



Slide Show 25:

Using the IGSS ODBC Interface

**INSIGHT
AND
OVERVIEW**



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ODBC and the IGSS ODBC Driver



- ODBC (Open DataBase Connectivity)

A Microsoft standard for communicating with different database products using SQL (Standard Query Language).

- IGSS ODBC Driver

The driver that makes IGSS data appear as a relational database.

Any SQL-enabled database product will be able to access the IGSS ODBC tables

(e.g. Microsoft Access or Microsoft Excel)

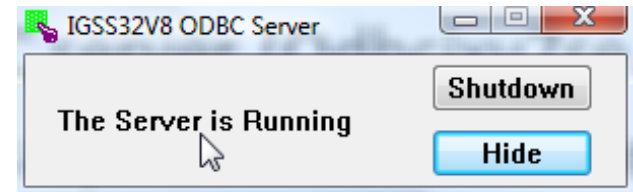
Use of the ODBC Driver

The ODBC interface can be used to:

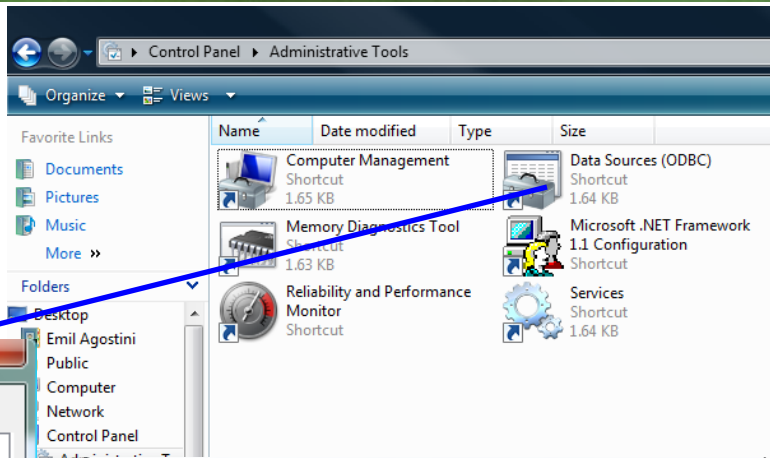
- Modify an IGSS configuration directly from a database
- Access process data (ALM, LOG, BCL)
- View a snapshot of online data

ODBC Network Driver

- ODBC server (Odbcixv8se.exe)
 - Typically activated on IGSS Server
 - Fetches data from the report folder
- ODBC client (Odbcixv8cl.dll)
 - Must be configured manually on operator stations
 - The ODBC client connects to the ODBC server via TCP/IP
 - By default, the ODBC Server runs locally



Installing the ODBC Driver



Control Panel > Administrative Tools

Name	Date modified	Type	Size
Computer Management	Shortcut		1.65 KB
Memory Diagnostics Tool	Shortcut		1.63 KB
Reliability and Performance Monitor	Shortcut		
Data Sources (ODBC)	Shortcut		1.64 KB
Microsoft .NET Framework 1.1 Configuration	Shortcut		
Services	Shortcut		1.64 KB

ODBC Data Source Administrator

User DSN | System DSN | File DSN | Drivers | Tracing | Connection Pooling | About

ODBC Drivers that are installed on your system:

Name	Version	Company
iFIX Historical Driver	5.00.6667.00	GE Fanuc
iFIX Real Time Driver	5.00.6667.00	GE Fanuc
IGSS32v7 ODBC Driver	7.00.00.9064	7-Technc
IGSS32v7 ODBC Network Driver	7.00.00.9064	7-Technc
IGSS32v8 ODBC Driver	8.00.00.9114	7-Technc
IGSS32v8 ODBC Network Driver	8.00.00.9114	7-Technc
Microsoft Access dBASE Driver (*.dbf, *.ndx, *.mdx)	12.00.6211.1000	Microsoft
Microsoft Access Driver (*.mdb)	6.00.6001.18000	Microsoft

An ODBC driver allows ODBC-enabled programs to get information from ODBC data sources. To install new drivers, use the driver's setup program.

OK Cancel Apply Help

ODBC Data Source Administrator

User DSN | System DSN | File DSN | Drivers | Tracing | Connection Pooling | About

System Data Sources:

Name	Driver
FIX Dynamics Historical Data	iFIX Historical Driver
FIX Dynamics Real Time Data	iFIX Real Time Driver
IGSS32v7 ODBC Network DS	IGSS32v7 ODBC Network Drive
IGSS32v8 ODBC Network DS	IGSS32v8 ODBC Network Drive

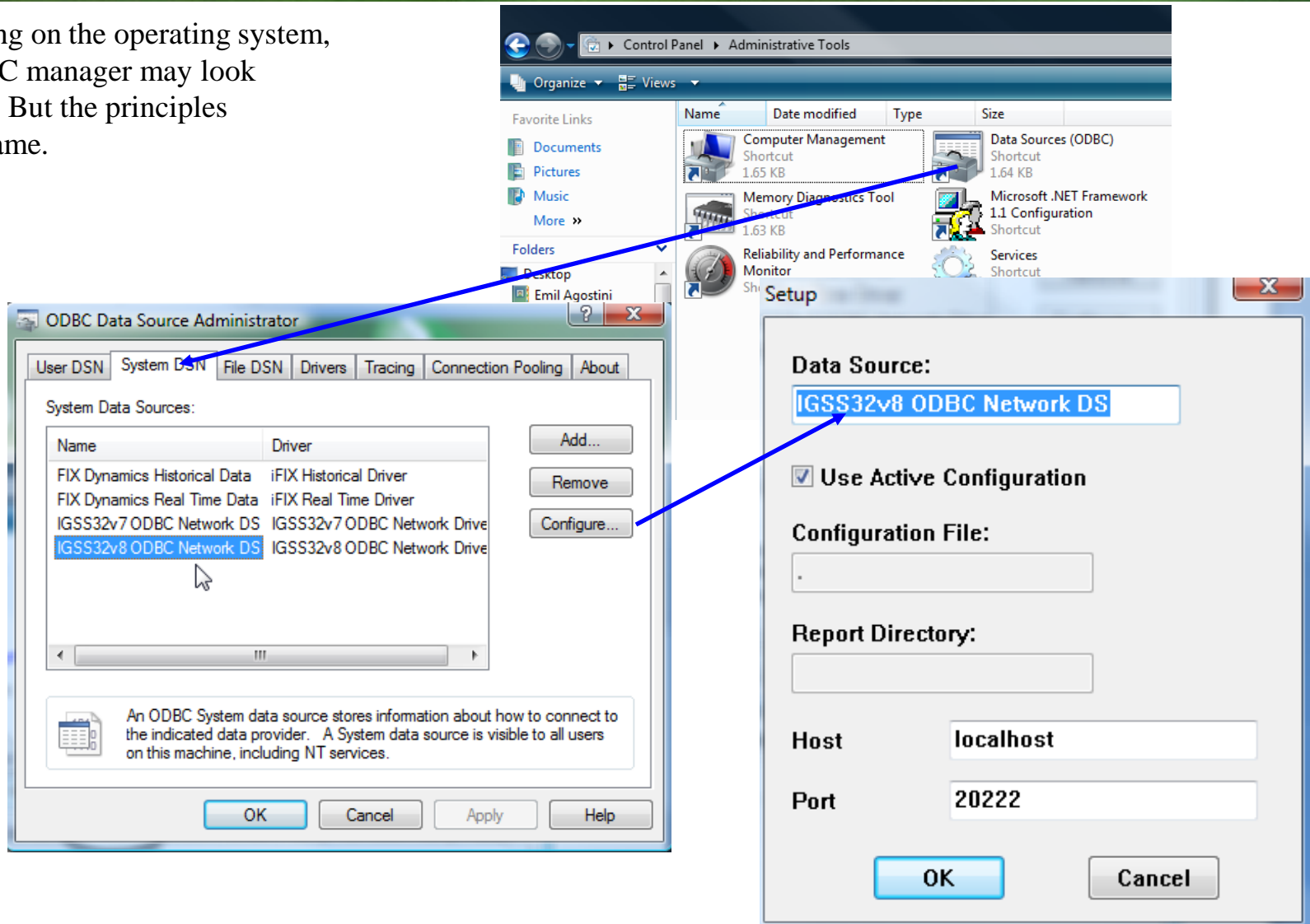
Add... Remove Configure...

