

iDoctor Updates (August 10th 2018 to present)

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Currently recommended “stable” builds

- IBM internal:
 - Latest client is 1340 (Jan 3rd)
 - Latest "stable" client is 1340 (Jan 3rd)
- IBM external:
 - Latest client is 1340 (Jan 3rd)
 - Latest "stable/announced" client is 1340 (Jan 3rd)

Dec 2018 (1340) – CSI – temporary storage overview updates

- In CSI in the 1st 3 temp storage overview graphs remove the total temp storage used from the Y2 and replace this with 2 values:
- - 1) percentage of temp storage used vs total space on the system ASP.
 - 2) percentage of temp storage used vs available space (in the system ASP)

This effects these graphs:

IBM i temporary storage overview

IBM i DB/non-DB temporary storage overview

Job temporary storage allocations

Dec 2018 (1340) – CSI – temporary storage cumulative graphs broken

- In CSI at 7.2 only in the temporary storage folder the following graphs weren't working and have been fixed:

Cumulative temporary storage pages allocated/deallocated (overlapping bars)

Cumulative net temporary storage pages allocated



Dec 2018 (1339) – CSI – Physical disk I/O graphs wrong

- In CSI under the I/O and memory page graph folder the "Physical disk I/O...." graphs excluded some metrics (system tasks) from the totals shown and has been fixed.

Dec 2018 (1339) – JW – Detail reports – objects waited on

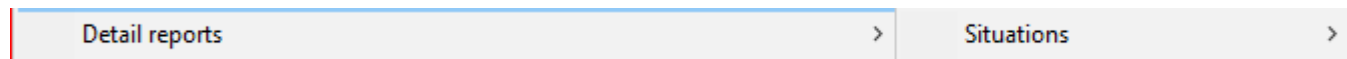
- Made the following updates to the reports under JW -> Detail reports -> Objects waited on:
 1. Now will exclude times/waits where no wait object occurred. (previously you might see blank wait object records)
 2. In the reports that show "all waits of interest" the wait buckets checked was incorrect and now fixed to match the Collection overview graphs.
 3. Updated the columns shown.
- See the update history for more details.

Dec 2018 (1339) – JW – Detail reports -> Situations fixes

- In Job Watcher the check to see if the situational analysis file exists was not working correctly. This caused the Detail reports -> Situations report options to not appear.

Also corrected a few issues with the Situation details report:

1. The report did not filter by the time period selected,
2. The report did not sort the data
3. Situations for tasks did not show the taskname information correctly.



Dec 2018 (1339) – JW – Call stack crash

- In Job Watcher fixed a crash on the interval details - call stack window if the current collection did not contain any data from the Retrieve program/module information analysis and the "Program details" mode had been previously enabled on the interface.

Dec 2018 (1339) – JW – Temp storage fixes

- In Job Watcher, corrected several inaccuracies with the Temporary storage ranking graphs. Both were showing incorrect results.

Also made improvements to the Temporary storage overview graphs so that contributions of jobs that only lived 1 interval are included:

Temporary storage pages allocated/deallocated (overlapping bars)
Net temporary storage pages allocated

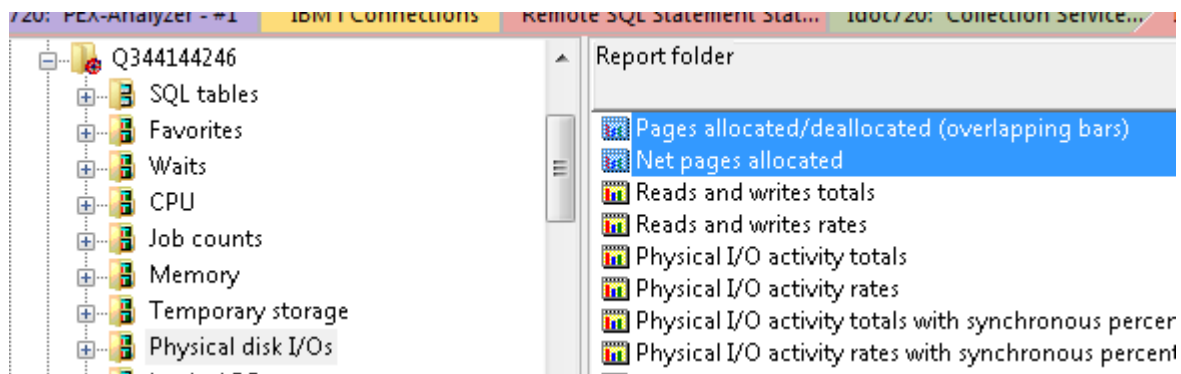
Dec 2018 (1339) – JW – Physical Disk I/Os graph change

- In Job Watcher, under the Physical Disk I/Os folder, the following graphs will now only appear if the Collection summary analysis has been ran:

Pages allocated/deallocated (overlapping bars)

Net pages allocated

This is due to potentially large inaccuracies with the current calculation which can only be resolved with the QAIDRJWGAP_<MBR> SQL table.



Dec 2018 (1339) – PEX PMCO samples < 1 ms

- In PEX, when listing the collections in a library the PMCO sample size column did not support showing values that were not a whole number like .1 ms and has been fixed.

		Job Watcher - #1		PEX-Analyzer - #2	
	Wrap count	PMCO interval size (ms)	Collection size (MB)	Defini	
AR 500732	0	600	1.3 MB	QCPI	
AR 500731	0	400	1.3 MB	QCPI	
AR 500730	0	200	1.3 MB	QCPI	
AR 500679	0	604	1.3 MB	QCPI	
AR 500626	0	1	1.1 MB	QPRC	
AR 500612	0	.1	1.1 MB	QPRC	
AR 500404	0	.1	1.1 MB	QPRC	
AR 500339	0	1	1.1 MB	QPRC	
AR 378906	0	200	4.8 MB	QAS	
AR 377695	0	200	6.2 MB	QAS	
AR 344416	0	200	1.6 MB	TE	
AR 283423	0	200	1.6 MB	QDT	
AR 260117	0	200	1.6 MB	QDR	

Dec 2018 (1339) – PEX profile fixes

- Made several fixes related to PEX profile collections.
- The collection type was listed as PEX stats – flat when listing a PEX profile collection within a library.
- The Collection properties – events tab did not show correct data.

General	Creation Settings	Definition	Events	Collection
Total events:				14
Events missed:				0
Sampling interval (milliseconds):				1
Events specified in the PEX definition:				
Partition id	Window id	Pane id	Total events	
0	0	0	14,306	



Dec 2018 (1339) – PEX+ folder removed

- The PEX+ folder in the GUI for all IBM i components has been removed because no mechanism exists to conclusively tell which super collections exist on the system.
- The pieces of a STRPEX_ super collection will need to be viewed in their respective components.

Dec 2018 (1339) – PEX+ super collection fixes

- The ability to start a PEX+ super collection from the Start PEX Collection wizard did not work with the latest versions of QMGTOOLS. The DBMON parameter was removed from the STRPEX_ command.

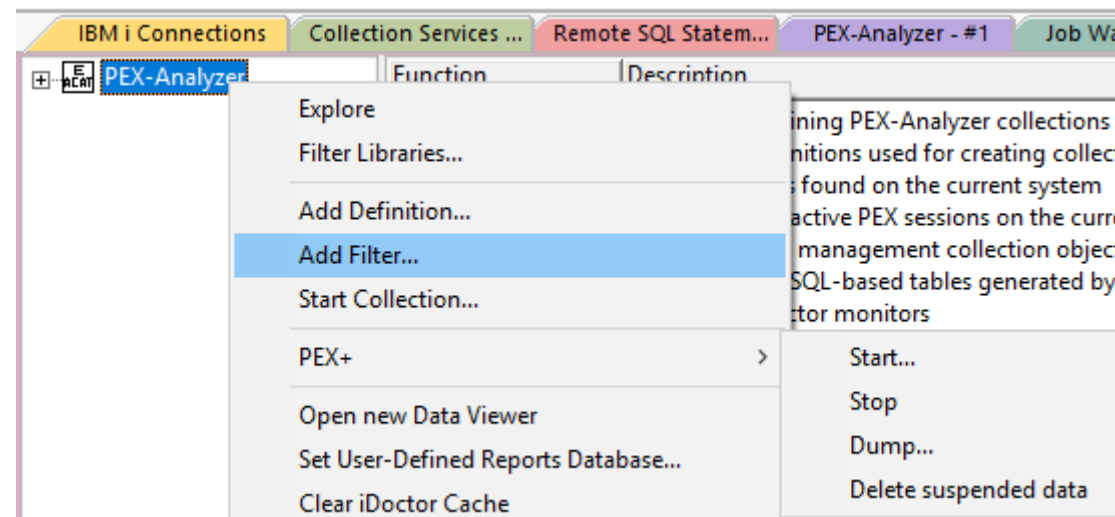
Also the "Include DBMON" options in the Start PEX Collection Wizard's PEX+ Options window have been removed.

Dec 2018 (1339) – Must Gather Tools GUI component removed

- The Must Gather Tools GUI component has been removed (at least for now) since there are too many things that have changed in QMGTOOLS and are now broken.
- We may revisit that effort in the future, but to keep it available in its current state does not make sense.

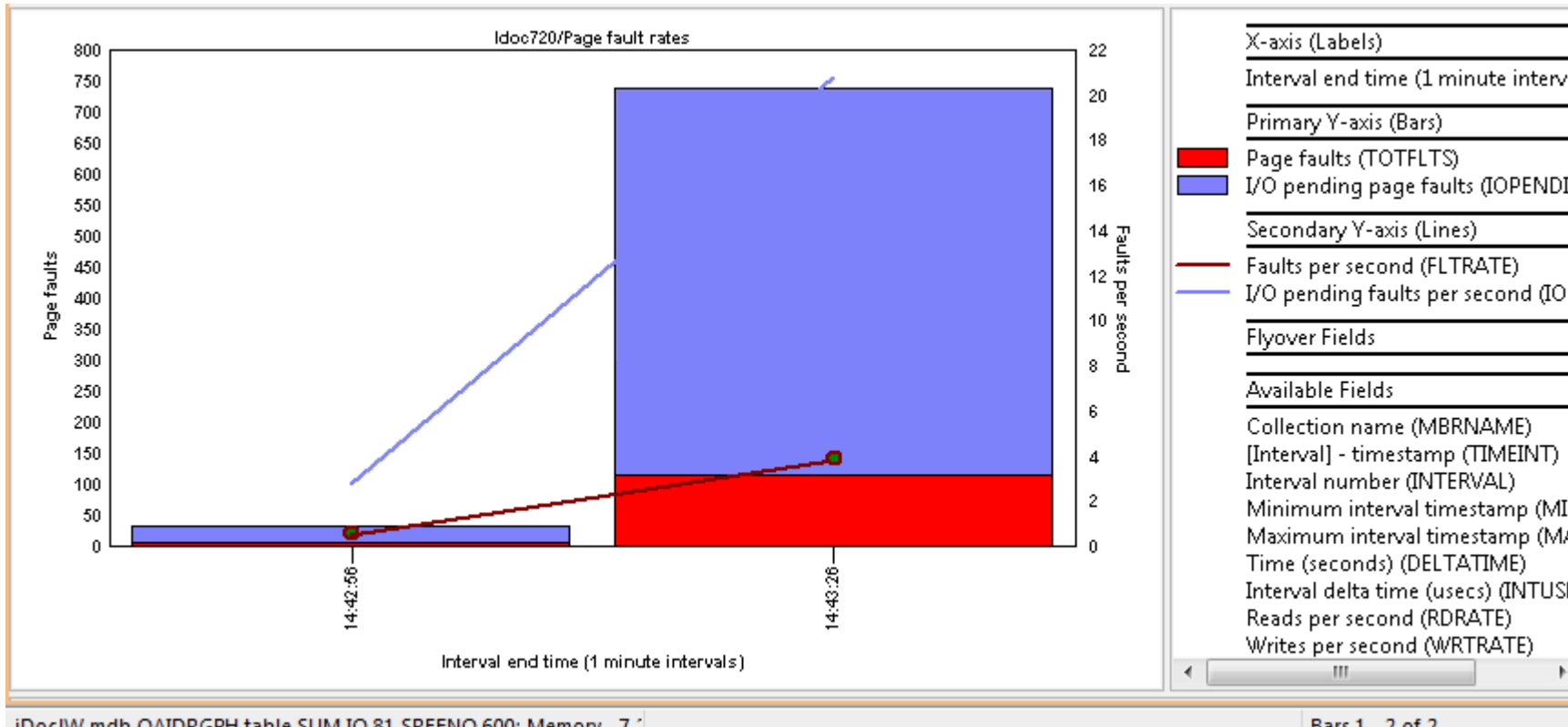
Dec 2018 (1339) – PEX+ menu location changes

- In PEX Analyzer, when right-clicking the PEX Analyzer icon added a PEX+ menu to start, stop, dump and delete suspended data related to PEX+ super collections since the PEX+ folder and Must Gather Tools GUI options to do these things have been removed.



Dec 2018 (1339) – JW Page fault rates graph issue

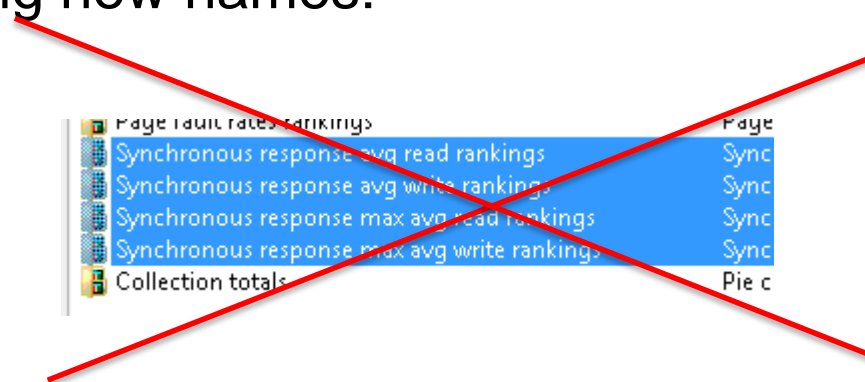
- In Job Watcher under Physical Disk I/Os -> Page fault rates the graph was incorrectly displaying page fault totals instead of the rates on the primary Y-axis.



Dec 2018 (1339) – Physical disk I/Os sync response rankings renamed

- In Job Watcher under Physical Disk I/Os, renamed the ranking graphs folders and graphs relating to synchronous response to use the following new names:

Average synchronous read response rankings
 Average synchronous write response rankings
 Maximum synchronous read response rankings
 Maximum synchronous write response rankings



Page fault rates rankings	Page fau
Average synchronous read response rankings	Average
Average synchronous write response rankings	Average
Maximum synchronous read response rankings	Maximui
Maximum synchronous write response rankings	Maximui
Collection totals	Pie chart



Dec 2018 (1339) – JW J9 JVM graphs by thread wrong

- In Job Watcher in the J9 JVM graphs the "by thread" overview graphs contained an incorrect calculation in the SQL statement which has been fixed.

Dec 2018 (1339) – Job Watcher – other graphs updated

- In Job Watcher within the Other graphs folder the following updates have been made:

1) These graphs were removed:

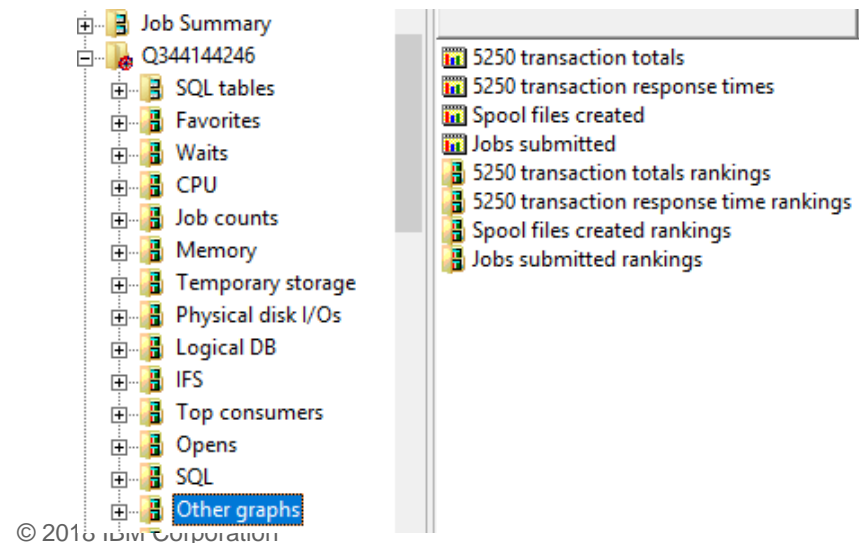
State transitions

User space and user index operations

State transition rankings

User space / user index operation rankings

2) The transactions graphs no longer include application input queuing or resource usage transactions.



Dec 2018 (1339) – Interval summary - Bad current waits updated

- For both CSI and JW on the Interval Summary -> Bad current waits tab updated the list of wait buckets used on the query.

At 6.1 and 7.1 they buckets are: 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 31, 32.

At 7.2+ they are: 5 , 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 31, 32.

This is to be consistent with other reports and graphs.

Also both lists on this tabs will now show the wait bucket description rather than requiring the user to use the flyover on the wait bucket number.

Dec 2018 (1339) – Interval summary interface flyovers not working

- In some cases the flyovers for columns in the lists in the Interval Summary interface (for wait buckets and enum numbers) in both JW/CSI did not work and has been fixed.

	Current wait bucket	Enum (wait type)	C ti m
709	14	2	
70F	14	2	
6EN	5	167	

Nov 2018 (1338) – PEX call stacks analysis update

- In PEX, added a new output table for the call stacks analysis. This is called PEXSTACKSCOMMON_<MBR> under the SQL tables folder.

• Added the following new drill down options from the Call stack analysis reports:

1. Selected program/procedure -> Common program summary for <PGMNAM>/<PROCEDURE>
2. Selected procedure -> Common program summary for <PROCEDURE>

394	8	LIC	
394	9	LIC	
394	10	LIC	
394	11	LIC	
394	12	LIC	
394	13	LIC	
394	14	LIC	
394	15	LIC	
60	1	LIC	
60	2	LIC	
60	3	LIC	
60	4	LIC	
60	5	LIC	
60	6	OPM	QLILIST
60	7	OPM	QSYGRAUT
60	8	OPM	QLIINSRT
60	9	OPM	QDFCDF
60	10	ILE	QSQUALIAS
60	11	ILE	QSQUALIAS
60	12	ILE	QSQCUTE
60	13	ILE	QSQCUTE
60	14	ILE	QSROUTE
60	15	ILE	QIDRGUI/QIDRPAC
60	16	ILE	QIDRGUI/QIDRPAGRI2
60	17	ILE	QIDRPAGRI2
60	18	ILE	QIDRPAGRI2
60	19	ILE	QIDRPAGRI2
60	20	ILE	QIDRPAGRI2
60	21	ILE	QIDRPAGRI2
60	22	ILE	QIDRPAGRI2
60	23	ILE	QIDRPAGRI2
60	24	ILE	QIDRPAGRI2
60	25	ILE	QIDRPAGRI2
60	26	ILE	QIDRPAGRI2
60	27	ILE	QIDRPAGRI2
60	28	ILE	QIDRPAGRI2
60	29	ILE	QIDRPAGRI2
60	30	ILE	QIDRPAGRI2
60	31	ILE	QIDRPAGRI2
60	32	ILE	QIDRPAGRI2
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60	41	ILE	QIDRPAGRI2
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60	43	ILE	QIDRPAGRI2
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60	45	ILE	QIDRPAGRI2
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60	49	ILE	QIDRPAGRI2
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60	52	ILE	QIDRPAGRI2
60	53	ILE	QIDRPAGRI2
60	54	ILE	QIDRPAGRI2
60	55	ILE	QIDRPAGRI2
60	56	ILE	QIDRPAGRI2
60	57	ILE	QIDRPAGRI2
60	58	ILE	QIDRPAGRI2
60	59	ILE	QIDRPAGRI2
60	60	ILE	QIDRPAGRI2

- Selected call stack >
- Selected program/procedure >
- Selected procedure >
- Record Quick View
- Copy
- Find...
- Save >
- Set Font...
- Preferences...
- Graph Definition >
- Query Definition >
- Duplicate as Table view
- Properties >
- Search Google for 'QIDRGUI/QIDRPAGRI2'
- Search Google for 'Program name (PGMNAM...'

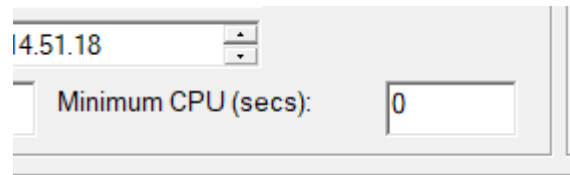
Nov 2018 (1338) – Create Indexes analysis added to the default

- In CSI and JW added the Create Indexes analysis to the STRIDRSUM command when analyses run and also in the GUI if the "Run ALL default analyses" option is used.

In the GUI there is an option to disable which analyses run by default if desired (when ran interactively.)

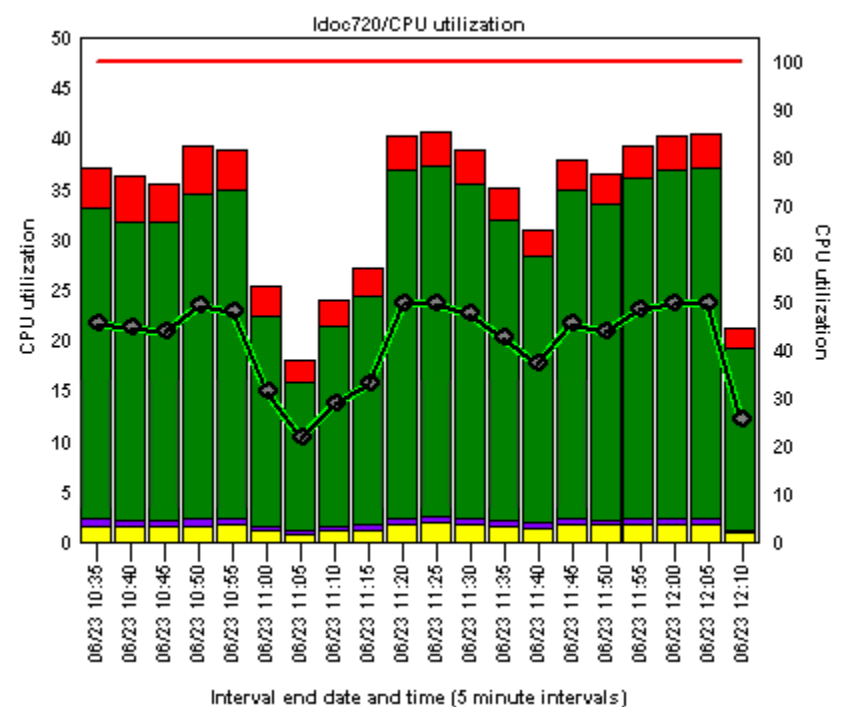
Nov 2018 (1338) – Job Summary window updates

- Made a couple tweaks to the Job Summary window (in JW/CSI)
 1. Fixed the Minimum CPU label to show the metric: Minimum CPU (secs)
 2. The window is now resizable.

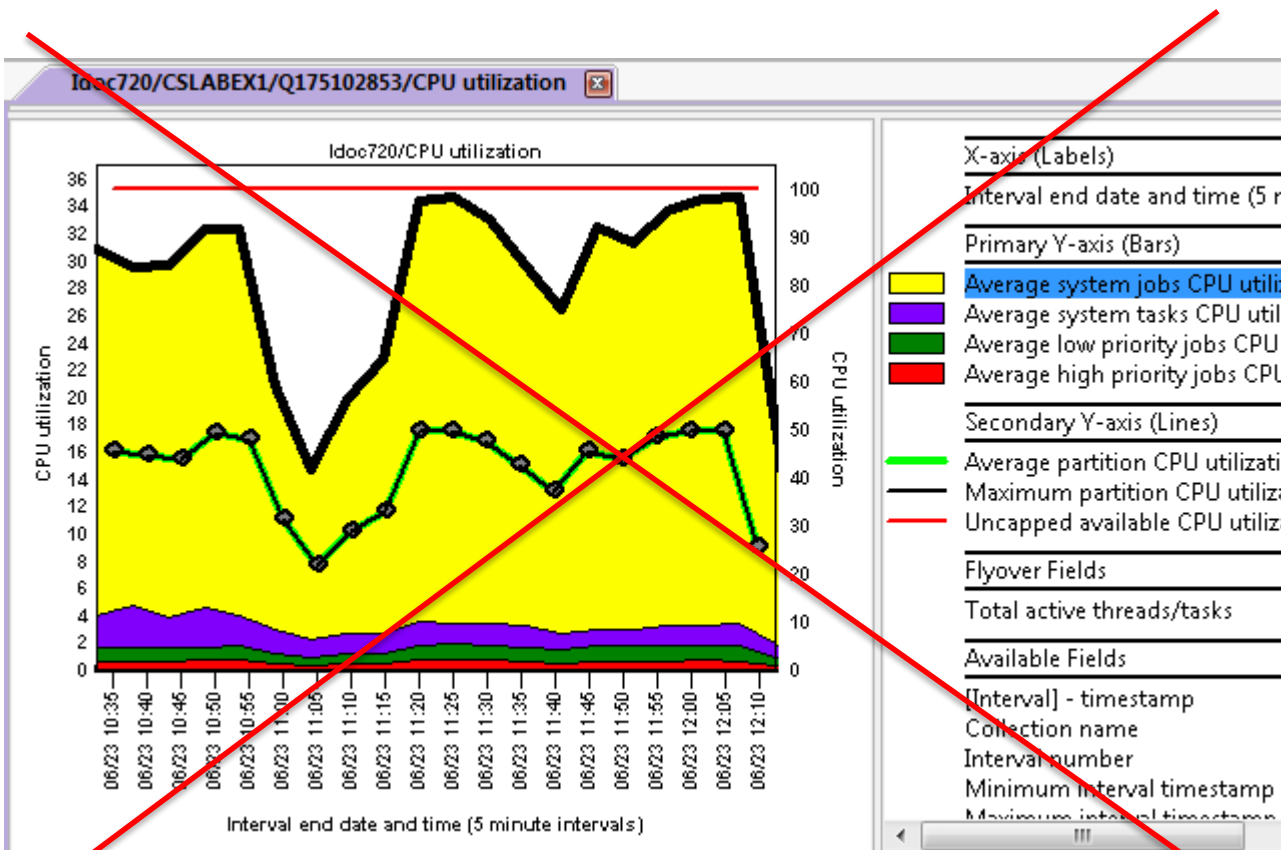


Nov 2018 (1338) – Area charts showing the wrong colors

- Area charts were showing the wrong colors.



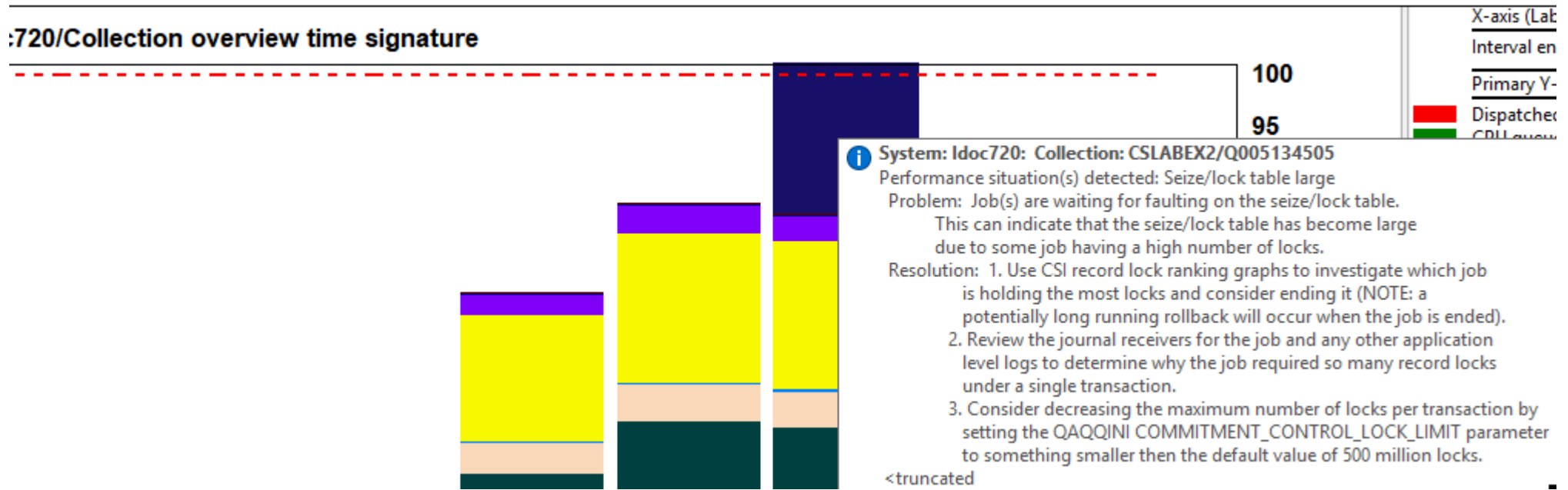
X-axis (Labels)
Interval end date and time (5
Primary Y-axis (Bars)
Average system jobs CPU uti
Average system tasks CPU ut
Average low priority jobs CPI
Average high priority jobs CF
Secondary Y-axis (Lines)
Average partition CPU utiliza
Maximum partition CPU utili
Uncapped available CPU utili
Flyover Fields
Total active threads/tasks
Available Fields
[Interval] - timestamp
Collection name
Interval number
Minimum interval timestamp
Maximum interval timestamp



X-axis (Labels)
Interval end date and time (5 n
Primary Y-axis (Bars)
Average system jobs CPU utiliza
Average system tasks CPU utili
Average low priority jobs CPU
Average high priority jobs CPL
Secondary Y-axis (Lines)
Average partition CPU utilizati
Maximum partition CPU utiliza
Uncapped available CPU utiliz
Flyover Fields
Total active threads/tasks
Available Fields
[Interval] - timestamp
Collection name
Interval number
Minimum interval timestamp
Maximum interval timestamp

Nov 2018 (1338) – CSI seize/lock table large situation added

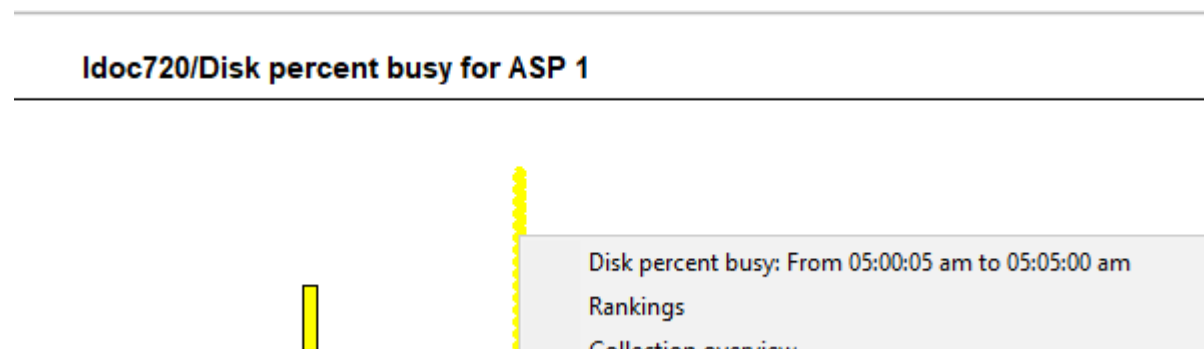
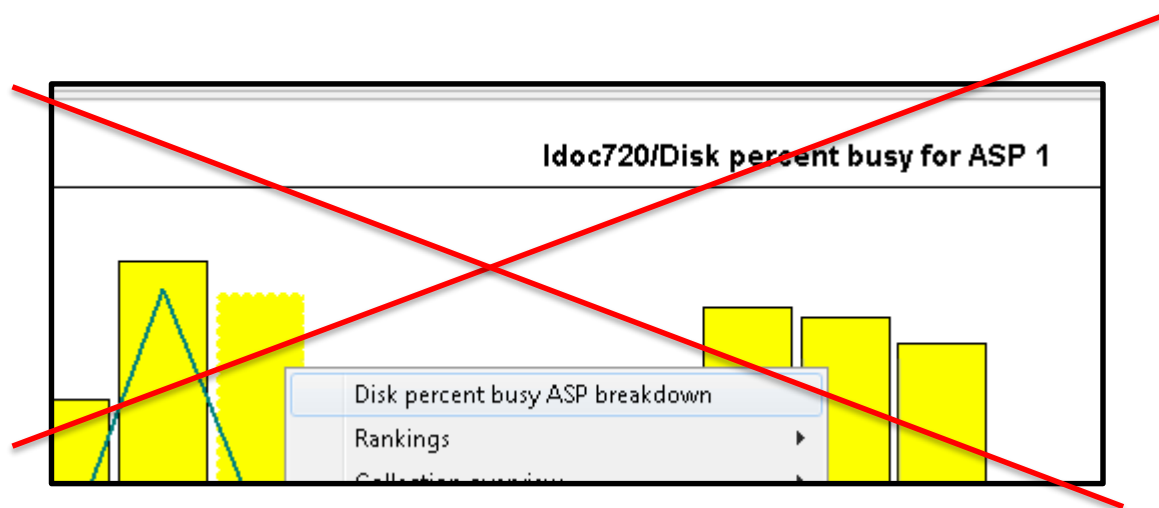
- Added a new situational analysis in CSI called "Seize/lock table large" to flag intervals where the total record locks is > X million per interval. (defaults to 5 million)



Nov 2018 (1338) – CSI disk graphs default drill down change

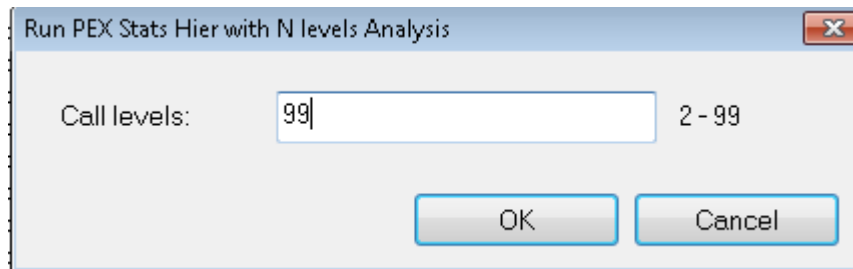
- In CSI from the disk graphs (overview charts), the default drill down is now "By disk path" again.

Also the folders "Flattened on" have all moved down the list after all of the rankings graph folders.



Nov 2018 (1338) – Stats hier for N levels change

- Updated the PEX Stats Hier with N call levels analysis to have a limit /range of 2-90 call levels since values bigger than that did not work.



