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Connecting Oracle Rdb to a Web Browser via PHP

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Agenda

1 Overview

- Connecting Rdb
- What is PHP
- Configuration.

2 Set up

- Install & setup XAMPP
- Install & setup of Oracle InstantClient
- Setup Oracle SQL/Services and OCI Services

3 Demo

Overview

- Connecting Rdb
- What is PHP?
- Configuration.



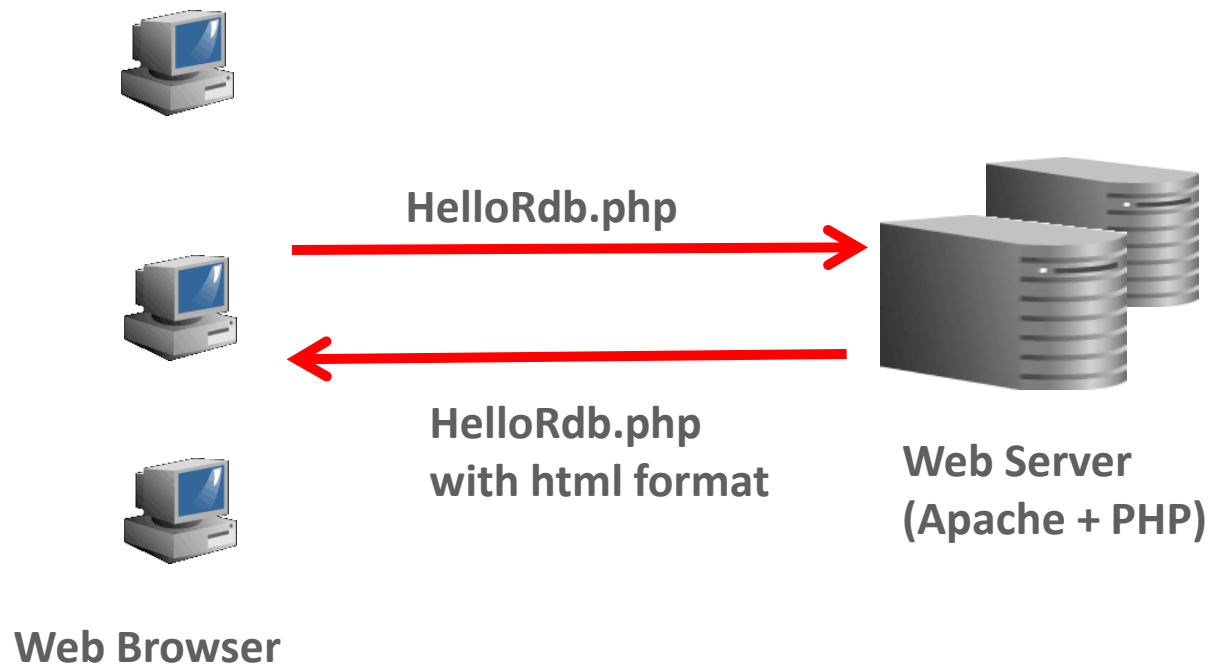
Connecting Rdb

- SQL/Services and OCI Services for Oracle Rdb
- Oracle ODBC Driver for Rdb v3.3.2.0
- Rdb JDBC Driver Alpha & Itanium
- Oracle Rdb Developer Tools for Visual Studio .NET
 - Oracle Rdb Data Provider for .NET
 - Oracle Rdb DDEX Provider for Visual Studio .NET
- Oracle Rdb Extension for SQL Developer
- Rdb Extension for OEM 10g, Release 7.2.1 for Alpha
for Itanium
- others

What is PHP?

- Open source
- Cross Platform
- Server side language
- Can be embedded in HTML
- PHP code is processed by PHP interpreter on Web Server then send result outputs to web browser.
- Web Servers (Apache, MS IIS)
- Procedural programming, or Object oriented programming, or mixture of them both.
- Supports various of databases.

