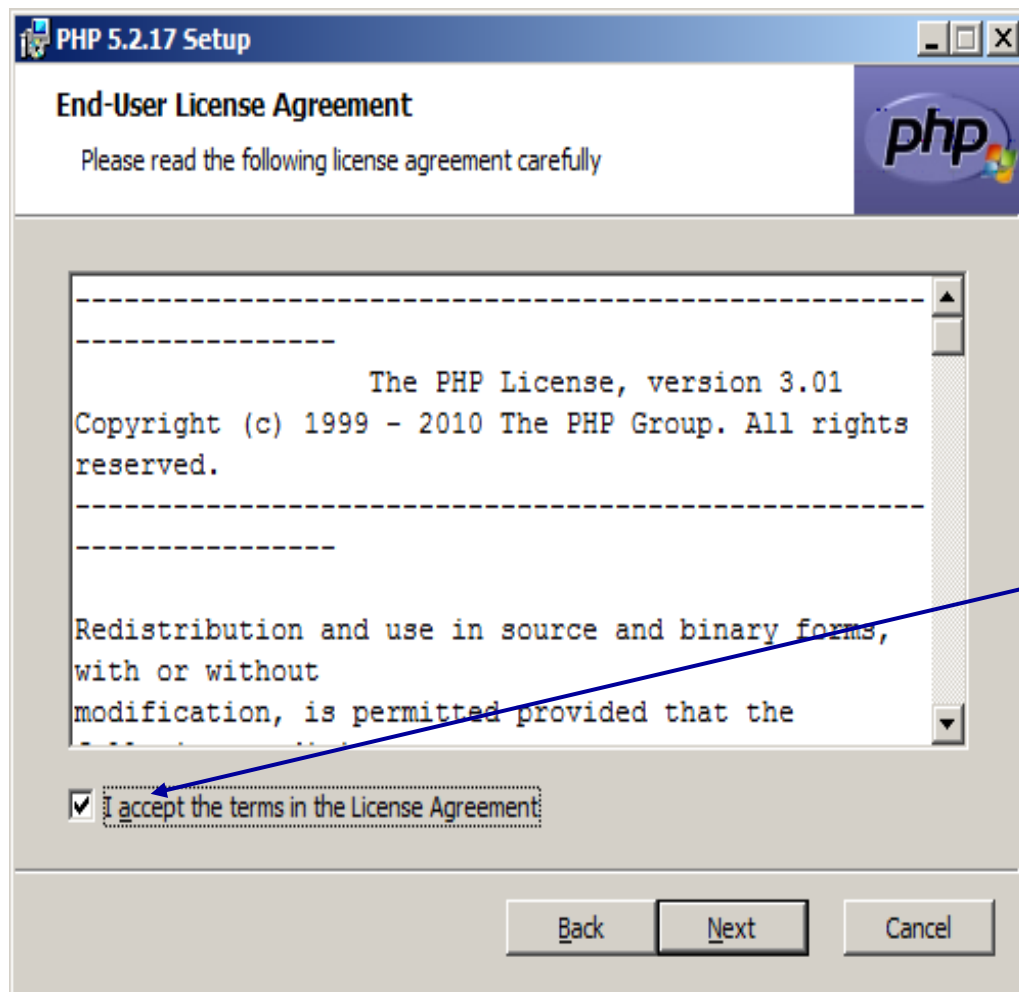
Check accept terms box and click Next.

