



# zBNA Lab Guide

zpcr@us.ibm.com John Burg Valerie Spencer

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Page 2 of 39 March 10, 2014 The purpose of this zBNA Lab is to provide an exercise in running the zBNA tool; utilizing its functions to successfully complete a simple Batch analysis.

In this exercise you will complete the following tasks:

- 1) Explore the Main Screen
  - Start zBNA and load in two data files
- 2) Filter Data
  - Use the job filtering capabilities (CPU time, Service classes, exclude jobs, key jobs and job masking) to select a subset of candidate Batch jobs
  - Save as zBNA File
  - Filter Top Program Pct
  - Load Step level records, and drill down into the Step details
- 3) Display a Graph and Create Reports Display the job subset created with the filters
- 4) Display SMF 42(6) DASD Dataset Analysis
  - Job/Dataset Report
  - Top 10 Dataset Report
- 5) Perform Alternate Processor Analysis Assess the impact of an alternate CPU technology
- 6) Explore zEDC Compression Identify data sets that will benefit from moving to zEDC cards
- 7) Save the final zBNA file

# Task 1 - Exploring the Main Screen

1. To start the System z Batch Network Analyzer (zBNA), first double-click the icon.



2. Click File, then Load Files ...



 If this is your first time using the zBNA tool, select the SMF70 (.edf) and z/OS SMF (.dat) files by clicking the appropriate *Browse* buttons. Navigate to C:\CPSTOOLS\zBNA. Both files are required to be loaded together. Note that a previously saved study file (.zBNA) is required to use the *Browse For zBNA File* button, in addition to the original SMF70 (.edf) and z/OS SMF (.dat) files.

Please input either t	he study file. Or the two data input files. Then select "Import" to bring the files into the program.
Browse For <u>z</u> BNA File	Choose the zBNA Study file
Please input the SMI	70 and SMF30 records below.
Browse For SMF <u>7</u> 0 File	C:\CPSTOOLS\zBNA\testrel4.edf
Browse For z/OS SMF File	C:\CPSTOOLS\zBNA\testrel4.dat
	Import Cancel

The SMF70 file name is **testrel4.edf** and **testrel4.dat** for the z/OS SMF one. Click *Import*.

4. The zBNA tool will load the desired data in tabular format with job information displayed. At the bottom of the panel the messages indicate that **5147 jobs** have been loaded from **JOB end records (SMF 30 subtype 5)**.

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Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cla	Elapsed Ti	CPU Time	zAAP Time	zllP Time	CPU Intens	EXCPs To	op Program	Top Pgm %	Condition
	M373Q3S	7	J	37397332	BATPRDDF	12.6m	204.8s	0.0s	0.3s	27.0%	193,926 IE	FIIC	0.0%	0000 -
	M3DQLSD	3	J	3DQ3DQ32	BATPRDDF	30.1m	26.5s	0.0s	0.0s	1.5%	11,995 D	SNECP10	3.0%	0000
	M0VPI03V	2	Y	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	11.1%	9 IE	FIIC	0.0%	0004
10	M0D3TSE5	3	J	32092032	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.9%	824 IE	FIIC	0.0%	0000
	M3SK891A	10	J	3SK9SK32	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.1%	800 IE	FIIC	0.0%	0000
	M4E5HQ3A	5	J	4E595732	BATPRODE	4.0s	0.4s	0.0s	0.0s	7.6%	3,554 IE	FIIC	0.0%	0000
10	DH03UXQ3	2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	4.3%	10 IE	FIIC	0.0%	0000
	M4E5HYPA	3	J	4E595732	BATPRODE	8.0s	0.2s	0.0s	0.0s	1.9%	809 IE	FIIC	0.0%	0000
	MUVPIU3V	2	J	0FD12032	SYSSIC	0.05	0.05	0.05	0.05	33.3%	9 IE	FIIC	0.0%	0004
	DH03UXQ4	2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	2.4%	10 IE	FIIC	0.0%	0000
	M3DLWDSA	/	1	3DL12032	BATPRODE	1.05	0.15	0.05	0.05	8.1%	315 IE	FIIC	0.0%	0000
	MUFDW57	/		0F493332	BATPRODE	29.0s	1.05	0.05	0.05	5.5%	5,882 IE	FIIC	0.0%	0000
	MUD3FUL7	5	1	32092032	BATPRODE	64.US	2.85	0.05	0.05	4.4%	65,048 IE	FIIC	0.0%	0000
	M320MQ4	4		32092032	BATPRODE	19.05	4.45	0.05	0.25	22.0%	12,303 IE	FIIC	0.0%	0000
	M3EUZAS	4		3E09E032	BATPRODE	29.911	34.38	0.05	0.05	1.9%	3,079 IE	FIIC	0.0%	0000
	M357710	20		25705722	BATERDOF	20.05	0.40	0.05	0.05	0.1%	2,217 10		0.0%	0000
	M3577LS	4		30790732	BATPRODE	4.05	0.48	0.05	0.05	9.1%	2,0111E		0.0%	0000
	09222010	4	J	SZ092032	BATTOTOE	0.00	0.10	0.05	0.05	2.170	2,030 1E		0.0%	0000
	09222014	6	A	6V012042	BATTOTOF	0.05	0.15	0.05	0.05	12 004	274 15	FIIC	0.0%	0000
-	M30DMDS	18	1	30D0K332	BATPRODE	31.5m	28.16	0.05	0.05	12.0%	3 228 140 IE	FIIC	0.0%	0000
	M4EV/HEG2	5		3EV3EV32	BATERDOF	15.9m	56.90	0.03	0.05	6.0%	162 815 10	FIIC	0.0%	0000
	MOWKUG51	1	A	0GE0GE42	BATTSTOF	0.05	0.05	0.03	0.05	26.7%	145 IF	FIIC	0.0%	0000
	MOWKUG5D	1	A	0GE0GE32	BATTSTDE	0.05	0.03	0.03	0.05	47.6%	171 IE	FIIC	0.0%	0000
	0823201A	6	A	6Y012042	BATTSTOF	0.05	0.15	0.05	0.05	11.8%	233 IE	FIIC	0.0%	0000
	M4EVHEG	5		3EV3EV32	BATPRODE	13.05	0.45	0.05	0.05	2.7%	1 724 IE	FIIC	0.0%	0000
	M4E0YEDF	51	B	4E595732	BATCHHI	169.0s	30.6s	0.05	0.0s	18.1%	62.829 IE	FIIC	0.0%	0000
	M354B3S5	11	Ĵ	35495732	BATPRODE	234 0s	45.5s	0.05	0.05	19.4%	77,722 IF	FIIC	0.0%	0000
	M3B1FR3	15	Ĵ	3B13B132	BATPRDDF	9.0s	0.5s	0.0s	0.0s	5.3%	10,830 IE	FIIC	0.0%	0000
	M3B1ER7	15	1	3B13B132	BATERDDE	7.05	0.55	0.05	0.05	6.5%	10 795 15	FIIC	0.0%	0000
147 Jobs										Only	JOB end recon	ds (type 30	subtype 5) ha	ve been loade

 Individual jobs may be selected with a single click. Right-clicking the first job, M373Q3S, displays a menu. Select Show Details to display the Step details. However, at this point, zBNA will only display Job End record information (not Step Detail) because the SMF 30 subtype 4 data has not been loaded. Once filtering is completed later, the Step Detail records will be loaded.

	2 Daten Net	work Analyzer	r - TEST FILE											
<u>File Edit Filt</u>	ters <u>A</u> ction	n <u>G</u> raph <u>R</u> e	eports <u>H</u> elp	)										
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							SYS	ID:			5121			
							Part	ition Logical L	Itilization:		93.7%			
							CPC	Utilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cla	Elapsed Ti	CPU Time	zAAP Time	zllP Time	CPU Intens	EXCPs	Top Program	Top Pgm %	Condition
M	1373Q3S	7	J	37397332	BATPRDDF	12.6m	204.8s	0.0s	0.3s	27.0%	193,92	6 IEFIIC	0.0%	0000 🔺
M	I3DQLSD	Show Step De	etails	3DQ3DQ32	BATPRDDF	30.1m	26.5s	0.0s	0.0s	1.5%	11,99	5 DSNECP10	3.0%	0000 =
M	IOVPI03V	Explude Data		0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	11.1%		9 IEFIIC	0.0%	0004
M	I0D3TSE5	Exclude Data		32092032	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.9%	82	4 IEFIIC	0.0%	0000
M	I3SK891A	Toggle Key B	atch	3SK9SK32	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.1%	80	DIEFIIC	0.0%	0000
M	I4E5HQ3A	Job Dataset I	Report	4E595732	BATPRDDF	4.0s	0.4s	0.0s	0.0s	7.6%	3,55	4 IEFIIC	0.0%	0000
D	H03UXQ3	4		0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	4.3%	1	DIEFIIC	0.0%	0000
M	I4E5HYPA	3	J	4E595732	BATPRDDF	8.0s	0.2s	0.0s	0.0s	1.9%	80	9 IEFIIC	0.0%	0000
M	10VP103V	2	J	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	33.3%		9 IEFIIC	0.0%	0004
D	H03UXQ4	2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	2.4%	1	DIEFIIC	0.0%	0000
M	I3DLWDSA	7	J	3DL12032	BATPRDDF	1.0s	0.1s	0.0s	0.0s	8.1%	31	SIEFIIC	0.0%	0000
M	IOFDW57	7	J	0F493332	BATPRDDF	29.0s	1.6s	0.0s	0.0s	5.5%	5,88	2 IEFIIC	0.0%	0000
M	I0D3FUL7	5	J	32092032	BATPRDDF	64.0s	2.8s	0.0s	0.0s	4.4%	65,04	BIEFIIC	0.0%	0000
M	1320MQ4	4	J	32092032	BATPRDDF	19.0s	4.4s	0.0s	0.2s	22.6%	12,36	3 IEFIIC	0.0%	0000
M	I3E0ZAS	4	J	3E09E032	BATPRDDF	29.9m	34.3s	0.0s	0.0s	1.9%	3,07	9 IEFIIC	0.0%	0000
M	13577HS3	28	J	35795732	BATPRDDF	28.0s	1.7s	0.0s	0.0s	5.7%	7,21	7 IEFIIC	0.0%	0000
M	13577LS	4	J	35795732	BATPRDDF	4.0s	0.4s	0.0s	0.0s	9.1%	2,61	1 IEFIIC	0.0%	0000
M	1320XT3	4	J	32092032	BATPRDDF	55.0s	1.2s	0.0s	0.0s	2.1%	2,63	DIEFIIC	0.0%	0000
Q	823201A	6	A	6YO12042	BATISTOF	0.0s	0.1s	0.0s	0.0s	9.4%	27	4 IEFIIC	0.0%	0000
Q	1823201A	6	A	6YO12042	BATISTOF	0.0s	0.1s	0.0s	0.0s	12.8%	27	ZIEFIIC	0.0%	0000
M	130DMDS	18	J	30D9K332	BATPRDDF	31.5m	28.1s	0.0s	0.0s	1.5%	3,228,14	UIEFIIC	0.0%	0000
M	I4FVHEG3	5	J	3FV3FV32	BATPRODE	15.8m	56.8s	0.0s	0.0s	6.0%	162,81	SIEFIIC	0.0%	0000
M	IUWKUG5J	1	A	UGEUGE42	BATISTOF	0.05	0.05	0.05	0.05	26.7%	14	DIEFIIC	0.0%	0000
M	IUWKUG5D	1	A	UGEUGE32	BATTOTOS	0.05	0.1s	0.0s	0.05	47.6%	17	THEFTIC	0.0%	0000
Q	1823201A	6	A	01012042	BATISTUF	0.05	0.15	0.05	0.05	11.8%	23	ALEFIIC	0.0%	0000
M	I4FVHFG	5	J	3FV3FV32	BATPRODE	13.05	0.45	0.05	0.05	2.7%	1,72	4 IEFIIC	0.0%	0000
M	I4EUTEDE	51	в	46090/32	BATCHHI	169.0S	30.65	0.05	0.05	18.1%	62,82	SIEFIIC	0.0%	0000
M	13040385	11	J	30490732	BATPRODE	234.0S	45.55	0.05	0.05	19.4%	10.00		0.0%	0000
M	1301013	15		30130132	BATERDUF	9.05	0.55	0.05	0.05	5.3%	10,83	FIEFIIC	0.0%	0000
5147 Jobs	DELEBCI	15		Concernance (1972	IDA LEBO IL IE	7.03	0.55	11.05	11.05	Only	JOB end re	cords (type 30	subtype 5) ha	ve been loaded

6. The Job Information panel displays the specific job information at the top of the **Steps** table.



**Note**: The job details will be displayed once you have performed **File**, **Add Selected Step Level Records** (performed after the **Filtering** process is complete) on the zBNA main panel.

In the display above, "**7 Total**" shown in the **Step Number** column refers to the total number of steps in this job, **M373Q3S**. Also, notice that there is a scroll bar so that all of the various fields can be seen. Click **Ok** to return to the main panel.

7. Jobs may be sorted by any parameter on the screen in both ascending and descending order, simply by clicking on the corresponding column header. Click the *CPU Time* column twice to sort from the largest to smallest values. Also note that the number of jobs in the screen, displayed in the bottom left-hand corner, is still currently **5147 jobs**.

