



TECH_168S1

**BATCH PERFORMANCE - LESSONS FROM A CUSTOMER
CASE**

TUE FEB 24, 9:15AM-10:15AM

Speaker

Mary

Vice President, ITBI Services at SMT Data (Denmark) since 2018.

Previously worked at Danske Bank, DXC, and IBM India. 14 years of experience in IBM mainframe performance and capacity management.

Email: mary.solomon@smtdata.com

LinkedIn: <https://www.linkedin.com/in/mary-solomon-4532833a/>



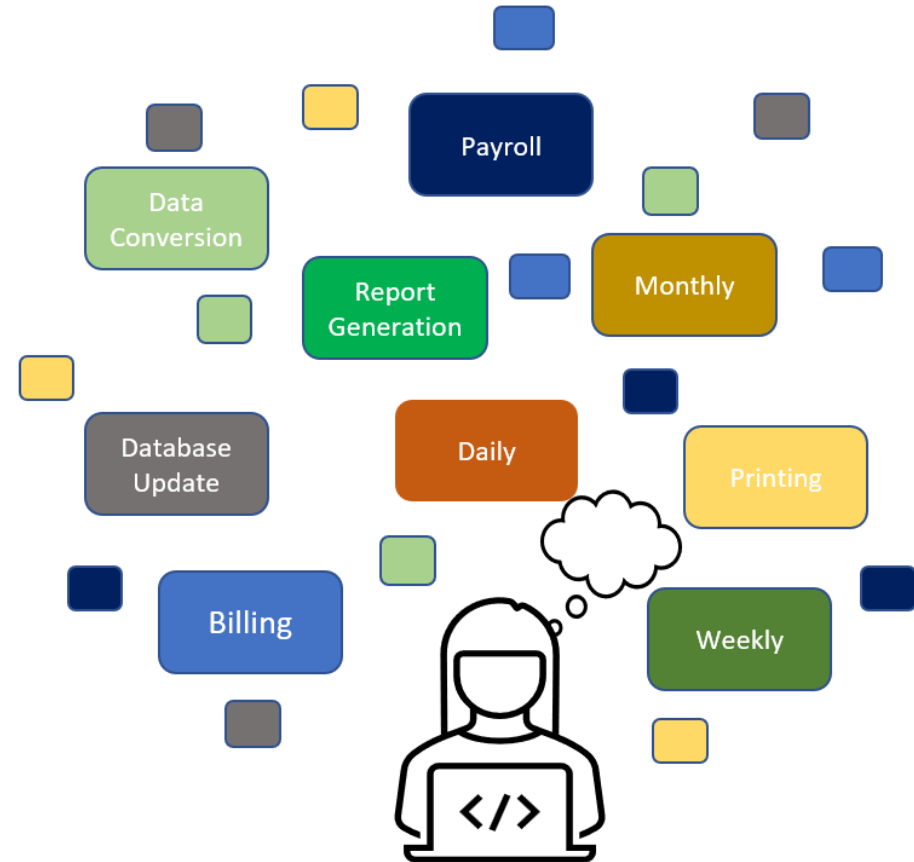
Batch Workload

- Batch job is a program that is assigned to the computer to run **without further user interaction**.
- Batch job reads and processes data in bulk, perhaps **terabytes of data**, and produces output, such as customer billing statements.
- Mainframe are typically equipped with good **job scheduling** tool that allows operator to submit, manage, and track the execution and output of batch jobs.
- z/OS batch job process millions of records
 - Sufficient **data storage**
 - Available **processor capacity**
 - Sysplex wide management of system resources – **Job Scheduler**



Pieces of Work

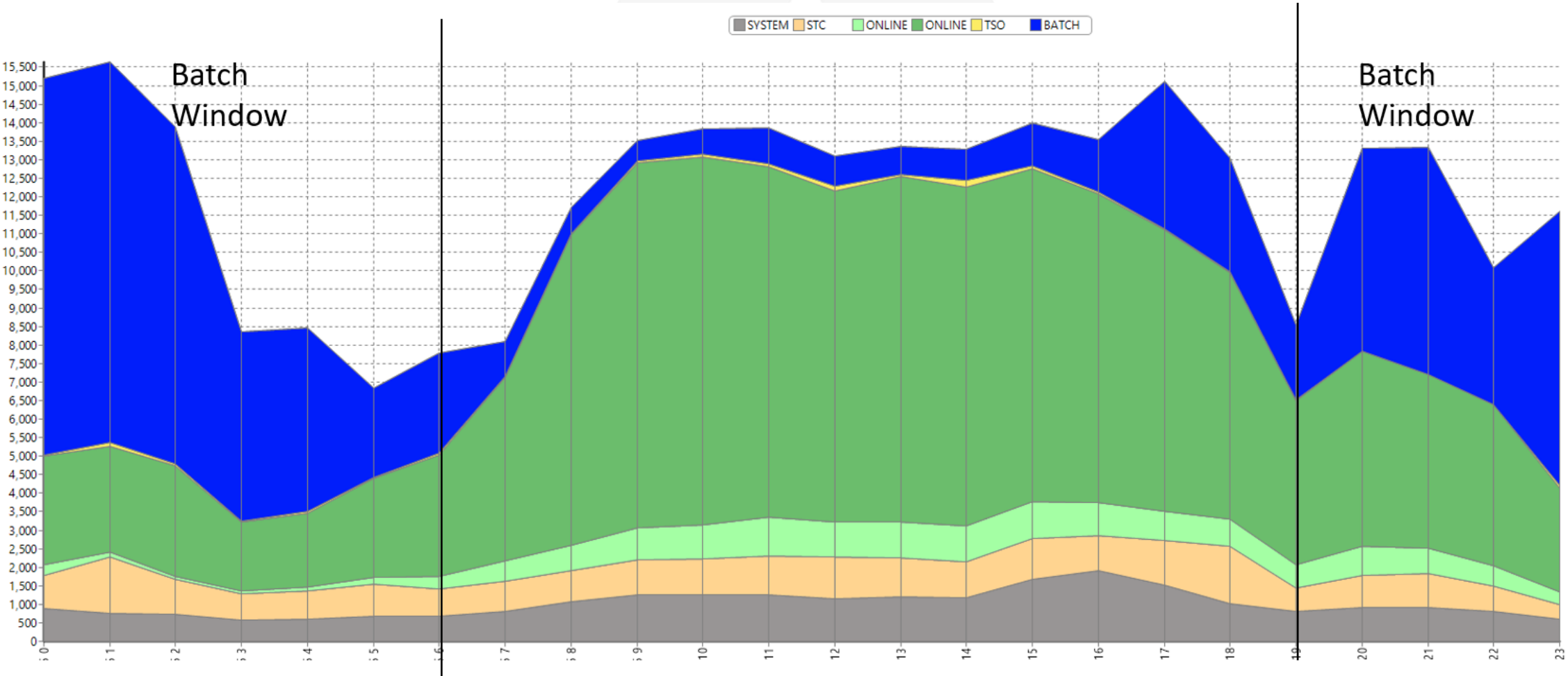
- Lot of pieces of work
- **Large amounts** of input data
- Large amounts of output data
- Job flow- hundreds or thousands of jobs in a **pre-established** sequence
- **Batch window** Ex. 17-07.00
- Job dependency
- Service level agreement (SLA)
- Processing **capacity**
- Processing **memory**



