

---

# iDoctor Updates (Feb 2019 to May 2019)

Ron McCargar  
iDoctor development  
IBM i Global Support Center



---

## Currently recommended “stable” builds

- IBM internal:
  - Latest client is 1351 (May 10<sup>th</sup>, 2019)
  - Latest "stable" client is 1350 (April 26<sup>th</sup>, 2019)
- IBM external:
  - Latest client is 1351 (May 10<sup>th</sup>, 2019)
  - Latest "stable/announced" client is 1350 (April 26<sup>th</sup>, 2019)

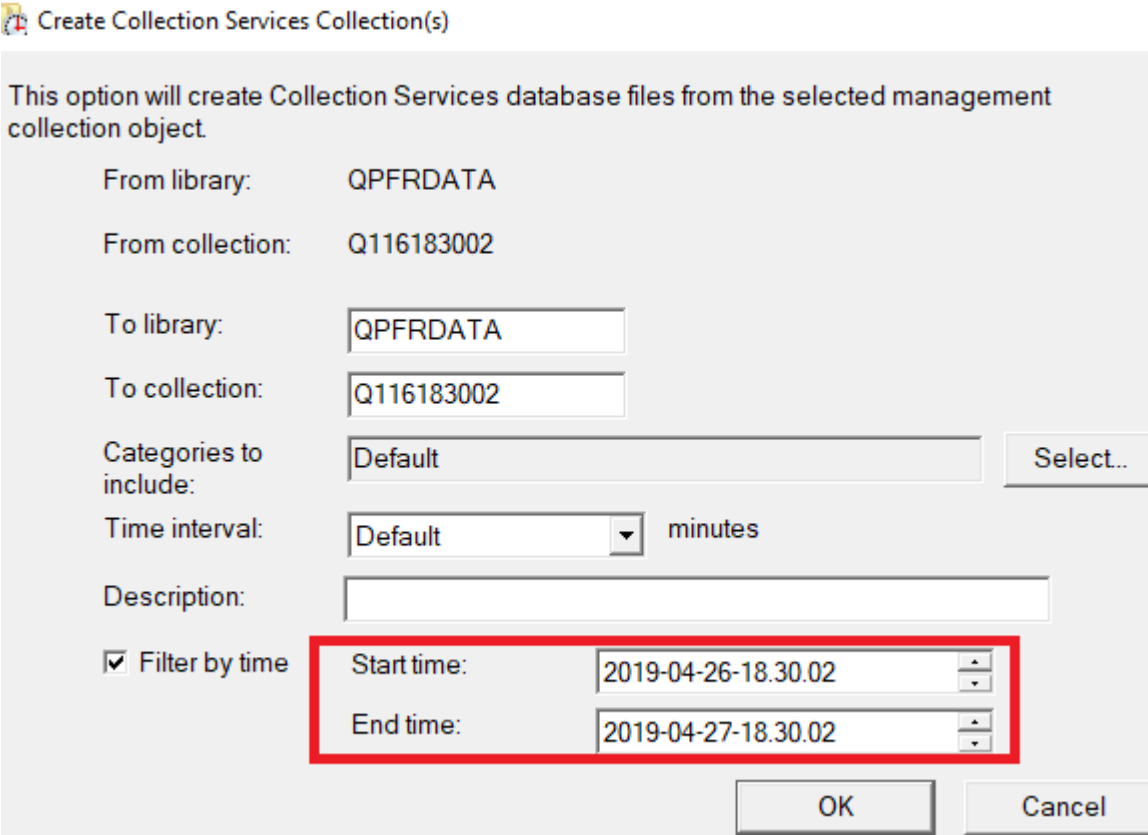
---

## Contents

- Collection Services Investigator: Slides 4 – 30
- General (miscellaneous updates): Slides 31 - 47
- Job Watcher: Slides 48 - 63
- PEX Analyzer: Slides 71-73
- Disk Watcher/Plan Cache Analyzer: Slides 68 - 70

## Feb 2019 (1345) – CSI – CS Objects – Create Collection times

- In CSI from the CS Objects folder the Create Collection option / window did not prefill the correct start and end times.



Create Collection Services Collection(s)

This option will create Collection Services database files from the selected management collection object.

From library: QPFRDATA

From collection: Q116183002

To library: QPFRDATA

To collection: Q116183002

Categories to include: Default Select..

Time interval: Default minutes

Description:

Filter by time

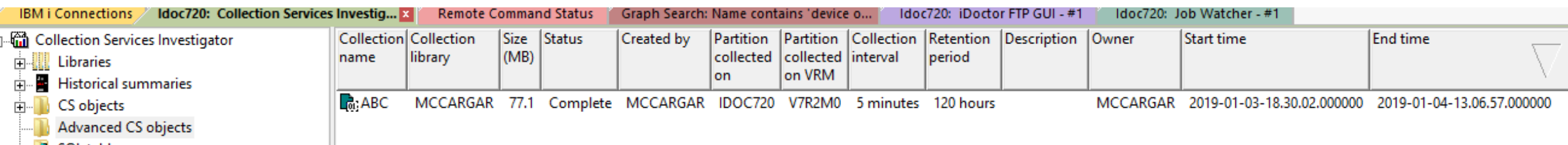
Start time: 2019-04-26-18.30.02

End time: 2019-04-27-18.30.02

OK Cancel

## Feb 2019 (1345) – CSI – Advanced CS Objects

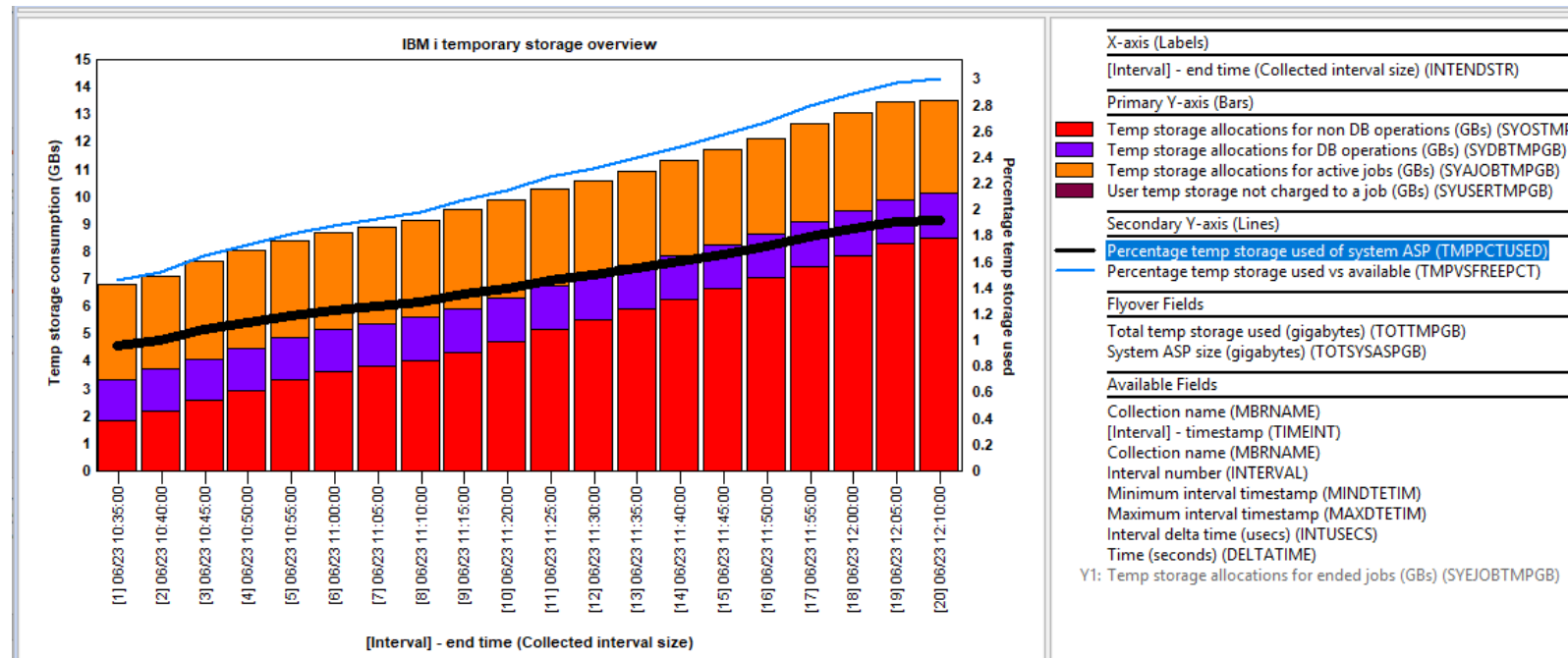
- In CSI, in the Advanced CS Objects folder renamed 2 columns as follows:
  - Creation time -> Start time
  - Change time -> End time
- **Note #1:** These times are the accurate start and end times for the data inside of the \*MGTCOL if using the Advanced CS Objects folder only.
- **Note #2:** The creation time and change time columns in the CS Objects folder by contrast refer to just the \*MGTCOL object itself and not the data within it.



Collection name	Collection library	Size (MB)	Status	Created by	Partition collected on	Partition collected on VRM	Collection interval	Retention period	Description	Owner	Start time	End time
@:ABC	MCCARGAR	77.1	Complete	MCCARGAR	IDOC720	V7R2M0	5 minutes	120 hours		MCCARGAR	2019-01-03-18.30.02.000000	2019-01-04-13.06.57.000000

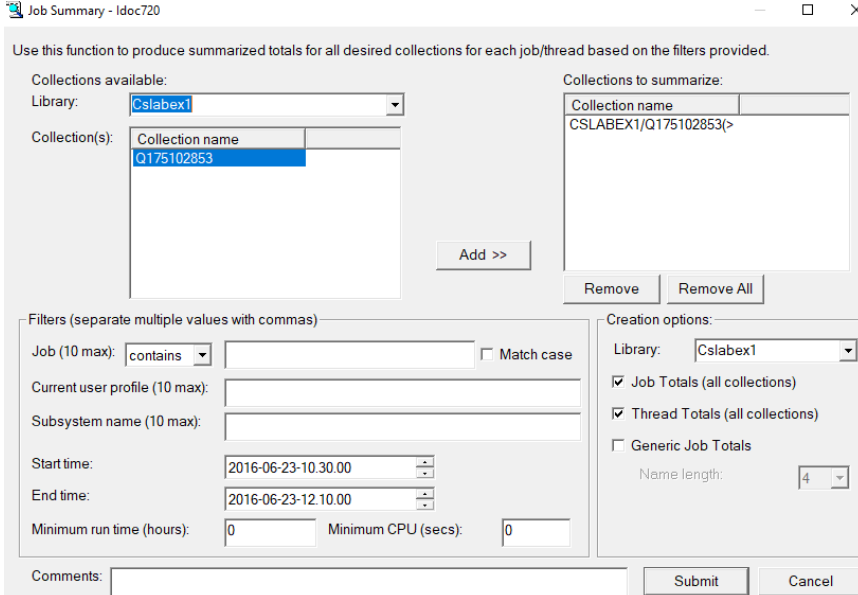
# April 2019 (1350) – CSI - Temporary storage calculation fix

- In CSI the calculation for the situation "Temp storage used is potentially too high and may disrupt SQL plan cache auto-sizing" was incorrect and has been fixed.
- This same miscalculation issue also effected the 1<sup>st</sup> 3 graphs in the CSI – temporary storage folder for the Y2-axis metrics.



## March 2019 (1346) – CSI – Job Summary analysis

- Updates for the Job Summary analysis:
  - At 7.3+ added support for new fields JBPGAI, JBPGDI, JBTMPPGAI, JBTMPPGDI
  - Renamed JBPGA and JBPGD to be clear that these values are since the thread started.
  - Added new fields JBPGACOL , JBPGDCOL to include the delta pages allocated or deallocated during the summary period time.
  - Several fields from file QAPMJOBOS where showing NULL values in some cases and have been changed to 0s.
  - Analysis would fail if a time filtering was set.



Job Summary - Idoc720

Use this function to produce summarized totals for all desired collections for each job/thread based on the filters provided.

Collections available:

Library: Cslabex1

Collection name
Q175102853

Add >>

Collections to summarize:

Collection name
CSLABEX1/Q175102853(>

Remove Remove All

Filters (separate multiple values with commas)

Job (10 max): contains Match case

Current user profile (10 max):

Subsystem name (10 max):

Start time: 2016-06-23-10:30.00

End time: 2016-06-23-12:10.00

Minimum run time (hours): 0 Minimum CPU (secs): 0

Creation options:

Library: Cslabex1

Job Totals (all collections)

Thread Totals (all collections)

Generic Job Totals

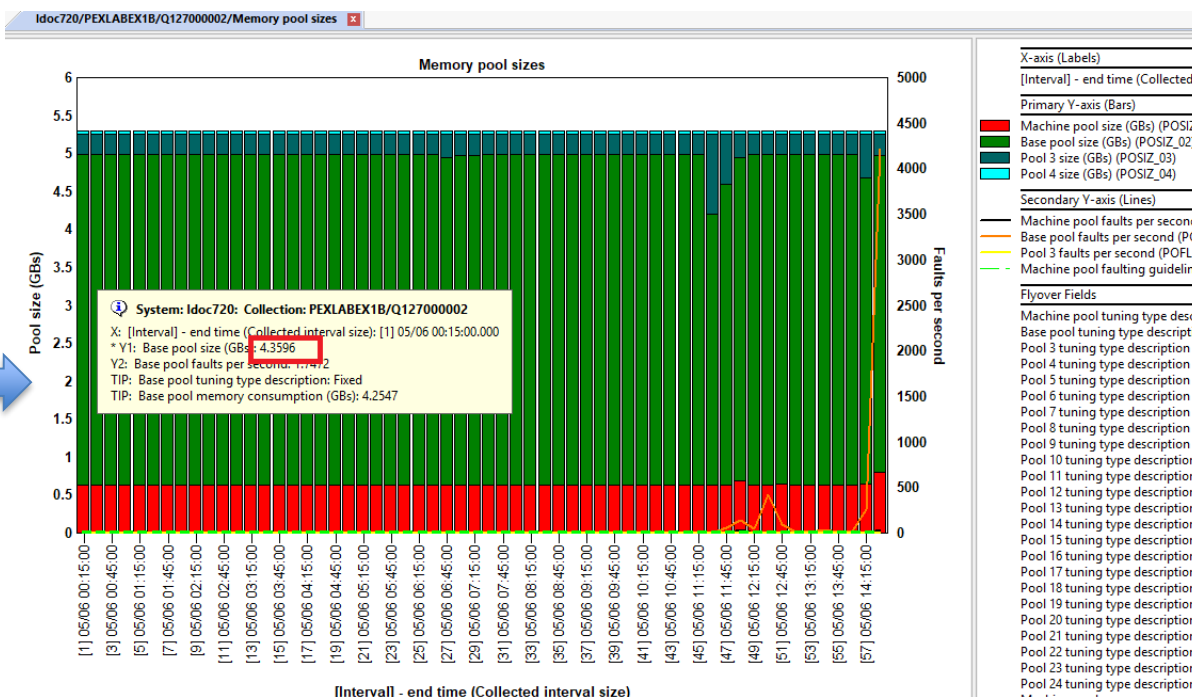
Name length: 4

Comments:

Submit Cancel

# April 2019 (1350) – CSI – System graphs – Memory pool size updates

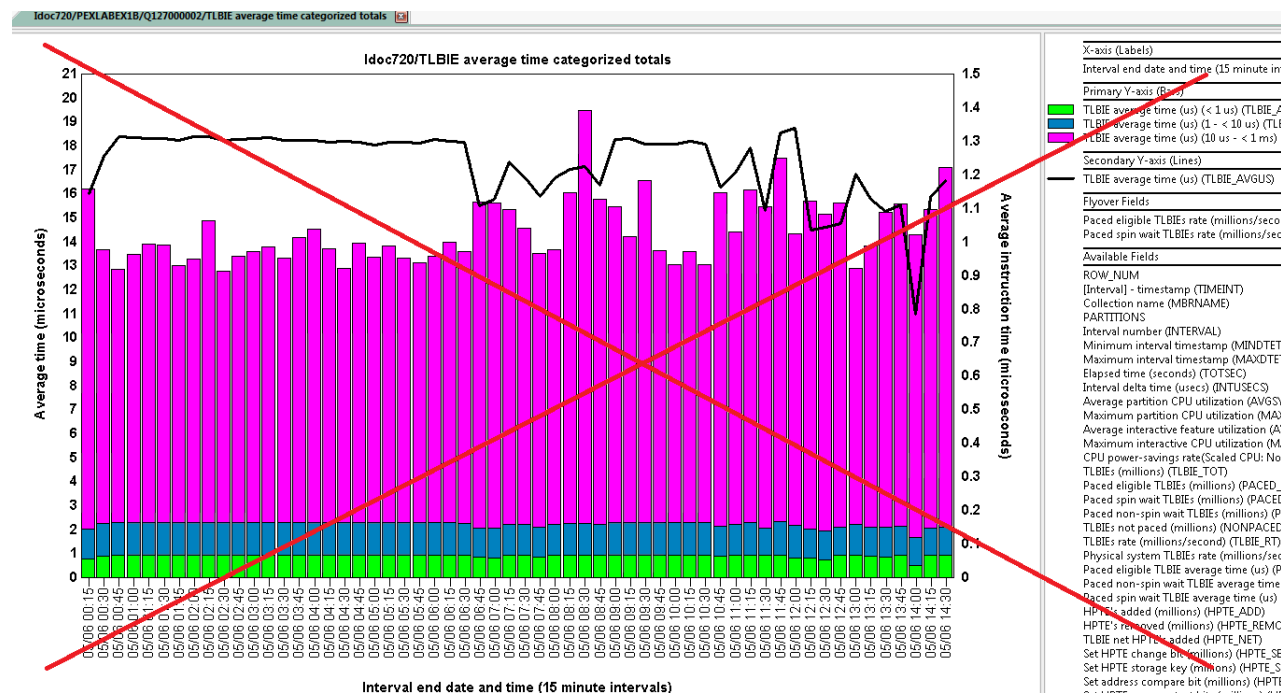
- In CSI – System graphs, all graphs that show memory sizes have the following updates:
  - Pool #3 is no longer using white as its color.
  - All memory size fields were (slightly) incorrect.
  - Memory sizes are now in gigabytes.