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ile Edit Filt	ers Action Gra	ph <u>R</u> eports <u>H</u>	elp											C
Applied Filters							Maint	rame Information	n		2009000000			
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							CPC U	tilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time 🔻	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Cod
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.5%	31,510	DSNECP10	92.0%	000
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.7s	31.7%	18,169,671	DSNECP10	46.0%	000
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	000
	M373ON4A	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	000
1.2	M373DVF	9	J	37397332	BATPRDDF	4.9h	1.0h	0.0s	0.0s	20.6%	4,74*	DSNECP10	41.0%	000
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	000
	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	44*	DSNECP10	21.0%	000
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	45.9m	0.0s	0.0s	37.7%	21,905	DSNECP10	49.0%	000
	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	000
100	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.9m	0.0s	0.0s	39.5%	596,359	DSNECP10	62.0%	000
1.00	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	000
10	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.8m	0.0s	0.0s	40.5%	874,506	DSNECP10	64.0%	000
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	000
	M373ECS	3	J	37597532	BATPRODE	2.6h	34.1m	0.0s	0.0s	22.1%	316	S DSNECP10	25.0%	000
	M3YHK7S3	26	J	3YH3YH32	BATPRODE	1.50	34.0m	0.05	0.05	36.7%	512,864	DSNECP10	62.0%	000
	M3YHK/SF	26	J	3YH3YH32	BATPRODE	1.4h	33.3m	0.05	0.05	40.4%	/31,964	DSNECP10	63.0%	000
	M3E0COS	3	J	3E09E032	BATPRODE	2.2h	29.6m	0.05	0.0s	21.9%	4,404	DSNECP10	26.0%	000
	M402GX3L	17		40242032	BATPRODE	54.2m	27.9m	0.05	0.05	51.5%	2,949,220	ENGEXE	4.0%	000
	M337F83	0	3	33/93/32	BATPRODE	1.20	20.011	0.05	0.05	30.3%	2,434,985	DSNECPTU	20.0%	001
	M34DUG3	15		34094432	BATPROUF	1.30	23.9m	0.05	0.05	29.5%	21,548	DSNECP10	29.0%	000
	M373IZ3	3	J	37397332	BATERDODE	E0.Em	22.011	0.05	0.05	31.0%	43,23	DONECP10	40.0%	000
	MOLIQAE1A	0	1	20220222	BATERDOF	50.0m	22.111 21.9m	0.05	0.05	26.6%	121 70	DONECP10	40.0%	001
_	M272010	14		27207222	BATCULI	55.4m	21.00	0.05	0.03	20.4%	2 407 043	DONECP10	24.0%	000
	MAE5E299	66	1	AE505732	BATERDOR	5.6h	21.0m	0.05	0.25	6.2%	10 060 941	DSNECP10	17.0%	000
	M2E0IK SNI	00		2E00E022	PATPPODE	1.2h	20.7m	0.03	0.00	26.5%	1 976 57/	DSNECP10	0.006	00
	M373EPV	4	- 1	37307332	BATCHHI	2.2h	20.0m	0.03	0.05	15 2%	1,376,060	DSNECP10	17.0%	00
	M373CNS	5	ĭ	37397332	BATERDDE	1.3h	19.9m	0.05	0.05	25 3%	392 740	DSNECP10	19.0%	00
	M3E066SO	2	Ĩ	3E09E032	BATPRODE	2.2h	19.6m	0.05	0.05	14.9%	344	DSNECP10	15.0%	000
	M3YV654	9	Ĵ	3YV3YV32	BATPRDDF	22.4m	19.2m	0.05	0.05	85.5%	130.750	IEFIIC	0.0%	000
	M402HY4E	18	Ĵ	40240232	BATPRODE	52.1m	19.1m	0.0s	0.0s	36.5%	4 293 85	IEFIIC	0.0%	000
	M3E066SA	2	Ĵ	3E09E032	BATPRODE	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	00
	M3E066SN	2	Ĵ	3E09E032	BATPRODE	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	00
	M233332	18	Ĵ	23323332	BATPRODF	1.1h	16.6m	0.0s	0.0s	26.2%	2,546,318	ENGEXE	22.0%	000
	M3E066SZ	2	Ĵ	3E09E032	BATPRODE	52.0m	16.3m	0.0s	0.0s	31.3%	321	IEFIIC	0.0%	000

## Task 2 - Filtering Data

1. There can be data from hundreds or thousands of jobs. It is often necessary to filter the jobs based on some criteria to reduce the number to be more manageable for the analysis, and Filters can help reduce the number. To apply a filter, click *Filters, Set Table Filters*...

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🔝 IBM Syste	m z Batch Netwo	rk Analyzer - TEST FIL	E				
<u>File</u> Edit	Filters Action	<u>Graph Reports H</u>	elp				
Applied Fi	Set Table Filters.						Mainf
	Clear Table Filter	s					Model
		<b>`</b>					Partiti
							SYSID
							Partiti
							CPC U
Key Batch	1 Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time 👻
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h
	M3730N4A	4	J	37397332	BATPRDDF	2.8h	1.2h

2. Start by setting the GCP Time to 10 seconds, which will filter out jobs that took less than 10 seconds of CPU during the job's elapsed time. Clicking on another option or pressing Tab will allow the changes to take effect. The purpose of setting the filter is to remove a number of jobs that took an extremely small amount of CPU resource, so that the focus on the analysis can be on the jobs with the most amount of impact.

lob Three	bolds:						Job Name Include Mask	
Top Pro GCP Til Elapse	ogram Pe me (sec: d Time (s	ct (0-100) i) ( iecs)	<	0	5			Add
Service Class		Report Class		Job Class	s	Account Code		
BATCHH BATPRD BATTSTI ONLPR2 SYSSTC	DF DF C	* NONE * BATAEPAY J2B3MBR J8SMFXXX J8WSF82E MEMBATCH	*	9 A J V W X Y	•	0F412032 0F90F932 0F90F942 0FD 0FD12032 0FF12032 •	Exclude by Job Name	Remove
Filter I	by time							
From:	4/25/13	-	0	0:00:00		*		
	-	-	1 0	7-50-54		-		ОК

Next, filter by the Service Class name. This allows one to filter on the WLM construct that is already aligned to business importance and classification. Multiple Service Classes may be selected by holding the Control key while clicking the desired service class names. Select **BATCHHI**, **BATPRDDF**, and © 2014 IBM Corporation
 SHARE – March 2014

**BATTSTDF**. Note that there are now **938** jobs in the table. To remove a selection, hold Control and click it again. Similarly, one can filter by Report Class, Job Class, or Account Code, if desired.

<u>File Edit Filters</u> Applied Filters SERVICE CLASS:	s <u>A</u> ction <u>G</u> raph	<u>R</u> eports <u>H</u> elp											
Applied Filters — SERVICE CLASS:													
SERVICE CLASS:							Mainframe	Information					
SERVICE CLASS:							Model:			2817	711		
SERVICE CLASS:							Partition Na	me:		ONLI	1		
SERVICE CEASS.	• DAT7.001 DAT100	DDE PATTETOE					SVSID			CVC4			
	DATCHHI, DATPRI	DUF, DATISTUP					STSID.			5151			
							Partition Lo	gical utilization:		93.75			
							CPC Utilizat	ion:		93.79			
Key Batch	Job Name	S	a the second second	-	and the second second	-	Tanan and And	and the second second	at the later	- 0 -	Top Program	Top Pgm %	Condition Code
M	134DES3	ZDINA Filters		March Street, or other			1100			Comercia	DSNECP10	92.0%	0000
M	/373BDS										DSNECP10	46.0%	0000
M	/373IYS	Job Thresholds:					Job Name	Include Mask			DSNECP10	34.0%	0000
M	13730N4A	Top Program P	ct (0-100)	0 %						hhh	DSNECP10	63.0%	0000
M	1373DVF									Adu	DSNECP10	41.0%	0000
M	1373XQ3	GCP Time (sec	s)	10						Duran I	DSNECP10	87.0%	0000
M	//3YFUEE	Flanned Time (		0						Remove	DSNECP10	21.0%	0000
M	I3HS23VA	Elapsed Time (	secs)	0							DSNECP10	49.0%	0000
M	1373BJ5	-									SYNCSORI	9.0%	0000
M.	I3YHK/SG	Service	Report	Job	Account						DSNECP10	62.0%	0000
m.	1340733	Class	Class	Class	Code						PONECP 10	21.0%	0000
M	1373149	DATOUR			07440000						SNECP10	26.0%	0000
M	1373ECS	BATCHHI	- NONE	9 -	0F412032	2					SNECP10	25.0%	0000
M	A3YHK7S3	BATPRODE	BATAEPAY	A	0F493332	-	Exclude b	Job Name			SNECP10	62.0%	0000
M	I3YHK7SF	BATTSTDF	J2B3MBR	В	0F90F932			3			DSNECP10	63.0%	0000
M	13E0COS	ONLPR2C	J8SMFXXX	J	0F90F942					Remove	SNECP10	26.0%	0000
M	1402GX3L	SYSSTC	J8WSF82E	V	OFD					· · · · · · · · · · · · · · · · · · ·	INGEXE	4.0%	0000
M	4337F83		MEMBATCH	W	0FD12032						DSNECP10	26.0%	0000
M	134DUG3			x	0FF12032	-					DSNECP10	29.0%	0000
M	/373IZS	-		Y 👻	4						DSNECP10	22.0%	0000
M	1373BFD		1	1							DSNECP10	48.0%	0000
M	//3HS451A										DSNECP10	23.0%	0000
M	1373IUS	Filter by time									DSNECP10	24.0%	0000
M	M4E5F3SS	From: Lunguan									DSNECP10	17.0%	0000
M	13E0IKSN	4/25/13		0:00:00							DSNECP10	8.0%	0000
M	1373FPV	To: Luncian								OK	DSNECP10	17.0%	0000
M	1373UNS	4/25/13	- 01	1:59:54	-						DSINECP10	19.0%	0000
M	13E000SU	-								Cancel	EFIIC	15.0%	0004
M.	4402UV4E	-									FIIC	0.0%	0000
	13E06694	-									ASNECP10	22.0%	0000
M	13E066SN					10.0000				Service Se	OSNECP10	13.0%	0004
M	1233332	18 .1	23323332	BATPRODE		1.1h	16.6m	0.05	0.05	26.2% 2.546	318 ENGEXE	22.0%	0000
M	43E066SZ	2 .1	3E09E032	BATPRODE	52	2 0m	16.3m	0.05	0.05	31.3%	321 IEEIIC	0.0%	0004

4. Job names may also be filtered by clicking *Add*. Specific jobs can be named, or only parts of the name may be used, followed by an asterisk, which will match any number of characters. Please add **M4**\* and **M3**\*, as separate entries, to the Job Name Mask. Click **OK** after keying in each Job Name Mask.

Select Jo	b Name Mask
?	Please input job name mask. (? for a single character, * for any number of character values.) M4*
	OK Cancel

5. As shown below, **M4**\* will find all jobs starting with M4, and **M3**\* will find all jobs starting with M3. Note that there are now **874** jobs on the main panel. Click *Ok* to return to the main panel.



 Even with a filtered list there may be jobs that should not be included. These can be excluded from the analysis. Select the line for job M373DVF and right-click; select *Exclude Data* to remove it from the table.

<b>Applied</b> Filte	rs							n Mainfr	ame Information	n					
								Model:				2817-71	1		
								Dartitic	n Namo:			ONUM			
ERVICE CLA	ASS: BATCHHI, BA	PRDDF, BATTST	DF					Farua	a nume.			ONLIN			
OB NAMES:	M3*, M4*							SYSID:				SYS1			
								Partitio	on Logical Utiliza	ition:		93.7%			
								CPC U	ilization:			93.7%			
Key Batch	Job Name	Steps	Job	Class	Acct Code	Service Class	Elapsed Time	CPU Time 🔻	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M34DES3	6		J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.5%	31,51	0 DSNECP10	92.0%	0000
	M373BDS	21		J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.7s	31.7%	18,169,67	7 DSNECP10	46.0%	0000
	M373IYS	3		J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,84	6 DSNECP10	34.0%	0000
	M3730N4A	4		J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,38	18 DSNECP10	63.0%	0000
	M373DVF			J	37397332	BATPRDDF	4.9h	1.0h	0.0s	0.0s	20.6%	4,74	1 DSNECP10	41.0%	0000
	M373XQ3	Show Step De	tails	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,10	1 DSNECP10	87.0%	0000
	M3YFUEE	Exclude Data		1	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	44	1 DSNECP10	21.0%	0000
	M3HS23VA	Toggio Koy Pa	tch	1	3HS3HS32	BATPRDDF	2.0h	45.9m	0.0s	0.0s	37.7%	21,90	15 DSNECP10	49.0%	0000
	M373BJ5	roggie ney ba	icii	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,03	IO SYNCSORT	9.0%	0000
	M3YHK7SG	Job Dataset R	eport	1	3YH3YH32	BATPRDDF	1.6h	38.9m	0.0s	0.0s	39.5%	596,35	9 DSNECP10	62.0%	0000
	M34D7JS	3		1	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,60	5 DSNECP10	21.0%	0000
	M3YHK7SE	26		1	3YH3YH32	BATPRODE	1.5h	36.8m	0.0s	0.0s	40.5%	874,50	I6 DSNECP10	64.0%	0000
	M373IAS	3	· ·	1	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,91	0 DSNECP10	26.0%	0000
	M373ECS	3		<u> </u>	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	31	6 DSNECP10	25.0%	0000
	M3YHK/S3	26	-		3YH3YH32	BATPRODE	1.50	34.0m	0.05	0.05	36.7%	512,86	4 DSNECP10	62.0%	0000
	M3YHK/SF	26	-		3YH3YH32	BATPRODE	1.4n	33.3m	0.05	0.05	40.4%	731,96	4 DSNECP10	63.0%	0000
	MBEOCOS	3	-	-	3E09E032	BATPRODE	2.2h	29.6m	0.05	0.05	21.9%	4,40	14 DSNECP10	26.0%	0000
	M402GX3L	1/			40242032	BATPRUDE	54.2m	27.9m	0.05	0.05	51.5%	2,949,22	O ENGEXE	4.0%	0000
	M337F83	0	-		33793732	BATPROOF	1.20	20.0m	0.05	0.05	30.3%	2,434,98	IS DSNECP10	20.0%	0000
-	M34D0G3	10		-	34094432	DATELU	1,311	23.911	0.05	0.05	29.5%	21,04	A DONECF IU	29.0%	0000
	M373IZ3	3		-	37397332	PATERDODE	E9.Em	22.0111 22.1m	0.05	0.05	37.0%	43,23	A DONECPTU	42.0%	0000
	MOLICAEIA	0		-	20220202	BATERDOF	50.0m	22.1111 01.0m	0.05	0.05	31.170	101.70	E DENECETO	40.070	0000
	M272ILIS	14		-	27207222	BATCHHI	55.4m	21.0m	0.08	0.03	20.1%	2 407 04	12 DSNECP10	24.0%	0000
	M4E5E3SS	66		í –	4E595732	BATERDDE	5.6h	20.7m	0.03	0.25	6.2%	19 960 84	3 DSNECP10	17.0%	0000
	M3E0IKSN	4		1	3E09E032	BATPRODE	1 3h	20.3m	0.00	0.05	26.5%	1 976 57	4 DSNECP10	8.0%	0000
	M373EPV	9		1	37397332	BATCHHI	2.2h	20.0m	0.05	0.05	15.2%	1 776 06	0 DSNECP10	17.0%	0000
	M373CNS	5		1	37397332	BATERDDE	1.3h	19.9m	0.0s	0.05	25.3%	392.74	0 DSNECP10	19.0%	0000
	M3E066SO	2		1	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	34	4 DSNECP10	15.0%	0004
	M3YV654	9		j	3YV3YV32	BATPRDDF	22.4m	19.2m	0.0s	0.0s	85.5%	130.75	0 IEFIIC	0.0%	0000
	M402HY4E	18		j	40240232	BATPRDDF	52.1m	19.1m	0.0s	0.0s	36.5%	4.293.85	7 IEFIIC	0.0%	0000
	M3E066SA	2		J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	34	0 DSNECP10	22.0%	0004
	M3E066SN	2		j	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	32	0 DSNECP10	13.0%	0004
	M3E066SZ	2		J	3E09E032	BATPRDDF	52.0m	16.3m	0.0s	0.0s	31.3%	32	1 IEFIIC	0.0%	0004
	M373XQ3	5		J	37397332	BATPRDDF	25.1m	15.2m	0.0s	0.0s	60.7%	24,83	4 IEFIIC	0.0%	0222