Web browser <-> Web Server



Example of PHP source code

- HelloRdb.php

```
<html>
<head>
<title>Hello Rdb</title>
</head>
<body>
<?php
echo "<h1>Hello Rdb!</h1>";
?>
</body>
</html>
```

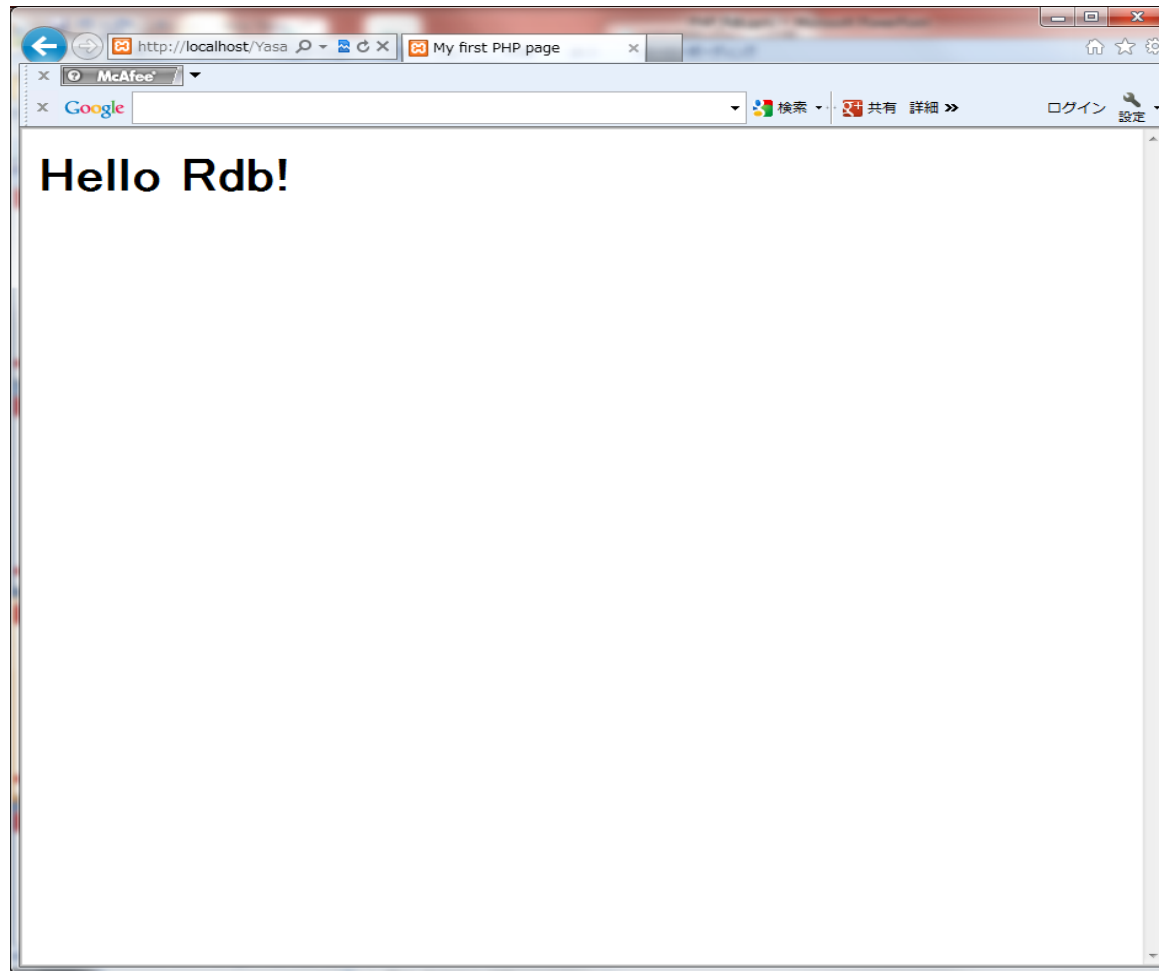


The diagram illustrates the structure of the PHP source code. It uses vertical brackets to group lines of code into three categories:

- HTML** (green bracket): Groups the opening <html> tag, the <head> section (including <title>Hello Rdb</title>), the </head> closing tag, and the <body> opening tag.
- PHP code** (red bracket): Groups the <?php opening tag, the echo statement (echo "<h1>Hello Rdb!</h1>";), and the ?> closing tag.
- HTML** (green bracket): Groups the </body> closing tag and the </html> closing tag.

