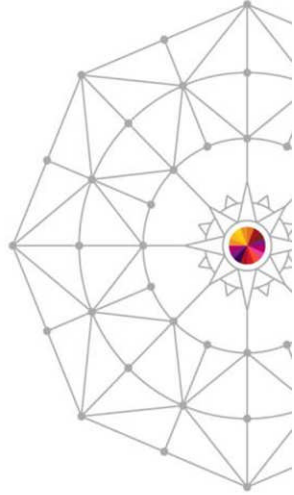




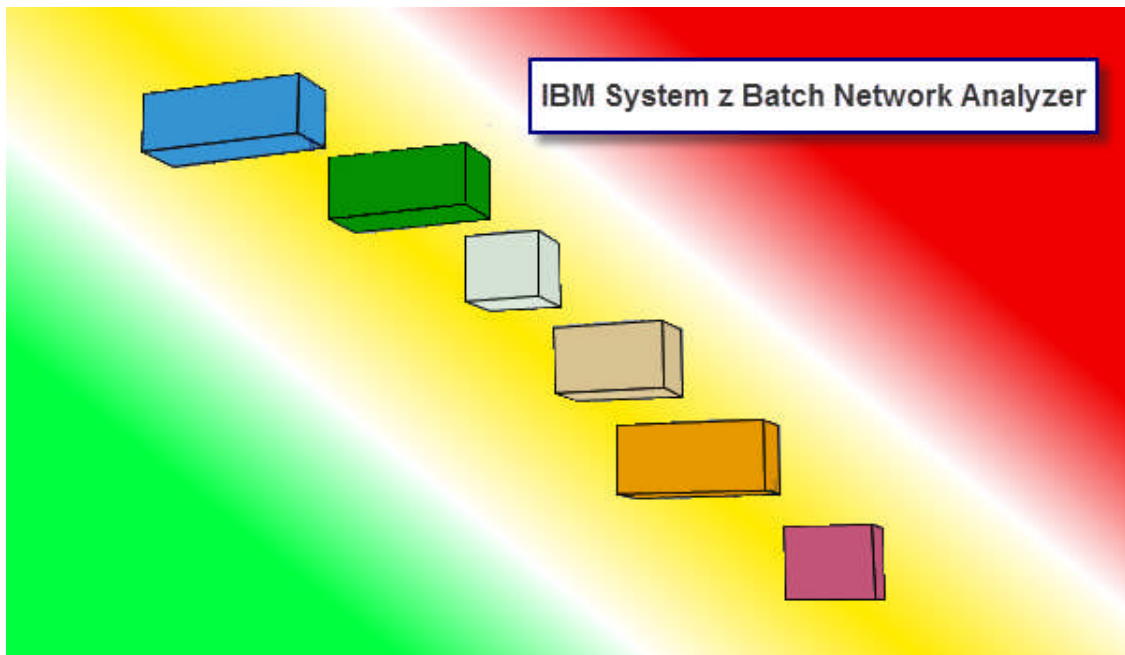
System z Batch Network Analyzer (zBNA) Tool Hands-on Lab

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March 12, 2014
Session Number 15129



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zBNA Lab Guide

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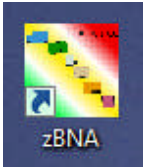
The purpose of this zBNA Lab is to provide an exercise in running the zBNA tool; utilizing its functions to successfully complete a simple Batch analysis.

In this exercise you will complete the following tasks:

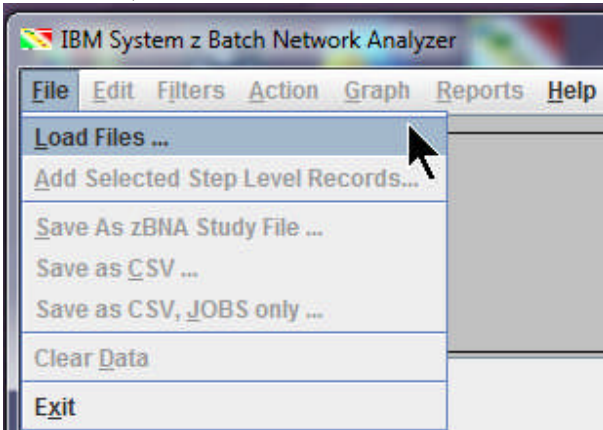
- 1) Explore the Main Screen
Start zBNA and load in two data files
- 2) Filter Data
 - Use the job filtering capabilities (CPU time, Service classes, exclude jobs, key jobs and job masking) to select a subset of candidate Batch jobs
 - Save as zBNA File
 - Filter Top Program Pct
 - Load Step level records,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

Task 1 - Exploring the Main Screen

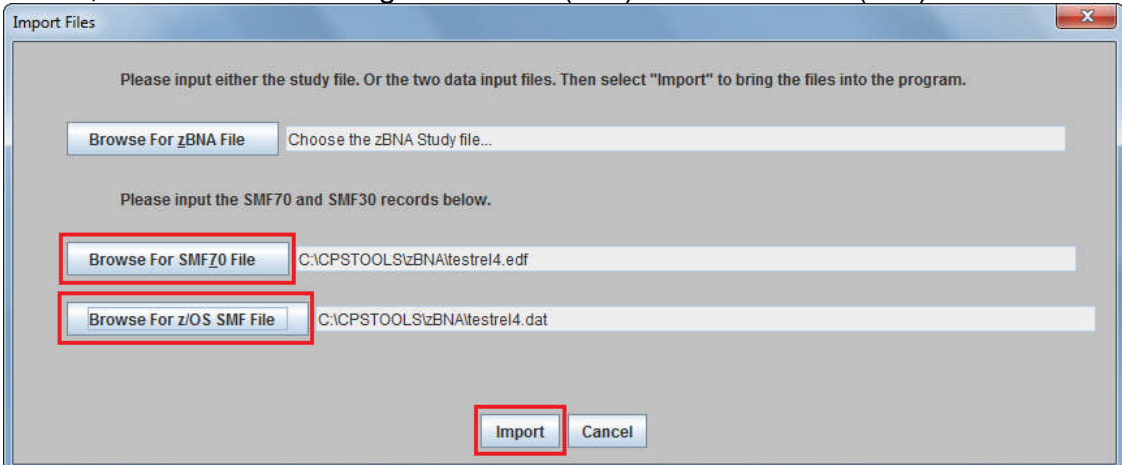
1. To start the System z Batch Network Analyzer (zBNA), first double-click the icon.



2. Click *File*, then *Load Files ...*



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



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

- 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)**.

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cla.	Elapsed TL.	CPU Time	zAAP Time	zIIP Time	CPU Intens.	EXCPs	Top Program	Top Pgm %	Condition
M373Q3S		7	J	37397332	BATPRDDF	12.6m	204.8s	0.0s	0.3s	27.0%	193,926	IEFIIC	0.0%	0000
M3DQLSD		3	J	3DQ3DQ32	BATPRDDF	30.1m	26.5s	0.0s	0.0s	1.5%	11,995	DSNECP10	3.0%	0000
M0VPI03V		2	Y	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	11.1%	9	IEFIIC	0.0%	0004
M0D3TSE5		3	J	32092032	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.9%	824	IEFIIC	0.0%	0000
M35K981A		10	J	35K98K32	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.1%	800	IEFIIC	0.0%	0000
M4E5HQ3A		5	J	4E595732	BATPRDDF	4.0s	0.4s	0.0s	0.0s	7.6%	3,554	IEFIIC	0.0%	0000
DH03LXQ3		2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	4.3%	10	IEFIIC	0.0%	0000
M4E5HYPA		3	J	4E595732	BATPRDDF	8.0s	0.2s	0.0s	0.0s	1.9%	809	IEFIIC	0.0%	0000
M0VPI03V		2	J	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	33.3%	9	IEFIIC	0.0%	0004
DH03LXQ4		2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	2.4%	10	IEFIIC	0.0%	0000
M3DLWDSA		7	J	3DL12032	BATPRDDF	1.0s	0.1s	0.0s	0.0s	8.1%	315	IEFIIC	0.0%	0000
M0FDW57		7	J	0F493332	BATPRDDF	29.0s	1.6s	0.0s	0.0s	5.5%	5,882	IEFIIC	0.0%	0000
M0D3FUL7		5	J	32092032	BATPRDDF	64.0s	2.8s	0.0s	0.0s	4.4%	65,048	IEFIIC	0.0%	0000
M320MQ4		4	J	32092032	BATPRDDF	19.0s	4.4s	0.0s	0.2s	22.6%	12,363	IEFIIC	0.0%	0000
M3E0ZAS		4	J	3E09E032	BATPRDDF	29.9m	34.3s	0.0s	0.0s	1.9%	3,079	IEFIIC	0.0%	0000
M3577HS3		28	J	35795732	BATPRDDF	28.0s	1.7s	0.0s	0.0s	5.7%	7,217	IEFIIC	0.0%	0000
M3577LS		4	J	35795732	BATPRDDF	4.0s	0.4s	0.0s	0.0s	9.1%	2,611	IEFIIC	0.0%	0000
M320XT3		4	J	32092032	BATPRDDF	55.0s	1.2s	0.0s	0.0s	2.1%	2,630	IEFIIC	0.0%	0000
Q823201A		6	A	6Y012042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	9.4%	274	IEFIIC	0.0%	0000
Q823201A		6	A	6Y012042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	12.8%	272	IEFIIC	0.0%	0000
M30DMDS		18	J	30D9K332	BATPRDDF	31.5m	28.1s	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	6.0%	162,815	IEFIIC	0.0%	0000
M0WKUG5J		1	A	0GE0GE42	BATTSTDF	0.0s	0.0s	0.0s	0.0s	26.7%	145	IEFIIC	0.0%	0000
M0WKUG5D		1	A	0GE0GE32	BATTSTDF	0.0s	0.1s	0.0s	0.0s	47.6%	171	IEFIIC	0.0%	0000
Q823201A		6	A	6Y012042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	11.8%	233	IEFIIC	0.0%	0000
M4FVHFG		5	J	3FV3FV32	BATPRDDF	13.0s	0.4s	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	18.1%	62,829	IEFIIC	0.0%	0000
M354B3S5		11	J	35495732	BATPRDDF	234.0s	45.5s	0.0s	0.0s	19.4%	77,722	IEFIIC	0.0%	0000
M3B1FR3		15	J	3B13B132	BATPRDDF	9.0s	0.5s	0.0s	0.0s	5.3%	10,830	IEFIIC	0.0%	0000
M3B1FR7		15	J	3B13B132	BATPRDDF	7.0s	0.5s	0.0s	0.0s	6.5%	10,786	IEFIIC	0.0%	0000

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

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cla.	Elapsed TL.	CPU Time	zAAP Time	zIIP Time	CPU Intens.	EXCPs	Top Program	Top Pgm %	Condition
M373Q3S		7	J	37397332	BATPRDDF	12.6m	204.8s	0.0s	0.3s	27.0%	193,926	IEFIIC	0.0%	0000
M3DQLSD		3	J	3DQ3DQ32	BATPRDDF	30.1m	26.5s	0.0s	0.0s	1.5%	11,995	DSNECP10	3.0%	0000
M0VPI03V		2	Y	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	11.1%	9	IEFIIC	0.0%	0004
M0D3TSE5		3	J	32092032	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.9%	824	IEFIIC	0.0%	0000
M35K981A		10	J	35K98K32	BATPRDDF	2.0s	0.1s	0.0s	0.0s	4.1%	800	IEFIIC	0.0%	0000
M4E5HQ3A		5	J	4E595732	BATPRDDF	4.0s	0.4s	0.0s	0.0s	7.6%	3,554	IEFIIC	0.0%	0000
DH03LXQ3		2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	4.3%	10	IEFIIC	0.0%	0000
M4E5HYPA		3	J	4E595732	BATPRDDF	8.0s	0.2s	0.0s	0.0s	1.9%	809	IEFIIC	0.0%	0000
M0VPI03V		2	J	0FD12032	SYSSTC	0.0s	0.0s	0.0s	0.0s	33.3%	9	IEFIIC	0.0%	0004
DH03LXQ4		2	J	0PA0PA32	BATPRDDF	0.0s	0.0s	0.0s	0.0s	2.4%	10	IEFIIC	0.0%	0000
M3DLWDSA		7	J	3DL12032	BATPRDDF	1.0s	0.1s	0.0s	0.0s	8.1%	315	IEFIIC	0.0%	0000
M0FDW57		7	J	0F493332	BATPRDDF	29.0s	1.6s	0.0s	0.0s	5.5%	5,882	IEFIIC	0.0%	0000
M0D3FUL7		5	J	32092032	BATPRDDF	64.0s	2.8s	0.0s	0.0s	4.4%	65,048	IEFIIC	0.0%	0000
M320MQ4		4	J	32092032	BATPRDDF	19.0s	4.4s	0.0s	0.2s	22.6%	12,363	IEFIIC	0.0%	0000
M3E0ZAS		4	J	3E09E032	BATPRDDF	29.9m	34.3s	0.0s	0.0s	1.9%	3,079	IEFIIC	0.0%	0000
M3577HS3		28	J	35795732	BATPRDDF	28.0s	1.7s	0.0s	0.0s	5.7%	7,217	IEFIIC	0.0%	0000
M3577LS		4	J	35795732	BATPRDDF	4.0s	0.4s	0.0s	0.0s	9.1%	2,611	IEFIIC	0.0%	0000
M320XT3		4	J	32092032	BATPRDDF	55.0s	1.2s	0.0s	0.0s	2.1%	2,630	IEFIIC	0.0%	0000
Q823201A		6	A	6Y012042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	9.4%	274	IEFIIC	0.0%	0000
Q823201A		6	A	6Y012042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	12.8%	272	IEFIIC	0.0%	0000
M30DMDS		18	J	30D9K332	BATPRDDF	31.5m	28.1s	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	6.0%	162,815	IEFIIC	0.0%	0000
M0WKUG5J		1	A	0GE0GE42	BATTSTDF	0.0s	0.0s	0.0s	0.0s	26.7%	145	IEFIIC	0.0%	0000
M0WKUG5D		1	A	0GE0GE32	BATTSTDF	0.0s	0.1s	0.0s	0.0s	47.6%	171	IEFIIC	0.0%	0000
Q823201A		6	A	6Y012042	BATTSTDF	0.0s	0.1s	0.0s	0.0s	11.8%	233	IEFIIC	0.0%	0000
M4FVHFG		5	J	3FV3FV32	BATPRDDF	13.0s	0.4s	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	18.1%	62,829	IEFIIC	0.0%	0000
M354B3S5		11	J	35495732	BATPRDDF	234.0s	45.5s	0.0s	0.0s	19.4%	77,722	IEFIIC	0.0%	0000
M3B1FR3		15	J	3B13B132	BATPRDDF	9.0s	0.5s	0.0s	0.0s	5.3%	10,830	IEFIIC	0.0%	0000
M3B1FR7		15	J	3B13B132	BATPRDDF	7.0s	0.5s	0.0s	0.0s	6.5%	10,786	IEFIIC	0.0%	0000

