

# ODBC for UNIX

## ***Migration and Interoperability from MPE to HP-UX LINUX and Solaris***

Minisoft's ODBC driver for HP-UX, Linux and Solaris enables these platforms to directly access data from TurboImage databases, KSAM and MPE files residing on an HPe3000. This opens up many new capabilities for migration and interoperability:

### **Access HPe3000 data as if it were part of the Oracle database**

For example, using Oracle's Heterogeneous Services using Generic Connectivity, Oracle users and applications can directly access HPe3000 data as if it were part of an Oracle database. Simple commands to Oracle can become powerful migration operations. A whole dataset can be migrated to the Oracle database with one statement such as this:

```
CREATE TABLE <new Oracle table> AS SELECT * FROM <e3000 dataset>
```

Also, since the HPe3000 data appears as tables in the Oracle database, Oracle applications can use the data directly. This provides a whole new slate of development tools for web and e-business applications. Later when the data is migrated to the Oracle system, the applications will not have to be changed.

### **Web application interoperability between the HPe3000 and UNIX systems**

Having Minisoft's ODBC driver available on HP-UX and Linux also enables web applications written for application servers such as WebSphere, Sun ONE Active Server Pages (formerly Chili!Soft ASP), iPlanet, Apache JServ, and others to interoperate with HPe3000 applications by directly accessing and modifying HP e3000 data. User applications, such as StarOffice can also use Minisoft's connectivity on HP-UX and Linux to access HP e3000 data.

# Installation

## HP/UX

### Requirements

The following is required on an HP/UX system:

1. unixODBC 2.2.3 or later. This can be obtained from the following site:

<http://www.unixodbc.org>

2. /usr/local/lib/libstdc++.sl.5.0

This is in the gcc 3.2 depot file which can be obtained from one of the following sites:

<<http://hpux.connect.org.uk>>

### Installing the Minisoft ODBC Driver

1. From your host machine login as Administrator (root) and create the following directory under /opt:

```
mkdir minisoft
```

2. Change the attributes of the directory:

```
chmod 755 minisoft
```

3. Once the library has been created place all Minisoft files in the /opt/minisoft directory.

4. Next, append the lines from "drvinst.ini" into the *odbcinst.ini* file for your system.

5. Use "config3kodbc.exe" to set the information from *mscard.ini* into your *odbc.ini* file. The database and password information for your HP3000 are encoded into the *odbc.ini* file and cannot be easily added with a text editor. The *config3kodbc.exe* application reads an ini file and encodes the information into the *odbc.ini* file:

```
-----  
config3kodbc.exe - i -u - f mscard.ini
```

Installs mscard as a User DSN

```
-----  
config3kodbc.exe - i -s -f mscard.ini
```

Installs mscard as a System DSN

### Licensing ODBC

#### license.exe

Please report the value shown after running the license.exe program utility so that a License Number can be generated for your system.

This is an HP-UX (11) executable. Place it in the /opt/minisoft directory.

**When run, it should display the System ID and System Name:**

```
# /opt/minisoft/license.exe
```

```
System ID = [541750568]
```

```
System Name = [HP-UX B.11.00 9000/800]
```

```
Use one of the following parameters:
```

```
1 - View license information
```

```
2 - License a product
```

```
5 - Create license file
```

```
6 - View license for a product
```

```
#
```

## **Solaris**

### **Requirements**

You will need the following on your Solaris system:

1. unixODBC 2.2.3 or later. This can be obtained from the following site:

<http://www.unixodbc.org>

2. /usr/local/lib/libstdc++.so.2.10.0

### **ODBC Driver**

1. From your host machine login as Administrator (root) and create the following directory under /opt:

```
mkdir minisoft
```

2. Change the attributes of the directory:

```
chmod 755 minisoft
```

3. Once the library has been created place all Minisoft files in the /opt/minisoft directory.

Open firefox

4. Next, append the lines from "drvinst.ini" into the *odbcinst.ini* file for your system.

5. Use "config3kodbc.exe" to set the information from *mscard.ini* into your *odbc.ini* file. The database and password information for your HPe3000 are encoded into the *odbc.ini* file and cannot be easily added with a text editor. The config3kodbc.exe application reads an ini file and encodes the information into the *odbc.ini* file.

```
-----  
config3kodbc.exe - i -u - f mscard.ini
```

Installs mscard as a User DSN

```
-----  
config3kodbc.exe - i -s -f mscard.ini
```

Installs mscard as a System DSN

### **ODBC License.exe**

#### **License.exe**

Please report the value shown from after running the License.exe utility so a License Number can be generated for your system.

