IBM eServer J iSeries J

Session: 409160

iSeries Access for Web: Using DB2 UDB on the Web

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iSeries Access for Web Development

IBM eServer iSeries

Session title: iSeries Access for Web:Using DB2 UDB on the Web

Session ID: 409160

Agenda Key: 45TB

Speakers: Schuman Shao
Warren Acker

Agenda

- iSeries Access for Web Overview
- Database Overview
- Working with SQL Tables
- Run SQL and the SQL Wizard
- SQL output types and options
- Output destinations
- Copying data to the iSeries
- Importing Client Access Data Transfer requests
- Managing saved requests
- User preferences
- Customizations
- Creating bookmarks and custom pages
- Summary
- Questions

iSeries Access for Web Overview

iSeries Access for Web is software that runs on the iSeries server. It provides access to various iSeries functions through a browser and provides an application user-centric, web-based view of iSeries or AS/400 applications and information.

iSeries Access for Web functions include:

- *Printers* - printer output, shared printers, and output queues
- *Messages* - user messages, message queues, send messages
- *Jobs* - work with jobs and server jobs
- *5250 Emulation*
- ***Database*** - run SQL statements, work with tables, upload data
- *Files* - work with files in the iSeries integrated file system or within NetServer file shares, upload files to the integrated file system or a NetServer share.
- *Command* - run iSeries commands from the browser.

iSeries Access for Web Overview

To get more hands on information on iSeries Access for Web request a copy of or attend

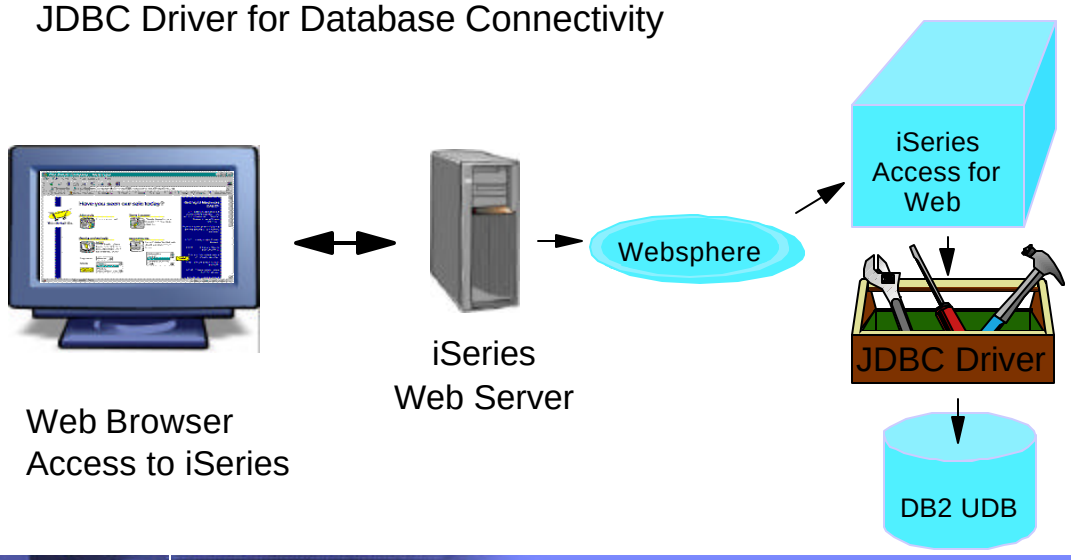
Sessions 53LA - 56LA: OPEN LAB:iSeries Access for Web and WebSphere Host Publisher

or

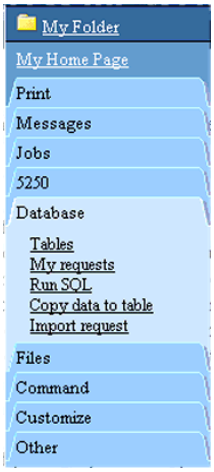
Visit the iSeries Access for Web Page.
http://ibm.com/servers/eserver/iseries/access/web/

Database Overview

iSeries Access for Web uses the IBM Toolbox for Java JDBC Driver for Database Connectivity



Access for Web - Database Functions Available

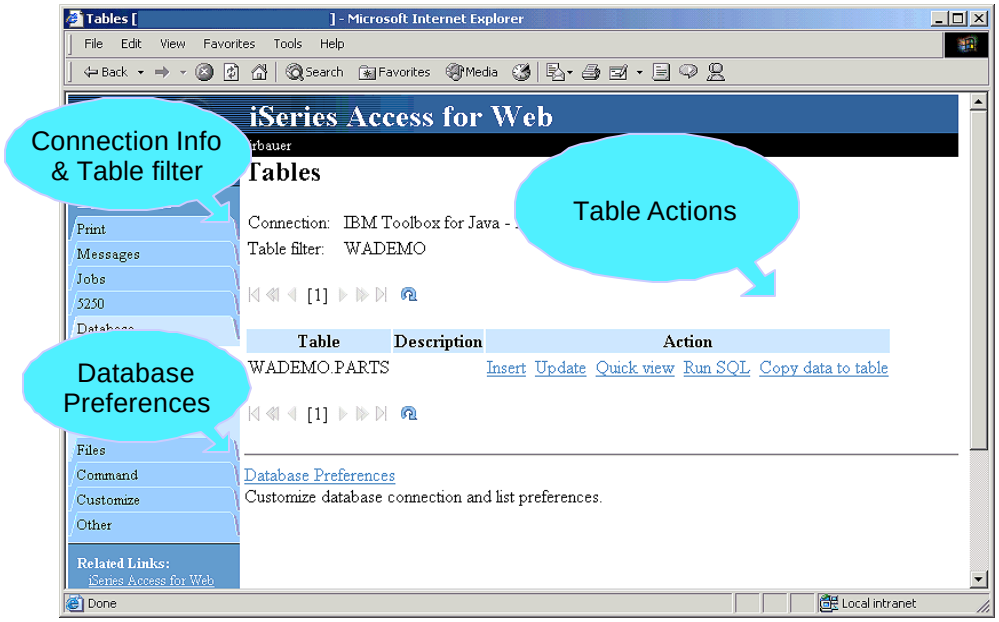


iSeries Access for Web has a very robust set of capabilities for working with DB2 UDB on the iSeries

- Tables - view, update, insert records into, or delete records from SQL tables.
- My Requests - run, copy, delete, rename saved requests, or create and manage shortcuts.
- Run SQL - run a SQL statement. The SQL wizard may be used to help create a SELECT statement.
- Copy data to table - Copy data from your workstation to a DB2 table on the iSeries.
- Import request - Import an iSeries Access for Windows/Client Access Data Transfer request profile.

Working with SQL Tables

Working with Tables



Notes: Table Actions

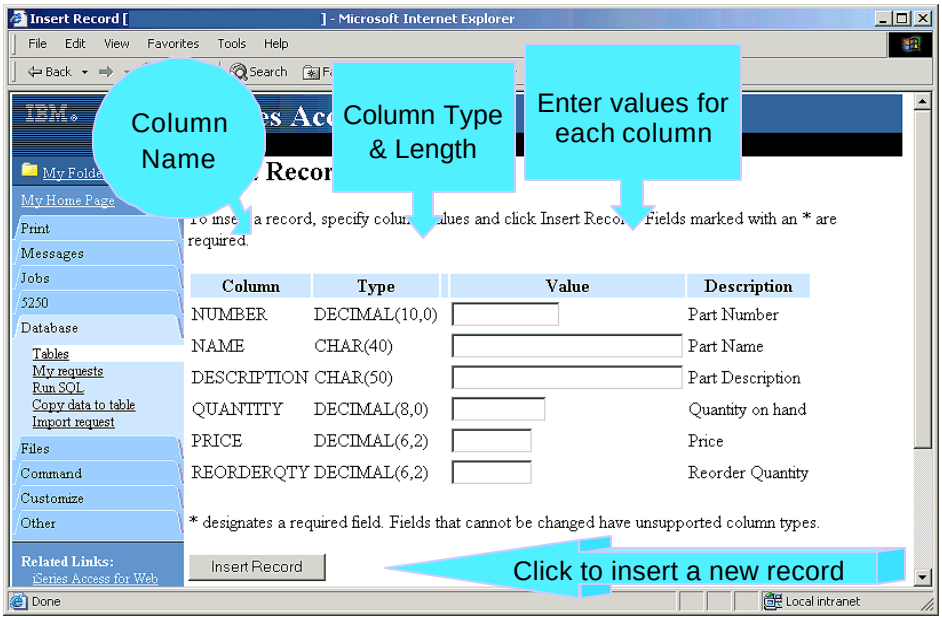
By clicking the 'Tables' tab you'll see a list of tables in the user portion of the library list (*USRLBL) by default.

On the top of the window you'll see the Connection and Table filter currently in use. These values may be changed by clicking the **Database Preferences** link on the bottom of the page.

In the tables list you'll see the table name, table description, and a set of actions you may perform on the table.

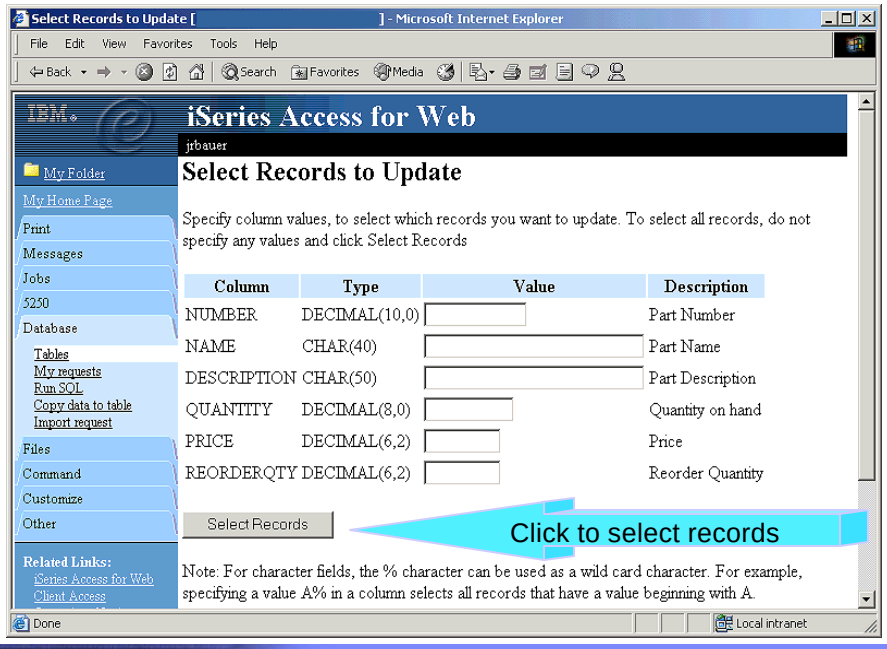
- Insert - Allows you to insert one or more records into the table.
- Update - Allows you to update or delete existing records from the table.
- Quick view - Allows you to quickly view the records in a table.
- Run SQL - Displays the Run SQL interface, ready to display the records of this table in one of many supported output types.
- Copy data to table - Displays the copy data to table interface, ready for you to copy data to the table.

Inserting New Records into A Table



Updating or Deleting Existing Records

The first step to update or delete records from a table is to select a range of records to update. Wildcards may be used in the selection.



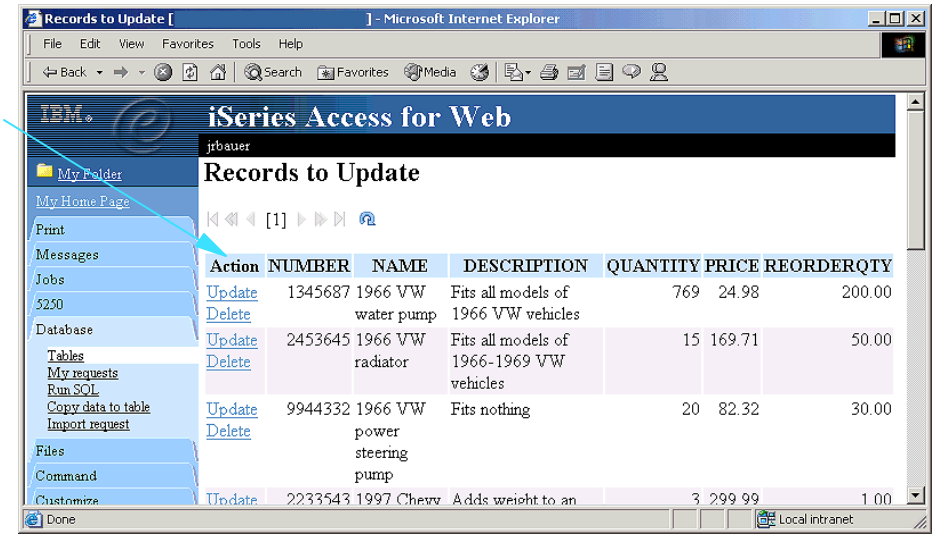
Notes: Selecting Records to Update

Finding records to update or delete in a table is made simpler by allowing you to select a record or a range of records by entering selection criteria. The wildcard character '%' may be used in the selection criteria. For example, specifying a part number of "KTF-111%" will find all parts that begin with "KTF-111" and allow you to update or delete those parts. If a wildcard is not used, only records having column data that exactly matches the value you entered will be displayed.

Clicking the **Select Records** button with no selection criteria will allow you to update or delete any record in the table.