Example of PHP

`http://localhost/Rdb/Hello_Rdb.php(C:\xampp\htdocs\Rdb\Hello_Rdb.php)`



Example of PHP source code

Source

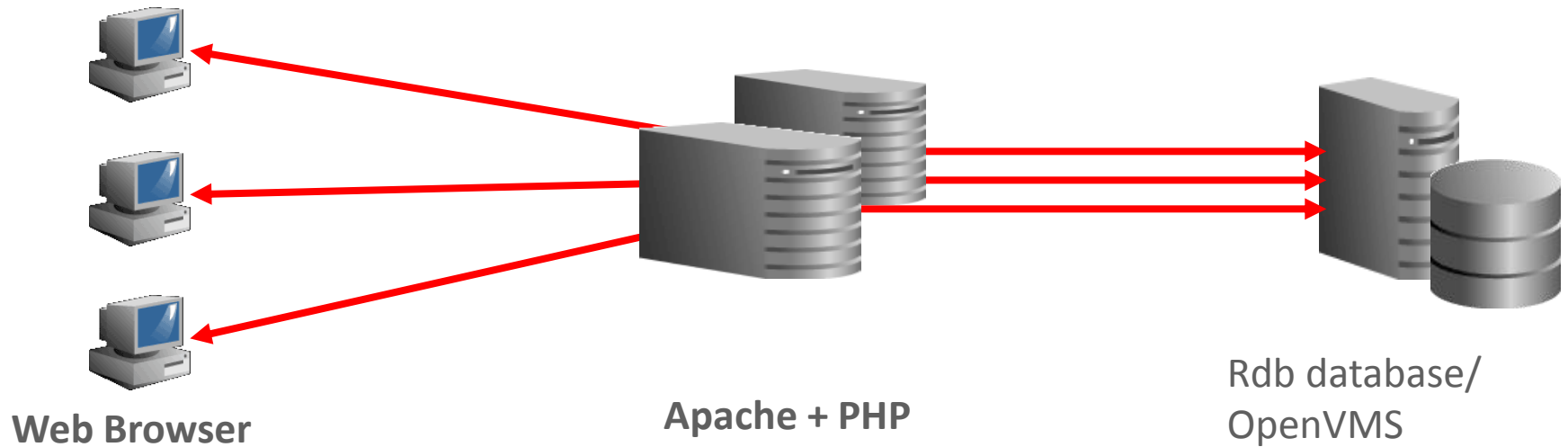
```
<html>  
<head>  
<title>Hello Rdb</title>  
</head>  
<body>  
<h1>Hello Rdb!</h1> </body>  
</html>
```

