IBM

Session: 404369

iSeries Access for Windows
Data Transfer: The Basics

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IBM eServer iSeries

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                    Transfer: The Basics

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Agenda Key: 32TA

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Agenda

- Overview of Data Transfer

- Where to find Data Transfer

- How To's of Data Transfer From iSeries

- Data Transfer From iSeries output types

- How To's of Data Transfer To iSeries

- Using the Excel Add-in

- Summary

- What's new

- Documentation

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Topics that will not be covered in detail

- SQL specifics and SQL syntax

- Secure Sockets Layer

- The PC5250 emulator

- iSeries file systems

- Using other methods to get to iSeries files

- HTML language

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What do I need to know to use Data Transfer?

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Overview of Data Transfer

- Uses the iSeries database server to transfer data to and from DB2 database files and iSeries source physical files

- Provides an SQL-like interface to allow full file SELECT or customized queries including joins, sorting, and record grouping

- Capable of transferring data to and from many popular PC file types including ASCII Text, CSV, Excel types, Tab-Delimited Text, Lotus .WK4, and others

- Provides access to iSeries file members

- Transfers may be run interactively, in batch mode, programatically, or directly from Microsoft Excel

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Overview of Data Transfer

Network data flow model
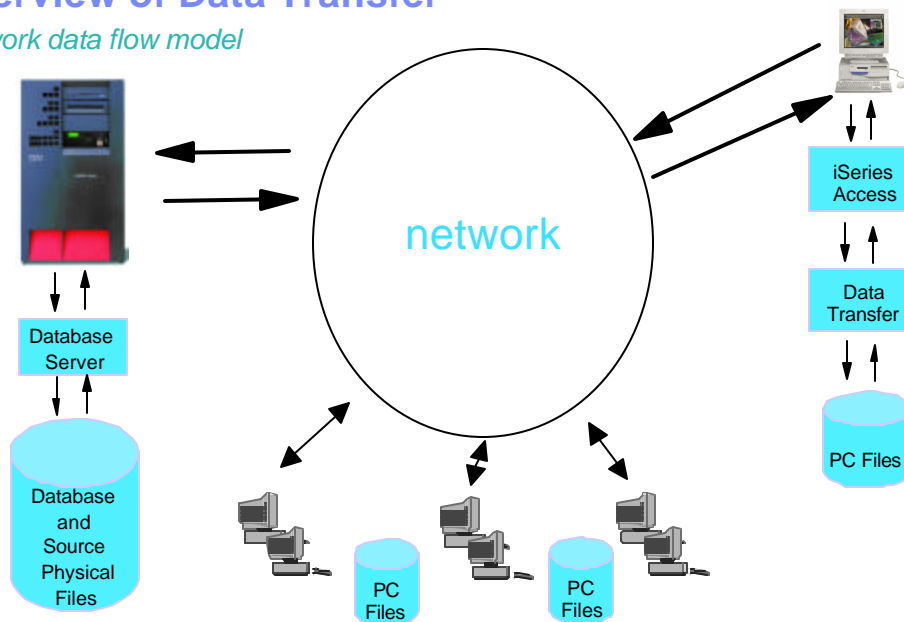
Overview of Data Transfer

Accessing other types of files on the iSeries

- Data Transfer is limited to tranferring source physical files and data physical files to PC file types and PC file types to the source and data physical files on the iSeries. Transferring other types of files to and from a PC and the iSeries requires using other methods. Some other types of files that reside on the iSeries are stream files or flat files such as those stored in the Root or NetWare portions of the iSeries Integrated File System. These files may be accessed using the methods listed below.
  - ▶ iSeries NetServer through 'shares'
  - ▶ iSeries Navigator Integrated File System (IFS) support
  - ▶ File Transfer Protocol (FTP)

Where to find Data Transfer

Where to find Data Transfer
The iSeries Access for Windows Folder

The Data Transfer From iSeries and
Data Transfer To iSeries applications
may be started by double clicking on
their icon in the IBM iSeries Access for
Windows folder on your desktop.
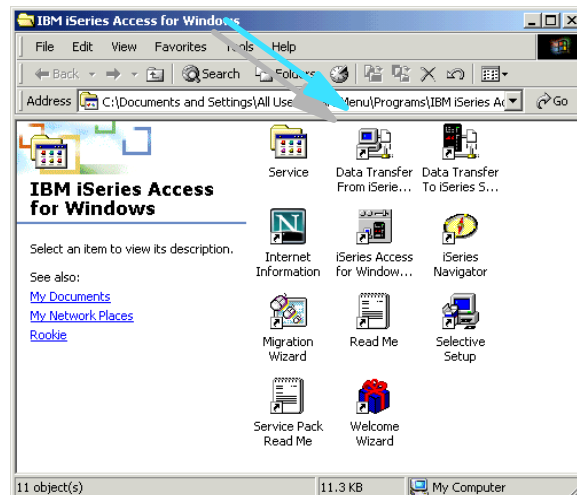
Notes: Starting Data Transfer from the Client Access Folder

Another way of accessing the Data Transfer function is through the iSeries Access menu or the iSeries Access program group.

To access Data Transfer from the menu, click on Start, Programs, IBM iSeries Access for Windows, and then either Data Transfer From iSeries or Data Transfer To iSeries Doing this will bring up a new transfer request that is ready for your input.

If you chose to create a program group at the end of installing Client Access, you can also open Data Transfer From iSeries or Data Transfer To iSeries from the IBM iSeries Access for Windows program group.

After the Data Transfer window is open, you can also load existing requests by selecting File - Open, or by choosing a request from the MRU list in the File menu.

Where to find Data Transfer

Transfer request files in Windows Explorer

Transfer requests may be opened by double clicking on their icon in the Windows Explorer. By specifying the Detail view from the View menu, the Transfer request type is displayed in the right pane of Explorer.

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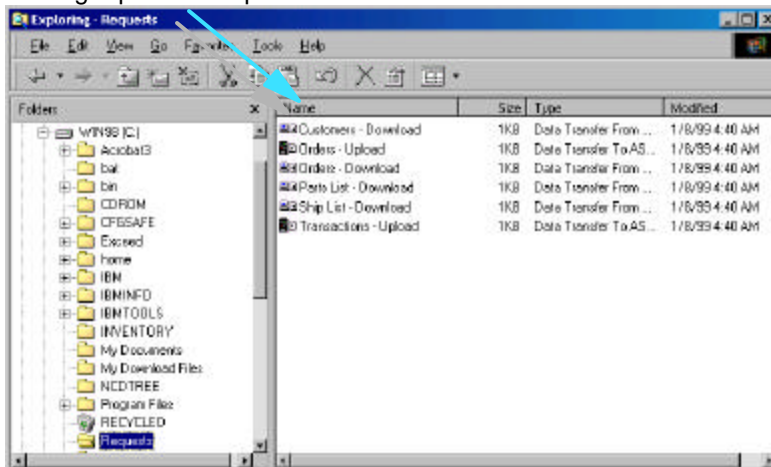
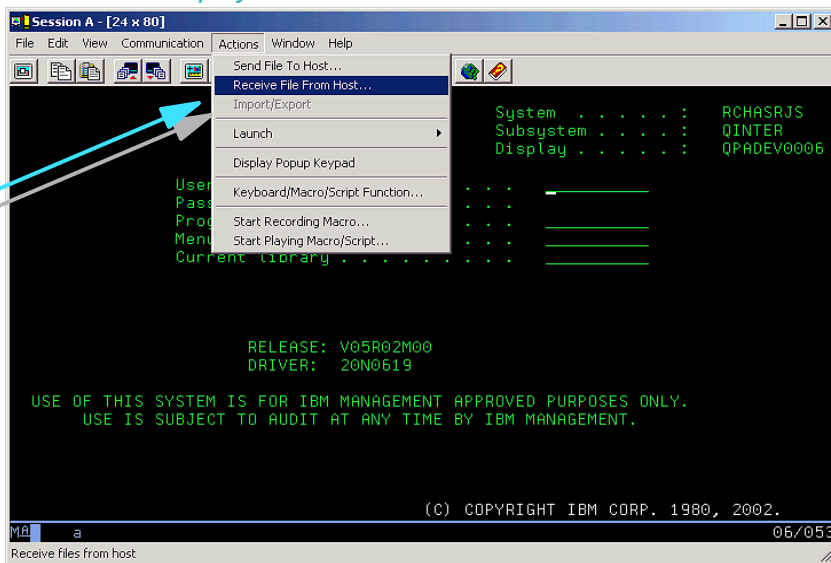# Notes: Data Transfer from Windows Explorer

If you have existing Data Transfer requests, you can also invoke Data Transfer from the Windows Explorer application.

To do this, simply open the Windows Explorer application and locate your Data Transfer requests. Once located, double click on the Data Transfer request you would like to work with. If you double-clicked on a .DTF or .TTO file, Data Transfer From iSeries will be loaded. If you double-clicked on a .DTT or .TFR file, Data Transfer To iSeries will be loaded. In iSeries Access for Windows .DTF and .DTT transfer requests can be setup to execute when they are opened from the Windows Explorer. The process of setting up "autorun" transfer requests is covered in a later section.

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Where to find Data Transfer
Data Transfer from a PC5250 Display Session

Selecting the send or receive options from the Actions menu will start Data Transfer To or From iSeries

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Send File To Host...
Receive File From Host...
Import/Export
Launch
Display Popup Keypad
Keyboard/Macro/Script Function...
Start Recording Macro...
Start Playing Macro/Script...

System . . . . . : RCHASRJS
Subsystem . . . . : QINTER
Display . . . . . : QPADEV0006

User
Pass
Prog
Menu
Current library . . . .

RELEASE: V05R02M00
DRIVER: 20N0619

USE OF THIS SYSTEM IS FOR IBM MANAGEMENT APPROVED PURPOSES ONLY.
USE IS SUBJECT TO AUDIT AT ANY TIME BY IBM MANAGEMENT.

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MA   a   06/053
Receive files from host

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Notes: Data Transfer from PC5250 Display Session

Data Transfer is available from the PC5250 emulator menu items From the emulator menu, select Receive File From Host under the Actions menu item. This will bring up a Data Transfer from iSeries window. Fill in the fields with the appropriate values and run the transfer request.

Transfers to the iSeries can also be performed through the emulator menus. To do this, select Send File To Host under the Actions menu item.

If you prefer the file transfer mechanism of the emulator that was available in previous releases, refer to Informational APAR II10202 to change the menu items to call that version of file transfer.

Where to find Data Transfer
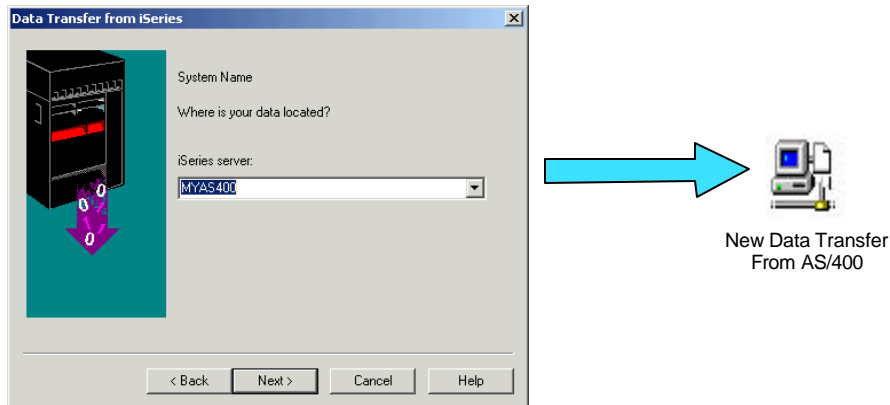*Data Transfer wizards from the Desktop*

A new transfer request can be created easily by right clicking on the desktop and selecting New-> Data Transfer From AS400 or Data Transfer To AS400
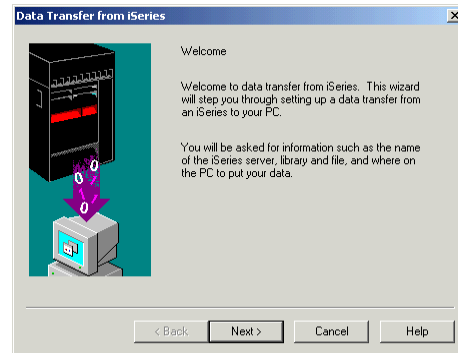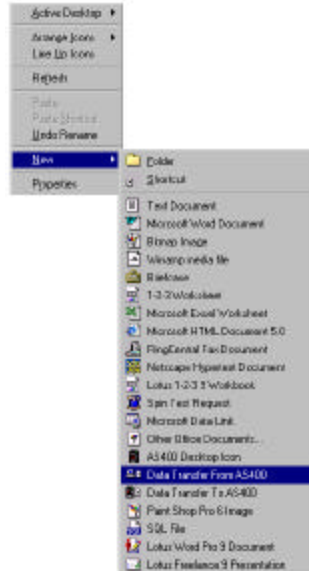
Where to find Data Transfer
Data Transfer wizards from the Desktop

The Data Transfer desktop wizards may be used to simplify the process of creating transfer request files

New Data Transfer
From AS/400

Notes: Data Transfer From iSeries Wizard

To create a new Data Transfer request, users can click the right mouse button on any "open" area on the desktop and select Data Transfer From AS400 under the New menu item.