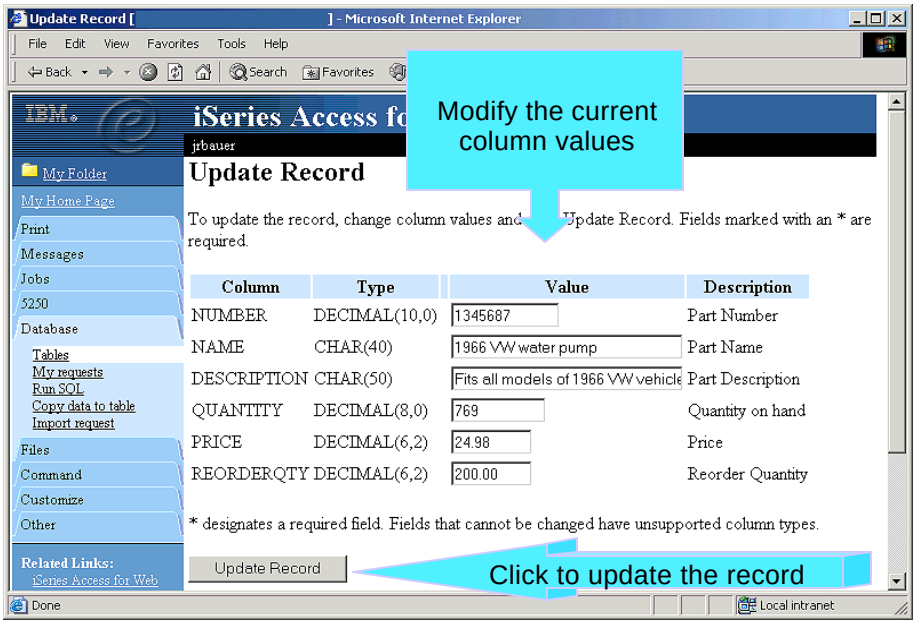
Updating and Deleting Records

The **Action** links allow you to either update or delete a record



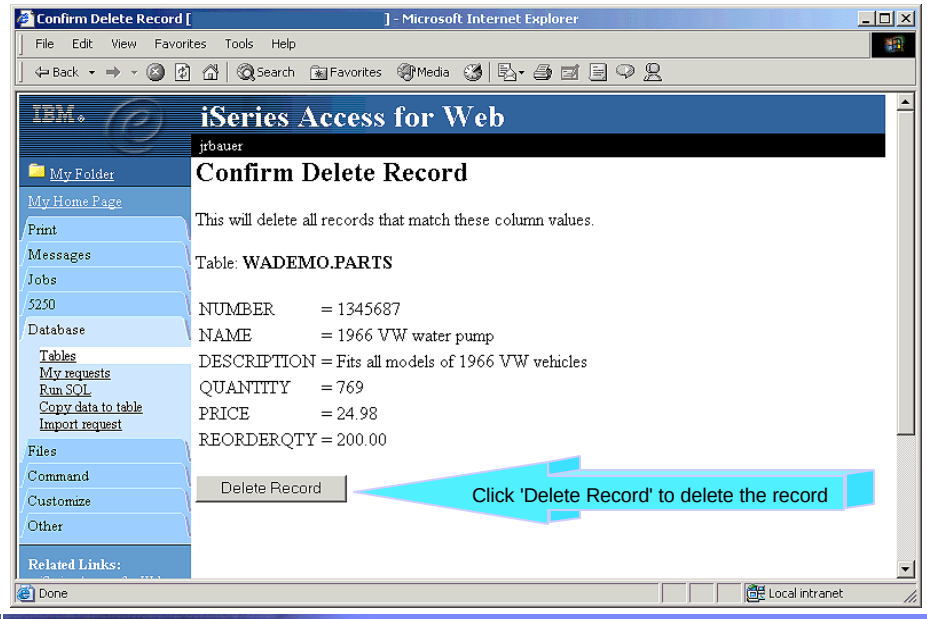
Updating a Record

With the update function column values for a record may be updated



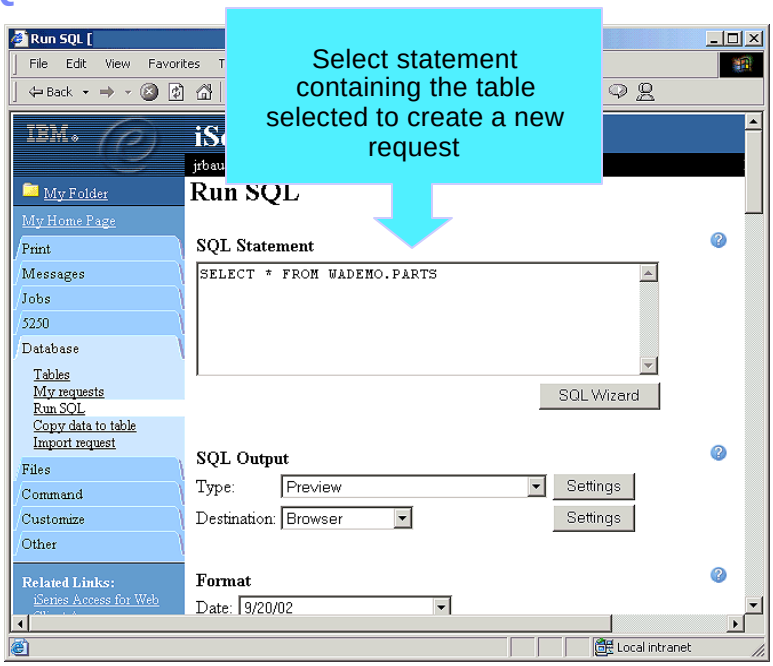
Deleting a Record

The Delete Record function requires you to verify the record you chose to delete



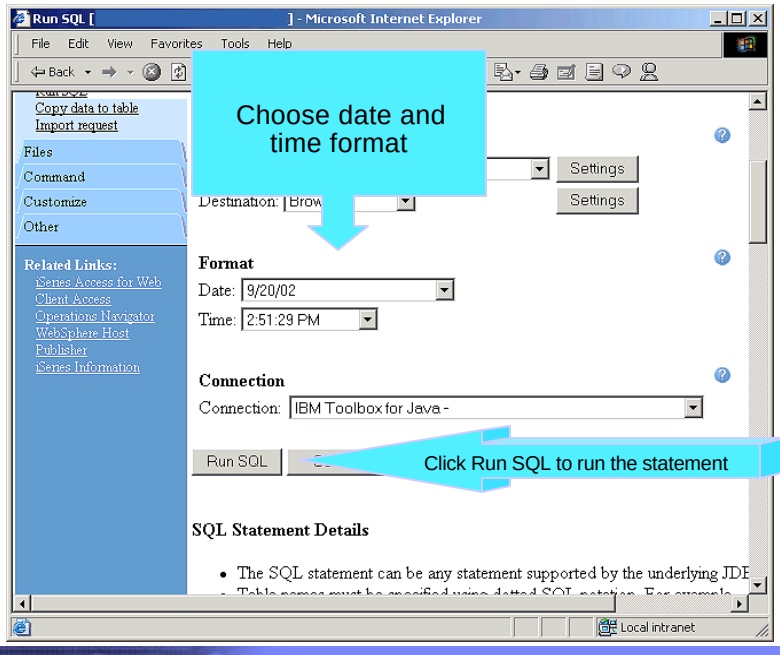
Tables: Run SQL

Selecting the **Run SQL** action from the Tables list brings you to the the Run SQL page. The SQL Statement will be primed with a full-table SELECT statement for the table you selected



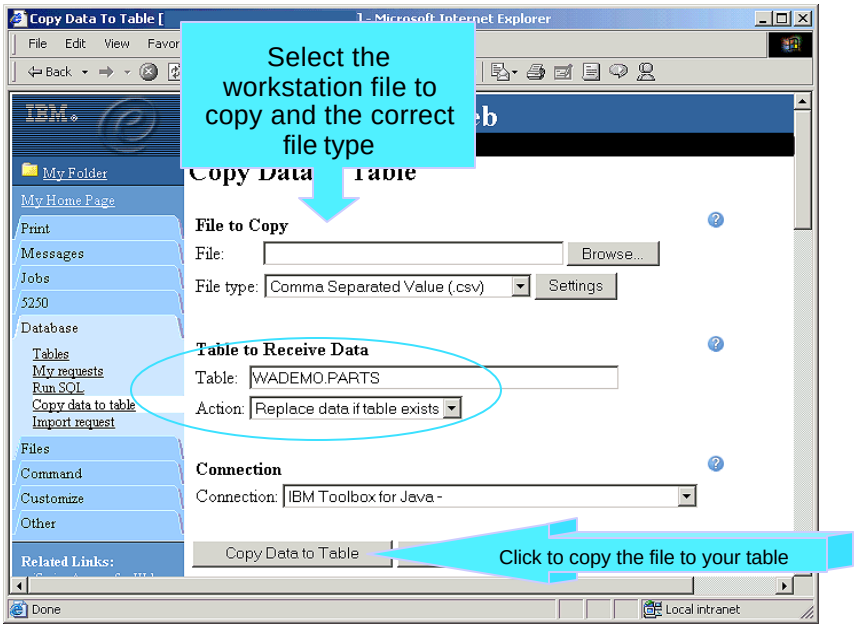
Tables: Run SQL (2)

When using Run SQL you have the option to choose the date and time format and also the connection to use



Tables: Copy data to table

Clicking **Copy data to table** from the Tables link brings you to the Copy data to table panel with the table name filled in



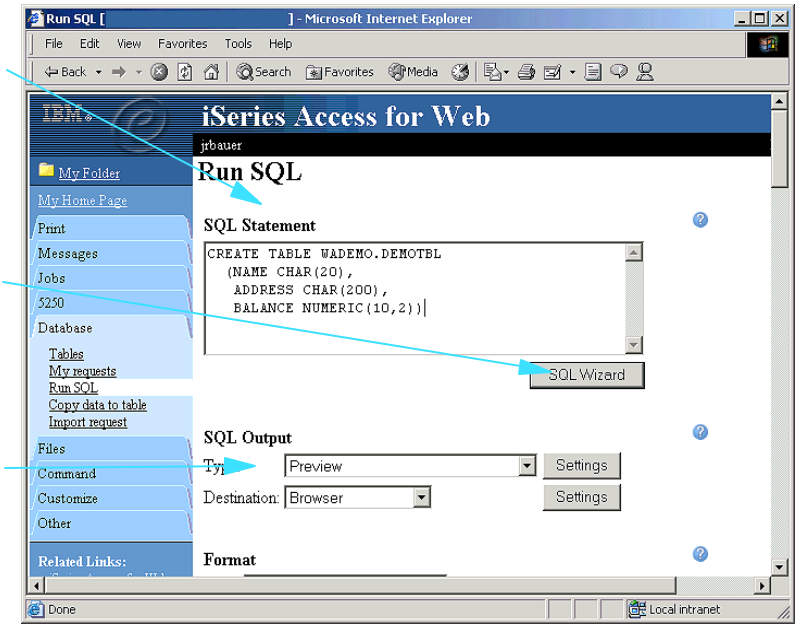
Run SQL and the SQL Wizard

Run SQL

The **Run SQL** function allows you to type in a free form SQL Statement

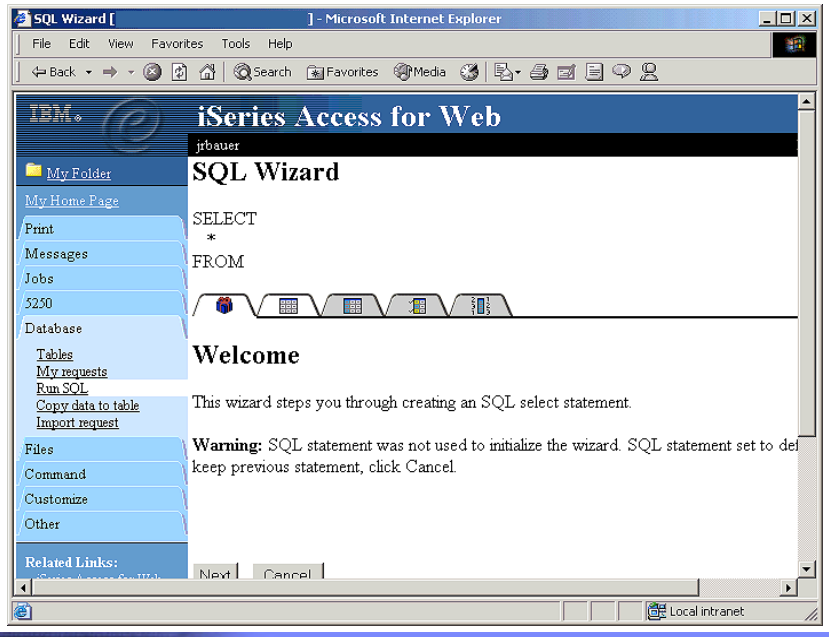
The SQL Wizard can help you generate a SQL SELECT statement

If your statement produces a result set you can select one of many output formats



The SQL Wizard

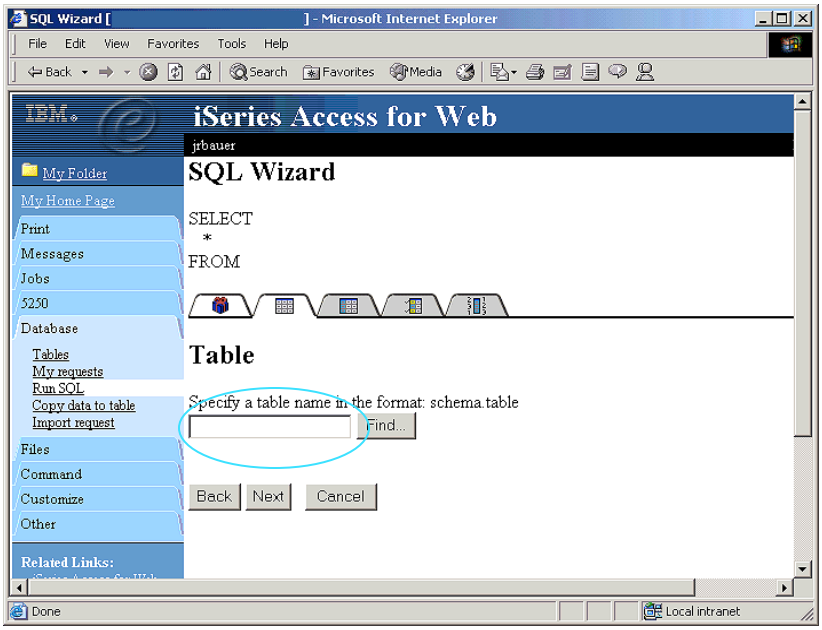
The SQL Wizard helps you generate a single table SELECT statement