This is a Solaris executable. Place it in the directory "/opt/minisoft". When ran, it should display the System ID and System Name:

```
# /opt/minisoft/license.exe  
System ID = [541750568]
```

System Name = [HP-UX B.11.00 9000/800]

Use one of the following parameters:

- 1 - View license information
  - 2 - License a product
  - 5 - Create license file
  - 6 - View license for a product
- #

# Linux

## Requirements

You will need the following on your Linux system:

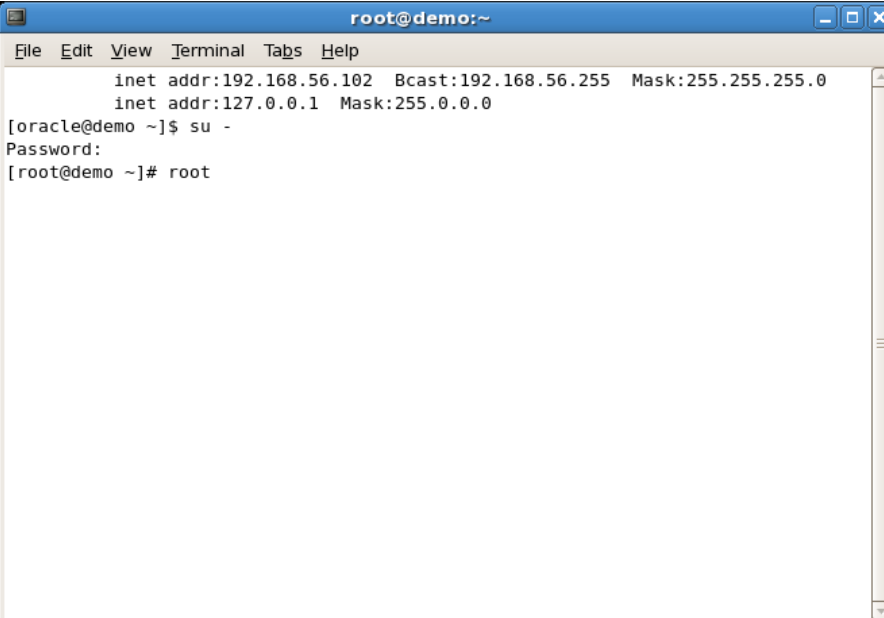
1. unixODBC 2.2.3 or later. This can be found at the following website:

<http://www.unixodbc.org>

2. /usr/local/lib/libstdc++.so.5 (Available with gcc 3.2)

## ODBC Driver

1. From your host machine login as Administrator (root).



```
root@demo:~  
File Edit View Terminal Tabs Help  
inet addr:192.168.56.102 Bcast:192.168.56.255 Mask:255.255.255.0  
inet addr:127.0.0.1 Mask:255.0.0.0  
[oracle@demo ~]$ su -  
Password:  
[root@demo ~]# root
```

2. Create the following directory under /opt:

```
mkdir minisoft
```

```
root@demo:/opt
File Edit View Terminal Tabs Help
-bash: root: command not found
[root@demo ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:D5:43:8E
          inet addr:192.168.56.102  Bcast:192.168.56.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fed5:438e/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:31 errors:0 dropped:0 overruns:0 frame:0
          TX packets:106 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:3964 (3.8 KiB)  TX bytes:11084 (10.8 KiB)
          Interrupt:185 Base address:0xd020

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128  Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:6363 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6363 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:8827360 (8.4 MiB)  TX bytes:8827360 (8.4 MiB)

[root@demo ~]# cd /opt
[root@demo opt]# mkdir minisoft
[root@demo opt]#
```