A Data Transfer From iSeries wizard will be displayed. This wizard will go through a set of pages to assist in setting up a transfer request. The pages will prompt for System name, iSeries database file, PC output device, and allow for selecting more advanced formatting options. This function is also available for Data Transfer To iSeries.

To invoke the wizards manually, enter:

For Data Transfer to iSeries
CWBTF /s [optional file.dtt]

Or

For Data Transfer from iSeries
CWBTF /r [optional file.dtf]

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Where to find Data Transfer

Running Data Transfer from the command line

- Batch
  - ▶ RTOPCB
  - ▶ RFROMPCB

- Wizards
  - ▶ CWBTF /R <filename>
  - ▶ CWBTF /S <filename>

- Data Transfer Graphical Interface
  - ▶ CWBTF /T
  - ▶ CWBTF /F
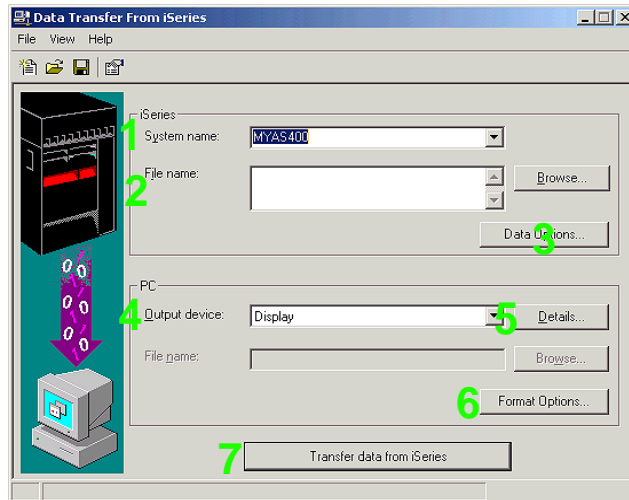 - ▶ CWBTF <filename>

Data Transfer From iSeries

Transferring data from your iSeries

Data Transfer from iSeries

The Data Transfer From iSeries main panel

Use Data Transfer From iSeries to create new transfer request files and to transfer data to the PC.

1. Enter or select the name of the iSeries to transfer data from.
2. Enter or browse for the file/files to transfer to the PC
3. Specify the fields to transfer, conditions on data, and sort order.
4. Select the output device.
5. Set specific options for the output device.
6. Set data options such as date and time formats and decimal separator.
7. Transfer data to your PC.

Data Transfer From iSeries

File   View   Help

1 iSeries
   System name: MYAS400
2 File name: Browse...
                                  Data Options...
   PC
4 Output device: Display   5 Details...
   File name: Browse...
                            6   Format Options...
7   Transfer data from iSeries

Notes: Data Transfer from iSeries

Steps to perform a simple download to a file

1) Start by selecting a system name from the system list.

2) Either enter the library/file you want to transfer to your PC, or select Browse to find the library/file you want to transfer. If the file exists in a library that is not in your library list, type in the library name (no slash) and hit Browse. The Browse dialog will now contain a list of files in the Library you selected. Beginning with V3R1M3, you can also add a library to the library list (up to 32 libraries). This will be covered in more detail later.

3) Select File as the PC Output Device. The default file type is ASCII text.

4) Browse for an existing PC file that you want to transfer the data into, or enter the name of a new file in the PC file name field.

5) Select Transfer data from iSeries. This will transfer the entire database file to the PC.

IBM eServer iSeries

Notes: Data Transfer from iSeries (continued)

Steps to perform a simple download to a file (continued)

6) If you will need to reuse this transfer request, select Save under the File menu.

Other download options:

File Options - You can open and existing request, save the current request, or load a request from the MRU list.

Properties - You can change conversion settings, configure your library list, set security options, and modify other transfer request settings.

Format Options - You can set options such as Date/Time formats, Decimal separator, and National Language specific sorting.

iSeries Data Options - You may set up requests to query for specific data.

PC Output Device - You can transfer data to: Display, File (many different formats), HTML, or Printer.

IBM eServer iSeries

Data Transfer From iSeries
The File Menu - working with transfer requests

Options on the file menu provide a means to work with stored transfer request files.

- File menu options include:
  - Creating a new request
  - Opening an existing request
  - Saving the current request
  - Saving the current request under a different file name
  - Setting request properties
  - Loading a recently used request

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IBM eServer iSeries
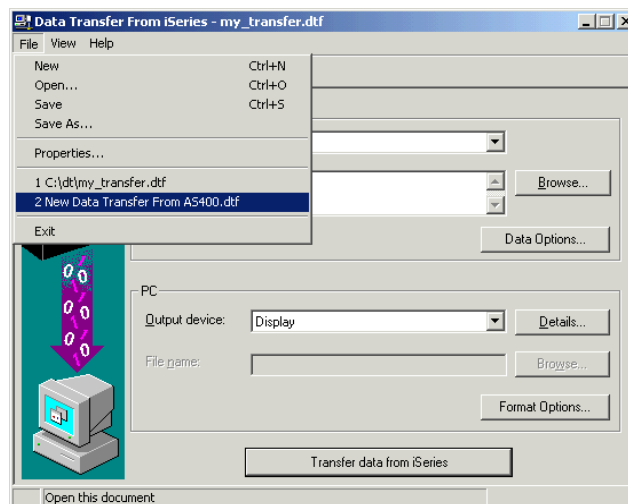
Notes: Data Transfer File Options

Data Transfer has a menu bar.

The main function of menu bar is the File menu. This menu offers items such as New, Open, Save, Save As. These functions make it easier to create, modify, and save transfer requests.

The File menu also contains a Most Recently Used (MRU) list of the last four transfer requests.

Lastly, and perhaps most importantly, is the Properties option under the File menu. This allows users to control conversions, library lists, display options, use of secure sockets, auto-run of the request and more.

For those of you that used CWBTFR.INI to control Data Transfer in the past, the Properties option replaces the INI file. This allows you an easy to use mechanism to control these settings on a request basis. The INI file is still used to "prime" newly created requests.

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IBM eServer iSeries

Data Transfer Properties
Startup Options

Startup options control how transfer requests behave when they are opened via the Windows Explorer or the CWBTF command on the command line.

By enabling 'Run transfer request automatically' and 'Close on completion' inRequest options, a request may run simply by double clicking on it on the desktop or from Windows Explorer.

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Properties
Conversions | Library List | Display | SQL | Connection | Startup

Request options
☑ Run transfer request automatically
  ☑ Close on completion

OK   Cancel   Apply   Help
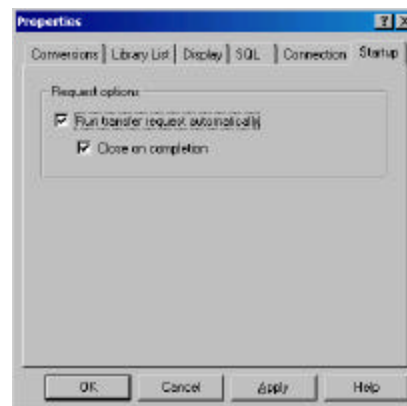
Notes: Data Transfer Startup Options

The Startup options control how a transfer request will be run if started from a shortcut, Start command, or Windows Explorer. The startup options have no effect when a transfer request is loaded from the File-Open menu in Data Transfer.

The main option controls if you want the transfer to run when the request is opened. The secondary option allow you to control if the request closes upon completion.

If both options are selected, this is considered to be an auto-start or auto-run request. With the set of policies that have been added, administrators can allow users to

only run auto-start requests. By doing this, users would not be able to change and perhaps corrupt their transfer requests.

Data Transfer Properties
Connection options

Connection options allow control of available connectivity options for Data Transfer

Through connection options the security and signon information of an iSeries (V4R4 and later) connection may be modified on a per-request basis.
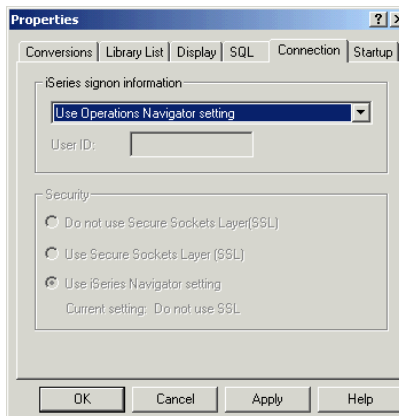
Notes: Data Transfer Connection Options

Signon information

In V5R1 is the option to specify signon options for the current transfer request. The default option is to use the current setting of Operations Navigator. The option to use the current Windows user and password, a specific user id, or to prompt every time may be chosen. In V5R2, the option to use Kerberos was added.

Connection security

Data transferred between the PC and iSeries can be encrypted by using SSL. The use of SSL can be controlled on a request by request basis for Data Transfer.

The default for the use of SSL is to use the Operations Navigator configuration for the iSeries the transfer is running to. This allows users to share transfer requests, and have SSL enabled based on how they have chosen to set the system settings on their PC.

Data Transfer also allows users to override the Operations Navigator default, and specifically set to run with SSL on or off. Running Data Transfer using SSL will affect the performance of the transfer.

SSL must be properly installed and set up on the PC. If it is not, the option will be disabled in the Data Transfer application. Additionally, SSL is only available on V4R4 and later versions of OS/400.

Data Transfer Properties
Conversion options

Conversion options allow for the enablement of special data conversions and for error logging

- Conversion options include:
  - CCSID 65535 conversions - eliminates hex data problem
  - Checking for and logging untranslatable fields
  - Preserve tabs on upload
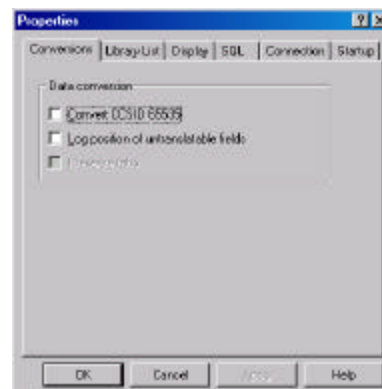
Notes: Data Transfer Conversion Properties

CCSID 65535 data - The use of this support is not recommended, but is supplied as a last resort type of function. If at all possible, the CCSID of the data on the iSeries should be changed to a
valid, convertable CCSID. In the cases where it is not possible to change the CCSID of the data, this option can be used to convert the data from the iSeries server job CCSID to the client CCSID. This implementation assumes the server job CCSID and the CCSID of data in the file are the same. If they are not, invalid data conversions may result.

Check for untranslatable fields - If this support is not selected, Data Transfer will only display a message if translation errors are detected. If this support is selected, Data Transfer will count the number of row/column values that were untranslatable. Additionally, if iSeries Access Detailed Tracing is active, Data Transfer will log a message containing the row/column values that could not be converted correctly. Performance will be affected when running with this option enabled.

Preserve tabs - If this support is enabled, Data Transfer will not convert tab characters to spaces when uploading data to the iSeries. The default behavior is to convert tabs to spaces.

Data Transfer Properties

Browsing your libraries

Where are the rest of my libraries?