Run PEX Stats Hier with N levels Analysis

Call levels: 2 - 99

OK Cancel

IBM i Connections		Idoc720: PEX-Analyzer - #1		Remote SQL Statement Status	
Time	System	Status	SQL Statement		
01/03/19 10:57:11	Idoc720	[IBM][System i Access ODBC Driver][DB2 for i5/OS]SQL0104 - Token PRCTYP was not valid. Valid tokens: TEXT.State: 42000 RC: -104	CALL QIDRGUI/		

Nov 2018 (1338) – FTP timeout error fix

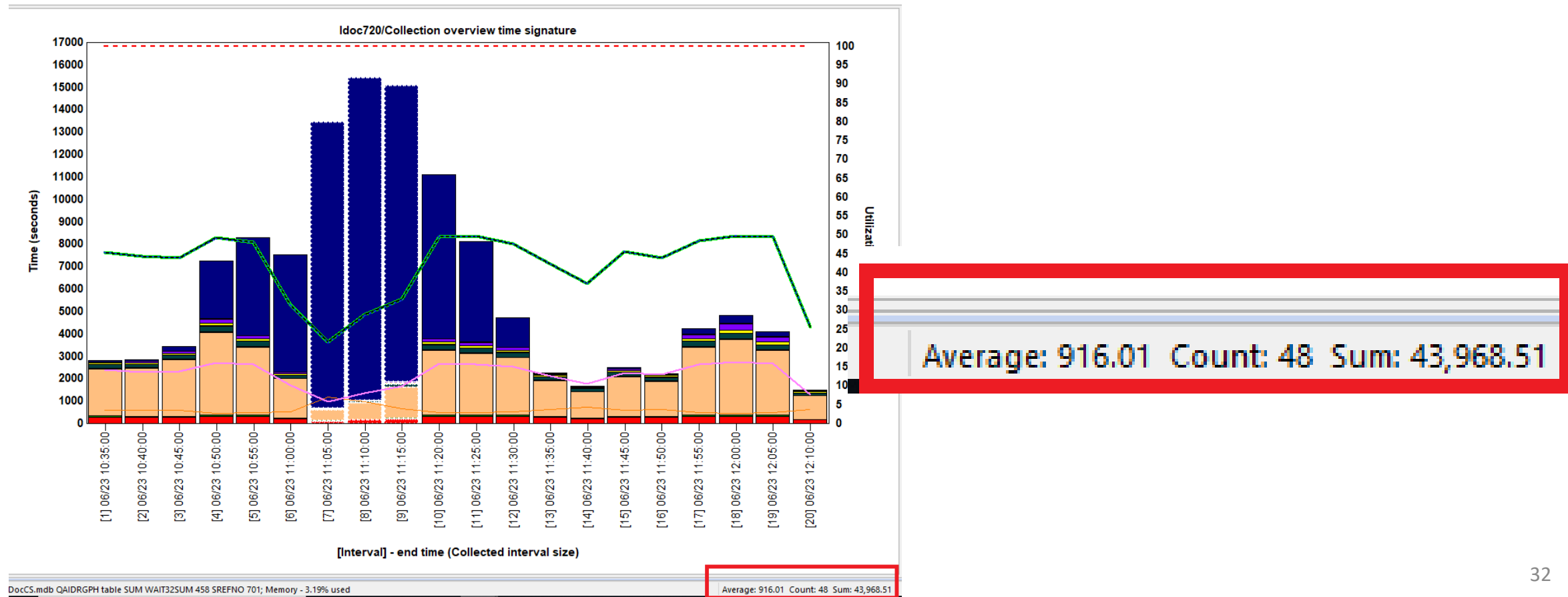
- If using the default FTP method (WININET) and the connection times out and error would be shown to the user the next time it is attempted to be used.

Nov 2018 (1338) – Power Connections fixes

- Made numerous updates and fixes for the support in Power Connections especially when relating to FTP transfers , and the options to work with nmon, npiv and sea data collections. Also made similar fixes when connected to an IBM i under the General functions -> Power folder.
- See the update history for more information on the Power Connections related fixes and updates.

Nov 2018 (1337) – Math pane added to status bars (1/2)

- The Main Window and Data Viewer status bars now contains a math pane based on numeric values from the current table or graph selections.



Nov 2018 (1337) – Math pane added to status bars (2/2)

- In tables, works for row selections or block cell selections.

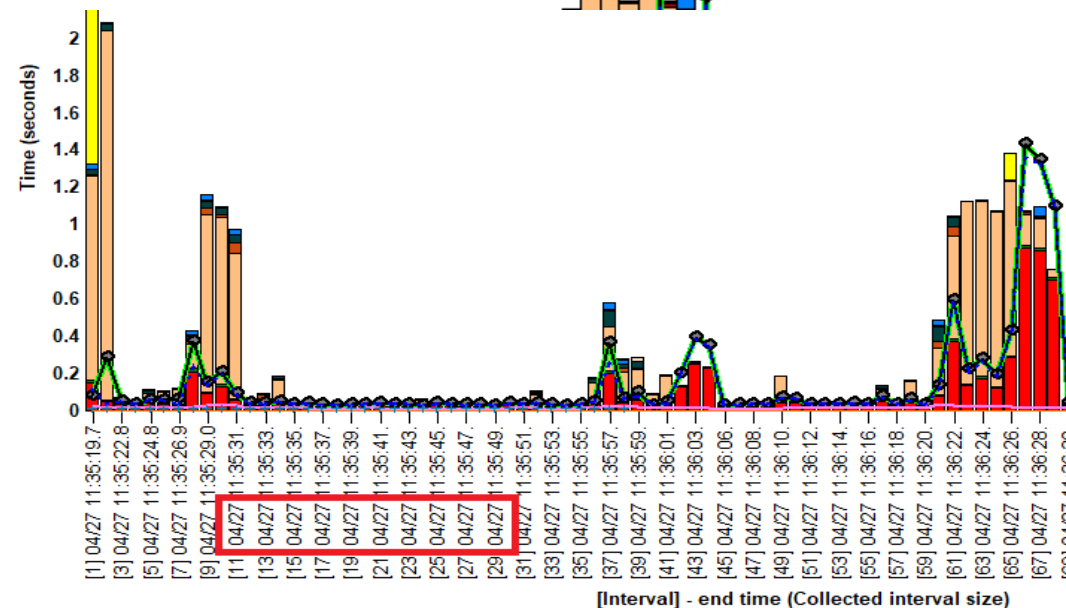
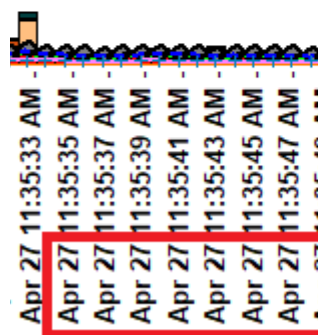
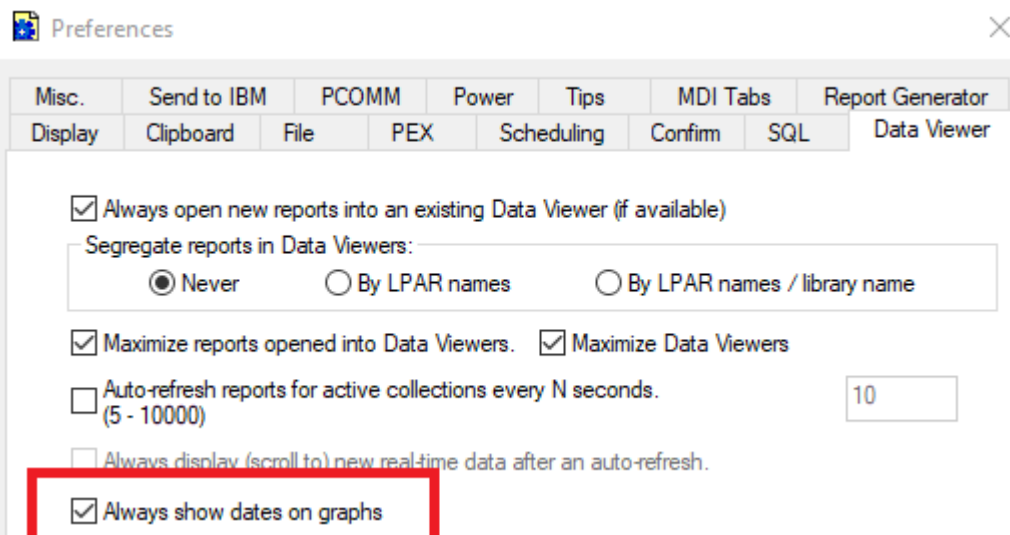
Output file	Description	Records
Qaidrcsanl_q175102853	CSI - Situational analysis file	20
Qaidrcsdt2107_q175102853		1
Qaidrcsdt2145_q175102853		0
Qaidrcsgap_q175102853	CSI - Wait bucket gap file	31,113
Qaidrcsgapint_q175102853	GAP file join to JOBMI	31,136
Qaidrcsisum_q175102853	CSI - Interval Summary	20
Qaidrcsisumtotals_q175102853	CSI - Aggregated Interval Summary	1
Qaidrcstl_q175102853	CSI - Threads/Tasks List	2,837
Qaidrjwenm	Block point enum descriptions	500
Qaidrot	Object Type Descriptions	306
Qaidrst	Segment Type Descriptions	361
QapgmDESCS		5,179
Qapmappn	APPN RELATED PERFORMANCE DATA	20
Qapmbus	BUS PERFORMANCE DATA	0
Qapmciop	COMMUNICATIONS PROCESSOR PERFORMANCE DATA	0
Qapmconf	SYSTEM CONFIGURATION FILE	70
Qapmdiop	DISK PROCESSOR PERFORMANCE DATA	0
Qapmdisk	DISK UNIT PERFORMANCE DATA	100
Qapmdiskrb	DISK UNIT RESPONSE BUCKET DATA	100
Qapmdps	DATA PORT SERVICES PERFORMANCE DATA	0
Qapmeth	ELAN PERFORMANCE DATA	20
Qapmhdwr	DSPHDWRSC *TYPE2 output file model	0
Qapmhttpb	HTTP SERVER BASE PERFORMANCE DATA	6
Qapmhttpd	HTTP SERVER DETAIL PERFORMANCE DATA	60
Qapmiopd	COMMUNICATIONS PROCESSOR PERFORMANCE DATA	0
Qapmisum	INTERVAL SUMMARY DATA	20
Qapmjobmi	JOB MI PERFORMANCE DATA	8,595
Qapmjobos	JOB OS PERFORMANCE DATA	4,303
Qapmjobsr	JOB SAVE AND RESTORE DATA	0
Qapmjobut	JOB WAIT BUCKET PERFORMANCE DATA	0

igator\Libraries\Cslabex1\Q175102853\Server-side output files\Qaidrcsgap_q175102853

Average: 7,939.22 Count: 9 Sum: 71,453

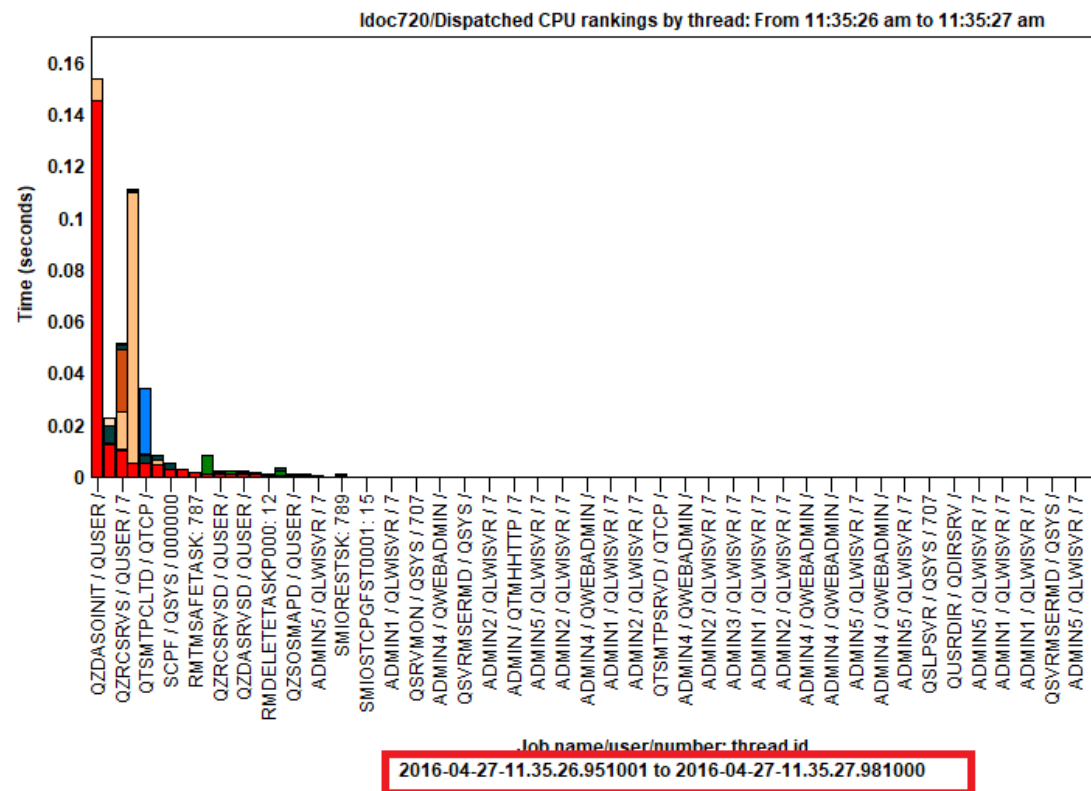
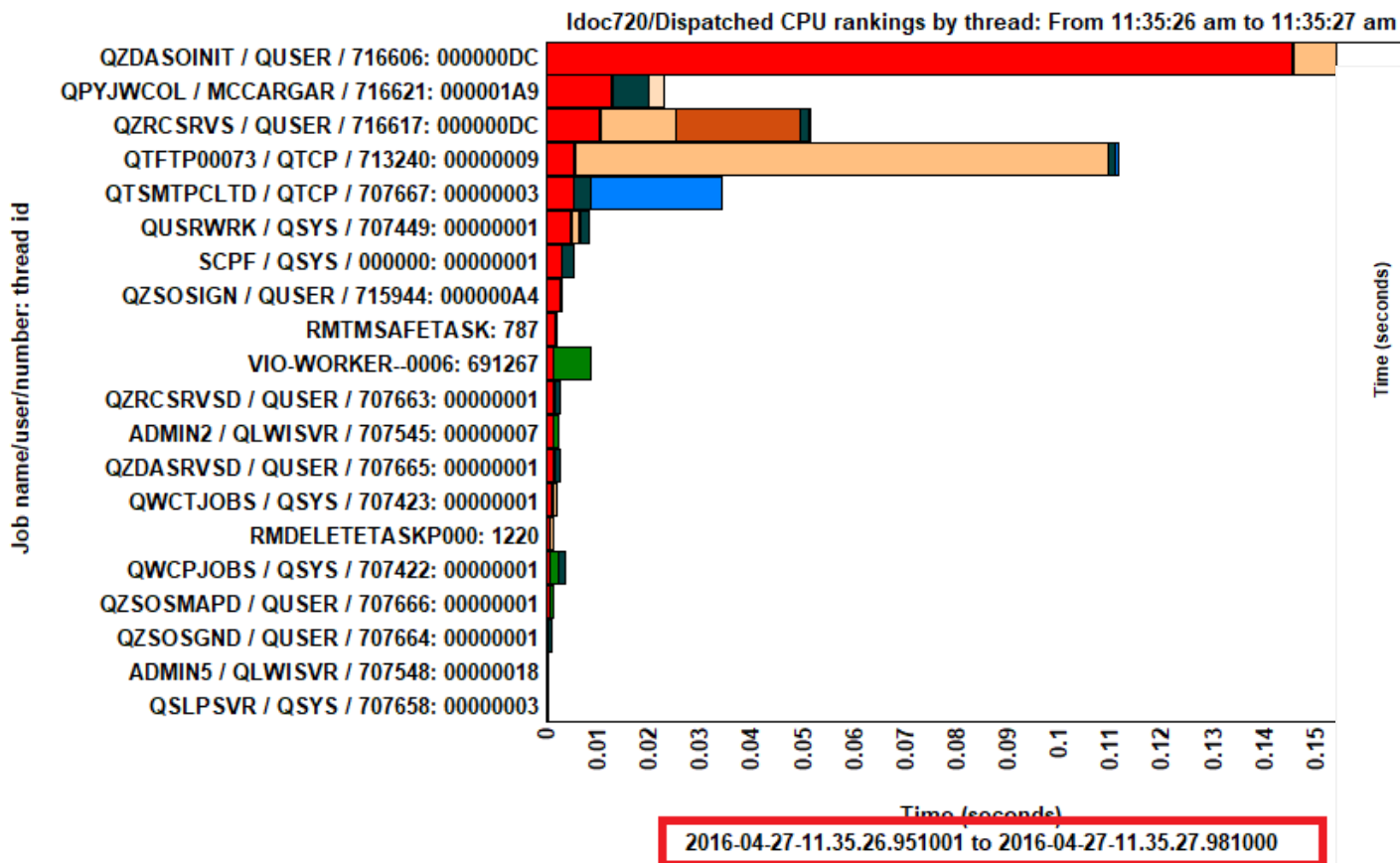
Nov 2018 (1337) – Changed the “Always show dates...” preference (1/2)

- The Data Viewer preference “Always show dates on time range graph X-axis” has been renamed to “Always show dates on graphs.”
- If checked, then the time periods of the collection will always be shown on the graph. For time-based vertical bar graphs, the month/day will be included on the X-axis.
- Added support for this if variable width bars mode is enabled.



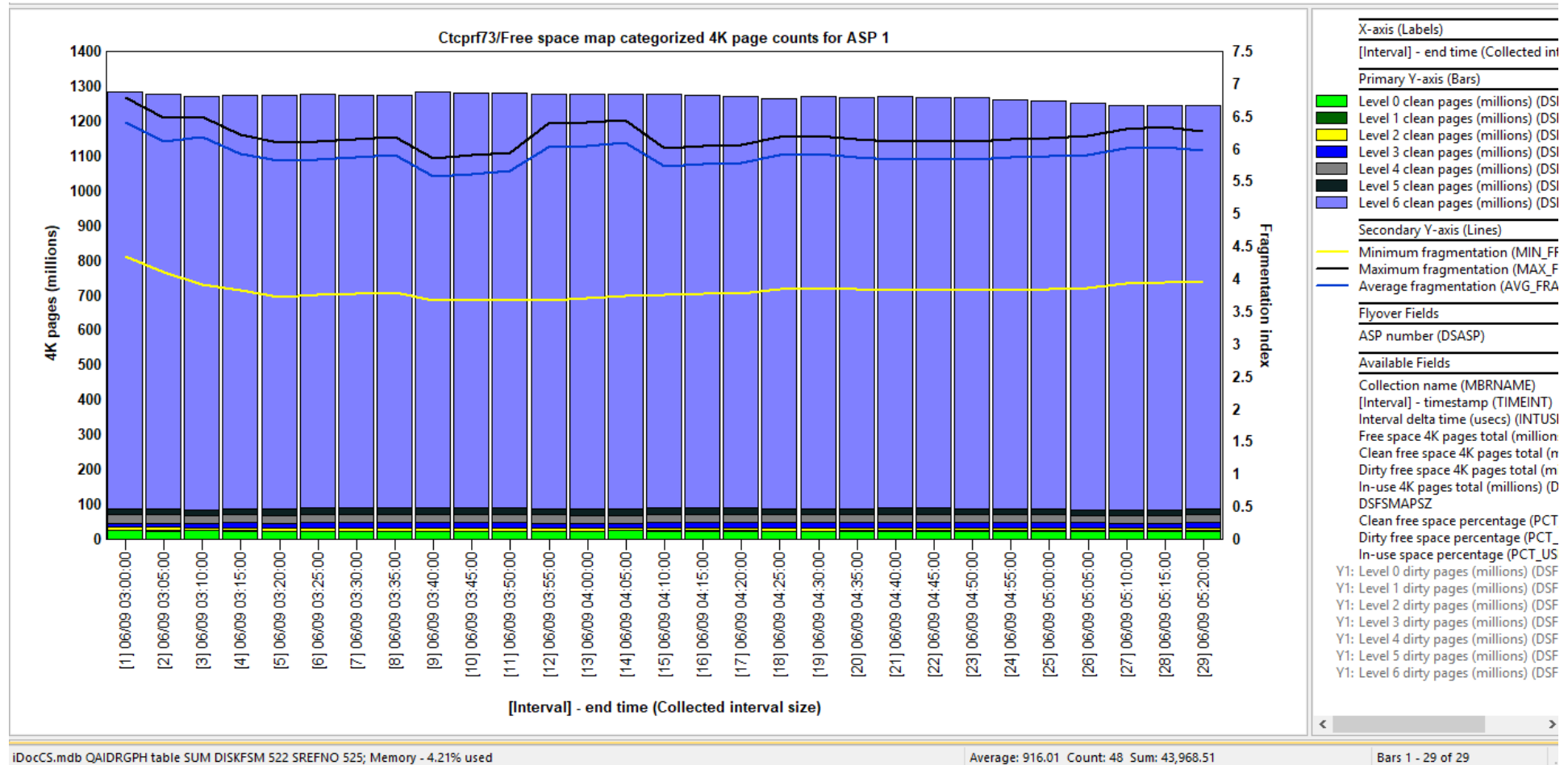
Nov 2018 (1337) – Changed the “Always show dates...” preference (2/2)

- For ranking graphs the full start/end timestamps are shown at the bottom of the graph.



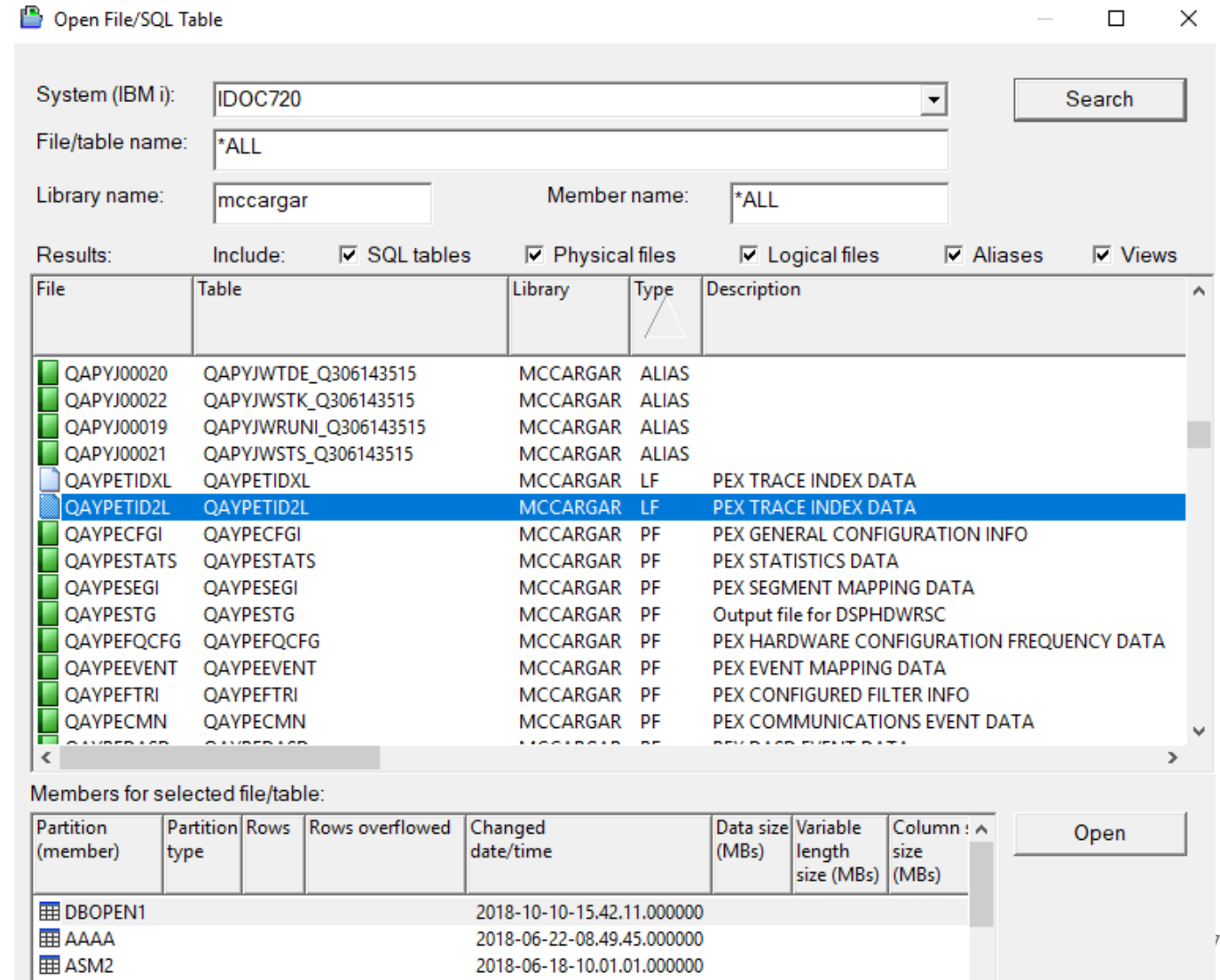
Nov 2018 (1337) – CSI free space map graph fixes

- Numbers were too big in multipath environments.



Nov 2018 (1337) – Open File/SQL Table Window fixes

- Couldn't open aliases, logical files or views.
- Double-click an option in the list to open.
- Logical file members now being built.



The screenshot shows the 'Open File/SQL Table' dialog box with the following search criteria:

- System (IBM i): IDOC720
- File/table name: *ALL
- Library name: mccargar
- Member name: *ALL

The 'Results' section shows the following options checked: SQL tables, Physical files, Logical files, Aliases, and Views.

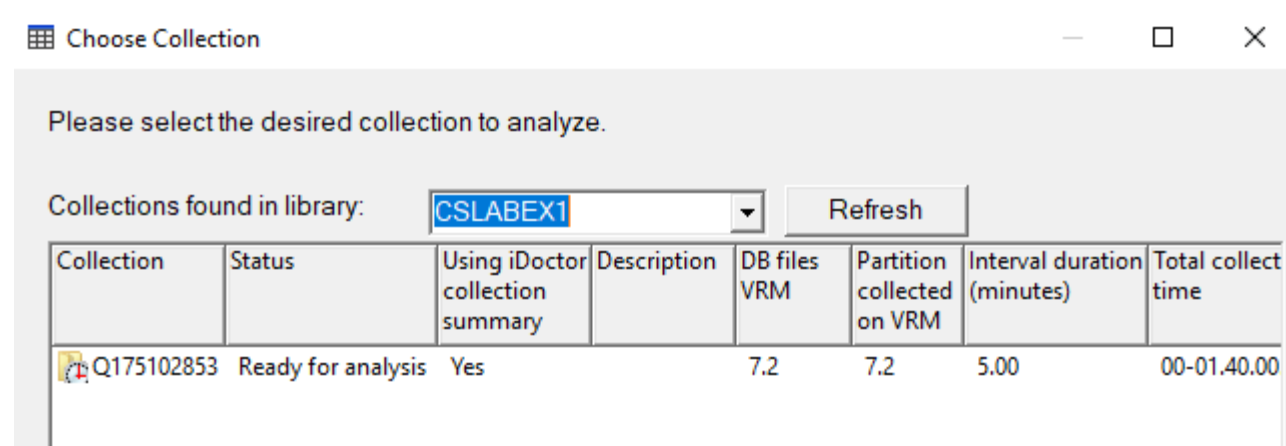
File	Table	Library	Type	Description
QAPYJ00020	QAPYJWUDE_Q306143515	MCCARGAR	ALIAS	
QAPYJ00022	QAPYJWSTK_Q306143515	MCCARGAR	ALIAS	
QAPYJ00019	QAPYJWRUNI_Q306143515	MCCARGAR	ALIAS	
QAPYJ00021	QAPYJWSTS_Q306143515	MCCARGAR	ALIAS	
QAYPETIDXL	QAYPETIDXL	MCCARGAR	LF	PEX TRACE INDEX DATA
QAYPETID2L	QAYPETID2L	MCCARGAR	LF	PEX TRACE INDEX DATA
QAYPECFGI	QAYPECFGI	MCCARGAR	PF	PEX GENERAL CONFIGURATION INFO
QAYPESTATS	QAYPESTATS	MCCARGAR	PF	PEX STATISTICS DATA
QAYPESEGI	QAYPESEGI	MCCARGAR	PF	PEX SEGMENT MAPPING DATA
QAYPESTG	QAYPESTG	MCCARGAR	PF	Output file for DSPHDWRSC
QAYPEFQCFG	QAYPEFQCFG	MCCARGAR	PF	PEX HARDWARE CONFIGURATION FREQUENCY DATA
QAYPEEVENT	QAYPEEVENT	MCCARGAR	PF	PEX EVENT MAPPING DATA
QAYPEFTRI	QAYPEFTRI	MCCARGAR	PF	PEX CONFIGURED FILTER INFO
QAYPECMN	QAYPECMN	MCCARGAR	PF	PEX COMMUNICATIONS EVENT DATA

Members for selected file/table:

Partition (member)	Partition type	Rows	Rows overflowed	Changed date/time	Data size (MBs)	Variable length size (MBs)	Column size (MBs)
DBOPEN1				2018-10-10-15.42.11.000000			
AAAA				2018-06-22-08.49.45.000000			
ASM2				2018-06-18-10.01.01.000000			

Nov 2018 (1337) – SQL Editor – Change DB collection menu fixes

- In some cases the user would not be prompted to select a different collection or member.
- The user might be incorrectly given a prompt to select a collection from the list without ever being shown the list of collections to choose from.



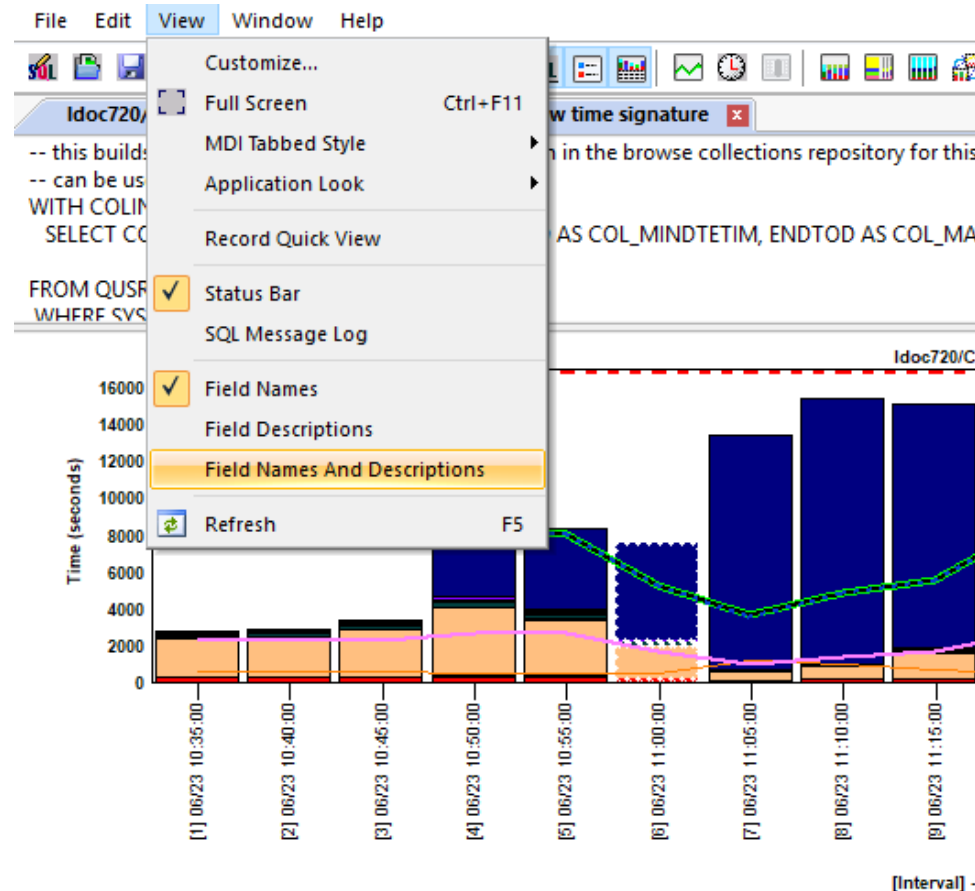
Nov 2018 (1337) – Data Viewer -> View menu fixes

- In the Data Viewer the menu options under View:

- Field Names
- Field Descriptions
- Field Names and Descriptions

were not being shown correctly as far as which one is currently selected (checked).

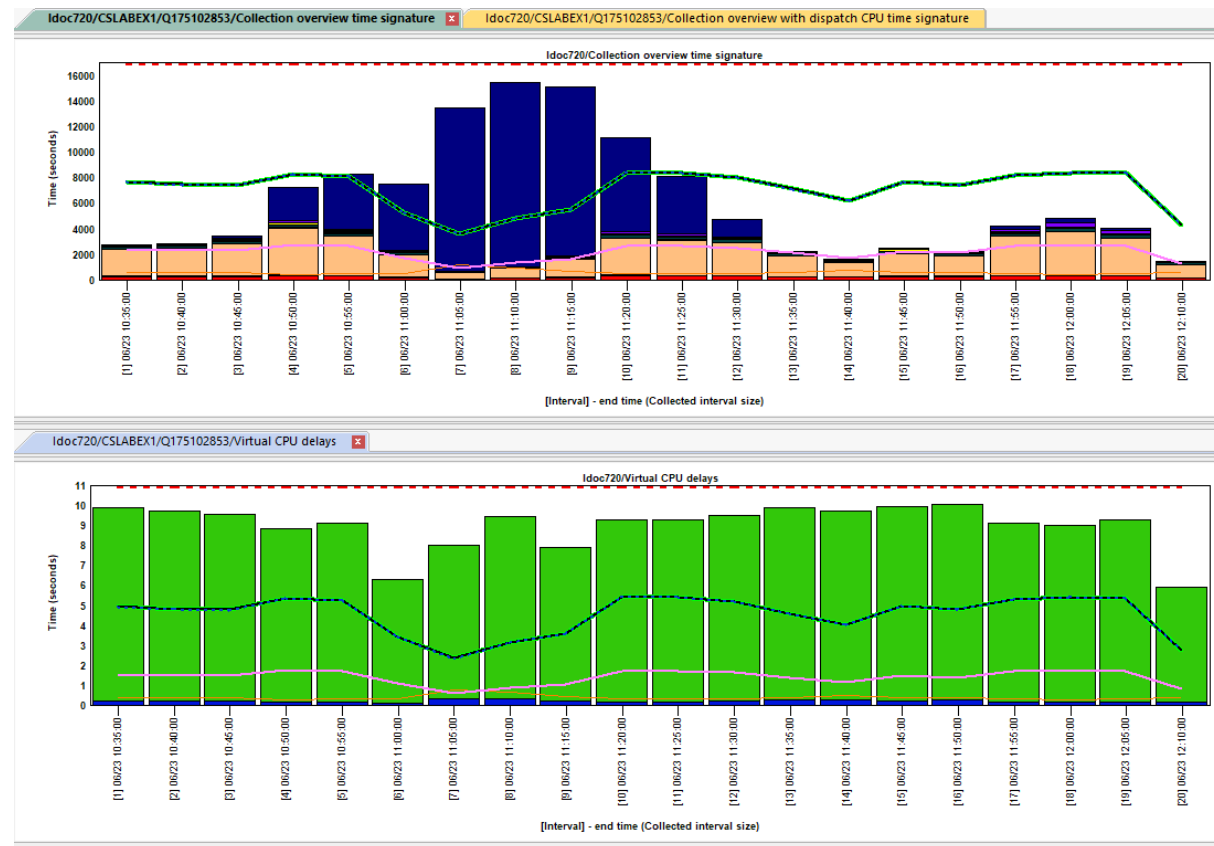
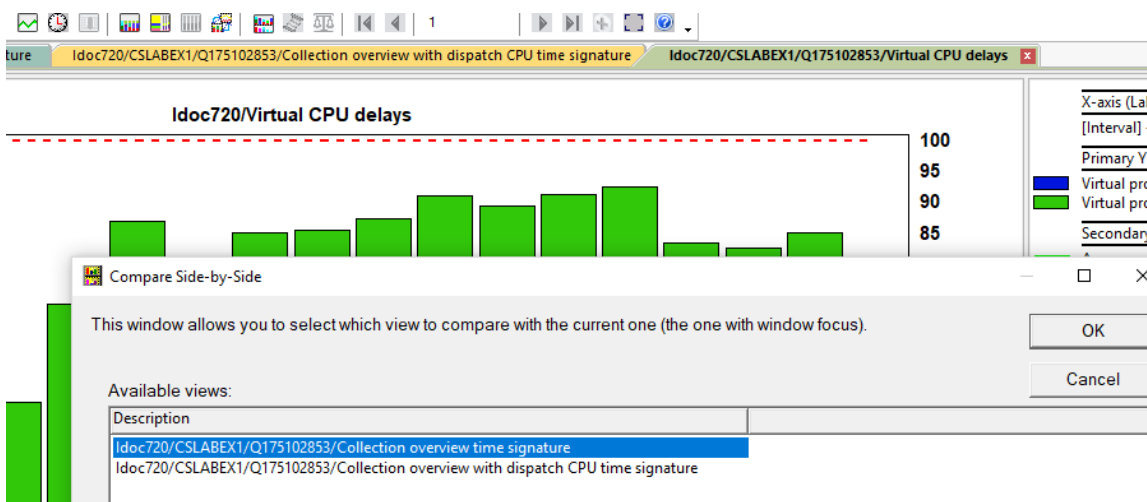
Also the View -> Field Descriptions option did not work correctly and has been fixed.



