Installing MySQL 5.0.15 Database On Windows

MySQL is a really popular, **R**elational **D**ata**B**ase **M**anagement **S**ystem (RDBMS), from the open source domain. It is used extensively by communities that wish to establish a dynamic web presence.

MySQL was created by a company owned by two Swedes, David Axmark and Allan Larsson and a Finn named Michael Monty Widenius who worked together since the 1980's in Sweden. They pride themselves in being a truly, second generation, open source company. With MySQL they have a **dual licensing policy** that helps support open source values while being a profitable, sustainable business.

All software that wishes to participate in the Open Source game plan must abide by the **G**NU **P**ublic **L**icense (GPL). The GPL dictates that all software, (in this case MySQL) can be used at **no cost** and that its source code is also made available under GPL.

This also means that if MySQL code is required for the application to function **or** if MySQL is distributed along with the software application, the application's source code must be also made available at no cost.

Some of the world's largest organizations Sabre Holdings, Cox Communications, The Associated Press, NASA and Suzuki have obtained significant cost savings by using MySQL to power their Web sites and business critical enterprise applications and packaged software.

Because many commercial organizations use this product, MySQL chose to privately license the software. This permits the commercial application using MySQL as their Db engine of choice, to keep their application source code private. **Private licenses** can be acquired on a per database server basis, starting at $200 for a single unit (or less, if there are a huge number of users).

MySQL works in perfect harmony with PHP, Perl, Python and Pascal and a host of other languages. If any ANSI SQL / DBMS technical skills exist in the organization of adoption, these can be leveraged on when using MySQL, to ensure that MySQL does whatever is required of it.

MySQL's outstanding benefits are**:**

❑ Sharply reduced database licensing costs

❑ A cut in system downtime

❑ Lower hardware expenditure

❑ A Reduction in administration, engineering and support costs

❑ Effortlessly handles large databases i**.e.** more than 50,000,000 records

❑ With MySQL there are no memory leakages

MySQL helps reduce / eliminate major problems associated with downtime, maintenance, administration and support. It offers superior speed, reliability and ease of use. This has made MySQL become the preferred choice of corporate IT Managers.

Installation Process

Once the file, **mysql-5.0.15-win32.zip** is downloaded to the HDD, do the following to install MySQL on a Windows box**:**

❑ Unzip the contents from the downloaded file using a zip utility, Winzip is one such. This will create a folder named **mysql-5.0.15-win32**. This folder holds the MySQL setup file

❑ Inside the folder **mysql-5.0.15-win32**, double click on **setup.exe** file. This will start the installation wizard as shown in diagram 1**.**1

Diagram 1.1: Welcome Screen for MySQL Server 5.0

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❑ Click [Next >] and the **Setup Type** dialog box appears as shown in diagram 1.2. There are three types of MySQL setup that can be performed**:**

  o **Typical:** This will only install the common program and features and is recommended for only general use

  o **Complete:** This will install all program and features and will consume a lot of hard disk space

  o **Custom:** This will allow a user to select the program and features desired, for installation along with the location for installation. This is usually the choice of experienced users of MySQL
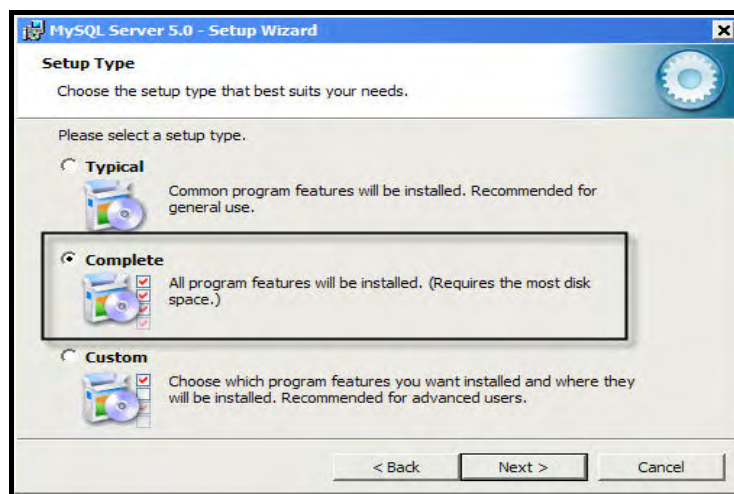
Diagram 1.2: MySQL Server 5.0 - Setup Type

