IBM

IBM System i5

iSeries Access for Web Database Access

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Simplify your IT.

iSeries Access for Web sessions/labs

23MG – iSeries Access for Web: Security Considerations
25MG – iSeries Access for Web: The Browser Alternative!
31LA – LAB: iSeries Access for Web: Installation and Configuration
32LA – LAB: iSeries Access for Web: Installation and Configuration
33MN – iSeries Access for Web: Control Access to your iSeries Resources
35MG – iSeries Access for Web: Setup and Configuration
36MG – Tips & Techniques for iSeries Access for Web
41MG – iSeries Access for Web: Real World Usage
43LA – OPEN LAB: iSeries Access for Web
44MG – iSeries Access for Web: Database Access
46MG – iSeries Access for Web Runs in a Portal
51MG – Programming with iSeries Access for Web
54MN – iSeries Access for Web: Run 5250 in a Browser

Voted "Best Traditional Lab" at Spring and Fall 2005 COMMON

Functional enhancements can be submitted via the FITS system. The URL is:
https://www-912.ibm.com/r_dir/ReqDesChange.nsf/Request_for_Design_Change?OpenForm

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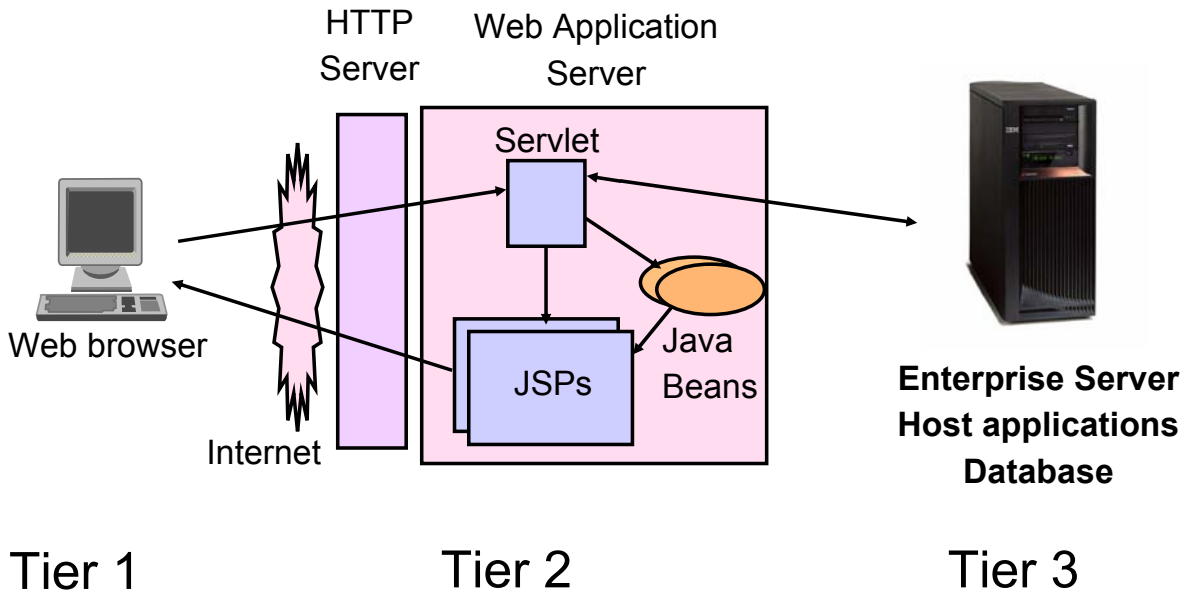
What is iSeries Access for Web?

End users can leverage business information, applications, and resources across an enterprise by extending the IBM i5/OS® resources to the client desktop through a web browser

i5/OS V5R4 &
V5R3,
OS/400 V5R2

- Provides a web-based view of i5/OS applications and resources through a browser

- Runs on i5/OS

- Requires no software be installed on the client other than a browser

- Provides two offerings:
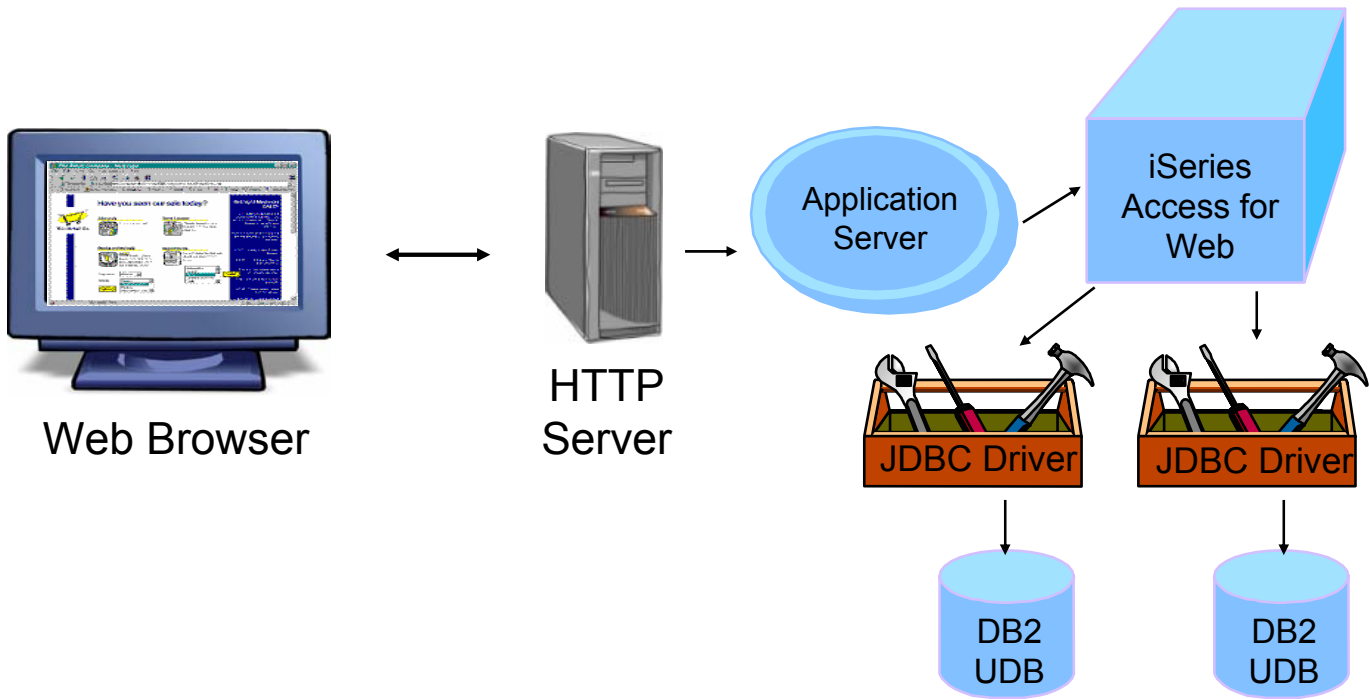 - Web application
  - Portal application

- Windows
- Linux
- Macintosh
- UNIX....

Mozilla

Netscape

Opera

Opera

Firefox

Internet Explorer

Note: Web application and portal application have different levels of functionality.

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Web application environment

HTTP
Server

Web Application
Server

Servlet

Web browser

Internet

JSPs

Java
Beans

Enterprise Server
Host applications
Database

Tier 1

Tier 2

Tier 3

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Database Overview

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

Web Browser

HTTP
Server

Application
Server

iSeries
Access for
Web

JDBC Driver

JDBC Driver

DB2
UDB

DB2
UDB

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iSeries Access for Web: Database Functions

iSeries Access for Web has a very robust set of capabilities for working with databases

- Tables - view, find, update, insert, delete table records

- My requests - run, copy, delete, and rename saved requests; create and manage shortcuts

- Run SQL - run SQL statements, wizard to create SELECT statements, many supported output file formats

- Copy data to table - copy data from workstation file to database table

- Import request - import iSeries Access for Windows/Client Access Data Transfer requests

- Import query – import query definition files or Query Manager files

- Extract server data – mine i5/OS object data, store in database table

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Restricting End User Access
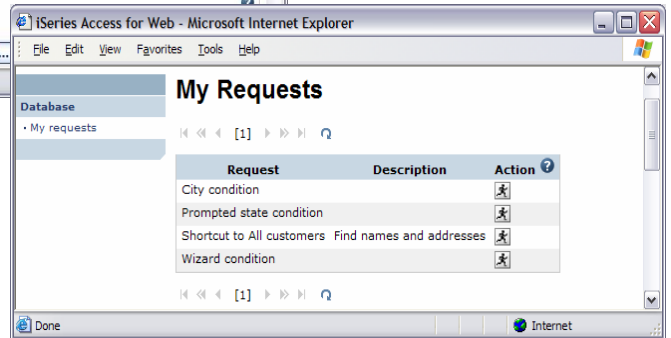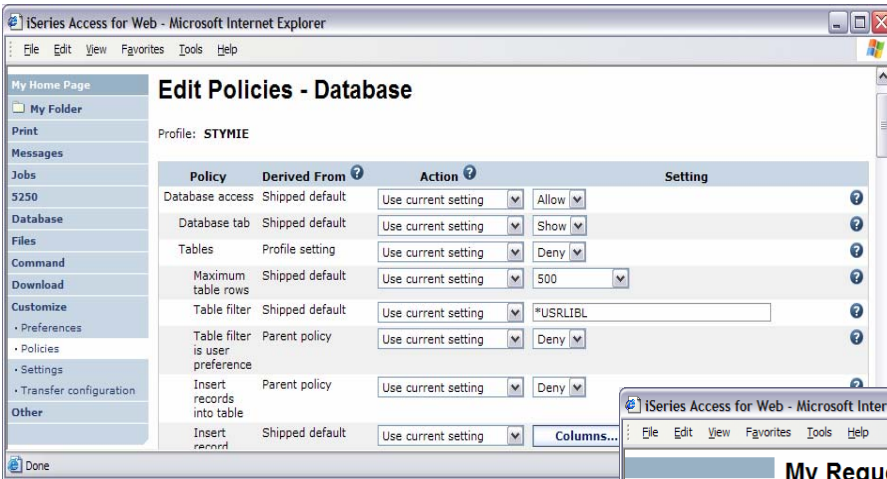
Use Customize to give
users access to
minimum set of
functions needed to
perform their jobs

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Run SQL

- The Run SQL function allows you to type in a free form SQL statement

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

- Click Run SQL to run the statement

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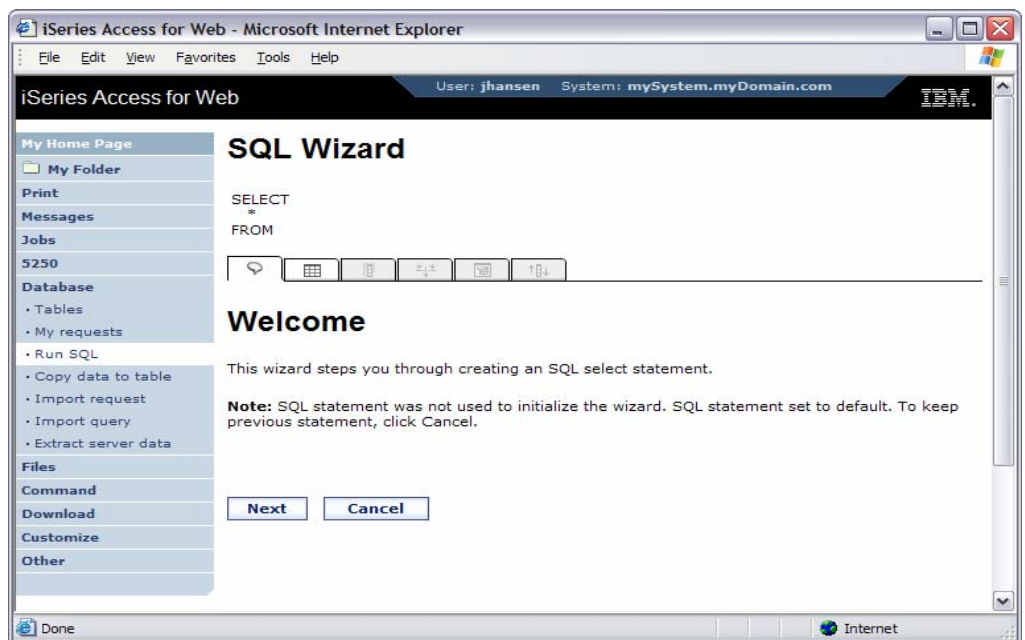# Run SQL: Results

