

PHP Web Development Tutorial Part 1

(Revision 1.1)

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How to Set Up Windows XP / Vista for Web Development with PHP and MySQL.

This tutorial is the first in a series about PHP and Web Development. To get started we are going to set up a PC as a development workstation. For our purposes we need to install a web server (Apache) - so that we can serve PHP files to our local machine, PHP - a popular server side language, and MySQL - a popular and powerful database server for creating databases.

There are many ways to install a web server, PHP, and MySQL on a Windows platform. For ease we are going to use XAMPP.

XAMPP is a free download and is available for various platforms. XAMPP will install Apache, MySQL, PHP and Perl on your computer. It will also install a few other tools that will be useful for web development. XAMPP should not be used to serve your website on the web because it has security limitations; however it's ideal for local development and testing.

There are two versions of XAMPP available to Windows users. A self extracting installer, and a zipped version. We will be using the zipped version but the same results can be achieved with the self extracting installer.

Installing XAMPP

1. Download **XAMPP 1.7.2** zipped version for Windows from the XAMPP website:
<http://www.apachefriends.org/en/xampp-windows.html>
2. Extract the files to **C:**
Note: The zipped file contains a folder called 'xampp', so once extracted your XAMPP installation will be located in: **C:\xampp**
3. Run the **setup_xampp** file located here **C:\xampp\setup_xampp.bat**
4. Accept the default settings presented in the DOS window

```
Should I add shortcuts to the startmenu/desktop? (y/n) y
Should I locate the XAMPP paths correctly? (y/x = exit setup) y
Should I make a portable XAMPP without drive letters? (y/n) n
```

Continues on next page

- You will be notified '**XAMPP relocating...**' Once the relocation routine has run, your installation screen will look something like this:

```

C:\WINDOWS\system32\cmd.exe

#####
# XAMPP 1.7.2 - Setup
#-----#
# Copyright 2009 Carsten Wiedmann (FreeBSD License)
#-----#
# Authors: Carsten Wiedmann <carsten_sttgt@gmx.de>
#          Kay Vogelgesang <kvo@apachefriends.org>
#####

Should I make a portable XAMPP without drive letters?

NOTE: - You should use drive letters, if you want use services.
      - With USB sticks you must not use drive letters.

Your choice? (y/n): n

relocating XAMPP.--
relocate XAMPP base package
relocate Apache
relocate FileZilla FTP Server
relocate Mercury
relocate MySQL
relocate OpenSSL
relocate Perl
relocate PHP
relocate phpMyAdmin
relocate Sendmail
relocate Webalizer
relocate XAMPP Demopage
relocating XAMPP successful.

XAMPP is ready to use.

Press <Return> to continue: _
  
```

- As advised '**Press (Return) to continue**'
- You will be informed '**I have set the timezone in 'php.ini' and 'my.ini' to "Europe/London"**' If you live outside the UK you may want to configure your php.ini and my.ini files for your country. – More on php.ini and my.ini later
- '**Press (Return) to continue**' – You will be presented with a menu.

```

#####
# XAMPP 1.7.2 - Setup
#-----#
# Copyright 2009 Carsten Wiedmann (FreeBSD License)
#-----#
# Authors: Carsten Wiedmann <carsten_sttgt@gmx.de>
#          Kay Vogelgesang <kvo@apachefriends.org>
#####

1. start XAMPP Control Panel
2. relocate XAMPP
   (current path: C:\xampp)
3. disable HTTPS (SSL)
4. disable Server Side Includes (SSI)
5. enable IPv4 only (current: IPv4/6 (auto))
6. disable mod_perl
7. disable Apache::ASP

x Exit

Please choose (1-7/x):
  
```

- Choose '**x**' from the menu to exit – Your installation of XAMPP is done!

A quick look at XAMPP

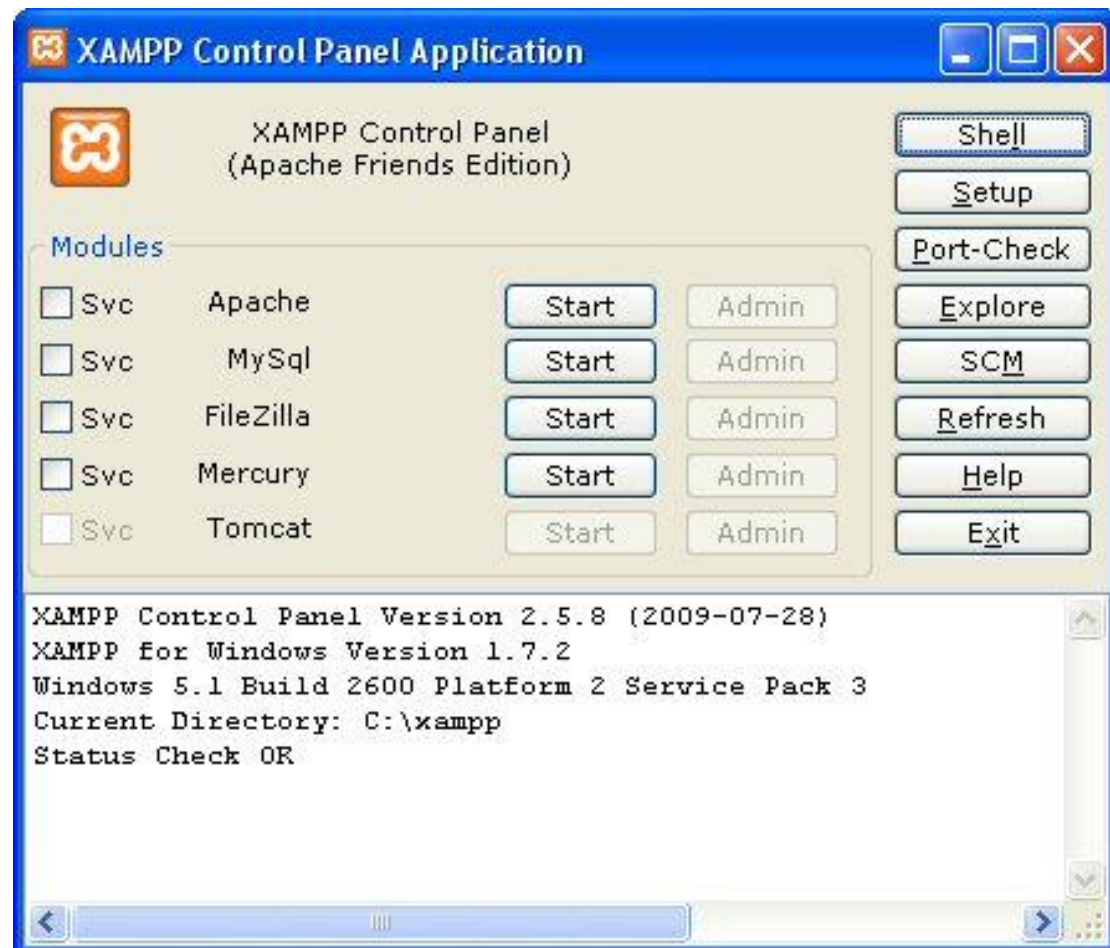
Now that XAMPP is installed you may want to see what it looks like. Before you do, it is worth noting that the XAMPP website has a great FAQ's page should you encounter any problems:

<http://www.apachefriends.org/en/faq-xampp-windows.html>

If you followed the 'Installing XAMPP' guide above you should have a links to the XAMPP Control Panel in your 'Start' menu (All Programs→XAMPP for Windows→XAMPP Control Panel) and on your desktop.



Launch XAMPP by clicking the 'XAMPP Control Panel' icon...



Above: XAMPP Control Panel

The control panel consists of three distinct areas:

1. The “Modules” list – A set of modules that can be used. To start a module click **‘Start’** button to the right of the module. To run a module as a service check the appropriate box to the left of the module and click the **‘Start’** button.
2. The “Tools” panel – A set of buttons for quick access to XAMPP tools and windows shortcuts.
3. The message area – This gives an overview of the XAMPP system, and provides status messages for the modules running.

Check that Apache, PHP, and MySQL are functioning

1. From the XAMPP Control Panel click the **‘Start’** button to the right of the ‘Apache’ module. If successful the module will be listed as ‘Running’:




2. Click the **‘Start’** button to the right of the MySql module.
3. Click the **‘Admin’** button for the ‘Apache’ service. This should open a new browser window with the URL: <http://localhost/xampp/splash.php>
4. Choose your language from the “Splash” screen.
5. You will get a congratulations message advising that XAMPP is installed – You have just proved that Apache is working!



Continues on following page...

- From the left hand menu of the above screen click 'phpinfo()'. If PHP is working you will be show the phpinfo() page – It displays various PHP settings and installed extensions. This will prove that PHP is functioning.

PHP Version 5.3.0 

System	Windows NT HOME-O6DY8QTHFX 5.1 build 2600 (Windows XP Professional Service Pack 3) i586
Build Date	Jul 2 2009 21:02:53
Compiler	MSVC6 (Visual C++ 6.0)
Architecture	x86
Configure Command	cscript /nologo configure.js

- Run the Security check from the left hand menu. A new window will open with the results of an XAMPP security check.

Subject	Status
These XAMPP pages are accessible through the network by anyone Every XAMPP demo page you are looking at right now is accessible by everyone over the network. Everyone who knows your IP address can see these pages.	UNSECURE
The MySQL admin user root has NO password Every local user on this Windows machine can access your MySQL database with administrator rights. You should set a password.	UNSECURE
PhpMyAdmin is freely accessible by network: PhpMyAdmin is accessible by network without a password. The configuration 'httpd' or 'cookie' in the "config.inc.php" can help.	UNSECURE
The FileZilla FTP password was changed	SECURE
A POP3 server like Mercury Mail is not running or is blocked by a firewall!	UNKNOWN
The Tomcat add-on is not installed.	UNKNOWN

The insecure items are red, the secure ones are green, and the ones that XAMPP can't interrogate (usually because they are not running) are coloured yellow.. There is a link to the security console to resolve these.

UNKNOWN

The green marked points are secure; the red marked points are definitively insecure and the yellow marked points couldn't be checked (for example because the software to check isn't running).

To fix the problems for mysql, phpmyadmin and the xampp directory simply use

=> <http://localhost/security/xamppsecurity.php> <= [allowed only for localhost]

- Click the security console link – the security console MySQL and XAMPP directory screen will be displayed.

MYSQL SECTION: "ROOT" PASSWORD

MySQL SuperUser: **root**

New password:

Repeat the new password:

phpMyAdmin authentication: *http* *cookie*

Set a random password for the phpMyAdmin user 'pma': Yes No

(File: C:\xampp\security\mysqlrootpasswd.txt)

XAMPP DIRECTORY PROTECTION (.htaccess)

User:

Password:

(File: C:\xampp\security\xamppdirpasswd.txt)

- Enter and confirm a password for the MySQL user 'root'. From now on you will need this password to log into MySQL and phpMyAdmin as user 'root'.
- Enter a username and a password for XAMPP directory – from now on you will need this username and password to log into the XAMPP control panel.
- Now that a MySQL root password has been set we can test MySQL. Stop the MySQL module from running via the XAMPP control panel then restart it.

