

iDoctor Updates 2024

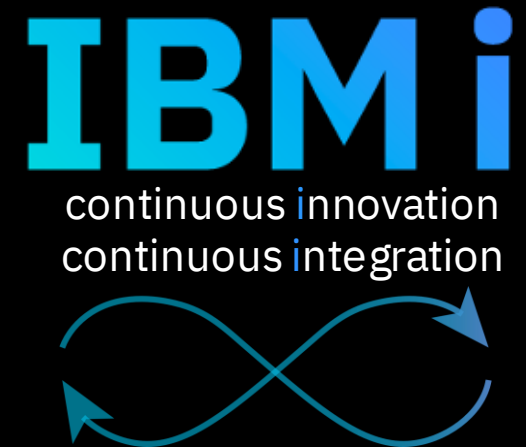
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Agenda

- **Overview**
- **UI modernization**
- **New Features**
- **Questions?**

Strategy changes in the last year (“Take aways”)

- Improved performance, stability and usability
 - Collections caching
 - Consistency in drill-down flow
 - Running SQL in the background
- Modernizing the UI experience
- Removing functions that are not used and simplifying the rest

Overview

- iDoctor is a suite of **dynamic** performance tools offered by the IBM i Global Support Center and sold via Technology Services.
- We cover most areas of performance on IBM i.
- Been around for roughly 24 years.

Dynamic on demand

- iDoctor was created primarily to help IBM support solve performance problems.
- Working on unique customer problems required ability to make changes to analysis tooling more quickly than at release boundaries.
- Feedback from users also drives enhancements, but our **#1** focus remains on helping support help you.

Grouped MDI

- iDoctor uses a multiple document interface with Grouped mode by default.
- The tabs / views can be moved into new vertical or horizontal tab groups.
- Drag and drop will create these too.
- By default, 1 view shown at a time.

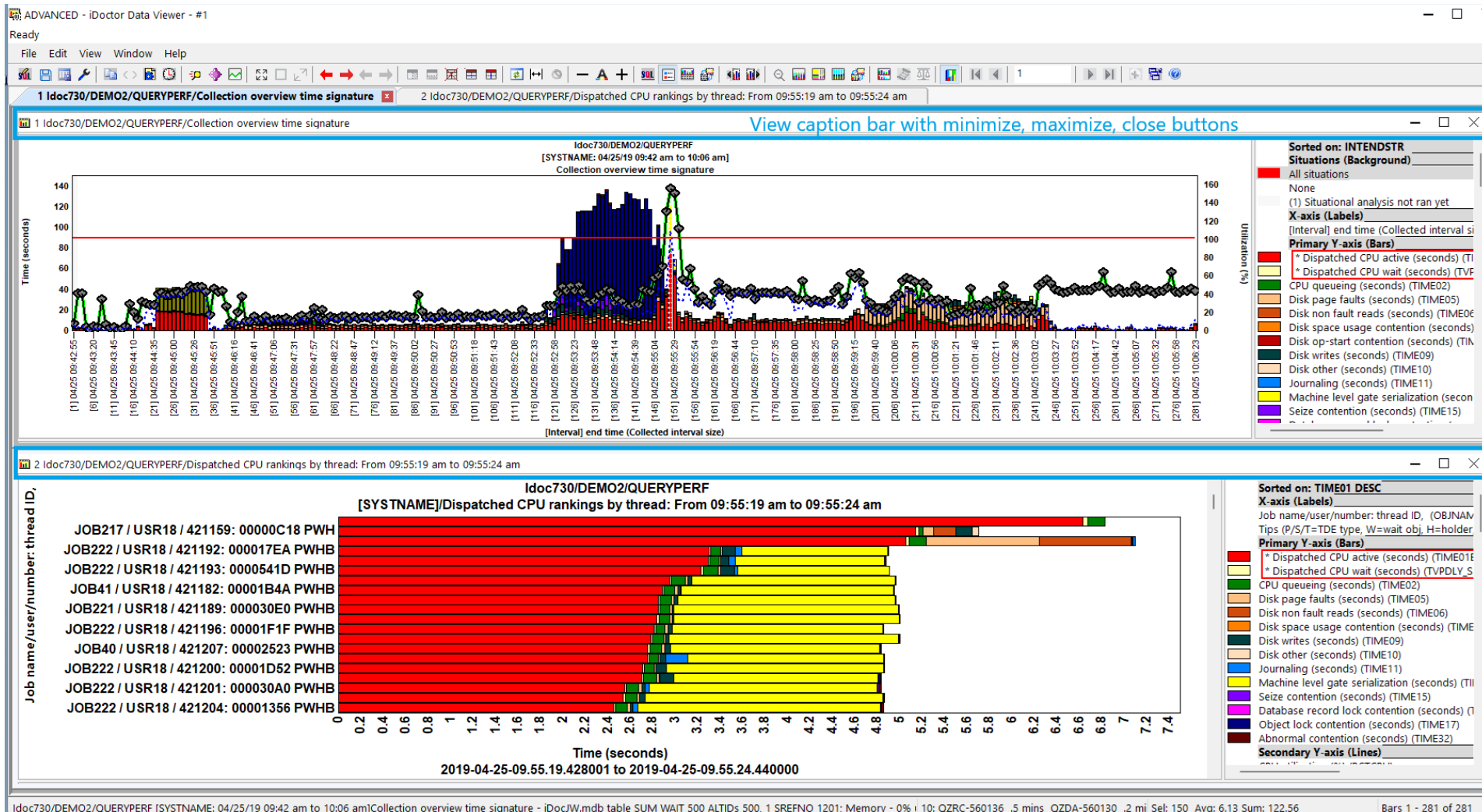
The screenshot displays the iDoctor application interface with various components highlighted by colored boxes and labels:

- Caption bar:** The top window title bar showing the application name and path.
- Message bar:** A blue bar below the caption bar displaying system messages like "SQL completed in 282 ms".
- Menu bar:** A bar containing standard application menus (File, Edit, View, IBM i, Window, Help).
- Toolbar:** A row of icons for various application functions.
- Libraries:** A section for managing libraries, including a "Message bar for panes" and search options.
- Pane:** A large area for displaying data, currently showing a "List view" of job data.
- Tabbed panes:** A section for switching between different views (Libraries, Tables, IFS, Objects, Active jobs, Find).
- Tree View:** A hierarchical view of the system's structure.
- Job Watcher component view:** A detailed view of the Job Watcher component.
- Status bar:** The bottom bar showing system information and the current page (1 - 3 of 3).

Collection	Using Collection Summary	Status	Description	Data ready	Collection type	Ending reason	Collection size (MB)	DB files VRM
SQL tables								
Job Summary								
QUERYPERF	Yes	Ready		SUM, SIT, SQL, IS, CW	Default	Ended by user	258.36	7.3

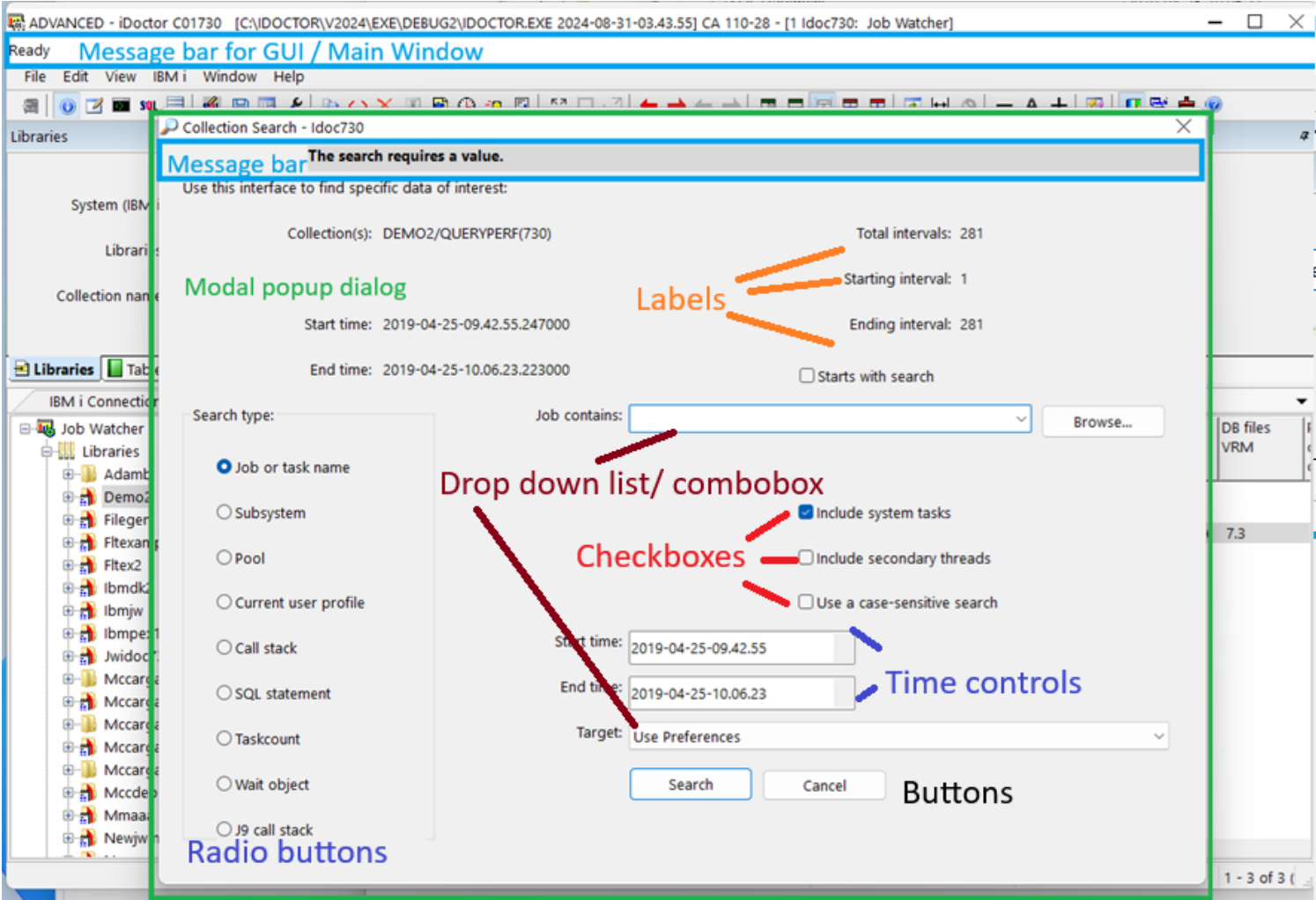
Standard MDI

- Some users prefer this style of interface where each view can be resized individually, maximized, minimized or tiled.
- This mode also features a caption bar per tab/view.



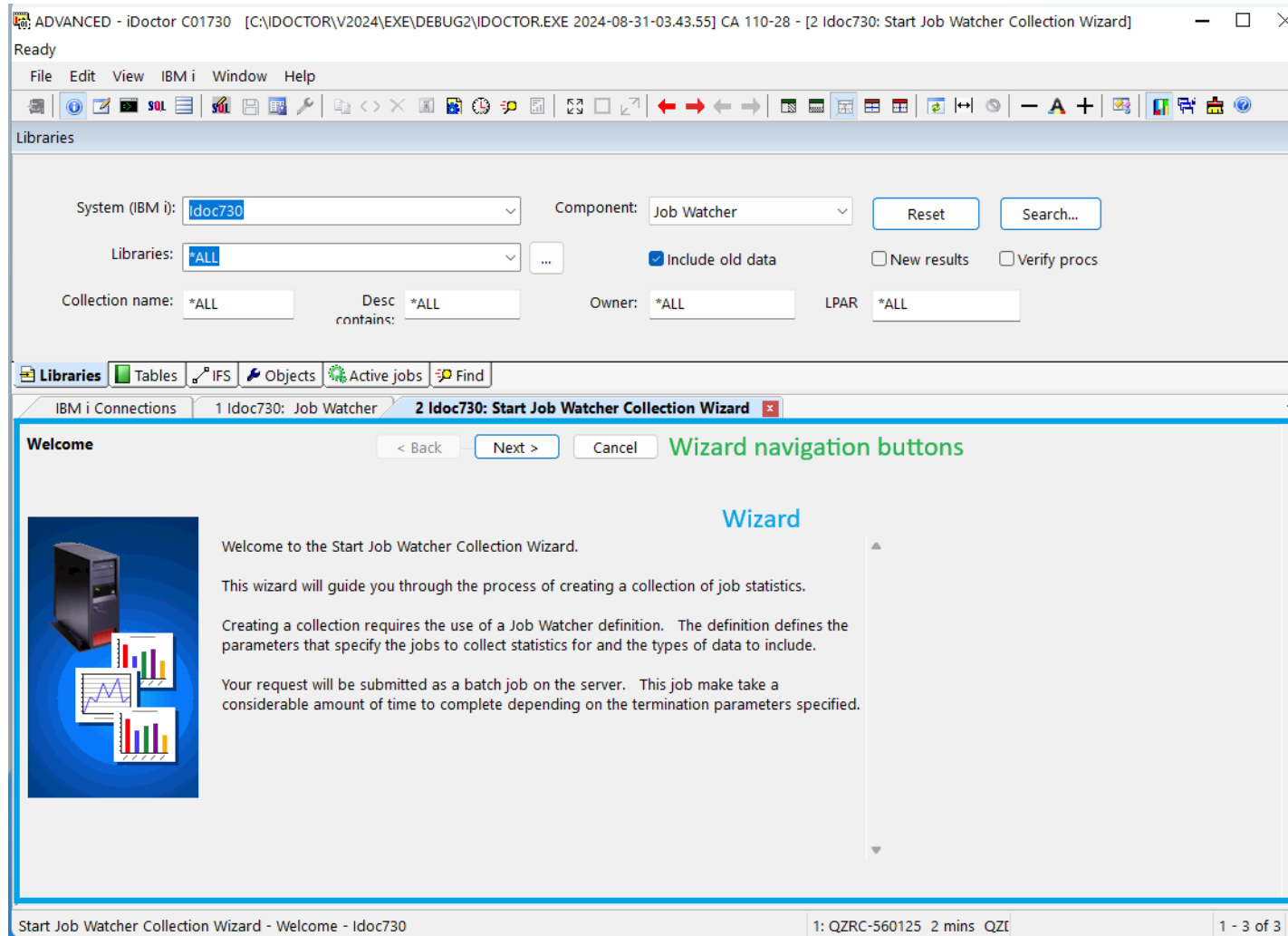
Modal interfaces vs Panes

- A modal popup interface is one where you must finish a task before returning to the previous window.
- This is why panes were added to make completing common tasks faster by avoiding extra steps.
- We also use tabbed panes to show appropriate content for the interface you are currently using.



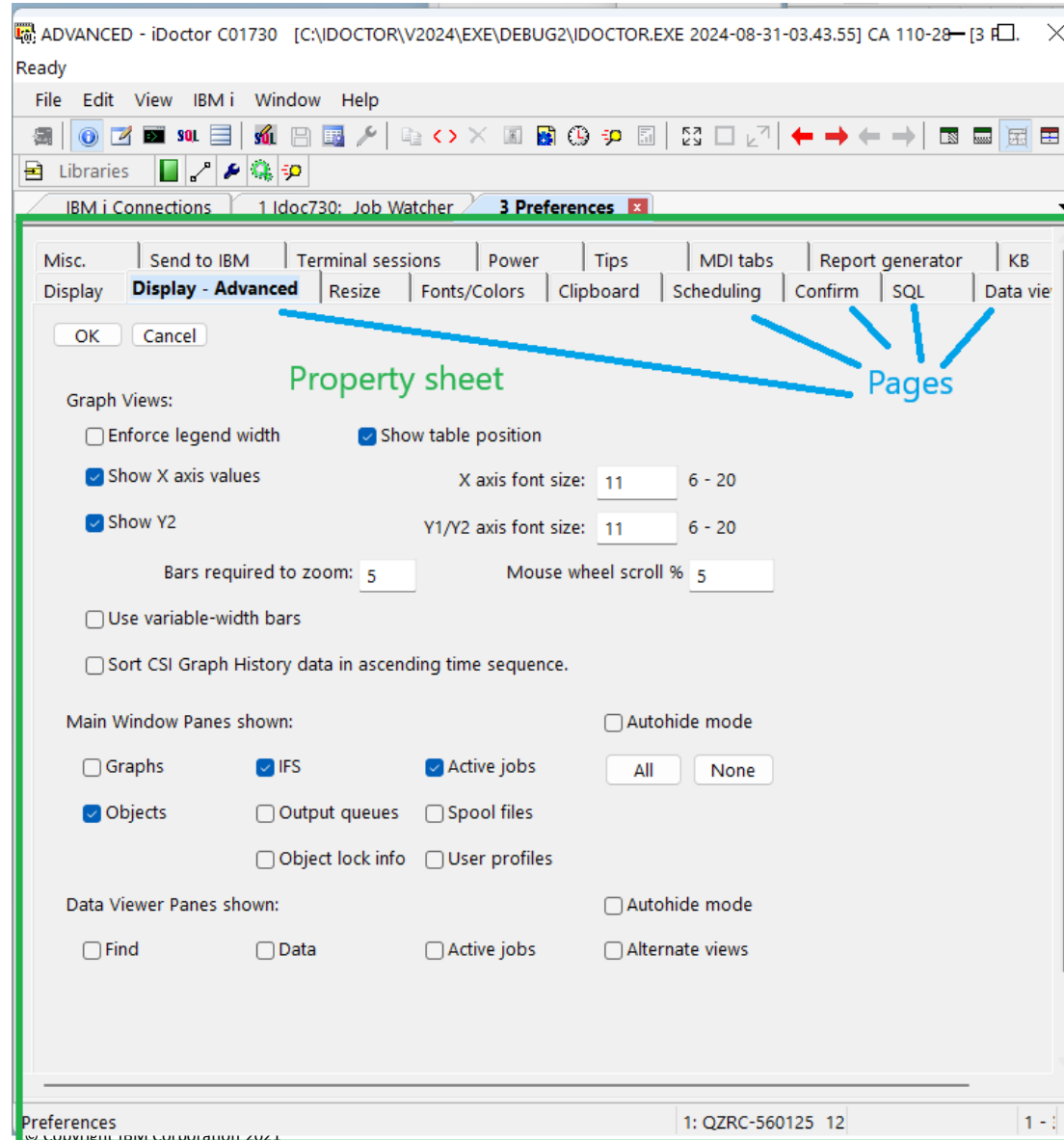
All Wizards are non-modal

- Since modal interfaces tend to restrict use, all Wizards are non-modal and act like a tab/view.
- Wizard navigation buttons were moved to the top.