Batch at Night

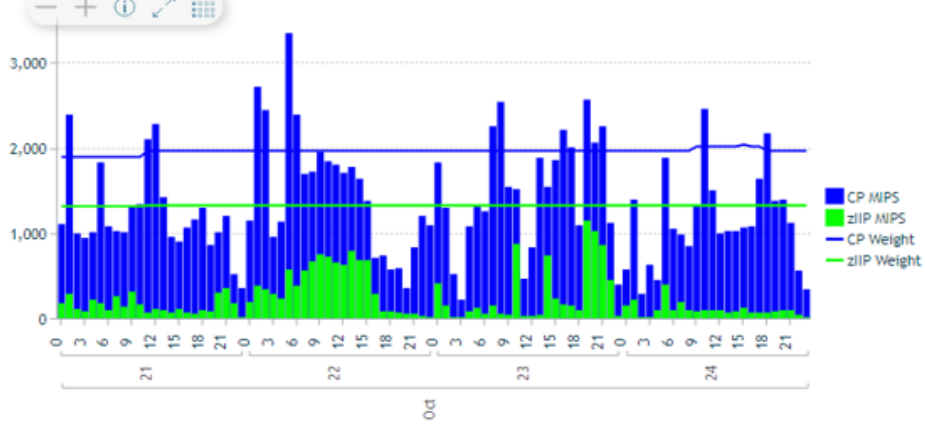
- Generally, **at night**, numerous batch jobs are processed. These jobs consolidate the results of the online **transactions** that take place during the day.
- **Backups of critical files** and databases are made before and after the batch window.
- In the production control department, the operations area is **monitoring the messages** on the system console and the execution of the jobs
- Jobs are **reading** or **updating** the database

Batch Flow

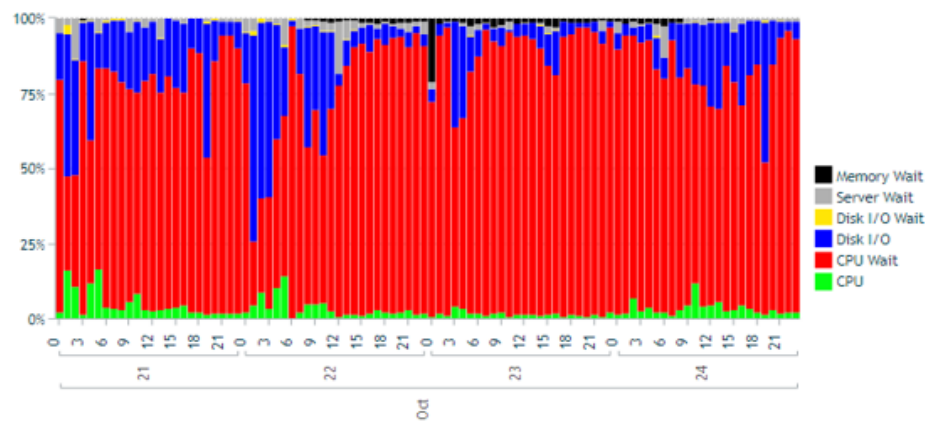


Top Batch Analysis

Hourly MIPS Usage & LPAR Weight (Sum) for CP and zIIP Processors



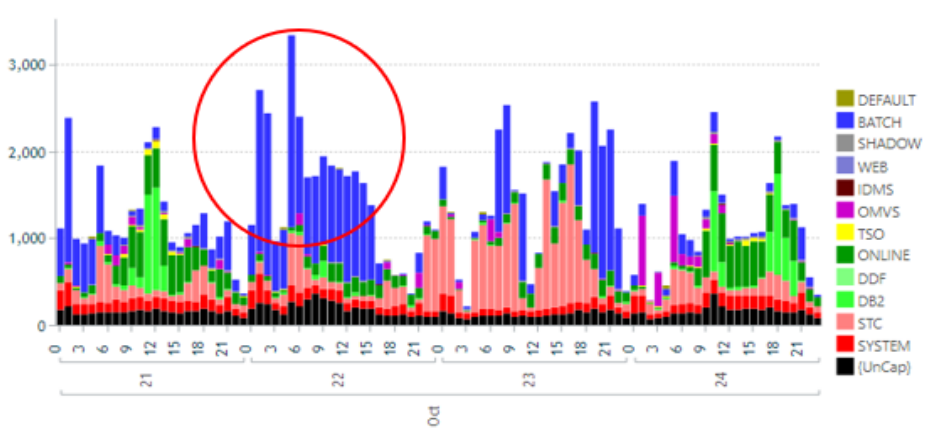
Hourly Primary Active Time Distribution for HiPri Work



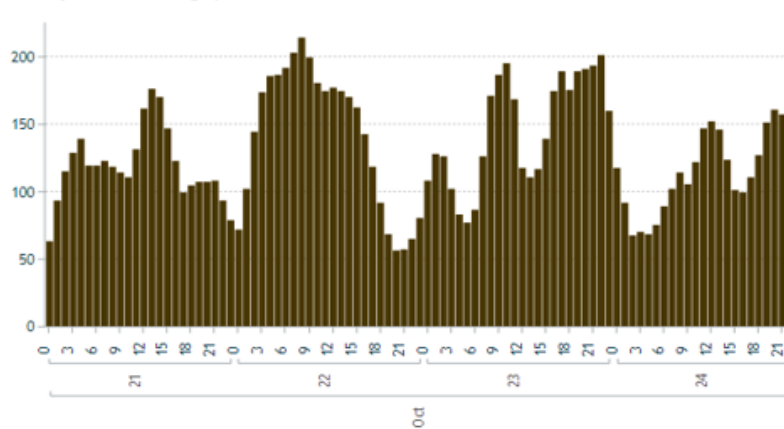
CPC Sysplex LPAR System

Interval
 Workdays 10-11
 Workdays 14-15
 Workdays 08-10, 11-14, 15-17
 Workdays 00-08, 17-24
 Weekends and holidays

