Math Matters

Install Guide

- SERVER -

TABLE OF CONTENTS

PREREQUISITES **1**
SYSTEM CONFIGURATION 1
INSTALL GUIDELINES **2**
SERVER INSTALLATION **3**
SETTING UP TOMCAT SERVER AS WINDOWS SERVICE **4**
SETTING UP MYSQL AS WINDOWS SERVICE **9**
SETTING UP REMAINING PROGRAMS **18**
ENTERING COMMAND-LINE INPUT **19**
URGENT NOTE **20**

PREREQUISITES

Below are the specifications that define the system configuration and environment set-up essential to install the database, admin utility and the games.

System Configuration

- Intel Core 2 Duo Processor E6300 (1.8GHz, 1066FSB) with 2MB cache
- 2 GB RAM
- 768MB NVIDIA GeForce 8800 GTX
- 250 GB SATA II hard drive
- Windows XP Operating System
- 16x DVD+R/RW CD-RW combination drive

A successful environment setup requires you to ensure the following two ports are not in use by other processes:

- Port number 3306
- Port number 9090

INSTALL GUIDELINES

All the software required for 3D Games is installed into one directory which is by default c:\3dgames. The install DVD contains config.properties file with default values for all required parameters. At the time of installation if there is no change in these values, just press enter key to accept the values values (**with the exception of the IP Address**). It is recommended to accept the default values which are designed to keep all the relevant software together in one location.

Installation of tomcat server and mysql service present their own install screens where user has to enter the directories manually. The Server installation section has all the screen shots showing where the input is required and what needs to be entered. For all the third party software, enter the root directory same as for 3D Games.

SERVER INSTALLATION

Server is the machine which hosts database to authenticate all the students before playing the game. Each student is assigned a player account by the administrator which is an automated process using admin utility. The username is same as studentid and password is first four characters of lastname followed by studentid. The server machine should always be accessible via network to the player machine while playing the game. All of the player performance information is dynamically logged to database as the game is being played.

Installation for server machine includes MySql database setup and tomcat server setup along with Administration Utility to manage student accounts and track performance. Since it is decided to run MySql and Tomcat server as windows services they are installed independently using the windows executable files included in installation DVD. Documents are included with diagrams on how to install them as services with few mouse clicks. This is required only for server machine installation and is not required on client (player) machines.

All of the software is installed into C drive in the directory 3DGames to consolidate everything into one place. This includes all the playable games.

Server Installation includes the following components:

- MySql as windows service
- Tomcat Server as windows service
- Math Matters Admin utility
- ODBC Driver
- OGG music format driver

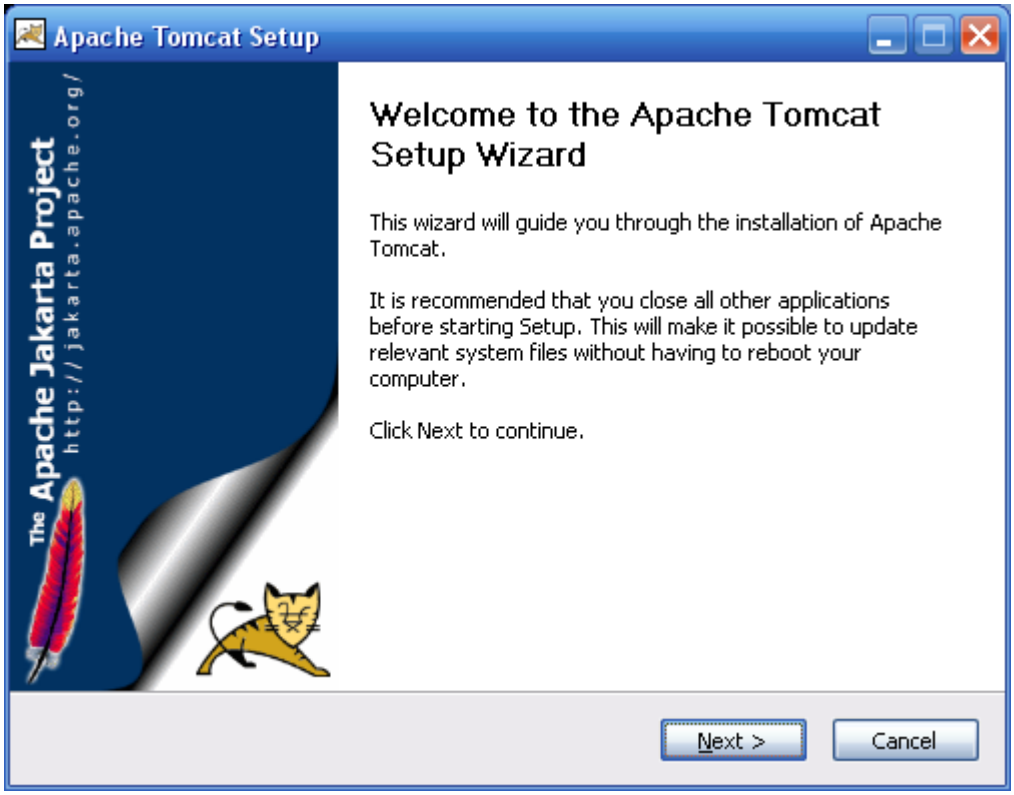
To start sever installation insert the DVD and change the directory to DVD drive. Execute **SETUP_mmServer.cmd** and provide answers to all the questions prompted by various components of the installation. Third party software like Tomcat and MySql are also recommended to be installed into **c:\3dgames** directory. This ensures all the relevant software is located in one directory.