Configure php.ini

The php.ini file is used for setting various parameters for PHP. After modifying the php.ini file it's a good idea to restart Apache. With our development environment we are going to configure PHP to work with XDebug – It's a debugging module that will make it easier to locate any errors in PHP code.

Lines that are used for comments in the php.ini file start with a semi-colon ";". A commented line will not be loaded as part of the PHP configuration. The php.ini file has number of commented lines.

We will also configure PHP so that it integrates with Eclipse - our IDE (Integrated Development Environment).

1. Locate the 'php.ini' file here: **C:\xampp\php\php.ini**
2. Open the file in a text editor (notepad will do)
3. Use the "find" function of your text editor to find the line that sets "implicit_flush"; if it is set to "Off" change the value to "On"
eg. **implicit_flush = On**

NOTE: setting this can degrade the performance of PHP, but it is useful for debugging.

4. Find the line that sets "report_zend_debug" by default this is commented with a semi-colon. Uncomment this line by removing the semi-colon.
eg. **report_zend_debug = 0**
5. Find and uncomment the line:
zend_extension = "XAMPP_HOME\php\ext\php_xdebug.dll".
6. Find the configuration block "[XDebug]" and make the following changes:
 - Find and uncomment the line:
xdebug.remote_host=localhost
Change the value of the setting from localhost to 127.0.0.1
 - Find and uncomment the line:
xdebug.remote_enable = 0
Change 0 to 1.
 - Find and uncomment the line:
xdebug.remote_handler = "dbgp"
 - Find and uncomment the line:
xdebug.remote_port = 9000
7. Save the php.ini file and close.
8. From the XAMPP control panel restart Apache

That's the php.ini file configured for our development environment. The next step is to set up Eclipse.

Installing and configuring Eclipse for PHP development.

Eclipse is an IDE or Integrated Development Environment. It can be used for development in many different programming languages. There is a version available that contains tools already packaged for PHP development. The version we are going to use is Eclipse PDT (Eclipse PHP Development Tools). Let's get started...

Eclipse is an application written in Java. Before you can use Eclipse you will need to download the latest version of java from Sun Microsystems:

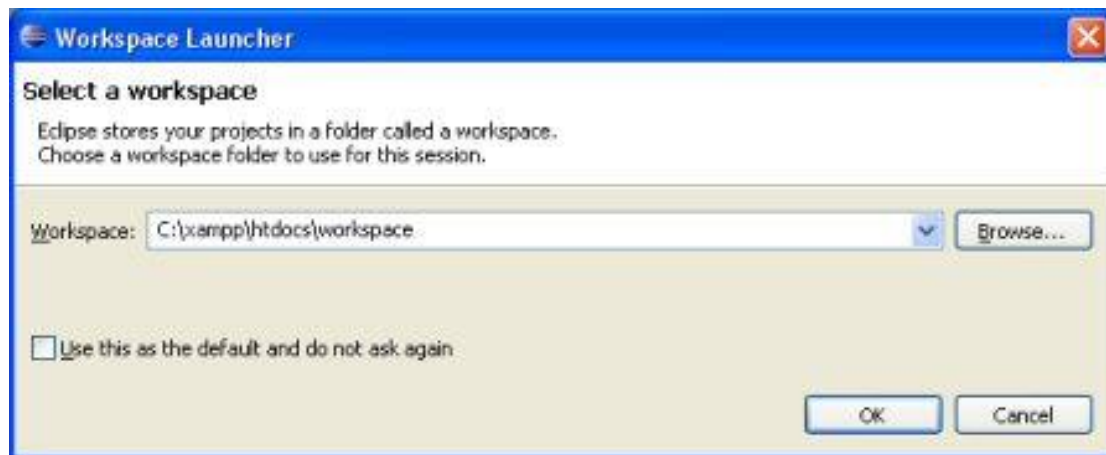
<http://www.java.com/en>

Install Eclipse PDT

1. Download Eclipse PDT - PHP development Tools
<http://www.eclipse.org/pdt/downloads/>
2. Extract the files to **C:**
A folder called '**eclipse**' will be created
3. For your convenience create a short cut to Eclipse and place it on your desktop. The program file for Eclipse can be found in **C:\eclipse**.