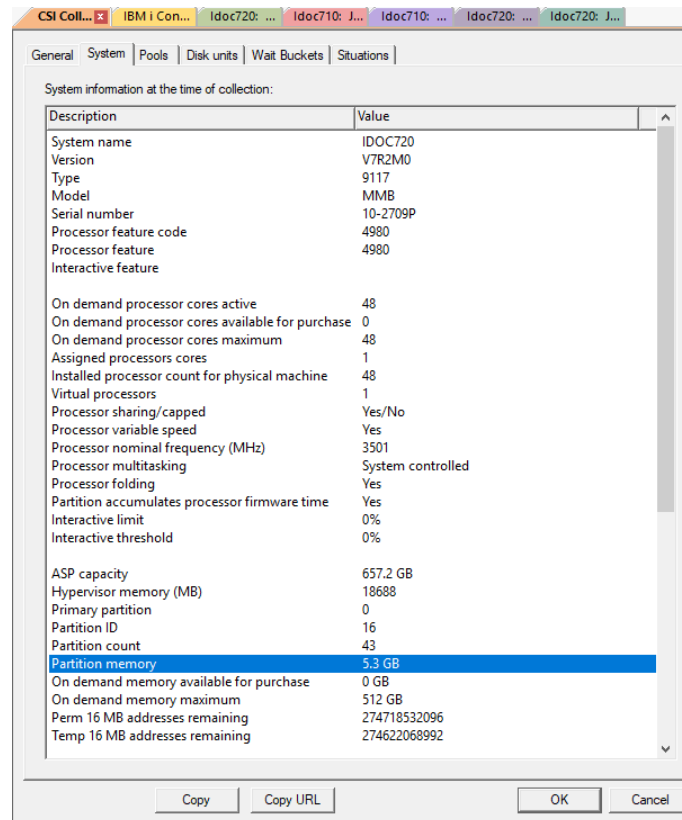
# Feb 2019 (1345) – CSI – System graphs removed

- These graphs that show averages within a categorized bucket were deleted since they might be misleading:
  - System graphs -> Interrupts -> Interrupts average time categorized totals
  - System graphs -> TLBIEs -> TLBIE average time categorized totals
  - System graphs -> TLBIEs -> TLBIE average time categorized totals per partition



# Feb 2019 (1344) – CSI – Collection properties – System tab

- Updated the CSI – Collection Properties – System tab so that the partition memory value is retrieved correctly if the value is > 9.5 Terrabytes (TBs.)
  - Note: These PTFs are required:
    - 7.3 PTF SI64302
    - 7.2 PTF SI64289



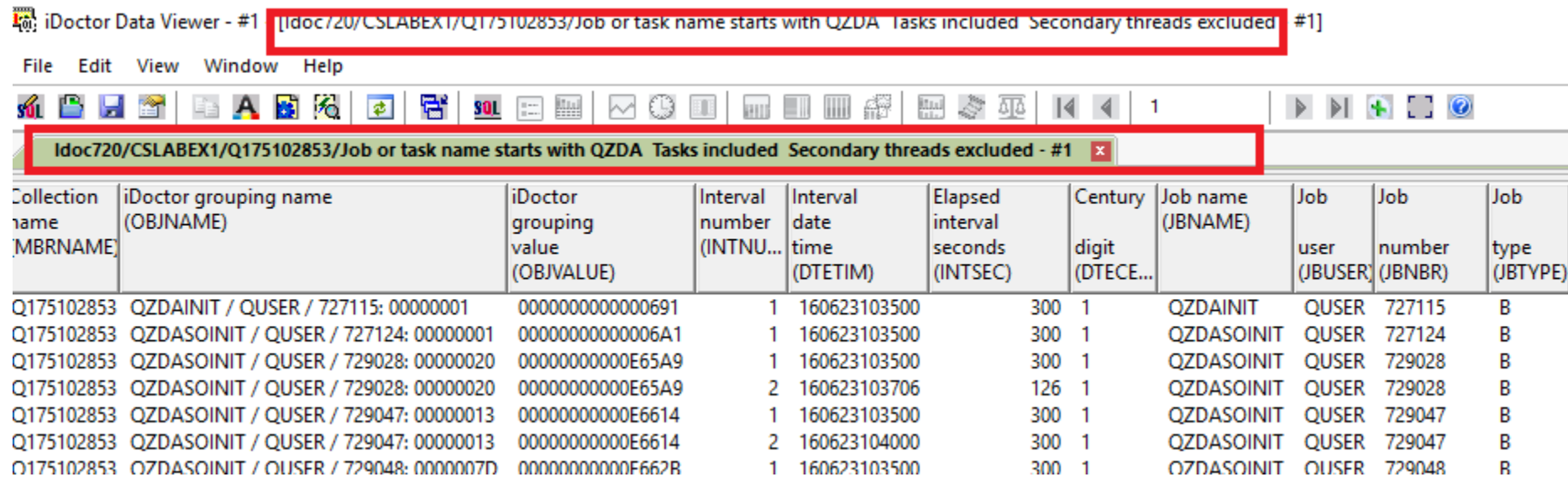
# April 2019 (1350) – CSI – Collection properties – Disk units tab updates

- In CSI – Collection properties - Disk units tab, made the following updates:
  - Disk capacity (in GB) was incorrectly reported previously and has been fixed.
  - Changed the Reads per second (in KBs) as well as Writes per second (in KBs) to show the value in megabytes instead to be consistent with the disk graphs
  - Removed these columns: TOTBLKRDS, TOTBLKWRTS, DSNBSY, DSSMPL
  - Added these columns: DSMU, DSIP (multipath and initial path indicators)

Disk units summary																				
Disk arm number	Disk letter	Device resource name	Multipath unit	Initial path	Disk drive type	ASP number	Reads per second	Disk reads per second (megabytes)	Writes per second	Disk writes per second (megabytes)	Disk capacity (in GB)	Disk idle pct	Disk utilization pct	Total reads	Total writes	Total buffer overruns	Total buffer underruns	Total queue elements	Average queue length	Av > 2/3
0001		DD006	0	0	2107	1	29.690	.620	26.912	.329	141.129	98.372	1.628	1,549,3>	1,404,3>	0	0	4,135,867	.079234	
0006		DD007	0	0	2107	1	20.894	.438	20.590	.290	141.129	98.629	1.371	1,090,4>	1,074,5>	0	0	2,003,028	.038373	
0007		DD008	0	0	2107	1	20.986	.451	17.126	.279	141.129	98.701	1.299	1,095,1>	893,766	0	0	2,050,505	.039283	
0008		DD009	0	0	2107	1	20.747	.424	16.069	.272	141.129	98.742	1.258	1,082,6>	838,587	0	0	1,980,884	.037949	
0009		DD010	0	0	2107	1	20.528	.428	21.073	.289	141.129	98.632	1.368	1,071,2>	1,099,7>	0	0	1,971,030	.037760	

# Feb 2019 (1345) – CSI/JW - Collection search report titles enhanced

- When performing a collection search in CSI or Job Watcher, added extra details to the report title about which filtering options and preferences were used.



Collection name (MBRNAME)	iDoctor grouping name (OBJNAME)	iDoctor grouping value (OBJVALUE)	Interval number (INTNU...)	Interval date time (DTETIM)	Elapsed interval seconds (INTSEC)	Century digit (DTECE...)	Job name (JBNAME)	Job user (JBUSER)	Job number (JBNBR)	Job type (JBTYPE)
Q175102853	QZDAINIT / QUSER / 727115: 00000001	0000000000000691	1	160623103500	300	1	QZDAINIT	QUSER	727115	B
Q175102853	QZDASOINIT / QUSER / 727124: 00000001	00000000000006A1	1	160623103500	300	1	QZDASOINIT	QUSER	727124	B
Q175102853	QZDASOINIT / QUSER / 729028: 00000020	000000000000E65A9	1	160623103500	300	1	QZDASOINIT	QUSER	729028	B
Q175102853	QZDASOINIT / QUSER / 729028: 00000020	000000000000E65A9	2	160623103706	126	1	QZDASOINIT	QUSER	729028	B
Q175102853	QZDASOINIT / QUSER / 729047: 00000013	000000000000E6614	1	160623103500	300	1	QZDASOINIT	QUSER	729047	B
Q175102853	QZDASOINIT / QUSER / 729047: 00000013	000000000000E6614	2	160623104000	300	1	QZDASOINIT	QUSER	729047	B
Q175102853	QZDASOINIT / QUSER / 729048: 0000007D	000000000000F662B	1	160623103500	300	1	QZDASOINIT	QUSER	729048	B

## March 2019 (1346) – CSI – Disk configuration – Raid type parity set

- Most disk configuration reports now include RAID type parity set.

Disk arm number (DSARM)	Disk letter (DMFLA...)	GEOMIRROR Detected (GEOMIRRO..)	Disk categories (DSCATDESC)	Multipath unit (DSMU)	Initial path (DSIP)	Device resource name (DSDRN)	Disk drive type (DSTYPE)	Resource model (DORMO...)	Resource part number (DORPRT)	Resource serial number (DORSER)	Disk type description (DISKGRP)	ASP number (DSASP)	IO processor resource name (IOPRN)	Disk IO storage adapter resource name (DSIOARN)	Disk drive size (GBs) (CAPACIT..)	RAID type parity set (DSRTPS)
0001			External Storage,	0	0	DD006	2107				DS8000	1	CMB09		141.1299	RAID 5
0006			External Storage,	0	0	DD007	2107				DS8000	1	CMB09		141.1299	RAID 5
0007			External Storage,	0	0	DD008	2107				DS8000	1	CMB09		141.1299	RAID 5
0008			External Storage,	0	0	DD009	2107				DS8000	1	CMB09		141.1299	RAID 5
0009			External Storage,	0	0	DD010	2107				DS8000	1	CMB09		141.1299	RAID 5

# April 2019 (1350) – CSI – Disk configuration – Total usable GBs fixed

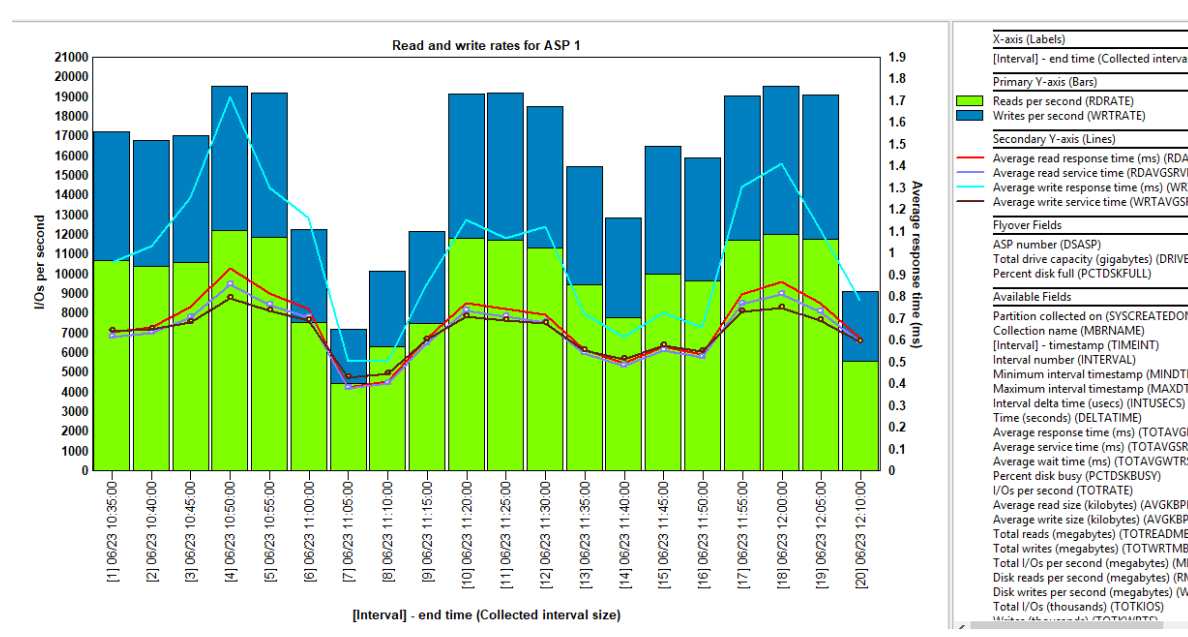
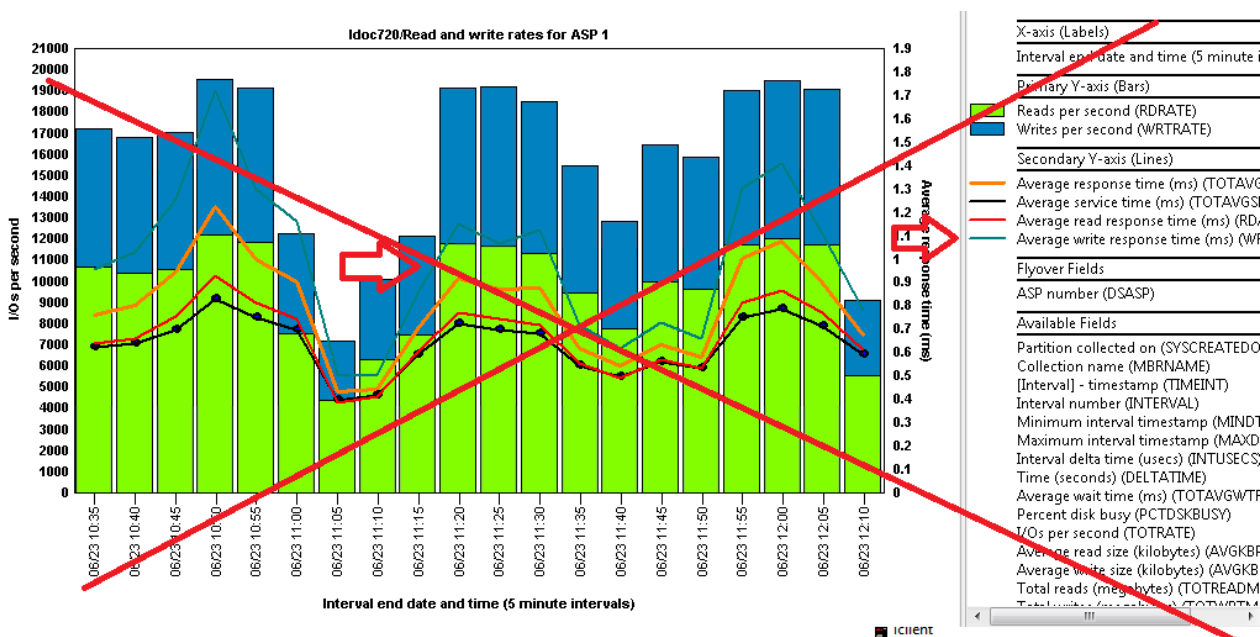
- In CSI, in the disk configuration folder corrected the calculation for Total usable GBs (TOTALGBS) for the Capacity (in GBs) by ASP reports.
  - It was in gibibytes previously and not gigabytes.