The Answer:

They must be added
to your library list!
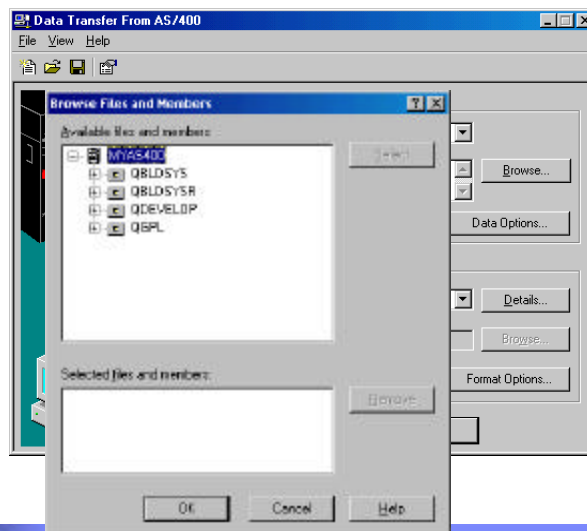
Data Transfer Properties

Working with the library list

The Data Transfer library list allows you to add your own library list to the library list of the current server job

- ► System libraries are the default libraries in the server job library list
- ► User libraries may be added so they are visible in the iSeries file browse window of Data Transfer
- ► User libraries allow file transfers to occur by specifying only the file name

Properties

Conversions | Library List | Display | SQL | Connection | Startup

These libraries are temporarily added to the iSeries job library list while this data transfer request is used.

iSeries library: DATAXFER   Add

○ Beginning   ○ End

Library Name	Type
QTEMP	System
QDEVELOP	System
QBLDSYS	System
QBLDSYSR	System
QGPL	System

Remove

OK   Cancel   Apply   Help
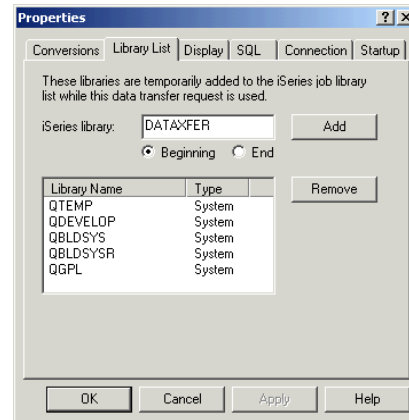
Notes: Data Transfer Library List

The library list page allows users to add libraries to the library list of the iSeries database server job supporting the current transfer request. Doing this allows users to Browse these libraries or to use only file names in the transfer request.

"User" libraries can be added to the beginning of or at the end of the system library list of the current job. The libraries that are added will be saved along with the transfer request will be used when the transfer request is opened again.

NOTE: Using this function will not change the library list associated with the user profile. Changes will only be made to library list of the iSeries database server job servicing the current Data Transfer request.
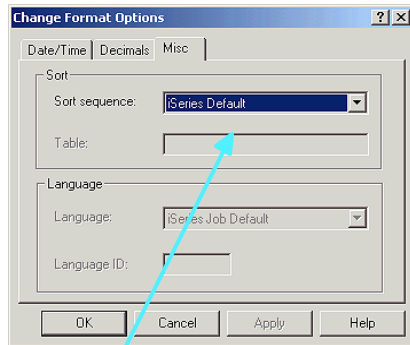

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Data Transfer From iSeries

Data Format Options - Date/Time and Decimals
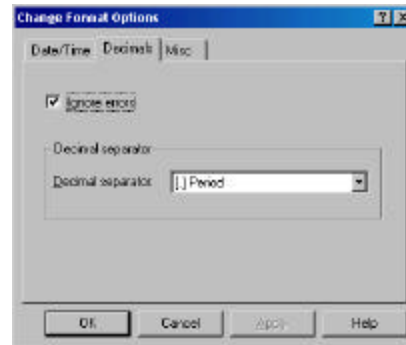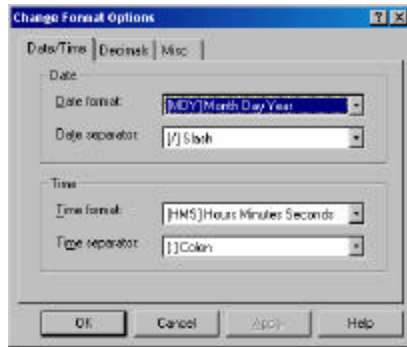
Data Transfer From iSeries

Data Format Options - Misc options

Specify a different language to sort by

Choose a sort sequence
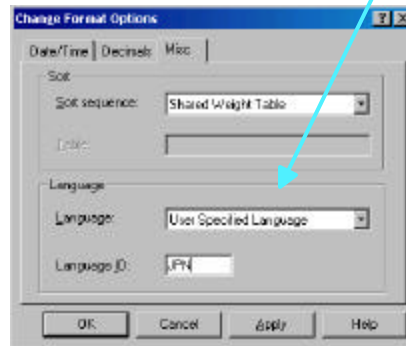
Notes: Data Transfer Data Format Options

Data format options such as date and time format and separator can be set to format date and time fields transferred from the iSeries. Other options include changing the decimal separator, and the sort sequence.

Data Transfer on-line help contains a listing of user defined language IDs.

Data Transfer From iSeries Output Devices

Where, oh where can my data go?

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Data Transfer Output Devices

Selecting the output device

Data Transfer From
iSeries may output to:
• The display window
• An HTML file
• A printer
• A PC file

Data Transfer From iSeries - my_transfer.dtf
File   View   Help

iSeries
System name: myiseries
File name: Browse...
Data Options...

PC
Output device: Display   Details...
  Display
  File
  HyperText Markup Language (HTML)
  Printer
File name: Browse...
Format Options...

Transfer data from iSeries
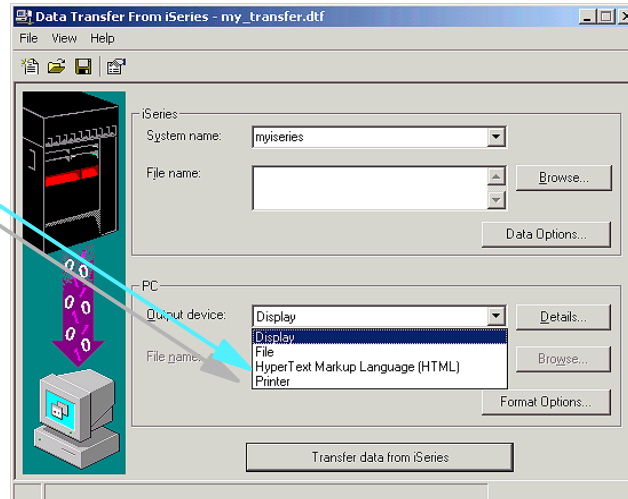
Data Transfer From iSeries

Output devices - Download to Display Details

By selecting the Display device and clicking on details, the Display Details window is displayed.

When downloading to a display window the font used to display the data may be changed to any one of the compatible fonts installed on the PC.

Display Details
Font: MS Sans Serif
Font style: Bold
Size: 12
OK   Cancel
Effects: Strikeout, Underline
Color: Black
Sample: AaBbYyZz
Script: Western
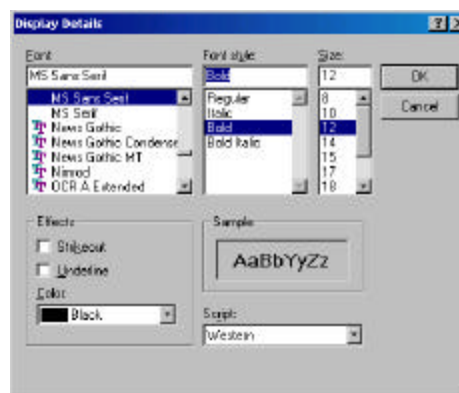
Notes: Configurable Fonts for Download to Display

Data Transfer allows users to select the font they want the data to be displayed in when downloading to display. The selected font can also be saved in the transfer request file for future use.

If a font is not selected, Data Transfer will use its default font for displaying the data.

Data Transfer From iSeries
Results of download to display

Right click on the display window to display a context menu. The context menu has options for exporting display data to the clipboard.

Notes: Data Transfer to Display

Also, don't forget the download to display window has the ability to sort your data for you. To do this, click on the column heading of the column you want to sort. This will sort in ascending order.   If you want sort in descending order, click on the column heading again and the data will be sorted in descending order.

Another item available from the display window is the ability to copy
data to the clipboard. To do this, select a row or rows by clicking on the data in the first column. Next, click the right mouse button on a selected item. You can now copy the selected data to the clipboard.

Data Transfer From iSeries
Output File Device details

1. Select whether to create new or to overwrite or append to an existing file.
2. Select the PC file type.
3. Certain file types have additional configuration options. Select Details to configure those options.
4. Select to translate from the host CCSID to either ANSI or ASCII characters.
5. Select whether or not to save a File Description File (FDF) for the PC file. An FDF is required to transfer the data to the iSeries

File Details

Output PC file
- Create new file
- 1 Overwrite existing file
- Append to existing file

File type:
2 ASCII Text   3 Details

4 Translate EBCDIC to: ASCII
Coded Character Set ID:

PC file description file
☑ Save transfer description
5 File name:
.FDF   Browse...

OK   Cancel   Help

Notes: Data Transfer to PC File Details

Data Transfer has the ability to append data to an existing PC file. This option is only available for the following file types: ASCII text, CSV, No Conversion, and Tab Delimited Text.

Data Transfer also has the ability to create a new PC file or to overwrite existing PC files. When using create or overwrite, the following file types are supported: ASCII text, BASIC Random, BASIC Sequential, BIFF3, BIFF4, BIFF5, BIFF7, BIFF8, Comma Separated Variable (CSV), DIF, DOS Random, DOS Random Type 2, No Conversion, Tab Delimited Text, and Lotus WK4, 123, and 123 Version 9.

Data Transfer From iSeries
Lotus WK4, 123, and BIFF file type options

The Lotus WK4, 123, and BIFF5, 7, & 8 (Excel) file types in Express contain options to create extra workbook sheets when the first sheet overflows, to include column headings, and to place those headings on extra sheets. Since the these file types support a limited number of rows per sheet, extra sheet support is very useful for large transfers.
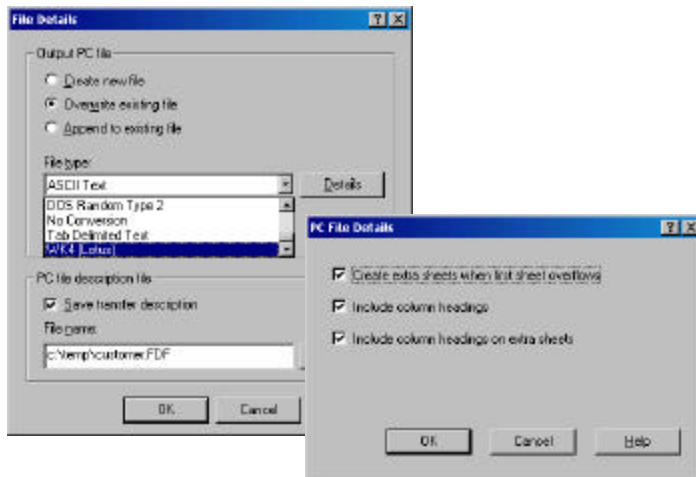
Notes: Data Transfer - Support for worksheets

In the iSeries Access for Windows product, Data Transfer supports Lotus .123, Lotus .WK4 and Excel version 5 to version 8 files. Configuration options have been added for these file types to improve their usefulness.

Lotus 123 and WK4 files only support 8192 rows per sheet. Excel version 5 and version 7 files support 16,385 rows per sheet and version 8 supports 65,536 rows per sheet. Due to this restriction, Data Transfer has options to allow for more data to be written to these files.

The option to control this is a checkbox for "Create extra sheets when first sheet overflows". With this on, for example, if more than 8192 are being transferred from the iSeries to a WK4 file, Data Transfer will create additional sheets until all of the data has been written to the file. (This is limited by the maximum number of 256 sheets supported by Lotus and Excel files.)

The other options control if column headings are included on any of the sheets, and if column headings are included on sheets 2 through n.

