

iDoctor update

Ron McCargar – idoctor@us.ibm.com



Agenda

- Overview
 - Goals, components, unique features and website.
- Latest updates to iDoctor
 - Covering the last 18 months.
- Questions?
 - Contact idoctor@us.ibm.com or mccargar@us.ibm.com

Overview

- iDoctor is a suite of dynamic performance tools
 - Developed by the IBM i Global Support Center.
 - Sold via Lab Services

- We cover all areas of performance
 - Started in V4R5
 - 7 IBM i components (2 free)
 - 2 Power components (free)

iDoctor goals

- Broaden the user base for Performance Investigation
 - Operators, programmers, consultants, etc.
- Simplify and automate processes
- Provide quick access to data
- Provide more analysis options
- Reduce the dependency on PEX traces

PRODUCTIVITY

IBM i Component	Description
Collection Services Investigator (CSI)	<u>High-level</u> system/job monitoring Specializes in job waits analysis
Job Watcher (JW)	<u>Medium-level</u> job analysis Specializes in job waits analysis
PEX Analyzer (PA)	<u>Low-level</u> system/job/disk tracing stats, profiling
Disk Watcher (DW)	Disk stats and traces See also CSI – disk graphs and/or PEX Analyzer – Physical Disk I/O
Plan Cache Analyzer	Analyses the system plan cache.
iDoctor FTP GUI (free)	Work with the IFS and libraries/objects.
Must Gather Tools (free)	GUI for QMGTOOLS library

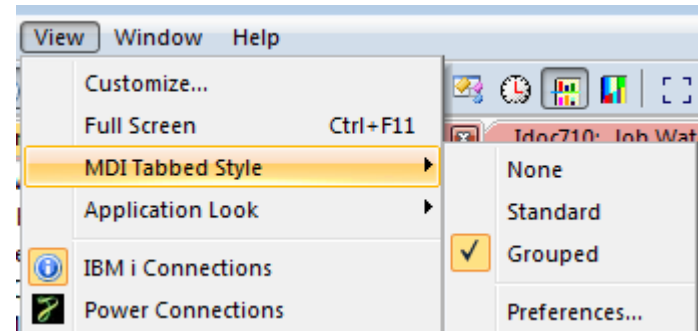
Power Component (non IBM i)	Description
<p>VIOS Investigator (free)</p>	<p>Collects or analyzes nmon, npiv or VIOS Advisor data.</p> <p>Includes support to automatically download/install and run the latest PerfPMR.</p>
<p>Power Connections (free)</p>	<p>Manage your SQLite, HMC, VIOS, AIX or Linux connections and drill down for more details.</p> <p>Includes support to graph nmon data on the PC (with SQLite) or on an IBM i.</p>

iDoctor GUI

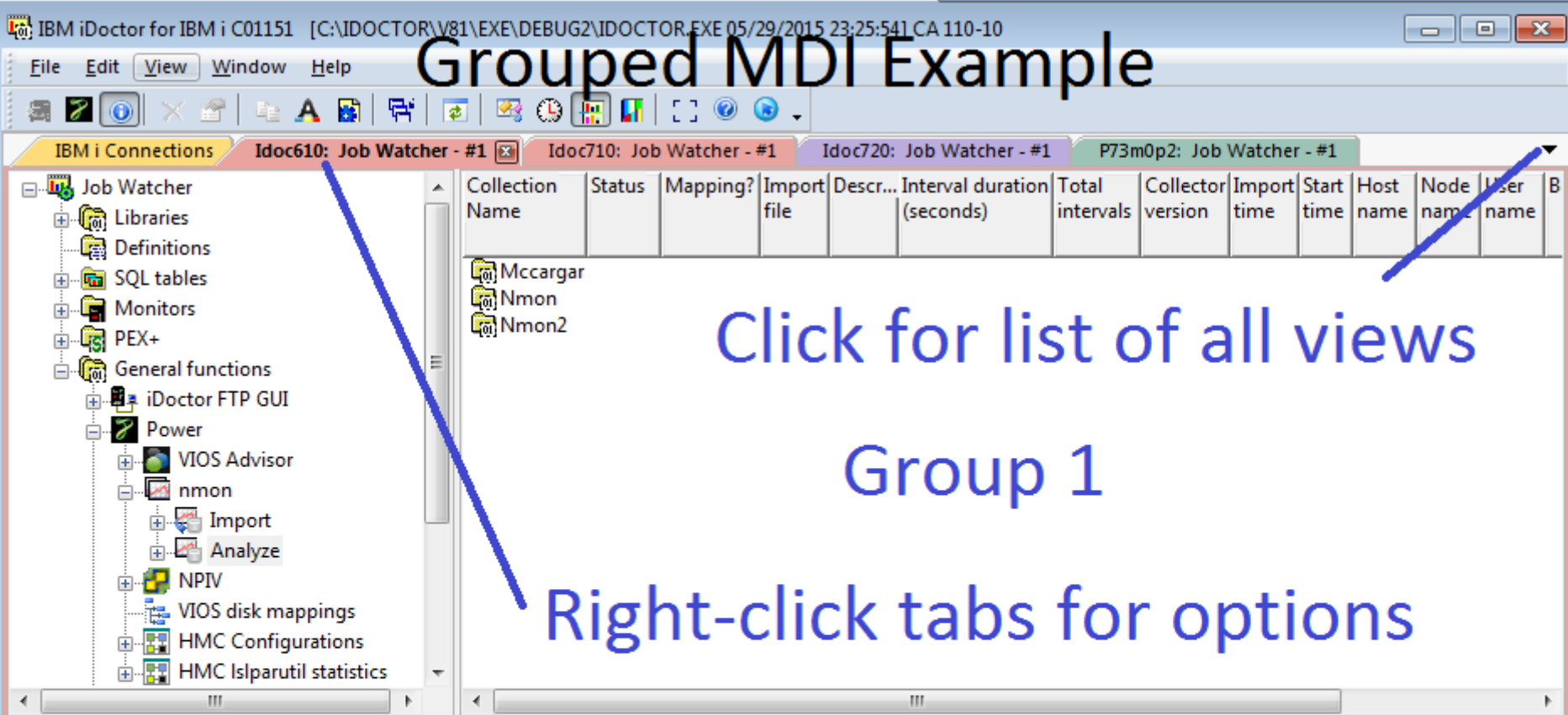
- Built on Windows
 - Superior flexibility and functionality
 - Support to run on Citrix servers
 - Runs on Linux KVMs, VirtualBox, etc.
- All components offer a similar user experience
- Requires:
 - System i Access for Windows or IBM i Access Client Solutions
 - Note: only if using the IBM i components.
 - .NET 4.0 or higher
 - Visual Studio 2012 redistributable package

New tabbed style interface

- Three styles available:
 - **Grouped** – Tabs can be grouped together into 1 or more groups in order to make comparisons.
 - Default setting
 - Drag and drop to move tabs around
 - **Note:** Views cannot be tiled or cascaded when using this style.
 - **Standard** – Provides tabs for each view and allows cascading and tiling of views.
 - **None** – This is the same as the original iDoctor GUI design (no tabs.)



Grouped MDI Example



IBM iDoctor for IBM i C01151 [C:\IDOCTOR\V81\EXE\DEBUG2\IDOCTOR.EXE 05/29/2015 23:25:54 CA 110-10]

File Edit View Window Help

IBM i Connections Idoc610: Job Watcher - #1 Idoc710: Job Watcher - #1 Idoc720: Job Watcher - #1 P73m0p2: Job Watcher - #1

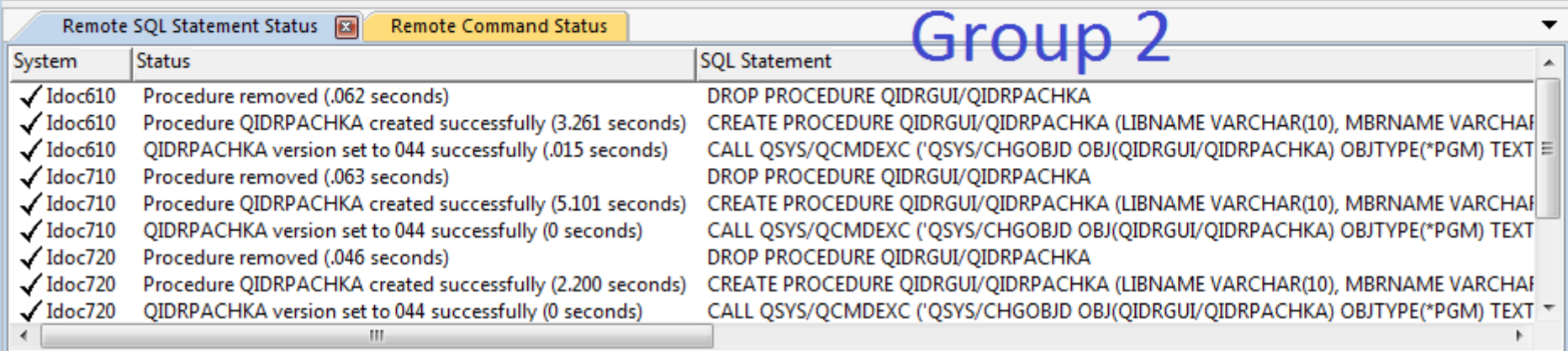
Job Watcher

- Libraries
- Definitions
- SQL tables
- Monitors
- PEX+
- General functions
 - iDoctor FTP GUI
 - Power
 - VIOS Advisor
 - nmon
 - Import
 - Analyze
 - NPiV
 - VIOS disk mappings
 - HMC Configurations
 - HMC Isparutil statistics

Collection Name	Status	Mapping?	Import file	Descr...	Interval duration (seconds)	Total intervals	Collector version	Import time	Start time	Host name	Node name	User name
Mccargar												
Nmon												
Nmon2												

Click for list of all views Group 1

Right-click tabs for options



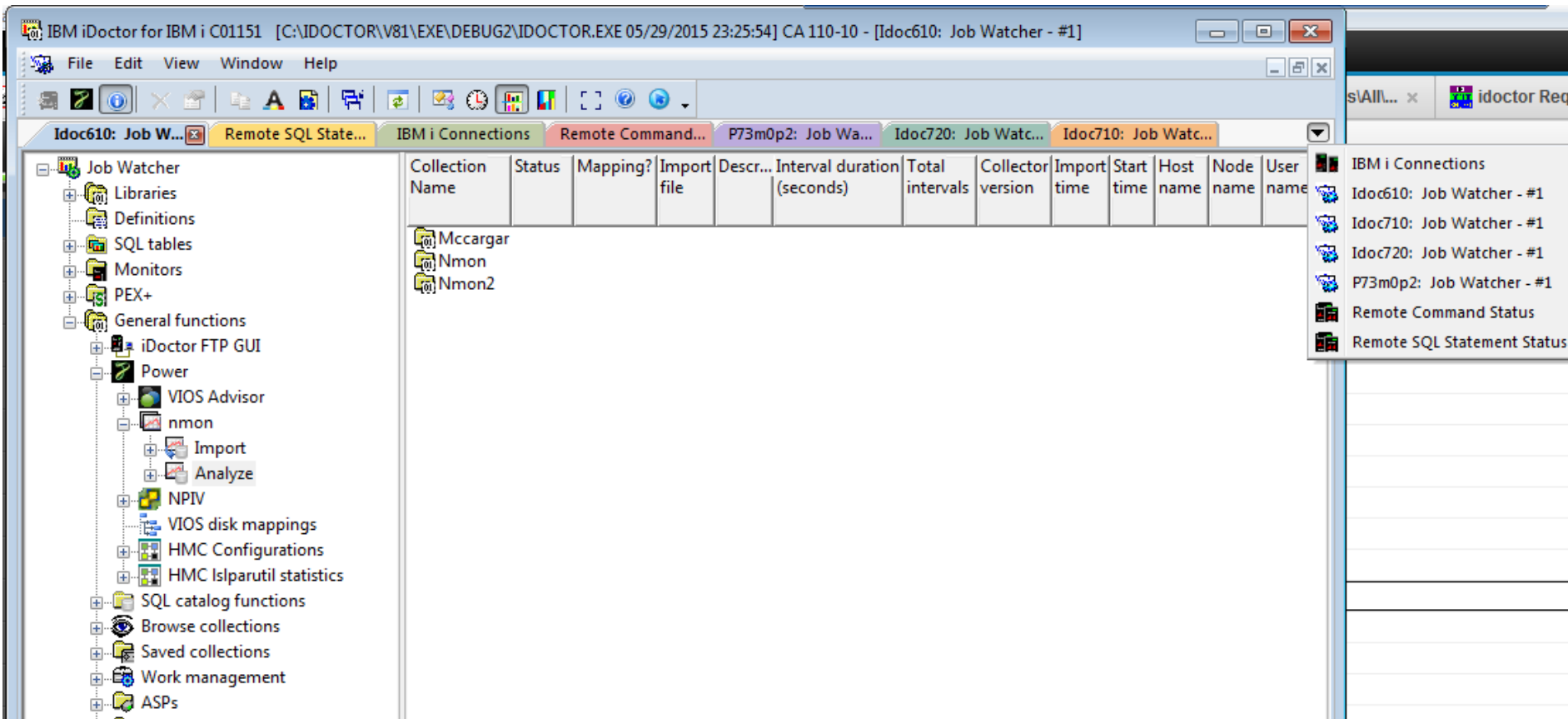
Remote SQL Statement Status Remote Command Status

Group 2

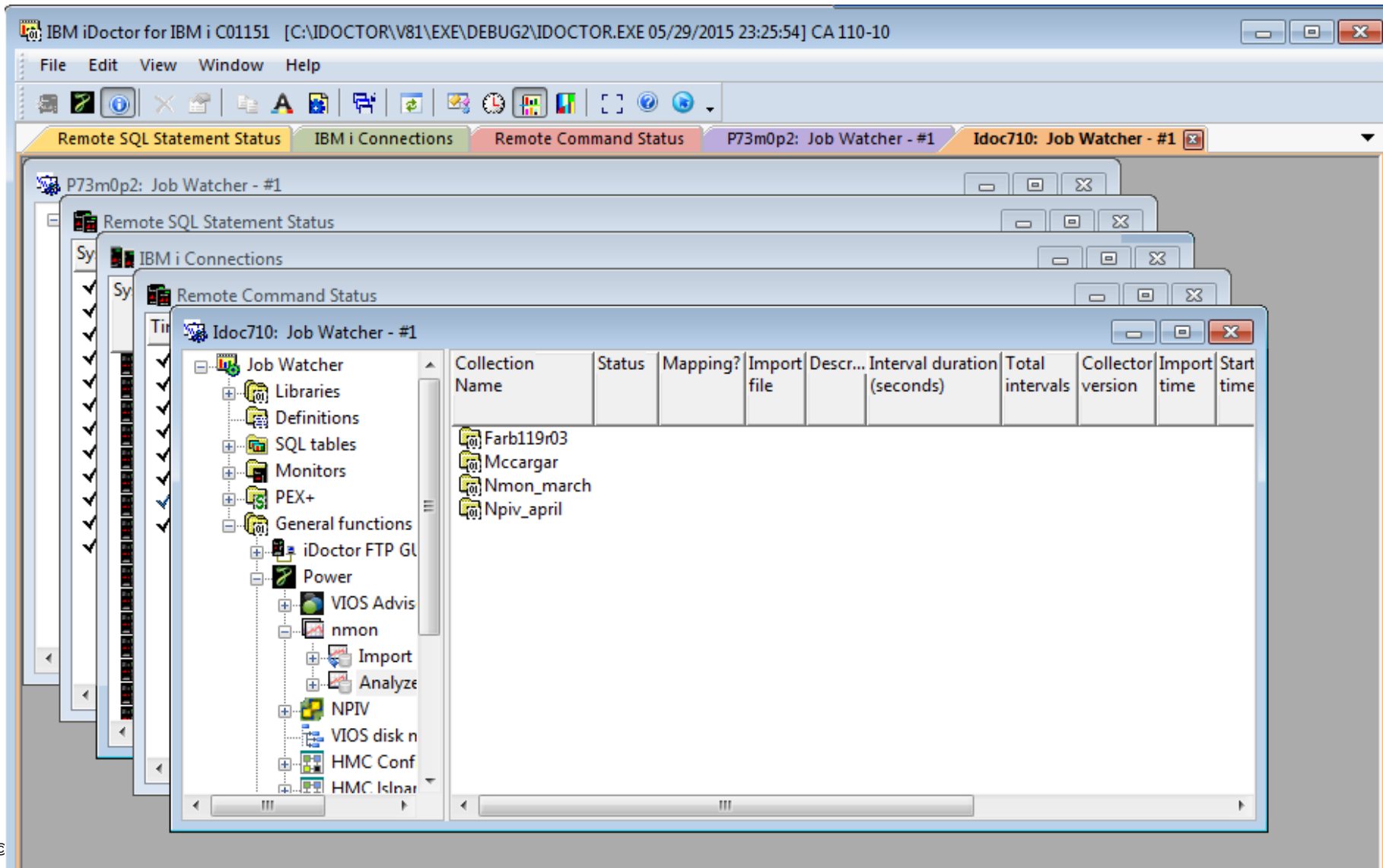
System	Status	SQL Statement
✓ Idoc610	Procedure removed (.062 seconds)	DROP PROCEDURE QIDRGUI/QIDRPACHKA
✓ Idoc610	Procedure QIDRPACHKA created successfully (3.261 seconds)	CREATE PROCEDURE QIDRGUI/QIDRPACHKA (LIBNAME VARCHAR(10), MBRNAME VARCHAR(10), OBJTYPE(*PGM) TEXT)
✓ Idoc610	QIDRPACHKA version set to 044 successfully (.015 seconds)	CALL QSYS/QCMDEXC ('QSYS/CHGOBJD OBJ(QIDRGUI/QIDRPACHKA) OBJTYPE(*PGM) TEXT')
✓ Idoc710	Procedure removed (.063 seconds)	DROP PROCEDURE QIDRGUI/QIDRPACHKA
✓ Idoc710	Procedure QIDRPACHKA created successfully (5.101 seconds)	CREATE PROCEDURE QIDRGUI/QIDRPACHKA (LIBNAME VARCHAR(10), MBRNAME VARCHAR(10), OBJTYPE(*PGM) TEXT)
✓ Idoc710	QIDRPACHKA version set to 044 successfully (0 seconds)	CALL QSYS/QCMDEXC ('QSYS/CHGOBJD OBJ(QIDRGUI/QIDRPACHKA) OBJTYPE(*PGM) TEXT')
✓ Idoc720	Procedure removed (.046 seconds)	DROP PROCEDURE QIDRGUI/QIDRPACHKA
✓ Idoc720	Procedure QIDRPACHKA created successfully (2.200 seconds)	CREATE PROCEDURE QIDRGUI/QIDRPACHKA (LIBNAME VARCHAR(10), MBRNAME VARCHAR(10), OBJTYPE(*PGM) TEXT)
✓ Idoc720	QIDRPACHKA version set to 044 successfully (0 seconds)	CALL QSYS/QCMDEXC ('QSYS/CHGOBJD OBJ(QIDRGUI/QIDRPACHKA) OBJTYPE(*PGM) TEXT')

Standard MDI Example - Maximized

- All views shown in a single group or tiled/cascaded if desired.



Standard MDI Example - Cascaded



The screenshot displays the IBM iDoctor for IBM i C01151 application window. The title bar reads "IBM iDoctor for IBM i C01151 [C:\IDOCTOR\V81\EXE\DEBUG2\IDOCTOR.EXE 05/29/2015 23:25:54] CA 110-10". The menu bar includes File, Edit, View, Window, and Help. The toolbar contains various icons for file operations and system functions. The window title bar shows several tabs: "Remote SQL Statement Status", "IBM i Connections", "Remote Command Status", "P73m0p2: Job Watcher - #1", and "Idoc710: Job Watcher - #1".

The "Idoc710: Job Watcher - #1" window is the active foreground window. It features a tree view on the left side with the following structure:

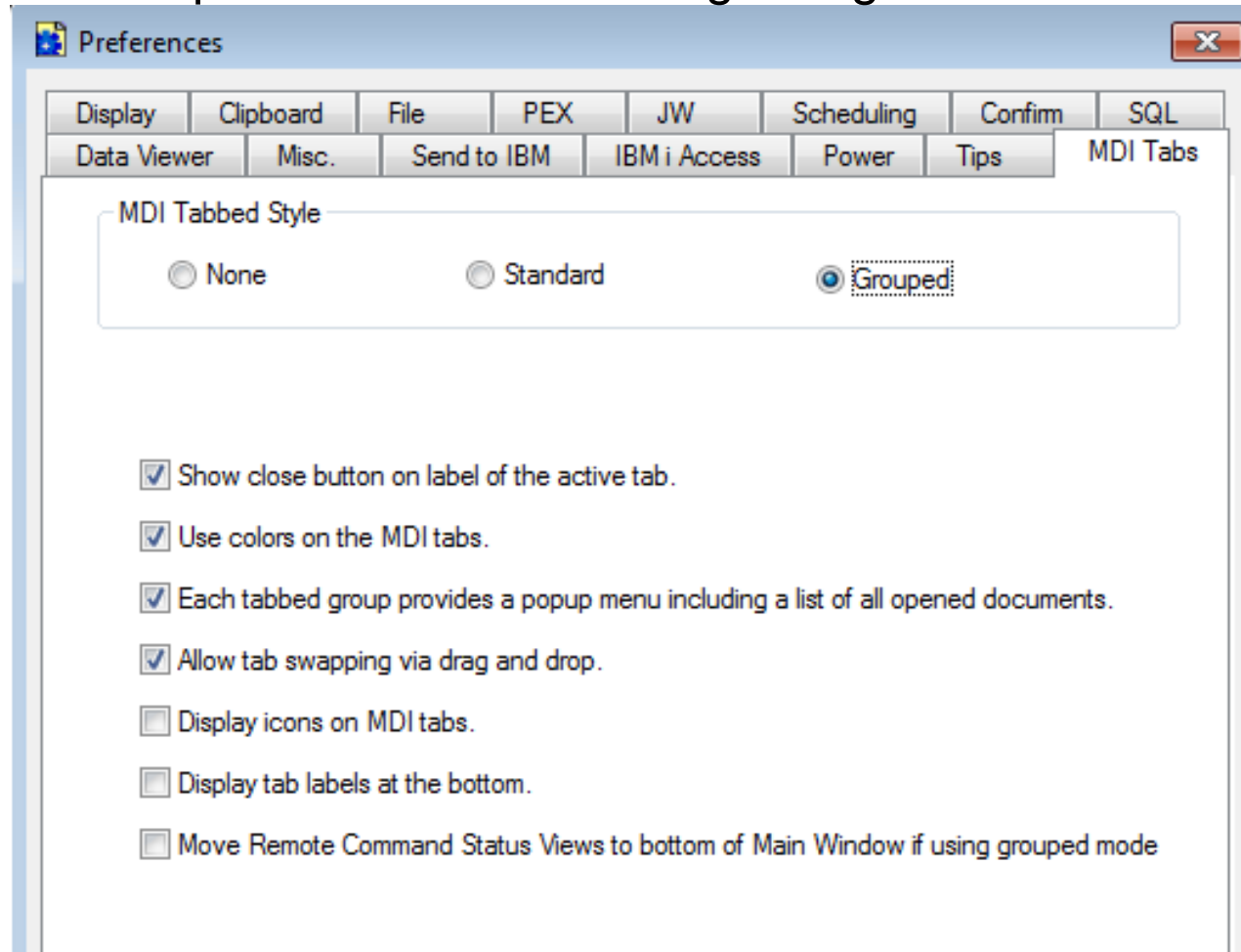
- Job Watcher
 - Libraries
 - Definitions
 - SQL tables
 - Monitors
 - PEX+
 - General functions
 - iDoctor FTP GL
 - Power
 - VIOS Advis
 - nmon
 - Import
 - Analyze
 - NPIV
 - VIOS disk n
 - HMC Conf
 - HMC Islnar

The main pane of the "Idoc710: Job Watcher - #1" window displays a table with the following columns: Collection Name, Status, Mapping?, Import file, Descr..., Interval duration (seconds), Total intervals, Collector version, Import time, and Start time. The table contains the following data:

Collection Name	Status	Mapping?	Import file	Descr...	Interval duration (seconds)	Total intervals	Collector version	Import time	Start time
Farb119r03									
Mccargar									
Nmon_march									
Npiv_april									

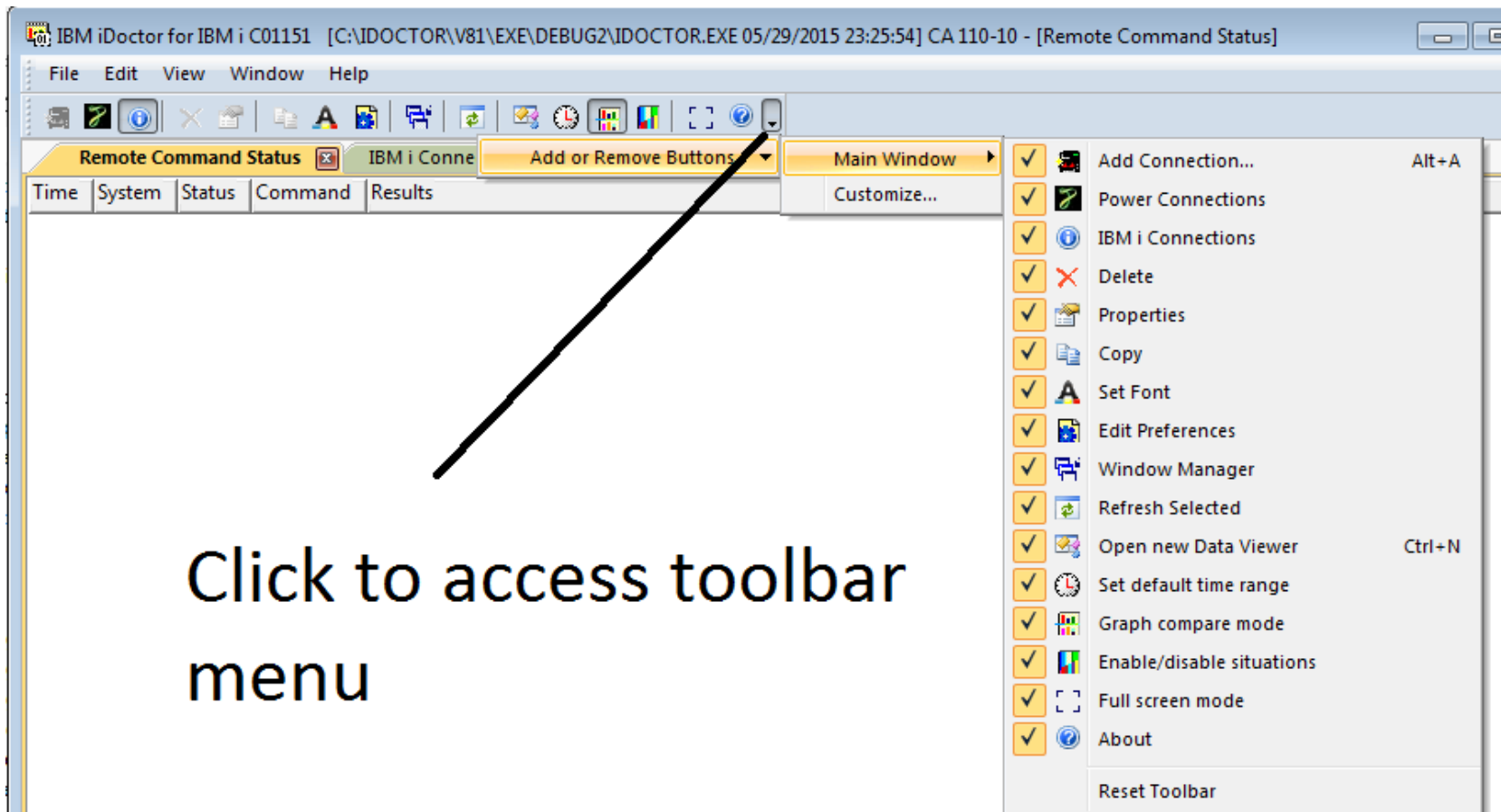
MDI Tabs - Preferences

- Controls various presentation details regarding how the tabs will look.