Idoc720/CSLABEX1/Q175102853/Capacity (in GBs) by ASP with paths - #1													
ASP number (DSASP)	GEOMIRROR Detected (GEOMIRRO...)	Disk categories (DSCATDESC)	Disk drive type (DSTYPE)	Disk unit model (DSMDL...)	DORSTS	RAID type (DSRD...)	Unit count (UNITCOUN...)	Path count (PATHCOUN...)	Total usable (GBs) (TOTALGBS)	Percent full (PCTFU...)	Average drive size (GBs) (AVGSIZEGBS)	Min drive size (GBs) (MINSIZEG...)	Max drive size (GBs) (MAXSIZEG...)
1		External Storage,	2107	0A06	Unknown	0	5	5	657.1	35.06	141.1299	141.1299	141.1299

Idoc720/CSLABEX1/Q175102853/Disk configuration - #1													
Idoc720/CSLABEX1/Q175102853/Capacity (in GBs) by ASP with paths - #1													
ASP number (DSASP)	GEOMIRROR Detected (GEOMIRRO...)	Disk categories (DSCATDESC)	Disk drive type (DSTYPE)	Disk unit model (DSMDL...)	Disk status (DORSTS)	RAID type parity set (DSRTPS)	Unit count (UNITCOUN...)	Path count (PATHCOUNT)	Total usable (GBs) (TOTALGBS)	Percent full (PCTFU...)	Average drive size (GBs) (AVGSIZEGBS)	Min drive size (GBs) (MINSIZEG...)	Max drive size (GBs) (MAXSIZEG...)
1		External Storage,	2107	0A06	Unknown	RAID 5	5	5	705.6	35.06	141.1299	141.1299	141.1299

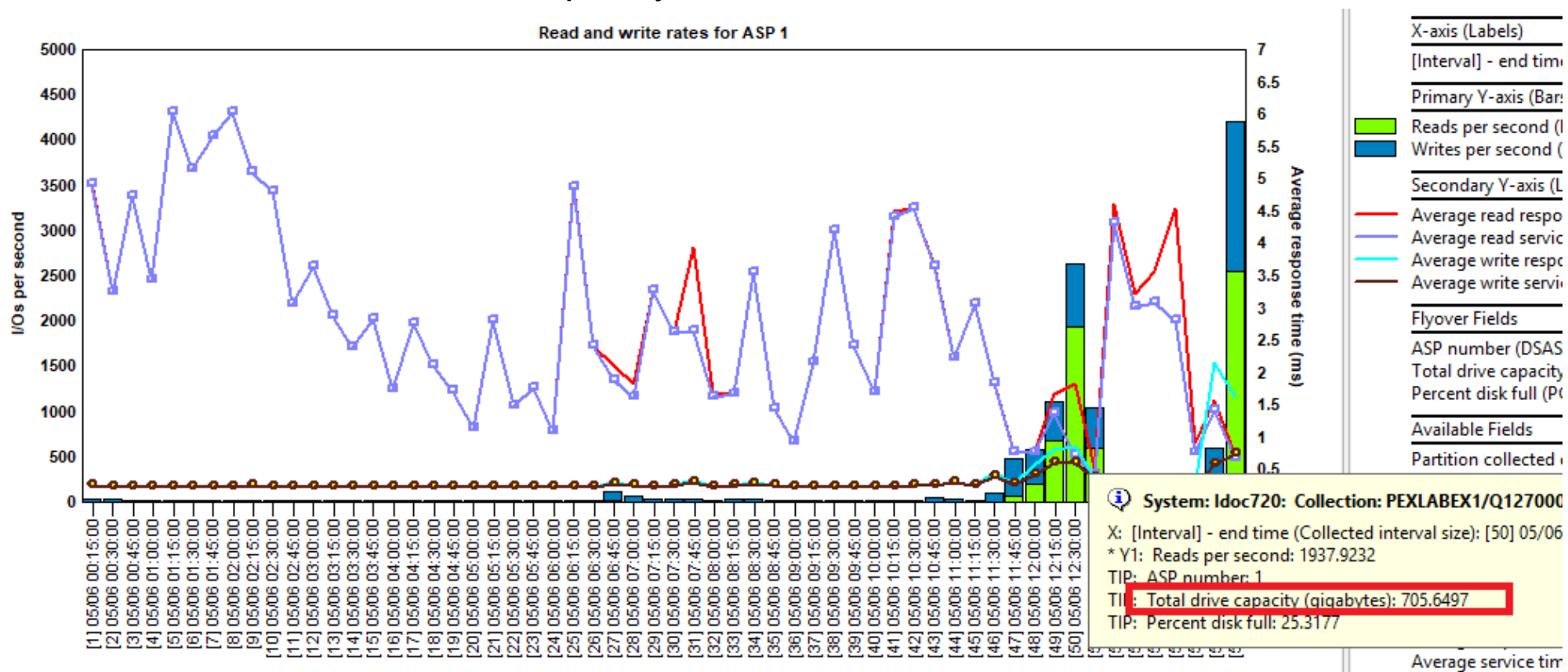
# April 2019 (1349) – CSI – Disk graphs – Color changes

- In CSI, made the color for the Average write response time (WRTAVGRSP) a bit lighter so it will show up better on some graphs.
- Also changed Average write size (AVGKBPERRWRT) as a result as well.



# April 2019 (1350) – CSI - Disk graphs – Total drive capacity calculation

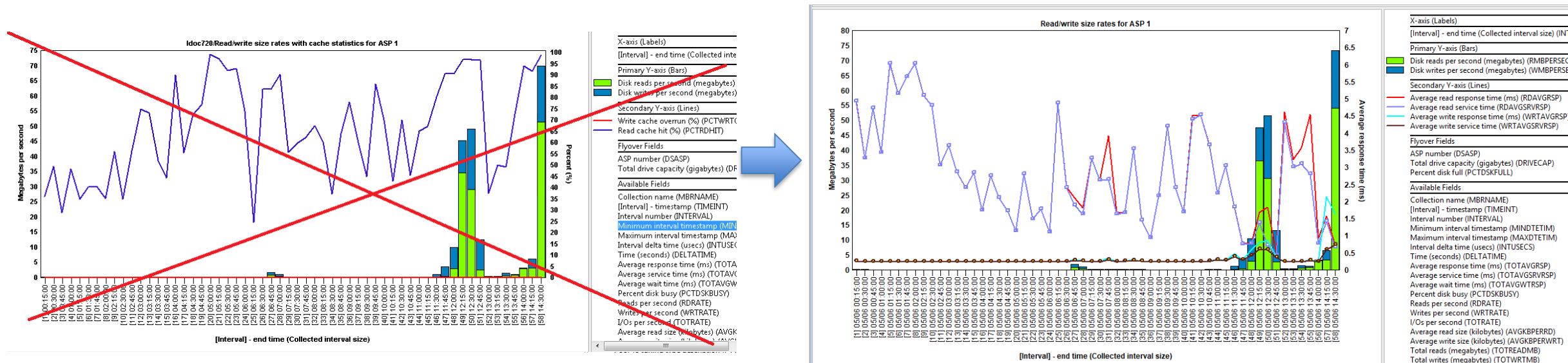
- In CSI, corrected accuracy problems with the DRIVECAP column (Total drive capacity) in the various disk graphs.
  - Note:** This is the total drive capacity for the current bar.





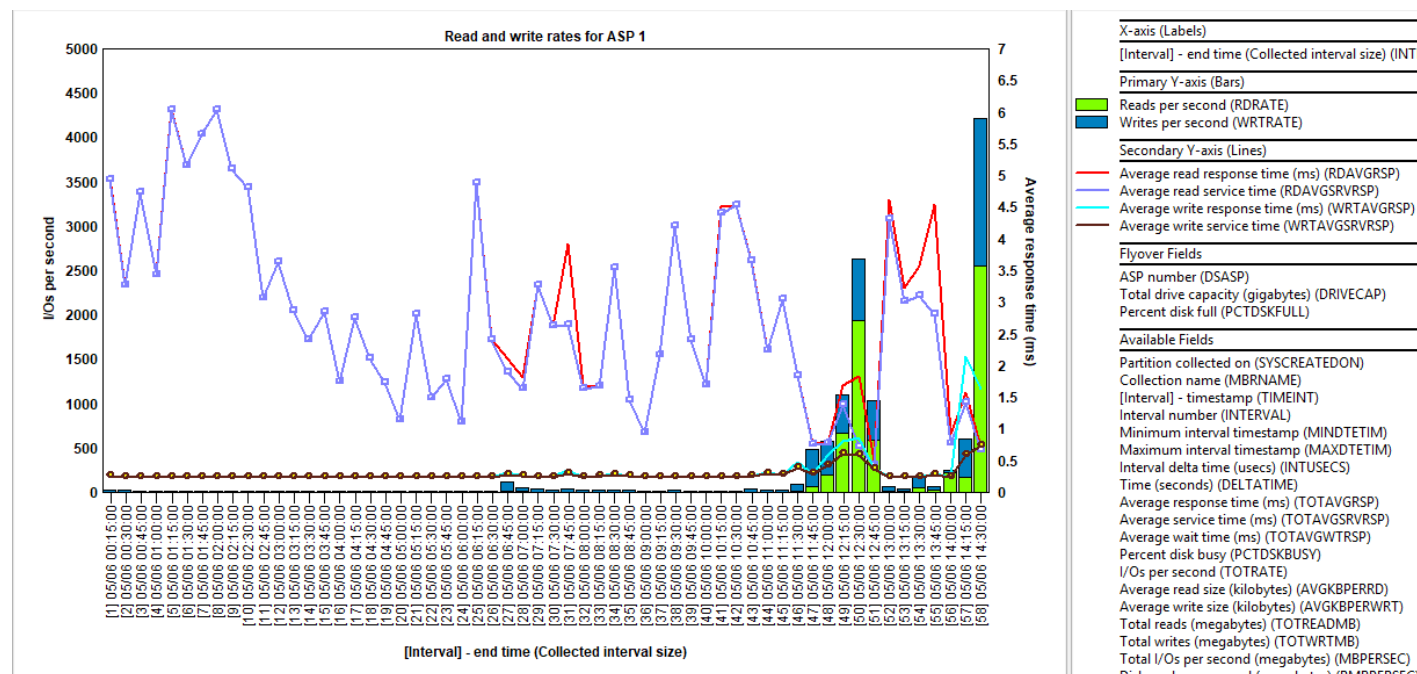
# April 2019 (1350) – CSI – Disk graphs size calculation fixes

- In CSI, disk graphs fixed the following columns shown in the various graphs:
  - AVGKBPERRD, AVGKBPERWRT, (average I/O sizes)
  - TOTREADMB, TOTWRTMB, (total I/O size)
  - DRIVECAP, (drive capacity)
  - MBPERSEC, RMBPERSEC, WMBPERSEC, (I/O size rates)
  - **Note:** The values previously were in mebibytes or gibibytes and not megabytes or gigabytes.



# March 2019 (1346) – CSI – Disk graphs – Y2 axis changes

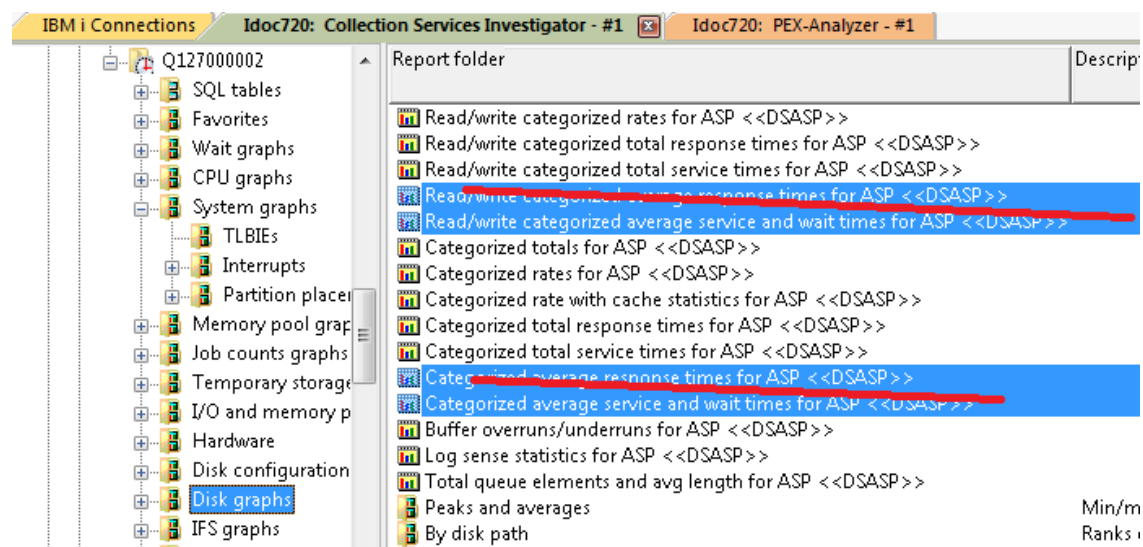
- Most disk graphs on the Y2-axis now display the following:
  - Average read response time
  - Average read service time
  - Average write response time
  - Average write service time



- **Note:** Graphs that don't show response times will now all identify what's on the Y2-axis in the graph title.

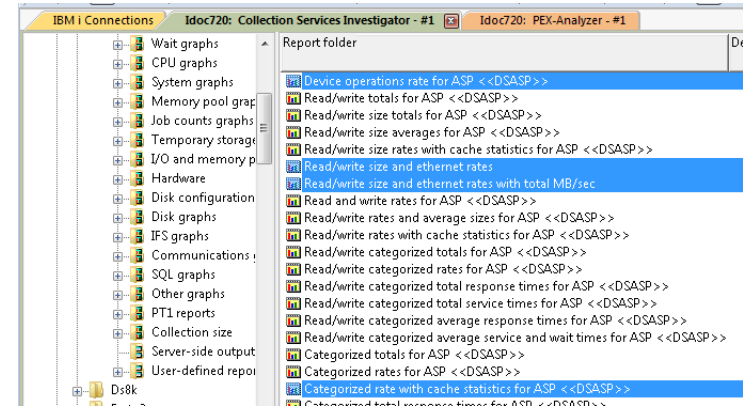
## Feb 2019 (1345) – CSI - Disk graphs deleted

- These graphs that show averages within a categorized response time bucket were deleted since they might be misleading:
  - Read/write categorized average response times for ASP <<DSASP>>
  - Read/write categorized average service and wait times for ASP <<DSASP>>
  - Categorized average response times for ASP <<DSASP>>
  - Categorized average service and wait times for ASP <<DSASP>>
  - Advanced -> Advanced average response time for ASP <<DSASP>>

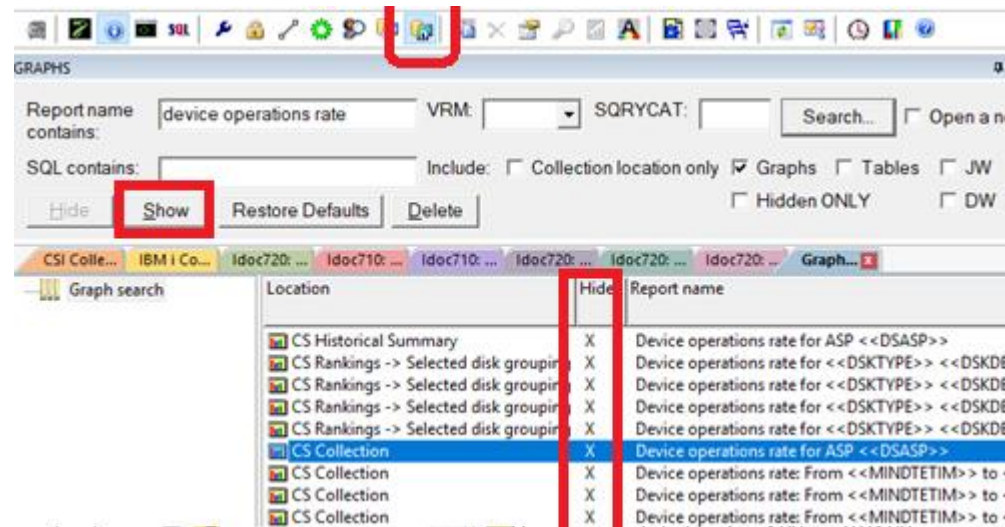


# March 2019 (1346) – CSI – Disk graphs hidden

- In CSI – disk graphs, the following graphs have been hidden:
  - Device operations rate
  - Read/write size and ethernet rates
  - Read/write size and ethernet rates with total MB/sec
  - Categorized rate with cache statistics

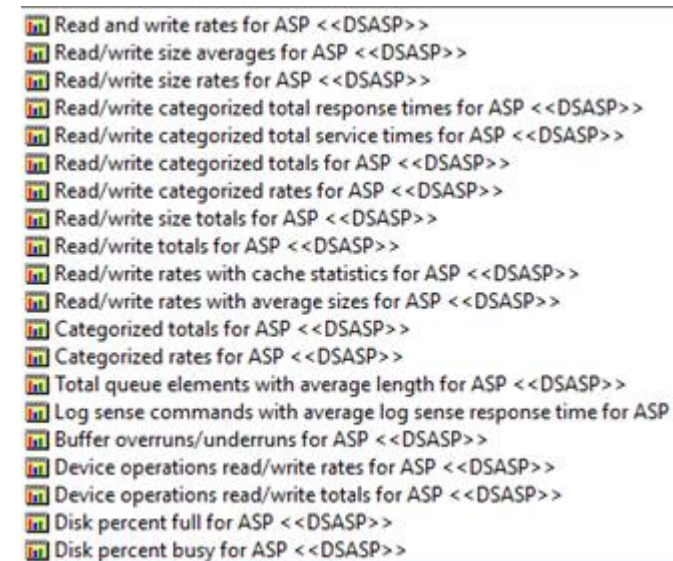


- **Note:** If desired these can be reshown again later using the new "Show" button found in the Graph search pane.



## March 2019 (1346) – CSI – Disk graphs reordered (1/2)





















- In CSI at 7.1 and higher the new order for the disk graphs is:
  - Read and write rates for ASP <<DSASP>>
  - Read/write size averages for ASP <<DSASP>>
  - Read/write size rates for ASP <<DSASP>>
  - Read/write categorized total response times for ASP <<DSASP>>
  - Read/write categorized total service times for ASP <<DSASP>>
  - Read/write categorized totals for ASP <<DSASP>>
  - Read/write categorized rates for ASP <<DSASP>>
  - Read/write size totals for ASP <<DSASP>>
  - Read/write totals for ASP <<DSASP>>
  - Read/write rates with cache statistics for ASP <<DSASP>>
  - Read/write rates with average sizes for ASP <<DSASP>>
  - Read/write rates with average lengths for ASP <<DSASP>>
  - Read/write rates with average log sense response time for ASP <<DSASP>>
  - See next slide for the rest...



## March 2019 (1346) – CSI – Disk graphs reordered (2/2)

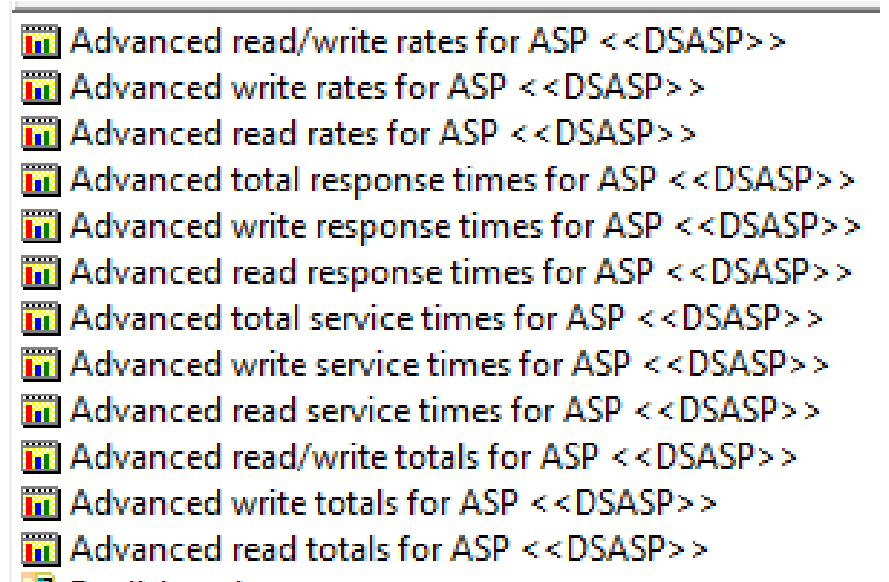
- Continued from previous slide....
  - Categorized totals for ASP <<DSASP>>
  - Categorized rates for ASP <<DSASP>>
  - Total queue elements with average length for ASP <<DSASP>>
  - Log sense commands with average log sense response time for ASP <<DSASP>>
  - Buffer overruns/underruns for ASP <<DSASP>>
  - Device operations read/write rates for ASP <<DSASP>>
  - Device operations read/write totals for ASP <<DSASP>>
  - Disk percent full for ASP <<DSASP>>
  - Disk percent busy for ASP <<DSASP>>

- **Note:** At 6.1 CSI, most disk graphs have been removed.