Data Transfer File Types
The tab delimited file type

The tab delimited text file type stores data as a flat text file containing field data separated by tabs. An example record may look like:

123 <tab> John Doe <tab> 10.1

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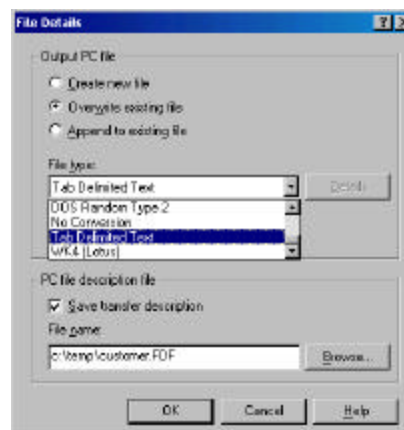
Notes: Support for Tab-delimited Text Files

In the Client Access Express product, Data Transfer has support for transferring to and from tab-delimited text files.

A tab-delimited text file is a file where the fields are separated by tabs, with each line ending combination of carriage return/line feed.

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Data Transfer From iSeries
ASCII File Details

The ASCII file type in allows for configurable truncation of spaces from the end of records, padding of numeric fields with zeros and an option to include an end of file indicator
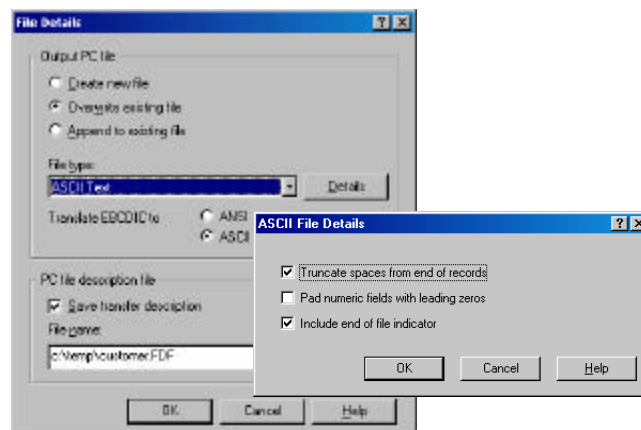
Notes: ASCII Text File Details

Truncate spaces from end of records

The addition of this option allows users to control if spaces at the end of a row are truncated or left as part of the data. In previous versions of Data Transfer, the trailing spaces were always truncated from the end of the row.

Pad numeric fields with leading zeros

This option allows users to choose whether or not to pad a numeric field with zeros if the length of the number is less than the maximum length of the field.

Include end of file indicator

This option allows users to choose whether or not to include the standard DOS ASCII end of file character at the end of the file.

Data Transfer From iSeries
Data Transfer to HTML

Data Transfer supports downloading iSeries data into an HTML file. The HTML file may be published on web server
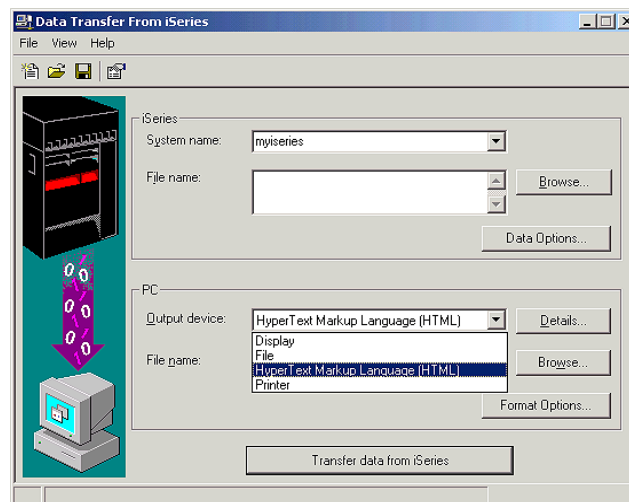
Notes: Data Transfer to a HTML table

Data Transfer supports downloading data into a HTML table format. To download into a HTML table, select HTML as the PC Output device on the Data Transfer From iSeries window.

The HTML tags written by Data Transfer are compliant with the Version 3.2 HTML specification. This means the browser used to read the HTML files must be compliant with the 3.2 specification. Most newer browsers are 3.2 compliant.

There are several property pages in Data Transfer to allow for configuration of how the HTML tables are constructed. These options are available by selecting the Details button next to the PC Output device item. The first two property pages will be discussed here.

There is currently no upload support for HTML tables.

Data Transfer From iSeries
HTML - File options

- File options include:
  - Autosizing - automatically create multiple linked HTML files on large downloads
  - Prompting - turn off prompting if HTML file exists
  - Translation - set the character set used in the HTML document

IBM
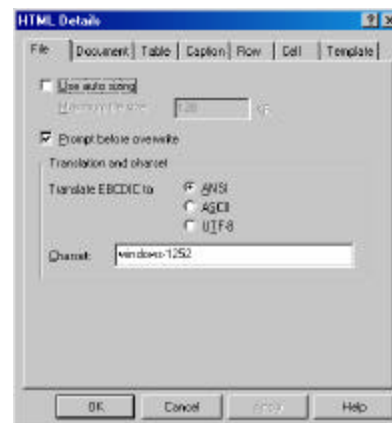
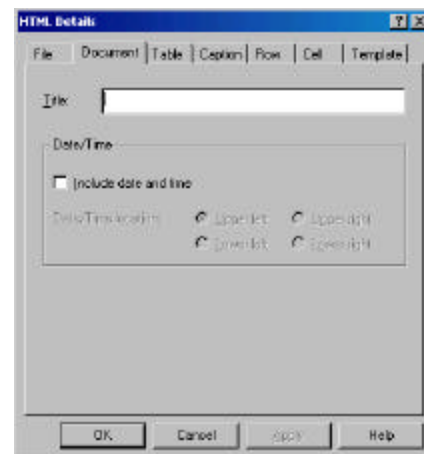# Notes: HTML Table Configuration - File options

Use auto sizing - This option is necessary if you are downloading large files. Many browsers do not support large HTML tables, and will "trap" or "die" when reading them. When using this option, Data Transfer will automatically break the data into separate HTML tables at a specified size in kilobytes. The default is 128 Kb.

Translation and charset - This allows you to select to translate to ANSI (Windows format), ASCII or UTF-8. Also, based on the CCSID of your PC, it will control the charset tag that is written to the HTML file. UTF-8 support allows data from multiple character sets to be displayed on the same HTML page. For example, data in French, English, and Japanese may be contained within a UTF-8 document. If you have the appropriate font, your browser will display this mixed data appropriately.

IBM

Data Transfer From iSeries

HTML - Document options

- Document options include:
  - Title - Add a title to the document
  - Date/Time - Include the date and time on the document in a set position within the document. The data and time format is the format set in the locale of the PC.

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Notes: HTML Table Configuration - Document options

The Document page allows you to set a title in your HTML file. It also allows you to include a date and time the transfer was run and where this date and time is positioned when displayed.

Data Transfer From iSeries

HTML File produced by Data Transfer

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IBM

Notes: Data Transfer to HTML

This screen shows Netscape Navigator displaying the result of a download of the file QIWS/QCUSTCDT into a HTML table.

The table caption and titles were configured in the HTML settings pages.

IBM

Data Transfer From iSeries
Printer device options

Data Transfer supports transferring data directly to your printer. Settings include setting print headings to appear on tops of pages, CPI, LPI, and the truncation of data on pages if the row size is too large for the page.

Printer Details

Print options

Headings:	On all pages
Maximum characters per line:	132
Maximum lines per page:	66
Characters per inch:	10
Lines per inch:	6

☑ Truncate data

OK   Cancel   Help

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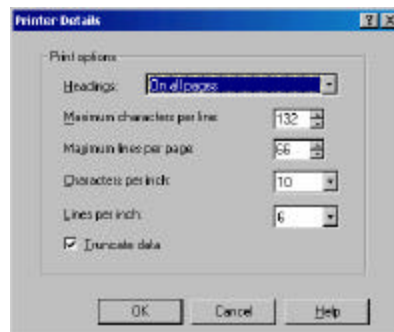
Notes: Data Transfer to Printer

Data Transfer has the ability to transfer data to your PC printer. Options such as where to include headings, number of characters per line, lines per page, and whether or not to truncate extra data can be modified. When transferring data to the printer the standard Windows dialog will be displayed to allow printer selection to occur.
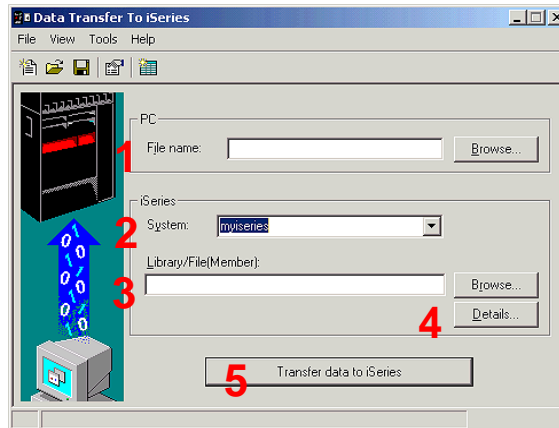
How do I get data to my iSeries?

Data Transfer To iSeries

The Data Transfer To iSeries main panel

Use Data Transfer To iSeries to create new transfer request files and to transfer data from the PC.

1. Enter or select the name of the PC file to transfer data from.
2. Select the iSeries system name to transfer data to.
3. Select the Library/File(Member) to transfer data to on the iSeries.
4. Select additional upload options.
5. Transfer data to your iSeries.

Data Transfer To iSeries
File View Tools Help

PC
File name: _____ Browse...

iSeries
System: myiseries ▼

Library/File(Member):
_____ Browse...
Details...

Transfer data to iSeries

Notes: Steps to perform a simple upload of a file

1) Start by selecting the PC data file you want to send to the iSeries. A Browse function is provided to allow you to locate the data file.

2) Select a system name from the system list.

3) Either enter the library/file you want to transfer the PC data into, or select "Browse" to find the library/file you want to transfer into.

4) Select the Details button to provide additional required information.

WARNING: When transferring data into an existing iSeries file, if the replace member options is chosen (the default), the member's contents are deleted and replaced with the data contained in the PC data file.

IBM eServer iSeries

Data Transfer To iSeries
iSeries File Details - upload options

Source Physical files
- Select not to use an FDF file
- Select the proper file type
- Select the record length, file and member text and authority on create

Data Physical files
- Use a PC FDF file
- Select Field Reference File, file and member text, and authority when creating new files

iSeries File Details

PC file
- ☐ Use PC file description
- File name: .FDF [Browse...]
- File type: ASCII Text
- Translate from: ASCII to EBCDIC
- Coded Character Set ID:

iSeries file
- Create iSeries object: No, replace member only
- Member text:
- iSeries file type: ⊙ Data ○ Source
- Field reference file name: [Browse...]
- Record length: 92
- Authority: Read/write
- File text:

[OK] [Cancel] [Help]

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IBM eServer iSeries

Notes: Understanding the iSeries File Details Panel

Description of what each control does/controls:

Use PC file description - This option should be selected if you are sending PC data to a data physical file. If you are sending PC data to a source physical file, this should not be selected, and you must select the PC data file type from the File type list.

File name - This file is a FDF file that contains the description of the data contained in the PC data file. This file is needed in order to have the Data Transfer application correctly read and format the PC data before sending it to the iSeries database file. A FDF file is created by default when a Data Transfer From iSeries request is run. Data Transfer will not send data correctly if this FDF file does not match the data in the PC data file.

File type - This option describes what PC file format is contained in the PC data file. This is only selectable when you are not using a FDF file to describe the data in the PC data file.

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Notes: Understanding the iSeries File Details Panel (cont)

Translate from - This allows users to state if the data contained in the PC data file is stored as ANSI (Windows format), ASCII (DOS format) or another CCSID. This option must match the option used when performing the Data Transfer From iSeries, and controls what is done for PC to iSeries (EBCDIC) character conversions.

Create iSeries object - Allows users to create a new database file and member, create a new member for an existing database file, replace the data in an existing member of a database file, or append to an existing database member.

Member text - Comment text to be associated with the new member being created.

File text - Comment text to be associated with the new file being created.

