zBNA Lab Guide



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z Systems Batch Network Analyzer (zBNA) Tool - Hands-on Lab

John Burg August 13 2015 Session 17551



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	IBM z Systems Batch Network Analyzer
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zBNA Lab Guide

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In this exercise you will complete the following tasks:

- 1) Explore the Main Screen
 - Start zBNA and load 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 with Simultaneous MultiThreading (SMT)

- Explore zEDC Compression Identify data sets that will benefit from moving to zEDC cards
- 7) Save the final zBNA file

1. To start the IBM z Systems 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 <u>z</u>BNA File* button, in addition to the original SMF70 (.edf) and z/OS SMF (.dat) files.

Browse For <u>z</u> BNA File	Choose the zBNA Study file
Please input the SM	F70 and SMF30 records below.
Browse For SMF <u>7</u> 0 File	C:\CPSTOOLS\zBNA\lestrel4.edf
Browse For z/OS SMF Fil	C1CPSTOOLSvzBNAttestrel4.dat

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)**.

ile Edit	Filters Action	i <u>G</u> raph	Reports H	elp											
Applied Fill	ers —							Tr Mainframe	Information	n					
								Model: Partition N SYSID: Partition L CPC Utiliza	ogical Utiliza	ition:		2817-711 ONLM SYS1 93.7% 93.7%	1		
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cl	Elapsed Ti	CPU Time	zAAP Time	zllP Time	IIP CP Time C	PU Inten	EXCPs	Top Progr	Top Pgm %	Condition
	M373Q3S	7	J	37397332	BATPRDDF	12.6m	204,8s	0.0s	0.3s	0.0s	27.0%	193,92	5 IEFIIC	0.0%	0000
	M3DQLSD	3	J	3DQ3DQ32	BATPRDDF	30.1m	26.55	0.0s	0.0s	0.0s	1.5%	11,99	5 DSNECP10	3.0%	0000
	M0VPI03V	2	Y	0FD12032		0.0s	0.0s	0.0s	0.0s		0.0%		9 IEFIIC	0.0%	0004
	M0D3TSE5	3	J	32092032	BATPRDDF	2.05	0.1s	0.05	0.05	0.0s	4.9%	824	4 IEFIIC	0.0%	0000
	M3SK891A	10	J	3SK9SK32	BATPRDDF	2.0s	0.15	0.0s	0.0s	0.0s	4.1%	800	IEFIIC	0.0%	0000
	M4E5HQ3A	5	J	4E595732	BATPRODF	4.0s	0.4s	0.0s	0.0s	0.0s	7.6%	3,554	4 IEFIIC	0.0%	0000
	DH03UXQ3	2	J	0PA0PA32	BATPRODF	0.05	0.05	0.0s	0.05	0.0s	0.0%	10	DIEFIIC	0.0%	0000
	M4E5HYPA	3	J	4E595732	BATPRDDF	8.0s	0.25	0.0s	0.0s	0.0s	1.9%	809	EFIIC	0.0%	0000
	M0VPI03V	2	J	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	0.0s	0.0%	1	EFIIC	0.0%	0004
	DH03UXQ4	2	J	0PA0PA32	BATPRODE	0.05	0.05	0.0s	0.05	0.0s	0.0%	10	IEFIIC	0.0%	0000
	M3DLWDSA	7	J	3DL12032	BATPRODE	1.0s	0.1s	0.0s	0.0s	0.0s	8,1%	31	5 IEFIIC	0.0%	0000
	M0FDW57	7	1	0F493332	BATPRODE	29.0s	1.65	0.0s	0.0s	0.0s	5.5%	5.88	2 IEFIIC	0.0%	0000
	M0D3FUL7	5	J		BATPRODE	64.0s	2.85	0.0s	0.0s	0.0s	4.4%		BIEFIIC	0.0%	0000
	M320MQ4	4	1		BATPRODE	19.0s	4.4s	0.0s	0.25		22.6%		BIEFIIC	0.0%	0000
-	M3E0ZAS	4	J		BATPRODE	29.9m	34.3s	0.0s	0.05		1.9%		EFIIC	0.0%	0000
-	M3577HS3	28	- i		BATPRDDF	28.0s	1.7s	0.0s	0.05		5.7%		TIEFIIC	0.0%	0000
	M3577LS	4	J	35795732	BATPRODE	4.05	0.45	0.0s	0.05		9.1%		1 IEFIIC	0.0%	0000
	M320XT3	4	Ĵ		BATPRODE	55.0s	1.25	0.0s	0.05		2.1%		IEFIIC	0.0%	0000
	Q823201A	6	A	6YO12042		0.05	0.15	0.05	0.05		9.4%		4 IEFIIC	0.0%	0000
	Q823201A	6	A	6YO12042		0.05	0.15	0.0s	0.05	0.05	0.0%		2 IEFIIC	0.0%	0000
-8-	M30DMDS	18	Ĵ		BATPRDDF	31.5m	28.15	0.05	0.05		1.5%	3.228.14		0.0%	0000
H	M4FVHEG3	5	Ĵ		BATPRDDF	15.8m	56.85	0.0s	0.05		6.0%	162.81		0.0%	0000
-	MOWKUG5J	1	A	0GE0GE42		0.0s	0.05	0.05	0.05	0.05	0.0%		SIEFIIC	0.0%	0000
	MOWKUG.	1	A	0GE0GE32		0.05	0.15	0.05	0.05		0.0%		1 IEFIIC	0.0%	0000
	Q823201A	6	A	6YO12042		0.05	0.15	0.05	0.05		11.8%		BIEFIIC	0.0%	0000
-	M4FVHFG	5	Ĵ		BATPRODE	13.0s	0.4s	0.05	0.05		2.7%		4 IEFIIC	0.0%	0000
	M4E0YEDF	51	B		BATCHHI	169.05	30.65	0.05	0.05		18.1%		DIEFIIC	0.0%	0000
-	M354B3S5	11	1		BATPRDDF	234.0s	45.5s	0.05	0.05		19.4%		2 IEFIIC	0.0%	0000
	M3B1FR3	15	J		BATPRDDF	9.05	0.55	0.05	0.05		5.3%		DIEFIIC	0.0%	0000
	M3B1FR7	15			BATPRODE	7.0s	0.55	0.05	0.05		6.5%		ELECTIC	0.0%	0000

 Individual jobs may be selected with a single click. Right-clicking the first job, M373Q3S, displays a menu. Select Show Step 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.

		on graph	Reports H	cip											
Applied Filt	ers							Model: Partition N SYSID:	ogical Utiliza			2817-711 ONLM SYS1 93.7% 93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cl	Elapsed Ti.	CPU Time	zAAP Time	zllP Time	IIP CP Time C	PU Inten	EXCPs	Top Progr	Top Pam %	Condition
	M373Q3S	7	- I		BATPRODE	12.6m	204.8s	0.05	0.3s	0.0s	27.0%	193,926		0.0%	0000
		Show Step	Details .		BATPRODE	30.1m	26.55	0.05	0.0s	0.05	1.5%		DSNECP10		0000
		Exclude Dat	Contraction of the local division of the loc		SYSSTC	0.05	0.05	0.05	0.0s	0.0s	0.0%		IEFIIC	0.0%	0004
	M0D3TSE5		The second s		BATPRDDF	2.05	0.15	0.05	0.0s	0.0s	4.9%		IEFIIC	0.0%	0000
	M3SK891A	Toggle Key	Batch		BATPRODE	2.05	0.15	0.05	0.0s	0.0s	4,1%		IEFIIC	0.0%	0000
	M4E5HQ3A	Job Datasel	t Report		BATPRODE	4.05	0.4s	0.0s	0.0s	0.0s	7.6%		IEFIIC	0.0%	0000
	DH03UXQ3	2	2		BATPRODE	0.0s	0.0s	0.0s	0.0s	0.05	0.0%		IEFIIC	0.0%	0000
_	M4E5HYPA	3			BATPRODE	8.0s	0.25	0.05	0.05	0.0s	1.9%		IEFIIC	0.0%	0000
	M0VPI03V	2			SYSSTC	0.0s	0.0s	0.05	0.05	0.0s	0.0%		IEFIIC	0.0%	0004
	DH03UXQ4	2			BATPRODE	0.05	0.05	0.05	0.05	0.0s	0.0%		IEFIIC	0.0%	0000
	M3DLWDSA	7	J	3DL12032	BATPRODF	1.05	0.1s	0.05	0.0s	0.0s	8.1%	315	IEFIIC	0.0%	0000
	M0FDW57	7	7 J		BATPRODE	29.0s	1.65	0.05	0.0s	0.0s	5.5%		IEFIIC	0.0%	0000
	M0D3FUL7	5	J	32092032	BATPRODE	64.0s	2.8s	0.05	0.0s	0.0s	4.4%	65.048	IEFIIC	0.0%	0000
	M320MQ4	4	L J	32092032	BATPRODE	19.05	4.45	0.0s	0.2s	0.0s	22.6%	12,363	IEFIIC	0.0%	0000
	M3E0ZAS	4	J	3E09E032	BATPRODE	29.9m	34.35	0.0s	0.0s	0.0s	1.9%		IEFIIC	0.0%	0000
	M3577HS3	28	J J	35795732	BATPRODE	28.0s	1.7s	0.0s	0.0s	0.0s	5,7%	7.217	IEFIIC	0.0%	0000
	M3577LS	4	J	35795732	BATPRODE	4.0s	0.45	0.05	0.0s	0.0s	9.1%	2,611	IEFIIC	0.0%	0000
	M320XT3	4	L J	32092032	BATPRODE	55.0s	1.25	0.05	0.0s	0.0s	2.1%	2,630	IEFIIC	0.0%	0000
	Q823201A	6	5 A	6YO12042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	0.0s	9,4%		IEFIIC	0.0%	0000
	Q823201A	6	5 A	6YO12042	BATTSTDF	0.05	0.15	0.05	0.0s	0.05	0.0%	272	IEFIIC	0.0%	0000
	M30DMDS	18	J	30D9K332	BATPRODF	31.5m	28.1s	0.0s	0.0s	0.0s	1.5%	3,228,140	IEFIIC	0.0%	0000
	M4FVHEG3	5	J	3FV3FV32	BATPRDDF	15.8m	56.8s	0.0s	0.0s	0.0s	6.0%	162,815	IEFIIC	0.0%	0000
	MOWKUG5J		A	0GE0GE42	BATTSTDF	0.0s	0.0s	0.0s	0.0s	0.0s	0.0%	145	IEFIIC	0.0%	0000
	MOWKUG	1	A	0GE0GE32	BATTSTDF	0.0s	0.1s	0.0s	0.0s	0.0s	0.0%	171	IEFIIC	0.0%	0000
	Q823201A	6	5 A	6YO12042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	0.0s	11.8%	233	IEFIIC	0.0%	0000
	M4FVHFG	5	i J	3FV3FV32	BATPRODE	13.0s	0.4s	0.0s	0.0s	0.0s	2.7%	1,724	IEFIIC	0.0%	0000
	M4E0YEDF	51	B	4E595732	BATCHHI	169.0s	30.6s	0.0s	0.0s	0.0s	18.1%	62,829	IEFIIC	0.0%	0000
	M354B3S5	11	J	35495732	BATPRDDF	234.0s	45.5s	0.0s	0.0s	0.0s	19,4%	77,722	IEFIIC	0.0%	0000
	M3B1FR3	15	J	38138132	BATPRODF	9.05	0.5s	0.05	0.0s	0.0s	5.3%	10,830	IEFIIC	0.0%	0000
47 Jobs	M3B1FR7	16	1	3R13R132	RATPRODE	7.05	0.5s	0.05	0.0s	0.0s	E 504	10 795		ubtype 5) hav	0000

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

Eile Action	n											
lob Name: N	1373Q3S		Job Numbe	er: JOB300	91		Number o	f Steps: 7		Key Batch	n: No	
Start Date: A	Apr 25, 201	3	Start Time:	12:17 AM			End Date:	Apr 25, 2013		End Time:	12:29 AM	
lob Class: J			Service Cla	ass: BATPF	RDDF		Account C	ode: 373973	Condition	Code: 0000		
op Pgm %: (0%		Top Progra	im: IEFIIC			Elapsed T	ime: 758.17 S	econds	CPU Inten	sity: 27.0%	
Steps	Start Dat	te Start Time	End Date E	nd Time	Proc S	step Step N	lame Pro	gram Name	Step Num	ber Sub Type	Job Class A	cct Code
	4/25/		4/25/13	0:29:42					7 T			37397332
<u>г</u>												112
rvi	ice Class	Report Class	Elapsed Tin	ne CPU T	Time	zAAP Time	zIIP Time	IIP CP Time	EXCP	CPU Intensity	Top Program	Top Pgm
B/	ATPRDDF		12.6	6m 20)4.8s	0.0s	0.3s	0.0	193926	27.0%	IEFIIC	0.
4 Us	se this ho	rizontal bar s	croll bar to	view all c	olum	ns.	-					

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

In the **Step Number** column "**7 Total**" 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**.

