Installation of Apache, PHP & MySQL

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Assignment 1

- Mark Standard
  1. Correctness
     - accurately describe the functionality to be delivered
     - Meet the standards in Software engineering (terminologies...)
     - Reasonable & feasible design
  2. Unambiguous
     - Clear; easy to be understood
  3. Comprehensive
     - detail functions and demands in your system
- Format
  You can adopt any format; make your report clear and comprehensive

Assignment Handin

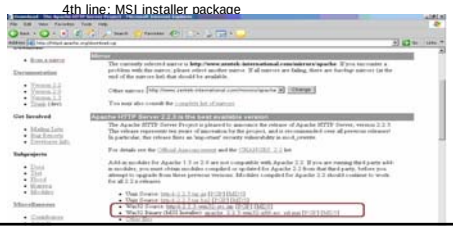
- Choose one of the following two means:
  1. Web Handin
     http://assignmentbox.cs.hku.hk:9000/handin/
     Login with your web-handin account and submit your program(s) to the correct course and assignment folder
  2. Hardcopy Handin
     Assignment box B2, 3rd floor, CYC Building.
- Deadline: November 1, 2006

Outline

- In this tutorial, you will learn how to
  - Install, configure & Test Apache
  - Install, configure & Test PHP
  - Install, configure & Test MySQL

Installation of Apache

- 1. Download the Apache HTTP Server
  The latest version is 2.2.3, download from Apache download page
  (http://httpd.apache.org/download.cgi)
  Windows: 3rd line: include source files, compile Apache source code
  4th line: MSI installer package



Installation of Apache

- 2. After you download the installer, double-click on the file
  apache_2.2.3-win32-x86-no_ssl.msi
- start the installation process. You will get a welcome screen, as shown next:

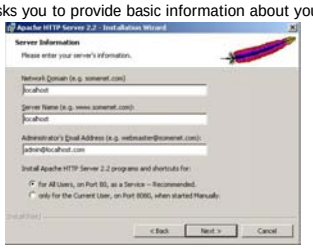
Installation of Apache

- 3. the Apache license screen

Select agree, click "next"

Installation of Apache

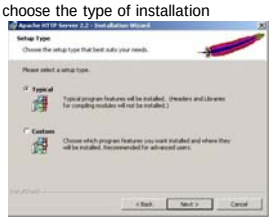
- 4. asks you to provide basic information about your computer



If your machine does not have a full network address, use localhost or 127.0.0.1 as the server name

Installation of Apache

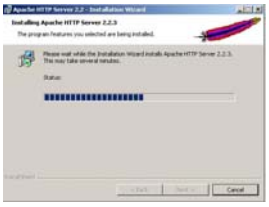
- 5. choose the type of installation



- **Typical** installation: not install headers and libraries. Don't plan to compile your own modules
- **Custom** installation: Select whether to install header files or documentation, & the target installation directory

Installation of Apache

- 6. installation process



Installation of Apache

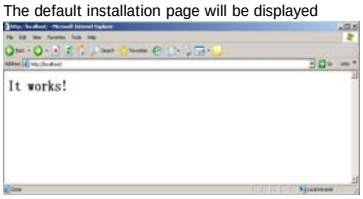
- 7. If everything goes well, it will present you with the final screen

Configuration of Apache

- Apache keeps all of its configuration information in files.
- Directories:
  - ***Conf***: main configuration file ***httpd.conf***
  - ***Htdocs***: hold your web server
- Httpd.conf
  1. Directives : configure specific settings of Apache, such as authorization, performance, and network parameters
  2. Containers: specify the context to which those settings refer.