An ODBC System data source stores information about how to connect to the indicated data provider. A System data source is visible to all users on this machine, including NT services.

OK Cancel Apply Help

Adding the driver manually

Depending on the operating system, the ODBC manager may look different. But the principles are the same.

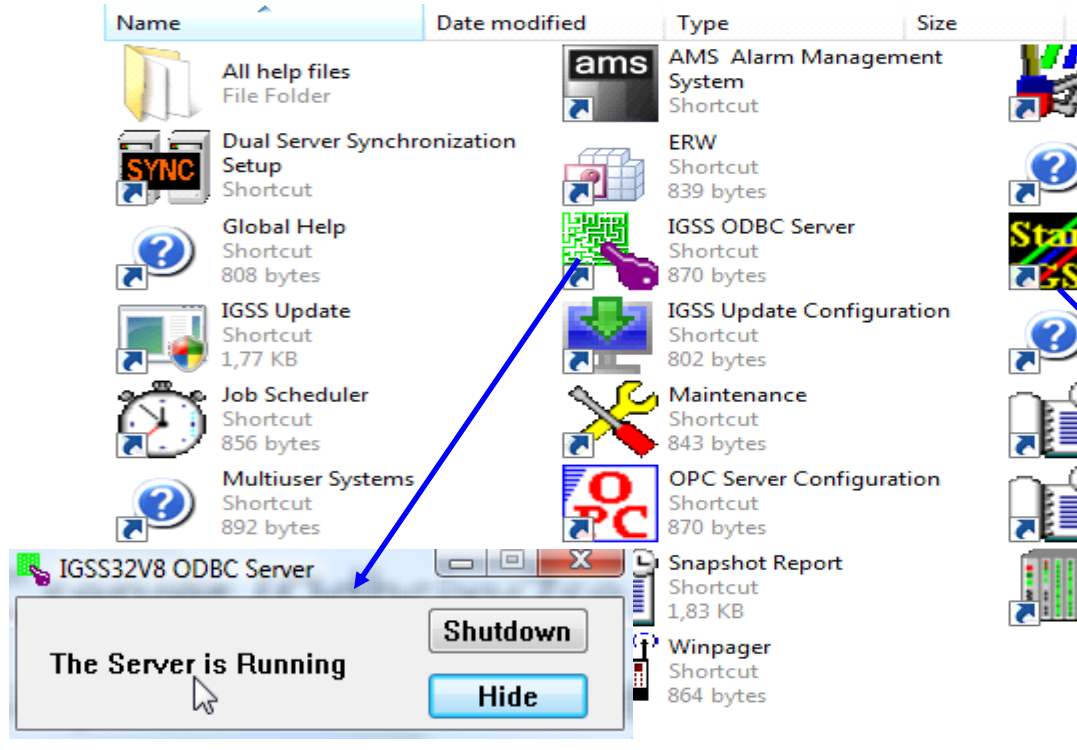


The image shows a Windows Administrative Tools window with several shortcuts. A blue arrow points from the 'Data Sources (ODBC)' shortcut to the ODBC Data Source Administrator window. In the ODBC Data Source Administrator, the 'System DSN' tab is selected, and the 'IGSS32v8 ODBC Network DS' entry is highlighted in the 'System Data Sources' list. Another blue arrow points from this entry to the 'Setup' dialog box. The 'Setup' dialog box has the following fields and options:

- Data Source:** IGSS32v8 ODBC Network DS
- Use Active Configuration**
- Configuration File:** .
- Report Directory:** (empty field)
- Host:** localhost
- Port:** 20222

Buttons for 'OK' and 'Cancel' are present at the bottom of the dialog box.

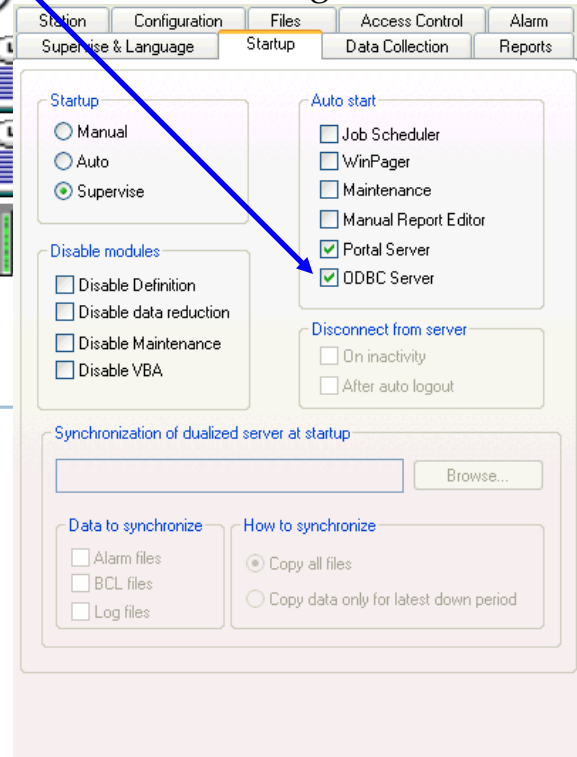
Setting up and starting the server



Name	Date modified	Type	Size
All help files		File Folder	
Dual Server Synchronization Setup		Shortcut	
Global Help		Shortcut	808 bytes
IGSS Update		Shortcut	1,77 KB
Job Scheduler		Shortcut	856 bytes
Multuser Systems		Shortcut	892 bytes
ams		AMS Alarm Management System Shortcut	
ERW		Shortcut	839 bytes
IGSS ODBC Server		Shortcut	870 bytes
IGSS Update Configuration		Shortcut	802 bytes
Maintenance		Shortcut	843 bytes
OPC Server Configuration		Shortcut	870 bytes
Snapshot Report		Shortcut	1,83 KB
Winpager		Shortcut	864 bytes

IGSS32V8 ODBC Server (Tray Icon): The Server is Running. Buttons: Shutdown, Hide.

