

SASbyODBC

〇、简要

ODBC概念

开放数据库连接（Open Database Connectivity, ODBC）是为解决异构数据库间的数据共享而产生的，现已成为WOSA(The Windows Open System Architecture(Windows开放系统体系结构))的主要部分和基于Windows环境的一种数据库访问接口标准ODBC 为异构数据库访问提供统一接口，允许应用程序以SQL 为数据存取标准，存取不同DBMS管理的数据；使应用程序直接操纵DB中的数据，免除随DB的改变而改变。用ODBC 可以访问各类计算机上的DB文件，甚至访问如Excel 表和ASCII数据文件这类非数据库对象。

```
/*
ODBC LIBNAME Statement Examples
In this example, USER=, PASSWORD=, and DATASRC= are connection options.
*/
libname mydblib odbc user=myusr1 password=mypwd1 datasrc=mydatasource;

/*
In this next example, the libref MYLIB uses the ODBC engine to connect to an Oracle
database. The connection options are USER=, PASSWORD=, and DATASRC=.
*/
libname mydblib odbc datasrc=mydatasourcemydatasource user=myusr1 password=mypwd1;

proc print data=mydblib.customers;
    where state='CA';
run;

/*
In the next example, the libref MYDBLIB uses the ODBC engine to connect to a Microsoft
SQL Server database. The connection option is NOPROMPT=.
*/
libname mydblib odbc noprompt="uid=myusr1;pwd=mypwd1;dsn=sqlservr;" stringdates=yes;

proc print data=mydblib.customers;
    where state='CA';
run;
```

一、数据库准备

过程略。已备：

Type	Host	Port	User	Password	Database
Oracle 11g	123.456.789.000	49161	system	oracle	sid:xe
Mysql	123.456.789.000	3306	root	123456	x
IBM db2	123.456.789.000	50000	db2inst1	db2inst1-pwd	sample

// Host 已加密，需注意各数据库版本

二、连接测试

(1) telnet测试

若windows，可通过控制面板-程序-打开或关闭windows功能来安装telnet。

```
# telnet 123.456.789.000 49161
Trying 123.456.789.000...
Connected to 123.456.789.000.
Escape character is '^]'.
^]
telnet> quit
Connection closed.
```

```
# telnet 123.456.789.000 3306
Trying 123.456.789.000...
Connected to 123.456.789.000.
Escape character is '^]'.
J
8.0.12 &I~o?ji0*Wj
                                caching_sha2_password
^]
telnet> quit
Connection closed.
```

```
# telnet 123.456.789.000 50000
Trying 123.456.789.000...
Connected to 123.456.789.000.
Escape character is '^]'.
^]
telnet> quit
Connection closed.
```

上述即可通。

若经过漫长等待后，出现以下情况，请先检查连接情况。

```
# telnet 123.456.789.000 1234
Trying 123.456.789.000...
telnet: connect to address 123.456.789.000: Operation timed out
telnet: Unable to connect to remote host
```

(2) 客户端测试

各种数据库客户端都可以，以下推荐DataGrip,可通过jdbc连接，轻松简单。

配置并测试，如下：

Data Sources and Drivers

Name:

@123.456.789.000

Reset

Comment:

General

Options

SSH/SSL

Schemas

Advanced

Connection type: SID

Driver: Oracle

Host:

123.456.789.000

Port:

49161

SID:

xe

Driver:

Thin

User:

system

Password:

<hidden>

Save:

Forever

URL:

jdbc:oracle:thin:@123.456.789.000:49161:xe

Overrides settings above

Test Connection

✓

DBMS: Oracle (ver. Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production)

📄

Case sensitivity: plain=upper, delimited=exact

Driver: Oracle JDBC driver (ver. 12.2.0.1.0, JDBC4.2)

Ping: 260 ms

Cancel

Apply

OK

Data Sources and Drivers

Name:

x@123.456.789.000

Comment:

General

Options

SSH/SSL

Schemas

Advanced

Connection type: default

Driver: MySQL for 5.1

Host:

123.456.789.000

Port:

3306

User:

root

Password:

<hidden>

Save:

Forever

Database:

x

URL:

jdbc:mysql://123.456.789.000:3306/x

Overrides settings above

Test Connection

✓

DBMS: MySQL (ver. 8.0.12)

Case sensitivity: plain=exact, delimited=exact

Driver: MySQL Connector Java (ver. mysql-connector-java-5.1.46 (Revision: 9cc87a48e75c2d2e87c1a293b2862ce651cb256e), JDBC4.0)

Ping: 333 ms

SSL: yes

⚠ Update to driver ver. 5.1.47

Cancel

Apply

OK

Data Sources and Drivers

Name: [Reset](#)

Comment:

General Options SSH/SSL Schemas Advanced

Connection type: **Type 4** Driver: **IBM Db2**

Host: Port:

User:

Password: Save: **Forever**

Database:

URL:
Overrides settings above

[Test Connection](#)

✓ DBMS: DB2/LINUX8664 (ver. SQL10055)
Case sensitivity: plain=upper, delimited=exact
Driver: IBM Data Server Driver for JDBC and SQLJ (ver. 4.23.42, JDBC4.1)
Effective version: IBM Db2 LUW (ver. 10.5.5)
Ping: 256 ms

[Cancel](#) [Apply](#) [OK](#)