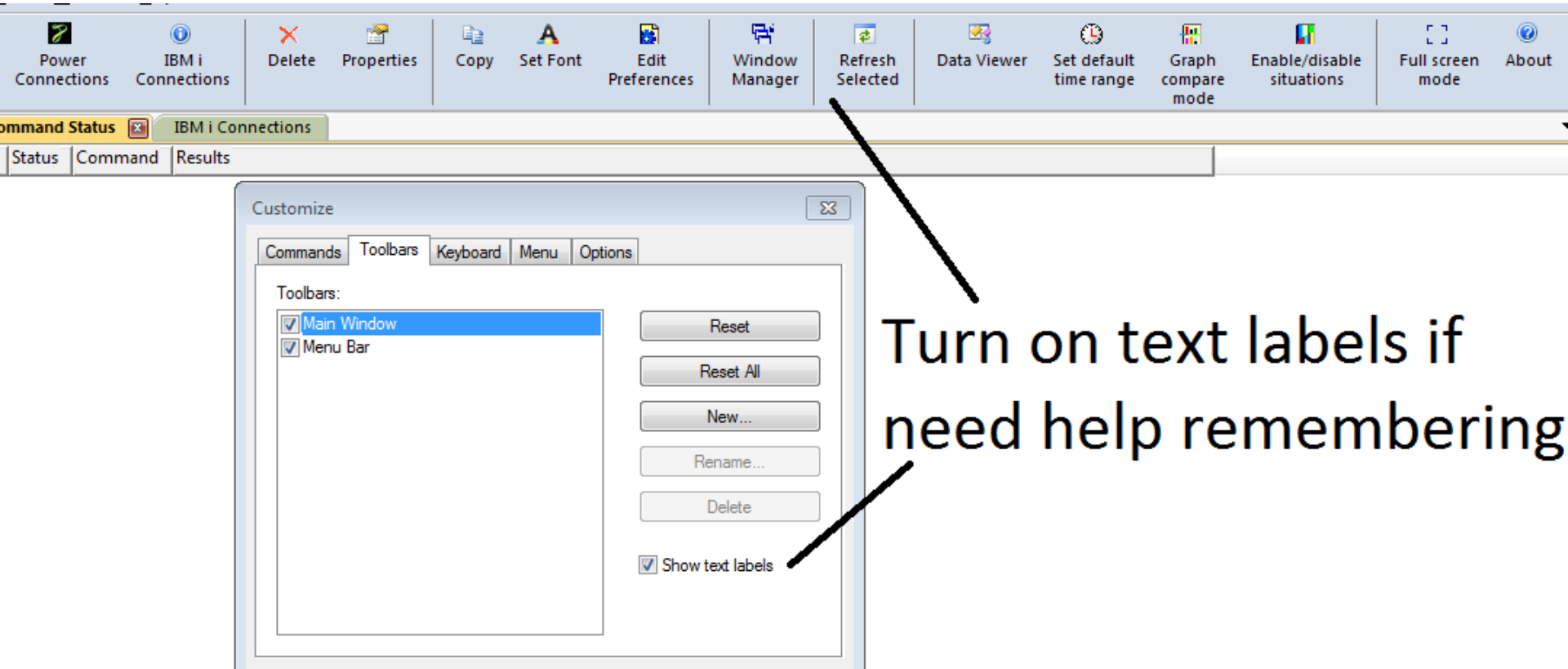
Customizable toolbars

- Click drop down arrow at end of toolbar.
- Toolbar menu -> Customize for additional options.



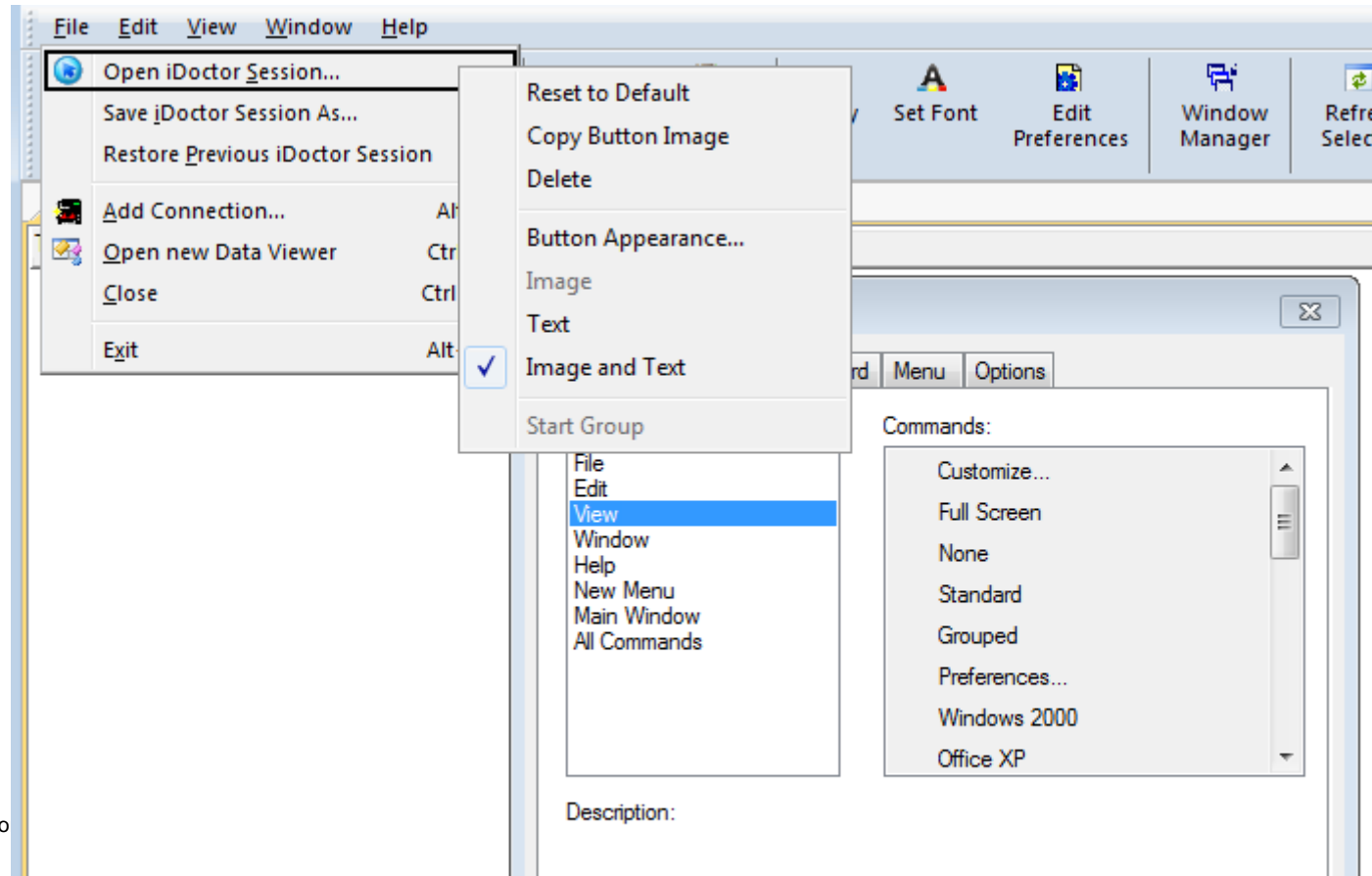
Customize – Toolbars – Show text labels

- Use Toolbar menu -> Customize -> Toolbars



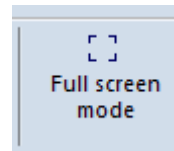
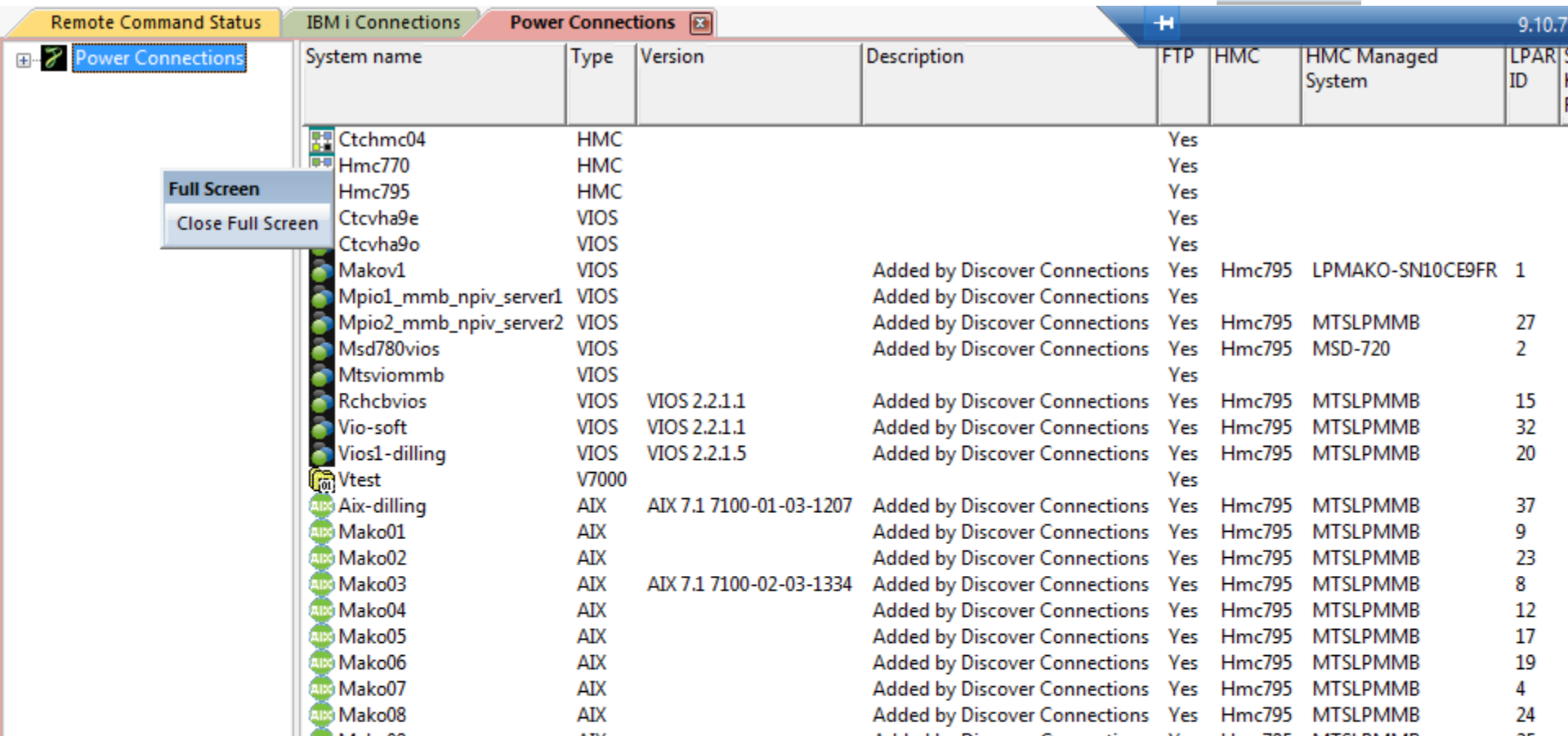
Customize – Menus

- With Customize window open you can click on menus to.
 - Right-click an individual menu to delete or change the image displayed.
 - Drag and drop a menu as new toolbar button or move them around in the menu.
 - Delete



Full Screen Mode

- This options allows you to temporarily hide the menu/toolbars to maximize the screen space available
- Press Escape or Close Full Screen to leave this mode.

The screenshot shows the 'Power Connections' window in IBM i Connections. A context menu is open over the system list, with 'Full Screen' selected. The table below lists the connections.

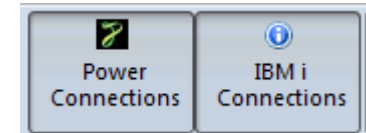
System name	Type	Version	Description	FTP	HMC	HMC Managed System	LPAR ID
Ctchmc04	HMC			Yes			
Hmc770	HMC			Yes			
Hmc795	HMC			Yes			
Ctcvha9e	VIOS			Yes			
Ctcvha9o	VIOS			Yes			
Makov1	VIOS		Added by Discover Connections	Yes	Hmc795	LPMako-SN10CE9FR	1
Mpio1_mmb_npiv_server1	VIOS		Added by Discover Connections	Yes			
Mpio2_mmb_npiv_server2	VIOS		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	27
Msd780vios	VIOS		Added by Discover Connections	Yes	Hmc795	MSD-720	2
Mtsviommb	VIOS			Yes			
Rchcbvios	VIOS	VIOS 2.2.1.1	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	15
Vio-soft	VIOS	VIOS 2.2.1.1	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	32
Vios1-dilling	VIOS	VIOS 2.2.1.5	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	20
Vtest	V7000			Yes			
Aix-dilling	AIX	AIX 7.1 7100-01-03-1207	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	37
Mako01	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	9
Mako02	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	23
Mako03	AIX	AIX 7.1 7100-02-03-1334	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	8
Mako04	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	12
Mako05	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	17
Mako06	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	19
Mako07	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	4
Mako08	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	24

Citrix Support

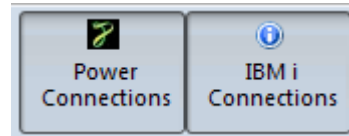
- We have a Citrix server within support now and are using this internally.
- iDoctor no longer requires Windows administrator level authority in order to run.
- **Note:** Windows administrator level authority is still required to install the latest server builds.

“My Connections” is now “IBM i Connections”

- The list of connections within iDoctor is now called IBM i Connections.
- All non IBM i Connections have been moved to a new expandable Power Connections view.
- Use these buttons to hide or show IBM i Connections or Power Connections.



Connection Export



- Use the Export Connections menu to save your desired connections to a Windows registry file.
 - Allows you to transfer connections to another PC/user.
 - Or need to uninstall/reinstall IBM i Access.
 - **Note:** Uninstalling IBM i Access will remove your connections.

Power Connections

- Work with HMCs, VIOS, AIX, or Linux systems.
- Also provides access to local SQLite stored data through SQLite ODBC connections.
- Uses SSH
- HMCs can be expanded to view managed systems and LPARs. LPARs can be expanded to work with available iDoctor functions.
- Use the Set Analysis Database menu to configure where performance data will be stored.
- iDoctor scripts get installed to /tmp/idoctor directory by default.

Power Connections Example

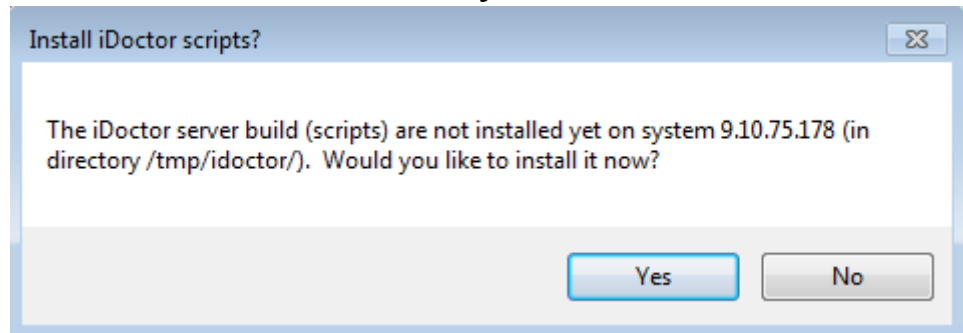
IBM i Connections		Power Connections								
Power Connections										
System name	Type	Version	Description	FTP	HMC	HMC Managed System	LPAR ID	SSH Pu Key File		
LOCAL_SQLITE	SQLite		C:\sqlite\iDoctor.sqlite	Yes						
LOCAL_SQLITE_41	SQLite		C:\sqlite\iDoctor41.sqlite	Yes						
Ctchmc04	HMC			Yes						
Hmc770	HMC			Yes						
Hmc795	HMC			Yes						
Ctcvha9e	VIOS			Yes						
Ctcvha9o	VIOS			Yes						
Makov1	VIOS		Added by Discover Connections	Yes	Hmc795	LPAKO-SN10CE9FR	1			
Msd780vios	VIOS		Added by Discover Connections	Yes	Hmc795	MSD-720	2			
Mtsviommb	VIOS			Yes						
Rchcbvios	VIOS	VIOS 2.2.1.1	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	15			
Vio-soft	VIOS	VIOS 2.2.1.1	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	32			
Vios1-dilling	VIOS	VIOS 2.2.1.5	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	20			
Vaa	V7000			Yes						
Mako02	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	23			
Mako03	AIX	AIX 7.1 7100-02-03-1334	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	8			
Mako04	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	12			
Mako05	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	17			
Mako06	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	19			
Mako07	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	4			
Mako09	AIX		Added by Discover Connections	Yes	Hmc795	MTSLPMMB	25			
Mako10	AIX			Yes						
Mako21	AIX		Added by Discover Connections	Yes	Hmc795	LPAKO-SN10CE9FR	21			
Mako22	AIX		Added by Discover Connections	Yes	Hmc795	LPAKO-SN10CE9FR	22			
Mako23	AIX		Added by Discover Connections	Yes	Hmc795	LPAKO-SN10CE9FR	23			
Mako24	AIX		Added by Discover Connections	Yes	Hmc795	LPAKO-SN10CE9FR	24			
Mako30	AIX			Yes						
Rchaixve1	AIX	AIX 7.1 7100-02-01-1245	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	13			
Rchaixve2	AIX	AIX 6.1 6100-08-00-0000	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	14			
Rchaixve3	AIX	AIX 7.1 7100-02-01-1245	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	39			
Rchasnim	AIX	AIX 7.1 7100-03-01-1341	Added by Discover Connections	Yes	Hmc795	MTSLPMMB	38			

Power Connections – Additional Software Recommended

- Putty (for SSH file transfers, and SSH key generation)
 - <http://the.earth.li/~sgtatham/putty/latest/x86/putty-0.64-installer.exe>
 - Configure where this is installed in Preferences -> Power.
 - If not used, then FTP connections are also required.
- SQLite (fast, zero installation DB for analyzing performance data)
 - <http://sqlite.org/2015/sqlite-shell-win32-x86-3081002.zip>
 - <http://sqlite.org/2015/sqlite-dll-win32-x86-3081002.zip>
 - Extract both of the above to a single directory (i.e. C:\sqlite)
 - Configure where this is installed on the Set Analysis DB window.
 - If not used, then an IBM i must be used to analyze data.
- SQLite ODBC Driver (required if using SQLite with iDoctor)
 - <http://www.ch-werner.de/sqliteodbc/sqliteodbc.exe>

Power Connections – Installing scripts

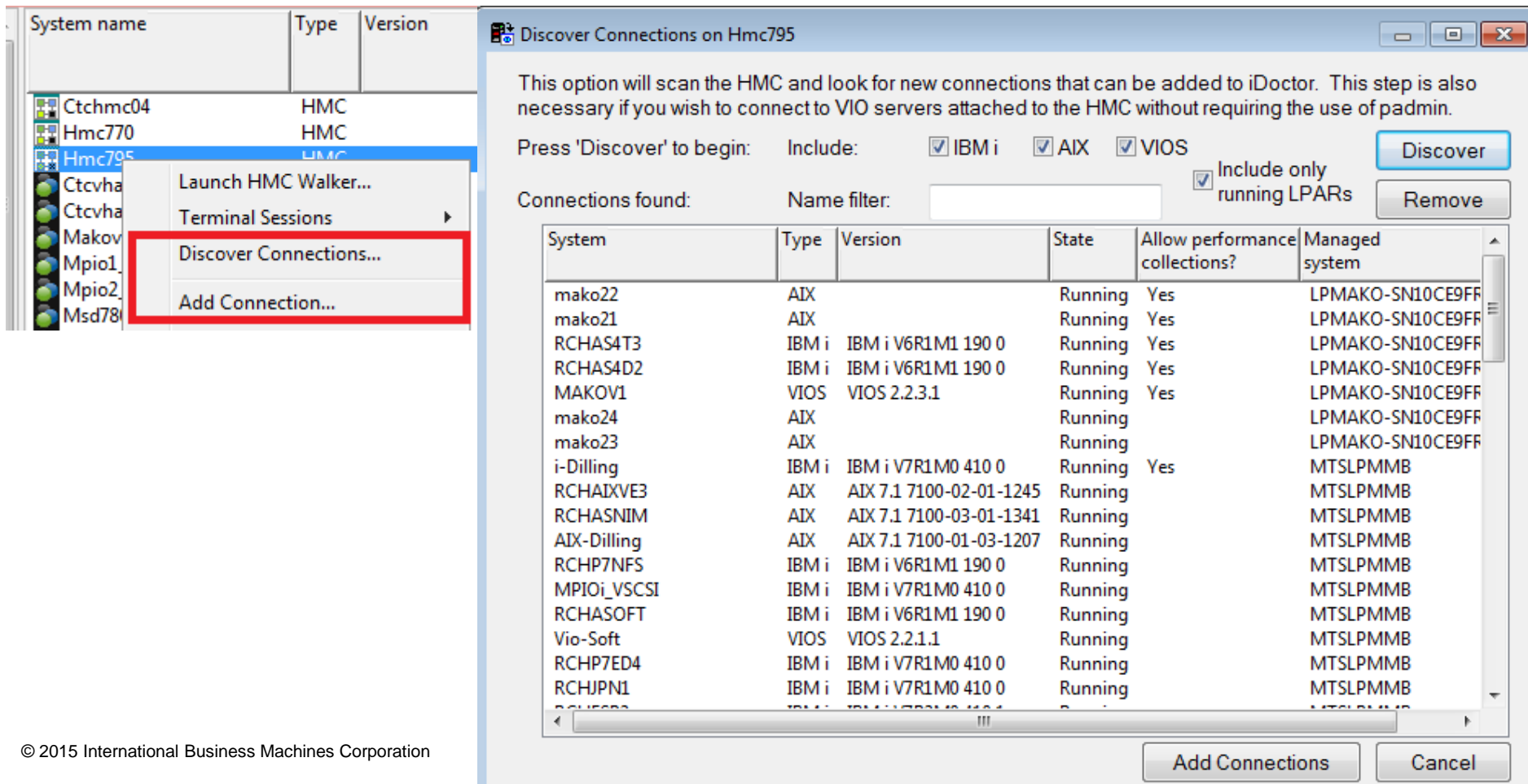
- First time you connect to AIX, Linux or VIOS you will be asked if scripts can be installed.



- Requires FTP or Putty's pscp.exe command (configure which is used under Preferences -> Power.)
- If using pscp.exe you will be required to connect manually to the system with Putty once to get server's host key cached in the registry.

Power Connections – Discover Connections

- Add Connections using Discover Connections (for an HMC) or use the Add Connection menu.



The screenshot shows the iDoctor interface with the 'Discover Connections on Hmc795' dialog box open. The dialog box contains the following text and controls:

This option will scan the HMC and look for new connections that can be added to iDoctor. This step is also necessary if you wish to connect to VIO servers attached to the HMC without requiring the use of padmin.