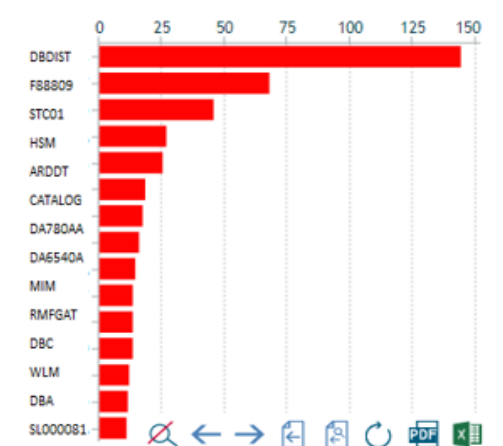
Hourly MIPS Usage per Workload



Hourly R4HA MSU Usage per CPC

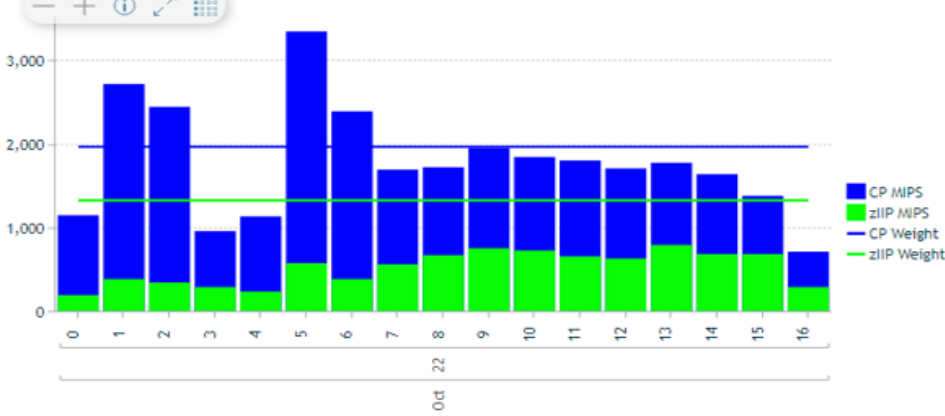


Top-15 CP-MIPS Users for Selected Period

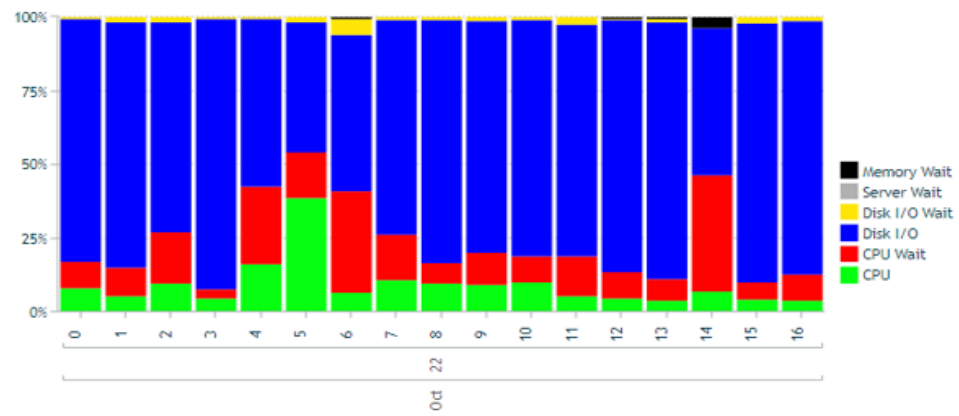


Top Batch Analysis

Hourly MIPS Usage & LPAR Weight (Sum) for CP and zIIP Processors



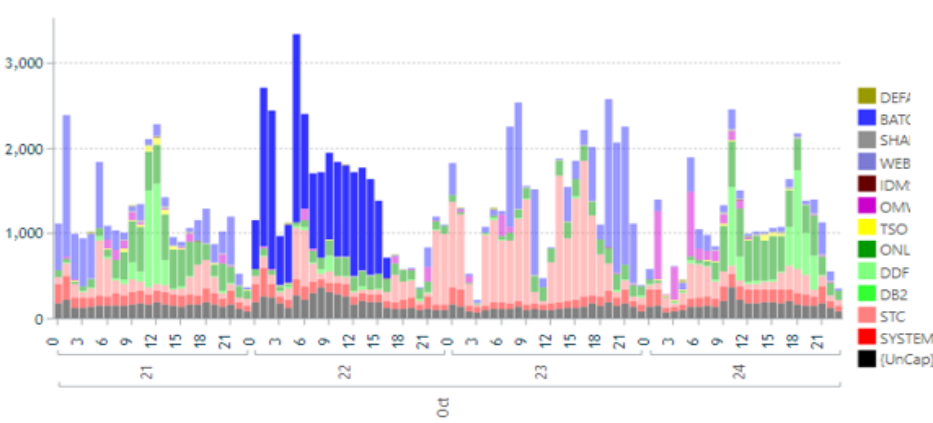
Hourly Primary Active Time Distribution for HiPri Work



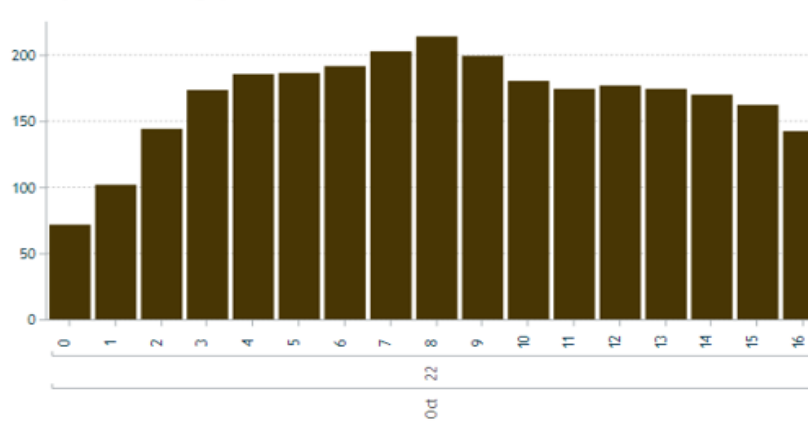
CPC Sysplex LPAR System

Interval
Weekends and holidays

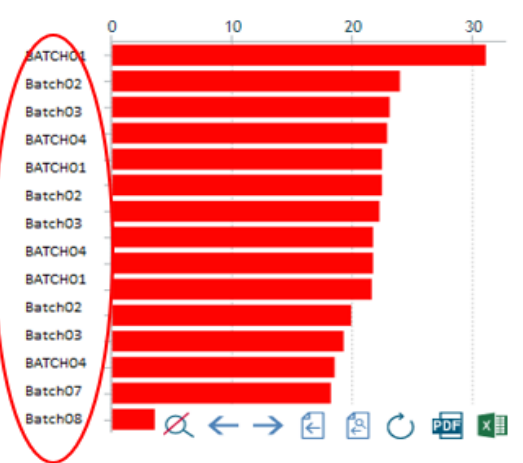
Hourly MIPS Usage per Workload



Hourly R4HA MSU Usage per CPC

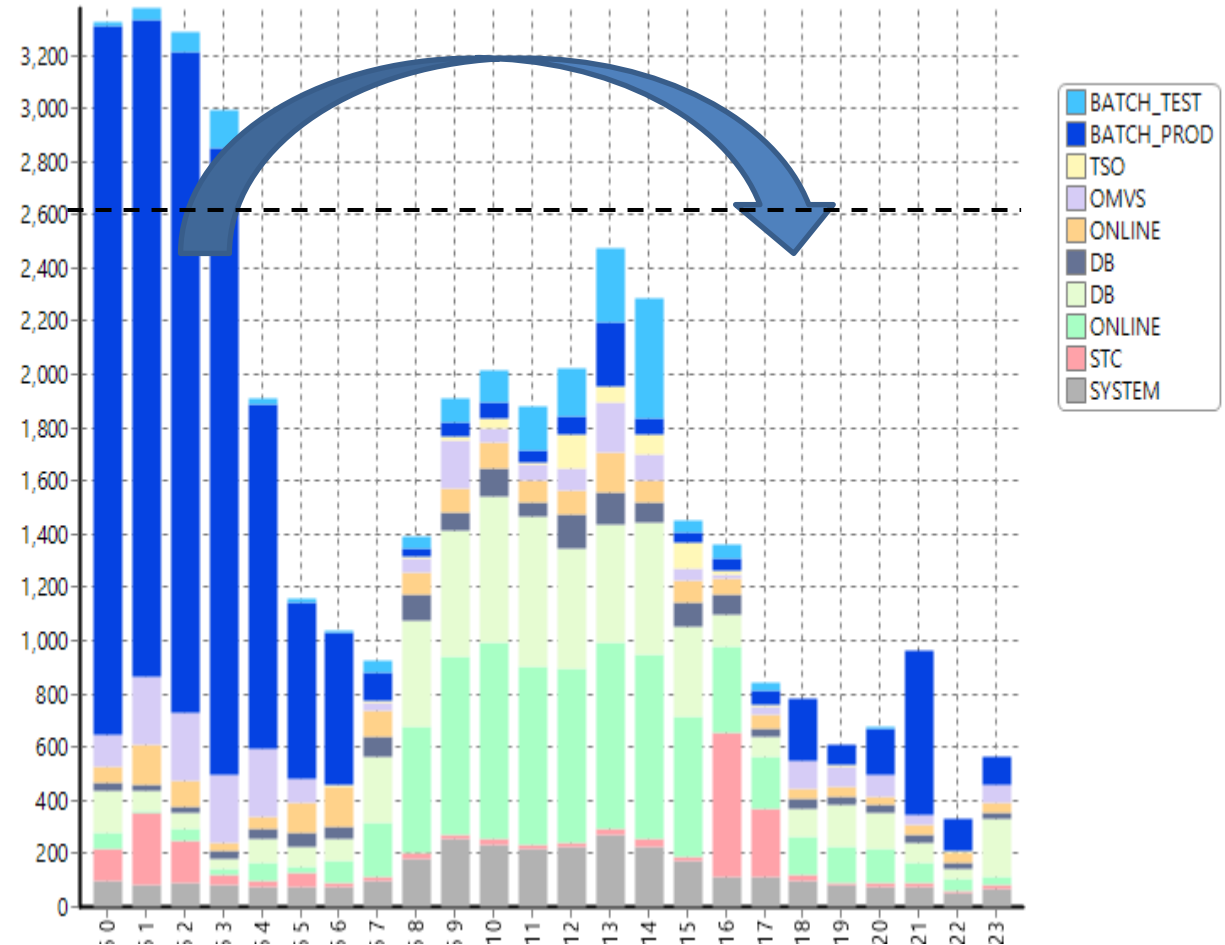


Top-15 CP-MIPS Users for Selected Period



Work Balance

- Workload distribution
- Distribute the batch workload across the Batch service class based on the business need
- Resource group
- Prioritizing tasks
- Code Efficiency
- Finding the Top Batch consumers
- Analysis Batch using tool like APA and Strobe. Review program logic



