

SouthWare® SQLTools™

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SouthWare SQL Tools

SouthWare SQL Tools is a collection of SQL-related technology designed for SouthWare users. With SQL Tools you have the option to utilize SQL features as you need them while retaining the flexibility resulting from SouthWare's use of a SQL-independent software platform. See the table "Comparing SQL Approaches" at the end of this section for a comparison of the SouthWare SQL Tools approach with other SQL-dependent software architectures.

SouthWare's SQL Tools technology includes the following components:

- **SouthWare ODBC** (using Transoft U/SQL technology)
- **SouthWare SQLView**
- **SouthWare SQLSync**

With these tools you can:

- ★ Access SouthWare data with SQL technology
- ★ Create, save, and retrieve SQL queries from within SouthWare
- ★ Store SouthWare data in SQL tables

Below is a brief overview of each tool. See the introduction to the appropriate section of this document for more details on each tool.

SouthWare ODBC

SouthWare ODBC provides controlled ODBC access (including SQL queries) to your SouthWare data from any ODBC-capable software.

SouthWare ODBC is a special software "wrapper" built around Transoft U/SQL, a leading ODBC connectivity software solution. SouthWare ODBC is provided as a standard function of the SouthWare platform and is tightly integrated with SouthWare features.

SouthWare SQLView

SouthWare SQLView allows you to access SouthWare data via SQL statements and review/analyze the data in a SouthWare grid.

SouthWare SQLView can be used for ad hoc (one-time) SQL reporting or for storing SQL-oriented "views" that may be used whenever needed. SouthWare ODBC provides the SQL statement processing via SouthWare's grid technology.

SouthWare SQLSync

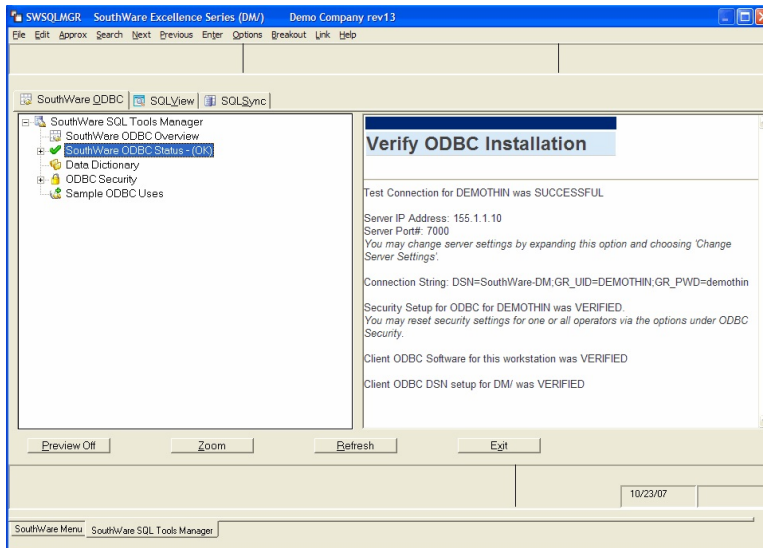
With SouthWare SQLSync you can interactively replicate the data from SouthWare files into corresponding MS-SQL tables. This add-on module lets you review, report, and analyze your data using the many tools available for MS-SQL data tables.

With SouthWare SQLSync your SouthWare system will continue to update its standard Vision file format, but the data will also be updated into corresponding MS-SQL tables. This keeps the MS-SQL tables synchronized with the Vision files. If an error occurs in updating the MS-SQL database then the MS-SQL table can be rebuilt from the corresponding Vision data file.

Comparing SQL Approaches		
	SQL-Dependent Approach	SouthWare's SQL-Independent Approach
Data is accessible for SQL queries via common SQL tools?	Yes	Yes <ul style="list-style-type: none"> • Via ODBC • Via replicated relational database tables
Built-In SQL Query Function?	Yes	Yes Via SQLView
Data is stored in relational database tables?	Yes	Optionally, as Replicated Data
★★Option to use software without relational database software and administration?	No	Yes
Primary processing is done directly to relational database?	Yes	No - secondary replicate
★★Data is safe from unauthorized access (particularly financial data is safe from change)?	Requires that a knowledgeable system administrator properly sets up and monitors security - database is designed to be "open"	Non-replicated data is fairly safe and can also be encrypted - replicated data has same issues as Typical SQL
Data access is fast?	Yes, if database is structured properly and SQL is optimized	Yes, if processing/querying by a key field
★★Business logic uses mature code that has been improved for over 20 years?	??	Yes

	SQL-Dependent Approach	SouthWare's SQL-Independent Approach
Database can be extended with new fields?	Yes Programs must be changed to reference added fields	Yes Extended Data technology
Database can be distributed over multiple servers?	Yes Typically a configurable database software function	Yes Data files can be distributed to different servers
Network traffic can be limited by performing data functions at the server?	Yes SQL commands typically pre-process data on data server	Yes, with Thin Client Thin Client option allows processing on data server
Software uses stored database procedures available for use by other database programmers?	Possibly? Depends on the coding for the application	No Has re-usable subroutines, but not as stored procedures
Software is portable across different operating systems?	Typically Not	Yes
Data is accessible for Internet applications	Yes Via SQL commands or other technology	Yes <ul style="list-style-type: none"> • Via ODBC or replicate data • Via SouthWare NetLink

SouthWare SQL Manager



The SouthWare SQL Manager provides an integrated environment for access to the tools in the SouthWare SQL Tools suite of components. The tabs in this manager organize the available tools into the following areas:

- **SouthWare ODBC** (using Transoft U/SQL technology) - To access native SouthWare data via SQL statements using ODBC technology
- **SQLView** - To create, save, and retrieve SQL queries of SouthWare data (via SouthWare ODBC) using SouthWare grid technology
- **SQLSync** - To store SouthWare data in SQL tables

Using the Manager

- To access a SQL component simply click on its related tab. The options within the tool are organized via an interactive tree view outline.
- As you highlight options in the tree, a preview pane to the right of the tree provides automatic documentation and explanation for the highlighted option.
- For options that have a Zoom or Edit option simply double-click on the item or highlight the item and then click on the related button to launch the feature.