均测试通过Test Connection，并可查看存在表。

Database

SYSTEM.CLASSINFO [@123.456.789.000] x

2 rows

Q: <Filter criteria>

	CLASSID	CLASSNAME
1	1	ivan
2	2	你好

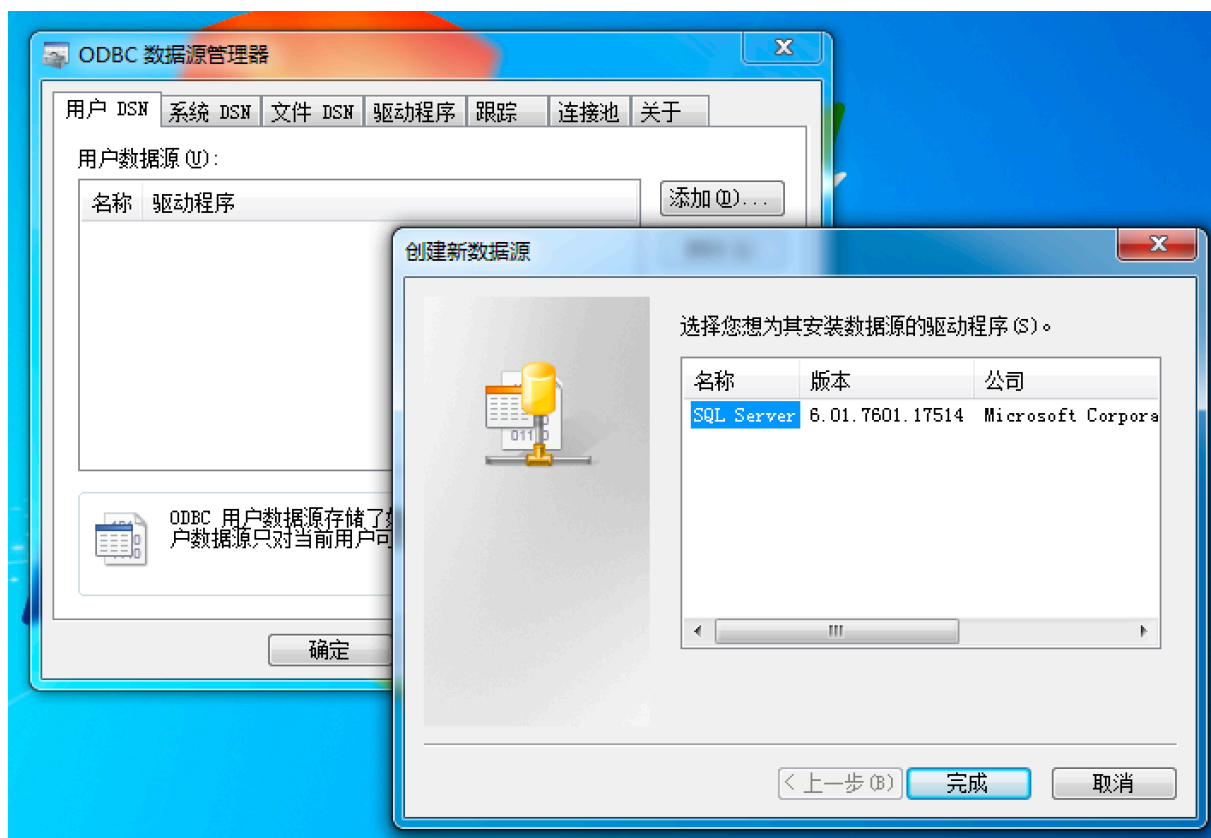
Database tree:

- @123.456.789.000 (2 of 13)
 - PUBLIC
 - SYSTEM
 - tables 155
 - AQ\$_INTERNET_AGENT_PRIVS
 - AQ\$_INTERNET_AGENTS
 - AQ\$_QUEUE_TABLES
 - AQ\$_QUEUES
 - AQ\$_SCHEDULES
 - CLASSINFO**
 - DEF\$_AQCALL

三、ODBC驱动

以下测试机型：win7 64bit 2GB*

一般来说，打开ODBC 数据源管理器的用户DSN添加，如下：



添加ODBC驱动，以实现在此出现新驱动。

(1) Oracle 11g

根据以下链接，注意版本和位数。 [官方链接](#)

官方下载链接

<https://www.oracle.com/technetwork/cn/topics/winia64soft-083954-zhs.html>

辅助下载链接

<https://ivan-bucket-out-001.oss-cn-beijing.aliyuncs.com/out/instantclient-basic-windows.x64-12.2.0.1.0.zip>

<https://ivan-bucket-out-001.oss-cn-beijing.aliyuncs.com/out/instantclient-odbc-windows.x64-12.2.0.1.0-2.zip>

各自解压到对应文件，如C:\App，可以看到文件路径如下：

C:\App\instantclient-basic-windows.x64-12.2.0.1.0\instantclient_12_2

C:\App\instantclient-odbc-windows.x64-12.2.0.1.0-2\instantclient_12_2

合并到instantclient_12_2，即odbc里面的文件全部放入basic文件中，通过cmd查看路径。

Microsoft Windows [版本 6.1.7601]

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C:\Windows\system32>dir C:\App\instantclient_12_2

2019/11/13 18:33 <DIR> .

2019/11/13 18:33 <DIR> ..