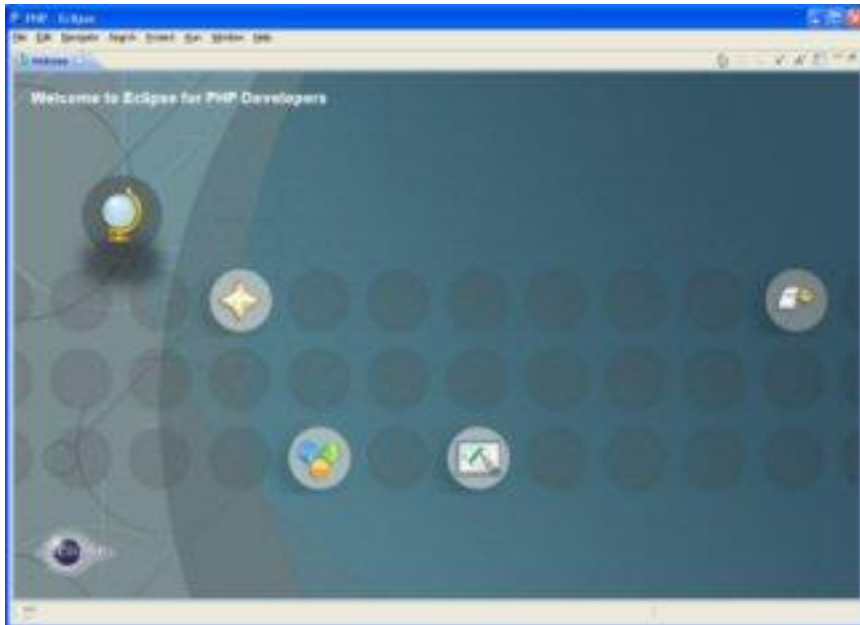


4. Run Eclipse and set the workspace directory to **C:\xampp\htdocs\workspace**

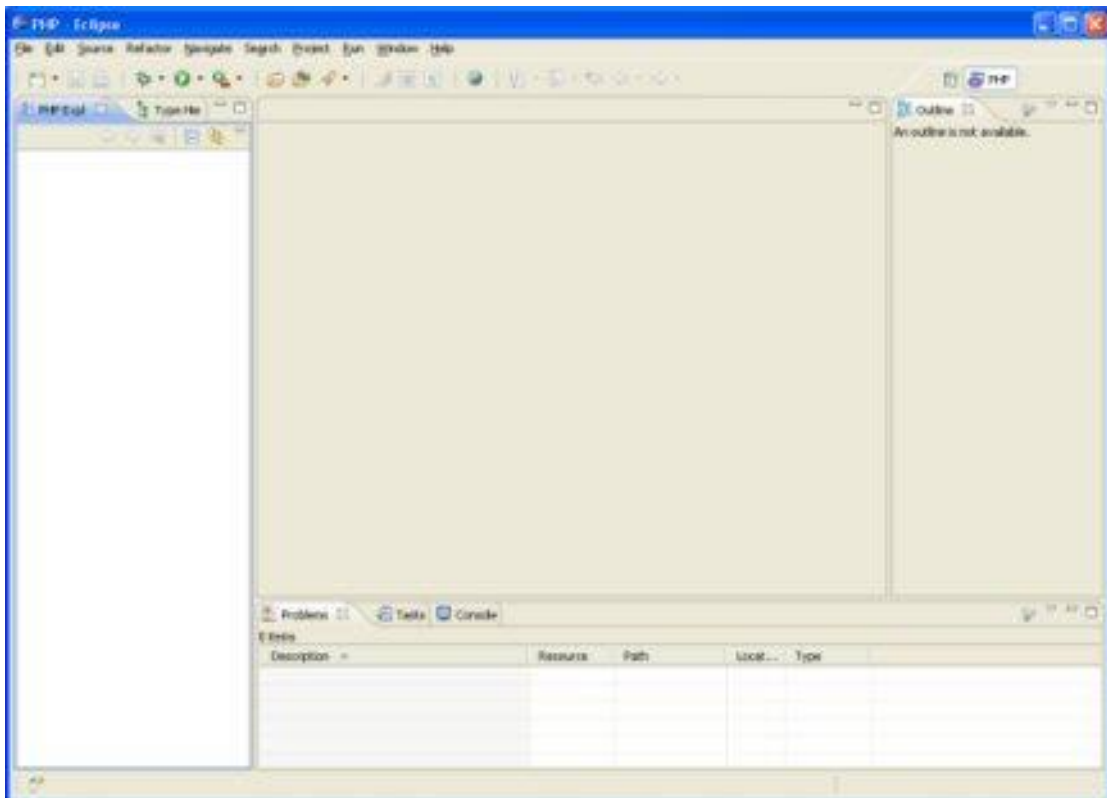


You can call this directory anything you like. In this example we've used 'workspace'. This is where all your development projects will be created.

5. The Eclipse workbench will load with a welcome screen



6. Close the welcome Screen, and you will be presented with the default Eclipse layout/workbench for PHP development.



We have successfully installed Eclipse PDT on Windows XP.

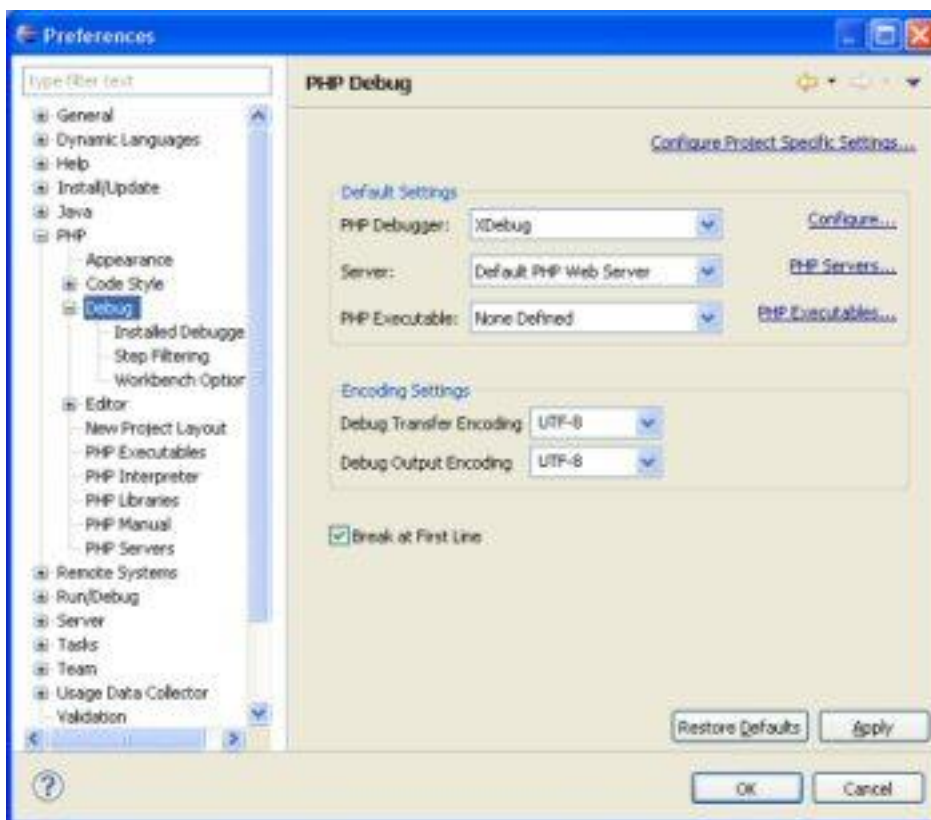
How to Setup XDebug to Work with Eclipse

Now that Eclipse is installed we need to configure it to work with XDebug.