What You Need Before You Start

Here is an overview of the steps to take before you start to use SouthWare SQL

Tools:

- ✓ **Install the SouthWare environment** (with the SouthWare runtime version) and license/register the SouthWare modules you will be using.
- ✓ **For SouthWare ODBC and SouthWare SQLView** make sure the ODBC engine is properly installed on the server and your workstation. This occurs as part of the normal install process but you may confirm that the engine is installed by checking the SouthWare ODBC status in the SQL Tools Manager.
- ✓ **For SouthWare SQLSync** you must license SQLSync, license and install the Acucorp Acu4GL version of your runtime, and install Microsoft SQL Server. The SQLSync server program must be started as a separate background process on your server.

See the Installation Notes section later in this manual for more information.

SouthWare ODBC

SouthWare ODBC provides controlled ODBC access to your SouthWare data from any ODBC-capable software.

SouthWare ODBC is a special SouthWare-specific software “wrapper” built around Transoft U/SQL, a leading ODBC connectivity software solution. SouthWare ODBC is provided as a standard function of the SouthWare platform and is tightly integrated with SouthWare features:

- Your SouthWare Data is available as a standardized ODBC Data Source
 - Bring data into MS Excel, MS Word, queries, report writers, etc.
- SouthWare Security protects ODBC access to your data
 - Access to SouthWare data via ODBC requires login via SouthWare operator login
 - Access to each SouthWare table via ODBC requires SouthWare security level of 4 for the related application
 - Access to each company's data files is secured
- ODBC Data Dictionary
 - ODBC data dictionary of tables/fields built from SouthWare Data Dictionary
 - Automatically updates ODBC data dictionary from user-defined fields in Extended Data
 - Automatically updates ODBC data dictionary for location-specific Warehouse Tracking files
- Automatic Installation
 - Automatically installed on server as part of the SouthWare installation process
 - Automatic setup of ODBC DSN on SouthWare client workstations
 - Provides optional ODBC access for each licensed SouthWare user

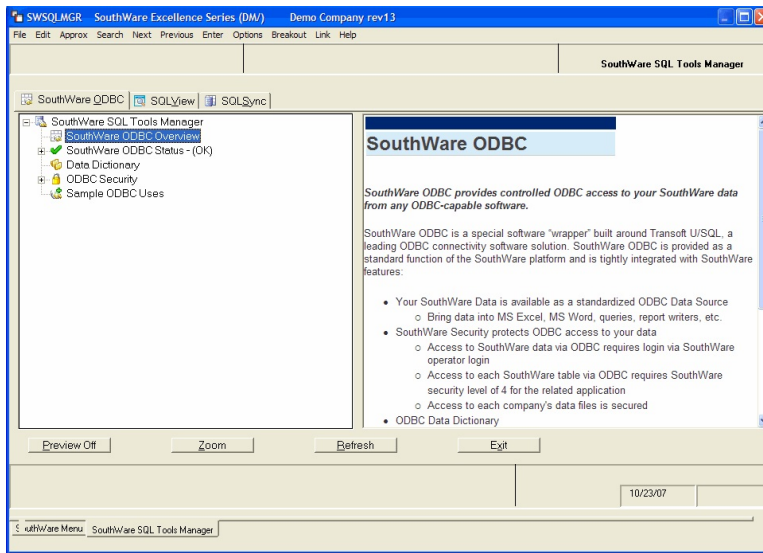
Developer Note:

There is an additional license option that allows the writing of data to SouthWare files using ODBC writeback. Use of this capability **is not normally recommended** since it avoids normal SouthWare data validation, does not update any related data files, and potentially makes your system data wrong and unsupportable. However, a SouthWare developer who understands the implications of writing data to a SouthWare file via ODBC may want to use this option. This option is licensed separately and has related security options (see the “ODBC Security” section of this manual).

If you believe you need this additional licensed option please contact your SouthWare reseller for more information.

SouthWare ODBC **Overview**

This option displays an overview page that outlines the benefits and features of SouthWare ODBC.



How SouthWare ODBC Works

SouthWare ODBC provides a secure ODBC connection to SouthWare's data files from any ODBC-capable software. SouthWare ODBC contains the following components:

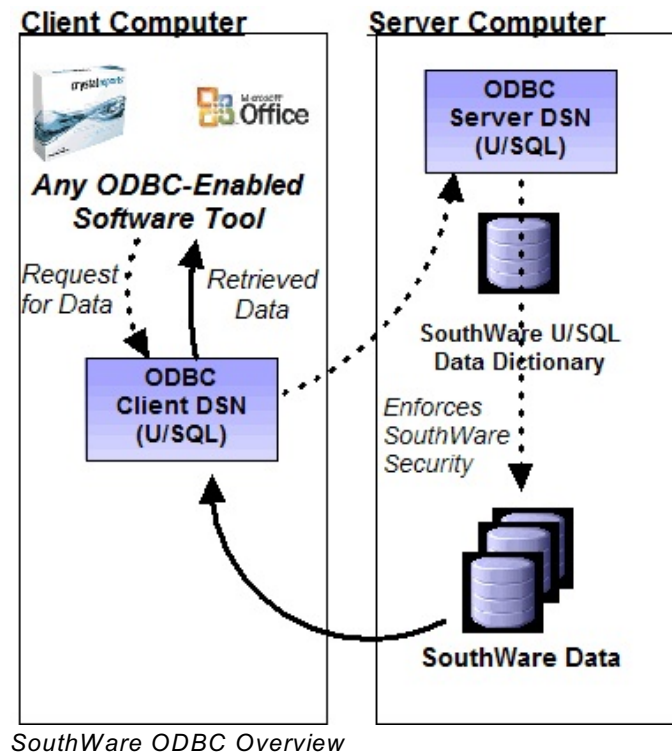
On your SouthWare Data Server

- SouthWare ODBC Server software
- U/SQL Data Dictionary for SouthWare files
- Data Source Name (DSN) for each SouthWare company ID that will use SouthWare ODBC
- Security (Grant/Revoke) Settings for each SouthWare operator and table (stored in data dictionary)

On each SouthWare Client machine

- SouthWare ODBC Client software
- Data Source Name (DSN) for each SouthWare company ID that uses ODBC on the workstation
- Win U/SQL

The following diagram illustrates how these components are used:



Process:

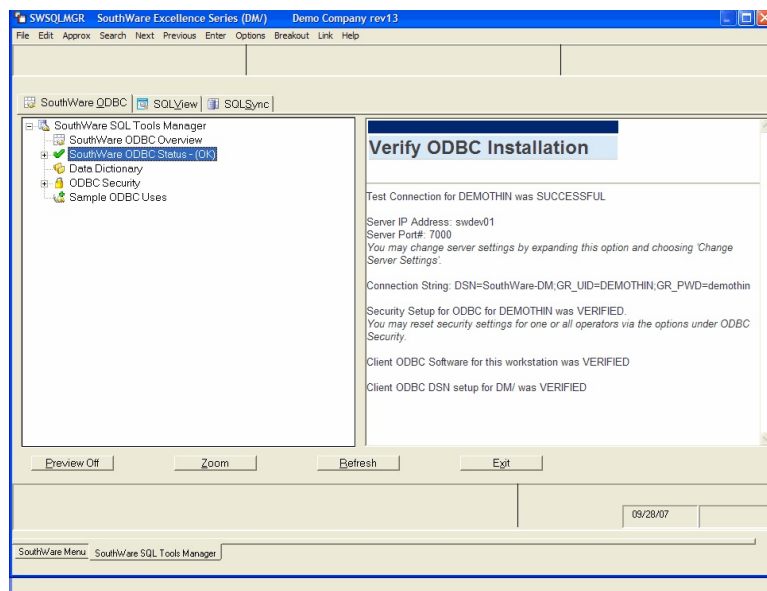
On the client machine the user can utilize any ODBC-enabled software product to access external ODBC data. A DSN for each SouthWare company is shown as an available Data Source. The user selects a SouthWare DSN. *The system requires an operator login and password to validate that the user can access this DSN and to determine which tables are available.*

The user selects the data to be retrieved and initiates the request. The Client software issues a request to the Server DSN for the data. The Server extracts the data and sends it back to the Client DSN to return to the ODBC requestor.

SouthWare ODBC Status - (status)

This option verifies and displays the installation and setup status of SouthWare ODBC. The program tries to do a test connection of the ODBC Server to verify setup.

- If the connection is successful this option will display an “OK” status - this indicates that the related software and data dictionary has been properly installed.
- If the manager cannot confirm that these have been properly installed via a test connection then an “ERROR” status will display.



The display to the right shows verification-related info:

- Whether the test connection was successful
- The Server IP Address and Port #
- The ODBC Connection String for the DSN
- Whether ODBC security for the current operator is set up
- Whether the Client ODBC software is set up on this workstation
- Whether the Client ODBC DSN for the current company is set up

Troubleshooting Notes

- **To set up the Client DSN for the current workstation and company** - If the Client ODBC DSN is not set up you may log off and back on. The logon process will set up the DSN.

- **To install the Client ODBC software on the current workstation** - If the Client ODBC software is not set up on this workstation you must use the Operator/Workstation Manager program to reset the Windows controls for this workstation. Then you may log off and back on to have the client ODBC software installed.
- **To reset ODBC security for the current operator** - If the ODBC security for the current operator is not set up you may go to the "ODBC Security" option in the SouthWare ODBC manager. From this option you may set/reset a single operator or reset the security for all operators.

SouthWare ODBC ➡ Status ➡ Change Server Settings

This option is available only if you are running on the server machine. On Unix/Linux machines or in a Terminal Services network you are typically always “running” on the server machine. If you are on a client machine in a Windows network you must go to the server machine in order to change these settings.

This option allows you to edit the server IP address and port number that were assigned during the setup of SouthWare ODBC Server. Normally you do not need to change these settings, but if they were not properly defined during setup you may edit them here. Zoom on this selection to display a window with the following settings:

Server IP Address

Enter the IP address of the server computer. This is the computer on which the ODBC Server software was loaded and is running. This must be your SouthWare data server machine.

Server Port

Enter the port number used for accessing the ODBC server on your server machine. Typically this will default to port 7000. Normally the only reason you might change this setting is if you are already using port 7000 for some other purpose.

Stopping and Restarting the Server

IF YOU CHANGE EITHER OF THESE SETTINGS you must stop and then restart the server.

- On a Windows Server the program asks if you want to automatically stop/restart the server.
 - On a Unix/Linux Server you must manually stop and restart the server
-
- ✓ Changes will not take effect until the server is stopped and restarted
 - ✓ If you are changing the settings for a functioning server you should do this when users are not accessing ODBC
 - ✓ After you restart the server users must log off and back in to SouthWare in order for the changes to be updated on each workstation

SouthWare ODBC Data Dictionary

This option provides overview documentation for the U/SQL Data Dictionary used by SouthWare ODBC. The data dictionary is installed as part of SouthWare ODBC and is updated by user-defined fields such as Extended Data.

Overview

When you access your SouthWare data via ODBC from other software a DSN is used to access your data. To define the data you want to retrieve you refer to data tables and then fields in tables.

SouthWare provides a U/SQL ODBC Data Dictionary of tables and fields available via SouthWare ODBC. The tables and columns defined in the U/SQL Data Dictionary used by SouthWare ODBC is derived from the SouthWare Data Dictionary used by ReportMate FYI and other SouthWare technologies.

Data Dictionary Differences

There are some important differences that an experienced SouthWare user will notice when using SouthWare ODBC instead of FYI:

- ✓ **File IDs versus Table names based on External file name** - the SouthWare vendor file is "AP01" in the SouthWare data dictionary while the Table name in the ODBC data dictionary is "AVEND"
- ✓ **Field Numbers versus Field names** - the SouthWare data dictionary refers to fields by numbers (AP01, field 1) while ODBC refers to table columns by name (AVEND, VendorNumber)
- ✓ **No "constructed" fields in ODBC** - the data available via ODBC must exist in the file. SouthWare's data dictionary includes numerous "fields" that are calculated or derived from data although the fields don't actually exist in a file.
- ✓ **No predefined pathing ("joins") between tables in ODBC** - SouthWare's data dictionary includes predefined pathing that automatically helps you retrieve data from related files. You can reference data from multiple related files in a single report or web page and the SouthWare data dictionary provides access to the data. ODBC does not provide this automatic "joining" of tables. To access data from multiple files with a SQL statement you must manually enter SQL "join" syntax that references multiple tables.

SouthWare ODBC Security

SouthWare ODBC secures ODBC access to your data using your SouthWare operator security settings. SouthWare ODBC sets grant/revoke privileges for each SouthWare file/table using operator security levels.

SouthWare ODBC controls ODBC access to data from 3rd-party products by requiring the operator to enter a valid SouthWare login name/password when accessing the SouthWare DSN. This is a very critical feature in controlling access to your data. By setting up your SouthWare security levels you are also controlling access from 3rd-party products. For example, when an operator in Microsoft Excel tries to extract data from SouthWare, the ODBC drivers will require a SouthWare login. This login will control which tables the operator may access.