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Run SQL: Statement

- You can run any SQL statement

- The SQL Wizard can help you generate an SQL SELECT statement

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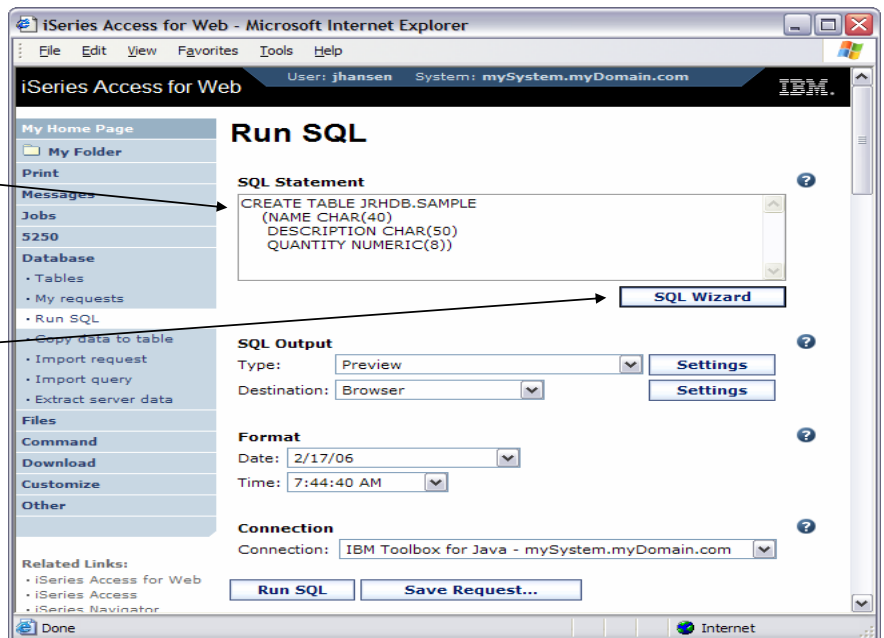
SQL Wizard

- The SQL Wizard helps you generate a single table SELECT statement

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SQL Wizard: Creating a SELECT Statement
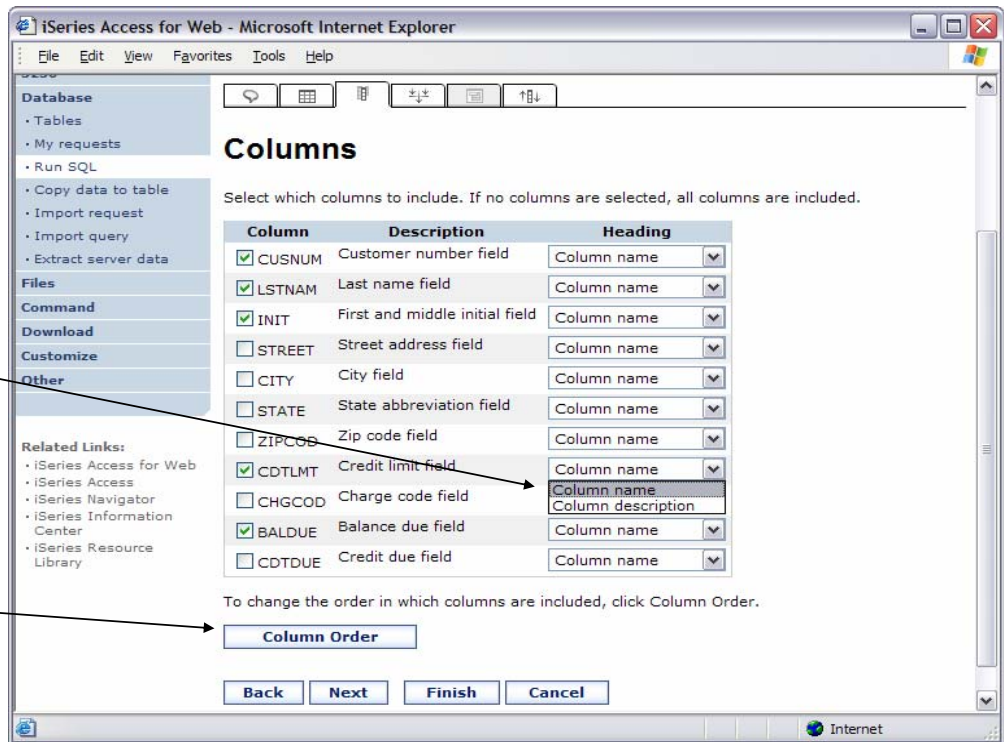
Step 1: Choose a table

- Type in or find the table from which to select records

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SQL Wizard: Choosing Columns for Output
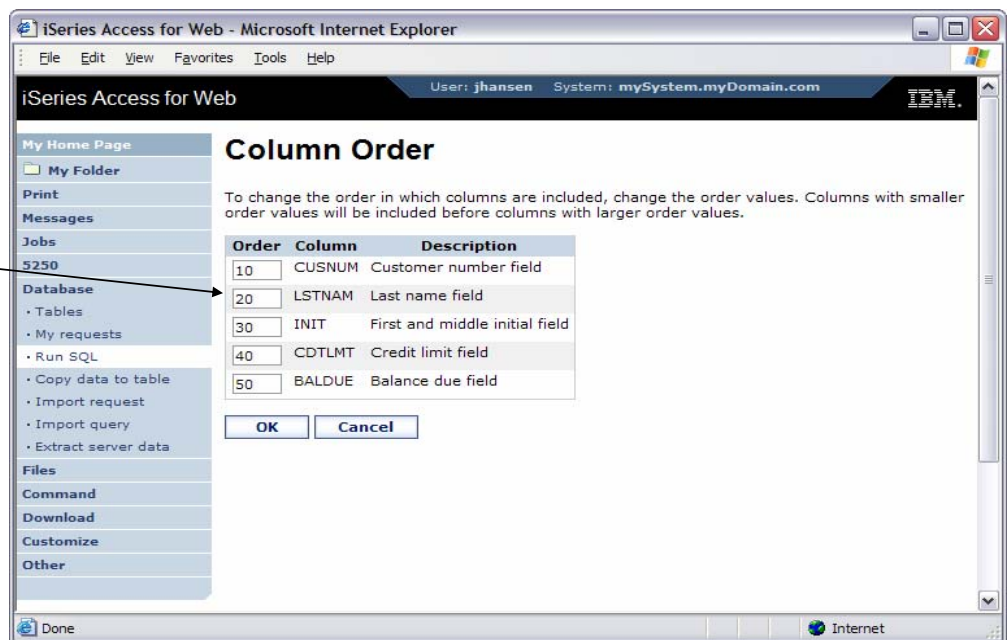
Step 2: Choosing columns

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

- Select column name or description for heading

- Click Column Order to change the order of columns in the output

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SQL Wizard: Choosing Column Order

Step 3: Ordering columns

- Order columns by specifying a sequence number

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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.

iSeries Access for Web - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

iSeries Access for Web   User: jhansen   System: mySystem.myDomain.com

My Home Page
My Folder
Print
Messages
Jobs
5250
Database
· Tables
· My requests
· Run SQL
· Copy data to table
· Import request
· Import query
· Extract server data
Files
Command
Download
Customize
Other

SQL Wizard

SELECT
  "CUSNUM", "LSTNAM", "INIT", "CDTLMT", "BALDUE"
FROM
  JRHDB.QCUSTCDT

Condition

To add a condition, click Add New Condition. To continue, click Next.

Add New Condition

Back   Next   Finish   Cancel

Done   Internet

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SQL Wizard: Specify a Conditional Column

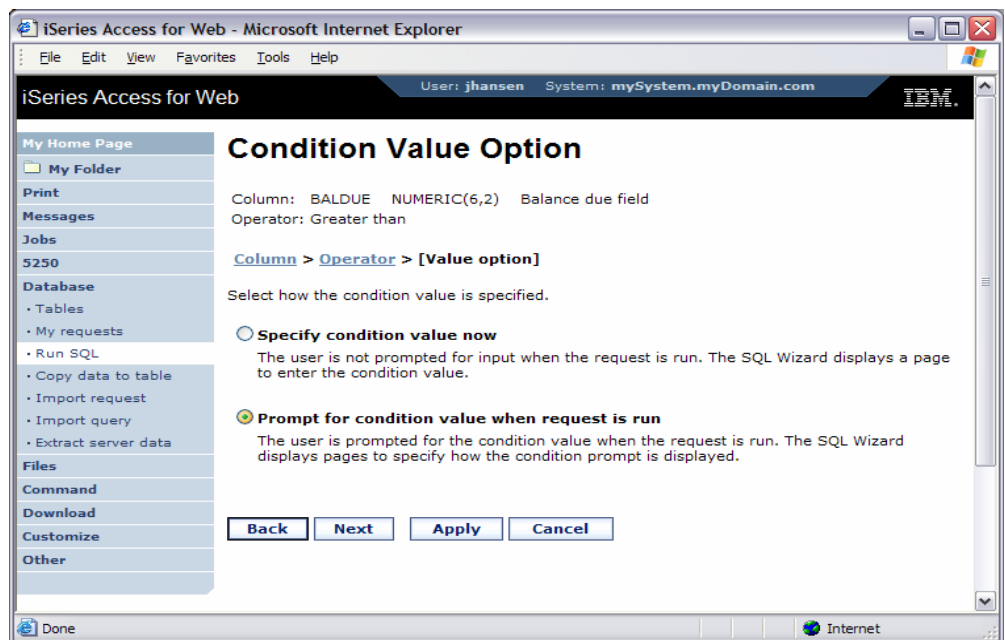- Select the column to use in the condition

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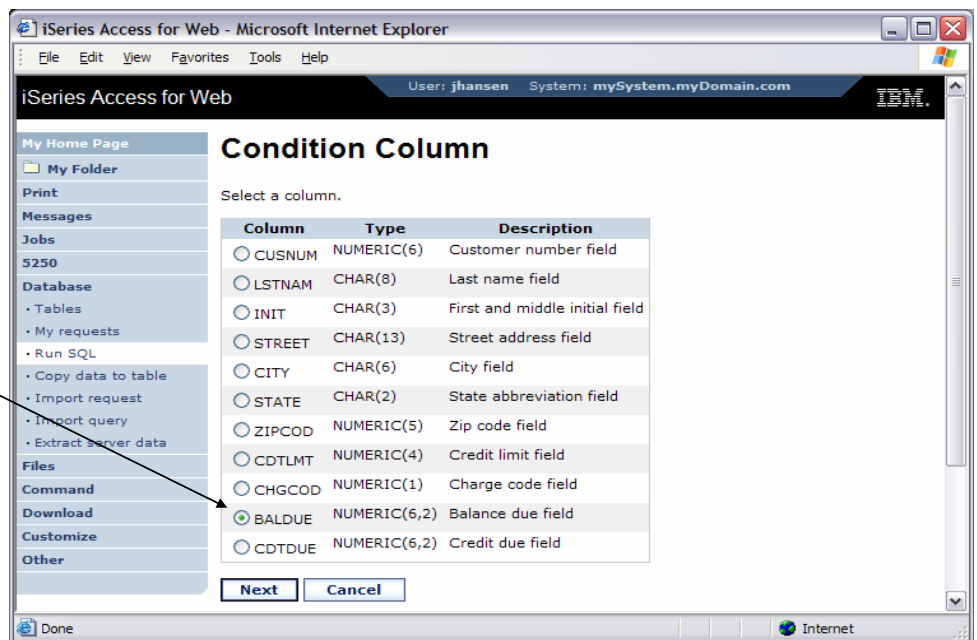
SQL Wizard: Choose the Operator Type