Setting up Tomcat Server as Windows Service

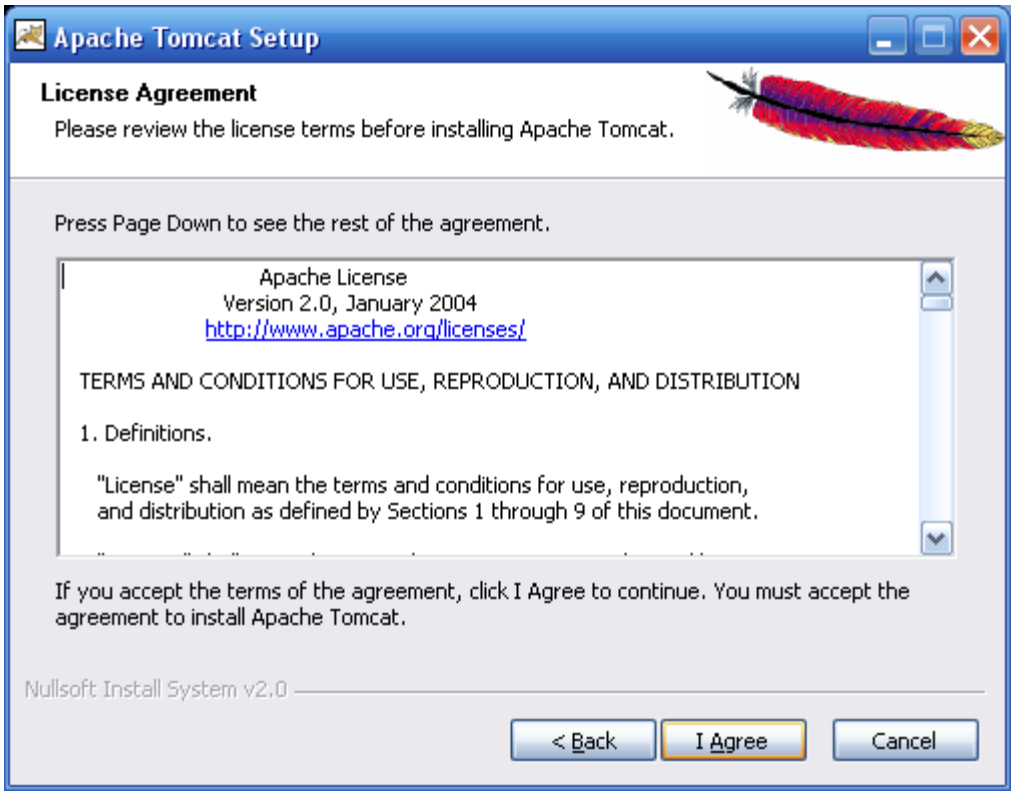
Tomcat Server can be setup as windows service to avoid keeping a command prompt open all the time to run the server. Whenever the server is restarted, tomcat service wll automatically start. Installation is easy with the following steps.

The server installation process (setupserver.bat) automatically starts tomcat installation which brings up wizard screens shown below. Please make sure to enter destination folder same as for all 3d games (shown in the subsequent screens).

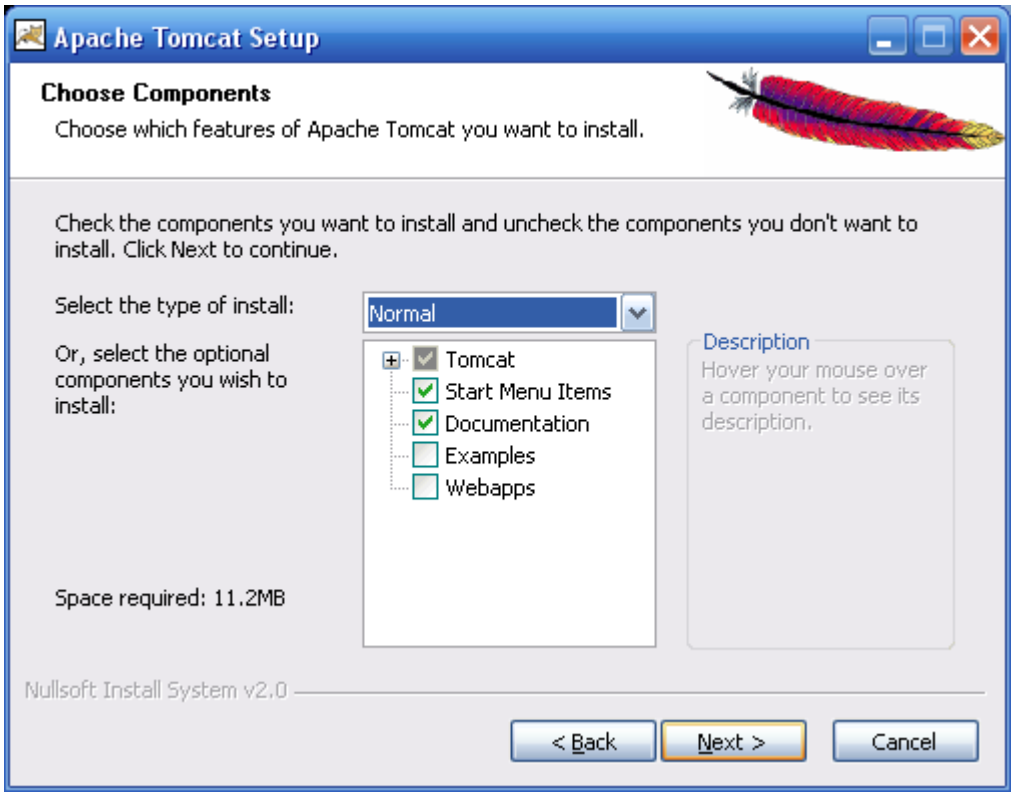
At the end of installation go to services panel and setup startUp type as 'automatic' instead of manual which will start tomcat whenever the server is rebooted.



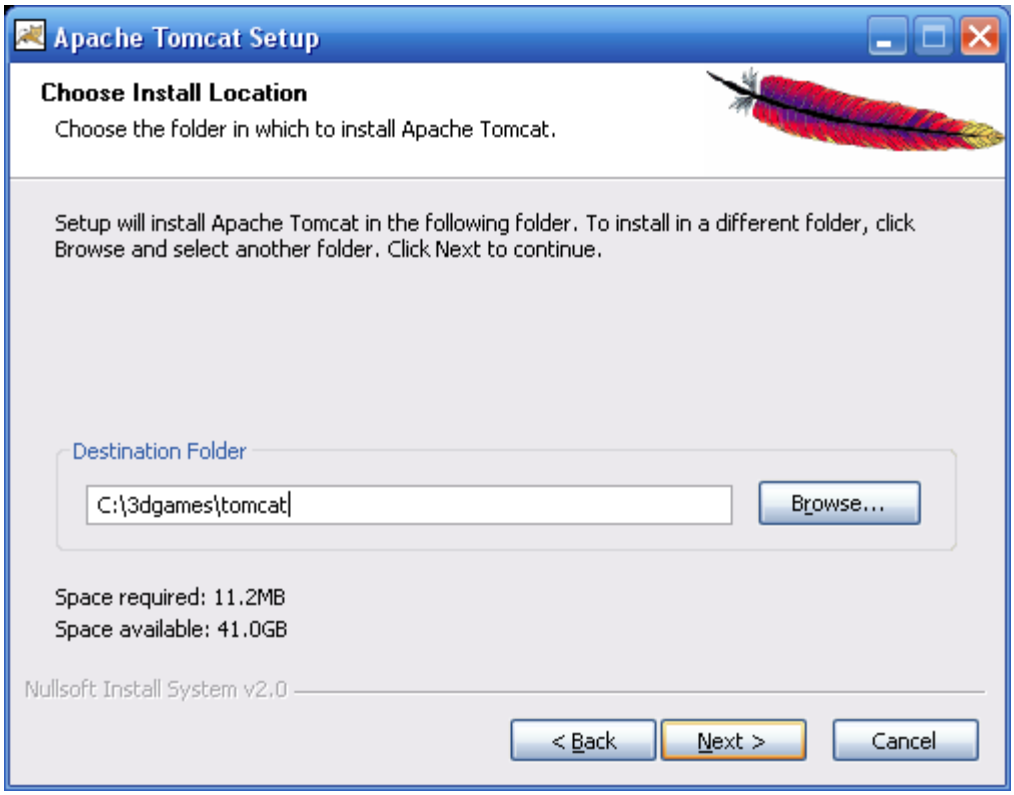
Click **Next** on the first screen as shown above:



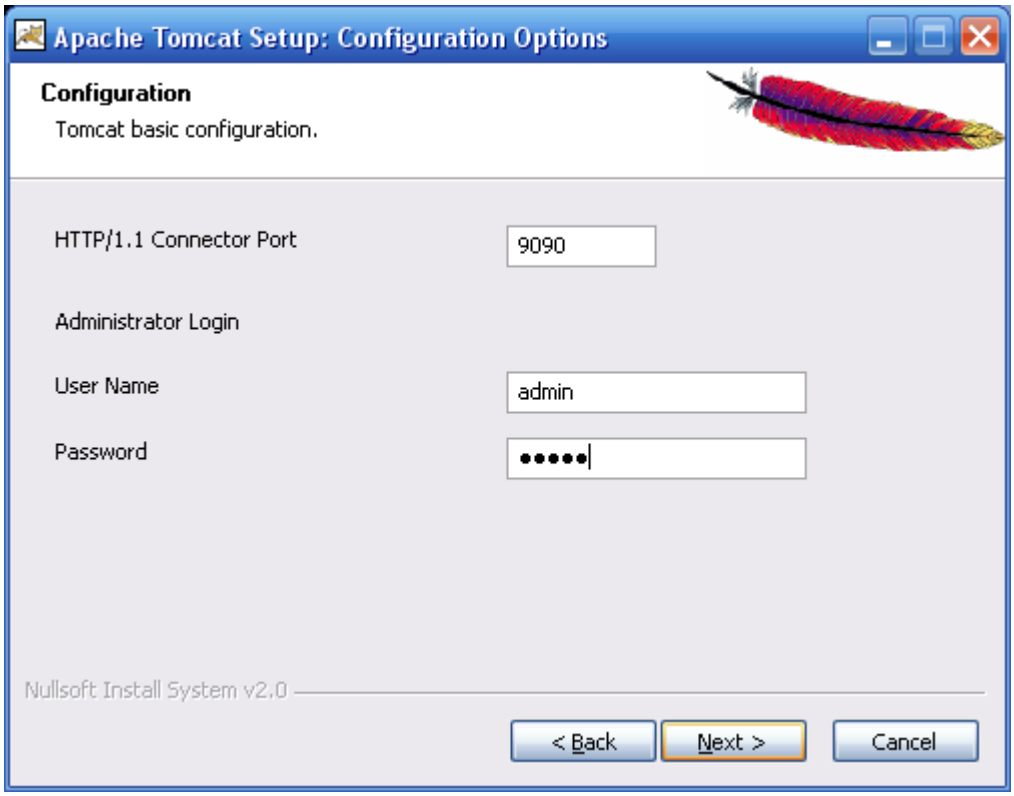
Click on **I Agree** button:



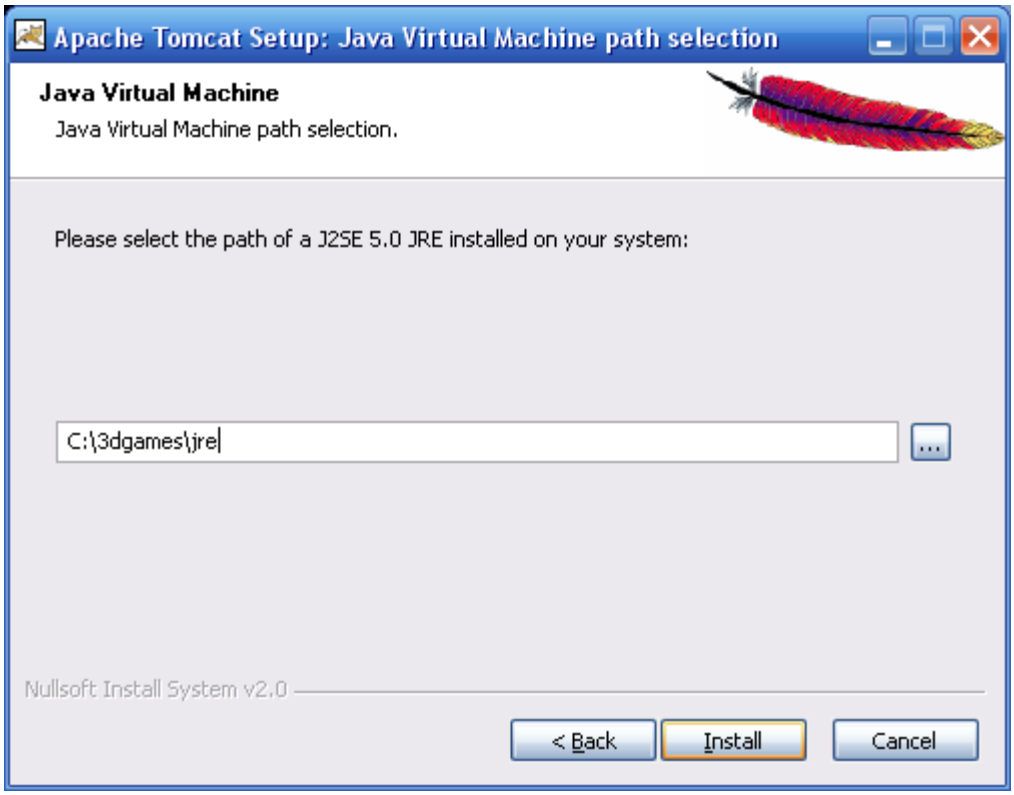
Click **Next** button



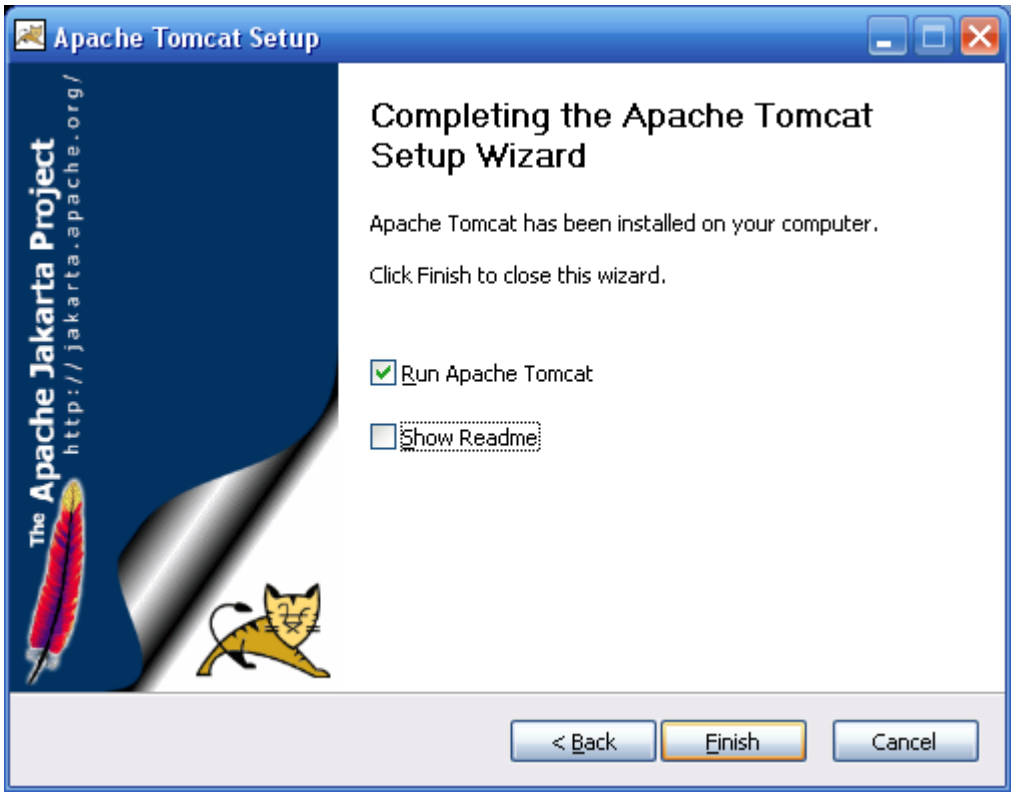
Enter **c:\3dgames\tomcat** (or reference a different drive if necessary) for destination folder and click **Next:**



Enter **9090** for Port , **admin** for User Name and **admin** for Password:



Enter **c:\3dgames\jre** (or reference a different drive if necessary) for JRE directory as shown above:

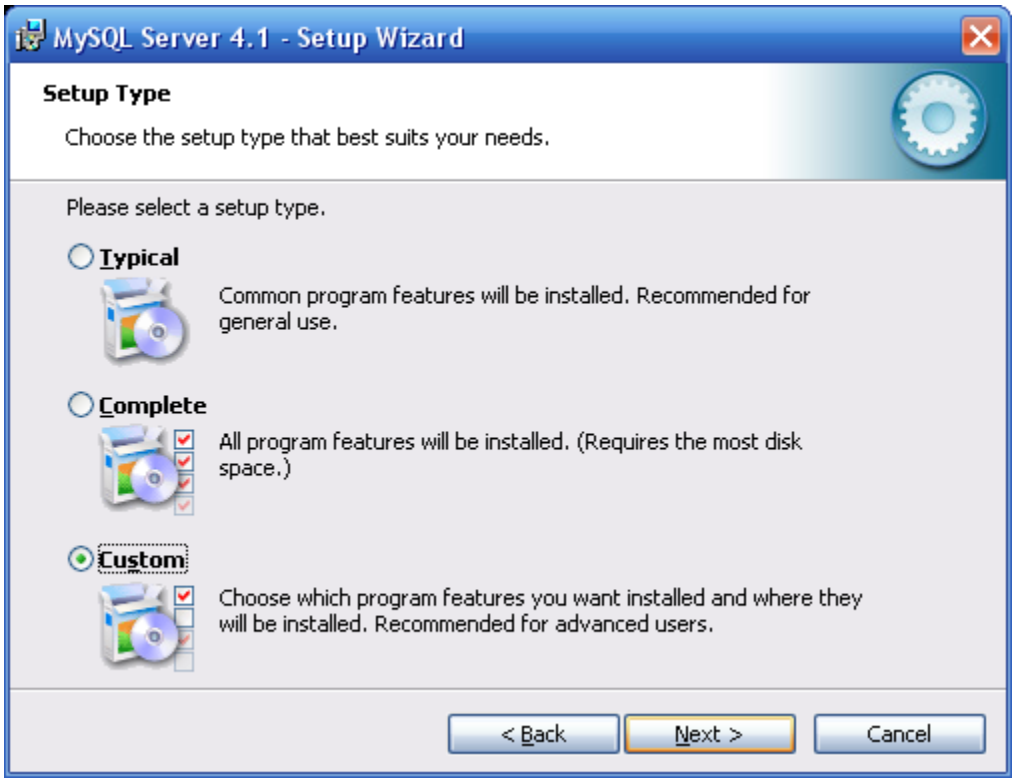


Click on Finish button to complete the installation:

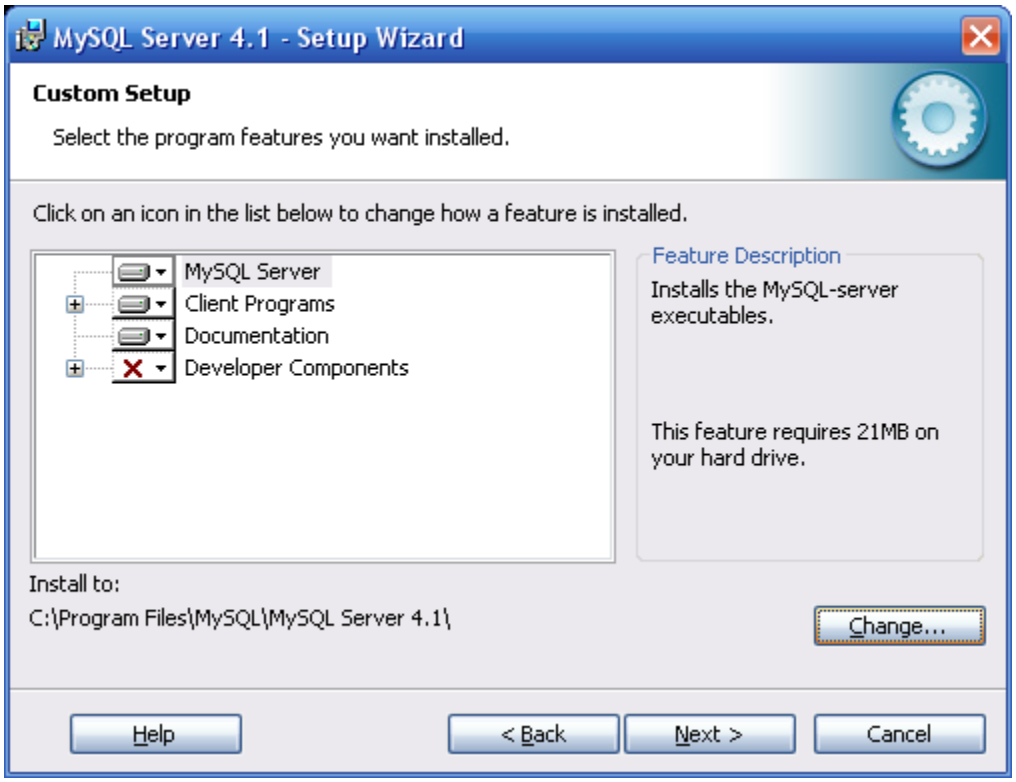
Setting up MySql as Windows Service

Below are the steps to install MySql server as windows service. This installation is started as part of Math Matters server installation which shows the screens below. The startup of mysql server service is automatic whenever the sysem is rebooted. Installtion can be done easily with the followng steps.

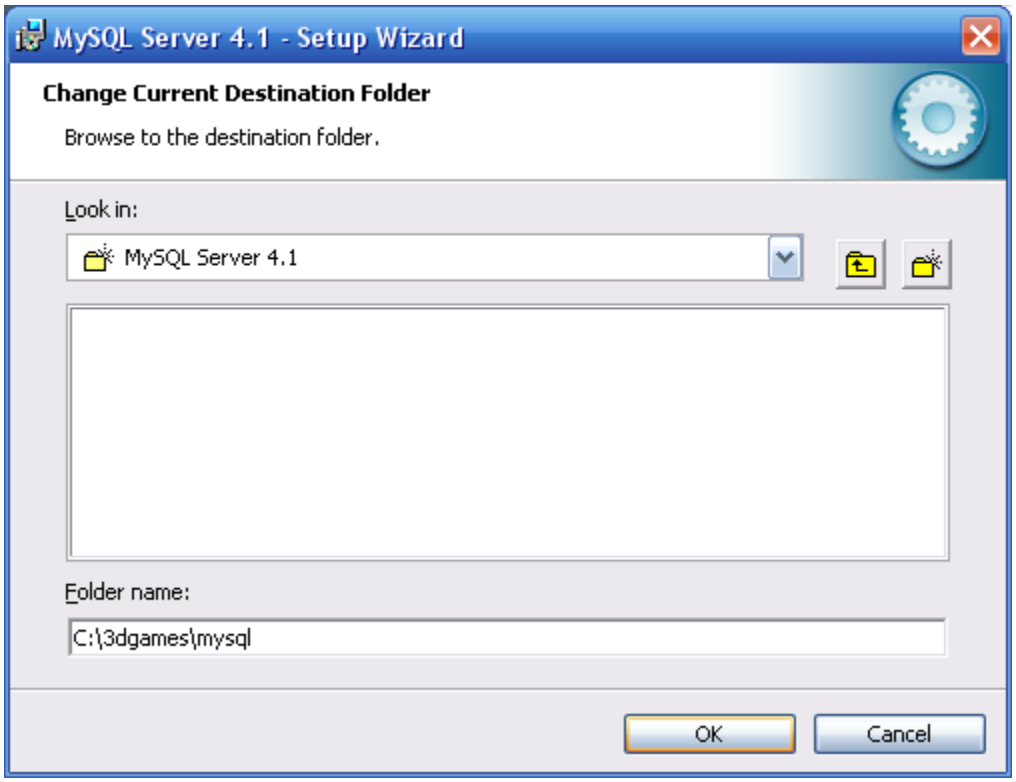
Click Next button on first screen:



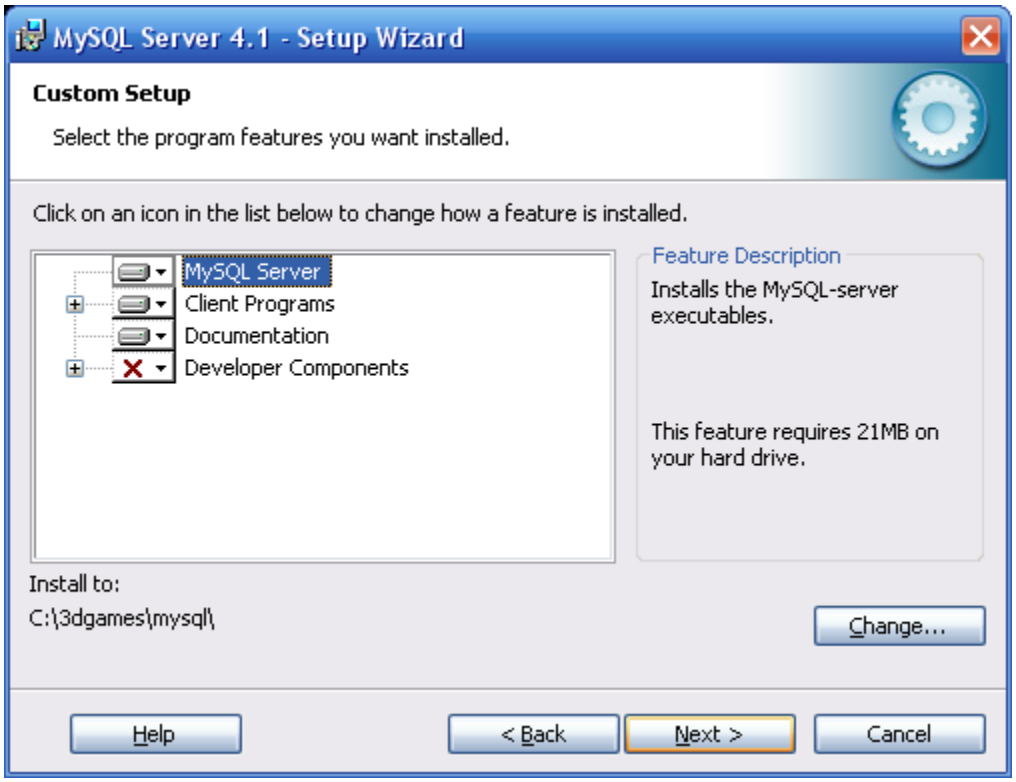
Select Custom option instead of typical to provide directory name:



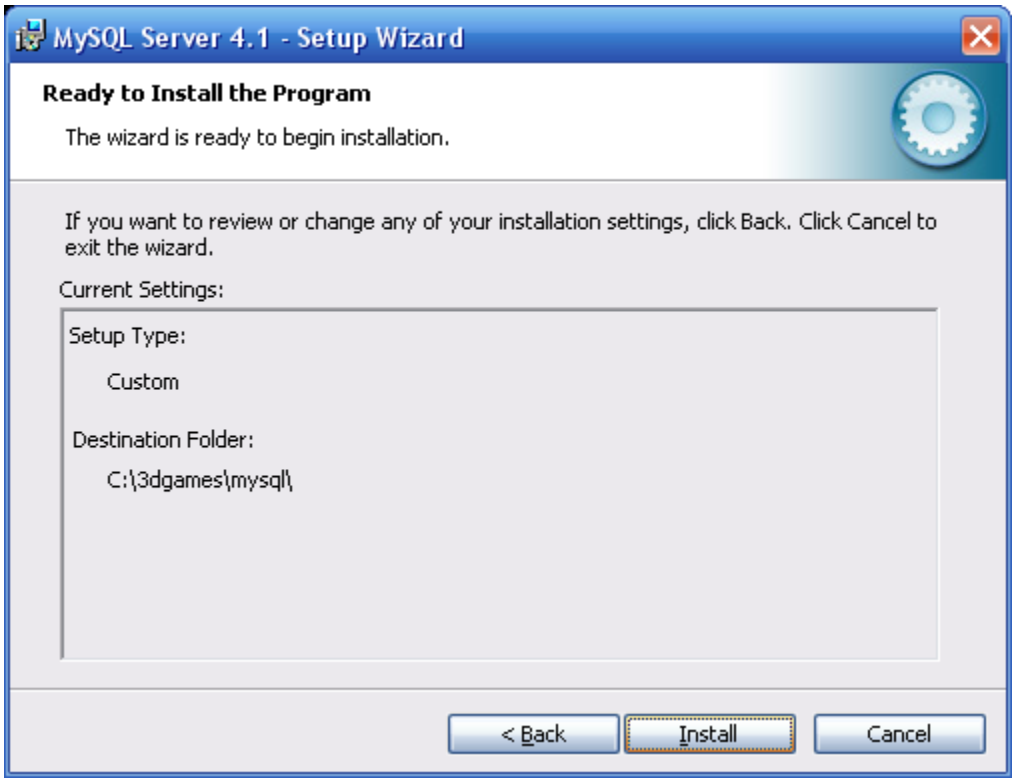
Click on Change button to provide directory name:



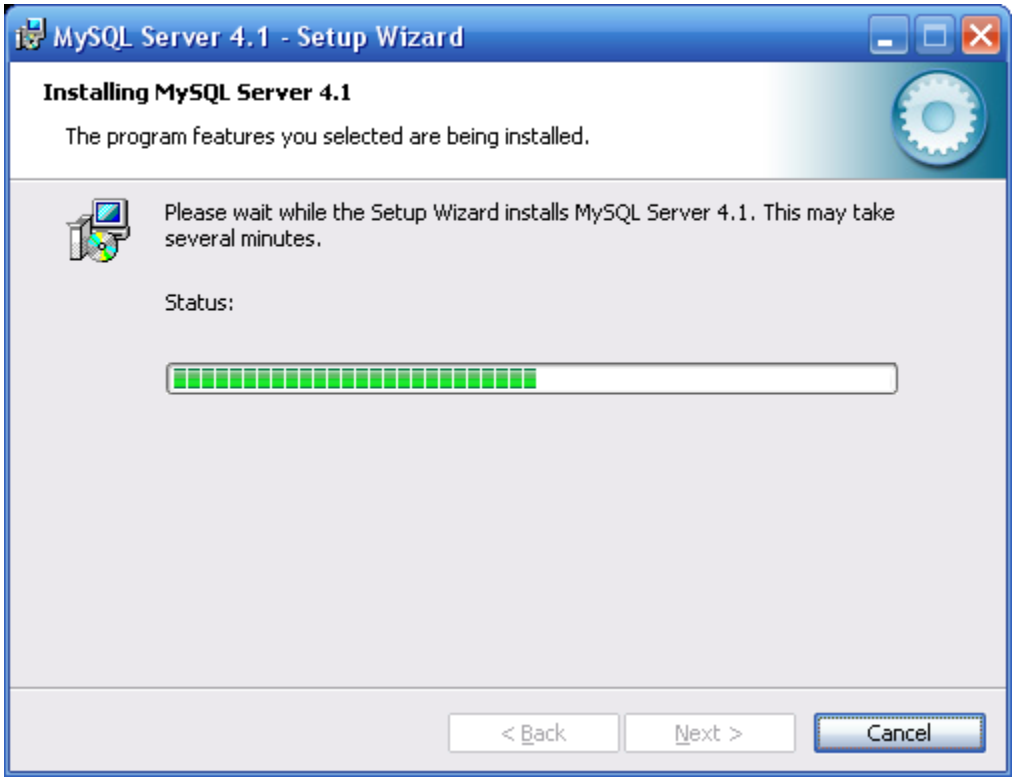
Type-in **c:\3dgames\mysql** (or reference a different drive if necessary) as directory name and click OK (c:\3dgames is assumed to be destination for all games. If it is different please enter that directory)



Click Next button:



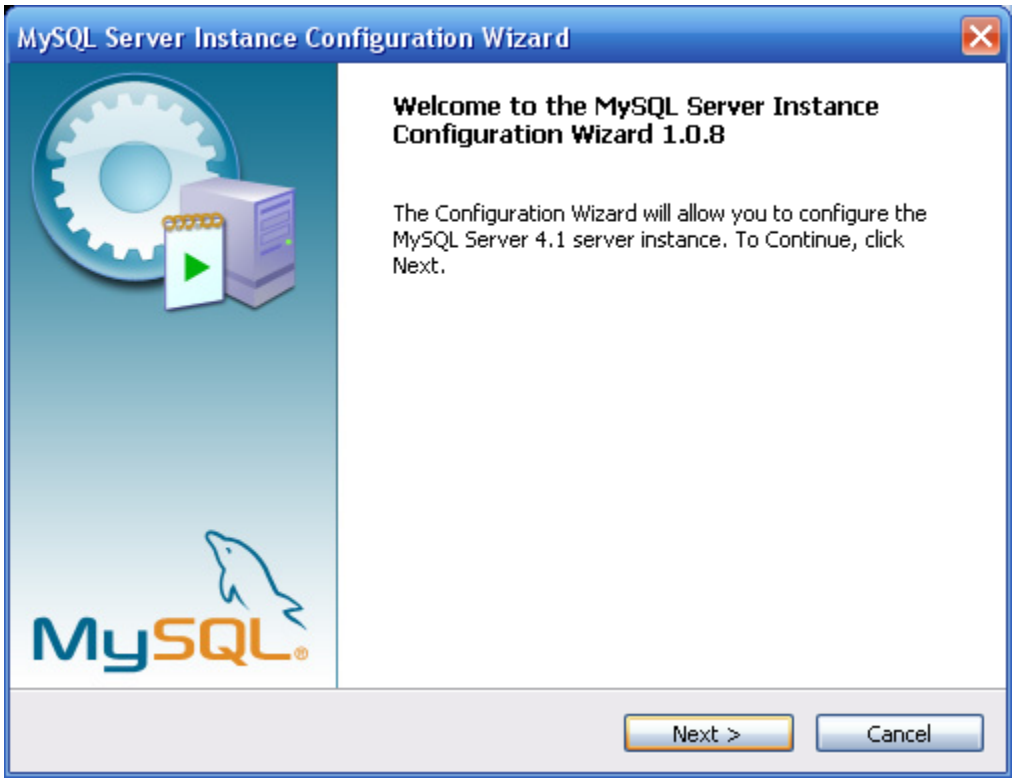
Click Install button:



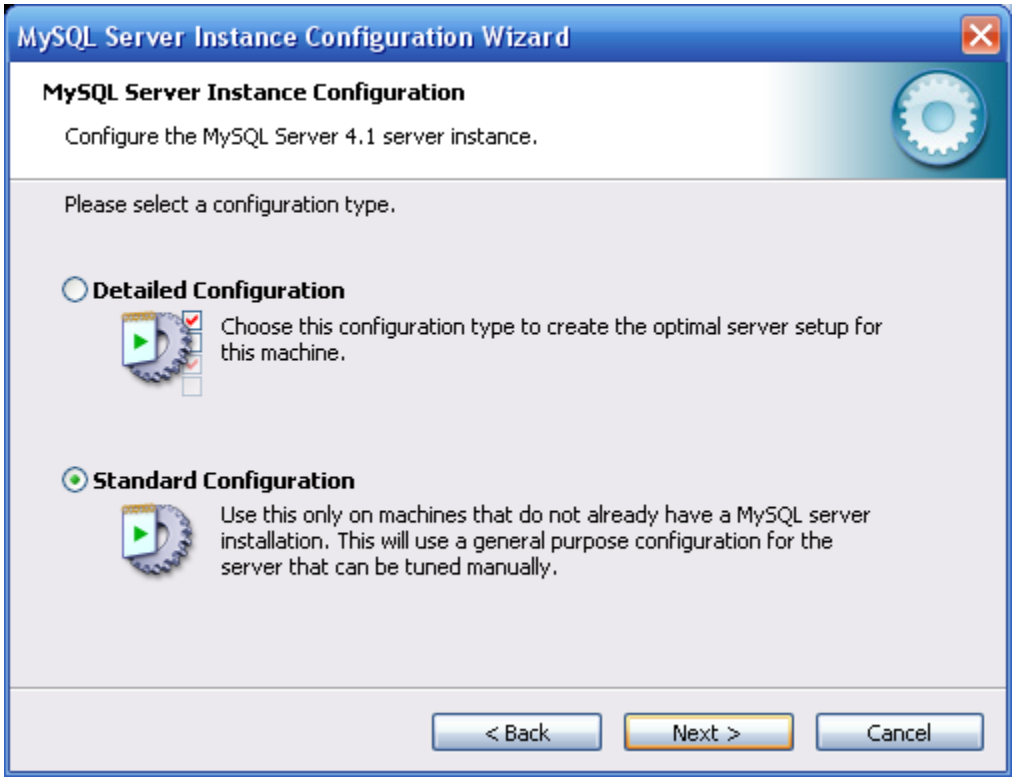
No action required for screen above. It takes few minutes to complete:

Click on Skip Sign-Up radio button and click Next:

Click on Finish Button:



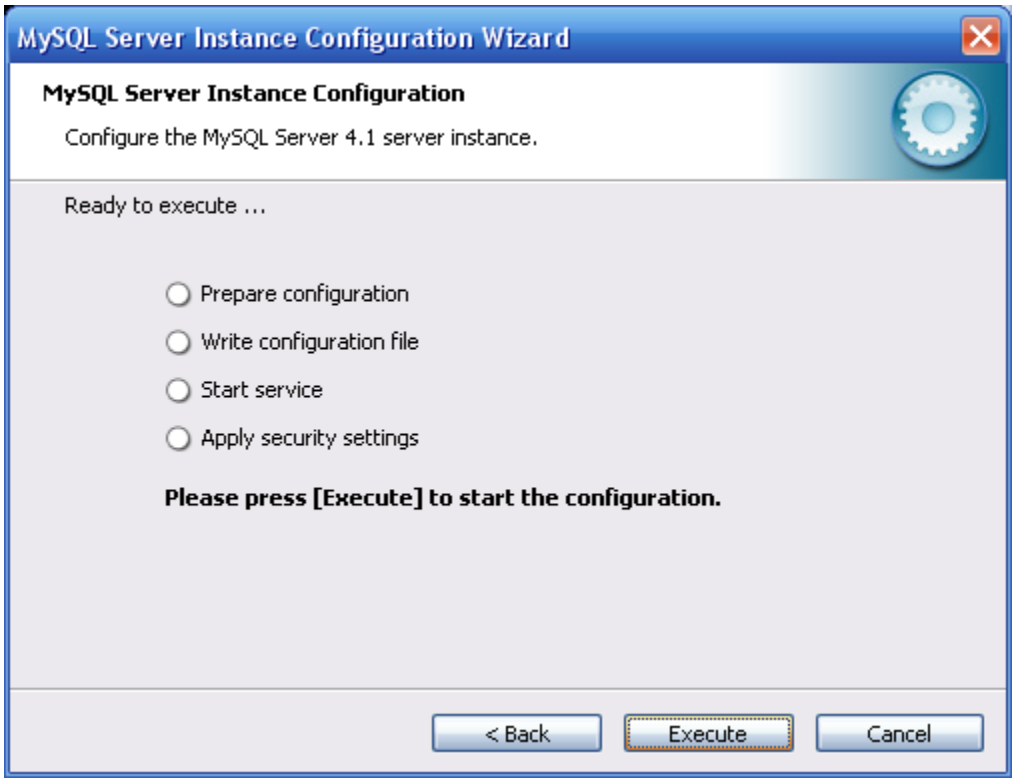
If the screen above doesn't come up automatically, select MySql Server Installation Configuration Wizard from Start /Programs/MySql menu:



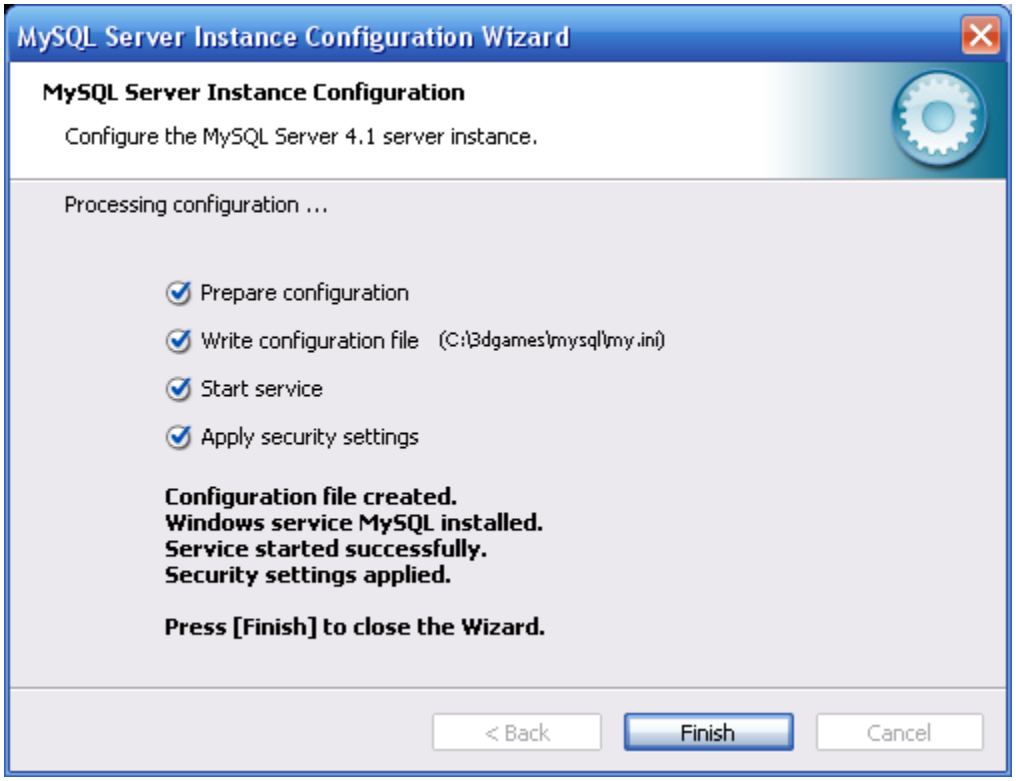
Select Standard Configuration radio button and click Next:

Click Next button:

Enter root as password and re-enter the same to confirm:



Click Execute button to complete the installation as service:



Click Finish button to exit the installation:

This concludes installation of MySql as windows service which can be seen in services list. To start/stop this service explicitly we can use services panel. Since the startup mode is set to Automatic by default, the service is started whenever the system is rebooted. This installation on server machine is pre-requisite for 3DGames installation because all the client machines connect to this database running on the server.

SETTING UP REMAINING PROGRAMS

These remaining programs include:

- MySQL Connector/ODBC 3.51
- Ogg Vorbis Detect Show Implementation

Both of these programs require only the default settings. Simply select “Next”, “Finish”, “I Agree”, and “Close” when each command applies.

ENTERING COMMAND-LINE INPUT

Following the remaining application installers is a list of prompts within the command-line.

Please follow along and enter the appropriate responses.

[input] Enter destination for games (press Enter if it is C:/3dgames):

- Under typical situations, simply press the enter key

[input] Enter database server IP Address (press Enter if it is localhost):

- **You MUST enter the IP Address for the server** here (i.e. the IP Address of this machine). **The only case in which you should leave this entry as the default (localhost) is if you are setting up a STAND-ALONE SERVER/CLIENT DUO**. If you are unaware of this IP Address, please contact someone within your department who is. Or, feel free to open a new command prompt window and type: ipconfig.
    - You should see a line that resembles the following:
      IP Address. . . . . : 10.62.10.20
      (Of course, you'll need to use your own IP Address and not the one provided in this example).

[input] Please enter tomcat directory (press Enter if it is C:/3dgames/tomcat):

- Under typical situations, simply press the enter key

[input] Please enter mysql directory (press Enter if it is C:/3dgames/mysql):

- Under typical situations, simply press the enter key

After you enter this information, output indicating the construction of a mySQL database will appear. Please disregard any output within this block of statements that looks similar to this:

- [exec] ERROR 1008 (HY000)

Also, please check to make sure you have received the following conclusion:

- BUILD SUCCESSFUL

If you have not received this notice (it appears at the bottom of the output), then something went wrong. In this circumstance, please restart the installation process.

- If this is your second time receiving an error in the installation process, you should consider the possibility that your installation files are corrupt and contact your supervisor or download a new installation package.

URGENT NOTE

We have noticed that in some circumstances, problems have arisen during the installation of Apache Tomcat and MySQL. These problems circle around *improper application of default settings*. ***Please check your system's settings*** (under **administrative tools**, or open the command prompt and type **services.msc**) while logged in as an administrative user in order to **verify that the settings for both Apache Tomcat and MySQL processes are as follows**:

- Startup Type: AUTOMATIC
- Status: STARTED

If these settings are not as indicated above, then be sure to change them.

Failure to handle this issue properly will result in an inactive Math Matters Server.