Auto start
The ODBC Server is started and stopped with the IGSS configuration.



Startup

- Manual
- Auto
- Supervise

Auto start

- Job Scheduler
- WinPager
- Maintenance
- Manual Report Editor
- Portal Server
- ODBC Server

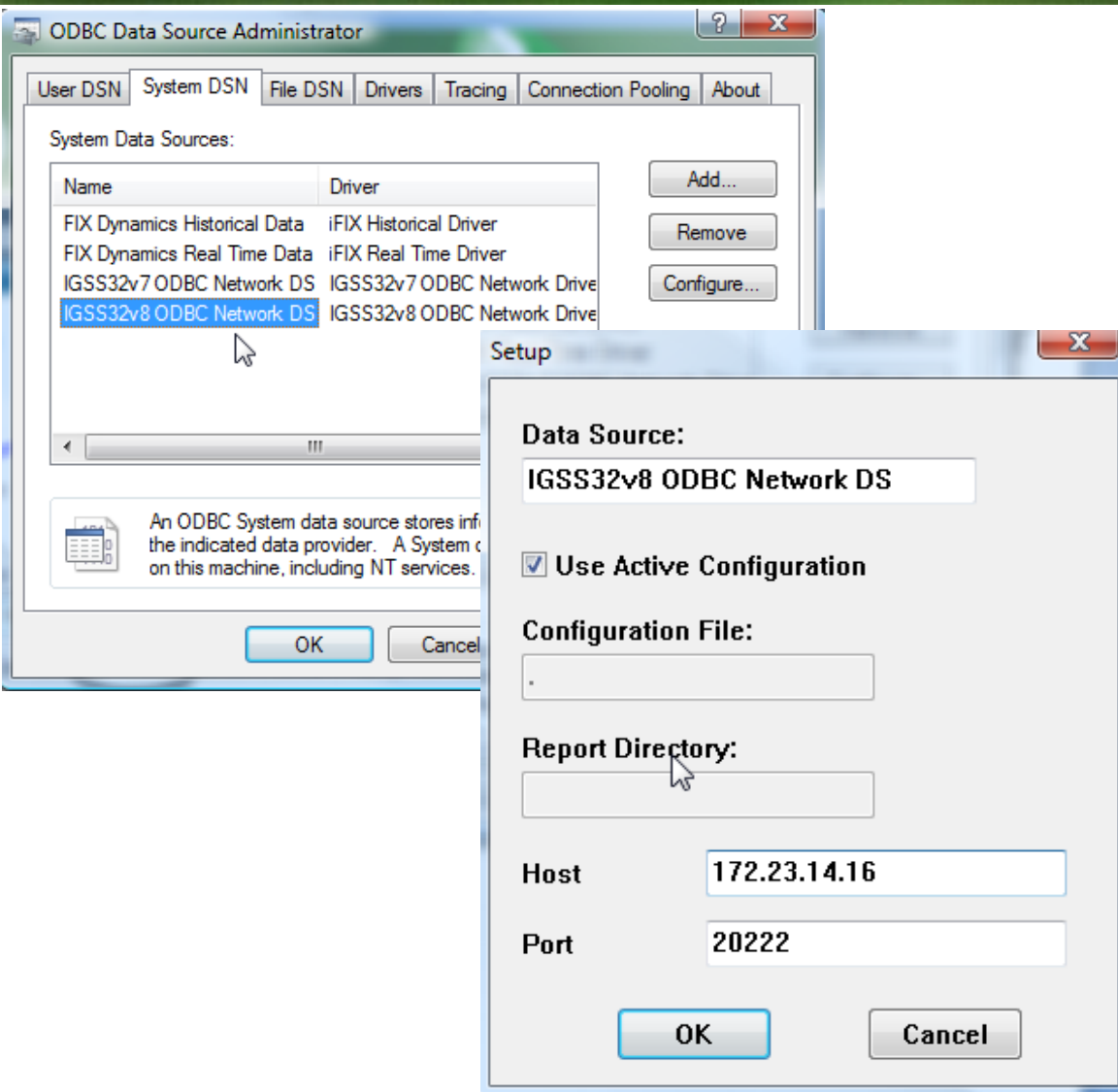
Disconnect from server

- On inactivity
- After auto logout

Manual startup

When manipulating the active configuration via ODBC, the IGSS configuration must not be running. Instead, start the server manually or put it in the Windows Startup group.

ODBC Client Setup



- Multiple data sources
- Active configuration or specify path
- ODBC client points to ODBC server TCP/IP host name and port



When the ODBC Server runs

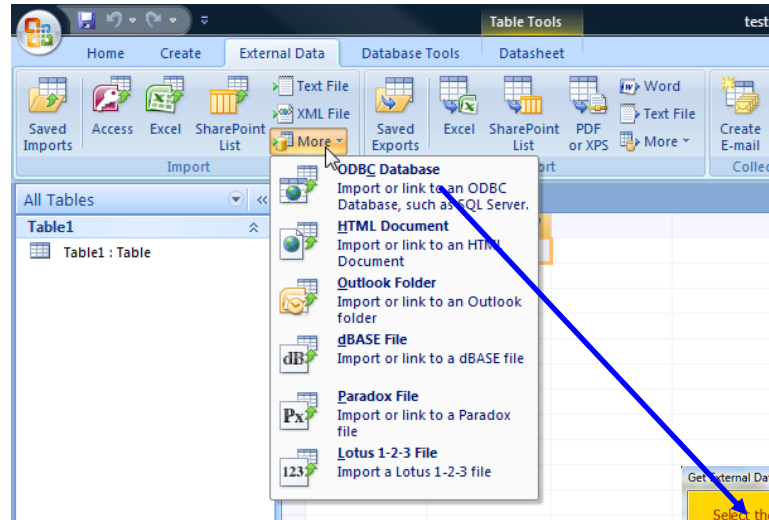
The ODBC Server must be running in order to use these features:

- Object Historian
- Embedded graphs
- Event Report Writer (ERW)
- Snapshot reports

