THE BIG PICTURE WITH BMC AMI UTILITIES FOR DB2



For many years now, Db2 systems have been running more and more utilities for the critical Db2 applications or management needs of databases.

Db2 Utilities continue to increase because over the years the number of objects has increased, the volume of data has increased, the number of applications has increased both in the production environments, but also in the Test and Development environments.

The consequence of this continuing growth of db2 application sizes have implications that often find the DBAs unprepared to manage:

- Increase in duration
- Increase in consumption
- Concurrency problems with applications
- Lack of an overview

BMC AMI Utilities for Db2 is a solution designed to best address these issues thanks to exclusive patents that provide unique techniques and solid results. In particular the solution helps customers by recording all the detailed information of each individual AMI Db2 utilities performed, providing DBAs with all the information necessary to have a global overview and the capability to understand and optimize their shop by quickly answering important questions such as:

How long do Db2 utilities last and consume on average? The trend in durability and consumption is growing ? How many jobs are executed and by which users ? How many abends and for which objects ? How many restart ? How many objects are treated ? How many records are processed ? How many Copy, Reorg, Load, Unload ? Are there objects too thick or too little reorganized ? Are there objects without backup ? Are there objects too unloaded ? Are there objects with sensitive data downloaded by unauthorized users ?

Being able for a DBA to have the answer to these questions means being able to have a great value for managing the best of db2 utilities. It means being able to understand how many and how the data is loaded, how and where it grows most, how much data is downloaded, better balance the executions, and monitoring the abends by identifying it among thousands of daily executions.

How long would it take to extract that information from SMF Records or from SYSCOPY utilizing IBM standard utilities?

The BIG PICTURE

BMC AMI Utilities for Db2 provides two specific tables that collects important historical information of the BMC utilities.

The CMN_BMCHIST_STEP table holds job/step information and contains columns such as job name, job ID, step number and name, utility name that was executed, utility ID, auth ID of the individual that submitted the job, start and end times as well as CPU, elapsed, GP CPU as well as zIIP CPU and zIIP Eligible. There are other columns that identify where the job was run as well as how many objects were processed.

The CMN_BMCHIST_OBJECT table provides detailed information regarding each object that was processed. Some of the details include object type, number of parts processed, start and end times, elapsed time, rows and pages processed as well as error code and reason why an object was not processed.

Every AMI utility executed writes into those History tables all the possible significant information may be helpful for any further analysis the analyst can do.

All these data allow DBAs to perform data mining for the most disparate researches producing reports as the following examples below.



BMC AMI Utilities for Db2

History Tables can be easily exported in CSV format using BMC AMI Command Center for Db2 or by any other tool you could have and then imported in an Excel spreadsheet for your personal Data Mining.