7. Note that returning to the zBNA Filters panel shows that job in the Exclude by Job Name list. There is one less job, now **873 Jobs**.

IBM System	z Batch Network Ana	alyzer - TEST FILE							-				
<u>Eile Edit Fi</u> lt	ers Action Graph	h <u>R</u> eports <u>H</u> elp											
Applied Filters SERVICE CLAS JOB NAMES: N	S: BATCHHI, BATPF 13*, M4*	RDDF, BATTSTDF				Mainfram Model: Partition N SYSID: Partition L CPC Utiliza	Information — ame: ogical Utilization: ttion:	:		2817-711 ONLM SYS1 93.7% 93.7%	Ĺ		
Key Batch	Job Name	S	A TRANSPORT		and the second second	Oto Tange W. J.	and the second second	10 Tana			Top Program	Top Pgm %	Condition Cod
	M34DES3	ZDINA FIITERS	Internet A			1100			C		DSNECP10	92.0%	000
	M373BDS										DSNECP10	46.0%	000
120	M373IYS	Job Thresholds:				Job Nam	e Include Mask				DSNECP10	34.0%	000
	M373ON4A	Top Program Po	ct (0-100)	0 %		1121					OSNECP10	63.0%	000
	M373XQ3					mJ			Add		DSNECP10	87.0%	000
	M3YFUEE	GCP Time (secs	) 1	D		M4*			-	1	OSNECP10	21.0%	000
	M3HS23VA	and the second second							Remo	ve	OSNECP10	49.0%	000
	M373BJ5	Elapsed Time (s	iecs)	0					-		SYNCSORT	9.0%	000
	M3YHK7SG										DSNECP10	62.0%	000
	M34D7JS	Service	Report	lob /	Account						DSNECP10	21.0%	000
	M3YHK7SE	Class	Class (	lass (	Code						DSNECP10	64.0%	000
	M373IAS										DSNECP10	26.0%	000
	M373ECS	BATCHHI	* NONE * 🔺 🧍		0F412032 📤						DSNECP10	25.0%	000
	M3YHK7S3	BATPRDDF	BATAEPAY	A	0F493332 💻	Construction 1	to be block			$\neg$	DSNECP10	62.0%	000
	M3YHK/SF	BATTSTDF	J2B3MBR	3	0F90F932	Exclude	Jy Job Marine			1	DSNECP10	63.0%	000
	M3E0COS	ONLPR2C	J8SMFXXX .	J	0F90F942	M373DV	(JOB27670)		Romo	MO	DSNECPTO	26.0%	000
	M402GX3L	SYSSTC	J8WSF82E	/	OFD				Rome	10	INGEAE	4.0%	000
	M337F83		MEMBATCH	N	0ED12032						DSNECP10	20.0%	000
	M34D0G3				05542022						DONECF TU	29.0%	001
	M373IZ3										DONECP 10	40.0%	000
	M3HS451A										DSNECP10	23.0%	00
	M373ILIS	-									DSNECP10	23.0%	00
	M4E5E3SS	Filter by time				U					SNECP10	17.0%	000
	M3EDIKSN	- Inter by ante								_	DSNECP10	8.0%	00
	M373FPV	From: 4/25/13	- 00:00	0:00	-						DSNECP10	17.0%	00
	M373CNS									01	DSNECP10	19.0%	00
	M3E066SO	To: 4/25/13	· 07:59	9:54	-				2000	UN	DSNECP10	15.0%	00
	M3YV654			Adda(1)					-		EFIIC	0.0%	00
	M402HY4E								C	ancel	EFIIC	0.0%	000
	M3E066SA										DSNECP10	22.0%	000
	M3E066SN										DSNECP10	13.0%	00
	M3E066SZ	- q - J	100000000000000000000000000000000000000	וטפארווא		iu.am	0.03	0.03	31.370	JE	EFIIC	0.0%	00
	M373XQ3	5 J	37397332 B	ATPRDDF	25.1m	15.2m	0.0s	0.0s	60.7%	24,83	4 IEFIIC	0.0%	023
	M4E5HEVS	7 J	4E595732 B	ATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,95	DSNECP10	18.0%	000
12 John										Only JO	Bend records (tv	ne 30 subtype 5	have been log

 If there are key jobs that you would like to focus on, select those in the Key Batch column. These will <u>always</u> be included in the analysis regardless of the job filter definitions. Select the following jobs as key: M373BJ5, M402GX3L, and M3E0IKSN.

pplied Filter	s							rame Information	n ———					
							Model				2817-71	1		
							Partiti	on Name:			ONLM			
ERVICE CLA	SS: BATCHHI, BATF	PRDDF, BATTSTE	)F				even				CVCA			
OB NAMES: I	M3*, M4*						51510				5151			
							Partiti	on Logical Utiliza	ition:		93.7%			
							CPC U	tilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time 🔻	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.5%	31,51	0 DSNECP10	92.0%	0000
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.7s	31.7%	18,169,67	7 DSNECP10	46.0%	0000
12	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,84	6 DSNECP10	34.0%	0000
	M373ON4A	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,38	8 DSNECP10	63.0%	0000
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,10	1 DSNECP10	87.0%	0000
	M3YFUEE	3		3YF3YF32	BATPRODE	3.0h	48.2m	0.05	0.05	27.2%	44	1 DSNECP10	21.0%	0000
	M3HS23VA	3	3	3H53H532	BATPRODE	2.00	40.911	0.05	0.05	37.7%	21,90	5 DSNECPTU	49.0%	0000
	M373B35	26		27397332	BATERDOF	2.00	39.0m	0.05	0.45	20.5%	14,021,03	0 DSNECP10	9.0%	0000
	M34D71S	20		34D94432	BATERDDE	1.5h	38.2m	0.05	0.03	43.5%	3 735 60	5 DSNECP10	21.0%	0001
	M3YHK7SE	26	ĭ	3YH3YH32	BATPRODE	1.5h	36.8m	0.05	0.05	40.5%	874 50	6 DSNECP10	64.0%	000
	M373IAS	3	Ĵ	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67.91	0 DSNECP10	26.0%	000
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	31	6 DSNECP10	25.0%	0000
	M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	34.0m	0.0s	0.0s	36.7%	512,86	4 DSNECP10	62.0%	0000
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.3m	0.0s	0.0s	40.4%	731,96	4 DSNECP10	63.0%	000
	M3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,40	4 DSNECP10	26.0%	000
V	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,22	6 ENGEXE	4.0%	000
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,98	9 DSNECP10	26.0%	000
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,54	8 DSNECP10	29.0%	000
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,23	1 DSNECP10	22.0%	000
	M373BFD	/	1	3/39/332	BATPRODE	58.5m	22.1m	0.05	0.05	37.7%	865,81	4 DSNECP10	48.0%	000
-	M3FI345TA	9	J	30307332	BATCHUI	59.4m	21.60	0.05	0.05	30.0%	2 407 04	2 DENECRIO	23.0%	0000
	M4E5E299	66	1	4E505732	BATERDODE	5.6h	21.0m	0.05	0.25	6.2%	10 060 94	3 DSNECP10	24.0%	0000
Y	M3E0IKSN	4	, i	3E09E032	BATPRODE	1 3h	20.7m	0.05	0.04	26.5%	1 976 57	4 DSNECP10	8.0%	000
	M373FPV	9	Ĵ	37397332	BATCHHI	2.2h	20 0m	0.05	0.05	15.2%	1,776.06	0 DSNECP10	17.0%	000
	M373CNS	5	Ĵ	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392.74	0 DSNECP10	19.0%	000
	M3E066SO	2	Ĵ	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	34	4 DSNECP10	15.0%	0004
	M3YV654	9	J	3YV3YV32	BATPRDDF	22.4m	19.2m	0.0s	0.0s	85.5%	130,75	0 IEFIIC	0.0%	000
	M402HY4E	18	Ĵ	40240232	BATPRDDF	52.1m	19.1m	0.0s	0.0s	36.5%	4,293,85	7 IEFIIC	0.0%	0000
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	34	0 DSNECP10	22.0%	000-
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	32	0 DSNECP10	13.0%	000-
	M3E066SZ	2	J	3E09E032	BATPRDDF	52.0m	16.3m	0.0s	0.0s	31.3%	32	1 IEFIIC	0.0%	000-
	M373XQ3	5	J	37397332	BATPRDDF	25.1m	15.2m	0.0s	0.0s	60.7%	24,83	4 IEFIIC	0.0%	0222
	M4E5HEVS	7	J	4E595732	BATPRODF	1.1h	15.0m	0.0s	0.0s	23.7%	6,95	4 DSNECP10	18.0%	0000

Now sort the *EXCPs* column in descending order to view the values from largest to smallest.

IBM System	z Batch Network A	nalyzer - TEST FI	E								and the second secon			
<u>File Edit Fi</u> l	ers <u>A</u> ction <u>G</u> ra	ph <u>R</u> eports <u>H</u>	lelp											
Applied Filter	3							rame Informatio	n					
							Model				2817-711			
							Dartiti	on Namo:			ONUM			
SERVICE CLA	S: BATCHHI, BATI	PRDDF, BATTST	DF				- aruu	on name.			ONLIN			
JOB NAMES: I	13*, M4*						SYSID				5151			
							Partiti	on Logical Utiliza	ation:		93.7%			
							CPC U	tilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zllP Time	CPU Intensity	EXCPs 🔻	Top Program	Top Pgm %	Condition Code
	M3YHGEU	37	J	3YH3YH32	BATPRDDF	1.3h	317.8s	0.0s	0.0s	7.0%	11,814,609	IDCAMS	6.0%	0000
	M3NE272G	12	J	3NEH7732	BATPRDDF	1.2h	352.7s	0.0s	1.1s	8.3%	11,170,071	SKTHRED	4.0%	0000
	M320XIU	4	J	32092032	BATPRDDF	13.5m	265.5s	0.0s	0.0s	32.7%	8,738,460	IEFIIC	0.0%	0000
	M3205D3	7	J	32092032	BATPRDDF	29.3m	283.8s	0.0s	0.0s	16.2%	8,533,858	IEFIIC	0.0%	000
	M3EODK3	2	J	3E03E032	BATPRDDF	1.7h	112.9s	0.0s	0.0s	1.9%	8,532,779	P1BLAH1	1.0%	000
	M3205D7	4	J	32092032	BATPRDDF	582.0s	286.4s	0.0s	0.0s	49.2%	8,202,131	IEFIIC	0.0%	000
	M364PSS	9	J	36496432	BATPRDDF	1.8h	299.9s	0.0s	0.0s	4.6%	8,008,518	P142MP1	3.0%	000
	M320ZVB	4	J	32092032	BATPRDDF	27.8m	242.3s	0.0s	0.0s	14.5%	7,180,565	IEFIIC	0.0%	000
	M320DYUD	4	J	32092032	BATPRDDF	51.9m	220.9s	0.0s	0.0s	7.1%	6,390,561	DSNUGSIT	2.0%	000
	M30DEYS	3	J	30D9K332	BATPRDDF	50.1m	123.6s	0.0s	0.0s	4.1%	6,298,940	SKTHRED	2.0%	000
	M320PEH	10	J	32092032	BATPRDDF	22.8m	160.4s	0.0s	0.0s	11.7%	5,019,935	IEFIIC	0.0%	000
	M320PEI	10	J	32092032	BATPRDDF	412.0s	147.1s	0.0s	0.0s	35.6%	4,648,950	IEFIIC	0.0%	000
	M320PEK	10	J	32092032	BATPRDDF	22.1m	147.8s	0.0s	0.0s	11.2%	4,635,676	IEFIIC	0.0%	000
	M3SK836A	11	J	3SK9SK32	BATPRDDF	33.8m	93.8s	0.0s	0.1s	4.6%	4,519,131	IEFIIC	0.0%	000
	M4E07APH	131	B	4E595732	BATCHHI	26.3m	121.9s	0.0s	0.0s	7.7%	4,479,181	IEFIIC	0.0%	000
	M3SK95DA	12	J	3SK9SK32	BATPRDDF	42.9m	160.3s	0.0s	1.2s	6.2%	4,362,335	IEFIIC	0.0%	000
	M3SK830A	11	J	3SK9SK32	BATPRDDF	38.7m	348.9s	0.0s	0.1s	15.0%	4,327,934	IEFIIC	0.0%	000
	M402HY4E	18	J	40240232	BATPRDDF	52.1m	19.1m	0.0s	0.0s	36.5%	4,293,857	IEFIIC	0.0%	000
	M3205D8	4	J	32092032	BATPRDDF	247.0s	141.1s	0.0s	0.0s	56.9%	3,890,301	IEFIIC	0.0%	000
	M3SKGIDA	3	J	3SK9SK42	BATPRDDF	331.0s	133.8s	0.0s	0.0s	40.4%	3,813,883	IEFIIC	0.0%	000
	M320XID	4	J	32092032	BATPRDDF	526.0s	122.9s	0.0s	0.0s	23.4%	3,787,837	IEFIIC	0.0%	000
	M402GX4L	8	J	40242032	BATPRDDF	34.1m	306.6s	0.0s	0.0s	15.0%	3,739,314	PDRSW000	1.0%	000
	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	000
	M30HF73	5	J	30H90H32	BATPRDDF	13.4m	57.3s	0.0s	0.0s	7.1%	3,688,037	IEFIIC	0.0%	000
	M4E07HZH	128	B	4E595732	BATCHHI	27.8m	114.5s	0.0s	0.2s	6.9%	3,499,688	IEFIIC	0.0%	000
	M320DYUE	4	J	32092032	BATPRDDF	23.4m	115.3s	0.0s	0.0s	8.2%	3,415,051	IEFIIC	0.0%	000
	M320DYUE	4	J	32092032	BATPRDDF	30.8m	115.7s	0.0s	0.0s	6.3%	3,413,820	IEFIIC	0.0%	000
	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	000
	M320SV3	10	J	32092032	BATPRDDF	413.0s	109.1s	0.0s	0.0s	26.4%	3,339,847	IEFIIC	0.0%	000
	M320MOD	7	J	32092032	BATPRDDF	22.6m	117.6s	0.0s	0.0s	8.7%	3,282,795	IEFIIC	0.0%	000
	M355MQS	11	J	35595532	BATCHHI	10.6m	16.4s	0.0s	0.0s	2.6%	3,280,310	IEFIIC	0.0%	000
	M30DMDS	18	J	30D9K332	BATPRDDF	31.5m	28.1s	0.0s	0.0s	1.5%	3,228,140	IEFIIC	0.0%	000
-	M373BJ4	5	J	37397332	BATPRDDF	1.2h	533.1s	0.0s	0.0s	12.3%	3,220,253	SYNCSORT	6.0%	000
V	M4E07B1H	132	В	4E595732	BATCHHI	16.5m	71.9s	0.0s	0.1s	7.2%	3,028,474	EFIIC	0.0%	000
	M3E0K8SN	7	J	3E09E032	BATPRDDF	26.9m	62.1s	0.0s	0.2s	3.8%	3,005,538	IEFIIC	0.0%	000
3 Jobs			200				1772 1755				Only JOE	end records (t)	rpe 30 subtype 5	have been lo