This is similar to the security clearance required by ReportMate and FYI.

Enabling Operator ODBC Access

A flag in the SouthWare operator record (XX-03-02, field 8, "Allow ODBC Access") controls whether an operator may use SouthWare ODBC.

Allow ODBC Access?

By default this option is enabled for all operators - you may use this field to permanently or temporarily disable ODBC access.

Enter "Y" to allow this operator to use SouthWare ODBC to access SouthWare data from other ODBC-capable software. The operator will be able to access tables for applications to which he has a security level clearance of at least 4.

Enter "N" to disable access to SouthWare ODBC for this operator. The operator will be removed from the table of ODBC-capable operators.

The easiest way to review/edit this setting for each operator in this company is via the "Set Operator Access" option described below.

Operator ODBC Access per Table

If an operator who is allowed ODBC access has a security level of '4' or higher for an application, SouthWare ODBC allows access to all tables for the application. If an operator does not have a security level of at least '4', SouthWare ODBC will not allow ODBC access to tables in that application. Each time you add/change operator security in SouthWare the corresponding changes will be made to ODBC access privileges.

When a user accesses a SouthWare ODBC DSN, he must enter his SouthWare login and password. This login then controls which tables the user may query.

Any operator who has a SouthWare security level of at least 4 for the related application may access a SouthWare table via ODBC, but an operator who does not have at least level 4 access for an application will not be allowed to access tables for that application. For example, an operator may not access SouthWare Payroll data via ODBC without at least a security level 4 for Payroll.

Notes on usernames and passwords

- **Duplicate Usernames** - Usernames are not case sensitive. This means that if you have duplicate SouthWare operator names that differ only in case you will end up with only one ODBC username. To overcome this situation you should create unique SouthWare operator names.

The system will update the operator security table in alphabetic sequence (upper case before lower case). For example, if you have operators "Bill", "BILL", and "bill" the last one processed (bill) will be the one in the security table. Only the company and security settings for "bill" will be available for use with ODBC.

- **Blank passwords are not allowed.** If you have a SouthWare operator with a blank password the ODBC password will be assigned as the operator name in all lowercase. For example, if you have an operator "DEMO" with a blank password the ODBC password will be "demo".

SouthWare ODBC ➡ Security ➡ Set Operator Access

This option allows you to review and edit which operators are allowed access to SouthWare ODBC from 3rd-party software. Zoom on this option to display a grid of operators for this company along with the current setting for the “Allow ODBC Access?” option (XX-03-02, field 8).

Operator	Name	Access ODBC?
DEMO	DEMO OPERATOR	<input checked="" type="checkbox"/>
DEMO2	NO DESKTOP!!!	<input checked="" type="checkbox"/>
DEMO C	DEMO OPERATOR	<input checked="" type="checkbox"/>
DEMO DEMO	DEMO OPERATOR THIN	<input checked="" type="checkbox"/>
DEMO LOW	DEMO THIN LOW SECURI	<input checked="" type="checkbox"/>
DEMO RICK	Demo Thin Operator	<input checked="" type="checkbox"/>
DEMO ROB	Demo Thin Operator	<input type="checkbox"/>
DEMO THIN	Demo Thin Operator	<input checked="" type="checkbox"/>
DEMO THN2	Demo Thin Operator	<input checked="" type="checkbox"/>
DEMO TIM	DEMO OPERATOR	<input checked="" type="checkbox"/>
JOHN	John's Demo Oper	<input checked="" type="checkbox"/>
JOHN NEW	John New Oper	<input checked="" type="checkbox"/>
JOHN NEW1	John New Oper	<input checked="" type="checkbox"/>
JOHN THIN	John Thin	<input checked="" type="checkbox"/>
JOHN W\IN	DEMO OPERATOR	<input checked="" type="checkbox"/>
JT640	John Thin	<input checked="" type="checkbox"/>

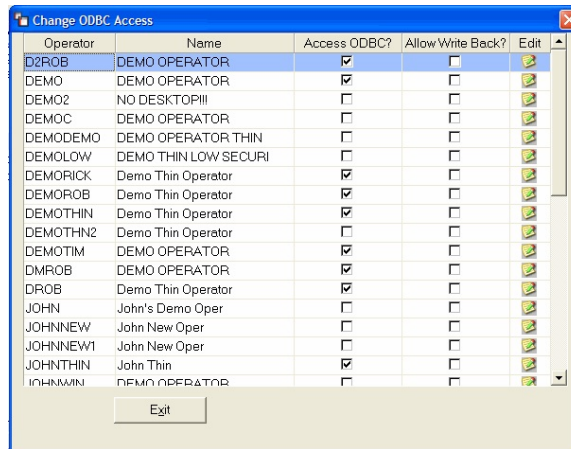
Exit

You may click on the checkbox field to toggle the setting for each operator.

DEVELOPERS OPTION FOR WRITEBACK

If you have licensed Writeback capability

If you license ODBC writeback on a user system then the settings for each operator include writeback options:



Allow Write Back?

Check this option if the operator should be allowed to use the ODBC writeback capability. If this is not checked the operator will not be able to do any ODBC writeback regardless of other security levels for the operator.

When you check this option for an operator the program will display a list of all tables that this operator could potentially update via ODBC. You may place a check beside any available table which should allow ODBC writeback by the operator.

Note:

This list includes only the tables for applications for which the operator has a SouthWare security level of at least 7. If an operator does not have a security level of 7 for an application (maintenance security) then ODBC writeback is not allowed.

Edit Option

If you have already defined writeback tables for an operator and want to edit the tables selected you may click on the Edit button. This will display the list of tables and allow you to change the selections.

SouthWare ODBC ➡ Security ➡ Reset Single Operator

This option allows you to reset and rebuild the ODBC security settings for a single operator. Normally you should not need to run this option but it may be used in a support situation when you believe the grant/revoke privileges for an operator and/or operator tables needs to be reset.

When you zoom on this option the program displays a list of operators with ODBC access. You may click on the reset button beside the operator to be reset. The program will then rebuild the ODBC security settings for the operator. **This may take several minutes** depending on the speed of your computer.