SYSREATEDON	TIMEINT	MBRNAME	INTERVAL	INTENDSTR
IDOC720	[4] 06/23 10:50:00.000	Q175102853	4	2016-06-23-10.50.00.000000
IDOC720	[5] 06/23 10:55:00.000	Q175102853	5	2016-06-23-10.55.00.000000
IDOC720	[6] 06/23 11:00:00.000	Q175102853	6	2016-06-23-11.00.00.000000
IDOC720	[7] 06/23 11:05:00.000	Q175102853	7	2016-06-23-11.05.00.000000


Nov 2018 (1337) – Compare side-by-side window not showing choice

- The Compare side-by-side window did not work properly as far as making the selection appear activated after pressing the OK button.



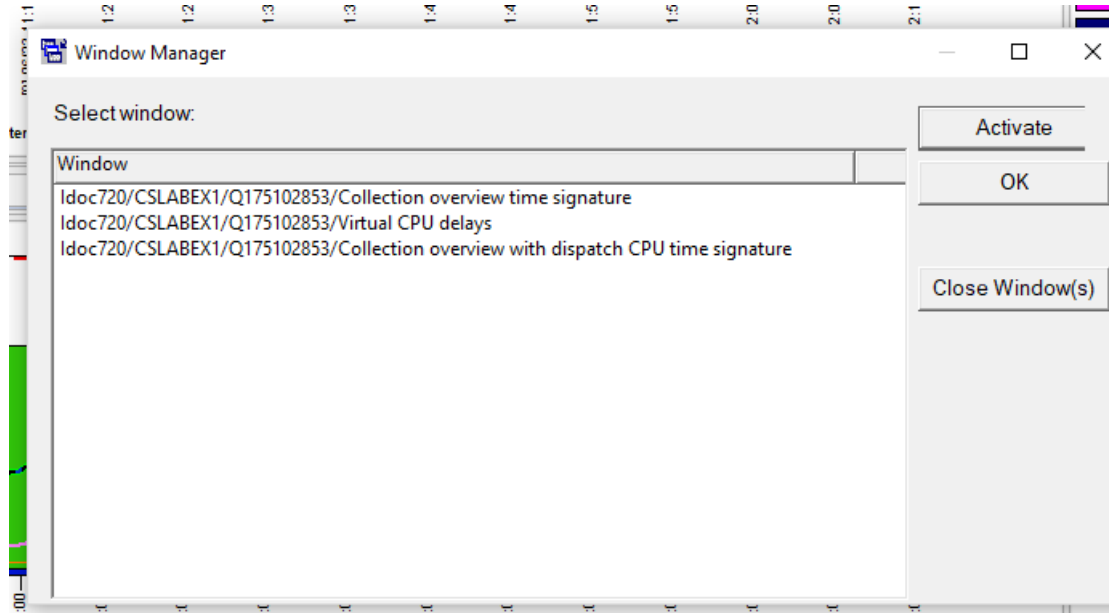


Nov 2018 (1337) – Compare side-by-side companion graph removed

- The side-by-side comparison mode companion graph button  has been removed from the Data Viewer toolbar.
- It has not been functional in more than 2 years.

Nov 2018 (1337) – Window manager updates

- Made the following updates to the Window Manager (from the toolbars on Main Window/Data Viewer):
 1. Removed the Save button (clicking it would crash the GUI)
 2. You can now maximize or resize the window and see long window titles better.
 3. Double-click a window in the list will show that window.





Nov 2018 (1337) – User-defined report properties updates

- Fixed some bugs with the user-defined report properties.
 1. If looking at a table's query definition on the Details page the location field the SREFNO field was mislabeled as SRENO.
 2. Unable to edit the SQL statement on the SQL tab.

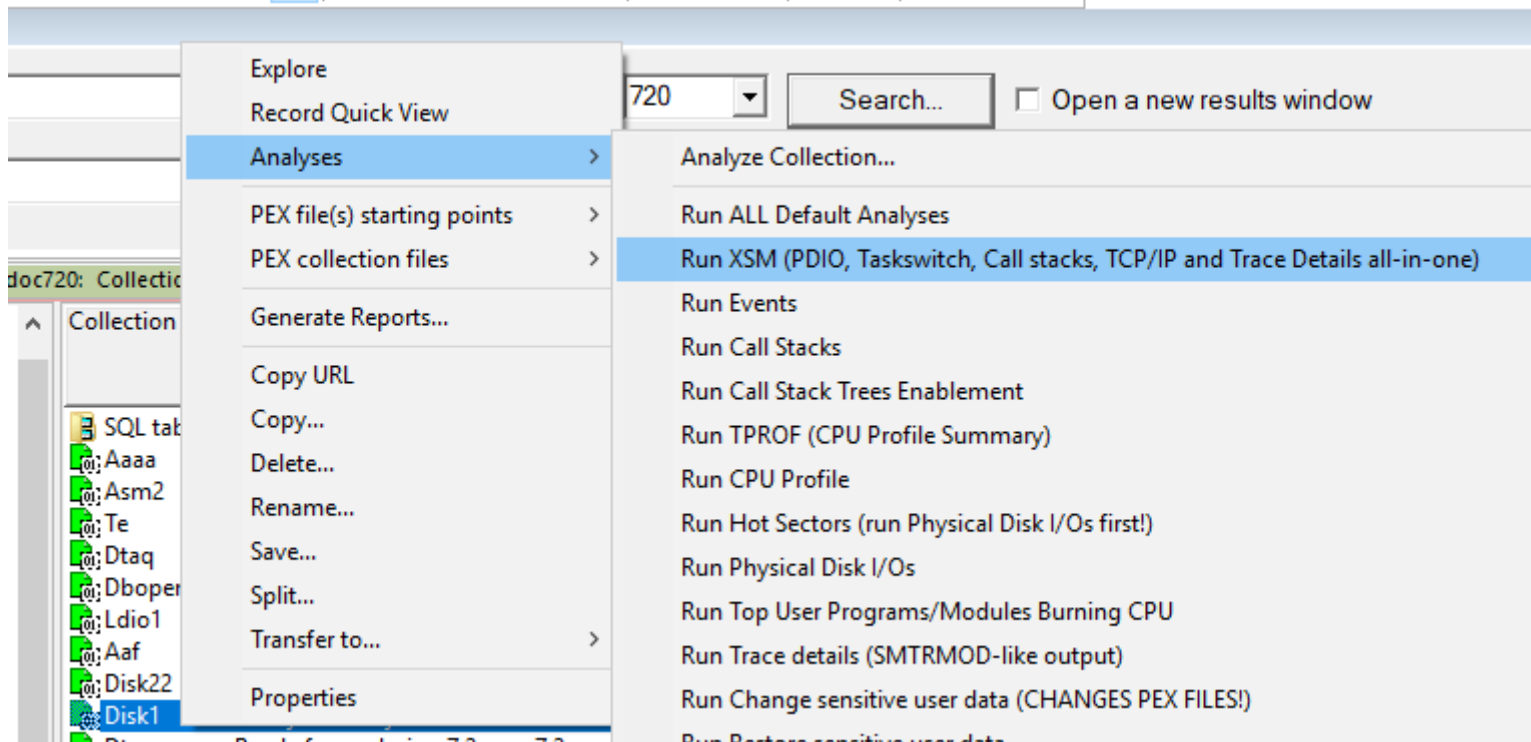


Nov 2018 (1337) – Active monitor deletion problems fixed

- Fixed bugs related to ending and deleting active Job Watcher, Disk Watcher or PEX monitors.
- In many cases the end request would not wait long enough before trying to delete the collection data. Because the collections had not ended yet when the delete request occurred, the data for the active collection did not get deleted.
- **Note:** The latest server builds are required.

Nov 2018 (1337) – PEX – XSM analysis fixed

- The XSM analysis option would fail in PEX Analyzer and has been fixed.





Nov 2018 (1337) – PEX – Monitor/Collection/Definition Wizard hang

- Within any interface that loads a PEX definition; if a ADDPEXDFN JOBS(*NONE) parameter value was encountered this would cause the GUI to hang.

Nov 2018 (1337) – iDoctor did not allow names to contain periods

- The name checking for library names, file names, member names, job names did not allow periods in iDoctor. Example: LIB.NAME
- Since this is a valid name, the checking has been fixed.



Nov 2018 (1337) – Changing a graph's definition could crash

- Fixed a possible crash if changing the graph's definition via the graph definition interface.



Nov 2018 (1337) – Adding a graph filter could crash the GUI

- Adding a filter from the graph legend could crash the GUI and has been fixed.

Nov 2018 (1337) – iDoctor report generator scheduler fixes

- Made the following fixes/updates to the iDoctor Report Generator scheduling function:
 1. The schedule task will now always require that the current user be logged in. If this is not done the task would likely fail.
 2. If the function runs more than 8 hours it will automatically terminate.
 3. If the task is already running when it is scheduled to start then the previous instance will be ended before starting a new instance.

Nov 2018 (1337) – Added new JW situation for locks

- **Problem:** IBM i may be losing track of locks and releasing them at process and thread termination. This can cause additional CPU consumption in the system.
- **Resolution:** Service can enable a setting through SST, **rmsllogleftlocks**, to produce additional LIC logs to determine the source of the issue.

Nov 2018 (1337) – Added new JW situations for QDBSRVXR2 jobs (1/2)

- **Problem:** QDBSRVXR2 job may not be running well
- **Resolution:** Check the wait bucket time signature for the QDBSRVXR2 job(s) on the system.

Nov 2018 (1337) – Added new JW situations for QDBSRVXR2 jobs (2/2)

- **Problem:** QDBSRVXR2 job busy
- **Resolution:** Look at the stacks and investigate what activity is being done that requires updates to the system catalog file QADBIFLD file, including creating and deleting libraries or files. One method is to search for programs that start QLI*.



Nov 2018 (1337) – JW situation #15 fixed

- The Job Watcher situation, Potentially large number of locks, was checking for the wrong call stack procedure name and has been fixed..

Nov 2018 (1337) – JW situations causing duplicate hits

- Two JW situations were causing duplicate records (“hits”) to occur in the situations SQL table:
 - Gate contention in ASM finding free space
 - Contention on user profile



Nov 2018 (1337) – Data Viewer preference changed

- In Preferences -> Data Viewer renamed the option "Always sort disk rankings graphs by avg response times" to "Always sort CSI external storage disk ranking graphs by avg response times".

Always sort CSI external storage disk rankings graphs by avg response times

Nov 2018 (1337) – Preferences -> Job Watcher tab removed

- The last option on this tab was obsolete so the whole tab has been removed.

Oct 2018 (1336) – Updates to the Situations editor

- Made several changes/fixes to the Situations editor:
 - 1. Changing an IBM-defined situation's color did not work.
 - 2. Changing the SQL statement of an IBM defined situation did not show those changes when reloading the interface.
 - 3. The list of situations now has a Changed column that indicates if the situation has changed from the IBM-shipped defaults.
 - 4. The list of situations did not prefilter the list by version of the collection being worked with. So in CSI the SMT context changed situation was listed twice.
 - 5. Adding a new situation didn't work.

Collection Services Investigator Situations

Use these options to indicate which situations should be ran and the filters to be applied (where applicable). By changing the filter values you can increase or decrease the likelihood of a situation occurring.

Selected Situation Quick Edit Options:

Situation: IBM-defined

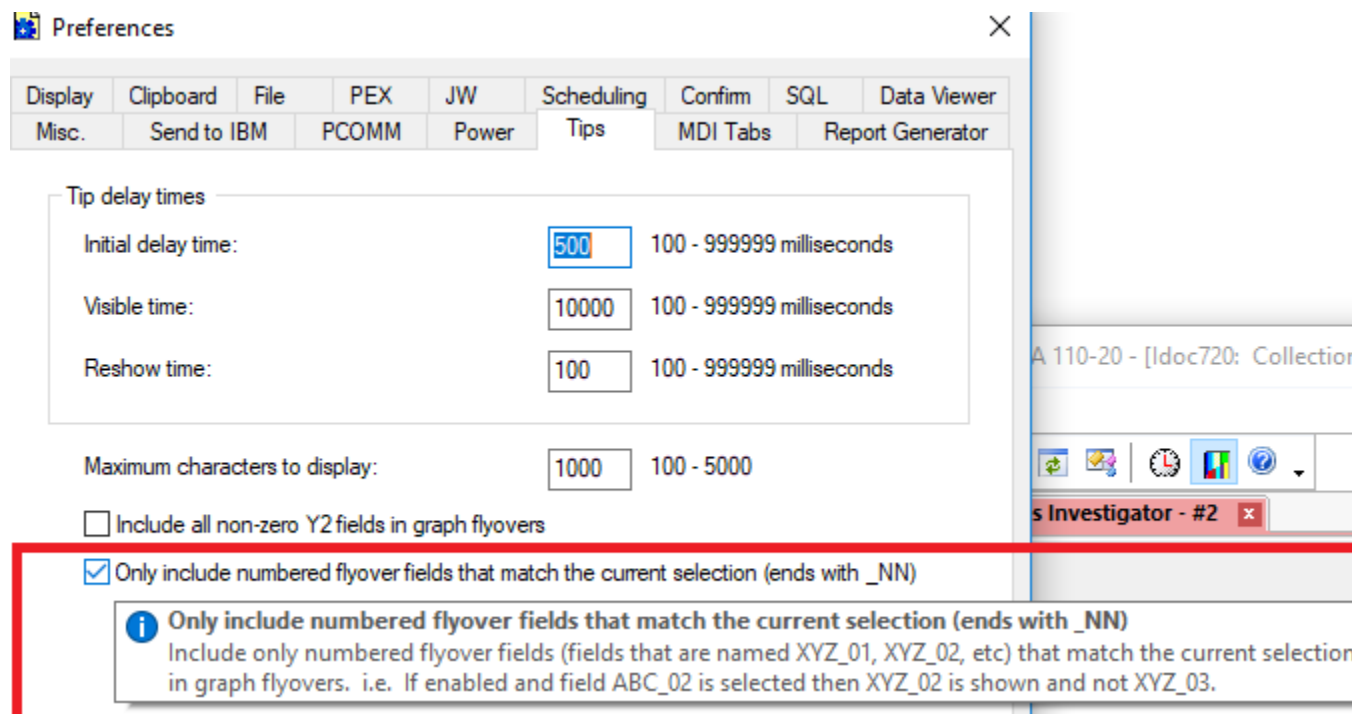
Color:

Situations Available:

Show	Changed	ID	Situation	Filter	Filter description
<input checked="" type="checkbox"/>		1	Interactive feature utilization	100	Minimum utilization - Default = 100%
<input checked="" type="checkbox"/>		2	Write cache overruns	20	Minimum write cache overruns percent - Default = 20
<input checked="" type="checkbox"/>		3	High disk response times	15	Minimum disk response time - Default = 15 ms
<input checked="" type="checkbox"/>		4	High faulting in the machine pool	10	Minimum machine pool faults per second - Default = 10
<input checked="" type="checkbox"/>		5	High disk storage consumed	90	Minimum disk space consumed - Default 90%
<input checked="" type="checkbox"/>		6	Jobs ineligible to run	3	Minimum transitions to ineligible - Default 3
<input checked="" type="checkbox"/>		7	Significant change in pool sizes	15	Minimum pool size delta change of total - Default 15%
<input checked="" type="checkbox"/>		8	High native file full opens	5000	Minimum opens per second - Default 5000
<input checked="" type="checkbox"/>		9	Flush all seize detected	60	Minimum amount of continuous time spent in the flush
<input checked="" type="checkbox"/>	Yes	10	SMT context changed by Ron		
<input type="checkbox"/>		11	Temporary storage is more than 7% of the free storage in ASP1 (flag first interval)		
<input checked="" type="checkbox"/>		12	Temporary storage is more than 7% of the free storage in ASP1 (flag all intervals)		

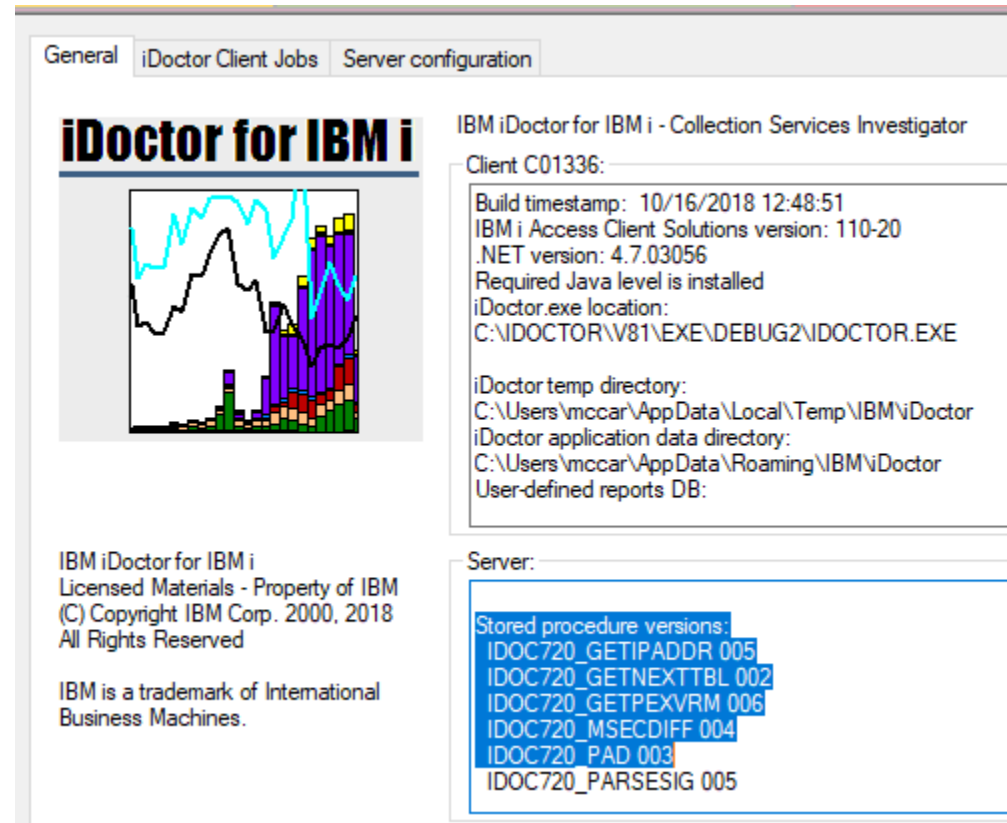
Oct 2018 (1336) – Tips preference for numbered fields

- This preference avoids showing too many flyover fields on the CSI memory pool graphs. Only flyover fields for the same pool are included if this new option is checked.
 - This option is checked by default.



Oct 2018 (1336) – iDoctor -> General -> stored procedure versions

- In the iDoctor application properties -> General tab when connected to an IBM i, the Server section will now include the iDoctor stored procedure versions installed in library QIDRGUI.



General | iDoctor Client Jobs | Server configuration

iDoctor for IBM i

IBM iDoctor for IBM i - Collection Services Investigator

Client C01336:

Build timestamp: 10/16/2018 12:48:51
 IBM i Access Client Solutions version: 110-20
 .NET version: 4.7.03056
 Required Java level is installed
 iDoctor.exe location:
 C:\IDOCTOR\W81\EXE\DEBUG2\IDOCTOR.EXE

iDoctor temp directory:
 C:\Users\mccar\AppData\Local\Temp\IBM\iDoctor
 iDoctor application data directory:
 C:\Users\mccar\AppData\Roaming\IBM\iDoctor
 User-defined reports DB:

Server:

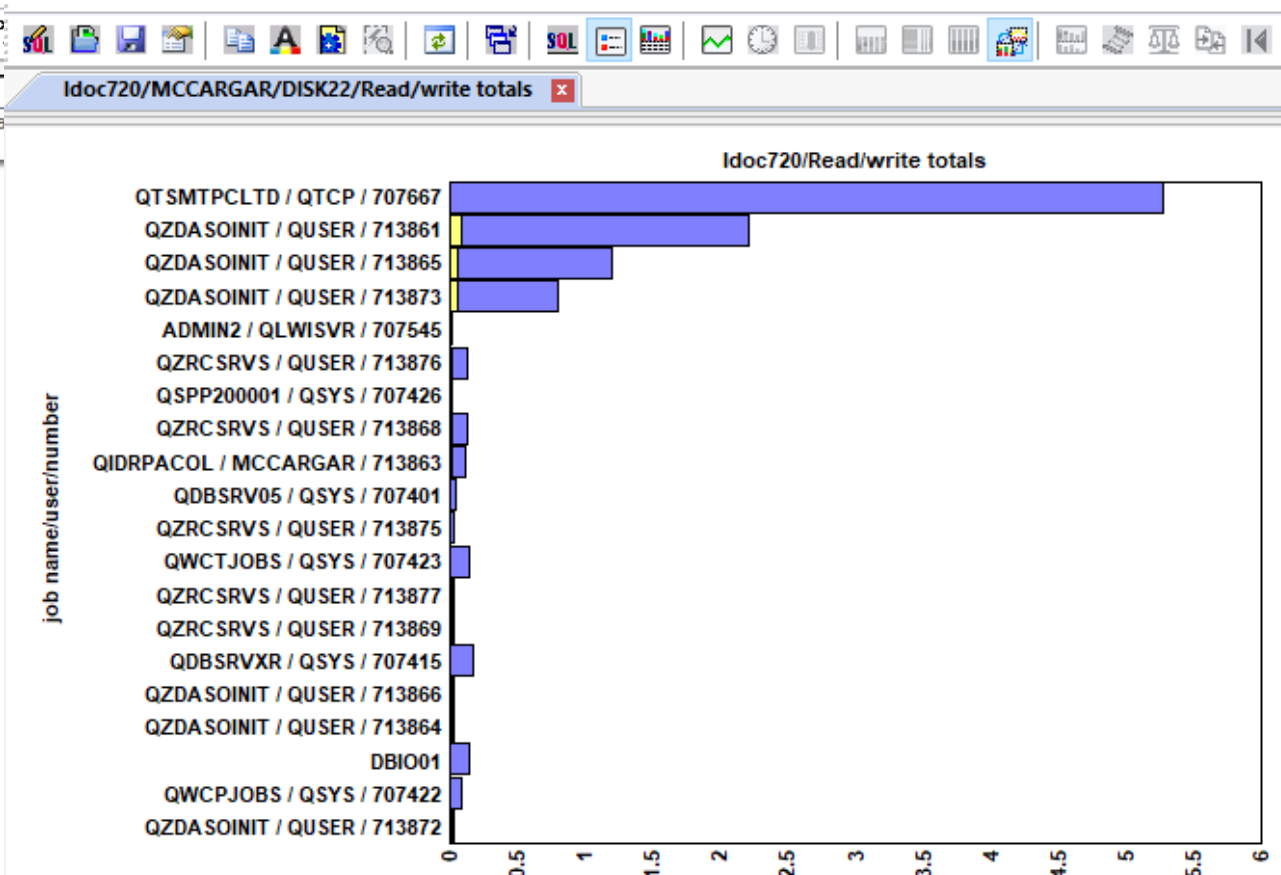
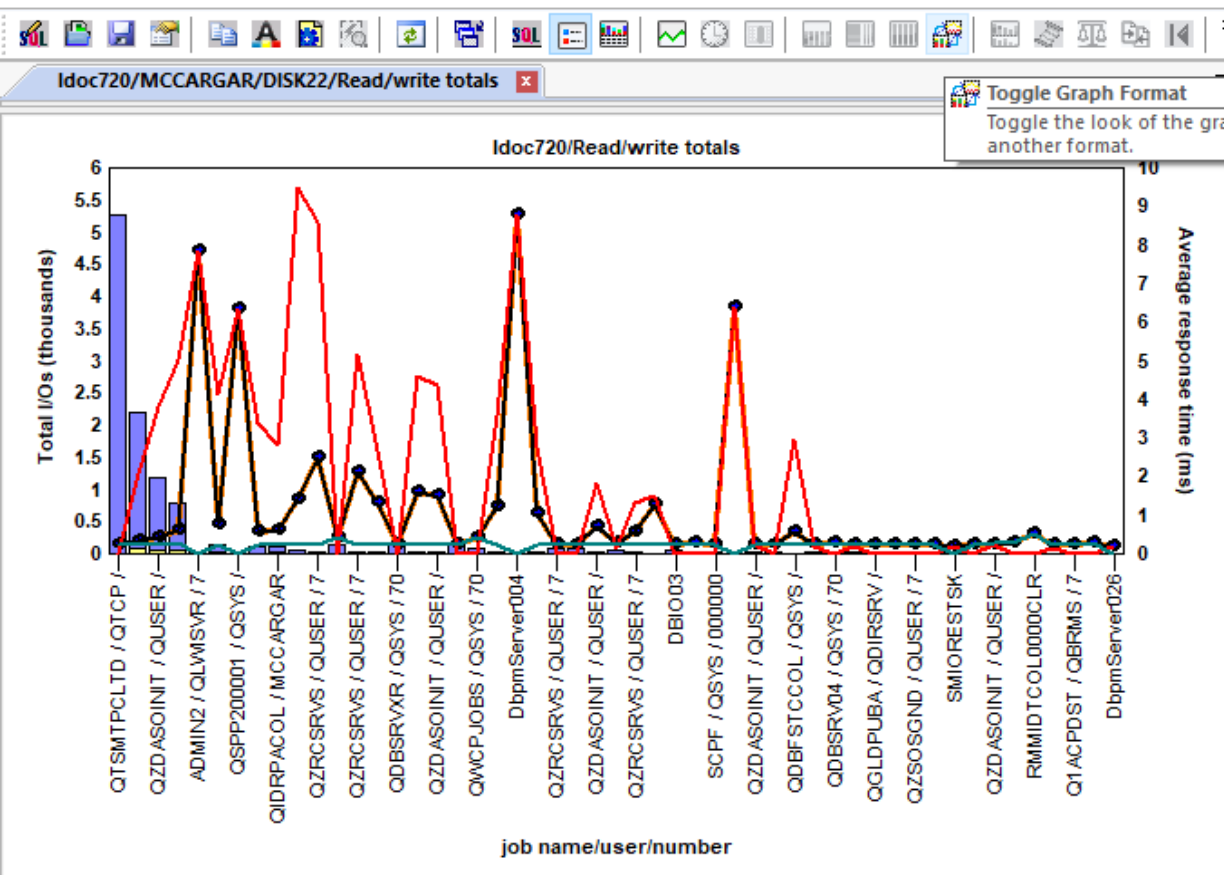
Stored procedure versions:
 IDOC720_GETIPADDR 005
 IDOC720_GETNEXTTBL 002
 IDOC720_GETPEXVRM 006
 IDOC720_MSECDIFF 004
 IDOC720_PAD 003
 IDOC720_PARSESIG 005

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 Business Machines.

Oct 2018 (1336) – Toggle graph format setting now “remembers”

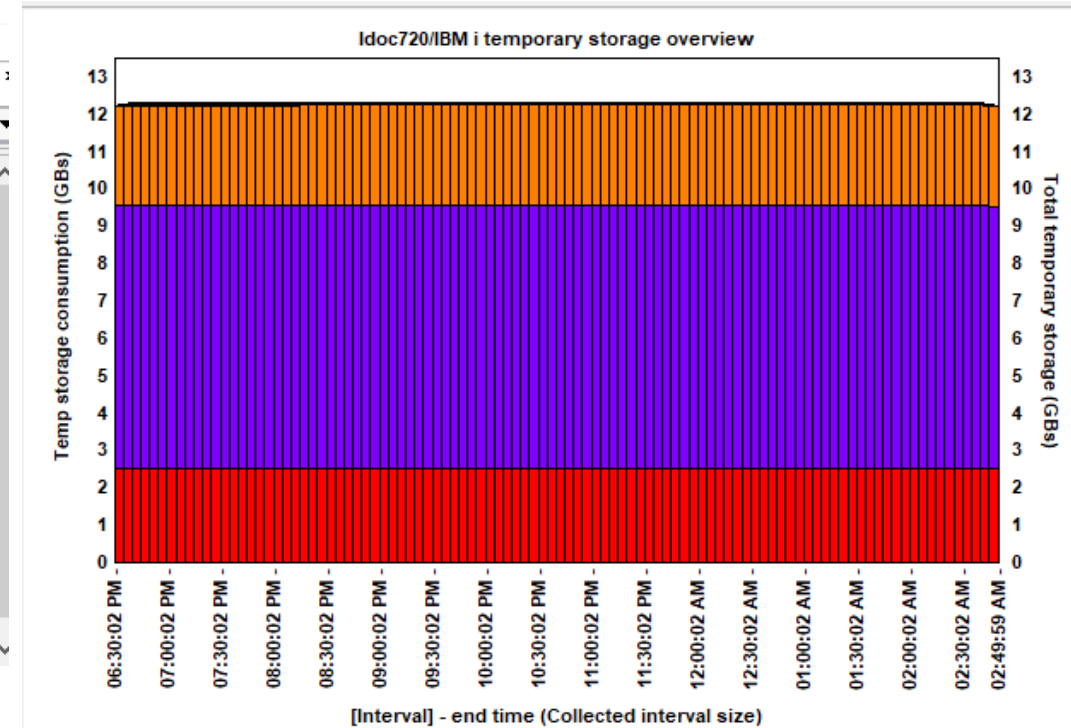
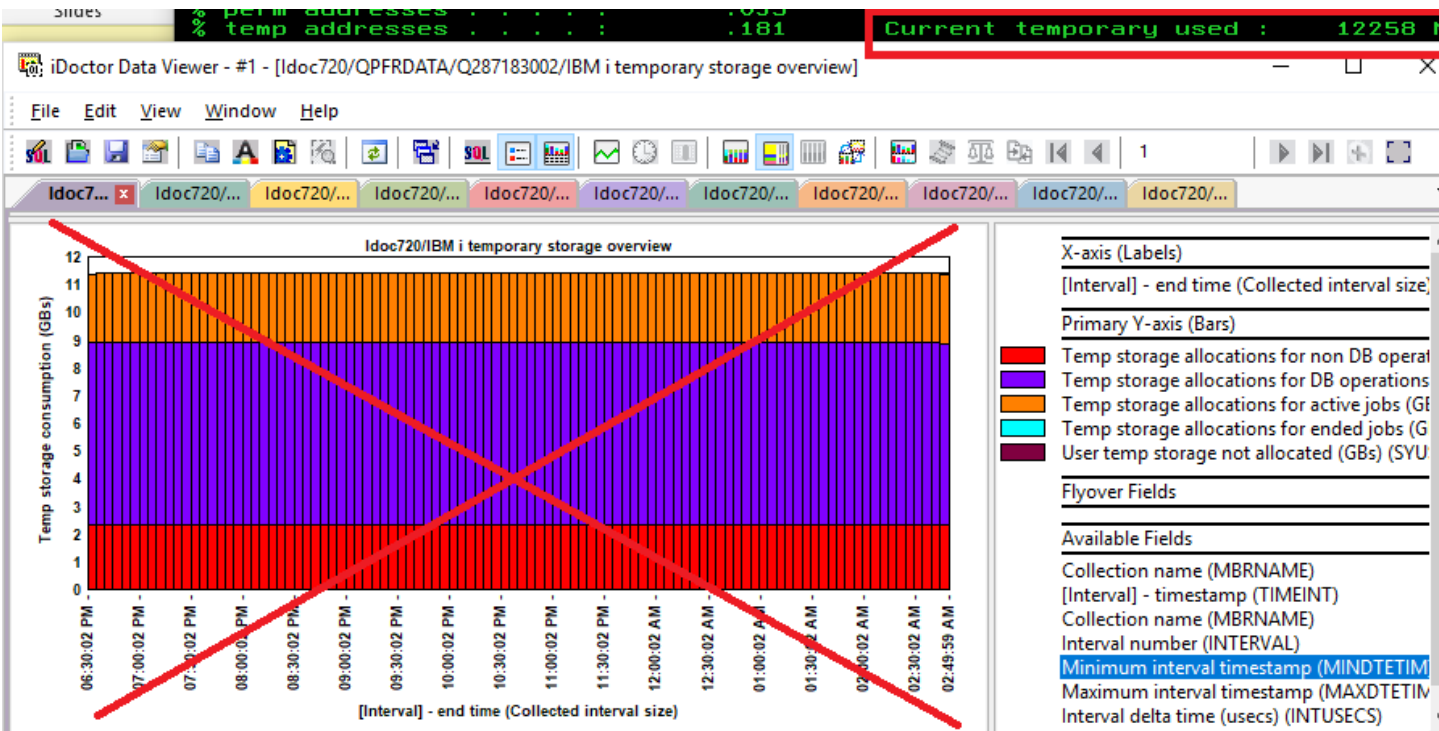
- The toggle graph format option (toolbar button in Data Viewer) will now remember in the windows registry whether or not you've clicked it on a graph for each folder/subfolder in iDoctor.



Oct 2018 (1336) – CSI temp stg graphs incorrect values

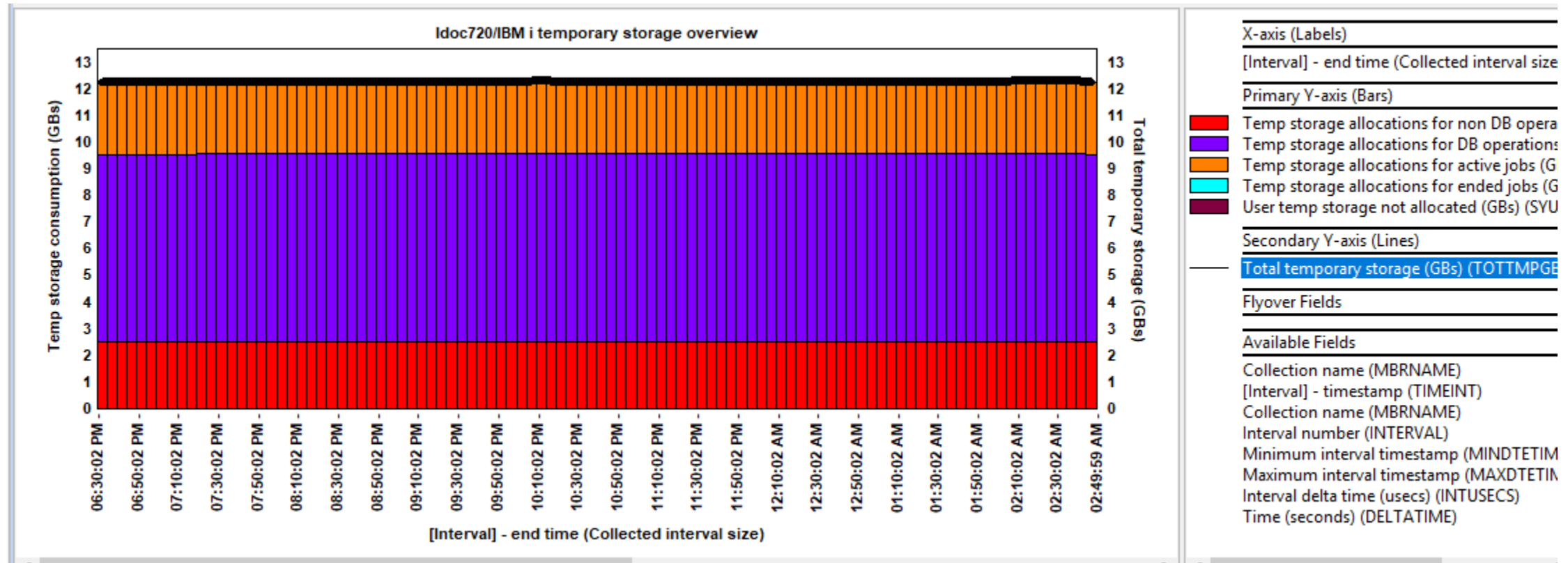
- In the Temporary storage graphs folder, the values given on these overview graphs were slightly less than they should have been.