Let's find job **M4E07B1H**, which has **3,028,474 EXCPs**, in the table. You can either slowly scroll down the table to job **M4E07B1H** or use the **Edit**, **Find** (Ctrl+F) function. Click the **Key Batch** checkbox. Note that the other three *Key Batch* jobs are still selected, however, they just are not in this view since we performed the sort by EXCPs.

**NOTE**: This technique of identifying jobs as *Key Batch* can be used to keep known jobs always in the analysis (e.g. critical path jobs, high importance, etc.) so that other filtering techniques do not inadvertently remove them. There is also the ability to separately report on these "Key" jobs.

At this point, let's stop and save the current filters that have been set along with the four jobs that are identified as key in a zBNA study file.



Name the file **testrel4** (".zBNA" will automatically be appended to the file name), and click **Save**.

9. Return to the zBNA Filters panel and set the *Top Program Pct* to **10%**, which will only include jobs where a Top Program is greater than 10%. Note that there are now only **36 jobs** in the table, including the four that we selected as key batch jobs. Click *Ok*.

🔝 IBM System	z Batch Network A	nalyzer - TEST FIL	E		1 - 2 - 2 - 2		1000	100		and the second			- 0 ×
<u>File Edit Filt</u>	ers Action Gra	ph <u>R</u> eports <u>H</u>	lelp										
r Applied Filters	;					Mainfran	ne Information						
						Model				2817-711			
						Dortition	Nomo			ONUM			
SERVICE CLAS	S: BATCHHL BATE	PRODE, BATTSTO	)F			Paruuon	Name:			UNLM			
JOB NAMES: M	13*. M4*					SYSID:				SYS1			
						Partition	Logical Utilization:			93.7%			
						CPC Utilia	ation:			93.7%			
Key Batch 💌	Job Name	Steps	ZRNA Filters	A Annual Cases - B	man in a	- Terrat	part lana di	r teng 100			am	Top Pgm %	Condition Code
V	M373BJ5	11	Contractory	Sector Se	1.00	10.000	in the	5-000	10 Marc		T	9.0%	0000 -
×	M3E0IKSN	4									D	8.0%	0000
~	M402GX3L	17	Job Inresnoids:				Job Name Includ	ie Mask				4.0%	0000
V	M4E07B1H	132	Top Program Pct (0-1	00) 10 %			M3*			Add		0.0%	0000
	M36BX4S	3	Rev.				M4*			Add	D	10.0%	0000
	M373BFD	7	GCP Time (secs)	10							p	48.0%	0000
	M3EHL8S	2	Flowerd Time (see )	0						Remove	P	15.0%	0000
	M373IZS	3	Elapsed Time (secs)								2	22.0%	0000
	M4E5HEVS	/									2	18.0%	0000
-	M3YHK/SF	20	Service Rep	ort Job	Account							03.0%	0000
	M34DUG3	15	Class Clas	ss Class	Code							29.0%	0000
	MOVUL/70E	200	DATOUR A AN		05440000						6	64.0%	0000
	M2VHK792	20	BATCHHI	DNE - 9 -	0F412032 -						6	62.0%	0000
	M3YHK7SG	26	BATPRODE BA	AEPAY	0F493332		Exclude by Job N	lame			6	62.0%	0000
	M3HS23VA	3	BATTSTDF J2E	I3MBR B	0F90F932						0	49.0%	0000
	M373IAS	3	ONLPR2C J85	IMFXXX J	0F90F942		M373DVF(JOB2	7670)		Remove	5	26.0%	0000
	M373ON4A	4	SYSSTC J8V	VSF82E V	OFD					· · · · · · · · · · · · · · · · · · ·	b	63.0%	0000
	M3E066SU	2	ME	MBATCH W	0FD12032						b	12.0%	0004
	M3E066SA	2		X	0FF12032 🖵						D	22.0%	0004
	M3E066SN	2	▼ 1	• Y •	4 1 1						D	13.0%	0004
	M34DES3	6									D	92.0%	0000
	M337F83	5									D	26.0%	0000
	M373IYS	3	Filter by time								D	34.0%	0000
	M34D7JS	3	From: AIDE/42	- 00:00:00							P	21.0%	0000
	M3E0COS	3	4/25/13	• 00:00:00							2	26.0%	0000
	M373CCS	15	T0: 4/25/42	07/50/54						OK		13.0%	0000
	MOLIDAEAA	2	4/25/13	07:59:54								15.0%	0004
	MOTO401A	9								Cancel	6	23.0%	0000
-	MOVELIEE	5									6	19.0%	0000
	M373EPV	3									6	21.0%	0000
	M373ECS	3	L INTERNET	CONTRACTO	2 100		ITTIS	TITIST	22.13		6	25.0%	0000
	M373BDS	21	37397332	BATPRODE	6.3h	2 0h	0.08	0.75	31.7%	18 169 677 DSNECP1	0	46.0%	0000
	M373IUS	14	37397332	BATCHHI	55.3m	21.6m	0.05	0.28	39.1%	3 407 043 DSNECP1	0	24 0%	0000 -
36 Jobs										Only JOB end record	is (typ	e 30 subtype 51	have been loaded

10. Let's add the job step data (SMF Type 30 subtype 4 records). Click **File**, **Add Selected Step Level Records**.

😒 IBM	System	z Batch Network Analyz	er - TEST FI	LE											
<u>File</u>	dit Fi	Iters Action Graph	Reports	lelp											
Load I	iles							Main	frame Information	n ———					1
Add S	oloctod	Sten Level Records						Mode	:			2817-711			
Muu u	ciccico	Step Lever Recordsm						Partit	ion Name:			ONLM			
Save	As zBN/	A Study File	, BATTST	DF				SASI				CVC4			
Save	as <u>C</u> SV							Destin				01.71			
Save a	as CSV	JOBS only						Parut	ion Logical Ouliza	luon:		93.7%			
Clear	Data		-					CPCI	Itilization:			93.7%			
			teps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
EXIT			11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000 -
-	~	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
-		M402GX3L	1/	1	40242032	BATPRODE	54.2m	27.9m	0.05	0.05	51.5%	2,949,226	ENGEXE	4.0%	0000
-		M4EU/BIH	132		4E090732	BATCHHI	10.0m	/1.95	0.08	0.15	26 50	3,028,474	Devico P10	10.0%	0000
-		M373BED	7		37397332	BATPRODE	58.5m	22 1m	0.03	0.05	37.7%	865.814	DSNECP10	48.0%	0000
-		M3EHL8S	2	- ă	3EH94932	BATPRODE	44.5m	12.2m	0.05	0.05	27.3%	36 613	DSNECP10	15.0%	0000
-		M373IZS	3		37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43.231	DSNECP10	22.0%	0000
		M4E5HEVS	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
		M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.3m	0.0s	0.0s	40.4%	731,964	DSNECP10	63.0%	0000
		M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
		M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
	121	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.8m	0.0s	0.0s	40.5%	874,506	DSNECP10	64.0%	0000
-		M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	34.0m	0.0s	0.0s	36.7%	512,864	DSNECP10	62.0%	0000
-	12	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.9m	0.0s	0.0s	39.5%	596,359	DSNECP10	62.0%	0000
-	12	M3HS23VA	3		3HS3HS32	BATPRODE	2.0h	45.9m	0.05	0.05	37.7%	21,905	DSNECP10	49.0%	0000
-		M373IAS	3	3	3/39/332	BATCHHI	2.00	34.20	0.05	0.05	22.2%	67,910	DSNECP10	20.0%	0000 =
-	-	M2E066211	4		25005022	BATERDOF	2.011 1.0h	409.00	0.05	0.05	40.070	30,300	DSNECF 10	12.0%	0000
-	-	M3E066SA	2		3E09E032	BATERDDE	1.01	450.05 18.2m	0.03	0.05	27.1%	342	DSNECP10	22.0%	0004
-		M3E066SN	2	ĭ	3E09E032	BATPRODE	1.2h	17.2m	0.05	0.05	23.7%	320	DSNECP10	13.0%	0004
-		M34DES3	6	Ĵ	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.5%	31.510	DSNECP10	92.0%	0000
		M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	0000
		M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	0000
	14	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
	12	M3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	0000
-		M373CCS	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	0000
-		M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0004
-		M3HS451A	9	J	3HS3HS32	BAIPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
-		M373GNS	5	J	37397332	BATPRODE	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
-		M373EPV	3		37307332	BATCHHI	3.0h	48.2m	0.05	0.05	27.2%	1 776 060	DSNECP10	21.0%	0000
		M373ECS	9	J	37597532	BATPRODE	2.20 2.6b	20.0m	0.05	0.05	22 1%	1,770,000	DSNECP10	25.0%	0000
-		M373BDS	21		37397332	BATPRODE	6 3h	2 0h	0.05	0.05	31.7%	18 169 677	DSNECP10	46.0%	0000
		M373IUS	14	Ĵ	37397332	BATCHHI	55.3m	21.6m	0.05	0.25	39.1%	3,407,043	DSNECP10	24.0%	0000 -
36 Job	s											Only JOE	end records (ty	pe 30 subtype 5	have been loaded.

11. The main zBNA panel is redisplayed. Now a job can be drilled down to show the step level details. (Note that the message "Only JOB end records (type 30 subtype 5) have been loaded" is no longer displayed in the information bar).

Eile Edit Filters	BATCHHI, BATP	oh <u>R</u> eports <u>H</u> RDDF, BATTSTD	elp					rame Information						
Applied Filters — SERVICE CLASS: E JOB NAMES: M3*,	BATCHHI, BATP , M4*	RDDF, BATTSTD	43					rame Information	2					
SERVICE CLASS: E JOB NAMES: M3*,	ВАТСННІ, ВАТР , M4*	RDDF, BATTSTD						rume information						
SERVICE CLASS: E JOB NAMES: M3*,	BATCHHI, BATP , M4*	RDDF, BATTSTD					Mode				2817-711			
SERVICE CLASS: E JOB NAMES: M3*,	BATCHHI, BATP , M4*	RDDF, BATTSTD					Partit	on Name:			ONLM			
JOB NAMES: M3*,	, M4*		NF				even				CVC4			
							STSIL	s.			5151			
							Partit	on Logical Utiliza	tion:		93.7%			
							CPC L	Itilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
M3	36BX4S	3	J	36896832	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000 -
M3	373BFD	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
M3	3EHL8S	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
M3	373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
M4	4E5HEVS	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
M3	3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
M3	34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
M3	373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
M3	3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	0000
M3	3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	36.6%	512,864	DSNECP10	62.0%	0000
M3	3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.8m	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	0000
M3	3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0m	0.0s	0.0s	37.8%	21,905	DSNECP10	49.0%	0000
M3	373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	0000
M3	3730N4A	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	0000
M3	3E066SU	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	13.4%	342	DSNECP10	12.0%	0004
M3	3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0004
M3	3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	0004
M3	34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.6%	31,510	DSNECP10	92.0%	0000
M3	337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	0000
M3	373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	0000
M3	34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
M3	3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	0000
M3	373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
M3	373CCS	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	0000
M3	3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0004
M3	3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
M3	373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
M3	3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
M3	3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	0000
M3	373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	0000
M3	373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	0000
M4	402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,226	ENGEXE	4.0%	0000
M3	373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,677	DSNECP10	46.0%	0000
M3	373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	0000
M4	4E5F3SS	66	J	4E595732	BATPRDDF	5.6h	20.7m	0.0s	0.2s	6.2%	19,960,843	DSNECP10	17.0%	0000 -
36 Jobs														

Let's sort on the **Elapsed Time** column so that the longest running job is the first one displayed in the table.