SouthWare ODBC ➡ Security ➡ Reset All Operators

This option allows you to reset and rebuild the ODBC security settings for all operators. Normally you should not need to run this option but it may be used in a support situation when you believe the grant/revoke privileges for operators and/or tables needs to be reset.

When you zoom on this option the program first confirms that you want to reset all operators. It will then rebuild the ODBC security settings for all operators. **This may take several minutes** depending on the number of operators and the speed of your computer.

SouthWare ODBC Sample Uses

This option displays an overview of sample uses of SouthWare ODBC by 3rd-party products such as Microsoft Query and Microsoft Excel. You can refer to an example to help get you started on using SouthWare ODBC to retrieve data into spreadsheets.

SouthWare SQLView

SouthWare SQLView allows you to access SouthWare data via SQL statements and review/analyze the data in a SouthWare grid.

SouthWare SQLView can be used for ad hoc (one-time) SQL reporting or for storing SQL-oriented “views” that may be used whenever needed. SouthWare ODBC provides the SQL statement processing via SouthWare’s grid technology.

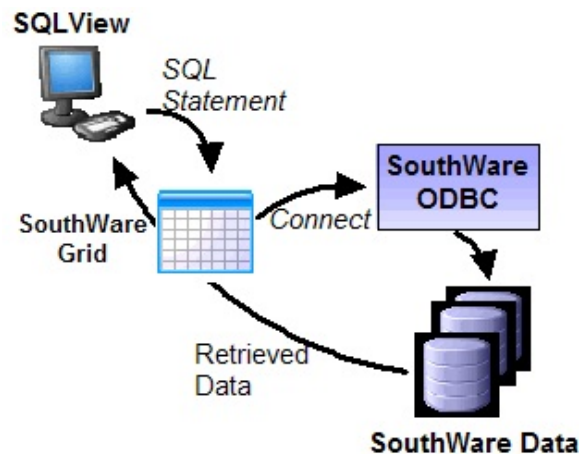
- Flexible SQL Statements
 - Enter any valid SQL “select” statement related to SouthWare data
 - SQL statements can contain SouthWare variables for “smart” views that match current link values
 - SQL Select Wizard to help create SQL statements for SouthWare data
- Speedy Processing
 - Data is “bound” to viewing grid to take advantage of fastest data retrieval
- Reusable View IDs
 - SQL statements can be saved as View IDs
 - SQLView View IDs can be called via SouthWare objects
- Powerful Data Review via Grid Options
 - Sort data by any column
 - Group data by any column (including multiple levels of grouping)
 - Display group totals of numeric data
 - Option to Save Layout
 - Text search within data view
 - Output to MS Excel
 - Output to HTML page
 - Print

SouthWare SQLView **Overview**

This option displays an overview page that outlines the benefits and features of SouthWare SQLView.

How SQLView Works

The grid technology used by SouthWare utilizes SouthWare ODBC to “connect” to SouthWare as a data source and then access SouthWare data via SQL statements.



SouthWare SQLView Overview

This method of data access does not use standard SouthWare data routines. You get the advantage of faster access but will not be able to use the features of SouthWare tools technology such as WorkFlow and link values. This is useful if you simply want to get to the data quickly via SQL statements (data mining) and don't need SouthWare tools features.

Differences between SQLView Data Grids and other SouthWare Data Grids

- When you view data in a SQLView grid the data has been retrieved via SQL/ODBC and the SouthWare program is not “aware” of what has been retrieved or what data is in each column. This means that you cannot zoom to related SouthWare programs or show previews of data in the related records.
- When you view data in other SouthWare grids such as Lookups and FYI, the data has been retrieved via SouthWare routines and the SouthWare program

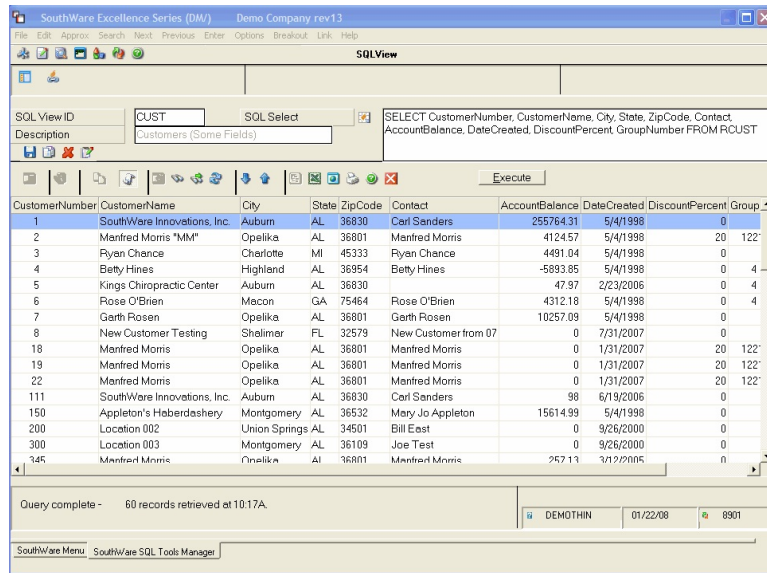
knows what data is in each column. This allows zooms to related programs and preview options showing data from the related records.

The table below summarizes some key results of this difference in how the data is accessed:

	SQLView Grid	FYI/Lookup Grids
Performance	Typically Fast depending on number of records loaded	Speed depends on efficient use of keys and number of records
Able to filter records with selection rules	Yes, via SQL "where" rules	Yes, via record selection criteria
Able to filter/manipulate data via WorkFlow	No	Yes
Able to zoom on a column that has a predefined hyperlink	No	Yes
Able to access "constructed" data not stored in file (see <i>"Data Dictionary Differences"</i> under <i>SouthWare ODBC</i>)	No, unless able to construct via SQL Select statement	Yes
Formatting of data	Depends on ODBC	Formatted based on Data Dictionary or FYI format

SouthWare SQLView Launch Viewer

This option launches the SQLView viewer program. The viewer allows you to use Structured Query Language (SQL) “Select” statements to retrieve data from SouthWare data files. The viewer uses SouthWare ODBC technology to process the SQL statement that retrieves data. The resulting view is displayed using SouthWare grid technology.



SQL View ID:

To create a new or one-time SQL query view leave this field blank. After you have created the view you may decide:

- to save it as a permanent SQL format, or
- to discard the view

To access an existing View ID enter the ID or use the Lookup feature to find the ID. When you enter an existing View ID the program executes the query and displays the retrieved records in the grid.