1. From the Eclipse **Window** menu choose **Preferences**



2. A new window will open. Using the navigation on the left choose **PHP→Debug**. In the default settings area change the **PHP debugger** to **XDebug**.



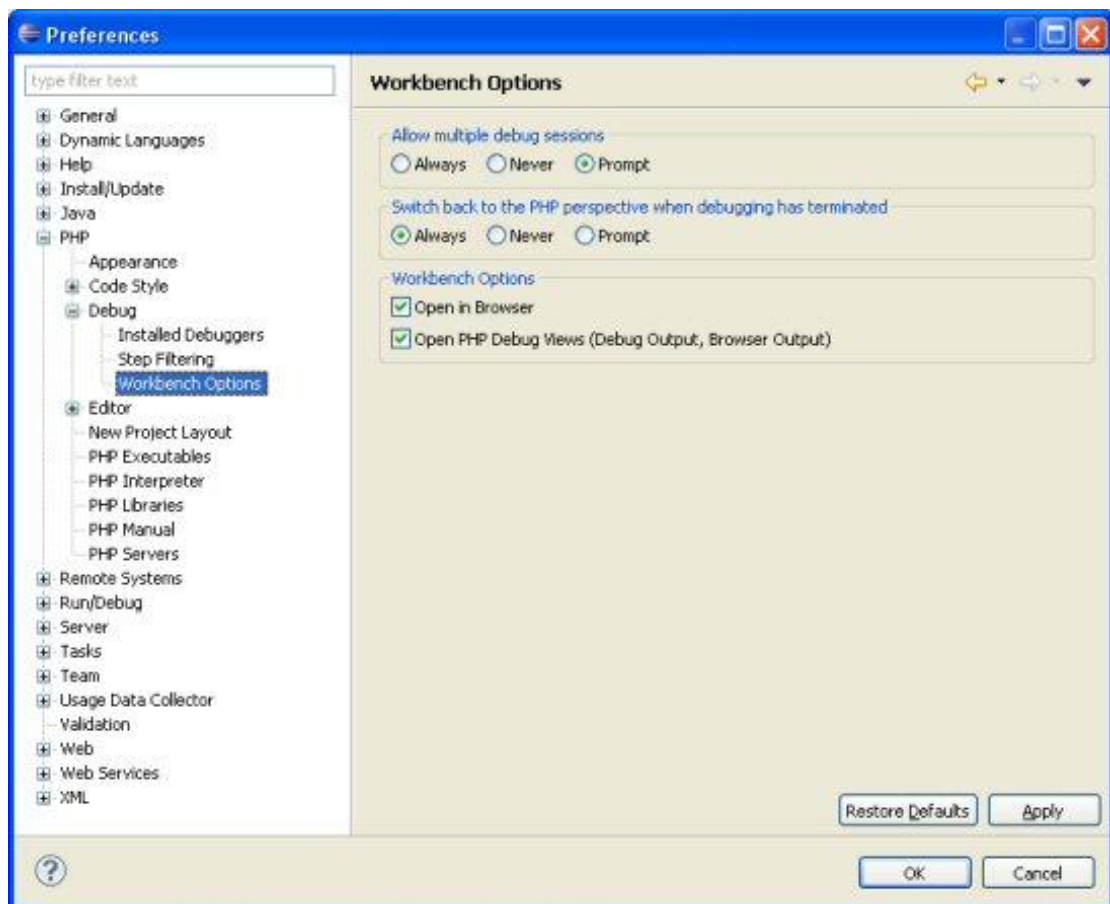
3. Click 'Configure' to the right of the option you just changed. This will bring up a list of installed debuggers.

Check that XDebug is using port 9000 – This is the setting used in our php.ini file.

You may get a warning advising that the port is already in use. If this is the case change the port to say 10001 apply the change, and then edit your php.ini file so that xdebug.remote_port = 10001