JOBNAME		* DBNAME	* SPNAME	· OBJ CREATO	IR Y OBJ NAME	· OBL TY	PE SUB TYPE	PART COUNT RUNDATE	ELAPSED R	OWS PROCESSED	PAGES PROCESSED	e • •	SPACE KB	OND CODE RESTART	ELAPSED 1	TOTAL CPU	CPU 2	IIP CPU MVS SNAME	* REPORTONLY	OBJ COUNT
SCONGRUN	JOB85970 STATS	BMCPA12	PASTSTAD			TS	R	45 03/17/2020	2088	196302	32403	4	129612	0	0 357	2 9999	483	502 BMCA	2 N	-
SCDNGRUN	JOB85970 STATS	BMCPA12	PASTSTAM	1		TS	B	6 03/17/2020	2084	23525	3421	4	13684	0	0 3572	2 9999	483	S02 BMCA	2 N	1
SCONGRUN	IOB85970 STATS	BMCPA12	PASTSTAT			TS		0.03/17/2020	1053	225884	27391	4	109564	0	0 357	9999	483	502 BMCA	2 N	
SCONGRUN	JOB85970 STATS	BMCPA12	PASTSTAW	(TS	8	8 03/17/2020	2111	54687	7442	4	29768	0	0 357	9999	483	502 BMCA	2 N	1
SCONGRUN	10885970 STATS	BMCPA12	PASTSTOR			TS		0.03/17/2020	2047	580066	43707	4	174828	0	0 3573	9999	483	502 BMCA	2 N	
SCONCRUM	IODREGTO STATS	DACDA12	DASTTENT		1	TS		0/02/17/2020	2021	49415	601		7764	0	0 357	0000	492	502 8464	7 N	1
SCONGRUN	IOB85970 STATS	BAACPA12	PAWESTAT	D		TS	P	45 03/17/2020	2105	28002	OADE	4	37632	0	0 3573	3 9999	483	502 BMCA	2 N	
SCONGRUM	IOBREDZO STATS	044(0412	DAWNSTAN			TS		8/02/17/10/	2100	ECCO	2104		8776	0	0 967	0000	492	SOT PACA	2.0	1
SCONGRUM	IOB85970 STATS	DACDA12	PAYAUISE			TS		0.03/17/3020	1019	05750	2790	-	15130	0	0 357	004	492	502 PMCA	2 N	
SCONGRON	10885970 STATS	DIVICIPALIZ	MCTCART			13		0 03/17/2020	1000	99799	5780		15120	0	0 3573	2 984	405	JUZ DMCA	2 N	
SCONGULI	10885047 1040	MICACON	DENESOOD	AIFTANU	DERT	13	T	0.03(17/202	574	14	7	-	29	0	0 141	1 3323	167	O RMCA	1.11	
CONCULA	100007047 1040	ARCTANUL	DEMOCRAC	ARCTANUL	CHO CHI	10		4 03/17/2020	747	10		- 1	10	0	0 441	2 2222	407	o parca		
SCONGOLL	100853947 LOND	MICTORED	DINESOC	MATAXLU	LOW	18		405/17/202	517	34	13		32	0	0 141	2 3333	107	O BMCA	1.11	
SCONGULI	10885947 LOND	MICHAELU	DSN8590P	MKIAGLO	ACT	18		0 03/17/2020	533	18	25	4	92	0	0 141	2 3353	107	0 BMCA	1 N	
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SCONGUL1	IOB85047 UNLOAD	MINTAXLU	DOMESSICE	MINIAOLU	CIVIE NOT	18		4 03/17/2020	83	32	13	4	52	0	0 534	62	62	O BALA	1 1	
SCONGUL	JOB63547 UNLOAD	MINING	DONESSOP	MATAGO	Privit Privite	18		0 03/17/2020	08	18	23	4	92	0	0 534	+ 62	02	U DINICA	1.0	1
SCOUPCTB	JOB85077 UNLOAD	MATAXLU	05485900	MATAXUU	ULPI	TB	-	0 03/17/2020	8	0	0	4	0	0	0 483	24	24	U BMCA	UN	
SCDUPSM1	JORSZAPA UNICAD	BINCATS	BINICRSCO	BMILATS	INS_COLUMINS	TB	6	1 03/17/2020	2	24	0	8	0	0	0 673	s 24	24	UBMCA	UN	
SCOUPSM1	TOR8240A ONFOVD	BINICATS	BNACRSCO	BMCATS	INS_COLUMINS	TB		1 03/17/2020	32	24	3780	8	30240	0	0 613	30	32	4 BMCA	UN	
SCDUPSM1	JOB85969 UNLOAD	BMCATS	BMCRSCO	BMCATS	IS_COLUMINS	TB	T	1 03/17/2020	80	24	3780	8	30240	0	0 95	1 38	34	4 BMCA	ON	
SVACS300	JUB85519 UNLOAD	BINICSVAD	J DSN8500A	BMCSVA00	EMINA	TB		4 03/17/2020	9	32	0	4	0	0	0 395	22	22	U BMCA	UN	
SVACS000	JOB85519 UNLOAD	BMCSVA0	DSN8SOOA	BMCSVA00	EMPA	TB		4 03/17/2020	16	32	0	4	0	0	0 42	4 23	23	0 BMCA	ON	
SVACS300	JOB85519 UNLOAD	BMCSVAD	D DSN8500A	BMCSVA00	EMPA	TB	Ť	4 03/17/2020	28	32	16	- 4	64	12	0 473	2 34	34	0 BMCA	0 N	
SVACSNOO	JOB85519 UNLOAD	BMCSVAD	DSNBSODA	BMCSVA00	EMIPA	TB	т	4 03/17/2020	33	32	16	4	64	0	0 40	7 35	35	0 BMCA	ON	
SVACS300	JOB85519 UNLOAD	BMCSVA0	D DSN8500A	BMCSVA00	EMPA	TB	T	4 03/17/2020	51	32	16	- 4	64	12	0 400	2 35	35	0 BMCA	ON	
SVACS000	JOB85519 UNLOAD	BMCSVAD	DSN8SODA	BMCSVA00	EMPA	TB	T	4 03/17/2020	54	32	16	4	64	12	0 38	5 36	36	0 BMCA	ON	