 Read and write rates for ASP <<DSASP>>
 Read/write size averages for ASP <<DSASP>>
 Read/write size rates for ASP <<DSASP>>
 Read/write categorized total response times for ASP <<DSASP>>
 Read/write categorized total service times for ASP <<DSASP>>
 Read/write categorized totals for ASP <<DSASP>>
 Read/write categorized rates for ASP <<DSASP>>
 Read/write size totals for ASP <<DSASP>>
 Read/write totals for ASP <<DSASP>>
 Read/write rates with cache statistics for ASP <<DSASP>>
 Read/write rates with average sizes for ASP <<DSASP>>
 Categorized totals for ASP <<DSASP>>
 Categorized rates for ASP <<DSASP>>
 Total queue elements with average length for ASP <<DSASP>>
 Log sense commands with average log sense response time for ASP
 Buffer overruns/underruns for ASP <<DSASP>>
 Device operations read/write rates for ASP <<DSASP>>
 Device operations read/write totals for ASP <<DSASP>>
 Disk percent full for ASP <<DSASP>>
 Disk percent busy for ASP <<DSASP>>

## March 2019 (1348) – CSI – Disk graphs - Advanced reordered

- In CSI Disk graphs -> Advanced the folder now contains:
  - Advanced read/write rates for ASP <<DSASP>>
  - Advanced write rates for ASP <<DSASP>>
  - Advanced read rates for ASP <<DSASP>>
  - Advanced total response times for ASP <<DSASP>>
  - Advanced write response times for ASP <<DSASP>>
  - Advanced read response times for ASP <<DSASP>>
  - Advanced total service times for ASP <<DSASP>>
  - Advanced write service times for ASP <<DSASP>>
  - Advanced read service times for ASP <<DSASP>>
  - Advanced read/write totals for ASP <<DSASP>>
  - Advanced write totals for ASP <<DSASP>>
  - Advanced read totals for ASP <<DSASP>>



---

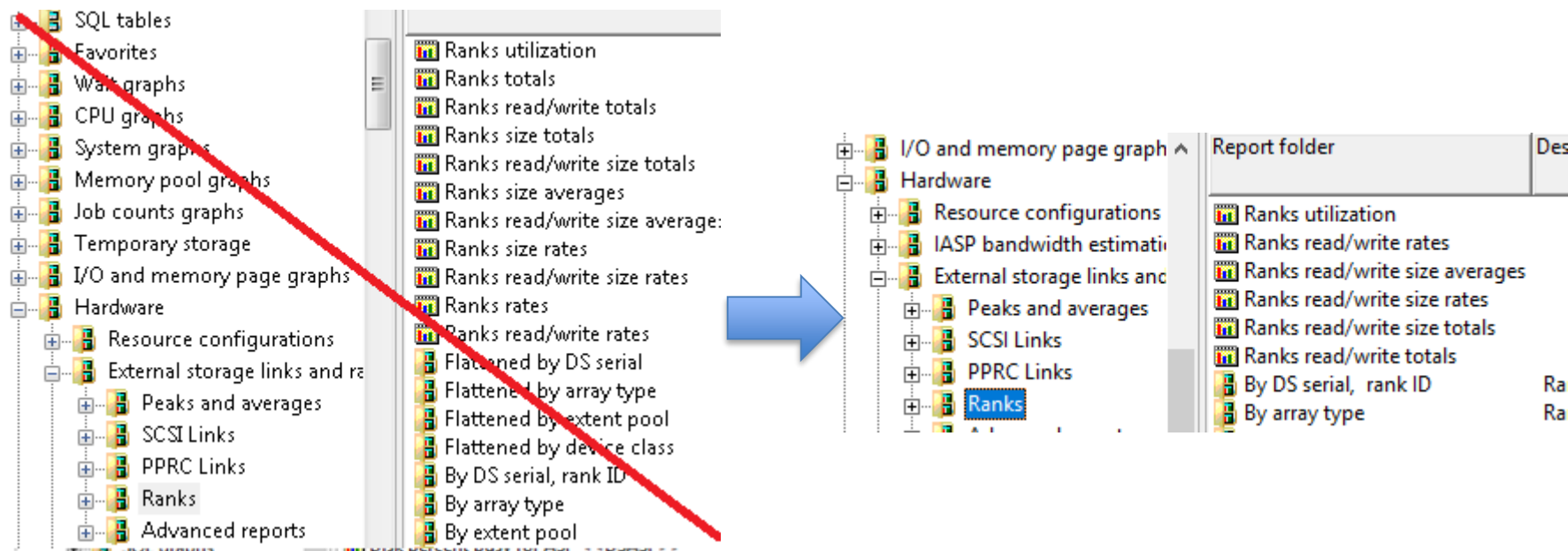
## April 2019 (1350) – CSI – External storage links and ranks updates (1/4)

- The I/O sizes shown in the CSI -> Hardware -> External storage links and ranks graphs for all types (SCSI, PRPC and Ranks) were being converted incorrectly from kilobytes to megabytes.



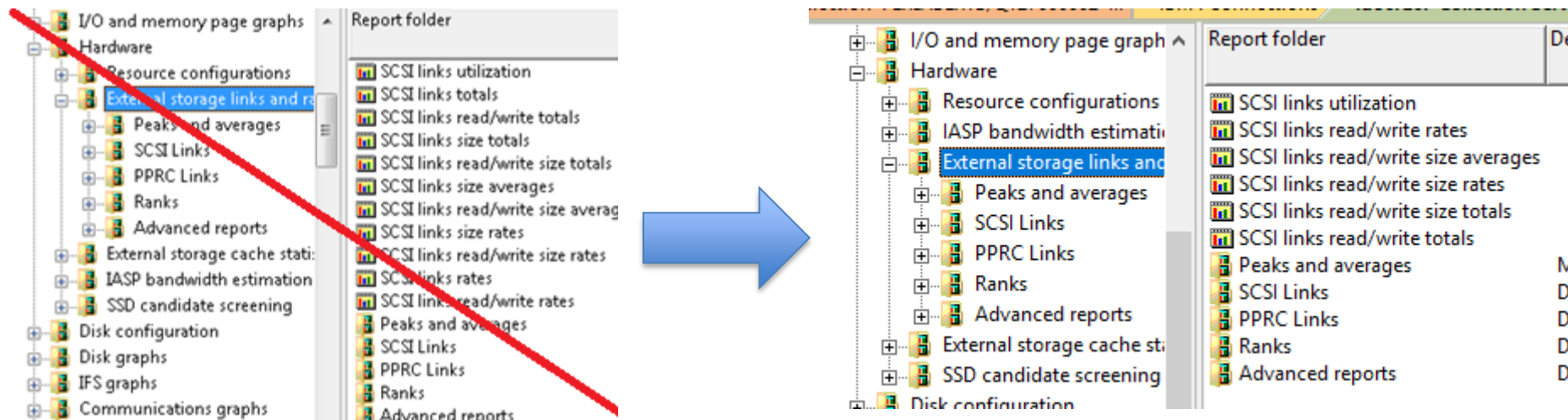
## April 2019 (1350) – CSI – External storage links and ranks updates (2/4)

- In CSI - Hardware - External storage links and ranks, the Ranks folder and all subfolders graph contents have been reorganized using similar conventions as the CSI - Disk graphs.
- These graphs that combine reads+writes were deleted:
  - Ranks rates
  - Ranks size averages
  - Ranks size rates
  - Ranks size totals
  - Ranks totals



## April 2019 (1349) – CSI – External storage links and ranks updates (3/4)

- In CSI, changed the contents and order of several graphs under Hardware -> External storage links and ranks to match conventions made to the CSI - Disk graphs.
- The folders changed are:
  - Hardware -> External storage links and ranks
  - Hardware -> External storage links and ranks -> SCSI Links (and all sub folders)
  - Hardware -> External storage links and ranks -> PPRC Links (and all sub folders)



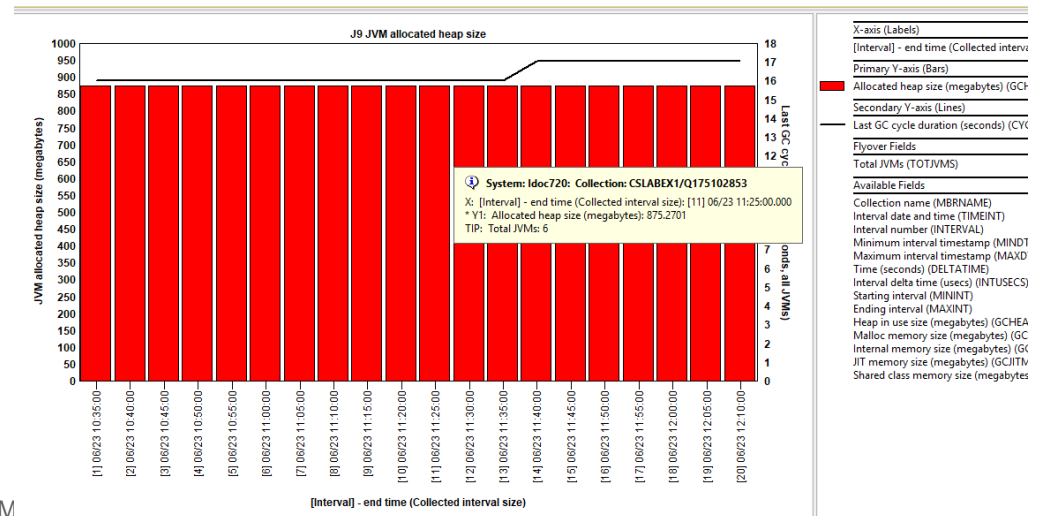
---

## April 2019 (1349) – CSI – External storage links and ranks updates (4/4)

- In CSI, the external storage links and ranks analysis has been updated to avoid showing **very large negative numbers** if the counters used by that analysis have wrapped.
  - **Note:** This previously could happen at any time if the 4 byte integer used for any metrics exceeded its maximum.

# April 2019 (1350) – CSI – JVM graphs updates

- In CSI in the JVM graphs folder the sizes listed were shown in mebibytes and not megabytes.
- Also the Total JVMs value was incorrect..
- Also if selecting multiple JVMs from the JVM graphs -> JVM rankings graphs and drilling down the multiple JVM heap sizes were averaged together instead of summed and is now fixed.





---

## April 2019 (1350) – CSI – drill down crash

- Fixed a possible drill down crash in CSI if no selection was made when right-clicking outside of a bar (on white space.)



---

## Feb 2019 (1345) – CSI – Performance improvement

- In CSI made a performance improvement for the following graphs by removing a CHAR(HEX()) comparison when doing joins on the TDEs in the SQL statement:
  - 1. Wait graphs -> Dispatched CPU rankings
  - 2. Wait graphs -> Disk time rankings
  - 3. Wait graphs drill down -> <<OBJTYPE>> wait time signature for <<OBJDESC>>


---

## March 2019 (1346) – CSI - Launch WLE

- In CSI, the launch workload estimator option from a collection does not work if C:\temp directory did not already exist on the PC.
- The function will now use iDoctor's temp directory which will properly create the directory and file.


## April 2019 (1350) – General – Add Connection port lookup mode

- On IBM i connections from the Add/Edit Connection window added an option "Port lookup mode" with possible values of Default, Server, Local and Standard. This will set the the cwbCO\_SetPortLookupMode API's setting for the ACS/CA connection.
- This gives you some control over the (server) ports used on the IBM i for the QZDASOINIT / QZRCSRVS jobs used by iDoctor.

 Add IBM i Connection

Provide below the system name or IP address as well as the type of connection. The description parameter is optional.

OK  
Cancel

 System:

System alias (optional):

Default user mode:

Description:

Port lookup mode:

Auxillary storage pool group:

Relational DB:

Default  
Server  
Local  
Standard



---

## April 2019 (1350) – General – Can't find local .mdb

- If unable to connect to a local iDoctor DB (such as iDocCS.mdb) when starting up a component, the error message will now list the file location from the Windows registry's ODBC setting where iDoctor is looking.

---

## Feb 2019 (1344) – General - ODBC fix related to DB2 mirror on 7.4

- Fixed a possible infinite loop that would continually end and reconnect the QZDASOINIT session if an unexpected error occurred on an SQL statement during the fetch of data.
- Reproducing this behavior also required skipping an initial signon via the IBM i connection view to the system and just immediately using the interfaces like WRKOBJ, WRKOBJLCK.
- Also the error that occurred on the fetch will now be displayed to the user where previously this was not visible.

---

## March 2019 (1348) – General – GDI limit fix

- The options to increase/restore the windows GDI limit was broken on Windows 10 and is now fixed.
  - This is useful if you wish to open many graphs at once or need to build very large/complex graphs showing many points.
- Use the Edit -> Increase Windows GDI limit or Edit -> Restore Windows GDI limit menus from the Main Window.
  - Note: Rebooting the PC as well as having admin level authority is required!
- Also in the iDoctor install directory you will find a new file SetGDILimitTo64K.reg which if executed will apply the required change to increase the limit to the maximum.

## March 2019 (1348) – General – Apply Keys fixes

- In some situations the Apply Keys menu option from the IBM i Connections View did not work well and would prompt the user to signon too many times:
  - The IBM i connections view now contains 2 additional columns after VRM: Default user mode and User.
    - This lets you see/control which user profile will be used to make the connection on each system before using the Apply Keys option.
  - The menu option Set Default Signon now contains 2 sub menus options -> All Systems or -> Selected System(s.)
    - If Set Default signon -> All Systems is selected, then all IBM i connections default user mode will be set to "set specific user ID" and user will be whatever value is typed in.
    - If Set Default Signon -> Selected systems is selected, then the same thing would happen but only for the selected systems.



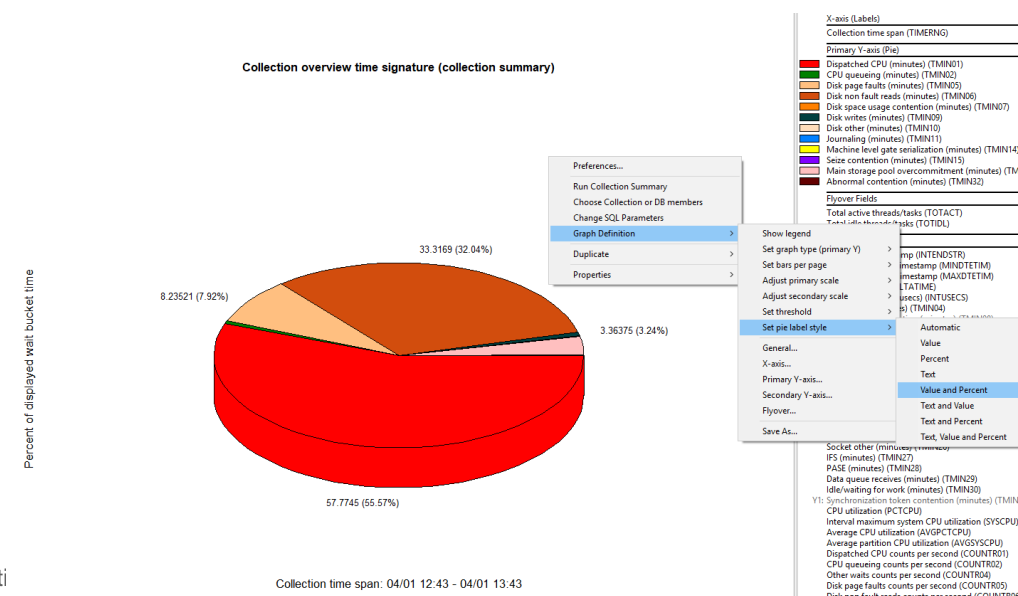
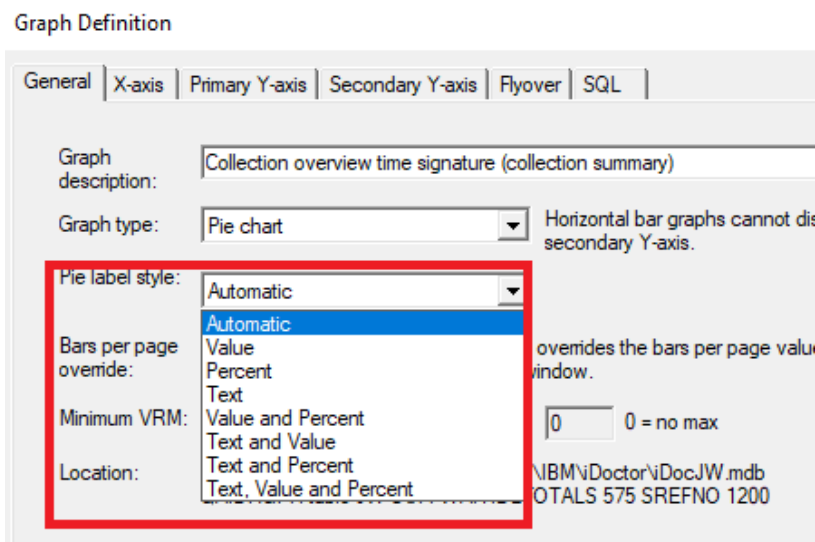
---

## March 2019 (1348) – General - Signon save password option

- Save password was not always working on the signon window.