Installing And Configuring Apache (cont.)
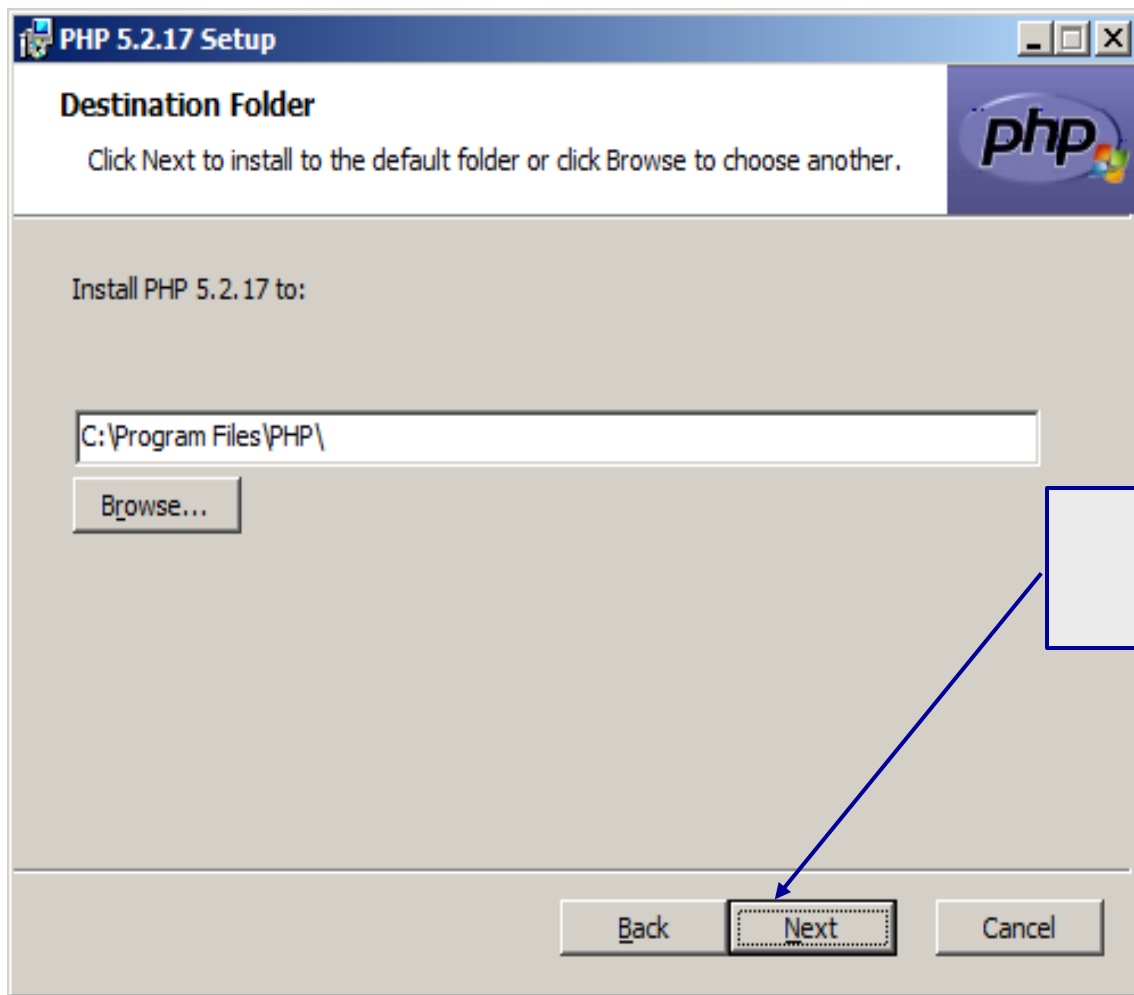
Set file path and click Next

Installing And Configuring Apache (cont.)

PHP 5.2.17 Setup

Web Server Setup

Select the Web Server you wish to setup.