Press 'Discover' to begin: Include: IBM i AIX VIOS

Include only running LPARs

Buttons: Discover, Remove

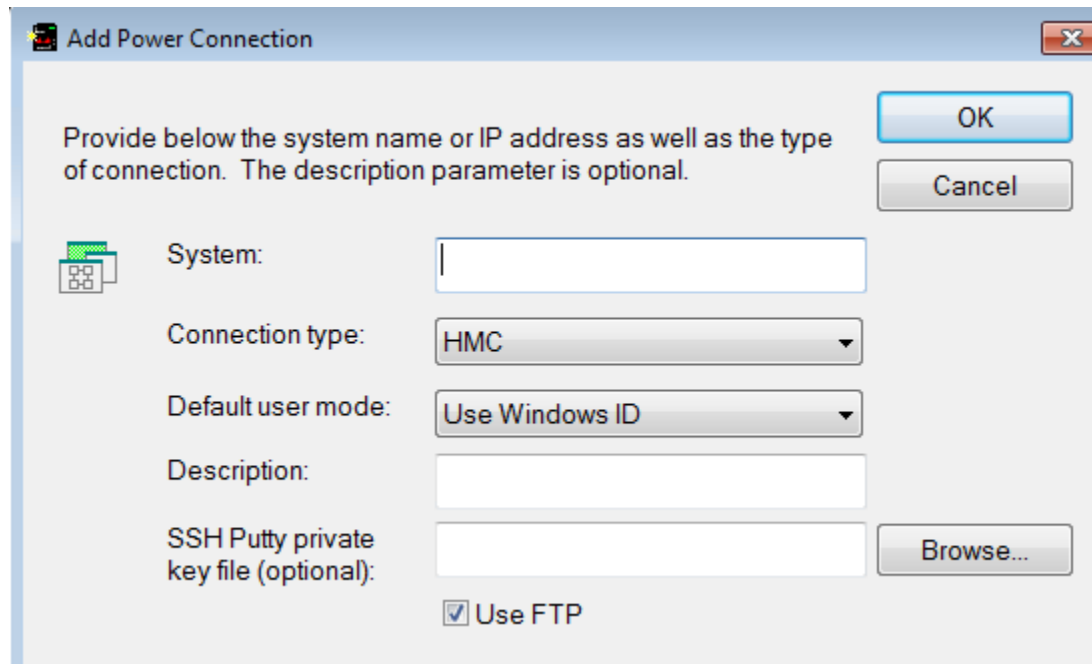
Connections found: Name filter:

System	Type	Version	State	Allow performance collections?	Managed system
mako22	AIX		Running	Yes	LPMAKO-SN10CE9FF
mako21	AIX		Running	Yes	LPMAKO-SN10CE9FF
RCHAS4T3	IBM i	IBM i V6R1M1 190 0	Running	Yes	LPMAKO-SN10CE9FF
RCHAS4D2	IBM i	IBM i V6R1M1 190 0	Running	Yes	LPMAKO-SN10CE9FF
MAKOV1	VIOS	VIOS 2.2.3.1	Running	Yes	LPMAKO-SN10CE9FF
mako24	AIX		Running		LPMAKO-SN10CE9FF
mako23	AIX		Running		LPMAKO-SN10CE9FF
i-Dilling	IBM i	IBM i V7R1M0 410 0	Running	Yes	MTSLPMMB
RCHAIXVE3	AIX	AIX 7.1 7100-02-01-1245	Running		MTSLPMMB
RCHASNIM	AIX	AIX 7.1 7100-03-01-1341	Running		MTSLPMMB
AIX-Dilling	AIX	AIX 7.1 7100-01-03-1207	Running		MTSLPMMB
RCHP7NFS	IBM i	IBM i V6R1M1 190 0	Running		MTSLPMMB
MPIOi_VSCSI	IBM i	IBM i V7R1M0 410 0	Running		MTSLPMMB
RCHASOFT	IBM i	IBM i V6R1M1 190 0	Running		MTSLPMMB
Vio-Soft	VIOS	VIOS 2.2.1.1	Running		MTSLPMMB
RCHP7ED4	IBM i	IBM i V7R1M0 410 0	Running		MTSLPMMB
RCHJPN1	IBM i	IBM i V7R1M0 410 0	Running		MTSLPMMB

Buttons: Add Connections, Cancel

Power Connections – Add Power Connection

- Add new Power Connections via this screen.
- Allows option to use SSH keyed connection.
- Can also be used to connect to a local SQLite DB.



Add Power Connection

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

System:

Connection type: HMC

Default user mode: Use Windows ID

Description:

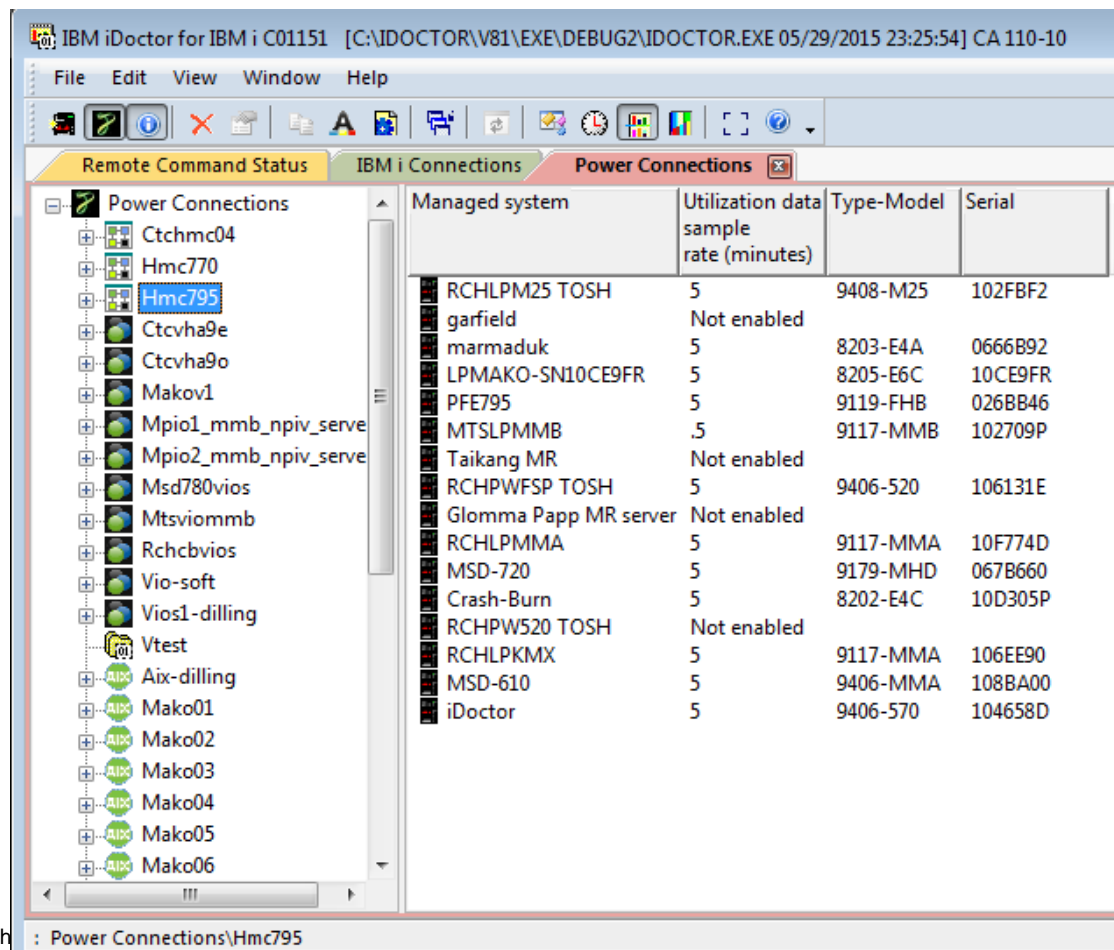
SSH Putty private key file (optional): **Browse...**

Use FTP

OK **Cancel**

Power Connections – Managed systems within an HMC

- This view allows you to view/change the utilization data sample rate (used by IsIparutil).



IBM iDoctor for IBM i C01151 [C:\IDOCTOR\V81\EXE\DEBUG2\IDOCTOR.EXE 05/29/2015 23:25:54] CA 110-10

File Edit View Window Help

Remote Command Status IBM i Connections Power Connections

Power Connections

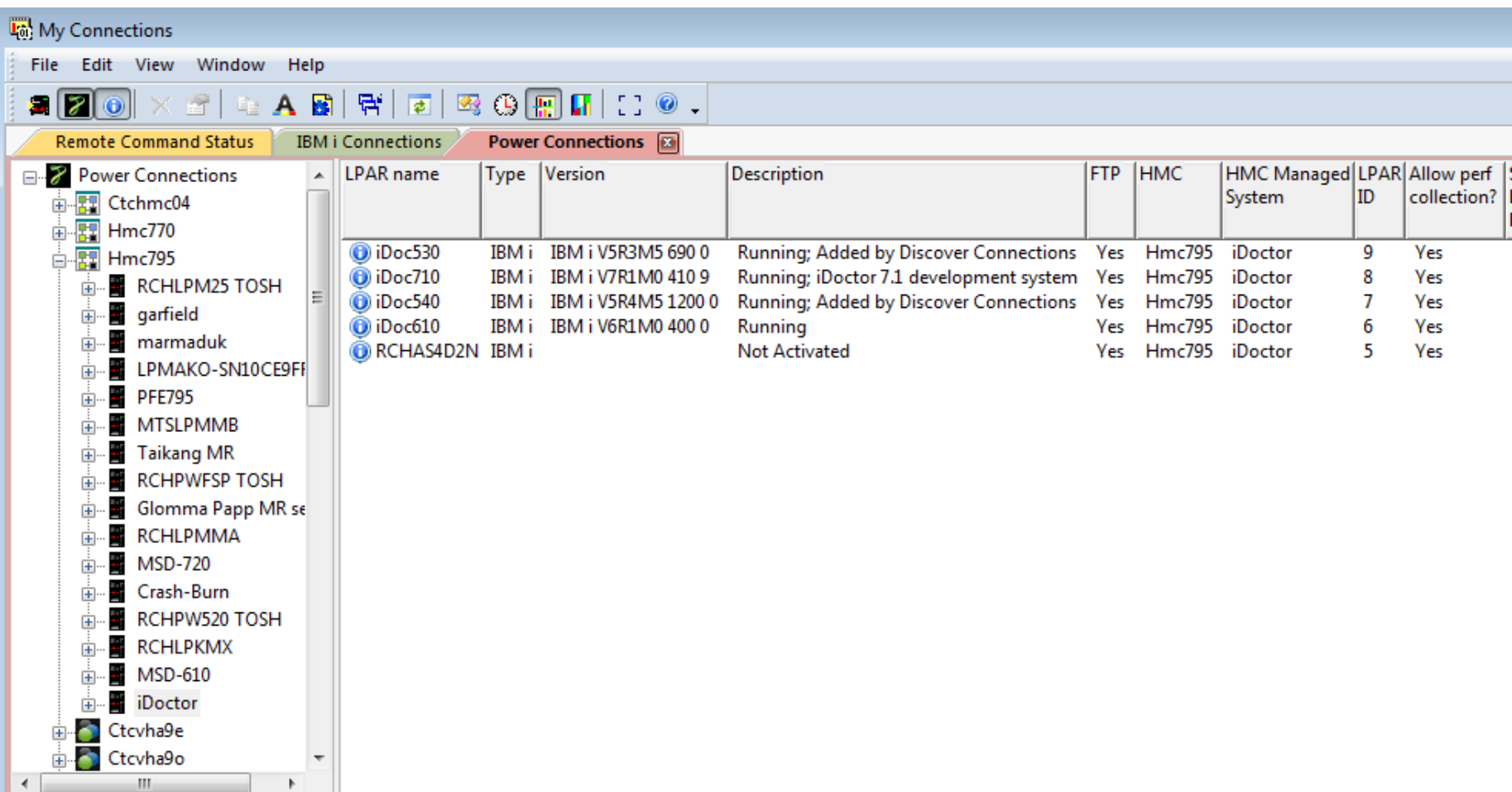
- Ctchmc04
- Hmc770
- Hmc795**
- Ctcvha9e
- Ctcvha9o
- Makov1
- Mpio1_mmb_npiv_serve
- Mpio2_mmb_npiv_serve
- Msd780vios
- Mtsviommb
- Rchcbvios
- Vio-soft
- Vios1-dilling
- Vtest
- Aix-dilling
- Mako01
- Mako02
- Mako03
- Mako04
- Mako05
- Mako06

Managed system	Utilization data sample rate (minutes)	Type-Model	Serial
RCHLPM25 TOSH	5	9408-M25	102FBF2
garfield	Not enabled		
marmaduk	5	8203-E4A	0666B92
LPMako-SN10CE9FR	5	8205-E6C	10CE9FR
PFE795	5	9119-FHB	026BB46
MTSLPMMB	.5	9117-MMB	102709P
Taikang MR	Not enabled		
RCHPWFSP TOSH	5	9406-520	106131E
Glomma Papp MR server	Not enabled		
RCHLPMMA	5	9117-MMA	10F774D
MSD-720	5	9179-MHD	067B660
Crash-Burn	5	8202-E4C	10D305P
RCHPW520 TOSH	Not enabled		
RCHLPKMX	5	9117-MMA	106EE90
MSD-610	5	9406-MMA	108BA00
iDoctor	5	9406-570	104658D

© 2015 International Business Mach : Power Connections\Hmc795

Power Connections – LPARs within a managed system

- Right-click and Launch iDoctor Components menu or drill down further to access iDoctor functions.

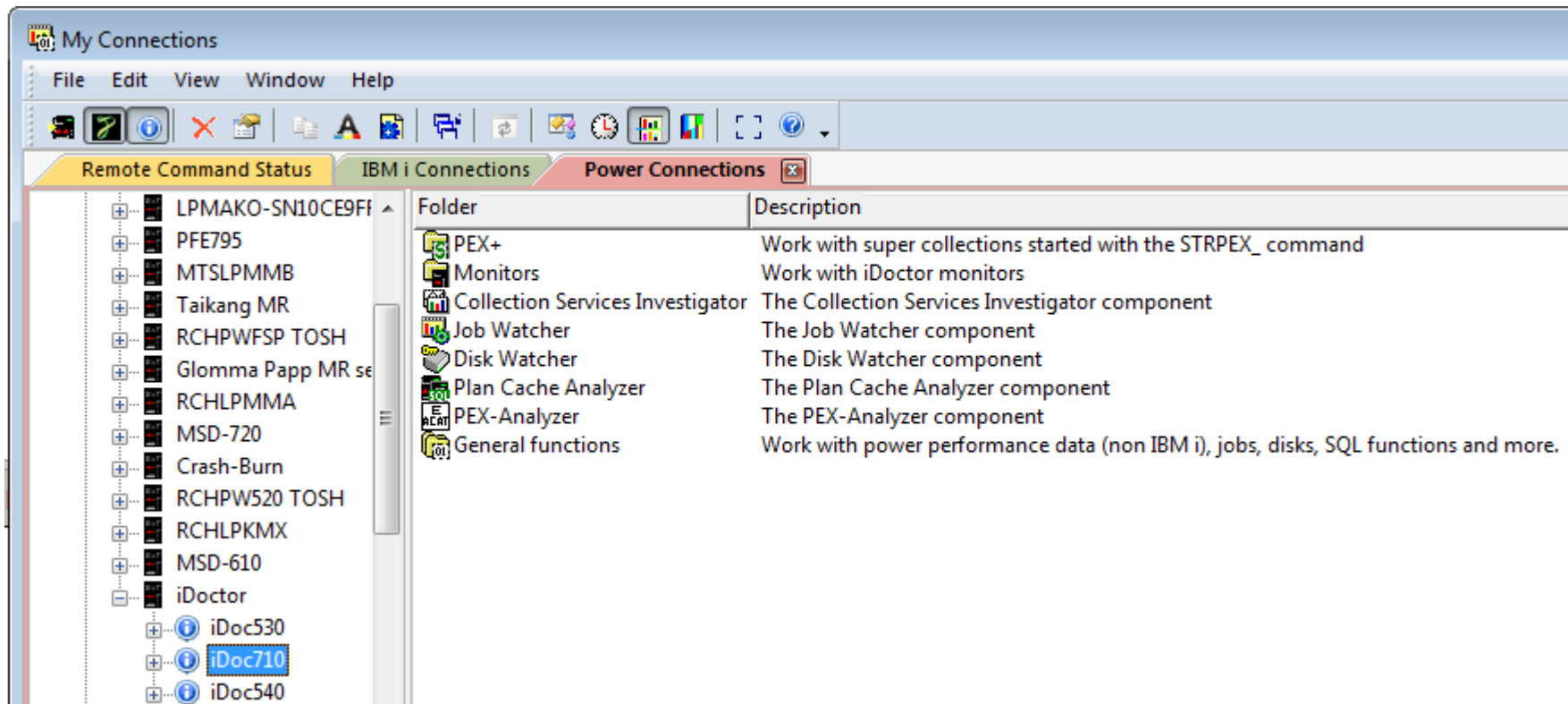


The screenshot shows the IBM i Connections interface. The 'Power Connections' tab is active, displaying a table of LPARs. The left pane shows a tree view of connections, including 'Hmc795' which is expanded to show various LPARs. The table columns are: LPAR name, Type, Version, Description, FTP, HMC, HMC Managed System, LPAR ID, and Allow perf collection?.

LPAR name	Type	Version	Description	FTP	HMC	HMC Managed System	LPAR ID	Allow perf collection?
iDoc530	IBM i	IBM i V5R3M5 690 0	Running; Added by Discover Connections	Yes	Hmc795	iDoctor	9	Yes
iDoc710	IBM i	IBM i V7R1M0 410 9	Running; iDoctor 7.1 development system	Yes	Hmc795	iDoctor	8	Yes
iDoc540	IBM i	IBM i V5R4M5 1200 0	Running; Added by Discover Connections	Yes	Hmc795	iDoctor	7	Yes
iDoc610	IBM i	IBM i V6R1M0 400 0	Running	Yes	Hmc795	iDoctor	6	Yes
RCHAS4D2N	IBM i		Not Activated	Yes	Hmc795	iDoctor	5	Yes

Power Connections – IBM i LPAR Functions

- Some functions require a key (CSI, JW, PEX).

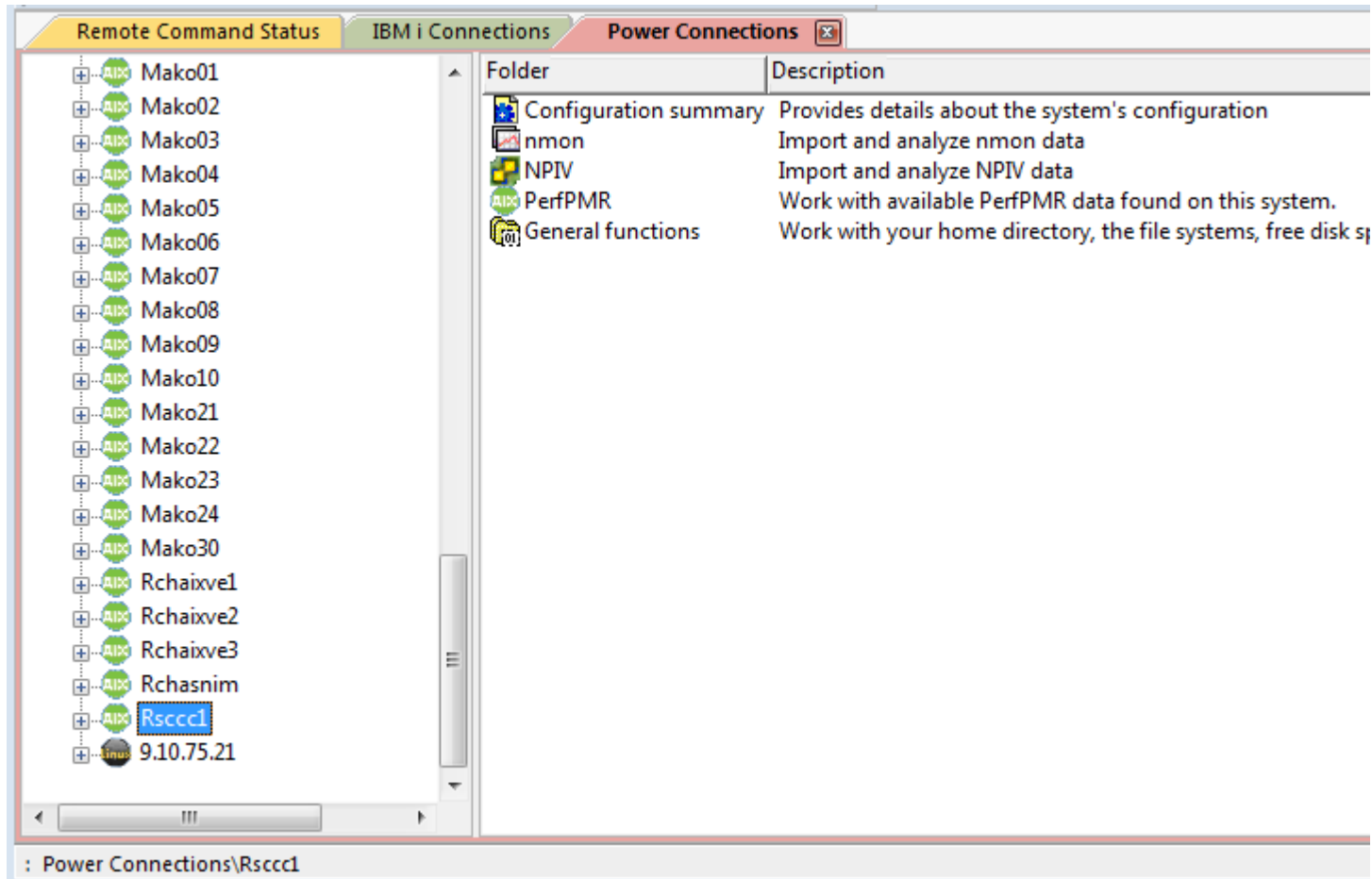


The screenshot shows the 'My Connections' application window with the 'Power Connections' tab selected. The window contains a list of folders and their descriptions. The 'iDoc710' connection is highlighted in the left pane.

Folder	Description
PEX+	Work with super collections started with the STRPEX_ command
Monitors	Work with iDoctor monitors
Collection Services Investigator	The Collection Services Investigator component
Job Watcher	The Job Watcher component
Disk Watcher	The Disk Watcher component
Plan Cache Analyzer	The Plan Cache Analyzer component
PEX-Analyzer	The PEX-Analyzer component
General functions	Work with power performance data (non IBM i), jobs, disks, SQL functions and more.

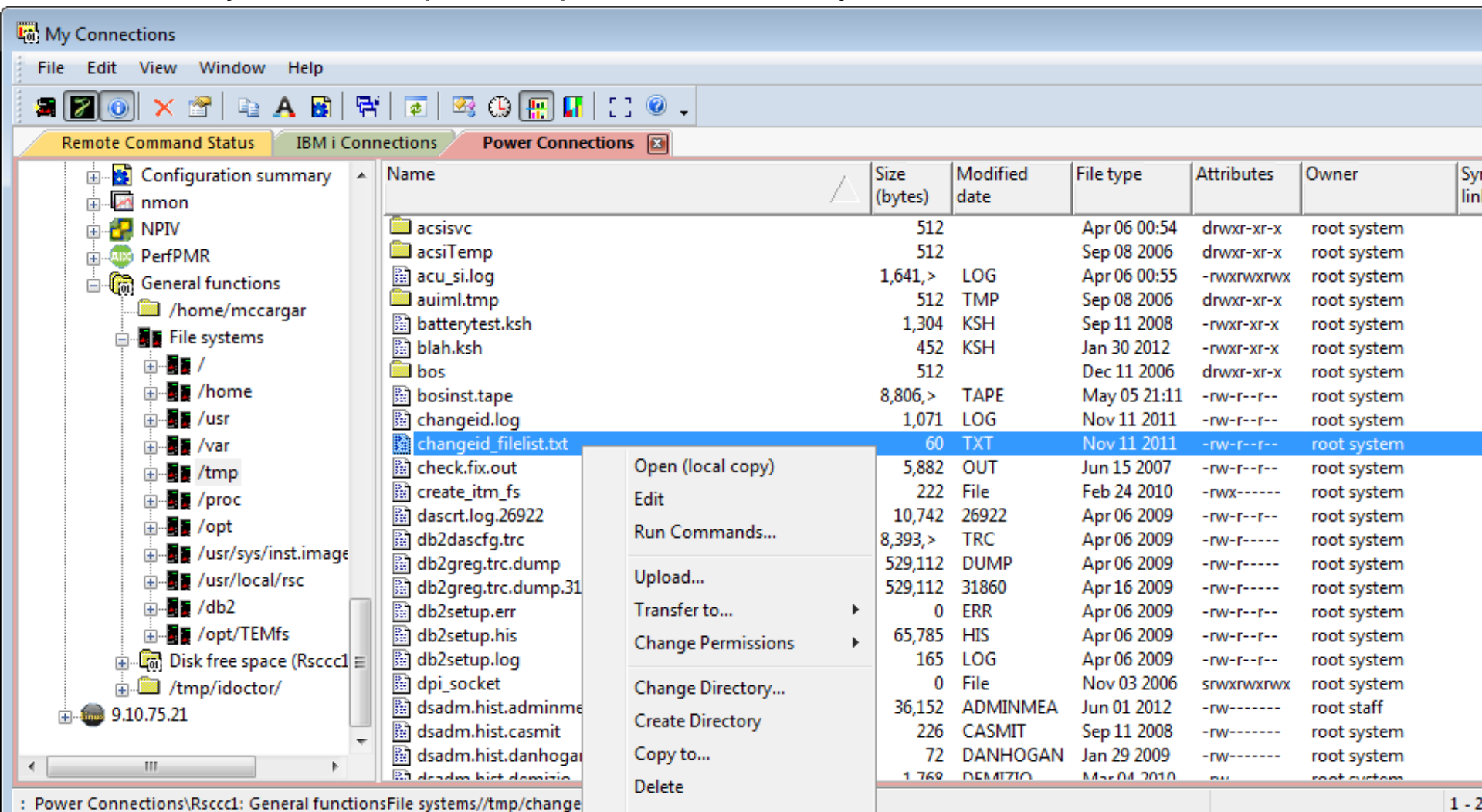
Power Connections – AIX Functions

- Nmon, npiv, perfpmr, and more.