The SQL Wizard: Creating a Select Statement

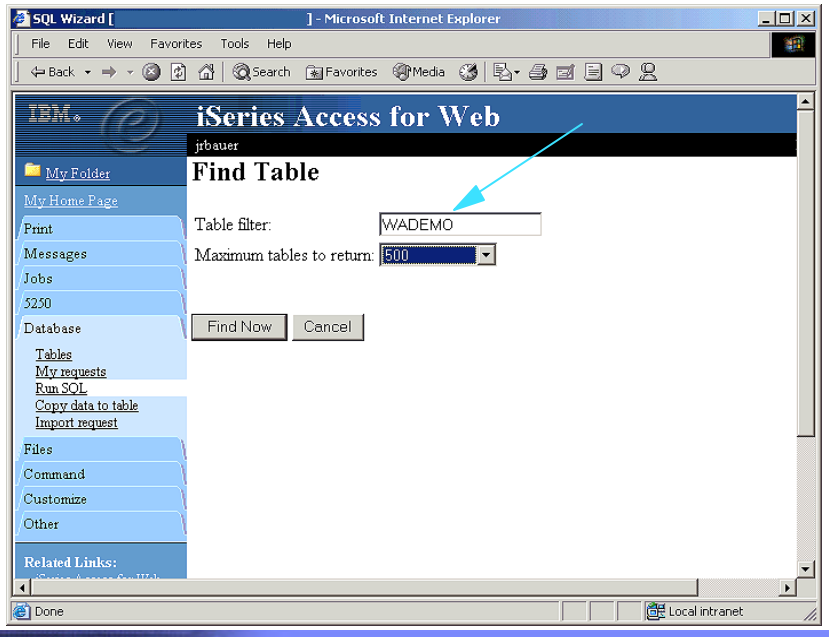
Step 1: Choose a table

Type in or find the table from which to select records



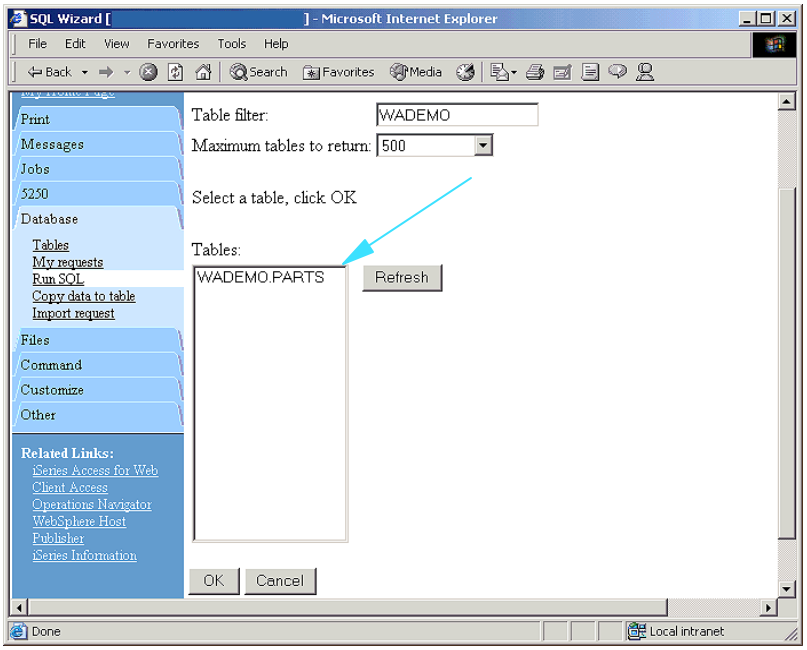
The SQL Wizard: Specify a table filter

Type in a table filter to help narrow your search. Many schemas (libraries) may be specified by putting them in a comma separated list



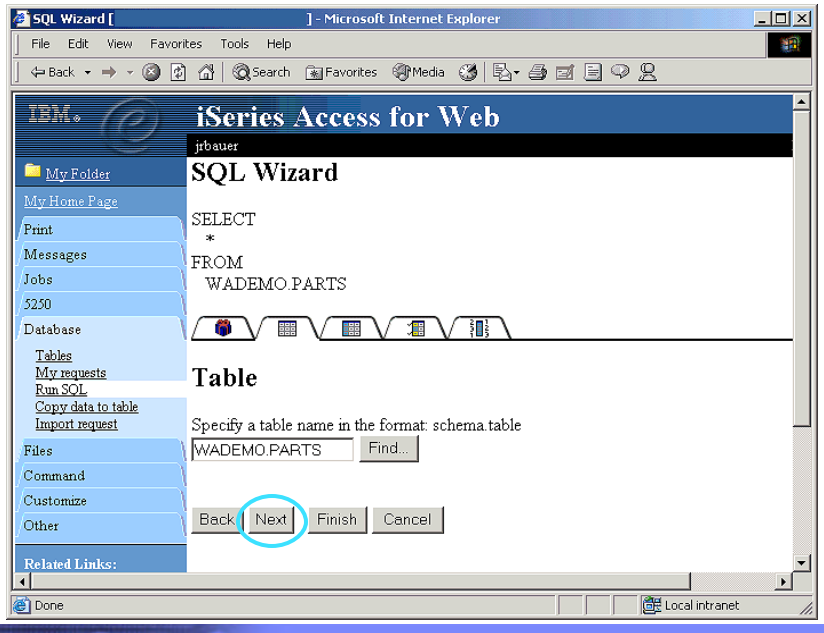
The SQL Wizard: Select a table from the search

Select a table and click OK to use it to generate the SELECT statement



The SQL Wizard: Going to step 2

Click **Next** button to select columns or click Finish to select all columns from the table

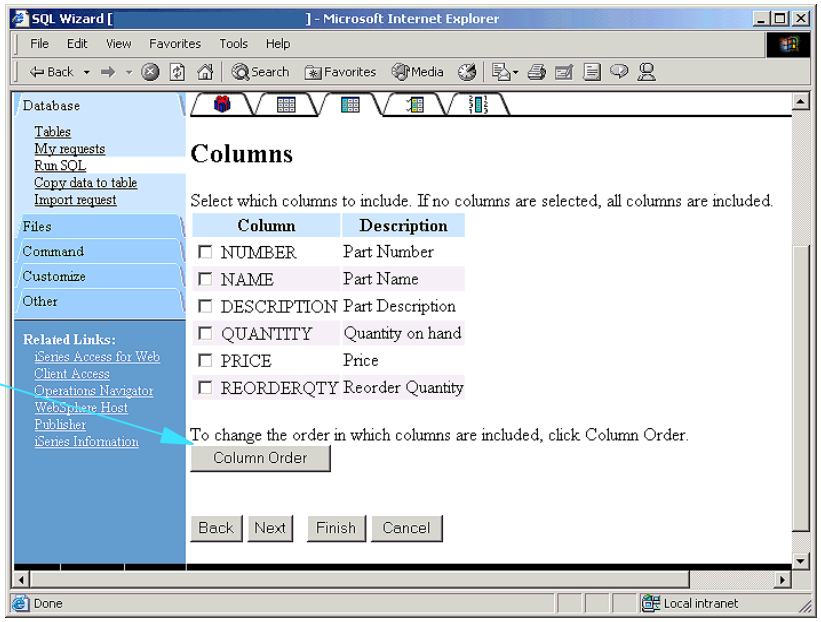


The SQL Wizard: Choosing columns for output

Step 2: Choosing columns

Check the boxes next to the columns to include them in the statement

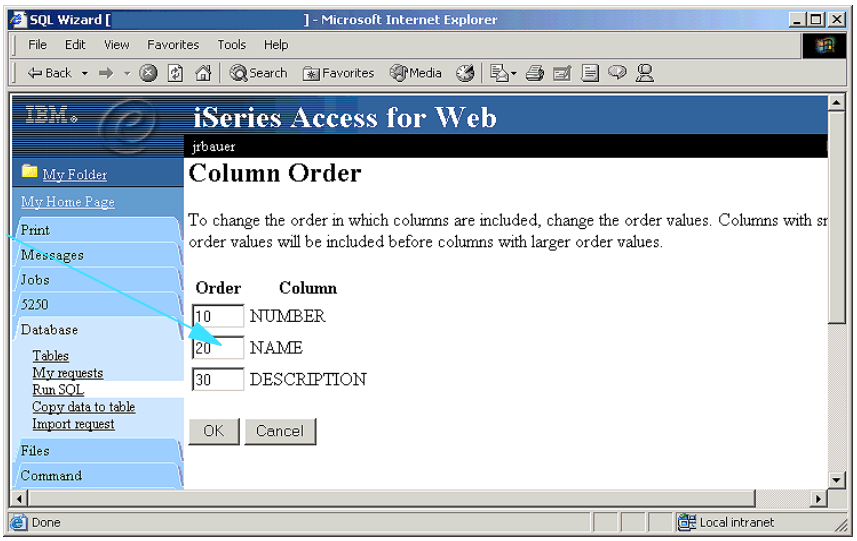
Click the column order button to change the order of columns in the output



The SQL Wizard: Choosing columns for output

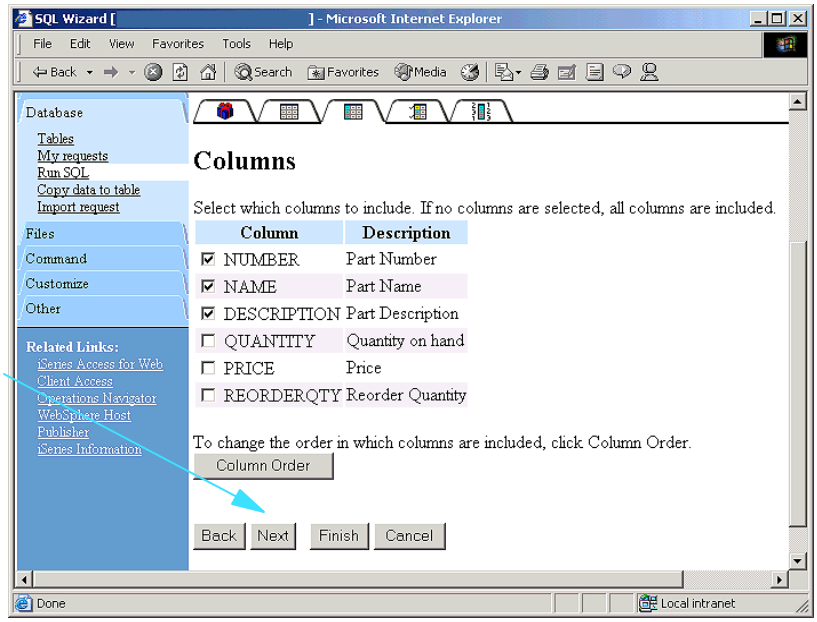
Step 3: Ordering columns

Order columns by specifying a sequence number



The SQL Wizard: Going to step 4

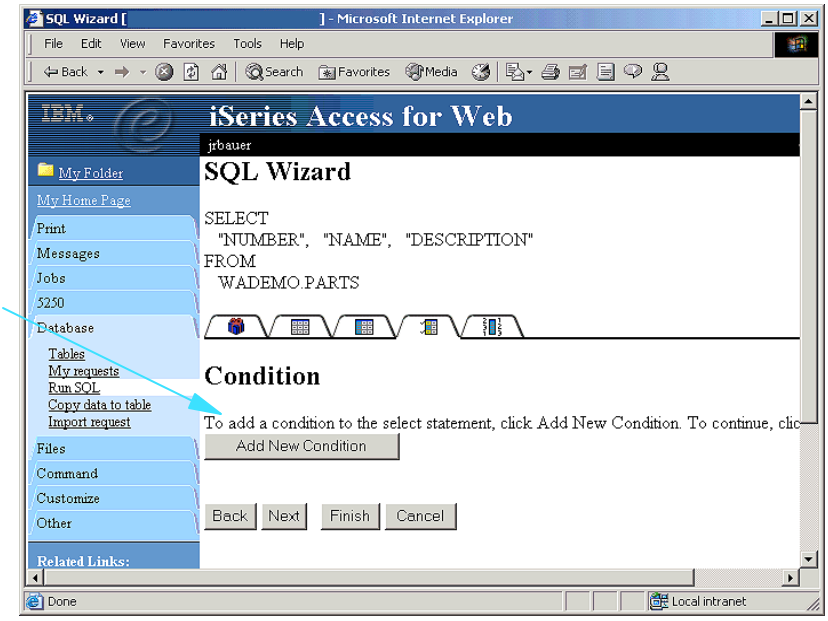
After columns and the column order has been chosen, select **Next** to specify conditions on the columns or **Finish** to return to Run SQL



The SQL Wizard: Specify Conditions

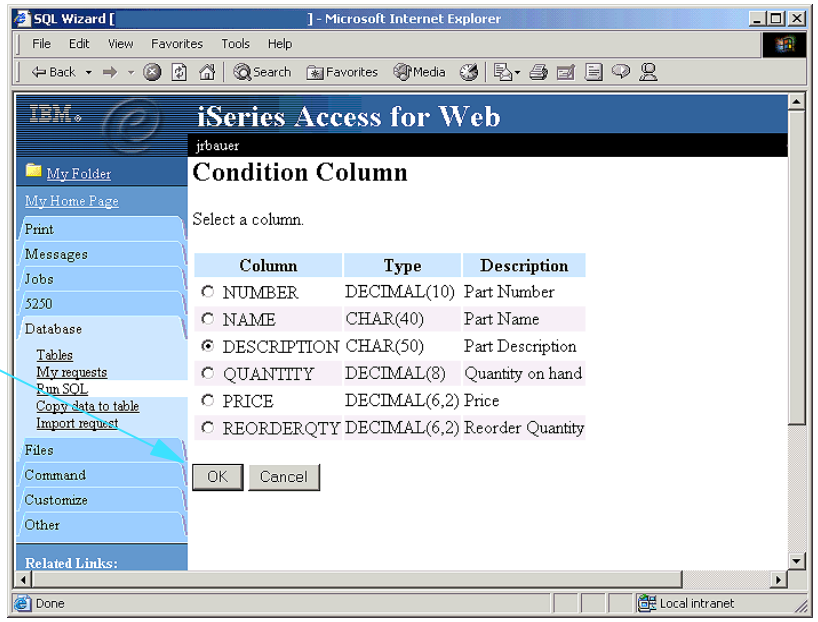
Step 4: Adding conditions

Conditions allow you to select records that meet certain criteria. Click Add New Condition to specify a condition.