❑ Select **Complete** and click [Next >]. The **Ready to Install the Program** screen appears. It displays the current settings such as the setup type and destination folder as shown in diagram 1.3
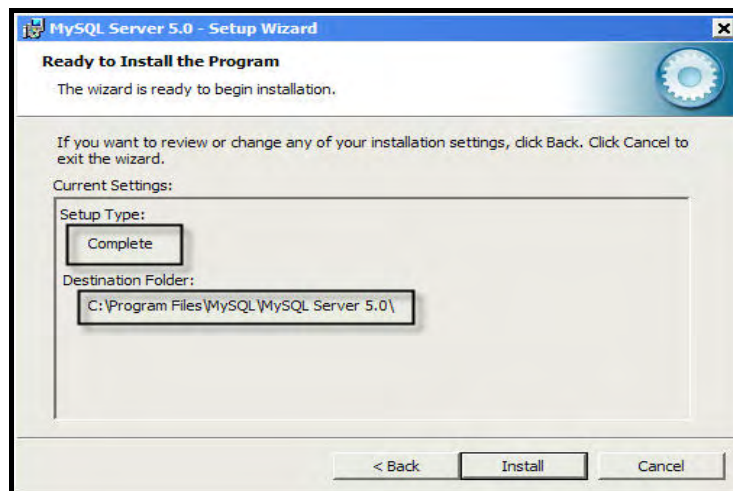
Diagram 1.3: MySQL Server 5.0 - Ready to Install the Program

❏ Click [Install]. This will commence the installation and transfer of files to the HDD as shown in diagram 1.4. A progress bar indicates how much of the installation has completed.
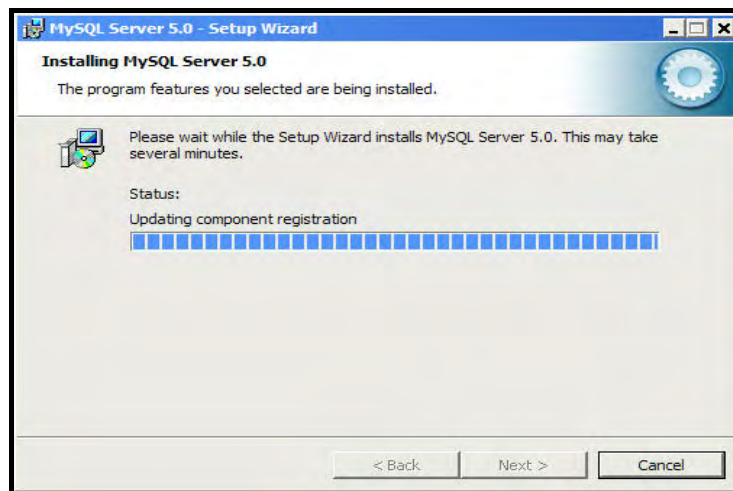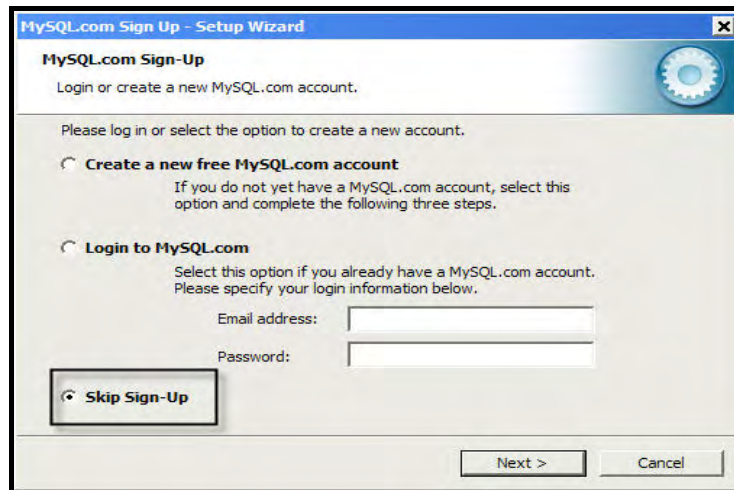