Online Demo

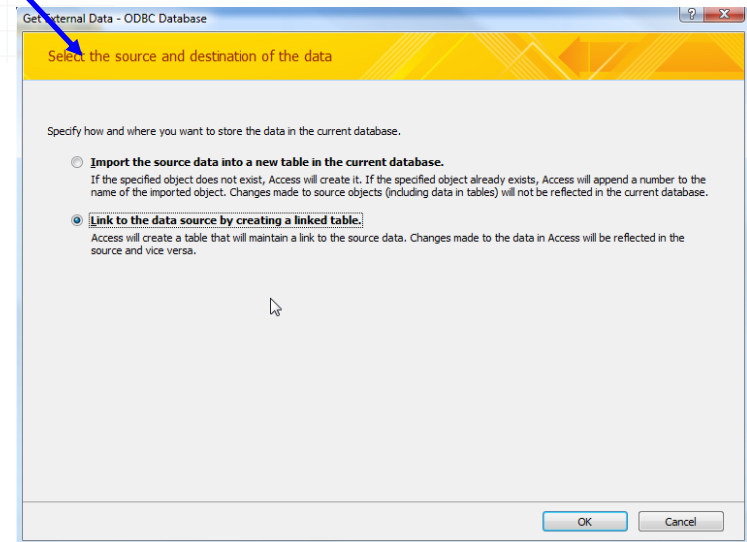
- Show setup under "Data Sources (ODBC)" in the Control Panel
- Show "Auto start" option in System Configuration
- Show how to manually activate the ODBC Server

Accessing the ODBC tables (1)



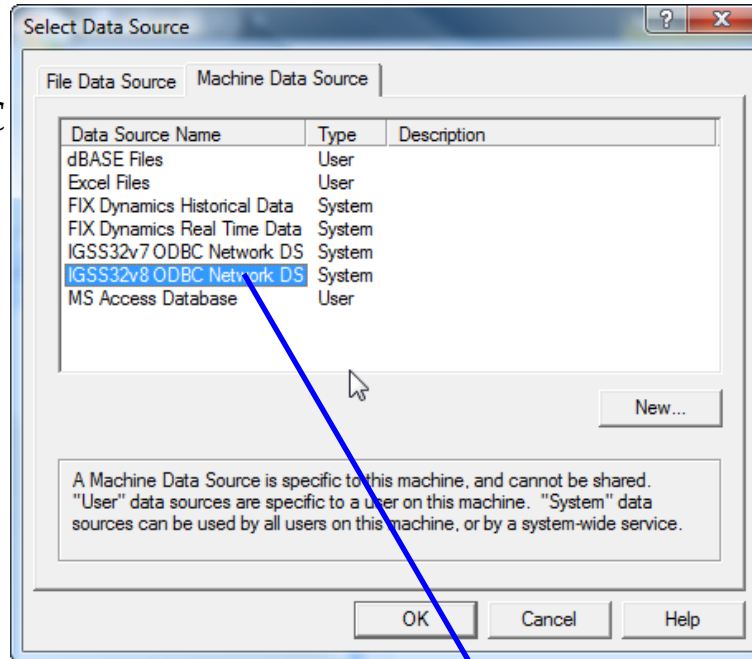
Create a blank database
Put the database in the configuration folder. Name it f.ex. "ODBC.xxx".

Link to ODBC data source
In "Files of type" select "ODBC Databases()".

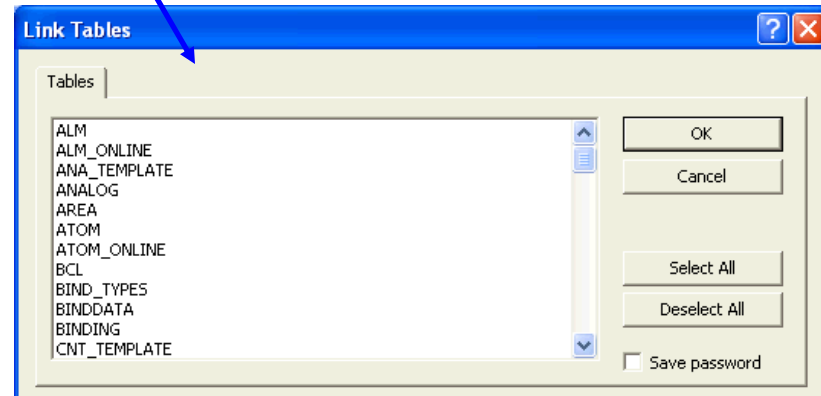


Accessing the ODBC tables (2)

Select the data source
Double-click the IGSS ODBC data source.



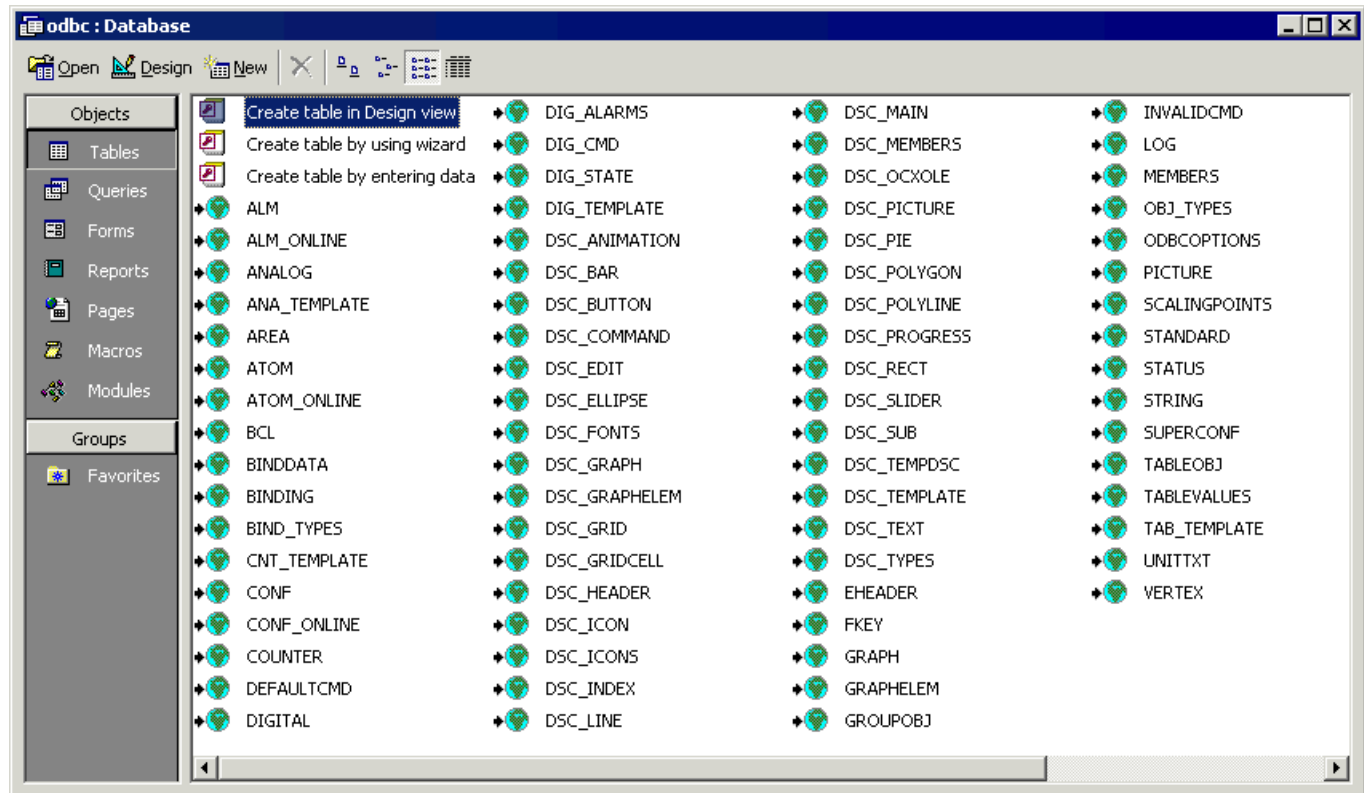
Select the IGSS ODBC tables
Click "Select All" to show all tables.