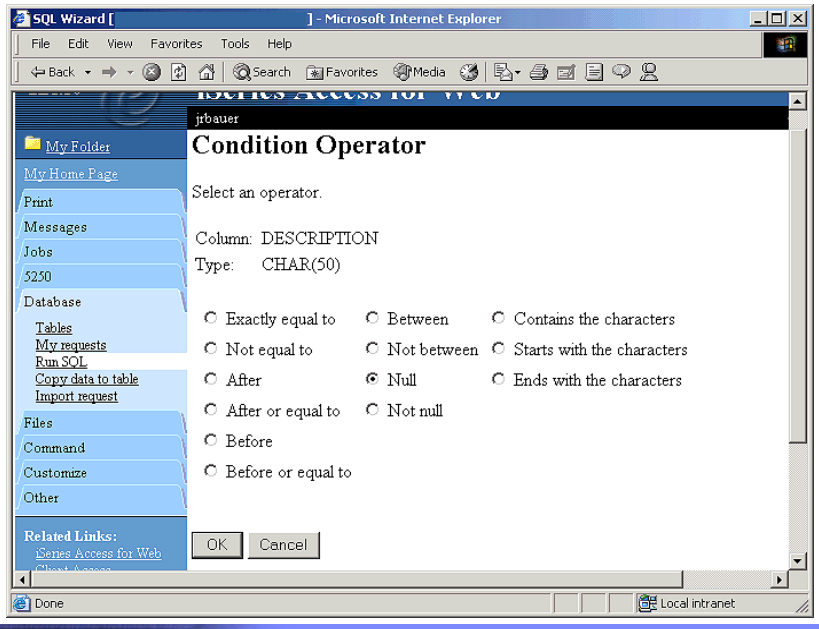
The SQL Wizard: Specify a conditional column

Select the column to use in the condition and click OK



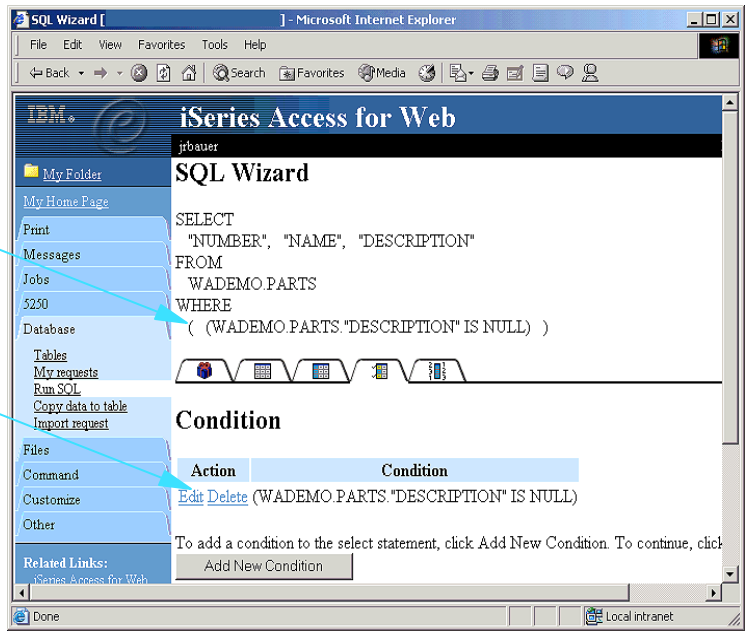
The SQL Wizard: Choosing the operator type

The SQL wizard allows you to choose the operator to use in the condition



The SQL Wizard: The condition is created

The condition shows up both in the SQL and in a condition list. You may edit or delete the condition. You may also add additional conditions.

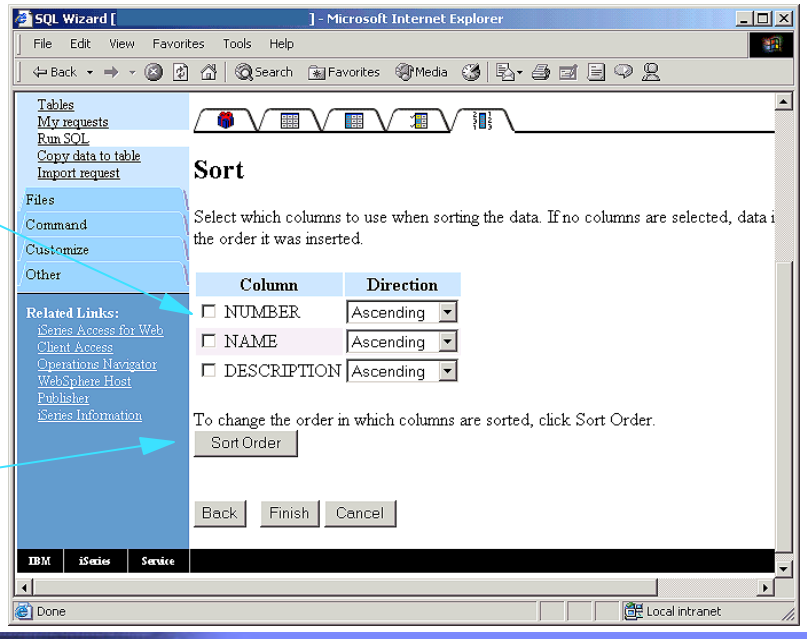


The SQL Wizard: Creating a Select Statement

Step 5: Sorting records

Choose the columns to used in the sort. Also select ascending or decending order

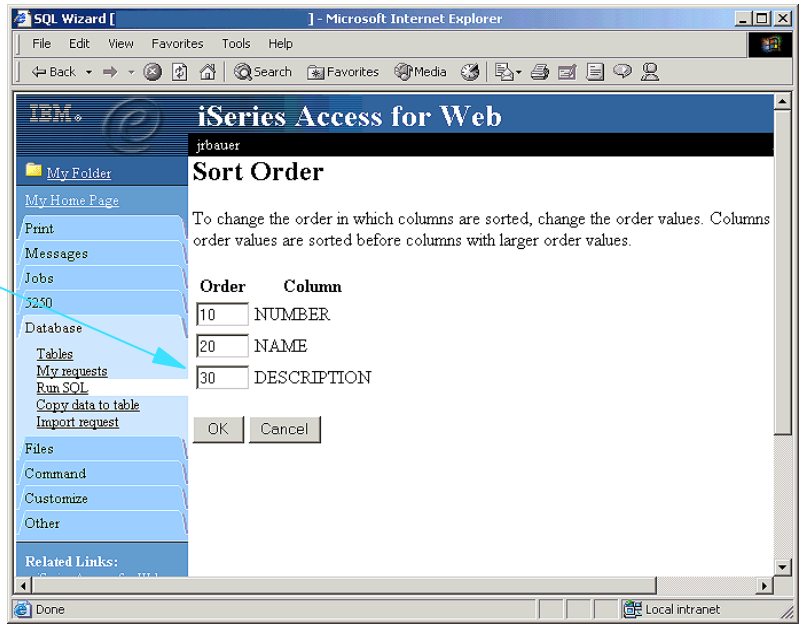
Click the Sort Order button to change the priority of the columns used in the sort



The SQL Wizard: Specify sort order

Step 5: Choosing the sort order

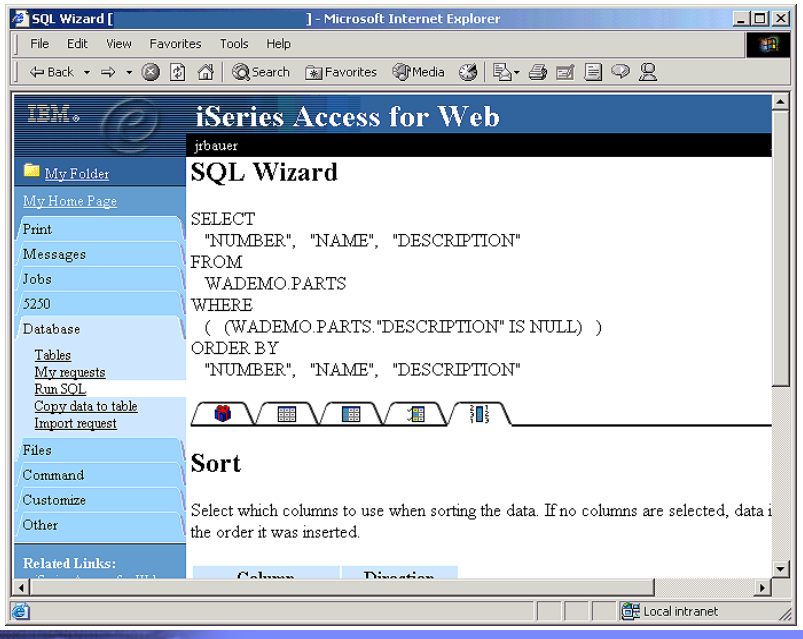
Create a sort order by specifying a sequence number for each column



The SQL Wizard: The statement is complete!

Step 7: Finishing up

The statement is now complete. Click the Finish button (not shown) on the bottom of the SQL Wizard page to return to Run SQL

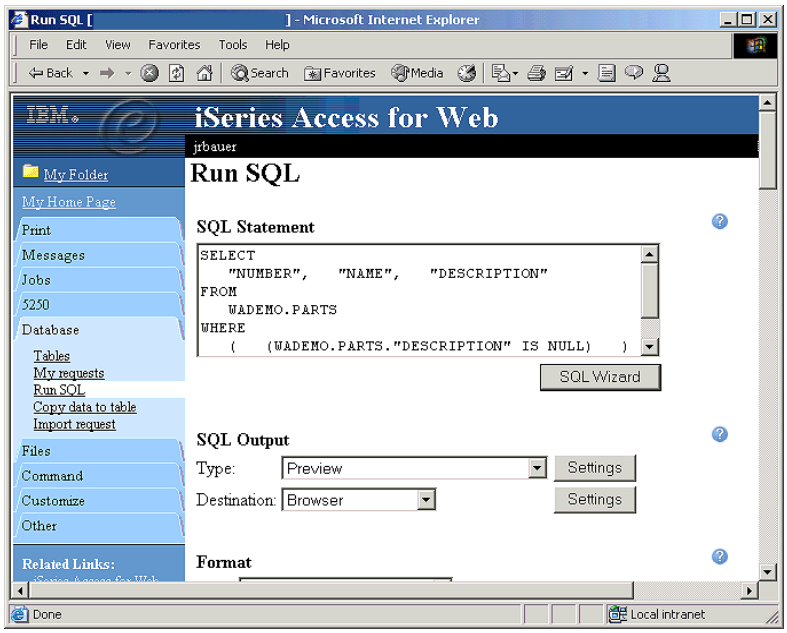


The SQL Wizard: Creating a Select Statement

Step 8: Returning to Run SQL

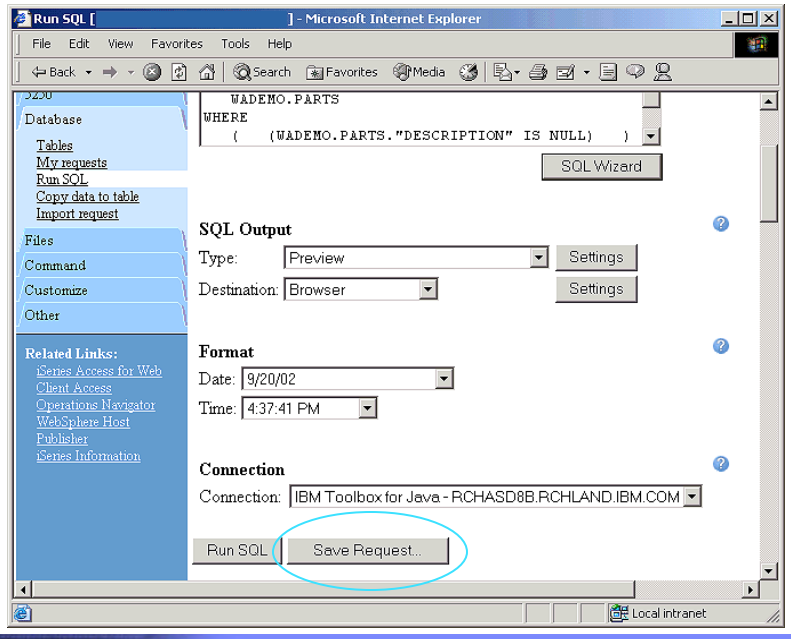
The SELECT statement you generated is available for use in Run SQL

Statements generated by iSeries Access for Web may be run immediately through Run SQL or stored and run multiple times.



