

iDoctor Updates (August 10th 2018 to present)

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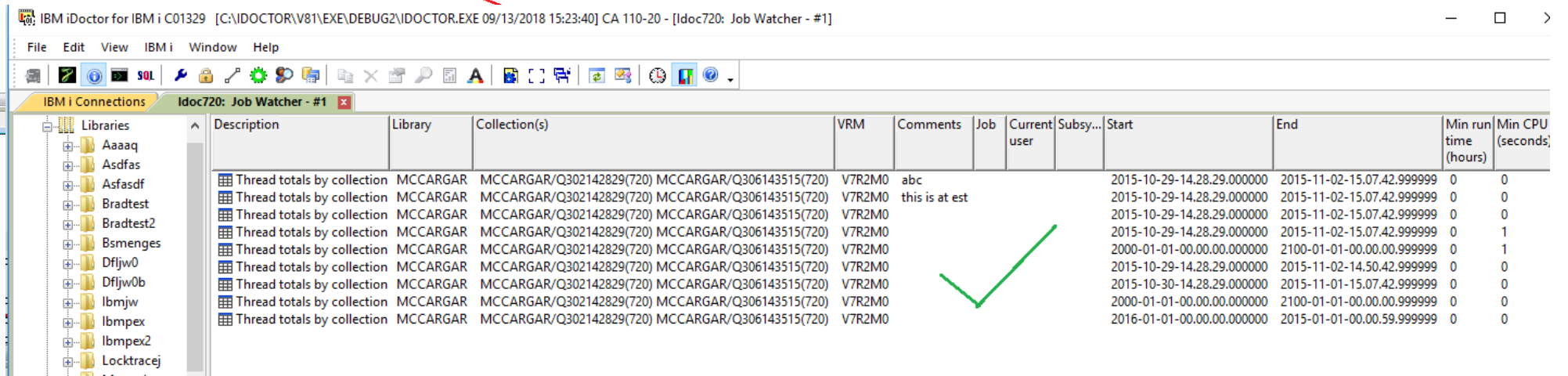
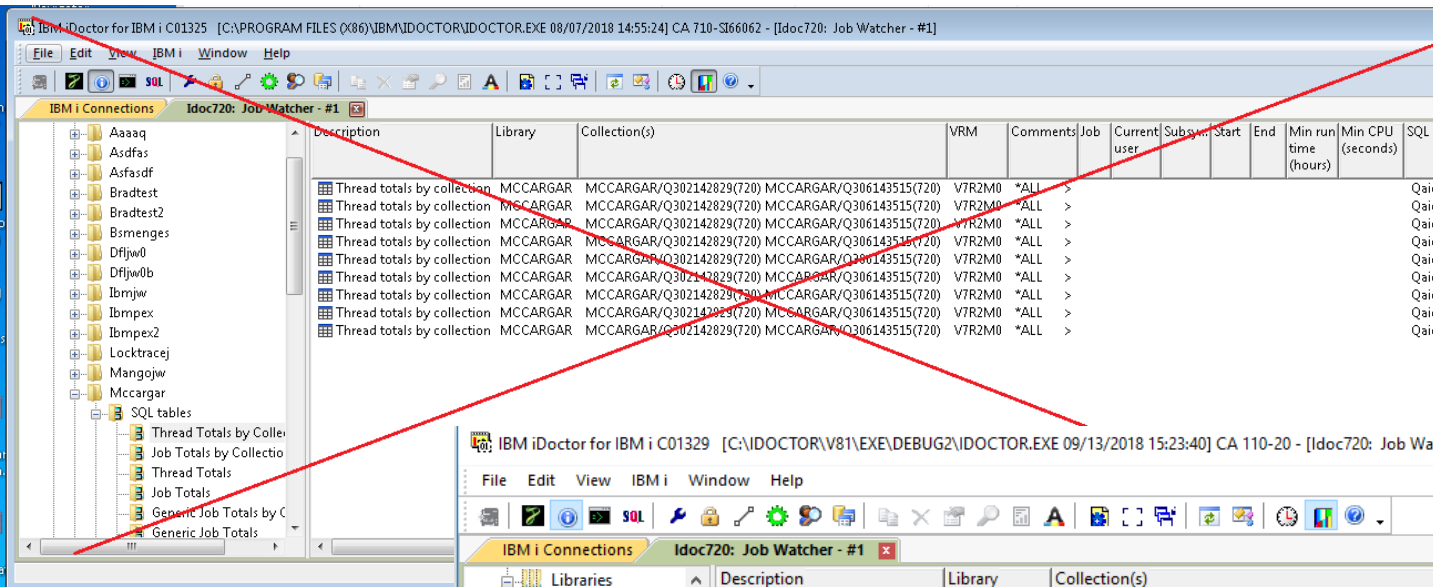


Currently recommended “stable” builds

- IBM internal:
 - Latest client is 1330 (Sept 18th)
 - Latest "stable" client is 1328 (Sept 5th)
- IBM external:
 - Latest client is 1330 (Sept 18th on ftp site only)
 - Latest "stable/announced" client is 1325 (Aug 7th)

Sept 2018 (1330) – JW/CSI – Job Summary folders

- The parsing of the parameters into the Job, Subsystem, comments, etc. columns was not working when viewing Job Summary SQL tables and has been fixed.



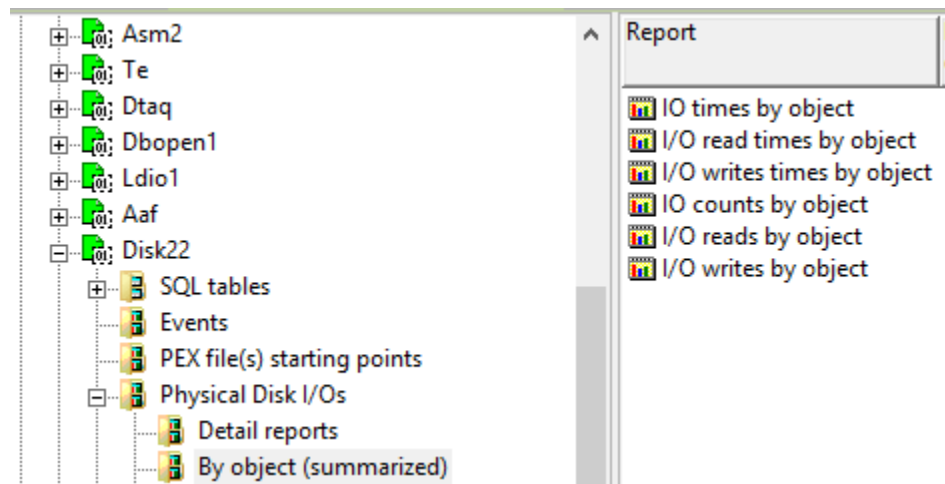


Sept 2018 (1330) – CSI – CPU utilization for <XYZ> graphs

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

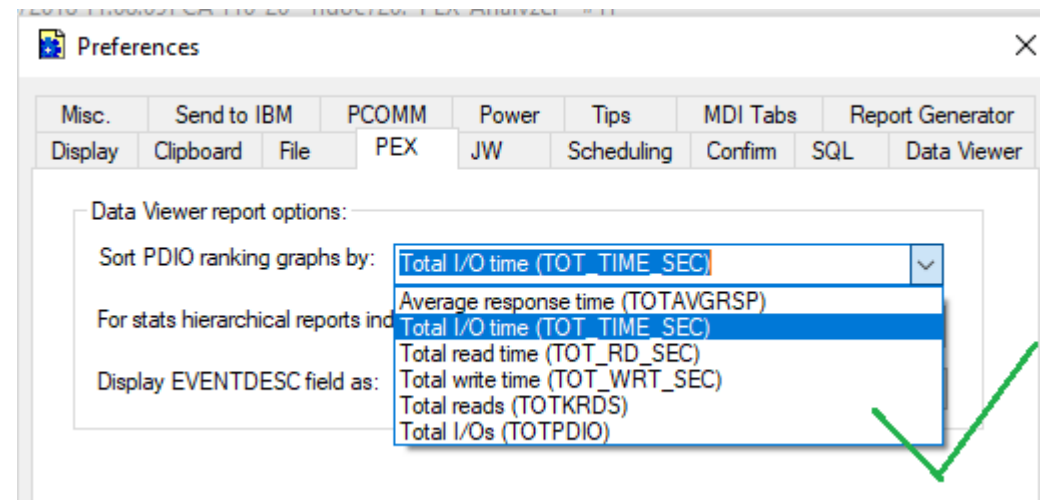
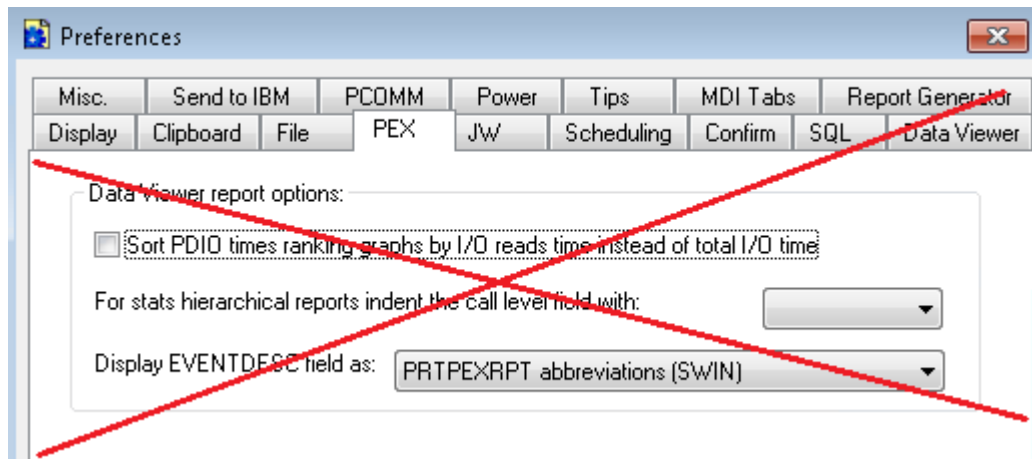
Sept 2018 (1330) – PEX PDIO By objects (summarized) folder back

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



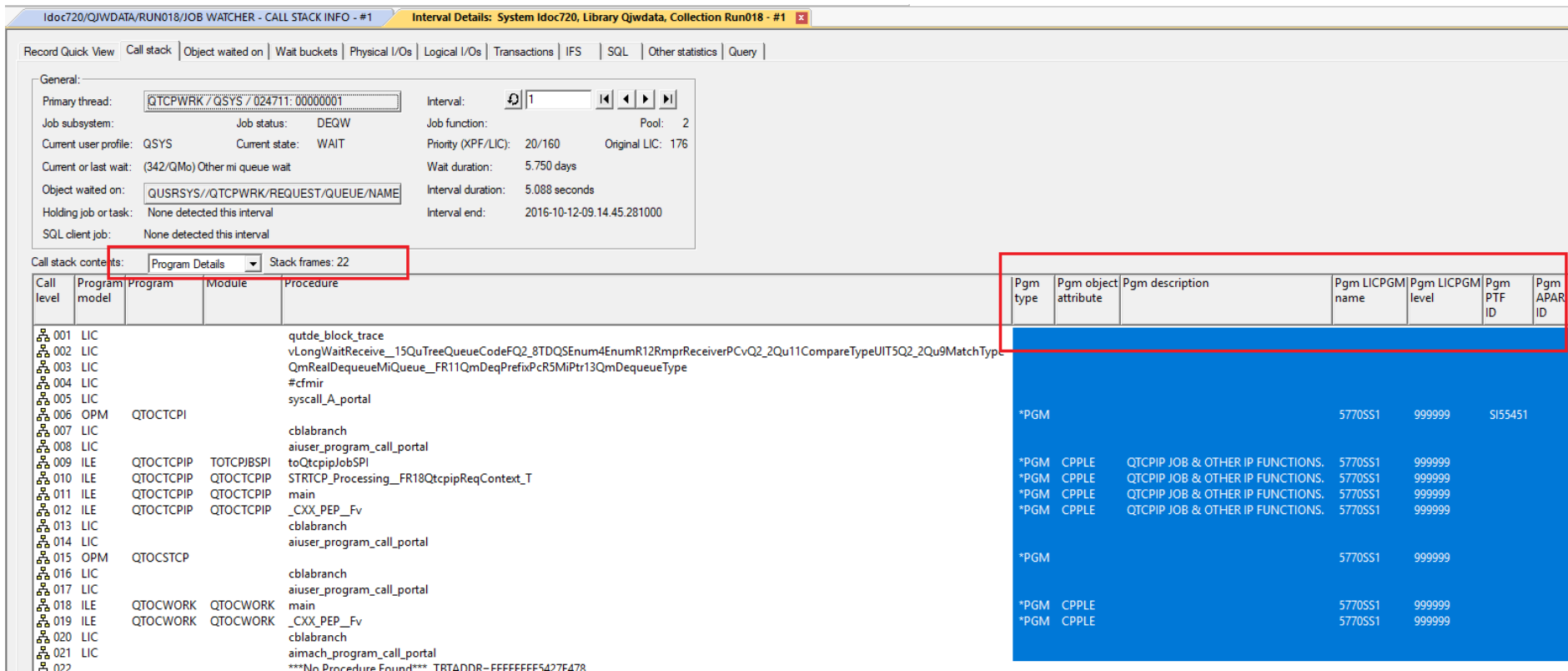
Sept 2018 (1330) – PEX PDIO sort option fixed

- 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 with columns for Call level, Program model, Program, Module, Procedure, Pgm type, Pgm object attribute, Pgm description, Pgm LICPGM name, Pgm LICPGM level, Pgm PTF ID, and Pgm APAR ID.