2017/03/08 07:34 19,968 adrci.exe

```

2017/03/08 07:34          23,264 adrci.sym
2017/03/08 07:35           512 BASIC_README
2017/03/08 07:34        55,808 genezi.exe
2017/03/08 07:34        56,264 genezi.sym
2019/11/13 18:33    <DIR>          help
2017/03/08 07:27       778,752 oci.dll
2017/03/08 07:27       731,816 oci.sym
2016/12/15 01:56       152,576 ocijdbc12.dll
2016/12/15 01:56        44,936 ocijdbc12.sym
2017/03/08 06:58       565,248 ociw32.dll
2017/03/08 06:58        96,456 ociw32.sym
2014/05/04 22:17        21,385 ODBC_IC_Readme_Win.html
2017/09/13 18:25       102,912 odbc_install.exe
2017/09/13 18:25        98,816 odbc_uninstall.exe
2016/12/13 16:40     4,036,257 ojdbc8.jar
2017/03/08 06:47        71,680 oramysql12.dll
2017/03/08 06:47        44,368 oramysql12.sym
2016/11/23 21:52     4,709,888 orannzsbb12.dll
2016/11/23 21:53     2,344,232 orannzsbb12.sym
2017/03/08 06:19       1,026,048 oraocci12.dll
2017/03/08 07:34       1,161,816 oraocci12.sym
2017/03/08 06:41       1,064,960 oraocci12d.dll
2017/03/08 07:34       1,137,064 oraocci12d.sym
2017/03/08 07:31     195,298,304 oraociei12.dll
2017/03/08 07:32     13,912,192 oraociei12.sym
2016/07/28 18:42        252,416 oraons.dll
2017/03/08 07:23       295,424 orasql12.dll
2017/03/08 07:23        60,072 orasql12.sym
2017/09/13 18:24       758,272 sqora32.dll
2017/09/13 18:25       192,512 sqoras32.dll
2017/09/13 18:25        18,432 sqresja.dll
2017/09/13 18:25        19,456 sqresus.dll
2017/03/08 07:34        19,968 uidrvci.exe
2017/03/08 07:34        23,264 uidrvci.sym
2019/11/13 18:32    <DIR>          vc14
2017/01/26 02:36        74,230 xstreams.jar
      35 个文件      229,269,568 字节
      4 个目录 52,208,181,248 可用字节

```

开始安装，注意通过管理员模式。

```

Microsoft Windows [版本 6.1.7601]
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# C:\Windows\system32>cd /d C:\App\instantclient_12_2

# C:\App\instantclient_12_2>odbc_install.exe
Oracle ODBC Driver is installed successfully.

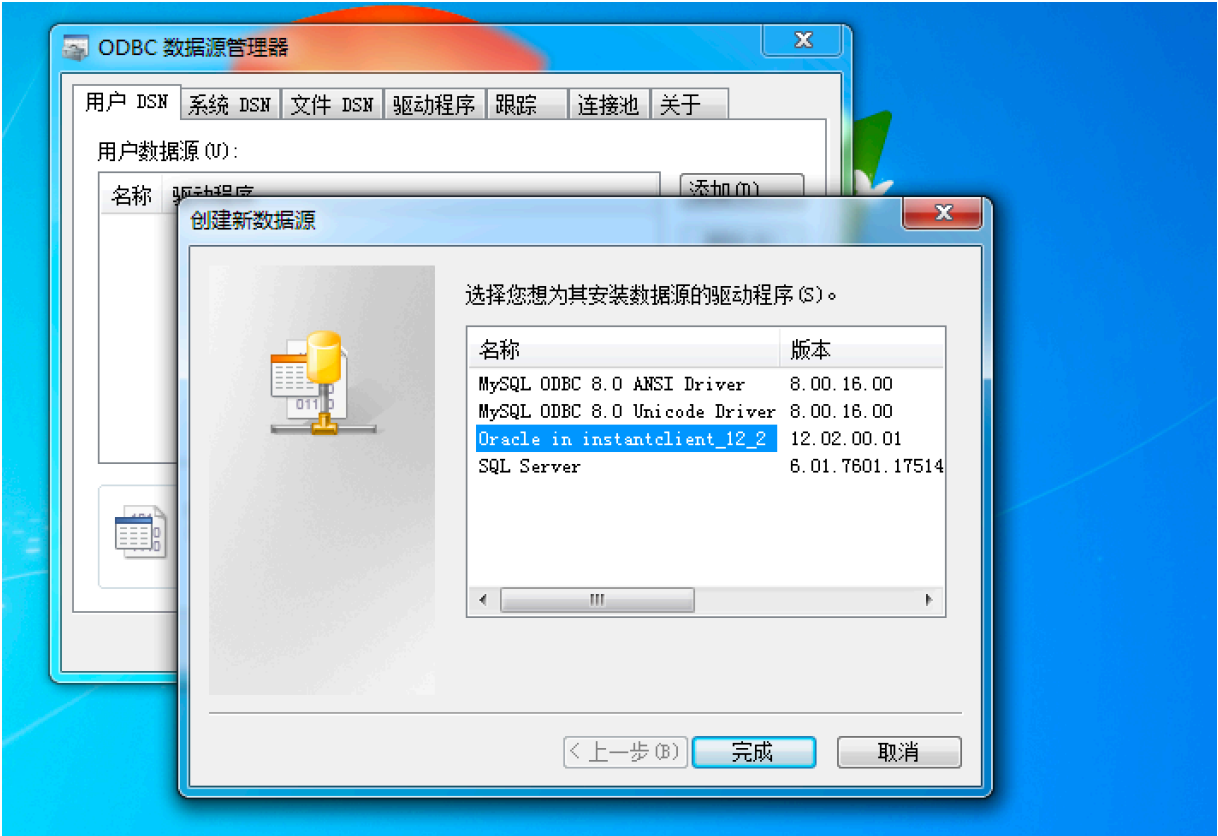
# C:\App\instantclient_12_2>