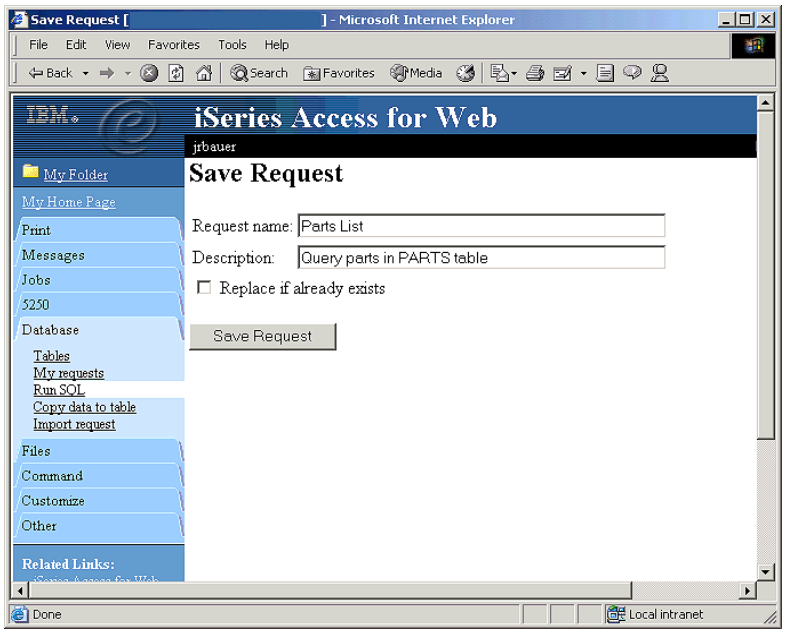
Run SQL: Saving a SQL Request

After creating a statement, by hand or with the Wizard you also have the option to store the statement for later use



Run SQL: Saving a SQL Request

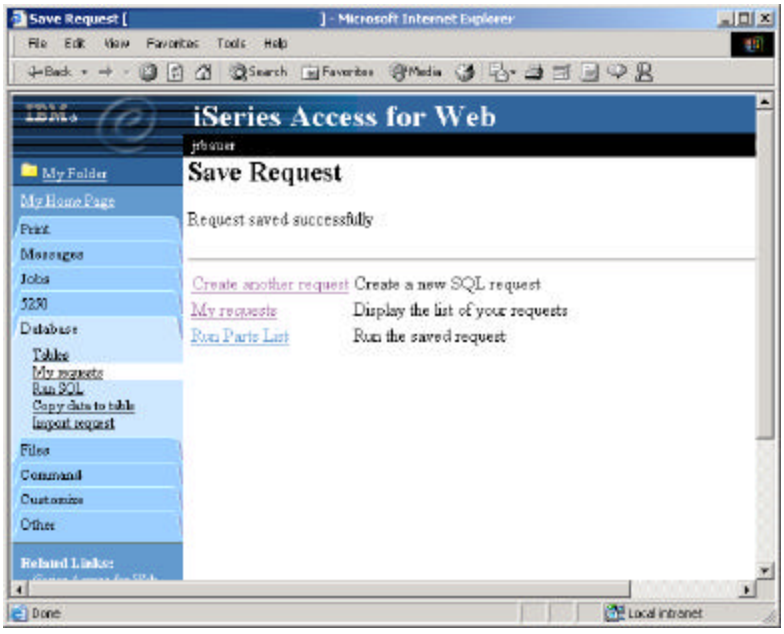
Type in the request name and a description and click 'Save Request' to save the SQL request. Choose 'Replace if already exists' to replace an existing request of the same name



Run SQL: Saving a SQL Request

Quickly running a saved request

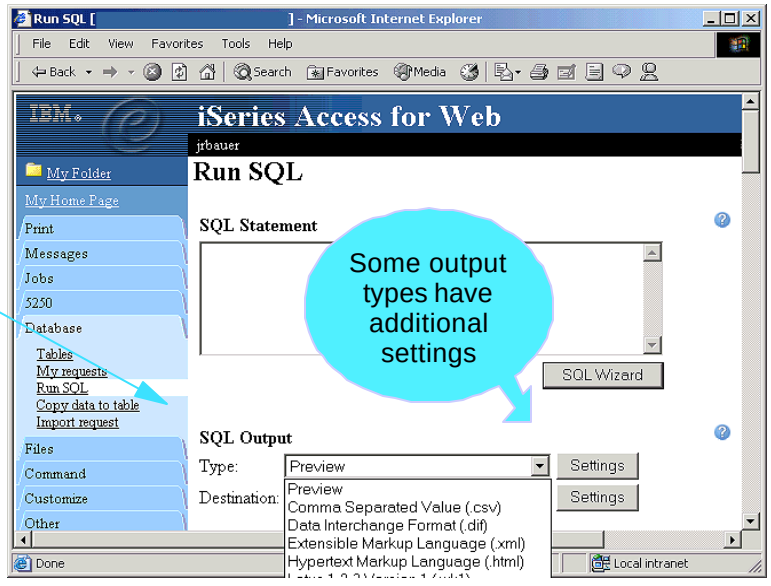
After saving the request you will be given a link to run the request. The request will also show up in your **My Requests** list



SQL Output Types and Options

SQL Output Types

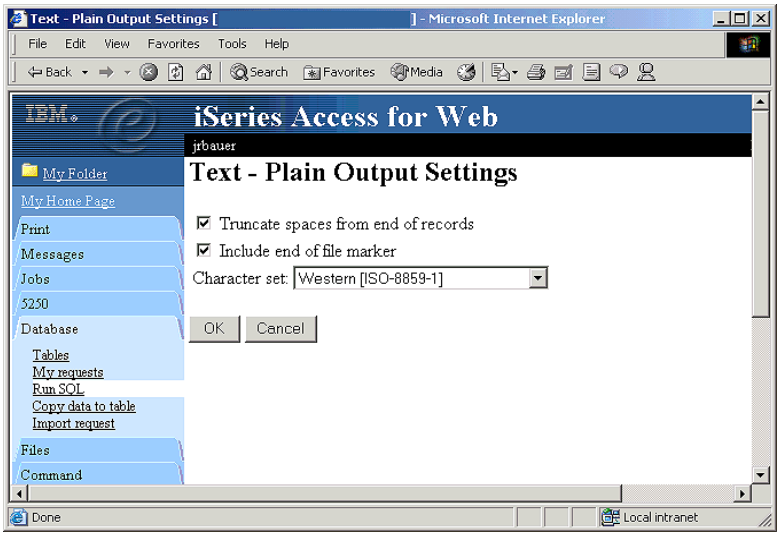
Results generated by statements may be returned in many different output types, including Plain Text, CSV, BIFF3, BIFF 4, DIF, HTML, Tab Delimited Text, WK1, XML, and PDF



SQL Output Options

Text-Plain Output Settings

- Truncate spaces from end of records
- Include end of file marker (0x1A)

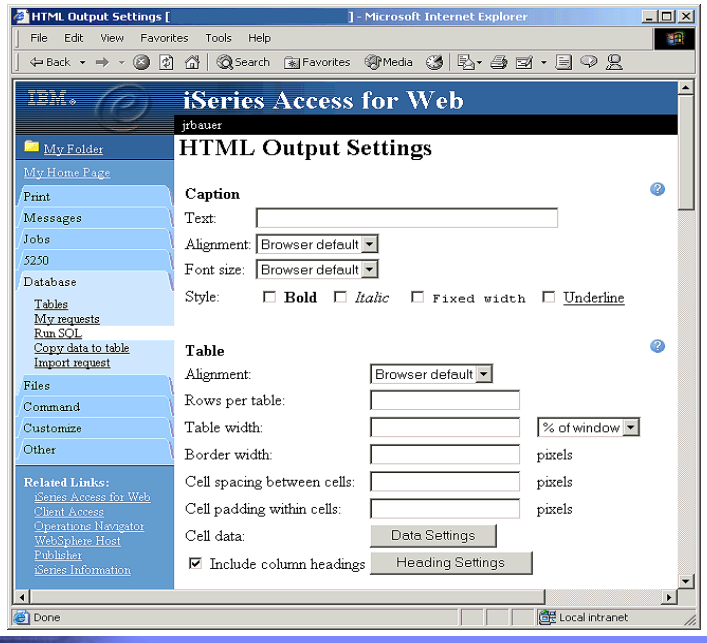


SQL Output Options

HTML Output Settings

Many settings for:

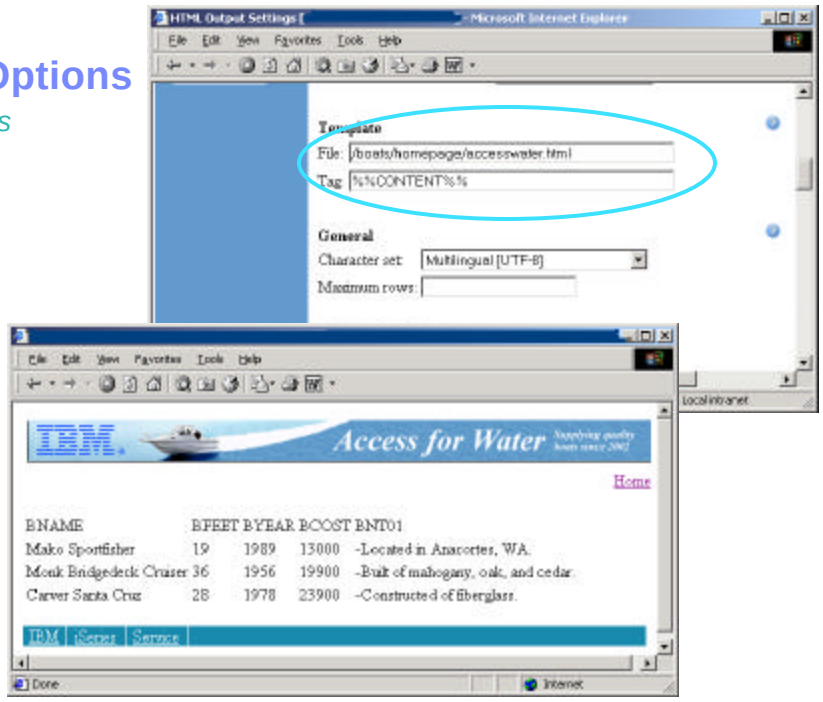
- Caption
- Table
- Cell data



SQL Output Options

HTML Output Settings

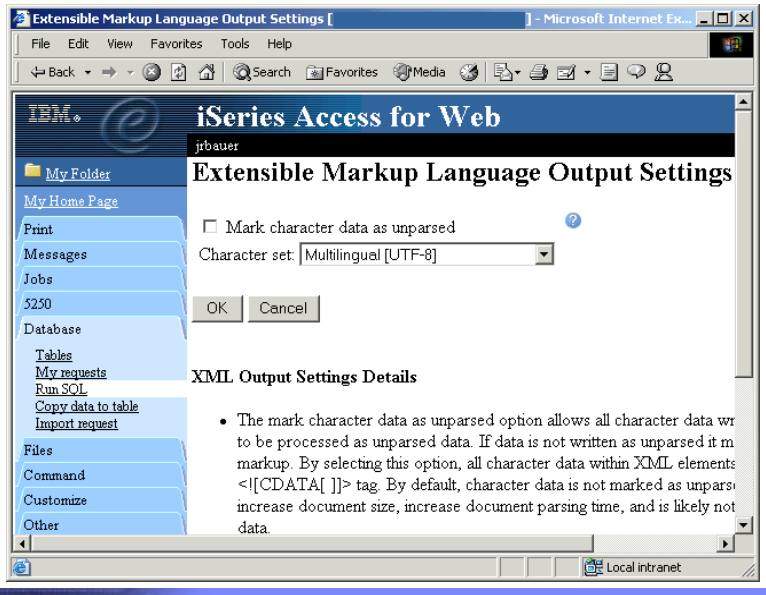
A template file can be used to display custom content before and after the statement results



SQL Output Options

XML Output Options

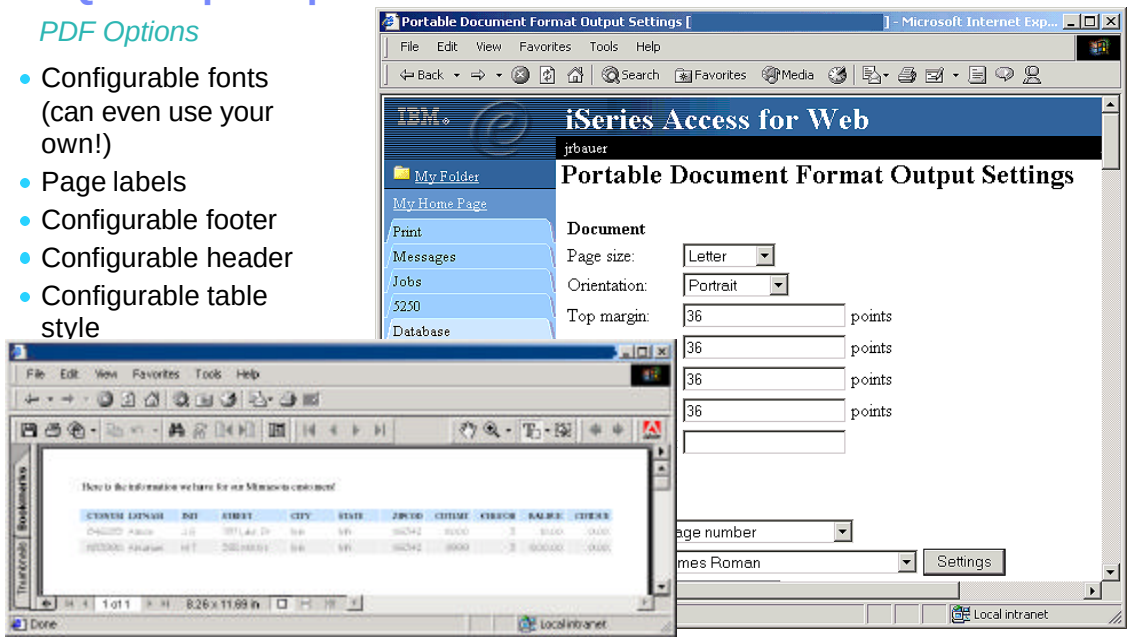
If your result set data contains the characters **"**, **<**, **>**, or **&** you must choose the *Mark character data as unparsed* option.