Diagram 1.4: MySQL Server 5.0 - Installation

❏ After installation is complete, the screen as shown in diagram 1.5 appears. This screen provides the following three options:

   o **Create a new free MySQL.com account:** Choose this option to create a new MySQL.com account

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- o **Login to MySQL.com:** Choose this if a MySQL.com account already exists

- o **Skip Sign Up:** Choose this option to skip setting up the MySQL.com account

❑ Select the third option i.e. **Skip Sign-Up** and click [Next >] as shown in diagram 1.5

Diagram 1.5: MySQL Server 5.0 - MySQL.com Sign-Up

❑ A screen showing **Wizard Completed** message appears. This screen indicates that the setup has finished installing MySQL Server 5.0

There is an option to configure the MySQL Server, this will generate an optimized MySQL configuration file, set the password for the root account and then create and setup a windows service running on a dedicated port. Select the option **Configure the MySQL Server now** as shown in diagram 1.6

Diagram 1.6: MySQL Server 5.0 - Wizard Completed

❑ Click [Finish] and the screen **Welcome to the MySQL Server Instance Configuration Wizard** appears. This process allows the configuration of the MySQL Server 5.0 server instance as shown in diagram 1.7
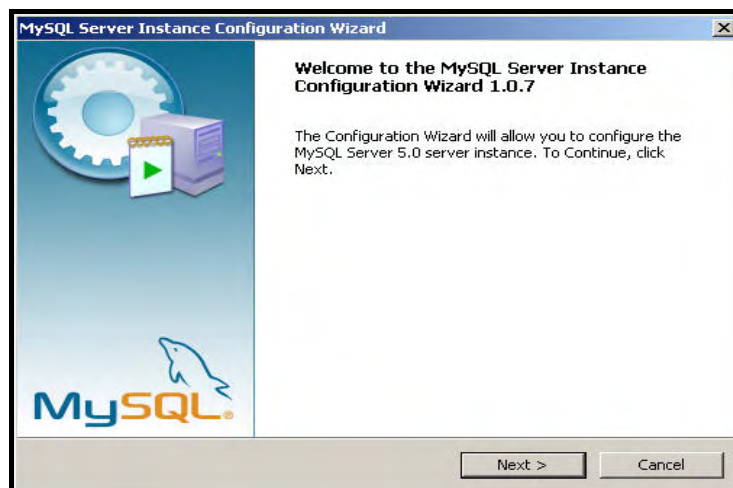

Diagram 1.7: Welcome screen of MySQL Server Instance Configuration Wizard 1.0.7

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❏ Click [Next >]. The next step in this wizard is the **MySQL Server Instance Configuration**. There are two types of configuration**:**

  ○ **Detailed Configuration:** This type of configuration will allow optimizing the MySQL DBMS server setup for the machine on which MySQL is being installed

  ○ **Standard Configuration:** This type of configuration is usually used on machines, where MySQL is being installed for the first time. This configuration process uses general purpose configuration values, after which MySQL can be tuned manually

❏ Select **Detailed Configuration** and click [Next >] as shown in diagram 1**.**8
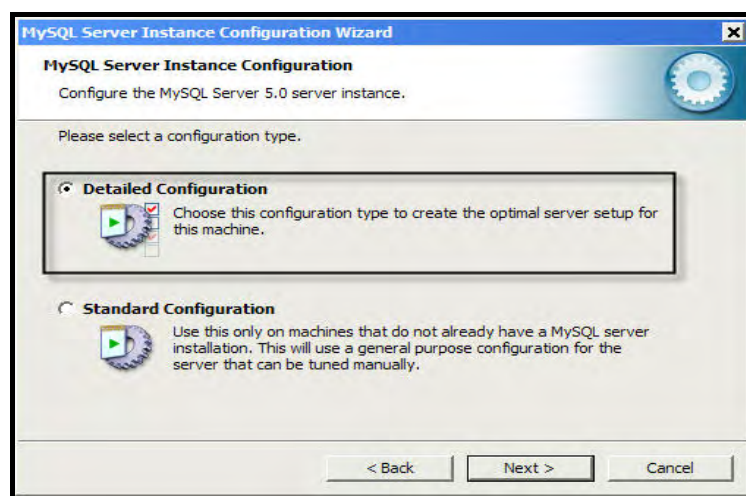
Diagram 1.8: MySQL Server Instance Configuration
Wizard - Configuration Type