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

The screenshot shows a 'Job Information' window with the following details:

- Job Name: M373Q3S
- Job Number: JOB30091
- Number of Steps: 7
- Key Batch: No
- Start Date: Apr 25, 2013
- Start Time: 12:17 AM
- End Date: Apr 25, 2013
- End Time: 12:29 AM
- Job Class: J
- Service Class: BATPRDDF
- Account Code: 37397332
- Condition Code: 0000
- Top Pgm %: 0%
- Top Program: IEFIC
- Elapsed Time: 758.17 Seconds
- CPU Intensity: 27.0%

The 'Steps' table is scrollable and contains the following data:

Key Batch	Start Date	Start Time	End Date	End Time	Job Name	Step Name	Program Name	Step Number	Sub Type	Job Class	Acct Code	Service Cl			
<input type="checkbox"/>	4/25/13	0:17:04	4/25/13	0:29:42	M373Q3S			7 Total	Job	J	37397332	BATPR			
						ass	Report Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	EXCP	CPU Intensity	Top Program	Top Pgm %
						DDF		12.6m	204.8s	0.0s	0.3s	1939...	27.0%	IEFIC	0.0%

A red arrow points to the horizontal scroll bar at the bottom of the table, with the text: "Use the horizontal scroll bar to view all columns."

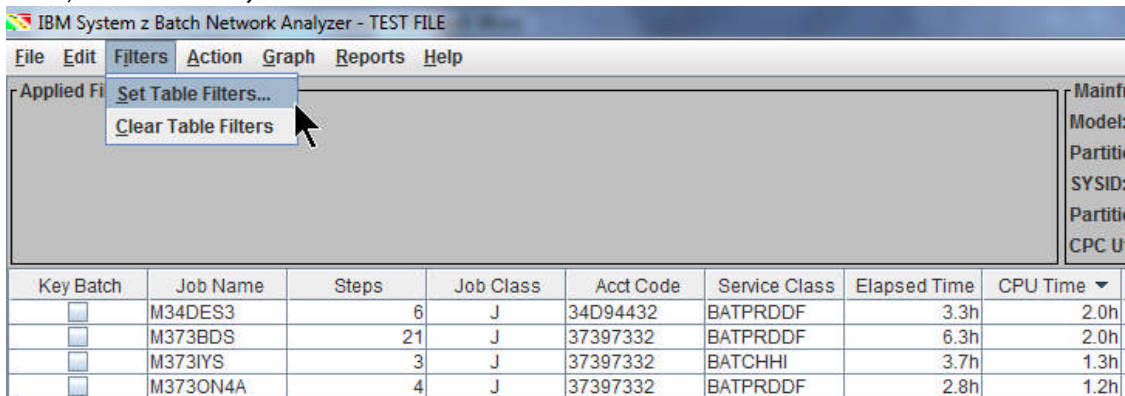
Note: The job details will be displayed once you have performed **File, Add Selected Step Level Records** (performed after the **Filtering** process is complete) on the zBNA main panel. In the display above, "**7 Total**" shown in the **Step Number** column refers to the total number of steps in this job, **M373Q3S**. Also, notice that there is a scroll bar so that all of the various fields can be seen. Click **Ok** to return to the main panel.

- 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**.

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M34DE53	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.5%	31,510	DSNECP10	92.0%	0000
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.7s	31.7%	18,169,677	DSNECP10	46.0%	0000
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	0000
	M373ON4A	4	J	37397332	BATPRDDF	2.6h	1.2h	0.0s	0.0s	40.9%	56,388	DSNECP10	63.0%	0000
	M373DVF	9	J	37397332	BATPRDDF	4.3h	1.0h	0.0s	0.0s	20.6%	4,741	DSNECP10	41.0%	0000
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	0000
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	45.9m	0.0s	0.0s	37.7%	21,905	DSNECP10	49.0%	0000
	M3736J5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
	M3YHK79G	26	J	3YH3YH32	BATPRDDF	1.6h	38.9m	0.0s	0.0s	39.5%	596,359	DSNECP10	62.0%	0000
	M34D7J5	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
	M3YHK79E	26	J	3YH3YH32	BATPRDDF	1.5h	38.8m	0.0s	0.0s	40.5%	874,506	DSNECP10	64.0%	0000
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	0000
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	0000
	M3YHK7S3	26	J	3YH3YH32	BATPRDDF	1.5h	34.0m	0.0s	0.0s	36.7%	512,864	DSNECP10	62.0%	0000
	M3YHK79F	26	J	3YH3YH32	BATPRDDF	1.4h	33.3m	0.0s	0.0s	40.4%	731,854	DSNECP10	63.0%	0000
	M3ECCOS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	0000
	IM402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,226	ENGEXE	4.0%	0000
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,889	DSNECP10	26.0%	0000
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
	M3736Z5	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
	M3736FD	7	J	37397332	BATPRDDF	56.5m	22.1m	0.0s	0.0s	37.7%	865,814	DSNECP10	48.0%	0000
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	0000
	IM4E5F3S5	66	J	4E595732	BATPRDDF	5.6h	20.7m	0.0s	0.2s	6.2%	19,960,843	DSNECP10	17.0%	0000
	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,960	DSNECP10	17.0%	0000
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0004
	M3YV654	9	J	3YV3YV32	BATPRDDF	22.4m	19.2m	0.0s	0.0s	85.5%	130,750	IEFIC	0.0%	0000
	IM402HY4E	18	J	40242032	BATPRDDF	52.1m	19.1m	0.0s	0.0s	36.5%	4,293,857	IEFIC	0.0%	0000
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0004
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	0004
	M233332	18	J	23323332	BATPRDDF	1.1h	16.6m	0.0s	0.0s	26.2%	2,546,318	ENGEXE	22.0%	0000
	M3E066SZ	2	J	3E09E032	BATPRDDF	52.0m	16.3m	0.0s	0.0s	31.3%	321	IEFIC	0.0%	0004

Task 2 - Filtering Data

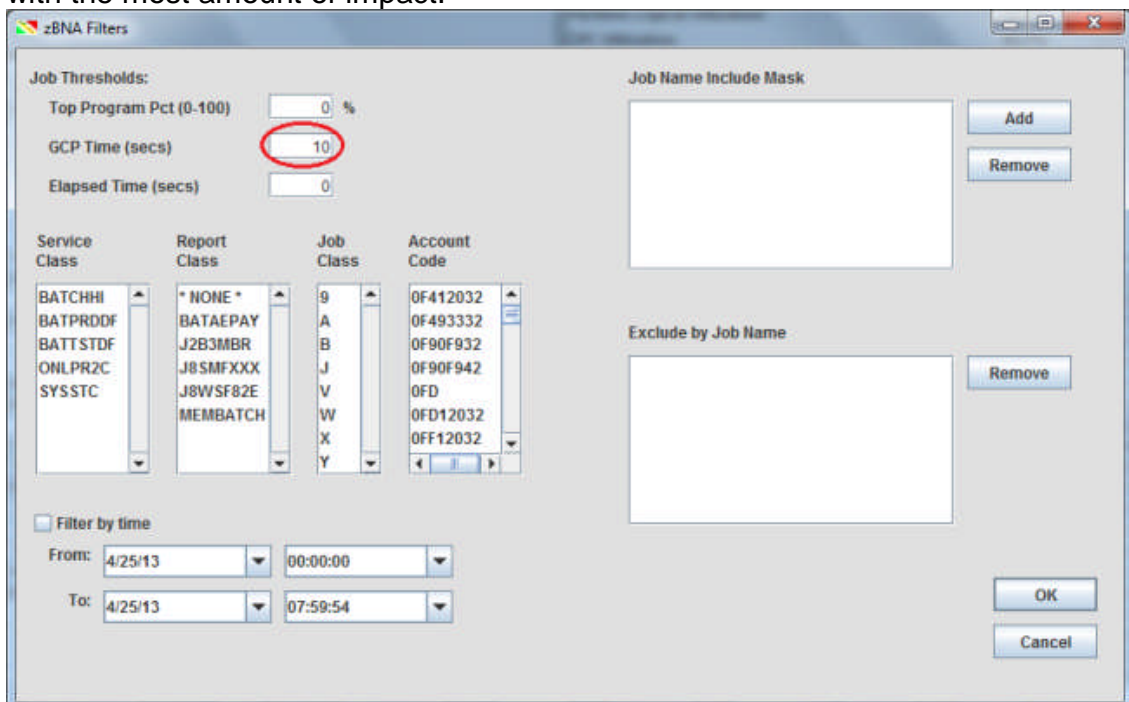
1. There can be data from hundreds or thousands of jobs. It is often necessary to filter the jobs based on some criteria to reduce the number to be more manageable for the analysis, and Filters can help reduce the number. To apply a filter, click **Filters, Set Table Filters...**



The screenshot shows the 'Filters' menu with 'Set Table Filters...' and 'Clear Table Filters' options. Below the menu is a table of jobs with columns: Key Batch, Job Name, Steps, Job Class, Acct Code, Service Class, Elapsed Time, and CPU Time.

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time
<input type="checkbox"/>	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h
<input type="checkbox"/>	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h
<input type="checkbox"/>	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h
<input type="checkbox"/>	M373ON4A	4	J	37397332	BATPRDDF	2.8h	1.2h

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



The screenshot shows the 'zBNA Filters' dialog box. The 'Job Thresholds' section has 'GCP Time (secs)' set to 10, which is circled in red. Other fields include 'Top Program Pct (0-100)' at 0% and 'Elapsed Time (secs)' at 0. The 'Job Name Include Mask' and 'Exclude by Job Name' sections are empty. The 'Filter by time' section shows 'From: 4/25/13 00:00:00' and 'To: 4/25/13 07:59:54'. The 'Service Class' list includes BATCHHI, BATPRDDF, BATTSTDF, ONLPR2C, and SYSSTC. The 'Report Class' list includes *NONE*, BATAEPAY, J2B3MBR, J8SMFXXX, J8WSF82E, and MEMBATCH. The 'Job Class' list includes 9, A, B, J, V, W, X, and Y. The 'Account Code' list includes 0F412032, 0F493332, 0F90F932, 0F90F942, 0FD, 0FD12032, and 0FF12032.

3. 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.

The screenshot shows the IBM System z Batch Network Analyzer interface. The main window displays a list of jobs with columns for Key Batch, Job Name, and various performance metrics. A dialog box titled "zRNA Filters" is open, allowing users to filter jobs based on several criteria:

- Job Thresholds:** Top Program Pct (0-100) set to 0%, GCP Time (secs) set to 10, and Elapsed Time (secs) set to 0.
- Service Class:** A list of service classes including BATHHI, BATPRDDF, BATTSTDF, ONLPR2C, and SYSSTC.
- Report Class:** A list of report classes including *NONE*, BATAEPAY, J2B3MBR, J8SMFXXX, J8W5F82E, and MEMBATC.
- Job Class:** A list of job classes including g, A, B, J, V, W, X, and Y.
- Account Code:** A list of account codes including 0F412032, 0F493332, 0F90F932, 0F90F942, 0FD, 0FD12032, and 0FF12032.
- Filter by time:** From 4/25/13 00:00:00 to 4/25/13 07:59:54.
- Job Name Include Mask:** A text input field for specifying job names to include.
- Exclude by Job Name:** A text input field for specifying job names to exclude.

The background table shows a list of jobs, with a red box highlighting the bottom row, indicating 938 jobs. A status bar at the bottom right of the table reads "Only JOB end records (type 30 subtype 5) have been loaded".

- 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.

The "Select Job Name Mask" dialog box is shown, prompting the user to input a job name mask. The text inside the dialog reads: "Please input job name mask. (? for a single character, * for any number of character values.)". The input field contains the text "M4*", and there are "OK" and "Cancel" buttons at the bottom.