Property Sheets

- Property sheets are used for things like Libraries, Collections and Preferences.
- Buttons are up top now.
- Most are non-modal now.

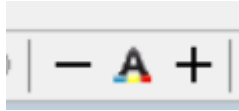


UI modernization (1/2)

- Custom font support
- Auto resize controls options
- MDI Tabbed Styles updates
- Panes
- Replaced message boxes with message bars.
- New toolbar buttons

Custom font support

- Uses the windows default font (Segoe UI – 9) but adjusts based on windows scaling.
- Change font size or settings with these toolbar buttons:



- Can also use **Ctrl +** or **Ctrl -** to change font size.
- Most of the GUI will honor the setting except:
 1. Popup message boxes (disabled by default)
 2. MDI tab flyovers (disabled by default)
 3. Menu bars don't update immediately until a Data Viewer is opened.

Resize controls

- If enabled, GUI elements (controls) will resize when windows resize. See **Preferences -> Resize** tab or **View -> Resize Controls** menu to configure.
- Resize controls has 4 options and the % value is how dramatic the resize should be:
 1. **Minimally (20%) - Default Requires a font size of 12 or less.**
 2. Compact (33%) – Requires font size of 14 or less.
 3. Standard (50%) – Font size 16 or less.
 4. Full (100%) – Font size 17+
- If Minimally still resizes too much you can use the override option on Preferences -> Resize. Minimum value is 2%.
- A few interfaces don't support this yet.

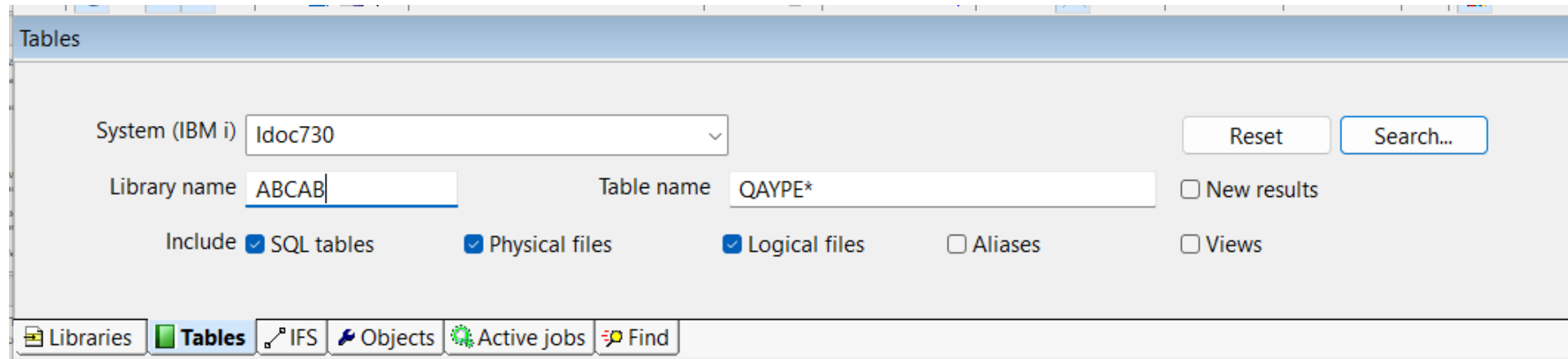
MDI Tabbed Styles

- This defines the style of interface used. (See **View -> MDI Tabbed Style** menu)
- MDI Tabbed Style None (Classic MDI) removed.
- **Grouped** (the default) or **Standard** can be used.
- New toolbar buttons can help you switch between Standard or Grouped for different types of scenarios and remembers the previous layout.
 1. Grouped mode - New vertical tabbed group
 2. Grouped mode – New horizontal tabbed group
 3. MDI Style Grouped
 4. Standard mode – Tile Horizontally
 5. Standard mode – Tile Vertically



Tabbed Panes

- Panes now use tabs, meaning only 1 is shown at a time.
- They help with switching tasks more quickly, like viewing perf data, active jobs, IFS, or objects.
- These automatically hide/reappear if you use F11 (full screen mode)



Libraries Pane

- A shortcut to get into the desired performance data.
- **Include old data** checkbox can be used to show/hide data older than 1 year. Use **Preferences -> Display -> Old at N months** option to change the threshold.
- **Verify procs** should be checked if moving to a new GUI build, at least temporarily or reinstall server builds.
- **Tip: Use Tables, IFS, Objects or Active jobs** panes to get into IBM i Explorer.

The screenshot shows the 'Libraries' pane in the IBM i Explorer interface. The pane contains several search filters: 'System (IBM i): Idoc730', 'Component: Job Watcher', 'Libraries: *ALL', 'Collection name: *ALL', 'Desc: *ALL', 'Owner: *ALL', and 'LPAR: *ALL'. There are also checkboxes for 'Include old data' (checked), 'New results', and 'Verify procs'. A 'Search...' button is present.

Below the Libraries pane, the '10 Preferences' dialog is open, showing the 'Display' tab. The 'Tab/report titles' field is set to '<system>/<library>/<collection>/<report name>'. The 'Column labels' dropdown is set to 'Descriptions (Names)'. The 'Show tab previews (%)' checkbox is checked, and the percentage is set to 25. The 'Old at N months' field is set to 12, which is highlighted with a red underline.

Find Pane

- This help you find something on the screen and cycle through the results.
- Works for tables, graphs, graph legends, SQL editors.
- Can't be used in trees or modal interfaces.

The screenshot shows the 'Find' pane in an IBM i environment. The search term 'mccargar' is entered in the 'Find what' field, with 4/15 results found. The search is performed on the '6 Idoc730: Job Watcher - List' table. The results are displayed in a table with columns: Library Name, Status, Description, Months old, Owner, Collections, Collection types, and Partic collection on VR.

Library Name	Status	Description	Months old	Owner	Collections	Collection types	Partic collection on VR
Filegen	Old		22	ADAMB	1	JW	730
Fltexample	Old	JW education slides - DO NOT DELETE	50	MCCARGAR	1	JW, CS	730
Fltex2	Old		50	MCCARGAR	1	JW	730
Ibmdk2	Old		78	QDFTOWN	1	JW	730
Ibmjw	Old		39	ADAMB	2	JW	730
Ibmpex1	Old	Created by QMGTOOLS	14	HENDERAN	1	JW	730
Jwidoc730	Old		13	MCCARGAR	6	JW	730
Mccargar		hi	0	MCCARGAR	8	JW, CS, DW	730
Mccargar1	Old		64	MCCARGAR	1	JW	730
Mccargar12	N/A			MCCARGAR			
Mccargar2	Old		64	MCCARGAR	3	JW	730
Mccargar3			4	MCCARGAR	2	JW	730
Mccdeh	Old		60	MCCARGAR	1	JW	730

Find Pane – Type ahead support

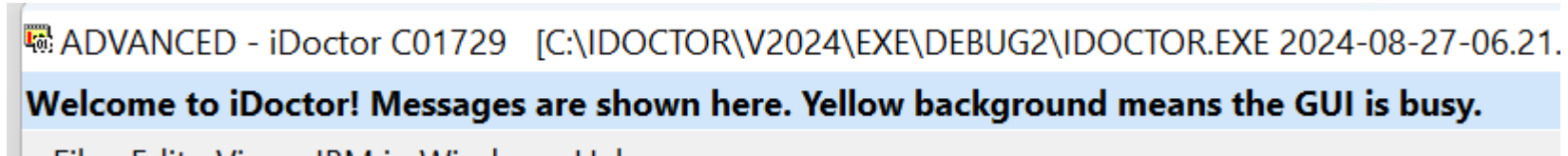
- If you want to find something in a list, follow these steps:
 1. Click on list.
 2. Start typing something.
 3. Find pane will automatically appear.
 4. Press enter to search.
 5. Press enter again to cycle through results (if applicable.)

The screenshot shows the IBM i Find pane with the search term 'ibmdk2' entered. The search results are displayed in a table with the following columns: Library Name, Status, Description, Months old, Owner, Collections, Collection types, and Partition collection on VRM.

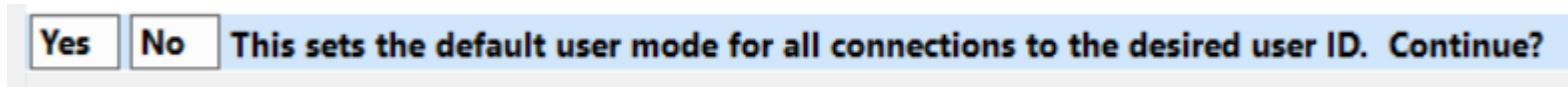
Library Name	Status	Description	Months old	Owner	Collections	Collection types	Partition collection on VRM
Adamb			8	ADAMB	1	JW, PA	730
Demo2	Old	JW education slides - DO NOT DELETE2	64	MCCARGAR	1	JW, CS	730
Filegen	Old		23	ADAMB	1	JW	730
Fltexample	Old	JW education slides - DO NOT DELETE	50	MCCARGAR	1	JW, CS	730
Fltex2	Old		50	MCCARGAR	1	JW	730
ibmdk2	Old		79	QDFTOWN	1	JW	730
Ibmjw	Old		39	ADAMB	2	JW	730
Ibmpex1	Old	Created by QMGTOOLS	14	HENDERAN	1	JW	730
Iwidoc730	Old		13	MCCARGAR	6	JW	730

Message bars (1/2)

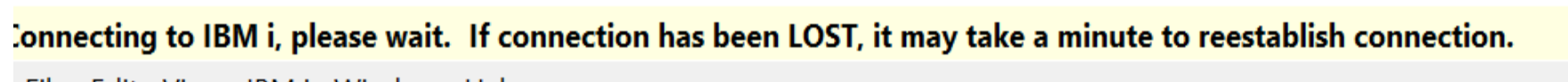
- **ALL windows** contain a message bar at the top of each interface.



- Replaces popup message boxes and also gives status of operations.
- Blue highlight color is used when asking questions.

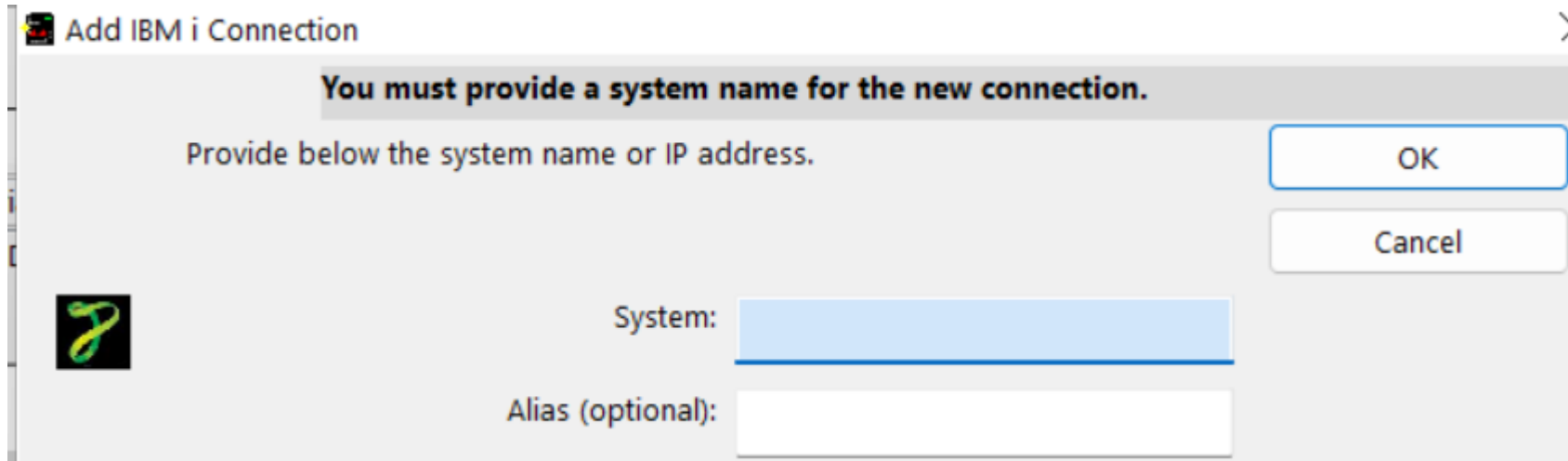


- Yellow background color means something is running.



Message bars (2/2)

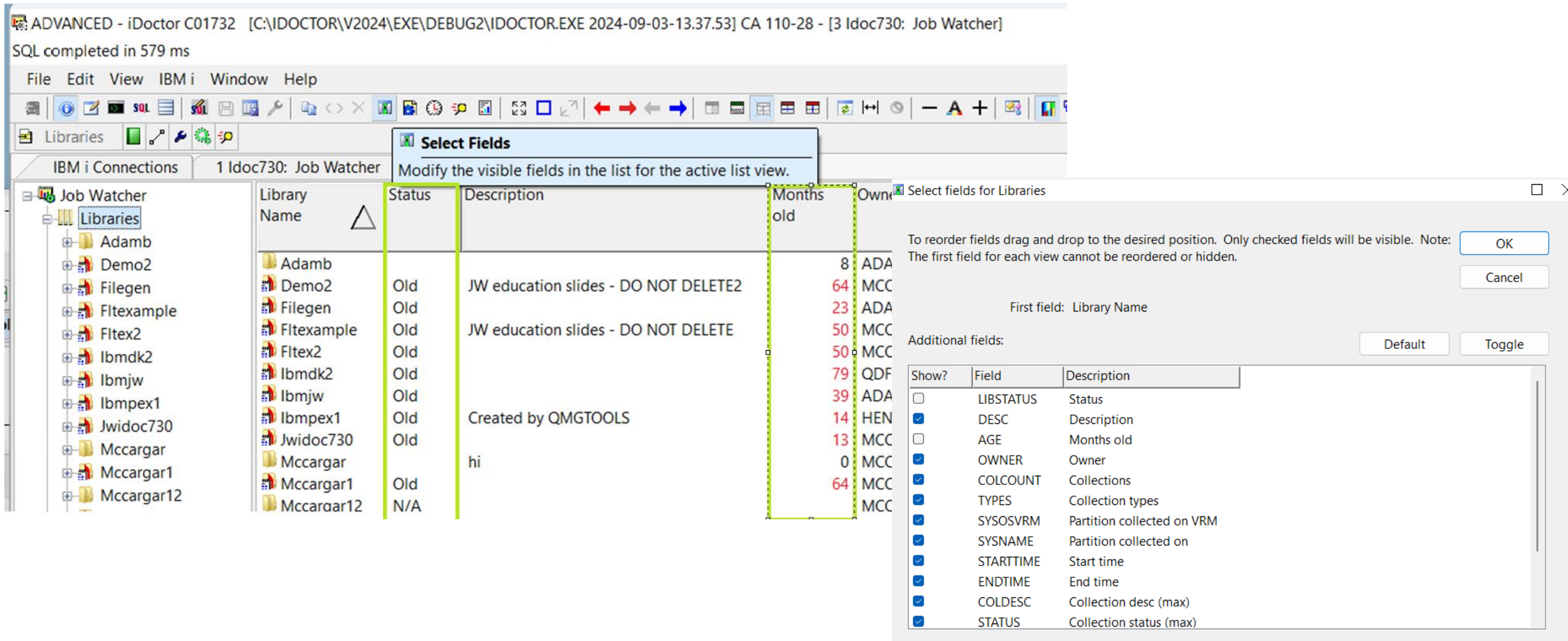
- Dark grey color background is just an informational message or error.
- On errors, the control with an issue is highlighted (light blue).



