Install & Configure Apache with PHP, JSP and MySQL on Windows XP Pro

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This is a quick guide to install and configure the Apache web-server with PHP and JSP support on a Windows XP Pro machine. Let me know if this helps you out! Feedback is appreciated. This is my first "published" guide. I made it for my own reference. Why not share?

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Versions used:

Apache	2.0.39
PHP	4.2.1
Tomcat	4.0.4
j2sdk	1.4.0.01
MySQL	3.23.51
MyODBC	2.50.39
PHPMyAdmin	2.2.6

Change Log: 2002/08/01

Changed workers.properties file – the ajp14 stuff was removed

Modified php.ini. Changed the following:

	<pre>include path = ".;c:\php\includes"</pre>
	<pre>session.save path = C:\Temp</pre>
	session.cookie path = \
2002/07/31	Modified workers.properties file – some paths were for older versions of Tomcat
2002/07/26	Modified step 5 of JSP install - hardcoded the Tomcat
	configuration into the Apache httpd.conf file.
	Also added MySQL installation instructions.

Download the Components

Before you can begin, you must first download all the required components. The components used in this tutorial are listed below. You may want to download the latest versions. The versions used in the tutorial are listed.

Apache Web Server

- <u>http://httpd.apache.org/</u>
- http://httpd.apache.org/dist/httpd/binaries/win32/
- apache_2.0.39-win32-x86-no_ssl.msi

PHP

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- PHP Win32 Binaries
 - http://www.php.net/
 - http://www.php.net/downloads.php
 - php-4.2.1-Win32.zip
 - PHP > Apache connector
 - http://FReemIRC.com/miki/php4apache2.dll
 - or <u>http://Rafigh.com/miki/php4apache2.dll</u>
 - or <u>http://IRan4You.com/miki/php4apache2.dll</u>
 - php4apache2.dll

JSP

- Tomcat (<u>http://jakarta.apache.org/site/binindex.html</u>)
 - jakarta-tomcat-4.0.4.exe
 - mod_jk
 - <u>http://www.acg-gmbh.de/mod_jk/</u>
 - mod_jk.dll
- Java
 - Download the latest Java SDK (We used Java 2 Standard Edition J2SE)
 - <u>http://java.sun.com/</u>
 - <u>http://java.sun.com/j2se/1.4/download.html</u> (get the SDK, not JRE)
 - j2sdk-1_4_0_01-windows-i586.exe

MySQL

- MySQL Database
 - http://www.mysql.com/downloads/mysql.html
 - Download the latest stable release for Windows
 - mysql-3.23.51-win.zip
- MyODBC
 - <u>http://www.mysql.com/downloads/</u>
 - Download the latest stable release of MyODBC for WinXP
 - myodbc-2.50.39-nt.zip
- PHPMyAdmin
 - <u>http://www.phpmyadmin.net/</u>
 - Download the latest stable release of PHPMyAdmin (.php files)
 - phpMyAdmin-2.2.6-php.zip

Install Components

Now that you have the necessary files, you can begin the installation process. We will install Apache, PHP, then the Java SDK and Tomcat.

Note to Windows2000 users:

This guide should work with Windows2000 as well. Remember to replace C:\WINDOWS with C:\WINNT anywhere in this document.

Apache

1. Run apache_2.0.39-win32-x86-no_ssl.msi



😸 Apache HTTP Server 2.0 - Installation Wizard 🛛 🛛 🔀
License Agreement
Please read the following license agreement carefully.
The Apache Software License, Version 1.1
Copyright (c) 2001 The Apache Software Foundation. All rights reserved.
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
 Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this 🛛 🕞
• I accept the terms in the license agreement
\bigcirc I <u>d</u> o not accept the terms in the license agreement
InstallShield
< <u>B</u> ack <u>N</u> ext > Cancel
🛃 Apache HTTP Server 2.0 - Installation Wizard 🛛 🛛 🔀

	Read This First Read this Before Running Apache on Windows.	P
	Apache HTTP Server	^
	What is it? 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:	
		~
I	nstallShield Cancel	