Description:

This field displays the description and purpose of the query. This is for reference purposes only.

When you are creating a new query this field is skipped. It is applicable only

for saved queries. You may edit this description via the Options button.

SQL Select:

In this field you define the SQL Select statement for this query. The statement you enter here will be sent to SouthWare ODBC to retrieve data from the SouthWare database. See also the "SQLView Wizard" section below.

Overview of SQL Select statements

The syntax of SQL Select statements can be quite sophisticated and is beyond the scope of this manual. A simply query can be done with a statement format of:

```
select (columns) from (table)
```

where columns correspond to fields and table corresponds to a file. For example, the statement:

```
select * from RCUST
```

will select all fields from the customer file and display them in the view. This statement will also retrieve all customers.

A further refinement of this statement might be:

```
select * from RCUST where State = 'AL'
```

This statement would result in a query view with all data for the customers with a state code of "AL".

One more variation might be:

```
select CustomerName, AccountBalance, PhoneNumber, City from  
RCUST where State = 'AL' and AccountBalance > 0
```

This statement would result in a query view that shows customer name, balance, phone, and city for customers with a state of "AL" and a balance greater than zero.

SQL Select statements can be much more complex. Refer to a SQL reference (one of our favorites is [SQL for Dummies](#) by Allen G. Taylor) for more information. There are also many on-line resources on the Web to help you learn SQL Select statement syntax.

SQL Select Statement Validation

Because of the many options available for SQL Select statements the program

cannot validate that the statement you enter is valid SQL syntax. However, it does validate the following characteristics of the statement:

- Statement must start with "select" since SQLView is designed for retrieving data. This also ensures that someone cannot perform other possibly destructive SQL functions via a SQLView statement.
- Statement must have "from" table identified - see also security notes below.

An error is displayed for invalid select statements.

SouthWare Variables

You may insert SouthWare variables (from XX99 fields) into SQL statements. These variables will be replaced at runtime with the current value for the field. This is a very powerful feature that allows your SQL statements to be automatically modified for the current context (record key, date, etc.) each time a view is run.

The syntax for inserting a SouthWare variable is:

<@XX99nnnn>

where "XX99" is the SouthWare Data Dictionary file and "nnnn" is the field number. Any field available in XX99 may be used, which includes:

- Current dates
- Current operator ID
- Current link values (customer number, stock number, order number, etc.)
- Constructed variables (such as calculated dates)
- Ulink fields (possibly populated by WorkFlow)

For example, let's say you want a SQL view that shows you all the invoices in the last 90 days for the current link customer. Create a constructed variable (XX-09-13) that computes a date as the current date minus 90 days (let's say you assign the computed date a field number of "8010" in XX99). The statement could be:

```
select InvoiceNumber, InvoiceDate, TotalPrice from SHST1 where  
CustomerNumber = '<@XX990051>' and InvoiceDate < '<@XX998010>'
```

Each time you run this SQLView the program will first replace the variables with their current values, then execute the SQL statement.

Security Notes:

SQLView uses the security access privileges defined for SouthWare operators to control which data can be displayed. See the related discussion under SouthWare ODBC, Security.

SQLView Wizard

At the Select statement field you may click on the Wizard button to the left of the field ([F5]) to access the SQLView Wizard window. This wizard helps you quickly construct basic SQL select statements for SouthWare data. The SQL Select features supported by the wizard are:

- Select a list of fields (or all fields)
- From a single table
- With up to five WHERE constraints to control the records selected

Note to Advanced SQL Users

You can enter any SQL-supported Select statements for a SQLView, but the wizard will support only the features above. Thus if you want to join multiple tables, ORDER fields for sorting, define BETWEEN values for ranges, etc., you must enter these statements directly into the SQL Select field for the SQLView.

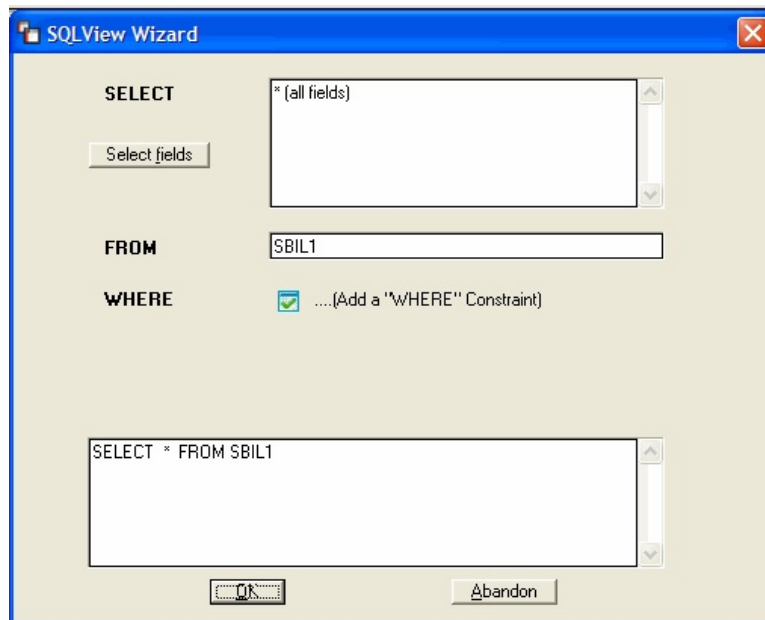
If you plan to enter a more complex SQL statement you could use the wizard to create an initial basic statement and then edit the statement in the SQLView Select field. If you then add features to the statement that are not supported by the wizard you will not be able to use the wizard for any subsequent editing.

To create a new Select statement (the select field is blank) the wizard first asks for the Table name.

Table Name

Enter either the Table name or the SouthWare Data Dictionary File ID for the Table from which data will be selected. You may use ([F3]) to lookup ODBC Table names or use ([F4]) to lookup Data Dictionary File IDs.

For example, if you are selecting records from the Customer File you may enter either the "RCUST" Table name or the "AR01" Data Dictionary File ID.

*SQLView Wizard*

After you specify the Table the wizard window will appear. This window defines the following components of a SQL select statement:

- SELECT (which fields to extract - can be edited)
- FROM (the table being used - display only)
- WHERE (which records to include - can be edited)
- The resulting SQL statement (display only)

Fields to Select

Here you may specify the fields from the table to extract and display in the grid. By default this parameter will be "*" for all fields.

