



A Survey for Selecting Best Web Database Connectivity Method (Using MYSQL) in Windows Platform

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Abstract: This research paper aims to help in carrying out the survey of Web Database Connectivity methods in windows platform. For constructing a website, Retrieving the data from web databases and developing web pages are very important. There are so many approaches for connecting and retrieving the data for web sites or web pages from databases in various platforms. Among all databases, MYSQL is the most popular database system available today. In this Paper the best web database connectivity methods are reviewed. Three methods of MYSQL namely php, asp and perl in windows platform are being deeply reviewed. IIS Server is used in this research. The benefit which is being incurred by these methods has been analyzed and finally the comparison of the three methods of connectivity is carried out to select the best method among them.

Keywords: MYSQL, PHP, ASP, PERL.

I. Introduction

MYSQL is a popular open source database management system commonly used in web applications due to its speed, flexibility and reliability. The web server is responsible for retrieve and handling user input, start to execute the program that processes it, get the result after execution and send them back to the user. To retrieve the information or data, Programs mostly communicates with web Database (MYSQL).

There are number of different steps to achieve the above process:

- Pre -request Execution: Every time dynamic content is required to start a new program to process the request. For example: Common Gateway Interface(CGI).
- Java Servlets: Number of requested processes or threads are already in running state So Every new request is managed by a separate thread.
- Templating: In this step, request specific contents are added to the web pages and return back them to the user. For Example: Java Server Pages(JSP), Microsoft Active Server Pages(ASP), hypertext Pre-processor(PHP).
- Web Server Extensions: In this step, the web server is extended through APIs to handle dynamic content.

In this Paper, the main objective is to evaluate the relative performance of three technologies: php, asp, perl for the connectivity to the MYSQL in windows platform.

II. Some Famous Technologies

Three methods are used to connect the web application with the MYSQL (web database System) in windows platform.

A. Php

The Php Hypertext preprocessor is programming language that allows web developers to create dynamic content that interact with the databases. Php is basically used for developing web based software applications. Php script can be embedded with HTML code.

In this example I designed a simple employee database with fields (Id, FirstName, LastName, Address, Email, Sex and Comments) in Mysql. Figure 1 explains the php code for this example.

```
<html>
<head>
<title>Result of Database Query with PHP</title>
</head>
<body bgcolor=#BDCBD9>
<? php
$hostname = "localhost";
$username= "root";
$password = "";
$dbName = "DB_EMP";
$table = "employee";
```

```

MYSQL_CONNECT($hostname, $username, $password) OR DIE( "Unable to connect to database");
mysql_select_db("$dbName") or die( "Unable to select database");
$query = "insert into $table values ('$id','$firstname','$lastname','$address','$email','$sex','$comments')";
$result= MYSQL_QUERY($query);
$query= "select * from $table";
$result = MYSQL_QUERY($query);
while ($row=mysql_fetch_array($result))
{
echo "<tr>";echo "<td>";
echo "$row[ID]";
echo "</td>";echo "<td>";
echo " ".$row[FirstName];
echo "</td>";echo "<td>";
echo " ".$row[LastName];
echo "</td>";echo "<td>";
echo " ".$row[Address];
echo "</td>";echo "<td>";
echo " ".$row[Email];
echo "</td>";echo "<td>";
echo " ".$row[Sex];
echo "</td>";echo "<td>";
echo " ".$row[Comments]."\n";
echo "</td>";echo "<td>";
}
mysql_close();
?>
<form method=POST action=viewdb_emp.php>
ID:<input type=text name=id size=5 maxlength=5>
FirstName:<input type=text name=firstname size=20>
LastName:<input type=text name=lastname size=20>
Address:<input type=text name=address size=52>
Email:<input type=text name=email size=32>
Sex:<select size=1 name=sex> <option value=male selected>male</option> <option
value=female>female</option> </select>
Comments:<textarea rows=3 name=comments cols=20></textarea>
<input type=submit value=Submit name=submit>
<input type=reset value=Reset name=reset>
</body>
</html>

```

Figure 1: Php script that connects to Mysql

B. Asp

Active server pages are a Microsoft technology that provide compile-free application environment in which we can combine HTML, scripts and reusable activeX server components to create dynamic websites with the help of server side script such as VBscript and Jscript. Active server pages enable server side scripting for IIS.

There are two different ways to connect to a Mysql database using the MyODBC driver: via a DSN, and via a connection string. MyODBC is the Open Database Connectivity (ODBC) compliant driver that we can use to connect to a Mysql database. Connection strings allow us to connect to a database using an ADO connection object. A Data Source Name is a data structure that contains the information about a specific database that an ODBC driver needs in order to connect to it. Figure 2 explains how asp script communicates with Mysql via the connection string.

```

<html> <head>
<title>Result ofDatabase Query with ASP</title>
</head>
<body bgcolor=#BDCBD9>
<h1>Result ofDatabase Query - ASP/VBScript</h1>
<%
set myconn server.createobject("adodb.connection") connection "Driver={MySQL ODBC 3.51 Driver};
server=localhost;
uid=root;
pwd=123;

```

```

Option=16384;
database=students"
myconn.open (connection)
set result = server.createobject("adodb.recordset")
sql = "SELECT * FROM student"
set result = myconn.execute(sql) ifnot result.EOF then
response.write("<p>Data for " & request("place"))
response.write("<table"                                order=2><tr><th>ID<th>FirstName<th>LastName<th>Addr
ess<th>Email<th>Sex<th>Comments<tr>")
while not result.EOF
response.write("<tr><td>" & result("ID"))
response.write("<td>" & result("FirstName"))
response.write("<td>" & result("LastName"))
response.write("<td>" & result("Address"))
response.write("<td>" & result("Email"))
response.write("<td>" & result("Sex"))
response.write("<td>" & result("Comments"))&"<tr>") result.movenext( wend response.write("</table>")
else response.write("<p>No Entry for" & request("place")) end if %>
</p> </body>
</html>