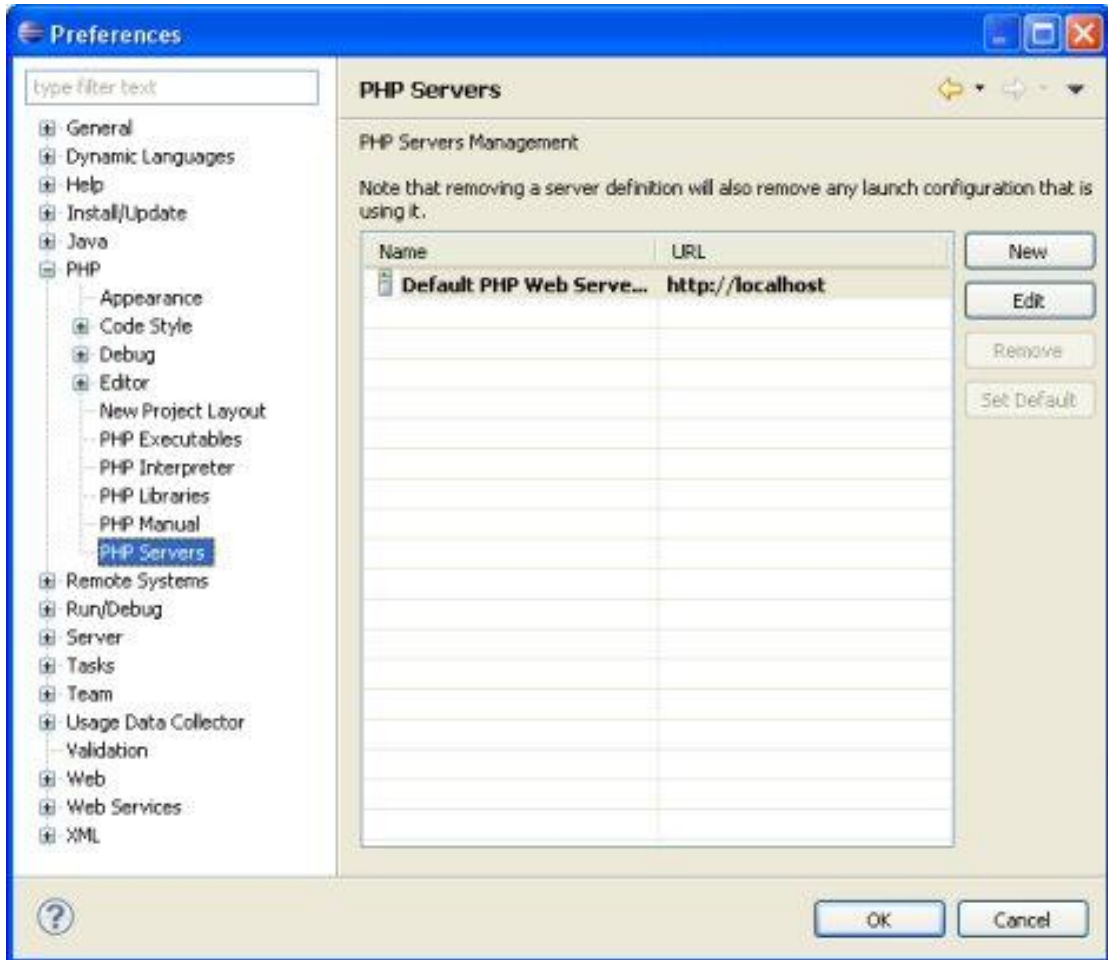
Apply the setting.

4. From the navigation choose **PHP→Debug→Workbench Options**
5. Select '**Always**' for 'Switch back to the PHP perspective when debugging has terminated'



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- Next we need to change the servers in the 'preferences window'. Navigate to **PHP→PHP Servers**

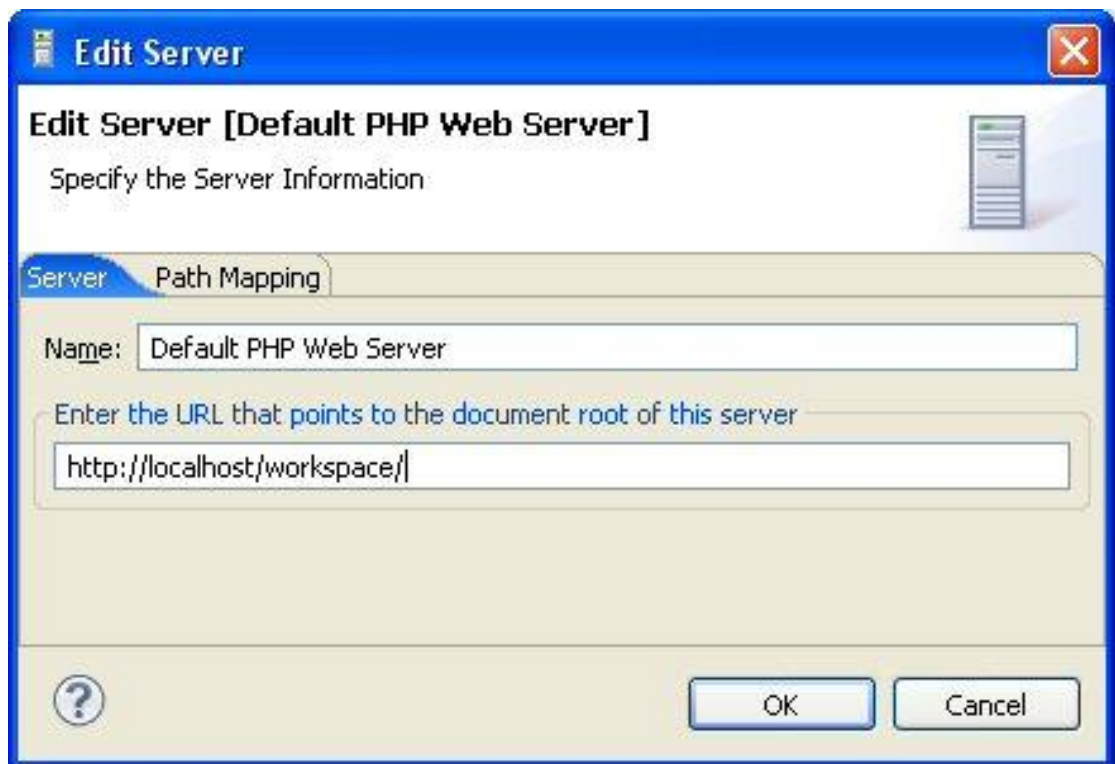


- Select the default PHP Web Server and click '**Edit**'.

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8. Enter the path of the document root –we set this as workspace

http://localhost/workspace/



9. Click 'OK' to confirm

Congratulations you have successfully set up a Windows based PHP web development environment.

To get started we are going to set up a really simple test project to introduce the basics so that we can focus on development later in the tutorials.