- Select the operator to use in the condition

- Available operators are determined by column type

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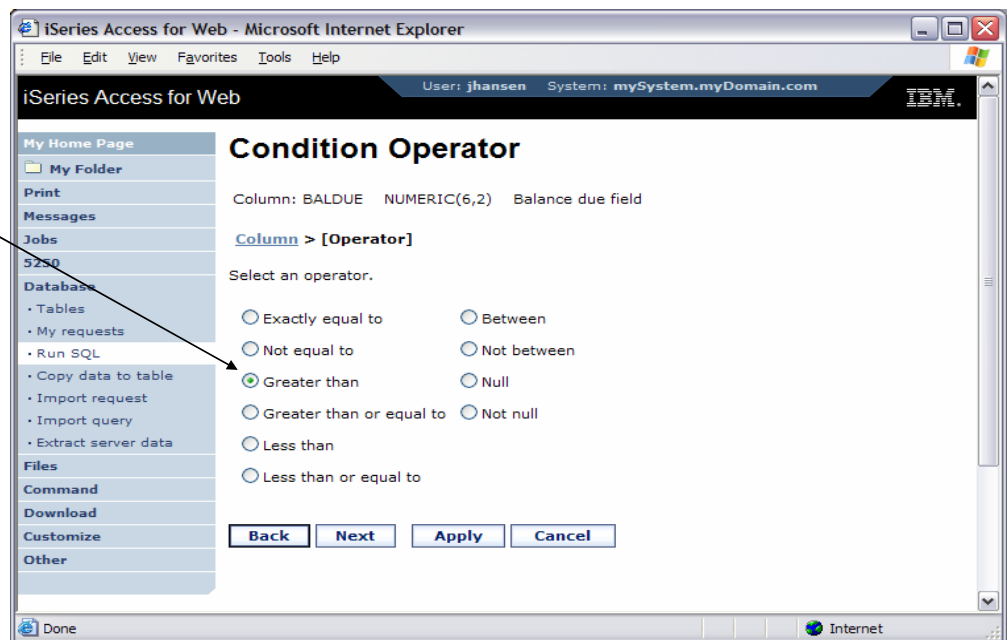
SQL Wizard: Choose Static vs. Dynamic

- Choose to specify the condition value in the request or to be prompted for it when the request is run

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SQL Wizard: Dynamic Query – Prompt Type

- Select how the user will be prompted for the values

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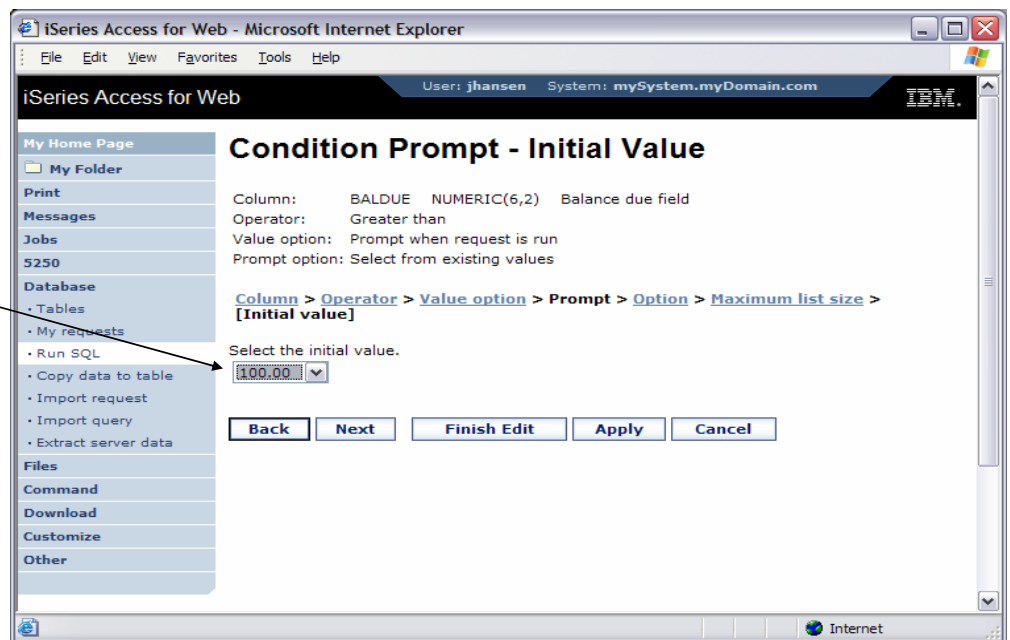# SQL Wizard: Dynamic Query – List Size

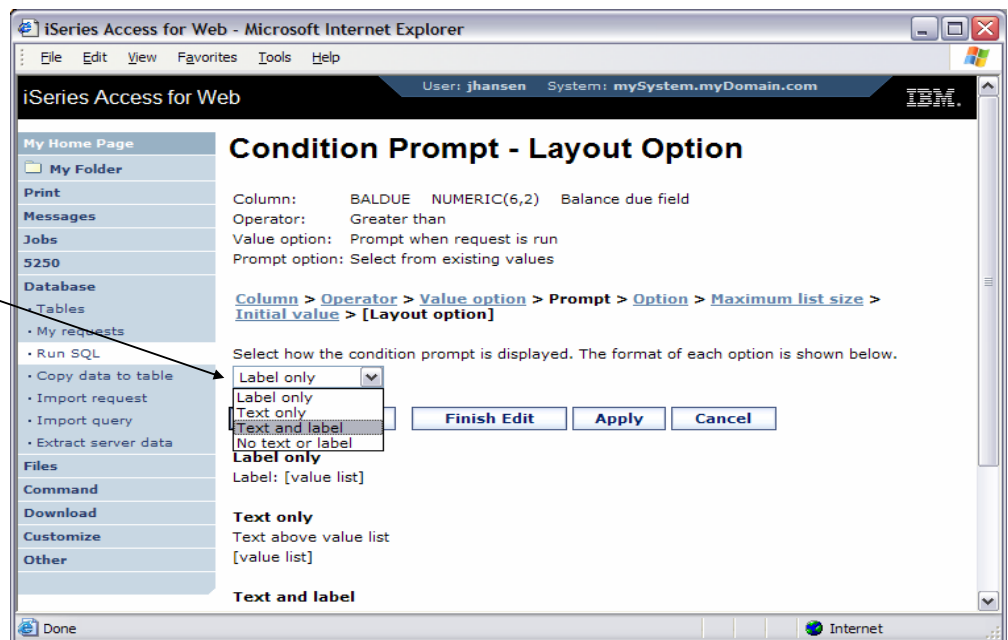- Choose the maximum number of unique values that are listed when using the existing values option

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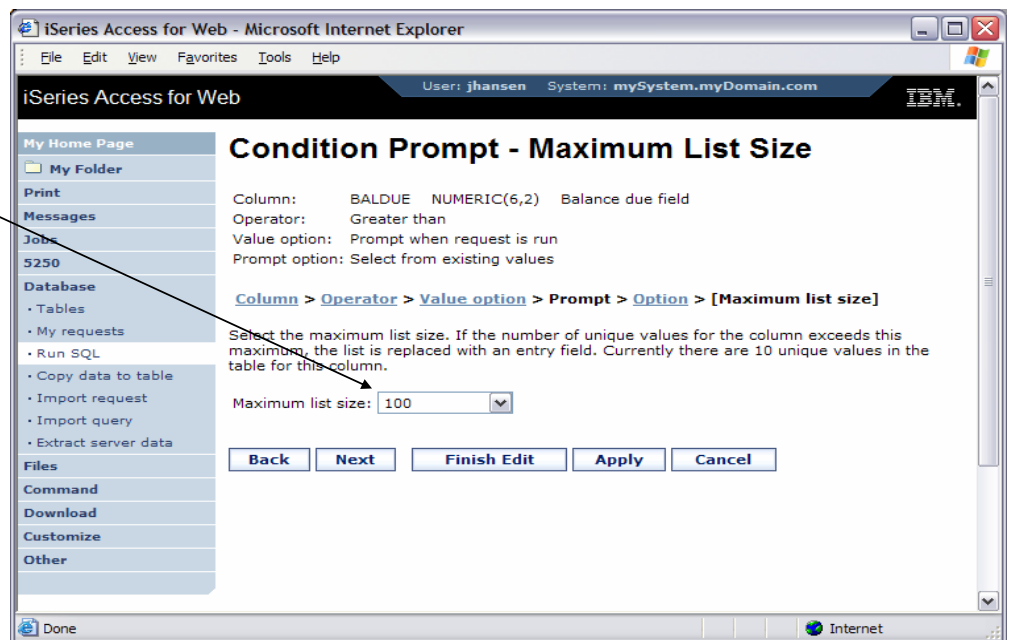
SQL Wizard: Dynamic Query – Initial Values

- Select the initial value to be displayed in the list

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SQL Wizard: Dynamic Query – Prompt Layout

- Select the layout of the description text used for the condition

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SQL Wizard: Dynamic Query – Prompt Text

- Specify the text description used for the condition

- Click Finish Edit to complete the condition

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SQL Wizard: Dynamic Query - Condition Created

- The condition is displayed in the SQL statement and the condition list

- You can edit or delete the condition

- You can add additional conditions

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SQL Wizard: Dynamic Query – Prompt Page

- Specify additional options for the condition value prompt page

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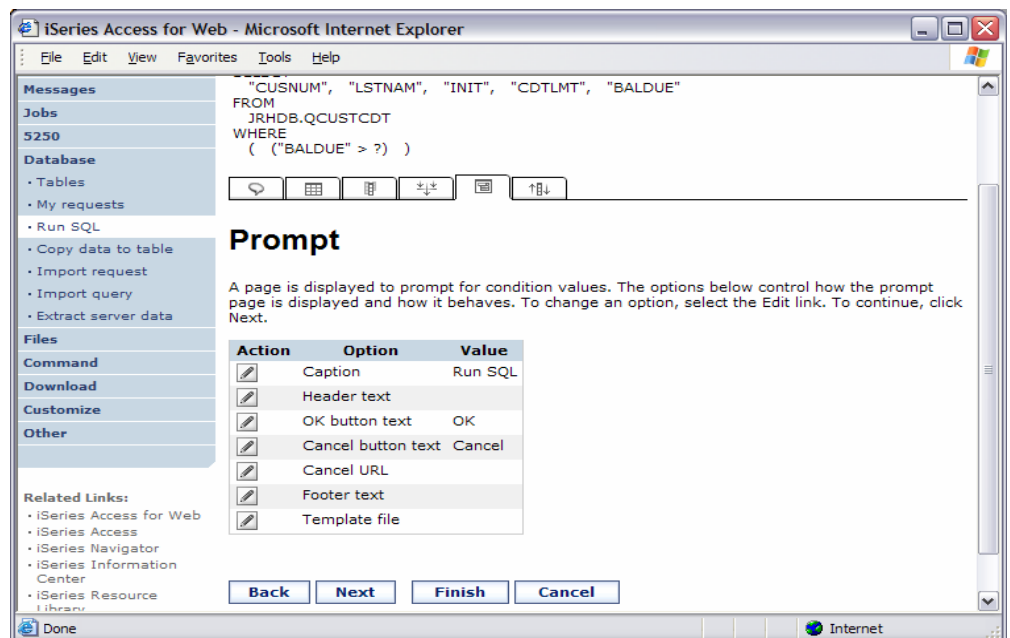
SQL Wizard: Dynamic Query – Prompt Caption