e Fait H	Iters Action G	raph Beport	s Help												
pplied Filter	rs							T Mainframe In	formation						
								Model:				2817.711			
								Partition Nam	22			ONLM			
								Concession of the local division of the loca	10 10						
								SYSID:				SYS1			
								Partition Logic	al Utilization:			93.7%			
								CPC Utilization	t;			93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time 🔻	zAAP Time	zilP Time	IIP CP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M34DES3	6	J	34D94432	BATPRODF	3.3h	2.0h	0.05	0.05	0.0s	61.5%	31,510	DSNECP10	92.0%	000
	M3738DS	21	J	37397332	BATPRODE	6.3h	2.01	0.08	0.7s	0.0s	31,7%	18,159,677	7 DSNECP10	46.0%	000
	M373IYS	3	J.	37397332	BATCHHI	3.7h	1.3h	0.05	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	000
	M373ON4A	4	J.	37397332	BATPRODE	2.8h	1.2h	0.0s	0.05	0.0s	40.8%	56,388	B DSNECP10	63.0%	00
	M373DVF	9	J	37397332	BATPRODE	4.9h	1.01	0.0s	0.0s	0.0s	20.6%	4,74	DSNECP10	41.0%	00
	M373XQ3	5	J.	37397332	BATPRODE	1.5h	56.6m	0.05	0.0s	0.0s	62.5%		1 DSNECP10	87.0%	00
	M3YFUEE	3	3	3YF3YF32	BATPRODE	3.0h	48.2m	0.05	0.05	0.05	27,2%	441	1 DSNECP10	21.0%	00
	M3HS23VA	3	3	3HS3HS32	BATPRDOF	2.0h	45.9m	0.05	0.05	0.0s	37.7%	21,905	5 DSNECP10	49,0%	00
	M3738J5	11	J.	37397332	BATPROOF	2.0h	39.0m	0.0s	0.4s	0.0s	32.2%	14,821,030	SYNCSORT	9.0%	00
	M3YHK7SG	26	J	3YH3YH32	BATPRODE	1.6h	38.9m	0.0s	0.0s	0.0s	39.5%	596,350	DSNECP10	62.0%	00
	M34D7JS	3		34D94432	BATPRODE	1.5h	38.2m	0.0s	0.0s	0.0s	43.5%	3.735,605	5 DSNECP10	21.0%	00
	M3YHK7SE	26	J	3YH3YH32	BATPRODE	1.5h	36.8m	0.05	0.0s	0.05	40,5%	874,506	5 DSNECP10	64.0%	00
	M373IAS	3	3	37397332	BATCHHI	2.6h	34.2m	0.05	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	00
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.05	0.0s	0.05	22,1%	316	5 DSNECP10	25,0%	00
	M3YHK7S3	26	J	3YH3YH32	BATPRODE	1.5h	34.0m	0.0s	0.05	0.0s	36.7%		DSNECP10	62.0%	00
	M3YHK7SF	26	J.	3YH3YH32	BATPRODE	1.4h	33.3m	0.05	0.0s	0.0s	40.4%	731,964	DSNECP10	63.0%	00
	M3E0COS	3	J	3E09E032	BATPRODE	2.2h	29.6m	0.05	0.05	0.0s	21,9%	4.404	4 DSNECP10	26.0%	00
	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.05	0.05	0.05	51.5%	2.949,226	5 ENGEXE	4.0%	00
	M337F83	5	J	33793732	BATPRODE	1.2h	26.6m	0.05	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	00
	M34DUG3	15	J	34D94432	BATPRODF	1.3h	23.9m	0.0s	0.0s	0.0s	29.5%	21,548	B DSNECP10	29.0%	00
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.05	0.0s	20.0	31.0%	43,231	DSNECP10	22.0%	00
	M3738FD	7	3	37397332	BATPRODE	58.5m	22.1m	0.0s	0.05	0.0s	37,7%	865,814	4 DSNECP10	48.0%	00
	M3HS451A	9		3HS3HS32	BATPRODE	59.4m	21.8m	0.05	0.0s	0.0s	36.6%		5 DSNECP10	23.0%	00
	M373IUS	14	3	37397332	BATCHHI	55.3m	21.6m	0.05	0.28	0.0s	39.1%	3,407,043	DSNECP10	24.0%	00
	M4E5F3SS	66	3	4E595732	BATPRODE	5.6h	20.7m	0.0s	0.2s	0.0s	6.2%	19,960,843	DSNECP10	17.0%	00
	MBEOIKSN	4	J.	3E09E032	BATPRODE	1.3h	20.3m	0.0s	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	00
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.05	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	00
	M373CNS	5		37397332	BATPRODE	1.3h	19.9m	0.05	0.05	0.0s	25.3%		DSNECP10	19.0%	00
	M3E066SO	2	J	3E09E032	BATPRODE	2.2h	19.6m	0.05	0.0s	0.05	14.9%		DSNECP10	15.0%	00
	M3YV654	9	J	3YV3YV32	BATPROOF	22.4m	19.2m	0.0s	0.0s	0.0s	85.5%	130,750		0.0%	00
	M402HY4E	18	J.	40240232	BATPRODF	52.1m	19.1m	0.05	0.05	0.0s	36.5%	4,293.857		0.0%	00
	M3E066SA	2	J	3E09E032	BATPROOF	1.1h	18.2m	0.0s	0.0s	0.0s	27.1%		DSNECP10	22.0%	00
	M3E066SN	2	J	3E09E032	BATPRODE	1.2h	17.2m	0.05	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	00
	M233332	18		23323332	BATPROOF	1.1h	16.6m	0,05	0.0s	0.0s	26.2%		ENGEXE	22.0%	00
	M3E066SZ	2	T	3E09E032	BATPRODE	52.0m	16.3m	0.0s	0.0s	0.0s	31.3%	3.2	LIEFIIC	0.0%	00

Task 2 - Filtering Data

 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...*

<u>File E</u> dit Fi	Iters Action	Graph Repor	ts <u>H</u> elp				
	et Table Filters lear Table Filte	*					
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time 🔻
Key Batch	Job Name M34DES3		Job Class 5 J	Acct Code 34D94432	Service Class BATPRDDF	Elapsed Time 3.3h	CPU Time ¥
Key Batch			6 J				2.0
Key Batch	M34DES3		6 J	34D94432	BATPRDDF	3.3h	2.0 2.0

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.

zBNA Filte	rs					- 6	N OTHER DESIGNATION.	
ob Thresh	olds:						Job Name Include Mask	
Top Prog GCP Tim Elapsed	e (secs		0 N	5				Add
Service Class		Report Class	Job Class	5	Account Code			
BATCHHI BATPRDDI BATTSTDF ONLPR2C SYSSTC		* NONE * BATAEPAY J2B3MBR J8SMFXXX J8WSF82E MEMBATCH	9 A J V W X Y	*	0F412032 0F493332 0F90F932 0F90F942 0FD 0FD12032 0FF12032		Exclude by Job Name	Remove
Filter by	time							
From:	/25/13	-	00:00:00		-			
To:	/25/13	-	07:59:54		-			OK

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 *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.

State of the local division of the	CONTRACTOR OF THE OWNER.	ik Analyzer - TEST FILE	
le <u>E</u> dit Fj	iters Action	iraph <u>R</u> eports <u>H</u> elp	
pplied Fitter	18	Mainframe Information	
		Model:	2817-711
		Partition Name:	ONLM
ERVICE CLA	SS: BATCHHI, B	ATPRODE, BATTSTDE SYSID:	SY51
		Partition Logical Utiliza	ation: 93.7%
		CPC Utilization:	93.7%
Key Batch	Job Name	Steps Job Class Acct Code Service Class Elapsed Time CPU Time = zAAP Time	zliP Time IIP CP Time CPU Intensity EXCPs Top Program Top Pgm % Condition Co
	M34DES3		31,510 DSNECP10 92.0% 00
	M3738DS	28NA Filters	169,677 DSNECP10 45.0% 00
	M373IYS		144,846 DSNECP10 34.0% 00
	M3730N4A	Job Thresholds: Job Name Include Mask	56,388 DSNECP10 63.0% 00
_	M373DVF	Top Program Pct (0-100) 0 %	4,741 DSNECP10 41.0% 00 6 101 DSNECP10 87.0% 00
_	M373XQ3 M3YFUEE		
-	M3HS23VA	GCP Time (secs) 10	
-	M373BJ5	Elapsed Time (secs)	Remove 21,905 DSNECP10 49.0% 00 821.030 SYNCSORT 9.0% 00
-	M3YHK7SG	Eapsed time (secs)	596.359 DSNECP10 62.0% 00
	M34D7JS		735.605 DSNECP10 21.0% 00
	M3YHK7SE	Service Report Job Account	874.506 DSNECP10 84.0% 00
	M373IAS	Class Class Code	67,910 DSNECP10 26.0% 00
	M373ECS	BATCHHI + NONE + 9 + 0F412032 +	316 DSNECP10 25.0% 00
	M3YHK7S3	BATPRODE BATAEPAY A 0F412032	512,864 DSNECP10 62.0% 00
	M3YHK7SF		731,964 DSNECP10 63.0% 00
	M3E0COS	BATTSTDF J2B3MBR B 0F90F932	4,404 DSNECP10 26.0% 00
	M402GX3L	ONLPR2C J8 SMFXXX J 0F90F942	Remove 949.226 ENGEXE 4.0% 00
	M337F83	SYSSTC J8WSF82E V OFD	434,989 DSNECP10 26.0% 00
_	M34DUG3	MEMBATCH W 0FD12032	21,548 DSNECP10 29.0% 00
	M373IZS	X 0FF12032	43,231 DSNECP10 22.0% 00
_	M373BFD	• • Y • 4 • 5	865,814 DSNECP10 48.0% 00
-	M3HS451A M373IUS		121,786 DSNECP10 23.0% 00 407.043 DSNECP10 24.0% 00
	M4E5F3SS		960.843 DSNECP10 24.0% 00
	M3E0IKSN	C Filter by time	976.574 DSNECP10 8.0% 00
-	M373FPV	From: 4/25/13 + 00:00:00 +	776.060 DSNECP10 17.0% 00
	M373CNS	The second se	392 740 DSNECP10 19.0% 00
	M3E066SO	To: 405/13 + 07/50/54 +	OK 344 DSNECP10 15.0% 00
	M3YV654	The second se	130,750 IEFIIC 0.0% 00
	M402HY4E		Cancel 293.857 IEFIIC 0.0% 00
	M3E066SA		340 DSNECP10 22.0% 00
	M3E066SN		320 DSNECP10 13.0% 00
	M233332		2546,318 ENGEXE 22.0% 00
Jobs	M3E066SZ	2 J 3E09E032 BATPRDDF 52.0m 16.3m 0.0s	0.0s 0.0s 31,3% 321/IEFIIC 0.0% 00 Only JOB end records (type 30 subtype 5) have been k

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, **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.

plied Fitter			1.11.11.1				ir Main	frame informat	ion —					
	SS: BATCHHL	BATPROOF, BATT	STDF				Mode Partit SYSIC Partit	t: Ion Name:			281 ONI SYS 93.3	51 7%		
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time -	zAAP Time	zilP Time	IIP CP Time	CPU Intensity	EXCPs Top Program	Top Pgm % Co	ndition Code
	M34DES3	5	J	34D94432	BATPRODF	3.3h	2.0h	0.0s	0.0s	0.0s	61.5%	31,510 DSNECP10	92.0%	000
	M3738DS	21	J.	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.7s	0.0s	31.7%	18,169,677 DSNECP10	46.0%	000
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	0.05	34.8%	144,846 DSNECP10	34.0%	000
	M373ON4A	4	L	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	0.05	40.8%	56,388 DSNECP10	63.0%	000
	M373DVF	9	1	37397332	BATPRDOF	4.9h	1.0h	0,0s	0.0s	0.0s	20.6%	4,741 DSNECP10	41.0%	000
	M373XQ3	Show Step Deta	alls J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	0.0s	62.5%	6,101 DSNECP10	87.0%	000
	M3YFUEE	Exclude Data	. J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.05	0.0s	27.2%	441 DSNECP10	21.0%	000
	M3HS23VA			3HS3HS32	BATPRODF	2.0h	45.9m	0.06	0.0s	0.0s	37.7%	21,905 DSNECP10	49.0%	000
	M373BJ5	Toggle Key Bate	ch J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	0.0s	32.2%	14,821,030 SYNCSORT	9.0%	000
	M3YHK7SG	Job Dataset Re	port J	3YH3YH32	BATPRODE	1.6h	38.9m	0.0s	0.05	0.0s	39.5%	596,359 DSNECP10	62.0%	.00
	M34D7JS	3	J	34D94432	BATPRODF	1.5h	38.2m	0.0s	0.0s	0.0s	43.5%	3,735,605 DSNECP10	21.0%	00
	M3YHK7SE	26	J	3YH3YH32	BATPRODF	1.5h	36.8m	0.0s	0.0s	0.0s	40.5%	874,506 DSNECP10	64.0%	00
	M373IAS	3	1	37397332	BATCHHI	2.6h	34.2m	0.05	0.0s	0.0s	22.2%	67,910 DSNECP10	26.0%	00
	M373ECS	3	J.	37597532	BATPRODE	2.6h	34.1m	0.0s	0.0s	0.05	22.1%	316 DSNECP10	25.0%	00
	M3YHK7S3	26	J	3YH3YH32	BATPRODF	1.5h	34.0m	0.0s	0.0s	0.08	36.7%	512,864 DSNECP10	62.0%	00
	M3YHK7SF	26	3	3YH3YH32	BATPRDOF	1.4h	33.3m	0.0s	0.0s	0.0s	40.4%	731,964 DSNECP10	63.0%	00
	M3E0COS	3	. J.:	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	0.0s	21.9%	4,404 DSNECP10	26.0%	00
	M402GX3L	17	J.	40242032	BATPRDOF	54.2m	27.9m	0.0s	0.0s	0.0s	51.5%	2,949,226 ENGEXE	4.0%	00
	M337F83	5	J	33793732	BATPRODF	1.2h	26.6m	0.0s	0.0s	0.05	35.3%	2,434,989 DSNECP10	26.0%	00
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	0.0s	29,5%	21,548 DSNECP10	29.0%	00
	M373IZS	3	L	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	0.0s	31.0%	43.231 DSNECP10	22.0%	00
	M373BFD	7	J	37397332	BATPRODF	58.5m	22.1m	0.05	0.05	0.05	37.7%	865.814 DSNECP10	48.0%	00
	M3HS451A	.9	L.	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	0.0s	36.6%	121,786 DSNECP10	23.0%	00
	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.28	0.0s	39.1%	3,407,043 DSNECP10	24.0%	00
	M4E5F3SS	55	J	4E595732	BATPRDDF	5.6h	20.7m	0.0s	0.2s	0.0s	6.2%	19,960,843 DSNECP10	17.0%	00
	M3E0IKSN	4	1	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	0.0s	26.5%	1,976,574 DSNECP10	8.0%	00
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	0.0s	15.2%	1,776,060 DSNECP10	17.0%	00
	M373CNS	5	J .	37397332	BATPROOF	1.3h	19.9m	0.0s	0.0s	0.0s	25,3%	392,740 DSNECP10	19.0%	00
	M3E066SO	2	L	3E09E032	BATPRDDF	2.2h	19.6m	0.06	0.0s	0.0s	14.9%	344 DSNECP10	15.0%	00
	M3YV654	9	1	3YV3YV32	BATPRODF	22.4m	19.2m	0.0s	0.0s	0.0s	85.5%	130,750 IEFIIC	0.0%	00
	M402HY4E	18	J	40240232	BATPRODF	52.1m	19.1m	0.0s	0.05	0.0s	36.5%	4,293,857 IEFIIC	0.0%	00
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	0.0s	27.1%	340 DSNECP10	22.0%	00
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	0.0s	23.7%	320 DSNECP10	13.0%	00
	M3E066SZ	2	J	3E09E032	BATPRDDF	52.0m	16.3m	0.0s	0.0s	0.05	31.3%	321 IEFIIC	0.0%	00
	M373XQ3	5	1	37397332	BATPROOF	25.1m	15.2m	0.0s	0.0s	0.0s	60.7%	24.834 IEFIIC	0.0%	02

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**.