3. Change the attributes of the directory:

`chmod 755 minisoft`

```
root@demo:/opt
File Edit View Terminal Tabs Help
[root@demo ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:D5:43:8E
          inet addr:192.168.56.102  Bcast:192.168.56.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fed5:438e/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:31 errors:0 dropped:0 overruns:0 frame:0
          TX packets:106 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:3964 (3.8 KiB)  TX bytes:11084 (10.8 KiB)
          Interrupt:185 Base address:0xd020

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128  Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:6363 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6363 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:8827360 (8.4 MiB)  TX bytes:8827360 (8.4 MiB)

[root@demo ~]# cd /opt
[root@demo opt]# mkdir minisoft
[root@demo opt]# chmod 755 minisoft
[root@demo opt]#
```

4. Once the library has been created, all of the Minisoft files must be placed in the `/opt/minisoft` directory. First, navigate to the Minisoft homepage ([www.minisoft.com](http://www.minisoft.com)) and select the Middleware tab.

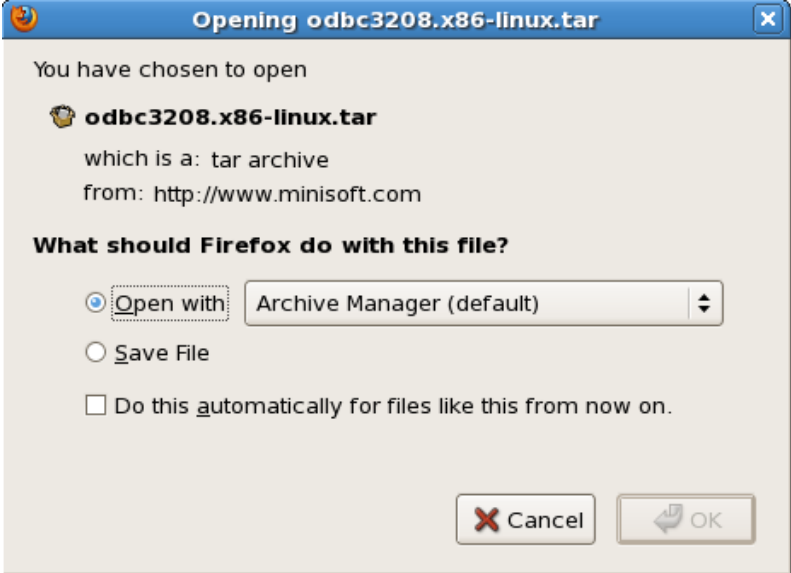


5. Next, pick the ODBC option and select ODBC for Unix.

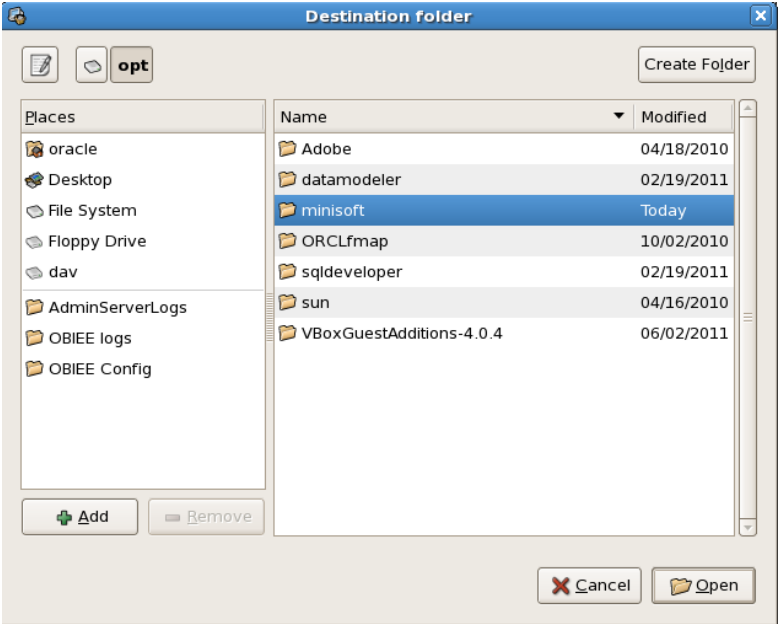


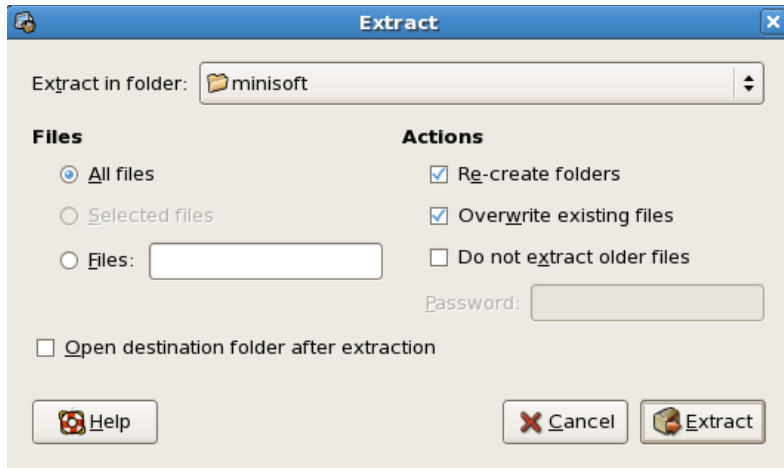


6. From there, choose either the Download an evaluation today! option or the ODBC Updates option from the Demo and Updates tab. Accept the conditions of use. Choose the appropriate file and open it.



7. Extract all of the Minisoft files. Locate the destination folder, Minisoft, and select Extract.





8. Locate the Minisoft directory.

```
root@demo:/opt
File Edit View Terminal Tabs Help
inet addr:192.168.23.235 Bcast:192.168.23.255 Mask:255.255.255.0
inet6 addr: fe80::a00:27ff:fed5:438e/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:98 errors:0 dropped:0 overruns:0 frame:0
TX packets:99 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:9672 (9.4 KiB) TX bytes:13337 (13.0 KiB)
Interrupt:177 Base address:0xd020

lo
Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:16436 Metric:1
RX packets:2953 errors:0 dropped:0 overruns:0 frame:0
TX packets:2953 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:4820552 (4.5 MiB) TX bytes:4820552 (4.5 MiB)

[root@demo ~]# cd /opt
[root@demo opt]# chmod 777