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

The screenshot shows the IBM System z Batch Network Analyzer interface. The main window displays a list of jobs with columns for Key Batch, Job Name, and various performance metrics. A dialog box titled 'zBNA Filters' is open, showing 'Job Name Include Mask' with 'M3*' and 'M4*' entered. The dialog also includes sections for 'Job Thresholds', 'Service Class', 'Report Class', 'Job Class', and 'Account Code'. The status bar at the bottom indicates '874 Jobs' and 'Only JOB end records (type 30 subtype 5) have been loaded'.

- 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.

The screenshot shows the same IBM System z Batch Network Analyzer interface, but now with a context menu open over the job entry for 'M373DVF'. The menu options include 'Show Step Details', 'Exclude Data', and 'Toggle Key Batch'. The 'Exclude Data' option is highlighted. The status bar at the bottom still shows '874 Jobs' and 'Only JOB end records (type 30 subtype 5) have been loaded'.

- 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**.

Click **Ok**.

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

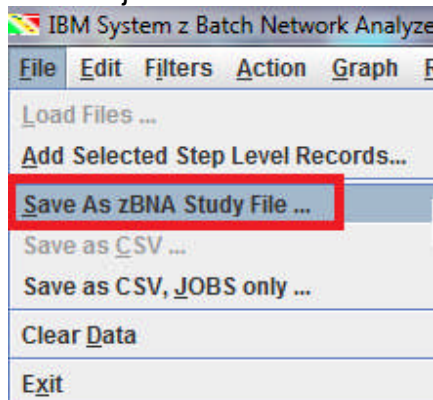
Now sort the **EXCPs** column in descending order to view the values from largest to smallest.

Key Batch	Job Name	Steps	Job Class	Act Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
<input type="checkbox"/>	M3YHGEU	37	J	3YH3YH32	BATPRDDF	1.3h	317.8s	0.0s	0.0s	7.0%	11,814,609	IDCCAMS	6.0%	0000
<input type="checkbox"/>	M3NE272G	12	J	3NEH7732	BATPRDDF	1.2h	352.7s	0.0s	1.1s	8.3%	11,170,071	SKTHRED	4.0%	0000
<input type="checkbox"/>	M320XIU	4	J	32092032	BATPRDDF	13.5m	265.5s	0.0s	0.0s	32.7%	8,738,460	IEFIC	0.0%	0000
<input type="checkbox"/>	M320DD3	7	J	32092032	BATPRDDF	29.3m	283.8s	0.0s	0.0s	16.2%	8,533,858	IEFIC	0.0%	0000
<input type="checkbox"/>	M3E0DK3	2	J	3E03E032	BATPRDDF	1.7h	112.9s	0.0s	0.0s	1.9%	8,532,779	P/BLAHT	1.0%	0000
<input type="checkbox"/>	M320SD7	4	J	32092032	BATPRDDF	582.0s	286.4s	0.0s	0.0s	49.2%	8,202,131	IEFIC	0.0%	0000
<input type="checkbox"/>	M364PSS	9	J	36496432	BATPRDDF	1.8h	299.9s	0.0s	0.0s	4.6%	8,008,518	P142MP1	3.0%	0000
<input type="checkbox"/>	M320ZVB	4	J	32092032	BATPRDDF	27.8m	242.3s	0.0s	0.0s	14.5%	7,180,565	IEFIC	0.0%	0000
<input type="checkbox"/>	M320YUD	4	J	32092032	BATPRDDF	51.9m	220.9s	0.0s	0.0s	7.1%	6,390,561	DSNUGSIT	2.0%	0000
<input type="checkbox"/>	M30DEYS	3	J	30D9K332	BATPRDDF	50.1m	123.6s	0.0s	0.0s	4.1%	6,298,940	SKTHRED	2.0%	0000
<input type="checkbox"/>	M320PEH	10	J	32092032	BATPRDDF	22.8m	160.4s	0.0s	0.0s	11.7%	5,019,935	IEFIC	0.0%	0000
<input type="checkbox"/>	M320PEI	10	J	32092032	BATPRDDF	412.0s	147.1s	0.0s	0.0s	35.6%	4,648,950	IEFIC	0.0%	0000
<input type="checkbox"/>	M320PEK	10	J	32092032	BATPRDDF	22.1m	147.8s	0.0s	0.0s	11.2%	4,635,676	IEFIC	0.0%	0000
<input type="checkbox"/>	M3SK836A	11	J	3SK9SK32	BATPRDDF	33.8m	93.8s	0.0s	0.1s	4.6%	4,519,131	IEFIC	0.0%	0000
<input type="checkbox"/>	IM4E074PH	131	B	4E595732	BATCHHI	26.3m	121.9s	0.0s	0.0s	7.7%	4,479,181	IEFIC	0.0%	0000
<input type="checkbox"/>	M3SK95DA	12	J	3SK9SK32	BATPRDDF	42.9m	160.3s	0.0s	1.2s	8.2%	4,362,335	IEFIC	0.0%	0000
<input type="checkbox"/>	M3SK830A	11	J	3SK9SK32	BATPRDDF	38.7m	348.9s	0.0s	0.1s	15.0%	4,327,934	IEFIC	0.0%	0000
<input type="checkbox"/>	IM402HY4E	18	J	40242032	BATPRDDF	52.1m	19.1m	0.0s	0.0s	36.5%	4,293,857	IEFIC	0.0%	0000
<input type="checkbox"/>	M320SD8	4	J	32092032	BATPRDDF	247.0s	141.1s	0.0s	0.0s	56.9%	3,890,301	IEFIC	0.0%	0000
<input type="checkbox"/>	M3SKGIDA	3	J	3SK9SK42	BATPRDDF	331.0s	133.8s	0.0s	0.0s	40.4%	3,813,883	IEFIC	0.0%	0000
<input type="checkbox"/>	M320YUD	4	J	32092032	BATPRDDF	526.0s	122.9s	0.0s	0.0s	23.4%	3,787,837	IEFIC	0.0%	0000
<input type="checkbox"/>	IM402X4IL	8	J	40242032	BATPRDDF	34.1m	306.5s	0.0s	0.0s	15.0%	3,739,314	PDRSIV000	1.0%	0000
<input type="checkbox"/>	M34D7JIS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
<input type="checkbox"/>	M30HF73	5	J	30H90H32	BATPRDDF	13.4m	57.3s	0.0s	0.0s	7.1%	3,688,037	IEFIC	0.0%	0000
<input type="checkbox"/>	IM40E7HZH	128	B	4E595732	BATCHHI	27.8m	114.5s	0.0s	0.2s	6.9%	3,499,688	IEFIC	0.0%	0000
<input type="checkbox"/>	M320YUE	4	J	32092032	BATPRDDF	23.4m	115.3s	0.0s	0.0s	8.2%	3,415,051	IEFIC	0.0%	0000
<input type="checkbox"/>	M320YUE	4	J	32092032	BATPRDDF	30.8m	115.7s	0.0s	0.0s	6.3%	3,413,820	IEFIC	0.0%	0000
<input type="checkbox"/>	M37JULS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,049	DSNECP10	24.0%	0000
<input type="checkbox"/>	M320SV3	10	J	32092032	BATPRDDF	413.0s	109.1s	0.0s	0.0s	26.4%	3,339,847	IEFIC	0.0%	0000
<input type="checkbox"/>	M320MOD	7	J	32092032	BATPRDDF	22.6m	117.6s	0.0s	0.0s	8.7%	3,282,795	IEFIC	0.0%	0000
<input type="checkbox"/>	M355MQS	11	J	35595532	BATCHHI	10.6m	16.4s	0.0s	0.0s	2.6%	3,280,310	IEFIC	0.0%	0000
<input type="checkbox"/>	M30CMD5	18	J	30D9K332	BATPRDDF	31.5m	28.1s	0.0s	0.0s	1.5%	3,228,140	IEFIC	0.0%	0000
<input type="checkbox"/>	M373B4	5	J	37397332	BATPRDDF	1.2h	533.1s	0.0s	0.0s	12.3%	3,220,250	SWVSORT	8.0%	00C1
<input checked="" type="checkbox"/>	IM4E07B1H	132	B	4E595732	BATCHHI	16.5m	71.9s	0.0s	0.1s	7.2%	3,028,474	IEFIC	0.0%	0000
<input type="checkbox"/>	M3E0K8SN	7	J	3E09E032	BATPRDDF	26.9m	62.1s	0.0s	0.2s	3.8%	3,005,530	IEFIC	0.0%	0000

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

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

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



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

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

Applied Filters: SERVICE CLASS: BATCCHI, BATPRDDF, BATTSTDF
JOB NAMES: M3*, M4*

Mainframe Information: Model: 2817-711, Partition Name: ONLMI, SYSID: SYS1, Partition Logical Utilization: 93.7%, CPC Utilization: 93.7%

zBNA Filters Dialog:

- Job Thresholds: Top Program Pct (0-100) = 10%
- GCP Time (secs) = 10, Elapsed Time (secs) = 0
- Job Name Include Mask: M3*, M4*
- Exclude by Job Name: M373DVF(JOB27670)
- Filter by time: From 4/25/13 00:00:00, To 4/25/13 07:59:54

Table Summary: 36 Jobs. Only JOB end records (type 30 subtype 5) have been loaded.

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

File Menu: Add Selected Step Level Records...

Mainframe Information: Model: 2817-711, Partition Name: ONLMI, SYSID: SYS1, Partition Logical Utilization: 93.7%, CPC Utilization: 93.7%

Table Summary: 36 Jobs. Only JOB end records (type 30 subtype 5) have been loaded.

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

Key Batch	Job Name	Steps	Job Class	Act Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
M36B4S	J	3	J	36896B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000
M373BFD	J	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
M3EHL8S	J	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
M373I2S	J	3	J	37397332	BATCHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
IM4E5HEVS	J	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
M3YHK7SF	J	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
M34DJG3	J	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
M373XQ3	J	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
M3YHK7SE	J	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	0000
M3YHK7S3	J	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	36.6%	512,864	DSNECP10	62.0%	0000
M3YHK7SG	J	26	J	3YH3YH32	BATPRDDF	1.6h	38.9m	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	0000
M3HS23VA	J	3	J	3HS3HS32	BATPRDDF	2.0h	48.0m	0.0s	0.0s	37.8%	21,905	DSNECP10	49.0%	0000
M373IAS	J	3	J	37397332	BATCHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	0000
M373ON4A	J	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	0000
M3E066SU	J	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	13.4%	342	DSNECP10	12.0%	0044
M3E066SA	J	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0044
M3E066SN	J	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	0044
M34DES3	J	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.6%	31,510	DSNECP10	92.0%	0000
M337F83	J	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	0000
M373IYS	J	3	J	37397332	BATCHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	0000
M34DJ7IS	J	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
M3E0C0S	J	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	0000
M373IJS	J	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
M373CCS	J	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	0000
M3E066SO	J	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0044
M3HS451A	J	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
M373CNS	J	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
M3E0KSN	J	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
M3YFLUEE	J	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	0000
M373FPV	J	9	J	37397332	BATCHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	0000
M373ECS	J	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	0000
IM402GX3L	J	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,226	ENGEKE	4.0%	0000
M373IUS	J	21	J	37397332	BATPRDDF	5.3h	2.0h	0.0s	0.8s	32.0%	16,169,877	DSNECP10	46.0%	0000
M373IJS	J	14	J	37397332	BATCHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	0000
IM4E5F3SS	J	66	J	4E595732	BATPRDDF	3.6h	20.7m	0.0s	0.2s	6.2%	19,960,843	DSNECP10	17.0%	0000

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

Key Batch	Job Name	Steps	Job Class	Act Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
M373BDS	J	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,677	DSNECP10	46.0%	0000
IM4E5F3SS	J	66	J	4E595732	BATPRDDF	5.3h	20.7m	0.0s	0.2s	6.2%	19,960,843	DSNECP10	17.0%	0000
M34DES3	J	6	J	34D94432	BATPRDDF	3.3h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	0000
M3YFLUEE	J	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	0000
M373ON4A	J	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	0000
M373ECS	J	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	0000
M373IAS	J	3	J	37397332	BATCHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	0000
M3E0C0S	J	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	0000
M3E066SO	J	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0044
M373FPV	J	9	J	37397332	BATCHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	0000
M3HS23VA	J	3	J	3HS3HS32	BATPRDDF	2.0h	48.0m	0.0s	0.0s	37.8%	21,905	DSNECP10	49.0%	0000
M373EJS	J	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
M3YHK7SG	J	26	J	3YH3YH32	BATPRDDF	1.6h	38.9m	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	0000
M3YHK7S3	J	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	512,864	DSNECP10	62.0%	0000	
M3YHK7SE	J	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	0000
M373XQ3	J	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
M34DJ7IS	J	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
M3YHK7SF	J	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
M34DJG3	J	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
M373CNS	J	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
M3E0KSN	J	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
M373I2S	J	3	J	37397332	BATCHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
M337F83	J	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	0000
M3E066SN	J	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	0044
M3E066SA	J	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0044
IM4E5HEVS	J	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
M3E066SU	J	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	13.4%	342	DSNECP10	12.0%	0044
M3HS451A	J	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
M373BFD	J	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
M373IUS	J	14	J	37397332	BATCHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	0000
IM402GX3L	J	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,226	ENGEKE	4.0%	0000
M373CCS	J	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	0000
M3EHL8S	J	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
M36B4S	J	3	J	36896B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000

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

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

Job Information

Job Name: M373BDS Job Number: JOB27655 Number of Steps: 21 Key Batch: No

Start Date: Apr 25, 2013 Start Time: 12:00 AM End Date: Apr 25, 2013 End Time: 6:17 AM

Job Class: J Service Class: BATPRDDF Account Code: 37397332 Condition Code: 0000

Top Task Percent: 46% Top Task: DSNECP10 Duration: 22673.0 Seconds CPU Intensity: 32.0%

Steps

Key Batch	Start Date	Start Time	End Date	End Time	Job Name	Step Name	Program N.	Step Number	Sub Type	Job Class	Acc. C.
	4/25/13	0:00:00	4/25/13	6:17:53	M373BDS			21		5J	37397332
	4/25/13	0:00:00	4/25/13	2:31:54	M373BDS	S373BD3	LNMHWW23	3		4J	
	4/25/13	2:31:53	4/25/13	2:39:30	M373BDS	EDFNXS3	LHEJHQHU	4		4J	
	4/25/13	2:39:29	4/25/13	2:47:19	M373BDS	EDFNXS4	LHEJHQHU	5		4J	
	4/25/13	2:47:18	4/25/13	2:50:29	M373BDS	EDFNXS5	LHEJHQHU	6		4J	
	4/25/13	2:50:28	4/25/13	2:51:12	M373BDS	EDFNXS6	LHEJHQHU	7		4J	
	4/25/13	2:51:11	4/25/13	2:52:46	M373BDS	EDFNXS7	LHEJHQHU	8		4J	
	4/25/13	2:52:45	4/25/13	2:55:26	M373BDS	VRUWBD3	VBOFVRUW	9		4J	
	4/25/13	2:55:25	4/25/13	3:02:36	M373BDS	S373BD4	LNMHWW23	10		4J	

Scroll to see the remaining Steps.