SQL Output Options

PDF Options

- Configurable fonts (can even use your own!)
- Page labels
- Configurable footer
- Configurable header
- Configurable table style



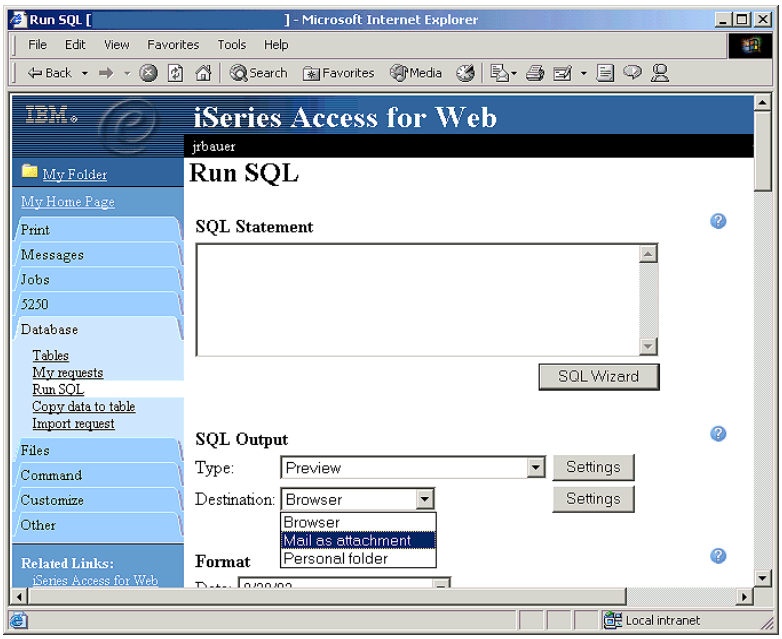
SQL Output Destinations

SQL Output Destinations

Choosing a destination

Choose from three different output destinations:

- Browser
- Email
- Personal folder



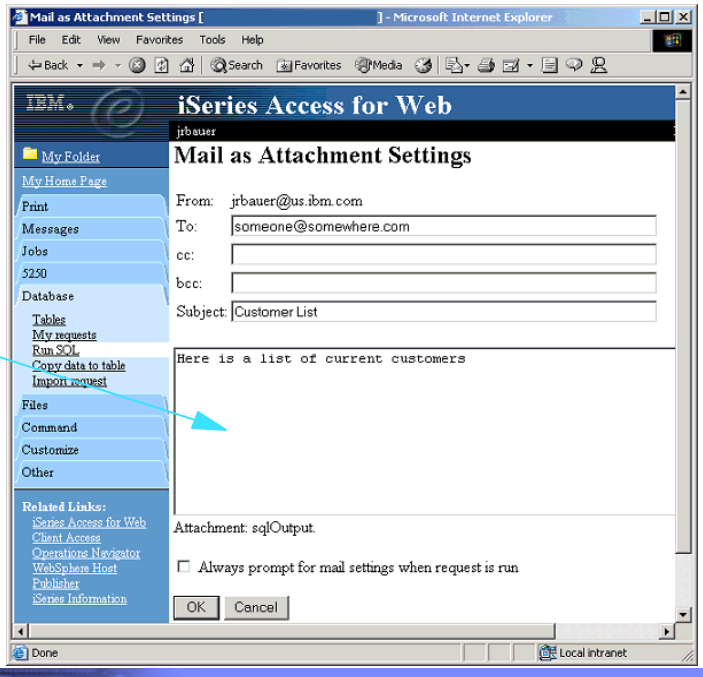
SQL Output Destinations

Mail as attachment

Mail the resulting file from Run SQL to another user or a list of users

Add a message to the attachment

Good option for sending results to a customer or supplier who doesn't have access to the iSeries server

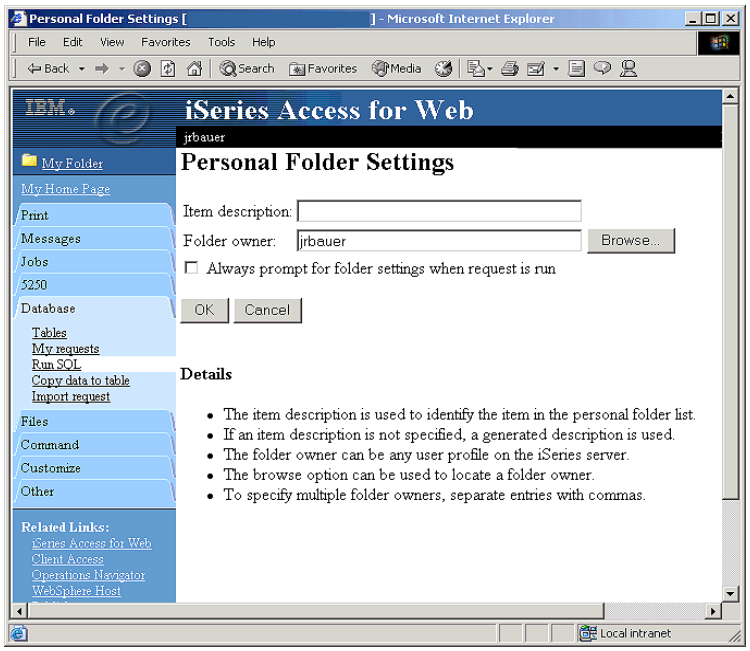


SQL Output Destinations

Send to personal folder

Send Run SQL output to a personal folder or to many personal folders

With personal folder and mail, the statement runs in the background - good options for statements with large result sets.

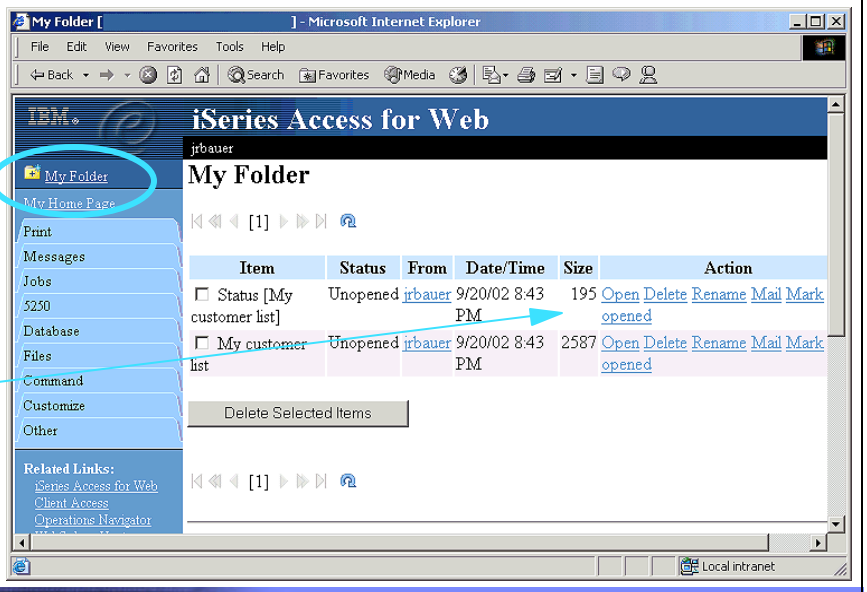


SQL Output Destinations

Viewing your Personal Folder

A personal folder is a storage area each user may have on the iSeries.

Open, Delete, Rename, or Email items



Copying Data to the iSeries

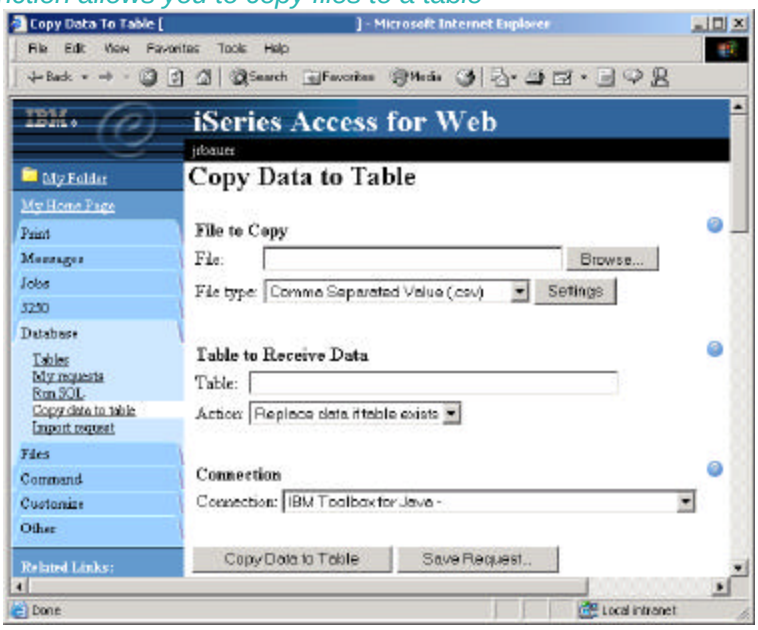
IBM eServer iSeries

Copying Data to the iSeries

Copy data to table function allows you to copy files to a table

Specify:

- File name
- File type
- File settings
- Table name
- Replace or append records to table
- Connection



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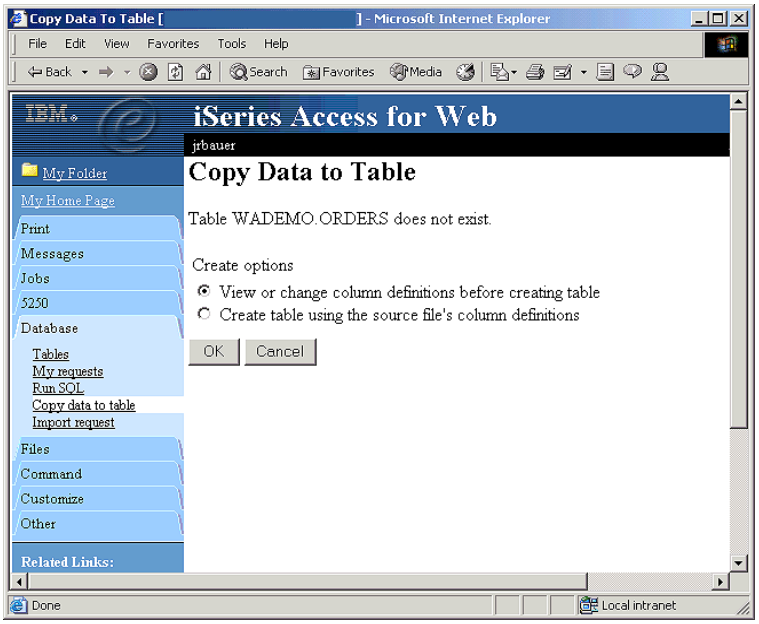
Copying Data to the iSeries: Creating a new table

Copy data to table will create a new table if one does not exist

Choose to view or change the table defininition or to simply create the table using the default definition determined by iSeries Access for Web

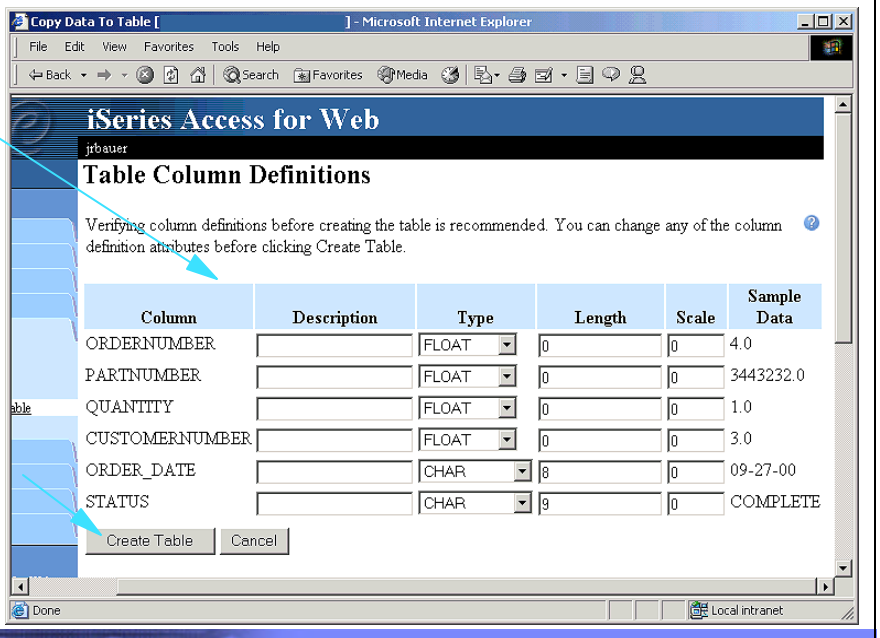


Copying Data to the iSeries: Creating a new table

Verify Column Definitions for A New Table

From this panel you may add a description, change data types, column length, and scale

Click Create Table to create the new table and copy your data to the new table

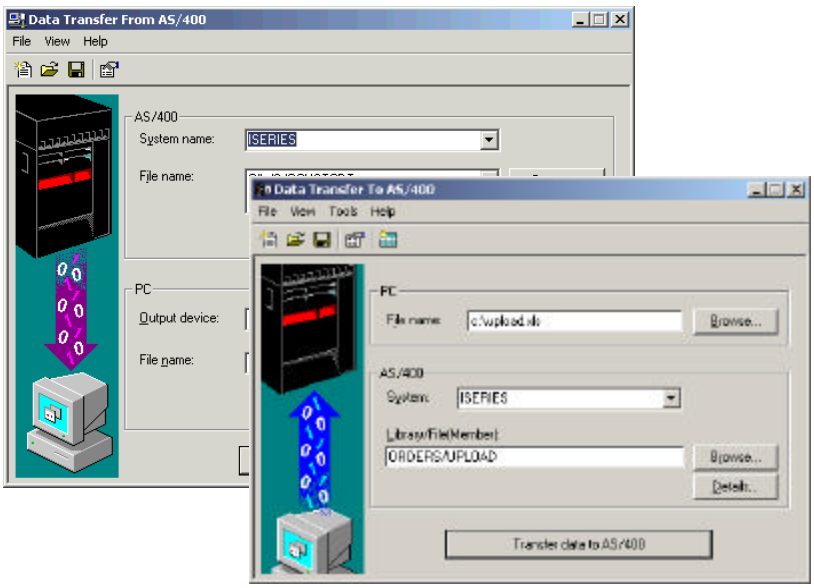


Importing Client Access Data Transfer Requests

IBM eServer iSeries

Importing Client Access Data Transfer Requests

Import your existing iSeries Access for Windows and Client Access Data Transfer requests into iSeries Access for Web!