chmod: missing operand after `777'
Try `chmod --help' for more information.
[root@demo opt]# chmod 777 minisoft
[root@demo opt]# cd minisoft
```

9. Next, append the lines from "drvinst.ini" into the odbinst.ini file for your system.

```
root@demo:/opt/minisoft
File Edit View Terminal Tabs Help
*
* -d driver
* -s data source
*
* Options:
*
* -f file name of template.ini follows
* this (valid for -i)
* -r get template.ini from stdin, not
* a template file
* -n Driver or Data Source Name follows
* -v turn verbose off (no info, warning
* or error msgs)
* -l system dsn
* -h user dsn
*
* Returns:
*
* 0 Success
* !0 Failed
*
* Please visit;
*
* http://www.unixodbc.org
* pharvey@codebydesign.com
*****
[root@demo minisoft]# odbcinst -i -d -f drvinst.ini
```

10. Use "config3kodbc.exe" to set the information from *mscard.ini* into your *odbc.ini* file. The database and password information for your HPe3000 are encoded into the *odbc.ini* file and cannot be easily added with a text editor. The config3kodbc.exe application reads an ini file and encodes the information into the *odbc.ini* file.

-----  
config3kodbc.exe -i -u -f mscard.ini

Installs mscard as a User DSN  
-----

## ODBC Licensing

Please report the value shown from after running the License.exe utility so a License Number can be generated for your system.

This is a Linux executable. Place it in the "/opt/minisoft" directory. When run, it should display the

System ID and System Name:

```
# /opt/minisoft/license.exe
```

```
System ID = [3046425382]
```

```
System Name = [Linux 2.4.18-17.8.0 i686]
```

Use one of the following parameters:

1 - View license information

- 2 - License a product
- 5 - Create license file
- 6 - View license for a product
- #

## **Server Installation on HP-UX**

### **Requirements**

1. The following will be needed:

`/usr/local/lib/libstdc++.sl.5.0`

2. Eloquence B.07.00 (please install Patch PE70-0304090 or later)

This can be found at the following website:

<http://www.hp-eloquence.com/support/B07/patch-B0700.html>

### **Server**

1. From your host machine login as Administrator (root) and create the following directory under /opt:

```
mkdir minisoft
```

2. Change the attributes of the directory:

```
chmod 755 minisoft
```

3. Once the library has been created place all Minisoft files in the /opt/minisoft directory.

Note: Make sure the minisoft directory is readable and executable from public.