Acct Code	Service Cla.	Report Class	Duration	CPU Time	zAAP Time	zIIP Time	EXCP	CPU Intensity	Top Task	Top Task %
37397332	BATPRDDF		22673	7,246.09	0.00	0.76	18169677	0.3195909...	DSNECP10	46.0
	BATPRDDF		9114	2,228.11	0.00	0.00	2857559	0.2444707...	DSNECP10	29.0
	BATPRDDF		457	13.77	0.00	0.00	1263029	0.0301312...	IEFIIC	0.0
	BATPRDDF		470	8.16	0.00	0.00	2695024	0.0173617...	IEFIIC	0.0
	BATPRDDF		191	3.67	0.00	0.00	1069746	0.0192146...	IEFIIC	0.0
	BATPRDDF		44	0.78	0.00	0.00	228224	0.0177272...	IEFIIC	0.0
	BATPRDDF		95	1.72	0.00	0.00	455276	0.0181052...	IEFIIC	0.0
	BATPRDDF		161	4.11	0.00	0.34	3967	0.0255279...	IEFIIC	0.0
	BATPRDDF		431	12.05	0.00	0.00	1375561	0.0279582...	IEFIIC	0.0

Scroll to see the remaining columns.

The detailed information on each step of the job includes:

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

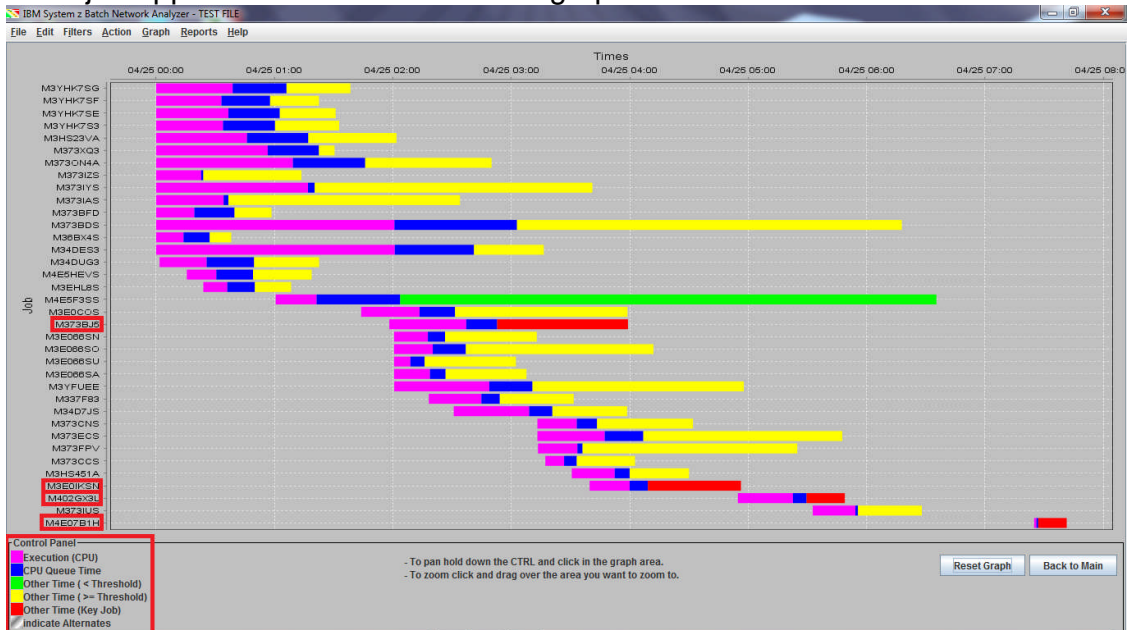
These step level fields may be useful once you've identified a job that you want to reduce the elapsed time, because you'll be able to identify the step and program level resources to know where to focus tuning or alternative technology. Click **OK** to return to the zBNA main panel.

Task 3 - Displaying a Graph

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

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time
<input type="checkbox"/>	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h
<input type="checkbox"/>	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h
<input type="checkbox"/>	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h
<input type="checkbox"/>	M373ON4A	4	J	37397332	BATPRDDF	2.8h	1.2h
<input type="checkbox"/>	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m
<input type="checkbox"/>	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m
<input type="checkbox"/>	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0m
<input checked="" type="checkbox"/>	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m
<input type="checkbox"/>	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.6h	38.8m

- Each job appears on its own line of the graph.



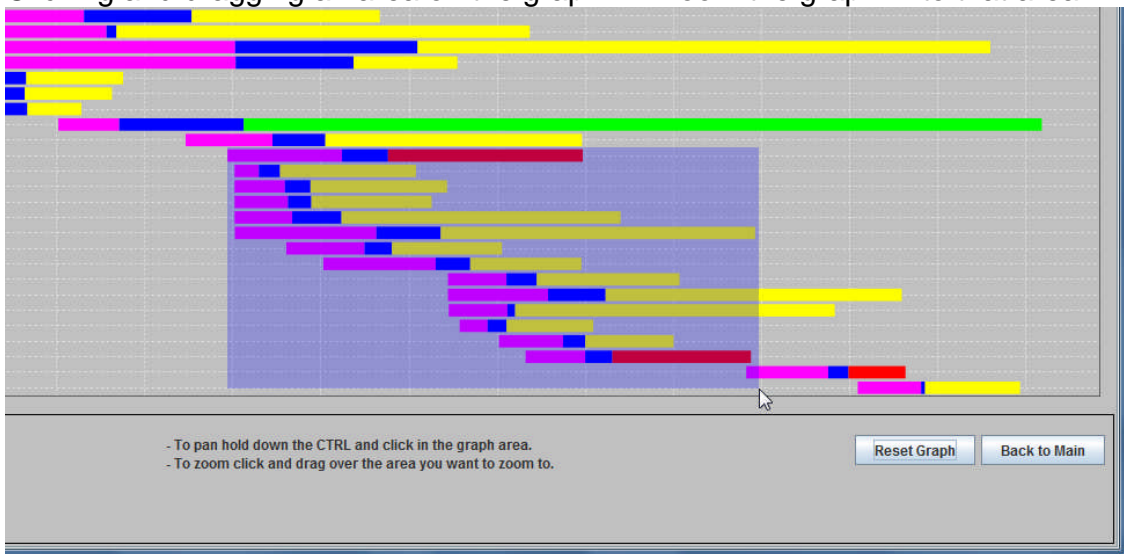
The Elapsed Time for a job is the sum of **CPU Time + CPU Queue Time + Other Time**. Other time is all other time, and is typically comprised of I/O time. The sum of the 3 components is placed on the X axis when the Job's Elapsed Time occurred in the interval, but they represent the % of time spent in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

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

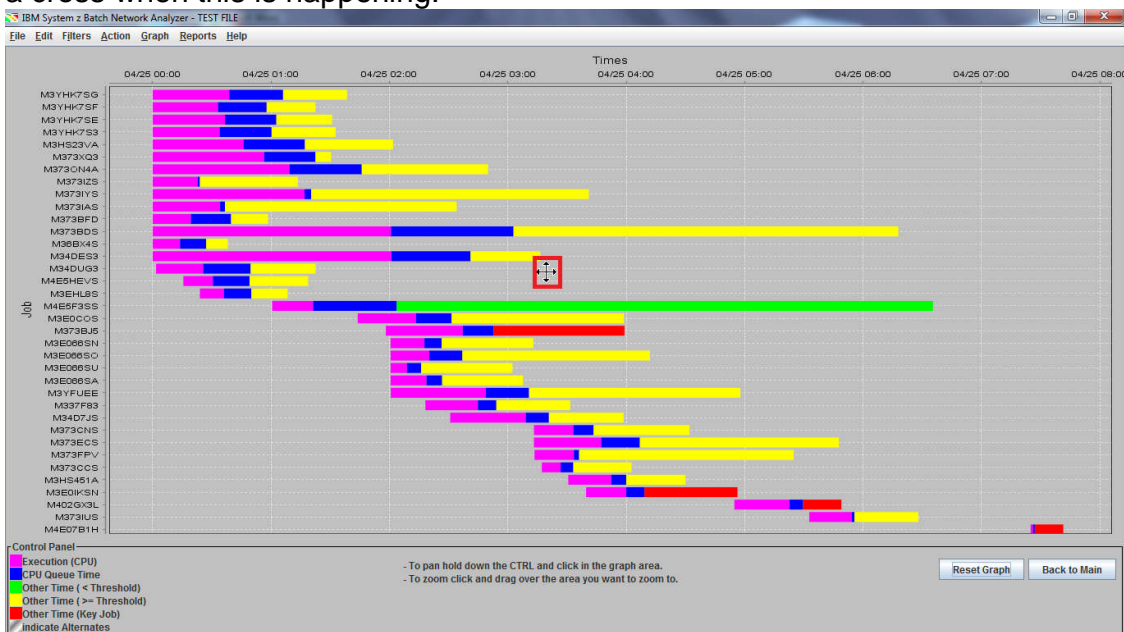
- Pink, **Execution (CPU Time)**, shows the measured CPU time for a job.

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

3. Clicking and dragging an area on the graph will zoom the graph in to that area.



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

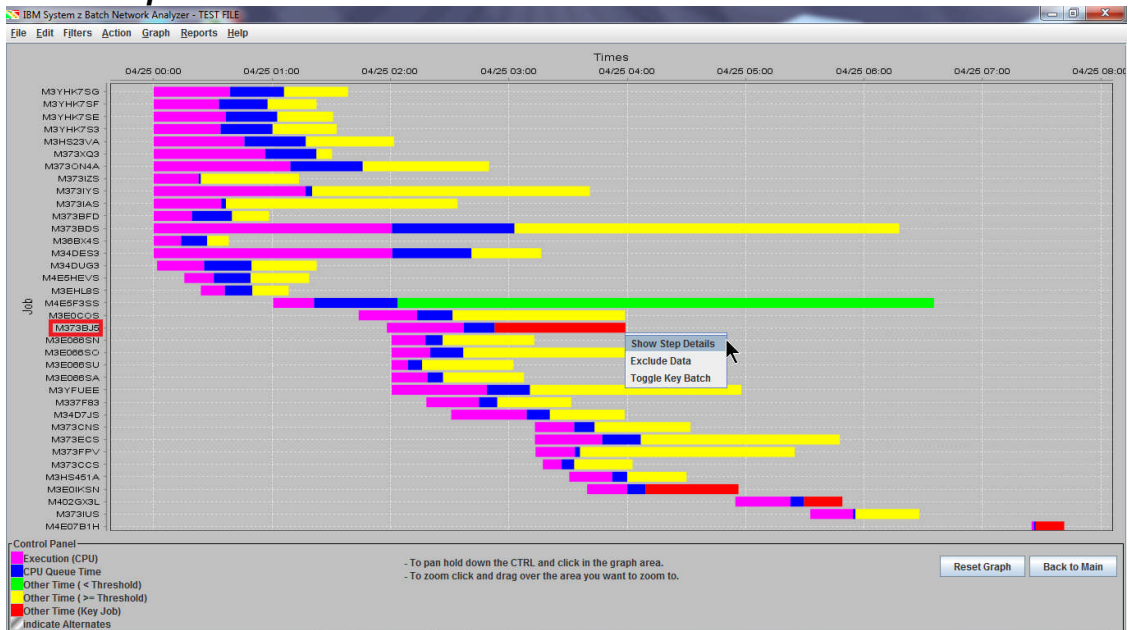


Click **Reset Graph** to show the original graph.