Power Connections – AIX – General Functions

- File systems /tmp example on an AIX system.



The screenshot shows the IBM Power Connections interface. On the left, a tree view shows the file system structure under 'General functions' > 'File systems' > '/tmp'. The main pane displays a table of files and folders. A context menu is open over the file 'changeid_filelist.txt'.

Name	Size (bytes)	Modified date	File type	Attributes	Owner	Syn link
acsisvc	512	Apr 06 00:54		drwxr-xr-x	root system	
acsiTemp	512	Sep 08 2006		drwxr-xr-x	root system	
acu_si.log	1,641,>	LOG	Apr 06 00:55	-rwxrwxrwx	root system	
auiml.tmp	512	TMP	Sep 08 2006	drwxr-xr-x	root system	
batterytest.ksh	1,304	KSH	Sep 11 2008	-rwxr-xr-x	root system	
blah.ksh	452	KSH	Jan 30 2012	-rwxr-xr-x	root system	
bos	512		Dec 11 2006	drwxr-xr-x	root system	
bosinst.tape	8,806,>	TAPE	May 05 21:11	-rw-r--r--	root system	
changeid.log	1,071	LOG	Nov 11 2011	-rw-r--r--	root system	
changeid_filelist.txt	60	TXT	Nov 11 2011	-rw-r--r--	root system	
check.fix.out	5,882	OUT	Jun 15 2007	-rw-r--r--	root system	
create_itm_fs	222	File	Feb 24 2010	-rwx-----	root system	
dascrt.log.26922	10,742	26922	Apr 06 2009	-rw-r--r--	root system	
db2dascfg.trc	8,393,>	TRC	Apr 06 2009	-rw-r-----	root system	
db2greg.trc.dump	529,112	DUMP	Apr 06 2009	-rw-r-----	root system	
db2greg.trc.dump.31	529,112	31860	Apr 16 2009	-rw-r-----	root system	
db2setup.err	0	ERR	Apr 06 2009	-rw-r--r--	root system	
db2setup.his	65,785	HIS	Apr 06 2009	-rw-r--r--	root system	
db2setup.log	165	LOG	Apr 06 2009	-rw-r--r--	root system	
dpi_socket	0	File	Nov 03 2006	srwxrwxrwx	root system	
dsadm.hist.adminme	36,152	ADMINMEA	Jun 01 2012	-rw-----	root staff	
dsadm.hist.casmit	226	CASMIT	Sep 11 2008	-rw-----	root system	
dsadm.hist.danhogan	72	DANHOGAN	Jan 29 2009	-rw-----	root system	
dsadm.hist.demizio	1,769	DEMIZIO	Mar 04 2010	-rw-----	root system	

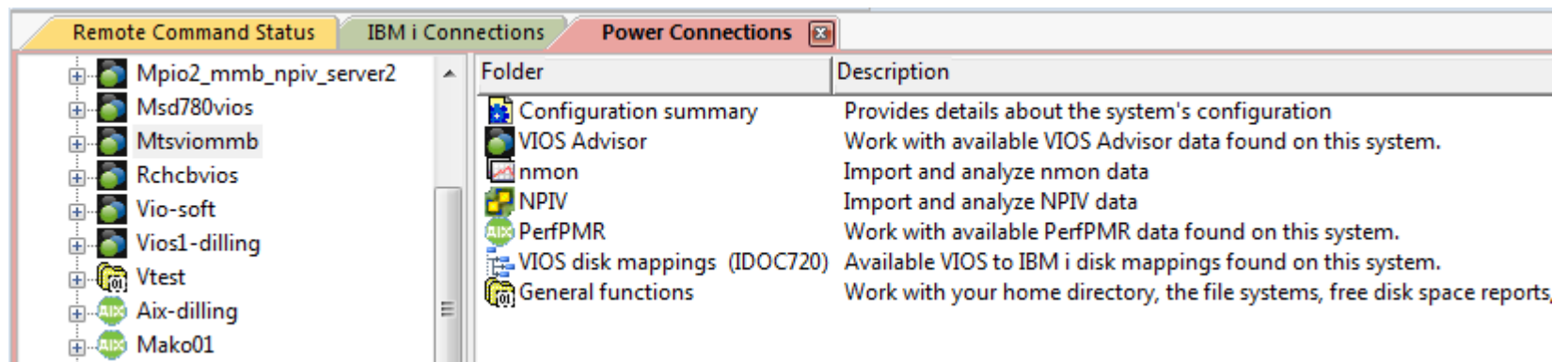
Context menu options for 'changeid_filelist.txt':

- Open (local copy)
- Edit
- Run Commands...
- Upload...
- Transfer to...
- Change Permissions
- Change Directory...
- Create Directory
- Copy to...
- Delete

Status bar: Power Connections\Rsccl1: General functionsFile systems//tmp/changeid_filelist.txt

Power Connections – VIOS (Investigator) Functions

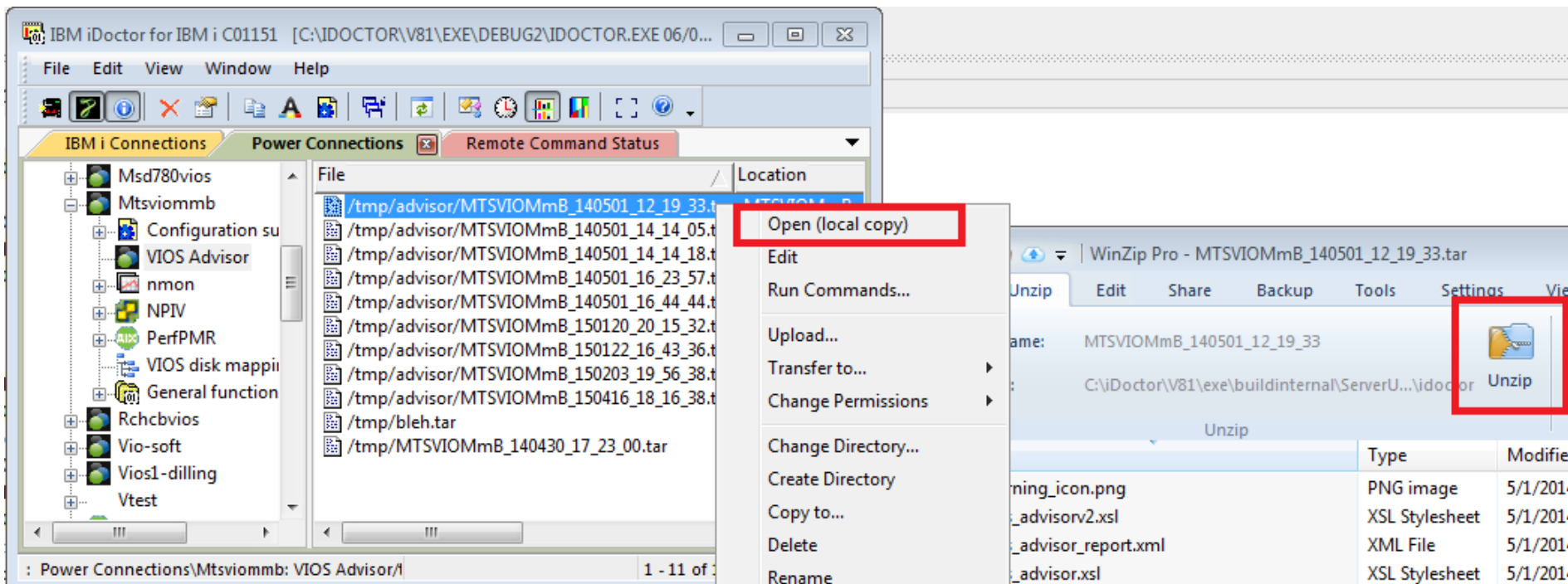
- VIOS Advisor, nmon, npiv, PerfPMR
- VIOS to IBM i disk mappings



Folder	Description
Configuration summary	Provides details about the system's configuration
VIOS Advisor	Work with available VIOS Advisor data found on this system.
nmon	Import and analyze nmon data
NPIV	Import and analyze NPIV data
PerfPMR	Work with available PerfPMR data found on this system.
VIOS disk mappings (IDOC720)	Available VIOS to IBM i disk mappings found on this system.
General functions	Work with your home directory, the file systems, free disk space reports,

Power Connections – VIOS Advisor

- VIOS Advisor folder contains VIOS Advisor .tar files.
 - Create via GUI or part command on VIOS.
 - Use Open menu to download to the PC
 - Unzip all files then open vios_advisor_report.xml in Firefox or IE (doesn't work in Google Chrome)



VIOS Performance Advisor



VIOS Performance Recording Summary

Hostname : MTSVIOMmB
 PartitionID: 18
[IBM Systems Workload Estimator](#) (VIOS Sizings)

Monitoring

Start Time: 05/01/2014 12:19 PM
 Stop Time: 05/01/2014 12:29 PM
 Duration: 9 min



Advisory Report

[Learn More](#) →

System - Configuration

Name	Value
Processor Family	Architecture PowerPC Implementation POWER7_COMPAT_mode 64 bit
Server Model	IBM 9117-MMB
Server Frequency	3500.0 MHz
Server - Online CPUs	4.0 cores
Server - Maximum Supported CPUs	8.0 cores
VIOS Level	2.2.3.0
VIOS Advisor Release	0.1

VIOS - I/O Activity













Name	Value
Disk I/O Activity 	Average : 0 @ 0.00 KB Peak: 0 @ 0KB
Network I/O Activity 	[Average Send: 15 @ 5.2 MBps , Average Receive: 15 @ 0.9MBps] [Peak Send: 18 @ 27.4 MBps , Peak Receive: 18 @ 1.0MBps]

VIOS - Disk Adapters

Risk/Impact 1=lowest 5=highest

Name	Measured	Suggested	First	Last	Risk	Impact
------	----------	-----------	-------	------	------	--------

VIOS - Processor

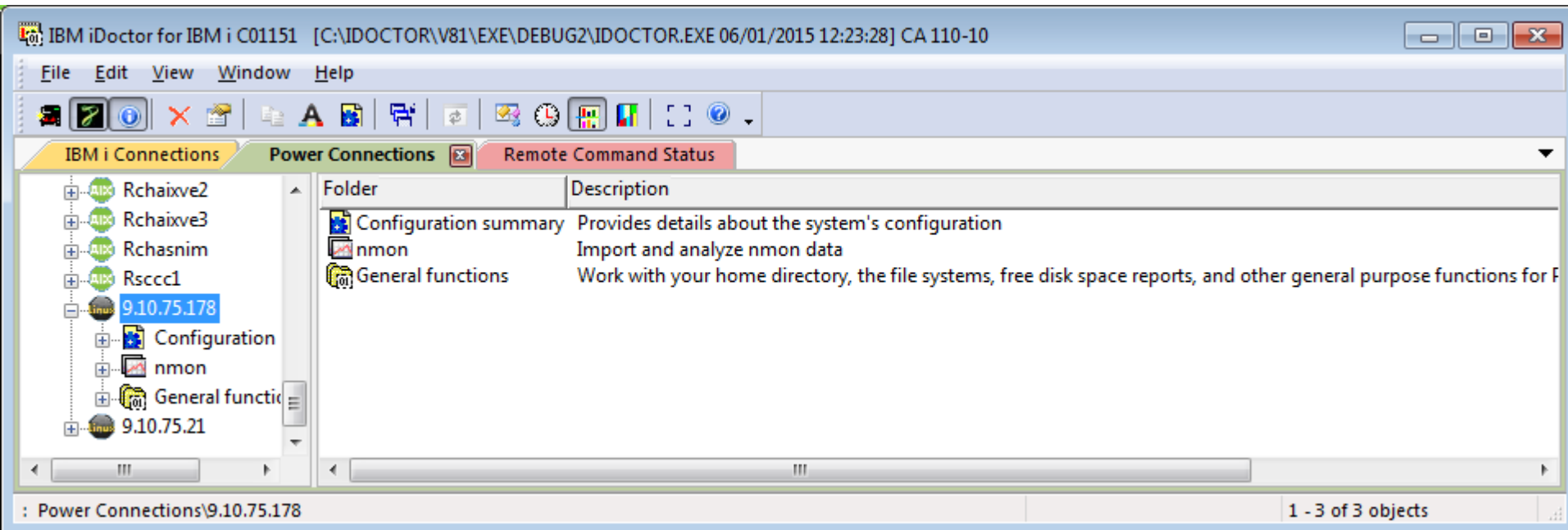
	Name	Measured Value	Suggested Value	First Observed	Last Observed
	CPU Capacity 	4.0 ent		05/01/2014 12:19 PM	
	CPU consumption 	Average:0.6% (cores:0.1) High:9.5% (cores:0.4)		05/01/2014 12:19 PM	05/01 12:29
	Processing Mode 	Shared CPU, (UnCapped)		05/01/2014 12:19 PM	
	Variable Capacity Weight 	128	129-255	05/01/2014 12:19 PM	
	Virtual Processors 	4		05/01/2014 12:19 PM	
	SMT Mode 	SMT4		05/01/2014 12:19 PM	

System - Shared Processing Pool

Name	Measured Value	Suggested Value	First Observed	Last Observed
------	----------------	-----------------	----------------	---------------

Power Connections – Linux Functions

- Nmon, configuration summary, access file system, etc.

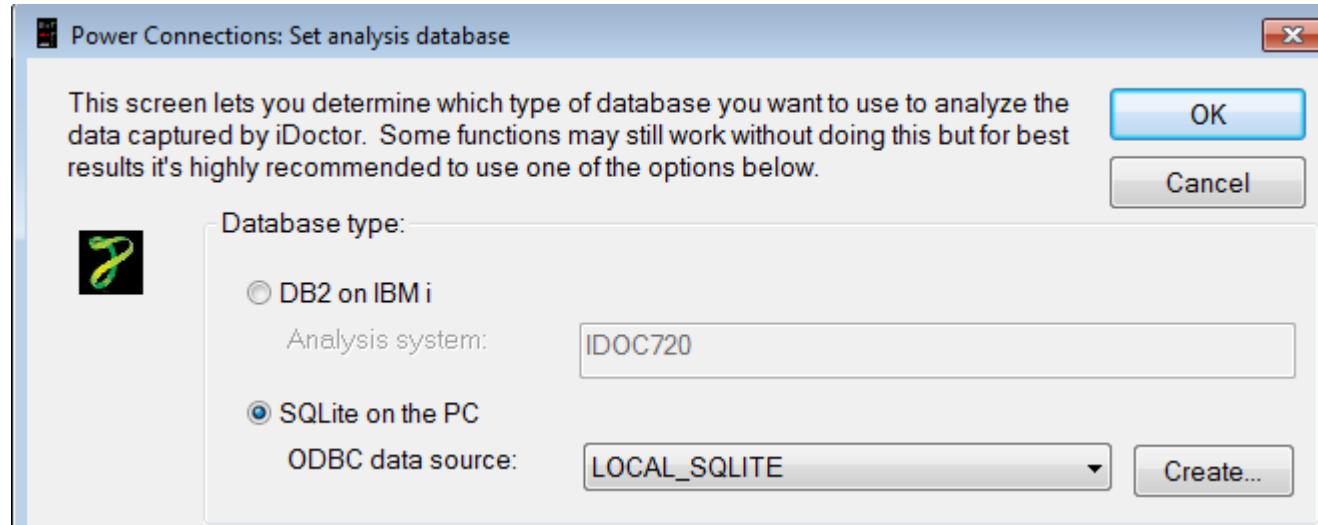
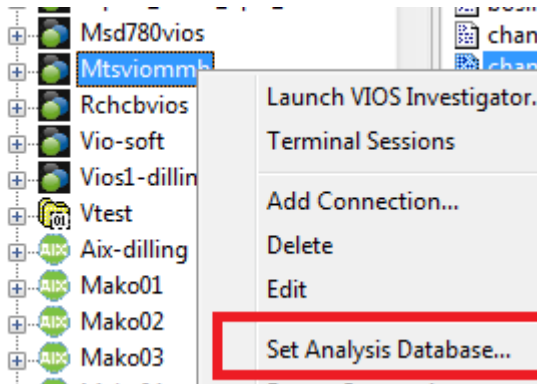


Power Connections – Analysis Database Graphing Support

- DB2 on IBM i
 - Nmon (with or without VIOS to IBM i disk mappings)
 - NPIV
 - HMC lsiparutil stats
 - HMC configurations
- SQLite on the PC
 - Nmon (without a VIOS to IBM i disk mapping)
 - Other options not yet available
- Oracle Express on the PC
 - Removed because agreement with Oracle doesn't allow use of free Oracle DBs in IBM products.

Power Connections – Set Analysis Database

- Configure where Power performance data will be stored.

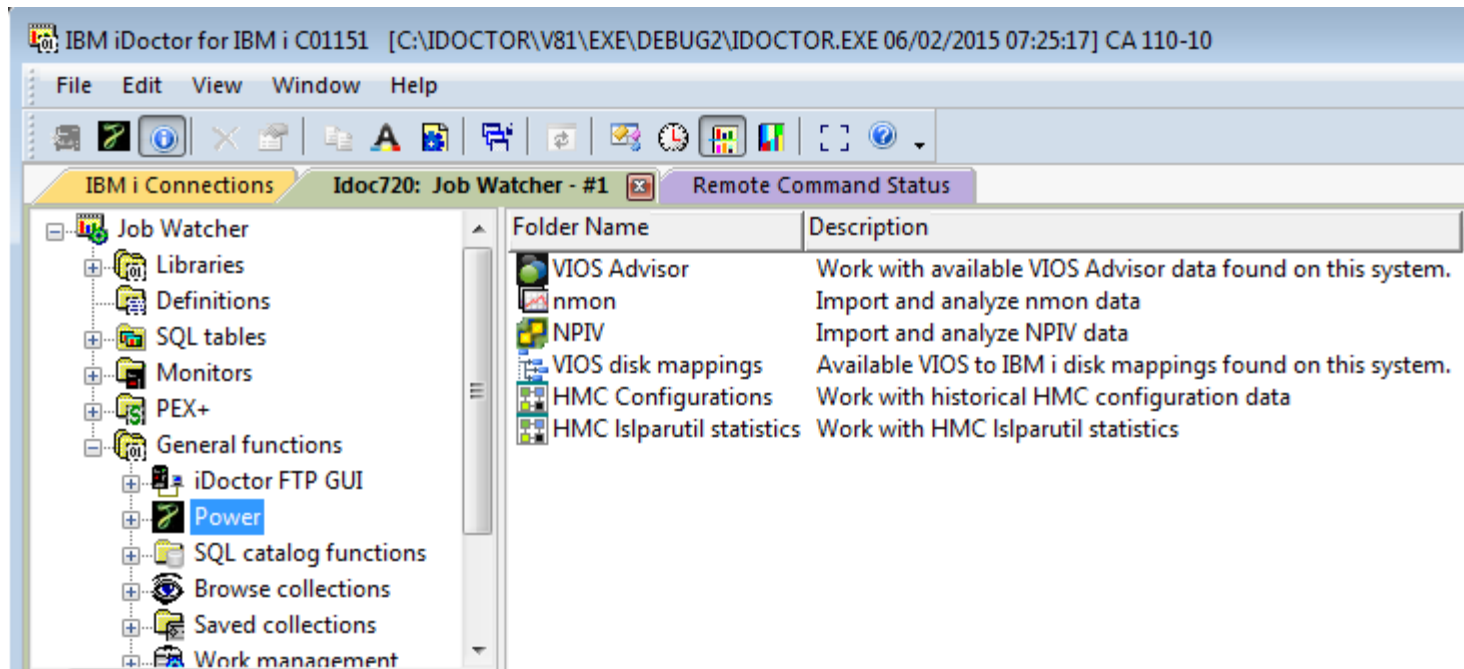


Analyzing Power Performance Data (nmon, npiv, etc.)

- Under any IBM i component: General Functions -> Power.
 - Data can be stored in the IFS or PC, then use Analyze Data menu to convert to DB files for graphing purposes.
 - **Note:** When connected to an IBM i, the Set Analysis Database setting does not apply. Data on the IBM i will always be shown.
- Power Connections
 - Expand a VIOS, Linux or AIX system for analysis options.
 - Nmon, npiv, VIOS Advisor or PerfPMR depending on type of system.
- Power Connections -> SQLite
 - Under the nmon folder. More to come in the future here.
 - Users without access to AIX/Linux/VIOS can also use this to analyze data entirely on the PC without touching the server (assuming they have the .nmon files.)

Job Watcher -> General Functions -> Power Example

- Each folder provides options to analyze (graph) or import additional data.

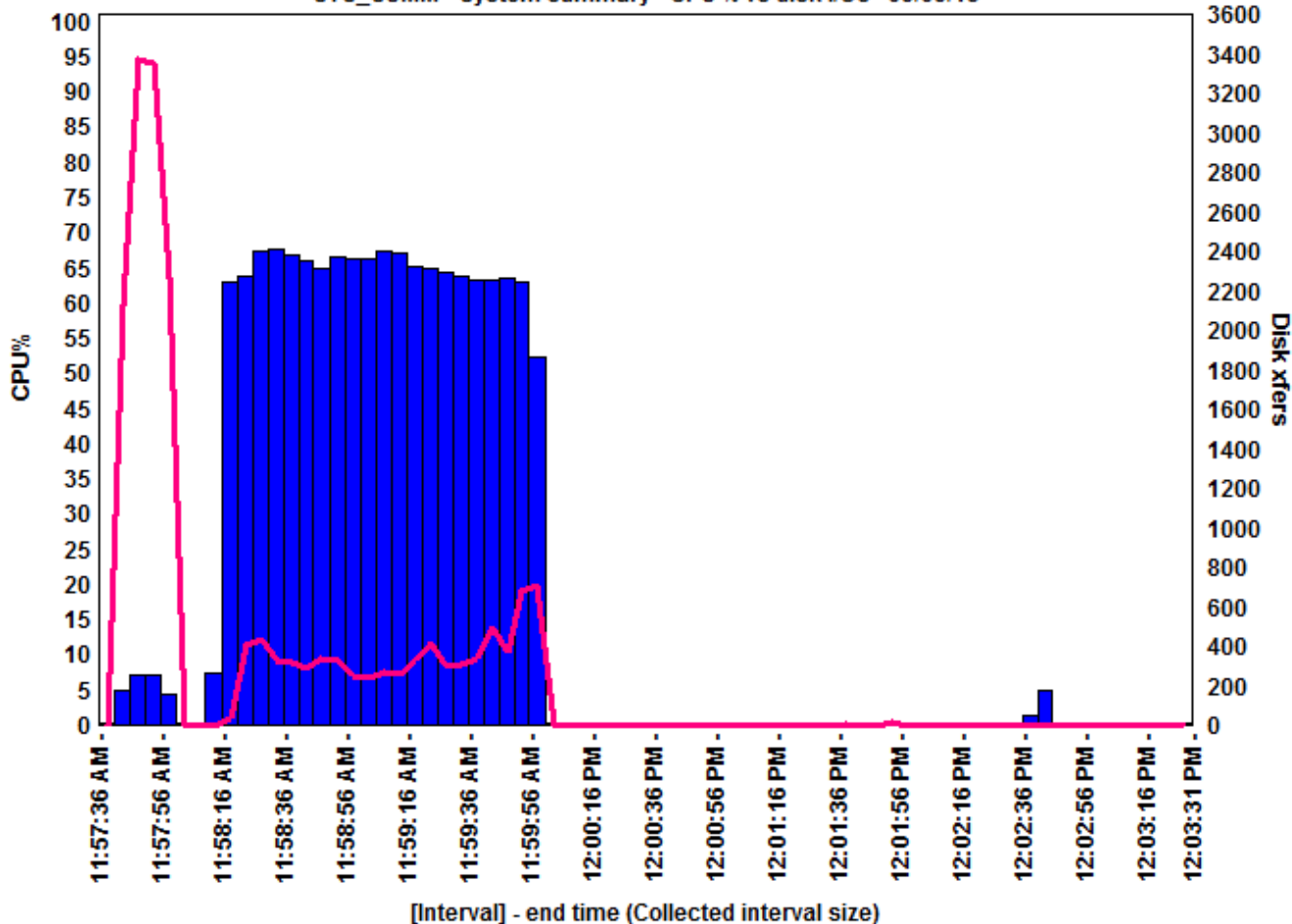




Nmon

- All “nmon Analyzer”-like graphs added to iDoctor
 - Ron McCargar maintains the Excel nmon Analyzer now.
 - 83 graphs + 65 reports
- The original set of CSI-like nmon graphs are also available.
- A mechanism to automatically monitor/analyze new data sent to the IBM i is being developed.
- Multiple collections/days can be graphed at once.
- nmon Analyzer website/downloads
 - https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Power%20Systems/page/nmon_analyser
- Nigel Griffith’s work on nmonchart:
 - <http://nmon.sourceforge.net/pmwiki.php?n=Site.Nmonchart>