The screenshot shows a dialog box titled "Add IBM i Connection" with a close button (X) in the top right corner. A dark grey message bar at the top contains the text "You must provide a system name for the new connection." Below this, the text "Provide below the system name or IP address." is displayed. On the left side, there is a small icon of a green question mark on a black background. To the right of the icon are two input fields: "System:" and "Alias (optional):". The "System:" input field is highlighted with a light blue border, indicating an error. Below the input fields are two buttons: "OK" and "Cancel".

Toolbar button – Select Fields

- This modifies the columns shown by default for the current folder.
- Shown in Main Window toolbar for the component views only.



ADVANCED - iDoctor C01732 [C:\IDOCTOR\V2024\EXE\DEBUG2\IDOCTOR.EXE 2024-09-03-13.37.53] CA 110-28 - [3 Idoc730: Job Watcher]

SQL completed in 579 ms

File Edit View IBM i Window Help

Libraries

IBM i Connections 1 Idoc730: Job Watcher

Job Watcher Libraries

Library Name	Status	Description	Months old	Owner
Adamb			8	ADA
Demo2	Old	JW education slides - DO NOT DELETE2	64	MCC
Filegen	Old		23	ADA
Fltexample	Old	JW education slides - DO NOT DELETE	50	MCC
Fltex2	Old		50	MCC
lbmdk2	Old		79	QDF
lbmjw	Old		39	ADA
lbmpex1	Old	Created by QMGTOOLS	14	HEN
Jwidoc730	Old		13	MCC
Mccargar		hi	0	MCC
Mccargar1	Old		64	MCC
Mccargar12	N/A			MCC

Select Fields

Modify the visible fields in the list for the active list view.

Select fields for Libraries

To reorder fields drag and drop to the desired position. Only checked fields will be visible. Note: The first field for each view cannot be reordered or hidden.

First field: Library Name

Additional fields: Default Toggle

Show?	Field	Description
<input type="checkbox"/>	LIBSTATUS	Status
<input checked="" type="checkbox"/>	DESC	Description
<input type="checkbox"/>	AGE	Months old
<input checked="" type="checkbox"/>	OWNER	Owner
<input checked="" type="checkbox"/>	COLCOUNT	Collections
<input checked="" type="checkbox"/>	TYPES	Collection types
<input checked="" type="checkbox"/>	SYSOSVRM	Partition collected on VRM
<input checked="" type="checkbox"/>	SYSNAME	Partition collected on
<input checked="" type="checkbox"/>	STARTTIME	Start time
<input checked="" type="checkbox"/>	ENDTIME	End time
<input checked="" type="checkbox"/>	COLDESC	Collection desc (max)
<input checked="" type="checkbox"/>	STATUS	Collection status (max)

Toolbar button – Find Pane



- This opens the Find Pane.

ADVANCED - iDoctor C01729 [C:\IDOCTOR\V2024\EXE\DEBUG2\IDOCTOR.EXE 2024-08-27-14.36.21] CA 110-28 - [6 Idoc730: Job Watcher]

Ready

File Edit View IBM i Window Help

Find

Find what: educa 1/3 Reset

Starts with Match cell Match case Column 4 only (Months old) If no hits, load

Searching: 6 Idoc730: Job Watcher - List Header

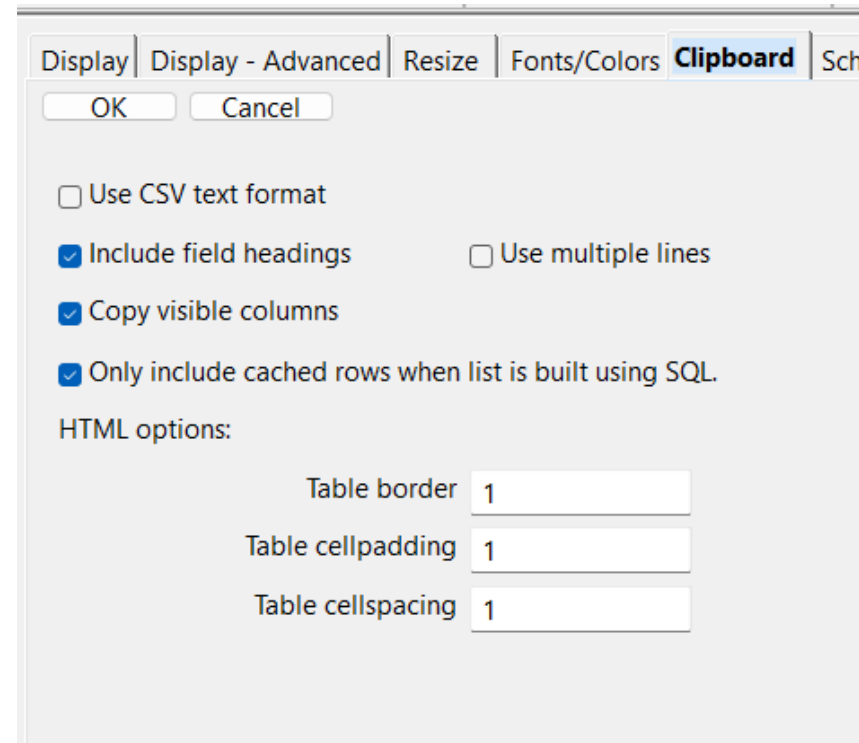
Libraries Tables IFS Objects Active jobs Find

Remote SQL Statement Status Remote Command Status IBM i Connections 6 Idoc730: Job Watcher 8 Idoc730: Job W

Library Name	Status	Description	Months old	Owner	Collection
Adamb			8	ADAMB	1
Demo2	Old	JW education slides - DO NOT DELETE2	64	MCCARGAR	1
Filegen	Old		22	ADAMB	1
Fltexample	Old	JW education slides - DO NOT DELETE	50	MCCARGAR	1
Fltex2	Old		50	MCCARGAR	1
Ibmdk2	Old		78	ODFTOWN	1

Toolbar button – Copy Window

- This copies the current interface to the clipboard.
- Also available under **Edit -> Copy Window** menu.
- Only works for tables (lists) and property pages.
- 3 formats are copied to clipboard TXT (or CSV), RTF and HTML.
- Up to target app to decide format to use.
- See **Preferences -> Clipboard** for options.



Toolbar button - Full screen mode (F11)

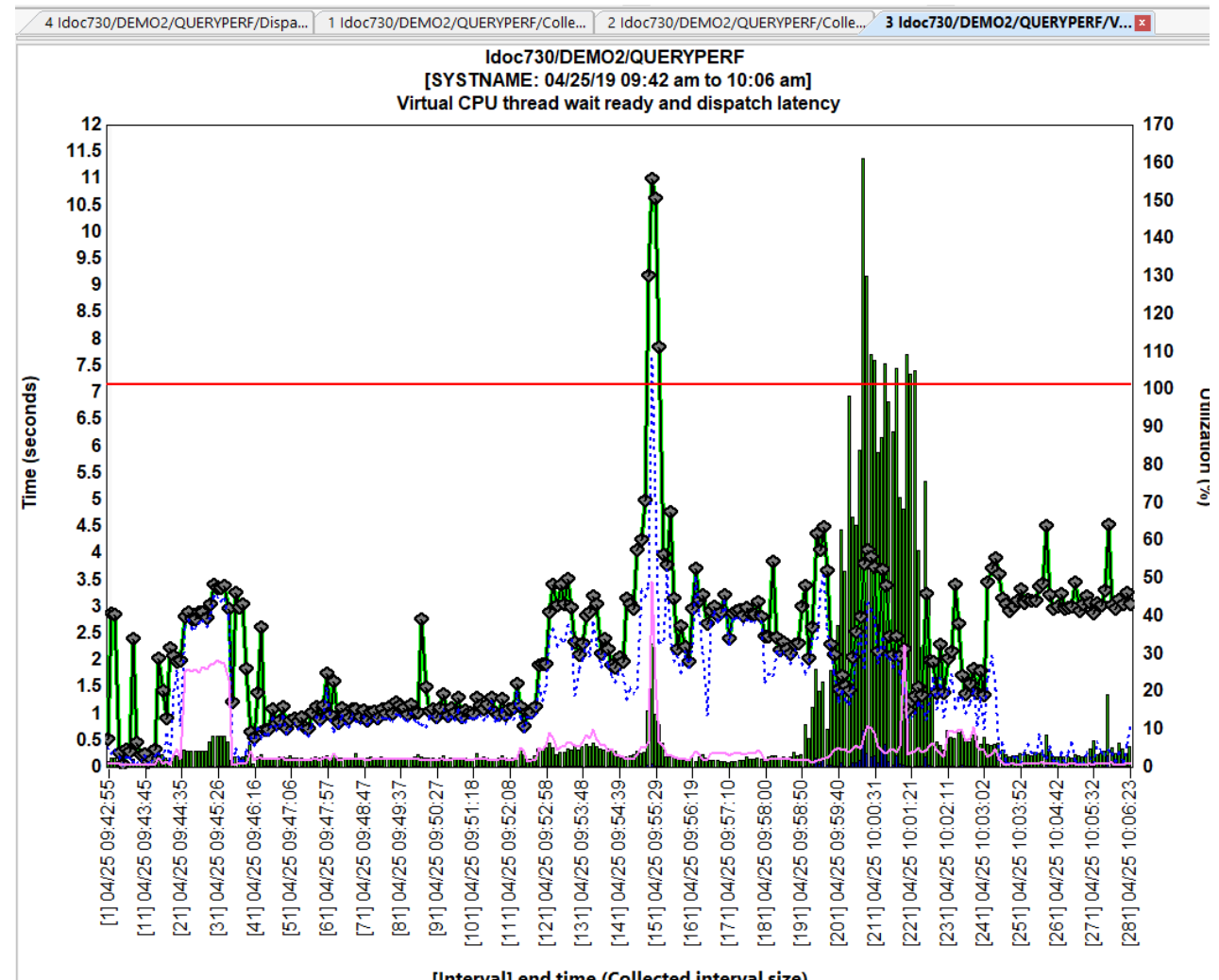
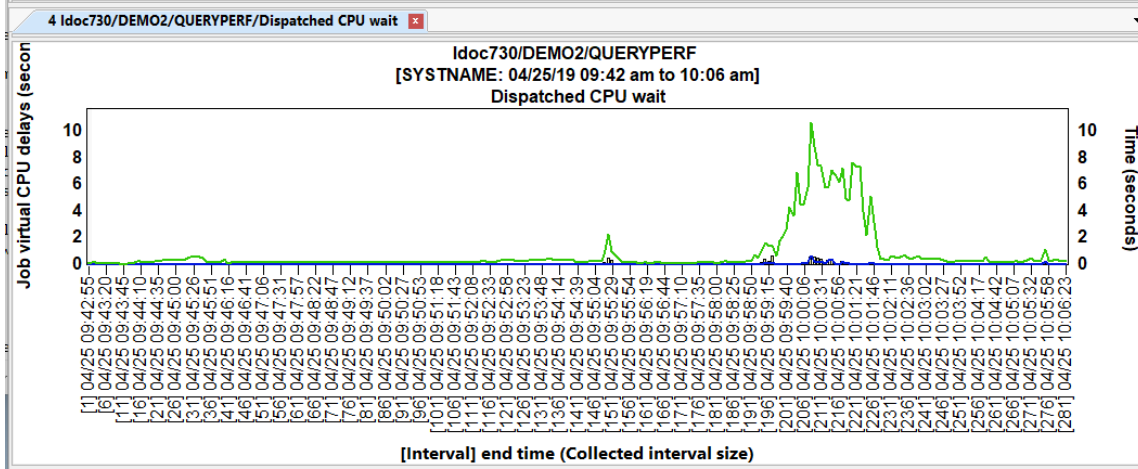
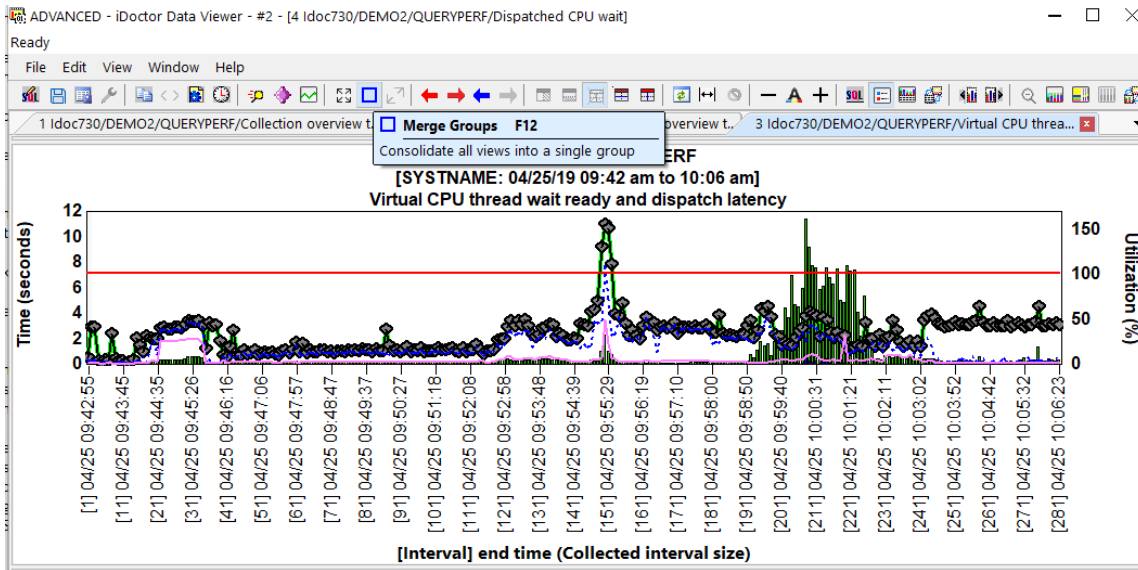


- If enabled these things happen:
 - Maximizes the window
 - Autohides the panes
 - Hides the status bar
- Also available under **View -> Full screen** menu.
- Some settings to control behavior are under **Preferences -> Resize**.

Toolbar button – Merge Groups (F12)

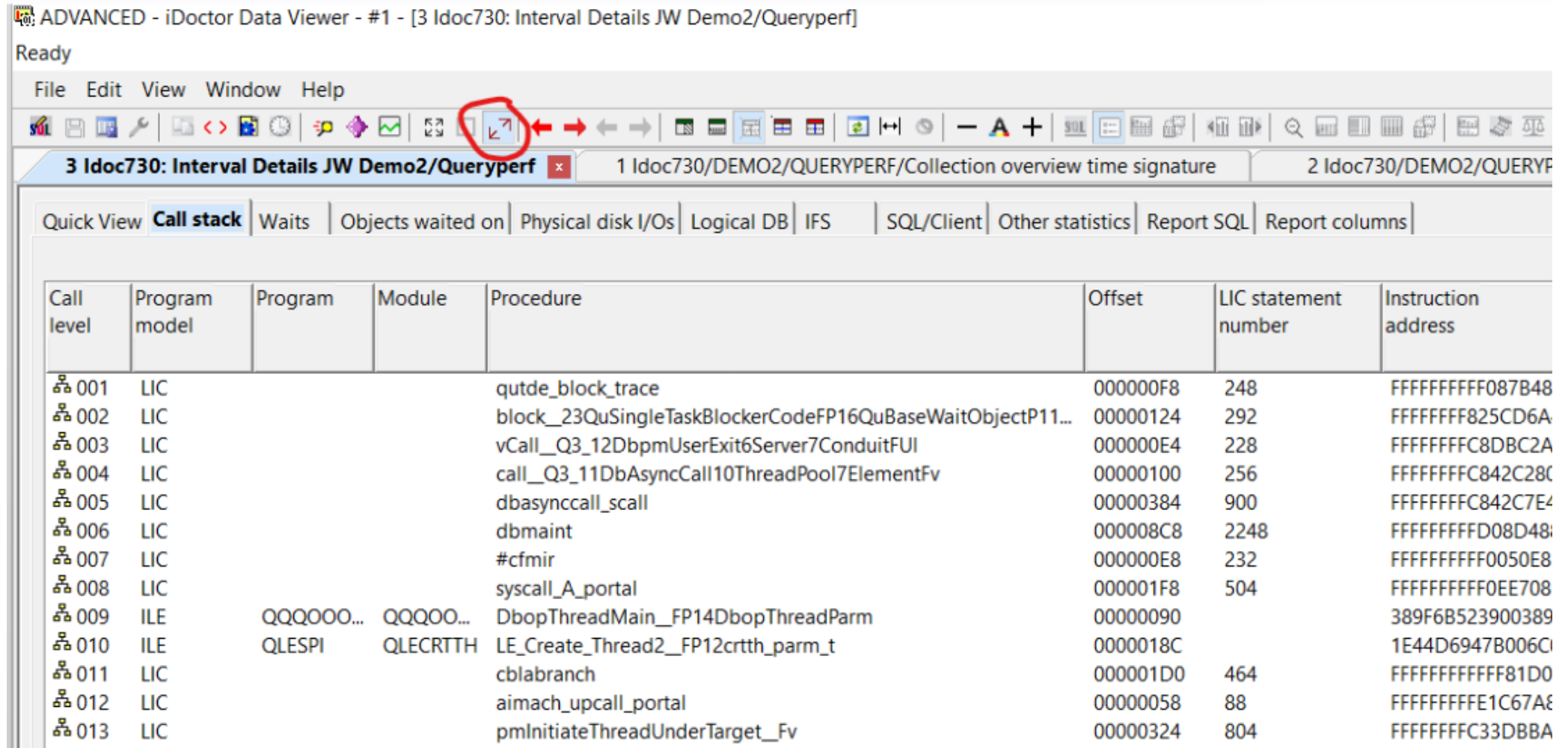


- When using **Grouped** MDI only, consolidates all views into 1 row/group.
- Useful if you wish to switch a view to full screen mode.
- Currently this does not toggle back to restore the previous layout.