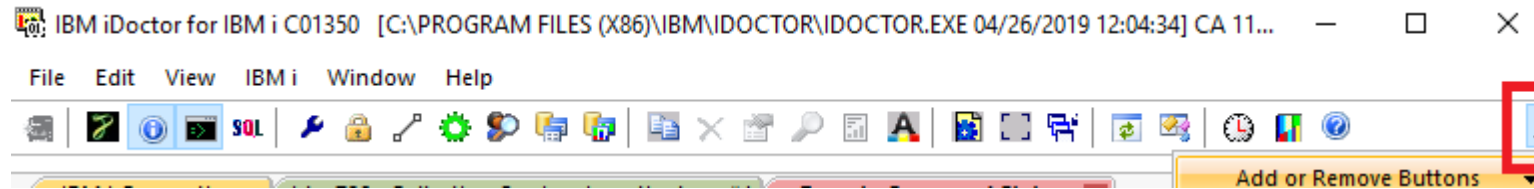
# March 2019 (1346) – General – Pie label style

- Changed the default setting for "Pie label style" (in graph definition -> General screen) to "Automatic".
- Also if the pie chart comes up and you don't like what you see for labels there are new options under the graph's right-click graph definition menu -> Set pie label style.
  - Or enter the Graph definition -> General page you can modify this setting there to control what appears on the graph.



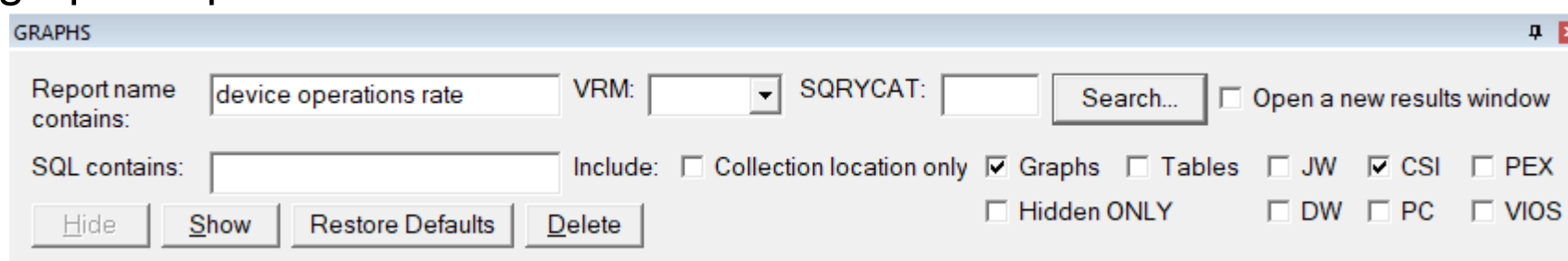
## March 2019 (1346) – General – Toolbars

- We have disabled the ability to move toolbar and menus around in both the Main Window and Data Viewer. The View -> Customize... option to customize the toolbars and menus has been removed as well.
- **Note:** The one option that remains is you can still click the little arrow at the bottom right of the toolbar to remove any buttons you don't wish to see.



## March 2019 (1347) – General - Graph search updates (1/2)

- On the graph search pane made these changes:
  - **Hidden ONLY checkbox:** if checked the results will ONLY include the graphs or table reports that are hidden from view within iDoctor.
  - **Hide** button: will hide all selected graphs/reports that match the group IDs selected.
    - For example in CSI the Collection overview time signature graph has a group ID of 1 but exists in several different locations and for various OS VRMs. Selecting 1 of these graphs in this interface and pressing the Hide button will hide them all.
    - Please note that some table reports do not have a group ID. These are used in various interfaces within iDoctor and cannot be hidden.
  - **Show** - This button will show any previously hidden reports shown in the graph search results.
  - **Restore Defaults** - This will restore the IBM shipped defaults for all components in terms of which graphs/reports are hidden and which are shown.



The screenshot shows a window titled "GRAPHS" with the following controls:

- Report name contains:  VRM:  SQRycAT:    Open a new results window
- SQL contains:
- Include:  Collection location only  Graphs  Tables  JW  CSI  PEX
- Hidden ONLY  DW  PC  VIOS
- Buttons:



## March 2019 (1347) – General - Graph search updates (2/2)

- On the graph search pane added new columns to the search results as follows:
  - Hide - An X value indicates if the graph or table is hidden from view within iDoctor. Users can control which graphs or tables they want to see with this client build and higher. These changes are stored in the windows registry.
  - Group ID - The group ID column is a number that is used to identify the same graph or table but shown in different ways (such as overview, rankings, or selection over time. This group ID value is used to be able to hide or show all graphs of a type selected in the interface more easily.

GRAPHS

Report name contains:  VRM:  SQRYPAT:    Open a new results window

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

Hidden ONLY  DW  PC  VIOS

---

IBM i Connections | Idoc720: Collection Services Investigator - #1 | Remote Command Status | Graph Search: Name contains 'device operations rate' - #1

Location	Hide	Report name	Folder	Group ID	Min VRM
CS Historical Summary	X	Device operations rate for ASP <<DSASP>>	Disk graphs	2,482	610
CS Rankings -> Selected disk grouping	X	Device operations rate for <<DSKTYPE>> <<DSKDESC>>	Disk graphs	2,482	610
CS Rankings -> Selected disk grouping	X	Device operations rate for <<DSKTYPE>> <<DSKDESC>>	Disk graphs	2,482	710
CS Rankings -> Selected disk grouping	X	Device operations rate for <<DSKTYPE>> <<DSKDESC>>	Disk graphs	2,482	610
CS Rankings -> Selected disk grouping	X	Device operations rate for <<DSKTYPE>> <<DSKDESC>>	Disk graphs	2,482	710
CS Collection	X	Device operations rate for ASP <<DSASP>>	Disk graphs	2,482	710
CS Collection	X	Device operations rate: From <<MINDTETIM>> to <<MAXDTETIM>>	Disk graphs -> By disk path	2,482	610
CS Collection	X	Device operations rate: From <<MINDTETIM>> to <<MAXDTETIM>>	Disk graphs -> By disk path	2,482	710
CS Collection	X	Device operations rate: From <<MINDTETIM>> to <<MAXDTETIM>>	Disk graphs -> By disk type	2,482	610
CS Collection	X	Device operations rate: From <<MINDTETIM>> to <<MAXDTETIM>>	Disk graphs -> By disk type	2,482	710
CS Collection	X	Device operations rate: From <<MINDTETIM>> to <<MAXDTETIM>>	Disk graphs -> By I/O adapter	2,482	610
CS Collection	X	Device operations rate: From <<MINDTETIM>> to <<MAXDTETIM>>	Disk graphs -> By I/O adapter	2,482	710

---

## Feb 2019 (1345) – General – SQL registers

- When iDoctor runs SQL statements normally via the GUI all QZDASOINITs created will register the application name as IDOCTOR in the SQL special registers.
- Made an update so when running SQL statements in batch when kicking of any iDoctor analyses, the client application special SQL register will also be set now to IDOCTOR in the batch job QIDRJWSUM. (Note: this job name is used for all components). This is also done if using the QIDRGUI/STRIDRSUM command.
- This will cover 99% of the SQL statements ran by iDoctor, a few other places exist in commands that run, but those are not typically long running

---

## Feb 2019 (1345) – General – Toggle idle waits fix

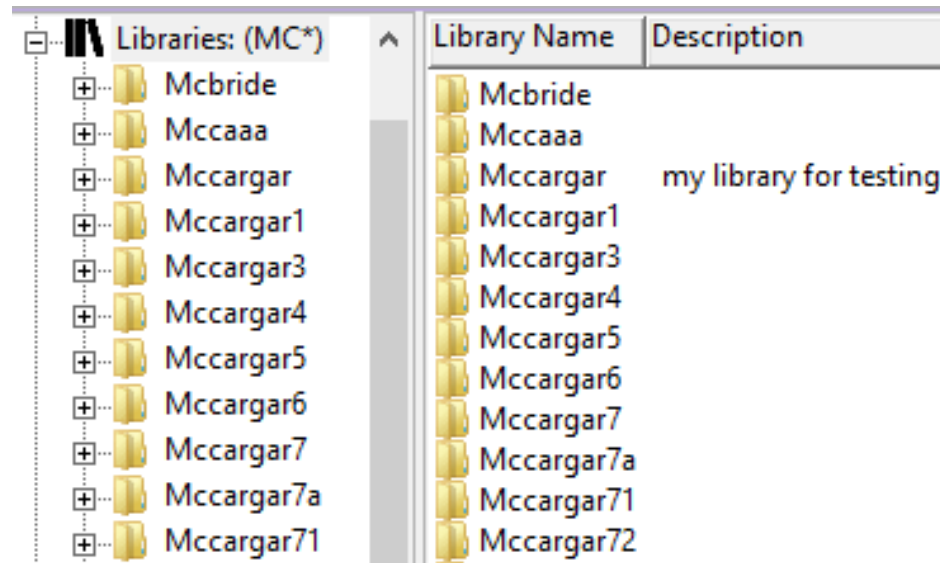
- In CSI or Job Watcher , the toggle idle waits toolbar button in the Data Viewer would show all wait buckets, but when toggled back the original graph did not return back to its original state. It would always display all interesting wait buckets instead of what was originally shown for that graph (such as DB record locks time only, if viewing the DB record lock time signature).
- Also the button did not work for wait bucket counts graphs (it would switch it to show times instead) and has been fixed.

## Feb 2019 (1345) – General - Remote SQL statement status view updates

- Made the following fixes and updates in the Remote SQL Statement Status View:
  - The Add SQL Statement window/option would allow a user to run an SQL statement without specifying a system name causing the window to become unusable.
  - Running a SELECT statement would cause the window to become unusable after the 1st use and future executions of SQL statements would fail with Invalid cursor state. The cursor is now cleaned up although no results can be shown currently by running SELECT or WITH statement in this interface.
  - Added new menu options Rerun SQL Statements -> Same LPAR(s) and Rerun SQL Statements -> Other LPAR(s) to reexecute the desired SQL statements.
  - **Note:** See the update history for more details.

## Feb 2019 (1345) – General – iDoctor FTP GUI - Libraries folder

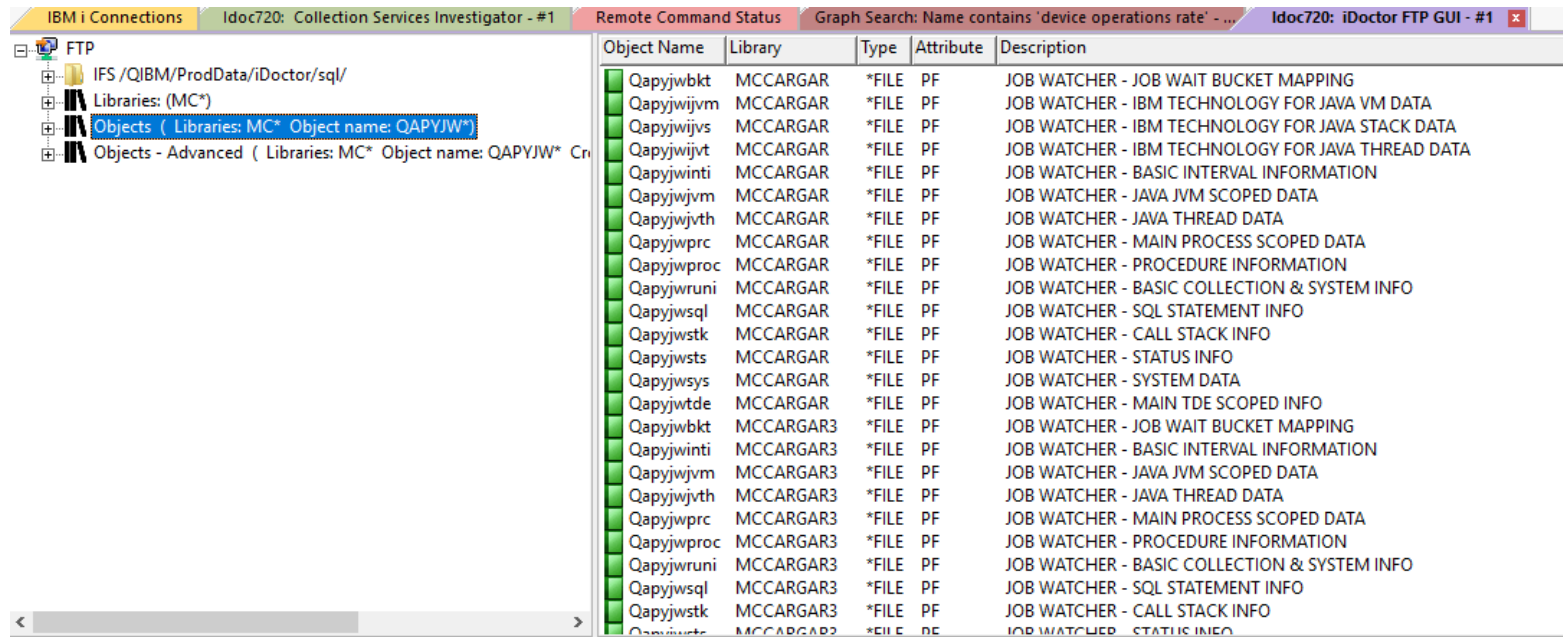
- The iDoctor FTP GUI Libraries folder will now show either all libraries on the system or only libraries matching the generic library name filter.
  - Note:** This means it will no longer include libraries based on those matching the object filters defined in the object filtering window.



Library Name	Description
Mcbride	
Mccaaa	
Mccargar	my library for testing
Mccargar1	
Mccargar3	
Mccargar4	
Mccargar5	
Mccargar6	
Mccargar7	
Mccargar7a	
Mccargar71	
Mccargar72	

# Feb 2019 (1345) – General – iDoctor FTP GUI - Objects folder

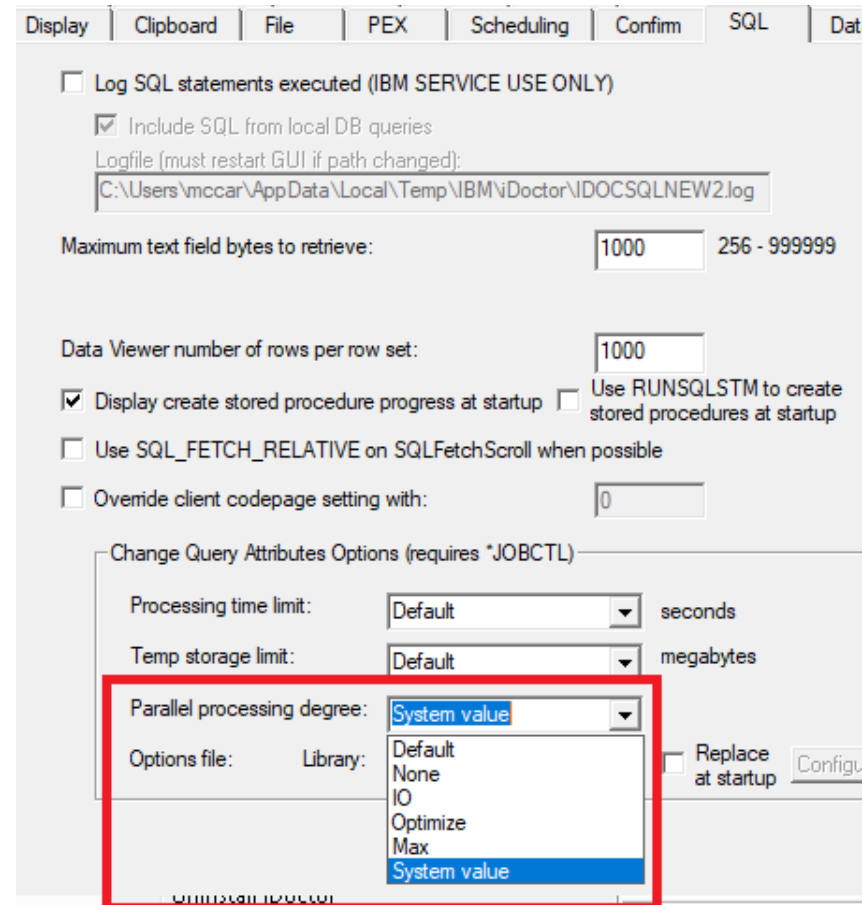
- In the iDoctor FTP GUI, 2 new folders were added:
  - **Objects** - contains all objects on the system that match the object filters, but faster and only contains 5 columns.
  - **Objects – Advanced** – contains all objects on the system that match the object filters but slower and contains many more columns such as object size. The columns shown and ordering can also be configured on this folder using the Select fields... menu option.