SVACS300	JOB85519 UNLOAD	BMCSVA0	DSN8500A	BMCSVA00	EMPA	TB	т	4 03/17/2020	55	32	16	- 4	64	0	0 703	2 35	35	0 BMCA	0 N	
SVACS000	JOB85519 UNLOAD	BMCSVA0	DSN8S00A	BMCSVA00	EMIPA	TB	т	4 03/17/2020	60	32	16	4	64	0	0 610	5 35	35	0 BMCA	0 N	
SVACS000	10885519 UNLOAD	BMCSVAD	D DSN8501A	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	3000000	16	- 4	9999	12	0 570	36	36	0 BMCA	ON	
SVACS000	JOB85519 UNLOAD	BMCSVAO	DSN8500A	BMCSVA00	EMPA	TB	т	4 03/17/2020	666666	3000000	16	4	9999	12	0 474	4 36	36	0 BMCA	0 N	
SVACS000	JOB85519 UNLOAD	BMCSVA0	DSN8502A	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	3000000	16	4	9999	0	0 705	33333	36	0 BMCA	0 N	
SVACS000	JOB85519 UNLOAD	BMCSVAD	DSN8SO4A	BMCSVA00	EMPA	TB	т	4 03/17/2020	000000	3000000	16	4	9999	12	0 855	9 33333	32	0 BMCA	ON	1
SVACS300	JOB85529 UNLOAD	BMCSVA0	DSN8500A	BMCSVA00	EMPA	TB		4 03/17/2020	666666	3000000	0	- 4	9999	12	0 190	33333	24	0 BMCA	0 N	
SVACS000	JOB85529 UNLOAD	BMCSVA0	DSN8S00A	BMCSVA00	EMIPA	TB		4 03/17/2020	666666	3000000	0	4	9999	12	0 199	8 33333	23	0 BMCA	0 N	
SVACS300	JOB85529 UNLOAD	BMCSVAD	D DSN8500A	BMCSVA00	EMPA	TB		4 03/17/2020	666666	3000000	0	- 4	9999	0	0 211	1 33333	24	0 BMCA	ON	
SVACS000	JOB85529 UNLOAD	BMCSVAD	D DSN8505A	BMCSVA00	EMPA	TB		4 03/17/2020	666666	3000000	•	4	9999	0	0 199	\$ 33333	23	0 BMCA	ON	
SVACS000	JOB85529 UNLOAD	BMCSVA0	TSABC111	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	3000000	16	4	9999	0	0 290	5 33333	35	0 BMCA	0 N	
SVACS000	JOB85529 UNLOAD	BMCSVAD	TSABC112	BMCSVA00	EMPA	TB	т	4 03/17/2020	666666	3000000	16	4	9999	0	0 435	9 33333	34	0 BMCA	ON	
SVACS3000	IOB85529 UNLOAD	BMCSVA0	TSABC113	BMCSVA00	EMPA	TB	т	4 03/17/2020	666666	3000000	16	- 4	9999	0	0 311	1 33333	37	0 BMCA	0 N	
SVACS000	JOB85529 UNLOAD	BMCSVA0	TSABC114	BMCSVA00	EMIPA	TB	т	4 03/17/2020	666666	3000000	16	4	9999	0	0 345	5 33333	34	0 BMCA	0 N	
SVACS300	JOB85591 UNLOAD	BMCSVA0	TSABC115	BMCSVA00	EMPA	TB		4 03/17/2020	666666	3000000	0	- 4	9999	0	0 200	3333	25	0 BMCA	ON	
SVACS000	JOB85591 UNLOAD	BMCSVAD	TSABC116	BMCSVA00	EMPA	TB		4 03/17/2020	666666	3000000	0	4	9999	0	0 215	3 3333	25	0/BMCA	0 N	
SVACSX00	JOB85591 UNLOAD	BMCSVA0	TSABC117	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	3000000	16	- 4	9999	0	0 294	4 3333	35	0 BMCA	0 N	
SVACS000	JOB85591 UNLOAD	BMCSVAO	TSABC118	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	3000000	16	4	9999	0	0 303	3 3333	35	0 BMCA	0 N	
SVACS300	10885591 UNLOAD	BMCSVAD	TSABC119	BMCSVA00	EMPA	TB	т	4 03/17/2020	666666	5555555	16	- 4	9999	0	0 311	3 3333	35	0 BMCA	0 N	
SVACS000	JOB85591 UNLOAD	BMCSVAO	TSABC120	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	5555555	16	4	9999	0	0 306	5 3333	35	0 BMCA	0 N	
SVACS300	JOB85591 UNLOAD	BMCSVA0	TSABC121	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	5555555	16	- 4	9999	0	0 370	36	36	0 BMCA	0 N	
SVACS000	JOB85591 UNLOAD	BMCSVAD	TSABC122	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	5555555	16	- 4	9999	0	0 30	1 36	36	0 BMCA	0 N	
SVACS300	JOB85591 UNLOAD	BMCSVA0	TSABC123	BMCSVA00	EMPA	TB	т	4 03/17/2020	666666	\$\$\$\$\$\$5	16	4	9999	0	0 308	3 37	37	0 BMCA	0 N	
SVACS000	JOB85591 UNLOAD	BMCSVAD	TSABC124	BMCSVA00	EMPA	TB	т	4 03/17/2020	666666	5555555	16	4	9999	0	0 305	9 36	36	0 BMCA	0 N	
SVACS000	IOB85591 UNLOAD	BMCSVA0	TSABC125	BMCSVA00	EMPA	TB	T	4 03/17/2020	666666	5555555	16	- 4	9999	0	0 346	5 35	35	0 BMCA	0 N	