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Using Eclipse

Eclipse is a powerful IDE used for lots of different programming languages. The Eclipse PDT (Eclipse PHP Development Tools) build is ideal for PHP development. To become familiar with eclipse it's necessary to know some of the terminology used.

Eclipse Terminology

Workbench – The workbench is the main Eclipse window. The workbench allows you to focus on a task or job. In Eclipse terms this is known as a 'perspective'.

Perspective - A 'Perspective' is a defined or customised workbench layout that will facilitate the tasks or job that you are doing. Eclipse PDT has two packaged layouts:

1. PHP – for editing and working with PHP files
2. PHP Debug – for debugging PHP

Perspectives can be opened from the menu by selecting **Window→Open Perspective**. The default one should be the PHP perspective.

Project – This is the project you are working on. A project is really just a folder or directory to contain your files; it helps you to keep your work organised logically. Within a project you can have as many folders and files that relate to your project as you like.

By Way of example we shall create a tiny project to test our configuration.

Creating a Project

1. From the **File** menu select **New→PHP Project**
2. Enter '**FirstProject**' as the project name
3. Click '**Finish**'
4. In the Project Explorer part of the PHP perspective you will have a project. It will contain two paths/resources – One to the project work space and one to the PHP libraries.

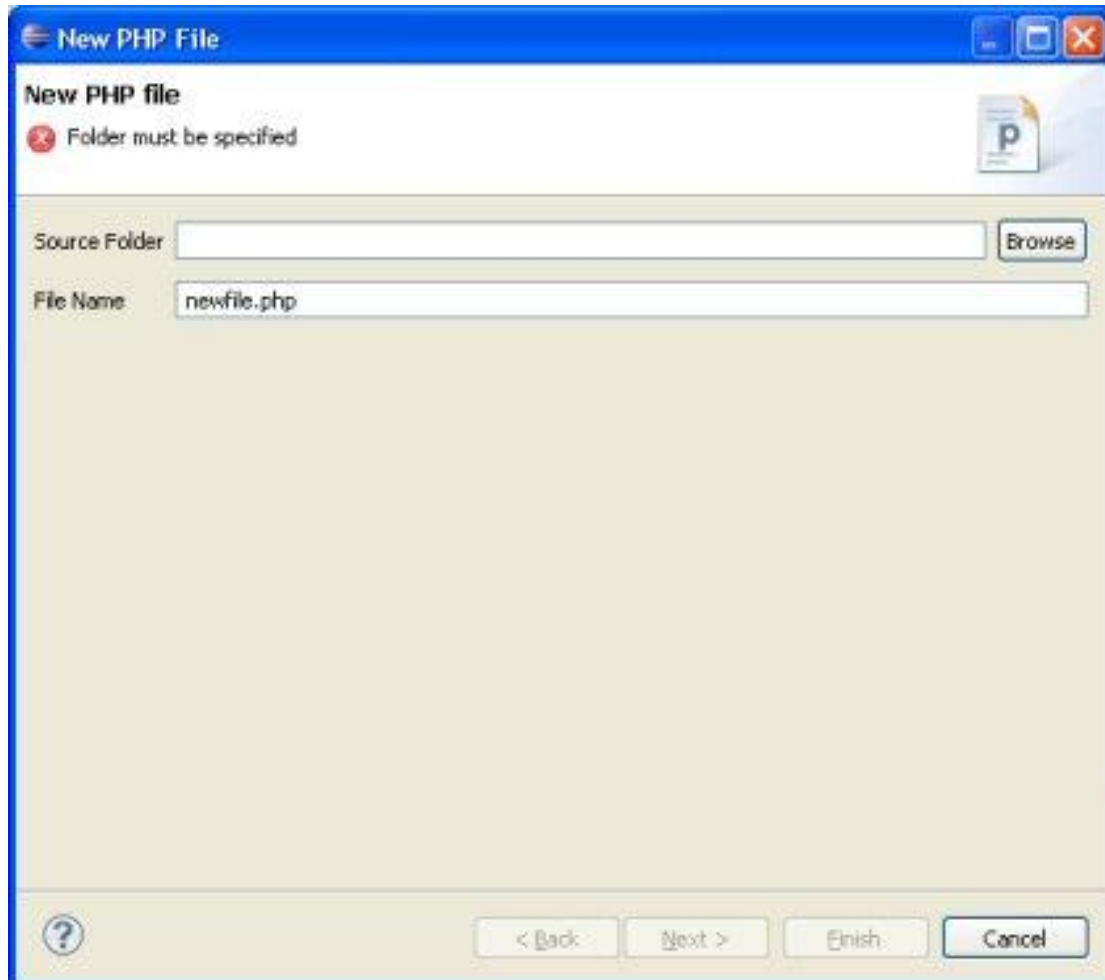


You have created a new 'Project' Next you want to add a file.

Adding a File to your Project

Now that you've created a Project you will want to add files. We are going to add one file and then open it in a web browser.