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Importing Data Transfer requests

Client Access, Client Access Express, and iSeries Access for Windows Data Transfer request profiles may be imported into iSeries Access for Web

Data Transfer From AS/400 / iSeries

- .TTO and .DTF request files supported by iSeries Access for Web
- iSeries Access for Web tries to do a "best fit" match for options in the transfer request file when converting them to a SQL select statement

Data Transfer To AS/400 / iSeries

- .TFR and .DTT request files supported by iSeries Access for Web
- iSeries Access for Web tries to do a "best fit" match for options in the transfer request when converting them to an upload request

Importing Client Access Data Transfer Requests

Restrictions and Problems

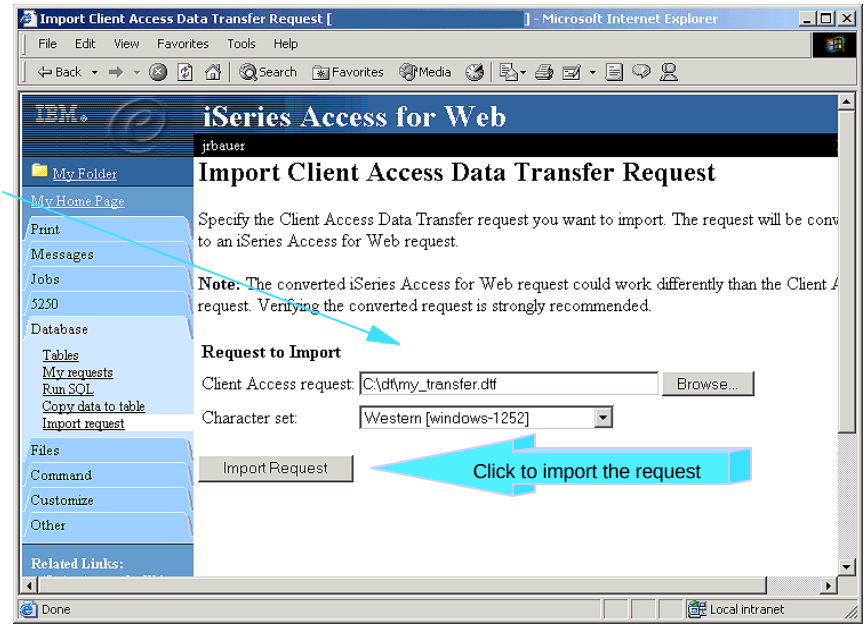
There are several considerations to keep in mind when using Data Transfer requests with iSeries Access for Web

- iSeries Access for Web is completely SQL based. Accessing multiple members of a file is not supported.
- iSeries Access for Web does not support all the file types that are supported by Data Transfer.
- Not all output file options are supported by iSeries Access for Web.
- If the request file accesses a system other than the default, a new connection must be must be configured by the administrator.

Importing a Client Access Data Transfer Request

The Import Function

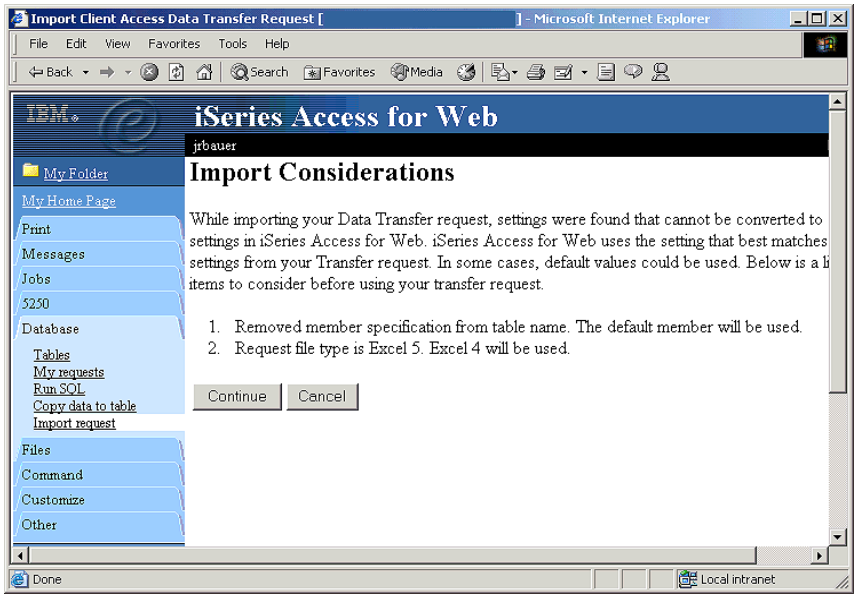
Browse for or enter in the name of the Client Access Data Transfer upload or download request to import



Importing a Client Access Data Transfer Request

Import considerations

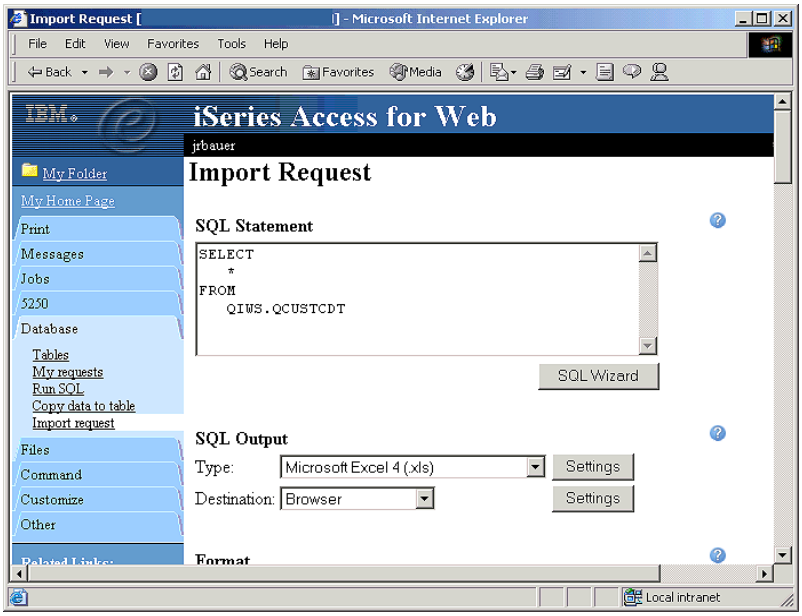
If there are issues or changes you should be aware of, the **Import Considerations** panel will display after the file is imported



Importing a Client Access Data Transfer Request

Importing a Data Transfer From AS/400 Request

The imported transfer request may be run or saved as an iSeries Access for Web request

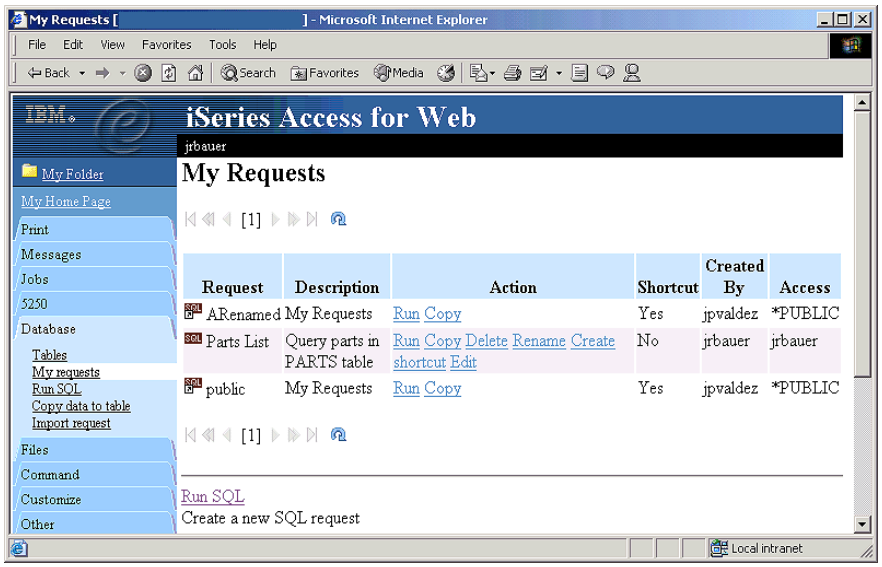


Managing Requests

Managing Requests

Managing your stored SQL and copy data requests

From My Requests you can run, copy, delete, rename, or create shortcuts to requests. You may also access shortcuts others have given you



Notes: Managing Requests

Use My requests to manage saved database requests. Saved requests include requests saved using Run SQL or Copy data to table. Imported Client Access Data Transfer requests, saved in either format, are also included in this list. The My requests function supports the following actions:

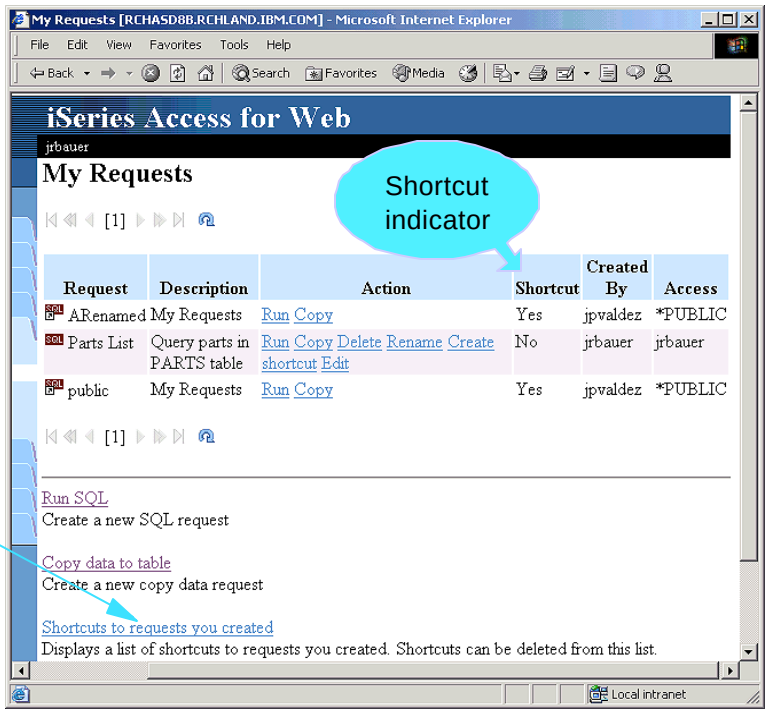
- **Run**
  Run the request. If the request is a Run SQL request, it will run the statement. If the request is a Copy data to table request, the Copy data to table panel will display will all the request attributes set.
- **Copy**
  Make a copy of the request.
- **Rename**
  Rename the request.
- **Delete**
  Delete the request.
- **Create Shortcut**
  Create a shortcut to the request. Access to the shortcut can be given to another user, a group of users, or to everyone (*PUBLIC)

Shortcuts

Working with shortcuts

My Requests allows you to work with shortcuts

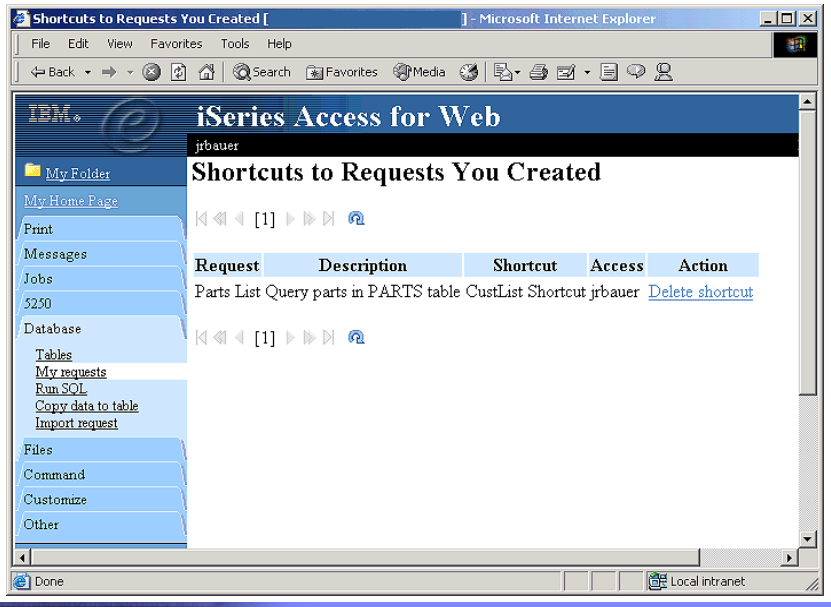
Manage shortcuts you created



Managing Shortcuts

Shortcuts to Requests You Created

- Original Request
- Request Description
- Shortcut
- Access - who can use it/see it
- Action - delete the shortcut



Notes: Working with Shortcuts

Database requests can only be accessed by the iSeries user profile used to create them. A shortcut is a way to share a request with other users. The following topics describe how the request actions apply to shortcuts:

Create a shortcut
To create a shortcut, a name and an access value must be specified. The access value identifies who will be able to access the shortcut. The access value can be an existing user profile name on the iSeries server, an existing group profile name, or *PUBLIC.

Run a shortcut
When a shortcut is run, the original request is actually run. If the original request is modified, the shortcut automatically picks up the modified behavior. This is not true for connection information, since the connection information is stored directly with the shortcut. If the connection in the original request is updated, the shortuct will not pick up the new connection. If this is not the desired behavior, the shortcut can be deleted and recreated.

Copy a shortcut
Copying a shortcut actually makes a copy of the original request. Like other requests, the access value for a copied request is the user profile used to create the copy. Therefore, any modifications to the copy do not affect the users of the the shortcut.

Delete a shortcut
The creator of a shortcut can delete the shortcut. If the shortcut access is a single user profile, the user with access to the shortcut can also delete it. Only the shortcut creator can delete a group or *PUBLIC shortcut.

Rename a shortcut
Only shortcuts with a sungle user profile access can be renamed. These shortcuts can be renamed by the shortcut creator or by the user with access to the shortcut.