 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.

mail and Firms								a design of the second second	For some state of the second							
pplied Filte RVICE CL/ DB NAMES:	ASS: BATCHHI, BA	TPROOF, BATT	STDF					Mainframe In Model: Partition Nam SYSID: Partition Logi CPC Utilizatio	e: cal Utilization:			2817-711 ONLM SYS1 93.7%				
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time *	zAAP Time	zliP Time	IIP CP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Co	
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.05	0.05	0.0s	61.5%	31,510	DSNECP10	92.0%	000	
	M3738DS	21	1	37397332	BATPRODE	6.3h	2.0h	0.0s	0.75	0.0s	31.7%	18.169,677	DSNECP10	46.0%	000	
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	000	
	M3730N4A	4	J	37397332	BATPRODE	2.8h	1.2h	0.05	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	000	
	M373XQ3	5	1	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	000	
	M3YFUEE	3	1	3YF3YF32	BATPRODF	3.0h	48.2m	0.0s	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	000	
	M3HS23VA	3	1	3HS3HS32	BATPRODF	2.0h	45.9m	0.05	0.0s	0.0s	37.7%	21,905	DSNECP10	49.0%	000	
(ar)	M373BJ5	11	J	37397332	BATPRODE	2.0h	39.0m	0.0s	0.45	0.0s	32.2%	14.821.030	SYNCSORT	9.0%	000	
	M3YHK7SG	26	J	3YH3YH32	BATPRODE	1,6h	38.9m	0.0s	0.0s	0.0s	39.5%	596,359	DSNECP10	62,0%	000	
	M34D7JS	3	1	34D94432	BATPRODE	1.5h	38.2m	0.0s	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	000	
	M3YHK7SE	26	1 I	3YH3YH32	BATPRODE	1.5h	36.8m	0.0s	0.0a	0.01	40.5%	874 506	DSNECP10	64.0%	000	
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	0.0s	22.2%	67.910	OSNECP10	26.0%	000	
	M373ECS	3	1	37597532	BATPRODE	2.6h	34.1m	0.0s	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	000	
	M3YHK7S3	26	J	3YH3YH32	BATPRODE	1.5h	34.0m	0.0s	0.0s	0.05	36.7%		DSNECP10	62.0%	000	
	M3YHK7SF	26	1	3YH3YH32	BATPRODE	1.4h	33.3m	0.0s	0.0s	0.0s	40.4%		DSNECP10	63.0%	000	
	M3E0COS	3	Ĵ	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	0.0s	21.9%		DSNECP10	26.0%	000	
1	M402GX3L	17	1	40242032	BATPRODE	54.2m	27.9m	0.0s	0.05	0.0s	51.5%	2,949,226		4.0%	000	
	M337F83	5	1	33793732	BATPRODE	1.2h	26.6m	0.0s	0.0s	0.0s			DSNECP10	26.0%	000	
	M34DUG3	15	1	34D94432	BATPRODE	1.3h	23.9m	0.0s	0.05	0.05			DSNECP10	29.0%	000	
	M373IZS	3	1	37397332	BATCHHI	1.2h	22.8m	0.01	0.05	0.0s			DSNECP10	22.0%	000	
-	M373BFD	7	1	37397332	BATPRODE	58.5m	22.1m	0.0s	0.05	0.05	37,7%		DSNECP10	48.0%	000	
	M3HS451A	9	1	3HS3HS32	BATPRODE	59.4m	21.8m	0.05	0.05	0.0s			DSNECP10	23.0%	000	
-	M373IUS	14	1	37397332	BATCHHI	55.3m	21.6m	0.0s	0.25	0.05			DSNECP10	24.0%	000	
-	M4E5F3SS	66	1	4E595732	BATPRDDF	5.6h	20.7m	0.05	0.25	0.05	6.2%		DSNECP10	17.0%	000	
12	M3E0IKSN	4		3E09E032	BATPRODE	1.3h	20.7m	0.05	0.05	0.0s			DSNECP10	8.0%	000	
	M373FPV	9	1	37397332	BATCHHI	2.2h	20.0m	0.05	0.05	0.0s			DSNECP10	17.0%	000	
	M373CNS	5	1	37397332	BATPRODE	1.3h	19.9m	0.05	0.05	0.05			DSNECP10	19.0%	000	
	M3E066SO	2	1	3E09E032	BATPRODE	2.2h	19.5m	0.05	0.05	0.05			DSNECP10	15.0%	000	
-	M3YV654		1	3YV3YV32	BATPRODE	22.4m	19.0m	0.05	0.05	0.05	85.5%	130.750		0.0%	000	
-	M402HY4E	18	1	40240232	BATPRODE	52.1m	19.1m	0.05	0.05	0.0s		4,293,857		0.0%	00	
	M3E066SA	2	1	3E09E032	BATPRODE	1.1h	18.2m	0.05	0.05	0.05	27.1%		DSNECP10	22.0%	000	
	M3E066SN	2		3E09E032 3E09E032	BATPRODE	1.10 1.2h	18.2m	0.05	0.05	0.05			DSNECP10	13.0%	000	
	M3E066SZ	2	1	3E09E032	BATPRODE	52.0m	17.2m 16.3m	0.05	0.05	0.05			IEFIIC	0.0%	000	
-	M3E06652 M373XQ3	2		3E09E032 37397332	BATPRODE	25.1m		0.05	0.05	0.05		24 834		0.0%	022	
_	M373XQ3 M4E5HEVS	7	-	3/39/332 4E595732	BATPRODE	25.1m		0.05	0.05	0.05			DSNECP10	0.0%	022	

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

plied Fi	ters														
	LASS: BATCHHI, BA S: M4°, M3°	TPROOF, BATT	STDF					Mainframe In Model: Partition Nam SYSID: Partition Logic CPC Utilization	e: cal Utilization:			2817-711 ONLM SYS1 93.7% 93.7%			
(ev Batc	h Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zilP Time	IIP CP Time	CPU Intensity	EXCPs ·	Top Program	Top Pam %	Condition C
	M32000F	5	J	3209D042	BATPRDDF	1.5h	12.0m	0.05	0.05	0.05	13.6%	49.551.826	DSNUGSIT	3.0%	00
	M32009F	5	1	3209D042	BATPRODE	35.4m	453.7s	0.05	0.05	0.0s	21.3%	40,730,232	DSNUGSIT	2.0%	00
	M3203EU	4	J	32092032	BATPRODE	36.0m	10.0m	0.0s	0.0s	0.05	27.8%	22.516,797	IEFIIC	0.0%	00
	M4E5F3SS	66	J	4E595732	BATPRODE	5.6h	20.7m	0.05	0.25	0.0s	6.2%	19.960.843	DSNECP10	17.0%	00
	M3738DS	21	1	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.7s	0.0s	31.7%	18,169,677	DSNECP10	46.0%	00
*	M373BJ5	11	J	37397332	BATPRODE	2.0h	39.0m	0.0s	0.45	0.05	32.2%	14,821,030	SYNCSORT	9.0%	00
	M320PED	10	1	32092032	BATPRDDF	31.3m	429.85	0.05	0.0s	0.0s	22.9%	14,770,924	IEFIIC	0.0%	00
	M320LG64	6	J	3J012042	BATPRODE	38.3m	100.9s	0.0s	0.05	0.05	4.4%	14.358.836	IEFIIC	0.0%	00
	M3YHGEU	-37	J	3YH3YH32	BATPRODE	1.3h	317.8s	0.0s	0.0s	0.0s	7.0%	11.814,609	IDCAMS	6.0%	00
	M3NE272G	12	J	3NEH7732	BATPRODE	1.2h	352.7s	0.05	1.15	0.05	8.3%	11,170,071	SKTHRED	4.0%	00
	M320XIU	4	J	32092032	BATPRODE	13.5m	265.5s	0.0s	0.0s	0.0s	32.7%	B.738,460	IEFIIC	0.0%	00
	M3205D3	7	J	32092032	BATPRODE	29.3m	283.85	0.0s	0.0s	0.0s	16.2%	8.533,858	IEFIIC	0.0%	00
	M3EODK3	2	240	3E03E032	BATPRODE	1.7h	112.95	0.0s	0.0s	0.0s	1.9%	8.532.779	P1BLAH1	1.0%	00
	M3205D7	4	J	32092032	BATPRDDF	582.09	286.4s	0.0s	0.0s	0.05	49.2%	B.202.131	IEFIIC	0.0%	00
	M364PSS	9	1	36496432	BATPRODE	1.8h	299.95	0.0s	0.0s	0.0s	4.6%	8.008.518	P142MP1	3.0%	
	M320ZVB	4	1	32092032	BATPRODE	27.8m	242.38	0.0s	0.0s	0.0s	14.5%	7,180,565		0.0%	
	M320DYUD	4	1	32092032	BATPRODE	51.9m	220.9s	0.0s	0.05	0.0s	7.1%		DSNUGSIT	2.0%	
	M30DEYS	3	1	30D9K332	BATPRODE	50.1m	123.6s	0.0s	0.0s	0.0s	4,1%		SKTHRED	2.0%	
	M320PEH	10	1	32092032	BATPRODE	22.8m	160.4s	0.05	0.05	0.05	11.7%	5.019.935		0.0%	00
	M320PE1	10	1	32092032	BATPRODE	412.0s	147.1s	0.01	0.05	0.0s	35.6%	4,648,950		0.0%	
	M320PEK	10	1	32092032	BATPRODE	22.1m	147.85	0.05	0.05	0.05	11.2%	4.635.676		0.0%	0
-	M3SK836A	11	, i	3SK9SK32	BATPRODE	33.8m	93.8±	0.0s	0.1s	0.0s	4.6%	4,519,131		0.0%	
-	M4E07APH	131	B	4E595732	BATCHHI	26.3m	121.95	0.0s	0.0s	0.0s	7.7%	4,479,181		0.0%	00
-	M3SK95DA	12	J.	3SK9SK32	BATPRODE	42.9m	160.3s	0.0s	1.25	0.0s	6.2%	4.362.335		0.0%	
	M3SK830A	11	1	35K95K32	BATPRODE	38.7m	348.9s	0.0s	0.15	0.0s	15.0%	4.327.934		0.0%	00
	M402HY4E	18	1	40240232	BATPRDDF	52.1m	19.1m	0.0s	0.0s	0.0s	36.5%	4,293,857		0.0%	
	M3205D8	4	1	32092032	BATPRODE	247.0s	141.15	0.00	0.05	0.05	56.9%	3,890,301		0.0%	0
-	M3SKGIDA	3	í.	3SK9SK42	BATPRODE	331.0s	133.85	0.05	0.05	0.0s	40.4%	3.813.883		0.0%	0
	M320XID	4	1	32092032	BATPRODE	526.0s	122.9s	0.05	0.05	0.05	23.4%	3,787,837		0.0%	
	M402GX4L	8	1	40242032	BATPRODE	34.1m	306,65	0.05	0.05	0.05	15.0%		PDRSW000	1.0%	
	M34D7JS	3	1	34D94432	BATPRODE	1.5h	38.2m	0.05	0.05	0.05	43.5%		DSNECP10	21.0%	
	M30HF73	5		30H90H32	BATPRODE	13.4m	57.35	0.05	0.05	0.05	7.1%	3.688.037		0.0%	
	M4E07HZH	128	B	4E595732	BATCHHI	27.8m	114.5s	0.08	0.25	0.0s	6.9%	3,499,688		0.0%	
-	M320DYUE	4	1	32092032	BATPRODE	23.4m	115.3s	0.05	0.05	0.05	8.2%	3.415.051		0.0%	
-	M320DYUE	-		32092032	BATPRODE	30.8m	115.7s	0.0s	0.05	0.0s	6.3%	3.413.820		0.0%	

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 <u>Edit</u>, <u>Find</u> (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.