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			quitde_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

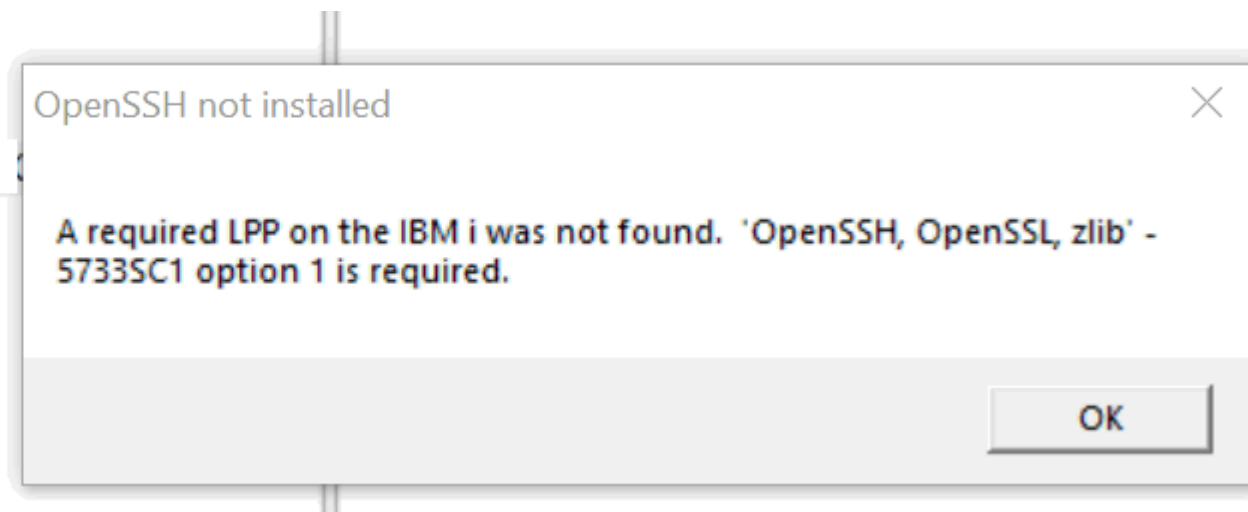
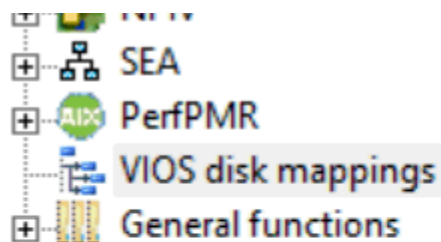
Sept 2018 (1329) – JW – New call stack reports options

- 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.



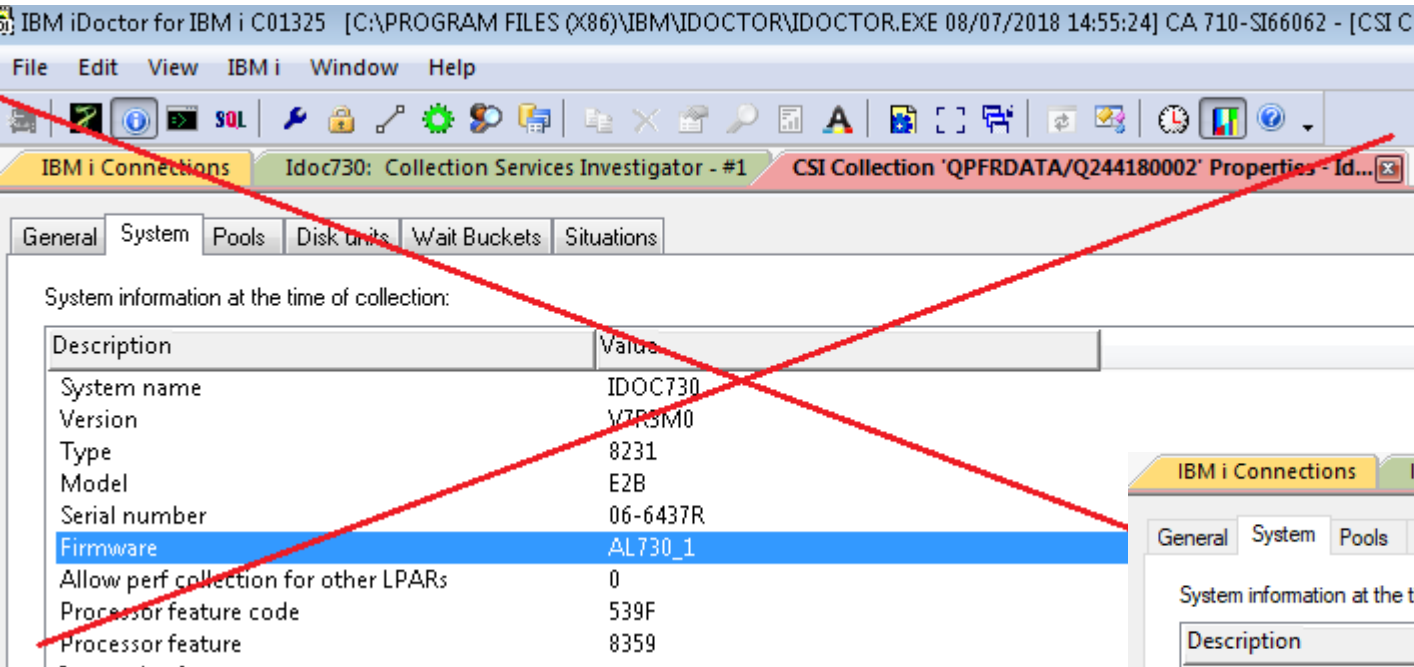
Sept 2018 (1329) – Power Connections – Create Disk Mapping Authentication Failure

- 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

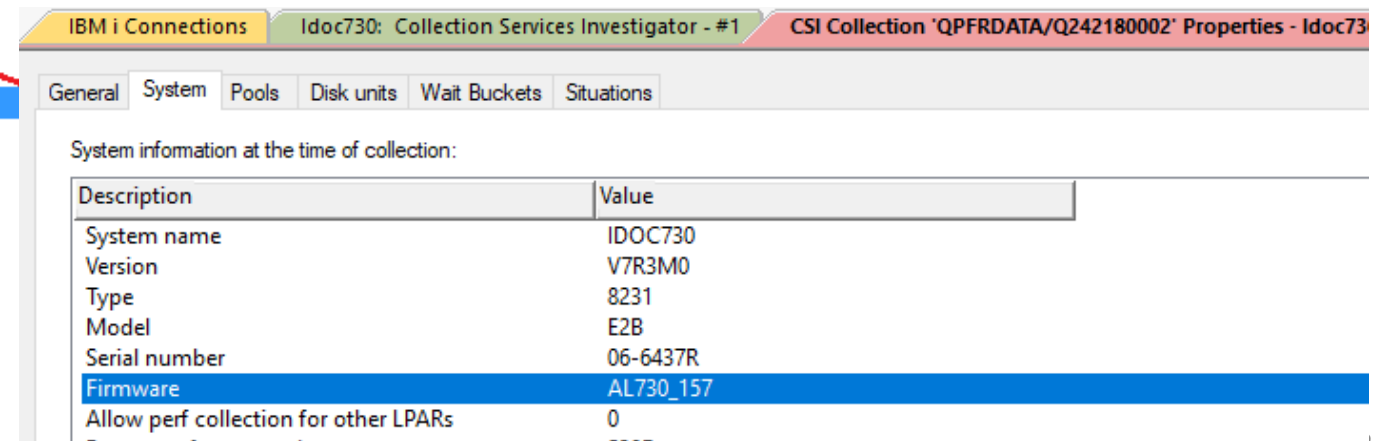
File Edit View IBM i Window Help

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

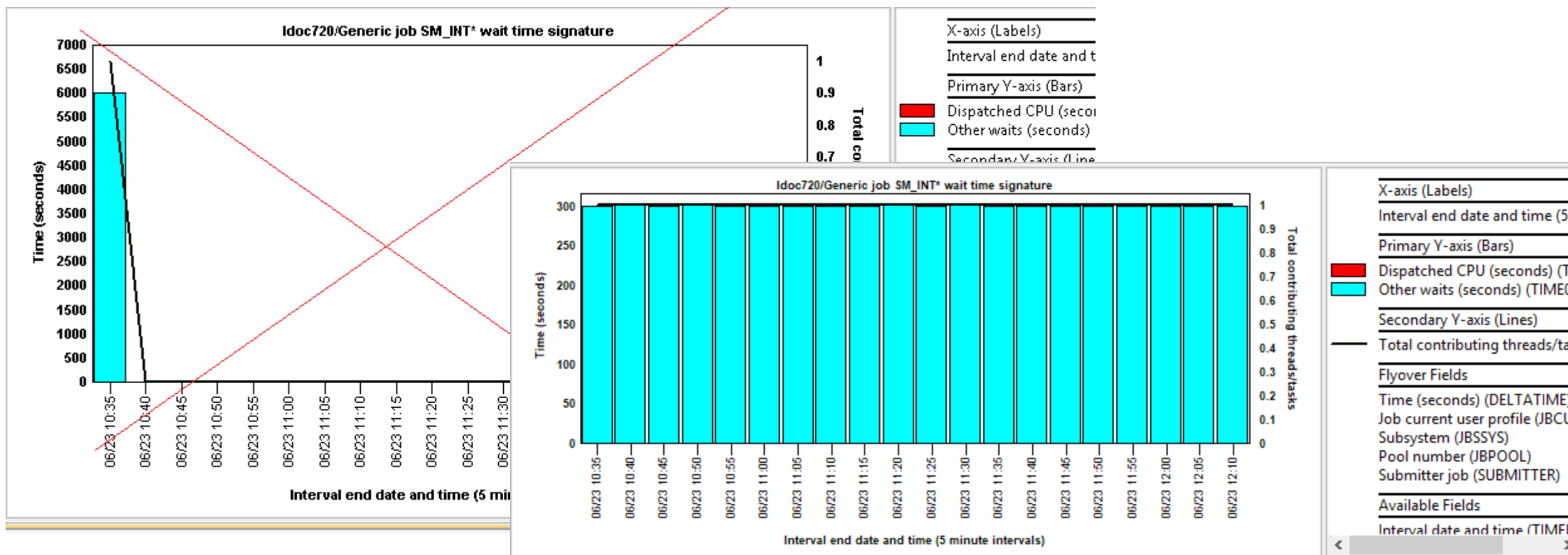
General System Pools Disk units Wait Buckets Situations