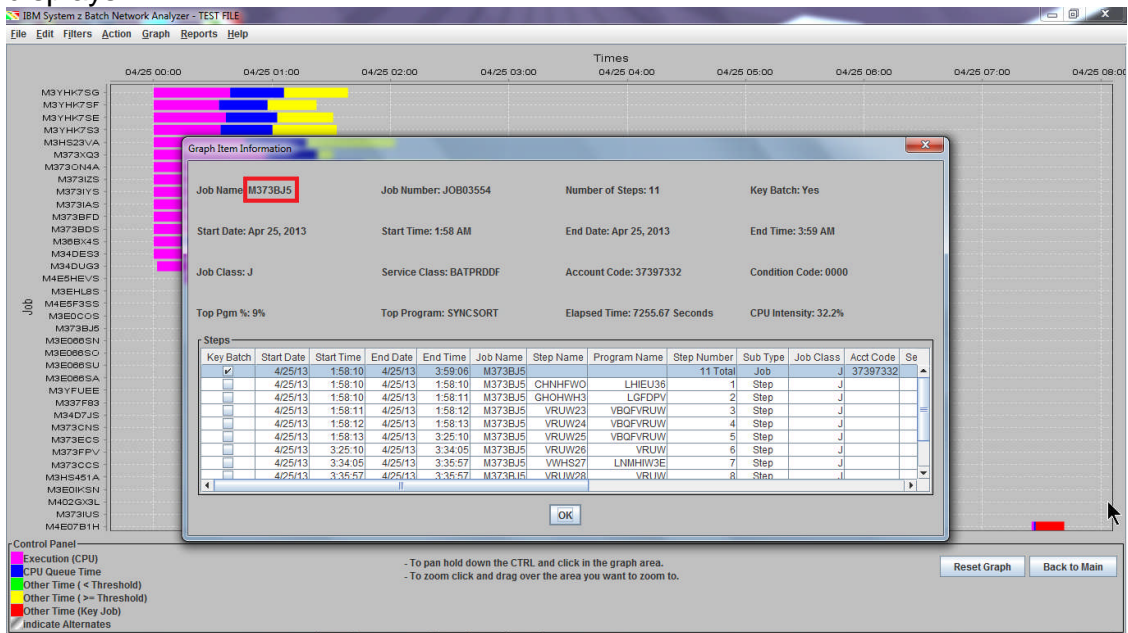
5. Hold the mouse over a job to show the Job information.



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*.

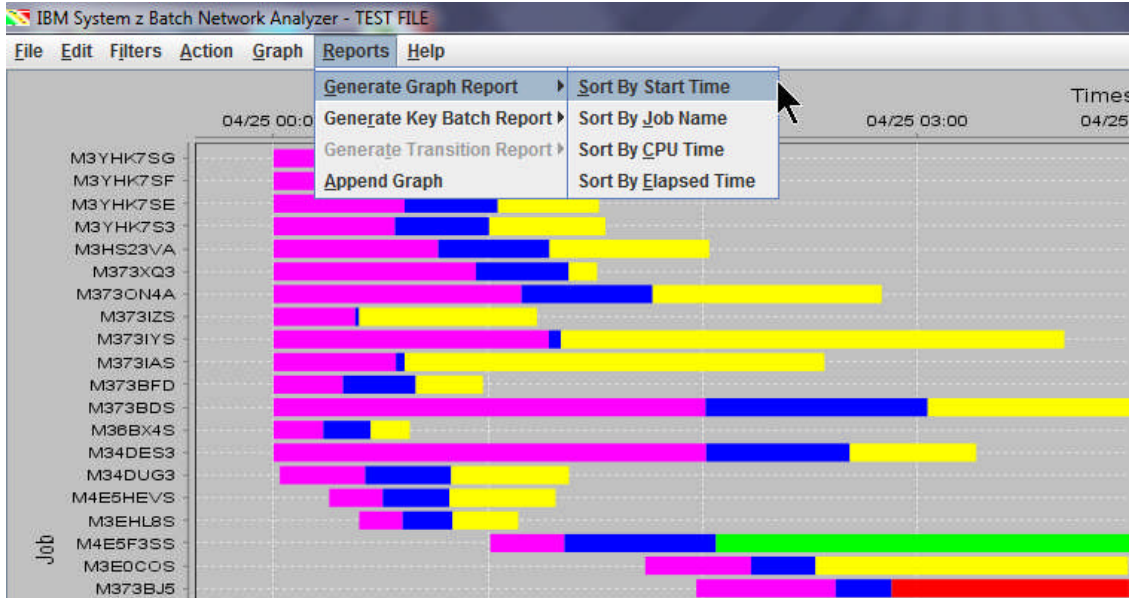


- The same Job Step panel that is accessible from the main panel displays.



Click **OK** to return to the graph.

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



This will prompt you to save the report as an HTML file. Key in a file name, e.g. “**TEST_Report.htm**” and click **Save**.

- 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

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

Data

There are 36 jobs in the following table.

Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time	CPU Time	Top Program	Top Pgm %
1		M3YHK7SG		4/25/13 12:00 AM	4/25/13 1:38 AM	26	J	3YH3YH32	BATPRDDF	5,908	2,327	DSNECP10	62
2		M3YHK7SF		4/25/13 12:00 AM	4/25/13 1:22 AM	26	J	3YH3YH32	BATPRDDF	4,950	1,988	DSNECP10	63
3		M3YHK7SE		4/25/13 12:00 AM	4/25/13 1:30 AM	26	J	3YH3YH32	BATPRDDF	5,458	2,198	DSNECP10	64
4		M3YHK7S3		4/25/13 12:00 AM	4/25/13 1:32 AM	26	J	3YH3YH32	BATPRDDF	5,565	2,035	DSNECP10	62
5		M3HS23VA	LNMH3D	4/25/13 12:00 AM	4/25/13 2:01 AM	3	J	3HS3HS32	BATPRDDF	7,308	2,763	DSNECP10	49
36	X	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	B	4E595732	BATCHHI	991	72	IEFIC	0
Total										239,325	72,959		

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

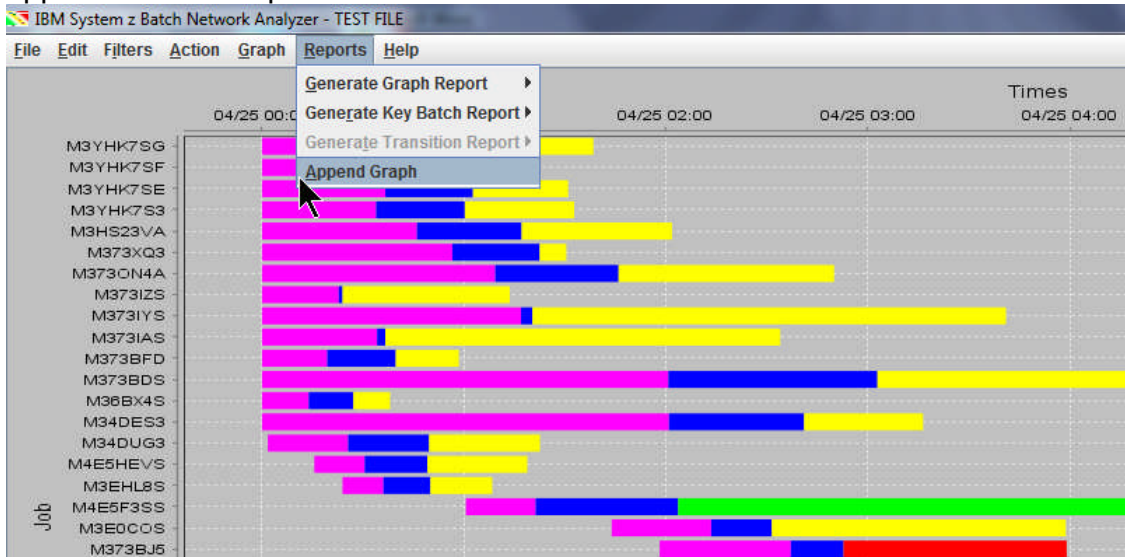
Key Batch Jobs

These are jobs that the user specifically selected for display.

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	CPU Time	Top Program	Top Pgm %
1	X	M373BJ5		4/25/13 1:58 AM	4/25/13 3:59 AM	11	J	37397332	BATPRDDF	7,255	2,339	SYNCSORT	9
2	X	M3E0IKSN		4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,601	1,218	DSNECP10	8
3	X	M402GX3L		4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,252	1,674	ENGEXE	4
4	X	M4E07B1H		4/25/13 7:24 AM	4/25/13 7:41 AM	132	B	4E595732	BATCHHI	991	72	IEFIIC	0
		Total								16,099	5,301		

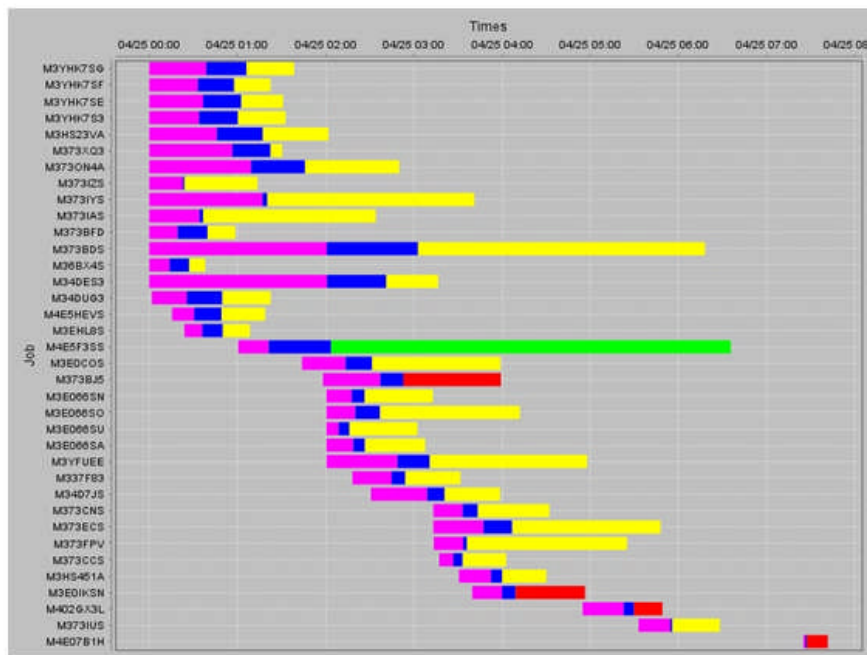
- When the graph report is initially generated, the graph is not present. *To include the graph in the report, click **Reports, Append Graph***. You will be prompted to select the previously saved report file. Then click **Save**, and the graph will be appended to the report.









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

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

33	X	M3E0IKSN	4/25/13 3:39 AM	4/25/13 4:56 AM	4	J	3E09E032	BATPRDDF	4,601	1,218	DSNECP10	8
34	X	M402GX3L	4/25/13 4:54 AM	4/25/13 5:49 AM	17	J	40242032	BATPRDDF	3,252	1,674	ENGEXE	4
35		M373IUS	4/25/13 5:32 AM	4/25/13 6:28 AM	14	J	37397332	BATCHHI	3,315	1,296	DSNECP10	24
36	X	M4E07BIH	4/25/13 7:24 AM	4/25/13 7:41 AM	132	B	4E595732	BATCHHI	991	72	IEFIIC	0
Total									239,325	72,959		



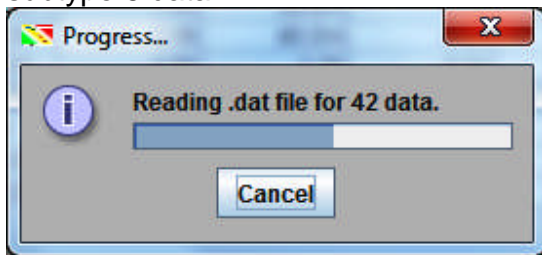
	Execution
	Wait for Execution
	Other Time (< Threshold)
	Other Time (>= Threshold)
	Other Time (Key Job)
	indicate Alternates

Task 4 – Reviewing DASD Data Set Information

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

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
	IM402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,225	ENGEXE	4.0%	0000
	M4E07B1H	132	B	4E598732	BATCHHI	16.5m	71.9s	0.0s	0.1s	7.2%	3,028,474	IEF10	0.0%	0000
	M38BX4S		J	36896832	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000
	M373BFD		J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
	M3EHL8S		J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
	M373IZS		J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
	IM4E9HEV9		J	4E598732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
	M3YHK78F		J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
	M34DUG3		J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000

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



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

Job Dataset Report

File Edit Action

Job Details:-

Job Name: **M4E07B1H** Key Batch: Yes Elapsed Time: 991.79 Seconds CPU Intensity: 7.2%

Start Date: Apr 25, 2013 Start Time: 7:24 AM End Date: Apr 25, 2013 End Time: 7:41 AM

Step	Step Number	DSN	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconn Time
S4E5N227	92	I4E5SEY.M4E57B1S.SOQDVSG.LQGHA	188.0s	1879622	0.1	0.0	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.VRUWLOH.M4E57B1S.J2421Y22	19.8s	738	26.8	0.0	0.0	20.7	
S4E5H22E	76	I4E5SE.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	
S4E5N26F	82	I4E5SE.SE5N226F.M4E57B1S	15.6s	10401	1.5	0.0	0.0	1.4	
S4E5N24E	75	I4E5SE.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.VRUWLOH.M4E57B1S.J2421Y22	8.4s	5249	1.6	0.0	0.0	1.5	
S4E03FQJ	47	I4E0SEY.M4E07B1S.HAW2KLS.LQGHA	8.4s	83547	0.1	0.0	0.0	0.0	

OK

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.