- Specify the text to be used for the caption of the condition value prompt page

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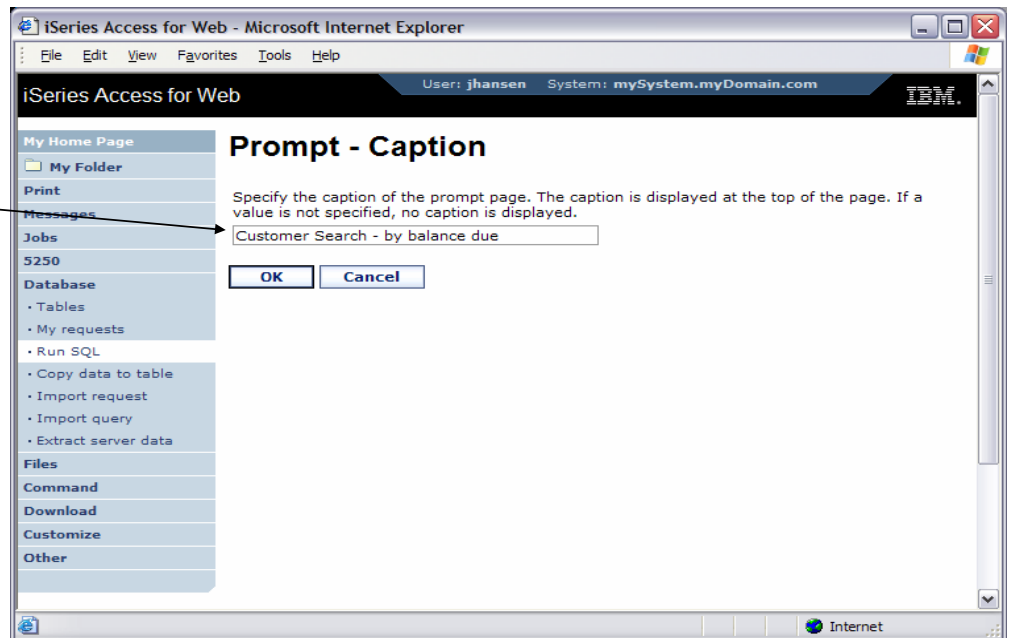
SQL Wizard: Sorting Records

Step 5: Sorting records

- Check boxes next to columns to use in the sort

- Select the sort order for each column

- Click Sort Order to change the sort priority of the columns

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SQL Wizard: Statement Is Complete!

Step 7: Finishing up

- The SELECT statement is complete

- Click Finish (not shown) at the bottom of the SQL Wizard page to return to Run SQL

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SQL Wizard: Using the Generated Statement

Step 8: Return to Run SQL

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

- Click Run SQL to run the statement

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SQL Wizard: Dynamic Query Example

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SQL Wizard: Dynamic Query Results

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Dynamic Query: Form Example

- Want more control over the look of the dynamic query pages?

- Want to add dynamic queries to your existing web pages or web applications?

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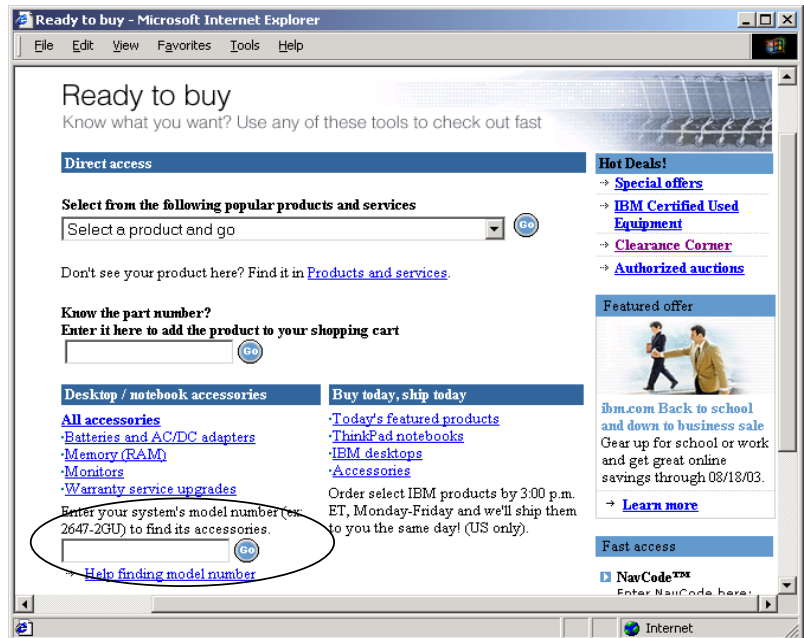
Dynamic Query: Form Example (cont.)

- Enter SQL statement with parameter markers directly into Run SQL

- Save the request

- Design your own form and add it to your existing web pages

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Dynamic Query: Form Example (cont.)

custom_form.html - WordPad

File Edit View Insert Format Help

```
<H2>Dynamic Query:   Form Example</H2>

<FORM action="http://x1519p4.rchland.ibm.com/webaccess/iWADbExec" method="GET">
<INPUT type="hidden" name="request" value="Customer lookup">
<P><LABEL>Enter the customer's last name (use % as a wildcard)<BR>
<INPUT type="text" name="iwaparm_1" value=""></LABEL>
<INPUT type="image" src="images/iwa_find.gif" alt="Find customer" name="find">
<FORM>
```

Dynamic Query: Form Example - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Spring 2006 Conference & Expo   COMMON

Dynamic Query: Form Example

Enter the customer's last name (use % as a wildcard)

Jo%

Done

http:// ..... /webaccess/iWADbExec/sqlOutput.xml?reqID...

File Edit View Insert Format Tools Data Go To Favorites Help

A1   fx CUSNUM

	A	B	C	D	E	F	G	H	I
1	CUSNUM	LSTNAM	INIT	STREET	CITY	STATE	ZIPCOD	CDTLMT	CHGC
2	938485	Johnson	J A	3 Alpine W	Helen	GA	30545	9999	
3	839283	Jones	B D	21B NW 1	Clay	NY	13041	400	
4									
5									
6									
7									
8									
9									
10									

Sheet1

Unknown Zone

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Run SQL: Output Types

- Statement results may be returned in one of many different output types

- Some output types have additional settings

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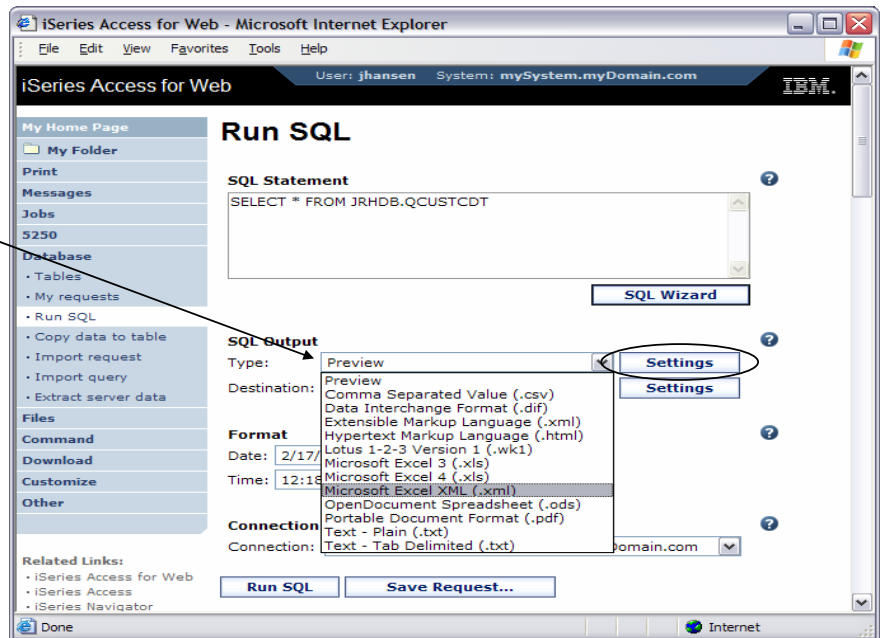
SQL Output Types

Type	Description	Applications	Notes
Preview	HTML paged-table list format	Browser	Cannot mail or send to folder, can limit number of rows returned, *note
Hyper Text Markup Language (*.html)	Format commonly used by internet browsers	Browser	Formatting preserved if imported into Excel, *note
Microsoft Excel 3 Microsoft Excel 4 (*.xls)	Binary Interchange File Format	Microsoft Excel 3 and later	Returns up to 16384 rows, can be used with newer versions of Excel
Microsoft Excel XML	New format supported by MS Office XP and newer	Any Microsoft product that can read MS XML files	Supports multiple sheets of data, with each sheet holding 65535 rows of data, *note
Portable Document Format (*.pdf)	Printer-friendly format	Adobe Acrobat	Preserves all fonts, formatting, graphics, and color, *note

*note = supports Unicode data

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SQL Output Types (cont.)

Type	Description	Applications	Notes
OpenDocument Spreadsheet (*.ods)	XML spreadsheet format used by office applications such as	OpenOffice.org	Supports multiple sheets of data, with each sheet holding 65535 rows of data, *note
Lotus 1-2-3 Version 1 (*.wk1)	Format used by Lotus 1-2-3 Version 1	Lotus 1-2-3 Version 1 and later	Returns up to 8192 rows, can be used with newer versions of Lotus 1-2-3
Data Interchange Format (*.dif)	Format that represents data in rows and columns	Used for data interchange between spreadsheet programs and other applications	The original Lotus 1-2-3 format!

*note = supports Unicode data

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SQL Output Types (cont.)

Type	Description	Applications	Notes
Comma Separated Value (*.csv)	Text format where fields are separated by commas	Supported by a wide variety of applications including Excel and 1-2-3	Numbers of rows returned not limited
Text - Plain (*.txt)	Plain text format for editing, displaying and printing	Text editors	No separator characters placed between the fields of data
Text – Tab Delimited (*.txt)	Text format where fields are separated by tab characters	Any application that processes text	Alternative to CSV if numeric data contains commas
Extensible Markup Language (*.xml)	Universal format for structured documents and data on the Web	XML parsers, newer versions of IE and Netscape browsers	*note

*note = supports Unicode data

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SQL Output Types

HTML Output Settings
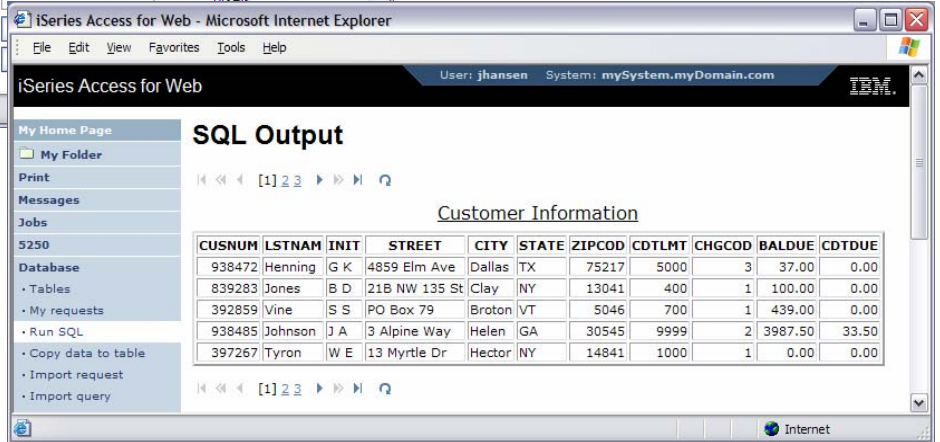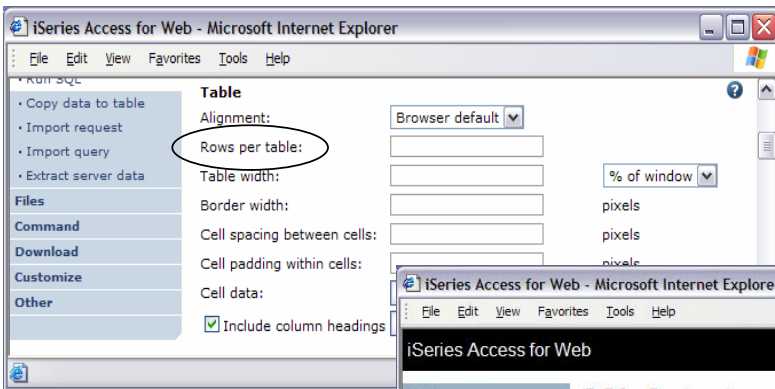
Many settings for:
- Caption
- Table
- Cell data