```

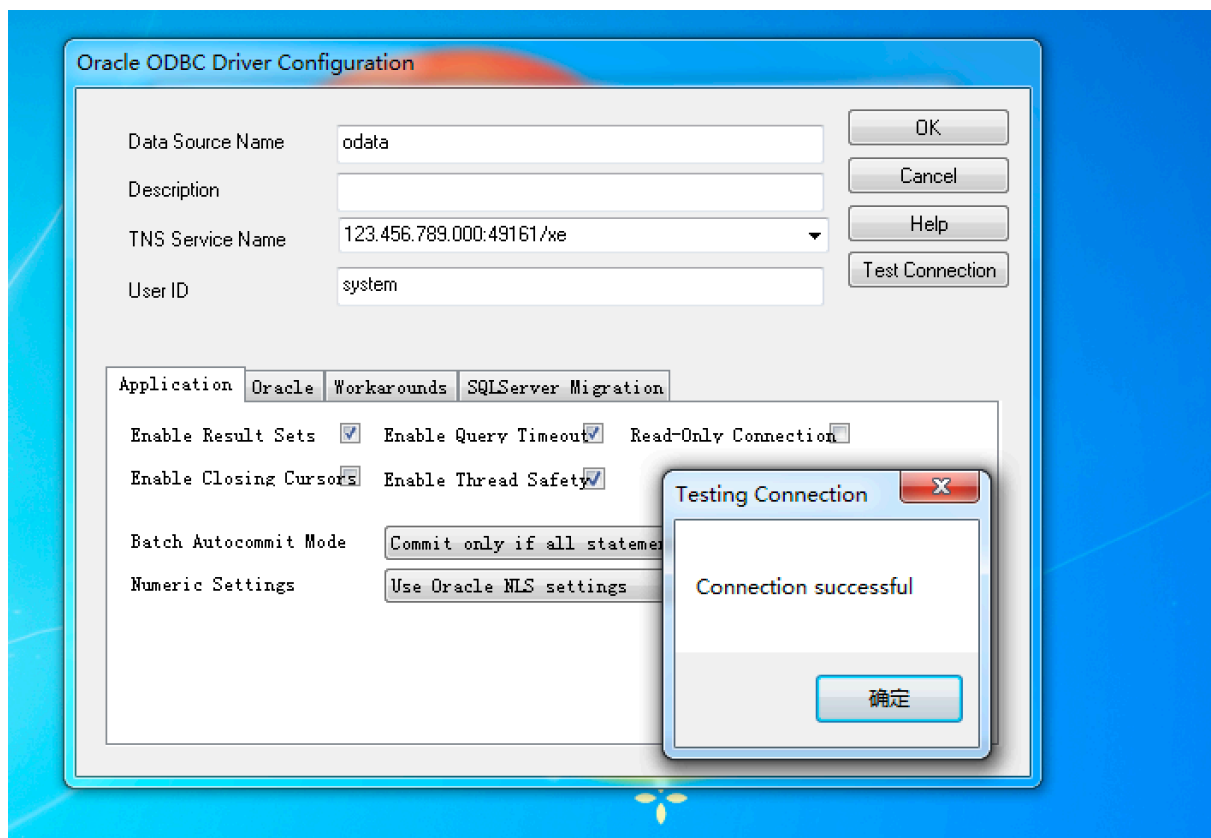
并配置环境变量：

变量	文件路径
ORACLE_HOME	C:\App\instantclient_12_2
Path 添加	C:\App\instantclient_12_2
TNS_ADMIN	C:\App\instantclient_12_2

查看ODBC，可得：



配置并测试，可得：



若无TNS，则配置为123.456.789.000:49161/orcl

(2) Mysql

根据以下链接，注意版本和位数。 [官方链接](#)