File Edit Fil	ters Action G	raph Repo	orts Help											
Applied Filter	s							ainframe Informa	ation					
SERVICE CLA JOB NAMES: I	° SS: BATCHHI, BA M3*, M4*	TPRDDF, B/	ATTSTDF				Mi Pa SY Pa	Model:         2817.711           Partition Name:         ONLM           SYSID:         SYS1           Partition Logical Utilization:         93.7%						
							CF	PC Utilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time 👻	CPU Time	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,677	DSNECP10	46.0%	0000
	M4E5F3SS	Show Ste	p Details	4E595732	BATPRDDF	5.6h	20.7m	0.0s	0.2s	6.2%	19,960,843	DSNECP10	17.0%	000
	M373IYS	Excluded	lata	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	000
100	M34DES3	Enclude L	7	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.6%	31,510	DSNECP10	92.0%	0000
	M3YFUEE	Toggle Ke	ey Batch	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	000
	M373ON4A	Job Data:	set Report	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	0000
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	000
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	000
	M3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	000
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0004
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	000
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0m	0.0s	0.0s	37.8%	21,905	DSNECP10	49.0%	000
2	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	000
	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.8m	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	000
	M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	36.6%	512,864	DSNECP10	62.0%	000
	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	000
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	000
	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	000
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	000
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	000
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	000
2	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	000
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	000
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	000
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	000-
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0004
	M4E5HEVS	7	. J.	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	000
	M3E066SU	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	13.4%	342	DSNECP10	12.0%	0004
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	000
	M373BFD	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	000
	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	000
~	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,226	ENGEXE	4.0%	000
	M373CCS	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	000
	M3EHL8S	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
	M36BX4S	3	J	36B96B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000

Job **M373BDS** is the longest running job in this filtered set. You can see that the elapsed time is **6.3 hours** and had **21 Steps**. Right click on that job, and select **Show Step Details**. **Note**: Double clicking in the job row will perform the same task.

12. The details on the steps are displayed. One row per each Step is provided, and all the columns for the Job level are provided for each Step. Remember to use both the vertical and horizontal scroll bars to view all of the information.

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SHARE – March 2014

Job Informatio	n										×			
Job Name: M	373BDS		Job Number:	JOB27655	(	Number of Ste	eps: 21)	Ke	y Batch: No					
Start Date: Ap	or 25, 2013		Start Time: 12	2:00 AM	Į.	End Date: Apr	25, 2013	En	d Time: 6:17 Al	и				
Job Class: J			Service Class	S: BATPRDDF		Account Code	: 37397332	Co	ndition Code: (	000				
Top Task Per	cent: 46%		Top Task: DS	NECP10	(1	Duration: 2267	73.0 Seconds	CP	U Intensity: 32	.0%				
r Steps-														
- Key Datab	Ole t Dele	Obstations	L College	End Times	to be before the	Oler Marrie	December 11		Out Tree L	-h Oleren	1			
Key Balch	Al25/12	Start Time	Al25/12	6:17:52	JOD Name	Step Name	Program N	otep Number	Sub Type J	OD Class	720721			
	4/25/13	0:00:00	4/25/13	2:31:54	M3738DS	\$373BD3	LNMHIW23	2	4 1	3	13513			
	4/25/13	2:31:53	4/25/13	2:39:30	M373BDS	EDENXS3	L HE IHOHU	1	4 1			> Scroll to	o see the ren	naining Steps.
	4/25/13	2:39:29	4/25/13	2:47:19	M373BDS	EDENXS4	I HE IHOHU		41					
	4/25/13	2:47:18	4/25/13	2:50:29	M373BDS	EDENXS5	L HE HOHU		4.1					
	4/25/13	2:50:28	4/25/13	2:51:12	M373BDS	EDENXS6	LHEJHQHU	7	4.1					
	4/25/13	2:51:11	4/25/13	2:52:46	M373BDS	EDFNXS7	LHEJHQHU	3	4 J					
	4/25/13	2:52:45	4/25/13	2:55:26	M373BDS	VRUWBD3	VBQFVRUW	9	4 J					
	4/25/13	2:55:25	4/25/13	3:02:36	M373BDS	S373BD4	LNMHIW23	10	4 J		-			
•											<b>F</b>			
							6 M (1)	10				1.12		V
	Scroll to see	the remaining	ng columns.	Acct Cod	e Service C	la Report Cla	ass Duration	CPU Time	zAAP Time	zllP Time	EXCP	CPU Intensity	Top Task	Top Task %
				37397332	BATPRDD	)F	226	7,246.0	9 0.00	0.7	6 1816967	7 0.3195909	DSNECP10	46.0 🔺
					BATPRDD	0F	91	4 2,228.1	1 0.00	0.0	0 285755	9 0.2444707	DSNECP10	29.0
					BATPRDD	)F	4	7 13.7	7 0.00	0.0	0 126302	9 0.0301312	IEFIIC	0.0 =
					BATPRDD	0F	4	0 8.1	6 0.00	0.0	0 269502	4 0.0173617	IEFIIC	0.0
					BATPRDD	)F	19	3.6	7 0.00	0.0	0 106974	6 0.0192146	IEFIIC	0.0
					BATPRDD	0F		4 0.7	B 0.00	0.0	0 22822	4 0.0177272	IEFIIC	0.0
					BATPRDD	)F	1	1.7	2 0.00	0.0	0 45527	6 0.0181052	IEFIIC	0.0
					BATPRDD	0F	1	4.1	1 0.00	0.3	4 396	7 0.0255279	IEFIIC	0.0
					BATPRDD	)F	43	1 12.0	5 0.00	0.0	0 137556	1 0.0279582	IEFIIC	0.0 -

The detailed information on each step of the job includes:

- start/end time and date
- step name
- program name
- step number
- sub type
- job class
- account code
- service class
- report class
- elapsed time
- CPU time
- zAAP time
- zIIP time
- EXCPs
- CPU intensity
- Top Program
- Top PGM %

These step level fields may be useful once you've identified a job that you want to reduce the elapsed time, because you'll be able to identify the step and program level resources to know where to focus tuning or alternative technology. Click **OK** to return to the zBNA main panel.

# Task 3 - Displaying a Graph

1. The data in the table on the main zBNA panel may also be displayed in a graph format by selecting *Graph* then *Display Graph: Table*. This will graph the selected jobs remaining from the previous filtering.

	and the second	( and the second second		1000				
<u>File Edit Fil</u>	ters <u>A</u> ction	Graph	Reports H	elp	2.0			
Applied Filter	s	Display	Graph: Table	9				Mainf
SERVICE CLA JOB NAMES: I	S S: BATCHHI, M3*, M4*	Display Display Set Inte Show 2	r Graph: <u>K</u> ey . / <u>G</u> raph: Trans ensity Percen /EDC <u>G</u> raph	Jobs sition Jobs It	<b>A</b>			Model: Partiti SYSID: Partiti CPC U
Key Batch	Job Nam	e	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time 🔻
	M34DES3		6	J	34D94432	BATPRDDF	3.3h	2.0h
	M373BDS		21	J	37397332	BATPRDDF	6.3h	2.0h
1.10	M373IYS		3	J	37397332	BATCHHI	3.7h	1.3h
	M373ON4A		4	J	37397332	BATPRDDF	2.8h	1.2h
110	M373XQ3		5	J	37397332	BATPRDDF	1.5h	56.6m
110	M3YFUEE		3	J	3YF3YF32	BATPRDDF	3.0h	48.2m
	M3HS23VA		3	J	3HS3HS32	BATPRDDF	2.0h	46.0m
V	M373BJ5		11	J	37397332	BATPRDDF	2.0h	39.0m
	M3YHK7SG		26	3	3YH3YH32	BATPRDDF	1.6h	38.8m

# 2. Each job appears on its own line of the graph.



The Elapsed Time for a job is the sum of **CPU Time + CPU Queue Time + Other Time**. Other time is all other time, and is typically comprised of I/O time. The sum of the 3 components is placed on the X axis when the Job's Elapsed Time occurred in the interval, but they represent the % of time spent in each component (e.g. the actual CPU Time does not all occur at the beginning of the job).

The legend for the graph appears in the bottom left corner.

• Pink, Execution (CPU Time, shows the measured CPU time for a job.

- Blue, **CPU Queue Time**, represents the estimated CPU wait time for a job, which is calculated from the *RMF Service class waiting for dispatch* field.
- **Other Time**, a green bar signifies that the job's CPU execution time is less than 10% (default value for **Set Intensity Percent**) of the job's duration.
- **Other Time**, a yellow bar signifies that the CPU execution time is more than 10% (default value for **Set Intensity Percent**) of the duration.
- Other Time, a red bar signifies *Key batch* jobs.
- 3. Clicking and dragging an area on the graph will zoom the graph in to that area.



 Holding Control allows the user to pan across the graph. The cursor will become a cross when this is happening.
 Is Mayster: 2 Bath Network Analyzer - TEST FILE



Click **Reset Graph** to show the original graph.



Further detail is available for each job by right-clicking and selecting Show Step Details. Right-click M373BJ5 (the first Key job with Red Other time) and click Show Step Details.



6. The same Job Step panel that is accessible from the main panel



Click OK to return to the graph.

7. A graph report can automatically be created by using the *Reports* menu while displaying the graph. Click *Generate Graph Report* then select what job attribute (Start Time, Job Name, CPU Time, Elapsed Time) you would like the data sorted in the table that is included in the report. Select "Sort By Start Time".



This will prompt you to save the report as an HTML file. Key in a file name, e.g. "**TEST\_Report**.htm" and click *Save*.

8. Open the file (**TEST\_Report.htm**) in an internet browser. After a legal disclaimer, the report will show the filters that were used and the resulting table. Key batch jobs are in bold. There is one line for each job, and at the very bottom there is a "Total" job line that is the sum of the resources used for all the Filtered jobs.

#### Filters

Туре	Filter
Top Percent	Greater than 10%
CPU Time	Greater than 10.0
Service Class	Must be BATCHHI, BATPRDDF or BATTSTDF
Job Names	Must match M4* or M3*
Exclude	Excluded from analysis: M373DVF(JOB27670)

#### Data

There are 36 jobs in the following table.

Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time	CPU Time	Top Program	Top Pgm %
1		M3YHK7SG		4/25/13 12:00 AM	4/25/13 1:38 AM	26	J	ЗҮНЗҮНЗ2	BATPRDDF	5,908	2,327	DSNECP10	62
2		M3YHK7SF		4/25/13 12:00 AM	4/25/13 1:22 AM	26	J	ЗҮНЗҮНЗ2	BATPRDDF	4,950	1,988	DSNECP10	63
3		M3YHK7SE		4/25/13 12:00 AM	4/25/13 1:30 AM	26	J	ЗҮНЗҮНЗ2	BATPRDDF	5,458	2,198	DSNECP10	64
4		M3YHK783		4/25/13 12:00 AM	4/25/13 1:32 AM	26	J	ЗҮНЗҮНЗ2	BATPRDDF	5,565	2,035	DSNECP10	62
5		M3HS23VA	LNMHIW3D	4/25/13 12:00	4/25/13 2:01	3	J	3HS3HS32	BATPRDDF	7,308	2,763	DSNECP10	49
36	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ватснні	991	72	IEFIIC	0
		Total								239,325	72,959		

**Note**: A report may also be generated solely for key batch jobs by selecting *Generate Key Batch Report* on the **Reports** menu. The following is included in the report.

### Key Batch Jobs

These are jobs that the user specifically selected for display.

Job Elapsed CPU Program Acct Тор Line Key Steps Job Name Start End Serv Class Name Class Code Time Time Program 4/25/13 4/25/13 37397332 BATPRDDF 1 х M373BJ5 1:58 3:59 11 J 7.255 2.339 SYNCSORT AM AM 4/25/13 4/25/13 X M3E0IKSN 3E09E032 BATPR DDF 4,601 1,218 DSNECP10 2 3.39 4:56 J 4 AM AM 4/25/13 4/25/13 40242032 BATPRDDF 3,252 X M402GX3L 1,674 ENGEXE 3 4:54 5:49 17 J AM AM 4/25/13 4/25/13 X M4E07B1H 7:24 7:41 4E595732 BATCHHI 991 72 IEFIIC 4 132 в AM AM Total 16,099 5,301

There are 4 jobs in the following table.

9. When the graph report is initially generated, the graph is not present. *To include the graph in the report, click Reports, Append Graph. You will be prompted to select the previously saved report file. Then click Save, and the graph will be appended to the report.* 



Click Back to Main to return to the zBNA main panel.

Тор

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10. Reload (or Refresh via F5) the report, which will now include the graph positioned below the job table.

			· · · · · ·									
33	X	M3E0IKSN	4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,601	1,218	DSNECP10	8
34	x	M402GX3L	4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,252	1,674	ENGEXE	4
35		M373IUS	4/25/13 5:32 AM	4/25/13 6:28 AM	14	J	37397332	BATCHHI	3,315	1,296	DSNECP10	24
36	x	M4E07B1H	4/25/13 7:24 AM	4/25/13 7:41 AM	132	B	4E595732	BATCHHI	991	72	IEFIIC	0
		Total							239,325	72,959	-	





# Task 4 – Reviewing DASD Data Set Information

1. The SMF Type 42 subtype 6 records are required to view the DASD data set I/O information. They are loaded into zBNA via the .dat file when the job step level data is added.