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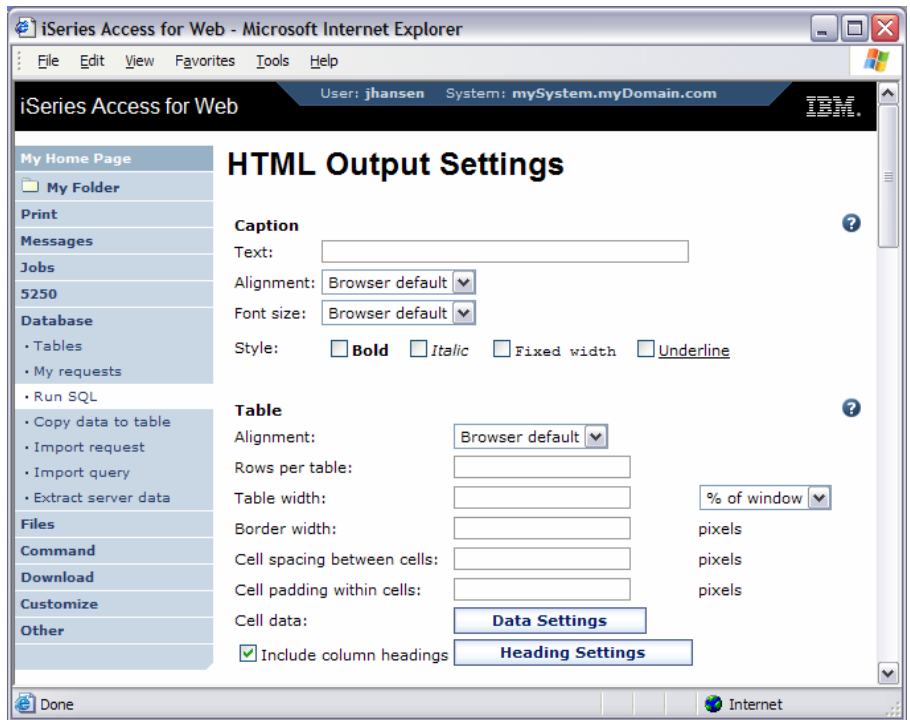
HTML Output Type

Displaying output in a paged list

Specify a value for 'Rows per table' to limit the number of rows displayed on a page

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HTML Output Type
Contrasting other layouts

Preview output type displays a limited number of rows per page, but you can't customize how the list is displayed

Customer Information

CUSNUM	LSTNAM	INIT	STREET	CITY	STATE	ZIPCOD
938472	Henning	G K	4859 Elm Ave	Dallas	TX	75217
839283	Jones	B D	21B NW 135 St	Clay	NY	13041
392859	Vine	S S	PO Box 79	Broton	VT	5046
938485	Johnson	J A	3 Alpine Way	Helen	GA	30545
397267	Tyron	W E	13 Myrtle Dr	Hector	NY	14841
389572	Stevens	K L	208 Snow Pass	Denver	CO	80226
846283	Alison	J S	787 Lake Dr	Isle	MN	56342
475938	Doe	J W	59 Archer Rd	Sutter	CA	95685
693829	Thomas	A N	3 Dove Circle	Casper	WY	82609

If you do not specify a value for 'Rows per table', all results are returned in a single page

iSeries Access for Web

SQL Output

CUSNUM	LSTNAM	INIT	STREET	CITY	STATE	ZIP
938472	Henning	G K	4859 Elm Ave	Dallas	TX	
839283	Jones	B D	21B NW 135 St	Clay	NY	
392859	Vine	S S	PO Box 79	Broton	VT	
938485	Johnson	J A	3 Alpine Way	Helen	GA	
397267	Tyron	W E	13 Myrtle Dr	Hector	NY	

My Home Page / My Folder / Print / Messages / Jobs / 5250 / Database / Tables / My requests / Run SQL / Copy data to table / Import request / Import query

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HTML Output Type

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

- The template file must exist in the i5/OS integrated file system

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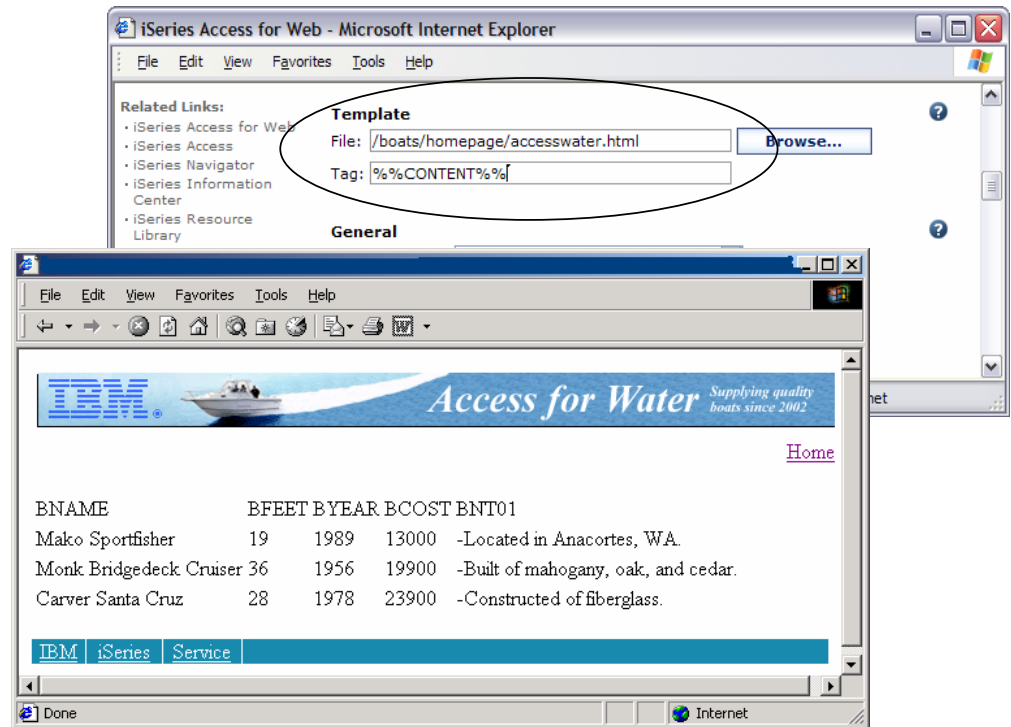
Run SQL: Output Destinations

- Statement results may be directed to one of four different destinations

- Some destinations have additional settings

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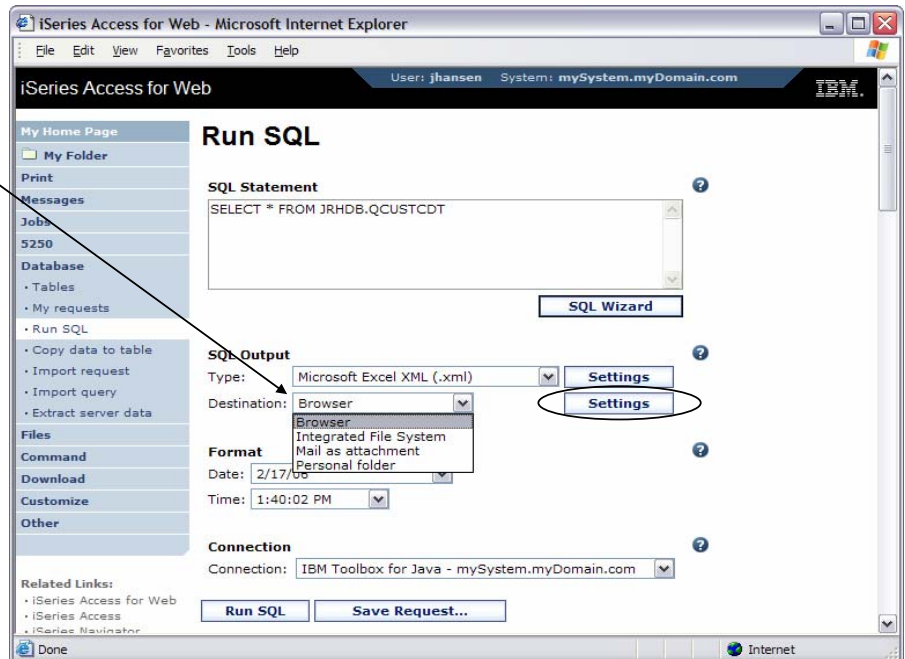
SQL Output Destinations

- Browser
  - Allows viewing of results immediately after query completes
 - Ties up browser session until query completes

- Integrated File System
  - SQL statement executes in the background; control returned to the browser session
  - Results of SQL statement available to all users with access to the i5/OS integrated file system

- Mail as attachment
  - SQL statement executes in the background; control returned to the browser session
  - Can send results to people that are not iSeries Access for Web users

- Personal folder
  - SQL statement executes in the background; control returned to the browser session
  - People receiving results must be iSeries Access for Web users

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Run SQL: Database Connections

- A Database connection defines characteristics of the JDBC connection to the database
  - Target database
  - JDBC driver
  - Other attributes

- Additional database connections are created using Customize
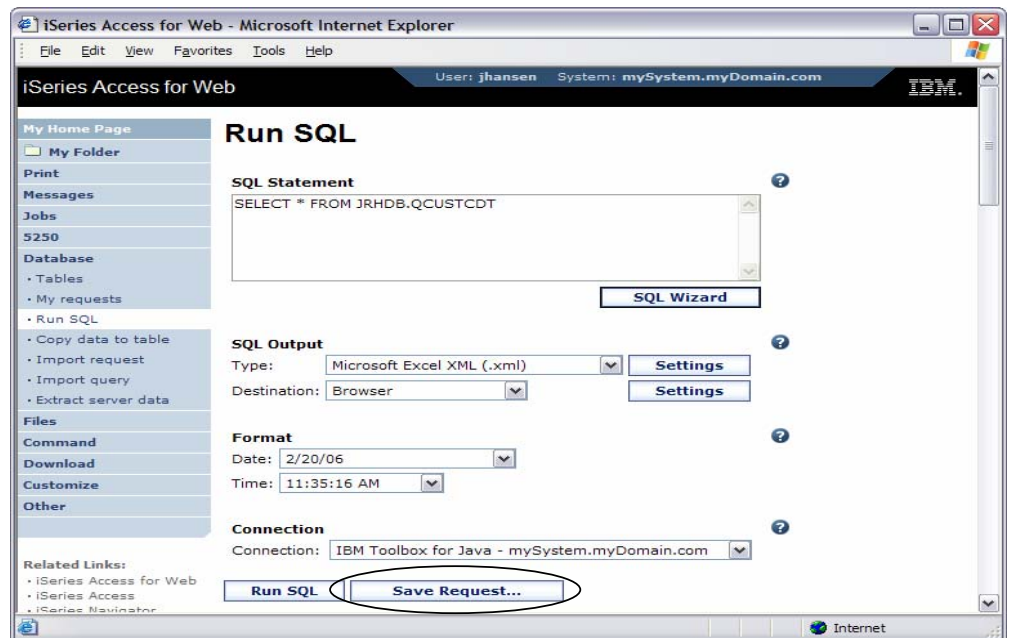
Simplify your IT.
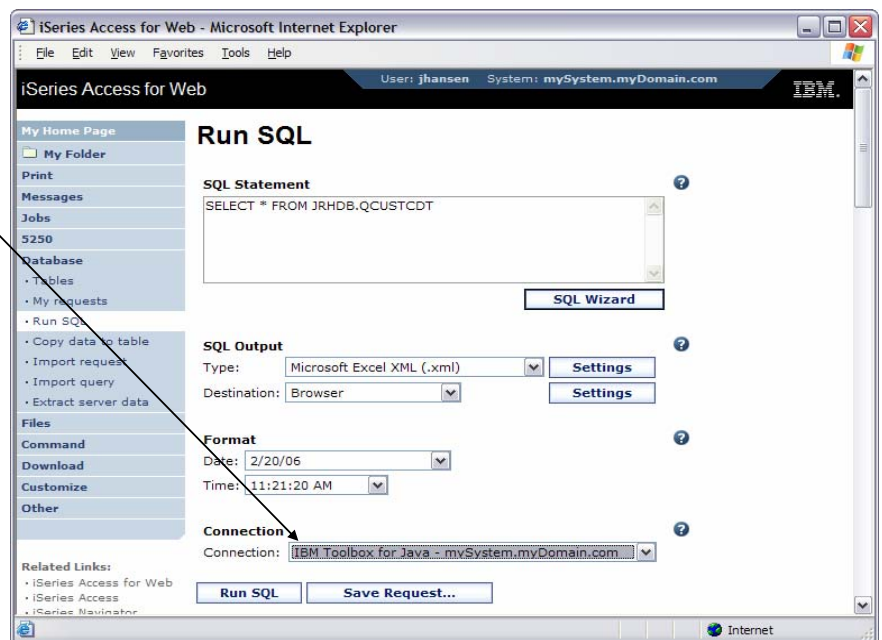
Adding Database Connections