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

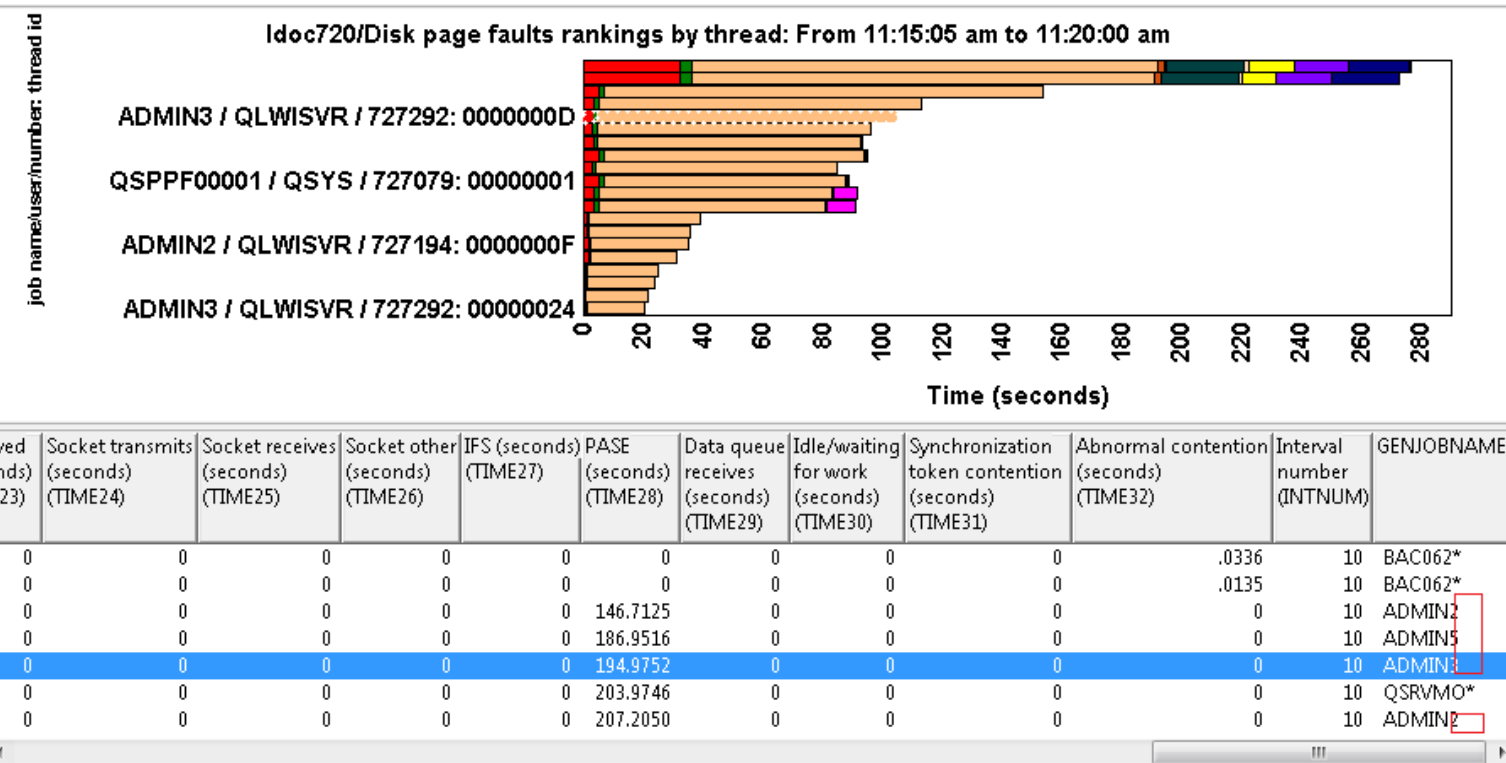
August 2018 (1327) – CSI – Generic job X wait time signature bad data

- 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)

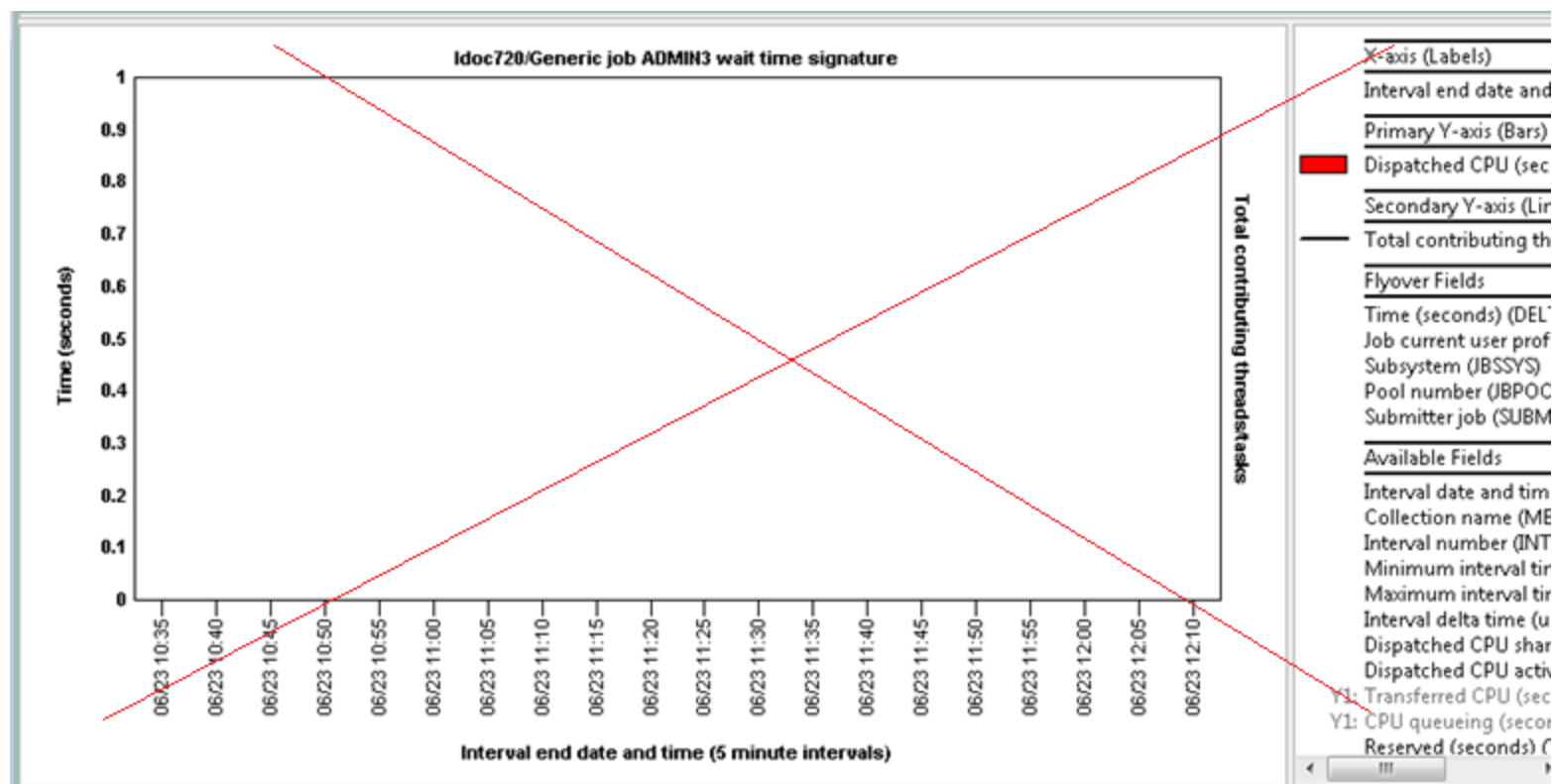
Always sort disk rankings graphs by avg response times

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:

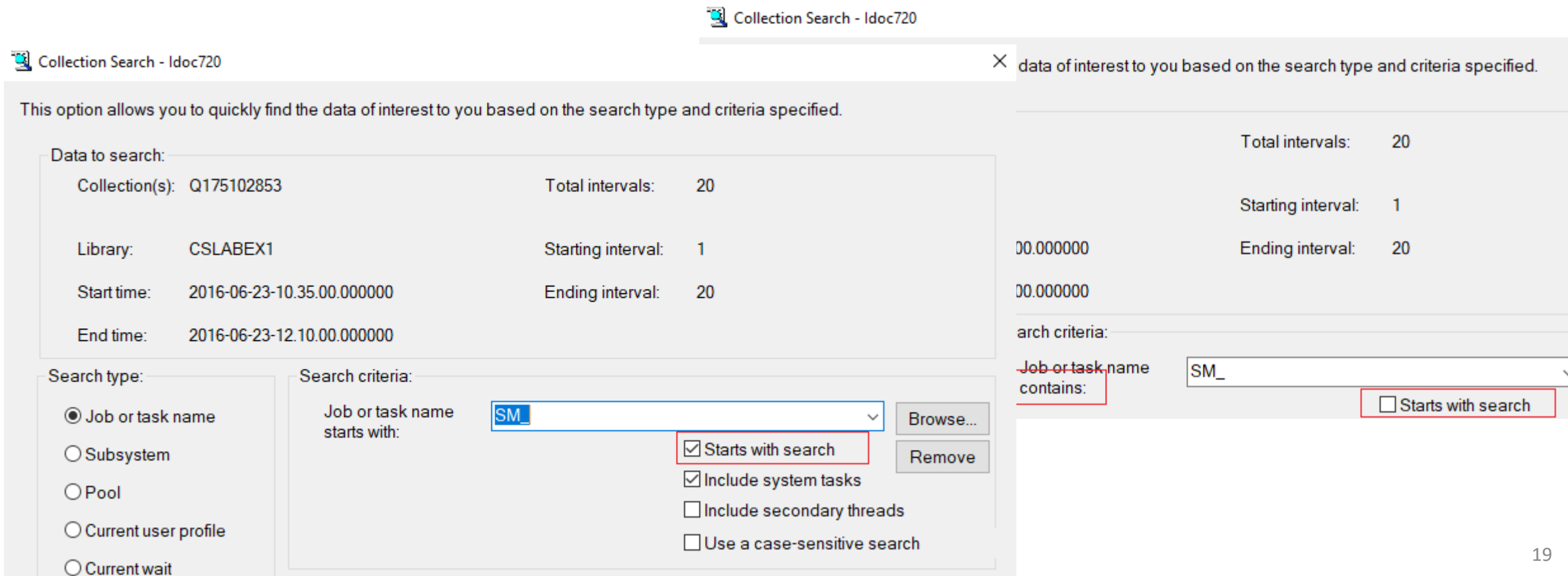
Starts with search

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 displays the 'Collection Search - Idoc720' window. It features a search criteria section with the following details:

- Data to search:**
 - Collection(s): Q175102853
 - Library: CSLABEX1
 - Start time: 2016-06-23-10.35.00.000000
 - End time: 2016-06-23-12.10.00.000000
- Search type:**
 - Job or task name
 - Subsystem
 - Pool
 - Current user profile
 - Current wait
- Search criteria:**
 - Job or task name starts with:
 - Starts with search
 - Include system tasks
 - Include secondary threads
 - Use a case-sensitive search

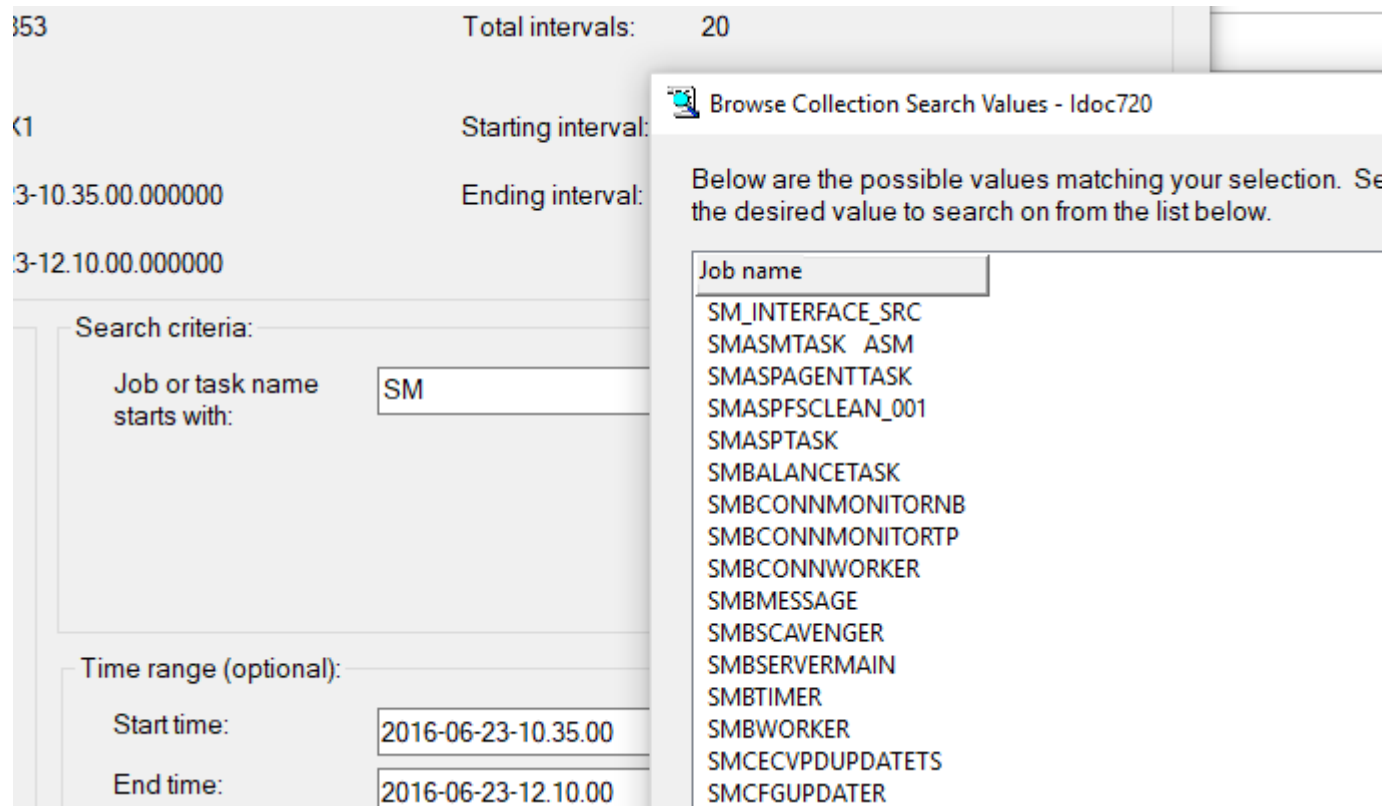
On the right side of the window, there is a summary of search results:

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

Below the summary, there is a section for search criteria with a dropdown menu set to 'SM_' and a checkbox labeled 'Starts with search' which is currently unchecked. The text 'Job or task name contains:' is visible above the dropdown.