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

Job Dataset Report

File Edit Action

Job Details:-

Job Name: M4E07B1H Key Batch: Yes Elapsed Time: 991.79 Seconds CPU Intensity: 7.2%

Start Date: Apr 25, 2013 Start Time: 7:24 AM End Date: Apr 25, 2013 End Time: 7:41 AM

Step	Step Number	DSN	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconn Time
S4E5N227	92	I4E5SEY.M4E57B1S.SOQDVSG.LQGHA	188.0s	1879622	0.1	0.0	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.VRUWLOH.M4E57B1S.J2421Y22	19.8s	738	26.8	0.0	0.0	20.7	
S4E5H22E	76	I4E5SE.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	
S4E5N26F	82	I4E5SE.SE5N226F.M4E57B1S	15.6s	10401	1.5	0.0	0.0	1.4	
S4E5N24E	75	I4E5SE.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.VRUWLOH.M4E57B1S.J2421Y22	8.4s	5249	1.6	0.0	0.0	1.5	
S4E03FQJ	47	I4E0SEY.M4E07B1S.HAW2KLS.LQGHA	8.4s	83547	0.1	0.0	0.0	0.0	

Get the Life of this Dataset

OK

- 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.

The screenshot shows the 'zBNA: Life of a Dataset' window. At the top, it displays 'Data Set Details:' with the dataset name 'I4E5SEY.M4E57B1S.SOQDVSG.LQGHA' and 'Number of Job Steps: 2'. Below this is a table with columns: Job, Step, Step Number, Job Number, Step End, Total IOTime, IO Count, Response Time, Queue Time, Pending Time, Connect Time, and Disconnect Time. The table contains two rows of data for job M4E07B1H. A scroll bar is visible at the bottom of the table area. To the right of the main table is a smaller table with columns: Read Percent, Compressed, Type, and Extended.

Job	Step	Step Number	Job Number	Step End	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconnect Time
M4E07B1H	S4E5N27D	88	JOB21576	04/25/2013 07:31:53	0.1s	130	1.1	0.0	0.0	1.0	0.0
M4E07B1H	S4E5N227	92	JOB21576	04/25/2013 07:41:01	188.0s	1,879,622	0.1	0.0	0.0	0.0	0.0

Read Percent	Compressed	Type	Extended
6	No	KSDS index	No
100	No	KSDS index	No

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 **Action** menu then **Top 10 Dataset Report**.

IBM System z Batch Network Analyzer - TEST FILE

Applied Filters: Set Alternate CPUs, Flag Transition Jobs

SERVICE CLASS: B
JOB NAMES: M3*
zEDC: Compression

Mainframe Information
Model: 2817-711
Partition Name: ONLIM
SYSID: SYS1
Partition Logical Utilization: 93.7%
CPC Utilization: 93.7%

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,976,574	DSNECP10	8.0%	0000
	IM402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,949,226	ENGXAE	4.0%	0000
	IM4027BH	132	B	4E598732	BATCHHI	16.5m	71.9s	0.0s	0.1s	7.2%	3,028,474	IEFJIC	0.0%	0000
	M3B8V4S	3	J	36B96832	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000
	M373BFD	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
	M3EHL8S	2	J	3EH94932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
	M373I2S	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
	IM4E9HEVS	7	J	4E598732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
	M373XQ3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.6m	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	0000
	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	36.6%	512,864	DSNECP10	62.0%	0000
	M3YHK7SG	26	J	3YH3YH32	BATPRDDF	1.5h	38.8m	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	0000
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0m	0.0s	0.0s	37.8%	21,905	DSNECP10	49.0%	0000
	M373IAS	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	0000
	M373ON4A	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,388	DSNECP10	63.0%	0000
	M3E066SU	2	J	3E09E032	BATPRDDF	1.0h	488.0s	0.0s	0.0s	13.4%	342	DSNECP10	12.0%	0004
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0004
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	0004
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.6%	31,510	DSNECP10	92.0%	0000
	M337F83	5	J	33793732	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	0000
	M373IYS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.8%	144,846	DSNECP10	34.0%	0000
	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,695	DSNECP10	21.0%	0000
	M3E0COS	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	28.0%	0000
	M373CCS	16	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	0000
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0004
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
	M3YFUJE	3	J	3YF3YF32	BATPRDDF	3.0h	49.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	0000
	M373FPY	9	J	37397332	BATCHHI	2.2h	20.0m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	0000
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	0000
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,677	DSNECP10	46.0%	0000
	M373IUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	0000

36 Jobs

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.

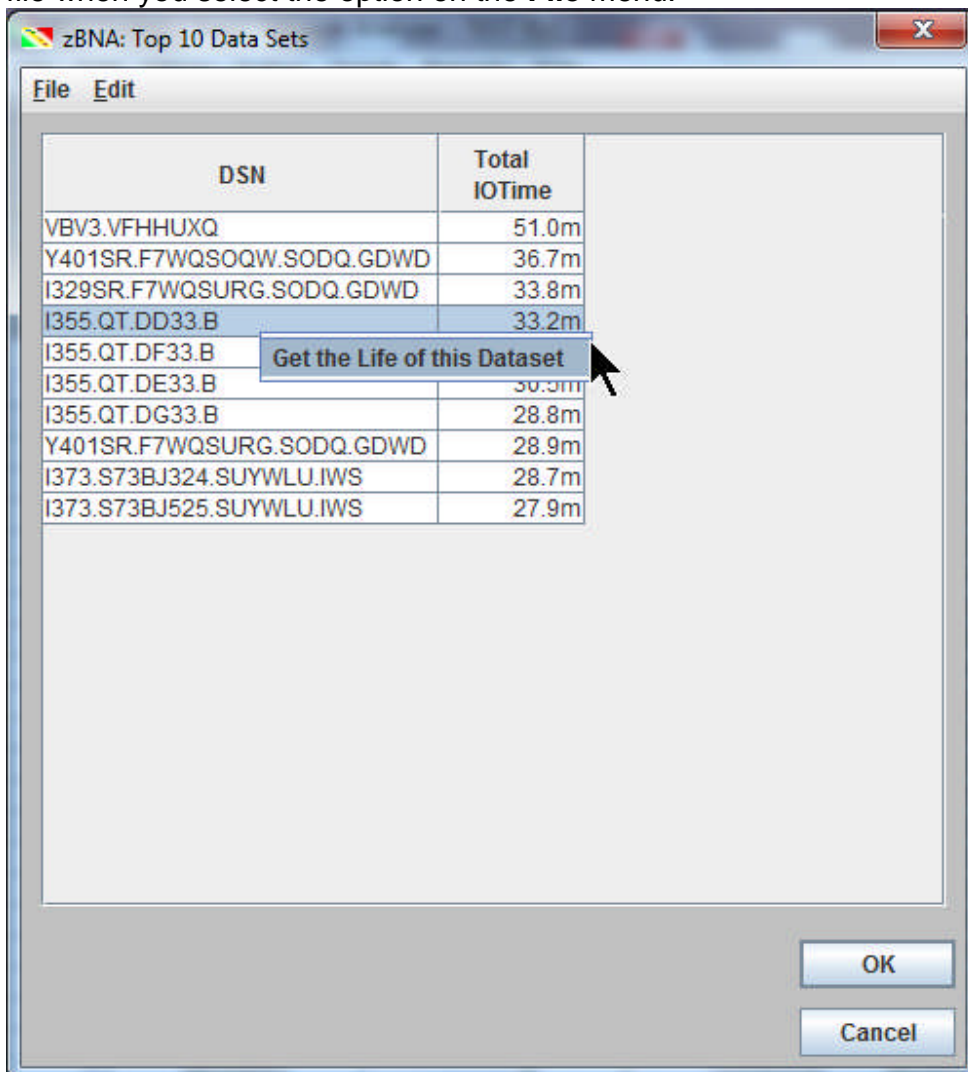
zBNA: Top 10 Data Sets

DSN	Total IOTime
VBV3.VFHHUXQ	51.0m
Y401SR.F7WQSOQW.SODQ.GDWD	36.7m
I329SR.F7WQSURG.SODQ.GDWD	33.8m
I355.QT.DD33.B	33.2m
I355.QT.DF33.B	32.5m
I355.QT.DE33.B	30.5m
I355.QT.DG33.B	28.8m
Y401SR.F7WQSURG.SODQ.GDWD	28.9m
I373.S73BJ324.SUYWLU.IWS	28.7m
I373.S73BJ525.SUYWLU.IWS	27.9m

OK
Cancel

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 **I355.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.

- 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.



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.

- 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.

zBNA: Life of a Dataset

Data Set Details:
Data Set: I355.QT.DD33.B Number of Job Steps: 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	6.1
M4E5UH3	VWHS7	11	JOB29797	04/25/2013 00:16:17	0.1s	11	5.1	0.0	0.1	0.3	4.4
M4E077VH	S4E5N27D	46	JOB29932	04/25/2013 00:16:37	0.0s	4	2.4	0.0	0.1	0.1	2.1
M4E0N7GH	S4E5N27D	55	JOB29876	04/25/2013 00:16:40	0.0s	2	3.7	0.0	0.0	0.2	3.3
M4E0N7GF	VWHS2302	25	JOB30315	04/25/2013 00:21:17	0.0s	1	0.3	0.0	0.1	0.1	0.1
M4E0YEDF	VWHS2302	25	JOB30739	04/25/2013 00:31:42	4.6s	860	5.4	0.0	0.1	0.2	4.3
M35703S	S357024	3	JOB31246	04/25/2013 00:34:25	0.0s	126	0.3	0.0	0.0	0.1	0.1
M35702S	S357024	3	JOB31261	04/25/2013 00:34:59	0.7s	2,440	0.3	0.0	0.1	0.1	0.1
M4E0XCOH	S4E5N27D	80	JOB31288	04/25/2013 00:35:30	0.0s	2	7.4	0.0	0.1	0.1	7.1
M35703S	S357020	12	JOB31246	04/25/2013 00:36:19	0.0s	124	0.3	0.0	0.1	0.1	0.1
M35703S	S357028	13	JOB31246	04/25/2013 00:36:24	0.0s	126	0.3	0.0	0.1	0.1	0.1
M4E0XCOF	VWHS2302	25	JOB31578	04/25/2013 00:37:30	0.0s	1	0.3	0.0	0.1	0.1	0.1
M35700S	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	4.1
M35702S	S357028	13	JOB31261	04/25/2013 00:55:14	1.7s	2,467	0.7	0.0	0.1	0.2	0.1
M35709G	S357093	13	JOB32268	04/25/2013 01:01:50	1.4s	219	6.2	0.0	0.1	0.8	5.1
M35709H	S357093	13	JOB32263	04/25/2013 01:02:00	1.2s	263	4.7	0.0	0.1	0.9	3.1
M35709E	S357093	13	JOB32266	04/25/2013 01:02:07	1.8s	322	5.4	0.0	0.1	0.8	4.1
M35709F	S357093	13	JOB32267	04/25/2013 01:02:56	2.1s	343	6.2	0.0	0.1	1.6	4.1
M35709D	S357093	13	JOB32265	04/25/2013 01:04:24	2.1s	329	6.5	0.0	0.1	1.4	4.1

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

zBNA: Life of a Dataset

Data Set Details:
Data Set: I355.QT.DD33.B Number of Job Steps: 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	4.1
M354GJS	S354GO3	3	JOB03191	04/25/2013 03:22:10	460.0s	82,127	5.6	0.0	0.0	0.5	4.1
M35702S	S357020	12	JOB31261	04/25/2013 00:53:33	12.3s	2,414	5.1	0.0	0.1	0.2	4.1
M4E0YHBH	S4E5N27D	86	JOB10179	04/25/2013 04:20:52	5.6s	1,194	4.7	0.0	0.1	0.6	3.1
M4E0YVGH	S4E5N27D	148	JOB01395	04/25/2013 01:34:20	4.7s	745	6.2	0.0	0.1	2.1	3.1
M4E0YEDF	VWHS2302	25	JOB30739	04/25/2013 00:31:42	4.6s	860	5.4	0.0	0.1	0.2	4.1
M4E5DGAS	VWHS223	3	JOB02930	04/25/2013 02:20:23	3.2s	1,327	2.1	0.0	0.1	0.5	1.1
M4E0XBQH	S4E5N27D	82	JOB20027	04/25/2013 07:10:23	2.8s	467	6.0	0.0	0.1	1.5	4.1
M4E563S	S4E5634	3	JOB16213	04/25/2013 06:09:27	2.7s	558	4.9	0.0	0.1	0.2	4.1
M35709D	S357093	13	JOB32265	04/25/2013 01:04:24	2.1s	329	6.5	0.0	0.1	1.4	4.1
M35709F	S357093	13	JOB32267	04/25/2013 01:02:56	2.1s	343	6.2	0.0	0.1	1.6	4.1
M35709E	S357093	13	JOB32266	04/25/2013 01:02:07	1.8s	322	5.4	0.0	0.1	0.8	4.1
M35702S	S357028	13	JOB31261	04/25/2013 00:55:14	1.7s	2,467	0.7	0.0	0.1	0.2	0.1
M35709G	S357093	13	JOB32268	04/25/2013 01:01:50	1.4s	219	6.2	0.0	0.1	0.8	5.1
M4E5H7S	S4EH7S5	5	JOB29802	04/25/2013 00:16:01	1.3s	199	6.7	0.0	0.1	0.1	6.1
M35709H	S357093	13	JOB32263	04/25/2013 01:02:00	1.2s	263	4.7	0.0	0.1	0.9	3.1
M4E0XVJH	S4E5N27D	82	JOB21988	04/25/2013 07:32:03	1.2s	314	3.8	0.0	0.1	0.1	3.1
M4E0YTRH	S4E5N27D	46	JOB23296	04/25/2013 07:47:50	1.1s	251	4.3	0.0	0.1	0.2	3.1
M35702S	S357024	3	JOB31261	04/25/2013 00:34:59	0.7s	2,440	0.3	0.0	0.1	0.1	0.1
M4E07HCH	S4E5N27D	82	JOB18469	04/25/2013 06:42:49	0.7s	153	4.8	0.0	0.1	0.6	3.1

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

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

Task 5 – Performing an Alternate Processor Analysis

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

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time
<input checked="" type="checkbox"/>	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m
<input checked="" type="checkbox"/>	M3E0IKSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m
<input checked="" type="checkbox"/>	M402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m
<input checked="" type="checkbox"/>	M4E07B1H	132	B	4E595732	BATCHHI	16.5m	71.9s

- 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.