❏ The next step is to select the server type for the Server Instance. The selection will have a direct impact on memory, disk and CPU usage. As shown in diagram 1**.**9. There are three server type options available**:**

  ○ **Developer Machine:** This is used for a development environment where many other applications run concurrently along with MySQL. Memory usage for the MySQL DBMS Server will be kept **minimum**

  ○ **Server Machine:** This is used when configuring MySQL on a server where many server type application processes run, such as application, web and mail server processes. Memory usage of MySQL DBMS Server will be kept **medium**

- o **Dedicated MySQL Server Machine:** This is used when configuring MySQL on a dedicated database server where only MySQL Database Server processes run **no other server** processes like application, web or mail servers will run on the same machine. Memory utilization for MySQL DBMS processes will be **maximum**
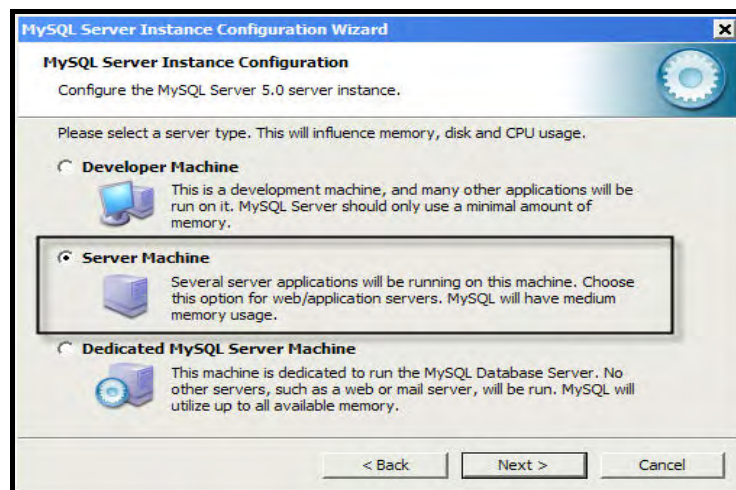

Diagram 1.9: MySQL Server Instance Configuration
Wizard - Server type

- ❑ Select the second option i**.**e**. Server Machine** and click ![Next >]
- ❑ The wizard offers three options for choosing database usage. They are**:** (As shown in diagram 1**.**10)

  - o **Multifunctional Database:** This option will optimize MySQL for use with a fast transactional **InnoDB** storage engine **and** the high speed **MyISAM** storage engine

  - o **Transactional Database Only:** This option will optimize MySQL for use with **InnoDB** as the main storage engine. However the **MyISAM** storage engine can still be used

  - o **Non-Transactional Database Only:** This option will only activate the non-transactional **MyISAM** storage engine. It is generally used for simple web applications like monitoring or logging applications and for analysis programs

- ❑ Select the **first** option i**.**e**. Multifunctional Database** and click ![Next >]

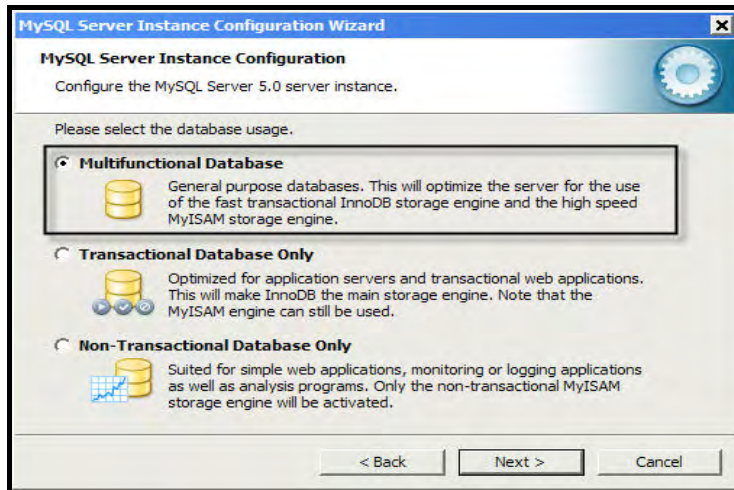**INSTALLING MySQL 5.0.15 DATABASE ON WINDOWS**