Accessing the ODBC tables (3)

All ODBC tables

The arrow indicates that the table is linked to the IGSS ODBC driver.

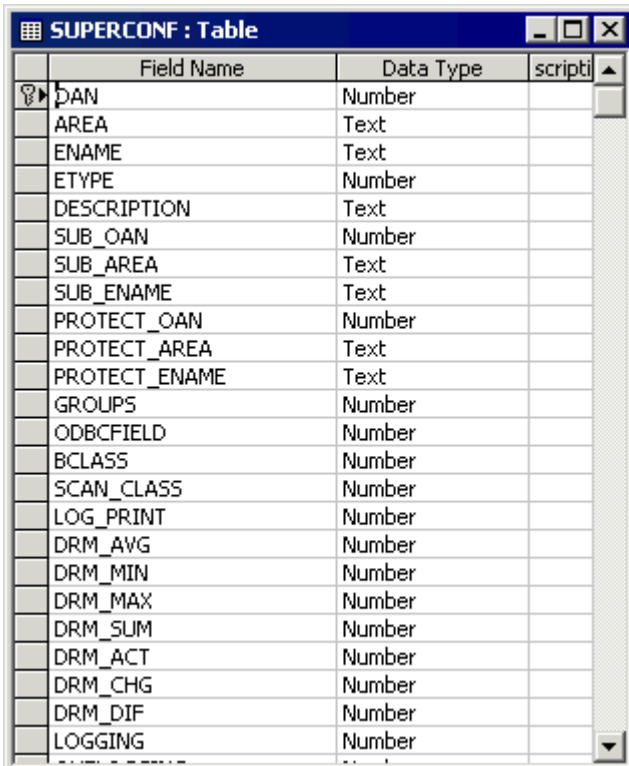


ODBC Tables – overview

- General tables
(CONF, ATOM, SUPERCONF, etc.)
- Type-specific tables
(ANALOG, ANA_TEMPLATE, etc.)
- Process data tables
(ALM, LOG, BCL)
- Online data tables
(ALM_ONLINE, ATOM_ONLINE, CONF_ONLINE)
- Descriptor Tables
(DSC_xxx)

General ODBC tables (1)

The SUPERCONF table

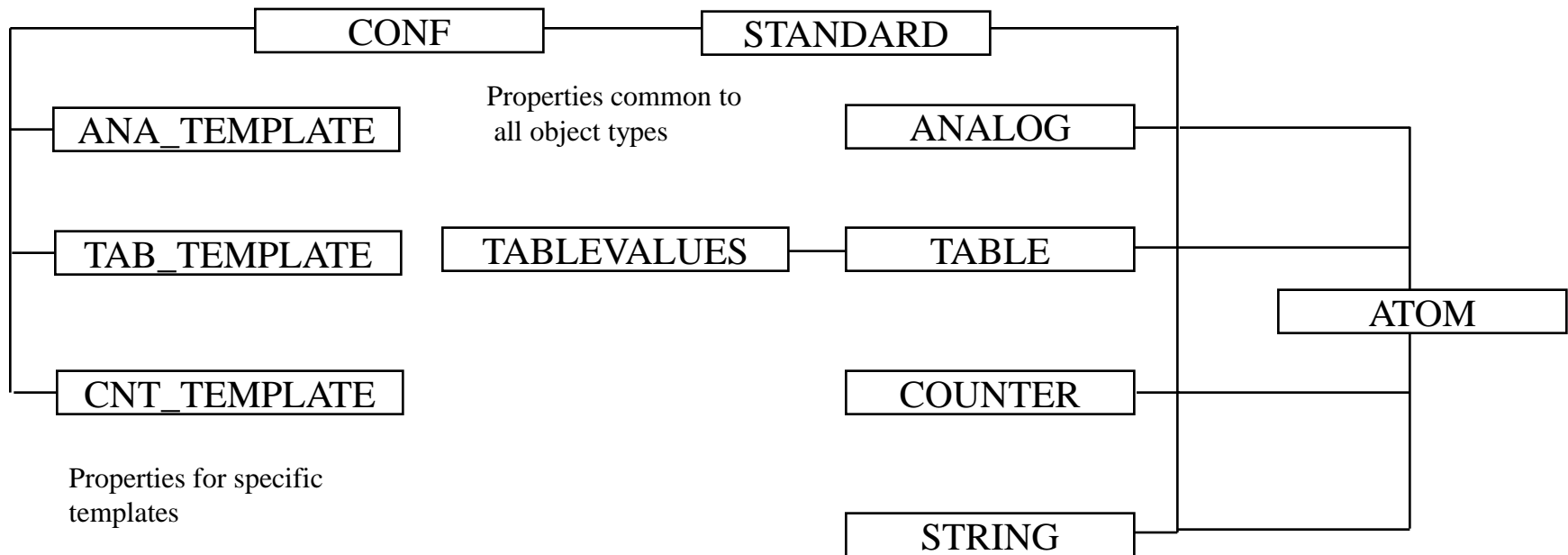


Field Name	Data Type	scripti
DAN	Number	
AREA	Text	
ENAME	Text	
ETYPE	Number	
DESCRIPTION	Text	
SUB_OAN	Number	
SUB_AREA	Text	
SUB_ENAME	Text	
PROTECT_OAN	Number	
PROTECT_AREA	Text	
PROTECT_ENAME	Text	
GROUPS	Number	
ODBCFIELD	Number	
BCLASS	Number	
SCAN_CLASS	Number	
LOG_PRINT	Number	
DRM_AVG	Number	
DRM_MIN	Number	
DRM_MAX	Number	
DRM_SUM	Number	
DRM_ACT	Number	
DRM_CHG	Number	
DRM_DIF	Number	
LOGGING	Number	

- A collection of properties for analog, digital, table, counter and string objects
- Other object types must be defined in CONF
- SUPERCONF creates the required records in the relevant tables

Type-specific tables (1)