Select Fields

To choose only specified individual fields you may click on the "Select Fields" button. This will display a field selection wizard similar to the one used in SouthWare FYI to select Data Dictionary fields. Since this wizard is for ODBC access the fields shown are the ones available for the Table in the ODBC Data Dictionary, not the SouthWare ReportMate Data Dictionary. You may select as many fields as needed from the tree view list, then click on the Finish button

From Table

This is for display only and shows the table you selected.

Where Constraints

Here you may add SQL “where” constraints that limit the records selected for this view. This is similar to the Record Selection Parameters for a SouthWare FYI report.

When you click on the button to add a WHERE constraint an entry window appears.

SQLView Wizard WHERE Definition

Here are the parameters you must enter to define a WHERE constraint

Choose ‘AND’ or ‘OR’

(Does not apply to the first WHERE constraint)

Here you must specify whether the additional WHERE constraint is an AND condition or an OR condition relative to the previous constraint:

- AND means that the condition must be true and the previous condition must be true in order for a record/row to be shown in the view
- OR means that the condition must be true or the previous condition must be true in order for a record/row to be shown in the view

Table Name

Display only to show table being used.

Field Name

Select a field/column name for the WHERE test from the list of available columns for the table.

Test Operation

Specify the test operation:

- LT - Less Than (results in SQL operator of "<")
- GT - Greater Than (results in SQL operator of ">")
- EQ - Equal To (results in SQL operator of "=")
- NE - Not Equal To (results in SQL operator of "<>")
- GE - GT or EQ (results in SQL operator of ">=")
- LE - LT or EQ (results in SQL operator of "<=")

Test Value Type

Specify the source of the test value for this condition. The value of the field/column specified above will be tested against this value:

- L - Literal - You will enter the test value in the next field.
- S - SouthWare Variable - You will enter the name of a SouthWare variable in the next field (see the "SouthWare Variables" discussion above).
- D - Data Dictionary field - You will specify an available field for this Table from the ODBC Data Dictionary.

Test Value

Enter the appropriate value:

- For a Literal, enter the value to be tested. For example, if you are testing customer balance (AccountBalance) to be greater than (GT) zero, enter "0" here.
- For a SouthWare Variable enter the variable name (format of "<@XX99nnnn>") or use the lookup to select a SouthWare field as described in "SouthWare Variables" above.
- For a Data Dictionary Field select from the dropdown list of available columns.

Example WHERE constraints

Let's say you are creating a view of Sales Orders to review discounts given and want to show only sales orders with a Total Price greater than \$100 and a discount percent greater than 5.

- Enter a WHERE constraint for TotalPrice GT a literal of "100"
- Enter a WHERE constraint "AND DiscPct GT a literal of "5"

The resulting WHERE SQL statement will be

WHERE TotalPrice > '100.00' AND DiscPct > '5'

Toolbar Options

There is a toolbar above the grid that contains special SQLView options. These options are outlined below:

Save a View

This option lets you save the current SQL statement as a SQLView format. You may use this to save a new format or to save changes for an existing format.

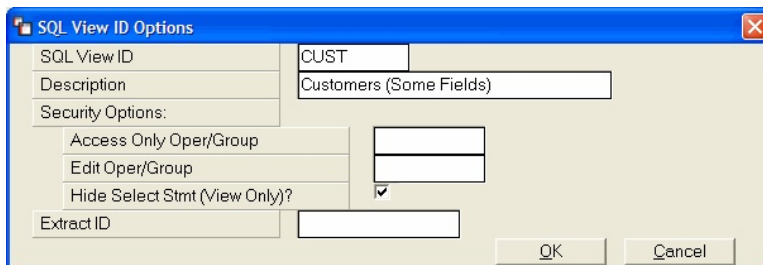
If the format has not been previously saved you must enter the View ID and Description as well as the information described for the Options function below.

Save As

This option lets you copy the current format to a new View ID name. You must enter the new View ID and description.

Delete

This option will delete the View ID format. You may not delete the format unless you have Edit access security.



SQLView Options Definition

Options Button

This function provides access to the following options for a SQLView format:

Description

This is a 30-character description of the view that will display in Lookup lists to help you identify the purpose of the View.

Security Options:

The options below allow you to control access to this View ID. These are optional features related to running the SQLView program - they are in

addition to the ODBC security for the data provided by SouthWare ODBC (see Other Security Notes below).

Access Only Oper/Group

Here you may specify an operator or group that may access and execute the SQLView but may not edit the SQL statement. If you leave this blank then any SQLView operator may access this format.

Edit Oper/Group

Here you may specify an operator or group that may both access and edit the SQLView format. If you leave this blank then any SQLView operator may access and edit this format.

Hide Select Statement (View Only)

Here you may specify to hide the Select statement from view-only operators. The program will hide the Select field from the display for view-only SQLView operators:

- Will not appear in SQLView screen
- Will not appear in SQLView Lookup
- Will not appear in SQLView tree view list

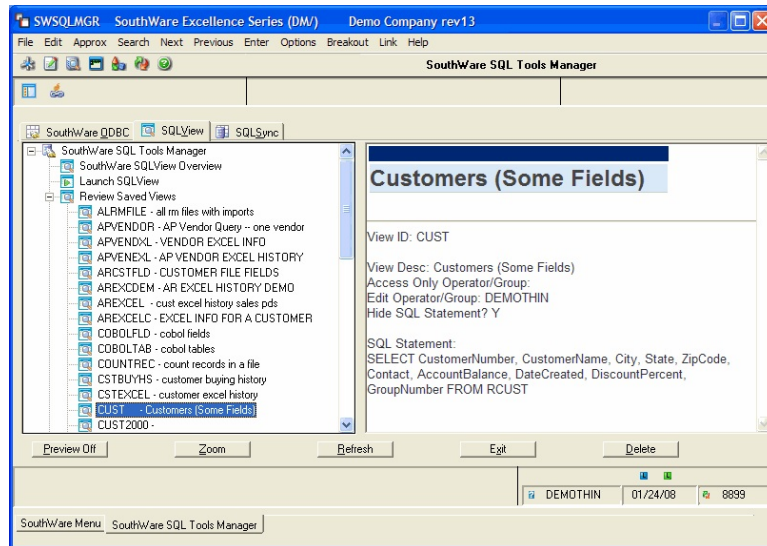
Extract ID

Here you may specify an Extract ID for this format. This allows you to dump and build formats for saving/moving to other systems. See XX-08-06-03 for more information.