2. Choose "Run as a service for $\underline{A}II$ Users – Recommended" when prompted.

🛃 Apache HTTP	Server 2.0 - Installation Wizard 🛛 🛛 🔀
Server Informat	ion
Please enter you	r server's information.
Network <u>D</u> omain	(e.g. somenet.com)
j <u>S</u> erver Name (e.	g. www.somenet.com):
Administrator's <u>E</u>	mail Address (e.g. webmaster@somenet.com):
I Install Apache H	TTP Server 2.0 programs and shortcuts for:
 ● For <u>A</u>II User 	s, on Port 80, as a Service Recommended.
🔘 only for the	e Current User, on Port 8080, when started Manually.
InstallShield	
	< <u>B</u> ack <u>N</u> ext > Cancel
🛃 Apache HTTP	Server 2.0 - Installation Wizard
Setup Type	
Choose the setu	p type that best suits your needs.
Please select a s	etup type.
	Typical program features will be installed. (Headers and Libraries for compiling modules will not be installed.)
<u>C</u> ustom	Choose which program features you want installed and where they will be installed. Recommended for advanced users.

InstallShield

< <u>B</u>ack

 $\underline{N}ext >$

Cancel

B Apache HTTP Server 2.0 - Installation Wizard	X
Destination Folder	\$
Click Change to install to a different folder	
Install Apache HTTP Server 2.0 to the folder: C:\Program Files\Apache Group\ 	
InstallShield Cancel	
澍 Apache HTTP Server 2.0 - Installation Wizard	
Ready to Install the Program The wizard is ready to begin installation.	
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
< Back Install Cancel	

🛃 Apache	HTTP Server 2.0 - Installation Wizard 📃 🗆 🔀
Installing The prog	Apache HTTP Server 2.0.39 ram features you selected are being installed.
13	Please wait while the Installation Wizard installs Apache HTTP Server 2.0.39. This may take several minutes.
	Status:
InstallShield –	< <u>B</u> ack <u>N</u> ext > Cancel

3. Finish the installation program.



4. Test: Open <u>http://localhost</u> in a web browser.

🕹 Opera - [Test Page for Apache Installation]
🗅 Eile Edit View Navigation Bookmarks E-mail News Window Help
Image: Second
Image: Optimized in the second se
If you can see this, it means that the installation of the <u>Apache web server</u> software on this system was successful. You may now add content to this directory and replace this page.
Seeing this instead of the website you expected?
This page is here because the site administrator has changed the configuration of this web server. Please contact the person responsible for maintaining this server with questions . The Apache Software Foundation, which wrote the web server software this site administrator is using, has nothing to do with maintaining this site and cannot help resolve configuration issues.
The Apache <u>documentation</u> has been included with this distribution. You are free to use the image below on an Apache-powered web server. Thanks for using Apache!
Test Page for Apache I

PHP

- 1. Extract php-4.2.1-Win32.zip into C:\php
- 2. Replace c:\php\sapi\php4apache2.dll with the one you downloaded.
- 3. Copy and rename c:\php\php.ini-dist to C:\WINDOWS\php.ini
- 4. Open php.ini and change the following:

```
include_path = ".;c:\php\includes"
session.save_path = C:\Temp
session.cookie_path = \
```

- 5. Add C:\php to your PATH System Environment Variable.
- 6. Add the following lines to httpd.conf:

```
LoadModule php4_module c:\php\sapi\php4apache2.dll
AddType application/x-httpd-php .php3 .phtml
```

7. **Test:** Restart Apache & open <u>http://localhost</u> in a web browser. Hopefully you see the same thing as before:



8. Test: Create a new document called *phpinfo.php* and paste the following into it:

phpinfo.php			
php</th <th></th> <th></th> <th></th>			
phpinfo();			
?>			

Save the document under C:\Program Files\Apache Group\Apache2\htdocs. Now open <u>http://localhost/phpinfo.php</u> in a web browser. You should see something like the following:

🚯 Opera - [ohpinfo()]		
🗅 <u>F</u> ile <u>E</u> dit	<u>V</u> iew <u>N</u> avigation <u>B</u> ookmarks E- <u>m</u> ail New <u>s</u> <u>W</u> indow <u>H</u> elp		_ 8 ×
Back Fr	Drward Reload Home Hotist Print New	1000 20	144
6005	http://localhost/phpinfo.php	Google search - Search	100% 🔻
	PHP Version 4.2.1	php	
	System	Windows NT 5.1 build 2600	
	Build Date	May 12 2002 23:51:56	
	Server API	Apache 2.0 Filter	
	Virtual Directory Support	enabled	
	Configuration File (php.ini) Path	C:\WINDOWS\php.ini	
	Debug Build	no	
	Thread Safety	enabled	
	This program makes use of the Zend Scripting Language Engine: Zend Engine v1.2.0, Copyright (c) 1998-2002 Zend Technologies	Powered by	
<	PHP 4 Credite		>
[] [] phpinto()			101