HTML

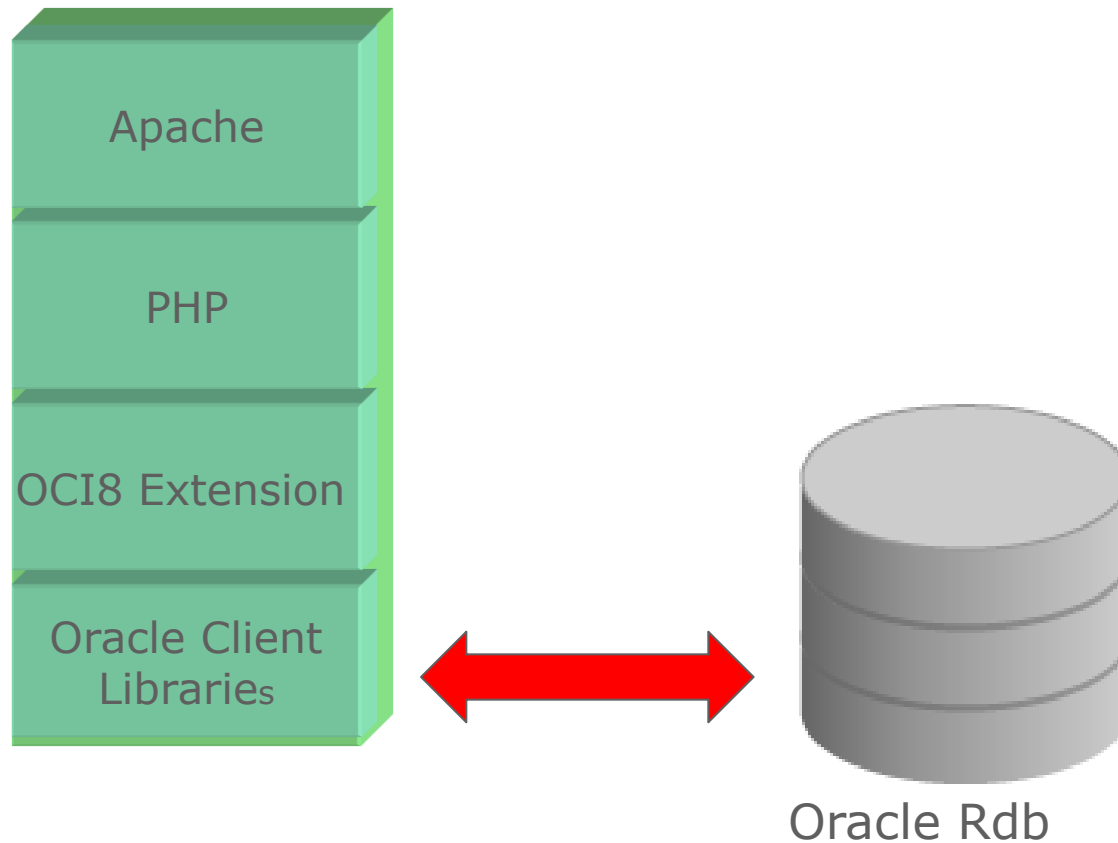
Example of configuration

- Software
 - Oracle Rdb
 - Oracle SQL/Services and OCI Services
 - Apache
 - PHP
 - XAMPP(Free package of Apache, PHP and others)
 - Oracle client kits or InstantClient

Web browser -> Web Server -> Database Server



Web Server & Database Server



XAMPP

- XAMPP 1.8.1
 - Apache 2.4.3
 - PHP 5.4.7
 - MySQL 5.5.27
 - phpMyAdmin 3.5.2.2
 - FileZilla FTP Server 0.9.41
 - Tomcat 7.0.30 (with mod_proxy_ajp as connector)
 - Strawberry Perl 5.16.1.1 Portable
 - XAMPP Control Panel 3.1.0 (from hackattack142)
- XAMPP download
 - <http://www.apachefriends.org/en/xampp-windows.html>