Other Security Notes

- General access to SQLView is controlled via an operator option described in the "Operator Access" section below. An operator may have normal access ("Y"), view-only access ("V"), or no access ("N") to the SQLView program.
- An operator must have access to SouthWare ODBC in order to use SQLView.
- Access to a SQLView does NOT automatically give you access to the data. The SouthWare ODBC security allows access only if your SouthWare operator has a security level of at least 4 for the related application. An error displays from SouthWare ODBC if an operator does not have appropriate access to the file.

SouthWare SQLView Review Saved Views



SQLView List

Expand this option to review a tree list of the current saved SQLView views. As you highlight each view the information pane to the right displays the parameters for the view. You may zoom on a highlighted view to run (or edit) the SQLView. You also have the option to delete a format (if your operator record has Edit access for the format).

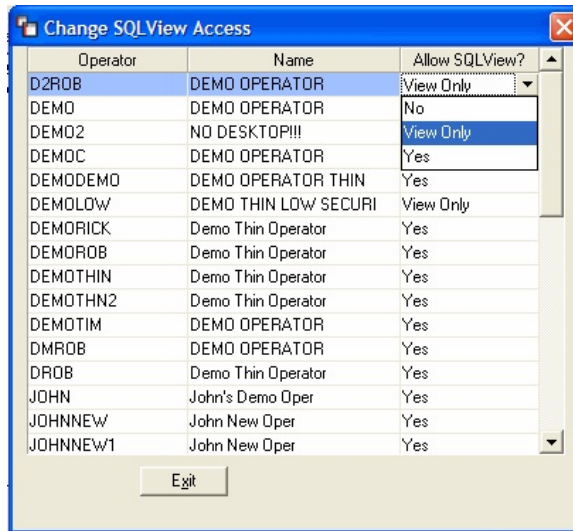
- An operator with SwiftMate security of 7 or higher will see and may delete any SQLView record (unless SQLView access is disabled in the operator record). This provides an administrator review capability regardless of the edit/access operators within the SQLView records.

SouthWare SQLView Related Options

The options in this section document other features of SQLView that you may use within the SouthWare environment.

SouthWare SQLView ➡ Related Options ➡ Operator Access

A SouthWare logon operator option controls whether an operator may use SQLView. You may use this option to grant/revoke SQLView privileges to each operator.



SQLView Operator Access

Zoom on this selection to display a grid of SouthWare logon operators for the current company. Beside each operator you may maintain the SQLView Access option stored in the operator record (XX-03-02, field 8, Access SQLView). Valid values for this option include:

- Y Yes - Allow operator to create and view SQLView views
- V View-only - Allow operator to view but not create SQLView views
- N No - Do not allow operator to create or view SQLView views

SouthWare SQLView ➡ Related Options ➡ Launch Via Object

This option documents the capability to launch a SQLView view via a SouthWare object. This allows you to use SQLView views from menu view portal links, links from buttons, breakout, WorkFlow, and other SouthWare technologies.

The syntax for calling a view from an object is:

`SWSQLGRD/P [viewname]`

where *viewname* is the View ID for a saved view.

SouthWare SQL Tools

SQLSync

SouthWare SQLSync

(Documentation will be finalized after testing/release.)

SouthWare SQL Tools - Installation Notes

The following sections provide more details on the process of installing the software required for the SQL Tools.

Installing SouthWare ODBC

When you install SouthWare on your server the standard SouthWare installation script will automatically install SouthWare ODBC on your server. This will:

- load Transoft U/SQL server software
- load the U/SQL Data Dictionary for SouthWare files
- load the U/SQL Client files that will be needed by client machines
- create some config files based on your server settings

The following configuration process will occur when a SouthWare administrator (with SwiftMate security level of at least 7) logs onto SouthWare:

1. A message explains that SouthWare ODBC is not set up and asks if you are ready to configure it.
2. A question asks you to confirm whether you are running on the server machine (you must be running on the server to configure SouthWare ODBC).
3. A window lets you confirm the IP address of the server (current machine) and the port to use for the ODBC server process (normally you should take the defaults).
 - i. The program creates the ODBC license on the server.
 - ii. The program installs the ODBC server software on the server.
4. A window displays a list of the company IDs on the system. By default the installation process will set up server Data Source Names for each company you use. You may click the "Active?" column to unselect a company if you do not want to set up SouthWare ODBC for that company (e.g. for an obsolete or test company you may not want to set up ODBC).
 - i. The program sets up a Server Data Source Name (DSN) for each SouthWare company ID that will use SouthWare ODBC.
 - ii. The program resets all workstations so that Windows controls will be re-registered at next logon. This will set up the ODBC client software needed for each workstation.
 - iii. The program will reset the Windows control for the current workstation to set up the client ODBC software and client DSN.
 - iv. For the current company the program also:
 - (1) Defines company-specific ODBC tables (if applicable)
 - (a) Warehouse Tracking tables
 - (b) Extended Data tables
 - (2) Defines ODBC Security (Grant/Revoke) Settings for each SouthWare operator and file within the U/SQL security table

On the SouthWare Server machine

After the installation your SouthWare server will contain the following components of SouthWare ODBC:

- Transoft U/SQL Server software
- U/SQL Data Dictionary for SouthWare files
- Data Source Name (DSN) for each SouthWare company ID that will use SouthWare ODBC
- Security (Grant/Revoke) Settings for each SouthWare operator and file within the U/SQL security table

On each SouthWare Client machine

When you log in to SouthWare on a client machine the logon process will automatically install/create the following components on the client machine:

- Transoft U/SQL Client software (loaded from the server)
- Data Source Name (DSN) for the SouthWare company ID (if the company has a server DSN for SouthWare ODBC)

Security Note

By default ODBC access will be enabled for all operators (subject to their security levels). If you want to disable ODBC access for one or more operators you may do this in the operator record (XX-03-02, field 8, "Allow ODBC Access?") or via the SouthWare ODBC Security Set Operator Access option in the SQL Manager.

Installing SouthWare SQLView

SouthWare SQLView is included in the SwiftMate module that is part of every SouthWare system. SouthWare ODBC must be installed, configured, and running as outlined in the previous section. There are no special steps needed to load SQLView.

Security Note

To activate SQLView access for an operator you must specify "Y" to the option "Allow SQLView" in the operator Other Security window (XX-03-02, field 8 Special Security). You may use the "Operator Access" grid available under Related Options for SQLView to quickly set this for all operators.