4. Next, create a symbolic link to your system specific Eloquence library. For example:

```
ln -s /opt/eloquence6/lib/pa11_32/libimage3k.sl  
/opt/eloquence/lib/libimage3k.sl
```

or

```
ln -s /opt/eloquence6/lib/pa20_32/libimage3k.sl  
/opt/eloquence/lib/libimage3k.sl
```

5. Append the following to your /etc/inetd.conf file:

```
#  
# odbcsrvr.exe  
#  
odbcsrvr stream tcp nowait root /opt/minisoft/odbcsrvr.exe odbcsrvr.exe  
S
```

6. Append the following to your /etc/services file:

```
#  
# Minisoft odbcsrvr.exe  
#  
odbcsrvr 30006/tcp
```

7. Append the following to your /etc/pam.conf file:

```
#
```

```
# PAM configuration
#
odbcdrv auth required /usr/lib/security/libpam_unix.1
odbcdrv account optional /usr/lib/security/libpam_unix.1
odbcdrv password required /usr/lib/security/libpam_unix.1
#
```

8. Report the System ID and System Name (see license.exe below) to your Minisoft sales office. Follow the directions returned to license the product.

9. Restart inetd using the command:

```
#inetd -c
```

## **ODBC Licensing**

Please report the value shown from after running the License.exe utility so that a License Number

can be generated for your system.

This is a HP-UX (11) executable. Place it in the "/opt/minisoft" directory. When ran, it should display the System ID and System Name:

```
# /opt/minisoft/license.exe
System ID = [541750568]
System Name = [HP-UX B.11.00 9000/800]
Use one of the following parameters:
1 - View license information
2 - License a product
5 - Create license file
6 - View license for a product
#
```

## **ODBC for Oracle Heterogeneous Services**

Oracle's Generic connectivity is intended for data integration solutions requiring the capability to connect from Oracle to non-Oracle database systems. Generic Connectivity is part of Oracle Heterogeneous Services.

Oracle versions

- 8i
- 9i
- 10
- 11

Operating Systems

- HP-UX (HPPA and IA64)
- Windows (i386 and x64)
- Linux (i386 and x64)

With the appropriate MPE and Image security, you can select, update, insert and delete records from your Oracle applications. Also read and write Image, KSAM and MPE files.

### ***Oracle Internet Directory***

After establishing and testing a connection, use the Oracle Network Manager to import the tnsnames.ora, according to your chosen configuration, into your directory for publication.

### ***Oracle 11g***

With Oracle 11, the hsodbc application has been replaced with dg4odbc.

### ***Using Oracle Generic Connectivity***

This is a step-by-step guide for setting up and troubleshooting Generic Connectivity using ODBC, showing Oracle 11g:

1. With the OUI (Oracle Universal Installer) install Generic Connectivity using ODBC. This product is part of the server installation because a listener is needed. A directory called=ORACLE\_HOME/hs is then created.
2. The Generic Connectivity utility needs data dictionary tables in the Oracle database. To check for their existence, run a query on i.e. SYS.HS\_FDS\_CLASS. If it fails, run the caths.sql script located in ORACLE\_HOME/RDBMS/ADMIN as user sys or internal.
3. Install and test the Minisoft ODBC Driver.
4. Next, configure tnsnames.ora. This file is in ORACLE\_HOME/network/admin.

Add the following lines to this file:

```
mscardid =  
(DESCRIPTION=  
(ADDRESS=(PROTOCOL=tcip)
```

```
(HOST=localhost)
(PORT=1521))
(CONNECT_DATA=(SID=mscard))
(HS=OK)
)
```

Note: A sample file is located in ORACLE\_HOME/hs/admin.