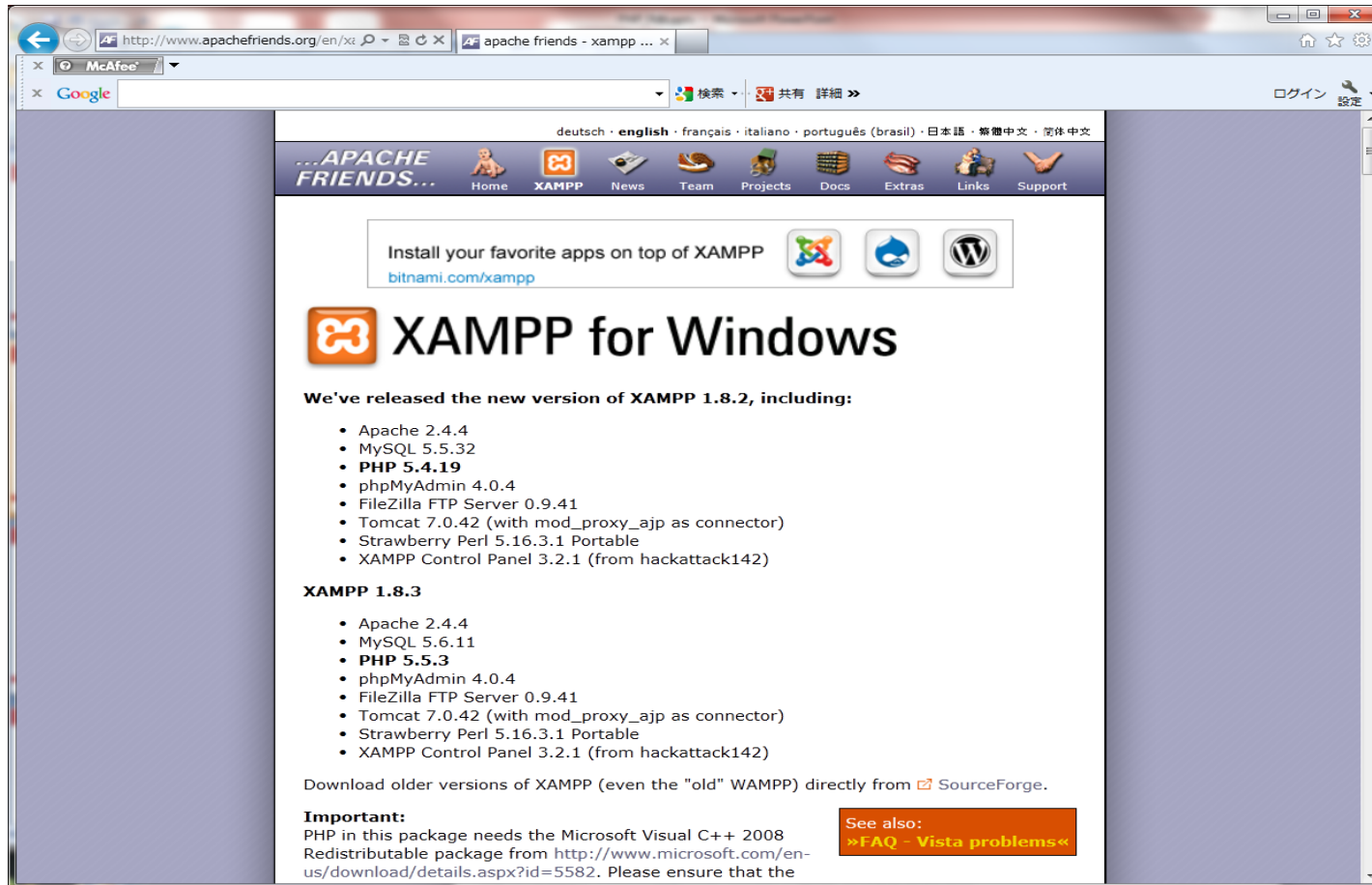
Setup

- Install & setup XAMPP
- Install & setup of Oracle InstantClient
- Setup Oracle SQL/Services and OCI Services