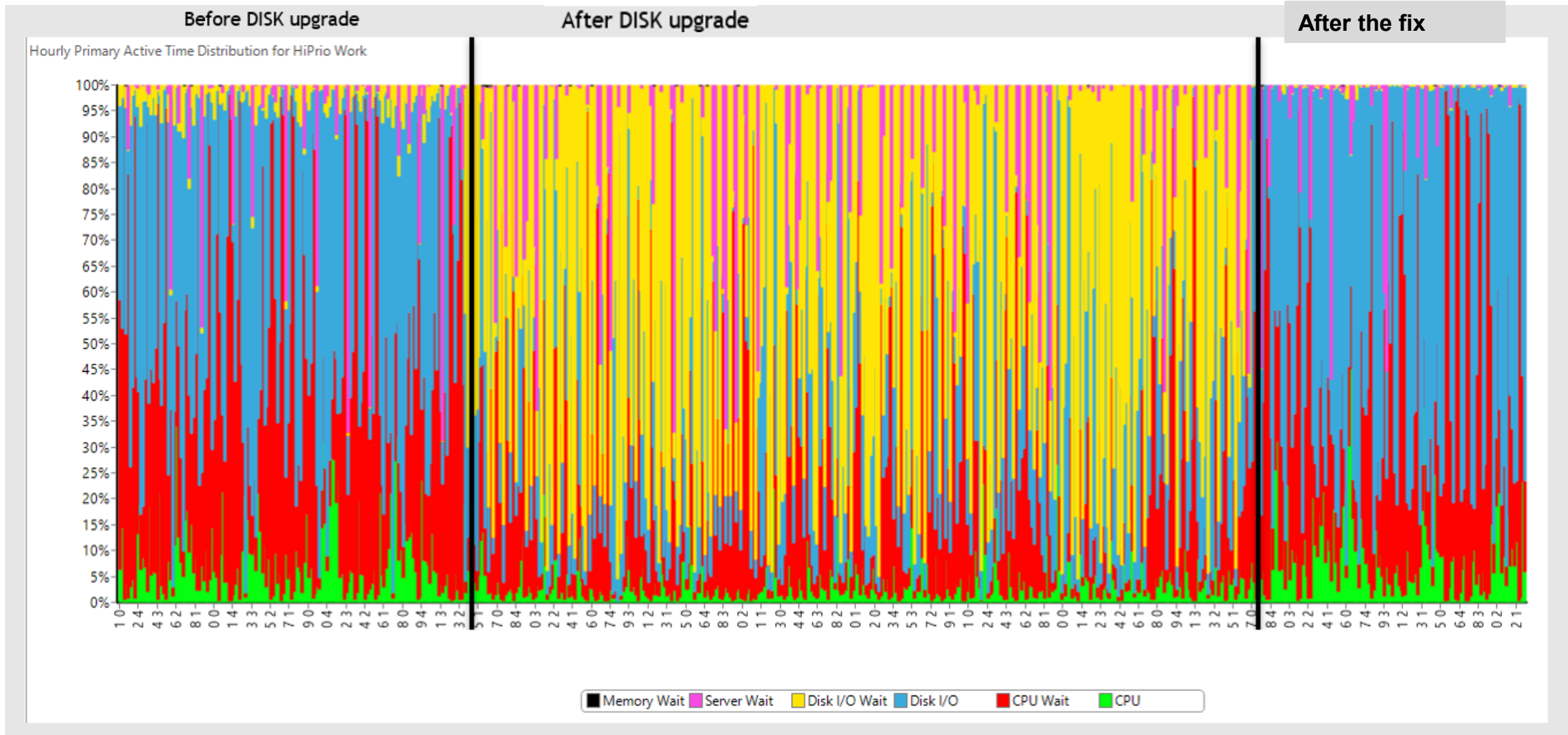
- The Workload Manager(WLM) **monitors a sysplex** and determines how much resource should be given to each item of work in the sysplex to **meet the goals** that you have defined for it.

Workload	Service Class	Total	U	0	1	2	3	4	5	D
Total	Total	1,712	128	261	165	575	222	277	61	24
{UnCap}	{UnCap}	128	128							
SYSTEM	SYSSTC	163		163						
	SYSTEM	98		98						
DB2	DB	75			75					
CICS	ONLINE01	57			57					
STC	STC01	34			34					
CICS	ONLINE02	533				533				
STC	STC02	39				39				
TSO	TSO02	21				4	1	16		
DB2	DDF	238					160	18	59	
BATCH	BATCH01	31						31		
STC	STC03	29					29			
OMVS	OMVS02	2					1	2		
	OMVS01	0					0			
BATCH	BATCH02	241						241		
OMVS	OMVS03	0						0	0	
BATCH	BATCH03	26							1	24
Total		1,712	128	261	165	575	222	277	61	24
%		100%	7%	15%	10%	34%	13%	16%	4%	1%