Object Name	Library	Type	Attribute	Description
Qapyjwbkt	MCCARGAR	*FILE	PF	JOB WATCHER - JOB WAIT BUCKET MAPPING
Qapyjwvm	MCCARGAR	*FILE	PF	JOB WATCHER - IBM TECHNOLOGY FOR JAVA VM DATA
Qapyjwivs	MCCARGAR	*FILE	PF	JOB WATCHER - IBM TECHNOLOGY FOR JAVA STACK DATA
Qapyjwivt	MCCARGAR	*FILE	PF	JOB WATCHER - IBM TECHNOLOGY FOR JAVA THREAD DATA
Qapyjwinti	MCCARGAR	*FILE	PF	JOB WATCHER - BASIC INTERVAL INFORMATION
Qapyjwvth	MCCARGAR	*FILE	PF	JOB WATCHER - JAVA JVM SCOPED DATA
Qapyjwprc	MCCARGAR	*FILE	PF	JOB WATCHER - JAVA THREAD DATA
Qapyjwproc	MCCARGAR	*FILE	PF	JOB WATCHER - MAIN PROCESS SCOPED DATA
Qapyjwruni	MCCARGAR	*FILE	PF	JOB WATCHER - PROCEDURE INFORMATION
Qapyjwsq	MCCARGAR	*FILE	PF	JOB WATCHER - BASIC COLLECTION & SYSTEM INFO
Qapyjwstk	MCCARGAR	*FILE	PF	JOB WATCHER - SQL STATEMENT INFO
Qapyjwsts	MCCARGAR	*FILE	PF	JOB WATCHER - CALL STACK INFO
Qapyjwsys	MCCARGAR	*FILE	PF	JOB WATCHER - STATUS INFO
Qapyjwtdc	MCCARGAR	*FILE	PF	JOB WATCHER - SYSTEM DATA
Qapyjwbkt	MCCARGAR3	*FILE	PF	JOB WATCHER - MAIN TDE SCOPED INFO
Qapyjwinti	MCCARGAR3	*FILE	PF	JOB WATCHER - JOB WAIT BUCKET MAPPING
Qapyjwvth	MCCARGAR3	*FILE	PF	JOB WATCHER - BASIC INTERVAL INFORMATION
Qapyjwprc	MCCARGAR3	*FILE	PF	JOB WATCHER - JAVA JVM SCOPED DATA
Qapyjwproc	MCCARGAR3	*FILE	PF	JOB WATCHER - JAVA THREAD DATA
Qapyjwruni	MCCARGAR3	*FILE	PF	JOB WATCHER - MAIN PROCESS SCOPED DATA
Qapyjwsq	MCCARGAR3	*FILE	PF	JOB WATCHER - PROCEDURE INFORMATION
Qapyjwstk	MCCARGAR3	*FILE	PF	JOB WATCHER - BASIC COLLECTION & SYSTEM INFO
Qapyjwsts	MCCARGAR3	*FILE	PF	JOB WATCHER - SQL STATEMENT INFO
Qapyjwsys	MCCARGAR3	*FILE	PF	JOB WATCHER - CALL STACK INFO
Qapyjwtdc	MCCARGAR3	*FILE	PF	JOB WATCHER - STATUS INFO

## Feb 2019 (1345) – General - Preferences – SQL

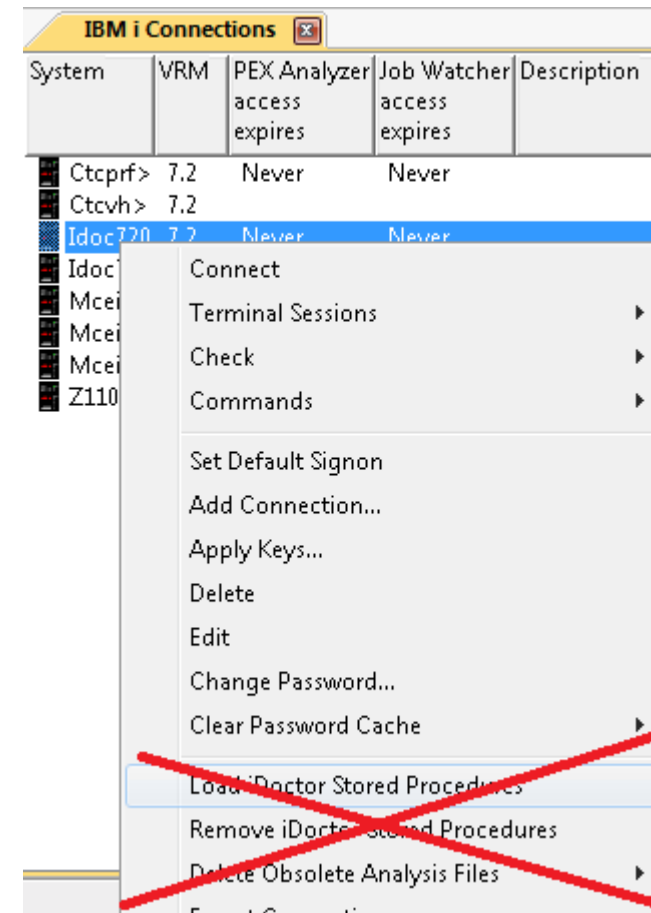
- On the Preferences -> SQL tab added an option to specify the parallel processing degree parameter for the CHGQRYA command. It includes the following options / values:
  - Default = \*SAME
  - None = \*NONE
  - IO = \*IO
  - Optimize = \*OPTIMIZE
  - Max = \*MAX
  - System value = \*SYSVAL



## Feb 2019 (1345) – General - IBM i connections options removed

- The following menu options found when right-clicking a connection in the IBM i Connections View have been removed:

- 1) Load iDoctor Stored Procedures
- 2) Remove iDoctor Stored Procedures
- 3) Delete Obsolete Analysis Files

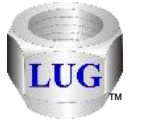




## Feb 2019 (1343) – JW – Collections folder added

- In JW added a Collections folder under the Job Watcher folder that is used to display all collections found on the system matching the library filter set. Note that this option can take a long time to run in some situations and should be used with caution.
- This provides the following capabilities:
  - Graphing multiple collections from multiple libraries at once.
  - Searching collections from multiple libraries at once.
  - Using the Report Generator option for collections in multiple libraries.

Collection	Library	Status	Ending reason	Using iDoctor collection summary	Collection size (MB)	DB files VRM	Partition collected on VRM	Partition collected on	Last colle
ABC12311	MCCARGAR	Ready for analysis	Ended by user	No	105.81	7.2	7.2	IDOC720	
MOM	MCCARGAR	Ready for analysis	Ended by user	Yes	105.81	7.2	7.2	IDOC720	
Q306143515	MCCARGAR	Ready for analysis	Ended by user	Yes	105.81	7.2	7.2	IDOC720	
Q302142829	MCCARGAR	Ready for analysis	Time limit	No, [Interval summary] file(s) must be created	158.79	7.2	7.2	IDOC720	
BUID	MCCARGAR3	Ready for analysis	Ended by user	Yes	73.39	7.2	7.2	IDOC720	
AAAFD	MCCARGAR3	Ready for analysis	Ended by user	Yes	73.39	7.2	7.2	IDOC720	
Q118113517	MCCARGAR3	Ready for analysis	Ended by user	Yes	73.39	7.2	7.2	IDOC720	
AA3	MCCARGAR3	Ready for analysis	Ended by user	No	73.39	7.2	7.2	IDOC720	
TESTAA	MCCARGAR3	Ready for analysis	Ended by user	Yes	73.39	7.2	7.2	IDOC720	
AFAF	MCCARGAR3	Ready for analysis	Ended by user	No	73.39	7.2	7.2	IDOC720	
QA	MCCARGAR3	Ready for analysis	Ended by user	No	73.39	7.2	7.2	IDOC720	
BUID	MCCARGAR5	Ready for analysis	Ended by user	Yes	73.39	7.2	7.2	IDOC720	
AAAFD	MCCARGAR5	Ready for analysis	Ended by user	Yes	73.39	7.2	7.2	IDOC720	
Q118113517	MCCARGAR5	Ready for analysis	Ended by user	No	73.39	7.2	7.2	IDOC720	
Q024130150	MCCARGAR7	Ready for analysis	Ended by user	No	32.18	7.2	7.2	IDOC720	



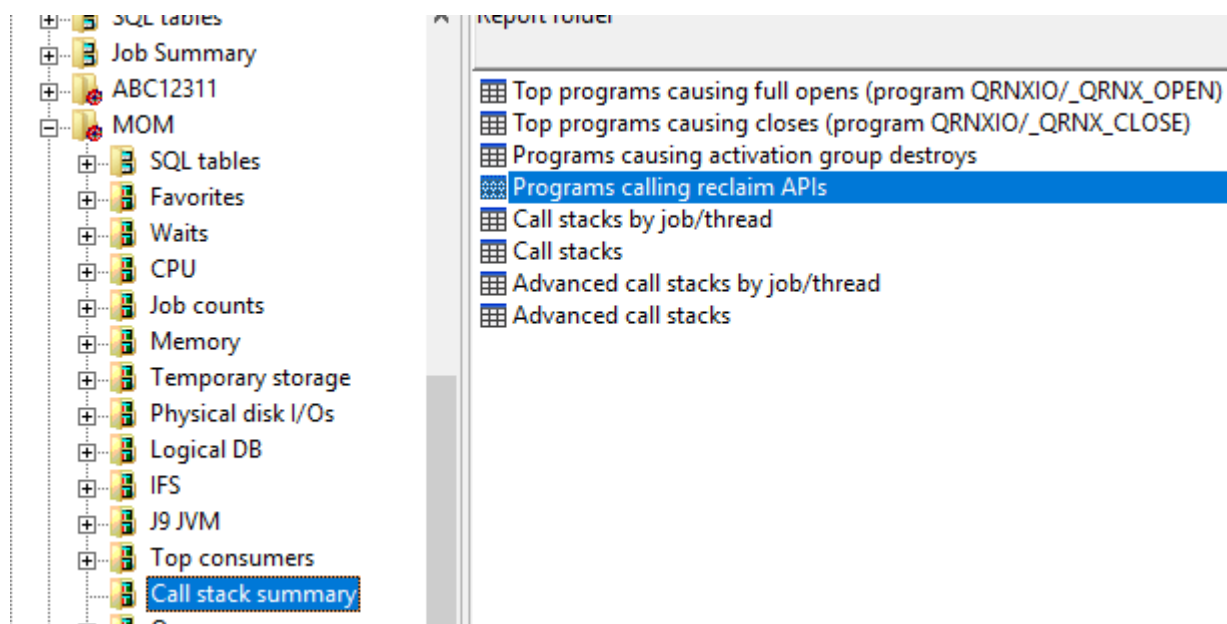
---

## March 2019 (1346) – JW – Temporary storage allocations

- In JW - temporary storage -> Job temporary storage allocations graph, renamed the column description for SYAJOBTMPGB from "Temp storage allocations for active jobs (GBs)" to "Temp storage allocations (GBs)" so that the total includes inactive jobs.
- **Note:** The collection summary analysis is now required to show this graph.

## Feb 2019 (1345) – JW – Call stack summary report added

- In Job Watcher added a new report in the Call stack summary folder:
  - Programs calling reclaim APIs.



# March 2019 (1348) – JW – Call stack drilldown updates

- In Job Watcher - call stack window made these to the call stack (drill-down) reports:
  - In the **Total occurrences: by job** report the total value was incorrect.
  - In the **Occurrences by interval: for this job/task** the sorting will now be by interval instead of total.

Record Quick View | Call stack | Waits | Objects waited on | Physical disk I/Os | Logical DB | IFS | J9 JVM | SQL | Other statistics | Query

General:

Primary thread: QDBSRV04 / QSYS / 669620: 00000001 Interval: 1

Job subsystem: Job status: DEQW Job function: Job CPU %: .14 Pool: 2

Current user profile: QSYS Current state: WAIT Priority (XPF/LIC): 52/192 Original LIC: 208

Current or last wait: (342/QMo) Other mi queue wait Wait duration: 866.541 milliseconds

Object waited on: QDBSVRQ2 Interval duration: 10.108 seconds

Holding job or task: None detected this interval Interval end: 2015-11-02-14.35.26.326000

SQL client job: None detected this interval Temp storage (MB): 22.6172 / 23.1094 (peak)

Call stack contents: Advanced Stack frames: 9

Call level	Program model	Program	Module	Procedure
001	LIC			qutde_block_trace
002	LIC			vLongWaitReceive_15QuTreeQueueCodeFQ2_8TDQSEnum4EnumR12RmprReceiverPCvQ2_2Qu11
003	LIC			QmRealDequeueMiQueue_FR11QmDeqPrefixPcR5MiPtr13QmDequeueType
004	LIC			#cfmir
005	LIC			syscall_A_portal
006	OPM	QDBSERVE		
007	LIC			
008	LIC			
009				

Call stack reports >	Total occurrences: all intervals
Display Full Procedure Name	Total occurrences: this interval
Record Quick View	<b>Total occurrences: by job</b>
Copy	Total occurrences by offset: all intervals

---

## March 2019 (1346) – JW – Physical Disk I/Os updates

- In Job Watcher in the Physical disk I/Os folder, corrected calculations made in the following graphs:
  - Pages allocated/deallocated (overlapping bars)
  - Net pages allocated
- **Note:** Pages allocated/deallocated for 1st interval a job was detected in the collection would often be reported incorrectly (much too high.)

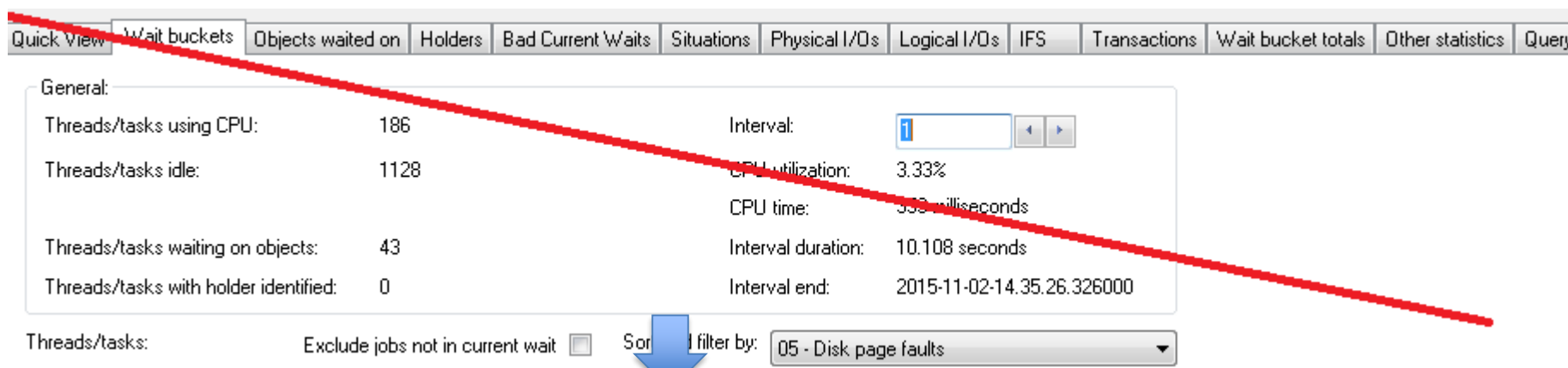
---

## March 2019 (1346) – JW – Temporary storage

- In Job Watcher in the Temporary storage folder, corrected calculations made in the following graphs:
  - Temporary storage pages allocated/deallocated (overlapping bars)
  - Net temporary storage pages allocated
- **Note:** Temporary pages allocated/deallocated for 1st interval a job was detected in the collection would often be reported incorrectly (much too high.)

## March 2019 (1346) – JW – Interval Summary interface (1/5)

- In Job Watcher in the interval summary interface updated the layout of tab names and content to more closely match what is found in the interval details interface for consistency:
  - General section: added Temp storage job allocations (GBs)

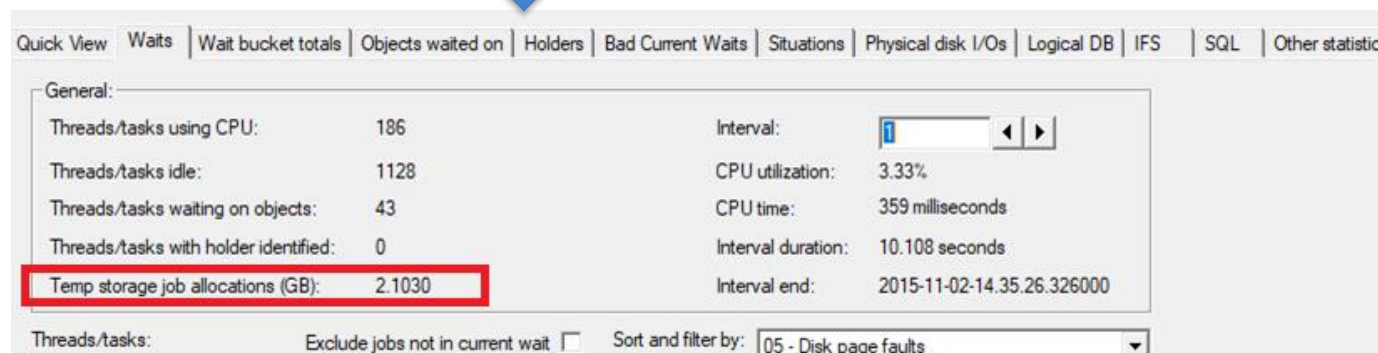


Quick View | **Wait buckets** | Objects waited on | Holders | Bad Current Waits | Situations | Physical I/Os | Logical I/Os | IFS | Transactions | Wait bucket totals | Other statistics | Query

General:

Threads/tasks using CPU:	186	Interval:	1
Threads/tasks idle:	1128	CPU utilization:	3.33%
Threads/tasks waiting on objects:	43	CPU time:	359 milliseconds
Threads/tasks with holder identified:	0	Interval duration:	10.108 seconds
		Interval end:	2015-11-02-14.35.26.326000

Threads/tasks: Exclude jobs not in current wait  Sort and filter by: 05 - Disk page faults



Quick View | **Waits** | Wait bucket totals | Objects waited on | Holders | Bad Current Waits | Situations | Physical disk I/Os | Logical DB | IFS | SQL | Other statistic

General:

Threads/tasks using CPU:	186	Interval:	1
Threads/tasks idle:	1128	CPU utilization:	3.33%
Threads/tasks waiting on objects:	43	CPU time:	359 milliseconds
Threads/tasks with holder identified:	0	Interval duration:	10.108 seconds
Temp storage job allocations (GB):	2.1030	Interval end:	2015-11-02-14.35.26.326000

Threads/tasks: Exclude jobs not in current wait  Sort and filter by: 05 - Disk page faults

# March 2019 (1346) – JW – Interval Summary interface (2/5)

- The Physical disk I/Os tab now contains the same columns (and layout) as in the Interval details - Physical disk I/Os tab.