Notes: Understanding the iSeries File Details Panel (cont)

iSeries file type - Data or Source. Data means you are transferring to a data physical file. If Data is specified, a PC file description file must be used. This description file must match the definition of the iSeries data physical file format. Also, if you are creating a new file, you must provide the name of an existing iSeries database file you want to have the new file based on. A "new" data format cannot be created using Data Transfer (without the help of the Create iSeries Database File tool).

Source means you are transferring to a source physical file. If Source is specified, a PC file description should not be used, and you must specify a File type for the PC file. When using the Source option and creating a new file, a record length must also be specified. This record length should be the length of the longest record you want to send to the iSeries + 12. The 12 additional characters are reserved for the initial columns of a source physical file.

If you want to transfer to a "flat file" where you only have 1 unformatted character field, you must use the Data option and use a PC file description (FDF) file.

Using the Create iSeries Database File Wizard

Create iSeries Database File Wizard

Starting the wizard

Start the Create iSeries Database File tool by selecting it from the Tools menu or by clicking on its icon in the toolbar

---
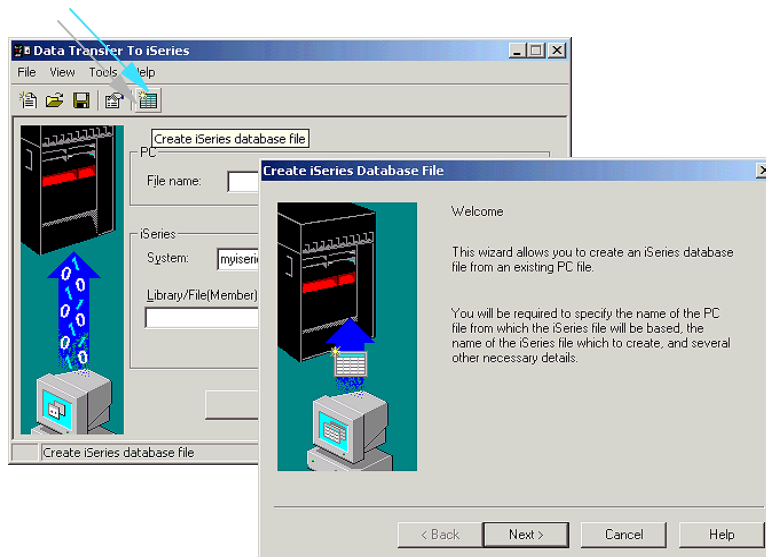
Notes: Create Database File Wizard

In iSeries Access for Windows, Data Transfer has the ability to define and create a new iSeries database file based on an existing PC data file. The new file is created as an SQL table. In previous releases, Data Transfer was only able to create files based on existing iSeries database files. The new function will also create the FDF file required for uploading the data to the new file.

The interface to create a new database file is found in the Data Transfer to iSeries application. The function can be started from the Tools menu or a new toolbar icon.

The image shown on the previous page is the welcome page of the Create Database File wizard.

Create iSeries Database File Wizard
Selecting the PC file that contains your data

The PC File Name panel allows you to enter or browse for the name of your PC file that you wish to use as a model for the new file on the iSeries
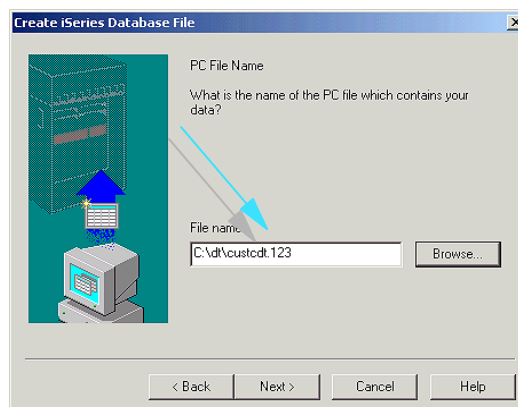
Notes: Create Database File Wizard

The first step in creating a new iSeries database file is to specify the PC file that you want the file based on. The file can be in any of the following formats:

ASCII text, BASIC Sequential, BIFF3, BIFF4, BIFF5, BIFF7, BIFF8, CSV, DIF, Tab-delimited text, WK4, or 123.

If you pick a file type containing detailed type information, such as BIFF or WK4, Data Transfer is able to more accurately determine the definition of the iSeries file you will want to create.

Create iSeries Database File Wizard

Selecting the PC File Type

The File Type page allows you to select the type of the PC file that you specified on the previous panel. The wizard will try to determine the file type based on the extension of the file

IBM
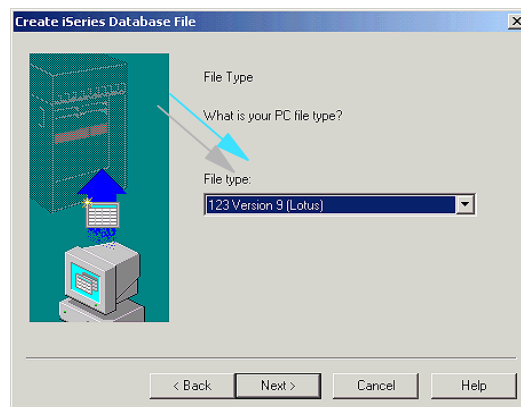
Notes: Create Database File Wizard

After specifying your PC file, Data Transfer attempts to determine the type of the file. The type detected by Data Transfer is shown in the window. If this "guess" by Data Transfer is not correct, you will need to set the correct file type before you continue. If this is not done, Data Transfer will not be able to read the data file correctly, and an error will be displayed or your file will not be scanned correctly.

IBM

Create iSeries Database File Wizard
The File Description File panel

To transfer data to your new file on the iSeries, an FDF file must be generated to match your PC file.

Create iSeries Database File

Create File Description File

What is the name of the file description file you would like to create?

File name:
C:\dt\custcdt.FDF   Browse...

< Back   Next >   Cancel   Help

IBM
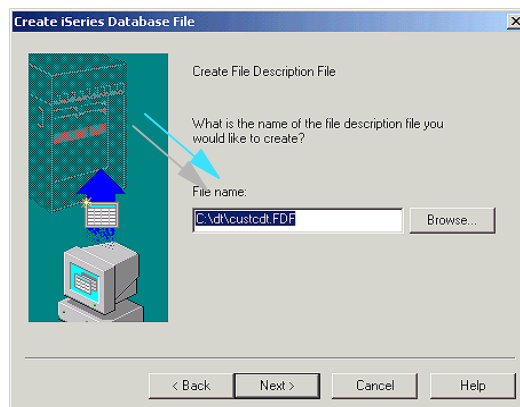
Notes: Create Database File Wizard

The information you enter along the way in the wizard will be loaded into the Data Transfer to iSeries application upon completion of the wizard function.

The FDF file is an essential item for step of transferring the data to the iSeries. This panel allows you to set the name of the FDF file to be used for the transfer.

IBM

Create iSeries Database File Wizard
The Scan PC File panel

The Scan PC File panel is used to scan your PC file to determine its field/field type layout

Create iSeries Database File

Scan PC File

To create an iSeries database file the PC file must be scanned to determine its data layout.

Select Start Scan to begin the scan.

Start Scan

☑ First row of data contains field names

< Back   Next >   Cancel   Help
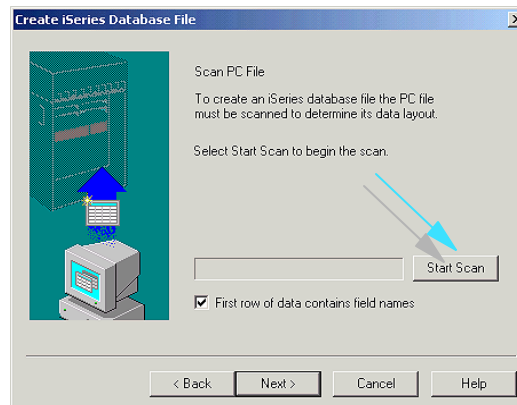
Notes: Create Database File Wizard

In order to retrieve the field information from the PC data file, Data Transfer must "scan" or parse the data. If you chose not to do this, you will be required to manually set up the field definitions from scratch. If you run the scan operation, Data Transfer will scan the PC file and come up with a first pass at what the field definitions of the new database file will need to be to hold the data from the PC data file.

Create iSeries Database File Wizard

The Contents of PC File panel

The Scan operation in the previous panel builds a list of fields. These fields are displayed in the Contents of PC File panel. Fields may be modified by selecting them and clicking on 'Details'
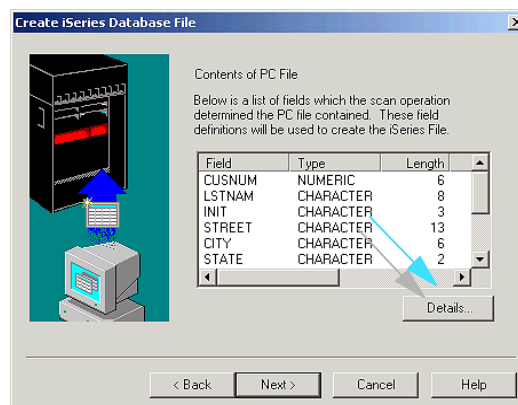
Notes: Create Database File Wizard

If you chose to have Data Transfer scan the PC data file, you will be presented with a list of fields found in the PC data file. If you chose a simple file type such as ASCII text, the field definitions will almost always need to be modified. If you chose a more complex file type such as BIFF or WK4, only minor modifications may be needed. Either way, it is a good idea to verify the field definitions are going to allow for all possible values you will want to insert into the iSeries database.

A context menu (right click in Details list control) is available to allow users to add to or remove fields from the list.

Create iSeries Database File wizard
The System Name panel

Select or type in the name of the iSeries where you want to create a new file

IBM
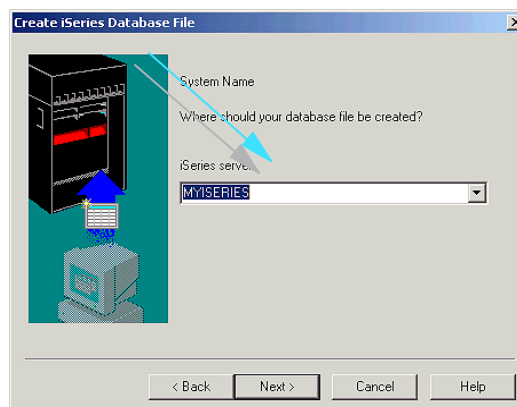
Notes: Create Database File Wizard

On this panel you need to specify the iSeries system name you want to create the database file on.

IBM

Create iSeries Database File Wizard
The iSeries File and Library panel

Enter the Library/File name you wish to create. A member name may not be specified since this tool uses the iSeries SQL Create TABLE interface

Create iSeries Database File

iSeries File and Library

What is the name of the file which will contain your data? For example, TESTLIB/TESTFILE.

The file you specify must not already exist in the specified library and you must have authority to write to the library.

Library/File:

JRBCOLLECT/CUSTOMER   Browse...

< Back   Next >   Cancel   Help
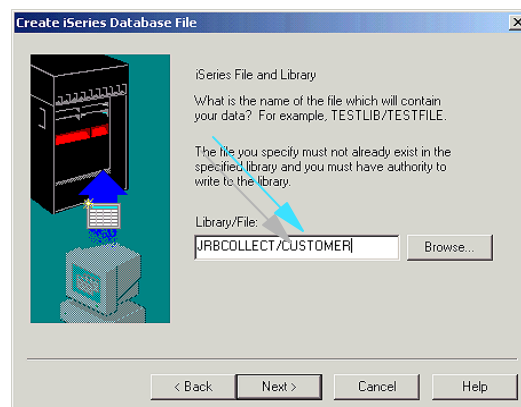
Notes: Create Database File Wizard

Now you must specify the library name and file name of the file you want to create. The syntax of this name is library/file.

After you have entered this, the next panel will allow you to specify a text string for a description of the file.

Lastly, you will be shown a confirmation panel containing the information gathered throughout the wizard. Selecting Next from this confirmation panel will create the database file.

Create iSeries Database File Wizard
The final panel - your file has been created!

Select finish to return to Data Transfer To iSeries. Remember - your file has been created, but has no data!

Create iSeries Database File

Congratulations!

You have successfully created an iSeries database file.

Use Data Transfer To iSeries to transfer data from your PC file to the new database file.

Press Finish to return to Data Transfer To iSeries.