php

- ○ Apache 1.3.x Module
- ○ Apache 2.0.x Module
- ○ Apache 2.2.x Module
- ○ Apache CGI
- ○ IIS ISAPI module
- ○ IIS FastCGI
- ○ IIS CGI
- ○ NSAPI
- ○ Xitami
- ○ Sambar Server
- ○ NetServe Web Server
- ○ Other CGI
- ○ Do not setup a web server
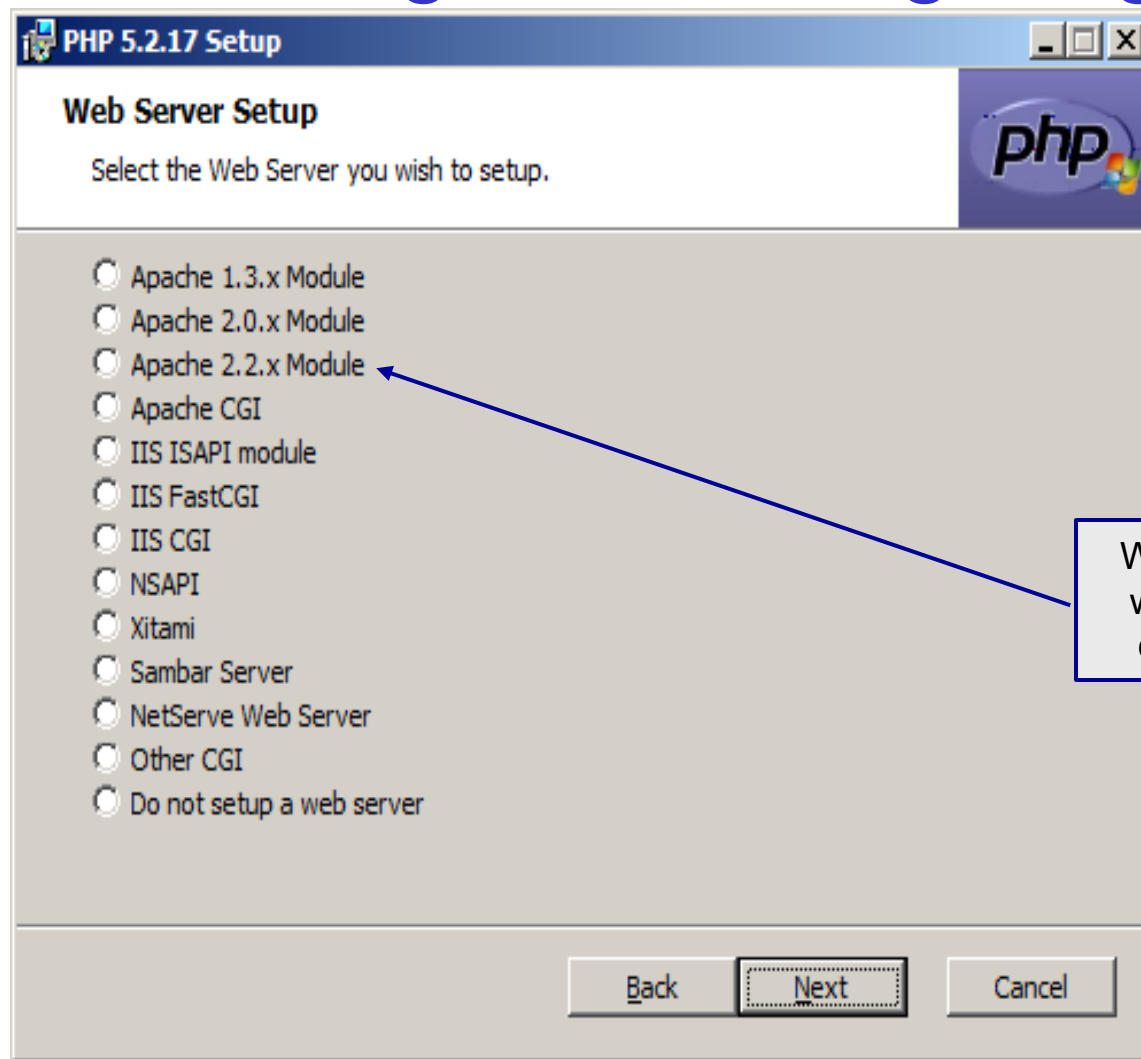
We'll be running PHP as a module within the Apache 2.2.x server so check this box. Then click Next.