Current temporary used : 12258 M



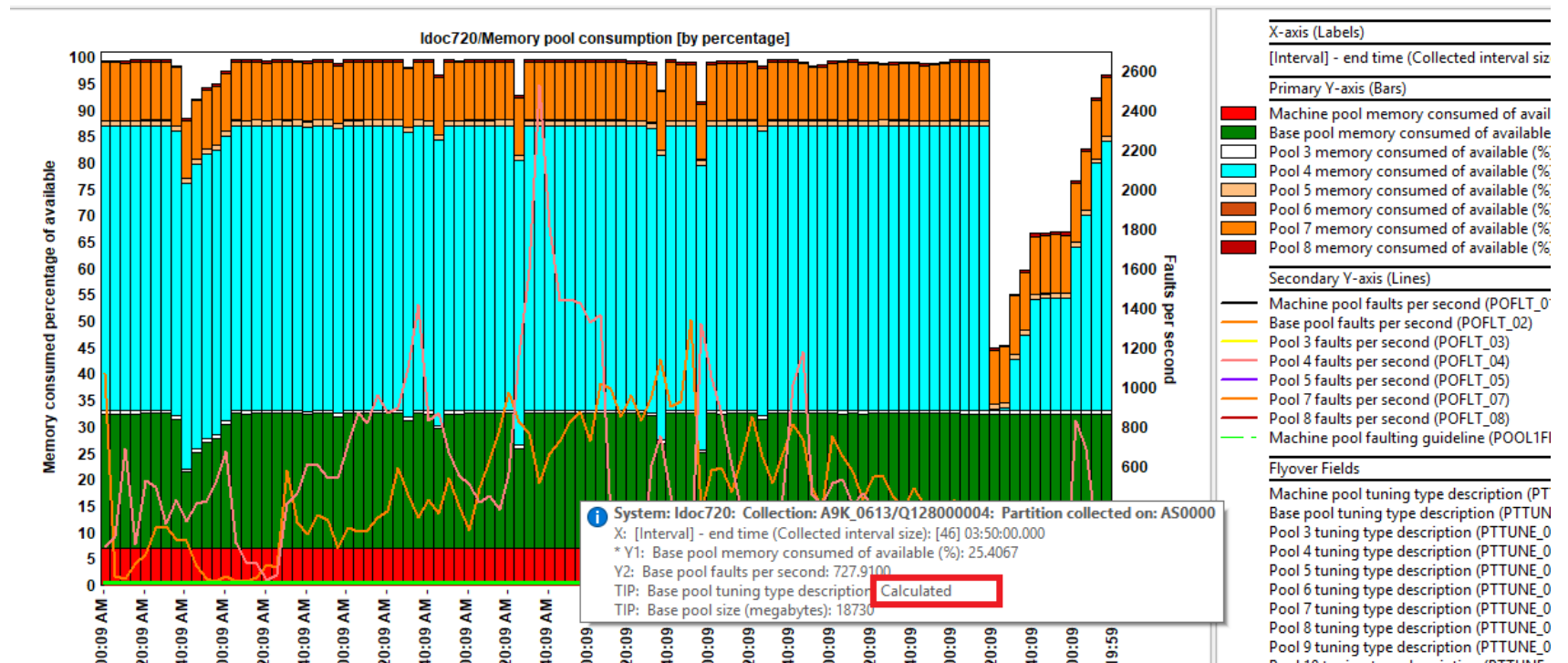
Oct 2018 (1336) – CSI temp stg graphs now includes total on Y2

- In the Temporary storage graphs folder, all graphs now includes the total temporary storage added up on the Y2 axis.



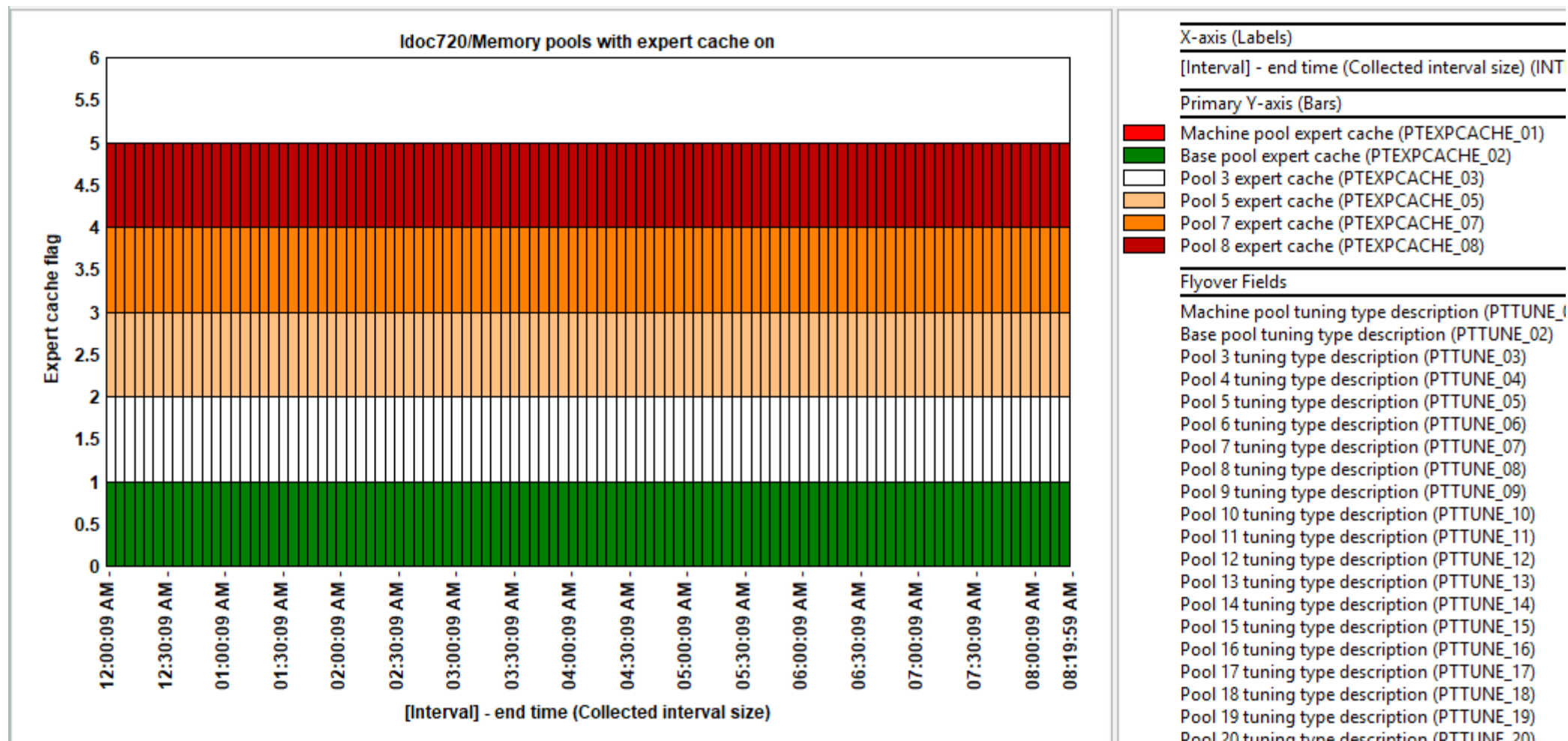
Oct 2018 (1336) – CSI Memory pool graph updates

- Added new flyover fields to the CSI memory pool graphs:
 - PTTYPER - Memory pool tuning type (0=Fixed, 1=static, 2=dynamic, 3=calculated /expert cache)
 - PTTUNE - Memory pool tuning type description (Fixed, Static, Dynamic, Calculated)
 - POSIZ - Memory pool size (if not already in the graph)
 - PONAME - Memory pool name (if 7.3+)



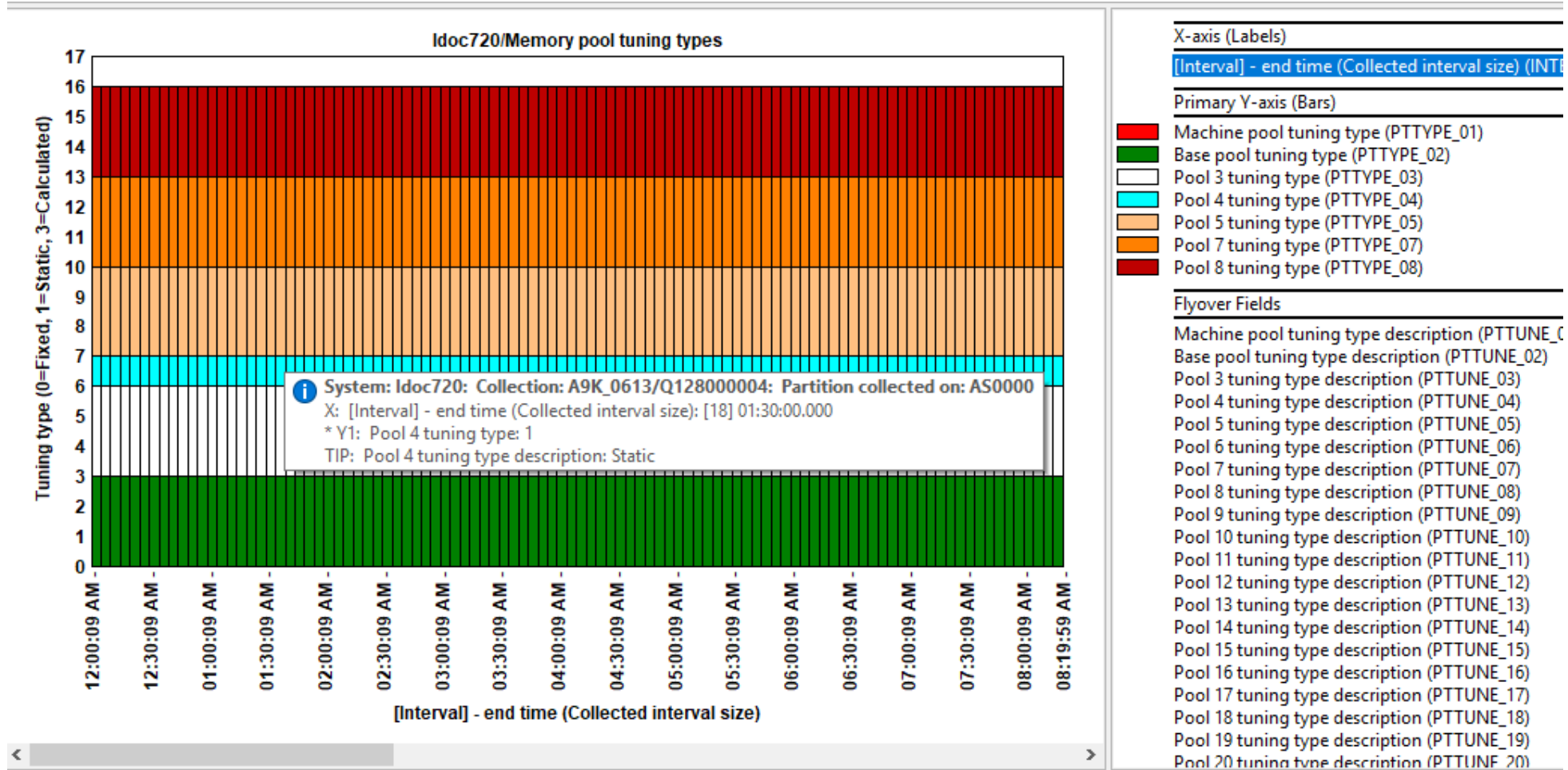
Oct 2018 (1336) – CSI Memory pool graphs – Expert cache on

- Added new graph: Memory pools with expert cache on



Oct 2018 (1336) – CSI Memory pool graphs – Memory pool tuning types

- Added new graph: Memory pool tuning types
 - Note:** This shows all pools with tuning types except Fixed (which equals 0 and not shown)



Oct 2018 (1336) – CSI SMT context change situation fix

- In CSI the situation SMT context changed had an incorrect calculation when ran against 7.1 collections.

Collection Services Investigator Situations

Use these options to indicate which situations should be ran and the filters to be applied (where applicable). By changing the filter values you can increase or decrease the likelihood of a situation occurring.

Selected Situation Quick Edit Options:

Situation: IBM-defined

Color:

Situations Available:

Show	Changed	ID	Situation	Filter	Filter description
<input checked="" type="checkbox"/>		1	Interactive feature utilization	100	Minimum utilization - Default = 100%
<input checked="" type="checkbox"/>		2	Write cache overruns	20	Minimum write cache overruns percent - Default = 20%
<input checked="" type="checkbox"/>		3	High disk response times	15	Minimum disk response time - Default = 15 ms
<input checked="" type="checkbox"/>		4	High faulting in the machine pool	10	Minimum machine pool faults per second - Default = 10
<input checked="" type="checkbox"/>		5	High disk storage consumed	90	Minimum disk space consumed - Defalut 90%
<input checked="" type="checkbox"/>		6	Jobs ineligible to run	3	Minimum transitions to ineligible - Default 3
<input checked="" type="checkbox"/>		7	Significant change in pool sizes	15	Minimum pool size delta change of total - Default 15%
<input checked="" type="checkbox"/>		8	High native file full opens	5000	Minimum opens per second - Default 5000
<input checked="" type="checkbox"/>		9	Flush all seize detected	60	Minimum amount of continuous time spent in the flush all enum -
<input checked="" type="checkbox"/>		10	SMT context changed		
<input checked="" type="checkbox"/>		11	Temporary storage is more than 7% of the free storage in ASP1 (flag first interval)		
<input checked="" type="checkbox"/>		12	Temporary storage is more than 7% of the free storage in ASP1 (flag all intervals)		

Oct 2018 (1335) – CSI list collections in a lib bug

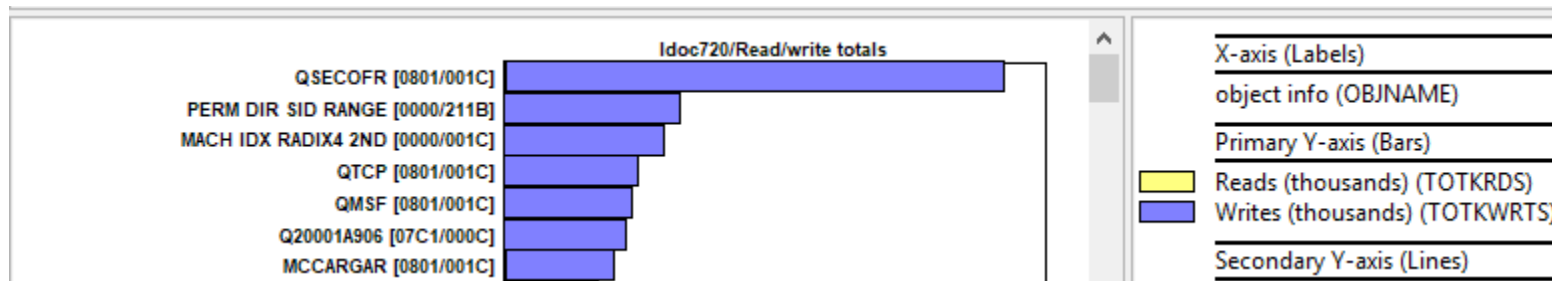
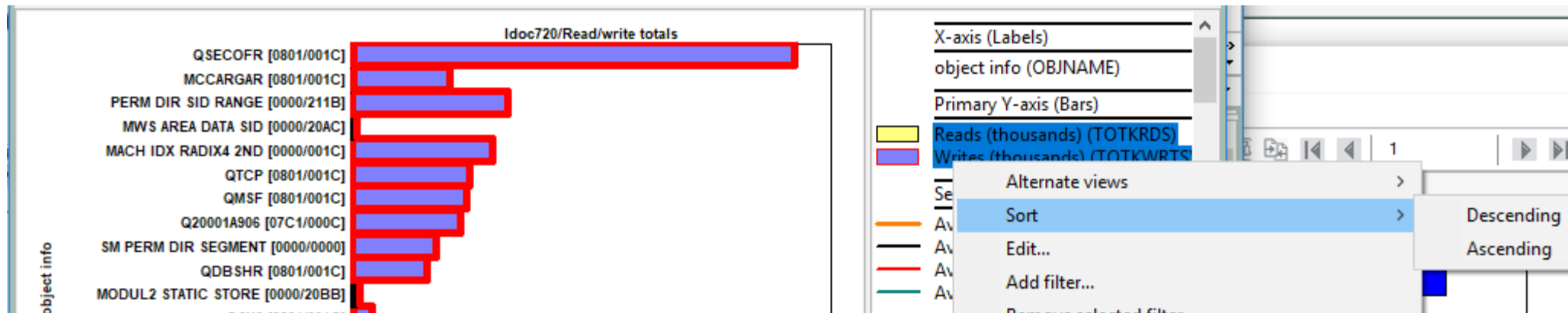
- In CSI the stored procedure to list collections in a library would fail if there were more than 29 collections in the library and one of them had a description on a QAPMCONF member.
 - Work-around: Remove all the member descriptions on file QAPMCONF

Oct 2018 (1335) – User-defined graphs broken if using an IBM I lib

- User-defined graphs weren't working if using an IBM i library as the user-defined reports database.

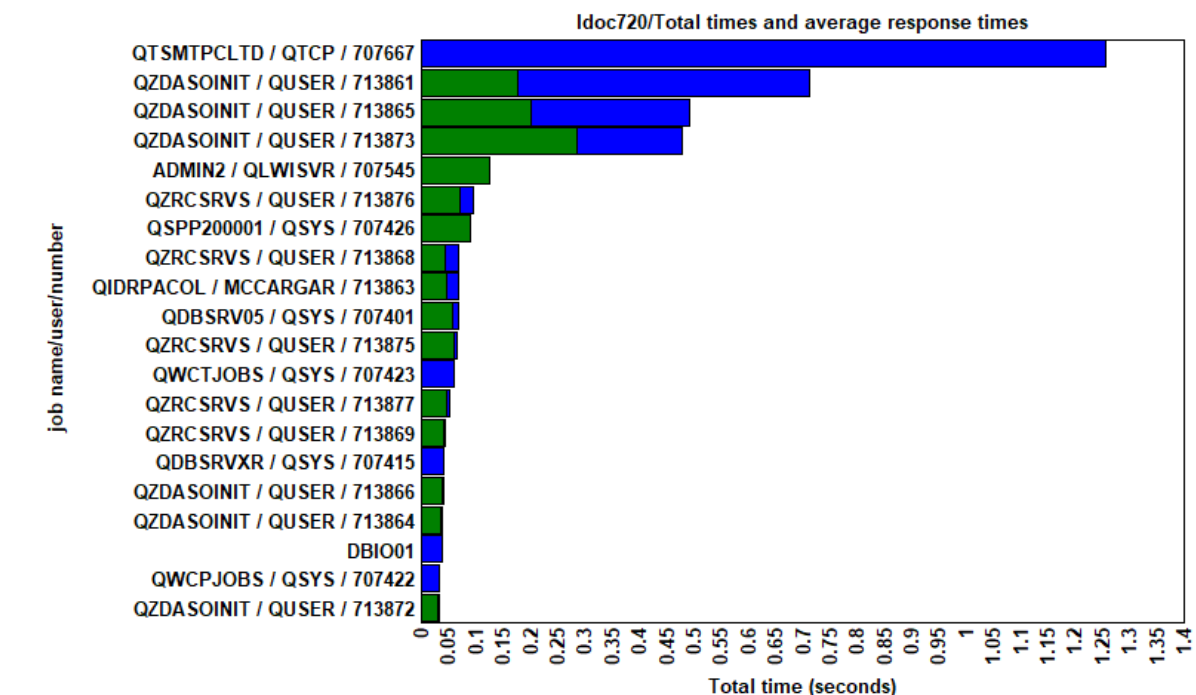
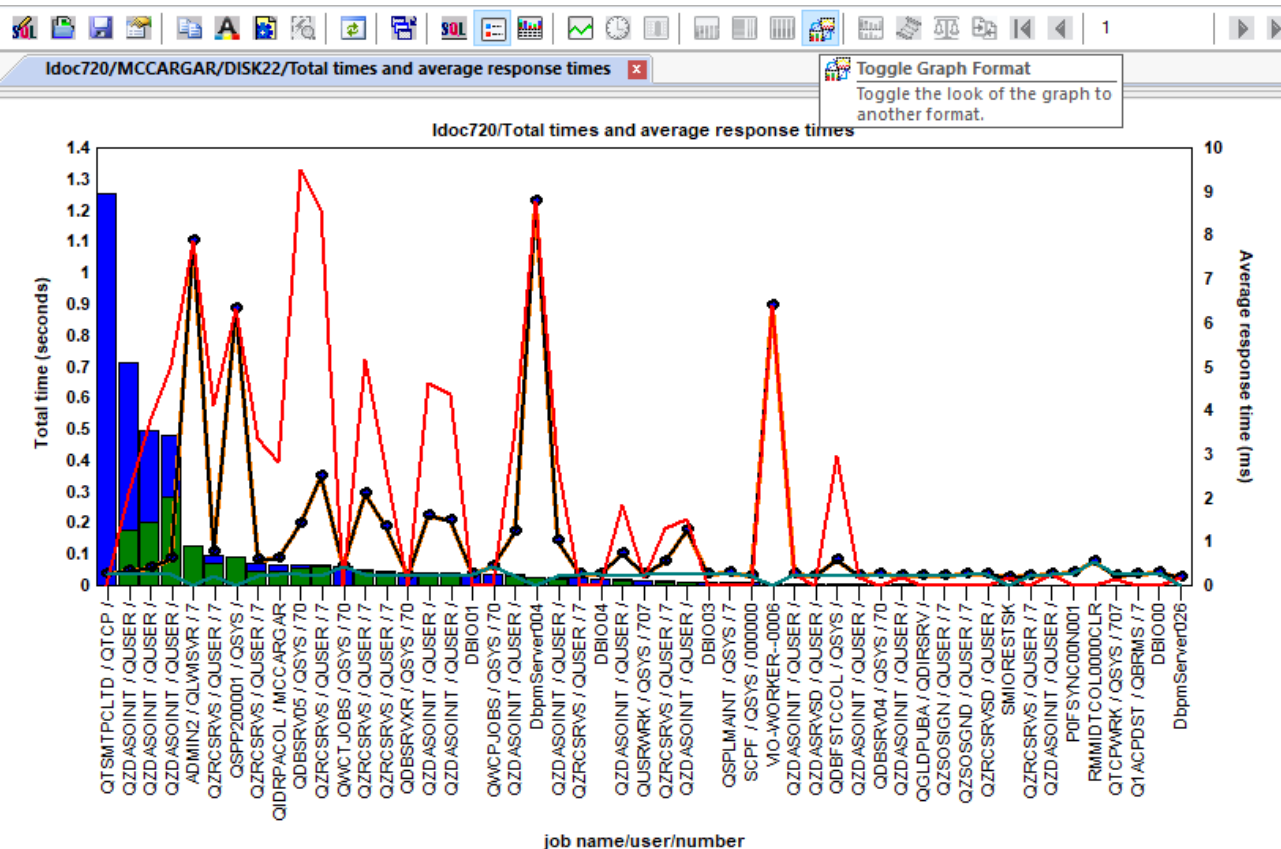
Oct 2018 (1334) – Multiple column sort from graph legend

- Sort option from graph legend now supports multiple columns. Use this to reorder the data based on the summation of the columns you have selected.



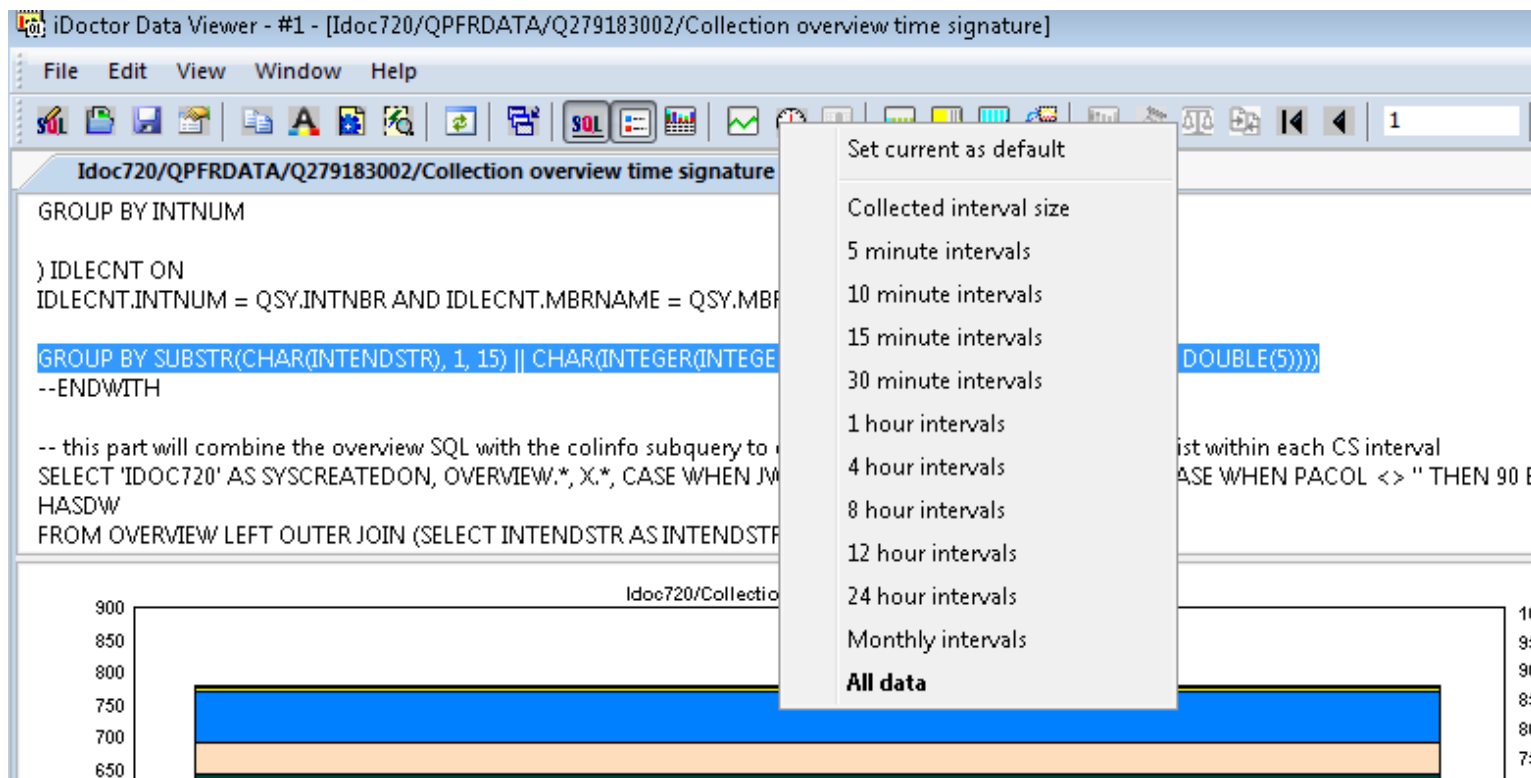
Oct 2018 (1333) – Toggle graph format button

- Button on toolbar can now be used to quickly convert ranking graphs from vertical to horizontal bars and vice versa.



Oct 2018 (1333) – Clock icon use did not change SQL statement

- Using the clock icon on a graph to change the time grouping and then viewing the SQL statement, would not show the correct/updated SQL statement and has been fixed.



The screenshot shows the iDoctor Data Viewer interface. The top window title is "iDoctor Data Viewer - #1 - [Idoc720/QPFRDATA/Q279183002/Collection overview time signature]". The menu bar includes File, Edit, View, Window, and Help. The toolbar contains various icons, including a clock icon. The main area displays the following SQL statement:

```

GROUP BY INTNUM
) IDLECNT ON
IDLECNT.INTNUM = QSY.INTNBR AND IDLECNT.MBRNAME = QSY.MBR
GROUP BY SUBSTR(CHAR(INTENDSTR), 1, 15) || CHAR(INTEGER(INTEGE
--ENDWITH

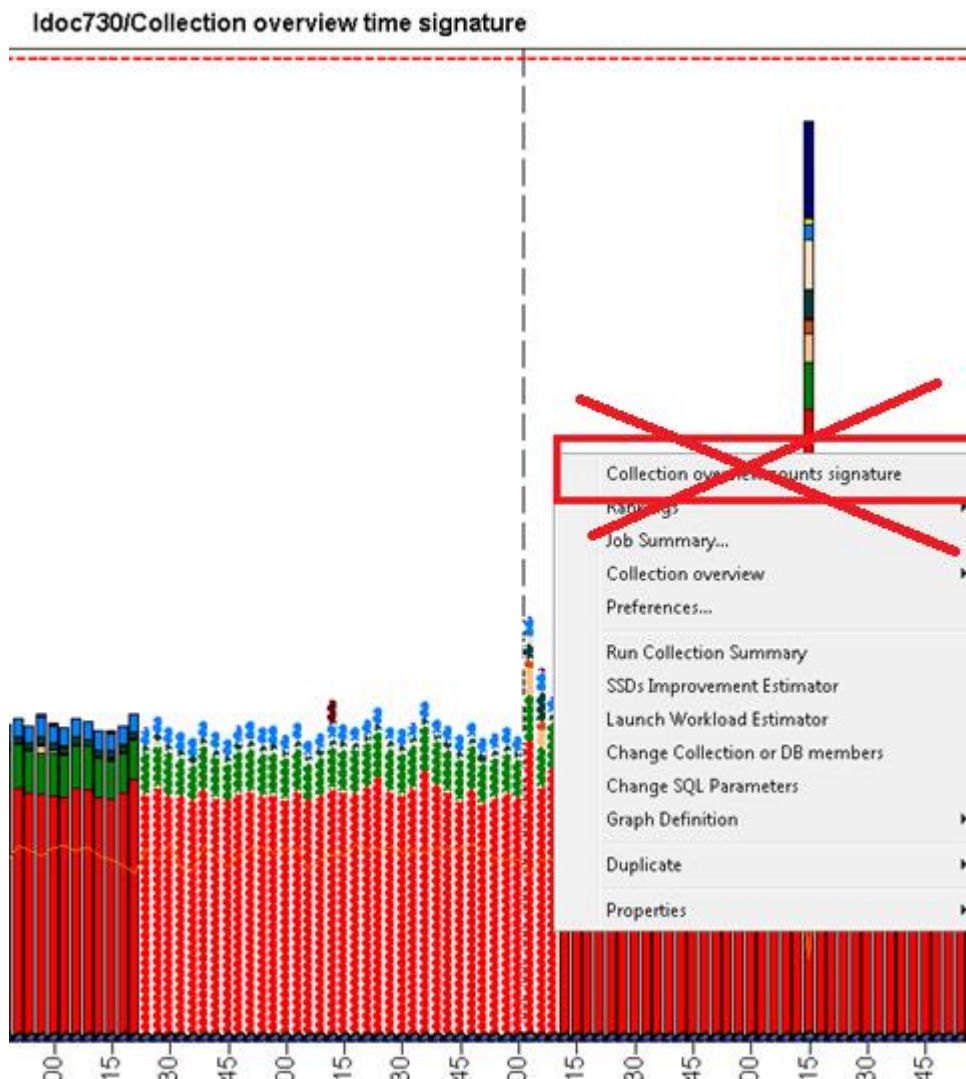
-- this part will combine the overview SQL with the colinfo subquery to
SELECT 'IDOC720' AS SYSCREATEDON, OVERVIEW.*, X.*, CASE WHEN JW
HASDW
FROM OVERVIEW LEFT OUTER JOIN (SELECT INTENDSTR AS INTENDSTR

```

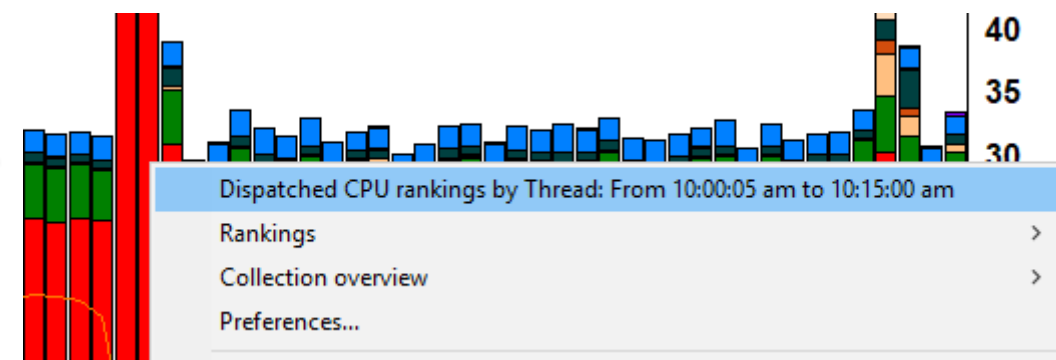
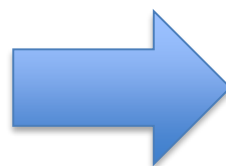
Below the SQL statement is a graph titled "Idoc720/Collection". The graph shows a blue bar chart with a y-axis ranging from 650 to 900. A context menu is open over the graph, listing the following options:

- Set current as default
- Collected interval size
- 5 minute intervals
- 10 minute intervals
- 15 minute intervals
- 30 minute intervals
- 1 hour intervals
- 4 hour intervals
- 8 hour intervals
- 12 hour intervals
- 24 hour intervals
- Monthly intervals
- All data

Oct 2018 (1333) – CSI default drill down not showing up



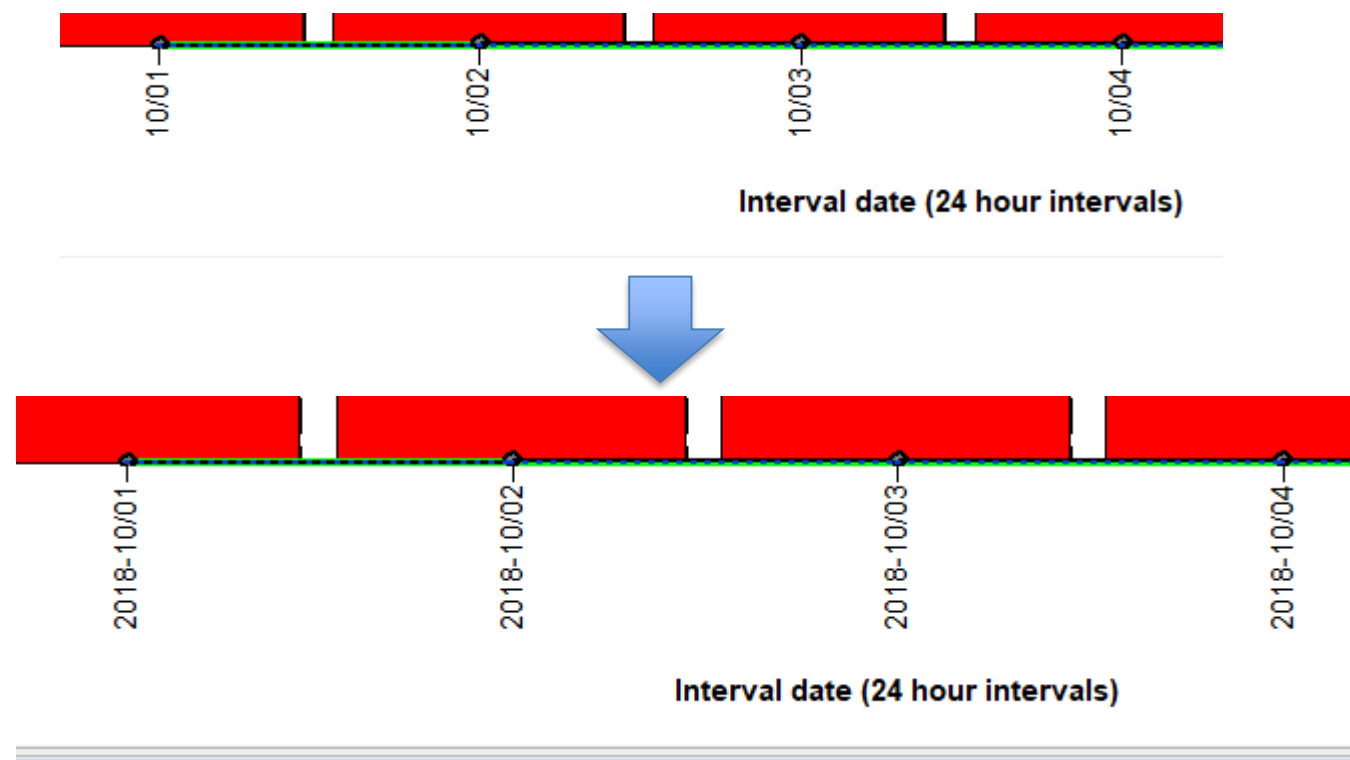
- When drilling down from the Collection overview time signature graph (with 1332), fixed an issue where the default drill down option would appear as the "Collection overview counts signature" graph instead of the Dispatched CPU wait bucket rankings by thread graph.