Analog, table, counter and string objects

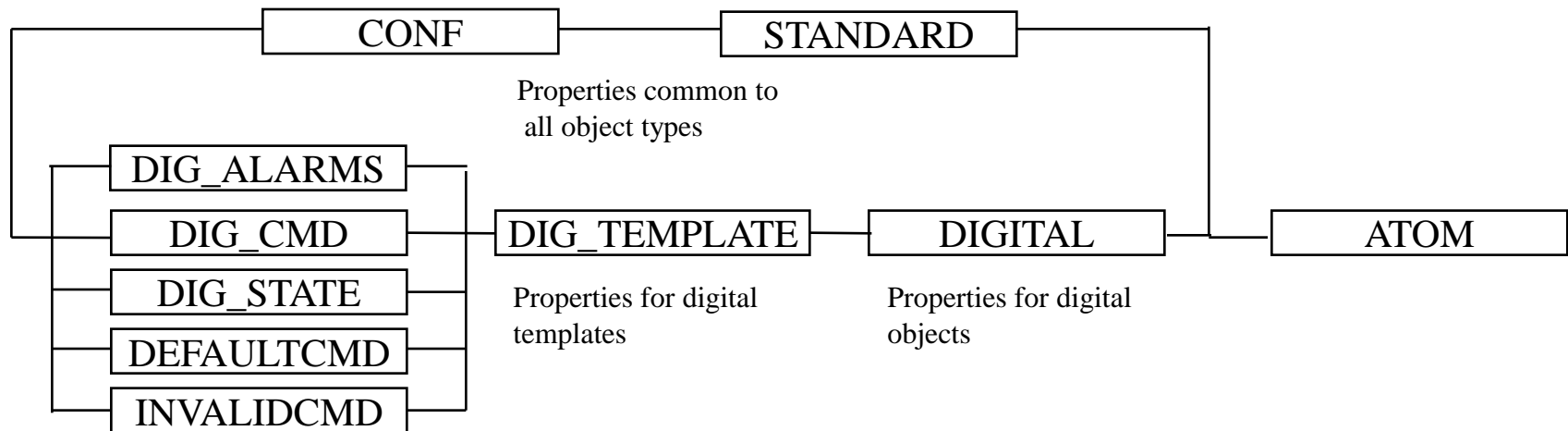


All tables have primary keys on OAN or area name and object name (flat, but simple structure).

These bind the tables together.

Type-specific tables (2)

Digital objects

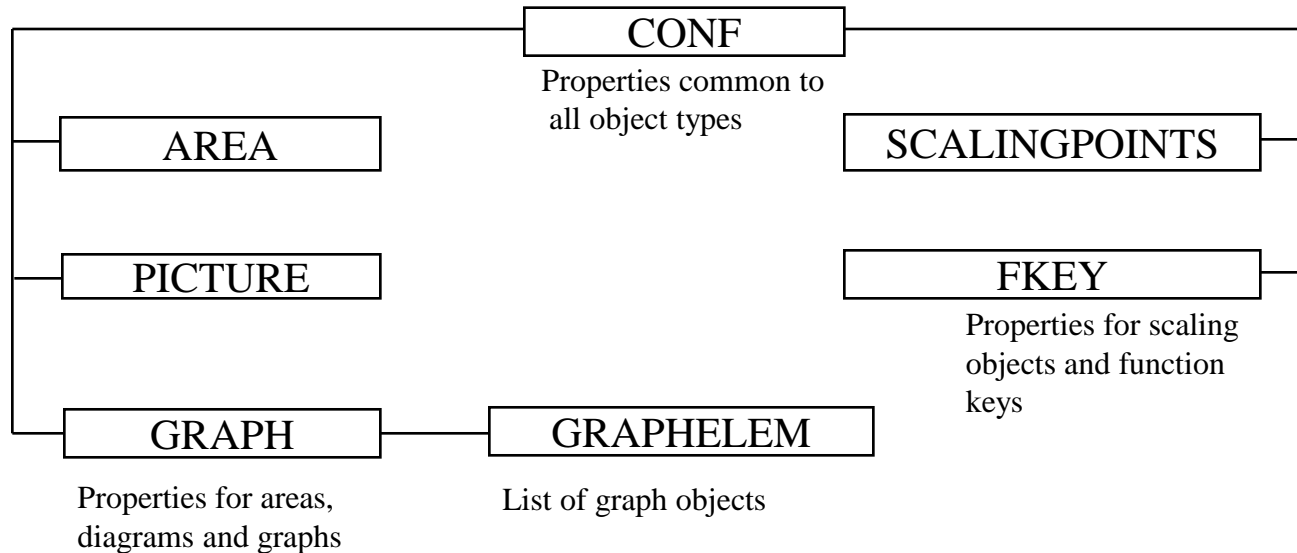


All tables have primary keys on OAN or area name and object name (flat, but simple structure).

These bind the tables together.

Type-specific tables (3)

Non-process objects



All tables have primary keys on OAN or area name and object name (flat, but simple structure).

These bind the tables together.

Process Data Tables

Field Name	Data Type
OAN	Number
AREA	Text
ENAME	Text
ALMNO	Number
BEG_TIME	Date/Time
BEG_MSEC	Number
ACK_TIME	Date/Time
ACK_MSEC	Number
END_TIME	Date/Time
END_MSEC	Number
LASTCHANGE_TIME	Date/Time
LASTCHANGE_MSEC	Number
ALMSTATE	Number
MNT	Number
WORSTVAL	Number
DRIVERID	Number
NODE_NUMBER	Number
CODE	Number
SUBCODE	Number
IGSSUSER	Number

Field Name	Data Type
OAN	Number
AREA	Text
ENAME	Text
ATOM	Number
DATE	Date/Time
MSEC	Number
ETYPE	Number
DVAL	Number
SVAL	Text
LIMIT	Number
STATUS	Number
QUALITY	Number
OUT	Number
IGSSUSER	Number

Field Name	Data Type
AREA	Text
ENAME	Text
IDX	Number
REDUCTION	Number
DATE	Date/Time
VALUE	Number
LIMIT	Number
STATUS	Number
QUALITY	Number
OUT	Number
BCLASS	Number

The amount of data in these tables can be enormous.

Example:

ONE object ONE reduction method BCL reduced every 60 sec.

1440 records/day = 43200 records/month = 525600 records / year



Use as narrow filters as possible when accessing these tables.
Remove old data ("Files" tab in System Configuration)

Online Data Tables

The ONLINE tables

- Values can be changed online

Field Name	Data Type
DAN	Number
AREA	Text
ENAME	Text
ALMNO	Number
BEG_TIME	Date/Time
BEG_MSEC	Number
ACK_TIME	Date/Time
ACK_MSEC	Number
END_TIME	Date/Time
END_MSEC	Number
LASTCHANGE_TIME	Date/Time
LASTCHANGE_MSEC	Number
ALMSTATE	Number
MNT	Number
WORSTVAL	Number
DRIVERID	Number
NODE_NUMBER	Number
CODE	Number
SUBCODE	Number
IGSSUSER	Number

Field Name	Data Type
DAN	Number
AREA	Text
ENAME	Text
ATOM	Number
VALUE	Number
STRING	Text
DATE	Date/Time
MSEC	Number
LIMIT	Number
STATUS	Number
QUALITY	Number
OUT	Number
IGSSUSER	Number