- Two types of database connection definitions are supported
  - Driver manager
  - Data source

- Data sources are managed by WebSphere® and can be used by other applications

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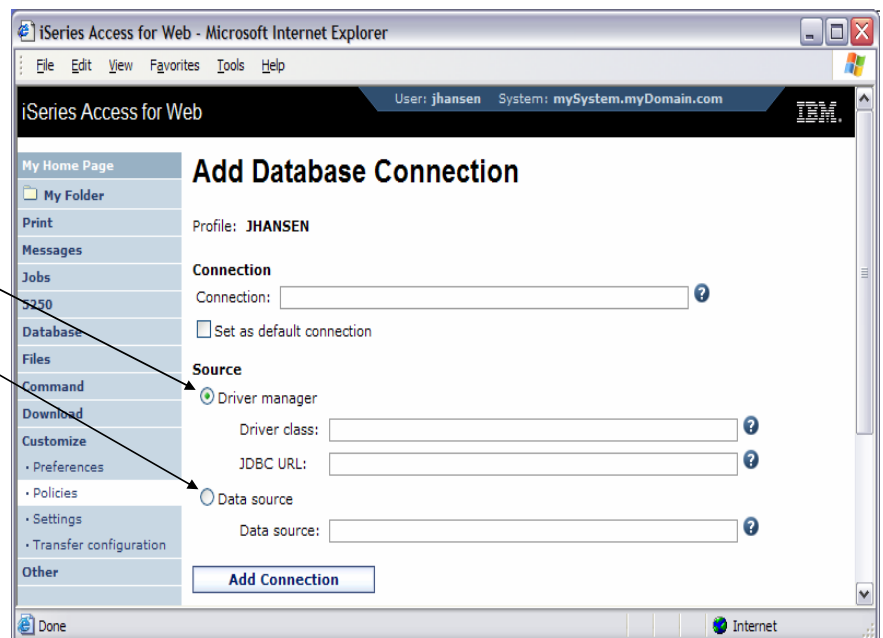
Run SQL: Save Request

- SQL statements (along with output, format, and connection information) can be saved for later use

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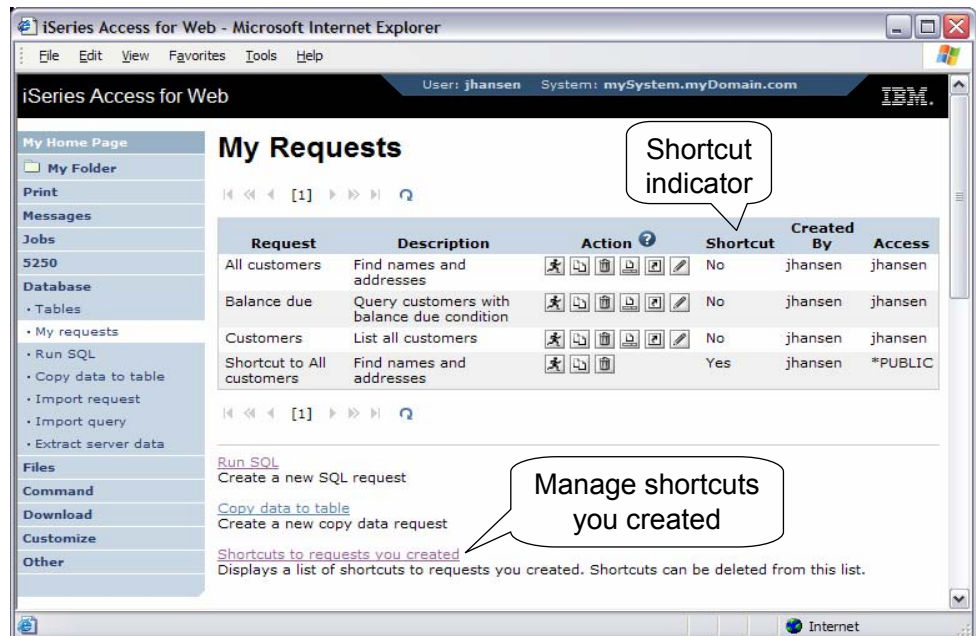# Run SQL: Saving an SQL Request

- Provide name and optional description

- Can replace an existing request

- Request can be run after it is saved

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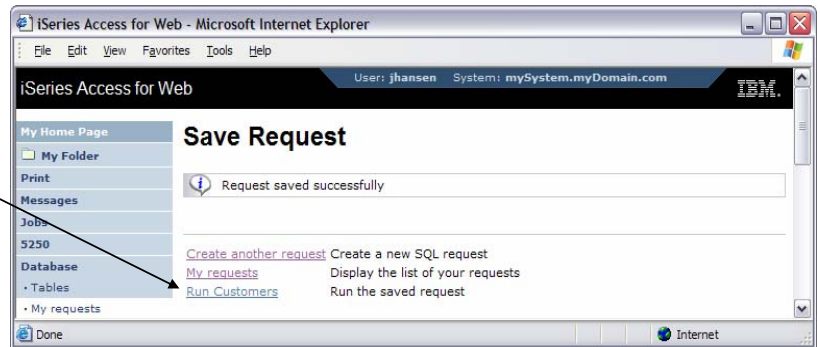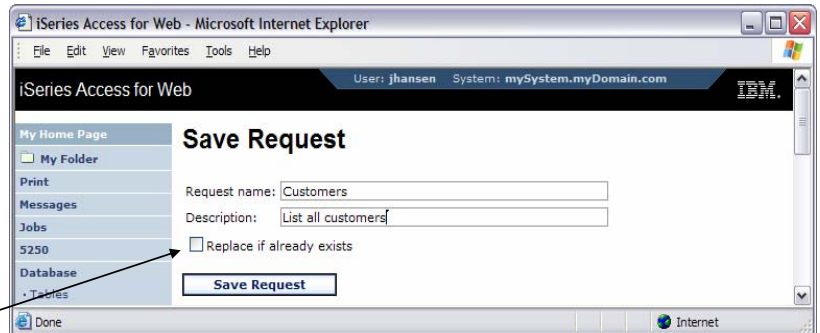
My Requests

- Work with requests you have created

- Create shortcuts so other users can access your requests

- Work with shortcuts for which you have access

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Understanding Shortcuts

- Requests can only be accessed by the user that created them
  - Based on user profile

- A shortcut is a way to share a request with other users
  - Reference to the original request

- When you create a shortcut you specify who can access it
  - A specific user or users (user profiles)
  - A group of users (group profiles)
  - All users (*PUBLIC)

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Shortcut Behavior

- The settings of the request referenced by a shortcut can only be modified by the shortcut creator

- Changes made to the request referenced by the shortcut are automatically reflected when the shortcut is run

  – Note: This is not true for changes to the connection information since the connection information is stored as part of the shortcut

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Shortcut Example

- Database administrator has access to all database functions

- *PUBLIC only has access to run requests

- Database administrator creates three database requests:
  - "Past due accounts"
  - "Low inventory"
  - "New orders"

- Database administrator creates three shortcuts:
  - To "Past due accounts"   Access: ACCOUNTING
  - To "Low inventory"   Access: PURCHASING
  - To "New orders"   Access: SHIPPING
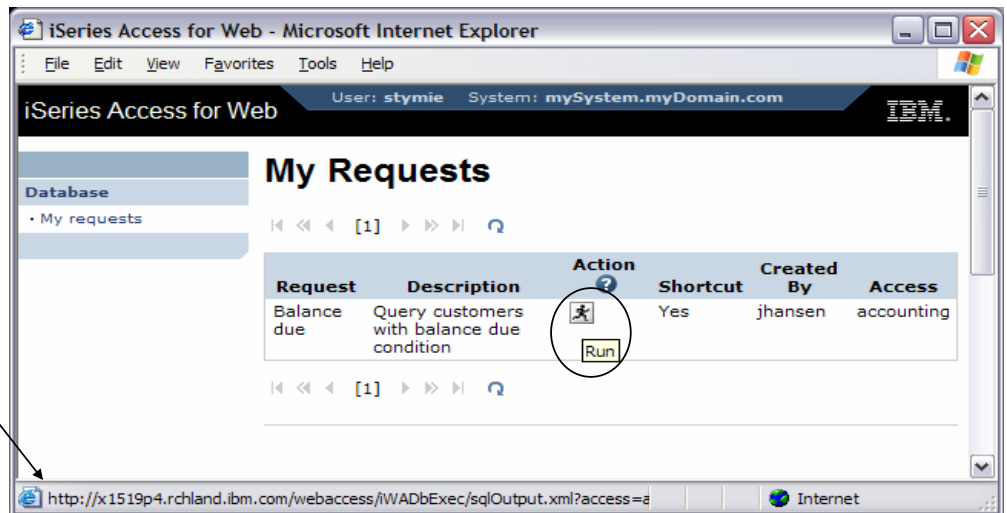
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Shortcut Example (cont.)

- Database administrator is the only one able to create and modify requests

- Users can only run requests needed to do their jobs.

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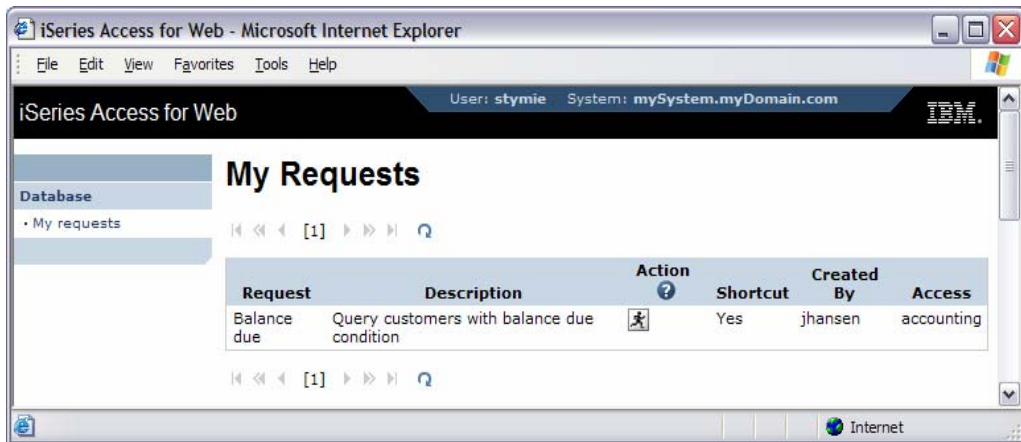
Shortcut Example (cont.)