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 for document IDoc720. The search criteria are as follows:

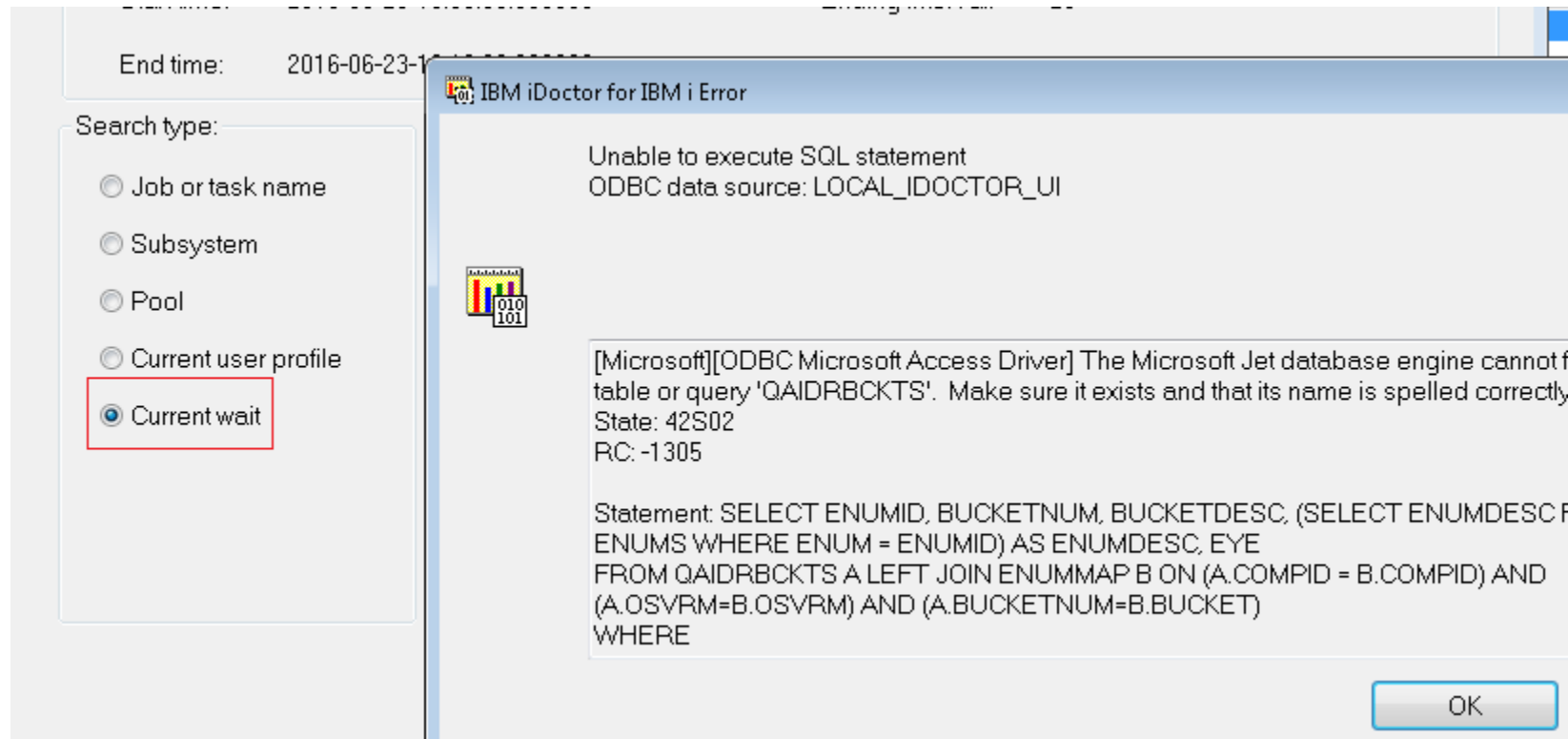
- Total intervals: 20
- Starting interval: 3-10.35.00.000000
- Ending interval: 3-12.10.00.000000
- Search criteria: Job or task name starts with: SM
- Time range (optional): Start time: 2016-06-23-10.35.00, End time: 2016-06-23-12.10.00

The resulting list of job names is:

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

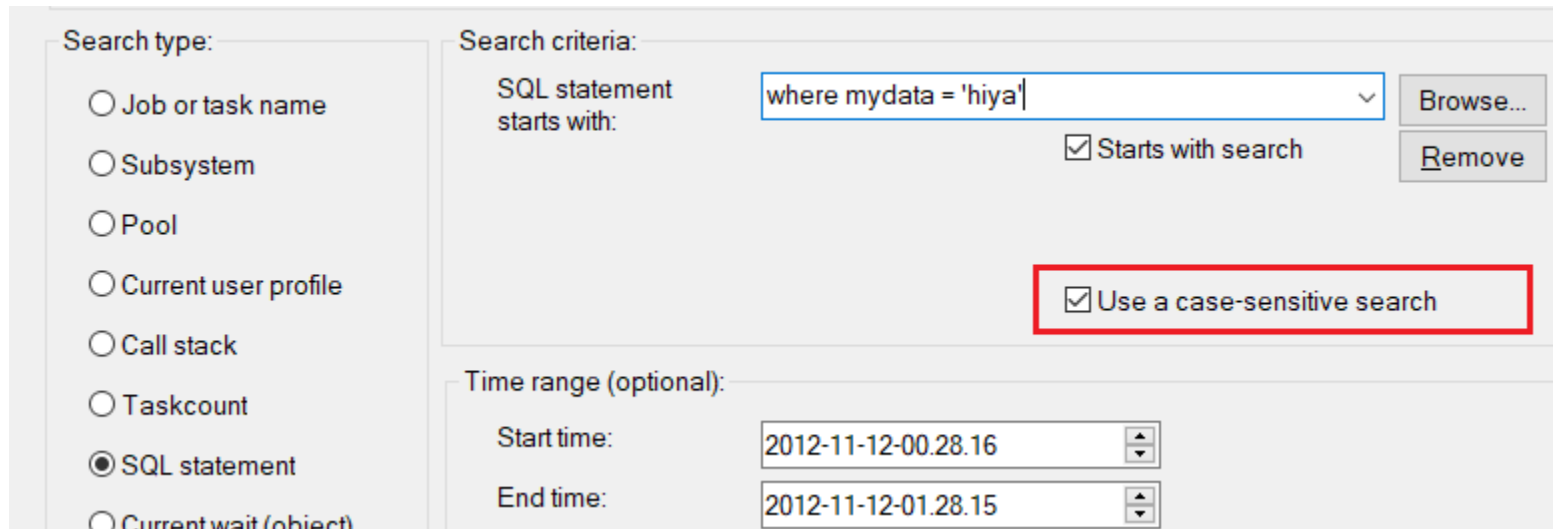
August 2018 (1327) – CSI/JW – Collection Search updates

- 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.

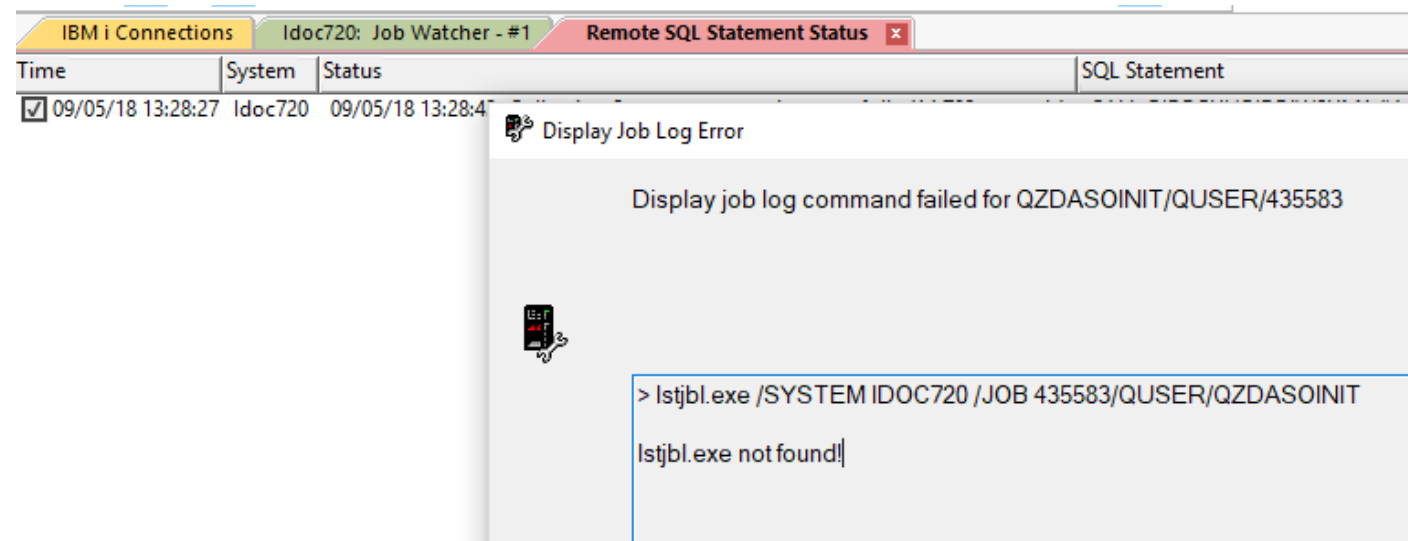
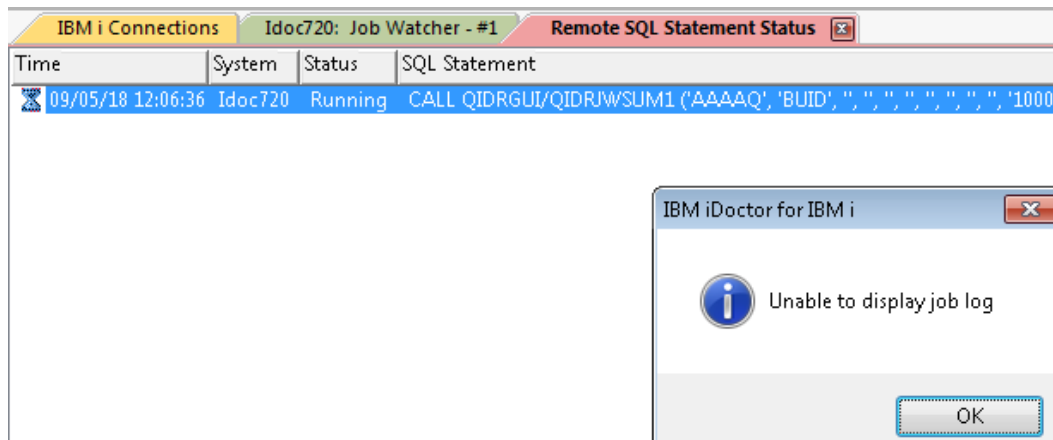


The screenshot shows a search interface with the following elements:

- 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.
- Search 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).