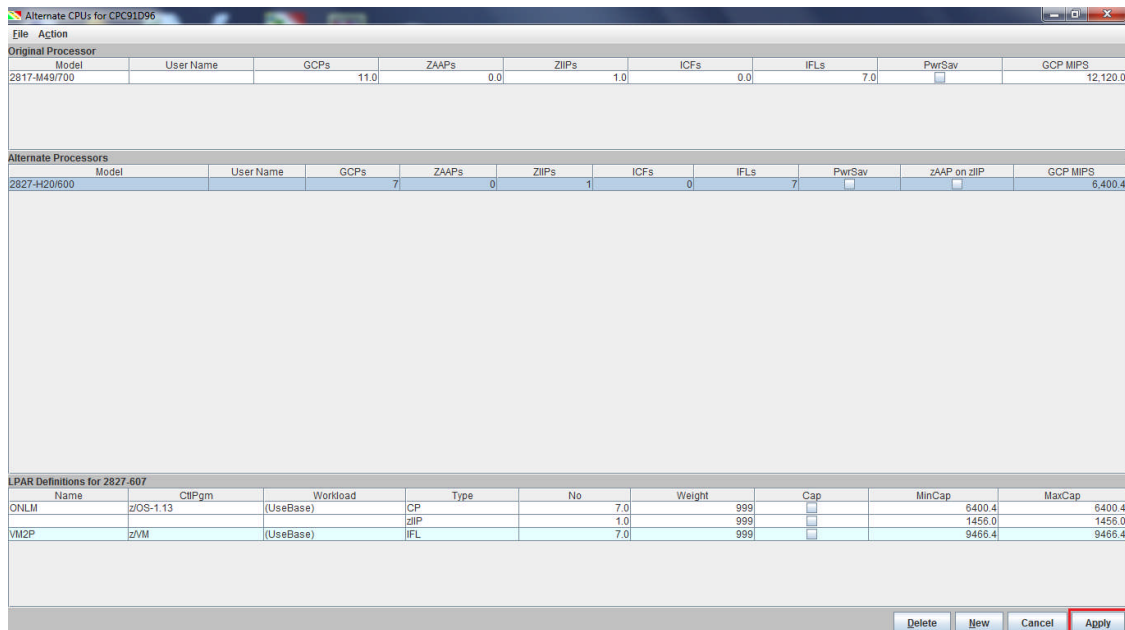
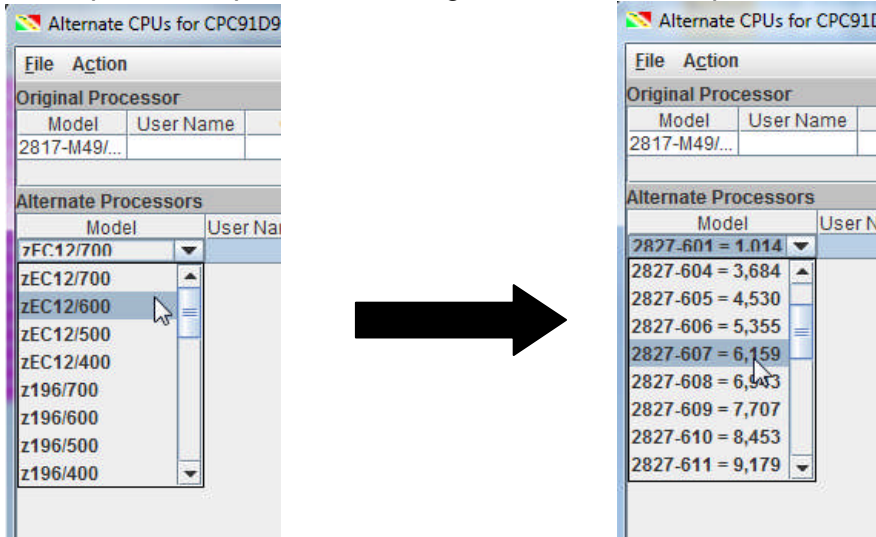
Model	User Name	GCPs	ZAAPs	ZIIPs	ICFs	IFLs	PwrSav	GCP MIPS
2817-M49/700		11.0	0.0	1.0	0.0	7.0	<input type="checkbox"/>	12,120.0

LPAR Definitions for 2817-711										
Name	ClpPgm	Workload	Type	No	Weight	Cap	MinCap	MaxCap		
ONLM	zOS-1.13	Low	CP	11.0	999	<input type="checkbox"/>	12120.0	12120.0		
			ZIIP	1.0	999	<input type="checkbox"/>	1098.7	1098.7		
VM2P	zVM	AverageLV	IFL	7.0	999	<input type="checkbox"/>	7519.8	7519.8		

Click **New**.

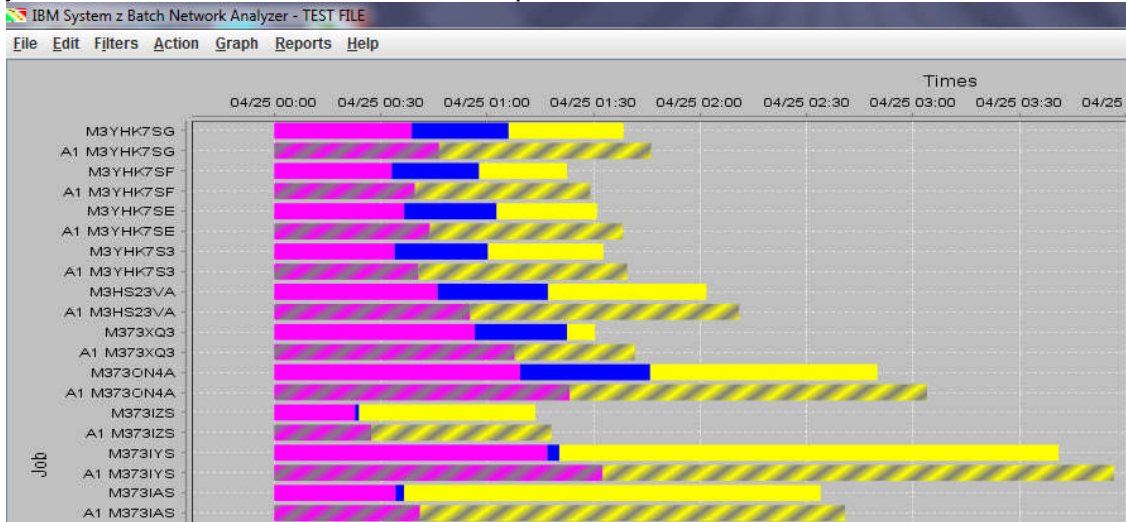
- A drop-down menu will appear that allows you to select the new processor. In this example we are going to select a processor with less total capacity and also less capacity per engine. Select the **zEC12/600** family, and then the **2827-607**.

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

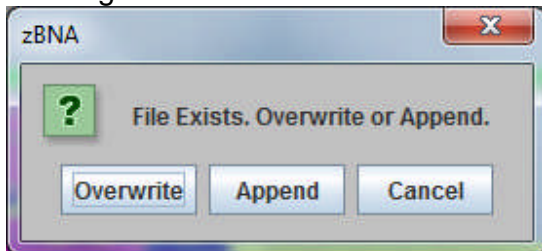


Click **Apply** to view the hypothetical scenario with this new processor.

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



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



Click **Append** to add to the end of the previously generated file.

Note: Click **Overwrite** to replace the file. Click **Cancel** to return to the graph.

- The report will now include the alternate processor, as well as the estimated run-time in the table for this new processor.

The processors considered in this analysis are the following:

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

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

The analysis follows:

Data

There are 36 jobs in the following table.

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

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

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

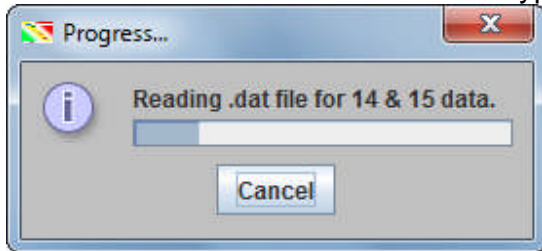
Task 6 – Exploring zEDC Compression

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

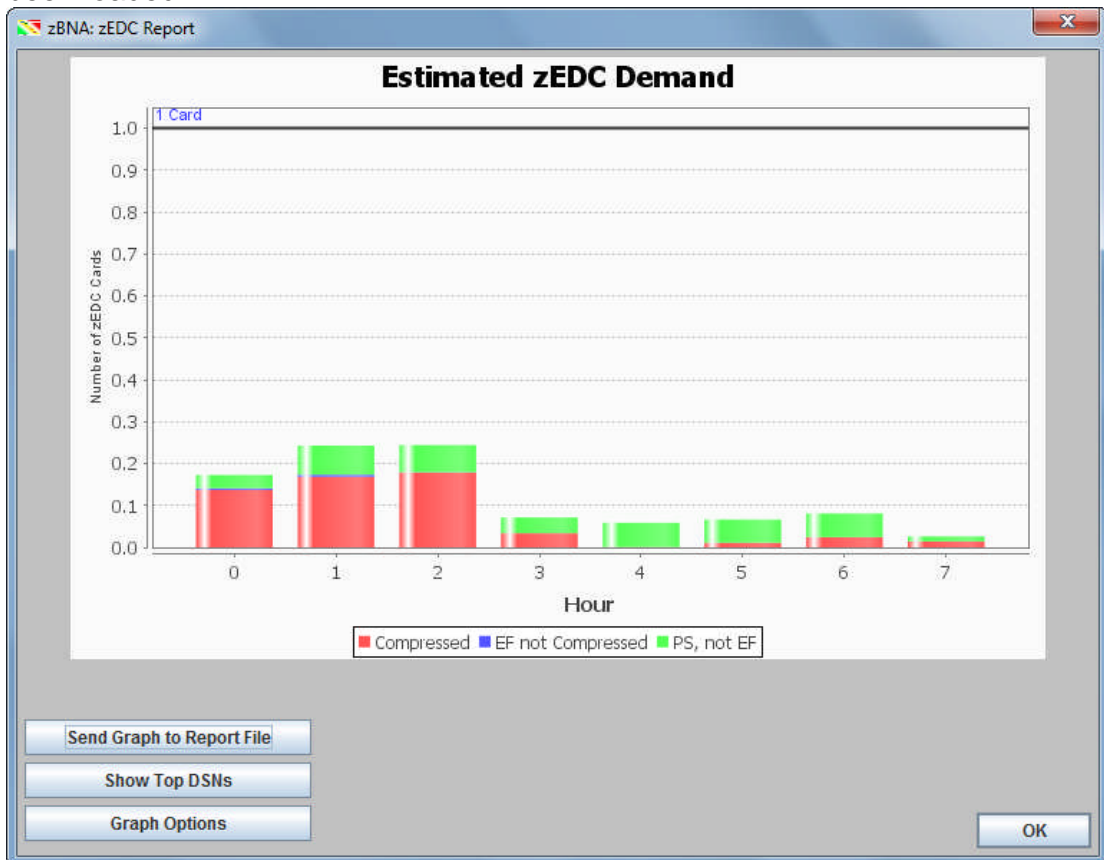
The screenshot shows the IBM System z Batch Network Analyzer interface. The 'Action' menu is open, and 'zEDC: Compression' is highlighted. The main window displays a table of job performance data.

