

My SQL

RAJEEV SRIVASTAVA (RAJEEVS@CDAC.IN)

INTRODUCTION

- Most Popular Open Source Database Management System
- Best suitable for public websites that require a fast & stable database
- Also used by non-web based applications.
- Also used by Google, Facebook, Amazon, Wikipedia and many famous websites
- Its fast, stable and small

MYSQL : HISTORY

- MySQL Project was started by Michael “Monty” Widenius and David Axmark in 1995
- It has a GNU Public License (Open Source).
- Later they founded a company MySQL Ab in Sweden that later became MySQL Inc. in US.
- In Jan, 2008 MySQL Inc. was acquired by Sun Microsystems.
- In Apr, 2009 Sun Microsystems was acquired by Oracle.
- At present Oracle holds the copyright to the source code of MySQL

MYSQL : FEATURES

- Open Source
- Multithreaded
- Relational
- Stable
- Cost Free
- Reliable
- High Performance (Speed – One of the most prominent features)
- Scalable

STORAGE ENGINE

- Provides interfaces between user SQL queries and database storage
- Manages queries
- Many Storage Engines Exist with their own specific advantages
 - Transaction Safe – allows rollback of data

INSTALLATION

- Database Server and Client works on several OS –
 - Linux
 - Max OS
 - Free BSD
 - Sun Solaris
 - Windows

MYSQL SOFTWARE COMPONENTS

- mysqld daemon – server process
 - Software that stores and maintains control over data in the database
 - Listens requests on a particular port (default 3306) by which client submits query
- mysql program – MySQL client (Also called as 'mysql monitor' or just 'monitor')
- mysqld_safe script
 - most common way to start the server (mysqld)
 - It can restart the server if it crashes

MYSQL UTILITIES

- mysqlaccess – create user accounts and set their privileges
- mysqladmin – used to manage database server from command line
- mysqlshow – used to examine server's status, also provide information about databases and tables
- mysqldump – used to export (backup) database structure and/or data into a plain-text dump file.
- mysql client – can be used to import (restore) data from a dump file to a MySQL database

MYSQL LICENSING

- Same Open Source Software with Dual Licensing –
 - GPL – Cost Free
 - A Commercial License
- MySQL Trademark – One can not distribute a software that includes MySQL in its name.
- MySQL Editions –
 - Community
 - Proprietary

GETTING THE SOFTWARE

- MySQL Website – www.mysql.com
 - Enterprise Edition (Commercial)
 - Community Edition (GPL)
- MySQL Recent Versions
 - Latest (GA) - MySQL 8.0
 - Previous Version (GA) – MySQL 5.7

INSTALLATION PACKAGES

- RPM/DEB Binary Packages available for Linux
- It can also be build using Source code
- Installer with GUI available for Windows
- It can also be installed using LAMP , WAMP & MAMP packages
 - L/W/M – Linux/Windows/Mac
 - A - Apache
 - M - MySQL
 - P – PHP/PERL/Python
- Important Components – Server, Client, Shared Libraries.

CONFIGURATION

- Main Configuration File (A text file)
 - On Linux Like System - /etc/my.cnf
 - On Windows (Recent Versions) – C:\ProgramData\MySQL\MySQL Server 8.0\my.ini
- Is used to configure Error Logging, Remote Connections, Performance Tuning etc.

DATABASE ROLES/USERS

- Database Roles
 - Database Administrator (DBA)
 - Database Developer
 - End User/Operator
- Default MySQL Administrator User – root
 - Different from root OS system user (Linux)
 - Is responsible for all MySQL Administrative tasks

MYSQL CLIENTS

- MySQL Command Line Client (MySQL Monitor)– Classic, Unicode supported version also available.
- MySQL Command Shell (First Version 8.0)– Recently Launched – Compatible with MySQL 8.0 & 5.7
- MySQL Workbench (Latest Version 8.0)
 - Demonstration
 - Connecting MySQL Monitor through Command Prompt
 - Connecting through each of the above clients

COMMANDS: INTERACTING WITH MYSQL

- MySQL Commands
- SQL Commands
- Demonstration

ATTRIBUTION

- Oracle MySQL Documentation =
 - <https://dev.mysql.com/doc/>
 - <https://dev.mysql.com/doc/refman/5.7/en/>
- Learning MySQL and MariaDB by Russel J. T. Dyer (O'Reilly). Copyright 2015 Russel J. T. Dyer, 978-1-44936290-4.