Oct 2018 (1333) – Time groupings will now show YYYY-MM-DD format

- In all iDoctor time-based graphs that support use of the clock icon, the following 3 groupings will now always show the year month and day in the label on the X-axis. (YYYY-MM/DD format)

24 hour intervals
 Monthly intervals
 All data



Oct 2018 (1333) – On IBM i the nmon import procedure no longer worked

- The nmon import stored procedure on IBM i no longer worked on some systems due to apparent changes to SQL syntax and use of SQL reserved words.

```

10/04/18 16:43:03 Ctcprf72 10/04/18 16:43:03: File sent successfully (22 seconds) put C:\nmon\Charlie\test.nmon /tmp/test.nmon
10/04/18 16:45:03 Ctcprf72 SQL0199 - Keyword PAGE not expected. Valid token> QSYS/RUNSQL SQL('Call qidrgui/QIDRNMADB2 ("MCCARGAR", "C001", 0, "/t
10/04/18 16:47:11 Ctcprf72 10/04/18 16:47:11: File sent successfully ( 28 seconds) put C:\nmon\Charlie\test.nmon /tmp/test.nmon

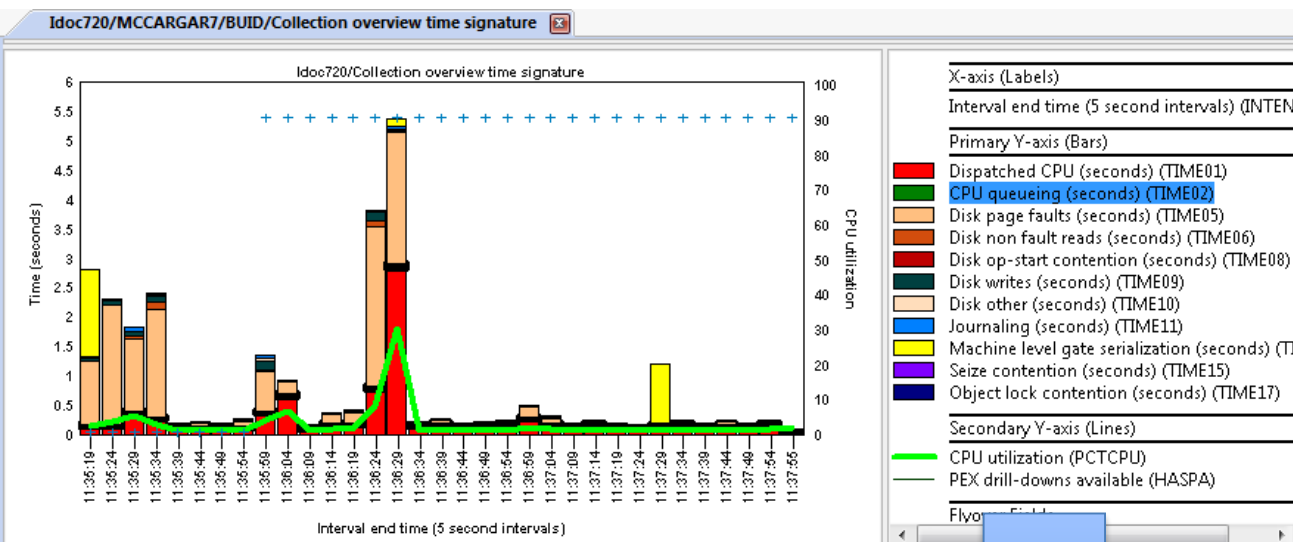
```

- Also corrected an issue where the GUI would incorrectly load the 6.1 version instead of the 7.1 version of the stored procedure on 7.1+ systems.

Oct 2018 (1333) – QMGTOOLS install change

- When installing QMGTOOLS, updated the installation so the QMGTOOLS library SAVF is transferred BEFORE clearing the QMGTOOLS library, just in case it fails to FTP.

Oct 2018 (1333) – Y2 field changes in JW graphs



Added extra fields to the Y2 axis whether or not collection summary analysis done.

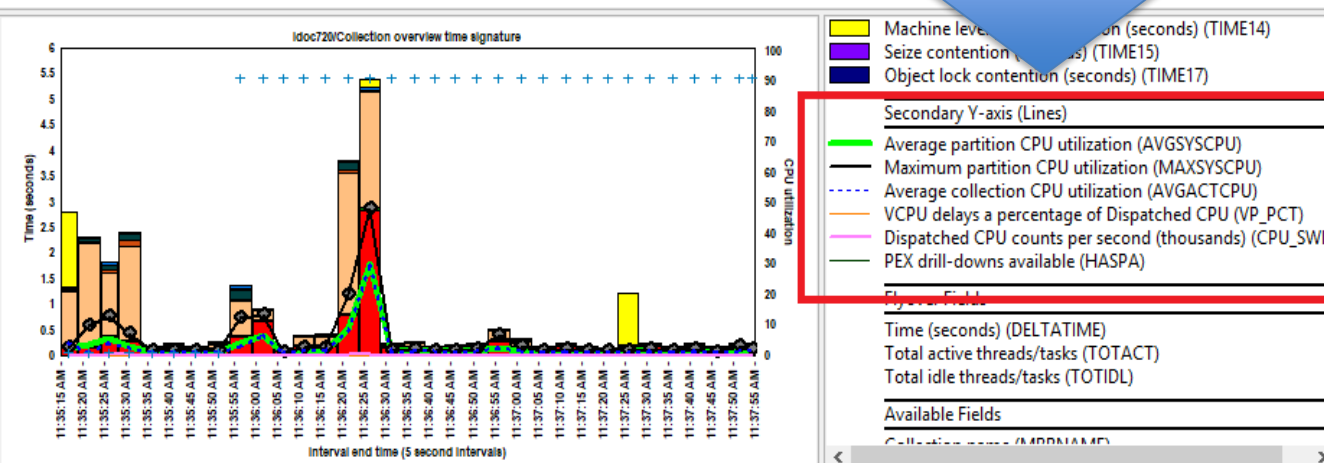
AVGSYSCPU - average system CPU utilization

MAXSYSCPU - maximum interval average system CPU utilization

AVGACTCPU - average collected CPU utilization

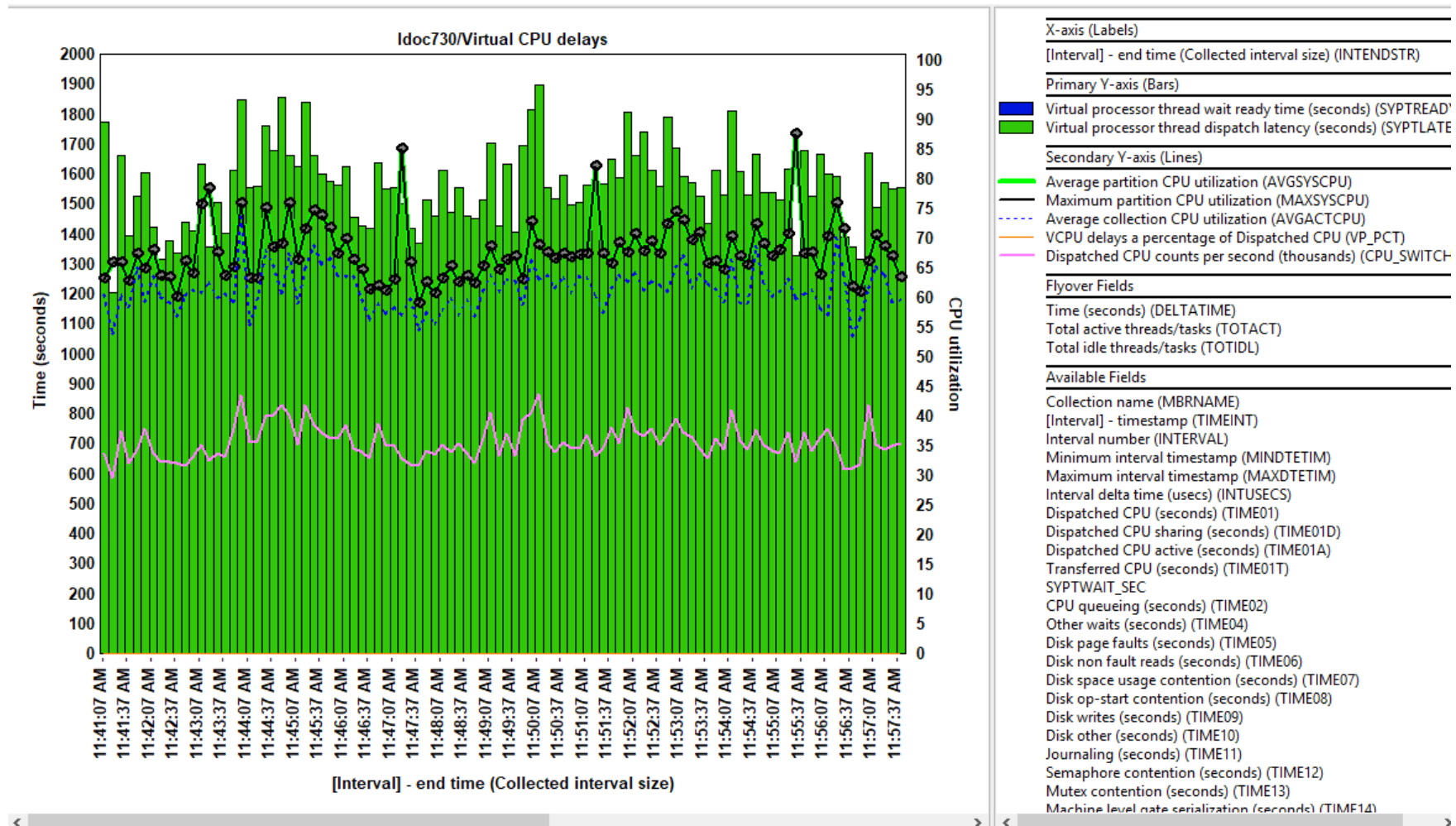
VP_PCT - VCPU delays as a percentage of dispatched CPU

CPU_SWITCH - Dispatched CPU counts per second (thousands)



Oct 2018 (1333) – Added Virtual CPU delay graph to JW

- At 7.1+ added the Virtual CPU delays graph to Job Watcher in the Wait graphs folder.

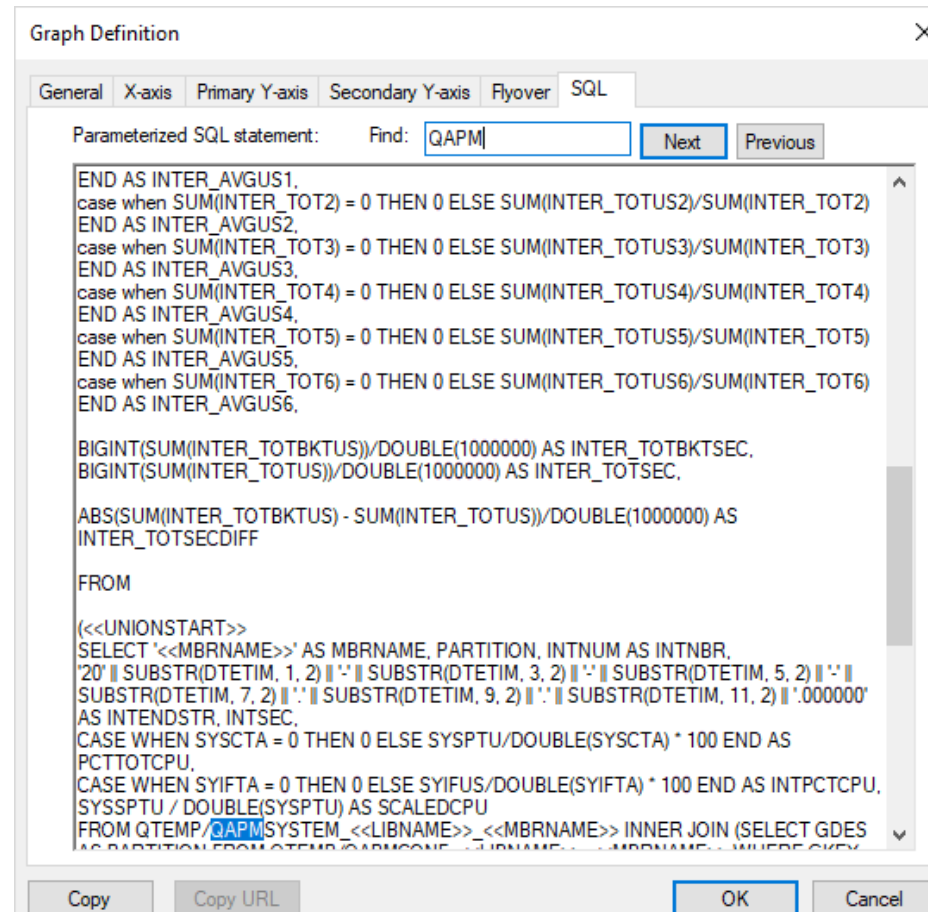


Oct 2018 (1333) – New google search options

- Added support to do a google search from the following locations in iDoctor:
 1. From the graph legend by right-clicking on a field description (and short name).
 2. From the table below a graph by right-clicking on a column header. 2 options are given: search on the the field description (and short name) or search on the value last selected in the table in the curent column.
 3. From any table in the Data Viewer you can right-click, any column header or cell value and do a search in the same ways as #2 above.

Oct 2018 (1332) – Find option – SQL tab

- In the SQL tab of a report definition's properties (either from graph search or user-defined reports), a new Find (text) option has been added to let you find something of interest in the SQL statement.

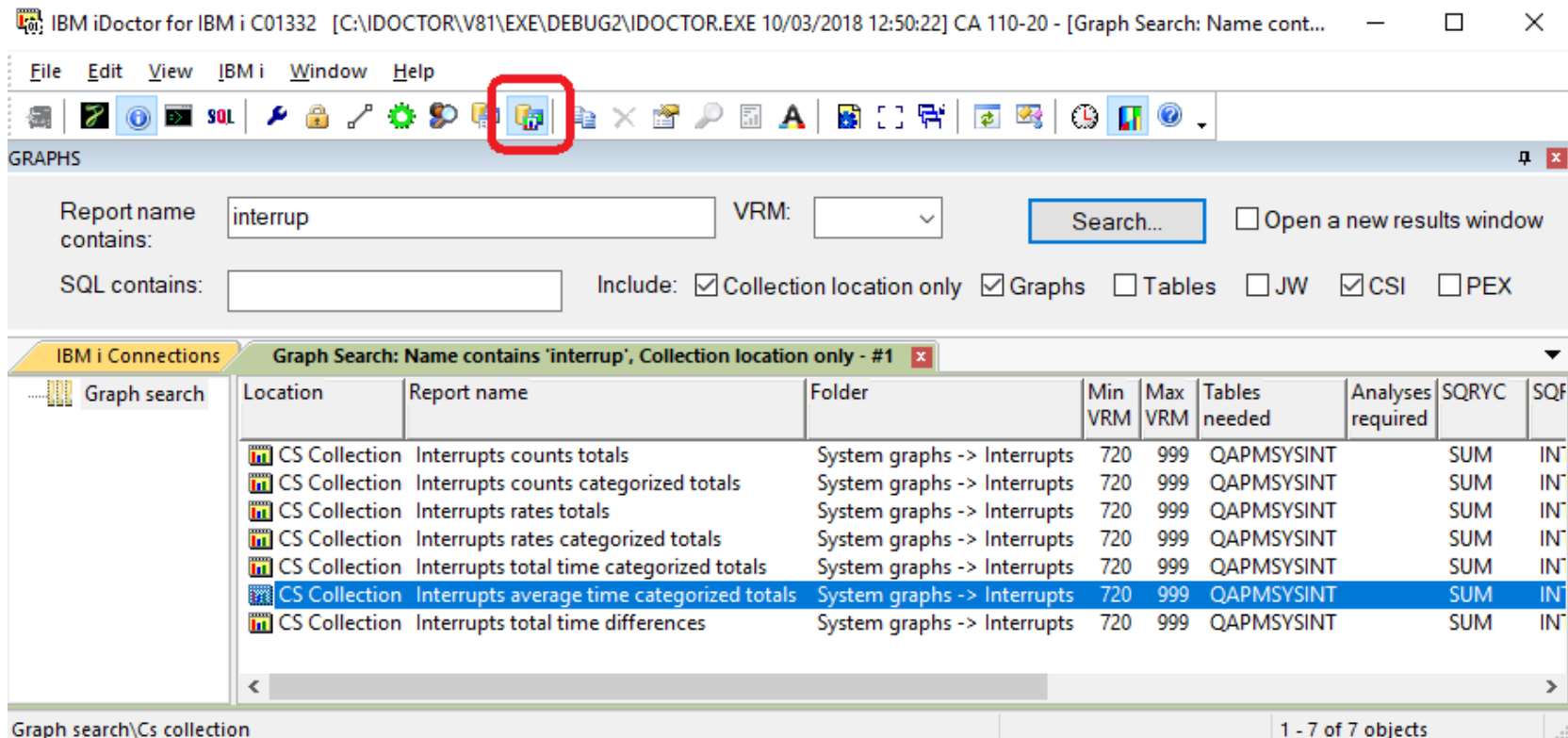


Oct 2018 (1332) – Graph search pane fixes

- Opening, closing and reopening the graph search pane would crash the GUI.
- Double-clicking graph search results was not showing the properties correctly.
- Gave the graph search results a proper title for the Pane/Tab including the values used on the search (if any)
- Updated the graph search results for CSI graphs related to TLBIEs, Interrupts and Fragmentation (free space map) to include PTFs needed in the Comments column.

Oct 2018 (1331) – Graph search pane

- Added a graph search function /pane that lets you browse the iDoctor report databases for reports of interest in the IBM i components CSI, Job Watcher and PEX Analyzer.
- This tells you required files, analyses, PTFs and VRMs needed in order for the report to appear and/or show data.



IBM iDoctor for IBM i C01332 [C:\IDOCTOR\W81\EXE\DEBUG2\IDOCTOR.EXE 10/03/2018 12:50:22] CA 110-20 - [Graph Search: Name cont...

File Edit View IBM i Window Help

Report name contains: VRM: Search... Open a new results window

SQL contains: Include: Collection location only Graphs Tables JW CSI PEX

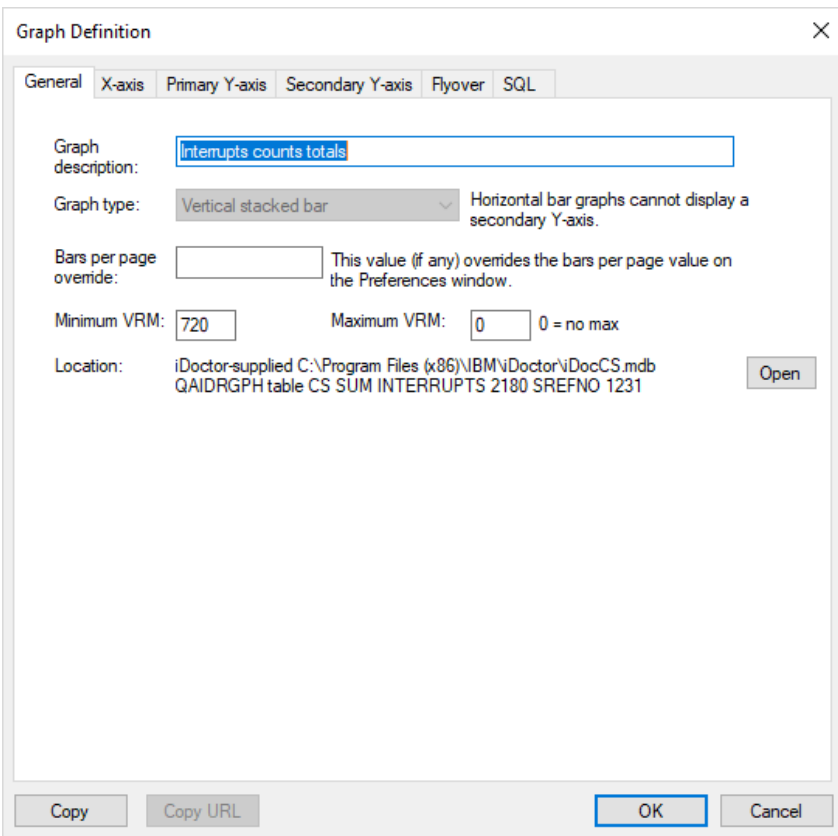
IBM i Connections Graph Search: Name contains 'interrup', Collection location only - #1

Location	Report name	Folder	Min VRM	Max VRM	Tables needed	Analyses required	SQRYC	SQF
CS Collection	Interrupts counts totals	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	
CS Collection	Interrupts counts categorized totals	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	
CS Collection	Interrupts rates totals	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	
CS Collection	Interrupts rates categorized totals	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	
CS Collection	Interrupts total time categorized totals	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	
CS Collection	Interrupts average time categorized totals	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	
CS Collection	Interrupts total time differences	System graphs -> Interrupts	720	999	QAPMSYSINT	SUM	IN	

Graph search\Cs collection 1 - 7 of 7 objects

Oct 2018 (1331) – Graph search pane (continued)

- When viewing the properties by double-clicking one of the results you can view the graph settings used as well as the parameterized SQL statement for the report.
- Note:** The properties interface is read only.



Graph Definition

General X-axis Primary Y-axis Secondary Y-axis Flyover SQL

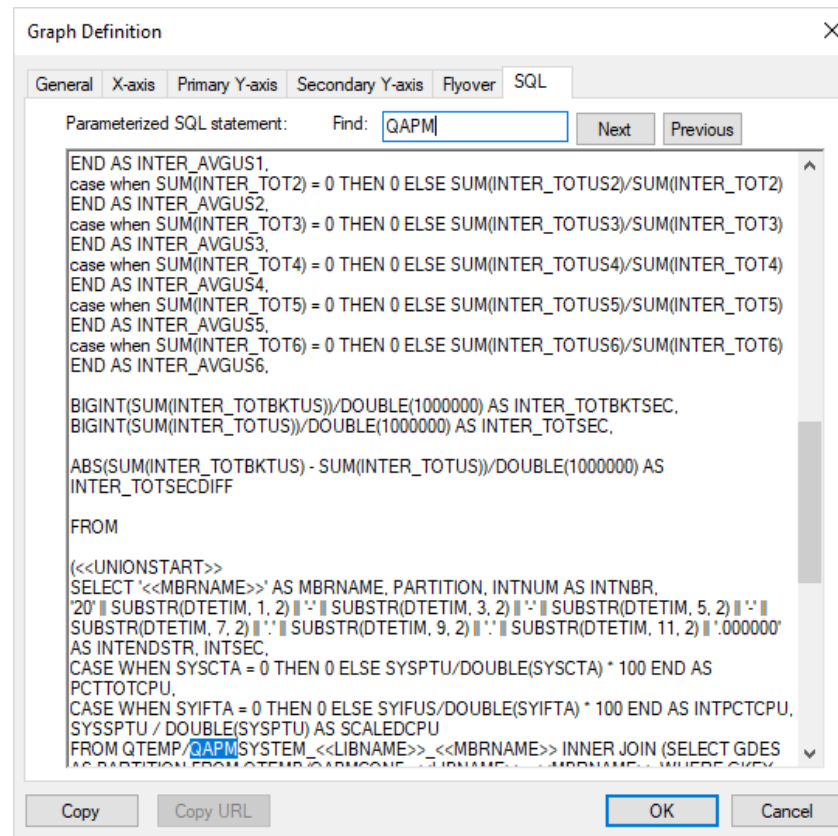
Graph description:

Graph type: Horizontal bar graphs cannot display a secondary Y-axis.

Bars per page override: This value (if any) overrides the bars per page value on the Preferences window.

Minimum VRM: Maximum VRM: 0 = no max

Location:



Graph Definition

General X-axis Primary Y-axis Secondary Y-axis Flyover SQL

Parameterized SQL statement: Find:

```

END AS INTER_AVGUS1,
case when SUM(INTER_TOT2) = 0 THEN 0 ELSE SUM(INTER_TOTUS2)/SUM(INTER_TOT2)
END AS INTER_AVGUS2,
case when SUM(INTER_TOT3) = 0 THEN 0 ELSE SUM(INTER_TOTUS3)/SUM(INTER_TOT3)
END AS INTER_AVGUS3,
case when SUM(INTER_TOT4) = 0 THEN 0 ELSE SUM(INTER_TOTUS4)/SUM(INTER_TOT4)
END AS INTER_AVGUS4,
case when SUM(INTER_TOT5) = 0 THEN 0 ELSE SUM(INTER_TOTUS5)/SUM(INTER_TOT5)
END AS INTER_AVGUS5,
case when SUM(INTER_TOT6) = 0 THEN 0 ELSE SUM(INTER_TOTUS6)/SUM(INTER_TOT6)
END AS INTER_AVGUS6,

BIGINT(SUM(INTER_TOTBKTUS))/DOUBLE(1000000) AS INTER_TOTBKTSEC,
BIGINT(SUM(INTER_TOTUS))/DOUBLE(1000000) AS INTER_TOTSEC,

ABS(SUM(INTER_TOTBKTUS) - SUM(INTER_TOTUS))/DOUBLE(1000000) AS
INTER_TOTSECDIFF

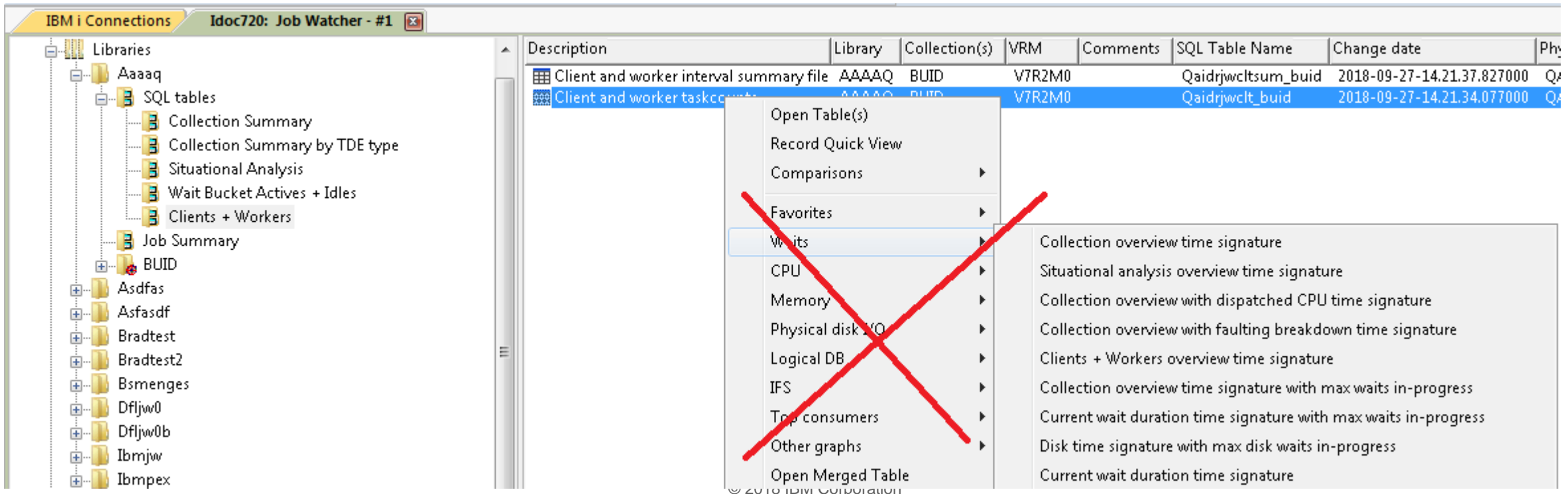
FROM

(<<UNIONSTART>>
SELECT '<<MBRNAME>>' AS MBRNAME, PARTITION, INTNUM AS INTNBR,
'20' || SUBSTR(DTETIM, 1, 2) || ':' || SUBSTR(DTETIM, 3, 2) || ':' || SUBSTR(DTETIM, 5, 2) || ':' ||
SUBSTR(DTETIM, 7, 2) || ':' || SUBSTR(DTETIM, 9, 2) || ':' || SUBSTR(DTETIM, 11, 2) || '.000000'
AS INTENDSTR, INTSEC,
CASE WHEN SYSCTA = 0 THEN 0 ELSE SYSPTU/DOUBLE(SYSCTA) * 100 END AS
PCTTOTCPU,
CASE WHEN SYIFTA = 0 THEN 0 ELSE SYIFUS/DOUBLE(SYIFTA) * 100 END AS INTPCTCPU,
SYSSPTU / DOUBLE(SYSPTU) AS SCALEDCPU
FROM QTEMP/QAPM$SYSTEM <<LIBNAME>> <<MBRNAME>> INNER JOIN (SELECT GDES
AS PARTITION FROM QTEMP/QAPM$CONF <<LIBNAME>> <<MBRNAME>> WHERE GKEY

```

Oct 2018 (1331) – JW - Most drill downs via SQL tables removed.

- In JW, removed graph drill down support previously found when right-clicking individual SQL tables except ones related to the Job Summary analysis.
 - These did not work in most cases and in some cases did not make sense to appear. This includes subfolders like "Collection Summary, Call Stack Summary, Long Transactions", etc.



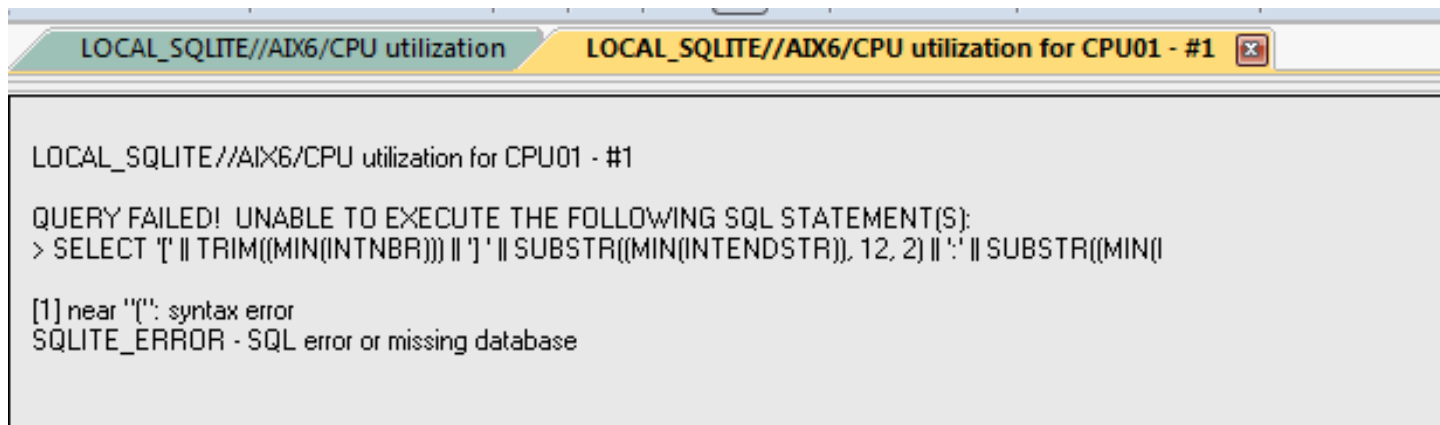
The screenshot shows the IBM i Connections Job Watcher interface. On the left, a tree view shows the 'Libraries' structure, including 'SQL tables' and 'Job Summary'. The main pane displays a table of SQL tables with columns: Description, Library, Collection(s), VRM, Comments, SQL Table Name, and Change date. Two rows are visible, both related to 'Client and worker task counts'.

Description	Library	Collection(s)	VRM	Comments	SQL Table Name	Change date	Phy
Client and worker interval summary file	AAAAQ	BUID	V7R2M0		Qaidrjwcltsum_buid	2018-09-27-14.21.37.827000	QA
Client and worker task counts	AAAAQ	BUID	V7R2M0		Qaidrjwclt_buid	2018-09-27-14.21.34.077000	QA

A context menu is open over the second row, listing various actions. A large red 'X' is drawn over the menu, indicating that these actions are removed or disabled. The menu items include: Open Table(s), Record Quick View, Comparisons, Favorites, Waits, CPU, Memory, Physical disk I/O, Logical DB, IFS, Top consumers, Other graphs, and Open Merged Table. A secondary menu is also visible, listing various time signature options like 'Collection overview time signature', 'Situational analysis overview time signature', etc.

Oct 2018 (1331) – NMON – SQLite – CPU utilization graph

- Corrected SQL errors with the nmon graph CPU utilization for <CPU #N> when using SQLite as the analysis database.



```

LOCAL_SQLITE//AIX6/CPU utilization for CPU01 - #1
LOCAL_SQLITE//AIX6/CPU utilization for CPU01 - #1
LOCAL_SQLITE//AIX6/CPU utilization for CPU01 - #1
QUERY FAILED! UNABLE TO EXECUTE THE FOLLOWING SQL STATEMENT(S):
> SELECT '(' || TRIM((MIN(INTNBR))) || ')' || SUBSTR((MIN(INTENDSTR)), 12, 2) || ':' || SUBSTR((MIN(I
[1] near "(": syntax error
SQLITE_ERROR - SQL error or missing database
  
```

Oct 2018 (1331) – NMON – SQLite – Delete collection issues

- Fixed an issue when using nmon and SQLite as the analysis database. Deleting collections created using the Merge option would not delete all files in the collection. This causes the user to be unable to create new collections (using the merge option) with the same name.
- When deleting nmon collections created using SQLite as the analysis database, improved the error handling and process in the remote command status view.

If any file cannot be deleted this will be listed in the results column (and history log). Previously the GUI would indicate the delete was successful when certain files may not have been deleted.