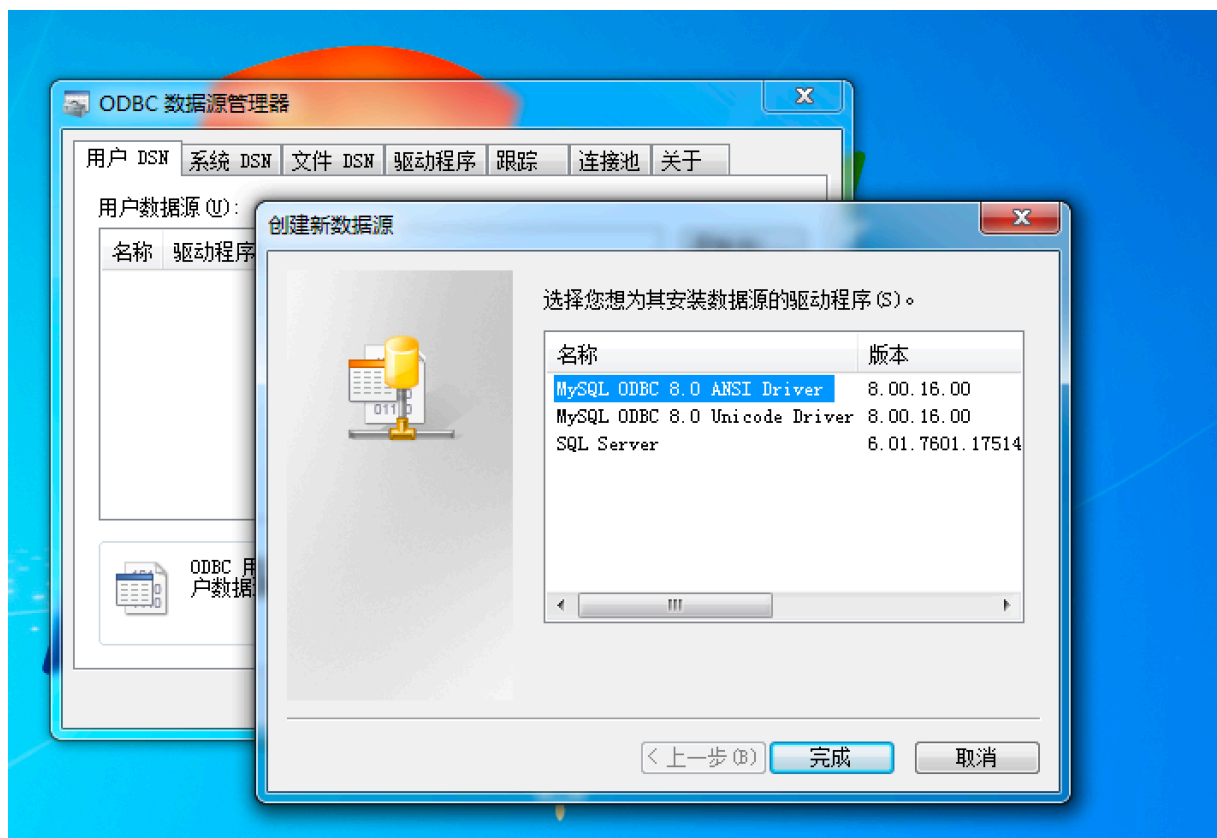
官方下载链接

<https://dev.mysql.com/downloads/connector/odbc/>

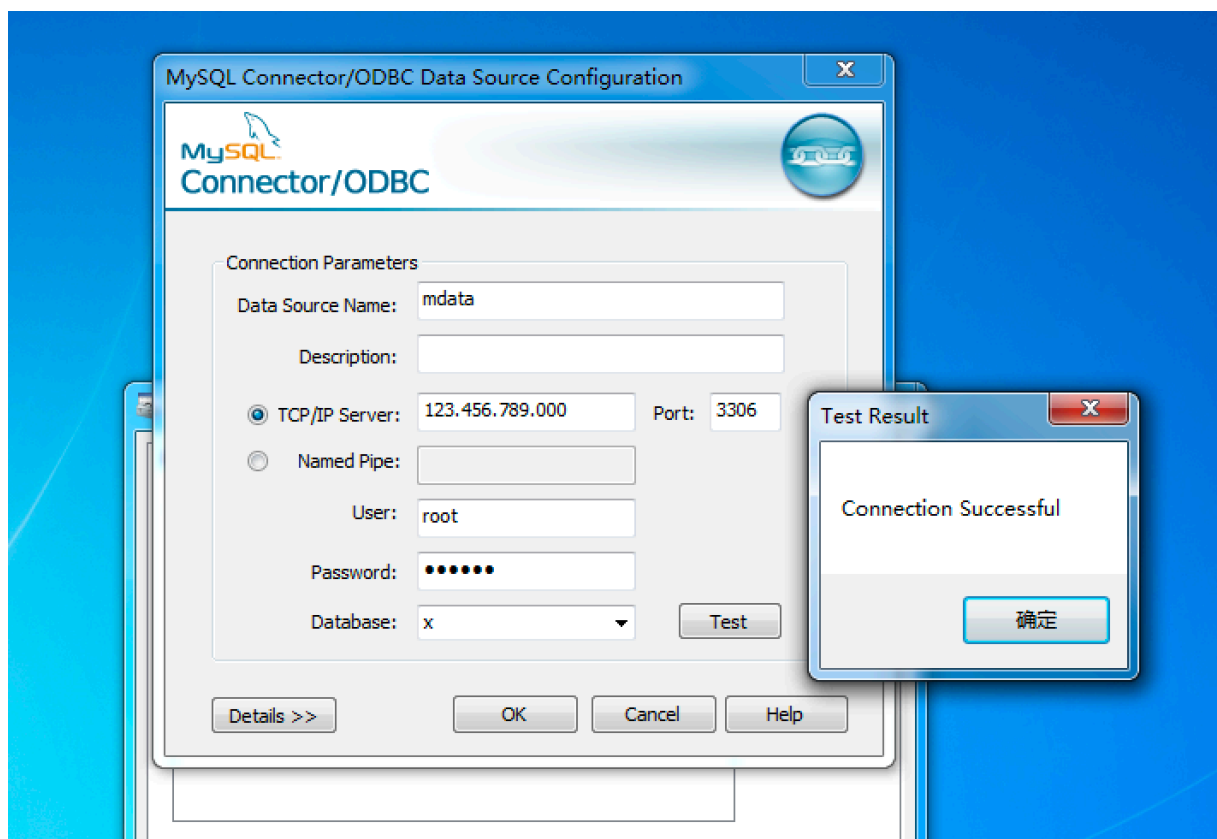
辅助下载链接

<https://ivan-bucket-out-001.oss-cn-beijing.aliyuncs.com/out/mysql-connector-odbc-8.0.16-winx64.msi>