Download & install XAMPP

<http://www.apachefriends.org/en/xampp-windows.html>



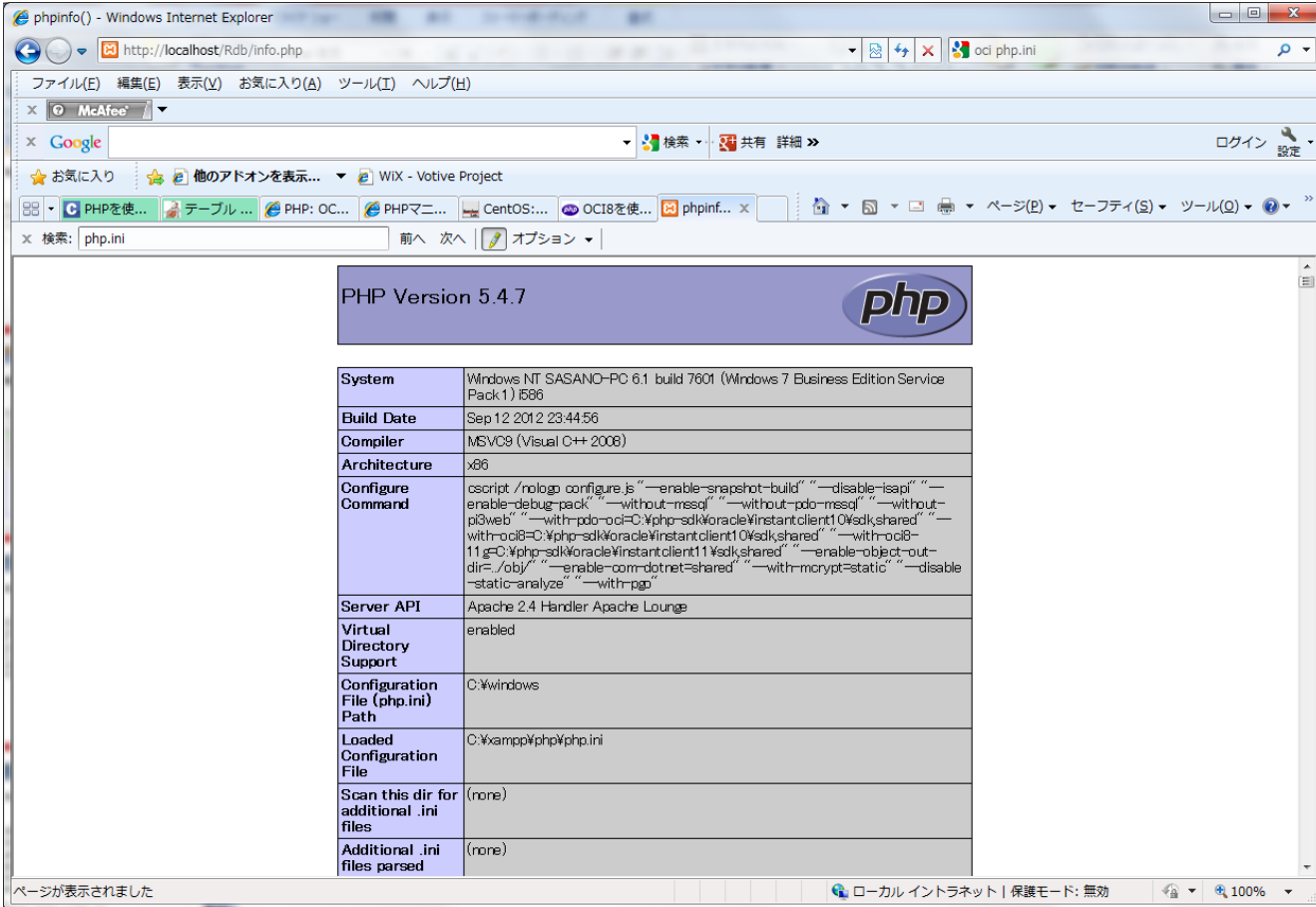
Setup XAMPP

- php.ini
;extension=php_oci8.dll
- Create info.php in
DOCUMENT_ROOT(C:/xampp/htdocs)