Diagram 1.10: MySQL Db Server - Instance Configuration
Wizard - Database Usage

❑ The next step is to select the drive and the directory where the **InnoDB** tablespace will be placed. Just below the selection of drive and directory the details of the drive selected (i.e. its volume name and the file system used) are displayed as shown in diagram 1.11. Keep the defaults displayed and click [Next >]
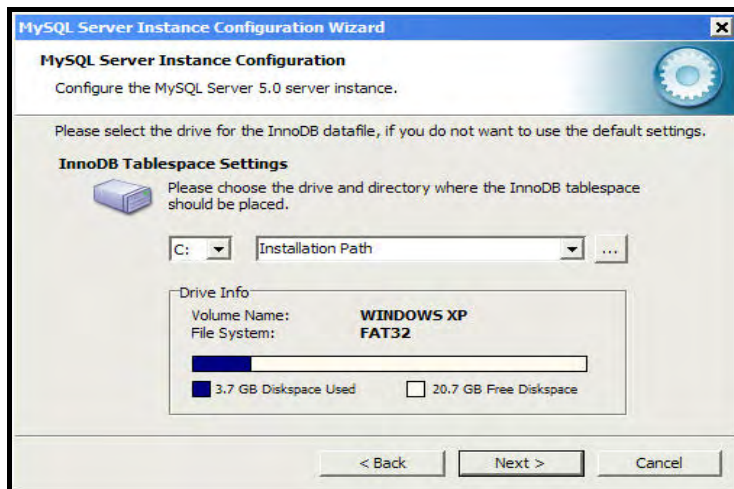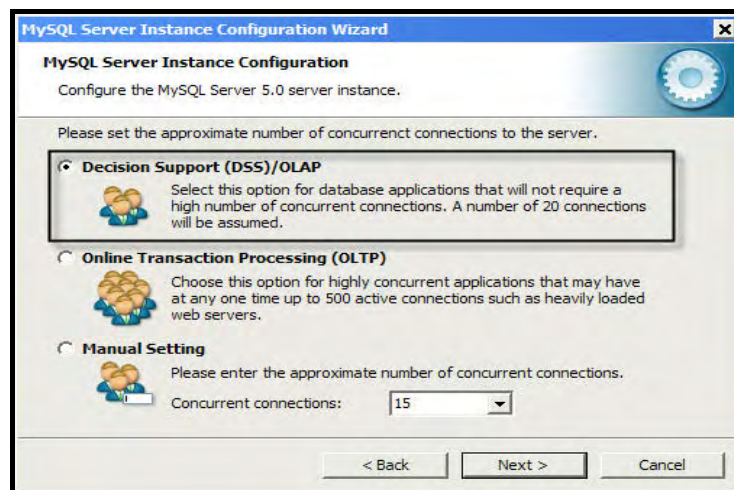

Diagram 1.11: MySQL Server Instance Configuration Wizard
- Drive Storing InnoDB datafile

❑ The next screen permits the selection of an approximate number of concurrent connections to the server. There are three options available: (As shown in diagram 1.12)

  o **Decision Support (DSS)/OLAP:** This option will allow **20** concurrent connections.

  o **Online Transaction Processing (OLAP:** This option can be used for high number of concurrent applications connections (i.e. up to **500)** active connections at a time which is usually the case with heavily loaded web servers

  o **Manual Setting:** In this option the number of concurrent connections can be manually entered according to a perceived (peak / general) load average

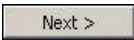❑ Select the first option **Decision Support (DSS)/OLAP** and click

Next >

Diagram 1.12: MySQL Server Instance Configuration Wizard
- Number of concurrent connections to the server