🗺 IBM System :	z Batch Netwo	ork Analyzer - TEST FIL	E	100	1000	Sec. 1		A CONTRACTOR OF	100		and the second		Statistics.	- 0 <u>×</u>
Eile Edit Filte	ers <u>A</u> ction	Graph Reports H	lelp											
Applied Filters	-						Main	frame Informatio	in					
							Mode	el:			2817-711			
							Parti	tion Name:			ONLM			
SERVICE CLAS	S: BATCHHI, E	BATPRODF, BATTSTO	)F				SYSI	D:			SYS1			
JOB NAMES: M	3°, M4°						Parti	tion Logical Utiliz	ation:		93.7%			
							CPC	Utilization:			93.7%			
Koy Batch -	Job Marry	e Ptone	Job Close	Aast Cada	Panica Class	Elanged Time	CRUTime	744P Time	TIP Time	CRI Untonsity	EVORe	Top Program	Top Ram %	Condition Code
Key Balch -	300 Nam	e oleps	100 01855	27207222	BATERDODE	Elapseu Time	20.05	2/04-11116	201F 11110	20.0%	14 021 020	EVALCEORT	10p F gill %	Condition Code
	M3F0IKSN	4	- 1	3F09E032	BATPRODE	2.011 1.3h	20.3n	0.05	0.45	26.5%	1 976 574	DSNECP10	8.0%	0000
V	M402GX3L	17	Ĵ	40242032	BATPRDDF	54.2m	27.9n	0.05	0.05	51.5%	2.949.226	ENGEXE	4.0%	0000
V	M4E07B1H	132	В	4E595732	BATCHHI	16.5m	71.9	s 0.0s	0.1s	7.2%	3,028,474	IEFIIC	0.0%	0000
	M36BX4S	Show Step Details	J	36B96B32	BATPRDDF	38.1m	13.9n	n 0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000
	M373BFD	Exclude Data	J	37397332	BATPRDDF	58.5m	19.4n	n 0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
	M3EHL8S	Exclude Data	J	3EH94932	BATPRDDF	44.5m	12.2n	n 0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
	M373IZS	Toggle Key Batch	J	37397332	BATCHHI	1.2h	22.8n	n 0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
	M4E5HEVS	Job Dataset Report	Ĵ	4E595732	BATPRDDF	1.1h	15.0n	n 0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
	M3YHK7SF	20	L J	3YH3YH32	BATPRDDF	1.4h	33.1n	n 0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
	M34DUG3	15	<b>T</b> 1	34D94432	BATERDDE	1.3h	23.9n	0.0s	0.08	29.5%	21 548	DSNECP10	29.0%	0000

A job must be selected to display the data set information. Let's focus on one of the jobs identified as key batch. Double click on the **Key Batch** header to sort that column. Right click on the job, **M4E07B1H**, and select **Job Dataset Report** (this option is also available on the **Action** menu). zBNA reads the SMF Type 42 subtype 6 data.

🔀 Prog	ress	×
1	Reading .dat file for 42 ( Cancel	data.

2. The zBNA Job Dataset Report panel displays the data sets for job M4E07B1H.

Job Details: Job Name: N	I4E07B1H	Key Batch: Yes	Elapsed	Time: 991.79	Seconds	CPU Ir	itensity: 7.2%		
Start Date: A	pr 25, 2013	Start Time: 7:24 AM	End Date	e: Apr 25, 201	3	End Ti	me: 7:41 AM		
Step	Step Number	DSN	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconı Time
34E5N227	92	I4E5SEY.M4E57B1S.SOQDVSG.LQGHA	188.0s	1879622	0.1	0.0	0.0	0.0	
64E5H22E	76	I4E5SE.M4E57B1S.PHD.HAWUDFW.J2439Y22	42.1s	619	68.0	0.0	0.1	34.6	
S4E0T8A4	66	Y325.L576.WPV	25.0s	249682	0.1	0.0	0.0	0.0	
S4E03FQG	44	I4E0SEY.M4E07B1S.HAW2KLS.GDWD	22.5s	7746	2.9	0.0	0.0	2.8	
64E5N27G	91	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	19.8s	738	26.8	0.0	0.0	20.7	
64E5H22E	76	I4E5SE.SE5H2233.M4E57B1S	19.5s	698	28.0	0.0	0.0	21.5	
64E03FQ7	36	VBV35337.W294677.UD222.M4E07B1H.U2910380	15.7s	83	189.0	0.0	1.4	159.3	
64E5N26F	82	I4E5SE.SE5N226F.M4E57B1S	15.6s	10401	1.5	0.0	0.0	1.4	
64E5N24E	75	I4E5SE.SE5N2233.M4E57B1S	13.2s	145	90.7	0.0	0.0	84.2	
64E5N27E	89	I4E5SE.HAWUDFW.M4E57B1S.ILOH	12.8s	3276	3.9	0.0	0.0	2.5	
64E5N227	92	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	8.4s	5249	1.6	0.0	0.0	1.5	
34E03E01	47	I4E0SEY M4E07B1S HAW2KLS LOGHA	8.45	83547	0.1	0.0	0.0	0.0	
•									•

Be sure to use the scroll bars to get a complete view of the job details. Sort the **Total IO Time** column in descending order so that the data set with the most IO time is positioned in the first row.

3. Right click on I4E5SEY.M4E57B1S.SOQDVSG.LQGHA, and select Get the Life of this Dataset.

Job Details:									
Job Name: N	I4E07B1H	Key Batch: Yes	Elapsed	Time: 991.79	Seconds	CPU II	ntensity: 7.2%		
Start Date: A	pr 25, 2013	Start Time: 7:24 AM	End Date	: Apr 25, 201	3	End Ti	ime: 7:41 AM		
Step	Step Number	DSN	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconi Time
34E5N227	92	I4E5SEY.M4E57B1S.SOQDVSG.LQGHA	188.0s	1879622	0.1	0.0	0.0	0.0	
4E5H22E	76	I4E5SE.M4E57B1S.PHD.HAWUDFW.J24 Get the Life	of this Dataset	619	68.0	0.0	0.1	34.6	
S4E0T8A4	66	Y325.L576.WPV	25.05	249682	0.1	0.0	0.0	0.0	
4E03FQG	44	I4E0SEY.M4E07B1S.HAW2KLS.GDWD	22.5s	7746	2.9	0.0	0.0	2.8	
4E5N27G	91	14E5SE.VRUWILOH.M4E57B1S.J2421Y22	19.8s	738	26.8	0.0	0.0	20.7	
4E5H22E	76	I4E5SE.SE5H2233.M4E57B1S	19.5s	698	28.0	0.0	0.0	21.5	
4E03FQ7	36	VBV35337.W294677.UD222.M4E07B1H.U2910380	15.7s	83	189.0	0.0	1.4	159.3	
4E5N26F	82	14E5SE.SE5N226F.M4E57B1S	15.6s	10401	1.5	0.0	0.0	1.4	
4E5N24E	75	I4E5SE.SE5N2233.M4E57B1S	13.2s	145	90.7	0.0	0.0	84.2	
4E5N27E	89	I4E5SE.HAWUDFW.M4E57B1S.ILOH	12.8s	3276	3.9	0.0	0.0	2.5	
4E5N227	92	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	8.4s	5249	1.6	0.0	0.0	1.5	
4E03E0.1	47	I4E0SEY M4E07B1S HAW2KLS LOGHA	8.4s	83547	0 1	0.0	0.0	0.0	
1									•

4. zBNA reads the .dat file that is loaded for the SMF 42 then the SMF 30 data. It searches through **all Jobs (5147)**, not just the Filtered Jobs. When it finishes the process, the **zBNA: Life of a Dataset** panel is displayed.

zBNA: Life o	f a Dataset										<u> </u>
le Edit Ac	tion										
DataSet Det	ails:				0.040						
)ataSet: I4E	5SEY.M4E57B	1S.SOQDVS	G.LQGHA		Num	ber of Job Ste	eps: 2				
Job	Step	Step Number	Job Number	Step End	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconnect Time
4E07B1H	S4E5N27D	88	JOB21576	04/25/2013 07:31:53	0.1s	130	1.1	0.	.0 0	.0 1.	0.0
4E07B1H	S4E5N227	92	JOB21576	04/25/2013 07:41:01	188.0s	1,879,622	0.1	0.	.0 0	.0 0.	0.0
								6 100	No No	KSDS index KSDS index	No No
							21			n	
				11							

The job names using this data set are shown. Use the scroll bar to view all of the data, and the columns can be sorted.

In this case, **Job M4E07B1H** is the only job that accessed the data set; in Steps 88 and 92. Step 92 has the most **Total IO Time**, 188 seconds. The response time is very low. If you scroll to the right, in the column **Type**, you'll see it is a "**KSDS Index**". While not currently provided in zBNA, one could investigate SMF 64s and consider increasing LSR / NSR buffers to hold Index Set and potentially eliminate ~3 Minutes of I/O time, which would be approximately 18% of the Job's elapsed time (16.5 minutes).

Click *OK* until the zBNA main panel is displayed.

e <u>E</u> dit Filt	ters Action Gra	ph <u>R</u> eports H	elp											
oplied Filters	5 Set Alternat	CPIIs						ame Information	n					
	Set Anterna	le CFU3					Model				2917 71	1		
	Flag Transit	ION JODS					Destitu				2017-71			
RVICE CLAS	SS-R Job Datase	t Report	)F				Paruu	on Name:			ONLIM			
B NAMES: M	13*.   Top 10 Data	iset Report					SYSID:				SYS1			
	ZEDC: Com	ression					Partitio	on Logical Utiliza	ition:		93.7%			
							CPC U	ilization:			93.7%			
ey Batch 👻	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Co
V	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,03	0 SYNCSORT	9.0%	00
2	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,57	4 DSNECP10	8.0%	00
2	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,22	6 ENGEXE	4.0%	00
2	M4E07B1H	132	В	4E595732	BATCHHI	16.5m	71.9s	0.0s	0.1s	7.2%	3,028,47	4 IEFIIC	0.0%	0
	M36BX4S	3	J	36B96B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,54	2 DSNECP10	10.0%	0
	M373BFD	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,81	4 DSNECP10	48.0%	0
	M3EHL8S	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,61	3 DSNECP10	15.0%	C
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,23	1 DSNECP10	22.0%	(
	M4E5HEVS	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,95	4 DSNECP10	18.0%	
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,96	4 DSNECP10	63.0%	
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,54	8 DSNECP10	29.0%	
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,10	1 DSNECP10	87.0%	
	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	40.3%	874,50	6 DSNECP10	64.0%	
	M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	36.6%	512,86	4 DSNECP10	62.0%	
	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.8m	0.0s	0.0s	39.4%	596,35	9 DSNECP10	62.0%	
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0m	0.0s	0.0s	37.8%	21,90	5 DSNECP10	49.0%	
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,91	0 DSNECP10	26.0%	
	M3730N4A	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,38	8 DSNECP10	63.0%	
	M3E066SU	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	13.4%	34	2 DSNECP10	12.0%	
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	34	0 DSNECP10	22.0%	
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	32	0 DSNECP10	13.0%	
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.6%	31,51	0 DSNECP10	92.0%	
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,98	9 DSNECP10	26.0%	
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,84	6 DSNECP10	34.0%	
	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,60	5 DSNECP10	21.0%	
	M3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,40	4 DSNECP10	26.0%	
	M373CCS	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,03	9 DSNECP10	13.0%	
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	34	4 DSNECP10	15.0%	
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,78	6 DSNECP10	23.0%	
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,74	0 DSNECP10	19.0%	
	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	44	1 DSNECP10	21.0%	
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,06	0 DSNECP10	17.0%	
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	31	6 DSNECP10	25.0%	
12	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,67	7 DSNECP10	46.0%	(
1000	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,04	3 DSNECP10	24.0%	

# 5. Click the Action menu then Top 10 Dataset Report.

zBNA displays an information panel showing that it is reading the SMF 42 (6) then SMF 30 data from the loaded .dat file. The **zBNA Top 10 Data Sets** panel is displayed.