JSP

1. Run j2sdk-1_4_0_01-windows-i586.exe



InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
Sun Microsystems, Inc. Binary Code License Agreement READ THE TERMS OF THIS AGREEMENT AND ANY PROVIDED SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY "AGREEMENT") CAREFULLY BEFORE OPENING THE SOFTWARE MEDIA PACKAGE. BY OPENING THE SOFTWARE MEDIA PACKAGE, YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCESSING THE SOFTWARE ELECTRONICALLY, INDICATE YOUR ACCEPTANCE OF THESE TERMS BY SELECTING THE "ACCEPT" BUTTON AT THE END OF THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL THESE TERMS, PROMPTLY RETURN THE Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Java 2 SDK, SE v1.4.0_01, you must accept this agreement. InstallShield <
Select folder where Setup will install files.
Setup will install Java 2 SDK, SE v1.4.0_01 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\j2sdk1.4.0_01
InstallShield

InstallShield Wizard			
Select Components			
Choose the components Setup will install.			
Select the components you want to install, and clear the co install.	omponents you do not want to		
Program Files	Description		
Native Interface Header Files	Libraries and executables for the Java 2 SDK tools.		
Java 2 Runtime Environment (Windows drive only			
Space Bequired on C: 68268 K			
Space Available on C: 12352380 K			
InstallShield			
< <u>B</u> ack	< <u>N</u> ext > Cancel		
(
InstallShield Wizard	<u>×</u>		
Select Browsers			
Java (TM) Plug-in will be the default Java runtime for the fo	ollowing browser(s):		
Microsoft Internet Explorer			
Netscape 6			
You may obtain the default in t	ha Jaua(TM) Plug in Cantrol		
Panel	ne Java(1M) Hug-In Condoi		
InstallShield			
< <u>B</u> ack	< <u>N</u> ext > Cancel		

InstallShield Wizard	
Setup Status	
Java 2 SDK, SE v1.4.0_01 Setup is performing the requested operations.	
Installing: Program files	
C:\j2sdk1.4.0_01\jre\lib\rt.jar	
26%	
InstallShield	
	Cancel



Setting up Java 2 Runtime Environment, Please wait...



2. Run jakarta-tomcat-4.0.4.exe

Apache Tomcat 4.0	
Using Java Development Kit found in C:\j2sdkee1.3	
OK	
🛃 Apache Tomcat 4.0: License Agreement	
You must read the following license before insta	illing:
The Apache Software License, Version 1.	1
Copyright (c) 1999, 2000, 2001 The Apache Softw All rights reserved.	vare Foundation.

 $\overline{\mathbf{X}}$

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3. Choose "NT Service (NT/2k/XP only) on the Installation Options screen.

🛃 Apache Tomcat 4.0: Installation Options 🛛 🛛 🔀					
This will	l install the Apache T	fomcat 4.0 servi	et container on y	our computer:	
Select the type	of install:	Custom		-	
Or, select the op	otional	V Tomcat 4.0) (required)	^	
components you	u wish to install:	VT Service (NT/2k/XP only)			
		🖌 JSP Devel	opment Shell Ex	tensions	
		V Tomcat 4.0) Start Menu Gro	oup 🗏	
		🗹 Tomcat 4.0) Documentation	ו ו	
Space required:	22.5MB	🗹 Example W	/eb Applications		
		Tomcat 4.0) Source Code	~	
Cancel	Nullsoft Install S	ystem v1.98	< Back	Next >	
🛃 Apache To	mcat 4.0: Insta	llation Direct	tory	X	
Apache To	mcat 4.0: Insta select a location to ir	Ilation Direct	tory) (or use the defa	ault):	
Select the direc	mcat 4.0: Insta select a location to ir tory to install apache	Ilation Direct nstall Tomcat 4.0 e-tomcat-4.0 in:	tory) (or use the defa	ault):	
Select the direc	mcat 4.0: Insta select a location to ir tory to install apache Files\Apache Tomo	Ilation Direct nstall Tomcat 4.0 e-tomcat-4.0 in: eat 4.0	tory) (or use the defa	ault): Browse	
Select the direc	mcat 4.0: Insta select a location to ir tory to install apache Files\Apache Tomo	Ilation Direct nstall Tomcat 4.0 e-tomcat-4.0 in: at 4.0	tory) (or use the defa	ault): Browse	
Space required:	mcat 4.0: Insta select a location to ir tory to install apache Files\Apache Tomo 22.5MB	Ilation Direct nstall Tomcat 4.0 e-tomcat-4.0 in: at 4.0	tory) (or use the defa	ault): Browse	
Space required: Space available	mcat 4.0: Insta select a location to in tory to install apache Files\Apache Tomo 22.5MB = 11.6GB	Ilation Direct nstall Tomcat 4.0 e-tomcat-4.0 in: at 4.0	tory) (or use the defa	ault): Browse	