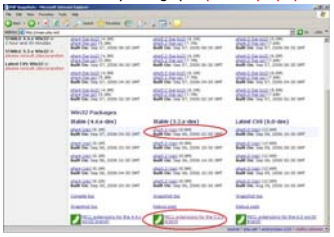
Test of Apache Server

- Open the apache server 
  programs->Apache HTTP Server 2.2.3->Control Apache Server->Start
- If everything goes well, you can access Apache using a browser.
  http://localhost/
- The default installation page will be displayed



Installation of PHP

- 1. Download PHP package(http://snaps.php.net)



Be compatible with apache 2.2.x, download version of (5.2.x)
PECL extension: support more extensions

Installation of PHP

- 2. Unzip the download PHP file to installation directory

  (php5.2-win32-200609062230.zip) to "c:\PHP5"

- 3. Extract the PECL extension file to "c:\PHP5\ext\".
  PECL is a repository for PHP Extensions, providing a directory of all known extensions and hosting facilities for downloading and development of PHP extensions.

  E.g. support C++, image processing ...

Installation of PHP

- 4. Copy the dll file that will be used by the system in explaining and compiling the php files.
  1. Copy the **php5ts.dll** from "c:\PHP5" to "c:\windows";(or "c:\winnt" in windows 2000 OS)
  2. Copy the following dll files from "c:\PHP5" to "c:\windows\system32"
     - fdftk.dll
     - fribidi.dll
     - gds32.dll
     - libeay32.dll
     - libmhash.dll
     - libmysql.dll
     - ntwdblib.dll
     - yaz.dll

Installation of PHP

- 5. Copy **php.ini-dist** file from "c:\php5" to "c:\windows"; and rename this file as "**php.ini**". Edit this file using any edit tools, like Notepad.
- Locate the lines of
  ; Directory in which the loadable extensions (modules) reside.
  extension_dir = "./"
- Modify the 2nd line to
  extension_dir = "c:\PHP5\ext"
- Save and close the file

Installation of PHP

- 6. Edit Apache configuration file to make the server can distinguish and use the correct compiler to PHP files.

1. Open **httpd.conf**:

Locate
DirectoryIndex index.html
Add php default page, normally as index.php
DirectoryIndex index.html index.php

2. In order to make Apache distinguish php and its corresponding extensions, Add the following 2 lines:
   AddType application/x-httpd-php .php
   AddType application/x-httpd-php-source .phps
3. Finally, the server should load the php module when it starts. So, add this line
   LoadModule php5_module c:\PHP5\php5apache2_2.dll
4. OK, save the httpd.conf file, and restart Apache server.

Test of Apache & PHP

- After the above setup, we can test whether the Apache server can distinguish and correctly compile the php file.
- We can write a simple php file as:

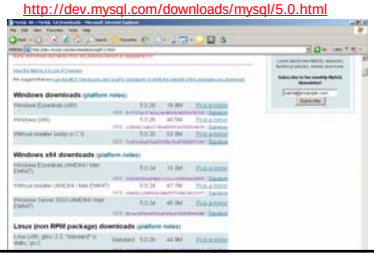
```
<?php
phpinfo();
?>
```

- Save as "test.php" into the server root directory.
  ....\Apache 2.2\htdocs (default)
- Then open the browser, and type the address:
  http://localhost/test.php
- If the php is installed correctly, you will see the following webpage:

Test of Apache & PHP

Installation of MySQL

- 1. Download MySQL setup file
  Current steady version: 5.0.26
  http://dev.mysql.com/downloads/mysql/5.0.html



Installation of MySQL

- 2. After download, double click(mysql-essential-5.0.26-win31.msi)
- Welcome screen

Installation of MySQL

- 3. Select setup type

Installation of MySQL

4. Confirmation

Installation of MySQL

- 5. sign up

- After registration, you can access to post in the MySQL forums at forums.mysql.com along with the ability to report bugs at bugs.mysql.com and subscribe newsletter

Installation of MySQL

- 6. Complete installation
- 7. start "Configuration the MySQL Server"

Configuration of MySQL

- 7.0 Welcome screen

  Launch the ...\bin\MySQLInstanceConfig.exe

  Create a custom "my.ini" file by asking a series of questions

Configuration of MySQL

- 7.1 select a Maintenance Option type

  Detects a existing "my.ini", you have the option of either reconfiguring your existing server, or removing the server instance by deleting the "my.ini" file and stopping and removing the MySQL service