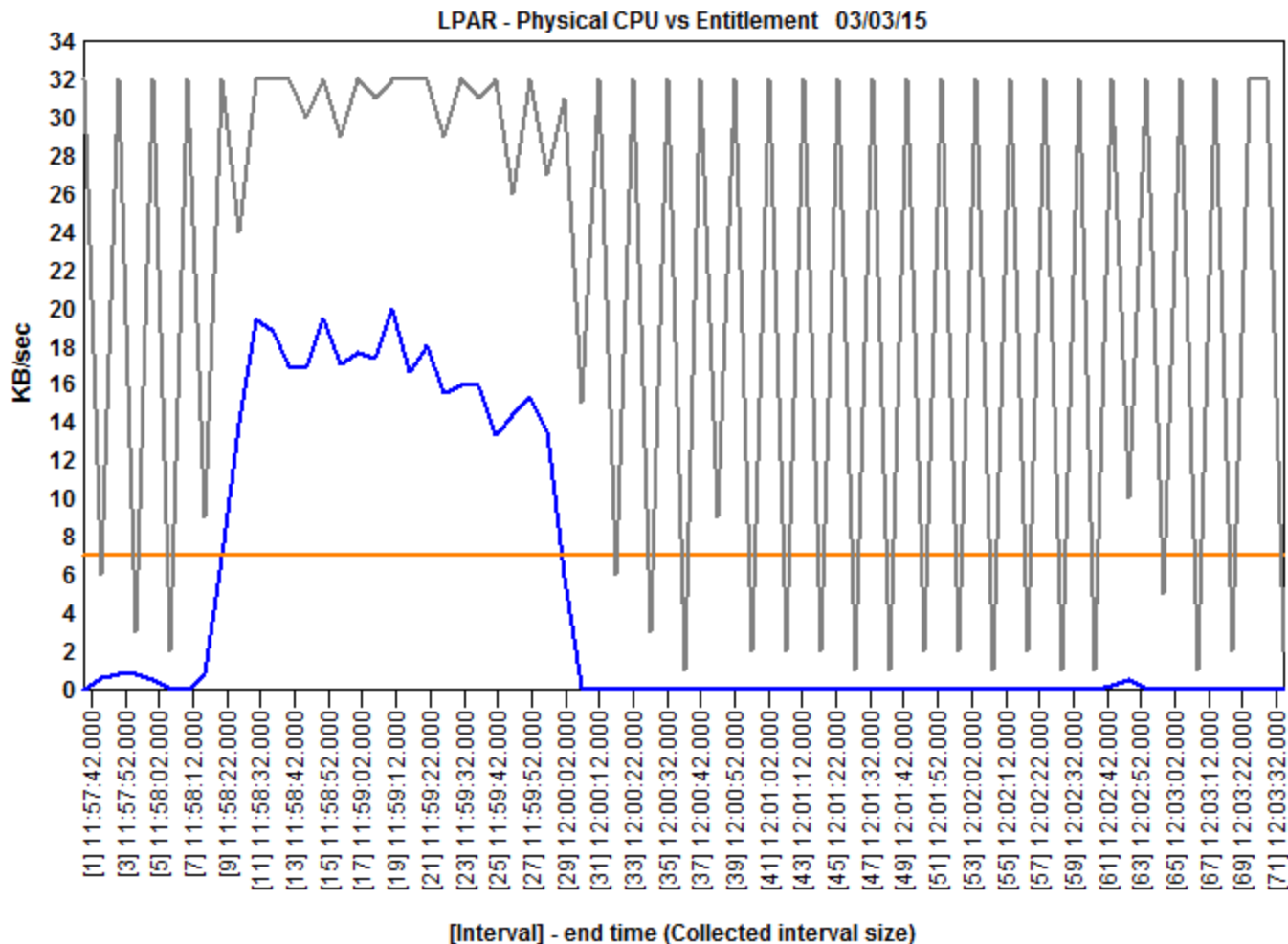
Nmon Analyzer – SYS_SUMM Graph Example

SYS_SUMM - System summary - CPU % vs disk I/Os 03/03/15



X-axis (Labels)
Interval end timestamp (INTENDSTR)
Primary Y-axis (Bars)
 CPU utilization (%) (TOTCPUPCT)
Secondary Y-axis (Lines)
 Disk I/Os per second (DISKIO)
Flyover Fields
Available Fields
[Interval] - timestamp (TIMEINT)
MBRNAME
Interval number (INTERVAL)
Minimum interval timestamp (MINDTET)
Maximum interval timestamp (MAXDTET)
Interval delta time (seconds) (DELTATIME)
Interval delta time (usecs) (INTUSECS)
Physical number of CPUs (PHYSICAL_CP)
User CPU utilization (%) (USRCPUPT)
System CPU utilization (%) (SYSCPUPT)
CPU wait (%) (WAITCPUPT)
CPU idle (%) (IDLEPCT)
Logical CPUs (CPUCOUNT)

Nmon Analyzer – LPAR Graph Example



X-axis (Labels)

Interval end timestamp (INTENDSTR)

Primary Y-axis (Bars)

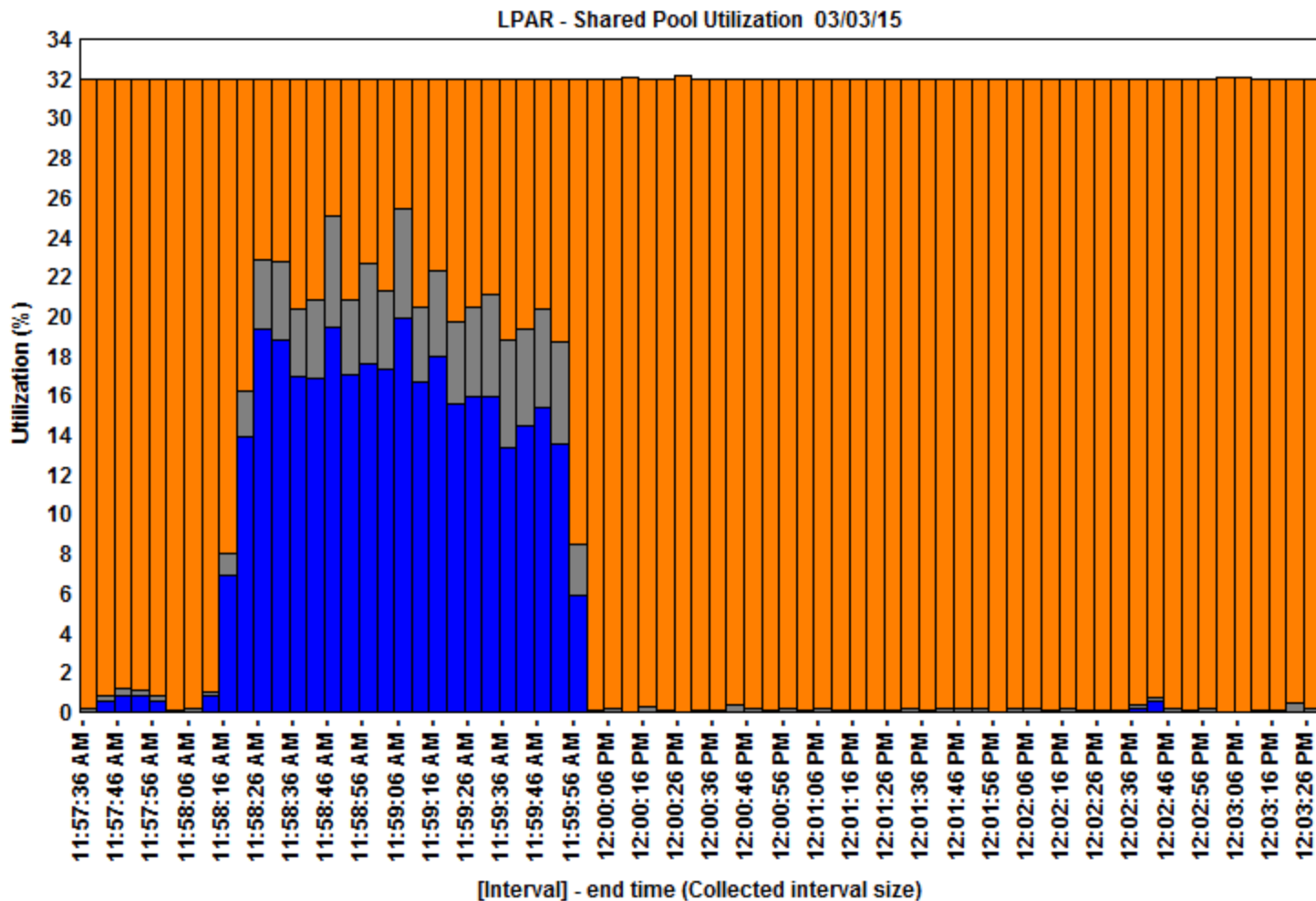
- █ Physical number of CPUs (PHYSICAL_C)
- █ Entitled number of CPUs (ENTITLED)
- █ Unfolded virtual processors (UNFOLDED)

Flyover Fields

Available Fields

- [Interval] - timestamp (TIMEINT)
- MBRNAME
- Interval number (INTERVAL)
- Minimum interval timestamp (MINDTE)
- Maximum interval timestamp (MAXDT)
- Interval delta time (seconds) (DELTA)
- Interval delta time (usecs) (INTUSECS)
- VP User % (VP_USERPCT)
- VP Sys % (VP_SYSPCT)
- VP Wait % (VP_WAITPCT)
- Other LPARs (OTHERLPARS)
- Pool idle (POOLIDLE)

Nmon Analyzer – LPAR Graph Example



X-axis (Labels)

[Interval] - end time (Collected interval size)

Primary Y-axis (Bars)

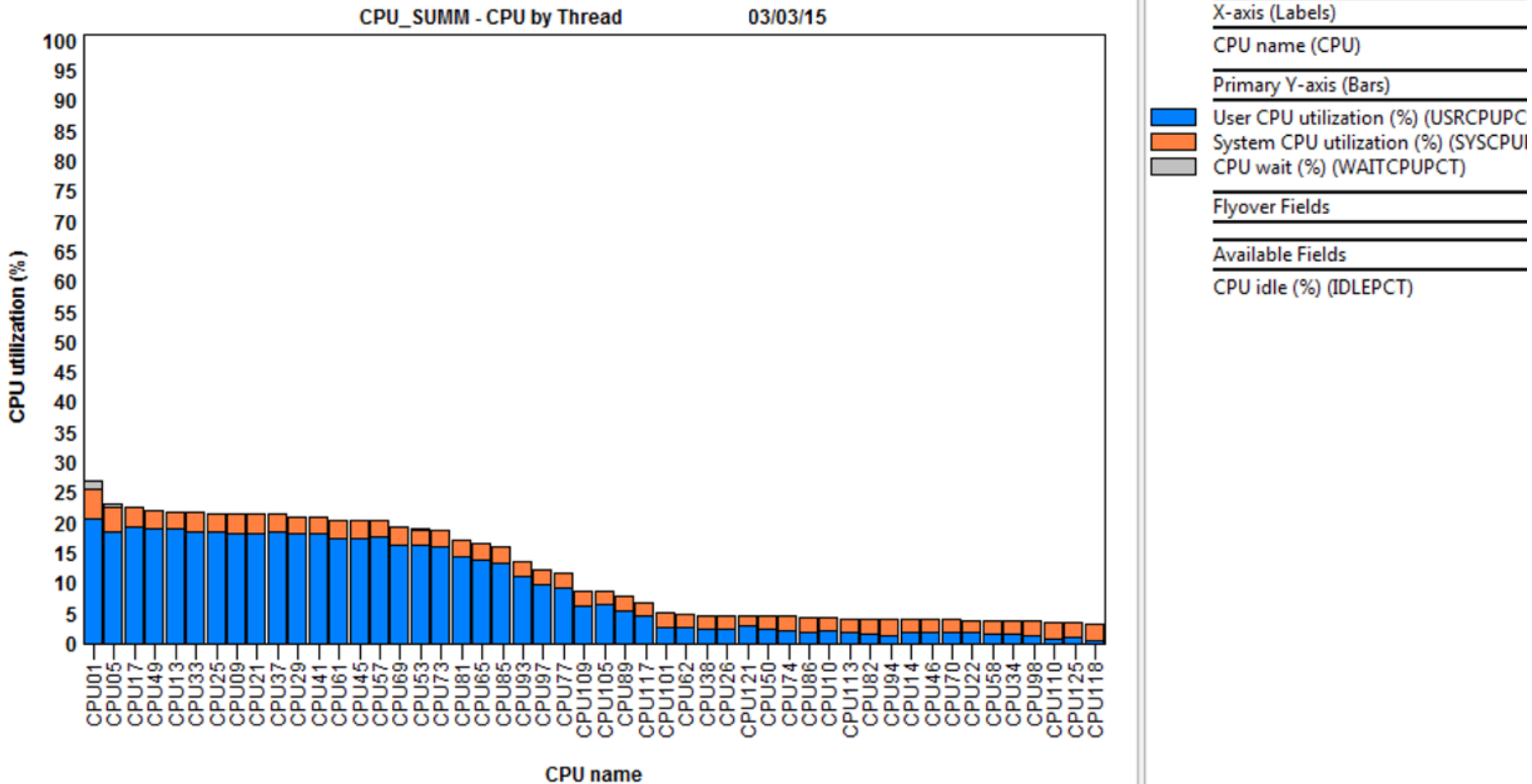
- Physical number of CPUs (PH)
- Other LPARs (OTHERLPARS)
- Pool idle (POOLIDLE)

Flyover Fields

Available Fields

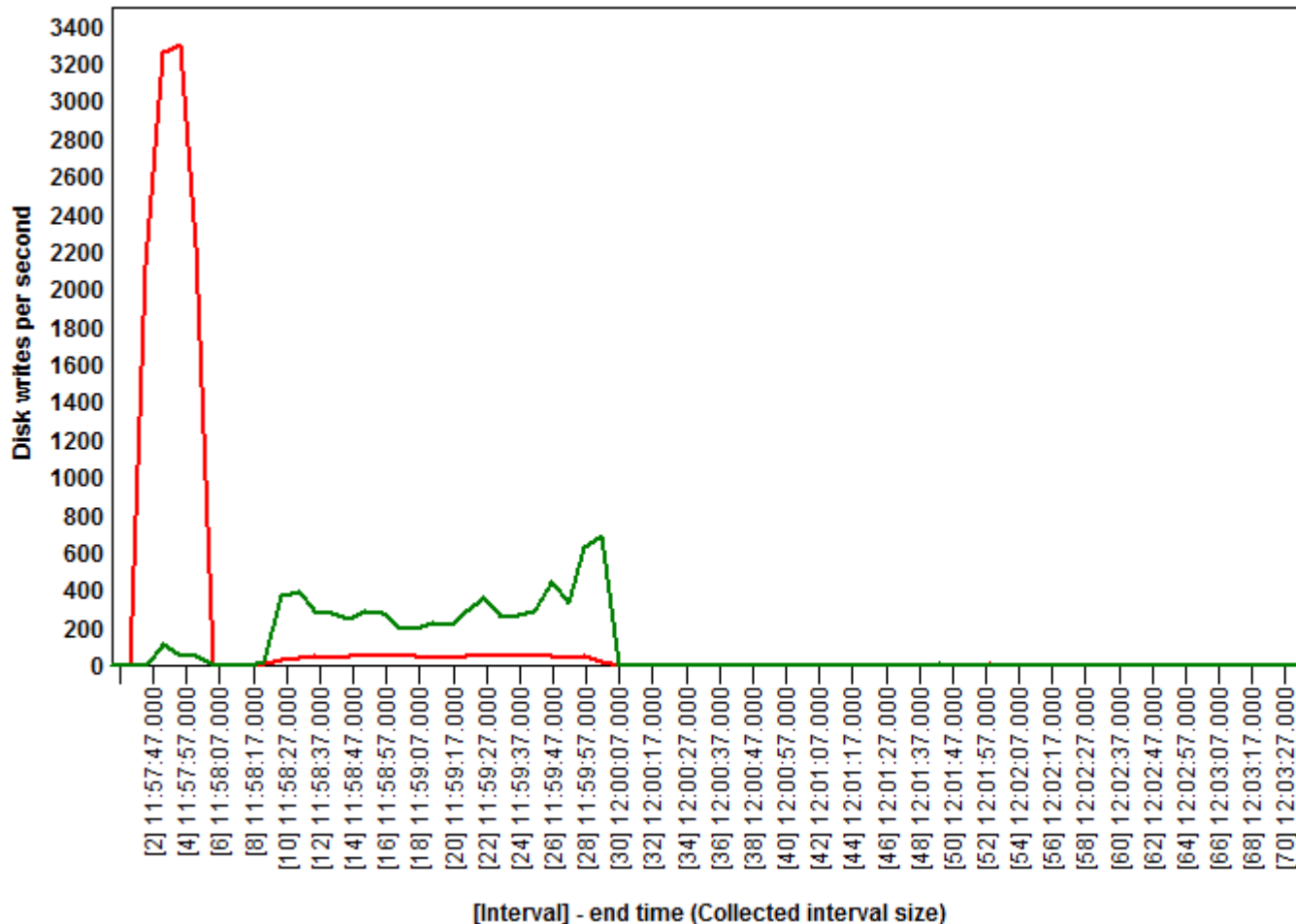
- [Interval] - timestamp (TIME)
- MBRNAME
- Interval number (INTERVAL)
- Minimum interval timestamp
- Maximum interval timestamp
- Interval delta time (seconds)
- Interval delta time (uses) (IN)
- Entitled number of CPUs (EN)
- Unfolded virtual processors (U)
- VP User % (VP_USERPCT)
- VP Sys % (VP_SYSPCT)
- VP Wait % (VP_WAITPCT)

Nmon Analyzer – CPU_SUMM Graph Example



Nmon Analyzer – DISKWIO Graph Example

DISKWIO - Disk IO writes per second overview 03/03/15



X-axis (Labels)

Interval end timestamp (INTENDSTR)

Primary Y-axis (Bars)

hdisk0 (F2)

hdisk1 (F3)

Flyover Fields

Available Fields

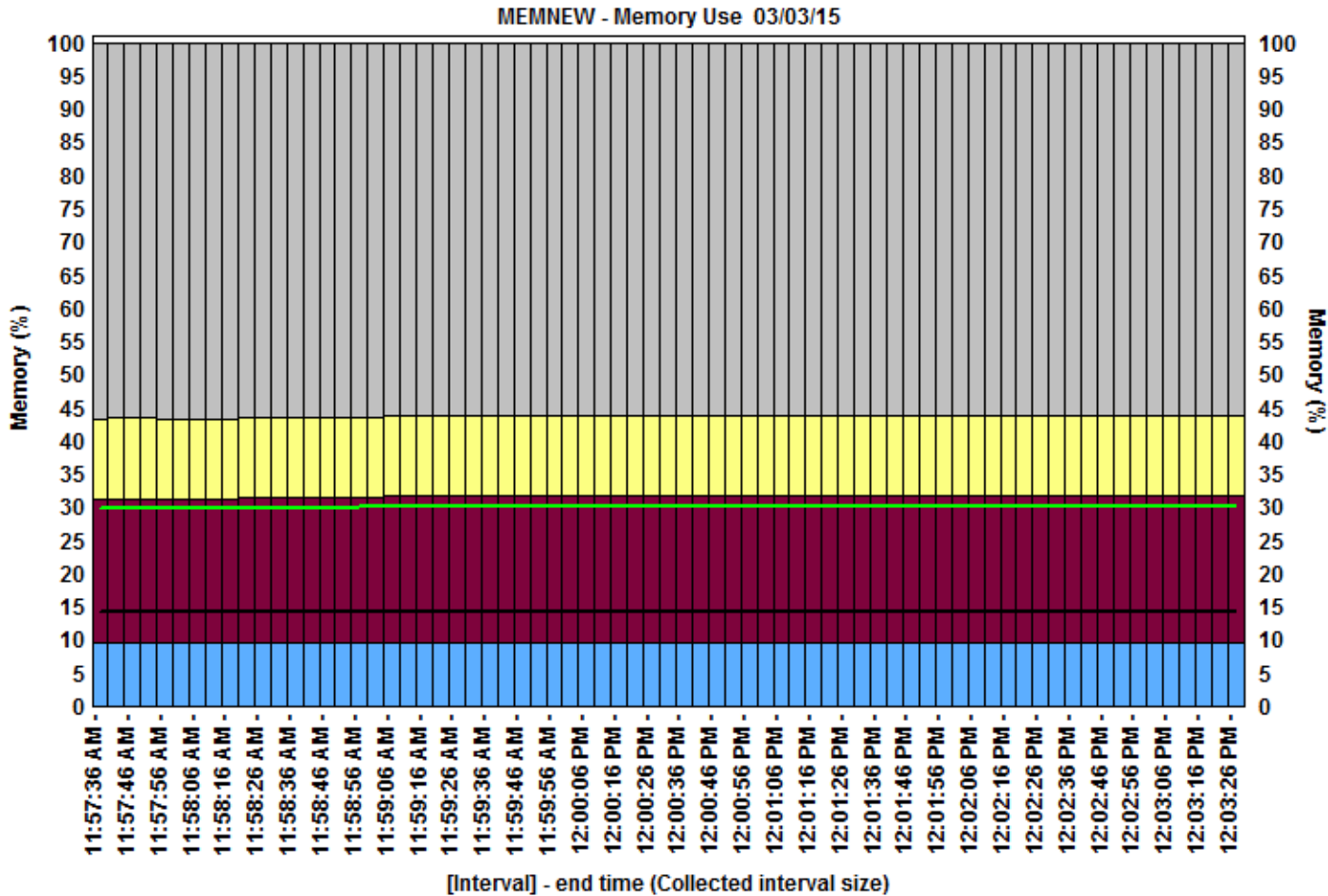
[Interval] - timestamp (TIMEINT)

MBRNAME

Interval number (INTERVAL)

F4

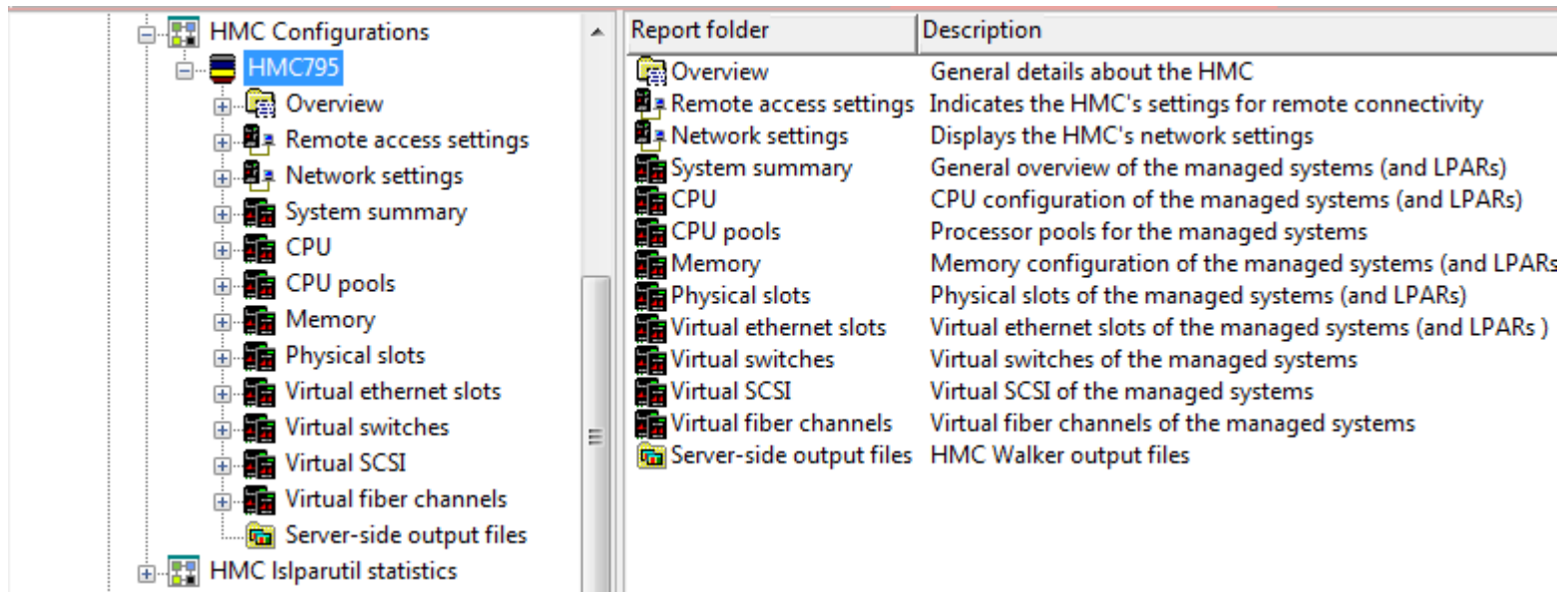
Nmon Analyzer – MEMNEW Graph Example



X-axis (Labels)
Interval end timestamp (INTENDST)
Primary Y-axis (Bars)
System % (MN_SYSPCT)
Process % (MN_PROCEPCT)
File system cache % (MN_FSCACH)
Free % (MN_FREEPCT)
Secondary Y-axis (Lines)
Pinned % (MN_PINNEDPCT)
User % (MN_USERPCT)
Flyover Fields
Available Fields
[Interval] - timestamp (TIMEINT)
MBRNAME
Interval number (INTERVAL)
Interval delta time (usecs) (INTUSE)

HMC Configurations

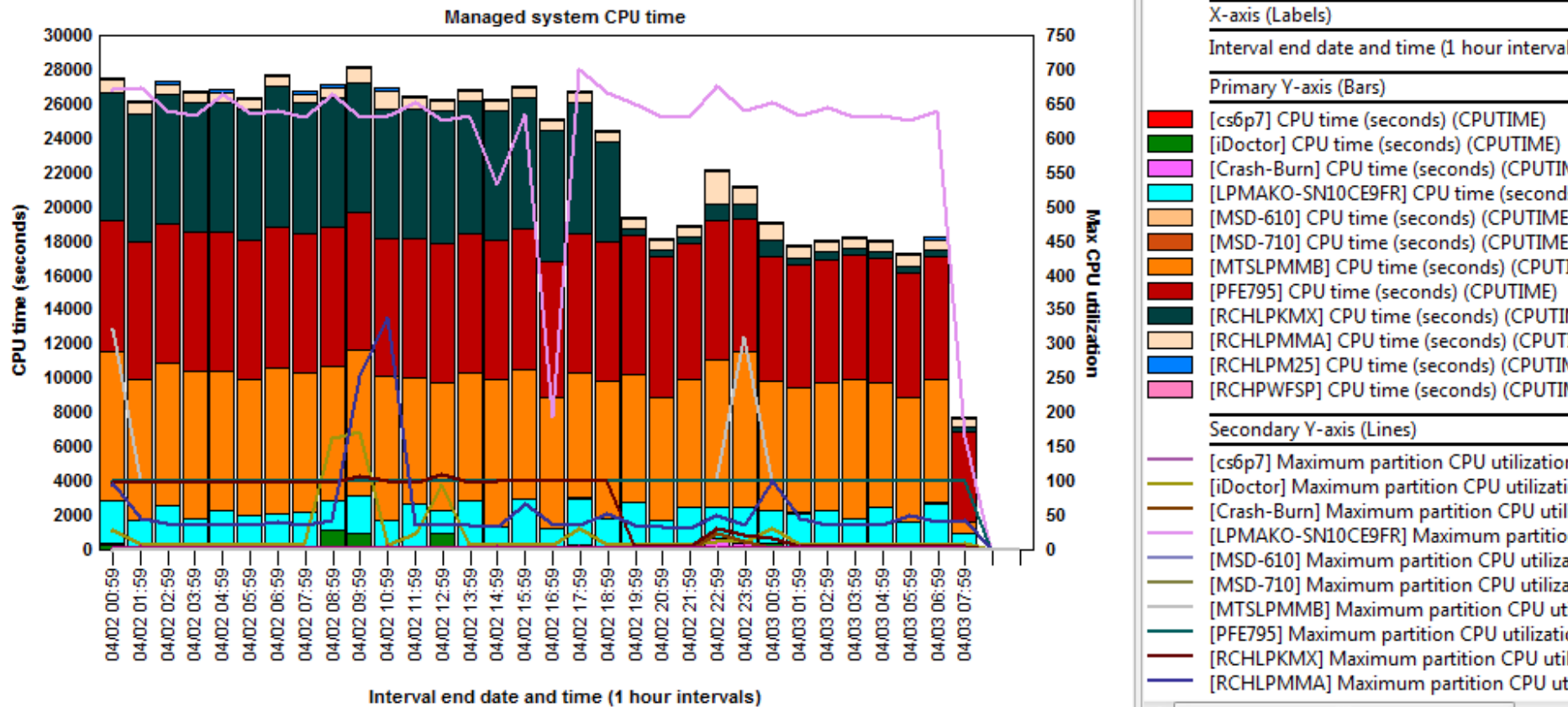
- Collects HMC configuration data and stores in IBM i DB2.
 - Similar to HMC Scanner
 - Access this under IBM i -> General Functions -> Power
 - Support to store data in SQLite coming soon.