点击安装后，查看ODBC，可得：



配置并测试，可得：



(3) IBM db2

根据以下链接，注意版本和位数。 [官方链接](#)

```
# 官方下载链接
https://www.ibm.com/support/pages/db2-odbc-cli-driver-download-and-installation-
information

# 辅助下载链接
https://ivan-bucket-out-001.oss-cn-beijing.aliyuncs.com/out/v10.1fp6_nt32_odbc_cli.zip
https://ivan-bucket-out-001.oss-cn-
beijing.aliyuncs.com/out/v10.1fp6_ntx64_odbc_cli.zip
```

解压，文件路径：

```
C:\App\v10.1fp6_ntx64_odbc_cli\clidriver
```

开始安装，注意通过管理员模式。

```
Microsoft Windows [版本 6.1.7601]
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# C:\Windows\system32>cd /d C:\App\v10.1fp6_ntx64_odbc_cli\clidriver\bin

# C:\App\v10.1fp6_ntx64_odbc_cli\clidriver\bin>db2cli install -setup
IBM DATABASE 2 Interactive CLI Sample Program
(C) COPYRIGHT International Business Machines Corp. 1993,1996
All Rights Reserved
Licensed Materials - Property of IBM
US Government Users Restricted Rights - Use, duplication or
disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

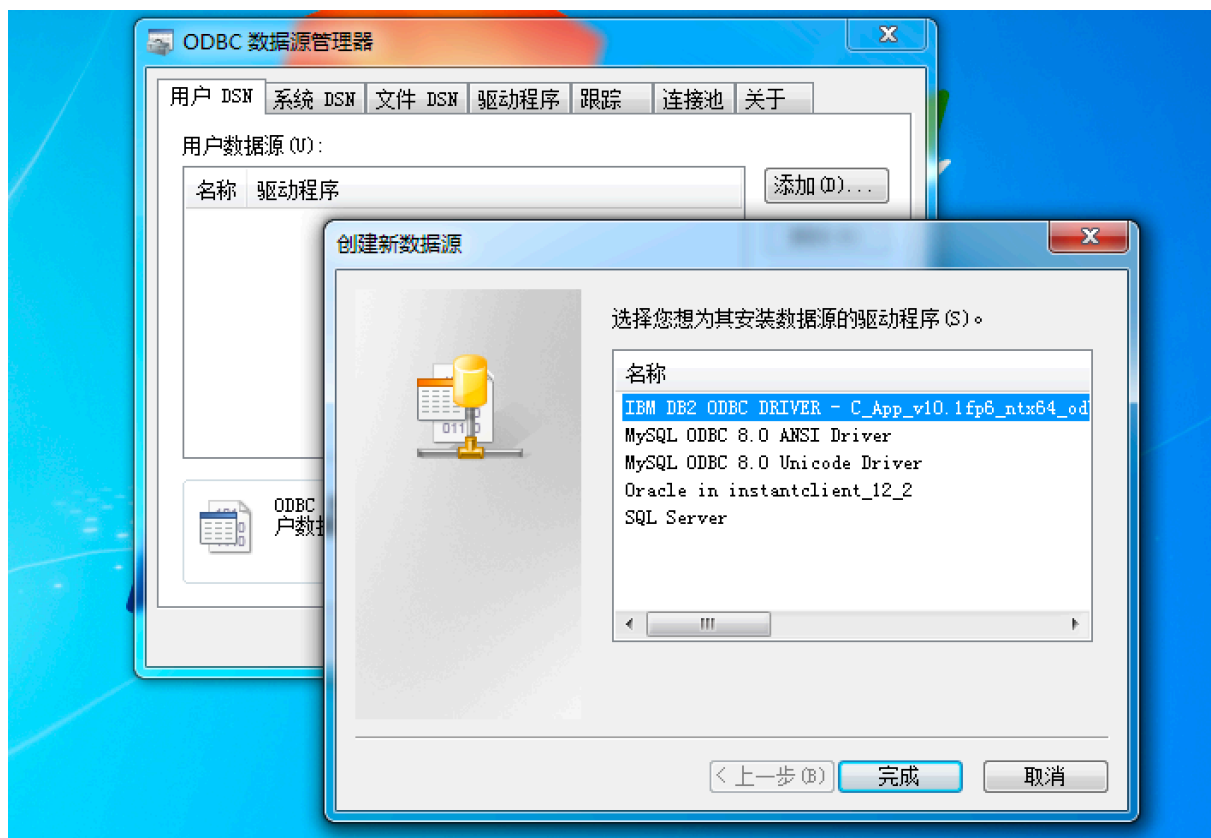
The IBM Data Server Driver for ODBC and CLI registered successfully.
The configuration folders are created successfully.

# C:\App\v10.1fp6_ntx64_odbc_cli\clidriver\bin>
```