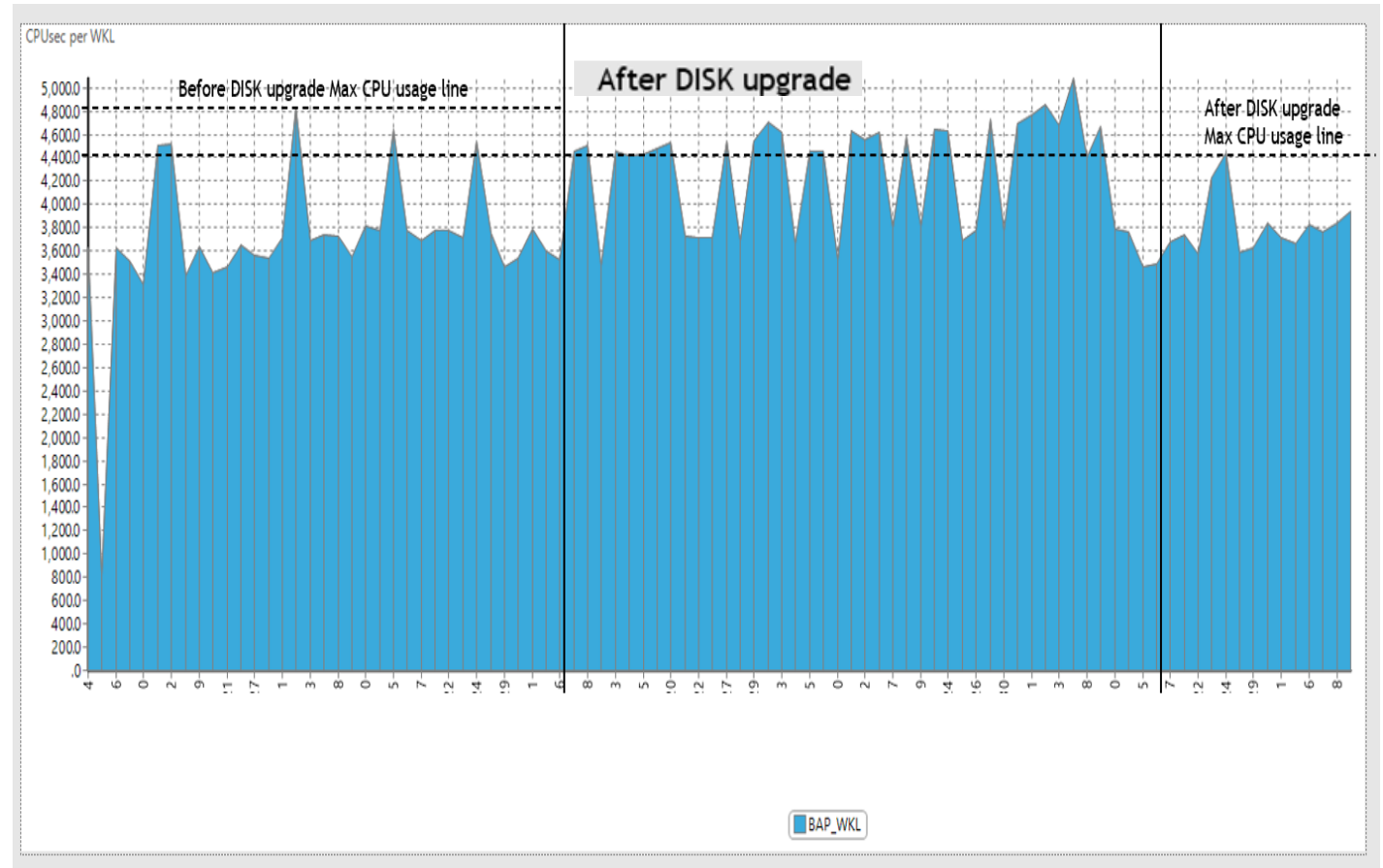
DISK IO WAIT

Disk Device – Batch Performance



Disk Device – Batch Performance

- Daily Batch Job CPU usage has decreased after DISK device upgrade, the decrease is directly indicates better performance in terms of CPU and elapsed time.

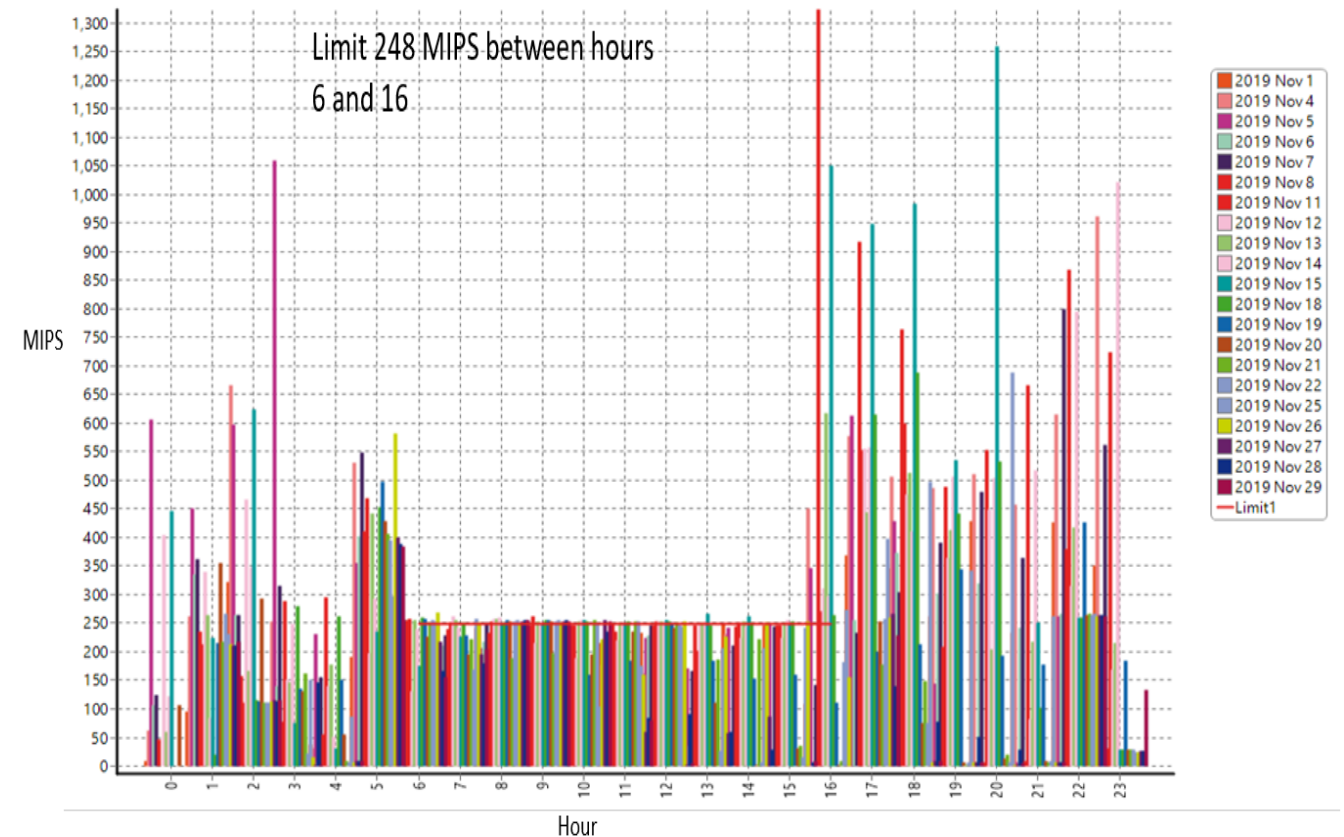




RESOURCE GROUP

Resource Group

- Resource groups allow to define a guaranteed maximum and minimum CPU consumption for work on the sysplex and on each individual member of the sysplex. This allows to
 - Prioritize work
 - Control the minimum and maximum resource consumption



Resource Group Overview

System	Workload	Mips	Resource Group	Resource Group	Service Class	calendar Weekdays
LPAR1	ONLINE	70.3	RG1 +	RG1	STC01	Monday
LPAR2	STC	28.5	RG2 +	RG2	PROD	Tuesday
LPAR3	BATCH	28.2	RG3 +	RG3	TEST	Wednesday
			RG4 +	RG4	PRODPRT	Thursday
			RG5 +	RG5	ONLCICS	Friday
			RG6 +	RG6	ONLPRD	
					STC02	

ResGrp	+ 0	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10	+ 11	+ 12	+ 13	+ 14	+ 15	+ 16	+ 17	+ 18	+ 19	+ 20	+ 21	+ 22	+ 23
RG1 +	67	38	52	106	173	186	156	113	33	50	62	62	66	66	59	42	207	197	252	307	209	251	185	113
RG2 +	22	11	10	58	77	54	54	42									73	69	88	98	91	125	81	13
RG3 +	8	8	7	7	16	25	18	16	27	44	56	58	59	59	56	39	39	25	23	22	20	18	19	52
RG4 +	22	12	24	13	17	38	41	45									92	76	69	59	62	47	43	25
RG5 +	14	6	8	7	15	20	27	9	2	1	1	1	1	1	1	1	2	25	21	25	31	59	34	22
RG6 +	1	1	3	21	49	49	13	1	3	3	1	1	1	1	1	1	1	1	50	101	4	1	8	1
RG6 +							2	1	1	3	5	2	5	5	2	2	0	0	0	1	0	0	1	0

Resource Group Overview

1. Capacity limit in **CPU service units** per second
 1. Minimum and maximum capacity apply **sysplex-wide**
 2. WLM ensures that the limits are met within the sysplex
2. Percentage of the **LPAR share** in general processor
 1. **Accommodate specialty** processor capacity
 2. Minimum and maximum capacity has a **system scope**
 3. WLM ensures that the limits are met on each system within the sysplex
3. **Number of general processors (CPs)**
 1. **Accommodate specialty** processor capacity
 2. Minimum and maximum capacity has a **system scope**
 3. WLM ensures that the limits are met on each system within the sysplex
4. Workload **MSU**
 1. Minimum and maximum capacity is expressed in million service units per hour and apply **sysplex-wide**
 2. WLM ensures that the limits are met within the sysplex