Quick View | Wait buckets | Objects waited on | Holders | Bad Current Waits | Situations | **Physical I/Os** | Logical I/Os | IFS | Transactions | Wait bucket totals | Other statistics | Query

General:

Threads/tasks using CPU: 186 Interval: 1

Threads/tasks idle: 1128 CPU utilization: 3.33%

Threads/tasks waiting on objects: 43 CPU time: 359 milliseconds

Threads/tasks with holder identified: 0 Interval duration: 10.108 seconds

Interval end: 2015-11-02-14.35.26.326000

Total IO	Total synchronous IO requests	Total asynchronous IO requests	Total read requests	Total writes requests	Total synchronous DB read requests	Total synchronous NDB read requests	Total synchronous DB write requests	Total synchronous NDB write requests	Total asynchronous DB read requests	Total asynchronous NDB read requests	Total asynchronous DB write requests	Total asynchronous NDB write requests	I/O pending page faults	Waits for asynchronous writes
1228	923	305	279	949	98	141	106	578	39	1	67	198	31	84



Quick View | Waits | Wait bucket totals | Objects waited on | Holders | Bad Current Waits | Situations | **Physical disk I/Os** | Query

General:

Threads/tasks using CPU: 186 Interval: 1

Threads/tasks idle: 1128 CPU utilization: 3.33%

Threads/tasks waiting on objects: 43 CPU time: 359 milliseconds

Threads/tasks with holder identified: 0 Interval duration: 10.108 seconds

Temp storage job allocations (GB): 2.1030 Interval end: 2015-11-02-14.35.26.326000

Reads and writes:

Description	Reads	Reads per second	Writes	Writes per second
Synchronous DB	98	9.7041	106	10.4963
Synchronous Non-DB	141	13.9621	578	57.2345
Asynchronous DB	39	3.8618	67	6.6345
Asynchronous Non-DB	1	.0990	198	19.6063
Totals	279	27.6271	949	93.9716

Other metrics:

Description	Value
IO pending page faults	31
IO pending faults per second	3.0697
Waits for asynchronous writes	84
Waits for asynchronous writes per second	8.3178
Page faults	229
Faults per second	22.6760
Total pages allocated	14950
Total pages deallocated	9717



# March 2019 (1346) – JW – Interval Summary interface (3/5)

- The logical DB tab now contains all 8 LDIO fields instead of just 3.

Quick View | Wait buckets | Objects waited on | Holders | Bad Current Waits | Situations | Physical I/Os | Logical I/Os | JFS | Transactions | Wait bucket totals | Other statistics | Query

General:

Threads/tasks using CPU: 186      Interval: 1

Threads/tasks idle: 1128      CPU utilization: 3.33%

Threads/tasks waiting on objects: 43      CPU time: 359 milliseconds

Threads/tasks with holder identified: 0      Interval duration: 10.108 seconds

Interval end: 2015-11-02-14.35.26.326000

Logical DB writes	Logical DB reads	Logical DB updates and deletes
2	125	30



Quick View | Waits | Wait bucket totals | Objects waited on | Holders | Bad Current Waits | Situations | Physical disk I/Os | Logical DB

General:

Threads/tasks using CPU: 186      Interval: 1

Threads/tasks idle: 1128      CPU utilization: 3.33%

Threads/tasks waiting on objects: 43      CPU time: 359 milliseconds

Threads/tasks with holder identified: 0      Interval duration: 10.108 seconds

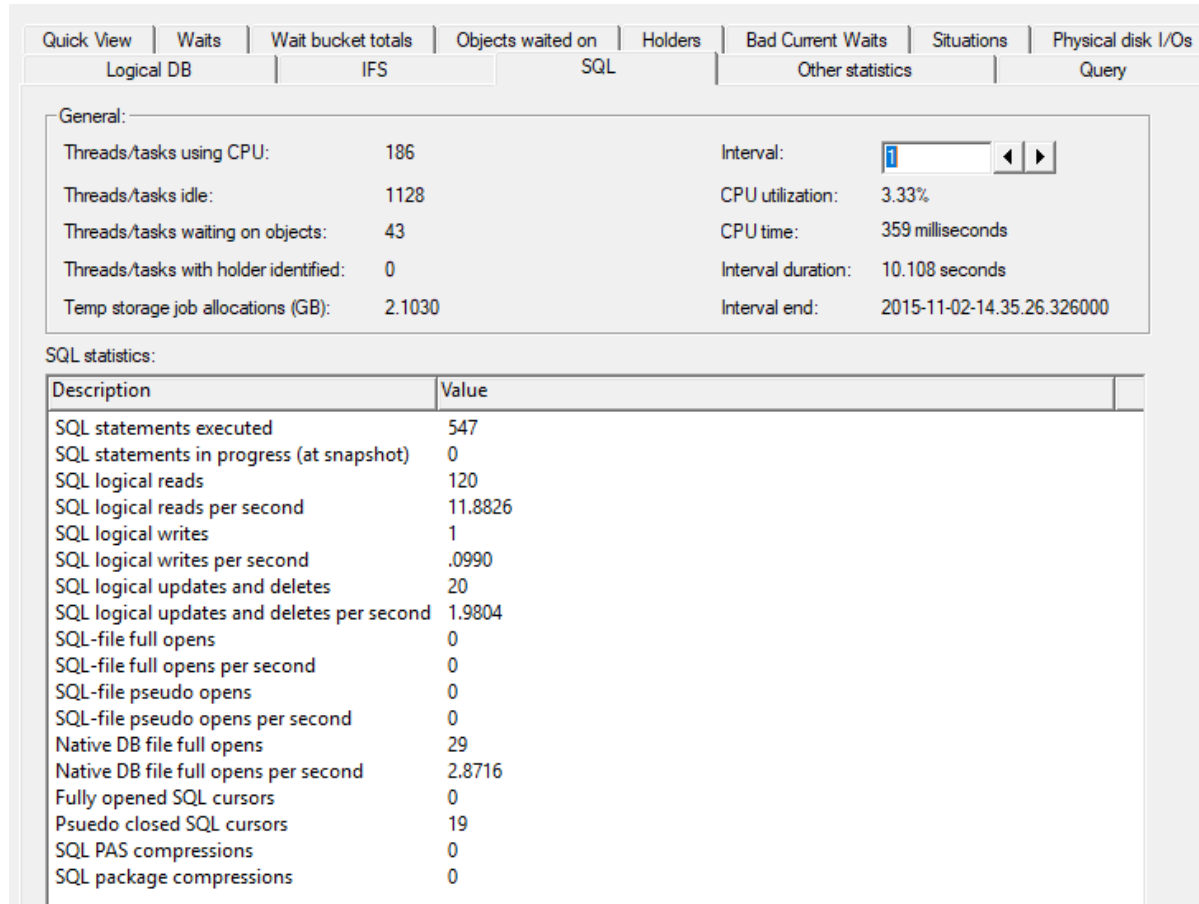
Temp storage job allocations (GB): 2.1030      Interval end: 2015-11-02-14.35.26.326000

Note: These metrics are captured at the job (primary thread) level only.

Description	Total	Rate per second
Logical reads	125	12.37
Logical writes	2	.19
Logical updates and deletes	30	2.97
Logical force end of data	0	0
Logical commits	6	.59
Logical rollbacks	2	.19
Logical index rebuilds	0	0
Logical sorts	0	0

## March 2019 (1346) – JW – Interval Summary interface (4/5)

- Added an SQL tab that contains 18 new SQL related metrics such as SQL statements executed and SQL-file full opens. (at 7.2+)



Quick View | Waits | Wait bucket totals | Objects waited on | Holders | Bad Current Waits | Situations | Physical disk I/Os

Logical DB | IFS | **SQL** | Other statistics | Query

General:

Threads/tasks using CPU:	186	Interval:	1
Threads/tasks idle:	1128	CPU utilization:	3.33%
Threads/tasks waiting on objects:	43	CPU time:	359 milliseconds
Threads/tasks with holder identified:	0	Interval duration:	10.108 seconds
Temp storage job allocations (GB):	2.1030	Interval end:	2015-11-02-14.35.26.326000

SQL statistics:

Description	Value
SQL statements executed	547
SQL statements in progress (at snapshot)	0
SQL logical reads	120
SQL logical reads per second	11.8826
SQL logical writes	1
SQL logical writes per second	.0990
SQL logical updates and deletes	20
SQL logical updates and deletes per second	1.9804
SQL-file full opens	0
SQL-file full opens per second	0
SQL-file pseudo opens	0
SQL-file pseudo opens per second	0
Native DB file full opens	29
Native DB file full opens per second	2.8716
Fully opened SQL cursors	0
Pseudo closed SQL cursors	19
SQL PAS compressions	0
SQL package compressions	0

## March 2019 (1346) – JW – Interval Summary interface (5/5)

- Updated the Other statistics tab to contain the same fields as in the interval details interface.
  - Note:** Transaction tab removed and its metrics added here.

Quick View	Waits	Wait bucket totals	Objects waited on	Holders	Bad Current Waits	Situations	Physical disk I/Os
Logical DB	IFS	SQL	Other statistics			Query	

General:

Threads/tasks using CPU:	186	Interval:	<input type="text" value="1"/>
Threads/tasks idle:	1128	CPU utilization:	3.33%
Threads/tasks waiting on objects:	43	CPU time:	359 milliseconds
Threads/tasks with holder identified:	0	Interval duration:	10.108 seconds
Temp storage job allocations (GB):	2.1030	Interval end:	2015-11-02-14.35.26.326000

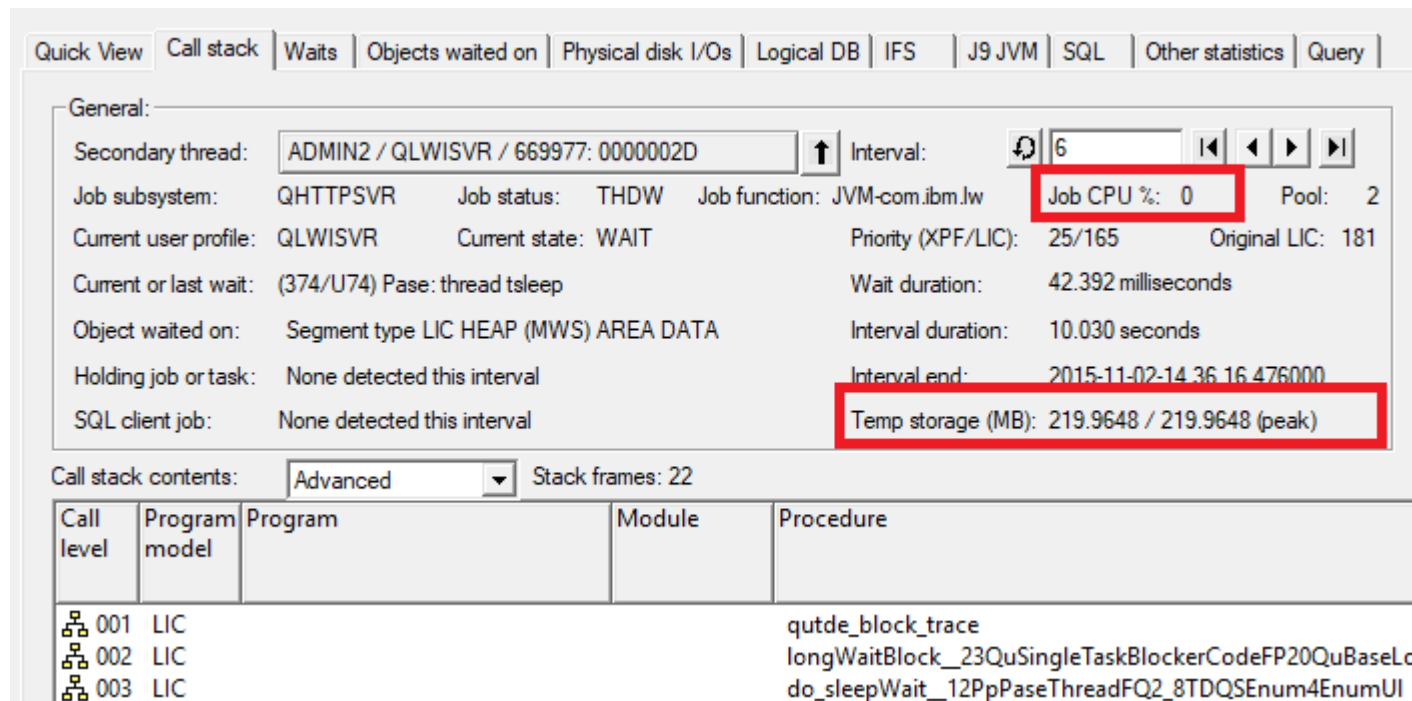
  

Other statistics:

Description	Value
Displays I/O response transactions	0
Displays I/O response transactions per second	0
Average display transaction response time (milliseconds)	0
Spool files created	0
Jobs submitted	0

## March 2019 (1346) – JW – Interval Details updates (1/5)

- In Job Watcher in the Interval Details interface made the following updates to improve consistency with the graph folders and having the same metrics available:
  - The **General** section at the top of most tabs will now include Job CPU % and Temp storage (MB) (current and peak since the job started) for the current job in the interval.
  - Note:** Temp storage is is only available at 7.2 and higher.



The screenshot shows the 'Interval Details' interface in Job Watcher. The 'General' section is expanded, displaying various job metrics. Two specific metrics are highlighted with red boxes: 'Job CPU %: 0' and 'Temp storage (MB): 219.9648 / 219.9648 (peak)'. The interface includes tabs for 'Quick View', 'Call stack', 'Waits', 'Objects waited on', 'Physical disk I/Os', 'Logical DB', 'IFS', 'J9 JVM', 'SQL', 'Other statistics', and 'Query'. Below the 'General' section, there is a 'Call stack contents' section with a dropdown menu set to 'Advanced' and 'Stack frames: 22'. A table below shows the call stack details.

Call level	Program model	Program	Module	Procedure
001	LIC			qutde_block_trace
002	LIC			longWaitBlock_23QuSingleTaskBlockerCodeFP20QuBaseLo
003	LIC			do_sleepWait_12PpPaseThreadFQ2_8TDQSEnum4EnumUI

## March 2019 (1346) – JW – Interval Details updates (2/5)

- In the **Physical disk I/Os** tab the Other I/Os section has been renamed to "Other metrics" and the list will now include:
  - Total pages allocated
  - Total pages allocated since job start
  - Temp pages allocated since job start
  - Total pages deallocated
  - Total pages deallocated since job start
  - Temp pages deallocated since job start

Quick View | Call stack | Waits | Objects waited on | **Physical disk I/Os** | Logical DB | IFS | J9 JVM | SQL | Other statistics | Query

General:

Secondary thread: ADMIN2 / QLWISVR / 669977: 000002D Interval: 6

Job subsystem: QHTTSPVR Job status: THDW Job function: JVM-com.ibm.lw Job CPU %: 0 Pool: 2

Current user profile: QLWISVR Current state: WAIT Priority (XPF/LIC): 25/165 Original LIC: 181

Current or last wait: (374/U74) Pase: thread tsleep Wait duration: 42.392 milliseconds

Object waited on: Segment type LIC HEAP (MWS) AREA DATA Interval duration: 10.030 seconds

Holding job or task: None detected this interval Interval end: 2015-11-02-14.36.16.476000

SQL client job: None detected this interval Temp storage (MB): 219.9648 / 219.9648 (peak)

Reads and writes:					Other metrics:	
Description	Reads	Reads per second	Writes	Writes per second	Description	Value
Synchronous DB	0	0	0	0	IO pending page faults	0
Synchronous Non-DB	0	0	0	0	IO pending page faults per second	0
Asynchronous DB	0	0	0	0	Waits for async writes	0
Asynchronous Non-DB	0	0	0	0	Waits for async writes per second	0
Totals	0	0	0	0	Page faults causing reads	0
					Page faults causing reads per second	0
					Total pages allocated	0
					Total pages allocated since job start	56
					Temp pages allocated since job start	56
					Total pages deallocated	0
					Total pages deallocated since job start	0
					Temp pages deallocated since job start	0

## March 2019 (1346) – JW – Interval Details updates (3/5)

- In the **Logical DB** tab renamed the metric "Logical others" to "Logical updates and deletes". Also added these new fields:
  - Logical force end of data
  - Logical commits
  - Logical rollbacks
  - Logical index rebuilds
  - Logical sorts

Quick View | Call stack | Waits | Objects waited on | Physical disk I/Os | **Logical DB** | IFS | J9 JVM | SQL | Other statistics | Query

General:

Secondary thread: ADMIN2 / QLWISVR / 669977: 0000002D ↑ Interval: 6

Job subsystem: QHTTSPVR Job status: THDW Job function: JVM-com.ibm.lw Job CPU %: 0 Pool: 2

Current user profile: QLWISVR Current state: WAIT Priority (XPF/LIC): 25/165 Original LIC: 181

Current or last wait: (374/U74) Pase: thread tsleep Wait duration: 42.392 milliseconds

Object waited on: Segment type LIC HEAP (MWS) AREA DATA Interval duration: 10.030 seconds

Holding job or task: None detected this interval Interval end: 2015-11-02-14.36.16.476000