5. Configuring listener.ora this file is in ORACLE\_HOME/network/admin. Add the following line to the SID\_List of the listener.ora and restart the listener afterwards. (After the restart a service handler for dg4odbc should exist).

```
SID_LIST_LISTENER=
(SID_LIST=
(SID_DESC=
(SID_NAME=mscard)
(ORACLE_HOME=/home/oracle/.../dbhome)
(PROGRAM= dg4odbc)
(ENVS=LD_LIBRARY_PATH=/opt/minisoft:/home/oracle/.../dbhome/lib)
)
)
```

Note: A sample file is located in ORACLE\_HOME/hs/admin.

6. Adjust the configuration file of the gateway. It is located in ORACLE\_HOME\HS\ADMIN. The name depends on the SID you use for the Heterogeneous Service. In our sample the listener SID is mscard and so the configuration file is initmscard.ora.

HS init parameters:

```
set ODBCSYSINI=/etc
set ODBCINI=/etc/odbc.ini
#set TraceLogLevel=15
#set TraceLogFlush=1
#set TraceFileName=/opt/minisoft/oracle_init_odbc.%p.log
HS_FDS_CONNECT_INFO=mscard
HS_FDS_TRACE_LEVEL=0
HS_FDS_TRACE_FILE_NAME=mscard.trc
HS_LANGUAGE=american_america.we8iso8859p1
#HS_FDS_SHAREABLE_NAME=/usr/lib/libodbc.so
HS_FDS_SHAREABLE_NAME=/opt/minisoft/lib3kodbc.sl
HS_FDS_SUPPORT_STATISTICS=FALSE
HS_FDS_FETCH_ROWS=1s
```

7. To move the dsn from the user to the system, take the ~/.odbc.ini file and move it to /etc/odbc.ini.



```
root@demo:/opt/minisoft
File Edit View Terminal Tabs Help
nohomish | | | | 22 |
| 23 | 22 | | | 22 | | 23 |
| | | dd'ee | | | | | | S
nohomish | | | | 23 | | |
| 33 | 33 | | | 33 | | 24 |
| | | | | 24 | | |
+-----+
+-----+
+-----+
SQLRowCount returns -1
24 rows fetched
SQL>
[root@demo minisoft]# cat ~/.odbc.ini
[MSCARD]
driver          = 3kodbc
DSN             = MSCARD
ImageDatabase0  = FXHJY0%FF'0D&JGG'ED':
User Password   = INJ\_YZ
User           = MGR
Account        = MINISOFT
Server         = 192.168.23.70
Server Port    = 30006

[root@demo minisoft]# cat ~/.odbc.ini >> /etc/odbc.ini
[root@demo minisoft]# rm ~/.odbc.ini
rm: remove regular file '/root/.odbc.ini'? y
[root@demo minisoft]#
```

## 8. Testing the connectivity:

- create a database link:

```
# sqlplus
```

```
sql> create database link mscard using 'mscardid';
```

```
sql> select * from customer@mscard;
```

### **Restriction**

The built-in column “ROWID” will conflict with an Oracle reserved word. Avoid using this column, column select wildcards, or use a Schema Editor file to hide or rename this column. Note that if any table or column conflicts with an Oracle reserve word, an error will occur.

## ***Troubleshooting COMMON ERRORS and SOLUTIONS***

- ORA-28509: unable to establish a connection to non-Oracle system
- ORA-02063: preceding line from HS
  - ✓ Make sure the HOST parameter in the tnsnames.ora file is correct.
  - ✓ Make sure the PORT number is correct.exit
  - ✓ Make sure the SID name is correct in both the TNSNAMES.ORA and
- ORA-28500: connection from ORACLE to a non-Oracle system returned this message:

[Transparent gateway for ODBC][H001] The environment variable  
<HS\_FDS\_CONNECT\_INFO> is not set.

ORA-02063: preceding 2 lines from HS

- ✓ Set HS\_FDS\_CONNECT\_INFO in the hs{sid}init.ora file to the data source name.

Example: HS\_FDS\_CONNECT\_INFO = <ODBC DataSource Name>

- ✓ Make sure the hs{sid}init.ora file exists in the ORACLE\_HOME/hs/admin directory and has the same name as the SID in the LISTENER.ORA.

Example: If SID=hsodbc in the listener.ora file, then the hs{sid}init.ora file would be named  
ORACLE\_HOME/hs/admin/inithsodbc.ora