historical data is possible to discover important aspects that can affect the maintenance aspects. Some examples might be:

Same Tablespaces reorganized every week

May be because for certain tablespaces triggered by the Real Time Statistics abends every week, so the reorg will always be repeated for all the following weeks until the abend will be resolved. DBAs don't have to wait any longer the list of job abended by the schedulers or digging into SDSF outputs, they now can easily look at the Condition Code column, then solve the problem that before was difficult to discover.

Or maybe because the tablespace degrades too fast along the week, so DBA can decide to execute reorg more often before the weekend or lift Real Time Statistics trigger values.

Auditing Unloads

Is very common in several shops to run thousands of data unloads every day in Production for different purposes. Data migration, generation of dataset to share among the different applications, applications that need to process data into sequential dataset, application backups outside Db2 etc... It is important to discover if there are some users that run UNLOAD not entitled to do it, or that different applications downloads the same table more than one time a day. Despite a such complex scenario like this it is however easy extract general information inquiring AMI historical table records producing the audit information you need.

Tuning Backups

Differently from SYSIBM.SYSCOPY where the MODIFY utility eliminates the historical records, in the BMC AMI Utilities for Db2 history tables the backup records remains, therefore it is possible to analyze the distribution of image copies over a long period of time taking the right decision to adjust the backup strategy if needed.

With BMC AMI utilities for Db2, DBAs can now finally have all the information about completed executions of the BMC utilities for Db2, analyze trends, aggregate consumptions, make decisions to change how jobs are scheduled, understand how much data are moved, if there are unauthorized utilities etc... and have create their own Db2 utilities BIG PICTURE.