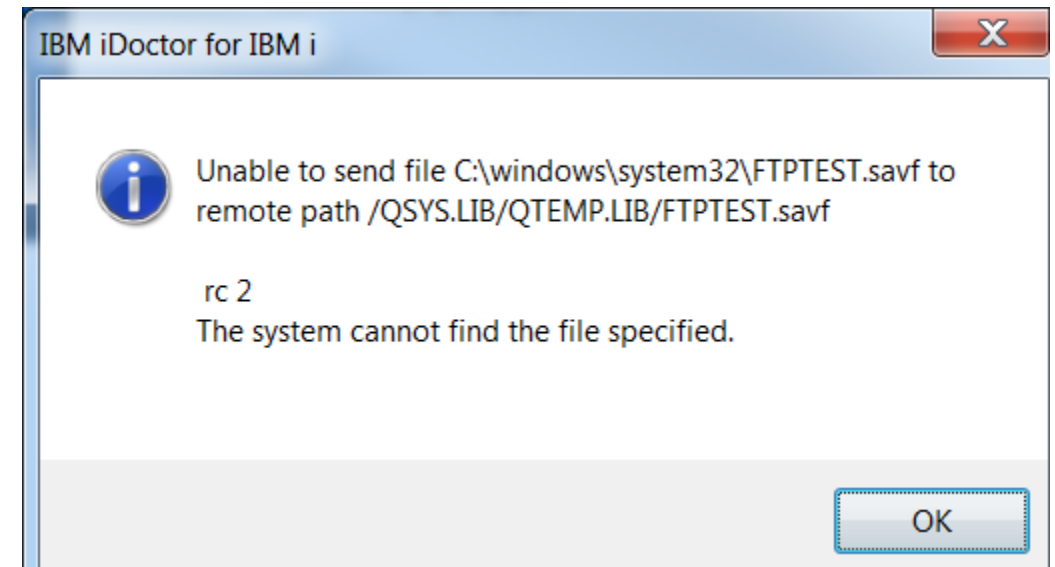
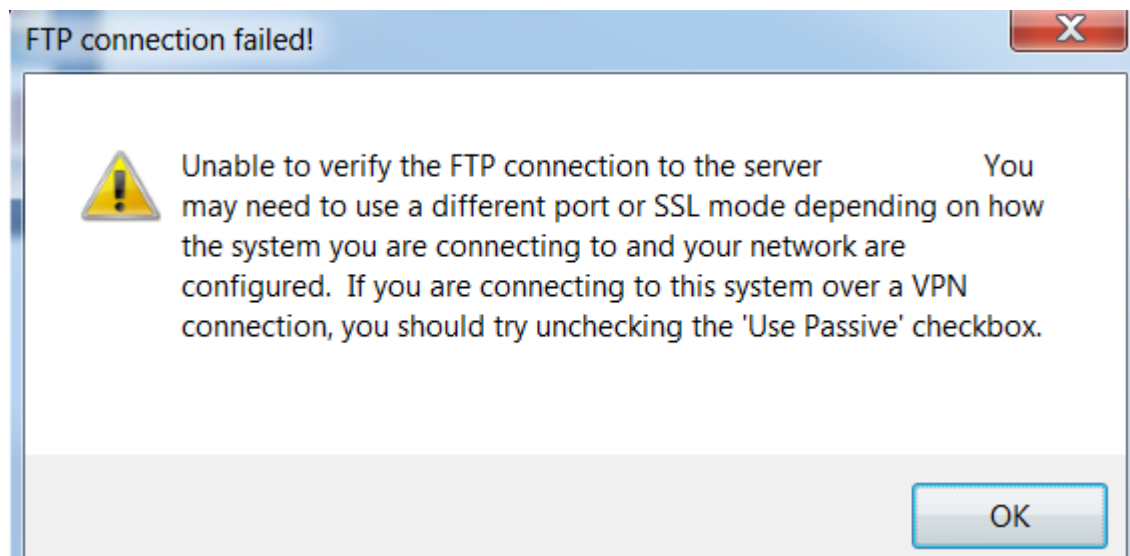
August 2018 (1327) – Display job log error

- 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.



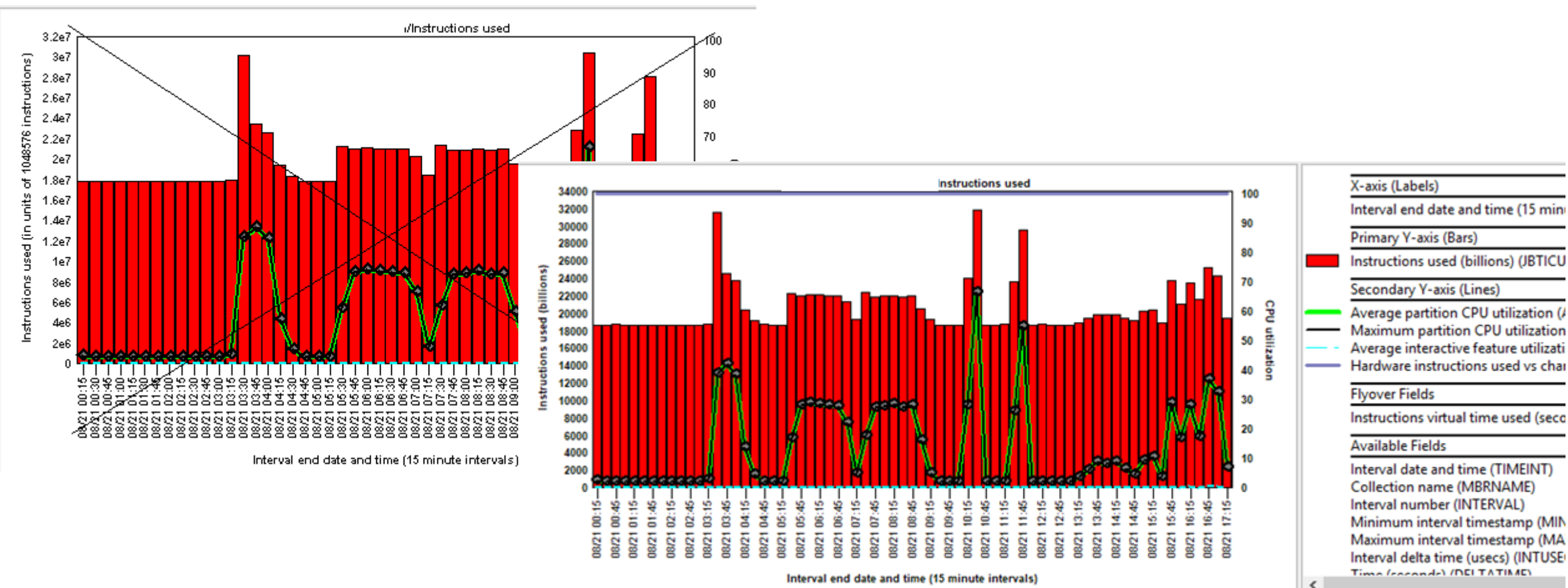
August 2018 (1327) – Installation secure FTP support broken

- 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.



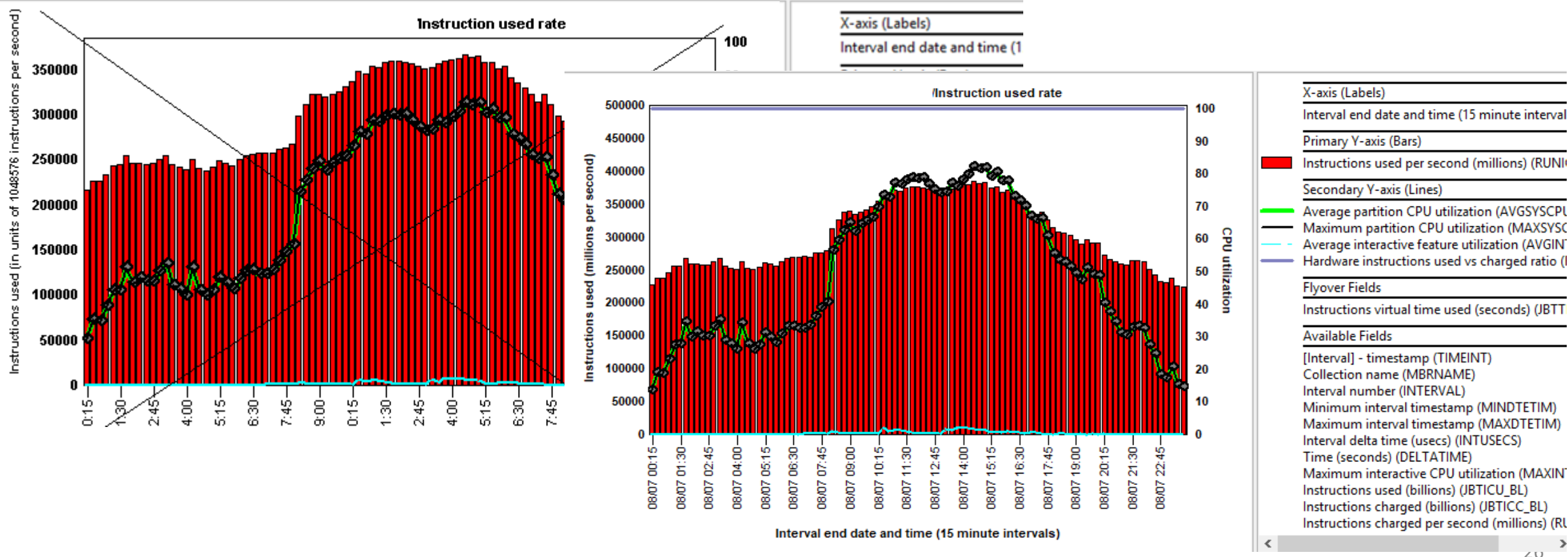
August 2018 (1327) – CSI - CPU Graphs -> P8 or higher update

- 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

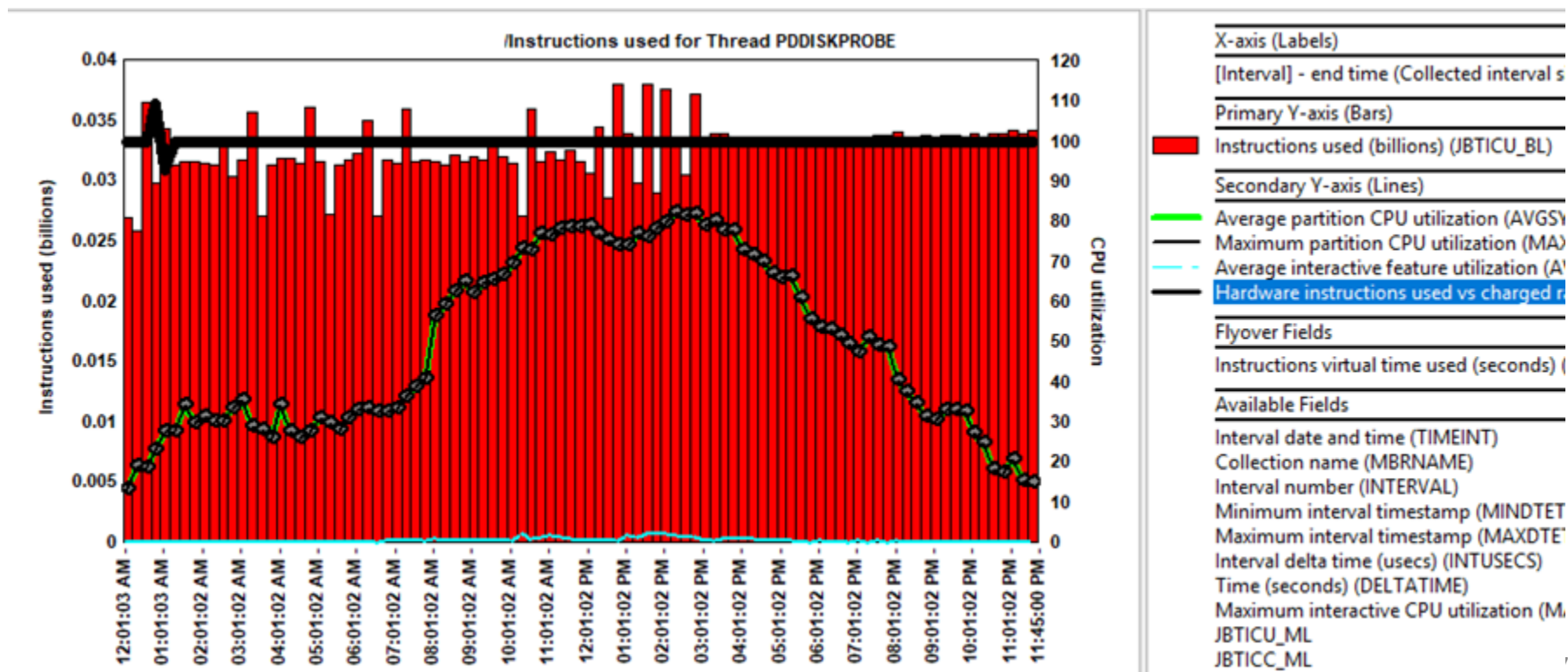
- These graphs on the Y2 now include a percent of instructions used vs charged (same value for both is at 100%):