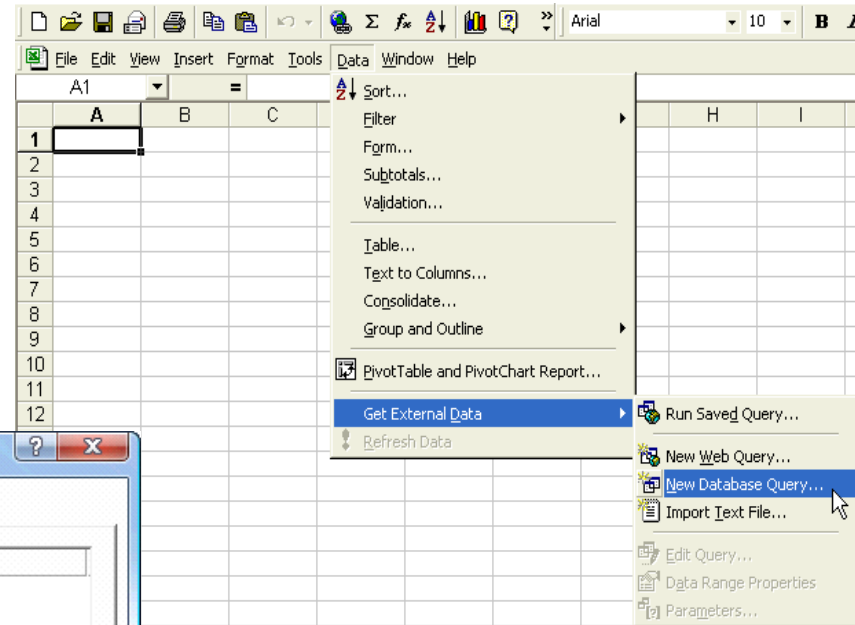
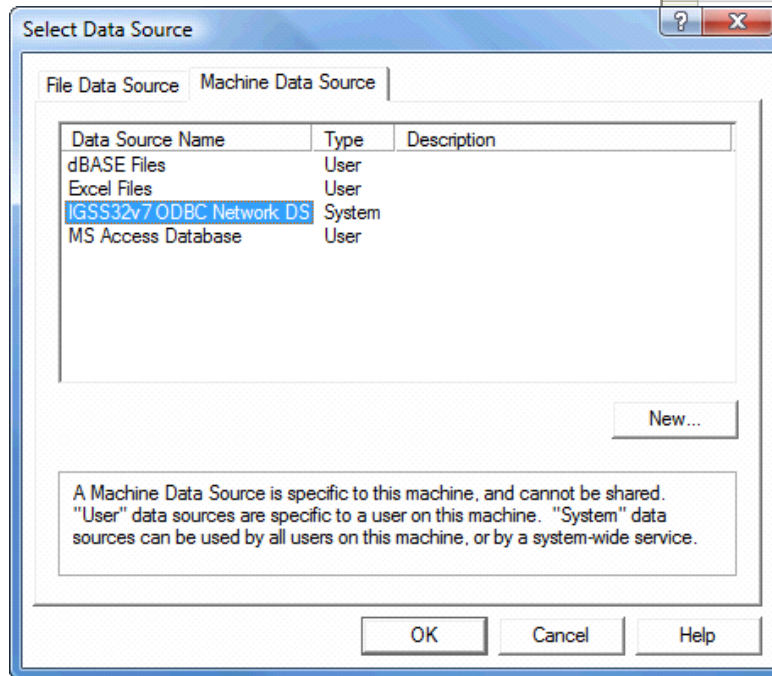
Field Name	Data Type
OAN	Number
AREA	Text
ENAME	Text
PASSIVE	Number
LOGGING	Number
OUTLOGGING	Number
LOG_PRINT	Number
INHIBITALARM	Number

Online Demo

- Create a new database
- Link to the ODBC tables
- Create a new analog object
- Create a new diagram
- Show the resulting configuration

Fetch IGSS Data Into Excel (1)

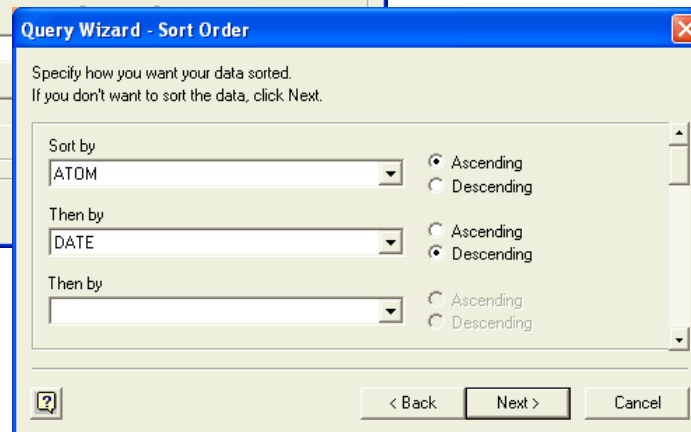
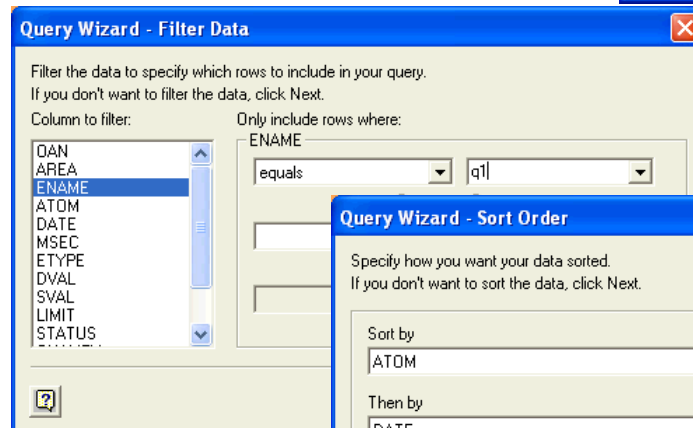
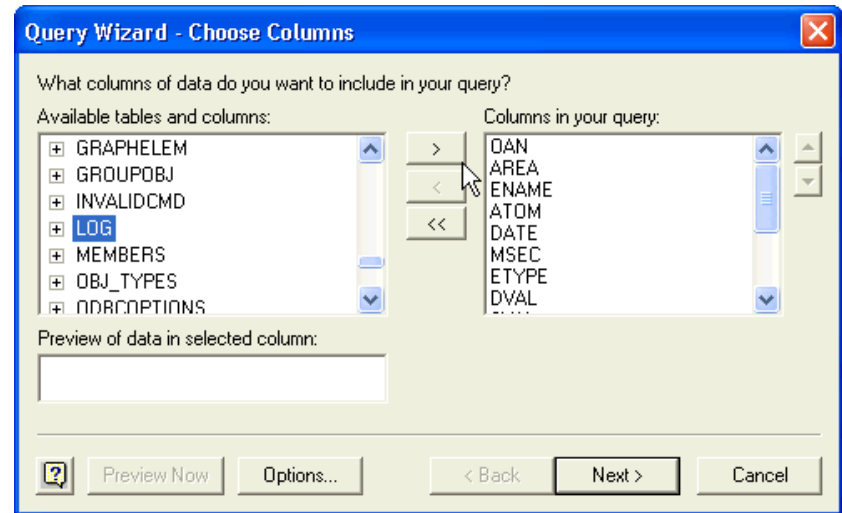
STEP 1:
Import data from
database