	ems Batch Networ	and the second se	11222						and the second second					12	- 0 - x
	iters Action G	raph Reports	Help												C
Applied Filte ERVICE CLA OB NAMES:	ASS: BATCHHI, BA	TPROOF, BATT	STDF				Mode Partit SYSIC	ion Name:			281 ONL SYS 93.7	1			
							2232777	Itilization:			93.7	5			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zliP Time	IIP CP Time	CPU Intensity	EXCPs *	Top Program	Top Pgm % Co	ondition Code
	M320DYUE	4	J	32092032	BATPRODE	23.4m	115.3s	0.0s	0.0s	0.0s	8 2%			0.0%	000
	M320DYUE	4	J	32092032	BATPROOF	30.8m	115.7s	0.0s	0.0s	0.0s	6.3%			0.0%	000
	M373IUS	14	1	37397332	BATCHHI	55.3m	21.6m	0.0s	0.25	0.0s	39.1%		DSNECP10	24.0%	000
	M320SV3	10	j.	32092032	BATPRODE	413.05	109.1s	0.0s	0.05	0.05	25.4%			0.0%	000
	M320MOD	7	1	32092032	BATPRODE	22.6m	117.6s	0.0s	0.05	0.0s	8.7%			0.0%	000
-	M355MQS	11	1	35595532	BATCHHI	10.6m	16.4s	0.0s	0.0s	0.05	2.6%			0.0%	000
	M30DMDS	18	1	30D9K332	BATPRDDF	31.5m	28.15	0.0s	0.05	0.0s	1.5%			0.0%	000
	M373BJ4	5	1	37397332	BATPRDDF	1.2h	533.1s	0.0s	0.05	0.05	12 3%		SYNCSORT	6.0%	000
1	M4E07B1H	132	8	4E595732	BATCHHI	16.5m	71.95	0.05	0.1s	0.05		3.028.474		0.0%	000
	M3E0K8SN	7	1	3E09E032	BATPRODE	26.9m	62.1s	0.0s	0.25	0.0s	3.8%	3.005.538		0.0%	000
	M402GX3L	17	J	40242032	BATPROOF	54.2m	27.9m	0.0s	0.05	0.0s	51,5%	2,949,226		4.0%	000
-	M320XIL	4	1	32092042	BATPRODE	504.0s	84.3s	0.0s	0.0s	0.0s	16.7%	2,765,896		0.0%	000
	M3NE225G	13	1	3NEH7732	BATPRODE	47.4m	497.5s	0.05	4.5s	0.0s	17.5%		SKTHRED	1.0%	000
	M3SK97DA	12	1	35K95K32	BATPRODE	19.0m	74.25	0.05	0.85	0.05	6.5%	2.663.785		0.0%	000
	M3YHE033	6	1	3YH3YH32	BATPRODE	1.3h	243.3s	0.0s	0.0s	0.0s	5.0%	2.523.610		4.0%	000
	M3DLWESA	47	1	3DL12032	BATPROOF	30.5m	159.8s	0.0s	0.05	0.0s	8.7%	2,474,259		0.0%	000
-	M3SKGIFA	3	1	35K95K42	BATPRDDF	444.0s	81.4s	0.0s	0.0s	0.0s	18.3%	2,445,351		0.0%	000
	M337E83	5	1	33793732	BATPROOF	1.2h	26.6m	0.0s	0.05	0.0s	36.3%		DSNECP10	26.0%	000
-	M329XESA	9	1	3299F932	BATPRODE	1.3h	231.0s	0.0s	0.0s	0.0s	5.1%			4.0%	000
-	M4E0YHBH	130	B	4E595732	BATCHHI	16.4m	74.0s	0.05	0.1s	0.05	7.5%	2.353.877		0.0%	000
-	M320XIM	4	1	32092032	BATPRODE	276.0s	76.7s	0.0s	0.05	0.0s	27.7%			0.0%	000
	M320FR9A	4	1	32092032	BATPROOF	334.05	74.0s	0.05	0.05	0.09	22.1%	2,276,553		0.0%	000
_	M3SK61DA	7	1	3SK9SK32	BATPRDDF	16.9m	323.3s	0.05	1.45	0.05	32.0%			0.0%	000
-	M320MFN	4	1	33733732	BATPRDDF	16.2m	67.45	0.0s	0.05	0.05	6.9%			0.0%	000
	M364PC7	2	1	36496432	BATPRDDF	35.8m	175.5s	0.05	0.05	0.0s	8.2%		DSNECP10	3.0%	000
-	M3NE226Z	6	Ĩ	3NEH7732	BATPRDDF	29.4m	211.45	0.05	3.95	0.0s	12.0%		SKTHRED	1.0%	000
_	M354GJS	7	1	35495432	BATPRODE	1.6h	252.1s	0.05	1.6s	0.05	4.3%	1,983,375		2.0%	000
2	M3E0IKSN	4	1	3E09E032	BATPRODE	1.3h	20.3m	0.05	0.05	0.05	28.5%		DSNECP10	8.0%	000
-	M355MPS	8	1	35595532	BATCHHI	11.9m	47.55	0.05	0.1s	0.05	6.6%	1.963.366		0.0%	000
-	M320XII	4	1	32092042	BATPRDDF	319.0s	64.1s	0.05	0.01	0.05	20.1%			0.0%	000
	M3N4SDD	28	1	3N43N432	BATPROOF	18.6m	202.25	0.05	0.05	0.05	18.1%	1.890.000		0.0%	000
	M364PTS	20	1	36496432	BATPRODE	33.7m	155.28	0.05	0.08	0.09	7.7%		DSNECP10	7.0%	000
-	M320D3I	10	1	3MY3MY32	BATPRDOF	11.9m	52.75	0.05	0.05	0.05	7.4%	1,805,441		0.0%	000
	M320MQ6	4	1	32092032	BATPRDDF	42.8m	515.58	0.05	21.5s	0.05	20.1%		DSNUTILB	8.0%	000
-	M4E0YWGH	192	8	4E595732	BATCHHI	16.2m	107.2s	0.05	0.1s		11.0%			0.0%	000
3 Jobs		192		Larcard 94	Tour Print	10.510	107.25	0.05	0.15	0.03				30 subtype 5) ha	

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.

ST IB	M z Sy	stems Ba	atch Netv	vork Analy
<u>F</u> ile	<u>E</u> dit	Filters	Action	Graph
-	d Files Selec		Level Re	ecords
Save	e As zi	BNA Stu	dy File	
Sav	e as <u>C</u>	SV		
Sav	e as C	SV, <u>J</u> OB	S only	
Exit				

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 10% or greater. Note that there are now only **36 jobs** in the table, including the four that we selected as Key Batch jobs. Click *OK*.

Applied Filters SERVICE CLASS: BATI JOB NAMES: M3*, M4*	Name Steps Job J5 SN ZBNA Filters X3L Job Thresholds: 45	P Class Acct Cod	e Service Class	Elapsed Time C	Model: Partition SYSID: Partition CPC Utili	Logical Utiliz ration:			2817 ONLA SYS1 93.79 93.79	M 1		
SERVICE CLASS: BAT JOB MAKES: M3*, M4 M373B M373B M402G M400 M402G M402G M400 M400 M400 M400 M400 M400 M400 M40	Name Steps Job 15 15 15 15 15 15 15 15 15 28NA Filters 15 10 28NA Filters 15 10 10 10 10 10 10 10 10 10 10	Class Acct Cod	e Service Class	Elapsed Time C	Model: Partition SYSID: Partition CPC Utili	Name: Logical Utiliz ration:			ONLA SYS1 93.75	M 1		
✓ M373B. ✓ M360X ✓ M360X ✓ M402G ✓ M4607I M368X M3768X M3784L M374K M374K M374K M34DU	J5 SN zBNA Filters X3L B1H 4S	Class Acct Cod	e Service Class	Elapsed Time C	PUTime z	and the second second				191 10		
M3E0ik M402G M4E07 M368X M373ei M3EHL M374i M32HL M374i M425H M37Hk M37Hk	SN SBNA Filters X3L B1H 4S Ton Program P					AAP Time	zliP Time :	IIP CP Time	CPU Intensity	EXCPs Top Program	Top Pgm %	Condition Code
M402G M4E07 M4E07 M368X M378H M378H M37H M455H M374K M344DU M34HK	X3L B1H Job Thresholds: 4S Ton Program P								- E - X	321,030 SYNCSORT	9.0%	0000
M4E071 M368X- M3738 M35HL M373IZ M35HL M37HK M4E5H	B1H Job Thresholds: 4S Top Program P									076.574 DSNECP10	8.0%	0000
M368X M3738/ M3EHL M351Z M4E5H M371Z M37HK M34DU	4S Ton Program P									949.226 ENGEXE	4.0%	0000
M37388 M3EHL M3731Z M4E5H M3YHK M3YHK					Job Name In	clude Mask				028,474 IEFIIC	0.0%	0000
M3EHL M373IZ M4E5H M3YHK M34DU	Top Program P		10 5		and a state of the	a second monthly				172,542 DSNECP10	10.0%	0000
M373IZ M4E5H M3YHK M34DU	FU Losses	CI (0-100)	10 1		M3*				Add	865,814 DSNECP10	48.0%	0000
M4E5H M3YHK M34DU	8S GCP Time (sec	a) (a)	10		M4*					36,613 DSNECP10	15.0%	0000
M3YHK M34DU	S		10		1000			Re	move	43,231 DSNECP10	22.0%	0000
M34DU	EVS Elapsed Time (secs)	0							6,954 DSNECP10	18.0%	0000
	7SF									731,964 DSNECP10	63.0%	0000
112722/										21,548 DSNECP10	29.0%	0000
ING 1 C MA		Report		Account						6.101 DSNECP10	87.0%	0000
M3YHK	7SE Class	Class	Class	Code	-					874,506 DSNECP10	64.0%	0000
M3YHK	753 BATCHHI	NONE .		0F412032 *						512,864 DSNECP10	62.0%	0000
M3YHK	796									596,359 DSNECP10	62.0%	0000
M3HS2		BATAEPAY		0F493332	Exclude by J	ob Name				21,905 DSNECP10	49.0%	0000
M373IA		J2B3MBR	в	0F90F932						67,910 DSNECP10	26.0%	0000
M3730	N4A ONLPR2C	J8SMFXXX	J	0F90F942	M373DVF(JC	827670)		Re	move	56,388 DSNECP10	63.0%	0000
M3E066	6SU SYSSTC	J8WSF82E	V	OFD	1 / SECTOR 2010 101				KICOMDIII	342 DSNECP10	12.0%	0004
M3E064	6SA	MEMBATCH	w	0FD12032						340 DSNECP10	22.0%	0004
M3E064	5SN	1 0000000000	x	0FF12032						320 DSNECP10	13.0%	0004
M34DE	S3	-	V -	4 1 5						31,510 DSNECP10	92.0%	0000
M337F8	33	1								434,989 DSNECP10	26.0%	0000
M373IY	S									144.846 DSNECP10	34.0%	0000
M34D7.	JS Filter by time				-					735,605 DSNECP10	21.0%	0000
M3E0C	OS									4,404 DSNECP10	26.0%	0000
M373C	CS From: 405513	- 00								510,039 DSNECP10	13.0%	0000
M3E066	550									344 DSNECP10	15.0%	0004
M3HS4	51A To: 025/13	+ 07	59:54						OK	121,786 DSNECP10	23.0%	0000
M373C								-		892,740 DSNECP10	19.0%	0000
M3YFU									Cancel	441 DSNECP10	21.0%	0000
M373FF	PV							-		776,060 DSNECP10	17.0%	0000
M373E	CS									316 DSNECP10	25.0%	0000
M37380	DS N					-				HAD STT DOLLEODID	46.0%	0000
M373IU		J 37397332								169,677 DSNECP10	40,0%	10000

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

un Taur	Filters Action Graph	Reports	Help												
oad Files	-	_					Tr Mair	frame Informat	ion ———						
dd Selec	ted Step Level Records.						Mode	st			281	7.711			
		- R					Parti	tion Name:			ONL	M			
ave As z	BNA Study File	BATT	STDF				SYS								
ave as C	5V	centro (SYS				
ave as C	SV, JOBS only						224.72	tion Logical Utili	zation:		93.7				
1000	att good and m	-					CPC	Utilization:			93.7	%			
Xit		one DS	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zliP Time	IIP CP Time	CPU Intensity	EXCPs	Top Program	Teo Pam %	Condition Code
1	M373BJ5	11	J	37397332	BATPROOF	2.0h	39.0m		0.45	0.09	32 2%		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%	
	M402GX3L	17	J	40242032	BATPROOF	54.2m	27.9m		0.0s	0.09	51.5%	2 949 226	ENGEXE	4.0%	0000
	M4E07B1H	132	8	4E595732	BATCHHI	16.5m	71.9s		0.1s	0.0s	7.2%	3,028,474	IEFIIC	0.0%	0000
	M36BX4S	3	J	36896832	BATPRDDF	38.1m	13.9m		0.0s	0.0s	36.5%		DSNECP10	10.0%	0000
	M3738FD	7	J	37397332	BATPRDDF	58.5m	22.1m	0.05	0.0s	0.05	37.7%	865,814	DSNECP10	48.0%	0000
	M3EHL8S	2	J	3EH94932	BATPRODF	44.5m	12.2m		0.0s	0.0s	27.3%		DSNECP10	15.0%	0000
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
	M4E5HEVS	7	3	4E595732	BATPRODF	1.1h	15.0m	0.0s	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	000
	M3YHK7SF	26	J	3YH3YH32	BATPRODF	1.4h	33.3m	0.0s	0.05	0.0s	40.4%	731,964	DSNECP10	63.0%	000
	M34DUG3	15	J.	34D94432	BATPROOF	1.3h	23.9m	0.0s	0.0s	0.09	29.5%	21.548	DSNECP10	29.0%	000
	M373XQ3	5	J	37397332	BATPROOF	1.5h	56.6m	0.0s	0.05	0.0s	62.5%	6,101	DSNECP10	87.0%	000
	M3YHK7SE	26	C.3.2	3YH3YH32	BATPRODE	1.5h	36.8m	0.0s	0.0s	0.0s	40.5%	874.506	DSNECP10	64.0%	000
	M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	34.0m	0.0s	0.0s	0.09	35.7%		DSNECP10	62.0%	000
	M3YHK7SG	26	J	3YH3YH32	BATPROOF	1.6h	38.9m	0.0s	0.0s	0.0s	39.5%	596 359	DSNECP10	62.0%	000
	M3HS23VA	3	J	3HS3HS32	BATPRODE	2.0h	45.9m	0.0s	0.0s	0.0s	37.7%	21,905	DSNECP10	49.0%	000
	M373(AS	3	J	37397332	BATCHHI	2.6h	34.2m		0.0s	0.05	22.2%		DSNECP10	26.0%	000
	M373ON4A	4	J	37397332	BATPROOF	2.8h	1.2h	0.0s	0.05	0.0s	40.8%	56.388	DSNECP10	63.0%	000
	M3E066SU	2	1	3E09E032	BATPRDDF	1.0h	498.05	0.05	0.05	0.0s	13.4%	342	DSNECP10	12.0%	000
-	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	0.0s	27.1%		DSNECP10	22.0%	000
	M3E066SN	2	J	3E09E032	BATPRODF	1.2h	17.2m	0.0s	0.05	0.05	23.7%	320	DSNECP10	13.0%	000
	M34DES3	6	- J	34D94432	BATPRDDF	3.3h	2.0h		0.05	0.0s	61.5%	31.510	DSNECP10	92.0%	000
	M337F83	5	J	33793732	BATPRODE	1.2h	26.6m		0.05	0.0s	35.3%		DSNECP10	26.0%	000
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h		0.0s	0.0s	34.8%		DSNECP10	34.0%	000
	M34D7JS	3	J	34D94432	BATPROOF	1.5h	38.2m		0.0s	0.0s	43.5%		DSNECP10	21.0%	000
	M3E0COS	3	J	3E09E032	BATPRODF	2.2h	29.6m		0.0s	0.0s	21.9%		DSNECP10	26.0%	000
	M373CCS	15	J	37397332	BATPRDDF	45.5m	571.8s		0.0s	0.0s	21.0%		DSNECP10	13.0%	000
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	000
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.05	0.05	0.05	36.6%		DSNECP10	23.0%	000
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m		0.0s	0.0s	25.3%		DSNECP10	19.0%	000
	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m		0.0s	0.05	27.2%		DSNECP10	21.0%	000
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.05	0.0s	15,2%	1,776,060	DSNECP10	17.0%	000
	M373ECS	3	J	37597532	BATPRODE	2.6h	34.1m		0.05	0.0s	22.1%		DSNECP10	25.0%	000
	M3738DS	21	Ĵ	37397332	BATPRODE	6.3h	2.08		0.7s	0.0s			DSNECP10	46.0%	000
	M373IUS	14	1	37397332	BATCHHI	55.3m	21.6m		0.2s				DSNECP10	24.0%	000

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).