Instructions used

Instructions charged

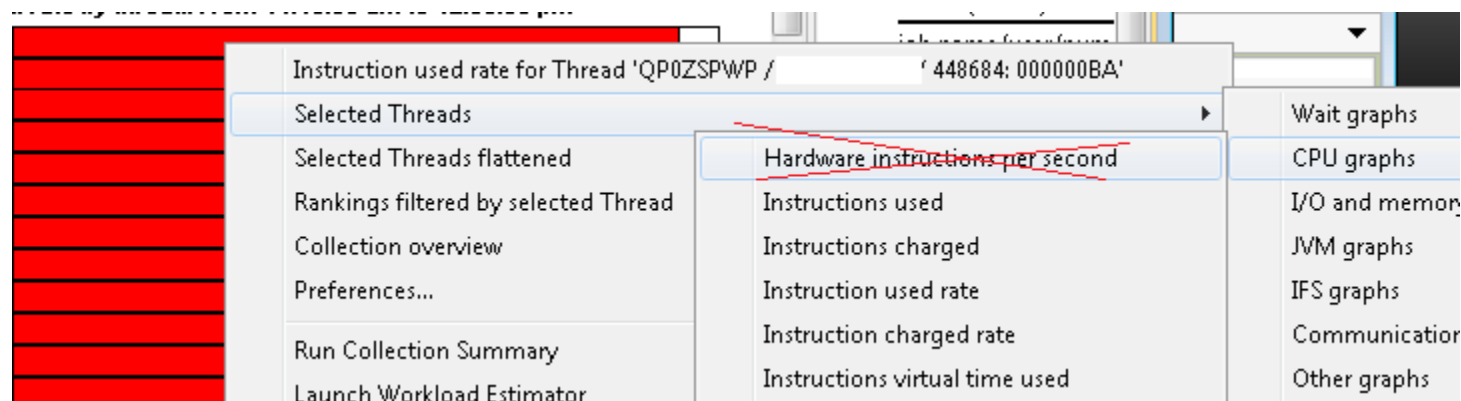
Instruction used rate

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.



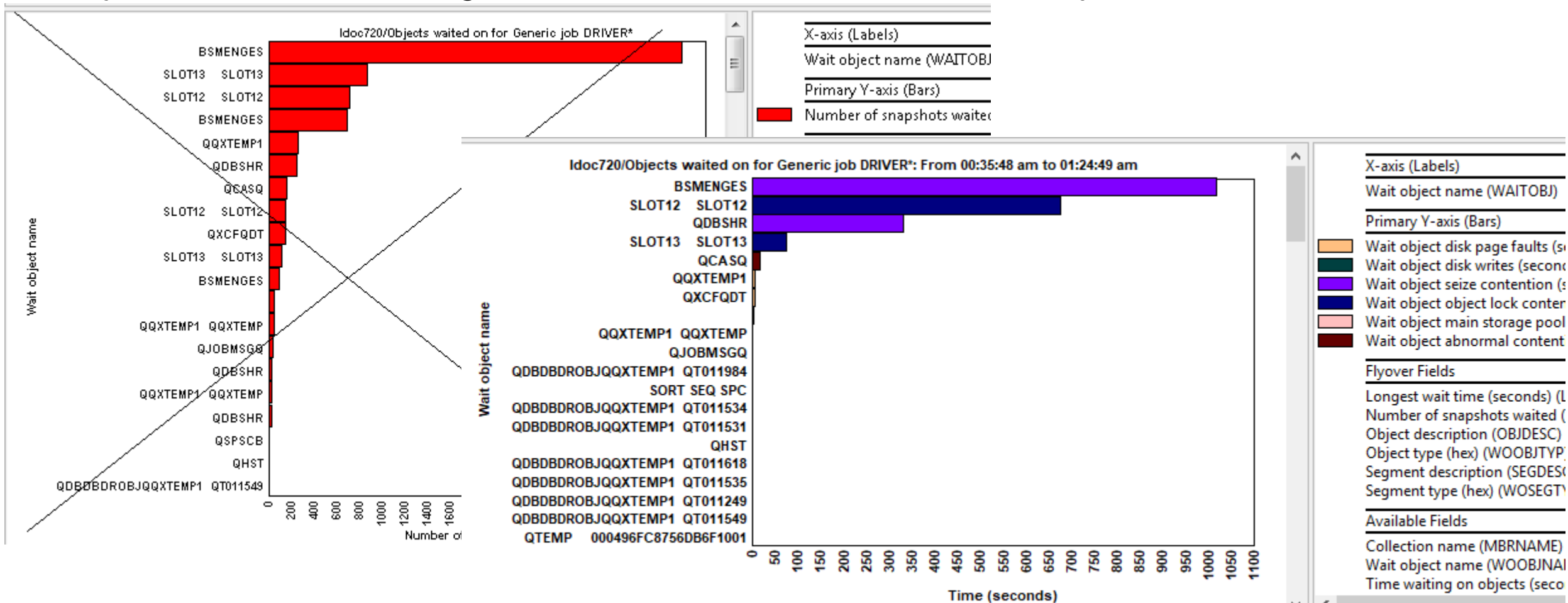
August 2018 (1327) – CSI - Incorrect idle wait calculations