Oct 2018 (1331) – JW – Holder chase broken at 7.4

- In JW, the Holder chase drill down sql syntax no longer worked at the next ibm i release due to changes to SQL syntax. Made a work around to handle this.

Oct 2018 (1331) – CSI – CPU utilization with SMT Context

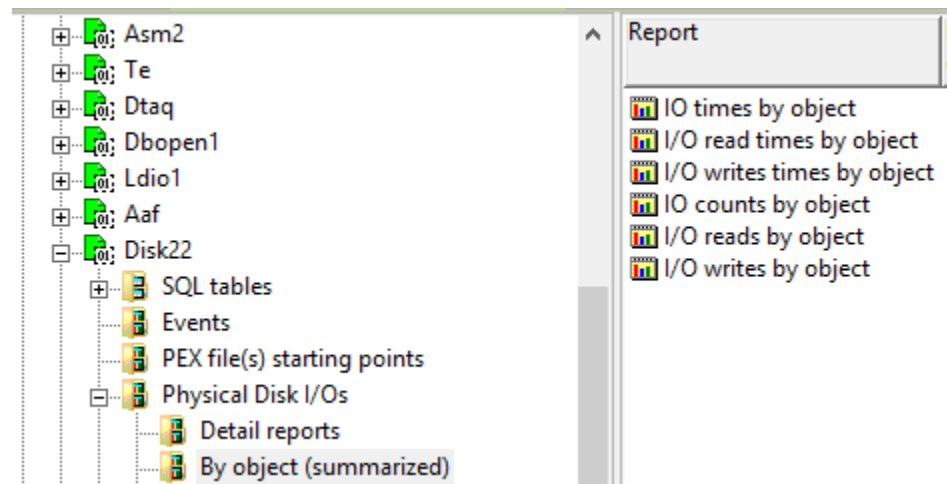
- Fixes for the CPU utilization with SMT Context graph
 1. At 7.1 the calculation for SMT Context was likely incorrect.
 2. At 7.2 the extra fields included in the table for total virtual processors and active virtual processors previously would not be able to exceed 32 and has been fixed so the true values are shown.
 3. Added total virtual processors and active virtual processors to the graph flyover.

Sept 2018 (1330) – CSI – CPU utilization for <XYZ> graphs

- Fixed the SQL statement for the CSI drill down graphs CPU utilization for <XYZ>. When graphing multiple collections the results were incorrect.

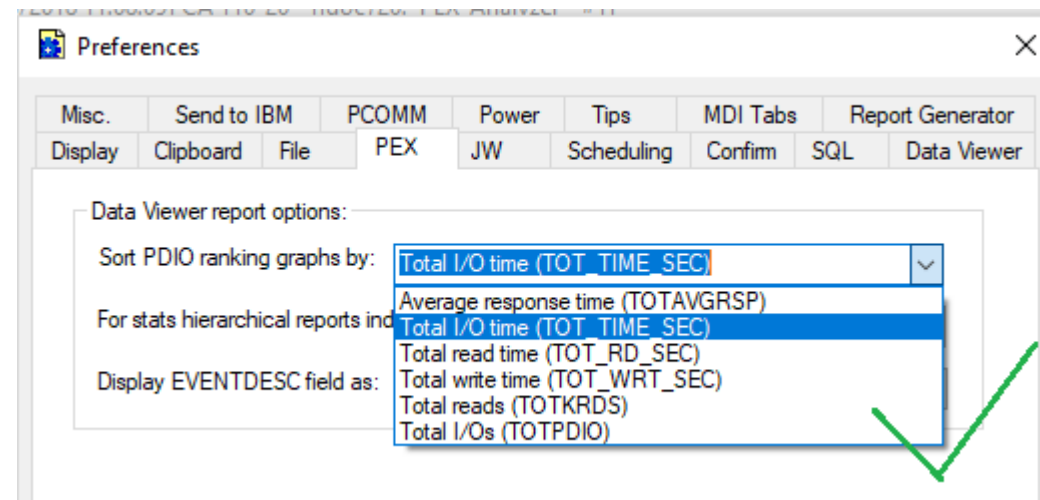
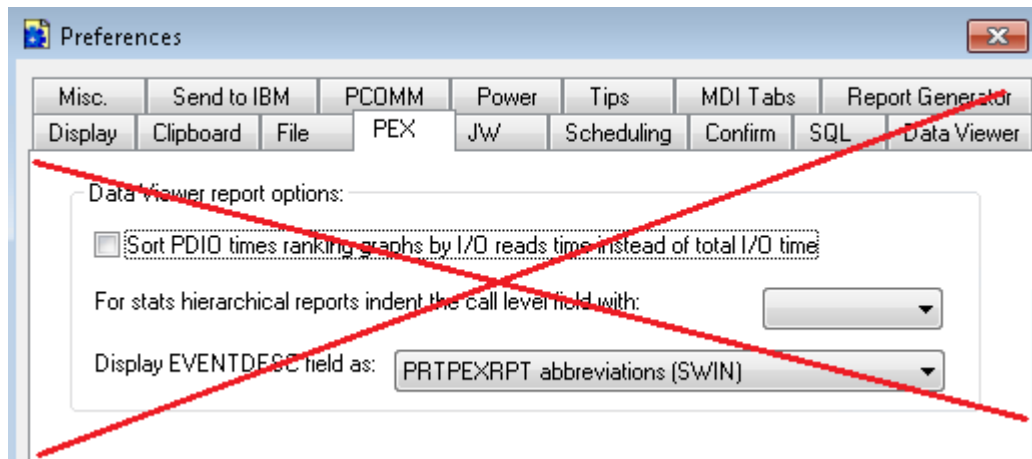
Sept 2018 (1330) – PEX PDIO By objects (summarized) folder back

- By request, the By object (summarized) folder is back and the 6 graphs within it.



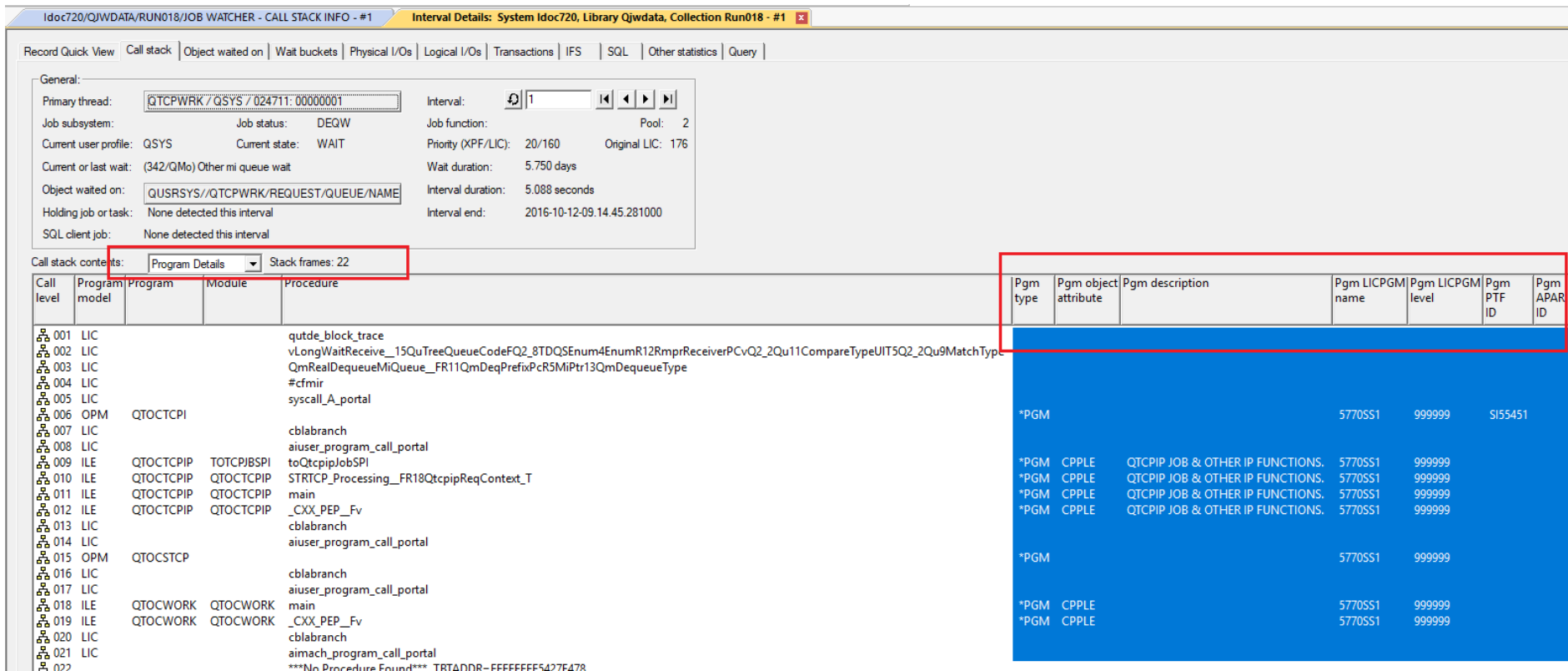
Sept 2018 (1330) – PEX PDIO sort option fixed

- In Preferences -> PEX the Sort PDIO ranking graphs option was broken and has been updated to add several new options (or type in your own choice will work too.)



Sept 2018 (1329) – JW – Call stack – Program details option

- In JW the call stack window now has an option called “Program details” in the drop down list that lets you see many additional details about the programs found in the call stack.
Note: This will only work if the “Retrieve program/module details” analysis has been ran on at least one collection in the library.



The screenshot shows the 'Call stack info' window for a job. The 'Call stack contents' dropdown is set to 'Program Details'. The main table displays the call stack entries, and a secondary table on the right provides detailed program information for each entry.

Call level	Program model	Program	Module	Procedure	Pgm type	Pgm object attribute	Pgm description	Pgm LICPGM name	Pgm LICPGM level	Pgm PTF ID	Pgm APAR ID
001	LIC			qutde_block_trace							
002	LIC			vLongWaitReceive_15QuTreeQueueCodeFQ2_8TDQSEnum4EnumR12RmprReceiverPCvQ2_2Qu11CompareTypeUIT5Q2_2Qu9MatchType							
003	LIC			QmRealDequeueMiQueue_FR11QmDeqPrefixPcR5MiPtr13QmDequeueType							
004	LIC			#cfmir							
005	LIC			syscall_A_portal							
006	OPM	QTOCTCPI			*PGM			5770SS1	999999		S155451
007	LIC			cblabbranch							
008	LIC			aiuser_program_call_portal							
009	ILE	QTOCTCPIP	TOTCPJBSP1	toQtcpipJobSPI	*PGM	CPPLE	QTCPIP JOB & OTHER IP FUNCTIONS.	5770SS1	999999		
010	ILE	QTOCTCPIP	QTOCTCPIP	STRTCP_Processing_FR18QtcpipReqContext_T	*PGM	CPPLE	QTCPIP JOB & OTHER IP FUNCTIONS.	5770SS1	999999		
011	ILE	QTOCTCPIP	QTOCTCPIP	main	*PGM	CPPLE	QTCPIP JOB & OTHER IP FUNCTIONS.	5770SS1	999999		
012	ILE	QTOCTCPIP	QTOCTCPIP	_CXX_PEP_Fv	*PGM	CPPLE	QTCPIP JOB & OTHER IP FUNCTIONS.	5770SS1	999999		
013	LIC			cblabbranch							
014	LIC			aiuser_program_call_portal							
015	OPM	QTOCSTCP			*PGM			5770SS1	999999		
016	LIC			cblabbranch							
017	LIC			aiuser_program_call_portal							
018	ILE	QTOCWORK	QTOCWORK	main	*PGM	CPPLE	QTCPIP JOB & OTHER IP FUNCTIONS.	5770SS1	999999		
019	ILE	QTOCWORK	QTOCWORK	_CXX_PEP_Fv	*PGM	CPPLE	QTCPIP JOB & OTHER IP FUNCTIONS.	5770SS1	999999		
020	LIC			cblabbranch							
021	LIC			aimach_program_call_portal							
022	LIC			***No Procedure Found*** TRTADDR-FFFFFFFF5427E478							

Sept 2018 (1329) – JW – Retrieve program/module details analysis

- In JW renamed the analysis "Retrieve program/module information" to "Retrieve program/module details". This was done to provide consistency with the new "Program details" option on the JW call stack.

Current or last wait:		(342/QMo) Other mi queue wait		Wait dur
Object waited on:		QUSRSYS//QTCPWRK/REQUEST/QUEUE/NAME		Interval c
Holding job or task:		None detected this interval		Interval e
SQL client job:		None detected this interval		
Call stack contents:		Program Details	Stack frames: 22	
Call level	Program model	Program	Module	Procedure
001	LIC			qutde_block_trace
002	LIC			vLongWaitReceive_15QuTreeQuer

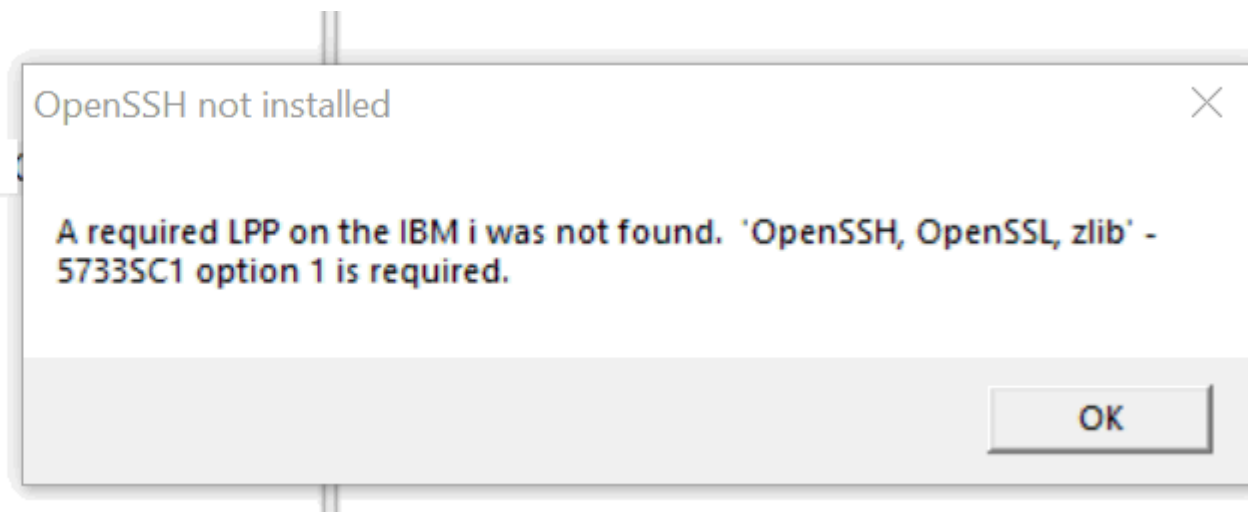
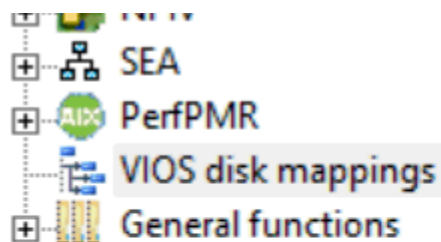
Sept 2018 (1329) – JW – New call stack reports options

- When drilling down from a call stack on a single entry, added two new options:
 - Program details
 - Module details

Note: This provides additional information about the program or module selected in the call stack.

Sept 2018 (1329) – Power Connections – Create Disk Mapping Check

- When running the Create Disk Mapping function the check for OpenSSH has changed so it should now work with any version installed on the IBM i. Previously it would fail if the version of OpenSSH installed did not match the version of IBM i.



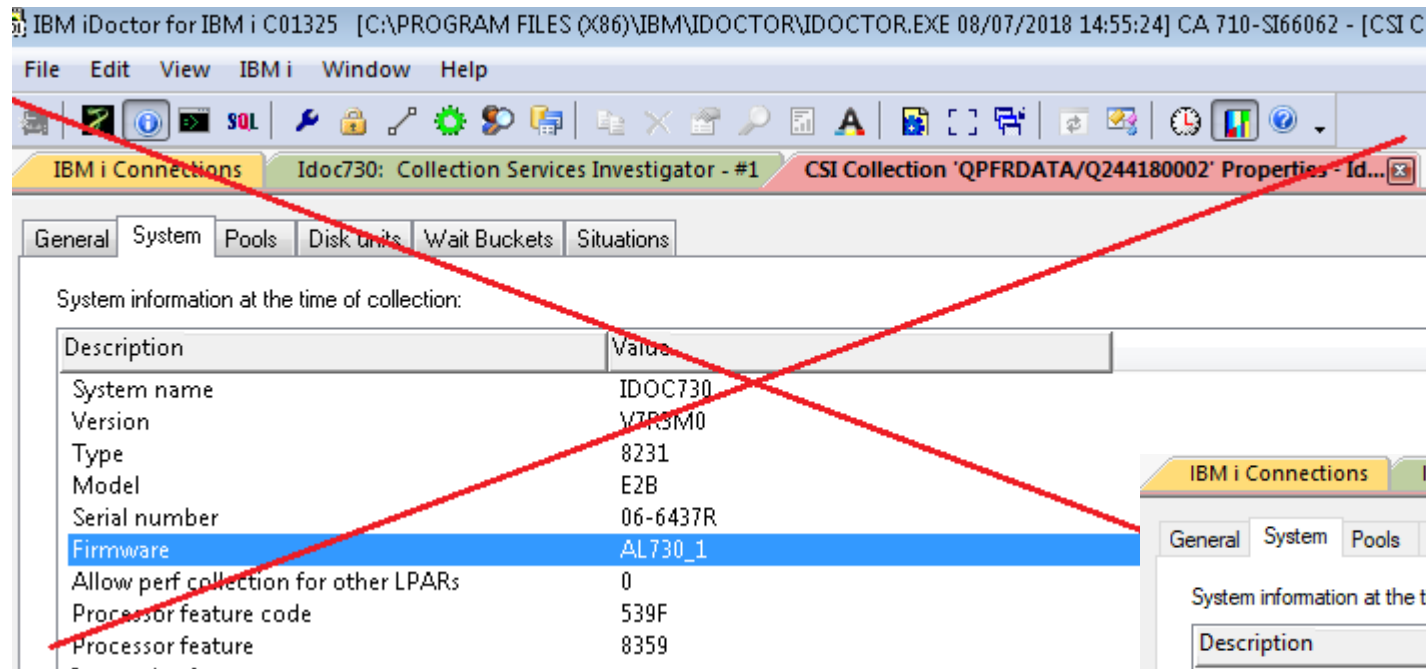
Sept 2018 (1329) – Power Connections – Create Disk Mapping Authentication Failure

- Fixed a timeout issue with the SSH connection used by MkAuthKeys.jar. This is part of the Create Disk Mapping function and would cause the user to think their user/password was incorrect when this wasn't true. The log provided clues to the true reason for the failure.

```
java.net.SocketTimeoutException: Read timed out
java.net.SocketTimeoutException: Read timed out
  at java.net.SocketInputStream.socketRead0(Native Method)
  at java.net.SocketInputStream.socketRead(Unknown Source)
  at java.net.SocketInputStream.read(Unknown Source)
  at java.net.SocketInputStream.read(Unknown Source)
  at trans.Transport.readPacket(Transport.java:290)
  at trans.Transport.read(Transport.java:154)
  at trans.Transport.read(Transport.java:134)
  at ssh.Connection.authenticateUser(Connection.java:606)
  at ssh.Connection.<init>(Connection.java:176)
```


Sept 2018 (1328) – CSI – Firmware truncated in Collection properties

- In CSI the firmware level in the System tab was truncated to 7 characters when it should have been 9.



IBM iDoctor for IBM i C01325 [C:\PROGRAM FILES (X86)\IBM\IDOCTOR\IDOCTOR.EXE 08/07/2018 14:55:24] CA 710-SI66062 - [CSI Co

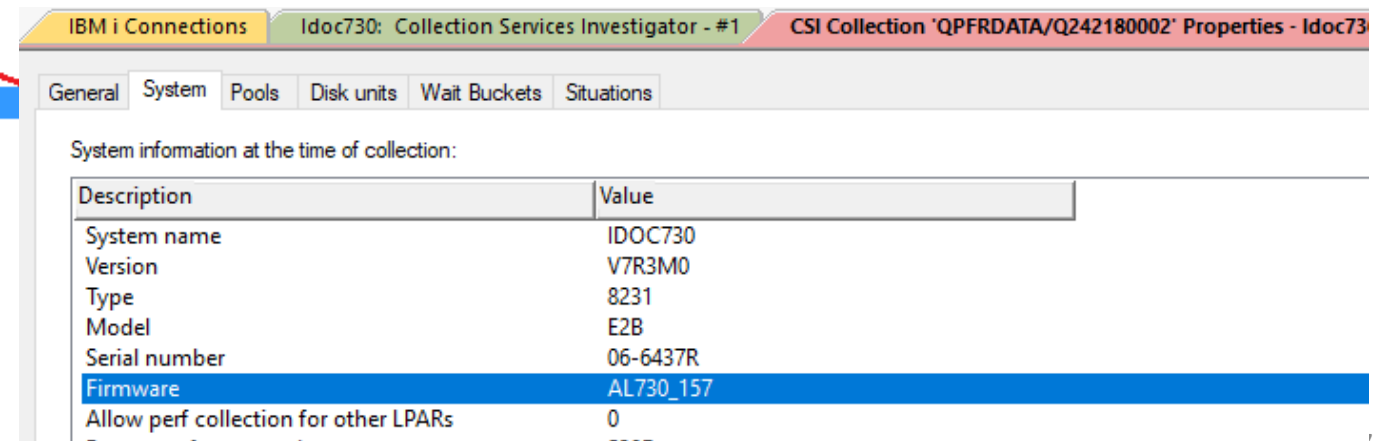
File Edit View IBM i Window Help

IBM i Connections Idoc730: Collection Services Investigator - #1 CSI Collection 'QPFRDATA/Q244180002' Properties - Id...

General System Pools Disk units Wait Buckets Situations

System information at the time of collection:

Description	Value
System name	IDOC730
Version	V7R3M0
Type	8231
Model	E2B
Serial number	06-6437R
Firmware	AL730_1
Allow perf collection for other LPARs	0
Processor feature code	539F
Processor feature	8359



IBM i Connections Idoc730: Collection Services Investigator - #1 CSI Collection 'QPFRDATA/Q242180002' Properties - Idoc73

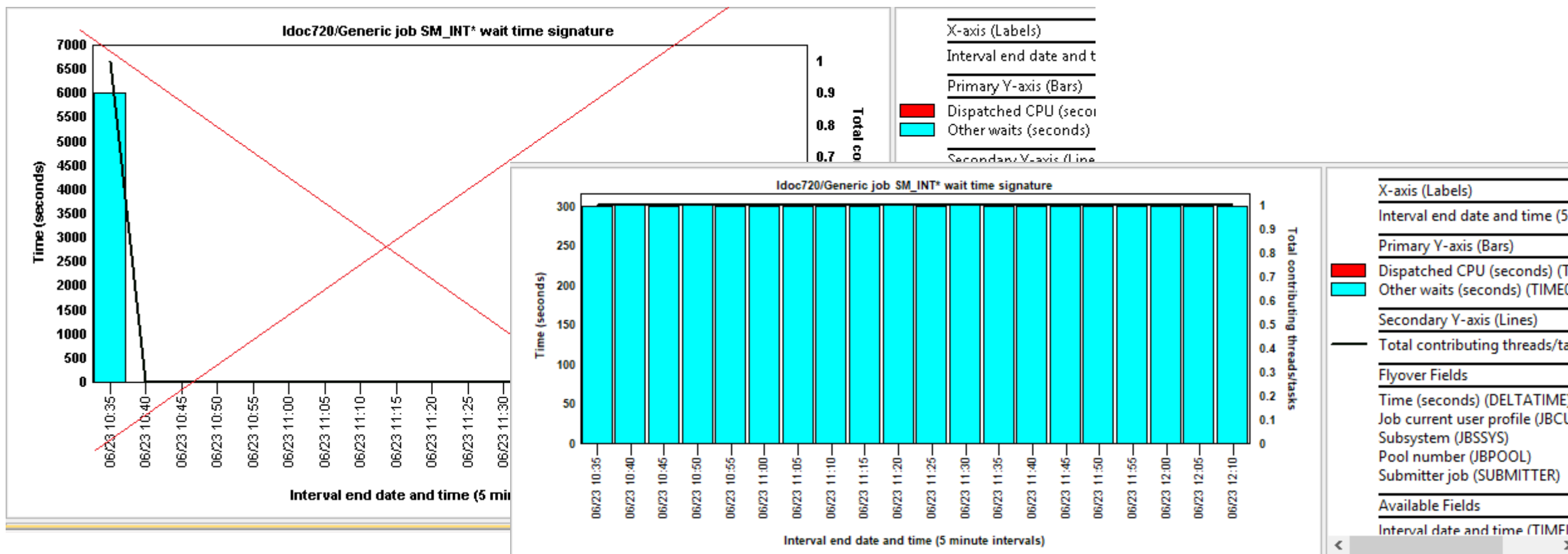
General System Pools Disk units Wait Buckets Situations

System information at the time of collection:

Description	Value
System name	IDOC730
Version	V7R3M0
Type	8231
Model	E2B
Serial number	06-6437R
Firmware	AL730_157
Allow perf collection for other LPARs	0

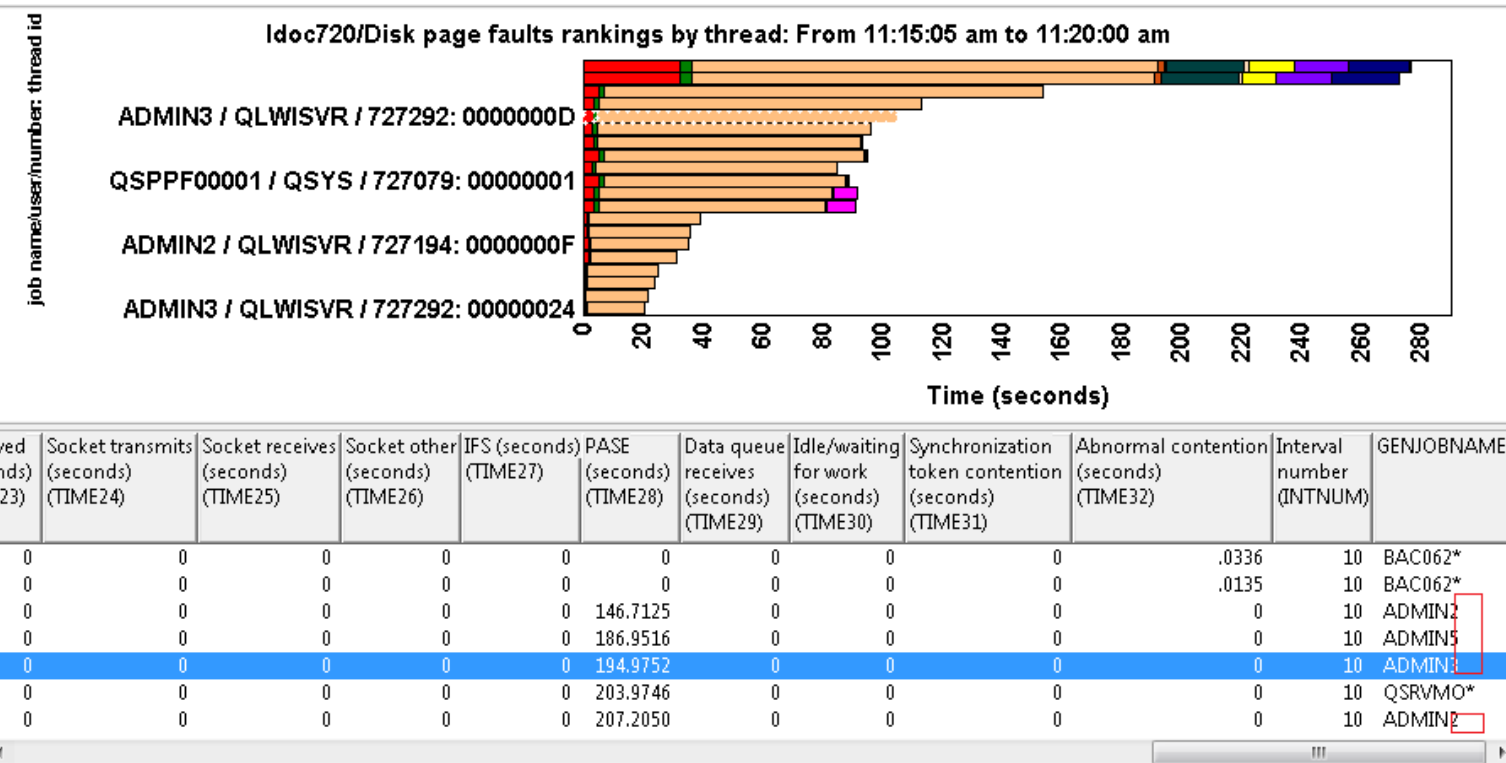
August 2018 (1327) – CSI – Generic job X wait time signature bad data

- In CSI the wait bucket times for the graph Generic job <XYZ> wait time signature were being calculated incorrectly for periods where the jobs were idle and has been fixed.



August 2018 (1327) – CSI – Generic job drill downs broken

- The Generic job drill down graphs would fail to produce any data (in some cases) because the previous SQL statement value for field GENJOBNAME did not contain a '*' at the end of the name if the job name length was the same as the generic job name length preference on the Data Viewer tab.



Preferences

Misc. Send to IBM PCOMM Power Tips MDI Tabs Report Generator
 Display Clipboard File PEX JW Scheduling Confirm SQL Data Viewer

Always open new reports into an existing Data Viewer (if available)

Segregate reports in Data Viewers:
 Never By LPAR names By LPAR names / library name

Maximize reports opened into Data Viewers. Maximize Data Viewers

Auto-refresh reports for active collections every N seconds. (5 - 10000)

Always display (scroll to) new real-time data after an auto-refresh.

Always show dates on time range graph X-axis

Override to collected interval size time groupings on single thread/job over time graphs.

Cache popup menus in memory (experimental, may cause issues)

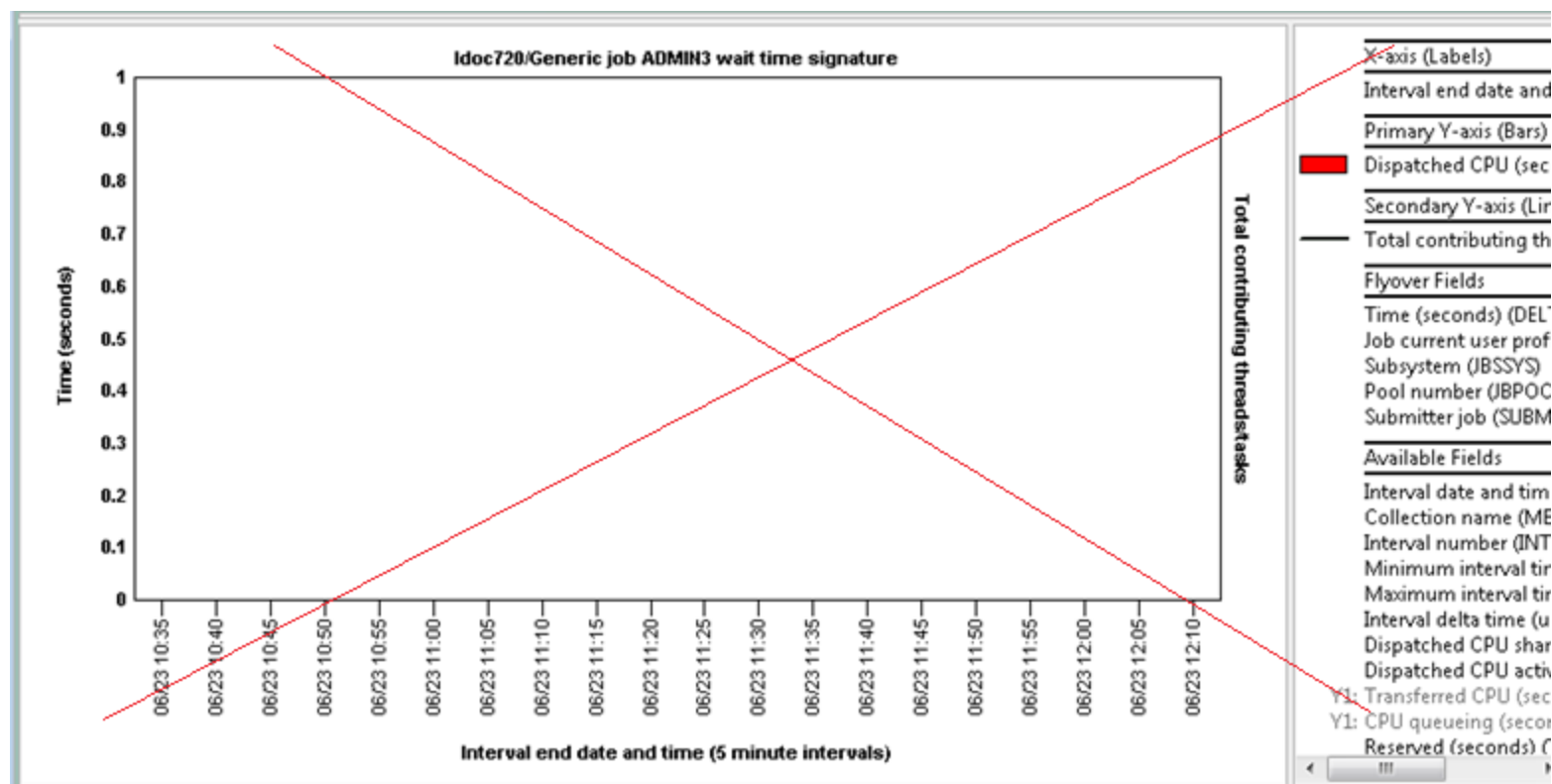
Always sort disk rankings graphs by avg response times

Name length for generic name grouping graphs: Start position:

Call stacks: _____

August 2018 (1327) – CSI – Generic job drill downs broken (page 2)

- The Generic job drill down graphs would fail to produce any data (in some cases) because the previous SQL statement value for field GENJOBNAME did not contain a '*' at the end of the name if the job name length was the same as the generic job name length preference on the Data Viewer tab.



August 2018 (1327) – CSI – Underlines in job names breaking drill downs

- In CSI the generic job for selected thread drill down graphs would return incorrect data if the generic job name selected contains underlines (such as SM_IN)

This fix causes the underlines to be treated correctly which have special meaning in SQL LIKE statements

August 2018 (1327) – CSI – Collection Search underline support

- If the search value contains an underline '_', the search results for job, subsystem or current user did not handle it correctly. More results would be returned than desired.