Note:

- *Resource group capacity includes cycles in both **TCB and SRB mode**.*
- *Resource group **minimum can equal resource group maximum**.*
- ***Maximum- applies to all service classes in that resource group.***
- ***Maximum is enforced.***
- ***Minimum- The default is 0, The minimum capacity setting has no effect when work in a resource group is meeting its goals.***

Resource Group Min and Max Limit

- Percentage of the **LPAR share** in general processor

Date	Time	SYSTEM	CPUTM	PCTDLCDE	RESGROUP	R723GGDE	R723GGMN	R723GGMX	R723GMNS	SRVCLASS	WKLDNAME
				CPU DELAY*PERCENT*NOT INCLUDING*WLM CAP	RESOURCE *GROUP*	RESOURCE*GROUP*DESCRIPTION	MIN CAPACITY* UNWEIGHT *CPU SU	MAX CAPACITY* UNWEIGHT *CPU SU	MINIMUM* CAPACITY* SPECIFIED?	SERVICE/ REPORT*C LASS*NA ME	WORKLOAD *GROUP*NA ME
28-Sep-22	8:01	****	73.06	19.4	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	8:31	****	749	4.5	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	9:00	****	878.8	7.1	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	9:01	****	19.05	25.3	CPLIM50	LIMIT TO 50%OF THE LPAR WEIGHT	0	50		PRD	BATCH_P
28-Sep-22	9:31	****	1087	22	CPLIM50	LIMIT TO 50%OF THE LPAR WEIGHT	0	50		PRD	BATCH_P
28-Sep-22	9:48	****	368.5	26.8	CPLIM50	LIMIT TO 50%OF THE LPAR WEIGHT	0	50		PRD	BATCH_P
28-Sep-22	10:01	****	227.7	19.8	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	10:31	****	620	22	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	11:01	****	782.3	15.9	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	11:31	****	853.1	12.2	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	11:39	****	280.3	5.6	CPLIM30	LIMIT TO 30% OF THE LPAR WEIGHT	0	30		PRD	BATCH_P
28-Sep-22	12:01	****	1006	8.9	CPLIM50	LIMIT TO 50%OF THE LPAR WEIGHT	0	50		PRD	BATCH_P
28-Sep-22	12:20	****	753	11	CPLIM50	LIMIT TO 50%OF THE LPAR WEIGHT	0	50		PRD	BATCH_P

Resource Group – Service Units

date	Time	SYSTEM	RESGROUP	SRVCLASS	WKLDNAME	R723GGMN	R723GGMX	SU per Sec	R723GMNS	RG MAX Limit	CPUTM	CPUUNITS	R723GGDE
25-Oct-22	4:19	****		STC_L	STC						42.51	3457128	
25-Oct-22	4:39	****		STC_L	STC						57.14	4191511	
25-Oct-22	5:19	****		STC_L	STC						390.8	31796626	
25-Oct-22	5:39	****		STC_L	STC						127.9	9831825	
25-Oct-22	5:59	****		STC_L	STC						347.6	27969791	
25-Oct-22	6:00	****		STC_L	STC						21.94	1772369	
25-Oct-22	6:19	****	LIMSTC	STC_L	STC	0		15049	Y	18058800	207.7	16931330	Capping STC_L
25-Oct-22	6:39	****	LIMSTC	STC_L	STC	0		15049	Y	18058800	214.5	17482074	Capping STC_L
25-Oct-22	6:59	****	LIMSTC	STC_L	STC	0		15049	Y	18058800	71.89	5832412	Capping STC_L
25-Oct-22	7:19	****	LIMSTC	STC_L	STC	0		15049	Y	18058800	45.92	3722676	Capping STC_L
25-Oct-22	7:39	****	LIMSTC	STC_L	STC	0		15049	Y	18058800	2.785	194972	Capping STC_L
25-Oct-22	7:59	****	LIMSTC	STC_L	STC	0		15049	Y	18058800	4.218	302631	Capping STC_L

Resource Group for CICS Region

1. You **cannot** assign a resource group to service classes representing transaction-oriented work, such as CICS or IMS **transactions (transaction goal)**.
2. If you want to assign a minimum or a maximum processor capacity and a maximum amount of memory to CICS or IMS work, you can do so by assigning a resource group to **their regions**.

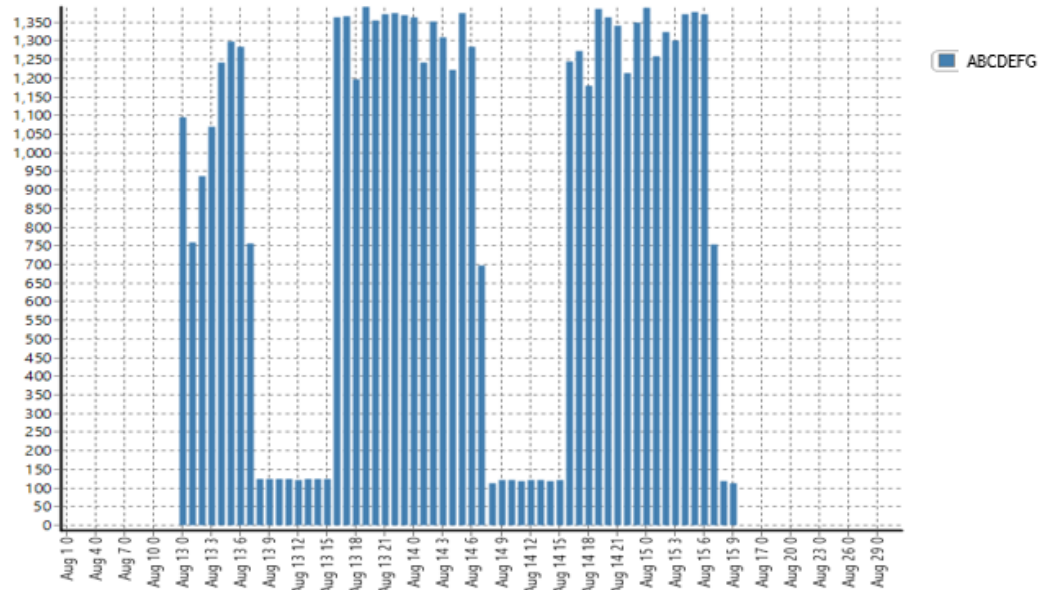
Date	Time	SYSTEM	RESGROUP	SRVCLASS	WKLDNAME	R723GGMN	R723GGMX in MSU	R723GMNS	MSU72	PCTDLCDE	PCTDLPDE	CPUTM	R723GGDE
17-Oct-22	16:30	****	RG1	ONL_TEST	ONLINE	0	98		35	3.2	0	456.4	LIMIT for TEST and DEV
17-Oct-22	17:00	****	RG1	ONL_TEST	ONLINE	0	98		34	1.6	0	454.8	LIMIT for TEST and DEV
17-Oct-22	17:00	****	RG1	ONL_TEST	ONLINE	0	98		34	1.6	0	454.8	LIMIT for TEST and DEV
17-Oct-22	17:30	****	RG1	ONL_TEST	ONLINE	0	98		33	1.3	0	440	LIMIT for TEST and DEV
17-Oct-22	18:00	****	RG1	ONL_TEST	ONLINE	0	98		42	1.4	0	558.6	LIMIT for TEST and DEV
17-Oct-22	18:30	****	RG1	ONL_TEST	ONLINE	0	98		62	3.8	0	811.4	LIMIT for TEST and DEV
17-Oct-22	19:00	****	RG1	ONL_TEST	ONLINE	0	98		62	4.3	0	811.9	LIMIT for TEST and DEV
17-Oct-22	19:30	****	RG1	ONL_TEST	ONLINE	0	98		84	9.4	1.5	1105	LIMIT for TEST and DEV
17-Oct-22	20:00	****	RG1	ONL_TEST	ONLINE	0	98		91	5.1	34.9	1196	LIMIT for TEST and DEV
17-Oct-22	20:30	****	RG1	ONL_TEST	ONLINE	0	98		38	3.6	1.3	505.3	LIMIT for TEST and DEV
17-Oct-22	21:00	****	RG1	ONL_TEST	ONLINE	0	98		31	0.7	0	409.6	LIMIT for TEST and DEV
17-Oct-22	21:30	****	RG1	ONL_TEST	ONLINE	0	98		30	2	0	398.3	LIMIT for TEST and DEV
17-Oct-22	22:00	****	RG1	ONL_TEST	ONLINE	0	98		26	0.5	0	343.9	LIMIT for TEST and DEV
17-Oct-22	22:30	****	RG1	ONL_TEST	ONLINE	0	98		25	1.4	0	329.7	LIMIT for TEST and DEV
17-Oct-22	23:00	****	RG1	ONL_TEST	ONLINE	0	98		30	1.1	0	395.6	LIMIT for TEST and DEV
17-Oct-22	23:30	****	RG1	ONL_TEST	ONLINE	0	98		2	0.1	0	28.75	LIMIT for TEST and DEV