DSNTotal IOTimeBV3.VFHHUXQ51.0m401SR.F7WQSOQW.SODQ.GDWD36.7m29SR.F7WQSURG.SODQ.GDWD33.8m55.QT.DD33.B33.2m55.QT.DF33.B30.5m55.QT.DG33.B28.8m401SR.F7WQSURG.SODQ.GDWD28.9m73.S73BJ324.SUYWLU.IWS28.7m73.S73BJ525.SUYWLU.IWS27.9m	3 <u>E</u> an		
VBV3.VFHHUXQ         51.0m           Y401SR.F7WQSOQW.SODQ.GDWD         36.7m           I329SR.F7WQSURG.SODQ.GDWD         33.8m           I355.QT.DD33.B         33.2m           I355.QT.DE33.B         32.5m           I355.QT.DE33.B         30.5m           I355.QT.DG33.B         28.8m           Y401SR.F7WQSURG.SODQ.GDWD         28.9m           I373.S73BJ324.SUYWLU.IWS         28.7m           I373.S73BJ525.SUYWLU.IWS         27.9m	DSN	Total IOTime	
Y401SR.F7WQSOQW.SODQ.GDWD 36.7m 329SR.F7WQSURG.SODQ.GDWD 33.8m 355.QT.DD33.B 33.2m 355.QT.DE33.B 30.5m 355.QT.DG33.B 28.8m Y401SR.F7WQSURG.SODQ.GDWD 28.9m 373.S73BJ324.SUYWLU.IWS 28.7m 373.S73BJ525.SUYWLU.IWS 27.9m	VBV3.VFHHUXQ	51.0m	
1329SR.F7WQSURG.SODQ.GDWD       33.8m         1355.QT.DD33.B       33.2m         1355.QT.DF33.B       32.5m         1355.QT.DE33.B       30.5m         1355.QT.DG33.B       28.8m         Y401SR.F7WQSURG.SODQ.GDWD       28.9m         1373.S73BJ324.SUYWLU.IWS       28.7m         1373.S73BJ525.SUYWLU.IWS       27.9m	Y401SR.F7WQSOQW.SODQ.GDWD	36.7m	
1355.QT.DD33.B       33.2m         1355.QT.DF33.B       32.5m         1355.QT.DE33.B       30.5m         1355.QT.DG33.B       28.8m         Y401SR.F7WQSURG.SODQ.GDWD       28.9m         1373.S73BJ324.SUYWLU.IWS       28.7m         1373.S73BJ525.SUYWLU.IWS       27.9m	1329SR.F7WQSURG.SODQ.GDWD	33.8m	
355.QT.DF33.B       32.5m         355.QT.DE33.B       30.5m         355.QT.DG33.B       28.8m         7401SR.F7WQSURG.SODQ.GDWD       28.9m         373.S73BJ324.SUYWLU.IWS       28.7m         373.S73BJ525.SUYWLU.IWS       27.9m	355.QT.DD33.B	33.2m	
I355.QT.DE33.B       30.5m         I355.QT.DG33.B       28.8m         Y401SR.F7WQSURG.SODQ.GDWD       28.9m         I373.S73BJ324.SUYWLU.IWS       28.7m         I373.S73BJ525.SUYWLU.IWS       27.9m	355.QT.DF33.B	32.5m	
I355.QT.DG33.B         28.8m           Y401SR.F7WQSURG.SODQ.GDWD         28.9m           I373.S73BJ324.SUYWLU.IWS         28.7m           I373.S73BJ525.SUYWLU.IWS         27.9m	I355.QT.DE33.B	30.5m	
Y401SR.F7WQSURG.SODQ.GDWD         28.9m           I373.S73BJ324.SUYWLU.IWS         28.7m           I373.S73BJ525.SUYWLU.IWS         27.9m	1355.QT.DG33.B	28.8m	
1373.S73BJ324.SUYWLU.IWS 28.7m 1373.S73BJ525.SUYWLU.IWS 27.9m	Y401SR.F7WQSURG.SODQ.GDWD	28.9m	
1373.S73BJ525.SUYWLU.IWS 27.9m	I373.S73BJ324.SUYWLU.IWS	28.7m	
	I373.S73BJ525.SUYWLU.IWS	27.9m	

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SHARE – March 2014

The purpose is to show where the most I/O time is, over the entire interval and regardless of who is accessing the dataset. Then looking at the characteristics, technology options can be evaluated to improve the response time, and thus the elapsed times of the jobs/online applications that are accessing it. In this case, it appears that 4 data sets starting with **I335.QT.** are the 4<sup>th</sup> through 7<sup>th</sup> Top data sets. Perhaps they are clones that we enabled for parallel processing? We'll investigate one of these files.

6. The Top 10 data sets are displayed, and the information can be written to a CSV file when you select the option on the **File** menu.

🔀 zBNA: Top 10 Data Sets		×
<u>F</u> ile <u>E</u> dit		
DSN	Total IOTime	
VBV3.VFHHUXQ	51.0m	
Y401SR.F7WQSOQW.SODQ.GDWD	36.7m	
I329SR.F7WQSURG.SODQ.GDWD	33.8m	
1355.QT.DD33.B	33.2m	
I355.QT.DF33.B Get the Life of t	his Dataset	
1355.QT.DE33.B	30.000	7
1355.QT.DG33.B	28.8m	
Y401SR.F7WQSURG.SODQ.GDWD	28.9m	
I373.S73BJ324.SUYWLU.IWS	28.7m	
I373.S73BJ525.SUYWLU.IWS	27.9m	
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		caller

Right click on the **I355.QT.DD33.B** data set then **Get the Life of this Dataset**. After zBNA reads the SMF 42 and 30 data in the .dat file, the **zBNA: Life of a Dataset** panel is displayed. 7. The job details are shown for the **I355.QT.DD33.B** data set. You can see that multiple different Jobs access this data set throughout the Batch interval.

e Edit A	ction										
Data Set De	tails:				(2007)		10-00-00-00-00-00-00-00-00-00-00-00-00-0				
DataSet: 135	55.QT.DD33.B				Num	ber of Job St	eps: 395				
Job	Step	Step Number	Job Number	Step End	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconnect Time
14E5H7S	S4EH7S5	5	JOB29802	04/25/2013 00:16:01	1.3s	199	6.7	0.0	0.1	0.1	6.
14E5UHS3	VWHS7	11	JOB29797	04/25/2013 00:16:17	0.1s	11	5.1	0.0	0.1	0.3	4.
4E077VH	S4E5N27D	46	JOB29932	04/25/2013 00:16:37	0.0s	4	2.4	0.0	0.1	0.1	2.1
14E0N7GH	S4E5N27D	55	JOB29876	04/25/2013 00:16:40	0.0s	2	3.7	0.0	0.0	0.2	3.
14E0N7GF	VWHS2302	25	JOB30315	04/25/2013 00:21:17	0.0s	1	0.3	0.0	0.1	0.1	0.(
14E0YEDF	VWHS2302	25	JOB30739	04/25/2013 00:31:42	4.6s	860	5.4	0.0	0.1	0.2	4.
35703S	S357024	3	JOB31246	04/25/2013 00:34:25	0.0s	126	0.3	0.0	0.0	0.1	0.0
35702S	S357024	3	JOB31261	04/25/2013 00:34:59	0.7s	2,440	0.3	0.0	0.1	0.1	0.0
4E0XCOH	S4E5N27D	80	JOB31288	04/25/2013 00:35:30	0.0s	2	7.4	0.0	0.1	0.1	7.
I35703S	S357020	12	JOB31246	04/25/2013 00:36:19	0.0s	124	0.3	0.0	0.1	0.1	0.0
I35703S	S357028	13	JOB31246	04/25/2013 00:36:24	0.0s	126	0.3	0.0	0.1	0.1	0.0
4E0XCOF	VWHS2302	25	JOB31578	04/25/2013 00:37:30	0.0s	1	0.3	0.0	0.1	0.1	0.0
I35700S	S357093	5	JOB31515	04/25/2013 00:41:00	0.3s	76	4.4	0.0	0.1	0.2	3.(
I35702S	S357020	12	JOB31261	04/25/2013 00:53:33	12.3s	2,414	5.1	0.0	0.1	0.2	4.4
135702S	S357028	13	JOB31261	04/25/2013 00:55:14	1.7s	2,467	0.7	0.0	0.1	0.2	0.1
I35709G	S357093	13	JOB32268	04/25/2013 01:01:50	1.4s	219	6.2	0.0	0.1	0.8	5.
135709H	S357093	13	JOB32263	04/25/2013 01:02:00	1.2s	263	4.7	0.0	0.1	0.9	3.(
135709E	S357093	13	JOB32266	04/25/2013 01:02:07	1.8s	322	5.4	0.0	0.1	0.8	4.4
135709F	S357093	13	JOB32267	04/25/2013 01:02:56	2.1s	343	6.2	0.0	0.1	1.6	4.1
135709D	S357093	13	JOB32265	04/25/2013 01:04:24	2.1s	329	6.5	0.0	0.1	1.4	4.1
	0.00000		10000105		~ ~		0.7	0.0	~ ~		181
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Now we want to see which Jobs have the most IO Time. Perform a sort on the **Total IO Time** column in descending order.

Data Set De	tails:				10.0000						
Data Set: 135	5.QT.DD33.B				Num	ber of Job St	eps: 395				
Job	Step	Step Number	Job Number	Step End	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconnec Time
1354KQR	VWHS23	2	JOB02903	04/25/2013 03:43:08	24.8m	281,099	5.3	0.0	0.0	0.3	4.
1354GJS	S354G03	3	JOB03191	04/25/2013 03:22:10	460.0s	82,127	5.6	0.0	0.0	0.5	4.
135702S	S357020	12	JOB31261	04/25/2013 00:53:33	12.3s	2,414	5.1	0.0	0.1	0.2	4.
4E0YHBH	S4E5N27D	86	JOB10179	04/25/2013 04:20:52	5.6s	1,194	4.7	0.0	0.1	0.6	3.
A4E0YWGH	S4E5N27D	148	JOB01395	04/25/2013 01:34:20	4.7s	745	6.2	0.0	0.1	2.1	3.
4E0YEDF	VWHS2302	25	JOB30739	04/25/2013 00:31:42	4.6s	860	5.4	0.0	0.1	0.2	4.
4E5DGAS	VWHS223	3	JOB02930	04/25/2013 02:20:23	3.2s	1,327	2.4	0.0	0.1	0.5	1.
14E0XBQH	S4E5N27D	82	JOB20027	04/25/2013 07:10:23	2.8s	467	6.0	0.0	0.1	1.5	4.
4E563S	S4E5634	3	JOB16213	04/25/2013 06:09:27	2.7s	558	4.9	0.0	0.1	0.2	4.
/35709D	S357093	13	JOB32265	04/25/2013 01:04:24	2.1s	329	6.5	0.0	0.1	1.4	4.
135709F	S357093	13	JOB32267	04/25/2013 01:02:56	2.1s	343	6.2	0.0	0.1	1.6	4.
/35709E	S357093	13	JOB32266	04/25/2013 01:02:07	1.8s	322	5.4	0.0	0.1	0.8	4.
//35702S	S357028	13	JOB31261	04/25/2013 00:55:14	1.7s	2,467	0.7	0.0	0.1	0.2	0.
//35709G	S357093	13	JOB32268	04/25/2013 01:01:50	1.4s	219	6.2	0.0	0.1	0.8	5.
M4E5H7S	S4EH7S5	5	JOB29802	04/25/2013 00:16:01	1.3s	199	6.7	0.0	0.1	0.1	6.
//35709H	S357093	13	JOB32263	04/25/2013 01:02:00	1.2s	263	4.7	0.0	0.1	0.9	3.
M4E0XWJH	S4E5N27D	82	JOB21988	04/25/2013 07:32:03	1.2s	314	3.8	0.0	0.1	0.1	3.
M4E0YTRH	S4E5N27D	46	JOB23296	04/25/2013 07:47:50	1.1s	251	4.3	0.0	0.1	0.2	3.
M35702S	S357024	3	JOB31261	04/25/2013 00:34:59	0.7s	2,440	0.3	0.0	0.1	0.1	0.
M4E07HCH	S4E5N27D	82	JOB18469	04/25/2013 06:42:49	0.7s	153	4.8	0.0	0.1	0.6	3.
4	lo receitoro	105	LIDBOARDE	III		400		0.01		~ ~ ~	1

We can see that many of the Jobs have Response times in the 2 - 6 MS range. Based on this, perhaps an investigation of I/O technology to reduce I/O response times should be a follow-on action.

Click **Ok** to return to the zBNA main panel.

# Task 5 – Performing an Alternate Processor Analysis

1. Now we will view a "what-if" scenario by selecting an alternate processor to "execute" the same batch jobs. **Click** *Action*, *Set Alternate CPUs* to load the Alternate CPUs panel.

🔝 IBM System :	IBM System z Batch Network Analyzer - TEST FILE													
<u>File Edit Filt</u>	ers	Action	Graph	Reports	He	lp								
Applied Filters		Set Alte	ernate Cl	PUs						Mainf				
		Flag Tra	ansition	Jobs	T					Model				
		Job Dat	aset Re	port		2				Partiti				
SERVICE CLAS	S: B	- Top 10	Dataset	Report	STDF	•				SYSID				
JOD NAMES. W	13 . 1	7EDC: C	omores	sion						Partiti				
	8	LEBOIRD	ompree							CPC U				
Key Batch 💌	J	ob Nam	e	Steps		Job Class	Acct Code	Service Class	Elapsed Time	CPU Time				
V	M37	3BJ5			11	J	37397332	BATPRDDF	2.0h	39.0m				
V	M3E	0IKSN			4	J	3E09E032	BATPRDDF	1.3h	20.3m				
~	M40	2GX3L			17	J	40242032	BATPRDDF	54.2m	27.9m				
V	M4E	07B1H		1	32	В	4E595732	BATCHHI	16.5m	71.9s				

2. Maximize the **Alternate CPUs** window to show all of the columns. Then expand the **Model** column in the **Alternate Processors** table so that the name of each model is completely viewable.

Alternate CPUs for CPC	291D96	And Address						
Eile Action								
Original Processor								
Model	User Name	GCPs	ZAAPs	ZIIPs	ICFs	IFLs	PwrSav	GCP MIPS
2817-M49/700		11.0	0.0	1.0		0.0	7.0	12,120.0
Alternate Processors	-							
Model	User Nam	e GCPs	ZAAPs	ZIIPs	ICFs	IFLS	PwrSav zAAP on zl	IP GCP MIPS
Namo	CliRam	Workload	Tuno	No	Weight	Can	MinCon	MaxCan
ONLM	z/0S-1.13	Low	CP	11.0	weight	999 D	12120.0	maxcap 12120.0
C. Ball		1. V. I	zIIP	1.0		999	1098.7	1098.7
VM2P	z/VM	Average/LV	IFL	7.0		999	7519.8	7519.8
							Delete New	Cancel Apply

Click New.

3. A drop-down menu will appear that allows you to select the new processor. In this example we are going to select a processor with less total capacity and also less capacity per engine. Select the **zEC12/600** family, and then the **2827-607**.

In this example, we are selecting a zEC12 607 subcapacity model versus the current z196 711 full capacity model. (Perhaps they have a zEC12 607 and are considering migrating these jobs to that processor, and they want to understand the impact to elapsed time changes versus their required Batch completion time.





Click **Apply** to view the hypothetical scenario with this new processor.

4. From the main zBNA panel, use *Graph, Display Graph Table* to display the graph to see that each row now contains a gray striped one below it. This second row shows the same jobs, however, the total times are estimated as if the jobs were run on the alternative new processor.