- The URL for the Run action can be bookmarked or copied and used as a link on a web page

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Import Query

- Import query definition files or Query Manager files

- Only the SQL statement is imported

- Further customization of the connection or request may be necessary

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Copy Data to Table

- Copy data from your workstation to a table

- Create a new table or replace data in an existing table

- Can view and change the table definition if creating a new table

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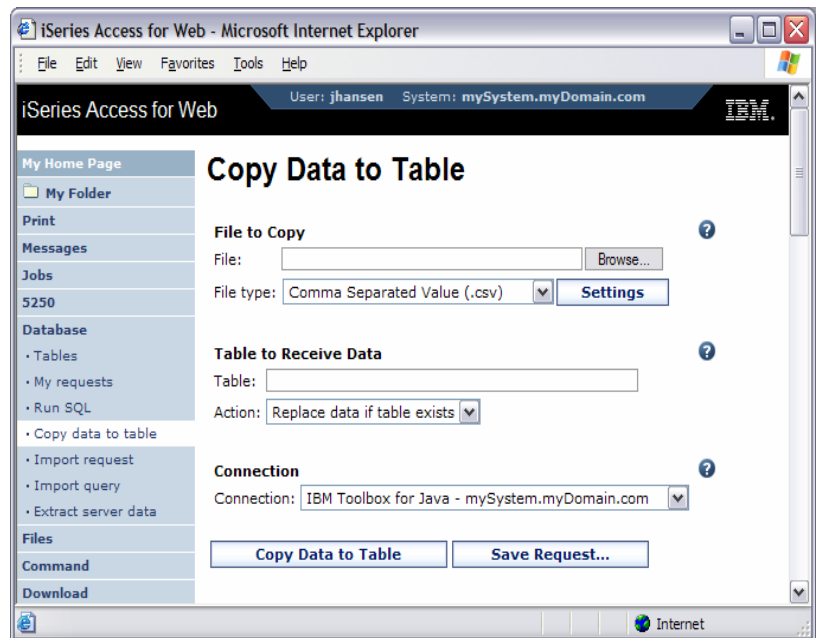
Copy Data to Table: Notes and Restrictions

- Data within a column needs to be the same type. A column that contains numeric data should only contain numeric data.
- Only the first sheet of data is supported when using Microsoft Excel and Lotus spreadsheets
- Date/Time columns must be in a string format. Excel and Lotus date and time formats are not supported.
- Not all file types supported by Run SQL can be used for Copy Data To Table
- A saved Copy Data to Table request will always ask you to enter the name of the workstation file from which to copy the data. This is done to protect your workstation data.

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Import Request

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

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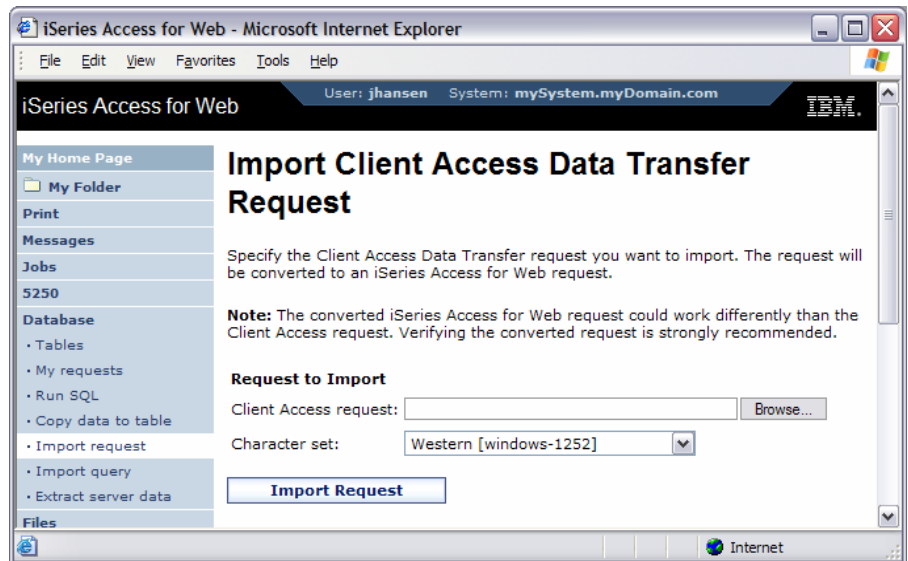
Importing Data Transfer Requests

iSeries Access for Windows, Client Access Express, and Client Access 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 an 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

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Import Request: Restrictions

- Some file types supported by Data Transfer are not supported by iSeries Access for Web.
    - In some cases the file type is mapped to a supported type.
    - If the file type cannot be mapped to a supported type, the import will fail.

- Some Data Transfer output options are not supported by iSeries Access for Web.
    - Unsupported options are ignored.
    - Example: A Data Transfer request to a printer

- iSeries Access for Web only provides access to the default member of a file (table).

- iSeries Access for Web does not differentiate between source physical and data physical files.
    - SRCSEQ and SRCDAT columns are never stripped on queries and never added on copies.

- Some Data Transfer download requests cannot be modified by the SQL Wizard.
    - Use Run SQL to modify the statement.

- iSeries Access for Web determines the encoding of client files based on the Data Transfer translate option and the browser settings. If the resulting encoding is not correct, you need to set the value on the Import page.

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Tables

- View, find, update, insert, and delete table records

- Links to Run SQL and Copy Data to Table

- Table filter to control the tables displayed in the list

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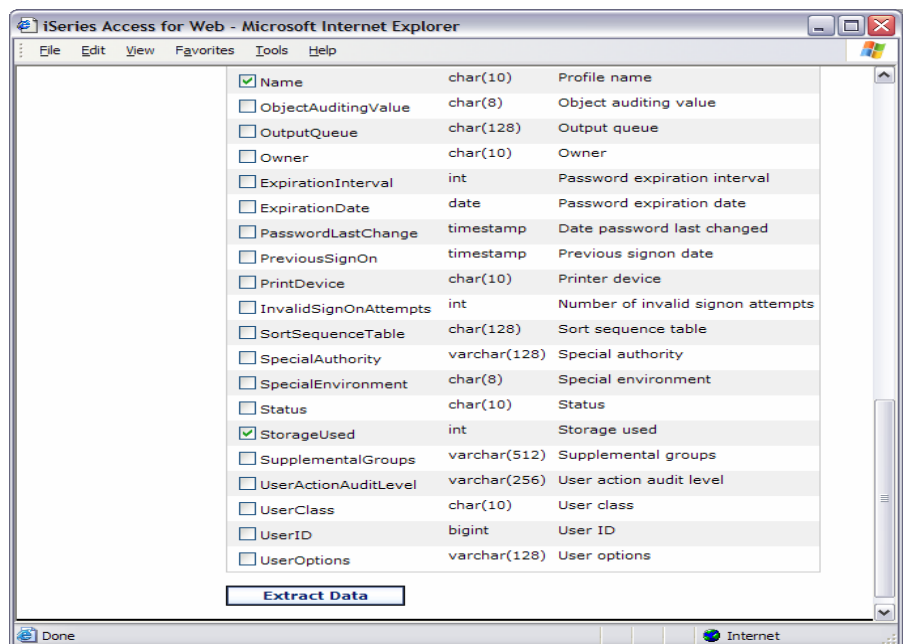# Extract Server Data

- Extract i5/OS object information into a database table

- Use Run SQL or Tables to retrieve relevant data

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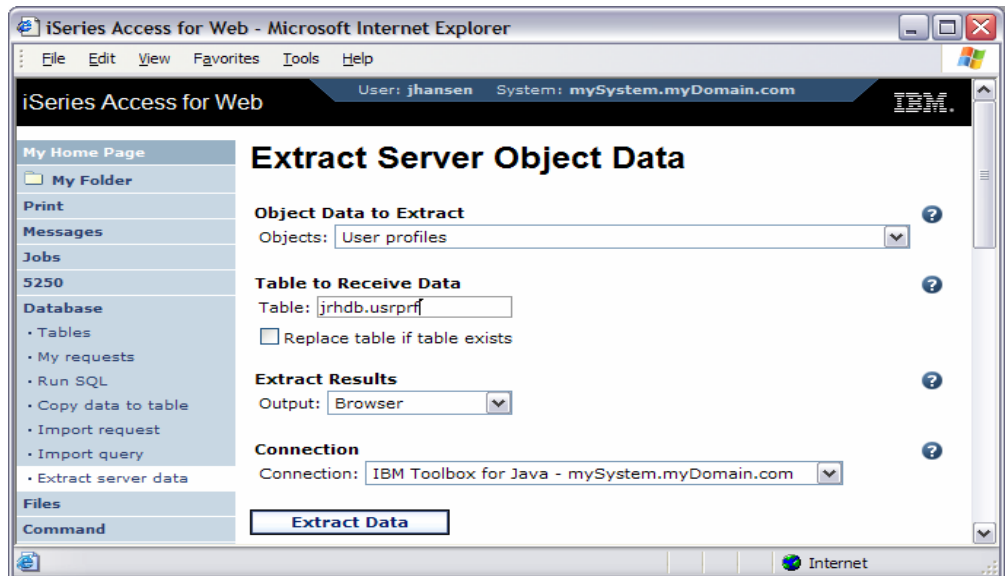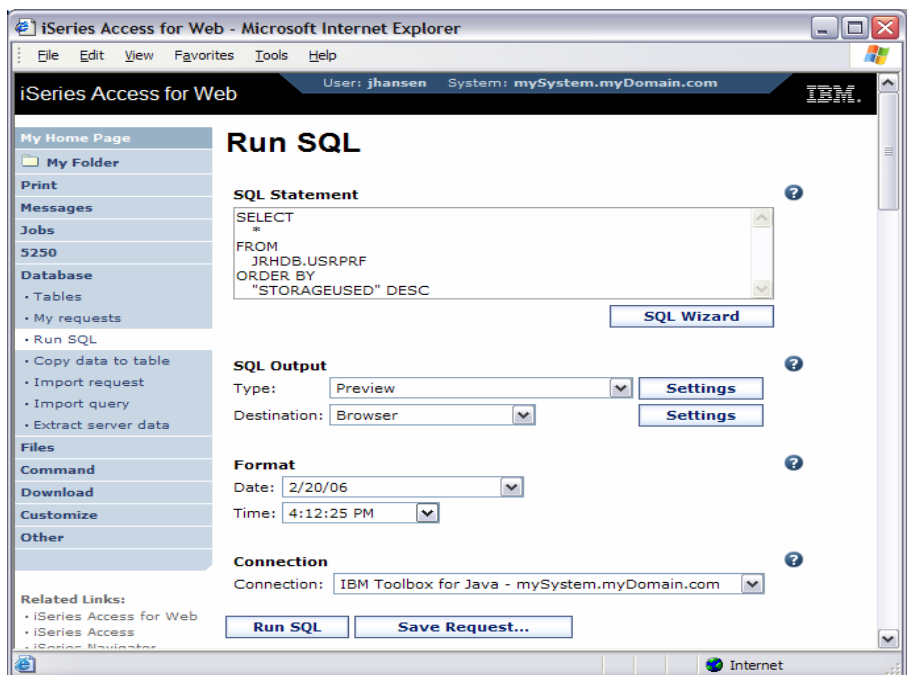
Extract Server Data (cont.)

- Choose which information is extracted

- Different information can be extracted for different object types

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Extract Server Data (cont.)