< Back   Finish   Cancel   Help

85-86
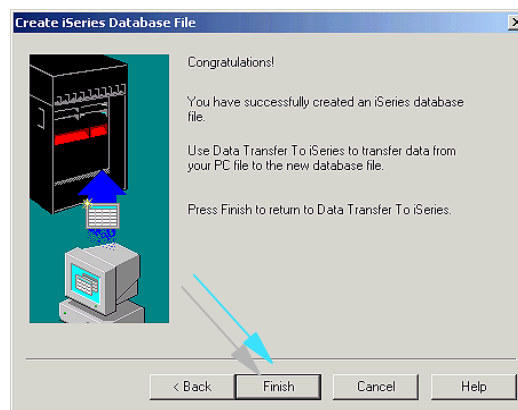
Notes: Create Database File Wizard

After the successful creation of the new database file, you will be presented with a informational panel stating the new file was created.

Create iSeries Database File Wizard
Returning to Data Transfer To iSeries

The PC file we used as a model

The iSeries System we created the file upon

The Library/File name of our new file

Click to transfer data to your new file
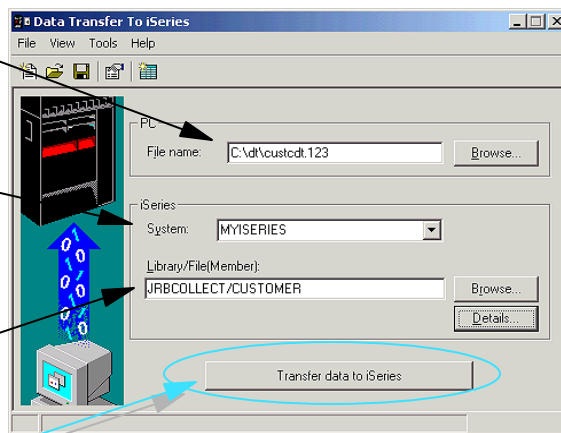
Notes: Create Database File Wizard

After the file has been created, you return to the Data Transfer to iSeries window. At this point, the database file has been created, and the Data Transfer window values have been set to the values enterred in the wizard. No data from the PC data file have been sent to the iSeries.

To complete the transfer, you must now select the "Transfer data to iSeries" button.

Batch Data Transfers

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Data Transfer From iSeries
Batch transfer command interface

RTOPCB [/S] [[/I] [filename [/C] [...]] | [[I] /F list file]]
  /S   Show transfer statistics.
   filename An iSeries to PC transfer request (.TTO or .DTF),
                  Rumba (.RTO), or Windows 3.1 (.DT) file transfer
                  request.
  /C   Process next file independent of previous file.
  /I   Ignore warnings.
  /F   Process files within list file (one filename per line).
  list file   A file containing a list of transfer files to process.

Examples:
  RTOPCB c:\temp\test.tto
  RTOPCB /S c:\temp\test.tto /C c:\temp\trans.dtf
  RTOPCB /S /F c:\temp\transfer

Notes: RTOPCB (Data Transfer in Batch)

In the past, Data Transfer only supported one transfer request per invocation of RTOPCB. Now, Data Transfer supports multiple transfer requests per invocation of RTOPCB.

The main reason for this interface addition is performance. Assuming your transfer requests run to the same iSeries, by running multiple requests per invocation of RTOPCB your performance can be substantially improved.

Users will save the performance costs of:
 (# of requests - 1) * (connection time + disconnect time)

By doing this the speed of the transfers will be improved and the load on the iSeries will also be reduced since one job will now service multiple transfer requests.

IBM

Data Transfer To iSeries
Batch transfer command interface

RFROMPCB [/S] [[/I] [filename [/C] [...]] | [/I] [/F list file]]
  /S   Show transfer statistics.
  filename A PC to iSeries file transfer request (.TFR or .DTT),
                    Rumba (.RTO), or Windows 3.1 (.DT) file transfer
            request.
  /C   Process next file independent of previous
             file.
  /F   Process files within list file (one filename per line).
  list file   A file containing a list of transfer files to process.

Examples:
  RFROMPCB c:\temp\test.tfr
  RFROMPCB /S c:\temp\test.tfr /C c:\temp\trans.dtt
  RFROMPCB /S /F c:\temp\transfer

IBM

Notes: RFROMPCB (Data Transfer in Batch mode)

In the past, Data Transfer only supported one transfer request per invocation of RFROMPCB. Now, Data Transfer supports multiple transfer requests per invocation of RFROMPCB.

The main reason for this interface addition is performance. Assuming your transfer requests run to the same iSeries, by running multiple requests per invocation of RFROMPCB your performance can be substantially improved.

Users will save the performance costs of:
 (# of requests - 1) * (connection time + disconnect time)

By doing this the speed of the transfers will be improved and the load on the iSeries will also be reduced since one job will now service multiple transfer requests.

Automating Data Transfer

Scheduling Batch Transfers

RTOPCB is
scheduled to
run at a given
date and
time

Scheduled Tasks

File   Edit   View   Go   Favorites   Advanced   Help

Name	Schedule	Next Run Time	Last Run Time
Add Scheduled Task			
Maintenance-Defragment programs	Disabled	Disabled	Never
Maintenance-Disk cleanup	Disabled	Disabled	Never
Maintenance-ScanDisk	Disabled	Disabled	Never
rtopcb	At 3:28 PM every day, starting 2/10...	3:28:00 PM 3/7/00	3:27:56 PM 3/6/00
Windows Critical Update Notification	Every 5 minute(s) from 7:20 PM for ...	7:20:00 PM 3/6/00	Never

6 object(s)

Notes: Scheduling a Data Transfer Request

iSeries Access for Windows does not provide a scheduler program. For an example of how to schedule a Data Transfer request, we picked Microsoft's System Agent application.

From Microsoft Task Scheduler select Add Scheduled Task. Go through the wizard to create the scheduled task and enter

"C:\Program Files\IBM\Client Access\RTOPCB.EXE" your.TTO

for the task to execute.

Complete the other scheduling options offered by the System Agent application. You are now ready to run transfer requests on a scheduled basis.

Using the Excel Add-In

Using the Excel Add-In
Installing the Add-In

To install the Add-In for Excel (if it wasn't automatically installed), select Tools -> Add-Ins... and locate cwbtfxla.xll under the Client Access 'shared' folder.
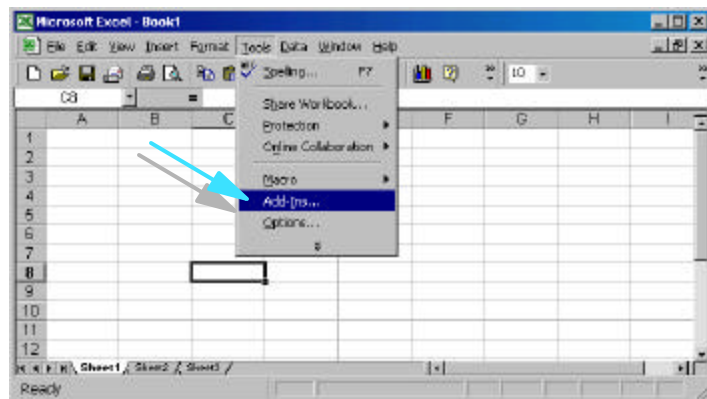
Notes: Data Transfer Add-in for Excel

Data Transfer supports transferring data directly to and from a Microsoft Excel sheet. This support is currently available withMicrosoft Excel 97, Excel 2000, and Excel XP.

This support is accessible by clicking on the Data Transfer upload or download button on the Excel toolbar.

NOTE: The Data Transfer Add-in is longer supported for Excel 95.

Notes: What do I do if the Data Transfer options are not available in Excel?

If Microsoft Excel was installed on your PC before iSeries Access, the iSeries Access setup program will automatically install the Microsoft Excel add-in when you choose to install Data Transfer.

If Microsoft Excel was installed on your PC after Client Access, you
will have to manually add the Data Transfer Add-In with these steps:

1   Open Microsoft Excel.
2   Click Add-Ins from the Tools menu.
3   Click the Browse... button.
4   Locate the path in which you installed Client Access.
5   Double click on the folder named 'Shared'.
6   Double click on the cwbtfxla file.
7   Click the OK button.

Data Transfer Add-In support is available for Excel 97, 2000, and XP.

Using the Excel Add-In

Transferring data into Excel

To transfer data from your iSeries to or from Excel select Data -> Transfer Data From/To iSeries from the Excel menu or click on one of the Data Transfer icons on the toolbar.

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window Help

	A	B	C		H	I	J

Data menu:
- Sort...
- Filter
- Subtotals...
- Validation...
- Text to Columns...
- PivotTable and PivotChart Report...
- Get External Data
- Refresh Data
- **Transfer Data From iSeries...**
- Transfer Data To iSeries...

Sheet1 / Sheet2 / Sheet3 /

Ready

Arial 10 **B** *I*

100%

A1 =
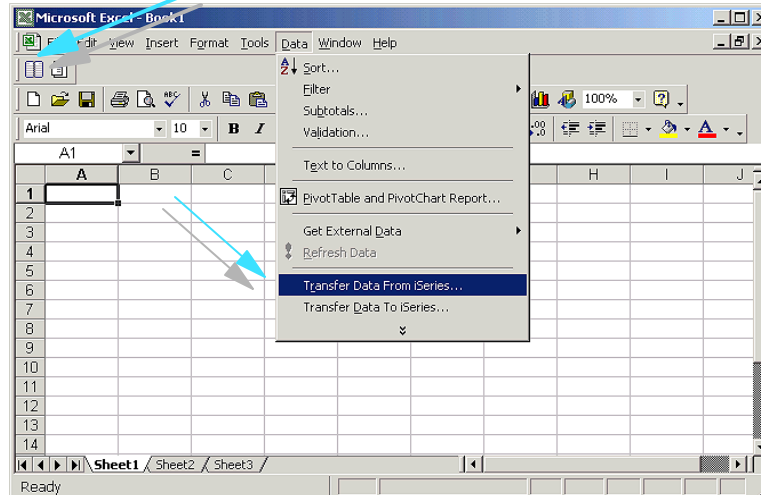
Notes: Data Transfer to and from Excel

Data Transfer download support into a Microsoft Excel sheet is accessible from the Excel menu. Go to the Data menu and select Transfer Data from iSeries.

Data Transfer download support is also available from the Client Access toolbar. The icon for Data Transfer resembles two small tables or a notebook.

Data Transfer upload support is available in iSeries Access for Windows! Data from an Excel sheet may be uploaded directly to the iSeries from Microsoft Excel.

Using the Excel Add-In to transfer data from the iSeries

The Transfer Request panel

The Transfer Request panel allows you to create a new transfer request or to using an existing one to populate the spreadsheet

---
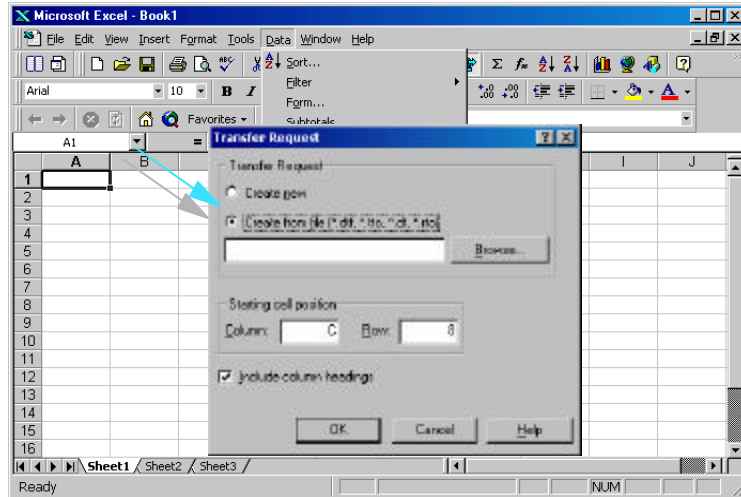
Notes: Data Transfer From iSeries into Microsoft Excel

After selecting the Data Transfer from iSeries icon on the Excel toolbar icon or the Transfer Data from iSeries menu item, a Transfer Request window will be displayed.

This window allows you to select an existing transfer request to run, or to create a new request by walking you through a series of wizard pages.