Resource Group MIPS Usage

Date/Hour MIPS Matrix (RED=90%Max/YELLOW=80%Max)

Month	Day	+ 0	+ 1	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10	+ 11	+ 12	+ 13	+ 14	+ 15	+ 16	+ 17	+ 18	+ 19	+ 20	+ 21	+ 22	+ 23
Aug	10	0																							
	11	0																							
	12	0																							
	13	1,095	758	937	1,070	1,241	1,299	1,284	756	123	124	123	123	121	124	123	123	1,364	1,365	1,195	1,391	1,355	1,372	1,374	1,368
	14	1,362	1,241	1,350	1,309	1,223	1,373	1,285	698	114	121	122	119	120	122	118	121	1,245	1,274	1,180	1,385	1,362	1,339	1,215	1,349
	15	1,387	1,260	1,324	1,300	1,370	1,377	1,372	754	118	113	0													
	16	0																							
	17	0																							
	18	0																							
	19	0																							

Hourly MIPS per WKL (From SMF Type 30: Uncaptured NOT included & DDF counted as DB2)



MIPS Users

	Total	CP	IIP
Total	108.9	103.0	5.9
ABCDEFGF	69.5	69.5	
	6.4	6.4	
	5.3	4.9	.3
	2.8	2.8	
	2.3	2.3	
	2.1	.6	1.5
	1.9	.6	1.3
	1.9	.6	1.3
	1.7	.9	.8
	1.7	1.7	
	1.5	1.5	
	1.3	1.3	
	1.0	1.0	
	.8	.8	
	.7	.7	
	.7	.7	
	.6	.6	
	.6	.6	
	.5	.4	.1
	.4	.4	
	.4	.4	
	.3	.3	
	.3	.3	
	.3	.1	.2
	.3	.3	
	.3	.3	
	.2	.2	.1
	.2	.2	

Sysplex	System	Type	MIPS Used	MIPS Weight	MIPS Limit
		IIP	175	1,540	2,775
		CP	132	619	2,899
		IIP	31	548	1,450
	TEST	CP	34	145	1,475
		IIP	3	557	1,475
		CP	19	43	1,523

Service Class	MIPS	Job Class	MIPS
Total	70	Total	70
	70	2	70

Task Type	MIPS
Total	69.5
JOB	69.5

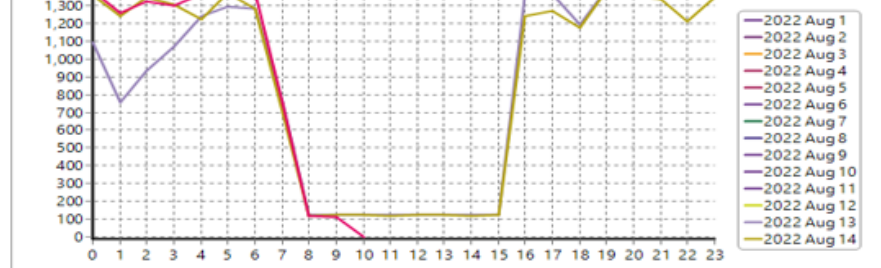
Enclave CPU Time
Empty result
This dataset shows the following:
- Int30 Job
- MIPS

The following drill-down criteria affect this object:
Int30 • Job = WDBXDT7T
Lpar • Cluster = TDCPLEX
Lpar • System = DMVS

The following global criteria affect this object:
calendar • Date = 2022 Aug
Lpar • Original System = 1
Processor Type = CP or IIP
SumLevel = Detail

The following local criteria affect this object:
Measure = Enclave Cpu Time

Daily MIPS Profile



SMF TYPE30 Records

TYPE30 SubType 5 : JOB TERMINATION EVENT
 TYPE30 SubType 4: STEP TERMINATION EVENT

SYSTEM	JESNR	JOB	JINIDATE	JINITIME	JTRMDATE	JTRMTIME	JELAPSTM	CPUSEC	CPUZIPTM	CPUZIETM	EXCPDASD	ABEND	ABNDRSNC	CONDCODE	RACFGRUP	RACFUSER	PGMRNAM	RESGROUP	WLMNAME	SRVCLASS	TYPETASK	STEPNR	JOBCLASS	
****	10564	ABCD	23-Mar-22	18:00:03	23-Mar-22	19:32:05	1:32:03	3530	0:00:00	0:00:00	105		0	0 DEV	OPC	MMS	RG1	BATCH	PROD	JOB	2	I		
****	4657	*****	23-Mar-22	3:54:47	23-Mar-22	5:43:41	1:48:54	1158	0:00:00	0:00:00			0	0 DEV	OPC	MNS		BATCH	PROD	JOB	93	I		
****	4245	EFGH	23-Mar-22	2:30:55	23-Mar-22	4:01:47	1:30:52	941	0:00:00	0:00:00	3056182	RETURN	0	4 DEV	OPC	OPT		BATCH	PROD	JOB	1	I		
****	4451	*****	23-Mar-22	3:18:15	23-Mar-22	4:33:30	1:15:14	899.3	0:00:00	0:00:00	734177	RETURN	0	4 DEV	OPC	PGM		BATCH	PROD	JOB	1	I		
****	5369	*****	23-Mar-22	6:01:04	23-Mar-22	6:30:22	0:29:17	703.1	0:00:00	0:00:00	3453659		0	0 DEV	OPC	DKK		BATCH	PROD	JOB	1	I		
SYSTEM	JESNR	JOB	STEPNR	STEPNAME	PROGRAM	INITDATE	INITTIME	TERMDATE	TERMTIME	SELAPSTM	CPUSEC	CPUZIPTM	CPUZIETM	EXCPDASD	ABEND	ABNDRSNC	CONDCODE	RACFGRUP	RACFUSER	PGMRNAME	RESGROUP	WLMNAME	SRVCLASS	TYPETASK
****	10564	ABCD	1	STEP1	PP87	23-Mar-22	18:00:03	23-Mar-22	19:32:05	1:32:03	3530	0:00:00	0:00:00	105		0	0 DEV	OPC	MMS	RG1	BATCH	PROD	JOB	
****	4245	EFGH	1	SAS	SAS	23-Mar-22	2:30:55	23-Mar-22	4:01:46	1:30:51	941	0:00:00	0:00:00	3056182	RETURN	0	4 DEV	OPC	MNS		BATCH	PROD	JOB	
****	4451	*****	1	SAS	SAS	23-Mar-22	3:18:15	23-Mar-22	4:33:30	1:15:14	899.3	0:00:00	0:00:00	734177	RETURN	0	4 DEV	OPC	OPT		BATCH	PROD	JOB	
****	5369	*****	1	SAS	SAS	23-Mar-22	6:01:04	23-Mar-22	6:30:22	0:29:17	703.1	0:00:00	0:00:00	3453659		0	0 DEV	OPC	PGM		BATCH	PROD	JOB	
****	4657	*****	18	MAIN	FOPMAIN	23-Mar-22	3:56:32	23-Mar-22	5:01:27	1:04:55	688.8	0:00:00	0:00:00	137193		0	0 DEV	OPC	DKK		BATCH	PROD	JOB	