❑ The next step in Configuration of MySQL Server 5.0 server instance is to set networking options. First option is to enable TCP/IP Networking i.e. allow TCP/IP connections. The second option is to enter a port number as shown in diagram 1.13

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Diagram 1.13: MySQL Server Instance Configuration
Wizard - Networking Options

❑ Keep the defaults and click [Next >]

❑ The next screen appears allowing the selection of a character set. There are three options for character set selection**:** (As shown in diagram 1**.**14)

   o **Standard Character Set:** Latin1 is the default character set in this option. It's also best suited for English and other West European languages

   o **Best Support For Multilingualism:** UTF8 is made default character set in this option. It's recommended for storing text in many different languages

   o **Manual Selected Default Character Set / Collation:** In this option the user can select the default character set

❑ Select the first option i**.**e**. Standard Character Set**, thereafter click [Next >]
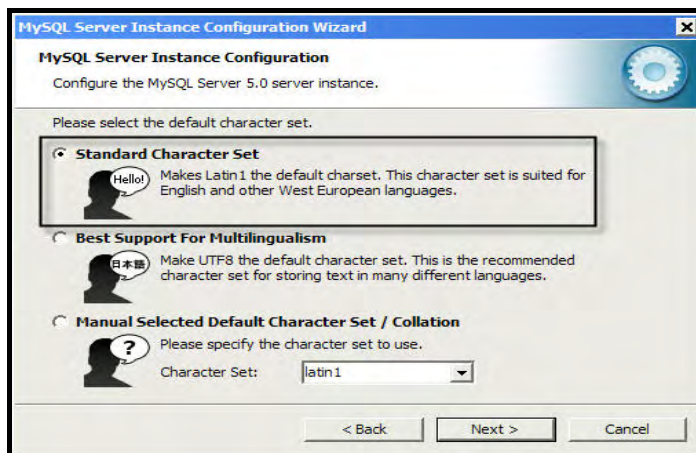
Diagram 1.14: MySQL Server Instance Configuration
Wizard - Default Character Set

❑ The next screen is settings that can be made in Windows

There are two options i**.e. Install As Windows Service** to run MySQL
Server as a service on Windows and **Include Bin Directory in
Windows PATH** for including the directory containing the server/client
executables in the Windows **PATH** variable. This will allow calling
MySQL from any directory via the command line.

Select **both options** as shown in the diagram 1.15 and click [Next >]

Diagram 1.15: MySQL Server Instance Configuration
Wizard - Windows Options

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❑ The next step is to set the security options bound to the root user's password. Select the first option i.e. **Modify Security Settings**. Here a root password and its confirmation have to be given as shown in diagram 1.16. Click [Next >]
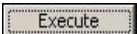
⚠ **Warning** **Do not** select the second option i.e. **Create An Anonymous Account** as it will create anonymous account on the server and will lead to an **insecure system**.

Diagram 1.16: MySQL Db Server Instance Configuration
Wizard - Security Options

❑ The next step indicates that the wizard is getting ready to execute the following**:**

　o Prepare configuration

　o Write configuration file

　o Start service

　o Apply security settings

❑ Click [Execute] to allow the wizard to proceed with these steps. As shown in diagram 1.17
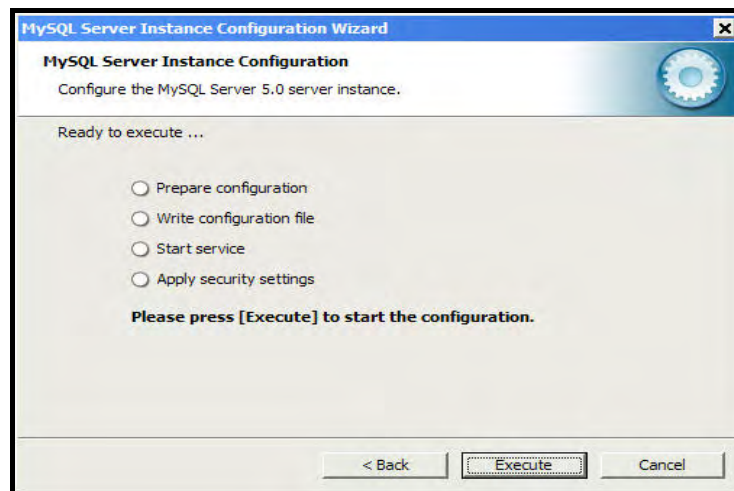
Diagram 1.17: MySQL Db Server Instance Configuration
Wizard - Click Execute