The window also has a setting for controlling where the data will be placed within the Excel sheet. A final setting lets you control whether or not column headings are included in the sheet.

IBM

Using the Excel Add-In to Transfer Data from the iSeries
Using a transfer request file

Transfers may be made directly into an Excel sheet by opening a saved transfer request on the PC

IBM
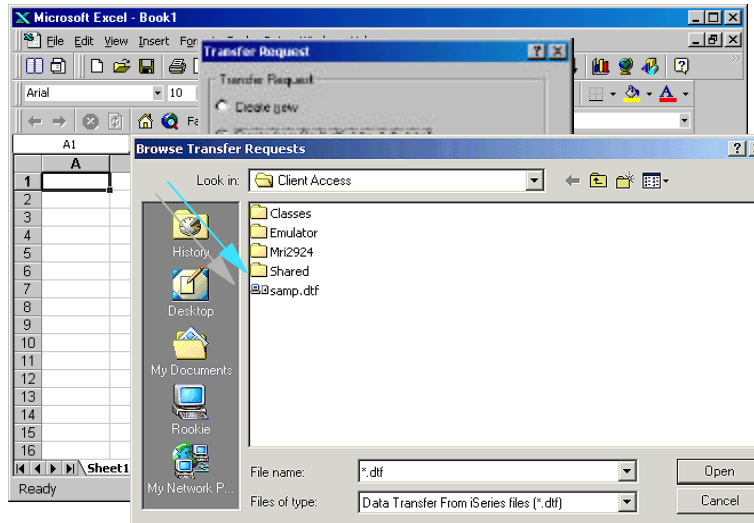
Notes: Data Transfer From iSeries into Excel using existing Transfer Requests

If you choose to use an existing transfer request, you can click on the Browse button and search for requests. The default for the Browse is to search for .DTF files. You may also search for .TTO, .DT, and .RTO files.

If you know the path and name of the request you want to run, an edit box is provided for you to enter the name without doing the Browse.

Using the Excel Add-In
A completed transfer into Excel

A completed transfer into Excel, complete with column headings and data from the iSeries file

---

Notes: Downloading data into Excel

This example shows the results of a SELECT * from QIWS/QCUSTCDT
into an Excel sheet at Column A, Row 1. The option to "Include column headings" was selected in this example.

Uploading data from Excel

Data can now be uploaded directly from an Excel spreadsheet to the iSeries! A menu option and Toolbar button are available for this function

---
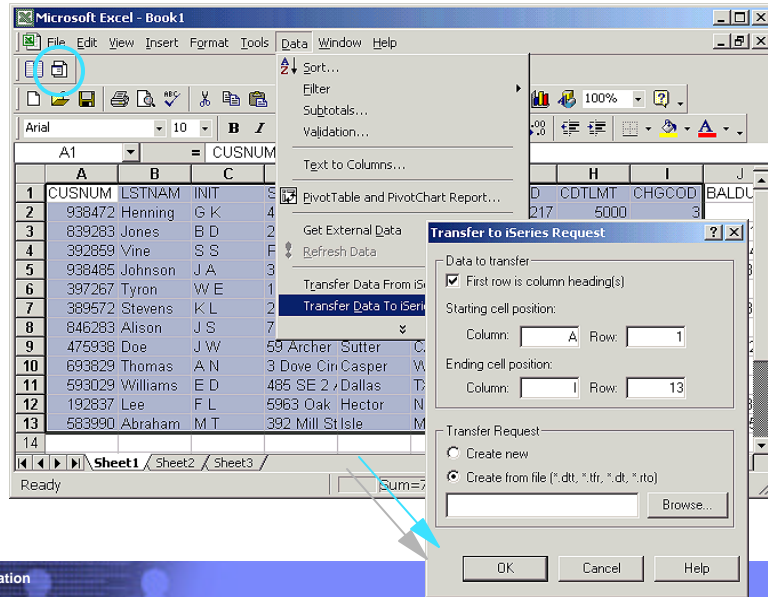
Notes: Uploading data from Excel

In V5R1 of Client Access Express the option to upload data has been added to the Add-in for Excel. This new option can be accessed either via the toolbar or the Excel Data menu. This option is also available in iSeries Access for Windows.

This new support allows the following functions for transferring data to the iSeries:

    Create new file and member based on iSeries file
    Create new file and member based on spreadsheet
    Create new member
    Replace member
    Append to existing member

The second option, 'Create new file and member based on spreadsheet' is the most immediately useful. It allows users to create a new database file on the iSeries based on the contents of the spreadsheet. Data is then uploaded to the new table.

Uploading data from Excel
Step 1 - Selecting the data to upload

Highlight the range of cells to upload
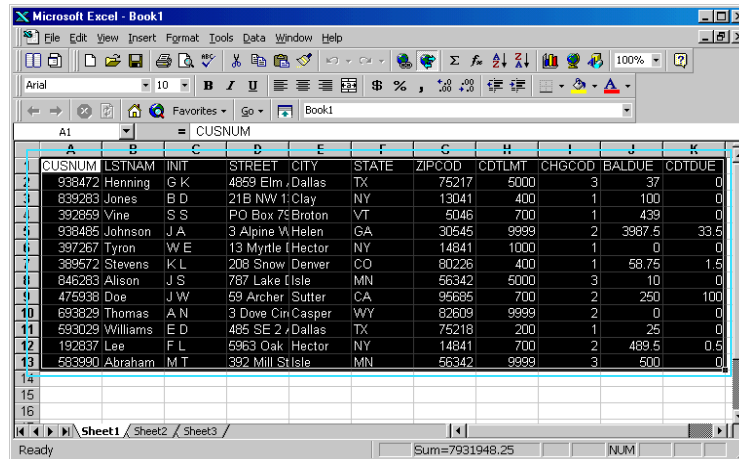
Uploading data from Excel
Step 2 - Activating the Add-in

Select the toolbar button or menu item to active the Add-in
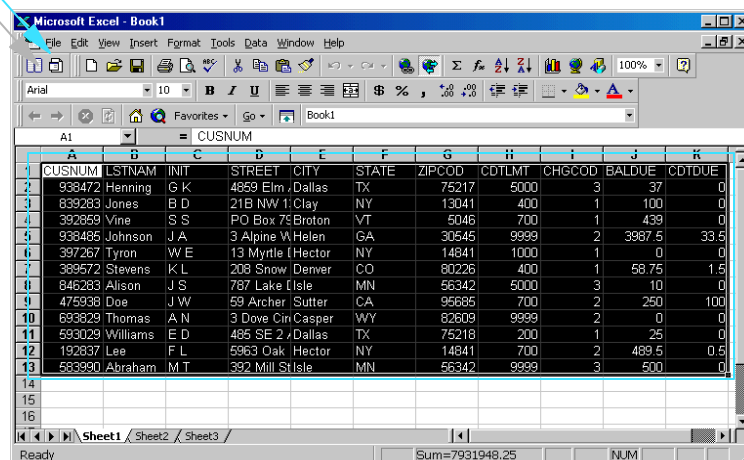
Uploading data from Excel

Step 3 - The main upload panel

- Select 'First row is column headings' if that is true
- Verify the correct range is specified for upload
- Choose to create a new transfer request
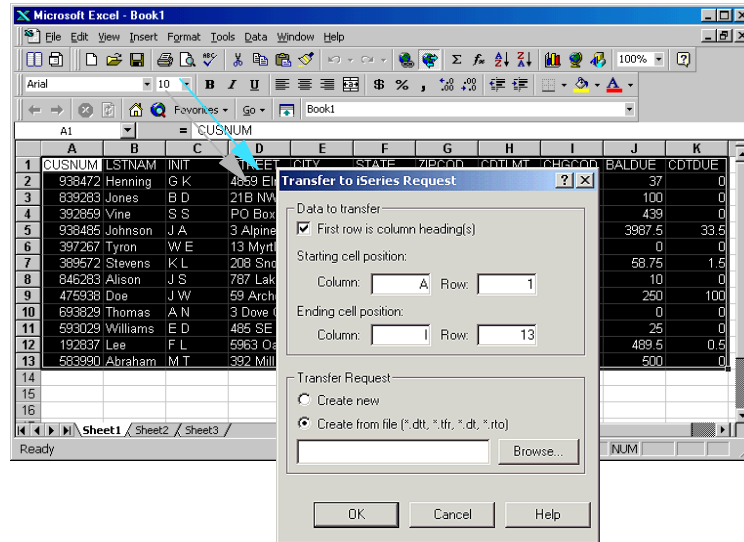
Uploading data from Excel

Step 4 - The request wizard

A wizard is available to help create a new transfer request. This request may be stored and re-used by the Add-in to upload the same or updated spreadsheet data at a later time.
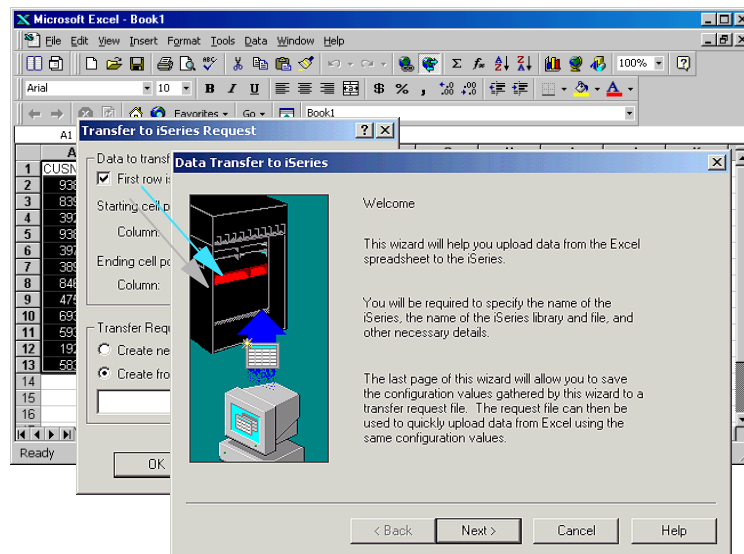
Uploading data from Excel

Step 5 - Data storage options

Select an option to store your data on the iSeries

If you don't currently have a file to store the data and do not have a reference file (a file on the iSeries that matches your PC data) choose 'Create new file and member based on spreadsheet'
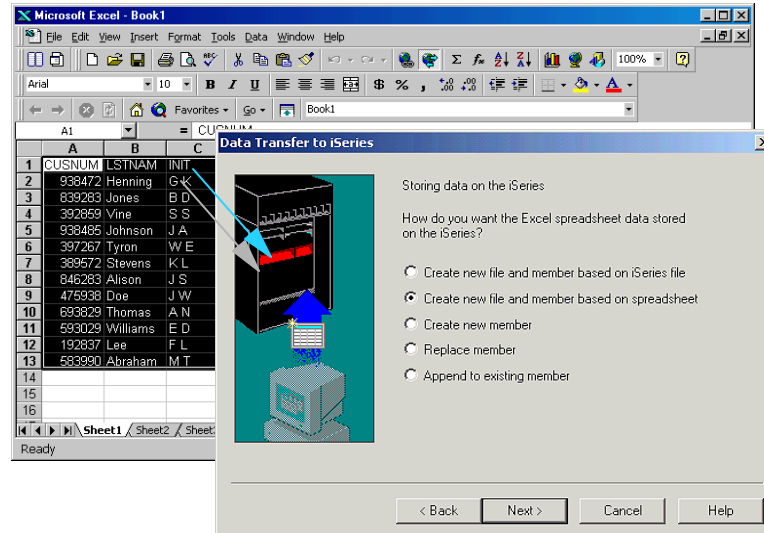
Notes: Data Storage Options

Upload support for the Add-in has many options for storing your data on the iSeries. Which option you choose will be based on whether you want to create a new file on the iSeries, create a new member, replace the data in a member, or append additional data to a member.

Create new file and member based on iSeries file
This option allows you upload data to a new file. The file will be created based on an existing file on the iSeries. The new file will have the same format as the existing file. The range of cells selected in the spreadsheet must have the same format of data as the file on the iSeries for the upload to be successful.

Create new file and member based on spreadsheet
This option allows you to upload data to a new file. The file will be created based on the format of the cells selected in the spreadsheet. Wizard pages help to generate a File Description File and a new file on the iSeries.