- 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*')
```

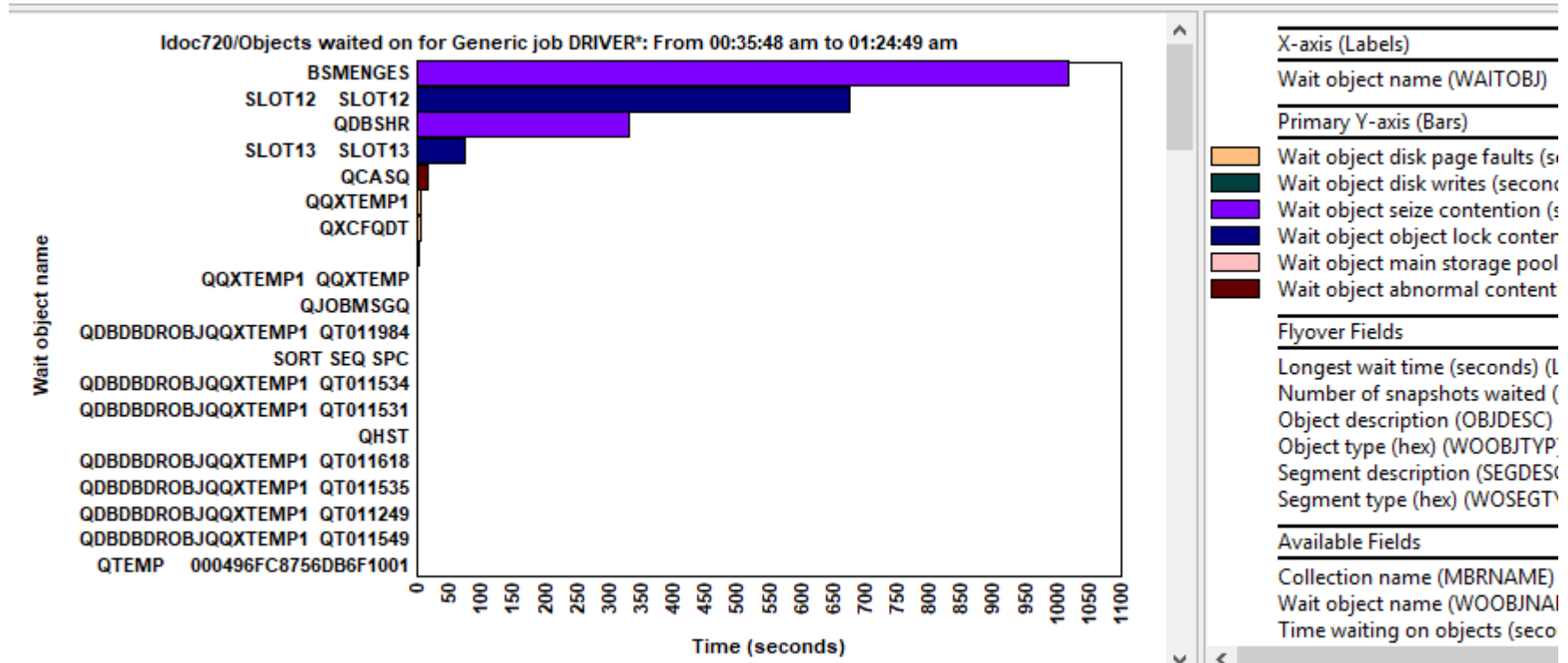
August 2018 (1327) – JW -> Waits -> Objects waited on drill downs

- 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.



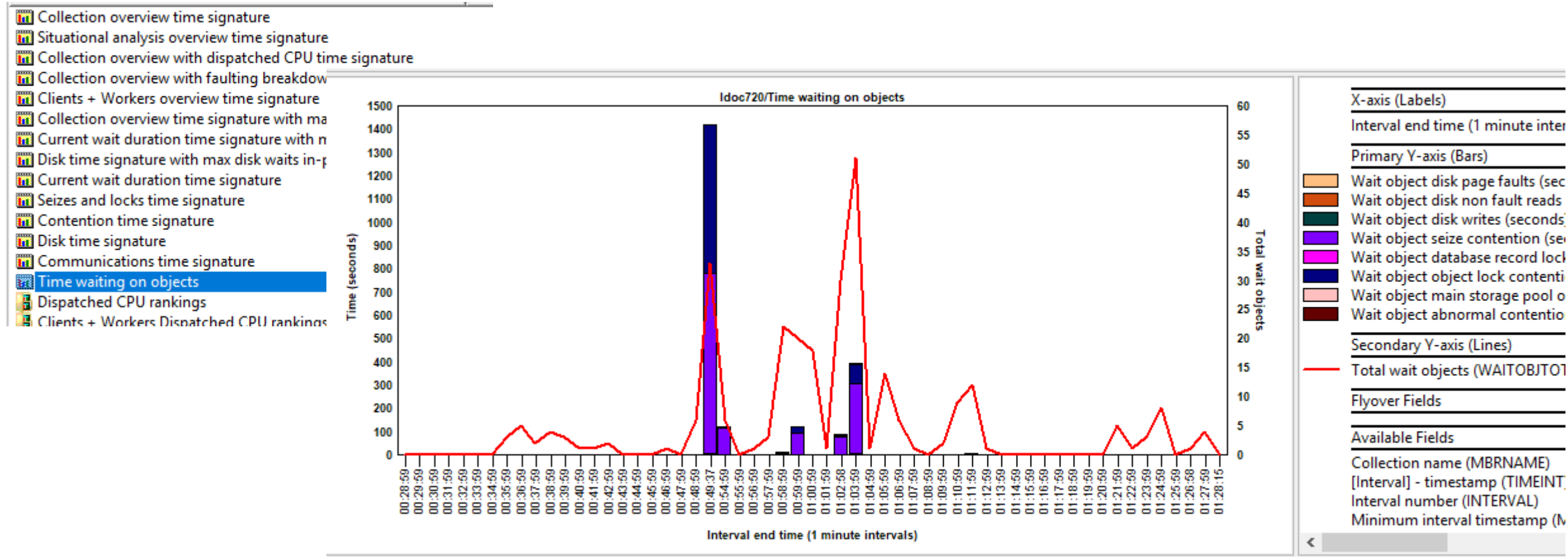
August 2018 (1327) – JW -> Waits -> Objects waited on drill downs

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



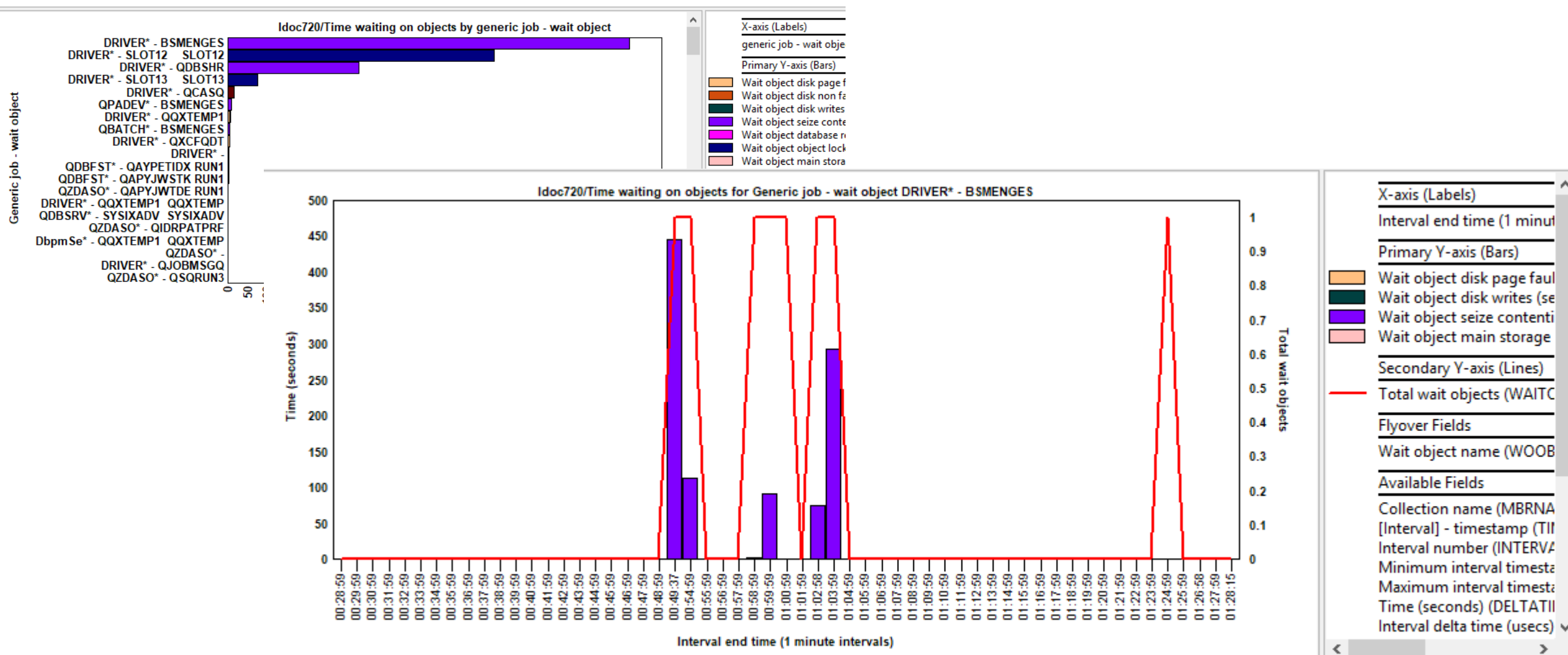
August 2018 (1327) – JW -> Time waiting on objects

- 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.



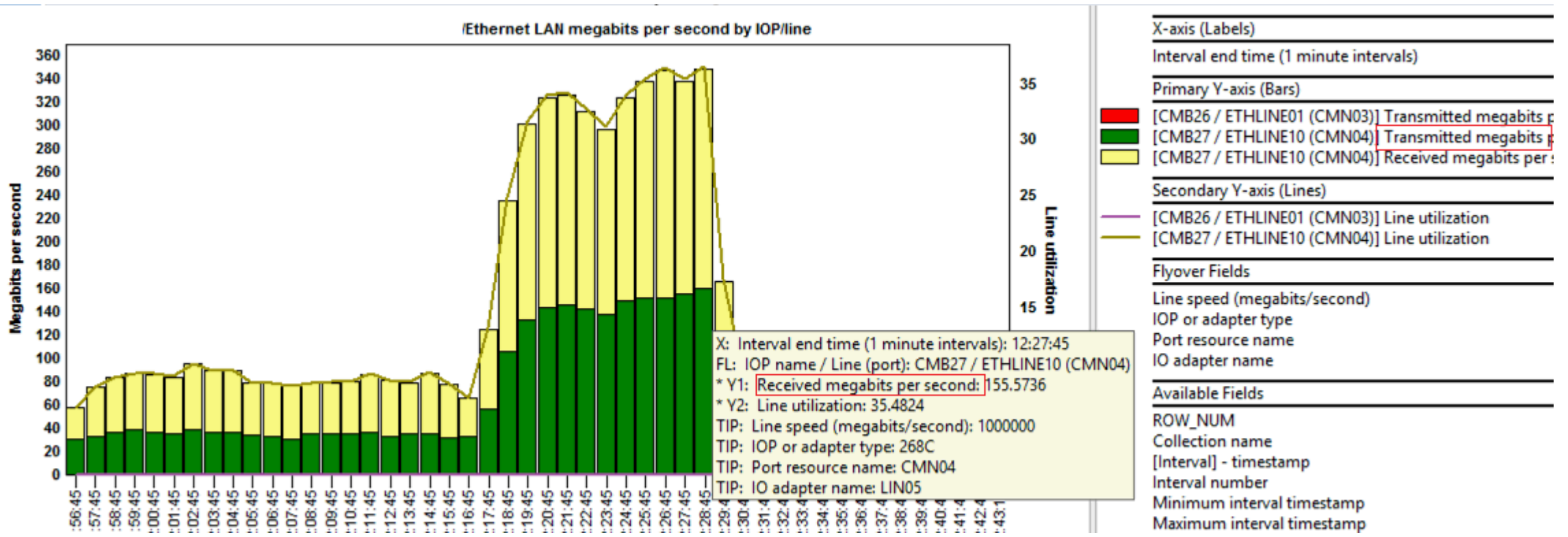
August 2018 (1327) – JW -> Time waiting on objects

- Generic job - wait object job grouping example.



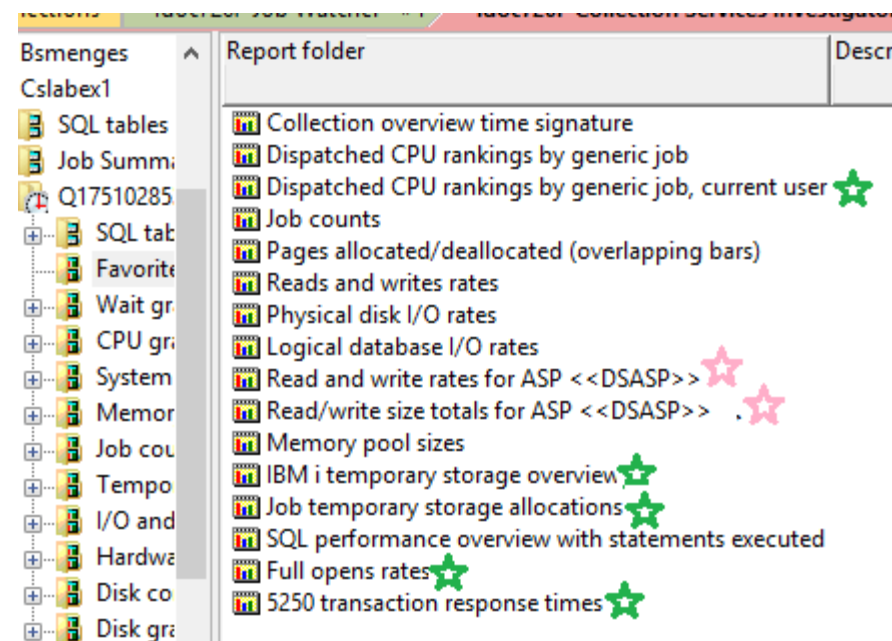
August 2018 (1327) – Fixed bad flyover descriptions in flattened graphs

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



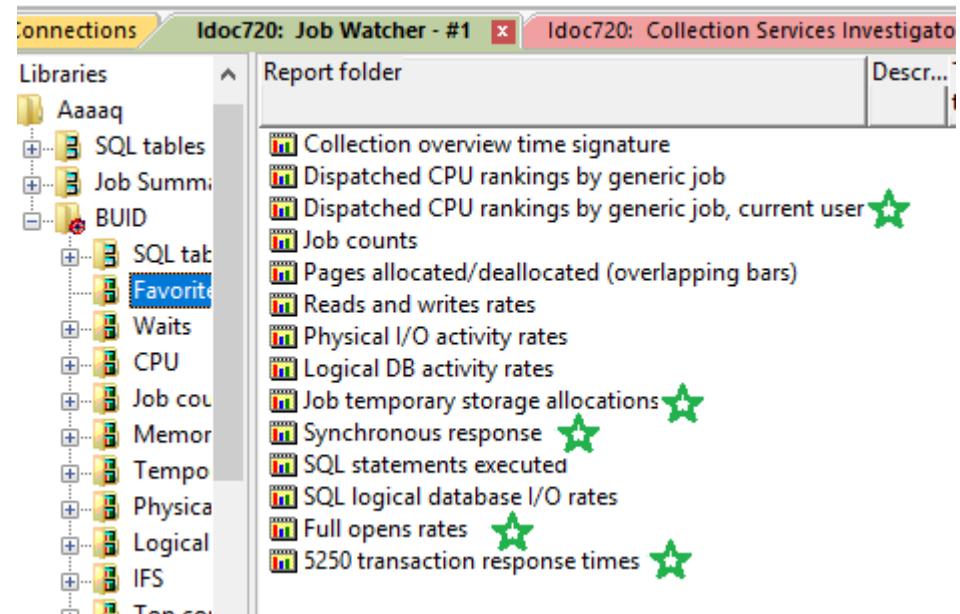
August 2018 (1327) – CSI – Favorites folder updates

- 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



August 2018 (1327) – JW – Favorites folder updates

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





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.

