

**Revision 2 - January 06**

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*Note: The MindGrove website has additional useful working and training materials on its resource pages.*

Document			
Document		Template	Size
Cover template for downloads		Manual 2005.dot	145920
Status	Final	Version	Format
Issue	1	26	A4
Change History			
Author	Component		Date
MnD	This version		January 06
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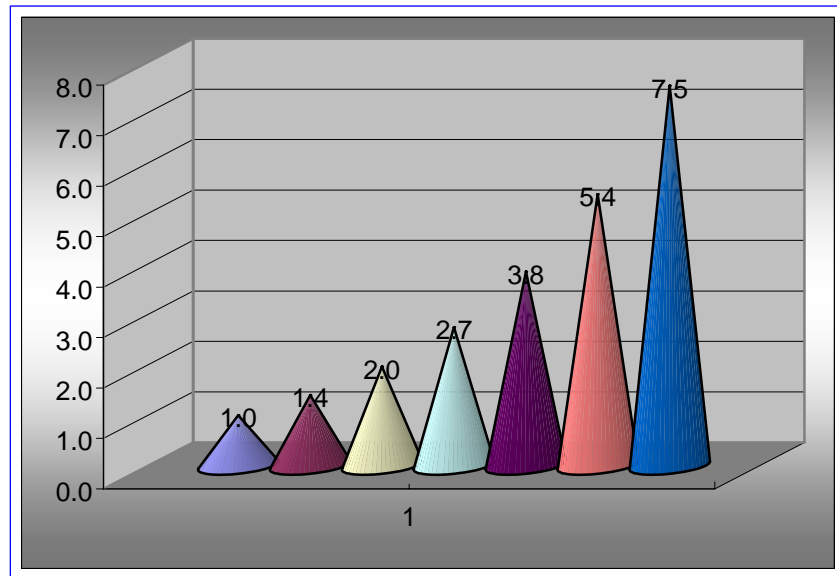
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# ODBC – Open Data Base Connectivity

What's the point of open data base connectivity?

- Organisations archive a lot of data and it is estimated that the rate of increase in data storage is greater than 30% compound per annum.

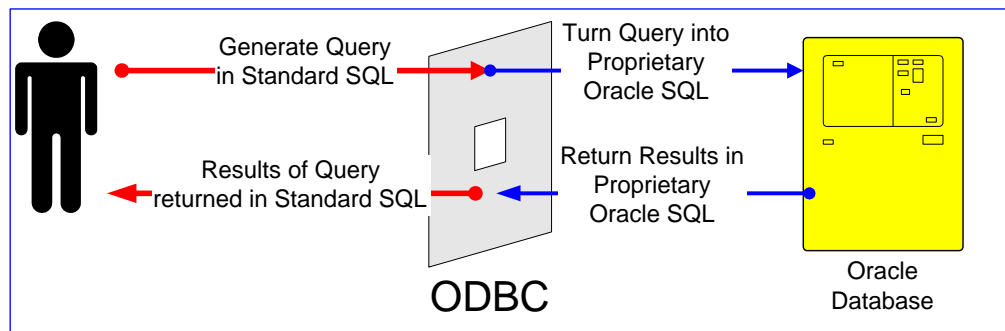


- Users are impatient – they want to access this stored information quickly and efficiently regardless of the location, data source or platform that stores the data. Why should they have to care whether the data resides on a PC, a Server or a Mainframe?

ODBC is a Standard created by Microsoft...

- The concept centres on the idea of moving data to or from a database – a “data source” – using a standard interface.
- There was already an interface for doing this called the “SQL Access Call Level Interface”. This was defined for programmers using SQL – “Structured Query Language”: a high level language widely used and incorporated into virtually all modern database software systems.
- The problem was that although most databases supported SQL, each database vendor – such as ORACLE – had added proprietary extensions to the SQL language, making each vendor’s implementation of SQL non-standard.

- Microsoft saw that in spite of virtually all database systems sharing a common feature – SQL, the ability of non-technical users to use SQL to access their data was severely impaired by vendors' actions.
- So the idea of ODBC was launched – a mechanism that would allow the user to communicate in “standard” SQL, but which would iron out the differences in proprietary implementations in a way that would remain transparent to the end user.



- If this could be done then developers could use ODBC for rapidly building applications for accessing, viewing or modifying data; new or existing applications could be ported to new data sources; and users could access their data using a single method.
- And this led to Microsoft launching the ODBC standard.

ODBC is vendor neutral...

- It's an open standard that is powerful, supports OLTP<sup>1</sup>, and supports flexible connections – you can access data sources across networks and across different hardware platforms.

Is ODBC any use for audit purposes?