Report folder	Description
Overview	General details about the HMC
Remote access settings	Indicates the HMC's settings for remote connectivity
Network settings	Displays the HMC's network settings
System summary	General overview of the managed systems (and LPARs)
CPU	CPU configuration of the managed systems (and LPARs)
CPU pools	Processor pools for the managed systems
Memory	Memory configuration of the managed systems (and LPARs)
Physical slots	Physical slots of the managed systems (and LPARs)
Virtual ethernet slots	Virtual ethernet slots of the managed systems (and LPARs)
Virtual switches	Virtual switches of the managed systems
Virtual SCSI	Virtual SCSI of the managed systems
Virtual fiber channels	Virtual fiber channels of the managed systems
Server-side output files	HMC Walker output files

HMC Isparutil statistics

- Collects HMC Isparutil statistics and stores in IBM i DB2.
 - Allows graphing of managed systems or individual LPARs.
 - Support to store in SQLite coming soon.

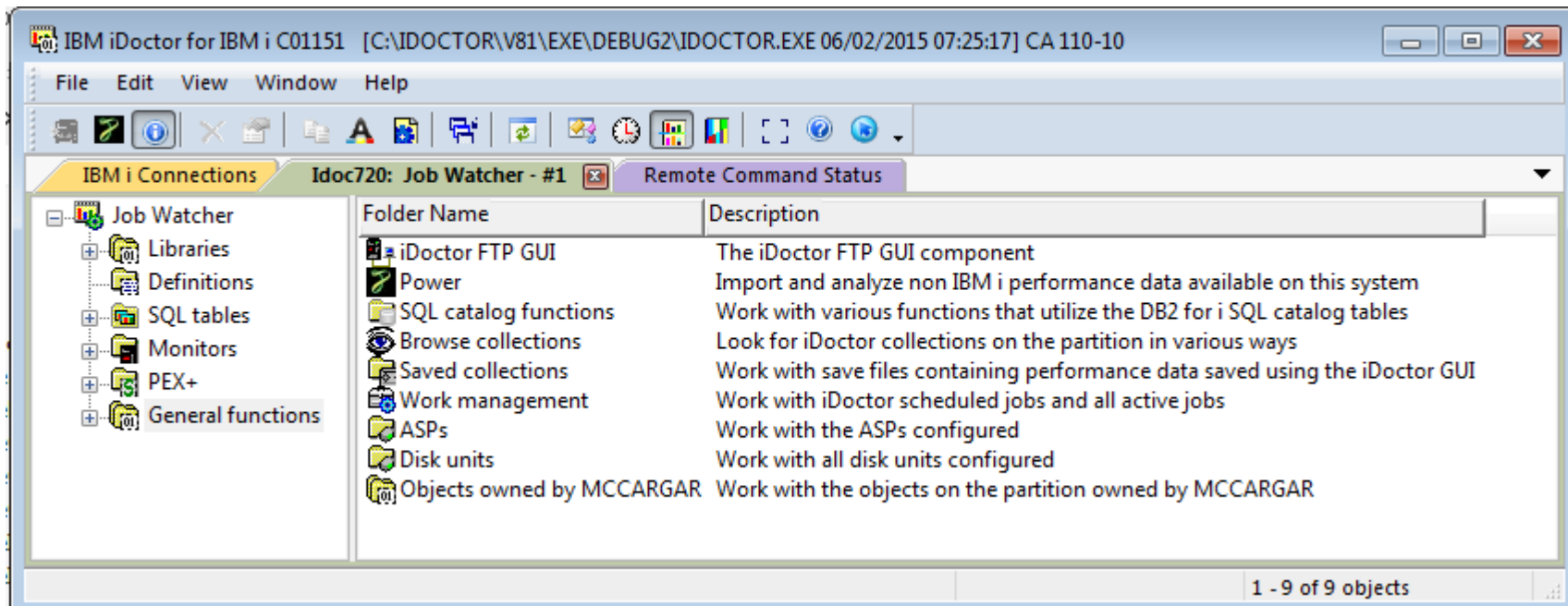


Sessions

- The GUI keeps track of all views opened and saves to a 'history' folder the state of your current session.
 - Can be used to restore a previous session from an earlier date
 - File -> Open iDoctor Session...
 - Or restore your session if the iDoctor GUI crashes.
 - File -> Restore Previous iDoctor Session
 - Save your current session to a file of your choice for later.
 - File -> Save iDoctor Session As...
- **Note:** This functionality replaces the shortcut support for individual graphs.

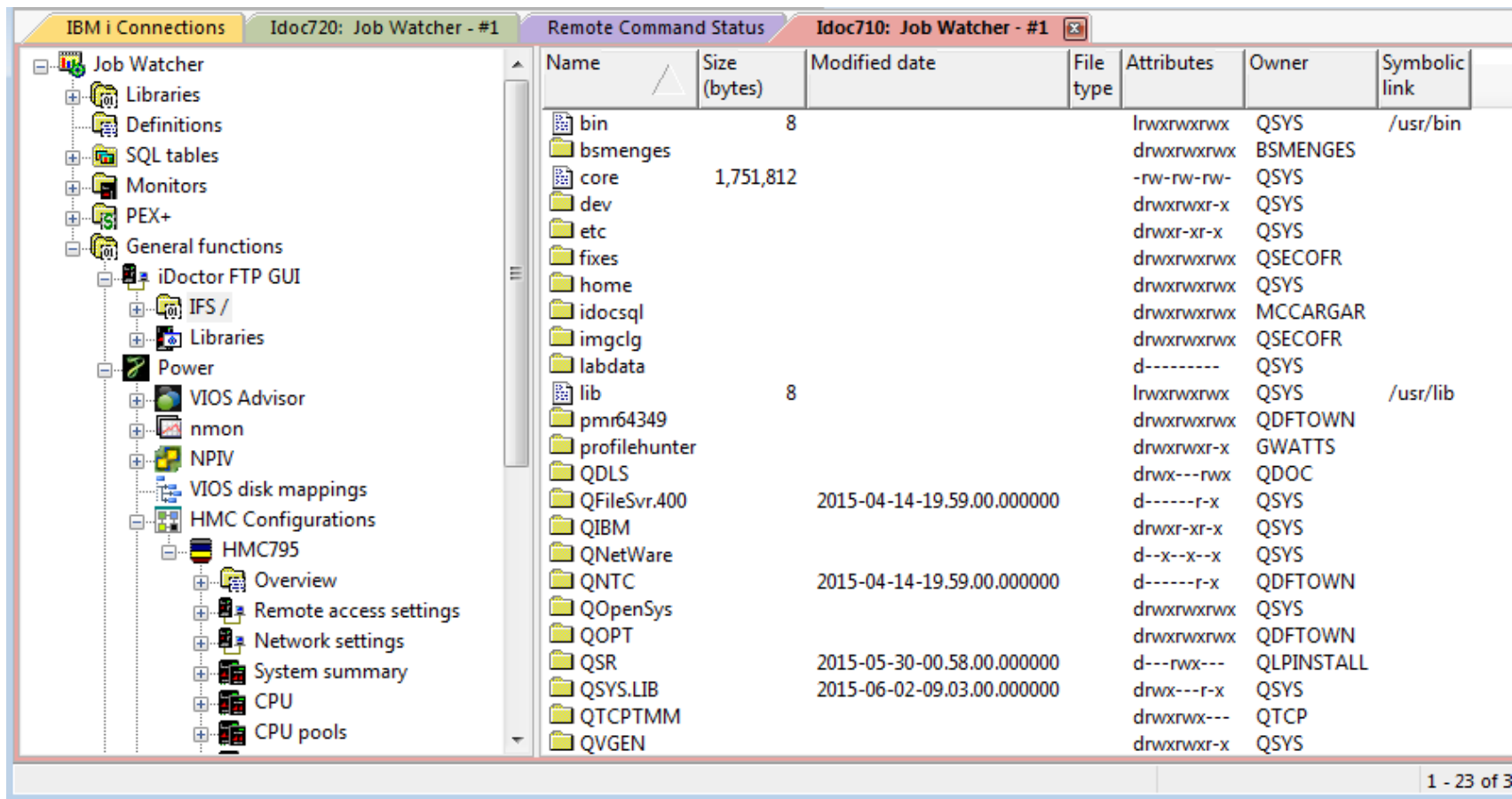
General Functions

- New folder added to most components
 - Provides miscellaneous functions: File system access, Power, Work management, SQL tables, Disk units, etc.
 - Added to avoid cluttering up initial list of functions.



iDoctor FTP GUI (free)

- Access the IFS or work with libraries/objects on an IBM i
 - Can be used to upload/download performance files or analyze them (i.e. kick off procedures for graphing purposes.)



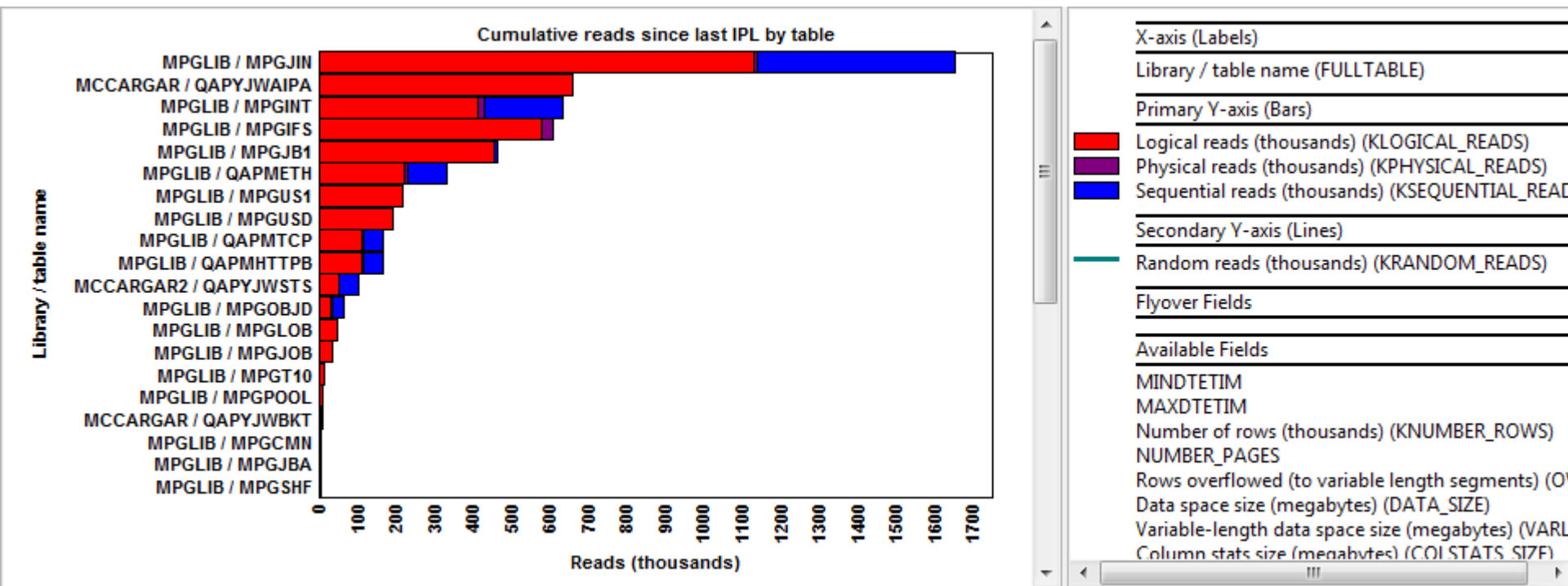
Name	Size (bytes)	Modified date	File type	Attributes	Owner	Symbolic link
bin	8			lrwxrwxrwx	QSYS	/usr/bin
bsmenges				drwxrwxrwx	BSMENGES	
core	1,751,812			-rw-rw-rw-	QSYS	
dev				drwxrwxr-x	QSYS	
etc				drwxr-xr-x	QSYS	
fixes				drwxrwxrwx	QSECOFR	
home				drwxrwxrwx	QSYS	
idocsql				drwxrwxrwx	MCCARGAR	
imgclg				drwxrwxrwx	QSECOFR	
labdata				d-----	QSYS	
lib	8			lrwxrwxrwx	QSYS	/usr/lib
pmr64349				drwxrwxrwx	QDFTOWN	
profilehunter				drwxrwxr-x	GWATTS	
QDLS				drwx---rwx	QDOC	
QFileSvr.400		2015-04-14-19.59.00.000000		d-----r-x	QSYS	
QIBM				drwxr-xr-x	QSYS	
QNetWare				d--x--x--x	QSYS	
QNTC		2015-04-14-19.59.00.000000		d-----r-x	QDFTOWN	
QOpenSys				drwxrwxrwx	QSYS	
QOPT				drwxrwxrwx	QDFTOWN	
QSR		2015-05-30-00.58.00.000000		d---rwx---	QLPINSTALL	
QSYS.LIB		2015-06-02-09.03.00.000000		drwx---r-x	QSYS	
QTCPTMM				drwxrwx---	QTCP	
QVGEN				drwxrwxr-x	QSYS	

General functions -> SQL Catalog functions

- Tables
 - Work with real time table/member statistics since last IPL or create and graph your own data collections.
 - Can be used to determine best candidates to move to SSDs.
 - This could be extended to collect index statistics if desired.
- IBM i Services
 - Provides miscellaneous functions: system values, PTFs, users/groups.
 - Could add more here if users are interested.

Table statistics graph example

- Accessible under General functions -> SQL Catalog functions -> Tables -> Table statistics after creating a collection.
- Stats can be either given since last IPL or during the data collection.
- Member statistics graphs also available.



Increase number of graphs you can open

- iDoctor graph control uses large number Windows GDI objects
 - Windows default limit is 10000 by default (per application.)
 - A single 300 bar x 33 color graph might use 2500-3000 objects.
 - Limit can be increased to 64K max.
- Within the iDoctor directory you can
 - Increase limit to 40K by running SetGDILimitTo40K.reg
 - Restore back to default Windows limit by running SetGDILimitTo10K.reg
 - **Note:** iDoctor directory is typically C:\program files (x86)\ibm\idoctor or C:\program files\ibm\idoctor

IBM i Connection SSL Support

- Check the Use SSL option on your IBM i connection.
 - Applies to remote command/program calls and ODBC connections only.
- **Note:** Secure FTP options are not available in all areas of iDoctor.
 - Need help testing this due to lack of test environments.
 - If this is something you are interested and can help test, contact me.

Super collections

- iDoctor super collections are now created using Must Gather Tools.
 - These contain PEX, JW, CS data and more.
 - QMGTOOLS library must be installed
- PEX+ folder in GUI is used to view data
 - This requires license keys to both JW and PEX
 - Start collections using Start Collection menu on the PEX+ folder.

IDRINSTALL command

- Allows iDoctor and QMGTOOLS to be installed via green screen
 - Can check for new builds and download the latest automatically
 - or use a specified library that contains the iDoctor save files if FTP access is not available.
 - Command exists in QIDRGUI and QMGTOOLS libraries with latest builds.

Install the GUI silently

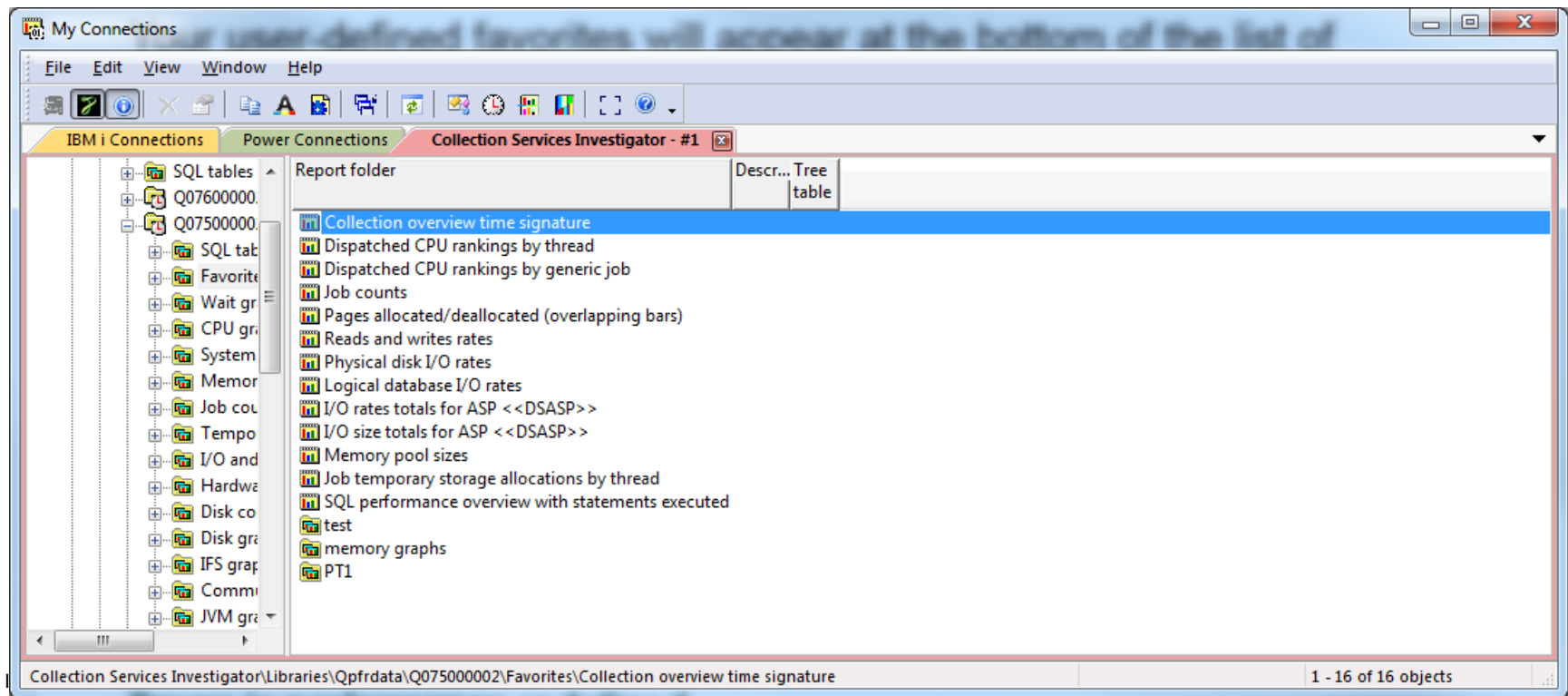
- Added support to install with no interface or prompts.
- Unzip iDoctorClientUpdate.exe (using WinZip or other compatible software) to a directory of your choice. Then execute InstalliDoctor.exe with these parameters:
 - InstalliDoctor.exe -hidegui -nostart
- -hidegui will cause the installer to not be shown at all
- -nostart will not start the iDoctor GUI when complete.

New graphing features

- Sort option from graph legend
 - Right-click desired field in legend and use Sort menu.
 - Ascending or descending options are available.
- Mouse wheel scrolling
 - See Preference -> Display -> Mouse wheel scroll percentage
 - Hold down CTRL while scrolling to increase/decrease bars per page shown.
- Zoom
 - Left-click and hold to draw a selection area over the graph to zoom in.
 - Zoom out by clicking on the graph again.
 - **Note:** You can zoom in multiple times.

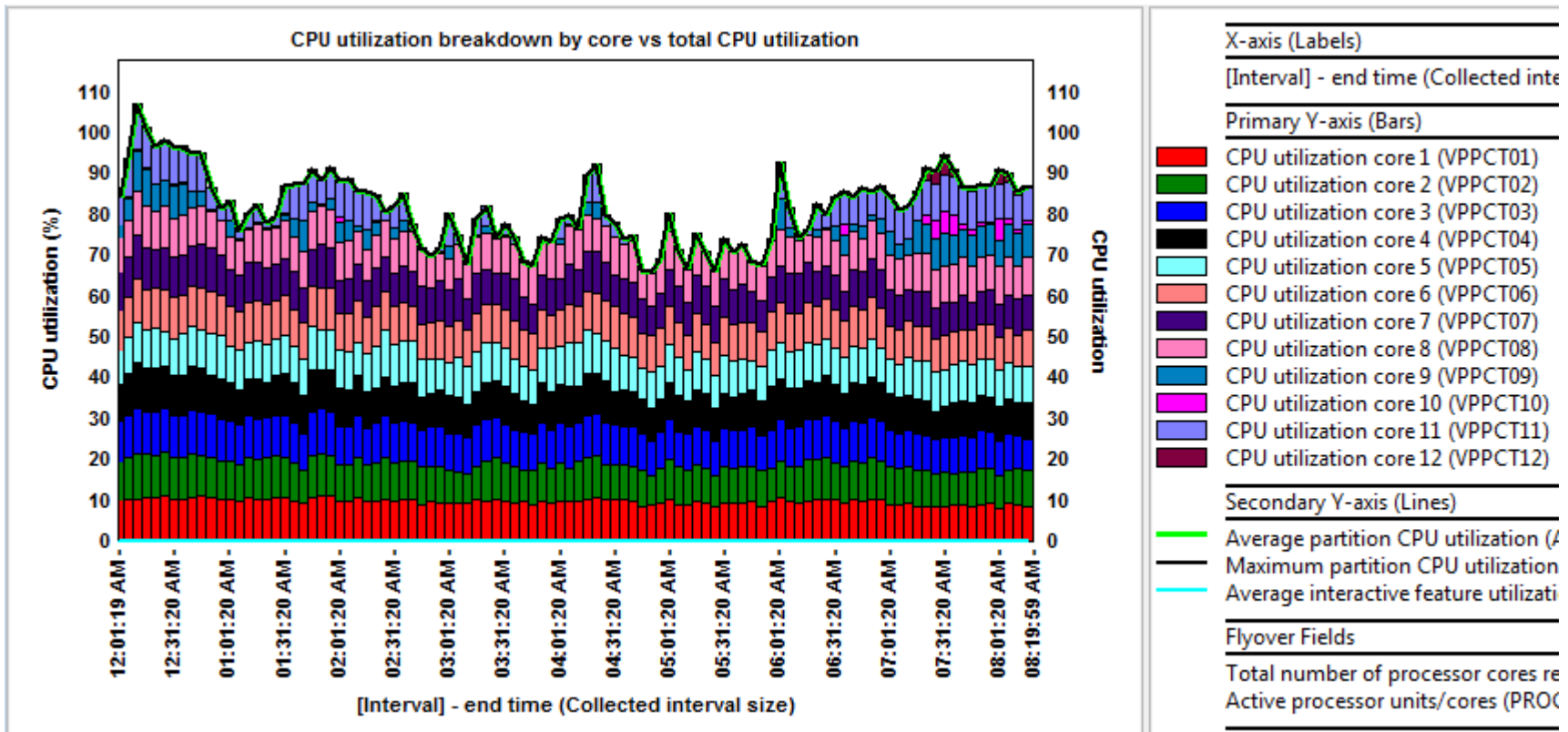
Favorites

- New option in CSI and JW to show most widely used graphs.
- Define your own favorites using the iDoctor Report Generator interface



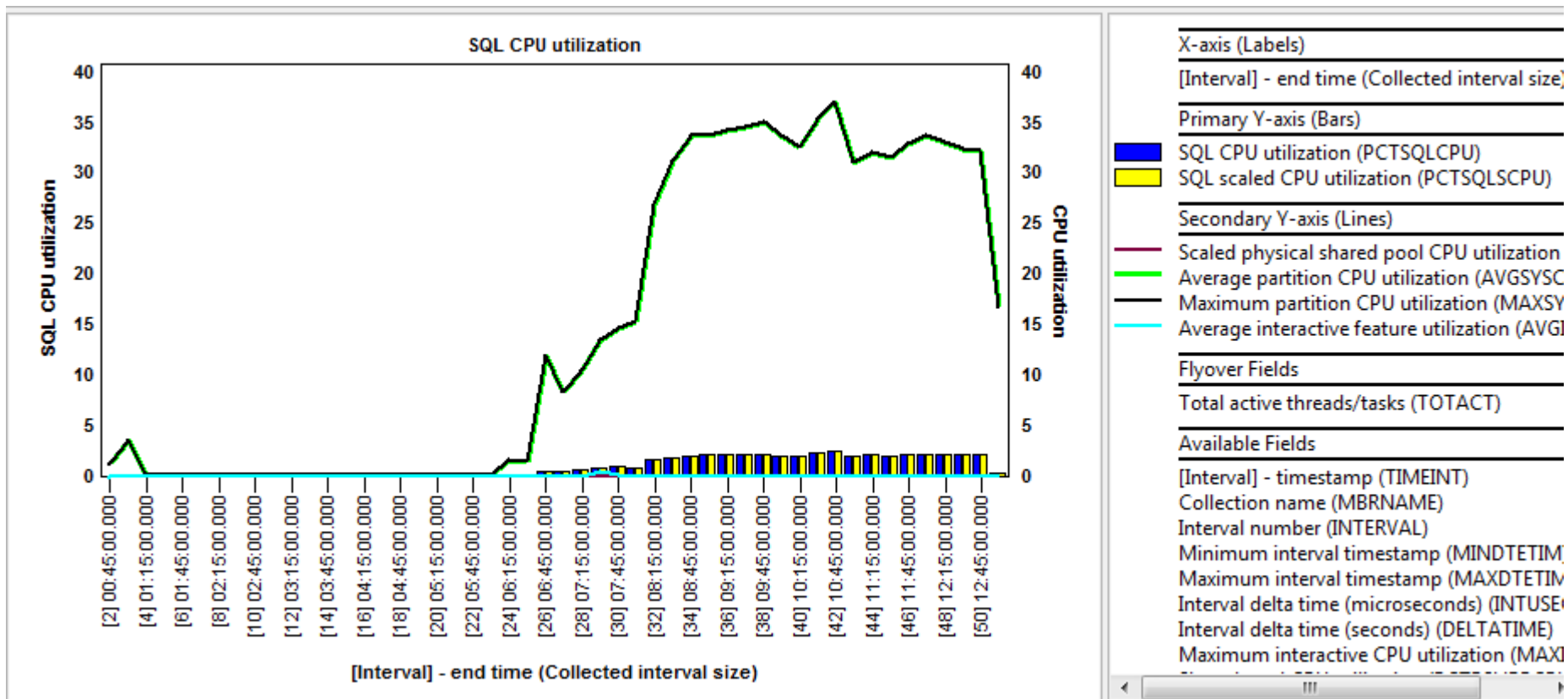
Collection Services Investigator – CPU core graphs

- In the CPU Graphs folder added these graphs:
 - CPU utilization breakdown by core vs total CPU utilization
 - CPU utilization breakdown by core
 - 7.1/6.1 = 64 cores max; 7.2 = 96 cores max.