- All the features of Run SQL and the SQL Wizard can be used to mine information from the extracted data
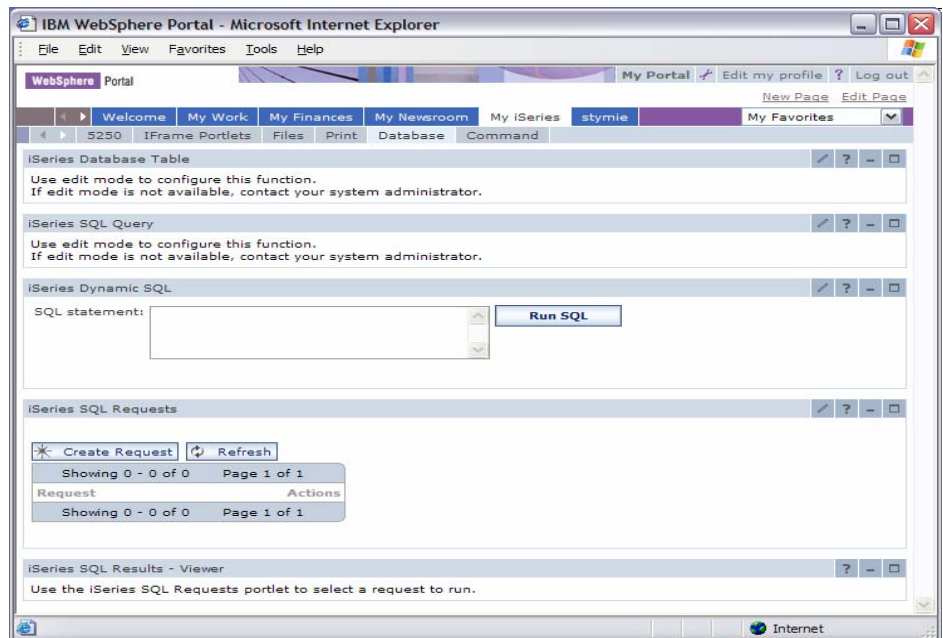
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Portal

- Portal provides a single point of personalized interaction with applications, content, processes and people

- Integrate data and applications from various sources into one user experience

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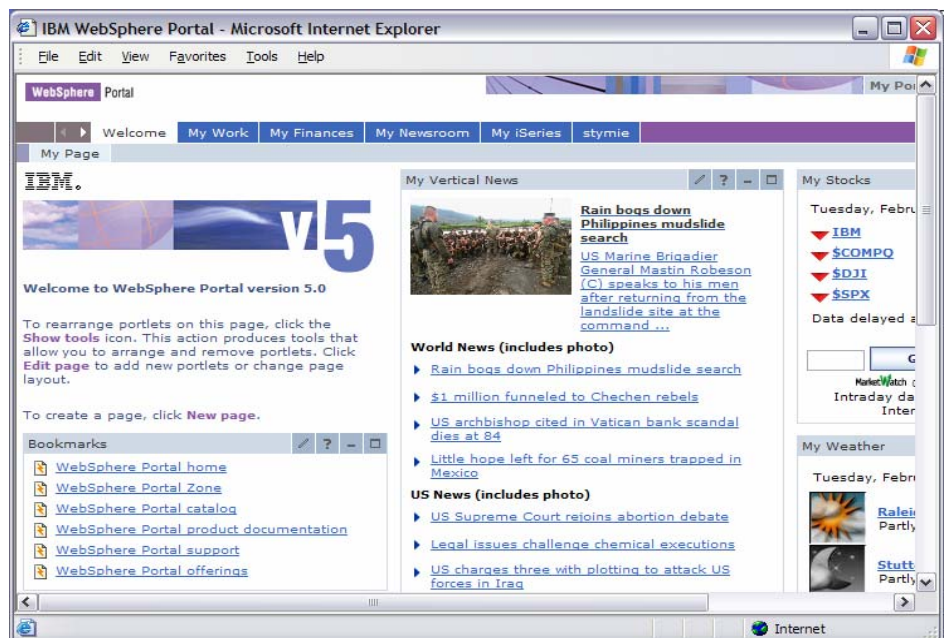
Portal Application

- iSeries Access for Web portlets integrate access to i5/OS resources in a portal environment

- Function is similar to the web application

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Database Table

- View records in a database table

- Insert, update and delete table records

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Database Table: Customizing

- Configure a filter to limit the records displayed in the list

- Deny access to any of the actions

- Customize view for adding or updating records

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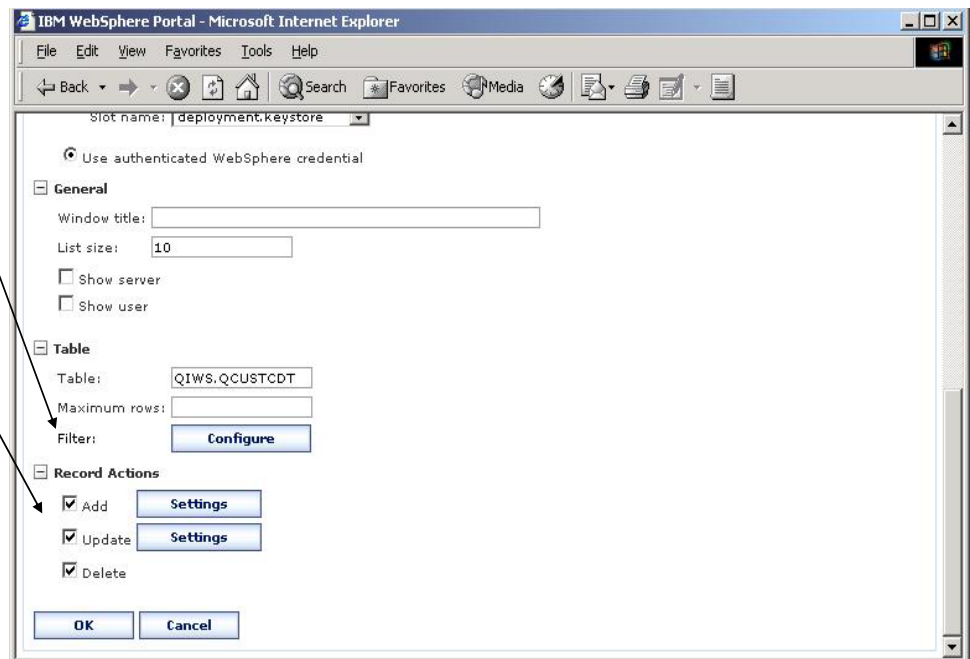
Database Table: Add Record

- Default view
- Custom view

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Dynamic SQL

- Run an SQL statement and display the results

- SQL statement must be entered manually

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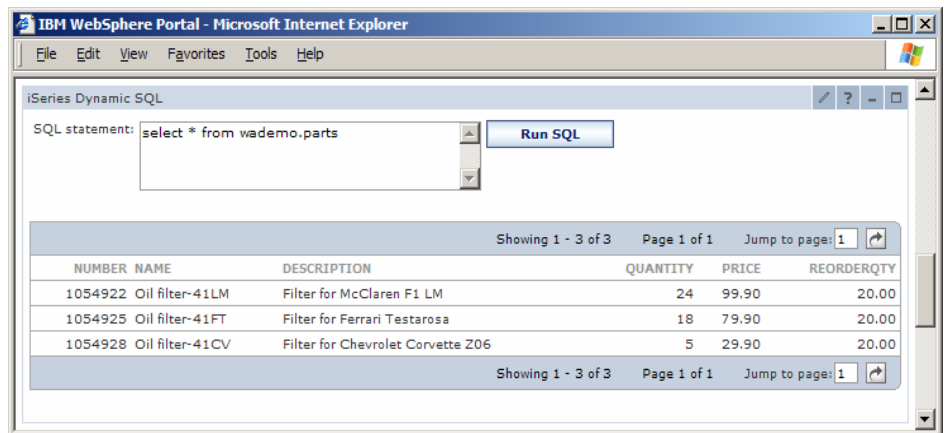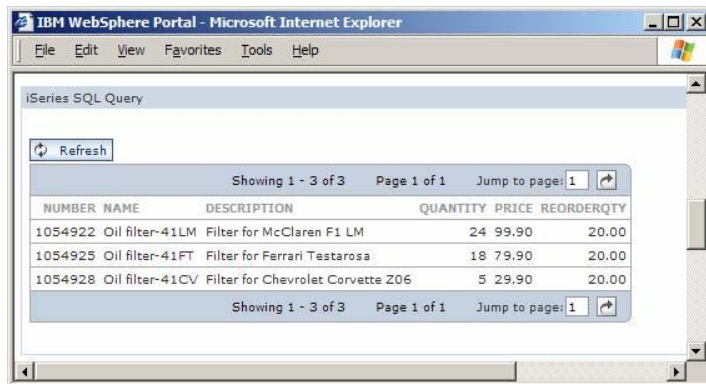
Dynamic SQL: Customizing

- Multiple display types supported

- Display type can be chosen when statement is run

- Results can be displayed in portlet window or new window (choose new window if results need to be saved)

Simplify your IT.
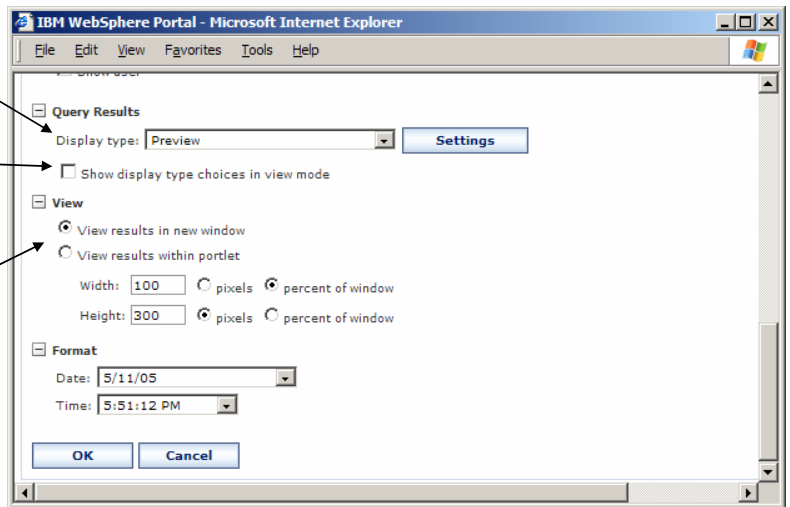
SQL Query

- Display results of an SQL query statement

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SQL Query: Customizing

- Only query statements can be specified

- Full SQL Wizard support, including dynamic queries

- Supports same display types as Dynamic SQL

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SQL Query: Tailored view

- Dynamic query built using SQL wizard
- Results displayed in separate window
- Excel XML used as display type

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Saved Requests

- Can be shared with other users

- Stored in back-end database, not with portlet

- Sent to viewer to run

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Additional Information

- Product web site
  - URL: http://www.ibm.com/eserver/iseries/access/web/
  - Latest information, articles, FAQs, fix information

- Information Center, Version 5 Release 4
  - URL: http://www.ibm.com/eserver/iseries/infocenter/
  - Connecting to iSeries, iSeries Access, iSeries Access for Web

- Product help
  - Available on iSeries Access for Web pages

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Try out Access for Web for yourself!

Start your browser and connect to the following web site:

http://iseriesd.dfw.ibm.com/webaccess/iWAHome (case sensitive)

User ID = WUSER Password = DEMO2PWD	This shows the basic look of Access for Web as we ship it. You can try various functions -- including working with printer output, creating database requests, etc. Click on the 5250 tab, sign on to i5/OS, then start an RPG application called BOATS and run it.
User ID = BOATADMIN Password = DEMO2PWD	This is an example of how a customer might design a web page for their use. You will see that an end user could start the same BOATS application by clicking on the 5250 session -- or they could have used WebFacing to run the application. You will also see other links that would let a user work with spooled files, browse the integrated file system, run database requests, etc..

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