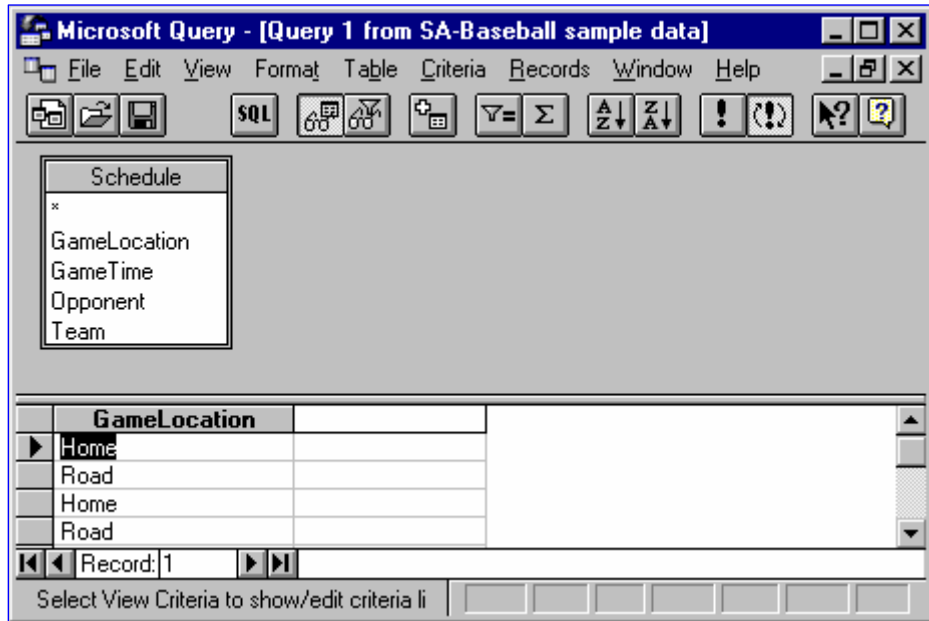
- You can program using the ODBC API – but there's no need to do so.
- You can use ready-made ODBC compliant software applications – such as Microsoft Query.
- You can use the ODBC links in other products such as IDEA/ACL

How do I get ODBC to work for me?

- You'll need four components:
  - a) An application that will receive results
  - b) An ODBC interface

<sup>1</sup> On-line transaction processing

- c) Driver routines, each specific to the type of database being processed
- d) The database – data source - containing the target data

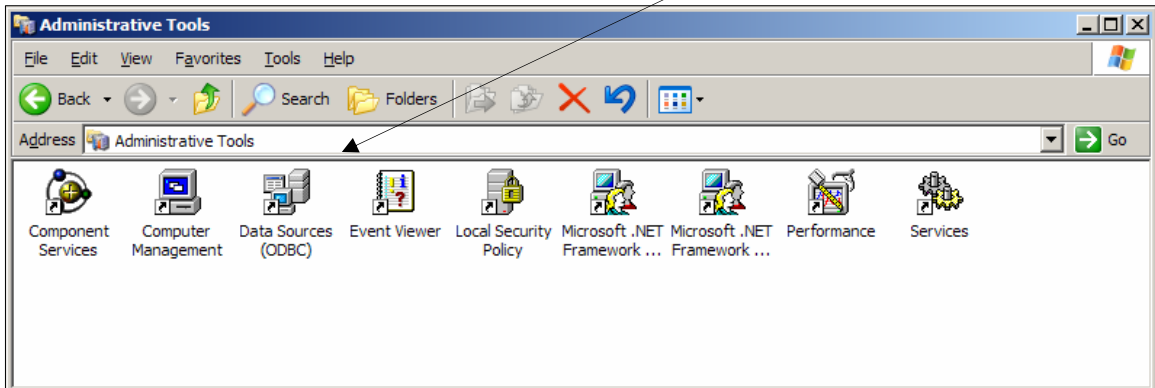


MSQuery?

- This is an ODBC enabled query application, included with MS Office since early 1995, that runs under all versions of Windows.
- You can use it directly, or indirectly – via Excel or use it directly, call it by name – MSQRY32.exe
- To use it indirectly, call it through Excel [DATA/GET EXTERNAL DATA/NEW DATABASE QUERY](#)

Where do I get the ODBC interface?

- Look in : [Start / Settings / Control Panel / Administrative Tools](#)



Where do I get ODBC driver routines for my data source?

*It all depends on what system you run some drivers have different conformance levels with the ODBC method, some are free, and some you have to pay for.*

- First look in ODBC driver manager and see what you have installed – does this contain the driver you need for your target database?
- Second, do a re-install of your software suite/s using *customise* or *selective* option, and install any ODBC or filter options that aren't currently present.
- Third, contact your systems support team and ask for drivers for your target databases (they may have been shipped with your software); they may be supplied to your organisation on request.
- Fourth,- download them for free! Search <http://www.microsoft.com> with the string ODBC DRIVER DOWNLOADS
- Search <http://www.google.co.uk> using “ODBC Drivers” as the search string
- Drivers may be available from your account vendor, such as: Ask Group (Ingres), Bull Information Systems (IDSII), Cincom Group (Supra), CA-Associates (CA-IDMS, Datacom), DEC (RDB, Mumps), Gupta Technologies, Hewlett Packard, IBM (DB2, IMS), Fujitsu (PICK, PRIME, SEQUOIA), Lotus, Oracle, Raima (DBS), SAS, SoftWare AG (Adabas), Sybase, Tandem, Visigenic (MacIntosh), Wang (Pace), Watcom (SQL)

Which databases have ODBC drivers?