Delay Report - Example

The Delay report allows you to determine which system resources are causing delays for jobs or job groups, and to what extent the jobs are delayed

The below table data from SMF72 (Selected only a few delay variables)

WKLDNAME	SRVCLASS	CPUTM	PCTDLCCA	PCTDLCDE	R723CQDTX	PCTDLIDL	PCTDLIOD	PCTDLUNK	PCTDLZIP	PCTDLQ	PCTDLSHS	R723CCVT
			CPU*CAPPING*DELAY *PERCENT	CPU DELAY*PERCENT*NOT INCLUDING*WLM CAP	TOTAL*QUEUE* DELAY*TIME	IDLE*DELAY* PERCENT	DASD*DELAY* PERCENT	UNKNOWN*DELAY *PERCENT	ZIP DELAY*PERCENT	QUEUE*DELAY*PERCENT *WAIT FOR*SERVER	PCT SERVER*HIPERSPACE* PAGING*DELAY	JCL*CONVERSION *DELAY TIME
BATCH	TEST	11.13	0	52.1	10.76	4.8	0	32.3	0	0	0	1.049
BATCH	TEST	50.48	0	45.4	57.22	6.8	0	33.4	0.2	0	0	4.194
BATCH	TEST	11.58	0	42.6	22.52	8.7	0	34	0.1	0	0	1.049
BATCH	TEST	0.028	0	40	0.353	0	0	20	0	0	0	0
BATCH	TEST	2692	20	31.8	264.7	41.6	0	6.1	0	0	0	6.291
BATCH	TEST	2983	5	28	265.6	42.9	0.1	4.4	0	0	0	4.194
BATCH	TEST	2763	0	25.8	28826	49.9	0	4.5	0	0	0	6.291

Batch Job CPU usage in DB2

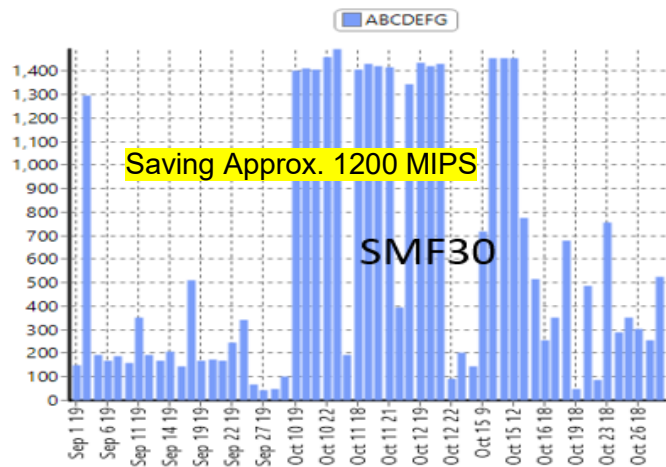
① Date/Hour MIPS Matrix (RED=90%Max/YELLOW=80%Max)

Month	Day	+ 10	+ 11	+ 12	+ 13	+ 14	+ 15	+ 16	+ 17	+ 18	+ 19	+ 20	+ 21	+ 22	+ 23
Oct	8														
Oct	9														
Oct	10									1,401	1,412	1,405	1,460	1,493	
Oct	11								1,408	1,431	1,419	1,414	395		
Oct	12								1,342	1,433	1,421	1,432	91		
Oct	13								203						
Oct	14								147						
Oct	15	1,456	1,454	1,454	775			513							
Oct	16								257						
Oct	17								353						
Oct	18								678						
Oct	19								50						
Oct	20								84						
Oct	21														

① DB2 Date / Hour Package MIPS Matrix (RED > 90% of Max / YELLOW > 75% of Max)

Year	Month	Day	+ 0	+ 7	+ 13	+ 16	+ 18	+ 19	+ 22
2022	Sep	21							111
		22							159
		25							190
		26							49
		27							28
		28							31
		29							66
Oct	11								4,496
	12								3,294
	13							181	
	14							132	
	15				2,769	124			
	16							198	
	17							277	
	18							457	

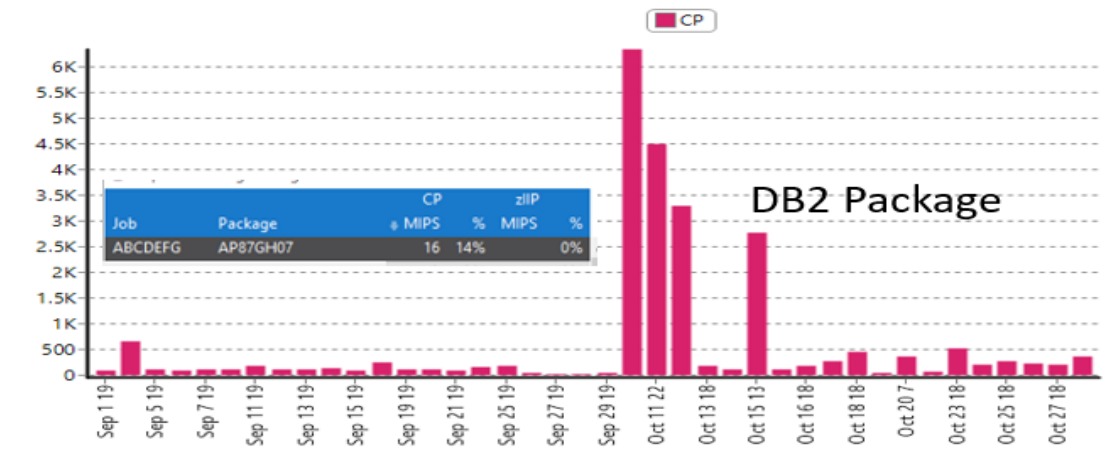
① Hourly MIPS per WKL (From SMF Type 30: Uncaptured NOT included &...)



① MIPS Consumers

Name	MIPS	CPUsec
Total	201.6	654,859.4
ABCDEFG	24.5	79,630.1
	11.3	36,857.1
	9.4	30,596.8
	8.1	26,153.0
	8.0	25,917.3
	6.7	21,774.3
	6.3	20,540.1
	6.3	20,350.4
	5.8	18,865.9
	5.2	16,865.0
	5.0	16,092.1
	4.7	15,427.3
	4.6	15,076.0
	3.5	11,516.0
	3.3	10,767.7
	3.1	10,214.2
	2.8	9,252.5
	2.7	8,760.1
	2.4	7,837.8

① Hourly Package MIPS Usage



Note: The Package Peaks are recorded at the transaction end time, the transaction could have run for hours

Key Takeaways

- **Balance Your Batch Workload**
Proper batch workload distribution reduces peak consumption, lowers costs, and improves overall system performance.
- **Validate DISK Upgrades with Measured Impact**
Always measure batch CPU and elapsed time before and after a DISK upgrade to ensure response times improve — not degrade.
- **Implement Resource Groups for Batch Processing**
Control peak utilization, stabilize performance, and reduce monthly billing through structured workload governance.
- **Proactively Manage Batch Delays**
Identify and resolve batch bottlenecks to improve performance, predictability, and SLA adherence.
- **Optimize Batch on DB2**
Measure DB2 batch behavior and eliminate looping programs to significantly reduce CPU consumption.

Since batch plays a major role in terms of both costs and performance in the mainframe, It is worth doing it!

Your feedback is important!

Submit a session evaluation for each session you attend:

www.share.org/evaluation

Session ID: TECH_168s1
Session Title: Batch
Performance: Lessons from a
Customer Case
Session Date/Time: Tue Feb
24, 9:15am-10:15am