Search criteria:

Job or task name contains:

Include system tasks

Collection name (MBRNAME)	iDoctor grouping name (OBJNAME)	iDoctor grouping value (OBJVALUE)
Q175102853	AM-ANSMGR	000000000000
Q175102853	BAC0622AA / BSMENGES / 729238: 0000004B	000000000000E
Q175102853	BAC0622AA / BSMENGES / 729238: 0000004B	000000000000E
Q175102853	BAC0622AA / BSMENGES / 729238: 0000004B	000000000000E
Q175102853	BAC0622AA / BSMENGES / 729238: 0000004B	000000000000E
Q175102853	BAC0622AA / BSMENGES / 729238: 0000004B	000000000000E
Q175102853	BAC0622AB / BSMENGES / 729239: 0000002A	000000000000E
Q175102853	BAC0622AB / BSMENGES / 729239: 0000002A	000000000000E
Q175102853	BAC0622AB / BSMENGES / 729239: 0000002A	000000000000E
Q175102853	BAC0622AC / BSMENGES / 729221: 00000064	000000000000E
Q175102853	BAC0622AC / BSMENGES / 729221: 00000064	000000000000E
Q175102853	BAC0622AC / BSMENGES / 729221: 00000064	000000000000E
Q175102853	BAC0622AD / BSMENGES / 729222: 00000004	000000000000E
Q175102853	BAC0622AD / BSMENGES / 729222: 00000004	000000000000E
Q175102853	BAC0622AD / BSMENGES / 729222: 00000004	000000000000E
Q175102853	BAC0622AD / BSMENGES / 729222: 00000004	000000000000E
Q175102853	BAC0622AD / BSMENGES / 729223: 0000000C	000000000000E
Q175102853	BAC0622AD / BSMENGES / 729223: 0000000C	000000000000E

Search criteria:

Job or task name starts with:

Starts with search

Include system tasks

Collection name (MBRNAME)	iDoctor grouping name (OBJNAME)	iDoctor grouping value (OBJVALUE)	Interval number (INTNU)	Interval date time (DTETIM)
Q175102853	SM_INTERFACE_SRC	0000000000000328	1	1606231C

August 2018 (1327) – JW – Collection Search underline support

- If the search value contains an underline '_' , the search results for job, subsystem, current user, call stack (pgm, module, procedure), sql statement, wait object name or J9 call stack procedure did not handle it correctly. More results would be returned than desired.

Search type:

Job or task name

Subsystem

Search criteria:

Job or task name contains:

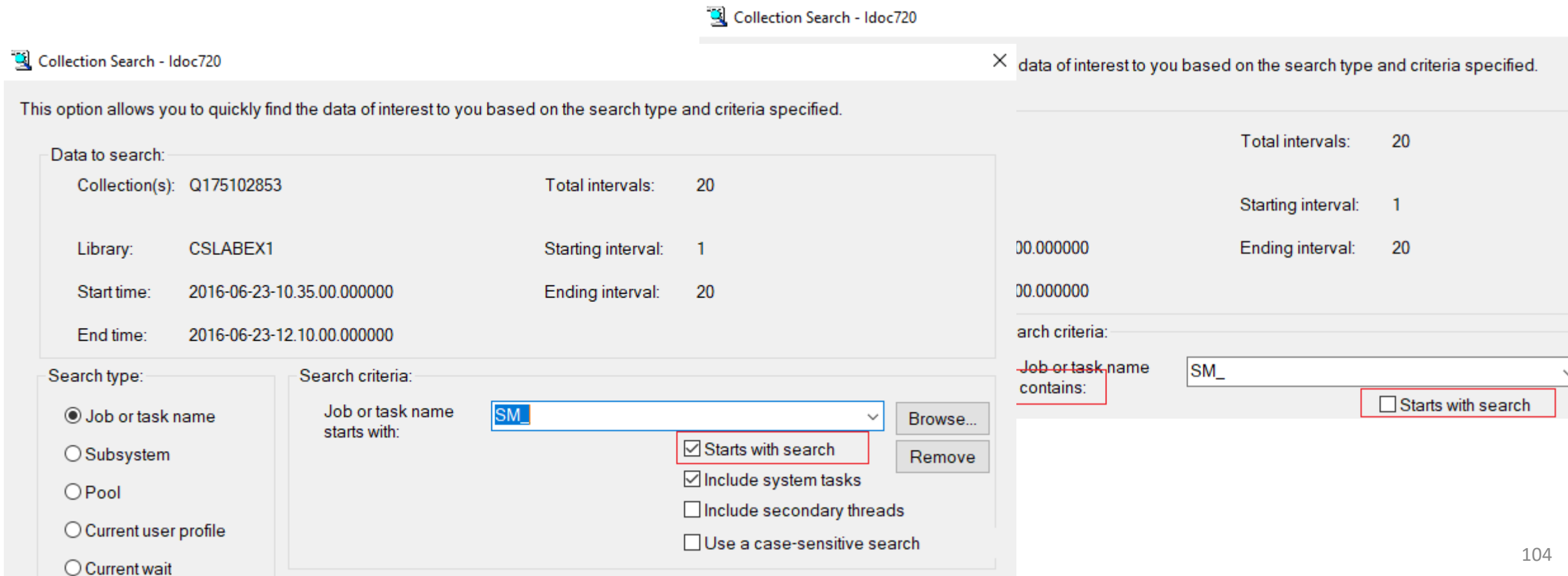
Starts with search

Include system tasks

Library name (LIBNAME)	Collection name (MBRNA)	Job name/user/thread ID (JTTHREAD)	Interval number (INTNU)	Interval number (INTERVA)	Time of day at ending snapshot start (STARTOD)	Reserved (TRESERV)	Task count (uniquely identifies a task/thread) (TASKCOUNT)	Elapsed interval time in microseconds (TDEUSECS)	Microsecs since IPL at ending snapshot start (STARTUSECS)	Microsecs since IPL at ending snapshot end (ENDUSECS)	Thread ID (THREADI)	Process initial thread task count (ITASKCOUNT)	Job/task name (TDEJOBNAME)	Thread status (THRSTATUS)	Current user profile (CURR)
BSMENGES	RUN1	SMASPFSCLEAN_001: 852	2,481	2,481	2012-11-12-01.18.12.382000		852	1,034,709	1,709,974,083,397	1,709,974,088,356		0	SMASPFSCLEAN_001	SMASPFSCLEAN_001	

August 2018 (1327) – CSI/JW – Collection Search “Starts with” option

- Added a "Starts with search" checkbox (default is checked) that indicates if the search value should apply to the beginning of data being searched or contained anywhere.



The screenshot shows the 'Collection Search - Idoc720' window. It displays search criteria and results for a collection search.

Search Criteria:

- Search type: Job or task name
- Search criteria: Job or task name starts with:
 - Starts with search
 - Include system tasks
 - Include secondary threads
 - Use a case-sensitive search

Data to search:

Collection(s):	Q175102853	Total intervals:	20
Library:	CSLABEX1	Starting interval:	1
Start time:	2016-06-23-10.35.00.000000	Ending interval:	20
End time:	2016-06-23-12.10.00.000000		

Results:

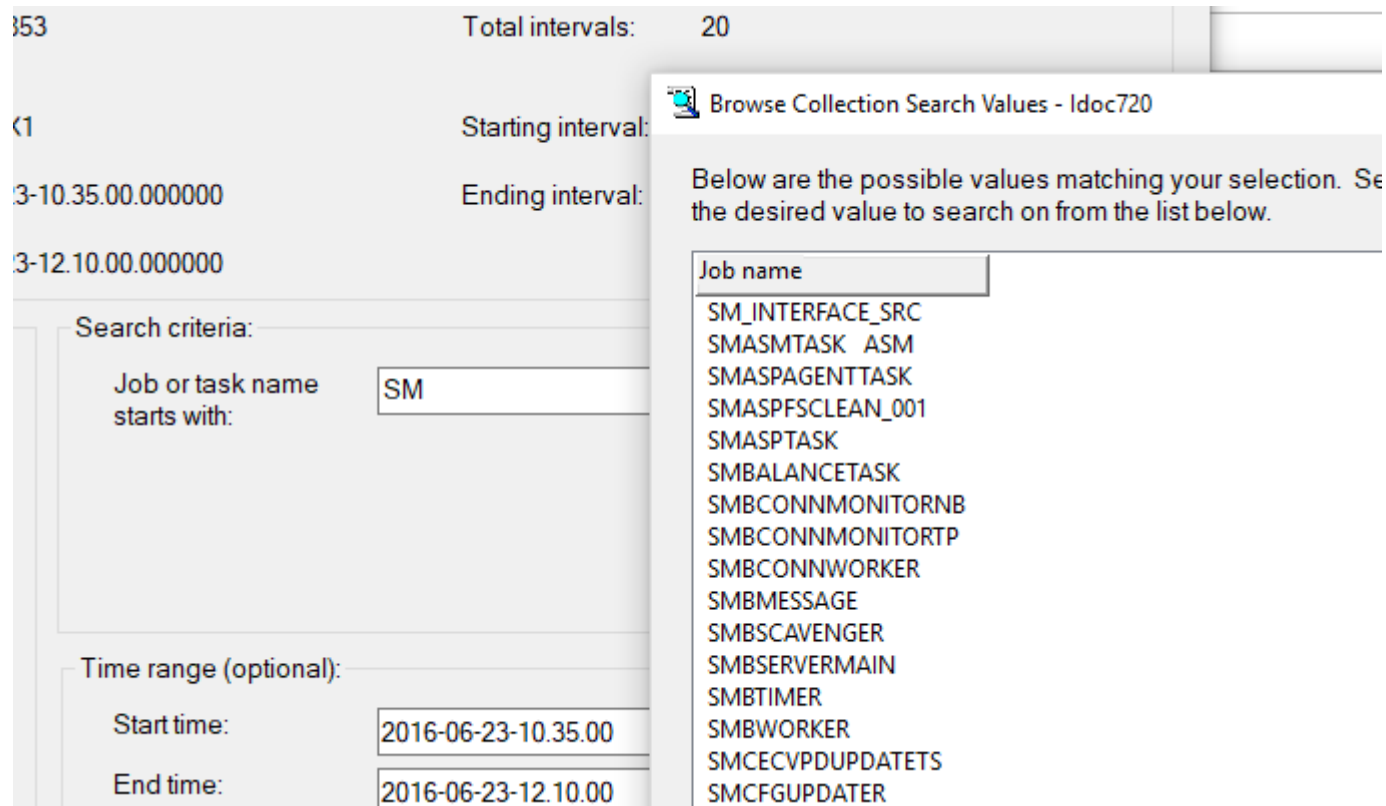
00.000000	Total intervals:	20
00.000000	Starting interval:	1
00.000000	Ending interval:	20

Search Criteria:

arch criteria: Starts with search

August 2018 (1327) – CSI/JW – Collection Search Browse update

- The browse function will now use the value entered in the textbox (if any) next to it as a filter to reduce the results shown. The new "Starts with" (or contains) option also now applies to the browse window.



The screenshot displays the 'Browse Collection Search Values' window. The search criteria are as follows:

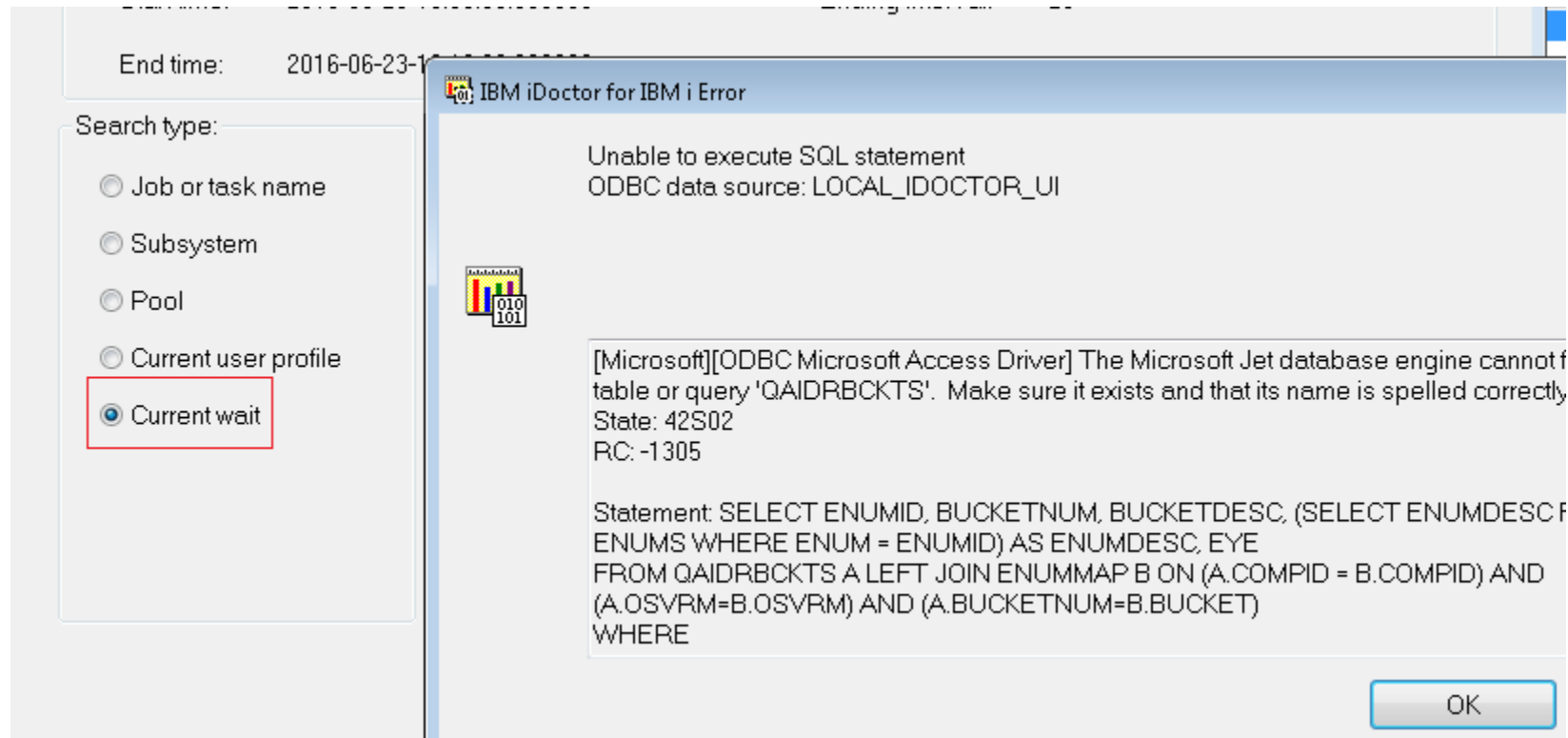
- Total intervals: 20
- Starting interval: 3-10.35.00.000000
- Ending interval: 3-12.10.00.000000
- Search criteria: Job or task name starts with: SM
- Time range (optional): Start time: 2016-06-23-10.35.00, End time: 2016-06-23-12.10.00

The list of job names matching the criteria is:

- SM_INTERFACE_SRC
- SMASMTASK ASM
- SMASPAGENTTASK
- SMASPFSCLEAN_001
- SMASPTASK
- SMBALANCETASK
- SMBCONNMONITORNB
- SMBCONNMONITORTP
- SMBCONNWORKER
- SMBMESSAGE
- SMBSCAVENGER
- SMBSERVERMAIN
- SMBTIMER
- SMBWORKER
- SMCECVPDUPDATETS
- SMCFGUPDATER

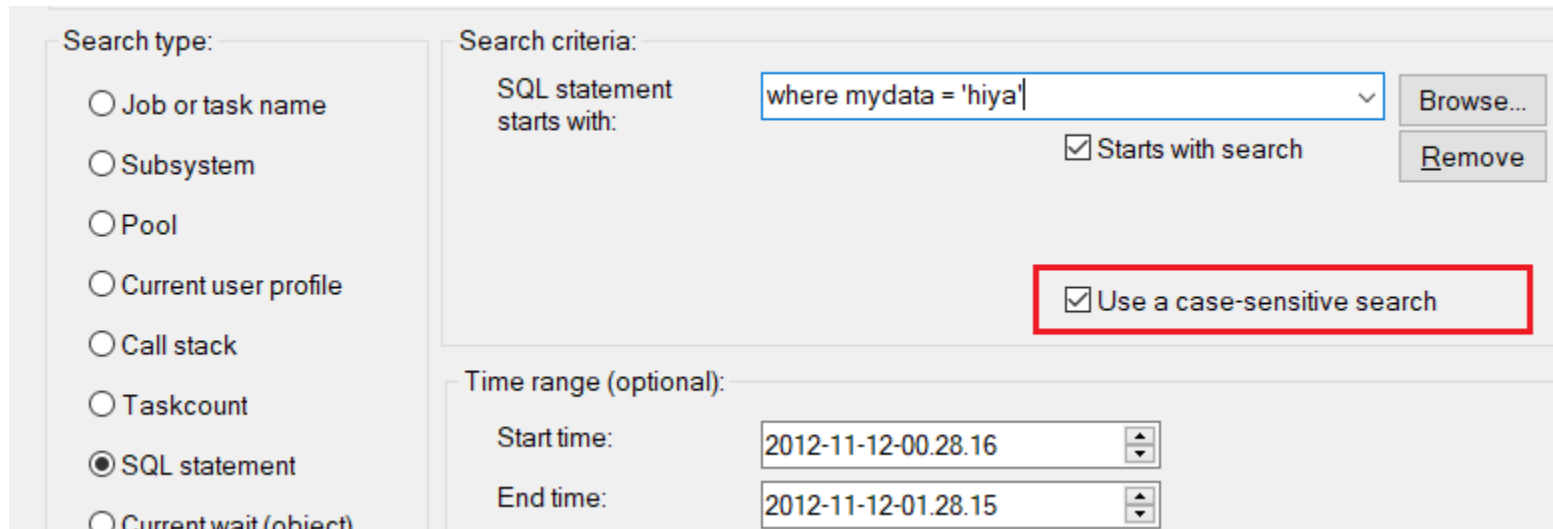
August 2018 (1327) – CSI/JW – Collection Search updates

- The option to browse using search type "Current wait" (i.e. enum) did not work at all.



August 2018 (1327) – JW – Collection Search SQL statement option

- Added an option to do a case-sensitive search (or not) on the SQL statement.

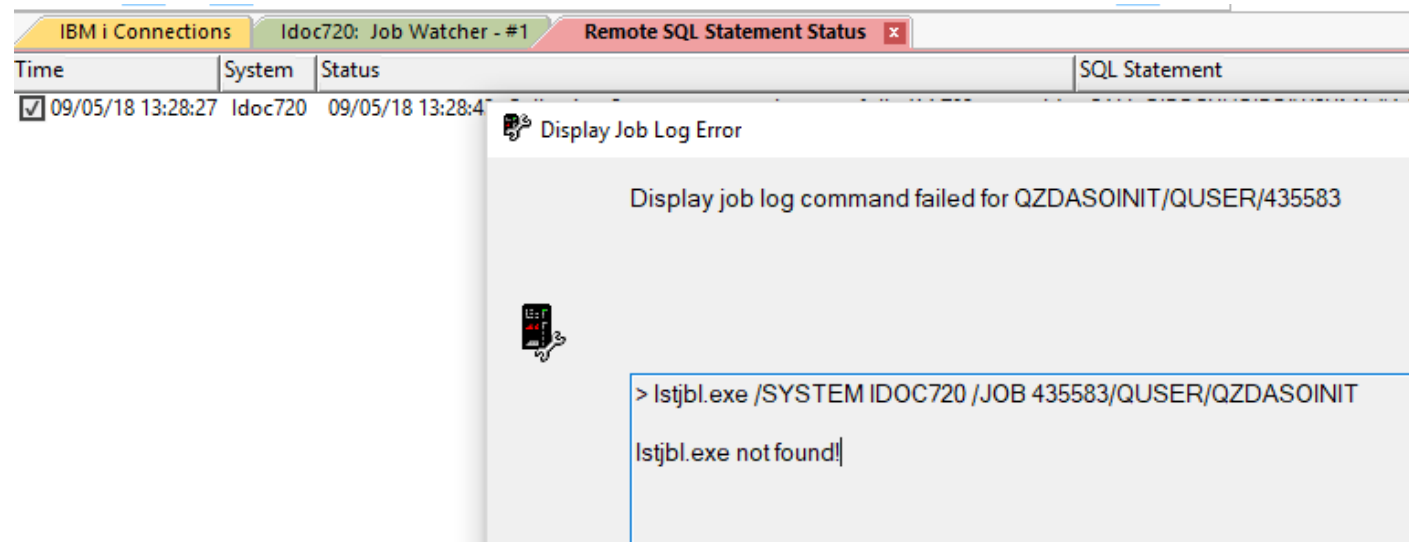
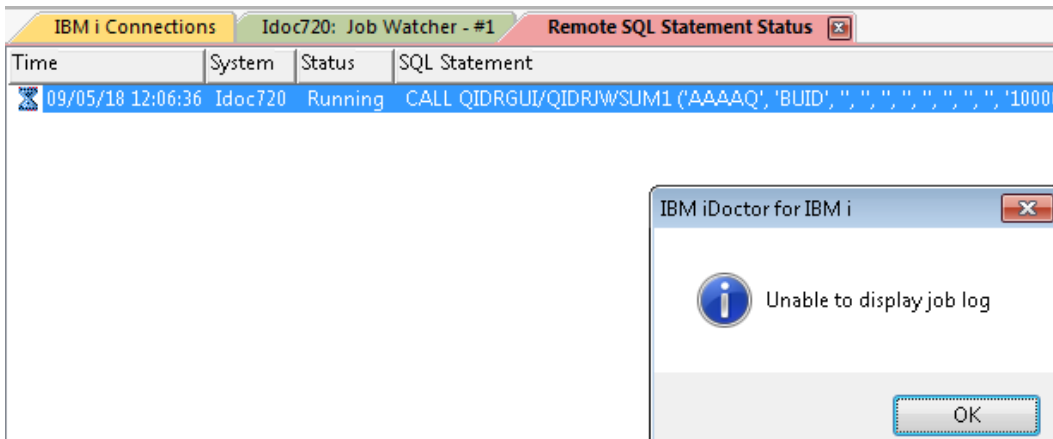


The screenshot shows a search interface with the following elements:

- Search type:** A list of radio buttons with 'SQL statement' selected.
- Search criteria:** A text box containing 'where mydata = 'hiya'', a 'Browse...' button, and a 'Remove' button.
- Options:** A checked checkbox labeled 'Starts with search' and a checked checkbox labeled 'Use a case-sensitive search' (highlighted with a red box).
- Time range (optional):** Two date pickers for 'Start time' (2012-11-12-00.28.16) and 'End time' (2012-11-12-01.28.15).

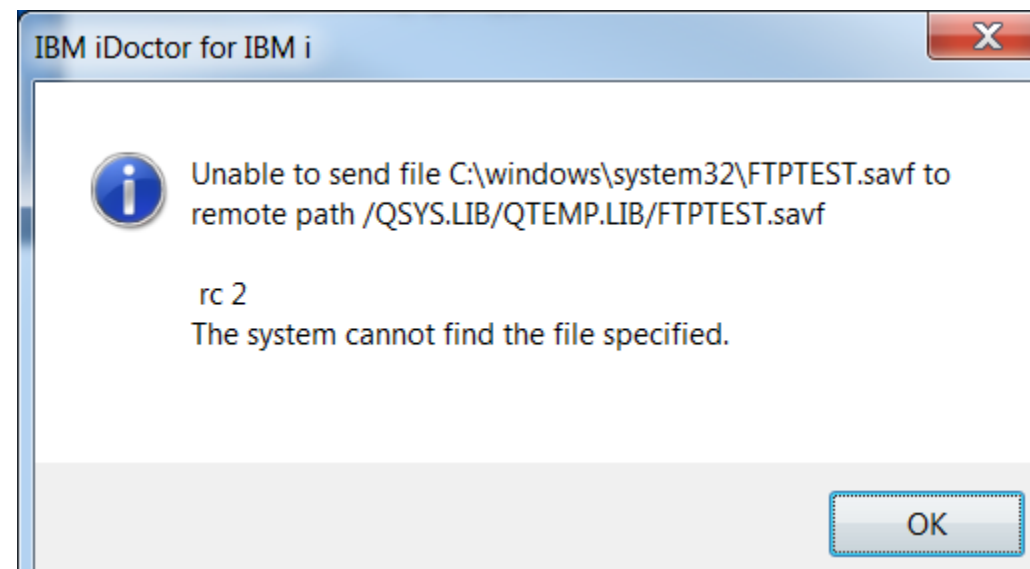
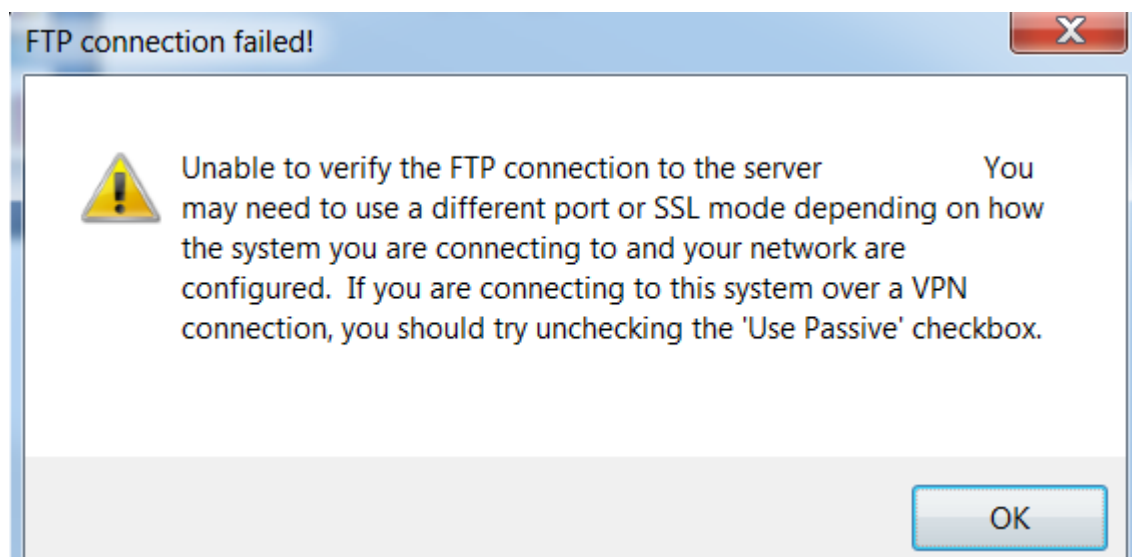
August 2018 (1327) – Display job log error

- Improved the error handling when using the Display job log option and it fails to find the required program `Istjbl.exe`. It will now clearly state the reason for the error.



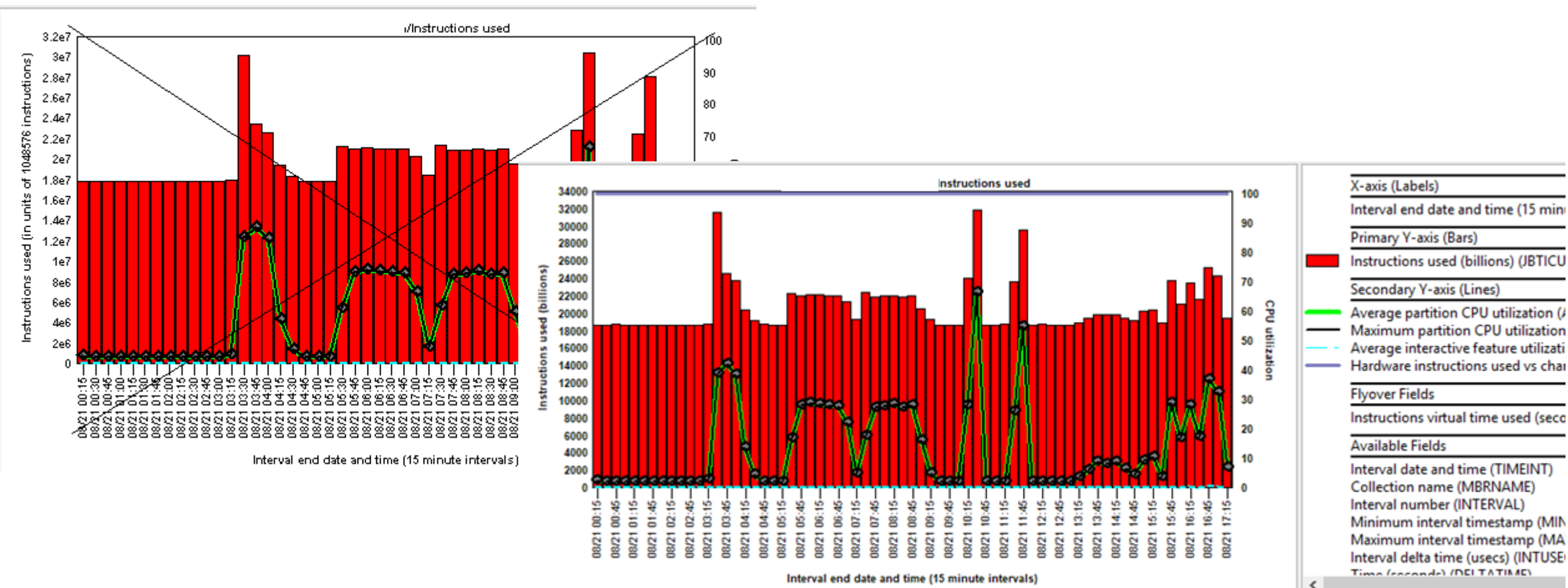
August 2018 (1327) – Installation secure FTP support broken

- In the installer, the support to FTP securely (“Use SSL” option) was broken and has been fixed. Also fixed a potential issue when doing the FTP connection test, it may try to use the wrong directory and cause a failure.



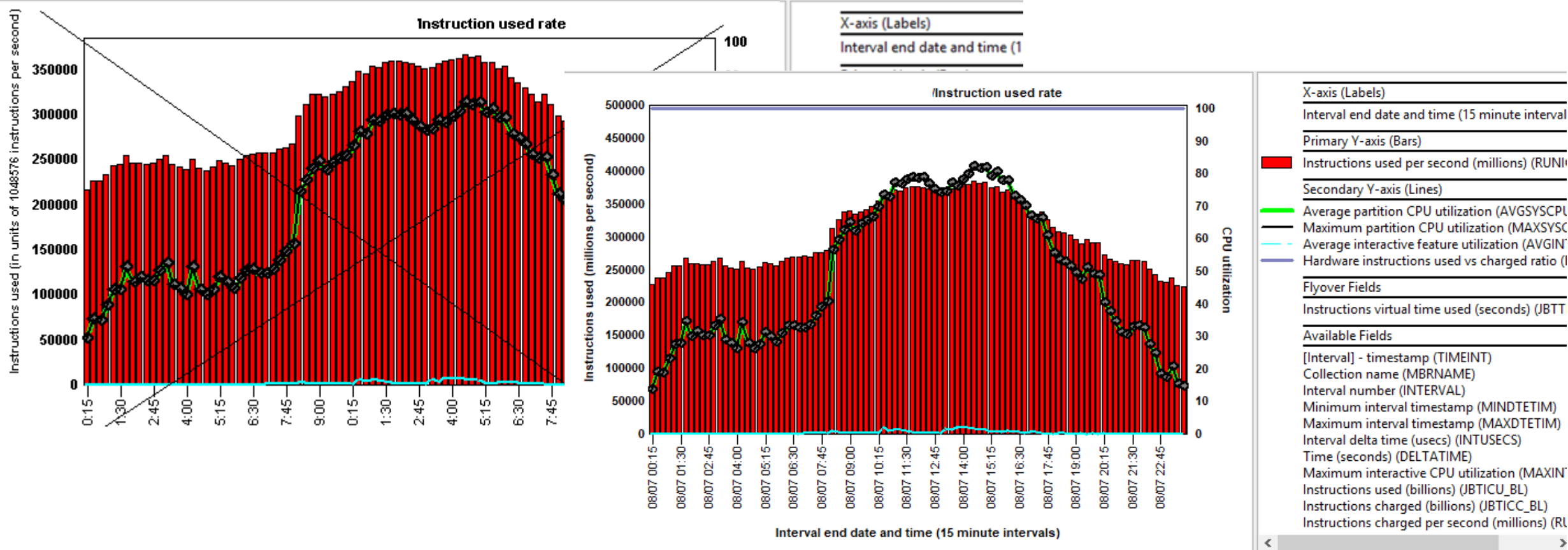
August 2018 (1327) – CSI - CPU Graphs -> P8 or higher update

- Most of the instruction counts are now shown in billions instead of "in units of 1048576 instructions" to improve usability.



August 2018 (1327) – CSI - CPU Graphs -> P8 or higher update

- The instruction rates are now shown in millions per second instead of "in units of 1048576 instructions per second" to improve usability.



August 2018 (1327) – CPU Graphs -> P8 or higher used vs charged ratio

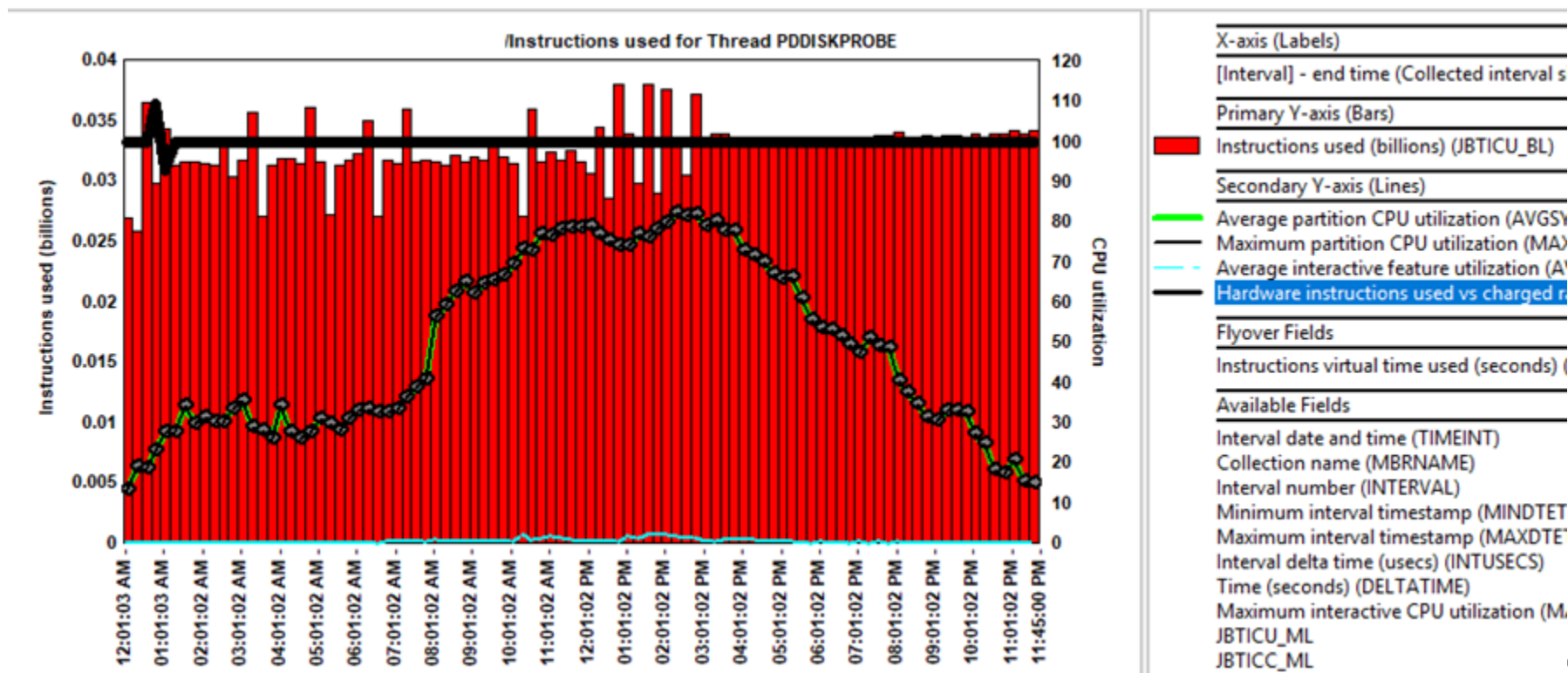
- These graphs on the Y2 now include a percent of instructions used vs charged (same value for both is at 100%):

Instructions used

Instructions charged

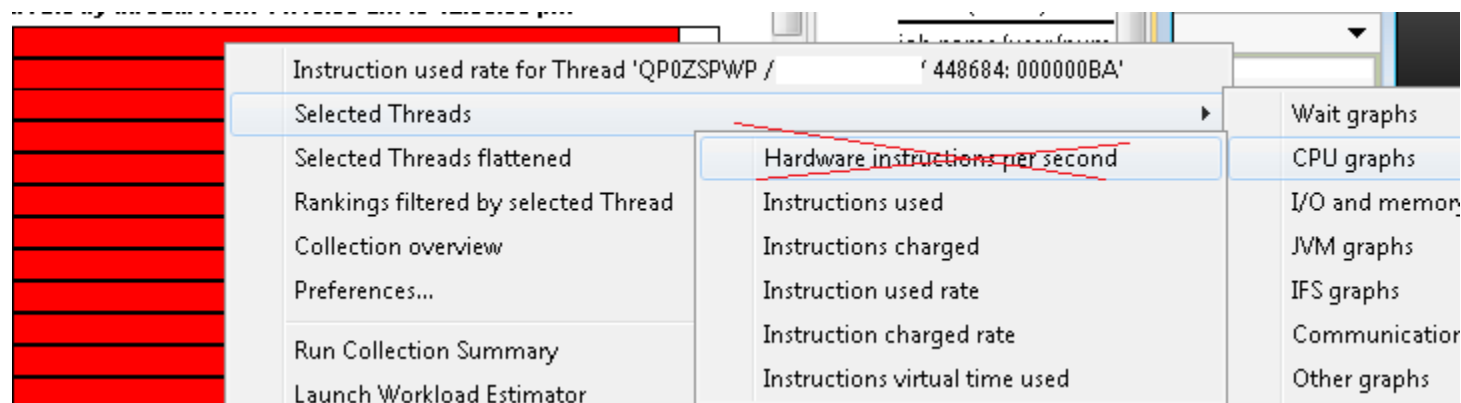
Instruction used rate

Instruction charged rate



August 2018 (1327) – CSI - CPU Graphs drill down removed

- In CSI the drill down graph Selected Threads/Job/etc -> CPU graphs -> Hardware instructions per second has been removed as it was a duplicate graph with Instructions used rates.