❑ A progress is displayed, which indicates how the configuration is progressing as shown in diagram 1.18.1. After finishing the process of configuration the following details are displayed: (As shown in diagram 1.18.2)

  o Configuration file created

  o Windows service MySQL installed

  o Service started successfully

  o Security settings applied

❑ Click [Finish] to exit the installation wizard

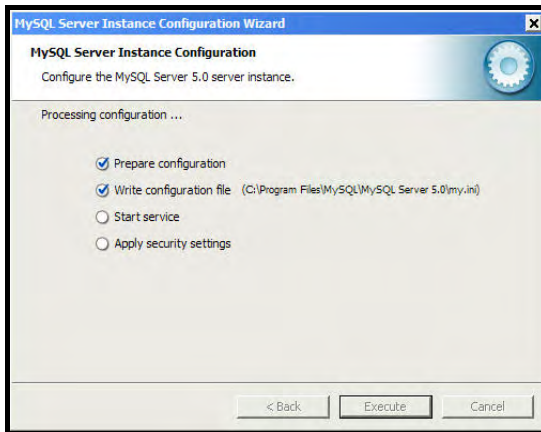**INSTALLING MySQL 5.0.15 DATABASE ON WINDOWS**

Diagram 1.18.1: MySQL Db Server Instance Configuration Wizard - Processing Configuration

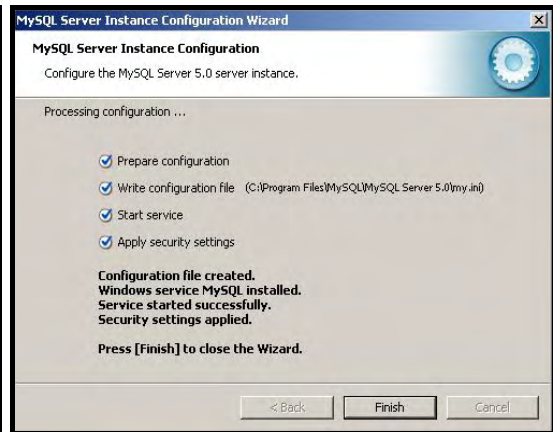**Diagram 1.18.2:** MySQL Db Server Instance Configuration Wizard - Configuration Finished

This completes the MySQL installation on Windows.

Starting The MySQL Command Line Client On Windows

❑ Now open MySQL Command Line Client by clicking **Start → All Programs → MySQL → MySQL Server 5.0 → MySQL Command Line Client** as shown in diagram 1.19
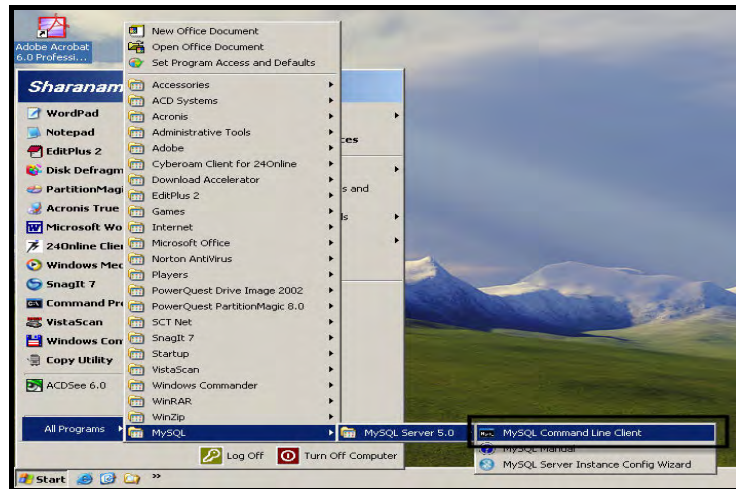