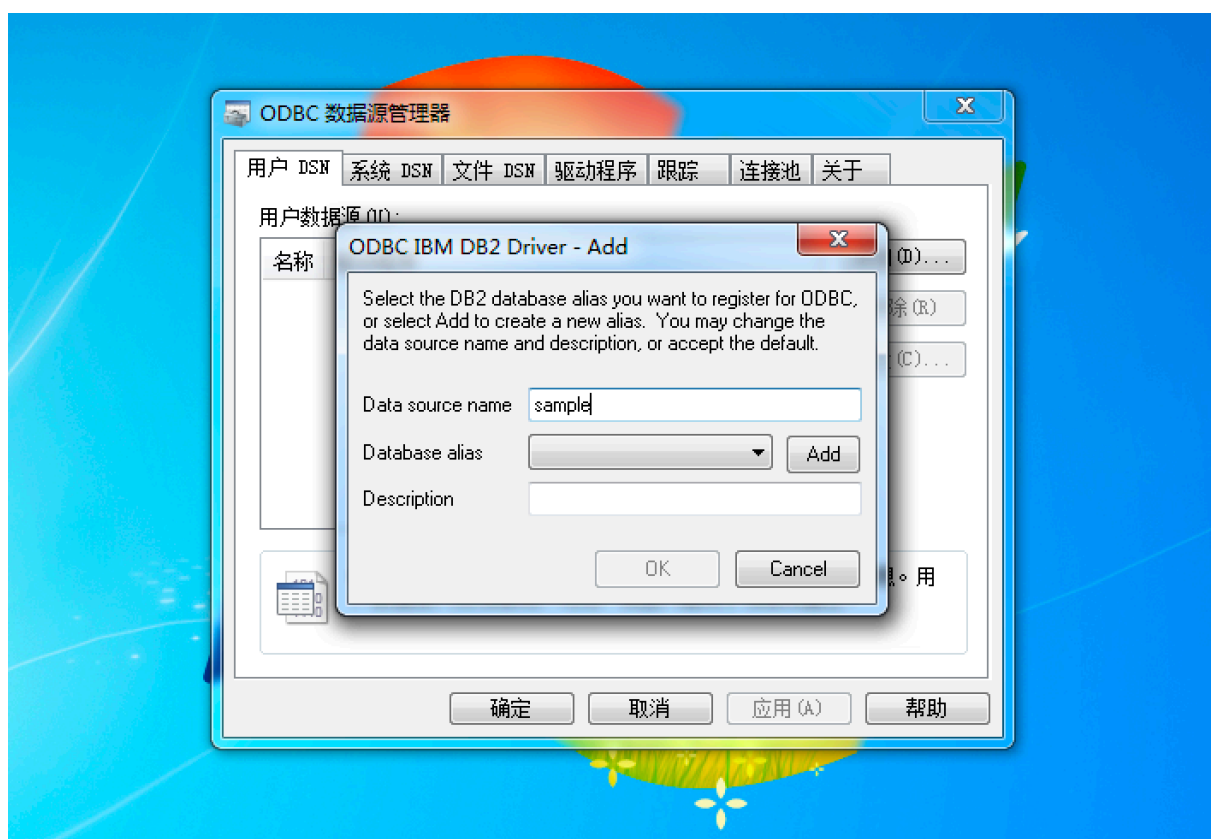
如果版本较老或上述命令无效，

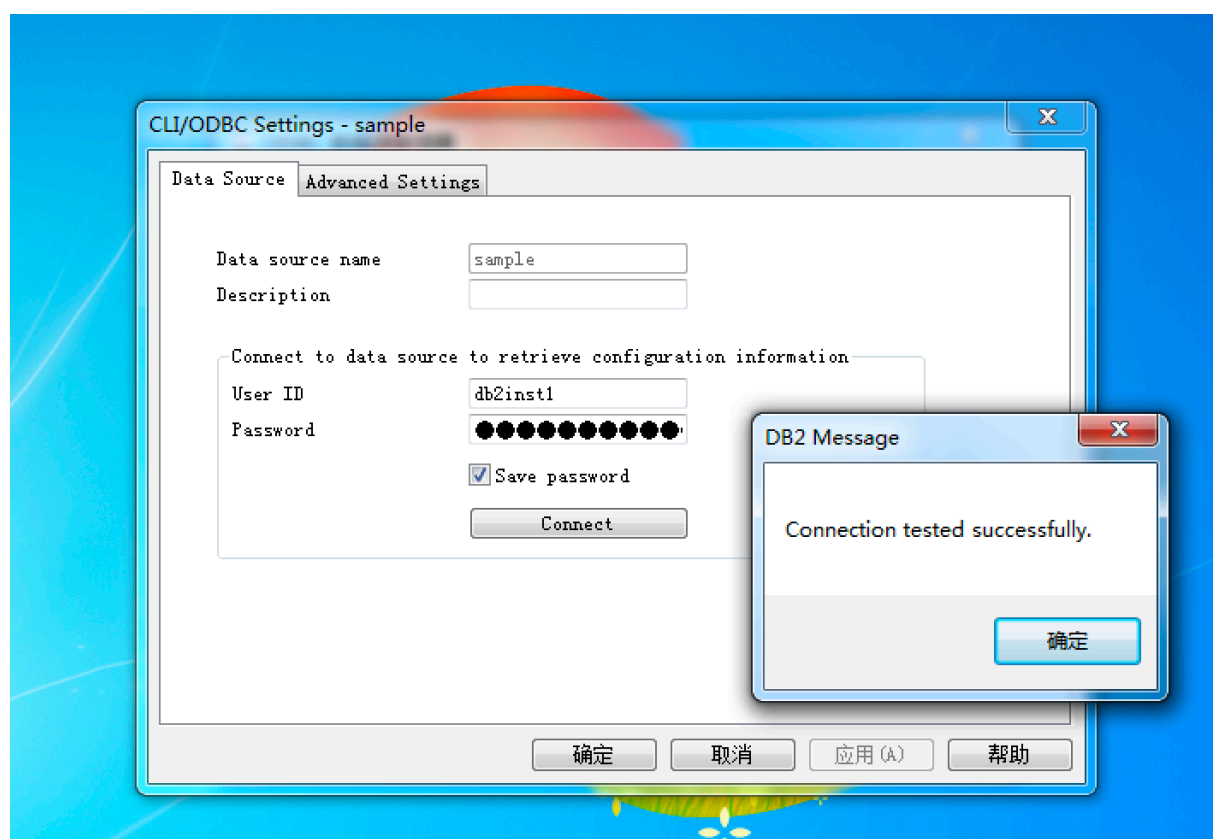
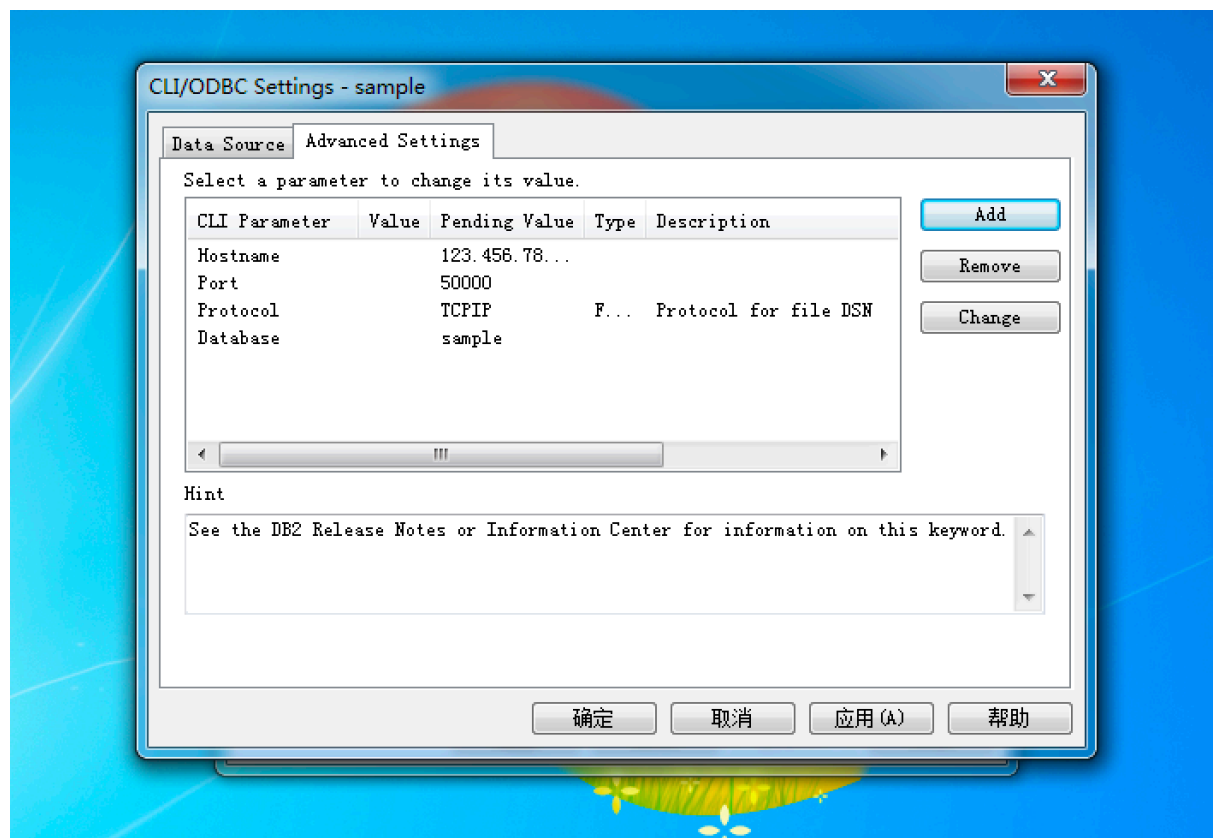
```
# db2oreg1 -i
并添加路径至Path
```

查看ODBC，可得：



配置并测试，可得：





四、SAS读取

(1) Oracle 11g

```
/* SAS */
LIBNAME TA ODBC USER=system PASSWORD=oracle DSN=odata;

/* Log
1 LIBNAME TA ODBC USER=system PASSWORD=XXXXXX DSN=odata;
NOTE: 已成功分配逻辑库引用名“TA”，如下所示：
      引擎： ODBC
      物理名： odata
*/
```

(2) Mysql

```
/* SAS */
LIBNAME TA ODBC USER=root PASSWORD=123456 DATASRC=mdata;

/* Log
1 LIBNAME TA ODBC USER=root PASSWORD=XXXXXX DATASRC=mdata;
NOTE: 已成功分配逻辑库引用名“TA”，如下所示：
      引擎： ODBC
      物理名： mdata
*/
```

(3) IBM db2

```
/* SAS */
LIBNAME TA ODBC USER=db2inst1 PASSWORD="db2inst1-pwd" DATASRC=sample;

/* Log
1 LIBNAME TA ODBC USER=db2inst1 PASSWORD=XXXXXXXXXXXXX DATASRC=sample;
NOTE: 已成功分配逻辑库引用名“TA”，如下所示：
      引擎： ODBC
      物理名： sample
*/
```