Toolbar button – Maximize List (F9)

- This option will toggle a list to take up the entire view.
- Only applies to property sheet interfaces. (i.e. **JW – Interval Details – Call stack**)



ADVANCED - iDoctor Data Viewer - #1 - [3 Idoc730: Interval Details JW Demo2/Queryperf]

Ready

File Edit View Window Help

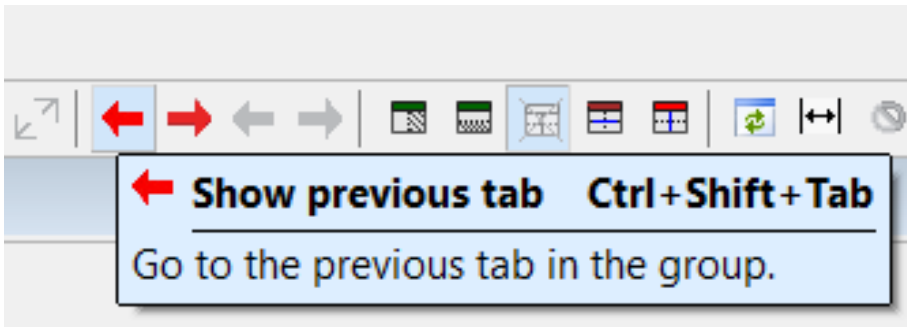
3 Idoc730: Interval Details JW Demo2/Queryperf x 1 Idoc730/DEMO2/QUERYPERF/Collection overview time signature 2 Idoc730/DEMO2/QUERYPERF

Quick View **Call stack** Waits Objects waited on Physical disk I/Os Logical DB IFS SQL/Client Other statistics Report SQL Report columns

Call level	Program model	Program	Module	Procedure	Offset	LIC statement number	Instruction address
001	LIC			qutde_block_trace	00000F8	248	FFFFFFFFF087B48
002	LIC			block_23QuSingleTaskBlockerCodeFP16QuBaseWaitObjectP11...	00000124	292	FFFFFFFF825CD6A
003	LIC			vCall_Q3_12DbpmUserExit6Server7ConduitFUI	000000E4	228	FFFFFFFFC8DBC2A
004	LIC			call_Q3_11DbAsyncCall10ThreadPool7ElementFv	00000100	256	FFFFFFFFC842C28C
005	LIC			dbasynccall_scall	00000384	900	FFFFFFFFC842C7E4
006	LIC			dbmaint	000008C8	2248	FFFFFFFFD08D48
007	LIC			#cfmir	000000E8	232	FFFFFFFFF0050E8
008	LIC			syscall_A_portal	000001F8	504	FFFFFFFFF0EE708
009	ILE	QQQ000...	QQQ00...	DbopThreadMain_FP14DbopThreadParm	00000090		389F6B523900389
010	ILE	QLESPI	QLECRTH	LE_Create_Thread2_FP12crth_parm_t	0000018C		1E44D6947B006C
011	LIC			cblabbranch	000001D0	464	FFFFFFFFF81D0
012	LIC			aimach_upcall_portal	00000058	88	FFFFFFFFE1C67A
013	LIC			pmlInitiateThreadUnderTarget_Fv	00000324	804	FFFFFFFFC33DBBA

Toolbar button – Show previous/next tab

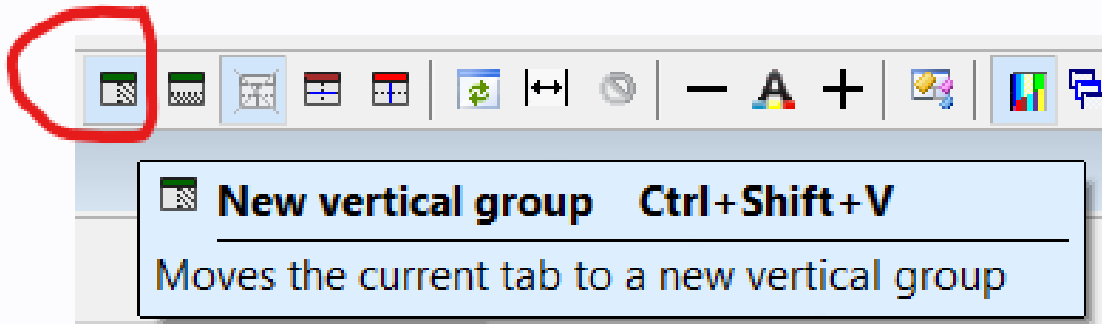
- This moves to the previous/next tab in the current tabbed group.
- Show previous tab shortcut: Ctrl+Shift+Tab
- Show next tab: Ctrl+Tab
- Works for both Grouped and Standard MDI modes.



Toolbar button – New vertical group (Ctrl+Shift+V)



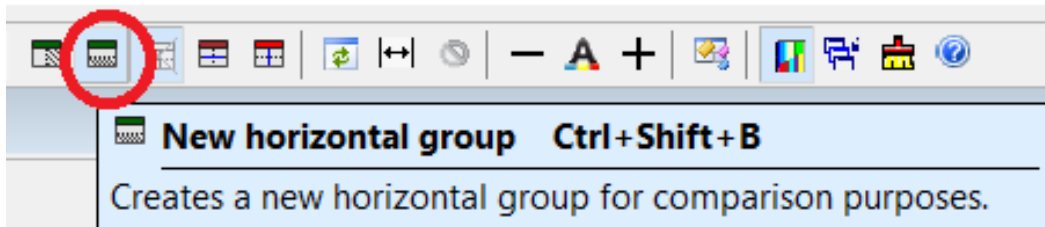
- This moves the current view into a new vertical tabbed group.
- Useful when you want to compare something or better utilize screen space.
- Grouped MDI mode only



Toolbar button – New horizontal group (Ctrl+Shift+B)



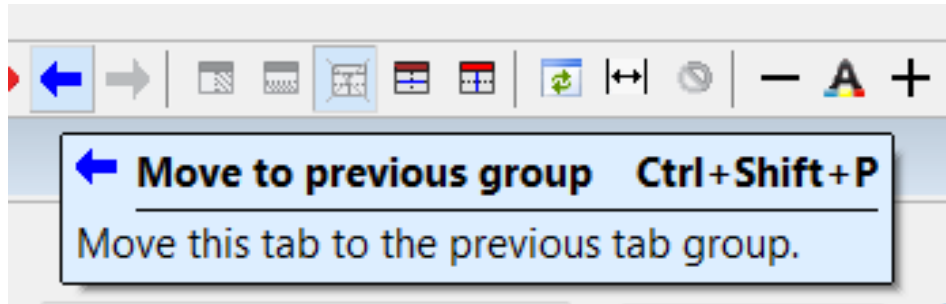
- This moves the current view into a new horizontal tabbed group.
- Useful when you want to compare something or better utilize screen space.
- Grouped MDI mode only



Toolbar button – Move to previous group (Ctrl+Shift+P)



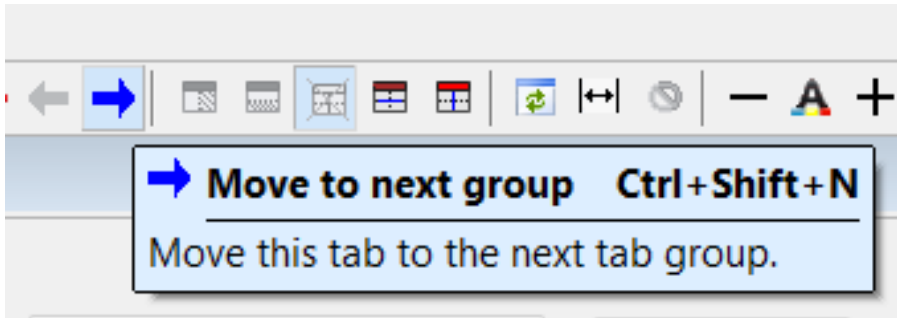
- This moves the current view back to the previous tabbed group.
- Grouped MDI mode only



Toolbar button – Move to next group (Ctrl+Shift+N)

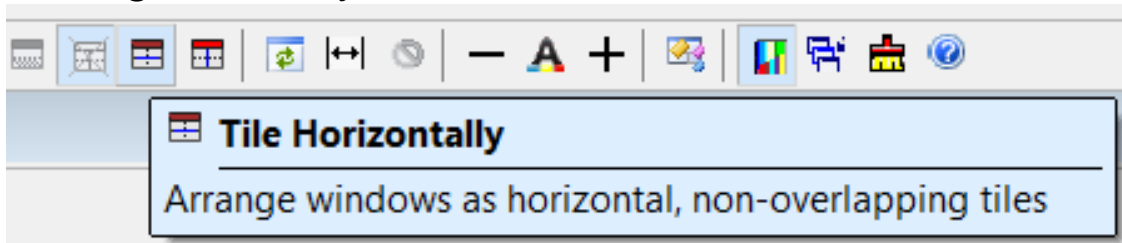


- This moves the current view to the next tabbed group.
- Grouped MDI mode only



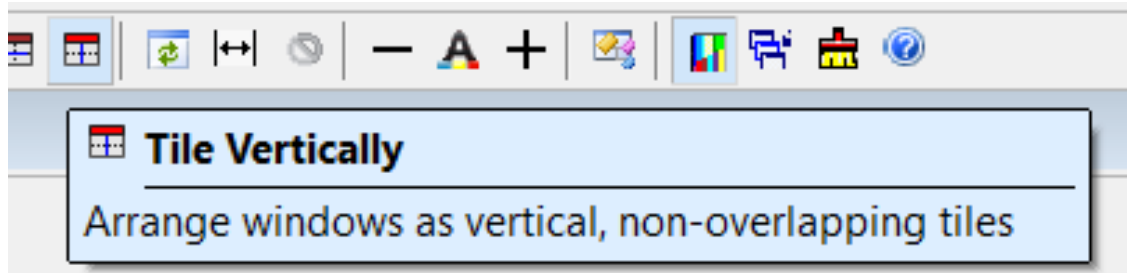
Toolbar button – Tile Horizontally

- This switches to Standard MDI mode and rearranges windows in a horizontal layout.
- Available from both Grouped/Standard MDI modes.
- Also available under **Window -> Tile Horizontally**
- If more than 6 views exist, only 1st 6 are tiled. **Note:** In the future, this will change to 4 max but has not yet been changed.
- This ignores any minimized views.



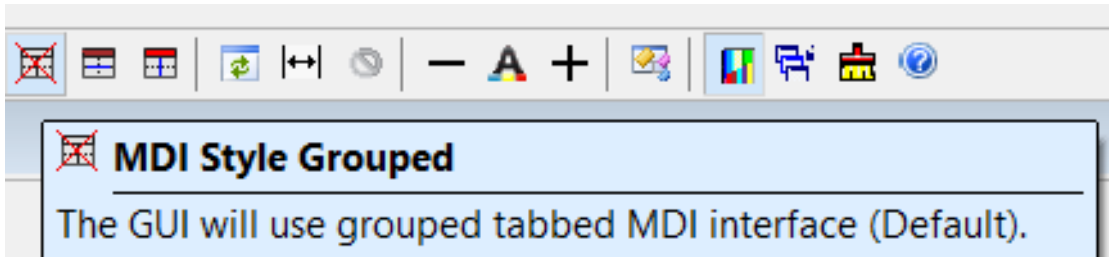
Toolbar button – Tile Vertically

- This switches to Standard MDI mode and rearranges windows in a vertical layout.
- Available from both Grouped/Standard MDI modes.
- Also available under **Window -> Tile Vertically**
- If more than 6 views exist, only 1st 6 are tiled. **Note:** In the future, this will change to 4 max but has not yet changed.
- This ignores any minimized views.



Toolbar button – MDI Style Grouped

- This switches to Grouped MDI mode and restores the previous grouped mode layout.
- Available from Standard MDI mode only.
- Also available under **View -> MDI Tabbed Style -> Grouped** menu.

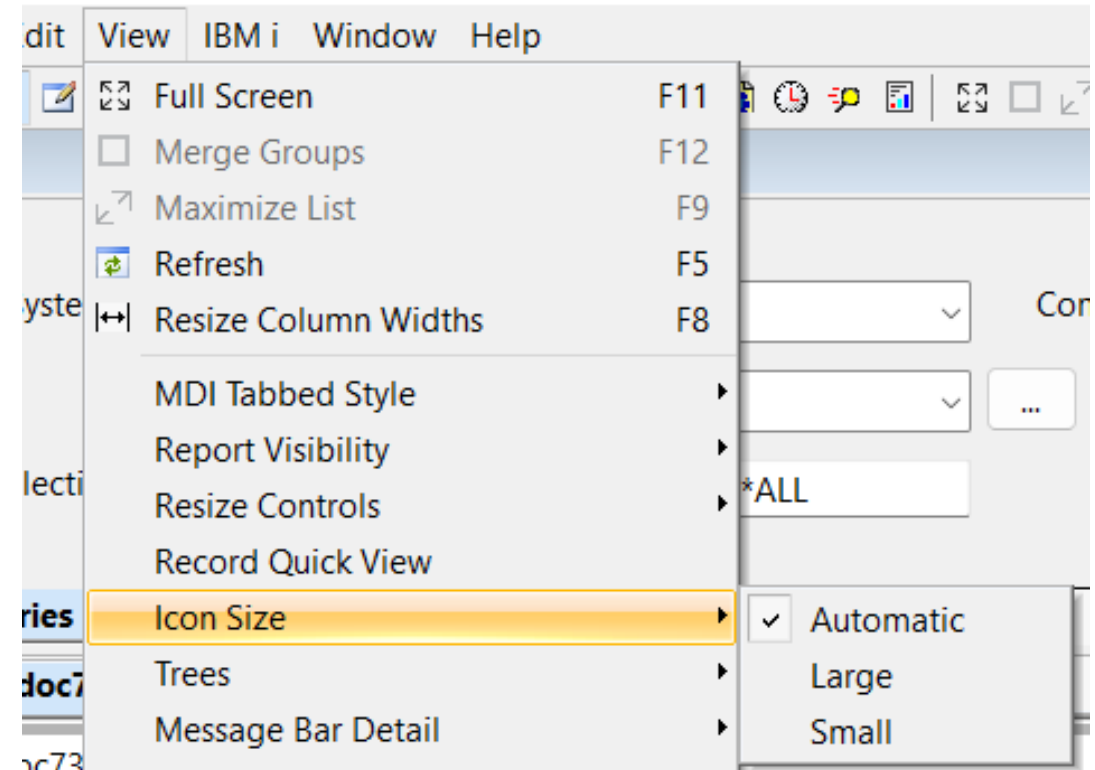


UI modernization (2/2)

- DPI - windows scaling support
- Tab previews
- PDF support (situations, spool files)