```

Figure 2: asp code that connects to Mysql

C. Perl

Perl(Practical Extraction and Report language) is a programming language that is developed by Larry wall, especially designed for text processing. Perl is now used for a wide range of tasks including system administration, web development, network programming and GUI development. Perl database integration interface DBI supports third party databases including oracle, Sybase and Mysql. In this we study the connection to perl with Mysql. DBI is a database independent interface for Perl, implemented as a Perl module that allows you to access your database from a Perl script. DBI does this by interfacing with database drivers that are specific to each database server. To use Mysql with ActivePerl you should also download the DBI and DBD-Mysql (or DBD-ODBC) package from the www.activestate.com and install them. Figure 4 contains how our Perl script is written (with ActivePerl.5.8).

```

use DBI;
print "Content-type:text/html\n\n";
print "<html>";
print "<head>";
print "<title>";
print "Result ofDatabase Query with DBI Perl";
print "</title>"; print "</head>";
print "<body bgcolor=#BDCBD9>\n"; $db_handle =
DBI>connect("dbi:mysql:database=students;host=localhost:3306;u ser=root;password=123") or die "Couldn't
connect to database: $DBI::errstr\n";
$sql = "SELECT * FROM student"; $statement= $db_handle->prepare($sql) or die "Couldn't prepare query
'$sql': $DBI::errstr\n";
$statement->execute( or die "Couldn't execute query '$sql': $DBI::errstr\n";
print "<table border=1>\n<tr><th>ID<th>FirstName<th>LastName<th>Ad
dress<th>Email<th>Sex<th>Comments</tr>";
while ($row_ref= $statement->fetchrow_hashrefO)
{
print "<tr>";
print " <td>$row_ref->{ID}</td>";
print " <td>$row_ref->{FirstName}</td>";
print " <td>$row_ref->{LastName}</td>";
print " <td>$row_ref->f{Address}</td>";
print " <td>$row_ref->{Email}</td>";
print " <td>$row_ref->{Sex}</td>";
print " <td>$row_ref->{BirthDay}</td>";
print " <td>$row_ref->{Average}</td>";
print " <td>$row_ref->{Comments}</td>";
print "</tr>"; }
print "</table>"; $db_handle->disconnect(
print "</body>";

```

```
print "</html>";
```

Figure 3: Perl script that connects to Mysql

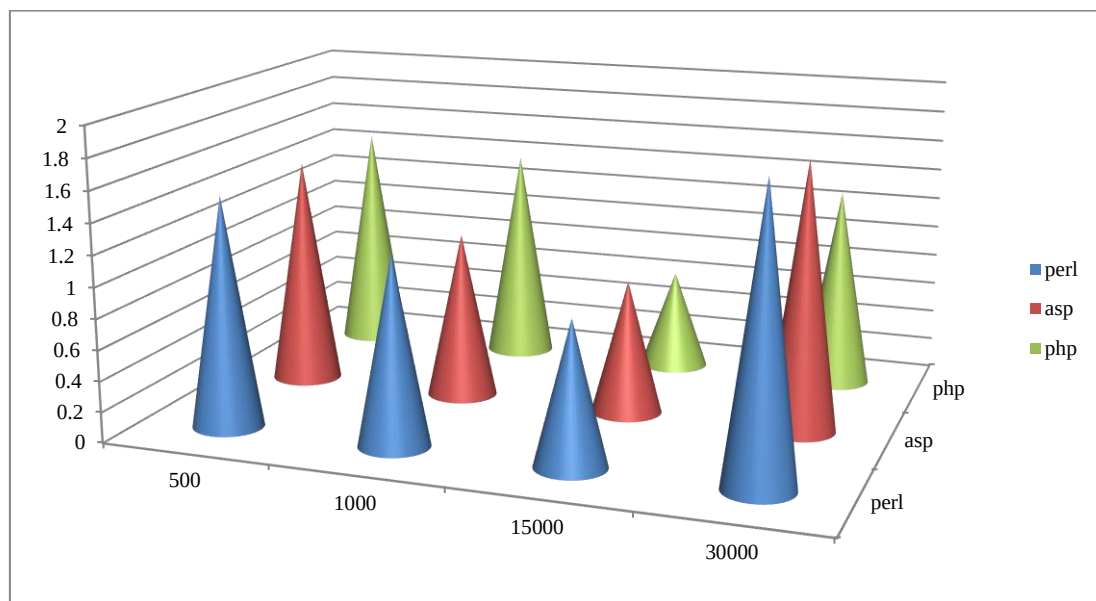
III. Comparison of three above technologies

The different technologies has been compared on number of records stored in the database. I used a network with two uniform computers that linked by a (CAT 5) cable. One of computers was the Web Server (IIS web server 5.1) and the other was the web client. Both of them had Windows XP operating system.

Comparing operations were done four times on the (IIS) web server with 20 concurrent users, at first with 500, at second time with 5000, at third time with 15000 and at fourth time with 30,000 records in database. Result is shown in Table 1 and Figure 5.

Table 1. Result of testing (the numbers are total average pages per second)

Records	Perl	asp	php
500	1.5	1.49	1.48
5000	1.23	1.09	1.4
15000	0.935	0.875	0.655
30000	1.87	1.75	1.31

**Figure 4: Results of testing**

IV. Best Technology for Web Database Connectivity

We have studied three different technologies namely php, asp and perl for web database connectivity (using Mysql) in windows platform. We have analyzed that perl has the most performance among methods. Performance of php is fewer with great records. Treatment of asp is in the middle of two methods.

V. References

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