Configuration of MySQL

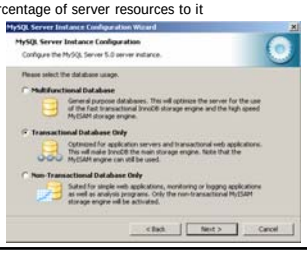
- 7.2 Choose a Configuration Type
  - Standard: new users, quickly without having to make many decisions about server configuration. may be incompatible with systems with an existing MySQL installation), not recommend
  - Detailed Configuration

Configuration of MySQL

- 7.3 Server type (memory, disk and processor usage)
  - **Developer Machine** :a typical desktop workstation, MySQL is only for personal use (minimal system resources)
  - **Server Machine** :running alongside other server applications, such as FTP, email and Web servers (a moderate portion of the system resources)
  - **Dedicated MySQL Server Machine** :run only the MySQL server (all available system resources)

Configuration of MySQL

- 7.4 Select Database Usage
  - indicate the storage engines used when creating MySQL tables. Determine whether the InnoDB storage engine is available and what percentage of server resources to it



Configuration of MySQL

- 7.5 InnoDB tablespace setting
  - Select a different location for InnoDB talbespace files than the MySQL server data directory (higher capacity or higher performance storage device available, e.g. RAID storage system)

Configuration of MySQL

- 7.6 Concurrent connections
  - Prevent the server from running out of resources, limit the number
  - Decision Support :Maximum number of connections is set at 100, with an average of 20 concurrent connections assumed
  - Online Transaction Processing :maximum number is 500
  - Manual settings:

Configuration of MySQL

- 7.7 Networking and Strict Mode options
  - Enable or disable TCP/IP networking, and to configurate the port number to connect to the MySQL server
  - Strict mode: If you applications that rely on MySQL's old "forgiving" behavior

Configuration of MySQL

- 7.8 character set
  - Select "Best Support For Multilingualism"(UTF8 store different characters)

Configuration of MySQL

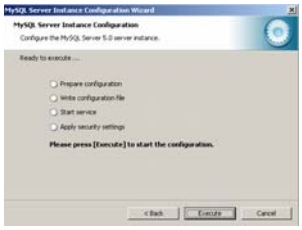
- 7.9 Service options
  - Start automatically during system startup, even restarted automatically by Windows in service failure。
  - Default name: MySQL, you can change the name, or uncheck the installation

Configuration of MySQL

- 7.10 security option
  - Set a root password for your MySQL
  - Do not wish to set a root password, uncheck "Modify security settings"
  - Create an anonymous user account, check the box

Configuration of MySQL

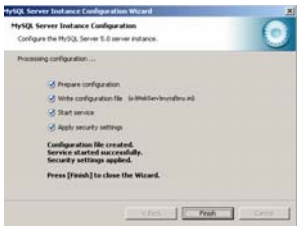
- 7.11 Confirmation, click Execute



Configuration of MySQL

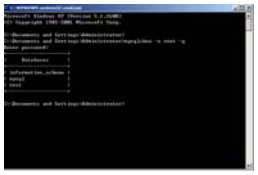
- 7.12 Finish

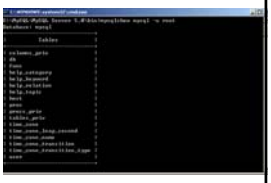
  If no problem, service started



Test of MySQL

- mysqlshow -u root –p // show the databases
- mysqlshow mysql -u root –p //show tables in mysql





Useful toolset

- MySQL GUI Tools Bundle for 5.0

  Provide a suite of desktop applications for the administration of MySQL instances and for building and manipulating the data within MySQL databases (http://dev.mysql.com/downloads/gui-tools/5.0.html)
  - MySQL administrator 1.2

    Perform administrative operations, such as configuring, monitoring and starting/stopping a MySQL server, managing users and connections, backups...
  - MySQL Query Browser 1.2

    Graphical tool for creating, executing and optimizing queries in a graphical environment
  - MySQL Migration Toolkit 1.1

    Graphical tool for migrating schema and data from various relational database systems to MySQL
  - MySQL Workbench 1.1

    Schema desin application that enables users to graphically design and modify tables and other database objects