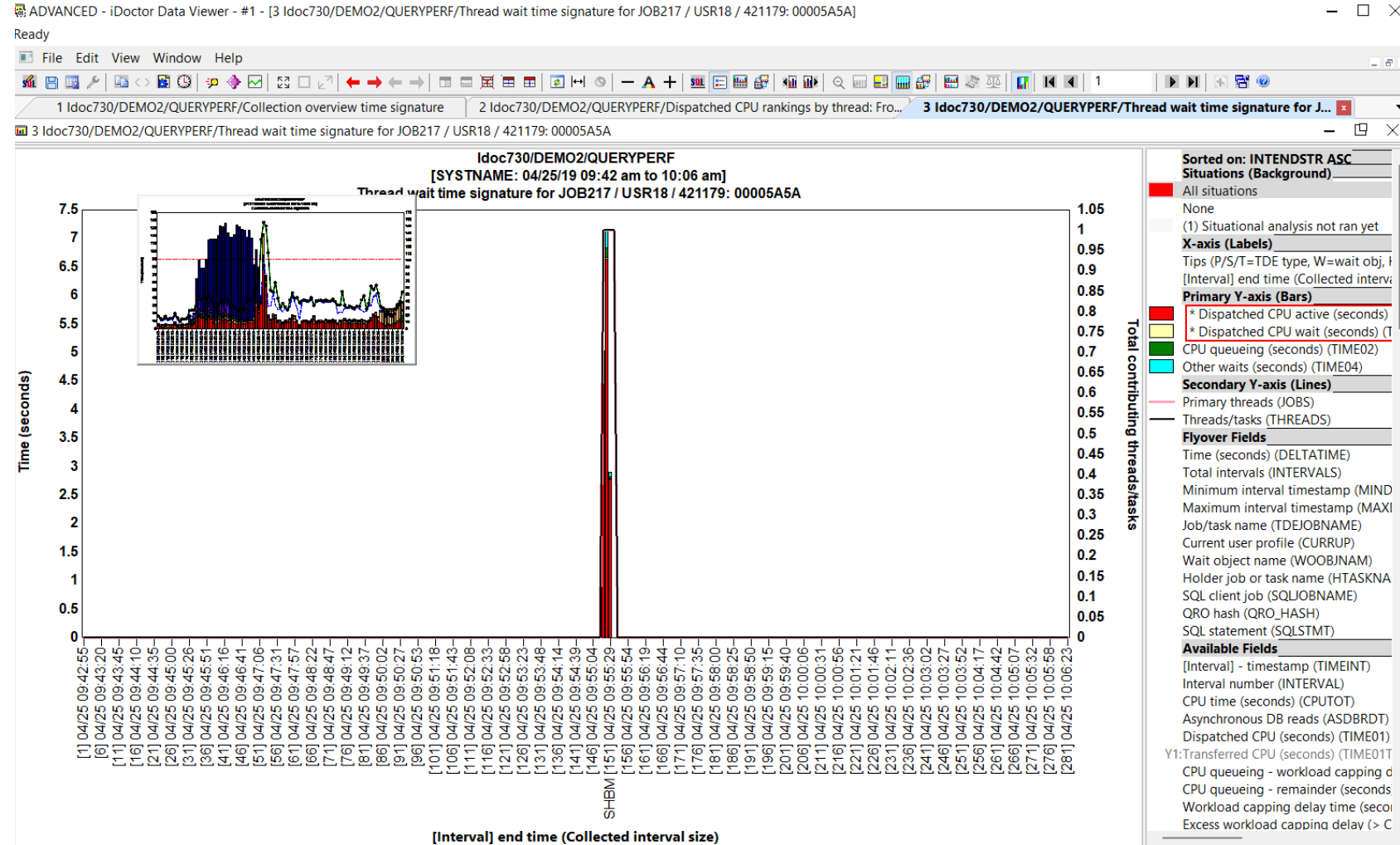
DPI – Windows scaling support

- GUI updated to detect and auto update based on windows scaling changes.
- Dragging a window from one monitor to another works better.
- Large icons will be used if scaling is $\geq 175\%$. See **View -> Icon Size** menu to override this behavior.
- Scroll bars will appear if property sheets are cut off.
- Not perfect; more work remains.



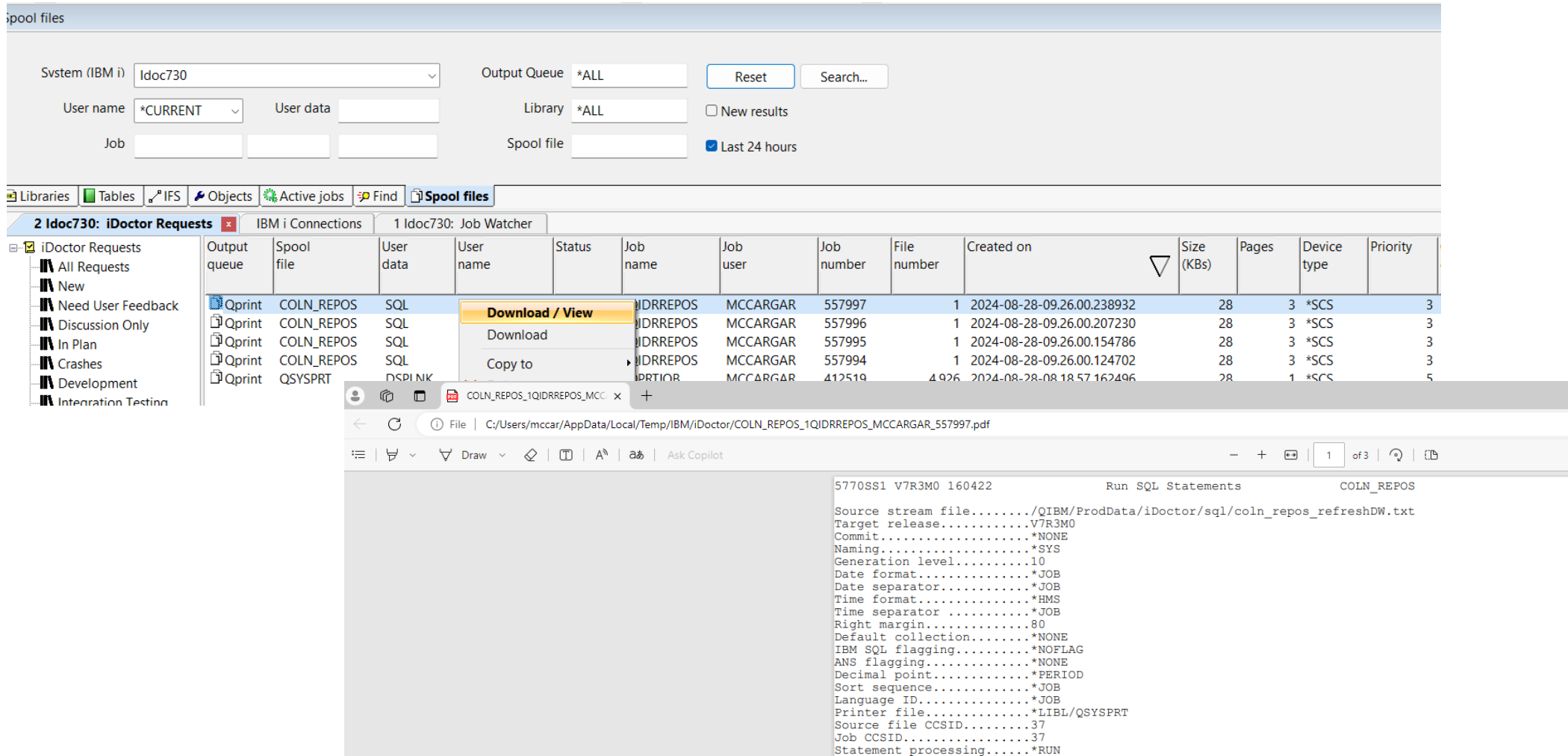
Tab previews

- When mouse is over a tab, these appear to show you what is behind that tab/view.
- Screenshots saved to %AppData% folder.
- Customize these under Preferences -> Display.
- Not shown for the current view.



PDF support

- Double-click a situation to view a PDF. (collection properties or graph legend)
- Spool files can be downloaded / viewed as a PDF. (7.3+)



The screenshot shows the IBM i Spool files interface. At the top, there are search filters for System (IBM i), User name, Output Queue, Library, and Spool file. Below this is a navigation bar with tabs for Libraries, Tables, IFS, Objects, Active jobs, Find, and Spool files. The main area displays a table of spool files with columns for Output queue, Spool file, User data, User name, Status, Job name, Job user, Job number, File number, Created on, Size (KBs), Pages, Device type, and Priority. A context menu is open over the first row, showing options for Download / View, Download, and Copy to. Below the table, a browser window is open, displaying a PDF of the selected spool file. The PDF content shows the following text:

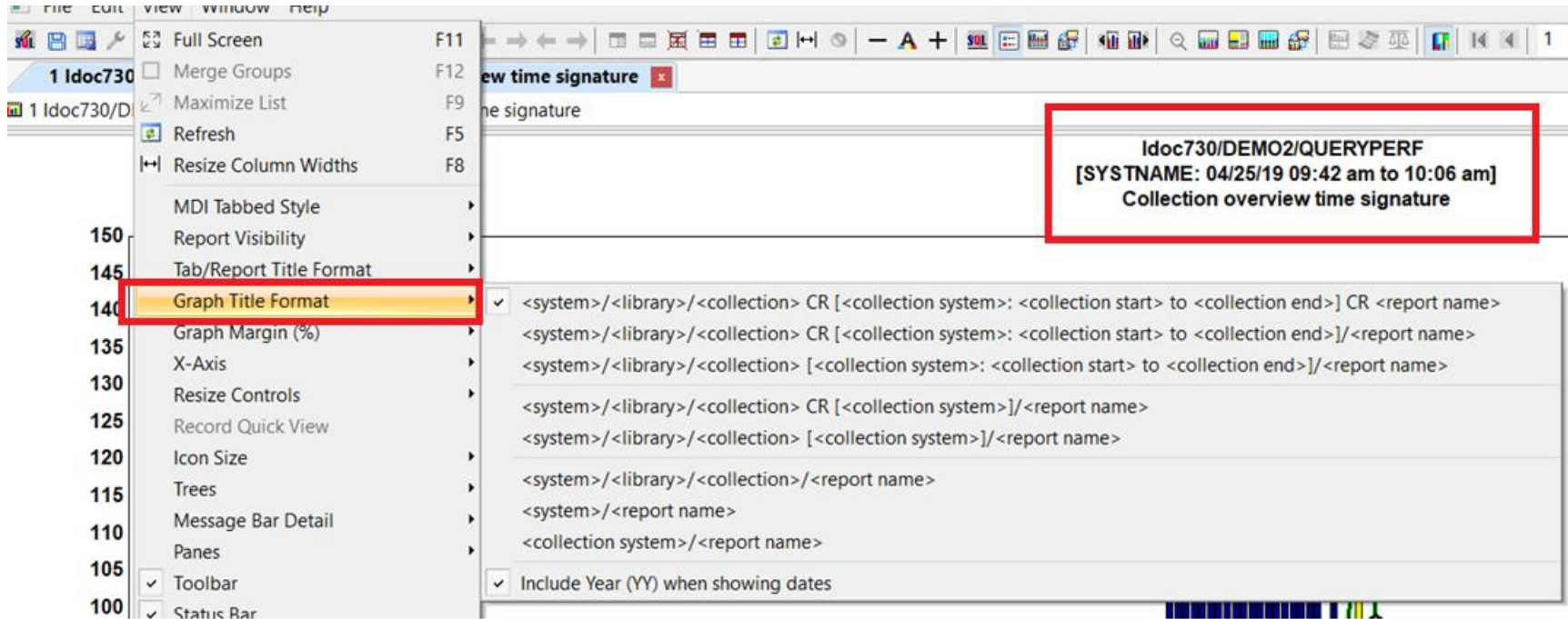
```
5770SS1 V7R3M0 160422          Run SQL Statements          COLN_REPOS
Source stream file...../QIBM/ProdData/iDoctor/sql/coln_repos_refreshDW.txt
Target release.....V7R3M0
Commit.....*NONE
Naming.....*SYS
Generation level.....10
Date format.....*JOB
Date separator.....*JOB
Time format.....*HMS
Time separator.....*JOB
Right margin.....80
Default collection.....*NONE
IBM SQL flagging.....*NOFLAG
ANS flagging.....*NONE
Decimal point.....*PERIOD
Sort sequence.....*JOB
Language ID.....*JOB
Printer file.....*LIBL/QSYSPT
Source file CCSID.....37
Job CCSID.....37
Statement processing.....*RUN
```

Graphing updates

- View -> Graph title format menu
- View -> Graph margin % menu
- View -> X-axis menu
- Legend updates
- Widget size
- Zoom in/out

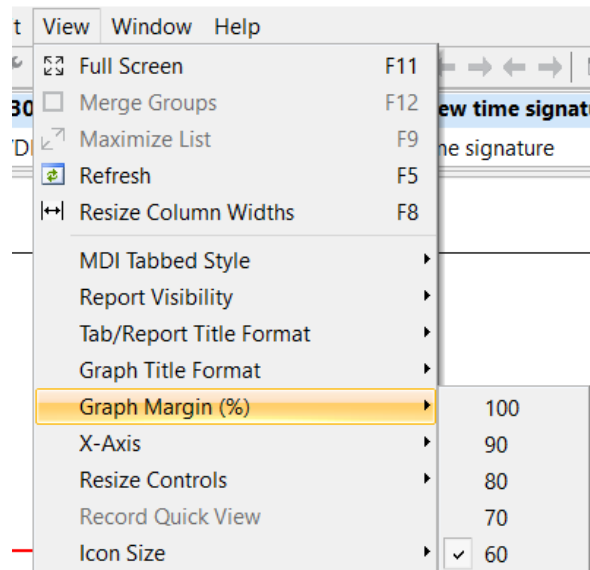
Graph Title Format

- Available under the View menu or Preferences -> Display.
- Now supports multiline graph titles. **CR** designates a new line. 3 lines max.



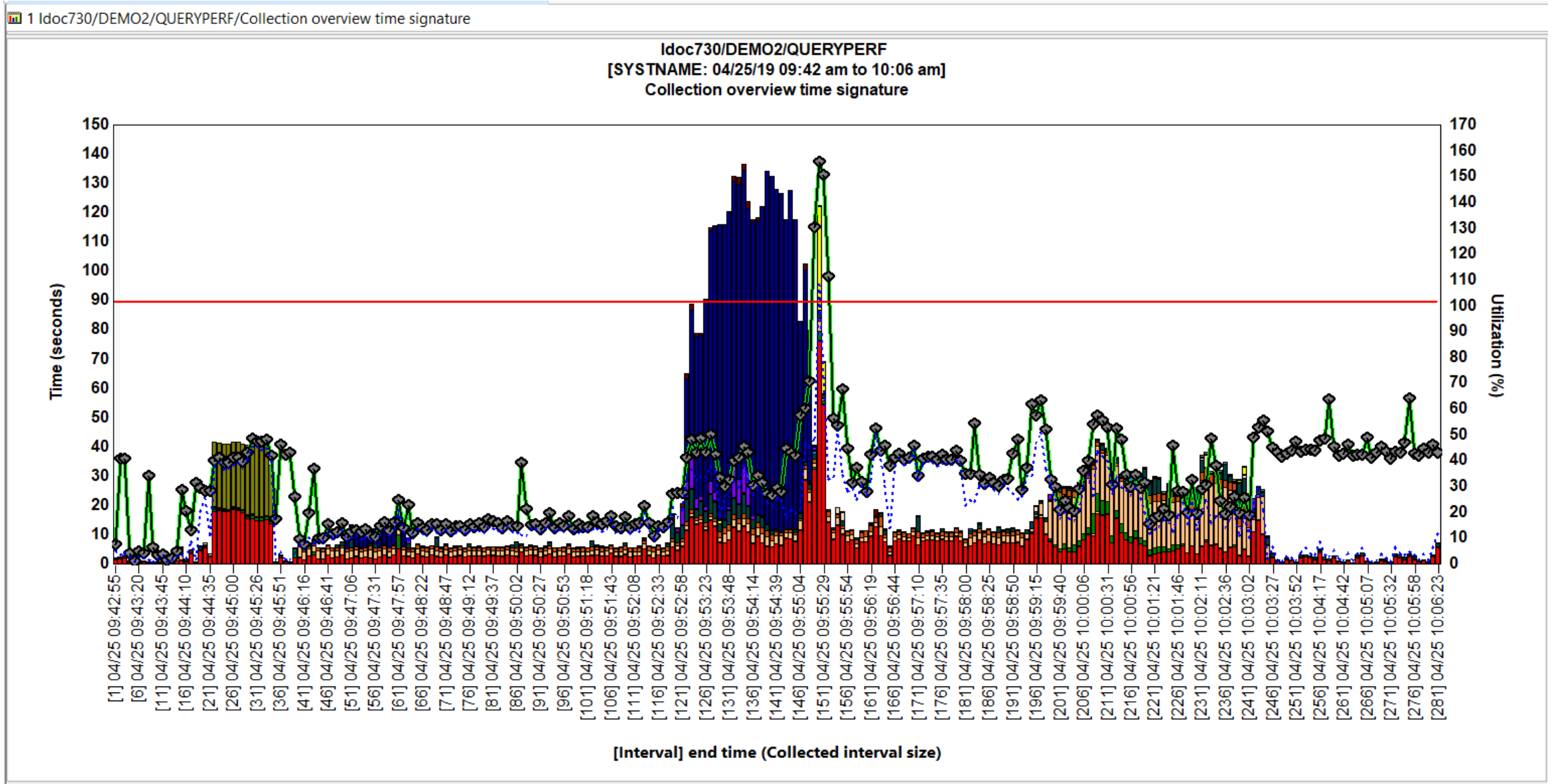
View -> Graph Margin % menu (1/3)

- Available under the View menu only.
- This controls how much white space is around the X/Y axis labels. Higher % means more white space. **Default is 80%.**
- Smaller value increases the size of the graph itself by sacrificing space in the label area.