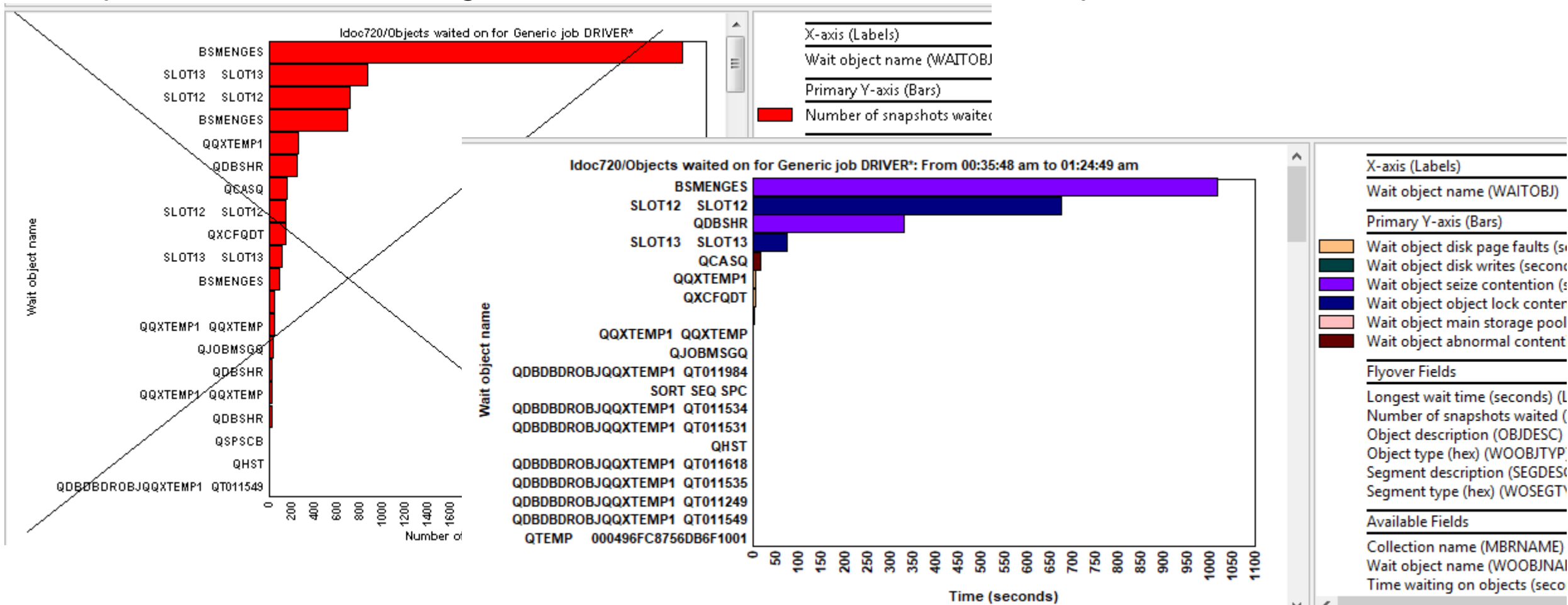
August 2018 (1327) – CSI - Incorrect idle wait calculations

- In CSI, for unsummarized collections, the <OBJTYPE> wait time signature for <XYZ> wait bucket graph calculated the idle waits incorrectly in the SQL statement **for all groupings above thread**. (job, generic job, etc)
- The SQL was incorrectly trying to compare a generic job name to the TDE ID as a filter...

```
FROM QTEMP/QAPMSYSTEM QSY LEFT OUTER JOIN QTEMP/QAPMJOBWTG QWT ON QSY.INTNUM =  
QWT.INTNUM  
WHERE CHAR(HEX(JWTDE)) IN ('DEFAULT*')
```

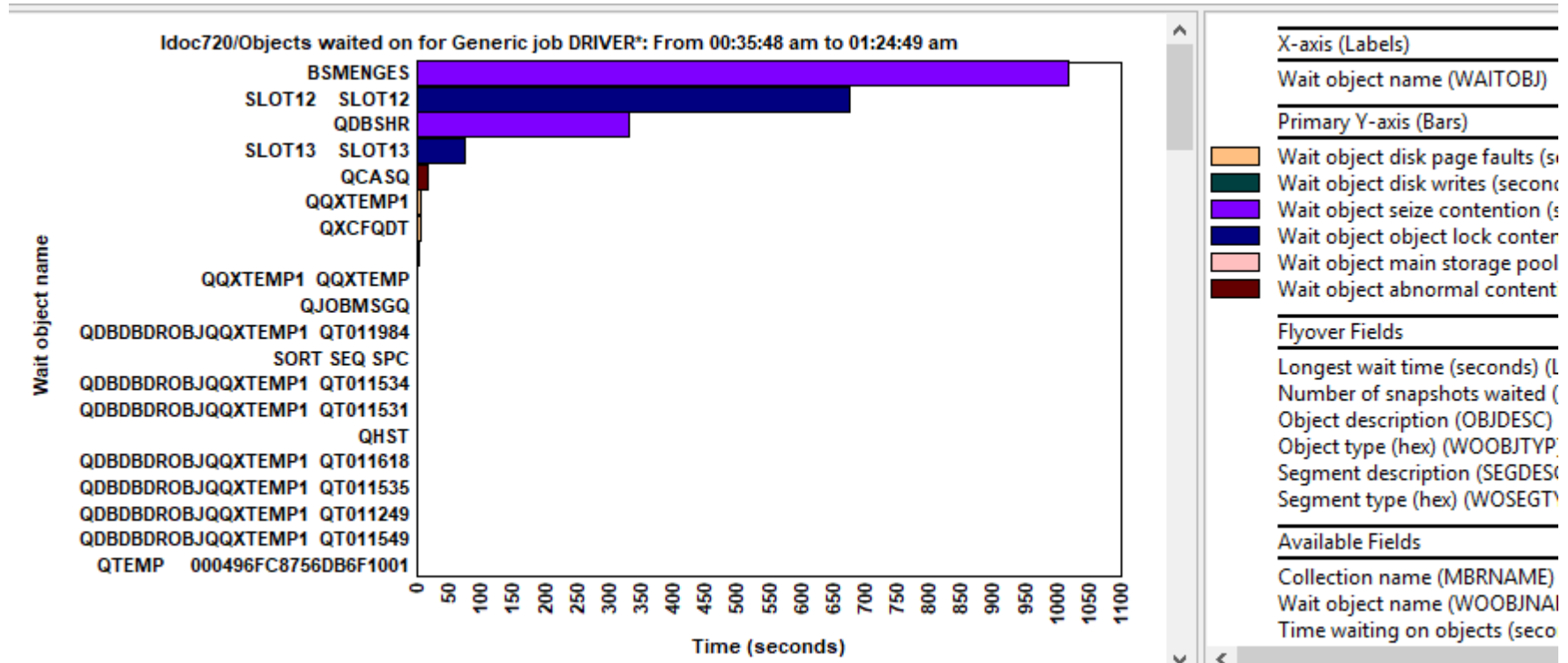
August 2018 (1327) – JW -> Waits -> Objects waited on drill downs

- These graphs will now show the "interesting" wait bucket times associated with each wait object instead of showing the number of intervals each wait object was found in the data.



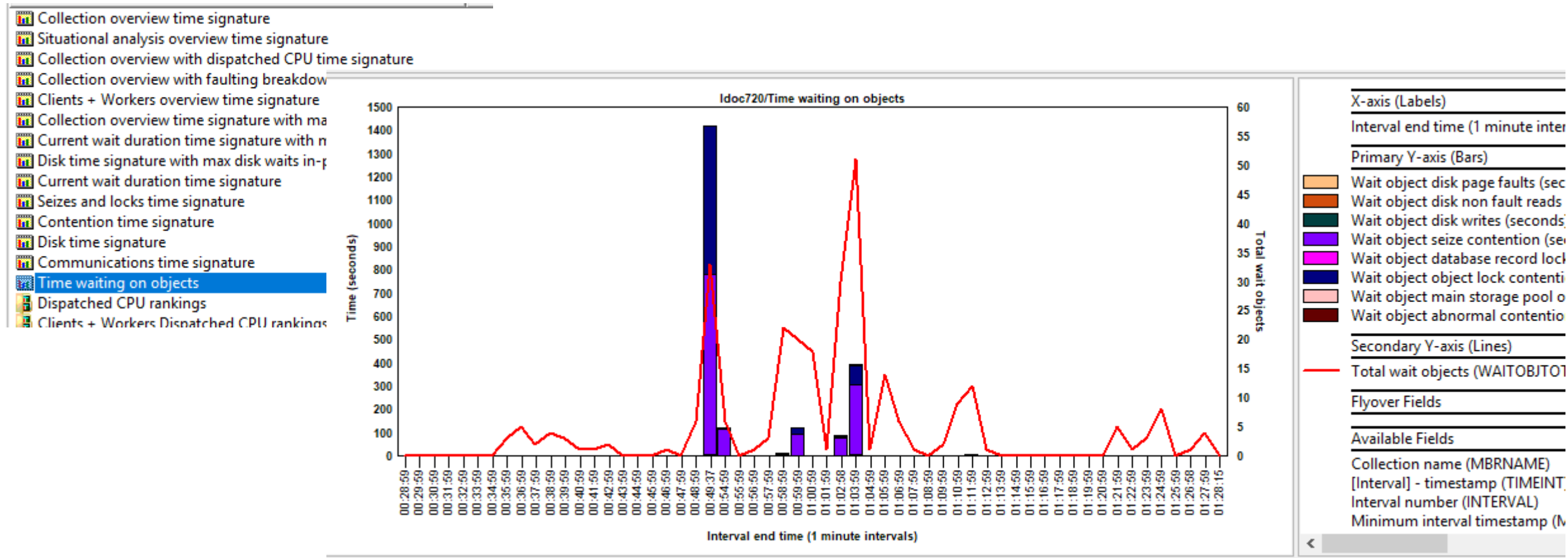
August 2018 (1327) – JW -> Waits -> Objects waited on drill downs

- These graphs previously did not support multiple collections but do now.



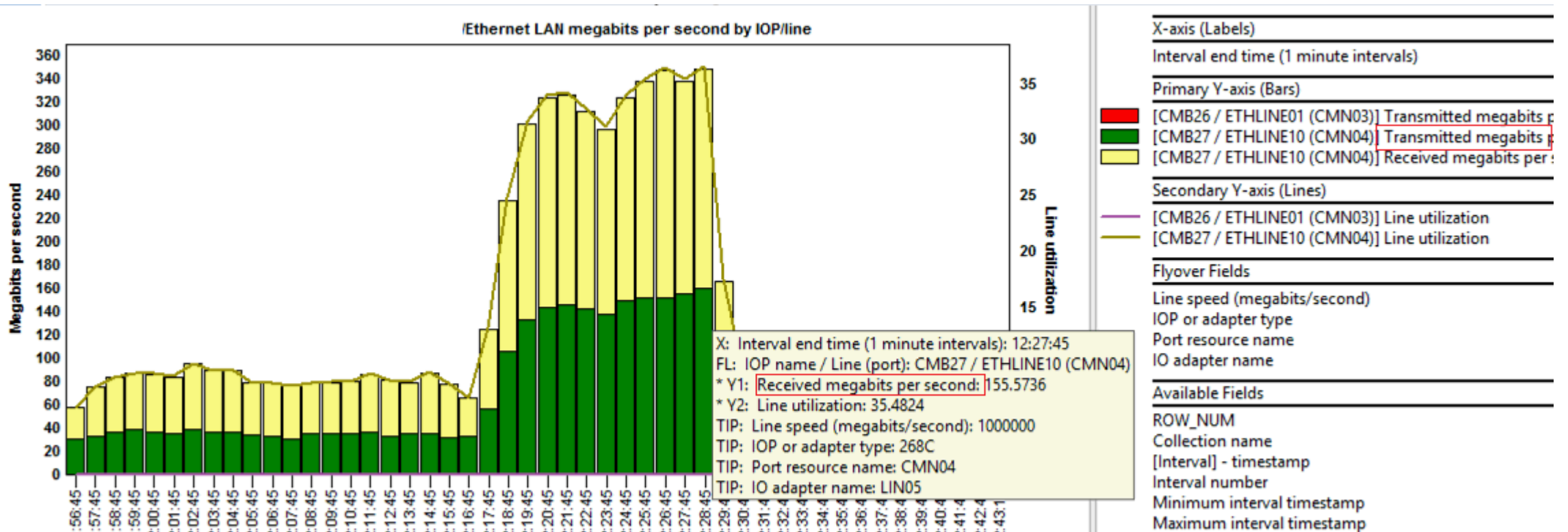
August 2018 (1327) – JW -> Time waiting on objects

- These graphs add up “interesting” current wait durations while a wait object was found and provides analysis capability of the waits associated with the wait objects.



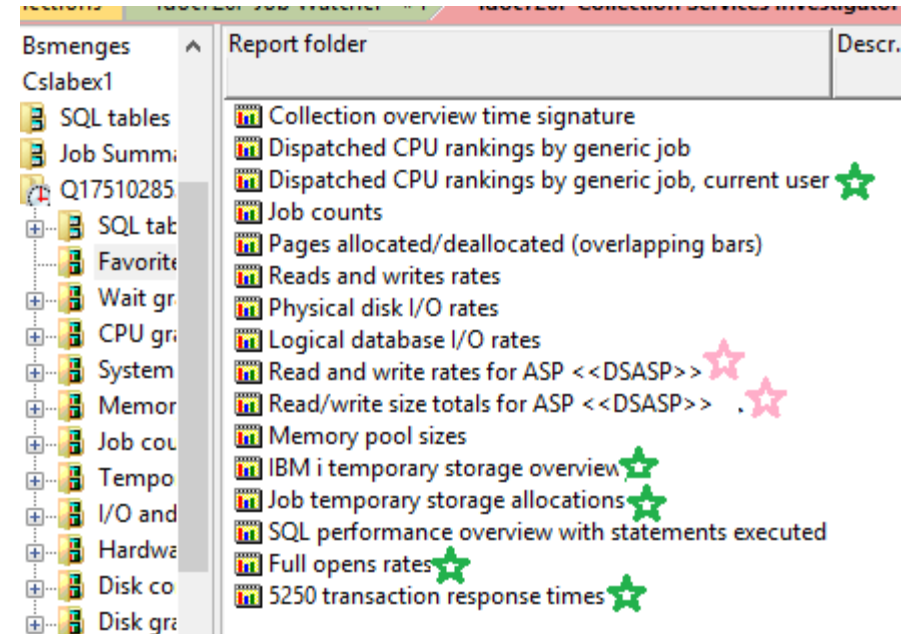
August 2018 (1327) – Fixed bad flyover descriptions in flattened graphs

- In some flattened graphs, the Y1 flyover description was incorrect and has been fixed.



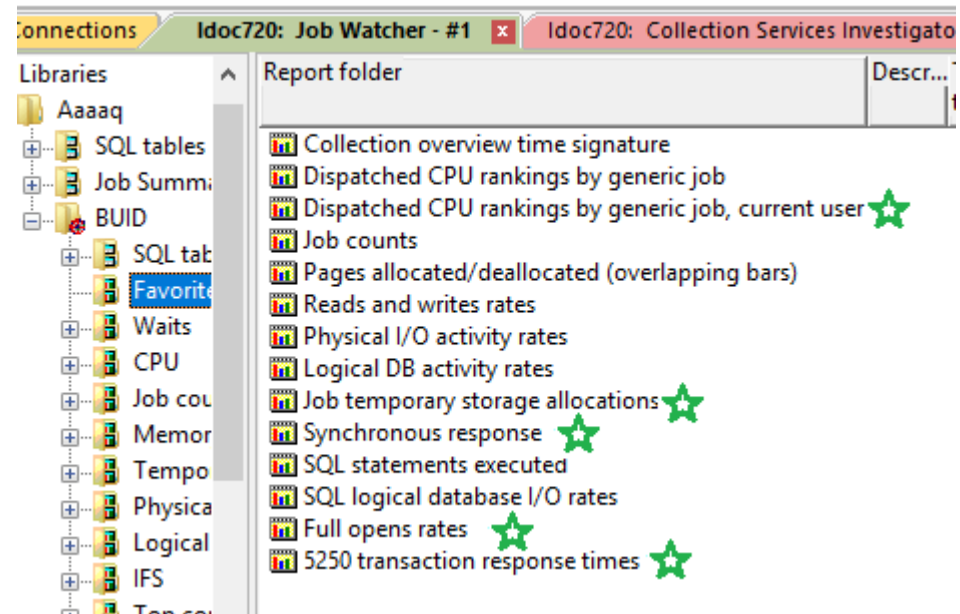
August 2018 (1327) – CSI – Favorites folder updates

- The latest CSI Favorites folder contents are shown below.
 - New graphs = green star, changed graphs = pink star.
 - Removed the following graphs:
 - Dispatched CPU rankings by thread
 - Job temporary storage allocations by thread



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August 2018 (1327) – CSI – Active virtual processors graph

- The values shown can now exceed 32 virtual processors.
 - Data now comes from QAPMSYSVP instead of QAPMSYSCPU which allows this.
 - Simplified the field descriptions shown to be:
 - Total virtual processors (TOTVPS)
 - Active virtual processors (ACTVPS)

August 2018 (1327) – JW – Generic job for the selected thread drill down

- Renamed the drill down to "Generic job for selected <<OBJTYPE>>" i.e. thread/user/etc since this option is available from more types of rankings than just thread rankings.
- The rates graphs showed inaccurate rate values if the interval selection was greater than the collected interval size.
- The Generic job X* memory page demand graph did not work.

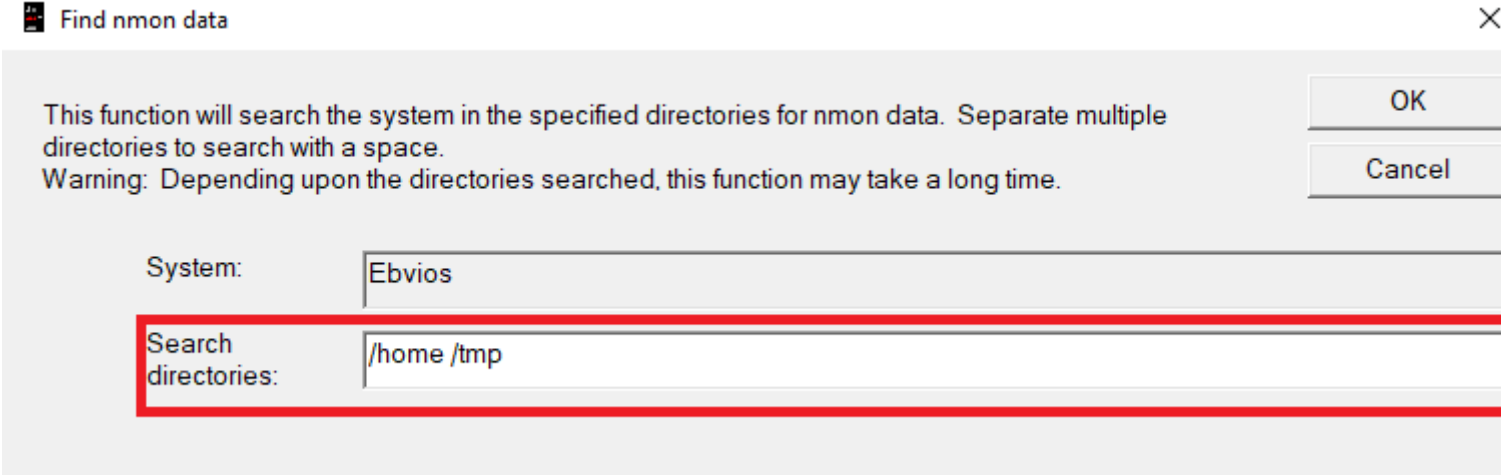
August 2018 (1326) – Power Connections issues fixed

- Fixed bugs in many spots related to the connection settings for Power systems (VIOS, HMC, etc) getting confused / saved in the location for IBM i connections instead.
 - FTP transfers may fail, because the wrong connection settings were being used.
 - This also effected functions that show data (open file), transfer files, or the edit option.

Time	System	Status	Command
<input checked="" type="checkbox"/> 08/16/18 09:38:59		Complete (.48 seconds)	cat /tmp/idoctor
<input checked="" type="checkbox"/> 08/16/18 09:39:09		Complete (.22 seconds)	cat /tmp/idoctor
<input checked="" type="checkbox"/> 08/16/18 09:39:10		08/16/18 09:39:13: Completed successfully >	rm /tmp/idoctor
<input checked="" type="checkbox"/> 08/16/18 09:39:10		08/16/18 09:39:30: Completed successfully >	print "/tmp/idoct
<input type="checkbox"/> 08/16/18 09:39:10		Error: An FTP connection is not available. >	get /tmp/idoctor
<input checked="" type="checkbox"/> 08/16/18 09:40:23		Complete (.45 seconds)	ioscli ioslevel
<input checked="" type="checkbox"/> 08/16/18 09:40:23		Complete (.48 seconds)	cat /tmp/idoctor
<input checked="" type="checkbox"/> 08/16/18 09:40:24		Complete (.66 seconds)	print "oslevel" o

August 2018 (1326) – Power Connections find window

- In the find window, the preference for the search directories can now be saved for each type of data (nmon, npiv, etc.) Previously all types of data shared the same value.
- Also the text on the window that refers to multiple system(s) when doing a find has been removed as this support no longer exists.



Find nmon data

This function will search the system in the specified directories for nmon data. Separate multiple directories to search with a space.
Warning: Depending upon the directories searched, this function may take a long time.

System: Ebvios

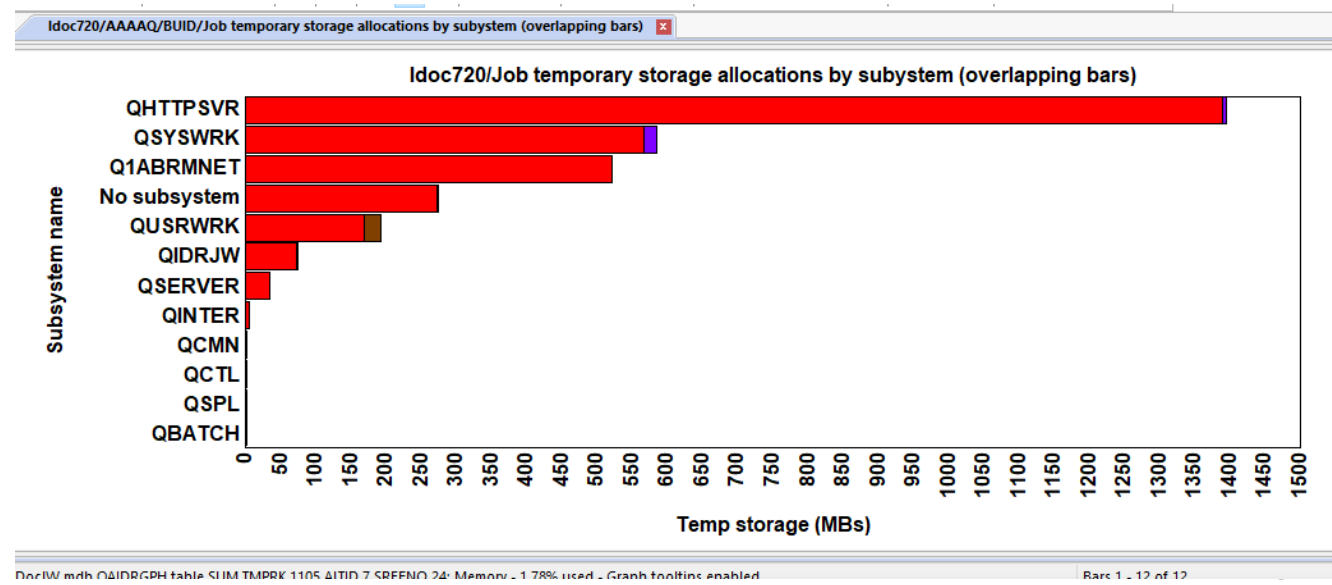
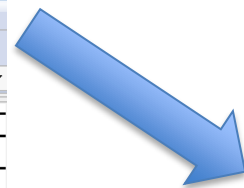
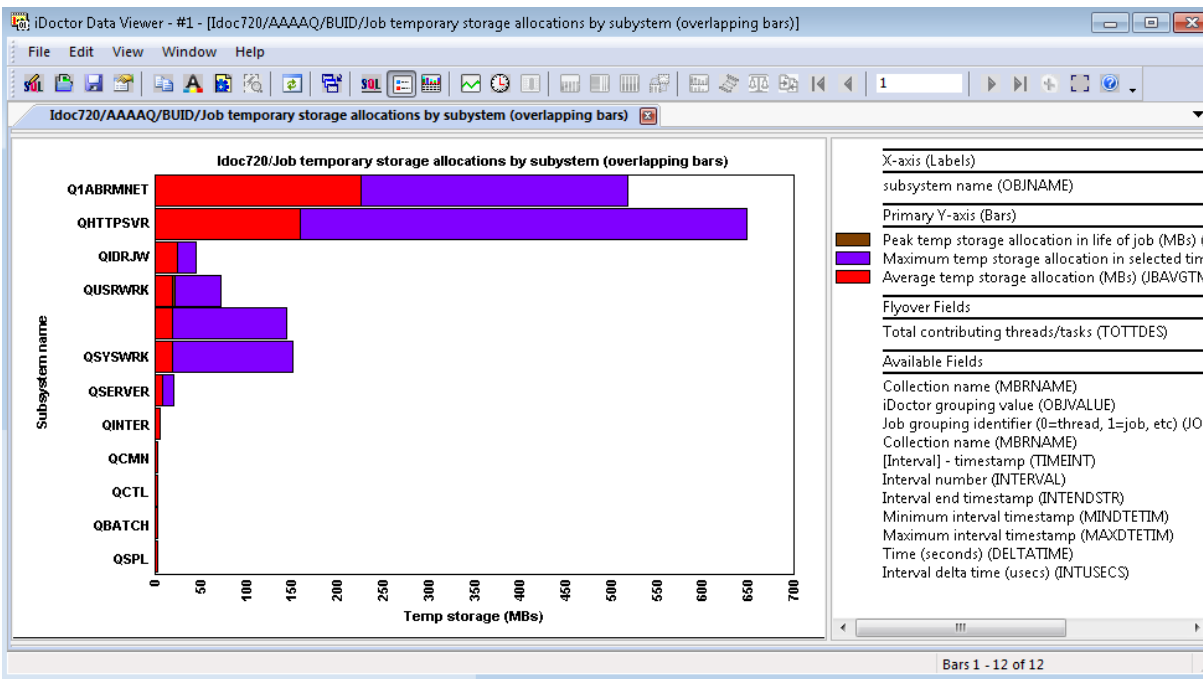
Search directories: /home /tmp

OK

Cancel

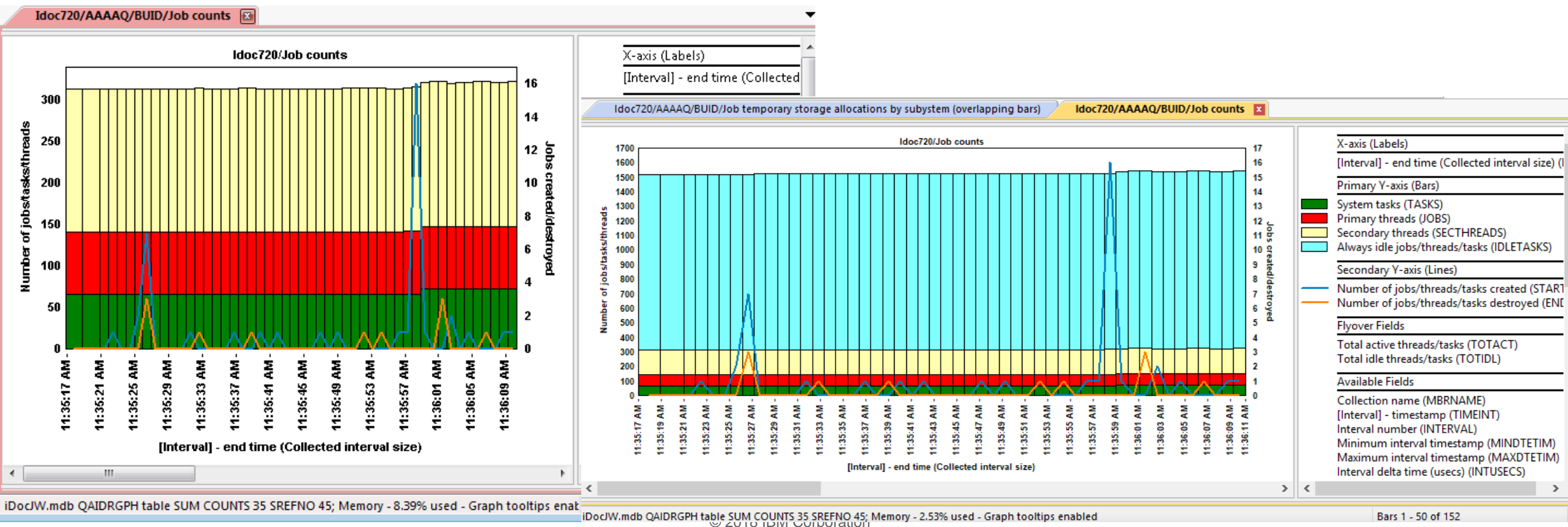
August 2018 (1326) – JW temp storage graphs inaccurate

- In Job Watcher, the Temporary storage - job temporary storage ranking graphs and selection over time were inaccurate and have been fixed. The values given were considerably smaller than they should have been in some situations.



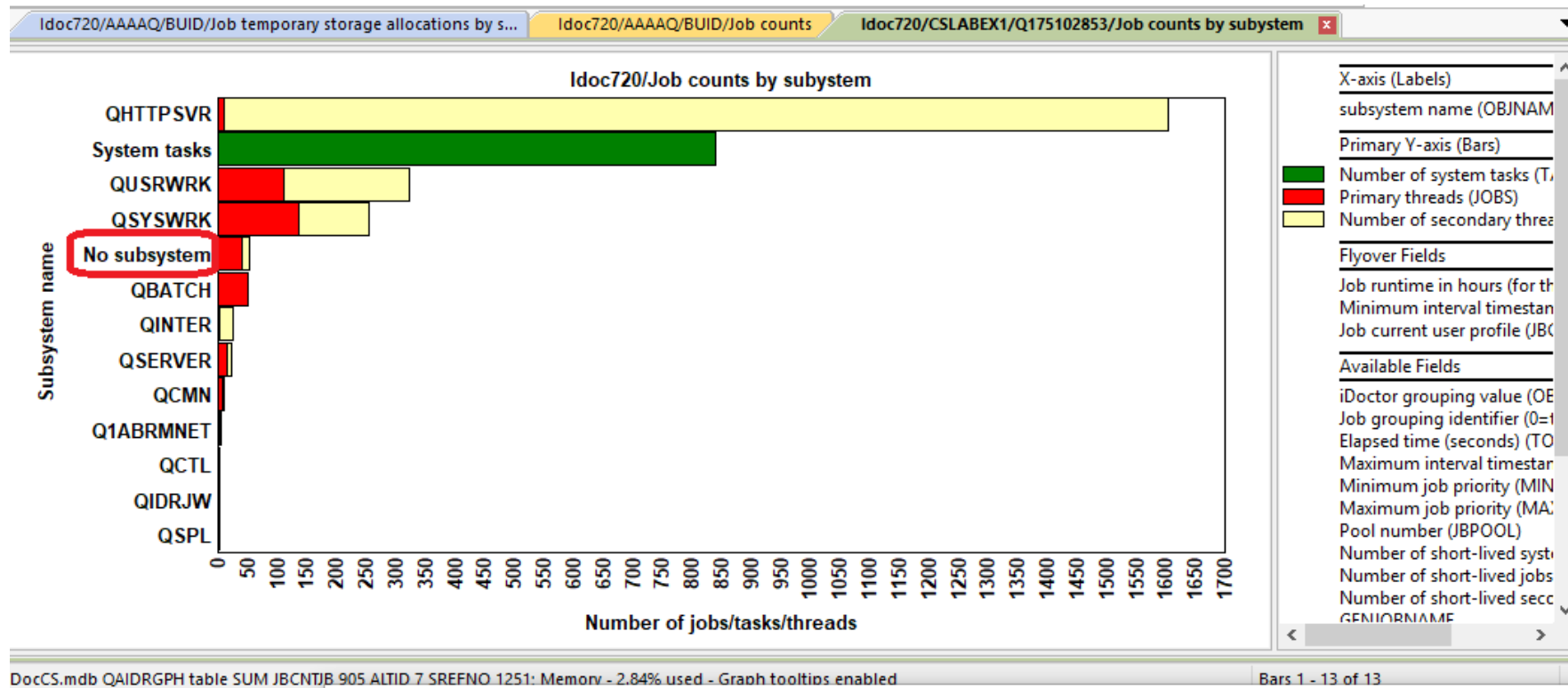
August 2018 (1326) – JW Job counts missing “always idle work”

- The Job Watcher job counts graphs were inaccurate as they did not include jobs/threads that never used CPU during the collection. Because they never used CPU we do not know if they are jobs, threads or tasks.



August 2018 (1326) – CSI ranking graphs – “No subsystem”

- In CSI fixed a problem in some of the ranking graphs where you may see "All system tasks" appear in the results when ranking by subsystem. This was really just data (not necessarily system tasks) where no subsystem was assigned to the job. This has been renamed to "No subsystem".



August 2018 (1326) – JW ranking graphs – “No subsystem”, “No user”...

- In JW in ranking graphs if no value is found applicable for the current grouping (i.e. subsystem, current user, etc) then instead of seeing blank you will now see text such as “No subsystem”. This provides the ability to drill down further on this entry where previously this was not possible.
 - For example you could drill down to see the jobs within the “No subsystem” grouping.