- 4. Copy mod_jk.dll to C:\WINDOWS\system32
- 5. Add the following at the end of your Apache *httpd.conf* file:

```
*****
## JSP Support
## Copied from Tomcat auto-configuration file
      + added JkMount /*.jsp ajp13
##
##
      + removed Virtual Host
<IfModule !mod_jk.c>
 LoadModule jk module c:/WINDOWS/system32/mod jk.dll
</IfModule>
JkWorkersFile "C:/Program Files/Apache Tomcat 4.0/conf/workers.properties"
JkLogFile "C:/Program Files/Apache Tomcat 4.0/logs/mod_jk.log"
JkLogLevel info
JkMount /manager ajp13
JkMount /manager/* ajp13
JkMount /examples ajp13
JkMount /examples/* ajp13
JkMount /tomcat-docs ajp13
JkMount /tomcat-docs/* ajp13
JkMount /webdav ajp13
JkMount /webdav/* ajp13
JkMount /*.jsp ajp13
```

6. Create a new text document called workers.properties. Save this document in the following directory: C:\Program Files\Apache Tomcat 4.0\conf. Cut and paste this into the document:

workers.properties

```
workers.tomcat_home=C:/Program Files/Apache Tomcat 4.0
workers.java_home=C:/j2sdk1.4.0_01
ps=\
worker.list=ajp13, ajp14
worker.ajp13.port=8009
worker.ajp13.host=localhost
worker.ajp13.topt=ajp13
worker.ajp13.tbfactor=1
worker.loadbalancer.type=lb
worker.inprocess.class_path=$(workers.tomcat_home)$(ps)server$(ps)lib$(ps)catalina.jar
worker.inprocess.stdour=$(workers.tomcat_home)$(ps)jre$(ps)bin$(ps)server$(ps)jvm.dll
worker.inprocess.stdour=$(workers.tomcat_home)$(ps)logs$(ps)inprocess.stdour
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```

7. Add the following to C:\Program Files\Apache Tomcat 4.0\conf*server.xml* after the <Server port="8005" ...> declaration.

```
<Listener className="org.apache.ajp.tomcat4.config.ApacheConfig"
modJk="c:/WINDOWS/system32/mod_jk.dll" jkDebug="info"
workersConfig="C:/Program Files/Apache Tomcat 4.0/conf/workers.properties"
jkLog="C:/Program Files/Apache Tomcat 4.0/logs/mod jk.log"/>
```

8. Add the following lines after the <Service name="Tomcat-Standalone"> declaration in the server.xml document.

```
<!-- Define an AJP 1.3 Connector on port 8009 -->
<Connector className="org.apache.ajp.tomcat4.Ajp13Connector"
port="8009" minProcessors="5" maxProcessors="75"
acceptCount="10" debug="0"/>
```

 Finally in the server.xml document, after any <Host name="localhost" ...> declarations, add a listener:

```
<Listener className="org.apache.ajp.tomcat4.config.ApacheConfig" append="true" />
```

10. **Note:** Always start Tomcat first and then start Apache. If you have to bounce Tomcat, remember to take down Apache first and restart it after Tomcat restarts.

Test: Start the Tomcat service. Open <u>http://localhost:8080/</u> in a web browser. You should see something like the following:



Test out the JSP Examples as well as the Servlet Examples to make sure they work. If they do not work, something is wrong with your Tomcat installation. (It's much easier to stop the Tomcat service, uninstall it, and start over again. Troubleshooting this is not fun as there's little documentation available.)

Test: Start up the Apache2 service and open <u>http://localhost/</u> in a web browser. Still working?

Test: Now try http://localhost/phpinfo.php to make sure that's still in working order.

Test: Open <u>http://localhost/examples/</u> in a browser, you should see something like the following:

🚯 Opera	a - [Directory List	ing For /]									_ 0	X
Cì <u>Eile</u> §	<u>E</u> dit <u>V</u> iew <u>N</u> avigatio	n <u>B</u> ookmarks	E- <u>m</u> ail New <u>s</u>	<u>W</u> indow	Help						_ 8	×
Back	Forward Rel	oad Home	w Hotlist	Print	New		~	-	-	110	114	
d @ C	B http://localhos	t/examples/				▼ Go	Go	ogle sea	irch	▼ 5	earch 100%	•
]	Directory I	Listing	For /									
I	Filename	Size								Last Mod	lified	
	images/					Wed,	10	Jul	2002	23:07:55	GMT	
	jsp/					Wed,	10	Jul	2002	23:07:55	GMT	
	servlets/					Wed,	10	Jul	2002	23:07:55	GMT	
ł	Apache Tomcat/4.0.4											
D Direct	town Listing For /											

Follow the jsp/ link. You should recognize the page from before.



MySQL

1. Extract mysql-3.23.51-win.zip to a temporary directory and run Setup.exe.







Note: Keep the default location. It will save you from frustration later on.

Setup Type		$\overline{\mathbf{X}}$
	Click the type	of Setup you prefer, then click Next.
	• Typical	Program will be installed with the most common options. Recommended for most users.
	C <u>C</u> ompact	Program will be installed with minimum required options.
	C Cystom	You may choose the options you want to install. Recommended for advanced users.
		< <u>B</u> ack <u>N</u> ext > Cancel



You may delete the temporary setup files at this time.

2. Open a command prompt and run the following command to install mysql as a Windows Service:

C:\mysql\bin> mysqld-max-nt -install

Note: It is advisable to close the Services utility while performing the --install or --remove operations, this prevents some odd errors.



3. **Test:** At the command prompt, type in **NET START MySQL**. This should start up the service you just setup.



Note: If you decided to install mysql somewhere besides the default c:\mysql, you may run into problems running it as a service. Check the *mysql.err* log file. It should tell you what's going on. It most likely has something to do with the my.cfg or my.ini files.

4. **Test:** Type in the command mysqlshow. It should display the current databases.



5. Extract myodbc-2.50.39-nt.zip to a temporary directory and run SETUP.EXE. (Don't worry if the Installer looks like it's for Windows 3.1. It's normal.)

Microsoft	ODBC Setup
P	Welcome to the Microsoft Open Database Connectivity (ODBC) Setup utility.
Setup in Connect Exit	stalls and configures Microsoft Open Database ivity components. Choose Continue to install or to leave without installing Microsoft ODBC.
	<u>Exit</u>

Install Drivers	×
Select one or more ODBC drivers to	ОК
install from the list, then choose UK.	Cancel
Available ODBC <u>D</u> rivers:	Help
MySQL	<u> </u>
	<u>A</u> dvanced

At this point, just click Close.

<u>)</u> ata Sources (Driver):	<u>C</u> lose
dBASE Files (Microsoft dBase Driver (*.dbf)) Excel Files (Microsoft Excel Driver (*.xls)) MS Access Database (Microsoft Access Driver (*.mdb)) sample-MySQL (MySQL)	<u>H</u> elp
	<u>S</u> etup
	De <u>l</u> ete
	<u>A</u> dd
	Drivers

Microsoft ODBC Setup	X
Setup Succeeded!	
Microsoft ODBC has been successfully installed.	

Note: You may delete the temporary installation directory at this time.

6. Extract phpMyAdmin-2.2.6-php.zip to your *htdocs* directory and rename it to something like "phpmyadmin" (e.g. C:\Program Files\Apache Group\Apache2\htdocs\phpmyadmin).

Note: You may want to use a .htaccess file or use the following to prevent random people from accessing PHPMyAdmin.

7. Open the config.inc.php in your favorite text editor and modify the following variables:

```
$cfgPmaAbsoluteUri = 'http://localhost/phpmyadmin/';
$cfgServers[$i]['auth_type'] = 'http';
```

8. Open http://localhost/ and login using root (password is blank). Make sure to change your password.



Resources

Apache http://www.apache.org/

PHP http://www.php.net/

Perl http://www.perl.com/ http://www.activestate.com/

JSP

http://www.acg-gmbh.de/mod_jk/ http://www.galatea.com/flashguides/apache-tomcat-24-win32.xml http://www.jguru.com/faq/view.jsp?EID=853905

MySQL http://www.mysql.com/ http://www.phpmyadmin.net/

Thanks!

Special thanks to Andrew Conrad, Rick Reumann, Dallas Thunder, and Andrei Isakov for their helpful feedback.