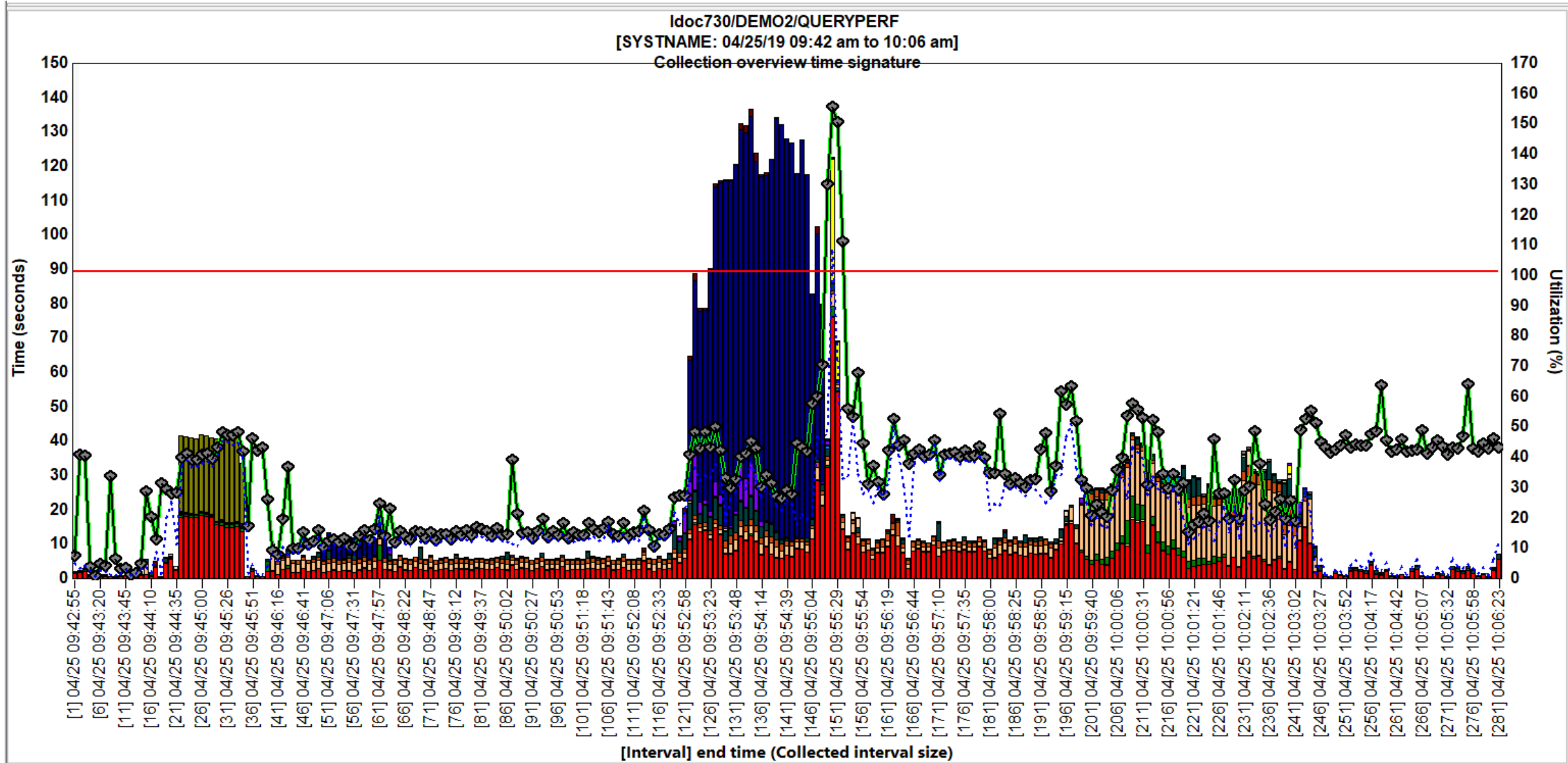
View -> Graph Margin % menu (2/3)

- 100%



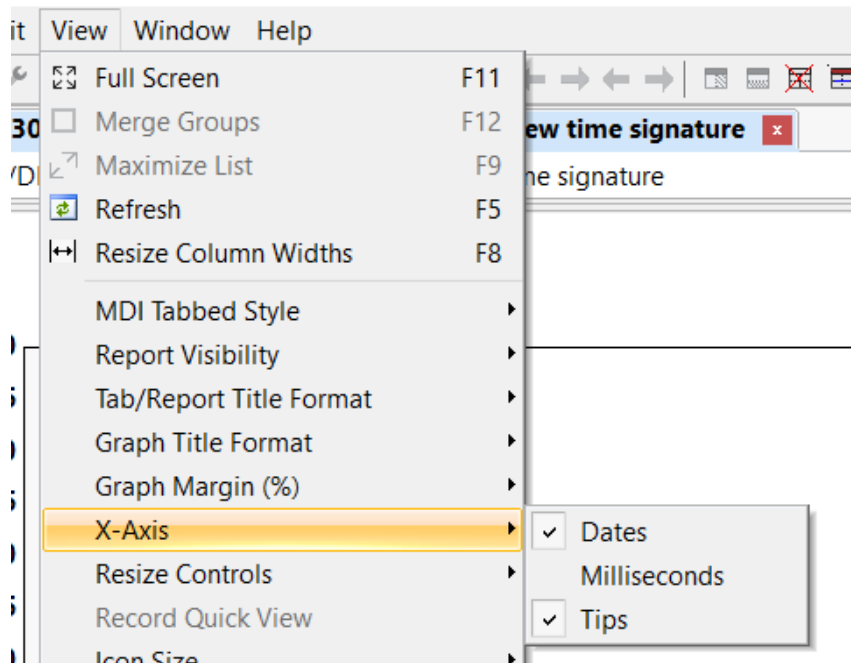
View -> Graph Margin % menu (3/3)

- 60%



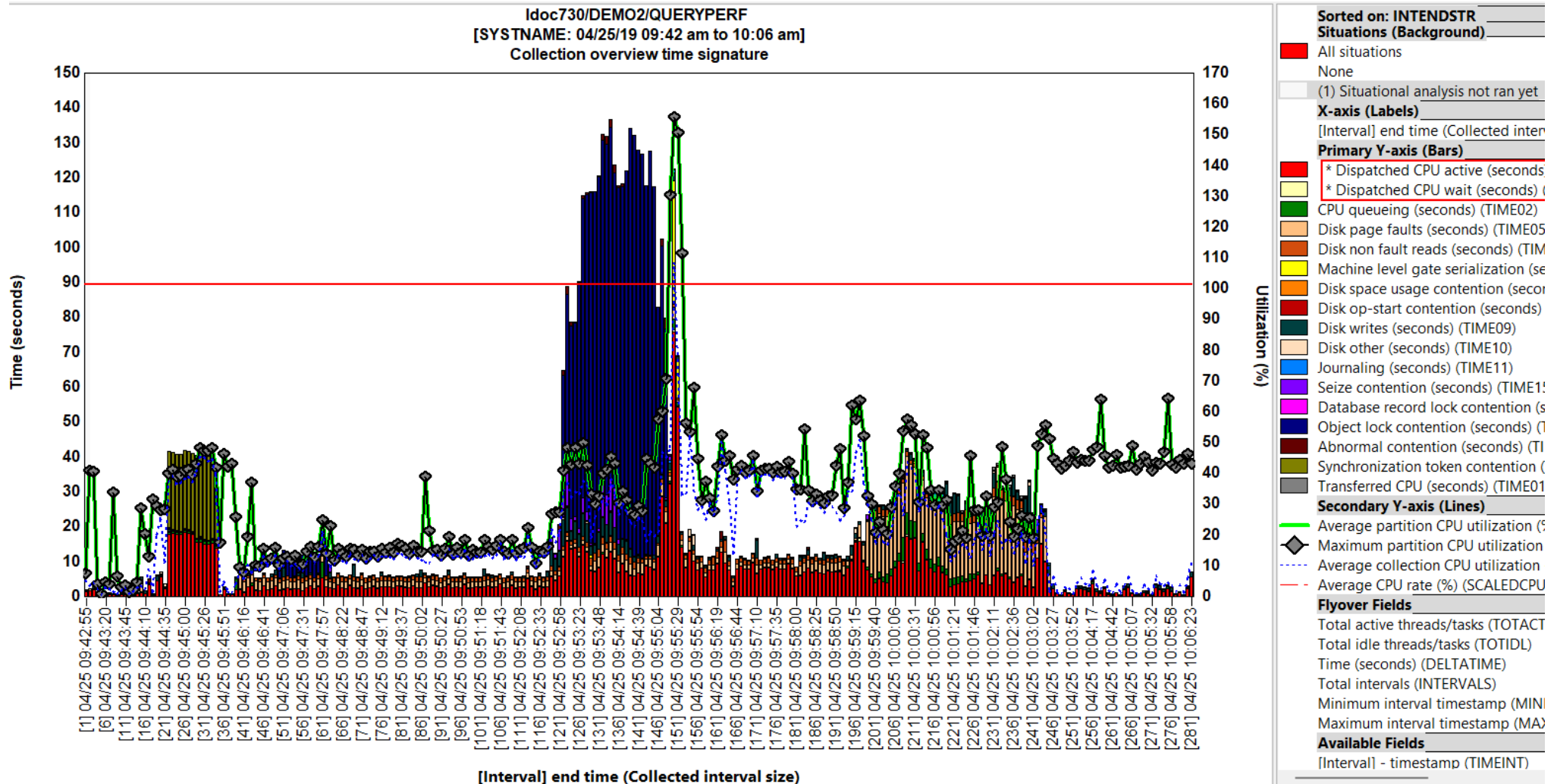
View -> X-axis menu

- These options let you decide what appears on the X-axis labels on graphs.
- **Tips** are the single character flags that appear in JW/CS graphs to tell you what exists in the data. (i.e. H = Holder)
- **Note:** These options modify the SQL statement, so reopening the graph after making changes is required.



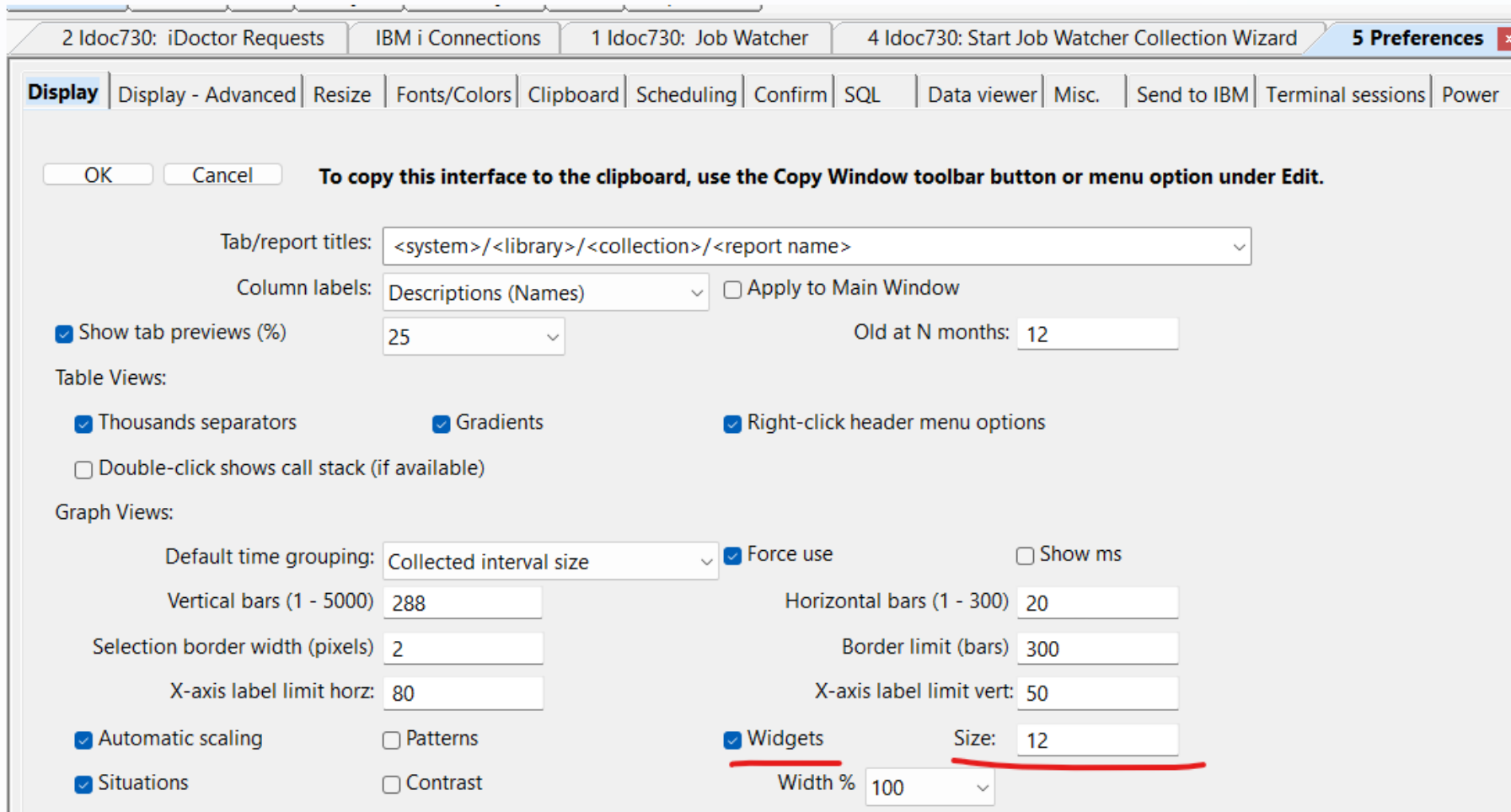
Graph legend updates

- Double-click a situation shows a PDF with more detail.
- Widgets drawn in legend now. Set widget size under Preferences -> Display.
- Added find support for legend or graph itself (drawn label text only.)