Collection Services Investigator – SQL CPU Graph (7.2)

- In the CPU Graphs folder:
 - SQL CPU utilization
 - Compares SQL unscaled vs scaled CPU utilization.
 - Partition CPU utilization on second Y-axis.

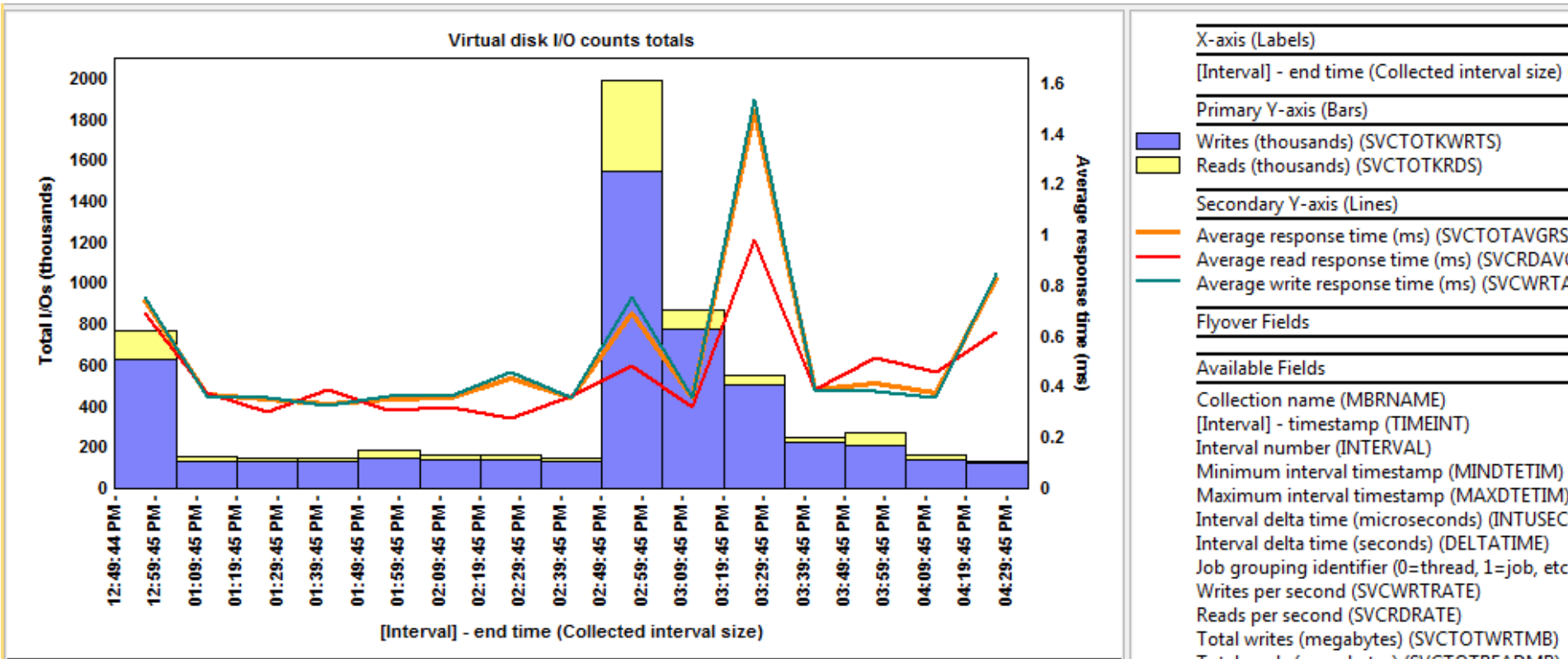


Collection Services Investigator - SVC/Storwize graphs

- Graph types under the CSI - SVC/Storwize graphs folder:
 - Virtual disk statistics
 - Managed disk statistics
 - Node statistics
 - Flattened by virtual disk name (one color per vdisk)
 - Flattened by managed disk name (one color per mdisk)
 - Flattened by node name (one color per node)
 - Flattened by drive ID (one color per drive ID)
 - Flattened by generic virtual disk name (one color per generic virtual disk name)
- Use the QMGTOOLS/SVCIMPORT command to create the necessary database files.

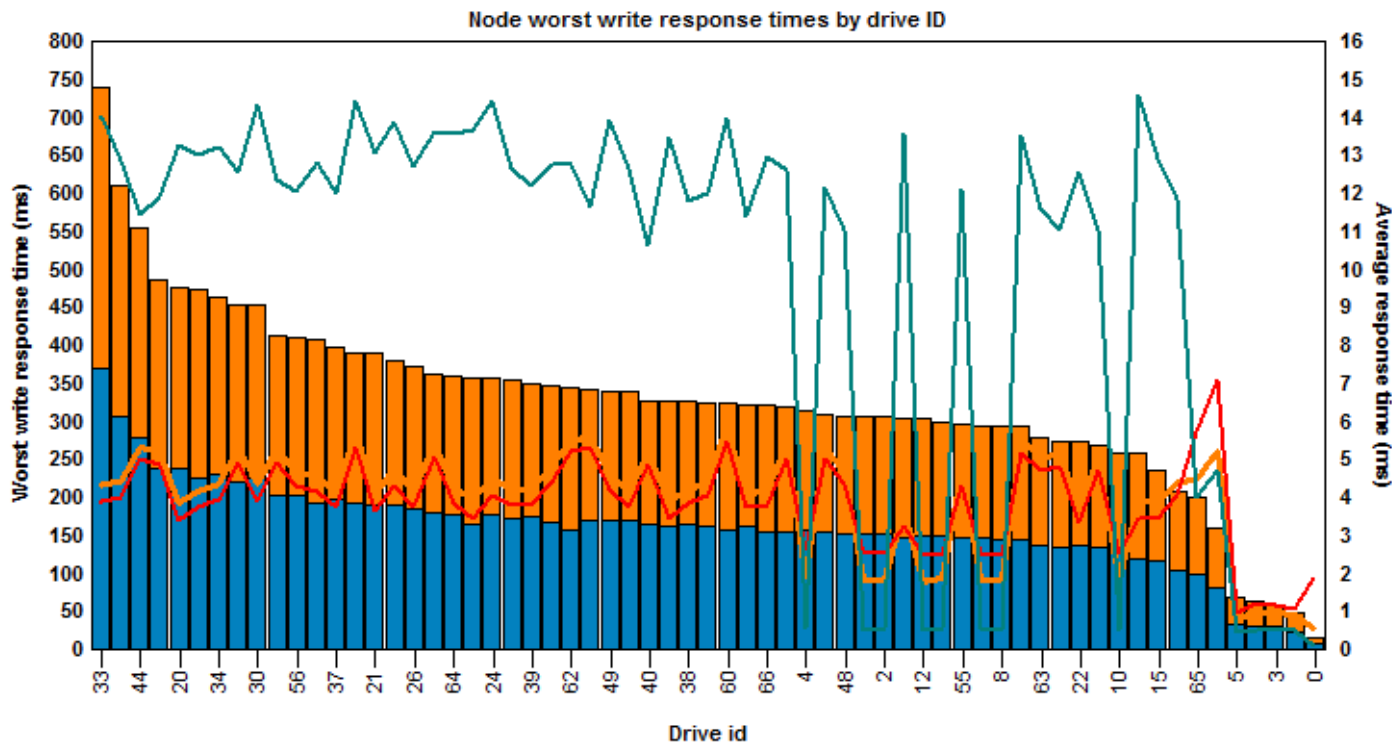
Collection Services Investigator - SVC/Storwize graphs






- Example: Virtual disk statistics -> Virtual disk I/O counts totals



Collection Services Investigator - SVC/Storwize graphs

- Example: Node statistics -> Node worst write response times by drive ID



X-axis (Labels)	
drive id (OBJNAME)	
Primary Y-axis (Bars)	
	Worst write external response time (ms)
	Worst queued write response time (ms)
Secondary Y-axis (Lines)	
	Average response time (ms) (SVCTO...)
	Average read response time (ms) (SVC...)
	Average write response time (ms) (SVC...)
Flyover Fields	
Available Fields	
Grouping unique identifier (OBJVAL)	
Job grouping identifier (0=thread, 1=...	
Node (NODE)	
Writes (thousands) (SVCTOTKWRTS)	
Reads (thousands) (SVCTOTKRDS)	
SVCTOTKIOS	
Writes per second (SVCWRTRATE)	
Reads per second (SVCRRATE)	
Total writes (megabytes) (SVCTOTW...)	
Total reads (megabytes) (SVCTOTR...)	

Questions/Feedback?

- Do you have any suggestions or feature requests?
 - Can send them to mccargar@us.ibm.com or idoctor@us.ibm.com or let me know now as time permits.

Backup Slides Begin Here (as time permits)

- See also:
 - https://www-912.ibm.com/i_dir/idoctor.nsf/
 - <http://public.dhe.ibm.com/services/us/igsc/idoctor/iDoctorMar2015.pdf>
 - <https://www.ibm.com/developerworks/community/groups/service/html/communityview?communityUuid=5f260572-0786-4dee-889d-ae7adc18944f>

Collection Services Investigator – Hardware configuration

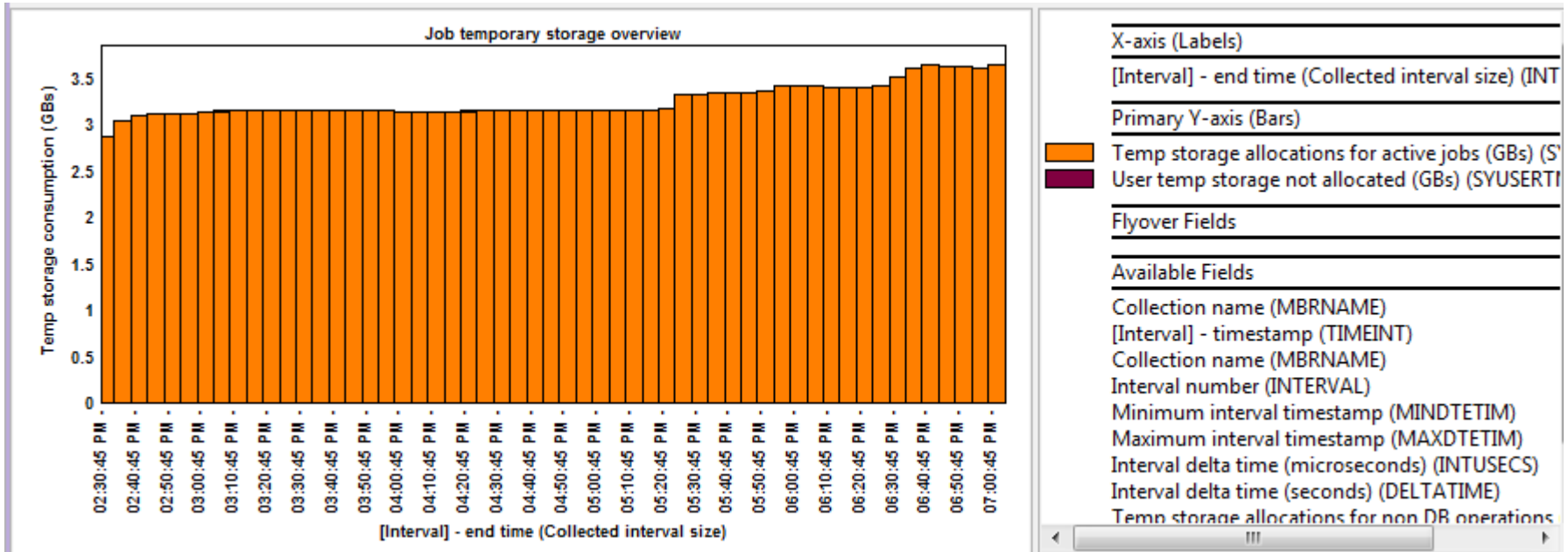
- Under Hardware -> Resource configuration added 4 new reports:
 - Hardware summary
 - Sockets summary
 - Memory summary
 - Planar summary
- These give high level overviews of the cores, planars and memory available on the physical system.

Collection Services Investigator – MGTCOL properties

- Properties on a management collection object now provides a new tab called Management collection
 - View the categories of data along with collection intervals and time periods captured.
- **Note:** In order for data to be usable by CSI you will need at least *SYSLVL, *JOBMI and *JOBOS.
 - Ideally the time interval sizes should be the same or graphing issues may occur.

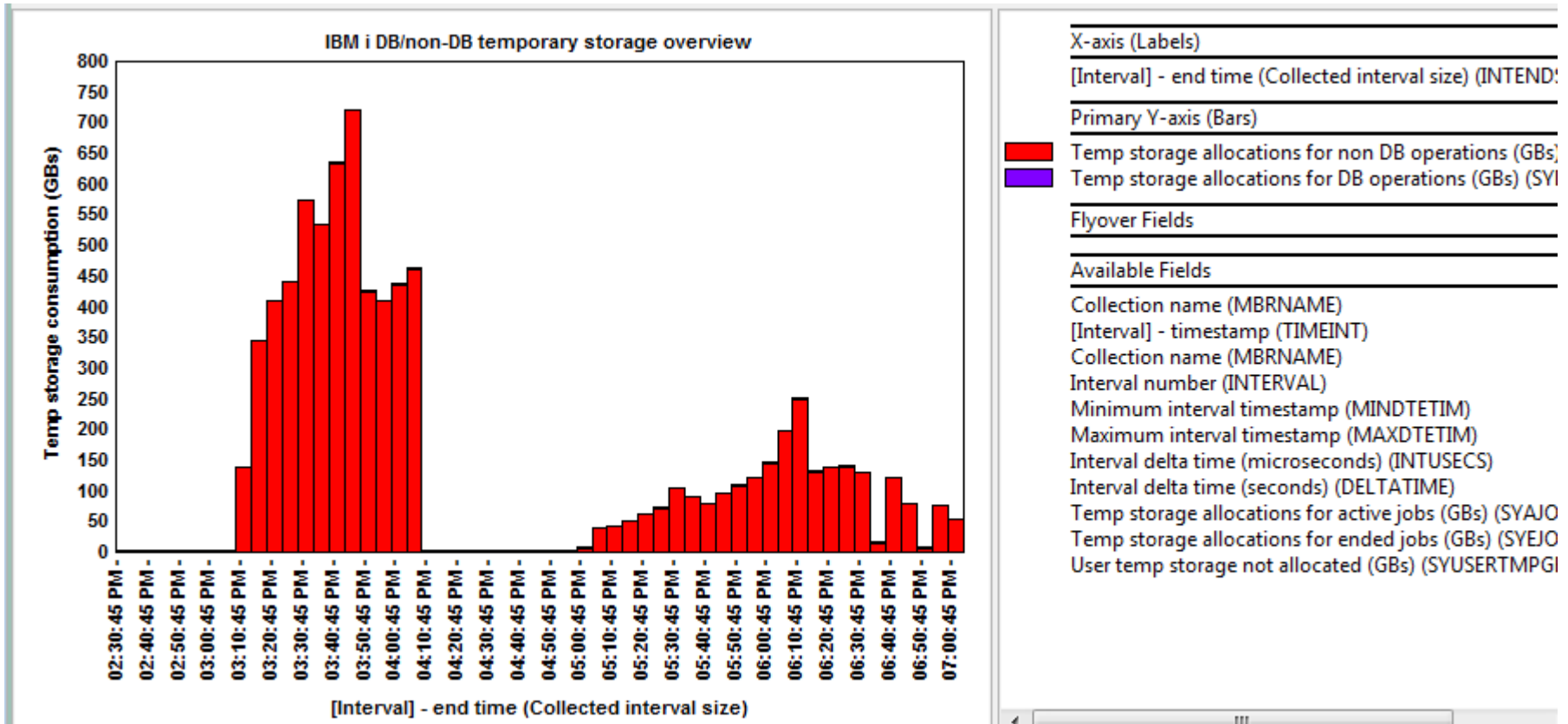
Collection Services Investigator – Temp storage graphs (7.2)

- Graphs available under the Temporary storage folder:
 - IBM i temporary storage overview
 - IBM i DB/non-DB temporary storage overview
 - Job temporary storage overview
 - Job temporary storage rankings
 - Drill-down to selected job/job grouping over time graphs



Collection Services Investigator – Temp storage graphs (7.2)

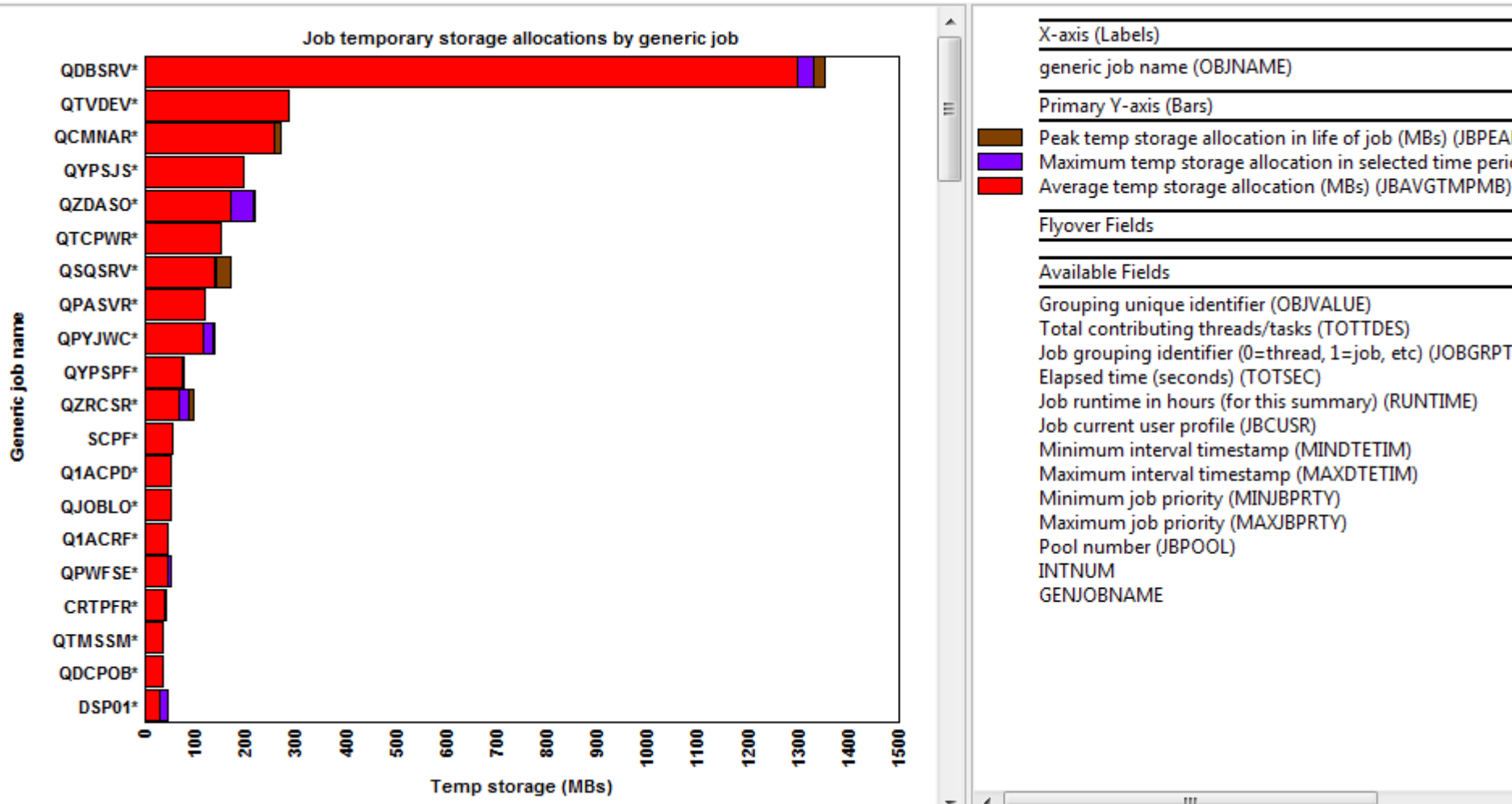
- IBM i DB/non-DB temporary storage overview



X-axis (Labels)
 [Interval] - end time (Collected interval size) (INTEND:
 Primary Y-axis (Bars)
 Temp storage allocations for non DB operations (GBs)
 Temp storage allocations for DB operations (GBs) (SYI)
 Flyover Fields
 Available Fields
 Collection name (MBRNAME)
 [Interval] - timestamp (TIMEINT)
 Collection name (MBRNAME)
 Interval number (INTERVAL)
 Minimum interval timestamp (MINDTETIM)
 Maximum interval timestamp (MAXDTETIM)
 Interval delta time (microseconds) (INTUSECS)
 Interval delta time (seconds) (DELTATIME)
 Temp storage allocations for active jobs (GBs) (SYAJO)
 Temp storage allocations for ended jobs (GBs) (SYEJO)
 User temp storage not allocated (GBs) (SYUSERTMPGI)