5. We can generate a new report that includes the alternate processor details or we can append to the one previously saved in **Task 3**. To do this, click on the **Reports** menu, then select **Generate Graph Report**, **Sort By Start Time**. This will prompt you to save the report as an HTML file. Since we have already created a report, you can select that file. zBNA will display the following message.



Click **Append** to add to the end of the previously generated file. **Note:** Click **Overwrite** to replace the file. Click **Cancel** to return to the graph. 6. The report will now include the alternate processor, as well as the estimated runtime in the table for this new processor.

The processors considered in this analysis are the following:

Note: There is no effort to determine if the alternate processor has the total capacity to run this workload. The analysis is simply comparing the single engine speed of base versus the alternate processor.

Name	Processor	Single GCP Mips	Ratio
Base (B)	2817-711	1,102	
Altemate 1 (A1)	2827-607	914	-17.0%

The analysis follows: Data

There are 36 jobs in the following table.

Name	Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time	CPU Time	Top Program	Top Pgm %
в	33	x	M3E0IKSN		4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,601	1,218	DSNECP10	8
Al	33	x	M3E0IKSN		4/25/13 3:39 AM	4/25/13 5:00 AM	4	J	3E09E032	BATPRDDF	4,851(5.4%)	1,468		
в	34	x	M402GX3L		4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,252	1,674	ENGEXE	4
Al	34	x	M402GX3L		4/25/13 4:54 AM	4/25/13 5:54 AM	17	J	40242032	BATPRDDF	3,595(10.5%)	2,018		
в	35		M373IUS		4/25/13 5:32 AM	4/25/13 6:28 AM	14	J	37397332	BATCHHI	3,315	1,296	DSNECP10	24
A1	35		M373IUS		4/25/13 5:32 AM	4/25/13 6:32 AM	14	J	37397332	ВАТСННІ	3,581(8.0%)	1,561		
в	36	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ВАТСННІ	991	72	IEFIIC	0
Al	36	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ВАТСННІ	1,006(1.5%)	87		
В			Total								239,325	72,959		
A01			Total								254,106(6.2%)	87,740		

In this case we can see that the Alternate Processor had a **Ratio** of **-17% Single GCP MIPS**, resulting in slightly increased CPU and Elapsed times compared to the current processor for each job.

Let's save the study as a zBNA file, click *File*, *Save As zBNA Study File*. This saves a .zBNA file containing the current filters and settings including the key batch jobs. However, when you load the .zBNA file, the original SMF70 and SMF30 files will still be needed.

# Task 6 – Exploring zEDC Compression

 To use the zBNA zEDC Compression function, SMF Type 14 and 15 (Input/Output Data Set Close) Records must be included in the ".dat" file. Click Action, zEDC: Compression on the main zBNA menu.

TBM System	z Batch Network A	Analyzer - TEST F	ILE											
Eile Edit Filt	ers Action Gra	aph <u>R</u> eports	Help											
Applied Filters	- Set Alterna	to CBUe						rame Informatio	in					
- Applied Filler	Set Anterna	le CPUS					Model				2047 744			
	Elag Transi	tion Jobs					model				2017-711			
SERVICE CLAS	S. R Job Datase	t Report	IDE				Partiti	on Name:			ONLM			
JOB NAMES: M	13*.   Top 10 Data	aset Report					SYSID	s			SYS1			
	ZEDC: Com	pression					Partiti	on Logical Utiliz	ation:		93.7%			
							CPC U	Itilization:			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zllP Time	CPU Intensity	EXCPs	Top Program	Top Pgm % Co	ndition Code
	M36BX4S	3	L J	36B96B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,54	2 DSNECP10	10.0%	0000
	M373BFD	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,81	4 DSNECP10	48.0%	0000
	M3EHL8S	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	3 DSNECP10	15.0%	0000
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,23	1 DSNECP10	22.0%	0000
	M4E5HEVS	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	4 DSNECP10	18.0%	0000
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,54	B DSNECP10	29.0%	0000
	M373XQ3	5		37397332	BATPRODE	1.50	56.6m	0.05	0.05	62.5%	6,10	1 DSNECP10	87.0%	0000
	M3YHK/SE	26	J	3YH3YH32	BATPRODE	1.50	36.6m	0.05	0.05	40.3%	874,50	S DSNECP10	64.0%	0000
	M3YHK/S3	20		31H31H32	BATPRODE	1.50	33.9m	0.05	0.05	30.0%	512,804	1 DSNECP10	62.0%	0000
	M3YHK/SG	26		31H31H32	BATPRODE	1.60	38.8m	0.05	0.05	39.4%	596,355	DSNECP10	62.0%	0000
	MOTOLO	3		30330332	BATPROUP	2.011	46.011	0.05	0.05	37.0%	21,90	DONECPTU DONECPTU	49.0%	0000
	M373065	3		37397332	BATCHHI	2.011	34.2m	0.05	0.05	22.2%	67,91	DONECP 10	20.0%	0000
	MOEDGGGQLL	4		25005022	DATERDOF	2.01	409.00	0.05	0.05	40.070	30,30	DONECP 10	12.0%	0000
	M2E06694	2		25005022	BATPPODE	1.00	490.05 10.0m	0.05	0.05	27 104	24	DSNECP10	22.0%	0004
	M2E066SM	2		2000002	DATERDO	1.00	17.2m	0.00	0.05	27.1%	221	DSNECP10	12.0%	0004
	M24DE92	6	1	24004422	DATERDO	2.2h	2.0h	0.00	0.03	61.6%	21.61	DSNECP10	02.0%	0004
	M337E83	5		33703732	BATPRODE	1.2h	26.6m	0.05	0.03	36.3%	2 434 98	DSNECP10	26.0%	0000
	M373IVS	3	1	37307332	BATCHHI	3.7h	1.3h	0.05	0.05	34.8%	144.84	BONECP10	34.0%	0000
	M34D71S	3	1 i - i - i - i - i - i - i - i - i - i	34D94432	BATPRODE	1.5h	38.2m	0.05	0.05	43.5%	3 735 60	DSNECP10	21.0%	0000
	M3E0COS	3	Ť	3E09E032	BATPRODE	2.2h	29.6m	0.05	0.05	21.9%	4 40	1DSNECP10	26.0%	0000
V	M373BJ5	11	1 J	37397332	BATPRDDF	2.0h	39.0m	0.05	0.45	32.2%	14 821 03	SYNCSORT	9.0%	0000
	M373CCS	15	1	37397332	BATPRODE	45.5m	571.8s	0.08	0.0s	21.0%	510.03	DSNECP10	13.0%	0000
	M3E066SO	2	Ĵ	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	34	DSNECP10	15.0%	0004
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121.78	5 DSNECP10	23.0%	0000
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,74	DSNECP10	19.0%	0000
L.	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	4 DSNECP10	8.0%	0000
	M3YFUEE	3	Ĵ	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	44	DSNECP10	21.0%	0000
	M373FPV	9	Ĵ	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	0000
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	31	DSNECP10	25.0%	0000
×	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,22	6 ENGEXE	4.0%	0000
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,67	7 DSNECP10	46.0%	0000
	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	3 DSNECP10	24.0%	0000
	M4E5F3SS	66	j j	4E595732	BATPRDDF	5.6h	20.7m	0.0s	0.2s	6.2%	19,960,843	B DSNECP10	17.0%	0000 -
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zBNA reads the data from the SMF Type 14 and 15 records.

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ata.



2. The **zEDC Report** panel displays after the SMF Type 14 and 15 records have been loaded.

This graph shows the estimated number of zEDC cards by hour needed to support the workload for all data sets that met the criteria in the interval. With this graph you can see the peak time and how many cards are required from a capacity perspective. Save this data and graphic image to a zBNA report file by clicking **Send Graph to Report File**. Input "**zEDCgraph**" for the file name, and click **Save**. Both the ".htm" and ".jpg" files are generated.

3. Let's view the data sets that zBNA has calculated are the top zEDC Compression candidates. Click **Show Top DSNs** to display the **zEDC Top Data Sets** panel.

<u>F</u> ile <u>E</u> dit			
<ul> <li>✓ Show Compressed Files</li> <li>✓ Show EF Files (not compressed)</li> <li>✓ Show PS Files (not EF and not EXCP)</li> <li>✓ Show PS Files (not EF and not EXCP)</li> </ul>	or MB? – MB/sec) otal)		
DSN	File Type	МВ	
I373.S73BJ324.SUYWLU.IWS	COMP	281256	
1373.S73BJ525.SUYWLU.IWS	COMP	234674	
I3SK.I68S.UA592.VXE.HHLG3.J3885Y22	COMP	93490	
I3SK.UA592.VXE.HHLG3.J3994Y22	COMP	93431	
I3SK.I68S.UA592.VXE.HHLG5.J3885Y22	COMP	89614	=
I3SK.VXEGWO.VRUW04.HHLG5	COMP	89556	
I3SK.I68S.UA592.VXE.HHLG7.J3885Y22	COMP	89369	
I3SK.I68S.UA592.VXE.HHLG4.J3885Y22	COMP	89357	
I3SK.UA592.VXE.HHLG7.J3992Y22	COMP	89311	
I3SK.VXEGWO.VRUW04.HHLG7	COMP	89310	
I3SK.UA592.VXE.HHLG4.J3993Y22	COMP	89299	
I3SK.I68S.UA592.VXE.HHLG6.J3885Y22	COMP	89275	
I3SK.VXEGWO.VRUW04.HHLG6	COMP	89215	
1373.S73BF42.SUYWLU3.RXWSXW.ILQDO.J2282Y22	COMP	57968	
I3NOSE.UFH.FODLPHAW.ILAHG	COMP	56448	
1373.J73BJ523.GHOWD.SUYDHA.FXUUHQW.J2258Y22	COMP	47649	
I3SK.I69S.UA592.GHS.HHLG3.J3885Y22	COMP	47461	
I3SK.I69S.UA592.GHS.HHLG5.J3885Y22	COMP	47141	-
	0000	17000	
Send Table Data to Report File			-
			OK
			-

By default, the list is ordered by the top data sets, according to MB, in each of the compression categories.

4. Double click on **MB** to sort the list of files by this characteristics.

🔀 zBNA: zEDC Top Data Sets			×
<u>File Edit</u>			
<ul> <li>✓ Show Compressed Files</li> <li>✓ Show EF Files (not compressed)</li> <li>✓ Show PS Files (not EF and not EXCP)</li> <li>✓ Show PS Files (not EF and not EXCP)</li> </ul>	or MB? - MB/sec) tal)		
DSN	File Type	мв 🕶	
I373.S73BJ324.SUYWLU.IWS	COMP	281256	-
I373.S73BJ525.SUYWLU.IWS	COMP	234674	
I4E5SE.P4E5PF31.KQR.PHPEHU.ILOH.J4696Y22	PS	134113	
I3SK.I68S.UA592.VXE.HHLG3.J3885Y22	COMP	93490	
I3SK.UA592.VXE.HHLG3.J3994Y22	COMP	93431	=
I3SK.I68S.UA592.VXE.HHLG5.J3885Y22	COMP	89614	
I3SK.VXEGWO.VRUW04.HHLG5	COMP	89556	
I3SK.I68S.UA592.VXE.HHLG7.J3885Y22	COMP	89369	
I3SK.I68S.UA592.VXE.HHLG4.J3885Y22	COMP	89357	
I3SK.UA592.VXE.HHLG7.J3992Y22	COMP	89311	
I3SK.VXEGWO.VRUW04.HHLG7	COMP	89310	
I3SK.UA592.VXE.HHLG4.J3993Y22	COMP	89299	
I3SK.I68S.UA592.VXE.HHLG6.J3885Y22	COMP	89275	
I3SK.VXEGWO.VRUW04.HHLG6	COMP	89215	
I3MWSE.UHVROYHG.FODLP.HAW.GDLOB.HQU.J2749Y22	PS	81070	
I4E5SE.P4E5PF5E.KQR.PHPEHU.ILOH.J4422Y22	PS	80711	
I373.S73BF42.SUYWLU3.RXWSXW.ILQDO.J2282Y22	COMP	57968	
I3NOSE.UFH.FODLPHAW.ILAHG	COMP	56448	-
LARE AREAUAC AUDVERUU ARUID	50	51004	
Send Table Data to Report File			
			ОК
			Cancel

Now the top data sets are listed by MB no matter which compression category they are in. Click **OK**.

5. On the **zEDC Report** panel, click **Graph Options** to display the **zEDC Options** panel.



Change the "Number of Top DSN Files" from the default value of 50 to 10. Click OK.



Click Show Top DSNs to redisplay the zEDC Top Data Sets panel.

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The purpose of providing the Top Data Sets is to identify which ones will provide the most impact/benefit from zEDC compression, and may provide a starting point for which ones to implement first.

ile <u>E</u> dit			
Show Compressed Files	Show by Rate or MB	? -	
	O by Rate (MB/sec	3	
Show EF Files (not compressed)	O bj nato (mbioot	7	
Show PS Files (not EF and not EXCP)	by MB (total)		
DSN	File Type	МВ	
373.S73BJ324.SUYWLU.IWS	COMP	281256	
373.S73BJ525.SUYWLU.IWS	COMP	234674	
3SK.I68S.UA592.VXE.HHLG3.J3885Y22	COMP	93490	
3SK.UA592.VXE.HHLG3.J3994Y22	COMP	93431	
3SK.I68S.UA592.VXE.HHLG5.J3885Y22	COMP	89614	
3SK.VXEGWO.VRUW04.HHLG5	COMP	89556	
3SK.I68S.UA592.VXE.HHLG7.J3885Y22	COMP	89369	
3SK.I68S.UA592.VXE.HHLG4.J3885Y22	COMP	89357	
3SK.UA592.VXE.HHLG7.J3992Y22	COMP	89311	
4E5SE.P4E5PF31.KQR.PHPEHU.ILOH.J469	6Y22 PS	134113	
Send Table Data to Report File			ОК
			Cance

Also, you can drill down further on a data set by right clicking on its name and selecting **Get the Life of this Dataset**.

You have successfully completed all the tasks in running the zBNA Lab.