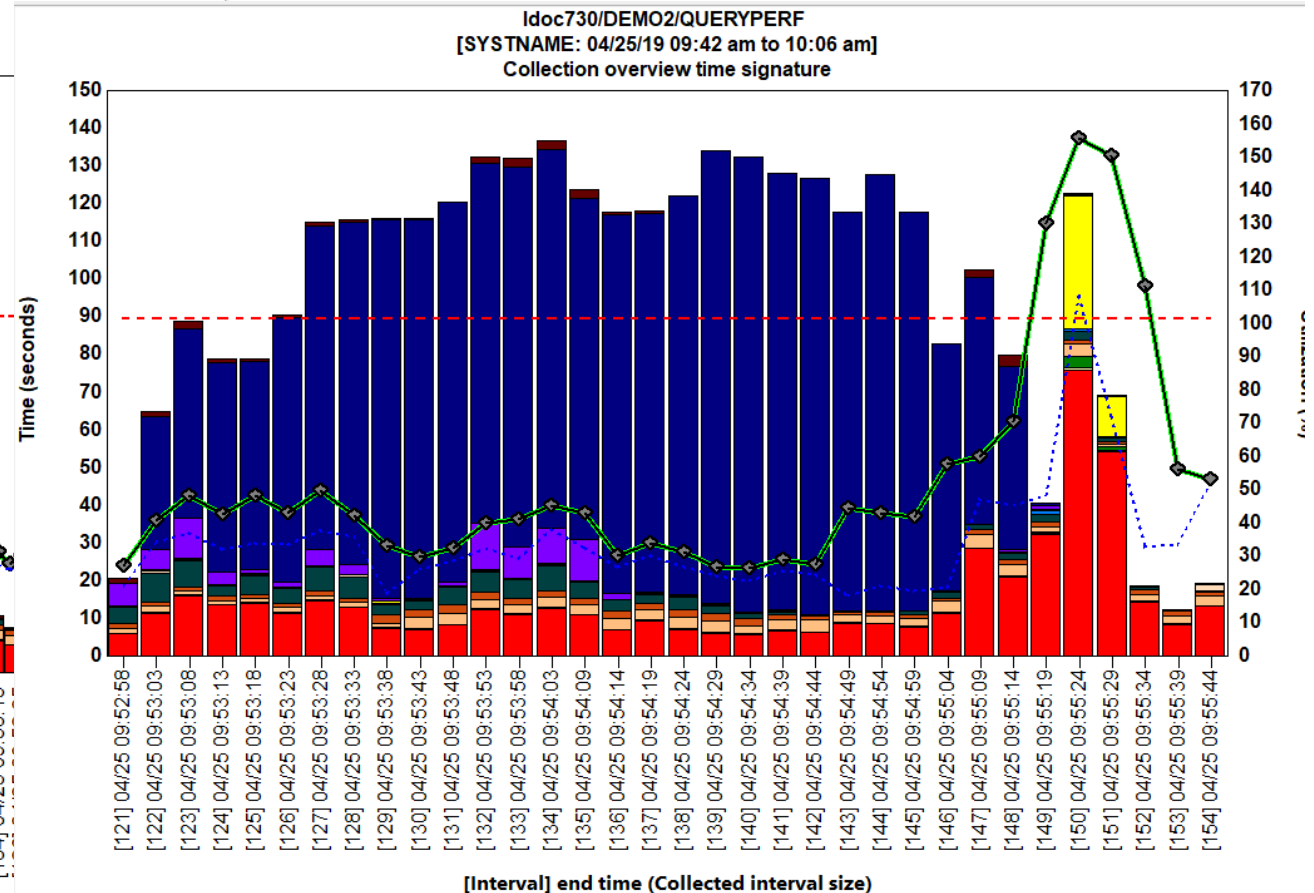
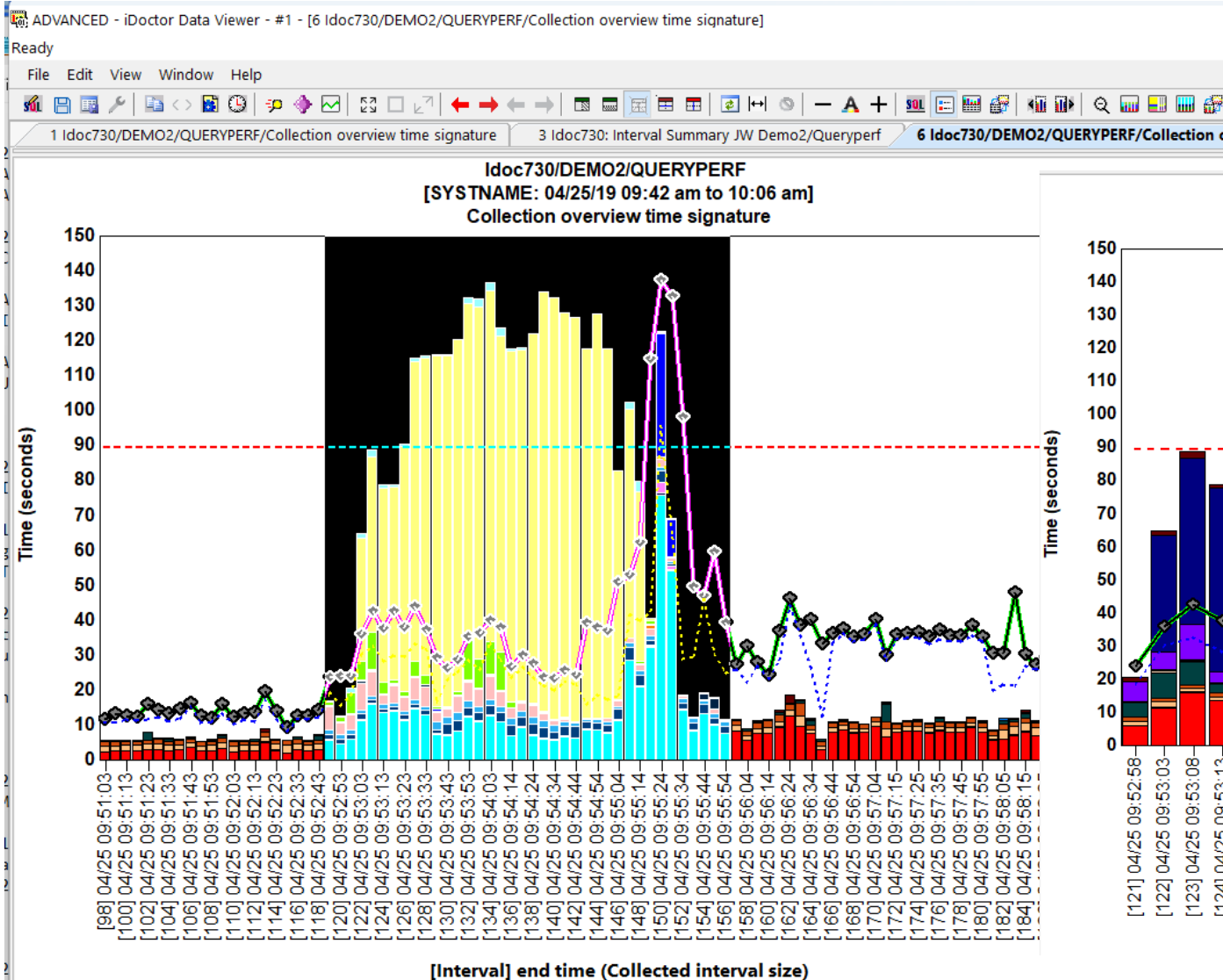
Graph widget size

- These are the small characters drawn on Y2 lines to help distinguish them.
- See **Preferences -> Display -> Widgets and (Widget) Size** settings.



Zoom in / out

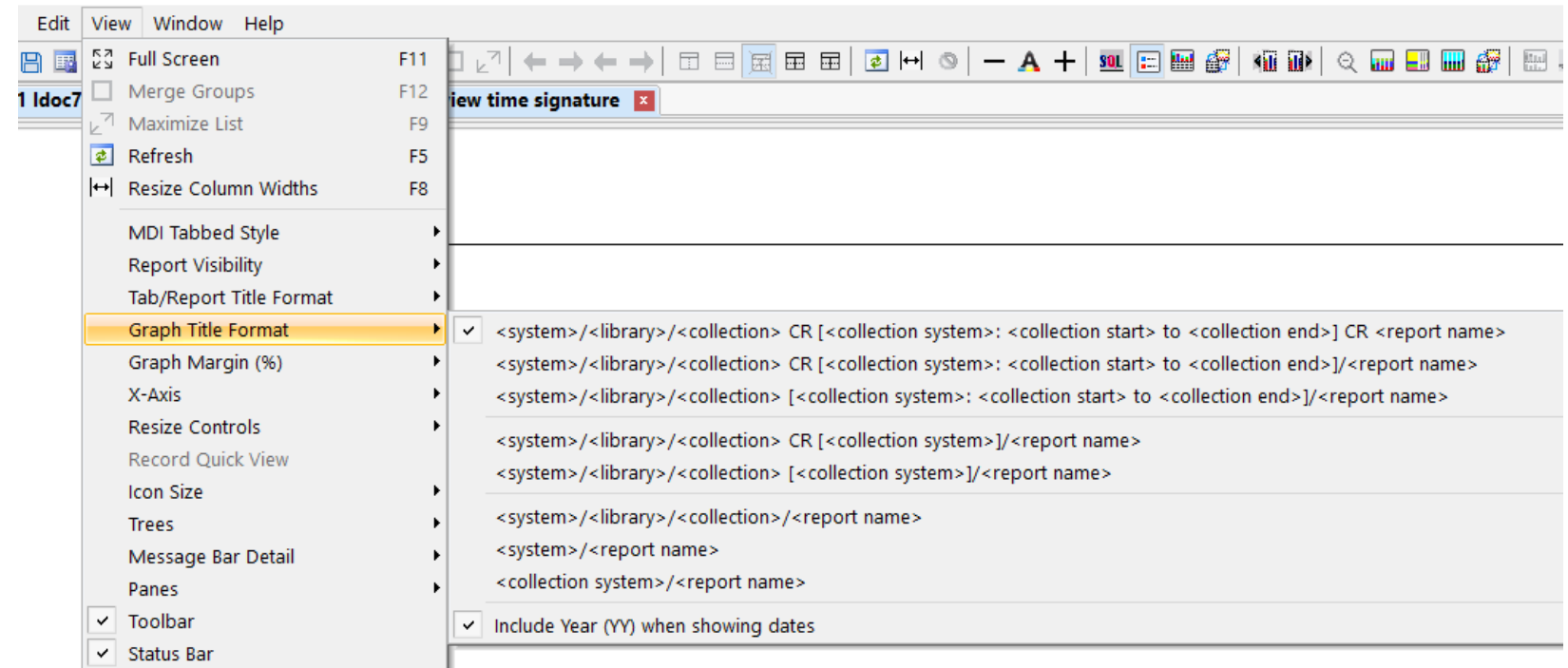
- Hold down left mouse button and drag over an area to zoom in. You can do this multiple times.
- Zoom out via this toolbar button or Alt+Z keyboard shortcut.



General changes summary (1/2)

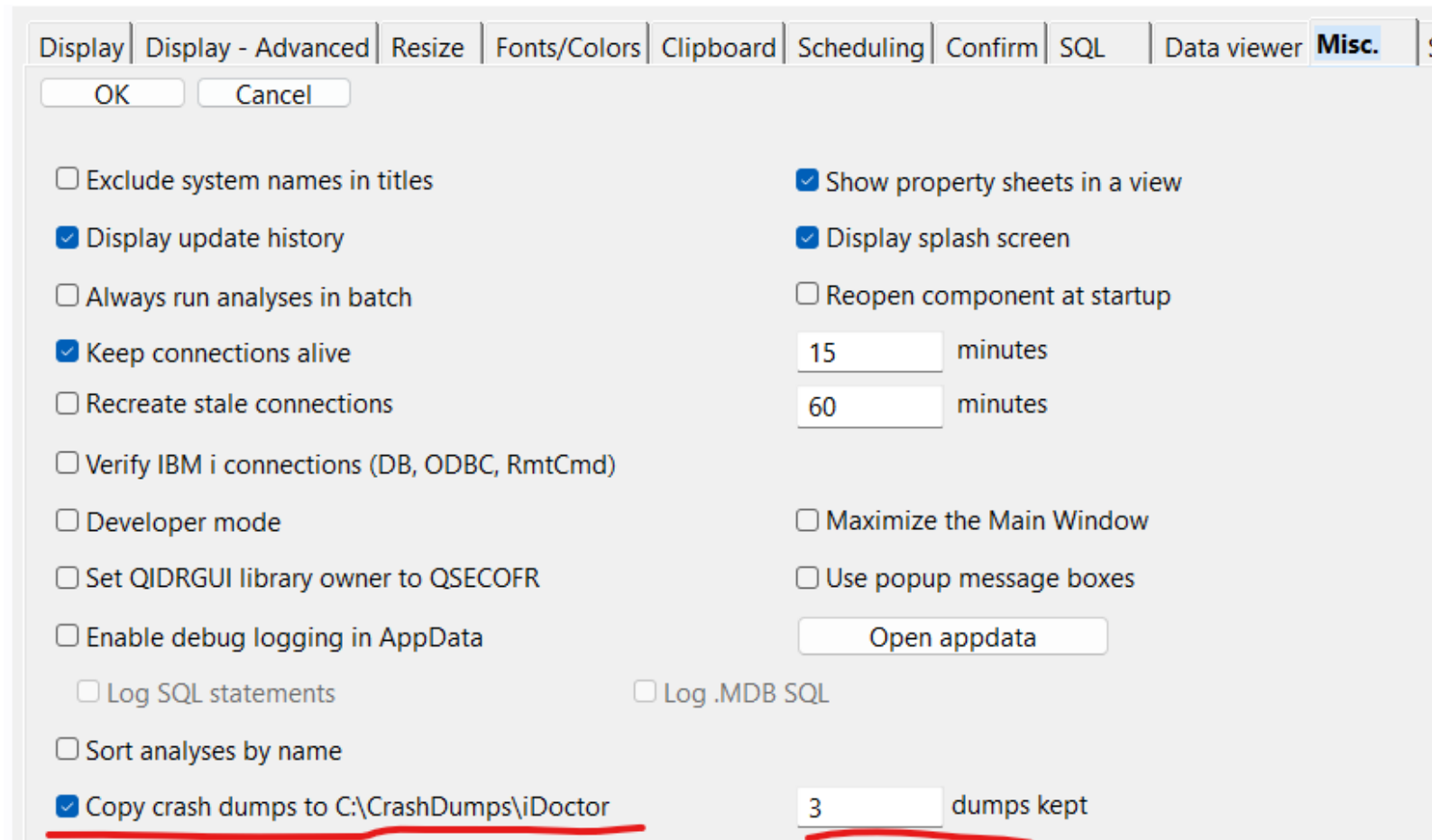
- Crash management
- Select all and Select all visible
- JW – call stack report drill downs
- Data Viewer View menu updates
- Connection status view

VANCED - iDoctor Data Viewer - #1 - [1 Idoc730/DEMO2/QUERYPERF/Collection overview time signature]



Crash management

- In the past year, improved usability by analyzing and fixing several crash bugs.
- Crash dumps can be analyzed if sent to me at idoctor@us.ibm.com
- See **Preferences -> Misc -> Copy crash dumps** setting.



Select All (Ctrl+A)

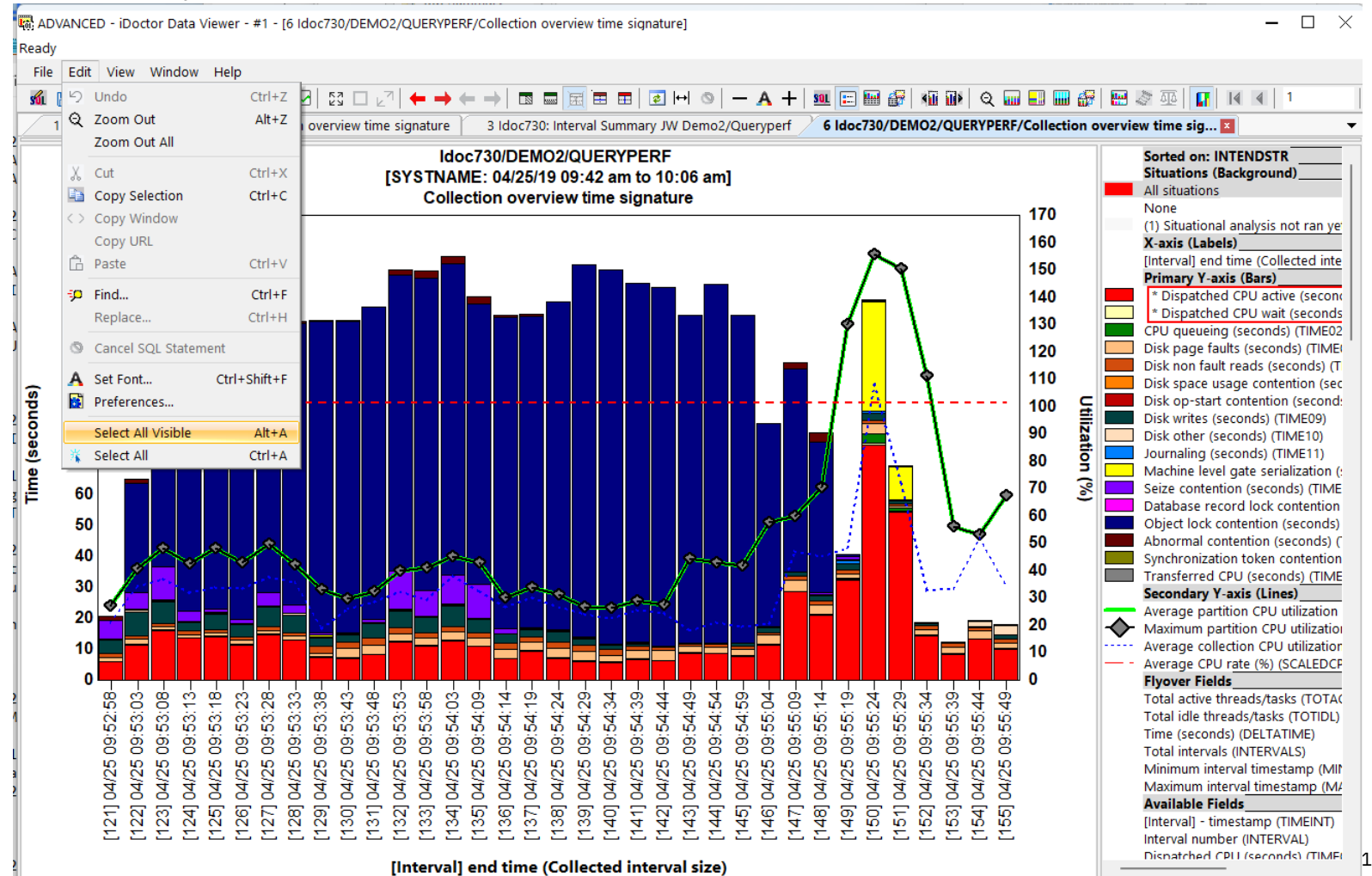
- This is used to select all rows in a table, or all bars in a graph.
- Available from the **Edit -> Select All** menu or use the keyboard shortcut.