Create new member
This option allows you to create a new member for an existing file on the iSeries. The spreadsheet data is then uploaded to this new member.

Replace member
This option removes the data from an existing member and replaces it with data from the spreadsheet.

Append to existing member
This option appends spreadsheet data to the end of an existing member

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Uploading data from Excel
Step 6 - Creating a file description file

Uploading data to the iSeries with Data Transfer requires a File Description File. Specify the name of the File Description File to use. If you do not have a File Description File that matches your data, specify the name of a file to create.
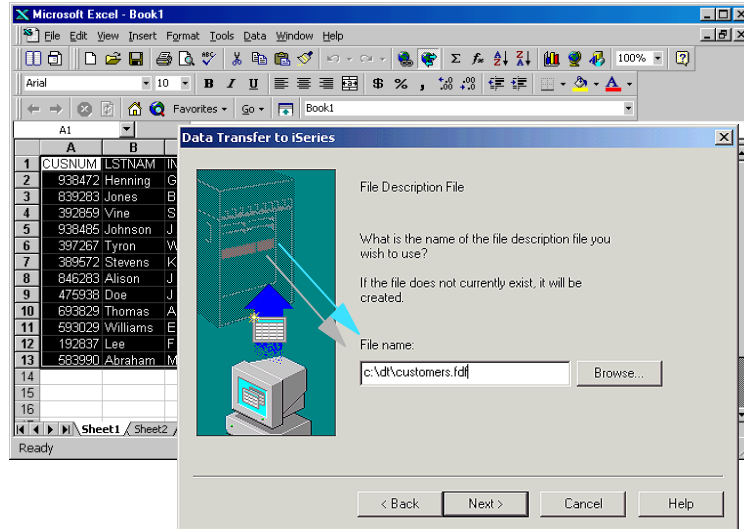
Uploading data from Excel
Step 6 (continued) - Creating an FDF

If you do not have a File Description file to match your data the wizard will create one for you
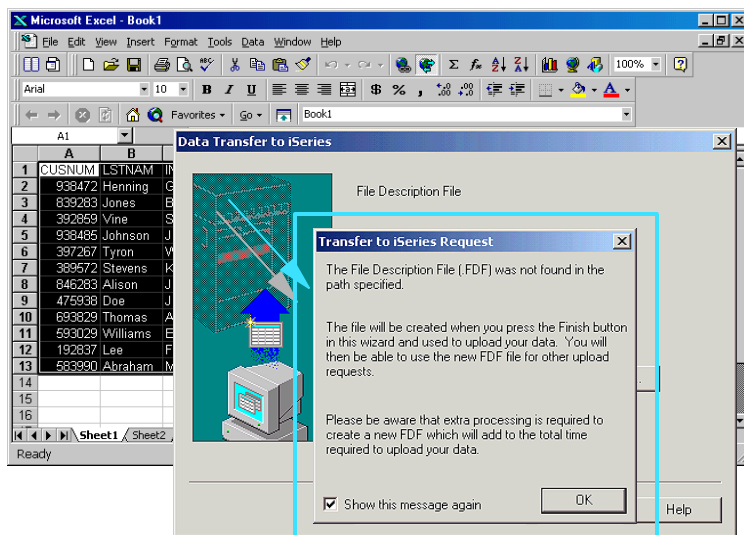
Uploading data from Excel

Step 7 - Scanning the spreadsheet

To create a new iSeries file based on the spreadsheet data, the spreadsheet must be scanned to determine its data format

Select 'Start scan' to scan the spreadsheet
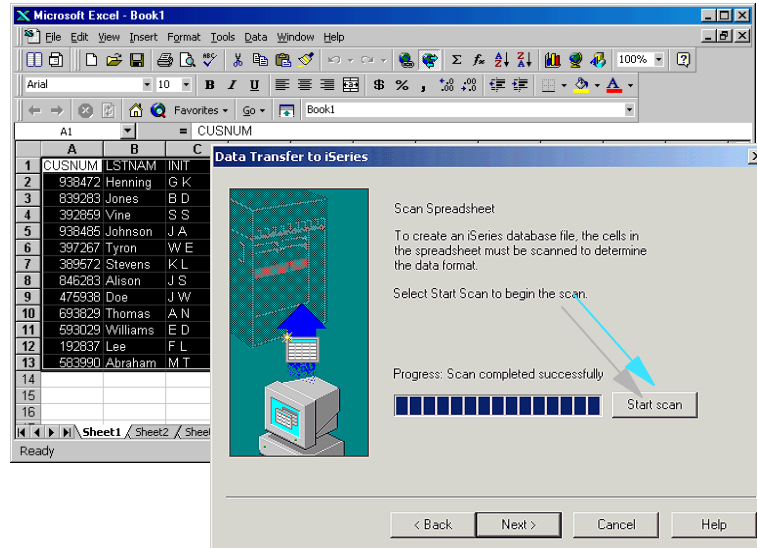
Uploading data from Excel

Step 8 (continued) - Spreadsheet columns

After scanning the data, review the list of fields found in the spreadsheet. If a column requires modification, select it and click 'Details'.
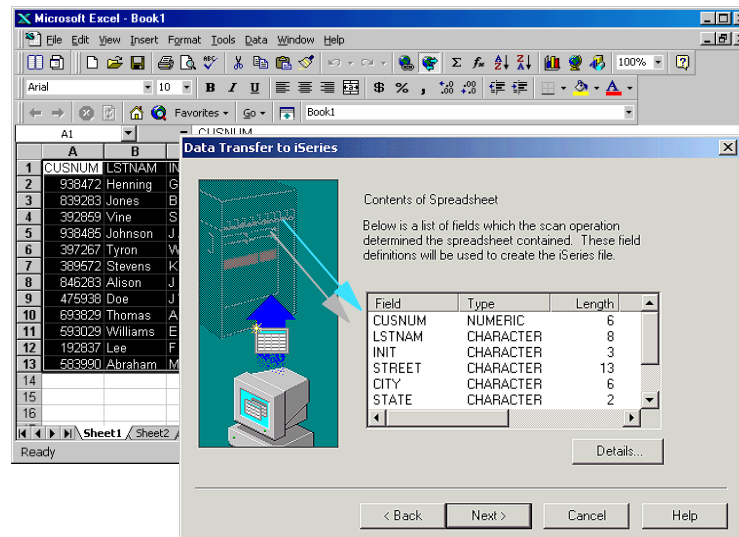
Uploading data from Excel
Step 8 (continued) - Spreadsheet columns

By clicking 'Details' you may add a field description, change the data type, and modify various other field attributes.

Note: Incorrect modification of a field may result in a field that does not match the data in your spreadsheet!

Field Details

Name: CUSNUM
Description:

Attributes
Type: NUMERIC
Length: 6
Scale: 0
Allocate: 0
Padding: 0
CCSID: *DEFAULT
Default: *DEFAULT
☐ Null capable

☑ Include in file description file

OK   Cancel   Help

	Type	Length
	NUMERIC	6
	CHARACTER	8
	CHARACTER	3
	CHARACTER	13
	CHARACTER	6
STATE	CHARACTER	2

Details...

< Back   Next >   Cancel   Help
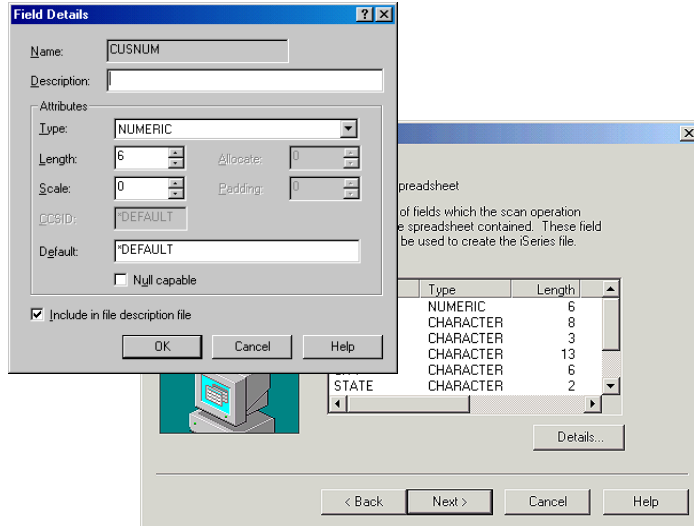
Uploading data from Excel
Steps 9,10,& 11 - System, Customize, & File

- Specify a system name
- Customize properties such as Date/Time format, CCSID 65535 conversion, and signon options
- Specify the library/file to create

Data Transfer to iSeries

System Name

Customize Data Transfer

iSeries Library and File
To what library and file do you want to send your data? For example, QIWS/QCUSTCDT.

Library/File(Member):
JRBCOLLECT/XLCUST   Browse...

< Back   Next >   Cancel   Help

Slide 1:
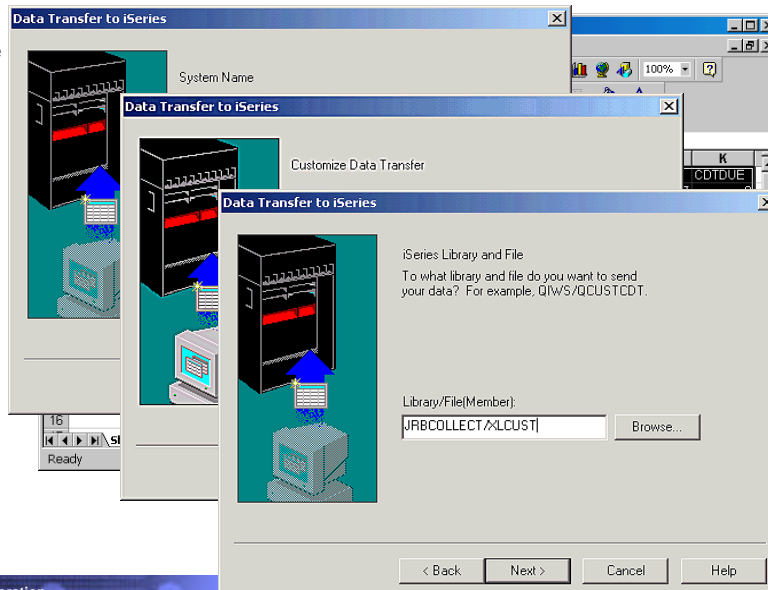
Uploading data from Excel
Steps 12,13,& 14 - File text, confirm, & save

- Specify a file description
- Confirm the Library/File and FDF to use or create
- Save the upload request to a request file and upload the spreadsheet data

Data Transfer to iSeries

File Description Text

Data Transfer to iSeries

Confirm Create Options

Data Transfer to iSeries

Save request to file

You can specify a file name to store your request information.

If you save your request to a file, you can run the request again without having to reconfigure your options.

If you choose not to save the information to a file, the information will only be used for the duration of this request.

File name:

Browse...

< Back   Finish   Cancel   Help

Slide 2:

What's new?

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New in Data Transfer

- Option to upload directly from Excel to the iSeries via the Add-In

- Configurable signon information when connecting to the iSeries. This option is available on a per-request basis.

- Support for the Lotus 123 version 97 and Version 9 file types

- Support for the Microsoft Excel version 8.0 (BIFF8) file type. This type is used by Excel 97 and 2000.

- Support for 4 byte (float) and 8 byte (double) floating point data types.

- Support for the BIGINT data type. This data type is available in release V4R5 of OS/400.

- UTF-8 Character support for download to HTML

- ActiveX Automation objects to programmatically run data transfer through various programming interfaces including Visual Basic for Applications (used to write MS Office macros), Visual Basic, C++, Java, and other platforms that support ActiveX.

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What are my other data access options?

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More Client Database Options

- ODBC/JDBC

- ADO/OLE DB Provider

- DB API

- iSeries Navigator - Database

- Java Toolbox

- iSeries Access for Web

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References

Additional Documentation & Information

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More information...

- iSeries Access for Windows Web Site - http://www.ibm.com/servers/eserver/iseries/access/
  - Technical Studio
  - Information APARs

- iSeries Access for Windows User's Guide
  - Found in iSeries Access for Windows folder

- Client Access Express for Windows Redbook
  - SG24-5191-00
  - http://www.redbooks.ibm.com

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