Applied Fitter	19							r Mainframe In	formation						
	ASS: BATCHHI, BA	TPRDDF, BATT	STDF					Model: Partition Nam SYSID: Partition Logic CPC Utilization	e; :al Utilization:			2817-711 ONLM SYS1 93.7% 93.7%			
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zllP Time	IIP CP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M36BX4S	3	J	36896832	BATPRDDF	38.1m	13.9m	0.0s	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	000
	M373BFD	7	1	37397332	BATPRODF	58.5m	19.4m	0.0s	0.05	0.0s	33.1%		DSNECP10	48.0%	00
	M3EHL8S	2	J	3EH94932	BATPRODF	44.5m	12.2m	0.0s	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	00
	M373IZS	3	1	37397332	BATCHHI	1.2h	22.8m	0.05	0.0s	0.0s	31.0%		DSNECP10	22.0%	00
	M4E5HEVS	7	1	4E595732	BATPRODE	1,1h	15.0m	0.05	0.0s	0.0s	23.7%		DSNECP10	18.0%	00
	M3YHK7SF	26	1	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	0.0s	40.1%		DSNECP10	63.0%	00
	M34DUG3	15	. J .	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	0.0s	29.5%		DSNECP10	29.0%	00
	M373XQ3	5	J.	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	0.0s	62.5%		DSNECP10	87.0%	00
	M3YHK7SE	26	1	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	0.0s	40.3%		DSNECP10	64.0%	00
	M3YHK7S3	26	1	3YH3YH32	BATPRODE	1.5h	33.9m	0.0s	0.0s	0.0s	36.6%		DSNECP10	62.0%	00
	M3YHK7SG	26	J	3YH3YH32	BATPRODF	1.6h	38.8m	0.0s	0.0s	0.0s	39.4%		DSNECP10	62.0%	00
	M3HS23VA	3	1	3HS3HS32	BATPRDDF	2.0h	46.0m	0.0s	0.0s	0.0s	37.8%		DSNECP10	49.0%	00
	M373IAS	3	1	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	0.0s	22.2%		DSNECP10	26,0%	00
	M373ON4A	4	J	37397332	BATPRODF	2.8h	1.2h	0.0s	0.0s	0.0s	40.8%		DSNECP10	63.0%	00
1	M3E066SU	2	1	3E09E032	BATPRODE	1.0h	498.0s	0.05	0.0s	0.0s	13,4%		DSNECP10	12.0%	00
_	M3E066SA	2	1	3E09E032	BATPRODE	1,1h	18.2m	0.0s	0.0s	0.05	27.1%		DSNECP10	22.0%	00
	M3E066SN	2	1	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	0.0s	23.7%		DSNECP10	13.0%	00
	M34DES3	6	J	34D94432	BATPRODE	3,3h	2.0h	0.0s	0.0s	0.0s	61.6%		DSNECP10	92.0%	00
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	0.0s	36.3%		DSNECP10	26.0%	00
	M373IYS	3	1	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	0.0s	34.8%		DSNECP10	34.0%	00
	M34D7JS	3	1	34D94432	BATPRODF	1,5h	38.2m	0.05	0.0s	0.0s	43.5%		DSNECP10	21,0%	00
_	M3E0COS	3	1	3E09E032	BATPRODF	2.2h	29.6m	0.0s	0.0s	0.0s	21.9%		DSNECP10	26.0%	00
×	M373BJ5	11	1	37397332	BATPRODE	2.0h	39.0m	0.0s	0.45	0.0s	32.2%		SYNCSORT	9.0%	00
-	M373CCS	15	1	37397332	BATPRODE	45.5m	571.8s	0.0s	0.0s	0.0s	21.0%		DSNECP10	13.0%	00
-	M3E066SO	2	1	3E09E032	BATPRODE	2.2h	19.6m	0.05	0.0s	0.0s	14.9%		DSNECP10	15.0%	00
-	M3H8451A	9		3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	0.0s	36.6%		DSNECP10	23.0%	00
	M373CNS M3E0IKSN	5	-	37397332 3E09E032	BATPRODE	1.3h 1.3h	19.9m 20.3m	0.0s	0.0s	0.0s	25.3%		DSNECP10 DSNECP10	19.0%	00
		4			BATPRODE			0.05		0.0s				21.0%	00
	M3YFUEE M373FPV	3	1	3YF3YF32		3.0h	48.2m	0.0s	0.05	0.05	27.2%		DSNECP10		00
-	M373ECS	9	1	37397332	BATCHHI	2.2h 2.6h	20.0m	0.05					DSNECP10	17.0%	00
		3	1	37597532	BATPRODE		34,1m	0.0s	0.05	0.05	22.1%		DSNECP10	25.0%	
(M)	M402GX3L	17	1	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.05	0.0s	51.5%	2,949,226		4.0%	00
_	M3738DS	21	1	37397332	BATPRODE	6.3h	2.0h	0.0s	0.8s	0.0s	32.0%		DSNECP10	46.0%	00
_	M373IUS M4E5F3SS	14		37397332 4E595732	BATCHHI	55.3m 5.6h	21.6m	0.0s	0.2s	0.05	39.1%		DSNECP10 DSNECP10	24.0%	00
Jobs	MAEDE 333	00	1	14E0907.32	BATPRODE	5.0n	20.7m	0.051	0.52	0.05	0.2%	18,900,843	USNEUP10	.17,9%	

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

Contraction of the local division of the	STATISTICS CONTRACTOR	ork Analyzer - TEST Graph Reports			1000									0
-		Graph Reports	Help											
pplied Fitte	rs						1	Mainframe Info	mation		10			
								Model:			2	2817-711		
								Partition Name:				DNLM		
		BATPROOF, BATTS	TOF					SYSID:				SYS1		
DB NAMES	M3*, M4*							Partition Logica	Utilization			93.7%		
								CPC Utilization:	Contraction Operation			93.7%		
Key Batch	Job Name	Steps	Job Class	Acct Code	Louis diana	Elapsed Time 💌	CPU Time	zAAP Time	zliP Time	IIP CP Time	CPU Intensity		m Top Pam %	0
Key Batch	M373BDS	Steps 21	Job Class	37397332	BATPRODF	Elapsed Time • 6.3h	2.0h	ZAAP TIMe 0.0s	DIP Time 0.8s	0.0s	32.0%	18.169.677 DSNECP10	46.0%	Condition Cod
	M4E5F3SS		A CONTRACTOR OF	4E595732	BATPRODE	5.6h	20.7m	0.05	0.25	0.0s	6.2%	19,960,843 DSNECP10	17.0%	00
-	M373IYS	Show Step Detai	15	37397332	BATCHHI	3.7h	1.3h	0.05	0.05	0.05	34.8%	144.846 DSNECP10	34.0%	00
-	M34DES3	Exclude Data		34D94432	BATPRDDF	3.3h	2.0h	0.05	0.05	0.05	61.6%	31,510 DSNECP10	92.0%	00
	M3YFUEE	Toggle Key Batch	h 1	3YF3YF32	BATPRODE	3.0h	48.2m	0.05	0.05	0.05	27.2%	441 DSNECP10	21.0%	00
	M3730N4A	Job Dataset Rep	20.	37397332	BATPRDDF	2.8h	1.2h	0.05	0.05	0.05	40.8%	56.388 DSNECP10	63.0%	00
	M373ECS	Job Dataset Rep	on	37597532	BATPRODE	2.6h	34.1m	0.05	0.05	0.05	22.1%	316 DSNECP10	25.0%	00
	M373IAS	3	1	37397332	BATCHHI	2.6h	34.2m	0.05	0.05	0.05	22.2%	67,910 DSNECP10	26.0%	00
	M3E0COS	3	J	3E09E032	BATPRODE	2.2h	29.6m	0.05	0.0s	0.05	21.9%	4.404 DSNECP10	26.0%	00
	M3E066SO	2	J	3E09E032	BATPRODE	2.2h	19.6m	0.0s	0.0s	0.05	14,9%	344 DSNECP10	15.0%	00
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.05	0.05	0.05	15.2%	1.776.060 DSNECP10	17.0%	00
	M3HS23VA	3	J	3HS3HS32	BATPRODE	2.0h	46.0m	0.0s	0.0s	0.05	37.8%	21,905 DSNECP10	49.0%	00
¥7	M373BJ5	311	1	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	0.0s	32.2%	14,821,030 SYNCSORT	9.0%	00
	M3YHK7SG	26	J	3YH3YH32	BATPRODE	1.6h	38.8m	0.0s	0.0s	0.0s	39.4%	596,359 DSNECP10	62.0%	00
	M3YHK7S3	26	1	3YH3YH32	BATPRODE	1.5h	33.9m	0.05	0.0s	0.0s	36.6%	512,864 DSNECP10	62.0%	00
	M3YHK7SE	26	1	3YH3YH32	BATPRODE	1.5h	36.6m	0.0s	0.0s	0.05	40,3%	874,506 DSNECP10	64.0%	00
	M373XQ3	5	1	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	0.0s	62.5%	6,101 DSNECP10	87.0%	00
	M34D7JS	3	. J .	34D94432	BATPRODF	1.5h	38.2m	0.0s	0.0s	0.0s	43.5%	3,735,605 DSNECP10	21.0%	00
	M3YHK7SF	25	1	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.05	0.05	40,1%	731,964 DSNECP10	63.0%	00
	M34DUG3	15	1	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.05	0.0s	29.5%	21,548 DSNECP10	29.0%	00
	M373CNS	5	1	37397332	BATPRODE	1.3h	19.9m	0.0s	0.0s	0.0s	25.3%	392,740 DSNECP10	19.0%	00
1	M3E0IKSN	4	1	3E09E032	BATPRDDF	1.3h	20.3m	0.05	0.05	0.0s	26.5%	1,976,574 DSNECP10	8.0%	00
	M373IZS	3	1	37397332	BATCHHI	1,2h	22.8m	0.0s	0.0s	0.0s	31.0%	43,231 DSNECP10	22.0%	00
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	0.05	36.3%	2,434,989 DSNECP10	26.0%	00
	M3E066SN	2	1	3E09E032	BATPRODE	1.2h	17.2m	0.0s	0.0s	0.0s	23.7%	320 DSNECP10	13.0%	00
	M3E066SA	2	1	3E09E032	BATPRDDF	1.1h	18.2m	0.05	0.0s	0.0s	27.1%	340 DSNECP10	22.0%	00
_	M4E5HEVS	7	1	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	0.0s	23.7%	6,954 DSNECP10	18.0%	00
	M3E066SU	2	1	3E09E032	BATPRDDF	1,0h	498.0s	0.05	0.05	0.05	13,4%	342 DSNECP10	12.0%	00
	M3HS451A	9	1	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.05	0.05	36.6%	121,786 DSNECP10	23.0%	00
	M3738FD	7	1	37397332	BATPRODE	58.5m	19.4m	0.0s	0.0s	0.0s	33,1%	865,814 DSNECP10	48.0%	00
	M373IUS	14	1	37397332	BATCHHI	55.3m	21.6m	0.0s	0.25	0.0s	39.1%	3,407,043 DSNECP10	24.0%	00
1	M402GX3L	17	1	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	0.0s	51.5%	2,949,226 ENGEXE	4.0%	00
	M373CCS	15	1	37397332	BATPRODE	45.5m	571.8s	0.0s	0.0s	0.0s	21.0%	510,039 DSNECP10	13.0%	00
	M3EHL8S	2	J	3EH94932	BATPRODE	44.5m	12.2m	0.0s	0.05	0.05	27.3%	36,613 DSNECP10	15.0%	00
Jobs	M36BX4S	3	1	36B96B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	0.0s	36.5%	172,542 DSNECP10	10.0%	00

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.

💌 zBNA Job	Details												10000	•	×		
Eile Action	Ŭ.																
Job Name: M	373BDS		Job Numb	er: JOB27	655	Numi	ber of Steps	: 21			Key Batch	No					
Start Date: Aj	pr 25, 2013		Start Time	e: 12:00 Al	i i	End	Date: Apr 25,	2013		E	ind Time:	6:17 AM					
Job Class: J			Service C	lass: BATF	RDDF	Acco	unt Code: 3	7397332		(Condition	Code: 0000)				
Top Pgm %: 4	16%		Top Progr	am: DSNE	CP10	Elaps	sed Time: 22	672.7 Se	econds	(PU Inten	sity: 32.0%					
r Steps								_		_			_	_	_		
Key Batch	Start Date	Start Time	End Date	End Time	Proc Step	Step Name	Program N	lame S	tep Num	ber S	ub Type	Job Class	Acct	Code	4		
	4/25/13	0:00:00	4/25/13	6:17:52					21 T	otal	Job		J 373	97332	-		
	4/25/13	0:00:00	4/25/13	2:31:53		\$373BD3	LNMF	IIW23		3	Step		J			Scroll to se	e all the Steps.
	4/25/13	2:31:53	4/25/13	2:39:29		EDFNXS3	LHEJH	IQHU		4	Step		J				
	4/25/13	2:39:29	4/25/13	2:47:18		EDFNXS4	LHEJH	IQHU		5	Step		J				
	4/25/13	2:47:18		2:50:28		EDFNXS5	LHEJH	IQHU		6	Step		J		-		
			Scroll to	o see the r	emaining c	olumns.											
		r	Steps		1007										199	8	
			Service Cla	ss Repo	t Class E	lapsed Time	CPU Time	ZAAP TI	ime zliF	Time	IIP CP T	ime EX	CP	CPU In	tensity	Top Program	Top Pam %
			BATPRO	DF		6.3h	2.0h		0.0s	0.85		0.0s 1816	39677		32.0%		46.0%
			BATPRO	DF		2.5h	37.1m		0.0s	0.0s			57559		24.5%		29.0%
			BATPRO	DF		455.0s	13.8s		0.0s	0.0s			53029		3.0%	IEFIIC	0.0%
			BATPRD	DF		469.0s	8.2s	1	0.0s	0.0s		0.0s 269	95024		1.7%	IEFIIC	0.0%
			BATPRD	DF		189.0s	3.7s	(0.0s	0.0s		0.0s 106	9746		1.9%	IEFIIC	0.0%
			4											III.			

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
- IIP CP 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.