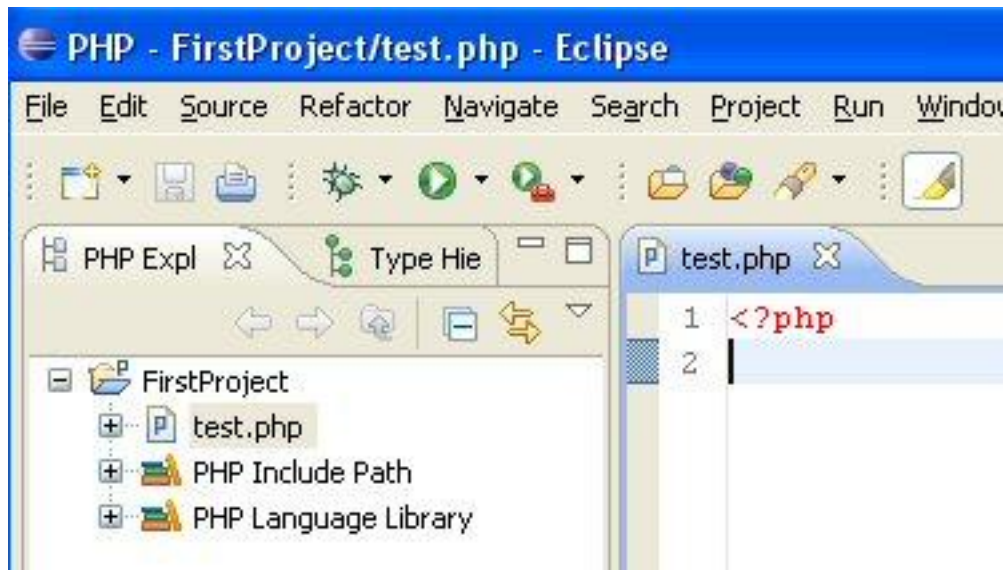
1. From the File Menu choose **New→PHP File**
2. A 'New PHP File' window will open.



3. Browse for a source folder and choose '**FirstProject**'
4. The default filename is 'newfile.php'. Change this to '**test.php**'.
5. Click '**Finish**'

Continues on next page....

- You will notice that a new file has been created under your project, and your new file has been opened for editing.



- Add the following line of PHP code to your file:

```
phpinfo();
```


- Close the PHP script by adding the following line

```
?>
```

- Your code window should look like this



Note: The asterisk (*) next to the file name indicates that the file has not been saved since it was edited.

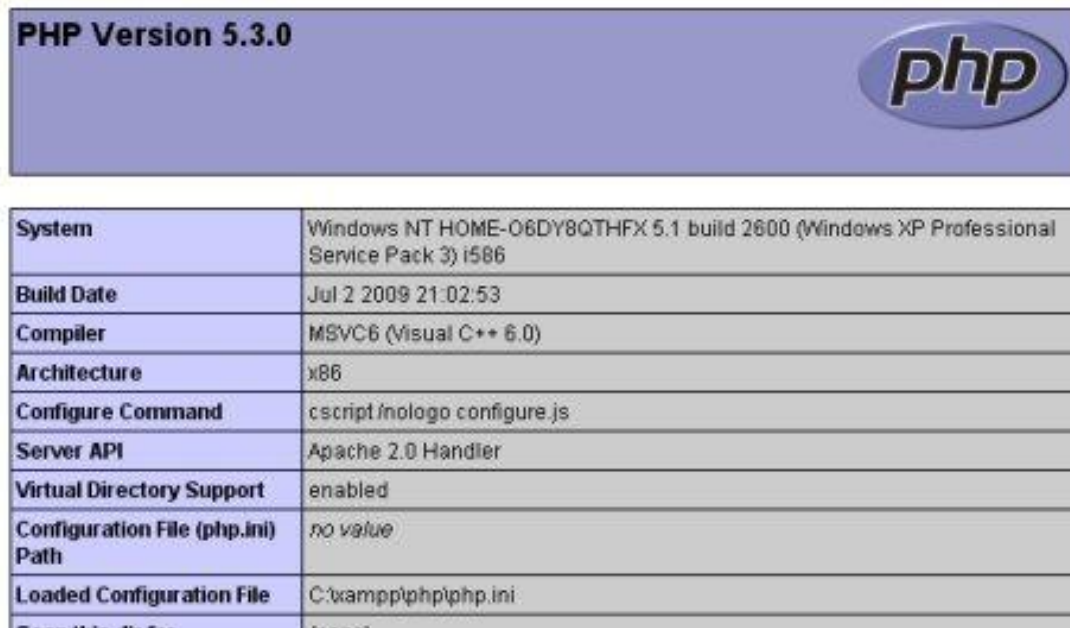
- From the file menu select 'Save' or click the save icon  on the workbench
- Ensure that XAMPP is running and that Apache and MySQL are running.
- Launch your favourite browser.

13. Enter the following URL into the address bar

http://localhost/workspace/FirstProject/test.php

As you can see the URL shows our Server **localhost**, the '**workspace**' folder that we created for storing our projects, the project folder '**FirstProject**' and the file we have just created called '**test.php**'.

14. You should see the PHP Info page in your browser window.



The screenshot shows the PHP Info page for version 5.3.0. At the top, it displays 'PHP Version 5.3.0' and the PHP logo. Below this is a table of system information.

System	Windows NT HOME-O6DY8QTHFX 5.1 build 2600 (Windows XP Professional Service Pack 3) i586
Build Date	Jul 2 2009 21:02:53
Compiler	MSVC6 (Visual C++ 6.0)
Architecture	x86
Configure Command	cmd.exe /c cscript /nologo configure.js
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	no value
Loaded Configuration File	C:\xampp\php\php.ini
Scan this dir for	(none)

This tutorial has shown:

- How to install and configure XAMPP
- How to edit the 'php.ini' file
- How to set up Eclipse PDT for PHP Web Development
- The basics of the Eclipse workbench
- How to create a new PHP Project with Eclipse
- How to create a new PHP File with Eclipse
- How to open your PHP files in a browser on your computer.

Revision History

Name	Date	Reason	Version
Paul Dunn	16/10/2009	Release	1.0
Paul Dunn	17/10/2009	Corrected error in 'How to Setup XDebug to Work with Eclipse' (step 4 and step 6) – Navigation paths were incorrect. Also corrected typos, and grammar. Added more bold text to improve readability. Updated copyright notice.	1.1