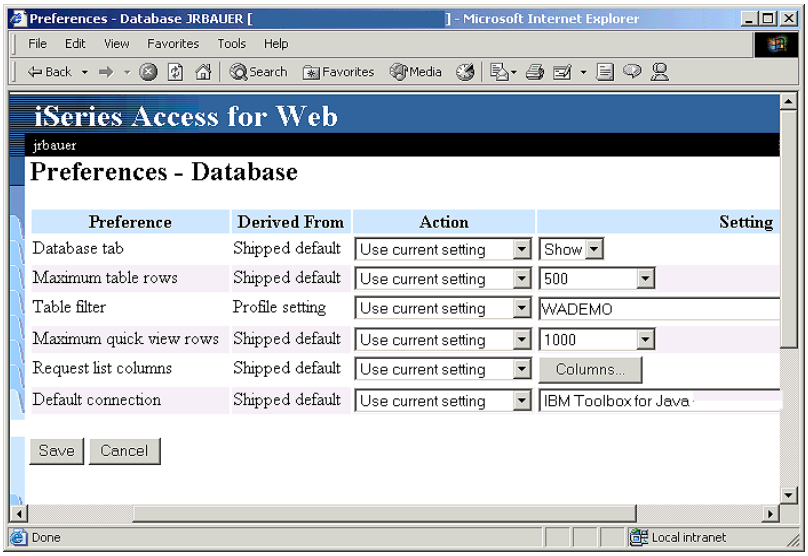
Editing shortcuts or creating shortcuts to other shortcuts
Shortcuts cannot be editited and a shortcut cannot be created to another shortcut.

Preferences and Customizations

User Preferences

Using Database Preferences

- User configurable (by default)
- Show/hide tab
- Configure filters
- Configure max rows
- Request list columns
- Default Connection



Notes: User Preferences

iSeries Access for Web provides a Preferences function which allows users to customize iSeries Access for Web settings to meet their needs. By default, all users are allowed to modify their preferences. Any preference modifications will be saved and associated with their iSeries user profile. To access Database preferences, select the Customize tab and then select Preferences. Next, click on the Database link under the category.

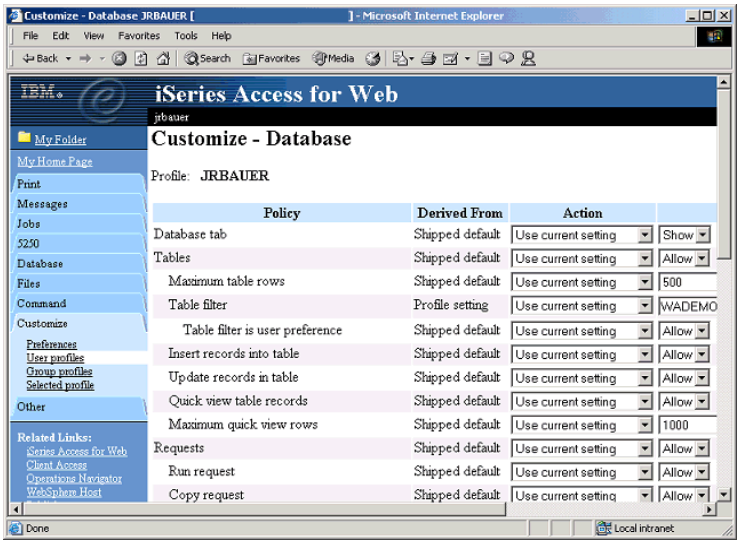
Configurable Database Preferences include:

- Show/no show Database Tab - Users can choose not to see the Database tab.
- Maximum Table Rows - Set the maximum number of tables to display when using the "Tables" function.
- Table Filter - Used to filter the libraries (schemas) displayed when the "Tables" function is used. The default value, *USRLIBL displays those tables in the libraries(schemas) in the user portion of the library for the authenticated user.
- Maximum quick view rows - Sets the maximum number of rows to display when using quick view.
- Request list columns - Set the columns to display and the order of columns displayed using the My Requests function.
- Default connection - Set the default connection for database functions. This connection is used by the Tables function and will be the default selection for the Copy data to table and Run SQL functions.

Customizations

Customizing Access to Database Functions

- Administrative function
- Allow/deny many facets of database
- Override user preferences
- Can be done at a group level
- Very granular



Notes: Customizations

iSeries Access for Web provides a Customize function for administrators to set policies for user and group profiles. These policies allow administrators to control what functions a user can perform and how certain information will be presented. When a function is restricted, its navigation bar content will be removed. Restricting a function also restricts access to the corresponding servlet. This means the function is also restricted if a user tries to access the servlet directly via its URL. When an administrator sets policies for a user or group, they take effect immediately.

Who can administer other users and groups

Administrators with *SECADM special authority in their iSeries user profile are automatically authorized to administer iSeries Access for Web settings for other users and groups. These administrators, in turn, have authority to grant other user profiles permission to the iSeries Access for Web administration functions. This is accomplished by setting the "Grant administrator privileges" policy for that user. Refer to the Administration policies table in the iSeries Access for Web Policies section for additional information on this policy. In either case, the administrator can only update policy settings for iSeries profiles that they have authority to.

How Policy Settings for a User are Determined

It is important for administrators to know how policy settings for an individual user will be determined.
The following sequence of checks are made when a policy related decision needs to be made for the logged on user:

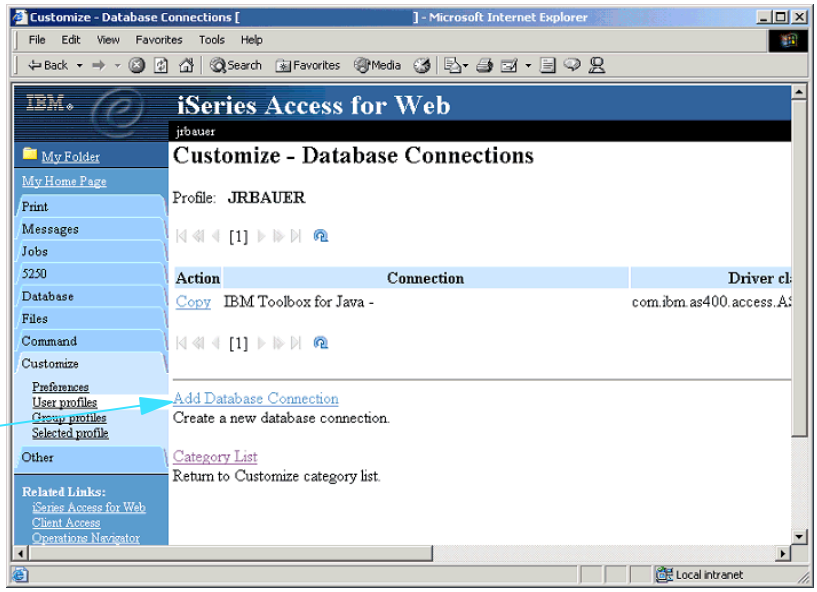
1. If the policy setting is specific to the user profile, it will be enforced.
2. If the policy setting is not specific to the user profile, group profiles that the user is a member of are checked. If the policy has been set for any of these group profiles, it will be enforced.
3. If the policy setting is not found in any of the user's group profiles, a special group, *PUBLIC is checked. If the policy has been set in the *PUBLIC group profile, it will be enforced.
4. If the policy setting is not found in the user's profile, any group profiles, or the *PUBLIC group profile, the shipped default policy setting will be used.

Customizing Database Connections

Customizing Access to Database Connections

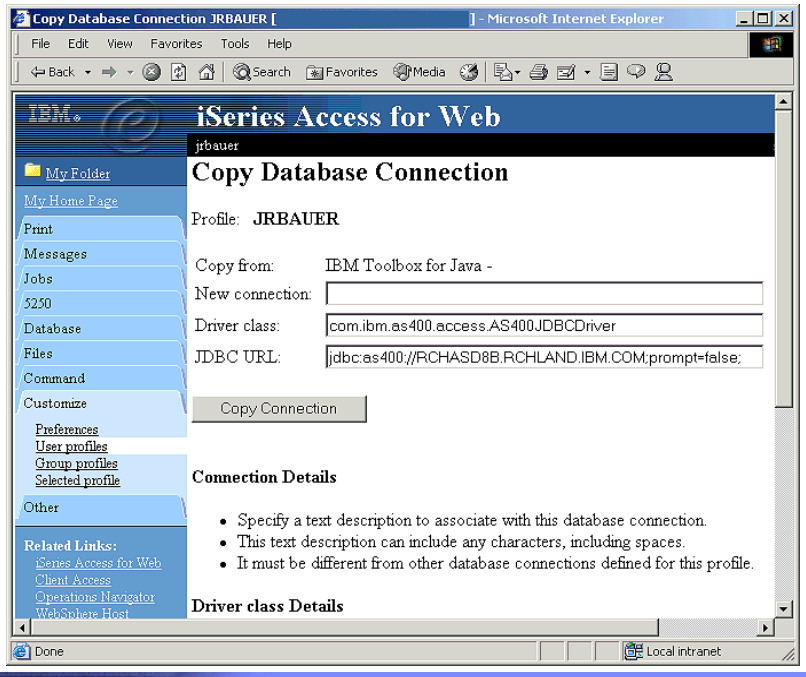
Database Connections can be copied, changed, or removed (cannot change or remove default)

New Database Connections can be added



Copying a Database Connection

The simplest way to create a new connection is to copy an existing connection!



Notes: Database Connections

The database function of iSeries Access for Web makes JDBC calls to access the database. By default, the IBM Toolbox for Java driver is used to access the server that iSeries Access for Web is running on.

Customization provides support for defining additional database connections. By defining additional connections, the database code can be switched to access a different database server, to use different driver settings, or to use a different JDBC driver. The ability to define new database connections through Customization is limited to users who are allowed to administer policy settings.

Database connections consist of three items:

1. Connection name. This is simply a unique name given to the connection. A default connection to the current system is always provided. The default connection is of the form "IBM Toolbox for Java - System name", where system name is the system running iSeries Access for Web.

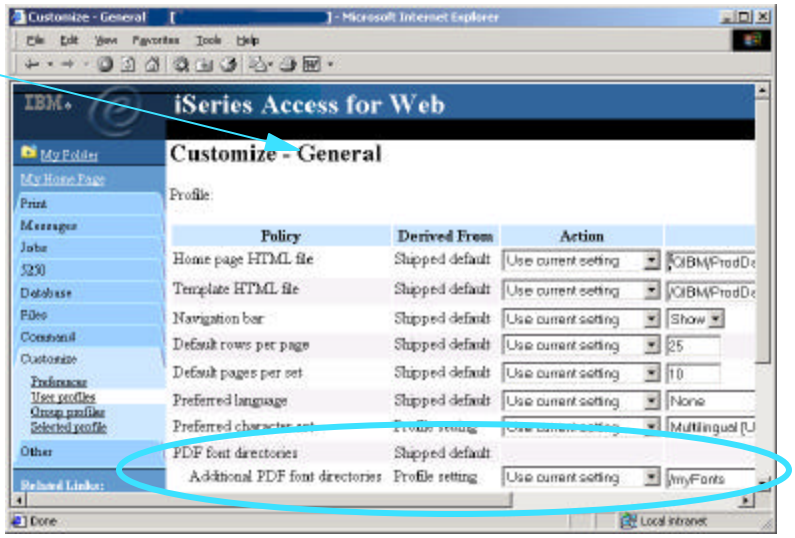
2. Driver name. This is the Java class file that implements the JDBC driver. This class file must be located in the class path of your application server.

3. JDBC URL. This parameter is in the form of a standard JDBC connection URL. It has the form jdbc:<sub protocol>://<system name>;connection parameters. Visit the IBM Toolbox for Java website for more information on the IBM Toolbox for Java JDBC driver at http://www.ibm.com/servers/eserver/iseries/toolbox/faqjdbc.htm. This FAQ includes information on getting CCSID 65535 conversion to occur over JDBC.

Note: iSeries Access for Web only supports the IBM Toolbox for Java driver. Using a different driver might work, but this is an untested and unsupported environment.

Adding PDF Fonts

- Set on general page
- Fonts must be stored in iSeries integrated file system
- Supported file types:
  - Adobe Type 1 (*.afm)
  - True Type (*.ttf)
  - True Type Collection (*.ttc)



Bookmarks and Custom Pages

Bookmarks and Custom Pages

You can create bookmarks to link to almost any function in iSeries Access for Web, including Database functions!

- Run A SQL Request by accessing a Bookmark
- View a table by using a bookmark
- Do quick table updates via a bookmark

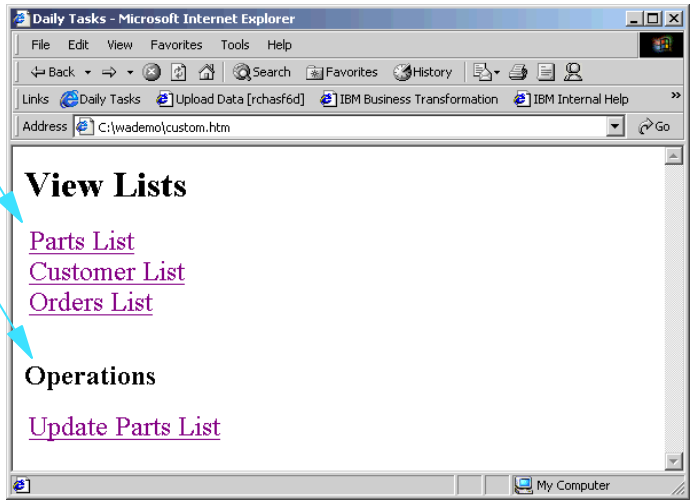
You can also build custom pages that link to various functions of iSeries Access for Web!

- Quick links to run SQL requests
- Links to allow users to download realtime data from the web

For iSeries Access for Web URL interface documentation go to:
http://ibm.com/servers/eserver/iseries/access/web/interface

Bookmarks and Custom Pages

Create your own custom pages that link to stored SQL and copy data Requests!



Summary

iSeries Access for Web Database:

- Is part of the iSeries Access for Web product
- Runs completely on the iSeries Server
- Can be accessed via a Web Browser
- Uses JDBC for DB2 UDB connectivity
- Allows you to work with SQL Tables. Including inserting, updating, and deleting records. You may also view the entire table.
- Has an interface to run SQL statements
- Has a graphical SQL Wizard to help you build SQL SELECT statements.
- Supports many data formats for displaying and emailing SQL Output
- May be used to copy data to iSeries tables
- Capable of Importing Client Access Data Transfer requests
- Robust interface for managing SQL requests
- Allows you to create bookmarks and custom pages to link to various Database functions
- Fully Customizable

Questions?

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