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

<http://localhost/info.php>

Configuration of XAMPP

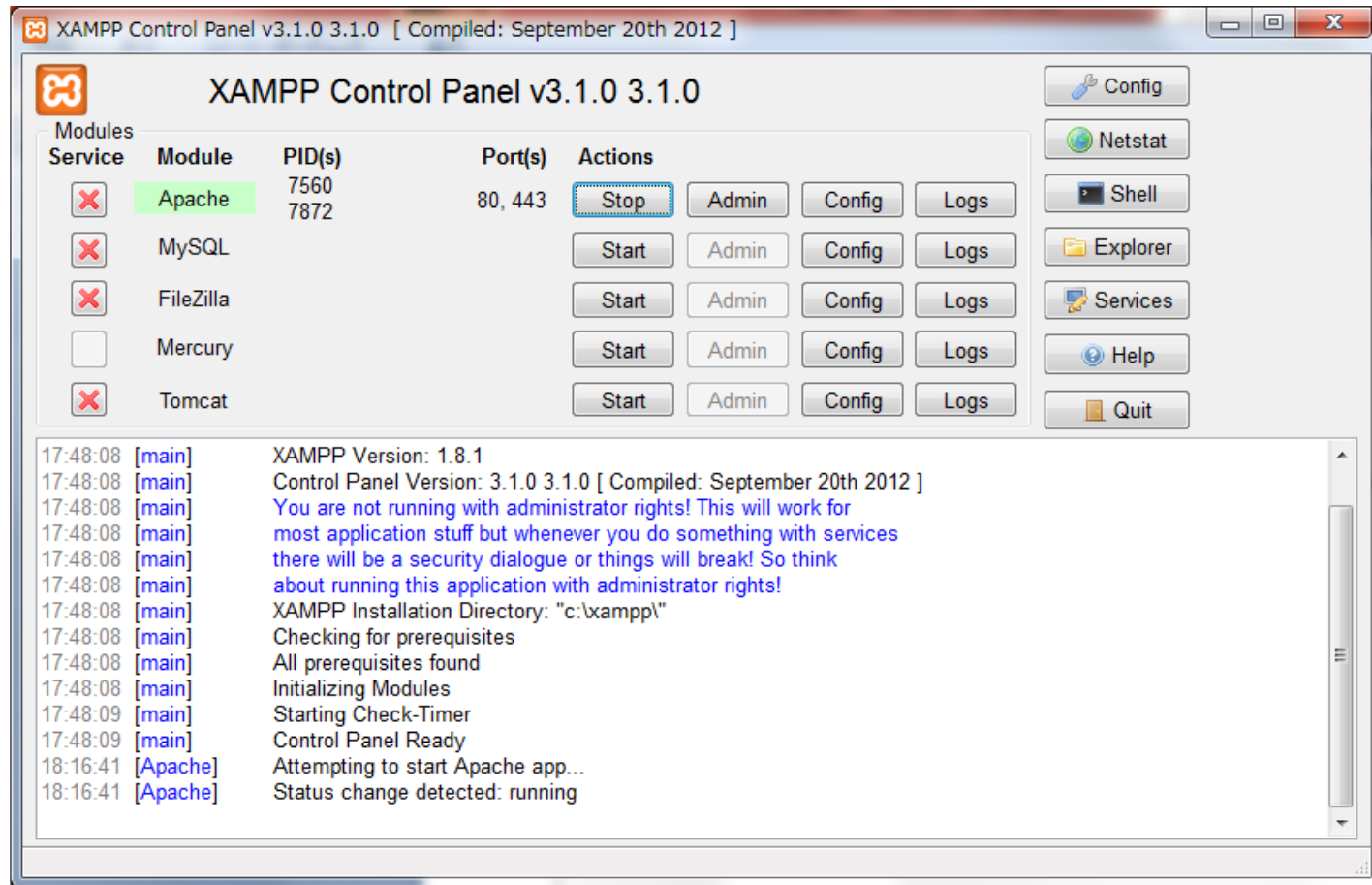


The screenshot shows a Windows Internet Explorer browser window displaying the phpinfo() page. The address bar shows the URL `http://localhost/Rdb/info.php`. The page title is "phpinfo() - Windows Internet Explorer". The browser's search bar shows "Google". The page content includes the PHP logo and the text "PHP Version 5.4.7". Below this, a table lists various system and configuration details.

System	Windows NT SASANO-PC 6.1 build 7601 (Windows 7 Business Edition Service Pack 1) i686
Build Date	Sep 12 2012 23:44:56
Compiler	MSVC9 (Visual C++ 2008)
Architecture	x86
Configure Command	<code>csript /nologo configure.js "--enable-snapshot-build" "--disable-isapi" "--enable-debug-pack" "--without-mssql" "--without-pdo-mssql" "--without-pi3web" "--with-pdo-oci=C:\php-sdk\oracle\instantclient10\sdk\shared" "--with-oci8=C:\php-sdk\oracle\instantclient10\sdk\shared" "--with-oci8-11g=C:\php-sdk\oracle\instantclient11\sdk\shared" "--enable-object-out-dir=.\obj" "--enable-com-dotnet=shared" "--with-mcrypt=static" "--disable-static-analyze" "--with-pgsql"</code>
Server API	Apache 2.4 Handler Apache Lounge
Virtual Directory Support	enabled
Configuration File (php.ini) Path	C:\windows
Loaded Configuration File	C:\xampp\php\php.ini
Scan this dir for additional .ini files	(none)
Additional .ini files parsed	(none)

The status bar at the bottom of the browser window shows "ローカル イン트라ネット | 保護モード: 無効" and "100%".