- Most!

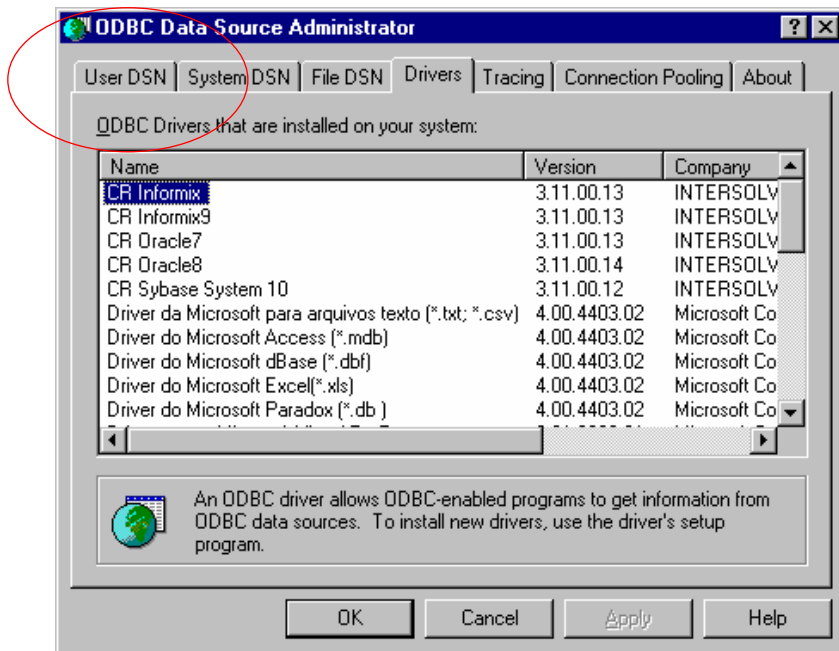
## ODBC in action

Setting up your ODBC interface

- Go to control panel and locate the ODBC administration icon



- See which drivers are included in your system by opening up the icon and selecting the drivers tab
- Now select and configure the access route to the database using the User DSN – User Data Set Name tab.



Installing a new driver

- Drivers come with a set-up program that shows which drivers are present on the disk. Select the driver/s you want installed, run the installation routine, go to ODBC administration routine after installation, check that your new driver is showing in the drivers list.

#### Connecting to a database

- You must have installed the appropriate driver first and then you must have configured an access route to the database. These are one-off events.
- Having done this you now run your SQL aware application!
- Run MSQRY32.exe
- Select data source – database
- Create new query
- And you are away!

#### Simple queries

- Simplest query is a single table data extraction or an extraction subject to criteria.
- Try sorting the output to cause duplicates to come together.
- Use multiple criteria to increase the specificity of the result.

#### More complex queries

- Relational databases will allow you to “join” data in queries. This pairs together criteria in two tables. You can answer questions such as: “Who have we invoiced recently for premium products in York where the order size was greater than 100 units?”

#### Query results can be processed further

- Save results as a table, then do the same for a second table, and then work on the combined result. Or export your results to a spreadsheet like 1-2-3, Quattro Pro, or Excel... then carry on processing in this new location... saving the results as a spreadsheet... possibly creating macros to perform common tasks... and saving the query for future use.
- Any query can be recycled and modified as many times as required, creating an audit library of queries for later use.

#### With the right driver you can ...

- Connect to a database of almost any type locally on a workstation, across a LAN, using spanning protocols such as SNA, IPX, TCP/IP, DECNET.
- The data is processed in situ and you don't have to move it about on media.

## Trouble-shooting

- If the driver doesn't work, try finding a more up to date driver or try using a different application with the driver.
- If the database won't extract, try saving the data source as a previous version of the database or exporting the table into a different database type.
- If you are completely stuck, try visiting the Internet sites or news-groups that deal with ODBC and see whether there is any up to date information relating to your problem.
- If the query takes a long time you can: separate the operation into two passes; order the query differently; arrange that the most important criteria appear first in the list; sort after extraction as a separate operation.
- If the query is rejected or you cannot bind to the database tables, check whether there are any locks on the database system caused by concurrent live operations, or whether you are being denied access by the security system of the target host.

## Summary

- ODBC is not difficult to configure; can be deployed in a wide range of data extraction scenarios; complex queries are possible; post processing of results are possible if you export them.

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