Diagram 1.19: Opening MySQL Command Line Client

❑ The MySQL Command Line Client opens up and prompts for a password as shown in diagram 1.20. Type in the password and press **Enter**

Diagram 1.20: Password prompted by MySQL
Command Line Client

❑ Once verification of password is done and the user is authenticated, the prompt changes to **mysql>** as shown in diagram 1.21
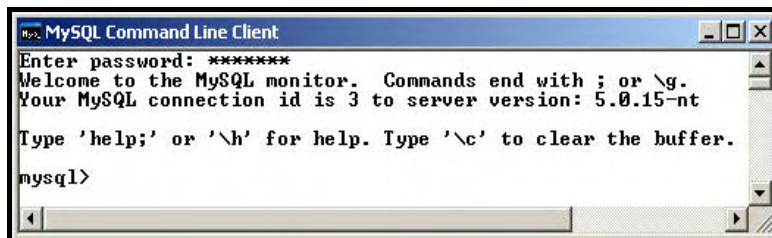

Diagram 1.21: MySQL connection made

Database Storage Engines Available Under MySQL On Windows

Issue the following command at the **mysql>** prompt. This command displays a list of storage engines enabled and available in MySQL On Windows as shown in diagram 1.22
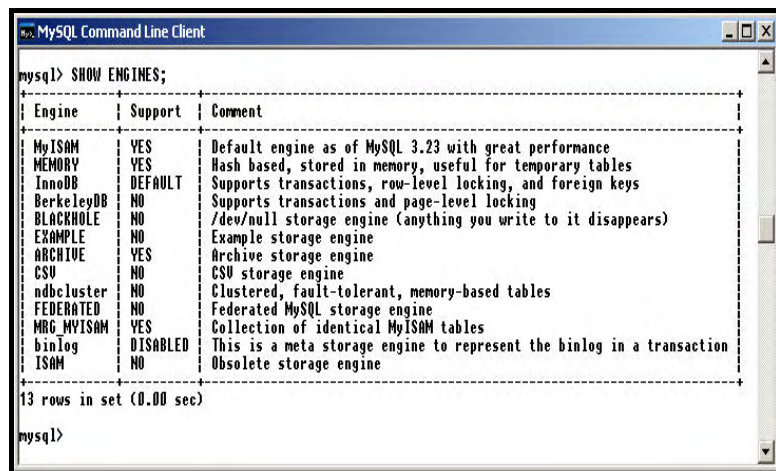
> **mysql>** SHOW ENGINES;

OR

> **mysql>** SHOW TABLE TYPES;

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```
MySQL Command Line Client                                    _ □ ×

mysql> SHOW ENGINES;
+------------+----------+----------------------------------------------------------------+
| Engine     | Support  | Comment                                                        |
+------------+----------+----------------------------------------------------------------+
| MyISAM     | YES      | Default engine as of MySQL 3.23 with great performance         |
| MEMORY     | YES      | Hash based, stored in memory, useful for temporary tables      |
| InnoDB     | DEFAULT  | Supports transactions, row-level locking, and foreign keys     |
| BerkeleyDB | NO       | Supports transactions and page-level locking                   |
| BLACKHOLE  | NO       | /dev/null storage engine (anything you write to it disappears) |
| EXAMPLE    | NO       | Example storage engine                                         |
| ARCHIVE    | YES      | Archive storage engine                                         |
| CSV        | NO       | CSV storage engine                                             |
| ndbcluster | NO       | Clustered, fault-tolerant, memory-based tables                 |
| FEDERATED  | NO       | Federated MySQL storage engine                                 |
| MRG_MYISAM | YES      | Collection of identical MyISAM tables                          |
| binlog     | DISABLED | This is a meta storage engine to represent the binlog in a transaction |
| ISAM       | NO       | Obsolete storage engine                                        |
+------------+----------+----------------------------------------------------------------+
13 rows in set (0.00 sec)

mysql>
```

Diagram 1.22: Storage Engines supported by MySQL on Windows

The above diagram indicates that **InnoDB** is the **DEFAULT** storage engine. However **MyISAM** storage engine is supported as well.