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

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<u>Eile E</u> dit F <u>i</u>	Iters Action	Graph Reports	Help				
Applied Filter	'S	Display Graph: T	able				
		Display Graph: K	ev Jobs				
				~			
SERVICE CLA	SS: BATCHHI,	Display Graph: T		s			
JOB NAMES:	M3*, M4*	Set Intensity Per	rcent				
	-						
Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time 🔻	CPU Time
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.
	M4E5F3SS	66	J	4E595732	BATPRDDF	5.6h	20.7
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.
	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2
	M3730N4A	4	J	37397332	BATPRDDF	2.8h	1.
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2
	M3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0
2	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0
	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.8
	M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	33.9
	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.6
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6
	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9
V	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3

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

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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.

4. Holding Control allows the user to pan across the graph. The cursor will become a cross when this is happening.



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

5. Hold the mouse over a job to show the Job information.



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 displays.

	04/25 00:00	04/25 01:00	3	04/25 02:00		04/25 03	00	Times 04/25 04	00 00	04/25 05:00		14/25 05 00	; a	04/25 07:00	04/25 (
MayHK7SG															
M3YHK7SF M3YHK7SE															
M3YHK75E															
M3H529VA															
M373XQ3			-												
M373ON4A															
M373125															
EVICTEM								- C							
M373IAS		ZBNA Job	Detaile			-						-			
M373BFD		ZBINA JOD	Details	_	_	_							Bad I had a b		
M373BD5		File Action													
M36BX4S M34DES3														_	
M34DUG3		Job Name M	373BJ5		Job Num	ber: JOB03	554	Numbe	r of Steps: 11		Key Batch	Yes			
MAESHEVS															
MIEHLES		Start Date: Ap	ar 25 2013		Start Tim	e: 1:58 AM		Fod Da	te: Apr 25, 2013		End Time:	1-59 AM			
		Sur Care Pa	1.000					a second second	and the state of the state						
M4E5F3SS M3EDCOS		100000			120000		00000	10000	1000 C 1000 C 1000 C	22	1000				
M3738J5		Job Class; J			Service	lass: BATF	amor	ACCOU	nt Code: 373973	32	Condition	Code: 0000			
M3E066SN															
M3E006SO		Top Pgm %: 9	56 C		Top Prog	ram: SYNC	SORT	Elapse	d Time: 7255.67	Seconds	CPU Inten	sity: 32.2%			
Maeoeesu		and the second sec													
M3E0665A		Steps													
M3YFUEE		Key Batch						Step Name	Program Name			Job Class			
M337F83 M3407J5			4/25/13	1.58.10	4/25/13	3:59:06				11 Total		J	37397332	*	
M3730N9 -			4/25/13	1:58:10	4/25/13	1:58:10		CHNHFWO	LHIEU36	1	Step	3			
M373ECS			4/25/13	1:58.10	4/25/13	1:58.11		GHOHWH3	LGFDPV	2	Step	J			
M373FPV			4/25/13	1:58:11	4/25/13	1:58:12		VRUW23	VBQFVRUW	3	Step	J	1	-	
M373005			4/25/13	1.58.12	4/25/13	1:58:13		VRUW24	VBOEVRUW	4	Sten				
M3HS451A															
MREDIKSN								10000							
M402GXBL								Ok							
M973IUS -														1 1 1	
M4E07B1H					_										· · · · · · · · · · · · · · · · · · ·
trol Panel															
ecution (CPU)				44		1000		in the graph a	222				17	11	
PU Queue Time								you want to z					5	eset Graph	Back to Main
ther Time (< Thre	shold)			+10	200m CBCR	anu urag o	ver me area	you want to z	oom to:						
ther Time (>= Thr															
ther Time (Key Jo															

Click OK to return to the graph.

 A graph report can automatically be created by using the <u>Reports</u> menu while displaying the graph. Click <u>Generate Graph Report</u> 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 "<u>Sort By Start</u> 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 seconds.
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 Seconds	CPU Time Seconds	Top Program	Top Pgm %
1		M3YHK7SG		4/25/13 12:00 AM	4/25/13 1:38 AM	26	J	3YH3YH32	BATPRDDF	5,909	2,333	DSNECP10	62
2		M3YHK7SF		4/25/13 12:00 AM	4/25/13 1:22 AM	26	J	3ҮНЗҮНЗ2	BATPRDDF	4,951	2,000	DSNECP10	63
3		M3YHK7SE		4/25/13 12:00 AM	4/25/13 1:30 AM	26	J	ЗҮНЗҮНЗ2	BATPRDDF	5,459	2,209	DSNECP10	64
4		M3YHK7S3		4/25/13 12:00 AM	4/25/13 1:32 AM	26	J	зүнзүнз2	BATPRDDF	5,566	2,042	DSNECP10	62
5		M3HS23VA		4/25/13 12:00 AM	4/25/13 2:01 AM	3	J	3H\$3H\$32	BATPRDDF	7,308	2,757	DSNECP10	49
36	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ватснні	992	72	IEFIIC	0
		Total								239,348	73,109		

Note: A report may also be generated solely for key batch jobs by selecting *Gene<u>r</u>ate Key Batch Report* on the <u>Reports</u> menu. The following is included in the report.

Key Batch Jobs

These are jobs that the user specifically selected for display.

There are 4 jobs in the following table.

Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time Seconds	CPU Time Seconds	Top Program	Top Pgm %
1	x	M373BJ5		4/25/13 1:58 AM	4/25/13 3:59 AM	11	J	37397332	BATPRDDF	7,256	2,339	SYNCSORT	9
2	x	M3E0IKSN		4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,602	1,218	DSNECP10	8
3	x	M402GX3L		4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,253	1,674	ENGEXE	4
4	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ВАТСННІ	992	72	IEFIIC	0
		Tota1								16,103	5,303		

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



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

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

Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time Seconds	CPU Time Seconds	Top Program	Top Pgm %
1	x	M373BJ5		4/25/13 1:58 AM	4/25/13 3:59 AM	11	J	37397332	BATPRDDF	7,256	2,339	SYNCSORT	9
2	x	M3E0IKSN		4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,602	1,218	DSNECP10	8
3	x	M402GX3L		4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,253	1,674	ENGEXE	4
4	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ВАТСННІ	992	72	IEFIIC	0
		Total								16,103	5,303		



	Execution
	Wait for Execution
	Other Time (< Threshold)
	Other Time (>= Threshold)
	Other Time (Key Job)
1.	indicate Alternates

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.

<u>le E</u> dit F	ilters Action	Graph Reports	Help				
Applied Filte	rs —						
SERVICE CLA JOB NAME S		BATPRDDF, BATTS	TDF				
Key Batch 🔻	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time
V	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0n
V	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3n
V	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9r
			-			10 5	
V	M4E07B1H	132	В	4E595732	BATCHHI	16.5m	71.9
	M4E07B1H M36BX4S			4E595732 36B96B32	BATCHHI BATPRDDF	16.5m 38.1m	
		Show Step Details					13.9r
	M36BX4S		J	36B96B32	BATPRDDF	38.1m	13.9r 19.4r
	M36BX4S M373BFD	Show Step Details	J	36B96B32 37397332	BATPRDDF BATPRDDF	38.1m 58.5m	13.9r 19.4r 12.2r
	M36BX4S M373BFD M3EHL8S	Show Step Details Exclude Data Toggle Key Batch	J J J	36B96B32 37397332 3EH94932	BATPRDDF BATPRDDF BATPRDDF	38.1m 58.5m 44.5m	13.9r 19.4r 12.2r 22.8r
	M36BX4S M373BFD M3EHL8S M373IZS	Show Step Details Exclude Data	J J J	36B96B32 37397332 3EH94932 37397332	BATPRDDF BATPRDDF BATPRDDF BATCHHI	38.1m 58.5m 44.5m 1.2h	71.9 13.9r 19.4r 12.2r 22.8r 15.0r 33.1r

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 <u>Action</u> menu). zBNA reads the SMF Type 42 subtype 6 data.



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

Job Details:- Job Name: M Start Date: A		Key Batch: Yes Start Time: 7:24 AM		Time: 991.79 e: Apr 25, 201			itensity: 7.2% me: 7:41 AM	X	
Step Step Number		DSN		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	
S4E5H22E	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	
S4E5N27G	91	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	19.8s	738	26.8	0.0	0.0	20.7	
S4E5H22E	76	14E5SE.SE5H2233.M4E57B1S	19.5s	698	28.0	0.0	0.0	21.5	
S4E03FQ7	36	VBV35337.W294677.UD222.M4E07B1H.U2910380	15.7s	83	189.0	0.0	1.4	159.3	
84E5N26F	82	14E5SE.SE5N226F.M4E57B1S	15.6s	10401	1.5	0.0	0.0	1.4	
S4E5N24E	75	14E5SE.SE5N2233.M4E57B1S	13.2s	145	90.7	0.0	0.0	84.2	
S4E5N27E	89	I4E5SE.HAWUDFW.M4E57B1S.ILOH	12.8s	3276	3.9	0.0	0.0	2.5	
S4E5N227	92	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	8.4s	5249	1.6	0.0	0.0	1.5	
S4E03E01	47	MEDSEY MAE07B1S HAW2KLS LOGHA	8.49	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 In	tensity: 7.2%			
Start Date: A	pr 25, 2013	Start Time: 7:24 AM	End Date	: Apr 25, 201	3	End Ti	me: 7:41 AM			
Step	Step Number	DSN	Total IOTime	IO Count	Response Time	Queue Time	Pending Time		Discon Time	
S4E5N227	92	I4E5SEY.M4E57B1S.SOQDVSG.LQGHA	188.0s	1879622	0.1	0.0	0.0	0.0		
S4E5H22E	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		Г
S4E03FQG	44	I4E0SEY.M4E07B1S.HAW2KLS.GDWD	22.5s	7746	2.9	0.0	0.0	2.8		1
S4E5N27G	91	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	19.8s	738	26.8	0.0	0.0	20.7		1
S4E5H22E	76	14E5SE.SE5H2233.M4E57B1S	19.5s	698	28.0	0.0	0.0	21.5		L
S4E03FQ7	36	VBV35337.W294677.UD222.M4E07B1H.U2910380	15.7s	83	189.0	0.0	1.4	159.3		1
34E5N26F	82	14E5SE.SE5N226F.M4E57B1S	15.6s	10401	1.5	0.0	0.0	1.4		1
S4E5N24E	75	14E5SE.SE5N2233.M4E57B1S	13.2s	145	90.7	0.0	0.0	84.2		1
34E5N27E	89	I4E5SE.HAWUDFW.M4E57B1S.ILOH	12.8s	3276	3.9	0.0	0.0	2.5		
S4E5N227	92	I4E5SE.VRUWILOH.M4E57B1S.J2421Y22	8.4s	5249	1.6	0.0	0.0	1.5		
S4E03E0.I	47	14E0SEY M4E07B1S HAW2KLS1 OGHA	8.4s	83547	0.1	0.0	0.0	0.0		

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.

Data Set De											
lataSet: I4E	5SEY.M4E57B	1S.SOQDVS	G.LQGHA		Num	ber of Job St	teps: 2				
Job	Step	Step Number	Job Number	Step End	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconnect Time
	S4E5N27D	88	JOB21576	04/25/2013 07:31:53	0.1s	130					
4E07B1H	S4E5N227	92	JOB21576	04/25/2013 07:41:01	188.0s	1,879,622	0.1	0.	0 0.	0.0	0.
						-	512	100		KSDS index KSDS index	No
							512	6	No	KSDS index	No
							512	100	INU	KSDS index	INU

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.

5. Click the <u>Action menu then Top 10 Dataset Report.</u>

ile <u>E</u> dit Fi	iters Action G	raph Reports	Help												
Applied Fitter	s Set Altern	ate CPUs						Tr Mainframe In	formation						
		ation Jobs						Model:				2817-711			
								Partition Nam	100 C			ONLM			
ERVICE CLA	SS:B Job Datas		STDF					SYSID:							
OB NAMES:	M3", [Top 10 Da	itaset Report										SYS1			
	gEDC: Cor	npression	N					Partition Logi				93.7%			
	-			-				CPC Utilization	nc			93.7%			
Key Batch 👻	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zliP Time	IIP CP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Co
	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.45	0.0s	32.2%	14.821,030	SYNCSORT	9.0%	000
(er)	M3E0IKSN	4	J	3E09E032	BATPRODE	1.3h	20.3m	0.0s	0.05	0.0s	26.5%	1,976,574	DSNECP10	8.0%	000
1	M402GX3L	17	J	40242032	BATPRODF	54.2m	27.9m	0.0s	0.05	0.0s	51,5%	2,949,226	ENGEXE	4.0%	000
1	M4E07B1H	132	B	4E595732	BATCHHI	16.5m	71.9s	0.0s	0.1s	0.0s	7.2%	3.028,474		0.0%	
	M36BX4S	3	1	36896832	BATPRODE	38.1m	13.9m	0.05	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	
	M373BFD	7	1	37397332	BATPRODE	58.5m	19.4m	0.0s	0.0s	0.0s	33.1%		DSNECP10	48.0%	
	M3EHL8S	2	J	3EH94932	BATPRODE	44.5m	12.2m	0.05	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	
	M373IZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	0.0s	31.0%		DSNECP10	22.0%	
	M4E5HEVS	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	0.0s	23.7%		DSNECP10	18.0%	
	M3YHK7SF	26		3YH3YH32	BATPRODE	1.4h	33,1m	0.05	0.0s	0.0s	40.1%		DSNECP10	63.0%	
	M34DUG3	15	J	34D94432	BATPRODF	1.3h	23.9m	0.0s	0.0s	0.0s	29.5%		DSNECP10	29.0%	
	M373XQ3	5	1	37397332	BATPRODE	1.5h	56.6m	0.0s	0.0s	0.0s	62.5%		DSNECP10	87.0%	
	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	0.0s	40.3%		DSNECP10	64.0%	
-	M3YHK7S3	26	J	3YH3YH32	BATPRODF	1,5h	33.9m	0.0s	0.0s	0.0s	36.6%		DSNECP10	62.0%	
han .	M3YHK7SG	26	1	3YH3YH32	BATPRODE	1.6h	38.8m	0.0s	0.0s	0.0s	39,4%		DSNECP10	62.0%	
_	M3HS23VA	3	1	3HS3HS32	BATPRODE	2.0h	46.0m	0.0s	0.0s	0.05	37.8%		DSNECP10	49.0%	
	M373IAS	3	1	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	0.0s	22.2%		DSNECP10	26.0%	
	M3730N4A	4	J	37397332	BATPRODE	2.8h	1.2h	0.0s	0.0s	0.0s	40.8%		DSNECP10	63,0%	
_	M3E066SU	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	0.05	13.4%		DSNECP10	12.0%	
100	M3E066SA	2	1	3E09E032	BATPRDDF	1,1h	18.2m	0.0s	0.05	0.0s	27.1%		DSNECP10	22.0%	
	M3E066SN	2	1	3E09E032	BATPRODE	1.2h	17.2m	0.0s	0.0s	0.0s	23.7%		DSNECP10	13.0%	
	M34DES3	6	1	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.05	0.0s	61.6%		DSNECP10	92.0%	
_	M337F83	5	1	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.05	0.0s	36.3%		DSNECP10	26.0%	
	M373IYS	3	1	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	0.05	34.8%		DSNECP10	34.0%	
-	M34D7JS	3	1	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	0.0s	43.5%		DSNECP10	21.0%	
_	M3E0COS	3	1	3E09E032	BATPRODE	2.2h	29.6m	0.0s	0.0s	0.0s	21.9%		DSNECP10	26.0%	
_	M373CCS M3E066SO	15	1	37397332 3E09E032	BATPRDDF	45.5m	571.8s 19.6m	0.0s	0.0s	0.0s	21.0%		DSNECP10 DSNECP10	13.0%	
-	M3E066SO M3HS451A	2	-	3E09E032 3HS3HS32	BATPRDDF	2.2h 59.4m	19.6m 21.8m	0.05	0.05	0.0s	14,9%		DSNECP10 DSNECP10	23.0%	
	M3HS451A M373CNS	9	1	37397332	BATPRODE	59.4m 1.3h	21.8m 19.9m	0.05	0.05	0.05	25.3%		DSNECP10 DSNECP10	23.0%	
-	M3YFUEE	0	- 4	37397332 3YF3YF32	BATPRODE	1.3n 3.0h	19.9m 48.2m	0.05	0.05	0.05	20.3%		DSNECP10 DSNECP10	21.0%	
	M373FPV	3	1	37397332	BATCHHI	3.0h	48.2m 20.0m	0.05	0.05	0.05	15.2%		DSNECP10 DSNECP10	21.0%	
-	M373ECS	3	-	37597532	BATPRODE	2.2h	20.0m 34.1m	0.05	0.05	0.05	22.1%		DSNECP10 DSNECP10	25.0%	
	M373ECS M373BDS	21		37397332	BATPRODE	2.0h 6.3h	34.1m 2.0h	0.0s	0.05	0.05	32.0%		DSNECP10 DSNECP10	25.0%	
	M373IUS	14		37397332	BATCHHI	55.3m	2.0n	0.05	0.05	0.05	39.1%		DSNECP10	24.0%	