The screenshot shows the IBM i Job Watcher interface. The 'Edit' menu is open, and the 'Select All' option is highlighted. The table below shows the data being viewed.

Status	Description	Months old	Owner	Collections	Collection types	Partition collected on VRM
Old	JW education slides - DO NOT DELETE2	64	MCCARGAR	1	JW, PA	730
Old		23	ADAMB	1	JW	730
Old	JW education slides - DO NOT DELETE	50	MCCARGAR	1	JW, CS	730
Old		50	MCCARGAR	1	JW	730
Old		79	QDFTOWN	1	JW	730
Old		39	ADAMB	2	JW	730
Old	Created by QMGTOOLS	14	HENDERAN	1	JW	730
Old		13	MCCARGAR	6	JW	730
Old	hi	0	MCCARGAR	8	JW, CS, DW	730
Old		64	MCCARGAR	1	JW	730
N/A			MCCARGAR			
Old		64	MCCARGAR	3	JW	730

Select All Visible (Alt+A)

- This is used to select all **currently visible** rows in a table, or bars in a graph.
- Useful on a graph after zooming in, prior to drilling down.
- Use the **Edit -> Select All Visible** menu or keyboard shortcut.



Job Watcher interval details - QRO hash/Plan ID/Client Job

- Changed the SQL client job label to be a drop-down list to let you choose which to see of:
 - SQL client job, Plan ID, QRO hash or QRO + plan ID
- **Note:** Drop-down list only enabled if more than 1 choice exists. If nothing exists, it won't appear at all.
- Plan ID requires PTFs at 7.4+ (not yet released).

The screenshot shows the 'Job Watcher interval details' window for a specific thread. The 'QRO + plan ID' field is highlighted with a red box, and a context menu is open over it with options: Copy QRO, Copy Plan, and Copy Both. The window displays various job details including thread ID, subsystem, current user, wait object, and interval duration.

Record Quick View | **Call stack** | Waits | Objects waited on | Physical disk I/Os | Logical DB | IFS | SQL/Client | Other statistics | Report SQL | Report columns

OK

Primary thread: QFILESYS1 / QSYS / 108790: 00000001 Interval: 1

Subsystem: Status: TIMW Function: Pool:

Current user: QSYS State: WAIT Job CPU %: 0 Priority:

Wait: (1/QCo) Qu counter Wait duration: 1.627 minutes

Wait obj: QFILESYS1 QSYS 108790 Interval duration: 5.445 seconds

Holder: JOB1: (n) Interval end: 2019-04-25-09.42.55.247000

QRO + plan ID: 000000000001E0F3, 141413 Temp stg: 4.25 / 4.25 (peak)

Mode: Advanced Include names: 17

Call level	Program model	Program	Module	Proc	Offset	LIC statement number
001	LIC		qutde_block_trace		000000F8	248
002	LIC		longWaitReceive_9QuCounterFR12RmprReceiverPvQ2_8TDQSEnum4EnumUICPv		0000074C	1868
003	LIC		validateAndWait_15PmWaitOnTimeOptFR15PmWaitOnTimeOpt		000000F0	240
004	LIC		pmWaitOnTimeInternal_FR15PmWaitOnTimeOpti		00000140	320

Job Watcher call stack report drill downs

- Select a single level options:
 - Trace back table (TBT) address + offset
 - TBT address only
- Select multiple call levels option:
 - Multiple TBTs

Mode: Advanced Include LIC Stack frames: 15

Call level	Program model	Program	Module	Procedure	Offset
001	LIC			quitde_block_trace	000000F8
002	LIC			block_23QuSingleTaskBlockerCodeFP16QuBaseWaitObjectP11QuBaseTimerUIQ2_2Qu8WaitTypeQ2_8TDQSEnum4Enum	00000124
003	LIC			vCall_Q3_12DbpmUserExit6Server7ConduitFUL	000000E4
004	LIC			call_Q3_11DbAsyncCall10ThreadPool7ElementFv	00000100
005	LIC			dbasynccall_scall	00000384
006	LIC			dbmaint	000008C8
007	LIC			#cfmir	000000E8
008	LIC			syscall_A_portal	000001F8
009	ILC	QQQOOUPCL	QQQOOUPCL	DbopThreadMain_FP14DbopThreadParm	00000090
010	ILE	QLESPI	QLECRTH		
011	LIC			cb	
012	LIC			air	
013	LIC			pr	

Call stack reports	>	Total occurrences (TBTs): all intervals
Display Full Procedure Name		Total occurrences (TBTs): this interval
Record Quick View		Total occurrences (TBTs) for this job/task: all intervals
Copy	Ctrl+C	Jobs with this occurrence (TBTs): this interval
Find	Ctrl+F	Jobs with this occurrence (TBTs): all intervals
Save	>	Occurrences (TBTs) by interval
Set Font...		Occurrences (TBTs) by interval for this job/task
Preferences...		Jobs and programs (14 levels) calling the selected pgm/procedure (TBTs): all intervals
Search	>	

3 Idoc730: Interval Details JW Demo2/Queryperf | 2 Idoc730/DEMO2/QUERYPERF/Dispatched CPU rankings ... | 1 Idoc730/DEMO2/QUERYPERF/Collec

Quick View **Call stack** Waits Objects waited on Physical disk I/Os Logical DB IFS SQL/Client Other statistics Report SQL Report columns

Call level	Program model	Program	Module	Procedure
001	LIC			quitde_block_trace
002	LIC			block_23QuSingleTaskBlockerCodeFP16QuBaseWaitObjectP11QuBaseTimerUIQ2_2Qu8WaitTypeQ2_8TDQSEnum4Enum
003	LIC			vCall_Q3_12DbpmUserExit6Server7ConduitFUL
004	LIC			call_Q3_11DbAsyncCall10ThreadPool7ElementFv
005	LIC			dbasynccall_scall
006	LIC			dbmaint
007	LIC			#cfmir
008	LIC			syscall_A_portal
009	ILE	QQQOOUPCL	QQQOOUPCL	DbopThreadMain_FP14DbopThreadParm
010	ILE	QLESPI	QLECRTH	
011	LIC			cb
012	LIC			air
013	LIC			pr

Call stack reports	>	Total occurrences (TBT + offset): all intervals
Display Full Procedure Name		Total occurrences (TBT + offset): this interval
Record Quick View		Total occurrences (TBT + offset): by job
Copy	Ctrl+C	Total occurrences by offset: all intervals
Find	Ctrl+F	Total occurrences (TBT + offset) for this job/task: all intervals
Save	>	Jobs with this occurrence (TBT + offset): this interval
Set Font...		Jobs with this occurrence (TBT + offset): all intervals
Preferences...		Occurrences (TBT + offset) by interval
Search	>	Occurrences (TBT + offset) by interval for this job/task

Letting non-*ALLOBJ users use iDoctor

- More work remains in the installer to create more files/objects to make this easier.
- The installer does not create the monitor files QUSRSYS/QAIDRJWM2 for example but will in the future.
- See [FAQ 4.8](#):
- File list in speaker notes.

4.8 What objects and IFS folders does a user need access to in order to use iDoctor?

For users that do not have full authorities on an IBM i they will require at a minimum the following:

1. The user profile must be added to function group QIBM_SERVICE_TRACE.
2. The user profile must be added to function group QIBM_SERVICE_JOB_WATCHER.
3. The user profile must be added to function group QIBM_SERVICE_DISK_WATCHER.
4. *ALL to library QIDRGUI.
5. *ALL to file QAPEXDFN in library QUSRSYS.
6. *ALL to file QAPYJWDFN in library QUSRSYS.
7. *ALL to file QAPYDWDFN in library QUSRSYS.
8. ***ALL to files QAIDR* in libraries QGPL and QUSRSYS. PLEASE NOTE: All files must exist (QUSRSYS/QAIDRCOLS, QUSRSYS/QAIDRLIBS, QUSRSYS/QAIDRJWM2, etc) which may require a full authority user, using all desired functions in the GUI you wish to let the other users use (such as the Monitors folder) prior to running the ADDIDRUSR command.**
9. *USE to commands ADDPEXDFN/RMVPEXDFN in library QSYS.
10. *USE to commands ADDPEXFTR/RMVPEXFTR in library QSYS.
11. *USE to commands ADDJWDFN/RMVJWDFN/STRJW in library QSYS.
12. *USE to commands ADDDWDFN/RMVDWDFN/STRDW in library QSYS.
13. *USE to commands SAVPFCOL/STRPFCOL/DLTPFRDTA in library QSYS.
14. *USE to CS API QYPSRSCA in library QSYS.
15. *OBJEXIST *OBJMGT *OBJOPR *OBJREF *READ *EXECUTE to QAYPE*, QAPY* and QAPM* files in QSYS.
16. *RWX to IFS path /QIBM/UserData/iDoctor and all subdirectories
17. *RWX to IFS path /QIBM/ProdData/iDoctor and all subdirectories.

Note: An administrator can grant these authorities by running the QIDRGUI/ADDIDRUSR command on your user profile.

[Return to Common Problems](#)

Data Viewer View menu updates

- Some options do not appear in preferences.

The screenshot shows the 'View' menu of the 'iDoctor Data Viewer' application. The menu items are as follows:

- Full Screen (F11)
- Merge Groups (F12)
- Maximize List (F9)
- Refresh (F5)
- Resize Column Widths (F8)
- MDI Tabbed Style
- Report Visibility
- Tab/Report Title Format
- Graph Title Format
- Graph Margin (%)
- X-Axis
- Resize Controls
- Record Quick View
- Icon Size
- Trees
- Message Bar Detail
- Panes
- Toolbar (checked)
- Status Bar (checked)
- Names
- Descriptions
- Descriptions (Names) (checked)
- Names - Descriptions

Annotations and their corresponding menu items:

- Function key options:** Points to 'Full Screen', 'Merge Groups', 'Maximize List', 'Refresh', and 'Resize Column Widths'.
- Grouped or Standard:** Points to 'MDI Tabbed Style'.
- Advanced mode recommended for most:** Points to 'Report Visibility'.
- Update how tab text appears:** Points to 'Tab/Report Title Format'.
- Graph title formatting, multiline options:** Points to 'Graph Title Format'.
- Adjust graph size within the view:** Points to 'Graph Margin (%)'.
- Control X-axis contents (tips, dates, milliseconds):** Points to 'X-Axis'.
- Customize table view column headings:** Points to 'Names', 'Descriptions', 'Descriptions (Names)', and 'Names - Descriptions'.

Connection Status View

- Identifies iDoctor connections in use.
- Use **Main Window -> View -> Connection Status** menu.
- Status bar identifies connection for the view with focus and how long idle.

Highlight and bold on tab means this is the active view/connection.

Connection #1 is shown in status bar.

System	Type	Connection index	Description	Status	Job	Last used	Last command
idoc730	RC	0	GUI	Active	QZRCRSVS QUSER 563097	2024-09-04-12.48.48.623	QSYS/CHKOBJ OBJ(QIDRGUI/GETLIBDESC) OBJTYPE(*SRVPGM)
idoc730	RC	1	Component view	Active	QZRCRSVS QUSER 563096	2024-09-04-12.48.44.775	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	RC	10	Data viewer	Active	QZRCRSVS QUSER 563108	2024-09-04-12.48.47.640	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	RC	102	Remote SQL statement status	Active	QZRCRSVS QUSER 563116	2024-09-04-12.48.55.943	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	RC	2	Remote command status	Active	QZRCRSVS QUSER 563113	2024-09-04-12.48.51.207	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	RC	20	Data viewer	Active	QZRCRSVS QUSER 563109	2024-09-04-12.48.48.308	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	RC	3	Interval summary/interval details	Active	QZRCRSVS QUSER 563117	2024-09-04-12.48.55.215	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	RC	30	Data viewer	Active	QZRCRSVS QUSER 563112	2024-09-04-12.48.50.204	QSYS/CALL PGM(QIDRGUI/INITJOB) PARM('0')
idoc730	FTP - WININET (unsecure)		GUI	Active			
idoc730	ODBC	0	GUI	Active	QZDASOINITQUSER 563104	2024-09-04-12.49.30.214	CALL QIDRGUI/QIDRJWCRTA ('DEMO2', 'QUERYPERF')
idoc730	ODBC	1	Component view	Active	QZDASOINITQUSER 563103	2024-09-04-12.49.08.364	CALL QIDRGUI/QIDRJWGRIA('DEMO2', 500, '0', 'STARTTOD DESC')
idoc730	ODBC	10	Data viewer	Active	QZDASOINITQUSER 563106	2024-09-04-12.49.31.780	WITH TIMES AS (SELECT 'DEMO2' AS LIBNAME, 'QUERYPERF' AS MBRNAM
idoc730	ODBC	102	Remote SQL statement status	Active	QZDASOINITQUSER 563114	2024-09-04-12.48.56.171	
idoc730	ODBC	2	Remote command status	Active	QZDASOINITQUSER 563111	2024-09-04-12.48.51.627	
idoc730	ODBC	20	Data viewer	Active	QZDASOINITQUSER 563107	2024-09-04-12.48.48.531	
idoc730	ODBC	3	Interval summary/interval details	Active	QZDASOINITQUSER 563115	2024-09-04-12.48.55.462	
idoc730	ODBC	30	Data viewer	Active	QZDASOINITQUSER 563110	2024-09-04-12.48.50.445	
local_idoc730_jw	ODBC	0	GUI	Active		2024-09-04-12.49.30.092	select * from SITUATIONS WHERE HIDE <> 1 AND (MINVRM = 0 OR MINVR
local_idoc730_ui	ODBC	0	GUI	Active		2024-09-04-12.49.10.409	SELECT * FROM BUCKETS WHERE OSVRM = '730' ORDER BY BUCKETNUM
local_idoc730_user	ODBC	0	GUI	Active		2024-09-04-12.49.12.281	SELECT * FROM COLUMNDESCS ORDER BY RCNAM
local_idoc730_wb	ODBC	0	GUI	Active		2024-09-04-12.49.12.293	SELECT * FROM BUCKETS_INT ORDER BY SEQ

1: QZRC-563096 1.5 mins QZDA-563103 1.1 mins

Connection Indexes Used by iDoctor


- List applies to ACS RC/ODBC connections only.
- These threads help avoid hangs and improve usability but can take 1-8 seconds to kick off depending on how slow your network connection is to the IBM i.
- With 1732 or higher, connections 10, 20, 30, 3, 2, 102 are pre-created in the background (in that order) when creating a component view.
- Avoid using the same connection at the same time, or you will hang until things complete.
 - Resorting/rerunning multiple already open views can cause this.
 - Use a new DV to avoid this.

Index	Description
0	Main GUI thread
1, 101, 201, etc.	Component views
2	Remote command status
102	Remote SQL statement status
3, 103, 203, etc.	Interval Details, Interval Summary interfaces
10, 20, 30, etc.	Data Viewer (DV) graphs/tables
11-19, 21-29, 31-39, etc.	DV if 10, 20, 30, in use.

Questions?

- Let me know what questions you have?
- Or I will be at ask the experts later and we can chat or demo something then.
- You can reach me at either idoctor@us.ibm.com or mccargar@us.ibm.com
- Thank you!

For More Information:

Links You Need	Twitter	#Hashtags
<p>IBM i Home Page: https://www.ibm.com/it-infrastructure/power/os/ibm-i</p> <p>IBM Strategy Whitepaper https://www.ibm.com/it-infrastructure/us-en/resources/power/i-strategy-roadmap/</p> <p>IBM Client Success: https://www.ibm.com/it-infrastructure/us-en/resources/power/ibm-i-customer-stories/</p> <p>Support Life Cycle: https://www.ibm.com/support/lifecycle/</p> <p>License Topics: https://www-01.ibm.com/support/docview.wss?uid=nas8N1022087</p> <p>Fortra 2024 Marketplace Survey https://www.fortra.com/resources/guides/ibm-i-marketplace-survey-results</p>	 @IBMservers @COMMONug @IBMChampions @IBMSystemsISVs @LinuxIBMMag @OpenPOWERorg @ITJungleNews @SAPonIBMi @SiDforIBMi @IBMAIXeSupp @IBMAIXdoc	<p>#IBMPower #IBMi #IBMAIX #Power10 #LinuxonPower #HANAonPower #ITInfrastructure #OpenSource #HybridCloud</p>