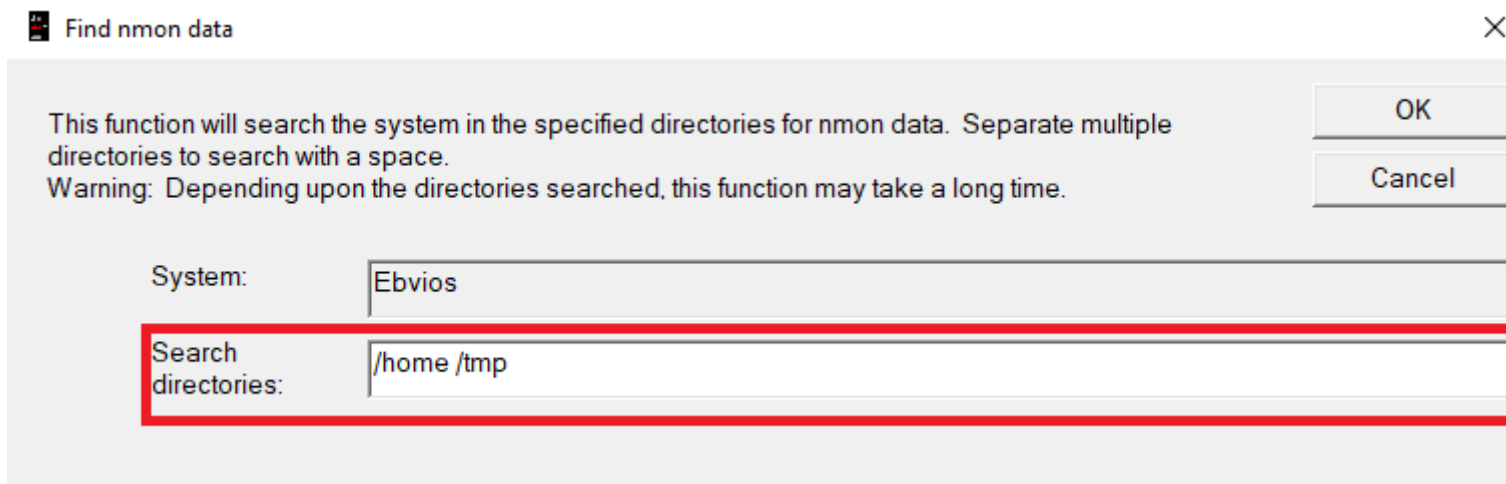
August 2018 (1326) – Power Connections issues fixed

- 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
✓ 08/16/18 09:38:59		Complete (.48 seconds)	cat /tmp/idoctor
✓ 08/16/18 09:39:09		Complete (.22 seconds)	cat /tmp/idoctor
✓ 08/16/18 09:39:10		08/16/18 09:39:13: Completed successfully >	rm /tmp/idoctor
✓ 08/16/18 09:39:10		08/16/18 09:39:30: Completed successfully >	print "/tmp/idoct
⚠ 08/16/18 09:39:10		Error: An FTP connection is not available. >	get /tmp/idoctor
✓ 08/16/18 09:40:23		Complete (.45 seconds)	ioscli ioslevel
✓ 08/16/18 09:40:23		Complete (.48 seconds)	cat /tmp/idoctor
✓ 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

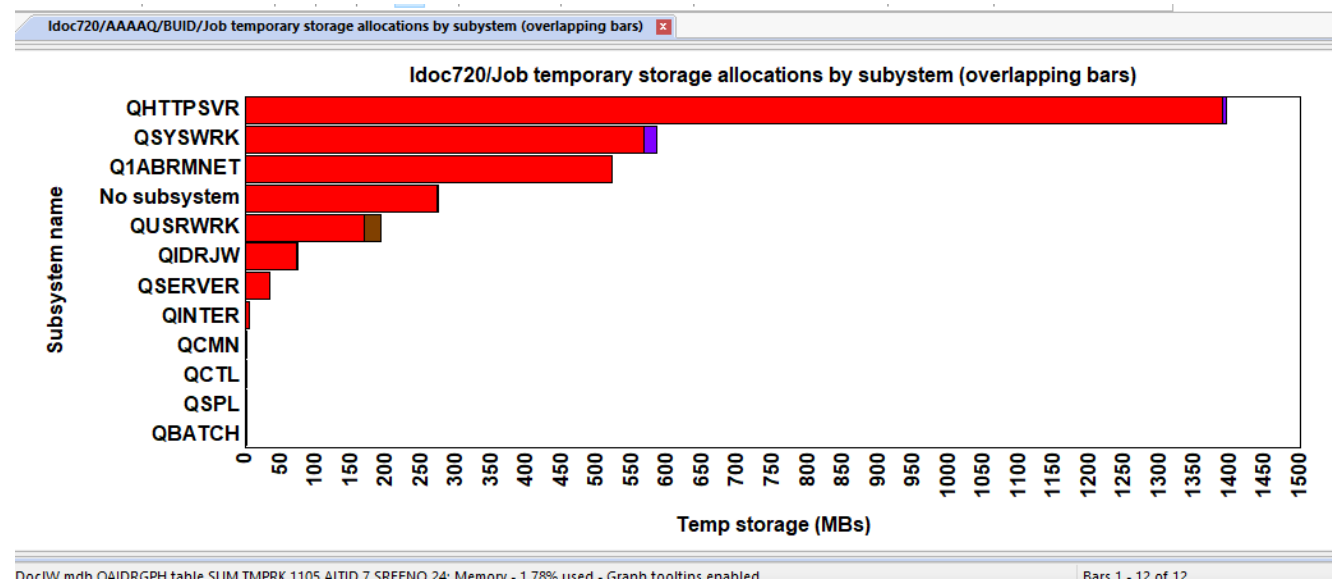
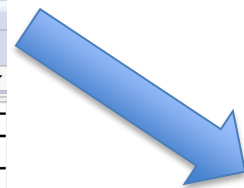
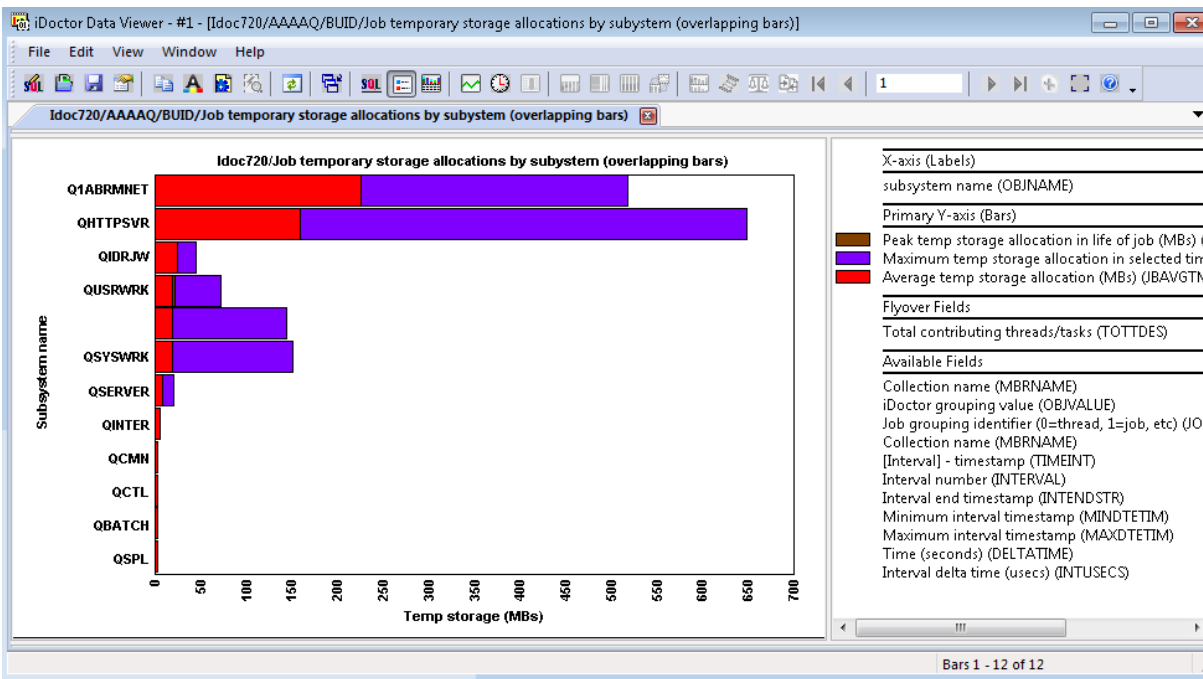
Search directories: /home /tmp

OK

Cancel

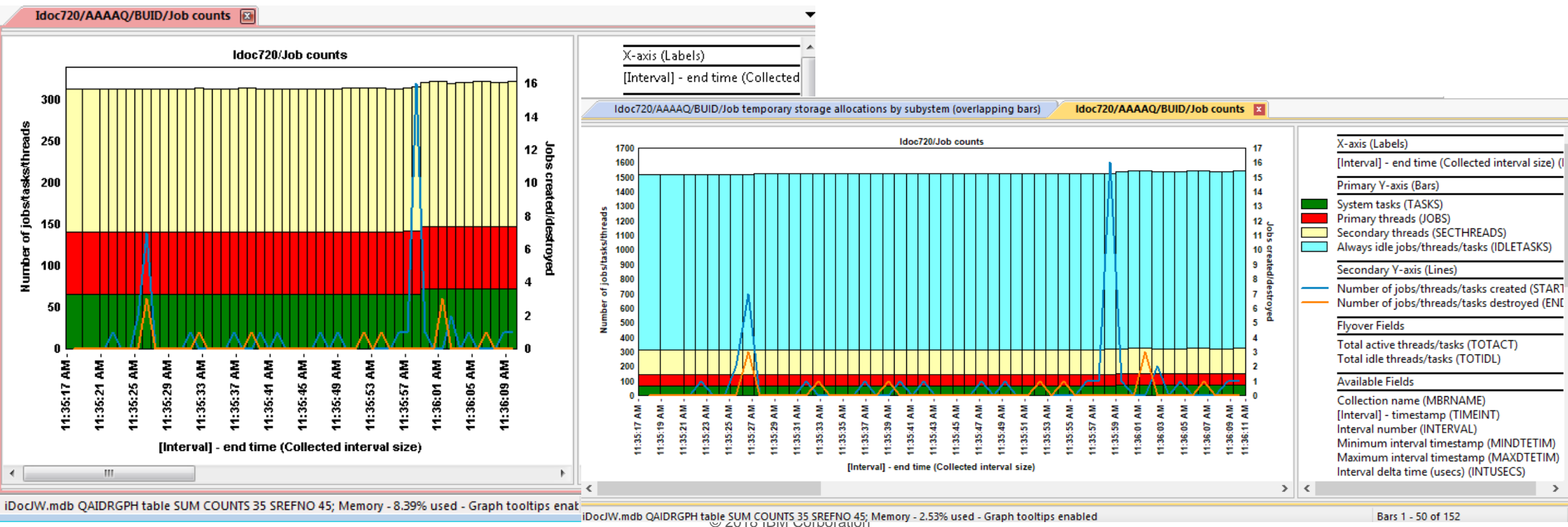
August 2018 (1326) – JW temp storage graphs inaccurate

- 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.



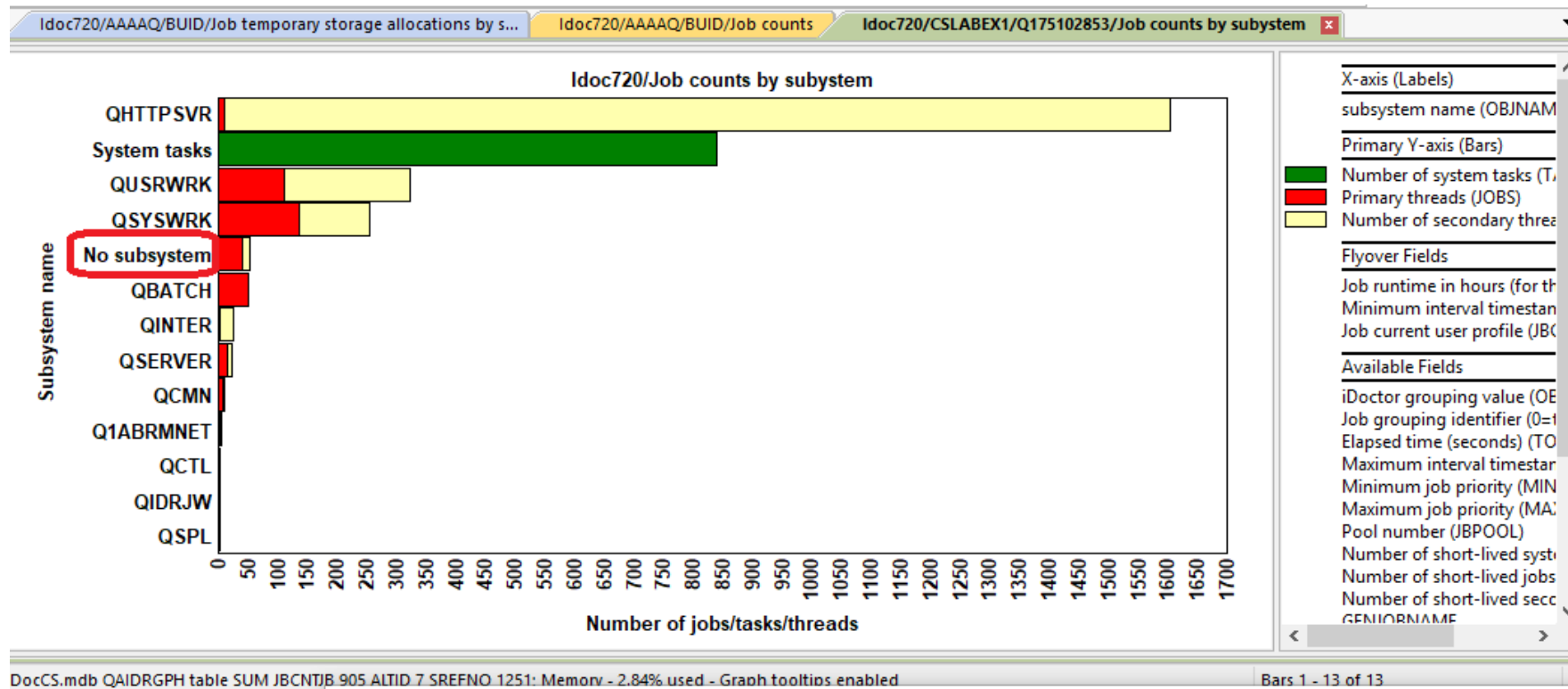
August 2018 (1326) – JW Job counts missing “always idle work”

- 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.