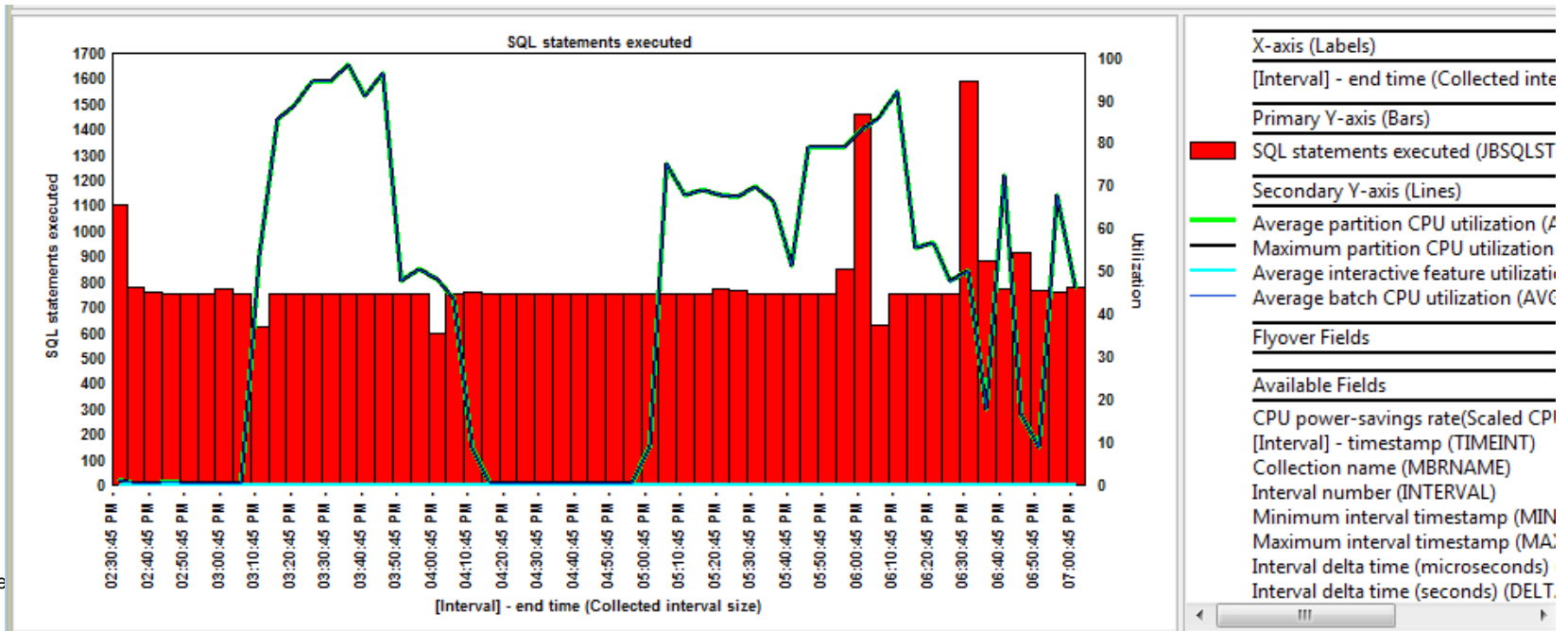
Collection Services Investigator – Temp storage graphs (7.2)

- Job temporary storage allocations by generic job



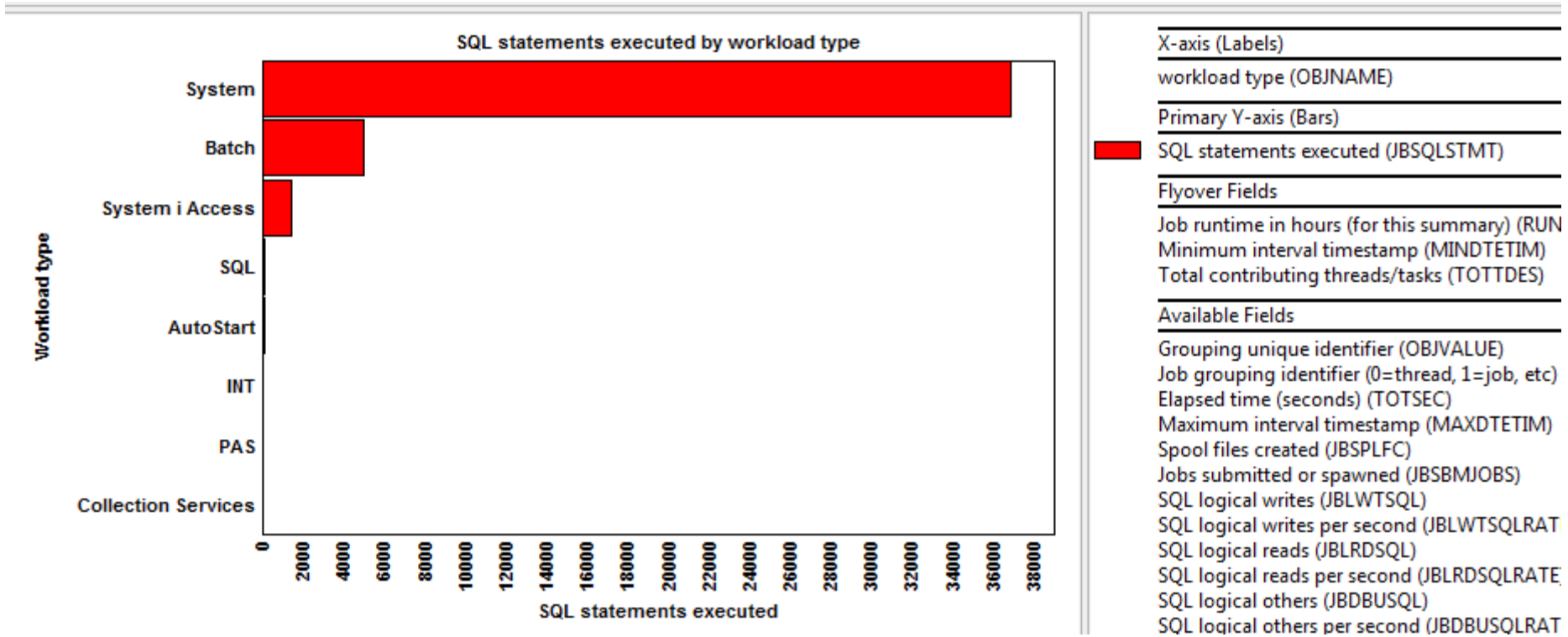
Collection Services Investigator – SQL graphs (7.2)

- New graphs available under the SQL folder at 7.2:
 - SQL statements executed
 - SQL logical database I/O totals
 - SQL logical database I/O rates
 - SQL compressions
 - Rankings graphs for all above
 - Drill down to selected job/job grouping over time



Collection Services Investigator – SQL graphs (7.2)

- SQL -> SQL statements executed rankings
 - SQL statements executed by workload type

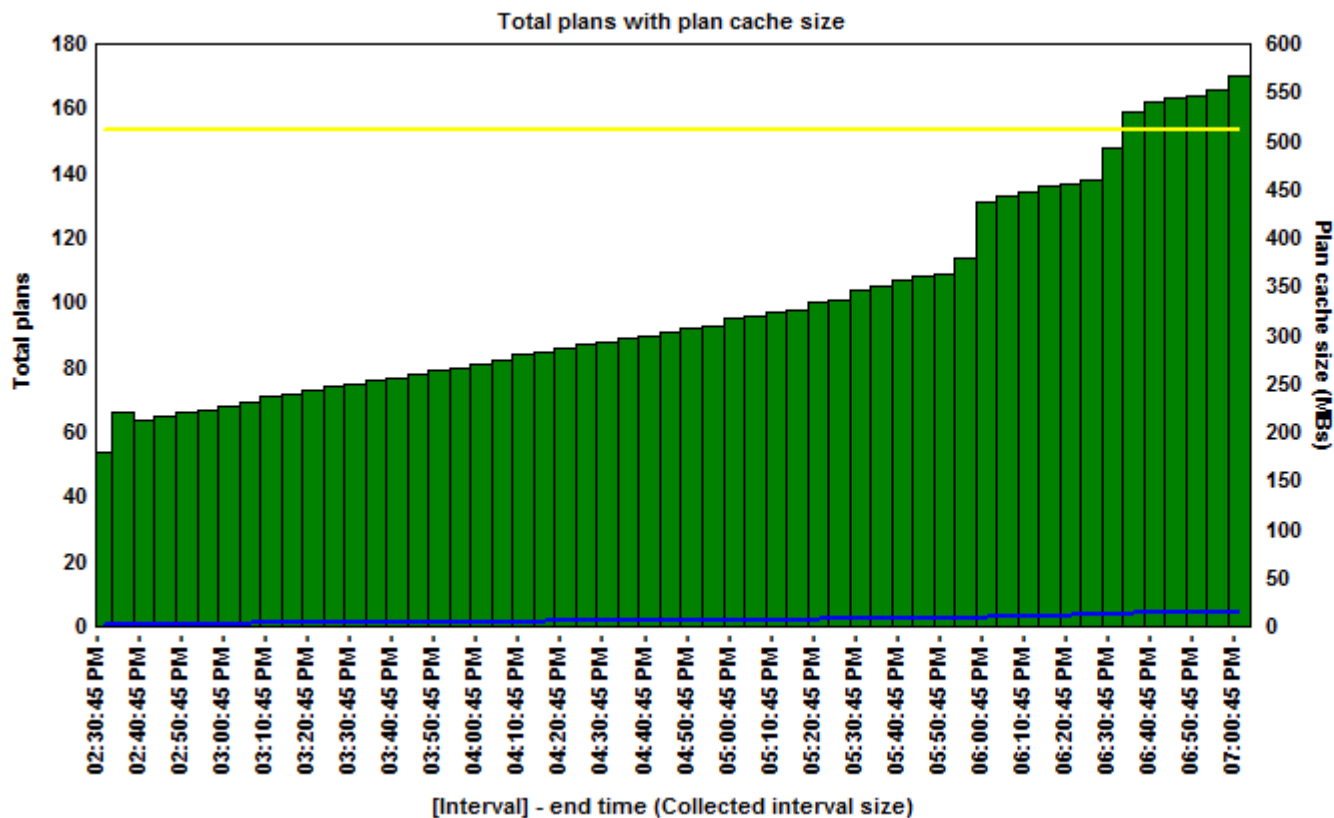


Collection Services Investigator – SQL – Plan Cache (7.2)

- New graphs available under the SQL -> Plan cache folder at 7.2:
 - Active queries
 - Total plans
 - Total plans with plan cache size
 - Sub caches and pruning event listeners
 - Cached runtime objects
 - Reusable runtime objects
 - Queries run with reusable runtime objects
 - Plans built
 - Plan cache probes
 - Plan cache awakenings and naps
 - Plans pruned and removed
 - Query opens
 - Adaptive query processing statistics
 - Optimizations
 - Maintained temporary index statistics

Collection Services Investigator – SQL – Plan Cache (7.2)

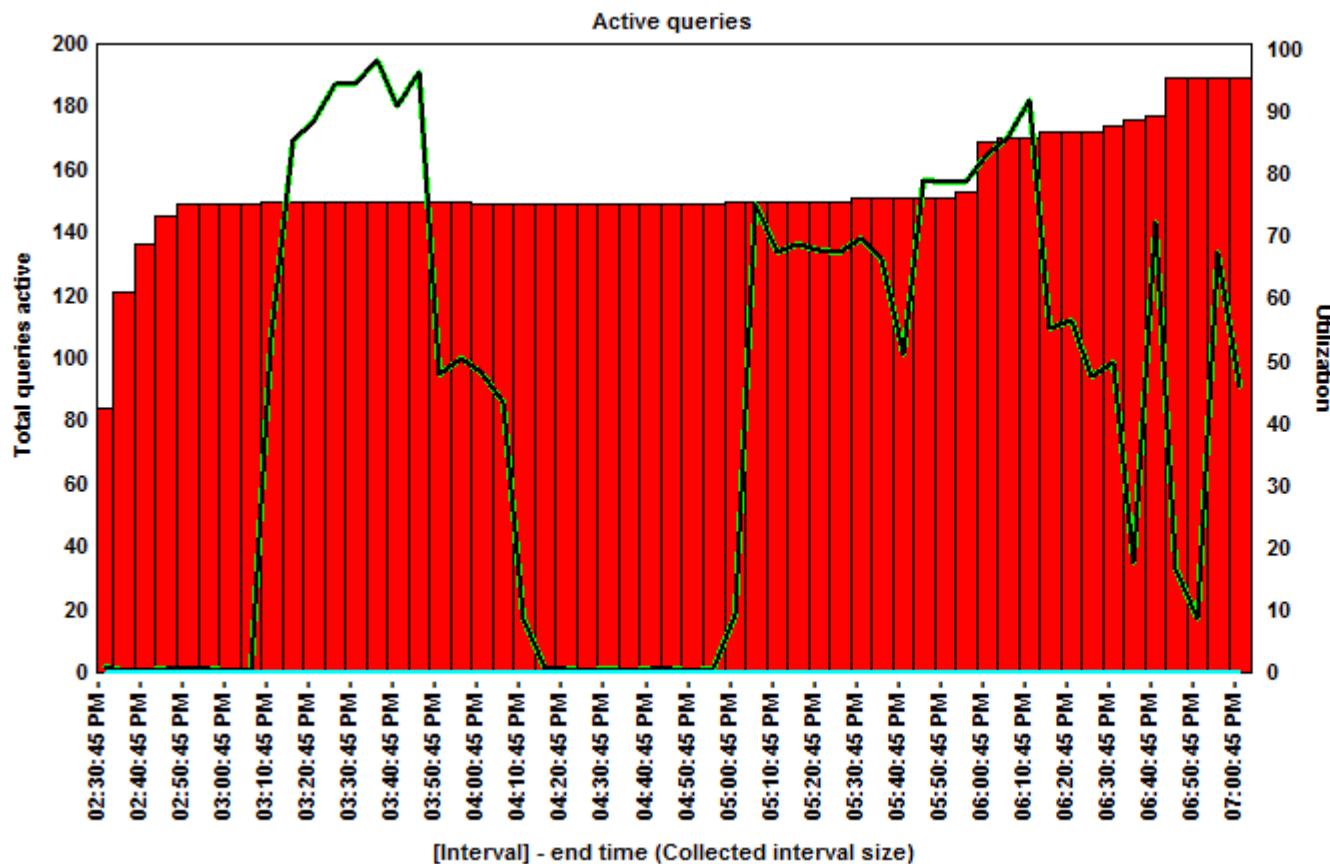
- SQL -> Plan cache:
 - Total plans with plan cache size



X-axis (Labels)
[Interval] - end time (Collected interval size)
Primary Y-axis (Bars)
Total plans (SQCURPLN)
Secondary Y-axis (Lines)
Total plan cache size (megabytes) (SQPCACHE)
Plan cache limit (megabytes) (SQPCACHELIMIT)
Flyover Fields
Available Fields
[Interval] - timestamp (TIMEINT)
Collection name (MBRNAME)
Interval number (INTERVAL)
Minimum interval timestamp (MINDT)
Maximum interval timestamp (MAXDT)
Interval delta time (microseconds) (INTD)
Interval delta time (seconds) (DELTA)
Average partition CPU utilization (AVG)
Maximum partition CPU utilization (MAX)
Average interactive feature utilization (AVG)
Maximum interactive CPU utilization (MAX)
Shared pool CPU utilization (PCTPSH)
PCTIRCPU
CPU power-savings rate (Scaled CPU)

Collection Services Investigator – SQL – Plan Cache (7.2)

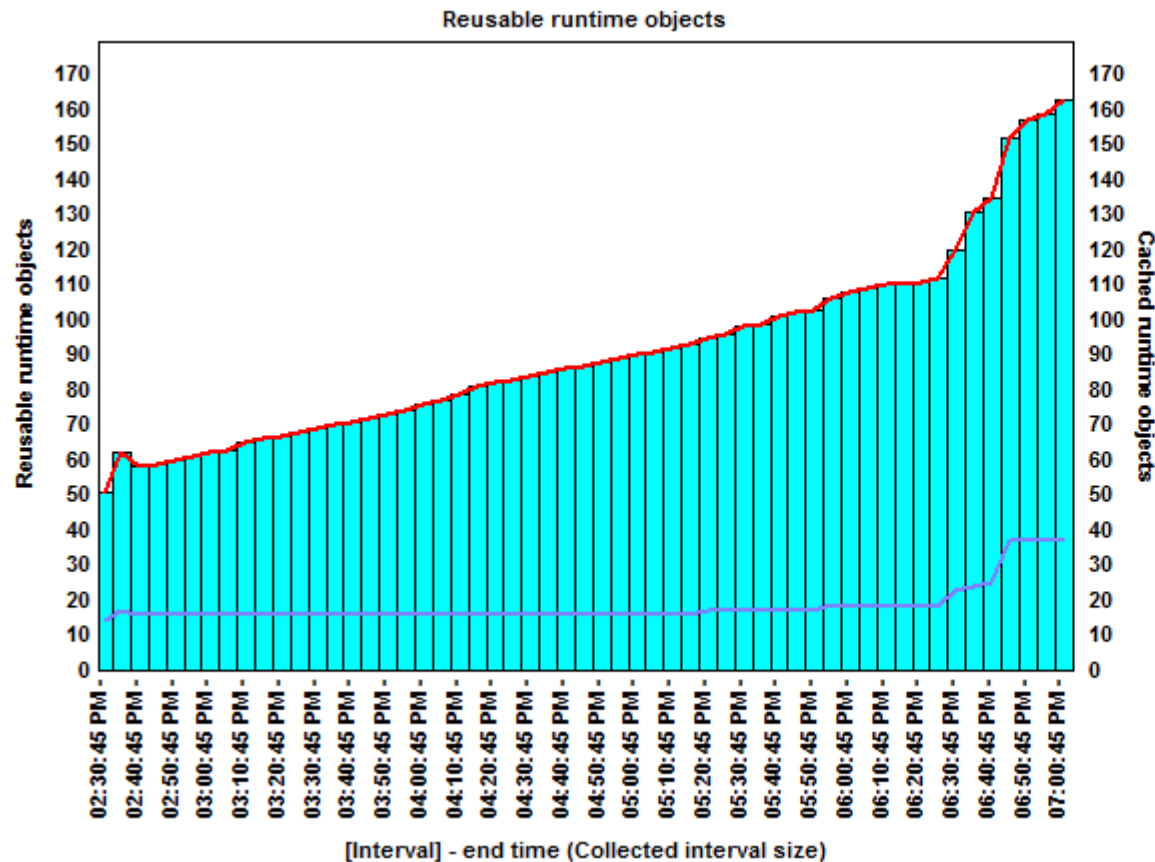
- SQL -> Plan Cache:
 - Active queries



X-axis (Labels)	[Interval] - end time (Collected interval size)
Primary Y-axis (Bars)	Total queries active (SQCURQRY)
Secondary Y-axis (Lines)	Average partition CPU utilization (AVGCPUPCT)
Flyover Fields	Total plans (SQCURPLN)
Available Fields	Total plan cache size (megabytes) (SQPLNCACHE)
	[Interval] - timestamp (TIMEINT)
	Collection name (MBRNAME)
	Interval number (INTERVAL)
	Minimum interval timestamp (MINDT)
	Maximum interval timestamp (MAXDT)
	Interval delta time (microseconds) (INTDELTA)
	Interval delta time (seconds) (DELTA)
	Maximum interactive CPU utilization (PCTSHR)
	Shared pool CPU utilization (PCTSHR)
	PCTIRCPU
	CPU power-savings rate (Scaled CPU) (PCTCPU)
	SQL CPU utilization (PCTSQLCPU)

Collection Services Investigator – SQL – Plan Cache (7.2)

- SQL -> Plan Cache:
 - Reusable runtime objects



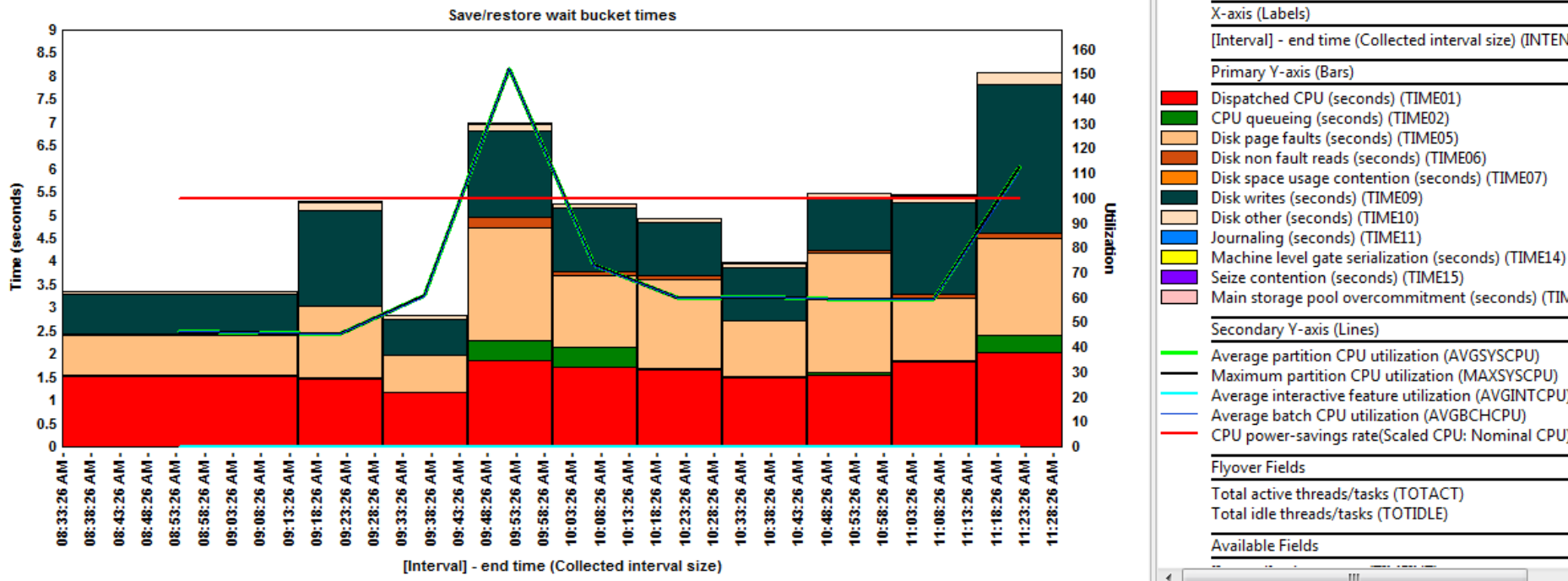
X-axis (Labels)
[Interval] - end time (Collected interval size) (INTENDSTRT)
Primary Y-axis (Bars)
Reusable runtime objects (SQCURROQ)
Secondary Y-axis (Lines)
Cached runtime objects (SQCURROQ)
Cached runtime objects with temp results (SQCURTROQ)
Flyover Fields
Available Fields
[Interval] - timestamp (TIMEINT)
Collection name (MBRNAME)
Interval number (INTERVAL)
Minimum interval timestamp (MINDTETIM)
Maximum interval timestamp (MAXDTETIM)
Interval delta time (microseconds) (INTUSECS)
Interval delta time (seconds) (DELTATIME)
Average partition CPU utilization (AVGSYSCPU)
Maximum partition CPU utilization (MAXSYSCPU)
Average interactive feature utilization (AVGINTCPU)
Maximum interactive CPU utilization (MAXINTCPU)
Shared pool CPU utilization (PCTSHRPCPU)
PCTIRCPU
CPU power-savings rate(Scaled CPU: Nominal CPU) (SCCPU)
SQL CPU utilization (PCTSQLCPU)

CSI – Hardware - Resource configuration

- New reports in the Hardware -> Resource configuration folder:
 - Hardware resources hierarchies (6 types)
 - Storage resources by IOP/IOA (3 types)
 - Comm resources
 - Coupled resources
 - Processor resources
 - Local workstation resources
 - Tape libraries by IOP/IOA
 - Tape units by IOP/IOA
 - Disk units by IOP/IOA
 - Optical storage units by IOP/IOA
 - and more

CSI – Hardware – Save/restore wait bucket graphs

- At 7.1+ updated the Hardware -> Save/restore folder to include a new graph called "Save/restore wait bucket times".
 - Shows wait buckets for jobs doing save/restore operations only.
 - Can drill down to job rankings



Collection Services Investigator – Additional new graphs

- Hardware -> Tape
- Communication graphs
 - Domino, HTTP, TCP/IP, etc.
- PT1 reports
 - Designed to look similar to the green screen reports

Job Watcher - STRJWMON command fixes

- When a Job Watcher monitor (or Disk Watcher monitor) ends a collection, it will no longer trigger the job to end abnormally if the collection does not exist at the time it is ended.
 - That could happen if the job ended on its own due to the definition settings, before the monitor was able to end it.
- The help text for the Collection overlap (OVLAP) changed:
 - This value (in seconds) will be added to the JW definition's collection duration, to ensure that data is still being collected while the next collection is being started. This value should be set to at least how long it takes for a collection to start in your environment.

Job Watcher - Additional green screen command changes

- New RUNSUM parameter:
 - "Run default analyses (RUNSUM)" *YES/*NO with default *NO applies to:
 - ENDJWCOL, ENDDWCOL, ENDJWMON, ENDDWMON, ENDPAMON
 - This allows the default "summarization" analyses to be ran when collections or monitors end based on the command used.
- Commands removed from QIDRWCH:
 - DSZJWCOL, SPLJWCOL, ADDPRDACS

Job Watcher – Additional new graphs

- Memory
 - Pages marked easy to steal (7.2)
 - Memory page demand, net page frames
- Job counts
 - Job counts rankings or short-lived rankings (with 7 job groupings)
- CPU
 - 5 new graphs
- SQL (7.2)
 - SQL statements executed, logical database I/O
- Temporary storage (7.2)
 - 10 new graphs

PEX Analyzer updates

- Start PEX Collection Wizard changes:
 - Interface added to optionally start QMGTOOLS/STRPEX_
 - STRPACOL problem types are no longer used.
 - GUI will issue ADDPEXDFN to create definition based on your parameters.
 - Maximum events to collect option
 - PMCO interval size mismatch check
 - Two collections cannot run on a system at the same-time with different PMCO interval sizes.
- New options for call stacks analysis
 - Generate call stacks by generic job/task.
- Added activation groups analysis
- TPROF PMCO format 4 support (cache line breakouts)

iDoctor Resources

- iDoctor e-mail list: usage tips, build updates, PTF info, etc.
 - Send requests to mccargar@us.ibm.com
- iDoctor Website:
 - http://www-912.ibm.com/i_dir/idoctor.nsf/
- YouTube Channel (20+ videos):
 - <https://www.youtube.com/user/IBMiDoctorForIBMi>
- Documentation:
 - <http://public.dhe.ibm.com/services/us/igsc/idoctor/iDoctorV72.pdf>