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.

🔀 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	
1355.QT.DF33.B	32.5m	
1355.QT.DE33.B	30.5m	
1355.QT.DG33.B	28.8m	
Y401SR.F7WQSURG.SODQ.GDWD	28.9m	
I373.S73BJ324.SUYWLU.IWS	28.7m	
I373.S73BJ525.SUYWLU.IWS	27.9m	
		OK Cancel

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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 4th through 7th 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.

DSI	N	Total IOTime		
BV3.VFHHUXQ		51.0m		
401SR.F7WQSOQ	W.SODQ.GDWD	36.7m		
329SR.F7WQSUR	G.SODQ.GDWD	33.8m		
355.QT.DD33.B		33.2m		
355.QT.DF33.B	Get the Life of t	his Dataset		
355.QT.DE33.B		30.000	て	
355.QT.DG33.B		28.8m		
401SR.F7WQSUR		28.9m		
373.S73BJ324.SUY	WLU.IWS	28.7m		
373.S73BJ525.SU\	WLU.IWS	27.9m		

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.

Data Set De 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	Disconnect Time
M4E5H7S	S4EH7S5	5	JOB29802	04/25/2013 00:16:01	1.3s	199	6.7	0.0	0.1	0.1	6.
M4E5UHS3	WHS7	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.(
4E0N7GH	S4E5N27D	55	JOB29876	04/25/2013 00:16:40	0.0s	2	3.7	0.0	0.0	0.2	3.1
4E0N7GF	VWHS2302	25	JOB30315	04/25/2013 00:21:17	0.0s	1	0.3	0.0	0.1	0.1	0.0
4E0YEDF	VWHS2302	25	JOB30739	04/25/2013 00:31:42	4.6s	860	5.4	0.0	0.1	0.2	4.5
A35703S	S357024	3	JOB31246	04/25/2013 00:34:25	0.0s	126	0.3	0.0	0.0	0.1	0.(
435702S	S357024	3	JOB31261	04/25/2013 00:34:59	0.7s	2,440	0.3	0.0	0.1	0.1	
4E0XCOH	S4E5N27D	80	JOB31288	04/25/2013 00:35:30	0.0s	2	7.4	0.0	0.1	0.1	7.(
M35703S	S357020	12	JOB31246	04/25/2013 00:36:19	0.0s	124	0.3	0.0	0.1	0.1	0.0
M35703S	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
435700S	S357093	5	JOB31515	04/25/2013 00:41:00	0.3s	76	4.4	0.0	0.1	0.2	3.1
M35702S	S357020	12	JOB31261	04/25/2013 00:53:33	12.3s	2,414	5.1	0.0	0.1	0.2	
M35702S	S357028	13	JOB31261	04/25/2013 00:55:14	1.7s	2,467	0.7	0.0	0.1	0.2	0.2
M35709G	S357093	13	JOB32268	04/25/2013 01:01:50	1.4s	219	6.2	0.0	0.1	0.8	5.
435709H	S357093	13	JOB32263	04/25/2013 01:02:00	1.25	263	4.7	0.0	0.1	0.9	
435709E	\$357093	13	JOB32266	04/25/2013 01:02:07	1.8s	322	5.4	0.0	0.1	0.8	
135709F	S357093	13	JOB32267	04/25/2013 01:02:56	2.1s	343	6.2	0.0	0.1	1.6	
435709D	S357093	13	JOB32265	04/25/2013 01:04:24	2.1s	329	6.5	0.0	0.1	1.4	4.1
(CARCALORD		LODGS LOF				6.7	-			

Now we want to see which Jobs have the most IO Time. Perform a sort on the **Total IO Time** column in descending order.

DataSet De DataSet: 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	Disconnect Time
M354KQR	VWHS23	2	JOB02903	04/25/2013 03:43:08	24.8m	281,099	5.3	0.0	0.0	0.3	4.
M354GJS	S354GO3	3	JOB03191	04/25/2013 03:22:10	460.0s	82,127	5.6	0.0	0.0	0.5	4.
M35702S	S357020	12	JOB31261	04/25/2013 00:53:33	12.3s	2,414	5.1	0.0	0.1	0.2	4.
M4E0YHBH	S4E5N27D	86	JOB10179	04/25/2013 04:20:52	5.6s	1,194	4.7	0.0	0.1	0.6	3.
M4E0YWGH	S4E5N27D	148	JOB01395	04/25/2013 01:34:20	4.7s	745	6.2	0.0	0.1	2.1	3.
M4E0YEDF	VWHS2302	25	JOB30739	04/25/2013 00:31:42	4.6s	860	5.4	0.0	0.1	0.2	4.
M4E5DGAS	VWHS223	3	JOB02930	04/25/2013 02:20:23	3.2s	1,327	2.4	0.0	0.1	0.5	1.
M4E0XBQH	S4E5N27D	82	JOB20027	04/25/2013 07:10:23	2.8s	467	6.0	0.0	0.1	1.5	4.
M4E563S	S4E5634	3	JOB16213	04/25/2013 06:09:27	2.7s	558	4.9	0.0	0.1	0.2	4
M35709D	S357093	13	JOB32265	04/25/2013 01:04:24	2.1s	329	6.5	0.0	0.1	1.4	4.
M35709F	S357093	13	JOB32267	04/25/2013 01:02:56	2.1s	343	6.2	0.0	0.1	1.6	4
M35709E	S357093	13	JOB32266	04/25/2013 01:02:07	1.8s	322	5.4	0.0	0.1	0.8	4.
M35702S	S357028	13	JOB31261	04/25/2013 00:55:14	1.75	2,467	0.7	0.0	0.1	0.2	0.
M35709G	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.
M35709H	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	0.10010	105	LODALLAS	A 1050010 01 00 11		4.5.75		0.0			

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** until the zBNA main panel is displayed.

Task 5 – Performing an Alternate Processor Analysis

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

TBM z Syste	ms Ba	atch Netw	ork Analyzer - TE	ST FILE				and the set
<u>F</u> ile <u>E</u> dit F <u>i</u> l	ters	Action	Graph Reports	s <u>H</u> elp				
Applied Filter	s —	Set Alte	rnate CPUs					
SERVICE CLA JOB NAMES: I		Job Dat Top <u>1</u> 0	ansition Jobs aset Report Dataset Report ompression	STDF				
Key Batch 💌	J	b Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time
V	M37	3BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m
2	M3E	0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m
V	M40	2GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m
2	M4E	07B1H	132	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.

te Action										
iginal Processor										
Model	User Name	GCPs	ZAAPs	ZiiPs	ICFs		IFLS		PwrSav	GCP MIPS
317-M49/700		11.0	0	0	1.0	0.0		7.0		12,1
ternate Processors	\cap									
Model	(4+0) User Nar	ne GCPs	ZAAPs	ZIIPs	ICFs	1FI	s	PwrSav	ZAAP on zilP	GCP MIPS
VAR Definitions for 28	17.711									
Name	CtiPgm	Workload	Туре	No	Weig	t	Сар		MinCap	MaxCap
		Workload	CP	No	11.0	999	Сар		12120.0	1212
Name	CtiPgm		Type OP JIIP	No		it 999 999 999	Cap		MinCap 12120 0 1098 7 7519 8	MaxCap 121 101 75

Click <u>N</u>ew.

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 **z13/600** family, and then the **2964-611**.

In this example, we are selecting a z13 611 subcapacity model versus the current z196 711 full capacity model. (Perhaps they have a z13 611 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.





We selected an IBM z13 processor, which supports a new feature, Simultaneous MultiThreading (SMT), on IFL and zIIP CPs only. An SMT Benefit value can be © 2013 - 2015 IBM Corporation Page 32 of 41

applied for each partition. You can type in the values manually in the **SMT column** in the respective **zIIP** and/or **IFL row** or let zBNA set the default value.

	ate CPUs for CP	C91090								
<u>File Act</u>	ion									
Driginal P	rocessor									
Mode	I User Na	me GCPs	ZAAF	s	ZIIPs	IC	Fs	IFLs	PwrSav	GCP MIP
2817-M49	/700	11	1.0	0.0	1.(D	0.0	7.0		12,218
Alternate	Processors									
Mode	User Na	me GCPs	ZAAPs	2	ZIIPs	ICFs	IFLS	PwrS	av zAAP on	GCP MI
2964-N30	/600	11		0	1	0		7		11,203
PAR Defi	nitions for 296	4.611								
PAR Defi	nitions for 296 CtlPam	4-611 Workload	Туре	No	Weight	Сар	Abs Ca	o SMT	MinCap	MaxCat
	nitions for 296 CtlPgm z/OS-1.13*		Type CP	No 11.0	Weight 999	Cap	Abs Ca) SMT	MinCap 11203.3	MaxCap 11203
Name	CtlPgm	Workload (UseBase)			999	Cap	Abs Ca) SMT		
Name ONLM	CtlPgm	Workload (UseBase)	CP	11.0	999 999	Cap	Abs Ca) SMT	11203.3	11203
Name ONLM	CtlPgm z/OS-1.13*	Workload (UseBase)	CP zlip	11.0 1.0	999 999	Cap	Abs Ca) SMT	11203.3 1608.0	11203 1608
Name DNLM	CtlPgm z/OS-1.13*	Workload (UseBase)	CP zlip	11.0 1.0	999 999		Abs Car	> SMT	11203.3 1608.0	11203 1608

First, we see that the MinCap is 1608.0 for the one zIIP and 10399.7 for the seven IFLs on the z13 611 before the SMT default is applied. Use Action, Apply IFL SMT Defaults. Repeat the same action for Apply zIIP SMT Defaults.

No. 11 Altern	ate CPUs for C	PC91D96								
Eile Ac	tion									
Original P	rocessor									
Mode	User Na	ame GCPs	Zł	APs	ZIIPs	ICF	s	IFLs	PwrSav	GCP MIPS
2817-M49	9/700	1	1.0	0.0	1.0		0.0	7.0		12,218.2
and the second s	Processors									
Mod			ZAAPs	ZIIPs	ICFs	IFLS		Sav z	AAP on zIIP	GCP MIPS
2964-N30)/600	11	0	1	0		7			11,203.3
LPAR Def	initions for 29	64-611								
Name	CtlPgm	Workload	Туре	No	Weight	Cap	Abs Cap	SMT	MinCap	MaxCap
ONLM	z/OS-1.13*	(UseBase)	CP	11.0	999				11203.3	11203.3
			zIIP	1.0	999			25%	2010.0	2010.0
VM2P	z/VM	(UseBase)	IFL	7.0	999			20%	12479.6	12479.6
						De	lete	<u>N</u> ew	Cancel	Apply

The suggested default **SMT Benefit** values are **25% for zIIP CPs** and **20% for IFL CPs**. You can see the increased MinCap values after applying SMT. Click Apply to view the hypothetical scenario with this new processor.

4. From the main zBNA panel, use <u>Graph</u>, Display Graph: <u>Table</u> 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 <u>Reports</u> menu, then select <u>Generate Graph Report</u>, <u>Sort By Start Time</u>. 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.

zBNA		X
? File Ex	cists. Overwrit	e or Append.
Overwrite	Append	Cancel

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		Proces	sor GCP Mips	Ratio				
						Base (B)	2817-7	11 1,111					
					A	lternate 1	(A1)	2964-6	11 1,018	-8.3%				
	Da	ta	alysis follov tre 36 jobs i		owing ta	ble.								
Name	Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time Seconds	CPU Time Seconds	Top Program	Top Pgn %
в	33	x	M3E0IKSN		4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,602	1,218	DSNECP10	8
Al	33	x	M3E0IKSN		4/25/13 3:39 AM	4/25/13 4:58 AM	4	J	3E09E032	BATPRDDF	4,711(2.4%)	1,328		
В	34	x	M402GX3L		4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,253	1,674	ENGEXE	4
Al	34	x	M402GX3L		4/25/13 4:54 AM	4/25/13 5:51 AM	17	J	40242032	BATPRDDF	3,404(4.7%)	1,826		
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 6:29 AM	14	J	37397332	BATCHHI	3,432(3.5%)	1,413		
в	36	x	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ватснні	992	72	IEFIIC	0
Al	36	x	M4E07B1H	-	4/25/13 7:24 AM	4/25/13 7:41 AM	132	в	4E595732	ВАТСННІ	997(0.6%)	78		
В			Total								239,348	72,982		
Al			Total								247,029(3.2%)	80,669		

In this case we can see that the Alternate Processor had a **Ratio** of **-8.3% 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 <u>*File*</u>, <u>Save As zBNA Study File</u>. 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.