Back   Next   Cancel

Installing And Configuring Apache (cont.)
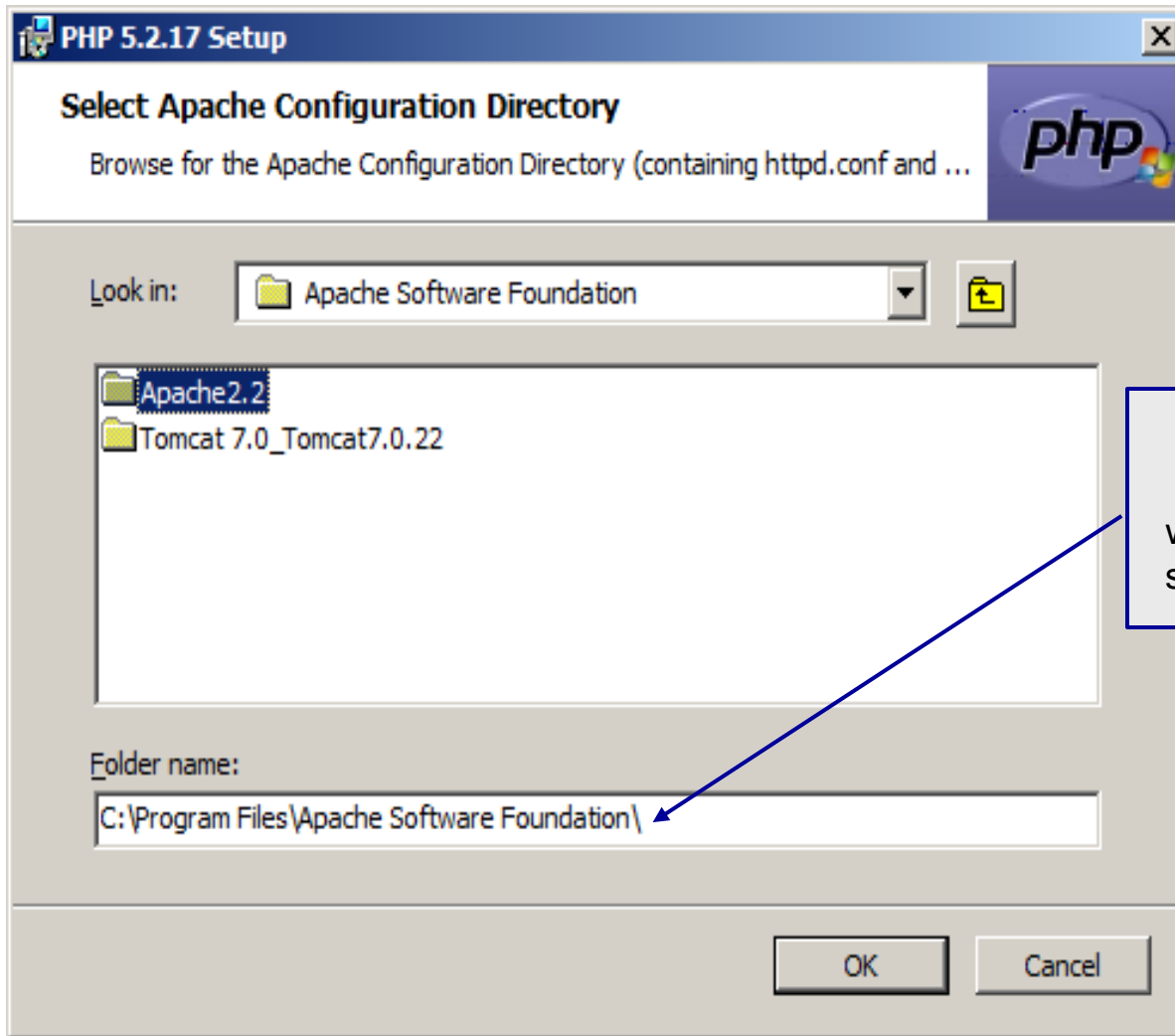
To set the Apache Configuration directory browse to the location where you setup the Apache HTTP server. Then click OK. Then Next.

Installing And Configuring Apache (cont.)

PHP 5.2.17 Setup

Choose Items to Install

Select the way you want features to be installed.

Click the icons in the tree below to change the way features will be installed.

- PHP
  - Script Executable
  - Extensions
  - Extras

PHP includes the many extensions enabled by default. You can optionally enable additional ones here. Default extensions: bcmath, calendar, COM, ctype, date, dom... This feature requires 0KB on your hard drive. It has 0 of 36 subfeatures selected. The subfeatures require 0KB on your hard drive.

Browse...