STEP 2:
Choose the IGSS ODBC
Data Source

Fetch IGSS Data Into Excel (2)

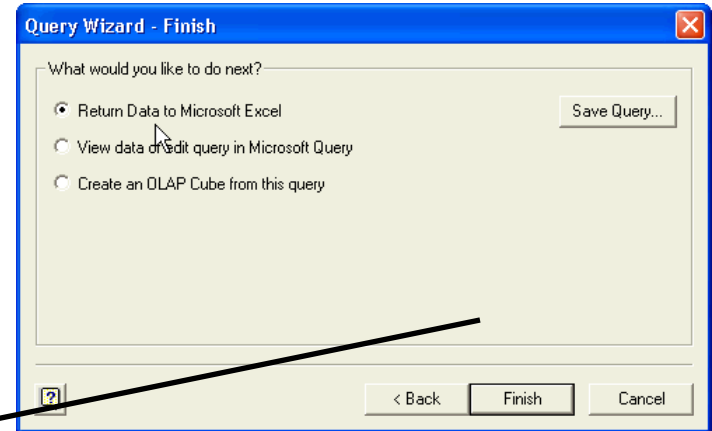
STEP 3:
Choose the ODBC table
and the relevant fields



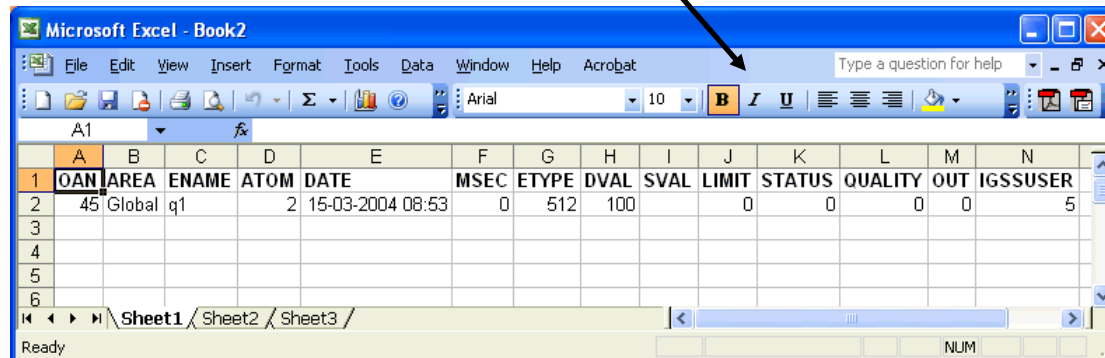
STEP 4:
Filter data and
define sort order

Fetch IGSS Data Into Excel (3)

STEP 5:
Return data to Microsoft Excel



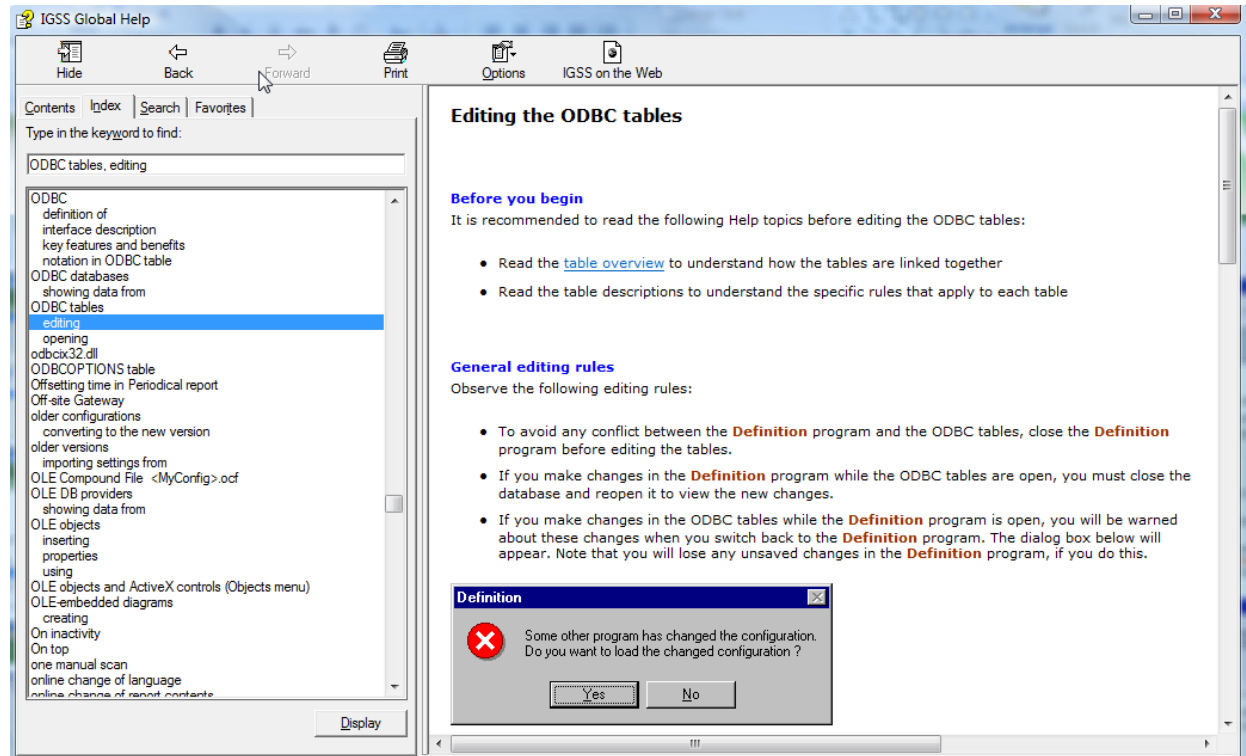
STEP 6:
Specify target cells in Excel



**THE FINAL
RESULT IN
MS EXCEL!**

Interface Help

- Interface overview
- Interface details
- Examples



The screenshot displays the IGSS Global Help application window. The title bar reads "IGSS Global Help". The menu bar includes "Hide", "Back", "Forward", "Print", "Options", and "IGSS on the Web". The main content area is titled "Editing the ODBC tables".

Editing the ODBC tables

Before you begin

It is recommended to read the following Help topics before editing the ODBC tables:


- Read the [table overview](#) to understand how the tables are linked together
- Read the table descriptions to understand the specific rules that apply to each table

General editing rules

Observe the following editing rules:

- To avoid any conflict between the **Definition** program and the ODBC tables, close the **Definition** program before editing the tables.
- If you make changes in the **Definition** program while the ODBC tables are open, you must close the database and reopen it to view the new changes.
- If you make changes in the ODBC tables while the **Definition** program is open, you will be warned about these changes when you switch back to the **Definition** program. The dialog box below will appear. Note that you will lose any unsaved changes in the **Definition** program, if you do this.

Definition

 Some other program has changed the configuration. Do you want to load the changed configuration?