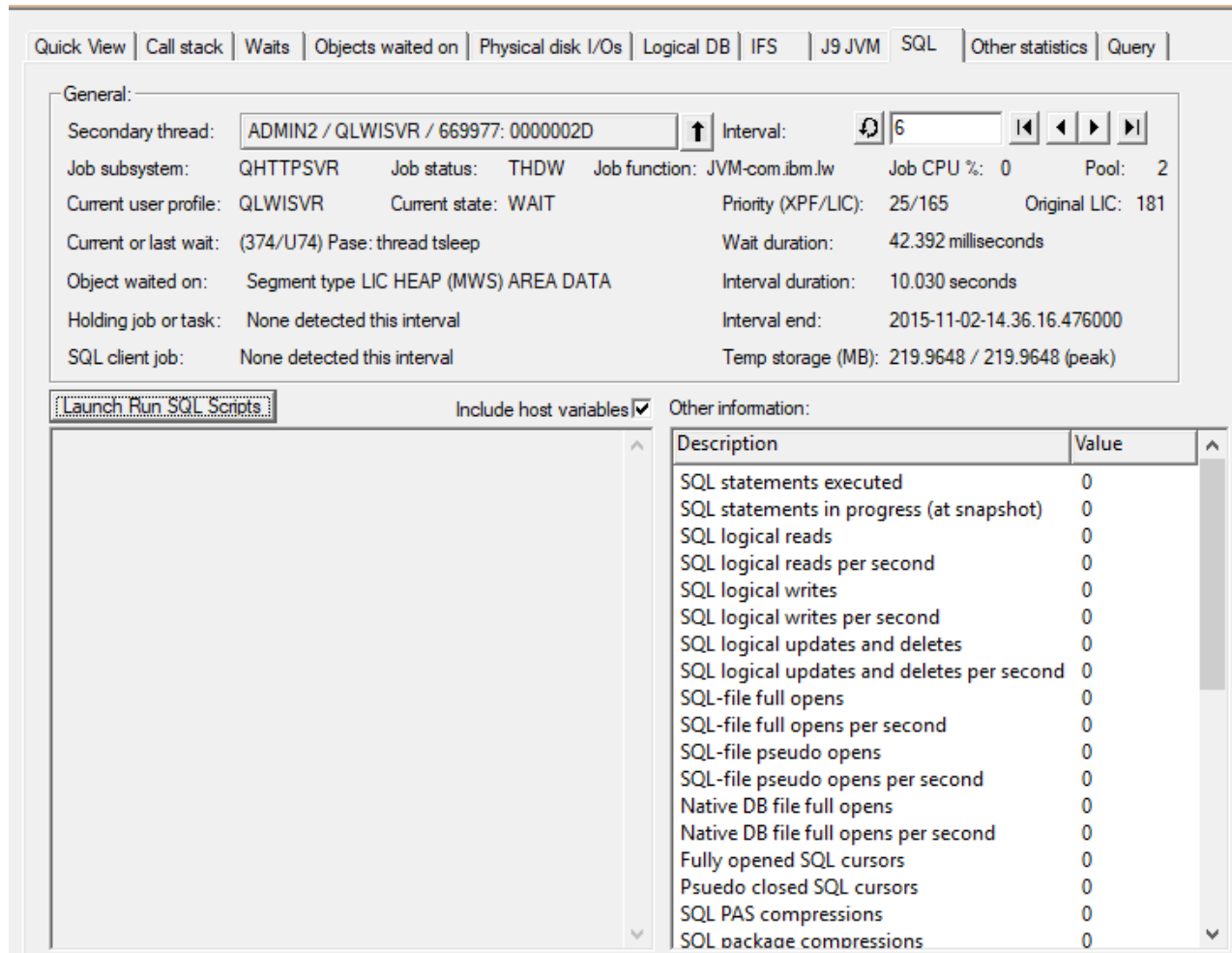
SQL client job: None detected this interval Temp storage (MB): 219.9648 / 219.9648 (peak)

Note: These numbers reflect the job's logical IOs for this interval for all threads.

Description	Total	Rate per second
Logical reads	0	0
Logical writes	0	0
Logical updates and deletes	0	0
Logical force end of data	0	0
Logical commits	0	0
Logical rollbacks	0	0
Logical index rebuilds	0	0
Logical sorts	0	0

# March 2019 (1346) – JW – Interval Details updates (4/5)

Added a large number of SQL-related metrics to the **SQL** tab in the Other information section.



Quick View | Call stack | Waits | Objects waited on | Physical disk I/Os | Logical DB | IFS | J9 JVM | **SQL** | Other statistics | Query

General:

Secondary thread: ADMIN2 / QLWISVR / 669977: 0000002D ↑ Interval: 6

Job subsystem: QHTTSPVR Job status: THDW Job function: JVM-com.ibm.lw Job CPU %: 0 Pool: 2

Current user profile: QLWISVR Current state: WAIT Priority (XPF/LIC): 25/165 Original LIC: 181

Current or last wait: (374/U74) Pase: thread tsleep Wait duration: 42.392 milliseconds

Object waited on: Segment type LIC HEAP (MWS) AREA DATA Interval duration: 10.030 seconds

Holding job or task: None detected this interval Interval end: 2015-11-02-14.36.16.476000

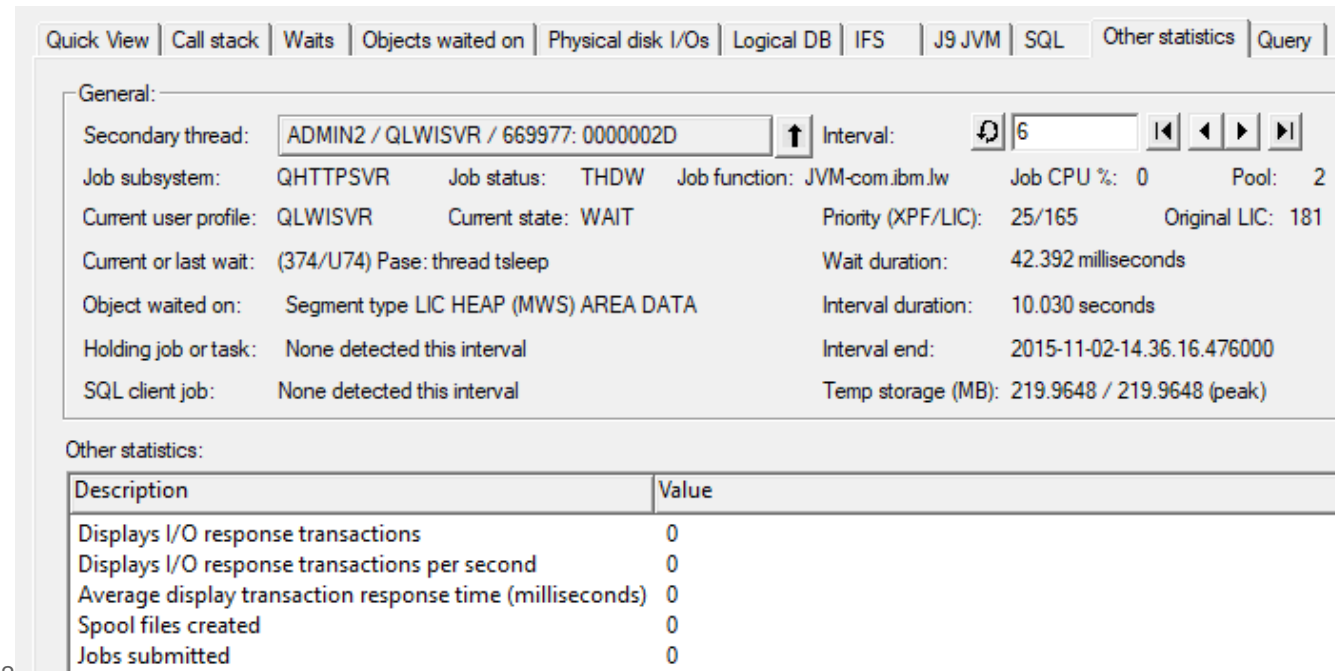
SQL client job: None detected this interval Temp storage (MB): 219.9648 / 219.9648 (peak)

Launch Run SQL Scripts Include host variables  Other information:

Description	Value
SQL statements executed	0
SQL statements in progress (at snapshot)	0
SQL logical reads	0
SQL logical reads per second	0
SQL logical writes	0
SQL logical writes per second	0
SQL logical updates and deletes	0
SQL logical updates and deletes per second	0
SQL-file full opens	0
SQL-file full opens per second	0
SQL-file pseudo opens	0
SQL-file pseudo opens per second	0
Native DB file full opens	0
Native DB file full opens per second	0
Fully opened SQL cursors	0
Pseudo closed SQL cursors	0
SQL PAS compressions	0
SQL package compressions	0

## March 2019 (1346) – JW – Interval Details updates (5/5)

- The **Other statistics** tab now contains these metrics in order to match the metrics found in the Other statistics folder.
  - Displays I/O response transactions
  - Displays I/O response transactions per second
  - Average display transaction response time (milliseconds)
  - Spool files created
  - Jobs submitted



Quick View | Call stack | Waits | Objects waited on | Physical disk I/Os | Logical DB | IFS | J9 JVM | SQL | Other statistics | Query

General:

Secondary thread: ADMIN2 / QLWISVR / 669977: 0000002D ↑ Interval: 6

Job subsystem: QHTTSPVR Job status: THDW Job function: JVM-com.ibm.lw Job CPU %: 0 Pool: 2

Current user profile: QLWISVR Current state: WAIT Priority (XPF/LIC): 25/165 Original LIC: 181

Current or last wait: (374/U74) Pase: thread tsleep Wait duration: 42.392 milliseconds

Object waited on: Segment type LIC HEAP (MWS) AREA DATA Interval duration: 10.030 seconds

Holding job or task: None detected this interval Interval end: 2015-11-02-14.36.16.476000

SQL client job: None detected this interval Temp storage (MB): 219.9648 / 219.9648 (peak)

Other statistics:

Description	Value
Displays I/O response transactions	0
Displays I/O response transactions per second	0
Average display transaction response time (milliseconds)	0
Spool files created	0
Jobs submitted	0



---

## Feb 2019 (1345) – JW – Reclaim resources situation

- In Job Watcher added a new situation to check if the reclaim resources CPP was detected in any call stacks.

---

## Feb 2019 (1345) – JW – Wait graphs - Counts graphs

- Added a Wait graphs -> Counts folder and graphs similar to what is found in CSI whether the collection has been summarized or not.
- The new graphs are:
  - Collection overview counts signature
  - Seizes and locks counts signature
  - Contention counts signature
  - Disk counts signature
  - Journaling counts signature
  - Communications counts signature

---

## Feb 2019 (1345) – JW – Job Summary analysis – generic totals

- In the Job Watcher job summary analysis the generic job totals file did not add up some metrics from file QAPYJWPRC correctly. Fields like LDIO reads were inaccurately counted up.

---

## Feb 2019 (1345) – JW – CPU\_SWITCH removed in most graphs

- Remove dispatched CPU counts (field CPU\_SWITCH) from the secondary Y-axis where it appears on most graphs that show CPU utilization in CSI and Job Watcher.
- It still appears on the following graphs and will also appear in the table below all graphs that showed it previously:
  - Wait graphs -> Virtual CPU Delays
  - CPU graphs -> Dispatched CPU breakdown and CPUQ
  - CPU graphs -> Dispatched CPU/CPUq usage by high/low priority with CPU utilization

---

## Feb 2019 (1345) – JW – Detail reports - Call stack summary flyover

- In JW, from the **Detail reports** -> 16, N or 50 level call stack summary reports, when placing your mouse over a program name in the call stack the IBM program descriptions will now be shown in the tooltip.
  - **Note:** This is only for known IBM defined programs where a description is available..

# Feb 2019 (1345) – JW – Detail reports - N level call stack summary

- In Job Watcher, from Detail reports added a new option "N level call stack summary" that will prompt the user for the desired number of max call levels and then build the report based on that number.
  - Note:** Keep in mind the bigger the number entered, the slower that this report will be!

N level call stack summary

This option will create a Job Watcher call stack summary report based on the number of call levels desired.

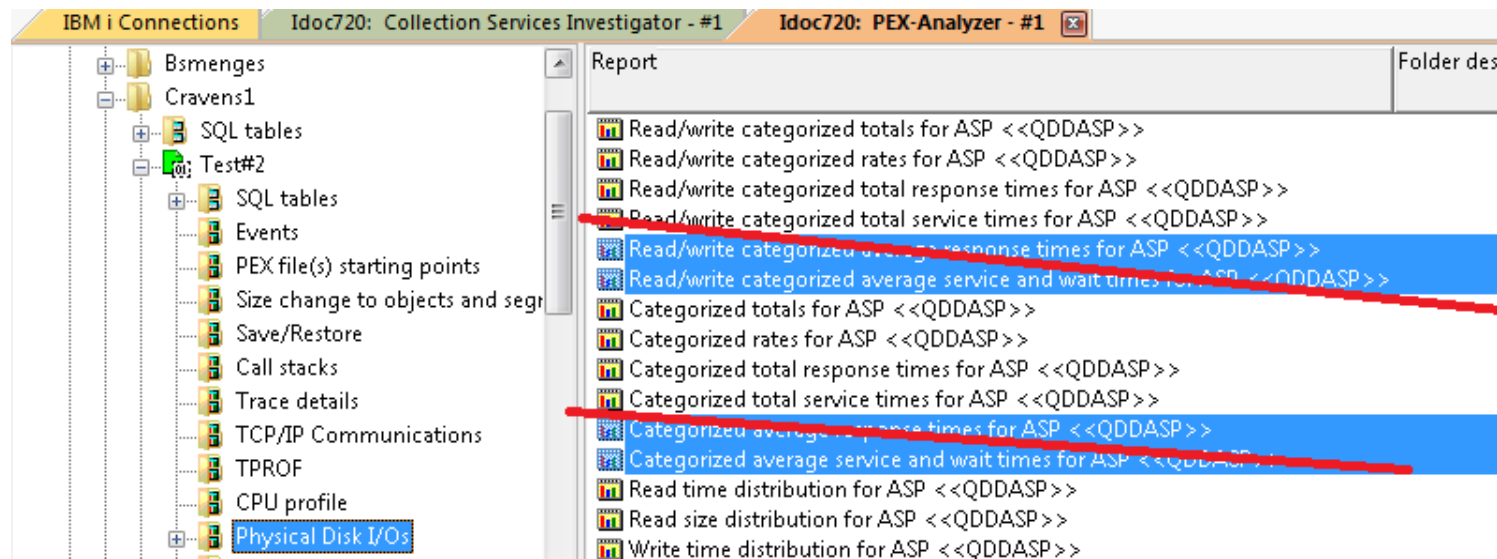
Maximum call levels (5 - 100):

OK Cancel

TOTAL	Call level (LEV...)	Program model (MODEL)	Program name (PGMNAM)	Module name (MODNAME)	Procedure (PROCNAME)
75	1	LIC			qutde_block_trace
75	2	LIC			longWaitBlock_23QuSingleTaskBlockerCodeFP20QuBaseLongWaitObjec
75	3	LIC			do_sleepWait_12PpPaseThreadFQ2_8TDQSEnum4EnumUI
75	4	LIC			do_tsleep_FUIT1
75	5	LIC			tsleep_complex_FtUIN22i
75	6	LIC			tia_schandler
75	7	LIC			tia_call_nofpeu
75	8	LIC			callTia_FP12PpPaseThreadP12TiaSaveState
75	9	LIC			thread_common_FP12PpPaseThreadP16PaseThreadAttach
75	10	LIC			runpase_thread_Fv
75	11	LIC			pasemi_runpase
75	12	LIC			#cfmir
75	13	LIC			syscall_A_portal
75	14	ILE	QP2USER2	QP2API	runpase_common_FiPvT2
75	15	ILE	QP2USER2	QP2API	__Qp2Thread
75	16	LIC			cblabbranch
75	17	LIC			ai_function_ptr_portal
75	18	ILE	QP0WPINT	QP0WSPTHR	pthread_create_part2
75	19	ILE	QLESPI	QLECRTTH	LE_Create_Thread2_FP12crth_parm_t
75	20	LIC			cblabbranch
75	21	LIC			aimach_upcall_portal
4	1	LIC			qutde_block_trace

# Feb 2019 (1345) – PEX – Physical disk I/Os graphs deleted

- These graphs that show averages within a categorized response time bucket were deleted since they might be misleading:
  - Read/write categorized average response times for <<OBJTYPE>> <<OBJDESC>>
  - Read/write categorized average service and wait times for <<OBJTYPE>> <<OBJDESC>>
  - Categorized average response times for <<OBJTYPE>> <<OBJDESC>>
  - Categorized average service and wait times for <<OBJTYPE>> <<OBJDESC>>





---

## Feb 2019 (1345) – PEX – bucketized TPROF reports update

- Added additional entries to the QIDRPA/COMPONENTS table used by the PEX "bucketized" tprof reports.
  - **Note:** Latest server builds required.



---

## March 2019 (1346) – PEX TPROF

- In PEX TPROF under the cacheline drill down folder added a new report called "Object resolution and total hits for cache line <<CACHELINE>>"

---

## March 2019 (1346) – Disk Watcher

- In Disk Watcher made the following fixes:
  - 1. In the stats graphs the selected unit, selected path or selected pool drill down from the ranking graphs did not show up and are back now.
  - 2. The trace graphs folder would show up incorrectly if no QAPYDWTRC file existed if the user ran the Trace summary analysis.
  - 3. The trace graphs will now show time periods where no IOs occurred with gaps correctly now.

# Feb 2019 (1345) – Plan Cache Analyzer – plans graphs update

- In the Plans graphs in Plan Cache Analyzer added the field QQTIM1 (Timestamp of last access plan rebuild) to the flyover.
  - Note: The table below the graph now includes both QQSTIM and QQTIM1.