Reset   Disk Usage   Back   Next   Cancel

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.)
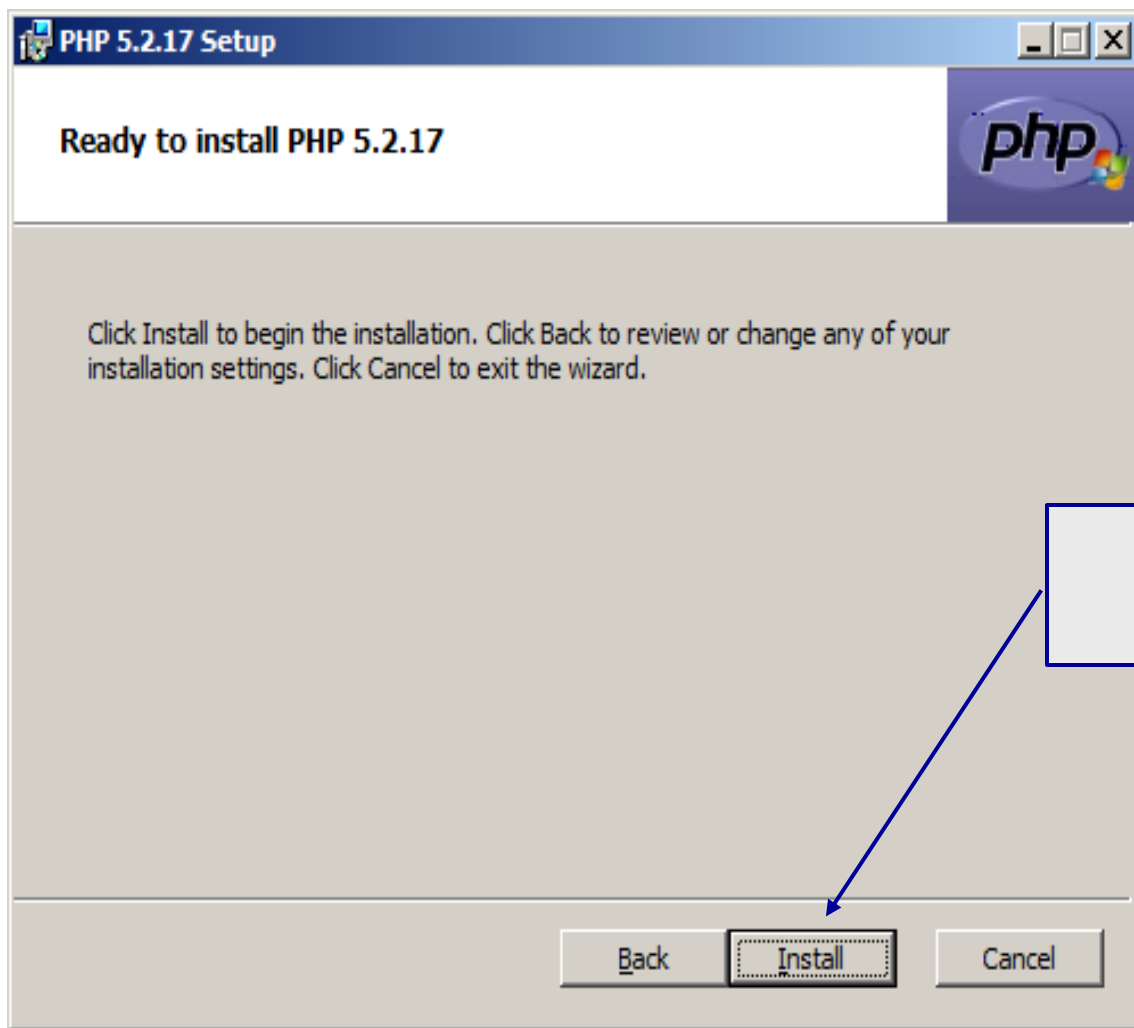
Click Install

Installing And Configuring Apache (cont.)

PHP 5.2.17 Setup

Completed the PHP 5.2.17 Setup Wizard

Click the Finish button to exit the Setup Wizard.