Starting Apache



Download & Install of Oracle InstantClient

- OTN

<http://www.oracle.com/technetwork/topics/winsoft-085727.html>

- Packages

- BASIC package
- Instant Client Package - SDK
- BASICLITE package
- SQLPLUS package

InstantClient 11.2

- Path=c:\instantclient \instantclient_11_2(set path=c:\instantclient\instantclient_11_2;%path%)
- ORACLE_HOME=c:\instantclient
- NLS_LANG=Japanese_Japan.JA16SJIS
- TNS_ADMIN=%ORACLE_HOME%\network\admin\tnsnames.ora

Setup Oracle SQL/Services and OCI Services

- Service
- Database
- Dispatcher
- others

Service

```
SQLSRV> show service sa_mcs731 full;
```

```
Service SA_MCS731
```

State:	RUNNING
Owner:	sasano
Owner Password:	<not specified>
Protocol:	OCI clients
Default Connect Username:	<not specified>
Default Connect Password:	<not specified>
SQL version:	7.3
Autostart:	on
Process init:	USER1:[SASANO]INIT_SA_mcs73.com
Attach:	ATTACH 'filename USER1:[SASANO.QA.RDB73.TESTDB.MCS]mf_personnel'
Schema:	<not specified>
Reuse:	SESSION
Database Authorization:	CONNECT USERNAME
dbsrc file:	<not specified>

Service

SQL init file: USER1:[SASANO]SA_MCS73.sql

Appl Transaction Usage: SERIAL

Idle User Timeout: <none>

Idle Exec Timeout: 300 seconds

Min Executors: 0

Max Executors: 100

Running Executors: 0

Clients Per Executor: 1

Active Clients: 0

Access to service SA_MCS73

Granted to users:

PUBLIC PRIVILEGED_USER 'SASANO'

Init procedure & SQL init file

```
$ type USER1:[SASANO]INIT_SA_MCS73.COM
```

```
$! define nls_lang ".JA16EUC "
```

```
$ type USER1:[SASANO]SA_MCS73.sql
```

```
--ALTER SESSION LOG BRIEF;
```

```
ALTER SESSION LOG FULL;
```

Setup database

- Create database
 - SQL> @SYS\$LIBRARY:SQL_FUNCTIONSnn(Rdbnn)
 - \$ @SYS\$LIBRARY:RDB_NATCONNnn PREPARE db
 - or
 - \$ @SYS\$LIBRARY:RDB_NATCONNnn UPGRADE db
 - add user by SYS\$LIBRARY:RDB_NATCONNnn by or ORA_CREATE_USER

Setup Dispatcher

- OCI_DISP – created during installation

```
SQLSRV> show disp oci_disp;
```

```
Dispatcher OCI_DISP
```

```
.
```

```
Network Ports:
```

```
(State) (Protocol)
```

```
SQL*Net listener oci_listener
```

```
Running OCI clients
```

```
.
```

```
.
```

Setup Listener.ora

- LISTENER.ORA

- location

- default :SYS\$COMMON:[SQLSRVnn. SQLNET. NETWORK. ADMIN]

- Oracle installed: ORA_ROOT:[NETWORK. ADMIN]

- Example of LISTENER.ORA

- USE_PLUG_AND_PLAY_OCI_LISTENER = OFF

- USE_CKPFIL_OCI_LISTENER = OFF

- OCI_LISTENER =

- (ADDRESS_LIST =

- (ADDRESS =

- (COMMUNITY = TCP_COM.world)

- (PROTOCOL = TCP)

- (HOST = NODE_A)

- (PORT = 1527)))

- STARTUP_WAIT_TIME_OCI_LISTENER = 0

- CONNECT_TIMEOUT_OCI_LISTENER = 10

- TRACE_LEVEL_OCI_LISTENER = OFF

Example of tnsnames.ora

```
TE_MCS73 =  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL = TCP) (HOST = xxxxxx) (PORT = 1527))  
    (CONNECT_DATA =  
      (SERVER = DEDICATED)  
      (SERVICE_NAME = SA_MCS731)  
    )  
  )
```

Demo(Rdb_PHP_demo.zip)

- Index.html
 - Connection
 - Connect.php
 - └─ conn_Rdb.php
 - Select
 - Select_Rdb.php
 - └─ select.php
 - Insert
 - Insert_Rdb.php
 - └─ Insert.php



Demo(Rdb_PHP_demo.zip)

- Index.html

- Update

- Update_Rdb.php
 - └─ update.php
 - └─ update1.php
 - └─ update2.php

- Delete

- Delete_Rdb.php
 - └─ delete.php

ORA



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