 To use the zBNA zEDC Compression function, SMF Type 14/15 (Input/Output Data Set Close) and 42 Subtype 6 Records must be included in the ".dat" file. Click <u>Action</u>, <u>z</u>EDC: Compression on the main zBNA menu.

le Edit Filters	Action Gr	aph Reports	Help												
polied Fitters	Set Alterna	te CPUs	100000					r Mainframe In	formation						
ERVICE CLASS: I DB NAMES: M3*,	Elag Transi	ition Jobs It Report aset Report	STOF					Model: Partition Nam SYSID: Partition Logi CPC Utilizatio	cal Utilization:			2817-711 ONLM SYS1 93.7% 93.7%			
Key Batch J	lob Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zliP Time	IIP CP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition C
	5BX4S	3	J	36896832	BATPROOF	38.1m	13.9m	0.0s	0.0s	0.0s			DSNECP10	10.0%	00
	738FD	7	J	37397332	BATPRODE	58.5m	19.4m	0.0s	0.05	0.0s	33.1%		DSNECP10	48.0%	00
M38	EHL8S	2	J	3EH94932	BATPRODF	44.5m	12.2m	0.0s	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	00
M3	731ZS	3	1	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	0.05	31.0%	43,231	DSNECP10	22.0%	00
M46	E5HEVS	7	J	4E595732	BATPRODE	1.1h	15,0m	0.0s	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	00
M31	HK7SF	26	1	3YH3YH32	BATPRODF	1.4h	33.1m	0.0s	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	00
M34	4DUG3	15	J	34D94432	BATPROOF	1.3h	23.9m	0.0s	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	00
M3	73XQ3	5	1	37397332	BATPROOF	1.5h	56.6m	0.0s	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	00
M31	HK7SE	26	J	3YH3YH32	BATPRODE	1.5h	36.6m	0.0s	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	00
M31	HK7S3	26	1	3YH3YH32	BATPROOF	1.5h	33.9m	0.0s	0.0s	0.0s	36.6%	512,864	DSNECP10	62.0%	00
M31	HK7SG	26	J	3YH3YH32	BATPROOF	1.6h	38.8m	0.0s	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	00
	HS23VA	3	J	3HS3HS32	BATPRODF	2.0h	46.0m	0.0s	0.0s	0.0s	37.8%		DSNECP10	49.0%	00
M3	73IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	00
M31	730N4A	4	J	37397332	BATPRODF	2.8h	1.2h	0.05	0.05	0.0s	40.8%	56,388	DSNECP10	63,0%	00
M38	E066SU	2	J	3E09E032	BATPRODF	1.0h	498.0s	0.0s	0.0s	0.0s	13.4%		DSNECP10	12.0%	00
M38	E066SA	2	J	3E09E032	BATPROOF	1,1h	18.2m	0.0s	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	00
M38	E066SN	2	J.	3E09E032	BATPRODF	1.2h	17.2m	0.0s	0.0s	0.0s	23.7%		DSNECP10	13.0%	00
M34	4DES3	6	J	34D94432	BATPROOF	3.3h	2.0h	0.0s	0.0s	0.0s	61.6%		DSNECP10	92.0%	00
M33	37F83	5	1	33793732	BATPRODF	1.2h	26.6m	0.0s	0.0s	0.0s	35.3%	2,434,989	DSNECP10	26.0%	00
M37	73/1/8	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	00
M34	4D7JS	3	1	34D94432	BATPRODE	1.5h	38.2m	0.0s	0.05	0.0s	43.5%	3,735,605	DSNECP10	21.0%	00
M36	EOCOS	3	J	3E09E032	BATPRODE	2.2h	29.6m	0.0s	0.0s	0.05	21.9%		DSNECP10	26.0%	00
M31	738.15	11	J	37397332	BATPRODF	2.0h	39.0m	0.0s	0.4s	0.0s	32.2%	14,821,030	SYNCSORT	9.0%	00
	73CCS	15	J	37397332	BATPRODF	45.5m	571.8s	0.0s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	00
M38	E066SO	2	J	3E09E032	BATPRODE	2.2h	19.6m	0.0s	0.0s	0.0s	14.9%		DSNECP10	15.0%	00
M3	HS451A	9	1	3HS3HS32	BATPRODE	59.4m	21.8m	0.0s	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	00
M3	73CNS	5	J.	37397332	BATPRODE	1.3h	19.9m	0.0s	0.0s	0.0s	25.3%		DSNECP10	19.0%	00
M38	EOIKSN	4	J	3E09E032	BATPRODE	1.3h	20.3m	0.0s	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8,0%	00
	FUEE	3	J	3YF3YF32	BATPRODF	3.0h	48.2m	0.0s	0.0s	0.0s	27.2%		DSNECP10	21.0%	00
M33	73FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	0.0s	15.2%	1,776,080	DSNECP10	17.0%	00
M31	73ECS	3	J	37597532	BATPRODE	2.6h	34.1m	0.06	0.0s	0.05	22.1%	316	DSNECP10	25.0%	00
M40	02GX3L	17	J	40242032	BATPROOF	54.2m	27.9m	0.0s	0.0s	0.0s	51.5%	2,949,226	ENGEXE	4.0%	00
M31	738DS	21	J	37397332	BATPRODE	6.3h	2.0h	0.0s	0.8s	0.0s	32.0%	18,169,677	DSNECP10	45.0%	00
M3	73/US	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	0.0s	39.1%	3,407,043	DSNECP10	24.0%	00
M48	E5F3SS	66	j.	4E595732	BATPROOF	5.6h	20.7m	0.0s	0.25	0.0s	6.2%	19 960 843	DSNECP10	17.0%	00

zBNA reads the data from the SMF Type 14 and 15 records.

No Progress	×
i Reading .dat fi	e for 14 & 15 data. el

2. The **zEDC Top Data Sets** panel displays after the SMF Type 14, 15, 42(6) records have been loaded.

₹ zi	BNA: zEDC Top Data Sets								(
Eile	Edit Action Graph Report Help									
	Show Compressed Files Show EF Files (not compressed) Show PS Files (not EF and not EXCP)	Show by Rate or ME	эс)	High (8.1) High (8.1) Medium (5.4 Low (2.7) Custom				its		
				MB				Projection	s for zEDC	
	DSN		File Type	Transferred	RW Ratio	Comp Ratio	∆ I/O Count	∆ I/O Time	∆ CPU Time	∆ DASD Space MB
	1373.S73BJ525.SUYWLU.IWS		EF	663,525	0.1:1	1.0:1	-1,221,974	-21.4m	107.4s	-4,210
	1373.S73BJ324.SUYWLU.IWS		EF	465,642	0.2:1	1.0:1	-1,641,088	-24.9m	69.9s	-9,216
100	1373.S73BJ324.SUYWLU.IWS		COMP	281,256	2:1	2.8:1	-1,754,723	-26.6m	-10.4m	-17,666
	1373.S73BJ525.SUYWLU.IWS		COMP	234,674	1:1	2.8:1	-1,468,517	-25.8m	-522.5s	-22,176
	I3SK.I68S.UA592.VXE.HHLG7.J3885Y	22	EF	132,169	0:1	1.0:1	-174,833	-202.9s	21.9s	-4,223
	I3SK 168S UA592 VXE HHLG3 J3885Y	22	COMP	93,490	1:1	6.8:1	-226,527	-215.2s	-205.6s	-1,663
	I3SK.VXEGWO.VRUW04.HHLG3		COMP	93,431	1:1	6.8:1	-226,383	-271.7s	-205.5s	-1,662
	I3SK.UA592.VXE.HHLG3.J3994Y22		COMP	93,431	1:1	6.8:1	-226,345	-254.5s	-205.5s	-1,662
	I3SK.I68S.UA592.VXE.HHLG5.J3885Y	22	COMP	89,614	1:1	6.8:1	-218,802	-209.2s	-197.1s	-1,638
	I3SK.VXEGWO.VRUW04.HHLG5		COMP	89,556	1:1	6.8:1	-218,662	-207.8s	-197.0s	-1,637
	I3SK.UA592.VXE.HHLG5.J3994Y22		COMP	89,556	1:1	6.8.1	-218,625	-251.4s	-197.0s	-1,637
	I3SK.I68S.UA592.VXE.HHLG7.J3885Y	22	COMP	89,369	1:1	6.8:1	-218,273	-253.3s	-196.6s	-1,635
	I3SK.I68S.UA592.VXE.HHLG4.J3885Y	22	COMP	89,357	1:1	6.8:1	-218,177	-228.3s	-196.6s	-1,634
	I3SK.UA592.VXE.HHLG7.J3992Y22		COMP	89,311	1:1	6.8:1	-218,062	-243.1s	-196.5s	-1,634
	I3SK VXEGWO VRUW04 HHLG7		COMP	89,310	1:1	6.8:1	-218,098	-241.7s	-196.5s	-1,634
	I3SK.VXEGWO.VRUW04.HHLG4		COMP	89,299	1:1	6.8:1	-218,033	-250.0s	-196.4s	-1,633
	I3SK.UA592.VXE.HHLG4.J3993Y22		COMP	89,299	1:1	6.8:1	-217,998	-228.9s	-196.4s	-1,633
	I3SK.I68S.UA592.VXE.HHLG6.J3885Y	22	COMP	89,275	1:1	6.8:1	-217,992	-218.0s	-196.4s	-1,633
	I3SK.VXEGWO.VRUW04.HHLG6		COMP	89,215	1:1	6.8:1	-217,846	-250.5s		-1,632
	I3SK.UA592.VXE.HHLG6.J3993Y22		COMP	89,215	1:1	6.8:1	-217,810	-282.3s	-196.3s	-1,632
	I3MWSE.UHVROYHG.FODLP.HAW.GE			59,795	R	1.0:1	-845,791	-325.7s		
	1373.S73BF42.SUYWLU3.RXWSXW.IL	QDO.J2282Y22	COMP	57,968	2.1	3.1:1	-327,471	-254.6s	-128.8s	-3,297

These are the data sets that zBNA has calculated are the top zEDC Compression candidates. **Note**: By default, the list is ordered by the top data sets, according to MB.

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.

Notes:

- You can drill down further on a data set by right clicking on its name and selecting **Get the Life of this Dataset**.
- Right click on a specific data set, and select **zEDC Dataset Analysis** to see the job and steps associated with that data set.
- All of the data sets in the table can be selected at once. Right click in the check box column, **Select All**. An option, **Clear All**, is available.

3. Let's change the number of top data sets to display. Use <u>Action</u>, <u>Number of</u> Data Sets to Display.



Change the default value of 50 to **10**. Click **OK** to redisplay the **zEDC top Data Sets** panel.

4. Now only the top 10 zEDC candidates are in the table.

	npressed Files	Show by Rate or MI	3? Estin	mate PS or EF Co	mp. Ratio	Graphing O	ptions			
	Files (not compressed) Files (not EF and not EXCP)	 by Rate (MB/s by MB (total) 	ec)	 High (8.1) Medium (5.4) Low (2.7) Custom 1.0 			tasets) Datasets Selected Datase	ets		
						s to		Projection	s for zEDC	
	DSN		File Type	MB Transferred	RW Ratio	Comp Ratio	∆ I/O Count	∆ I/O Time	∆ CPU Time	∆ DASD Space MB
1373.873	BJ525.SUYWLU.IWS		EF	663,525	0.1:1	1.0:1	-1,221,974	-21.4m	107.4s	-4,210
I373.S73	BJ324.SUYWLU.IWS		EF	465,642	0.2:1	1.0:1	-1,641,088	-24.9m	69.9s	-9,216
	BJ324.SUYWLU.IWS		COMP	281,256	2:1	2.8:1	-1,754,723	-26.6m	-10.4m	-17,666
	BJ525.SUYWLU.IWS		COMP	234,674	1:1	2.8:1	-1,468,517	-25.8m	-522.5s	-22,176
	S.UA592.VXE.HHLG7.J3885Y		EF	132,169	0:1	1.0:1	-174,833	-202.9s	21.9s	-4,223
	S.UA592.VXE.HHLG3.J3885Y	22	COMP	93,490	1:1	6.8:1	-226,527	-215.2s	-205.6s	-1,663
	EGWO.VRUW04.HHLG3		COMP	93,431	1:1	6.8:1	-226,383	-271.7s	-205.5s	-1,662
	592.VXE.HHLG3.J3994Y22		COMP	93,431	1:1	6.8:1	-226,345	-254.5s	-205.5s	-1,662
	S.UA592.VXE.HHLG5.J3885Y	22	COMP	89,614	1:1	6.8:1	-218,802	-209.2s	-197.1s	-1,638
I3SK.VXE	GWO.VRUW04.HHLG5		COMP	89,556	1:1	6.8:1	-218,662	-207.8s	-197.0s	-1,637

5. Let's look a few of the zEDC graphs. Click **<u>G</u>raph**, **Projected zEDC Cards**.



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 **<u>Report</u>**, **<u>Output Graph</u>**. Input "**zEDCgraph**" for the file name, and click **Save**. Both the ".htm" and ".jpg" files are generated.

6. Click Graph, Projected zEDC CPU Savings.



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This graph shows the projected zEDC CPU Savings by file type. Compressed has the largest savings, as the CPU will be offloaded to the zEDC card. Save and **append** this graphic image to the **zEDCgraph.**htm file that was created. A ".jpg" file is created and saved in the updated ".htm" file.



7. Click Graph, Projected I/O Count.

This graph shows the projected zEDC I/O Savings by file type. Save and **append** this graphic image to the **zEDCgraph.**htm file that was created. A ".jpg" file is created and saved in the updated ".htm" file.

Return to the main panel, and save the final zBNA study file.

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