Click Finish

Back   Finish   Cancel
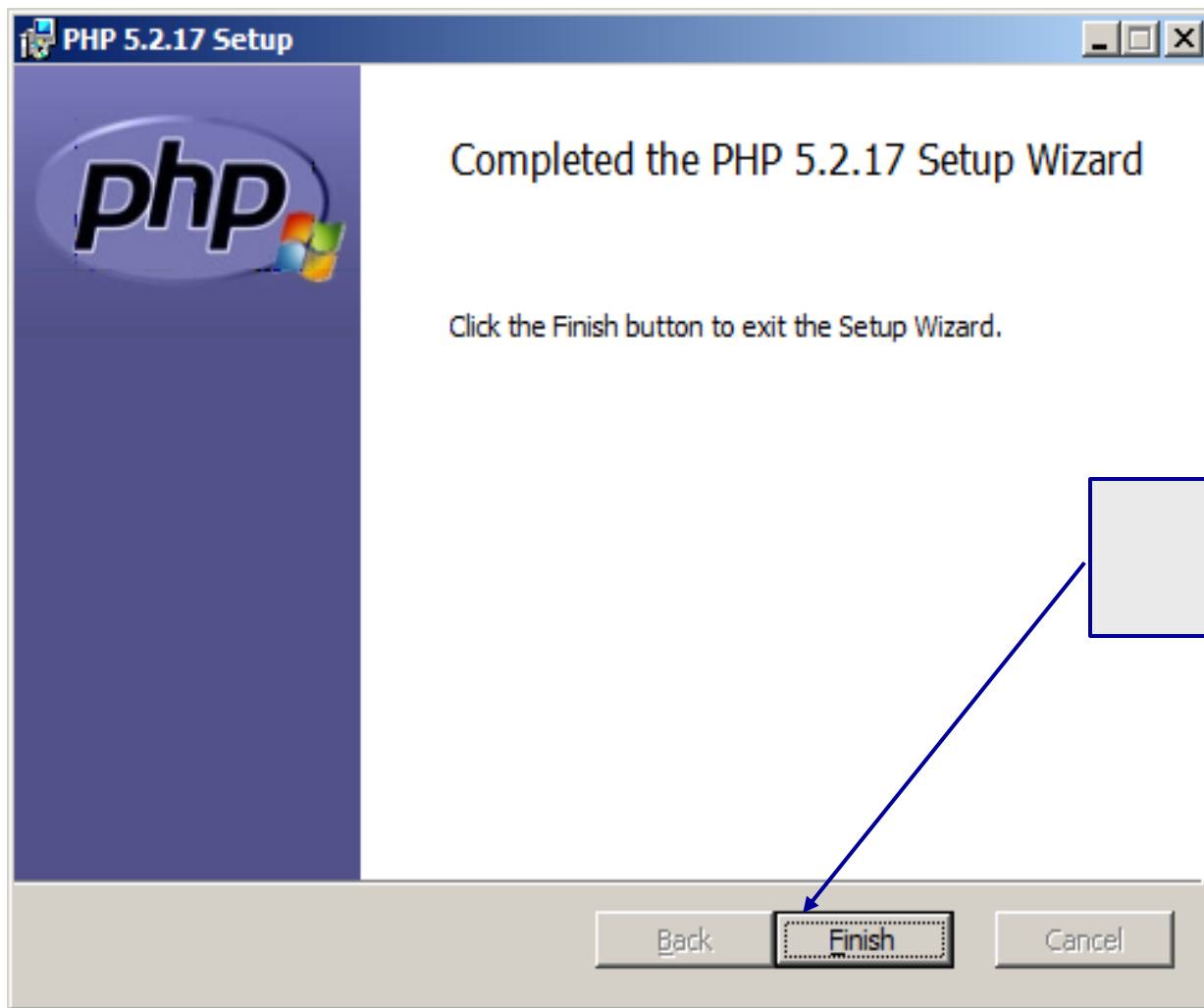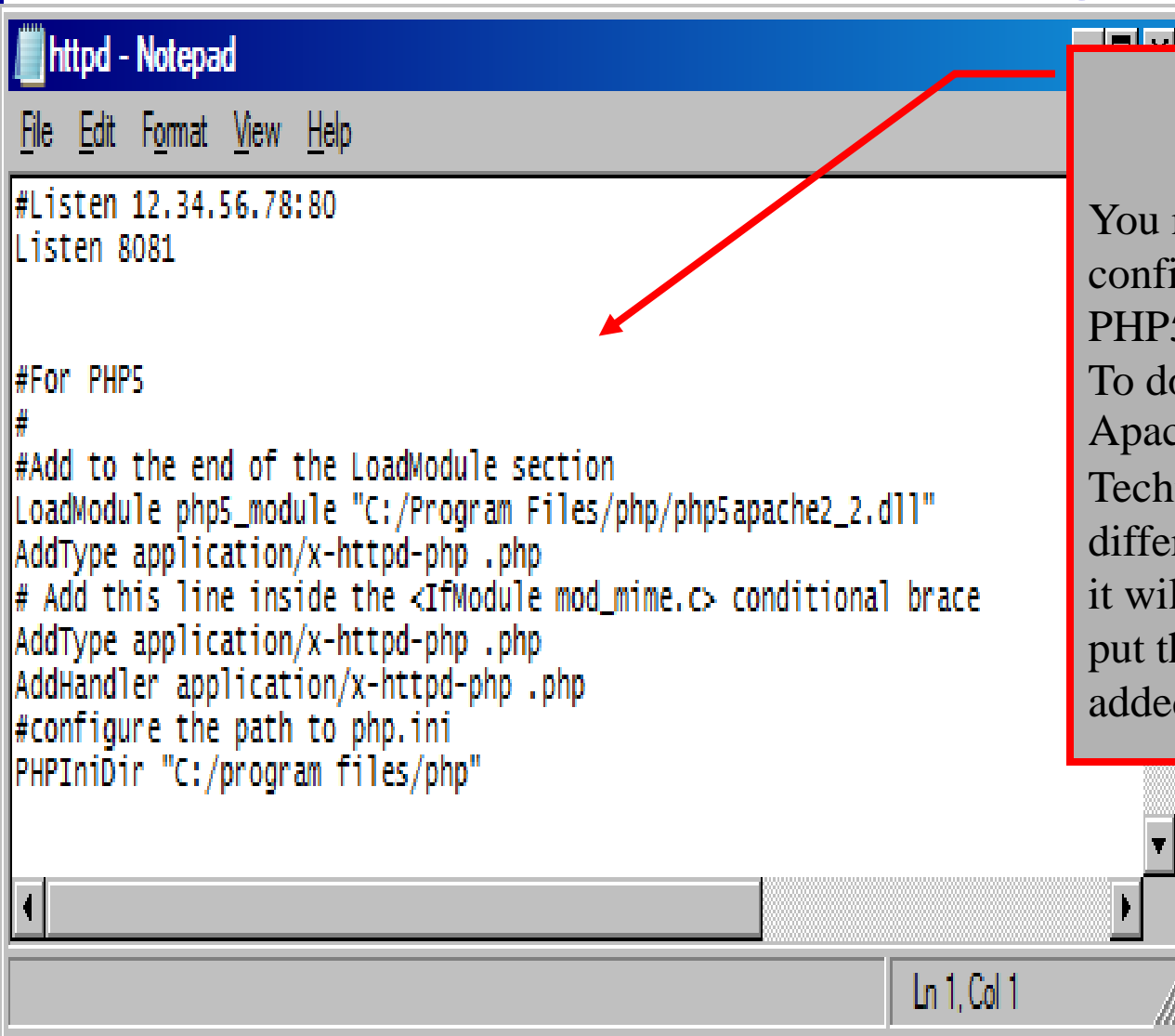
Modify Apache Configuration File

```
httpd - Notepad

File  Edit  Format  View  Help

#Listen 12.34.56.78:80
Listen 8081


#For PHP5
#
#Add to the end of the LoadModule section
LoadModule php5_module "C:/Program Files/php/php5apache2_2.dll"
AddType application/x-httpd-php .php
# Add this line inside the <IfModule mod_mime.c> conditional brace
AddType application/x-httpd-php .php
AddHandler application/x-httpd-php .php
#configure the path to php.ini
PHPIniDir "C:/program files/php"


                                                        Ln 1, Col 1
```

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

C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\hello.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

ArrayScript3.ps1 | hello.php

```
1   <html>
2   <head>
3       <title> Hello From PHP</title>
4   </head>
5   <body style = "font-family: arial, sans-serif;
6                  background-color: #856363" background=image1.jpg>
7       <h1> Hello From PHP </h1>
8
9       <?php
10          print "Current Information";
11          phpInfo();
12      ?>
13  </body>
14  </html>
```

This is PHP

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.

length : 281   lines : 14   Ln : 14   Col : 8   Sel : 0   Dos\Windows   ANSI   INS

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.

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?   X

welcome.php

ArrayScript3.ps1   welcome.php

```php
 1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
 2      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
 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">
15     <hr>
16     <font color = blue><h1> Generating HTML From PHP </h1></font color>
17      <p>
18        <strong>
19        <!---print variable name's value in the message-->
20         <?php
21            print("This is your first crack at running a PHP script...");
22            print("<HR>");
23            print("Welcome to the world of PHP technology, ");
24         ?>
```

PHP code declaring a variable.

PHP Hypertex length : 945   lines : 36   Ln : 35   Col : 1   Sel : 0   Dos\Windows   ANSI   INS

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?   X

ArrayScript3.ps1   welcome.php

welcome.php

```php
13      <!-- body section of document -->
14      <body style = "font-size: 2em">
15       <hr>
16       <font color = blue><h1> Generating HTML From PHP </h1></font color>
         <p>
           <strong>
           <!---print variable name's value in the message-->
20           <?php
21               print("This is your first crack at running a PHP script...");
22               print("<HR>");
23               print("Welcome to the world of PHP technology, ");
24           ?>
25           <font color = green>
26           <?php
27               print("$name");
28           ?>
29           </font color>
30           </strong>
31         </p>
32       </body>
33    </html> <!-- end XHTML document -->
34
35
36
```

PHP code

PHP code

PHP Hypertex length : 945 lines : 36   Ln : 35 Col : 1 Sel : 0   Dos\Windows   ANSI   INS

A Simple PHP Document - Opera

Opera | A Simple PHP Document

Web   localhost:8081/CNT4714/welcome.php

welcome.php

Generating HTML From PHP

This is your first crack at running a PHP script...

Welcome to the world of PHP technology, Mark

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.

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?   X

server.php

ArrayScript3.ps1 | welcome.php | hello.php | server.php

```
 3
 4    <!-- server.php                          -->
 5    <!-- Program to display $_SERVER variables -->
 6    <html xmlns = "http://www.w3.org/1999/xhtml">
 7       <head>
 8          <title>SERVER Variables Display</title>
 9       </head>
10       <body style = "font-family: arial, sans-serif;
11          background-color: #856363"  background=image1.jpg>
12
13          <table border = "0" cellpadding = "2" cellspacing = "0"
14             width = "100%">
15          <?php
16             // print the key and value for each element
17             // in the $_SERVER array
18             foreach ( $_SERVER as $key => $value )
19                print( "<tr><td bgcolor = \"#11bbff\">
20                   <strong>$key</strong></td>
21                   <td>$value</td></tr>" );
22
23          ?>
24          </table>
25       </body>
26    </html>
```

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

PHP Hypertex length : 888   lines : 26   Ln : 10   Col : 1   Sel : 0   Dos\Windows   ANSI   INS

Opera | SERVER Variables Display | ×

Web | localhost:8081/CNT4714/server.php

HTTP_USER_AGENT	Opera/9.80 (Windows NT 6.0; U; Edition United States Local; en) Presto/2.9.168 Version/11.51
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:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Program Files\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/2.2.21 (Win32) PHP/5.2.17
SERVER_NAME	localhost
SERVER_ADDR	127.0.0.1
SERVER_PORT	8081
REMOTE_ADDR	127.0.0.1
DOCUMENT_ROOT	C:/Program Files/Apache Software Foundation/Apache2.2/htdocs
SERVER_ADMIN	admin@WIN-OG70HXCQGAX.localdomain

Start | Apache on Windows ... | CNT4714 | *C:\Program Files\Ap... | SERVER Variables ... | 3:08 PM

To direct input to this virtual machine, press Ctrl+G.   vmware