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Time	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
	M36BX4S	3	J	36B96B32	BATPRDDF	38.1m	13.9m	0.0s	0.0s	36.5%	172,542	DSNECP10	10.0%	0000
	M373BFD	7	J	37397332	BATPRDDF	58.5m	19.4m	0.0s	0.0s	33.1%	865,814	DSNECP10	48.0%	0000
	M3EH4BS	2	J	3E9B4932	BATPRDDF	44.5m	12.2m	0.0s	0.0s	27.3%	36,613	DSNECP10	15.0%	0000
	M373ZS	3	J	37397332	BATCHHI	1.2h	22.8m	0.0s	0.0s	31.0%	43,231	DSNECP10	22.0%	0000
	IM4E5HEVS	7	J	4E595732	BATPRDDF	1.1h	15.0m	0.0s	0.0s	23.7%	6,954	DSNECP10	18.0%	0000
	M3YHK7SF	26	J	3YH3YH32	BATPRDDF	1.4h	33.1m	0.0s	0.0s	40.1%	731,964	DSNECP10	63.0%	0000
	M34DUG3	15	J	34D94432	BATPRDDF	1.3h	23.9m	0.0s	0.0s	29.5%	21,548	DSNECP10	29.0%	0000
	M373XO3	5	J	37397332	BATPRDDF	1.5h	56.6m	0.0s	0.0s	62.5%	6,101	DSNECP10	87.0%	0000
	M3YHK7SE	26	J	3YH3YH32	BATPRDDF	1.5h	36.5m	0.0s	0.0s	40.3%	874,506	DSNECP10	64.0%	0000
	M3YHK7B3	26	J	3YH3YH32	BATPRDDF	1.5h	33.9m	0.0s	0.0s	36.6%	512,864	DSNECP10	62.0%	0000
	M3YHK79G	26	J	3YH3YH32	BATPRDDF	1.6h	38.8m	0.0s	0.0s	39.4%	596,359	DSNECP10	62.0%	0000
	M3HS23VA	3	J	3HS3HS32	BATPRDDF	2.0h	46.0m	0.0s	0.0s	37.8%	21,905	DSNECP10	49.0%	0000
	M373IA5	3	J	37397332	BATCHHI	2.6h	34.2m	0.0s	0.0s	22.2%	67,910	DSNECP10	26.0%	0000
	M373ON4A	4	J	37397332	BATPRDDF	2.8h	1.2h	0.0s	0.0s	40.8%	56,389	DSNECP10	63.0%	0000
	M3E066SU	2	J	3E09E032	BATPRDDF	1.0h	498.0s	0.0s	0.0s	13.4%	342	DSNECP10	12.0%	0004
	M3E066SA	2	J	3E09E032	BATPRDDF	1.1h	18.2m	0.0s	0.0s	27.1%	340	DSNECP10	22.0%	0004
	M3E066SN	2	J	3E09E032	BATPRDDF	1.2h	17.2m	0.0s	0.0s	23.7%	320	DSNECP10	13.0%	0004
	M34DES3	6	J	34D94432	BATPRDDF	3.3h	2.0h	0.0s	0.0s	61.6%	31,510	DSNECP10	92.0%	0000
	M337F83	5	J	33797332	BATPRDDF	1.2h	26.6m	0.0s	0.0s	36.3%	2,434,989	DSNECP10	26.0%	0000
	M373YS	3	J	37397332	BATCHHI	3.7h	1.3h	0.0s	0.0s	34.6%	144,849	DSNECP10	34.0%	0000
	M34D7JS	3	J	34D94432	BATPRDDF	1.5h	38.2m	0.0s	0.0s	43.5%	3,735,605	DSNECP10	21.0%	0000
	M3E0C0S	3	J	3E09E032	BATPRDDF	2.2h	29.6m	0.0s	0.0s	21.9%	4,404	DSNECP10	26.0%	0000
	M373BJ5	11	J	37397332	BATPRDDF	2.0h	39.0m	0.0s	0.4s	32.2%	14,821,030	SYNCSORT	9.0%	0000
	M373CCS	15	J	37397332	BATPRDDF	45.5m	571.8s	0.0s	0.0s	21.0%	510,039	DSNECP10	13.0%	0000
	M3E066SO	2	J	3E09E032	BATPRDDF	2.2h	19.6m	0.0s	0.0s	14.9%	344	DSNECP10	15.0%	0004
	M3HS451A	9	J	3HS3HS32	BATPRDDF	59.4m	21.8m	0.0s	0.0s	36.6%	121,786	DSNECP10	23.0%	0000
	M373CNS	5	J	37397332	BATPRDDF	1.3h	19.9m	0.0s	0.0s	25.3%	392,740	DSNECP10	19.0%	0000
	M3E0KSN	4	J	3E09E032	BATPRDDF	1.3h	20.3m	0.0s	0.0s	26.5%	1,975,574	DSNECP10	8.0%	0000
	M3YFUEE	3	J	3YF3YF32	BATPRDDF	3.0h	48.2m	0.0s	0.0s	27.2%	441	DSNECP10	21.0%	0000
	M373FPV	9	J	37397332	BATCHHI	2.2h	20.9m	0.0s	0.0s	15.2%	1,776,060	DSNECP10	17.0%	0000
	M373ECS	3	J	37597532	BATPRDDF	2.6h	34.1m	0.0s	0.0s	22.1%	316	DSNECP10	25.0%	0000
	IM402GX3L	17	J	40242032	BATPRDDF	54.2m	27.9m	0.0s	0.0s	51.5%	2,945,226	ENGXGE	4.0%	0000
	M373BDS	21	J	37397332	BATPRDDF	6.3h	2.0h	0.0s	0.8s	32.0%	18,169,677	DSNECP10	46.0%	0000
	M373JUS	14	J	37397332	BATCHHI	55.3m	21.6m	0.0s	0.2s	39.1%	3,407,043	DSNECP10	24.0%	0000
	IM4E5F3SS	66	J	4E595732	BATPRDDF	5.6h	2.0h	0.0s	0.2s	6.2%	19,960,843	DSNECP10	17.0%	0000

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



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



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

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

DSN	File Type	MB
I373.S73BJ324.SUYWLU.IWS	COMP	281256
I373.S73BJ525.SUYWLU.IWS	COMP	234674
I3SK.I68S.UA592.VXE.HHLG3.J3885Y22	COMP	93490
I3SK.UA592.VXE.HHLG3.J3994Y22	COMP	93431
I3SK.I68S.UA592.VXE.HHLG5.J3885Y22	COMP	89614
I3SK.VXEGWO.VRUW04.HHLG5	COMP	89556
I3SK.I68S.UA592.VXE.HHLG7.J3885Y22	COMP	89369
I3SK.I68S.UA592.VXE.HHLG4.J3885Y22	COMP	89357
I3SK.UA592.VXE.HHLG7.J3992Y22	COMP	89311
I3SK.VXEGWO.VRUW04.HHLG7	COMP	89310
I3SK.UA592.VXE.HHLG4.J3993Y22	COMP	89299
I3SK.I68S.UA592.VXE.HHLG6.J3885Y22	COMP	89275
I3SK.VXEGWO.VRUW04.HHLG6	COMP	89215
I373.S73BF42.SUYWLU3.RXWSXW.ILQDO.J2282Y22	COMP	57968
I3NOSE.UFH.FODLPHAW.ILAHG	COMP	56448
I373.J73BJ523.GHOWD.SUYDHA.FXUUHQW.J2258Y22	COMP	47649
I3SK.I69S.UA592.GHS.HHLG3.J3885Y22	COMP	47461
I3SK.I69S.UA592.GHS.HHLG5.J3885Y22	COMP	47141

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

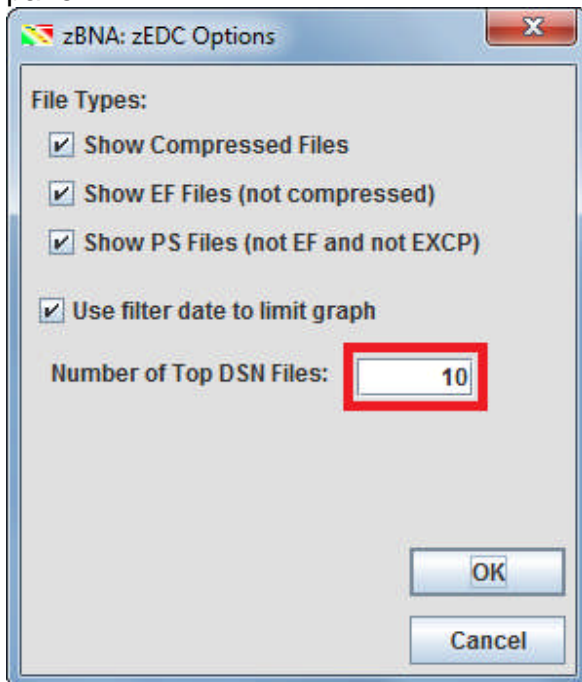
- Double click on **MB** to sort the list of files by this characteristics.

The screenshot shows a dialog box titled "zBNA: zEDC Top Data Sets". It has a menu bar with "File" and "Edit". There are three checked checkboxes: "Show Compressed Files", "Show EF Files (not compressed)", and "Show PS Files (not EF and not EXCP)". A group box "Show by Rate or MB?" contains two radio buttons: "by Rate (MB/sec)" (unselected) and "by MB (total)" (selected). Below this is a table with three columns: "DSN", "File Type", and "MB". The "MB" column is highlighted with a red border. At the bottom of the dialog are buttons for "Send Table Data to Report File", "OK", and "Cancel".

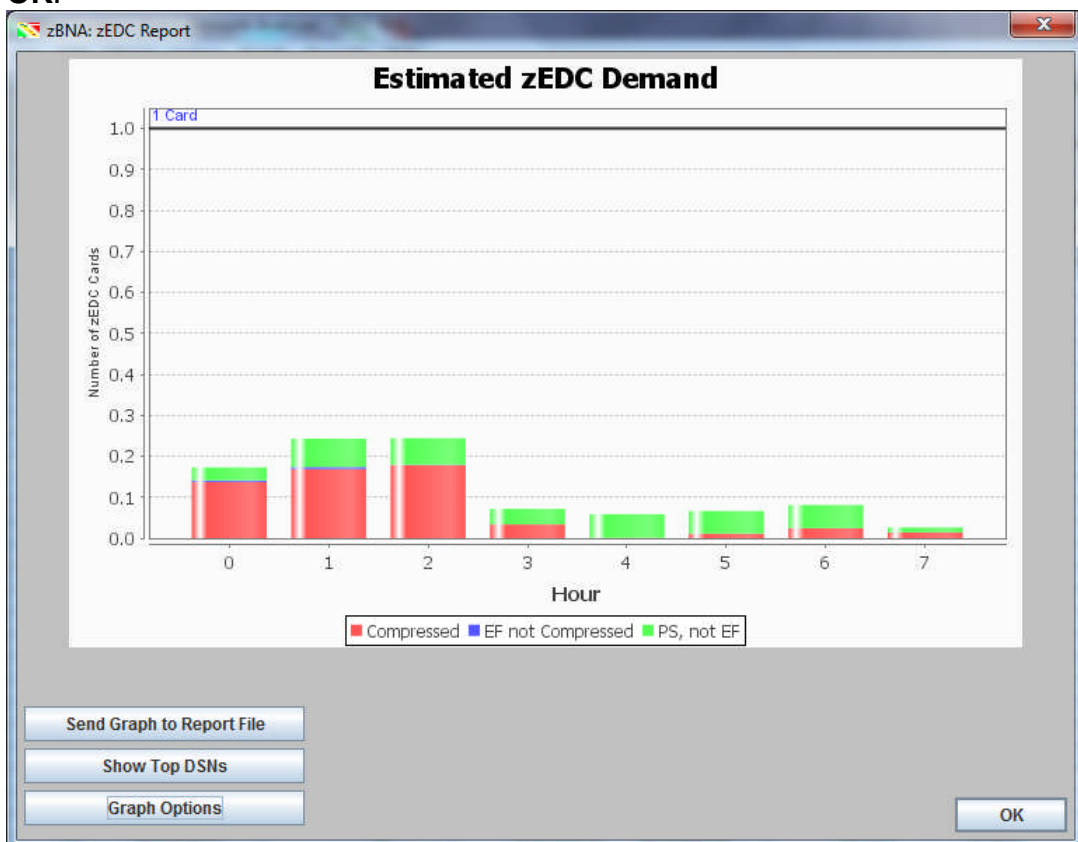
DSN	File Type	MB
I373.S73BJ324.SUYWLU.IWS	COMP	281256
I373.S73BJ525.SUYWLU.IWS	COMP	234674
I4E5SE.P4E5PF31.QQR.PHPEHU.ILOH.J4696Y22	PS	134113
I3SK.I68S.UA592.VXE.HHLG3.J3885Y22	COMP	93490
I3SK.UA592.VXE.HHLG3.J3994Y22	COMP	93431
I3SK.I68S.UA592.VXE.HHLG5.J3885Y22	COMP	89614
I3SK.VXEGWO.VRUW04.HHLG5	COMP	89556
I3SK.I68S.UA592.VXE.HHLG7.J3885Y22	COMP	89369
I3SK.I68S.UA592.VXE.HHLG4.J3885Y22	COMP	89357
I3SK.UA592.VXE.HHLG7.J3992Y22	COMP	89311
I3SK.VXEGWO.VRUW04.HHLG7	COMP	89310
I3SK.UA592.VXE.HHLG4.J3993Y22	COMP	89299
I3SK.I68S.UA592.VXE.HHLG6.J3885Y22	COMP	89275
I3SK.VXEGWO.VRUW04.HHLG6	COMP	89215
I3MWSE.UHVROYHG.FODLP.HAW.GDLOB.HQU.J2749Y22	PS	81070
I4E5SE.P4E5PF5E.QQR.PHPEHU.ILOH.J4422Y22	PS	80711
I373.S73BF42.SUYWLU3.RXWSXW.ILQDO.J2282Y22	COMP	57968
I3NOSE.UFH.FODLPHAW.ILAHG	COMP	56448

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

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



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



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

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.

DSN	File Type	MB
I373.S73BJ324.SUYWLU.IWS	COMP	281256
I373.S73BJ525.SUYWLU.IWS	COMP	234674
I3SK.I68S.UA592.VXE.HHLG3.J3885Y22	COMP	93490
I3SK.UA592.VXE.HHLG3.J3994Y22	COMP	93431
I3SK.I68S.UA592.VXE.HHLG5.J3885Y22	COMP	89614
I3SK.VXEGWO.VRUW04.HHLG5	COMP	89556
I3SK.I68S.UA592.VXE.HHLG7.J3885Y22	COMP	89369
I3SK.I68S.UA592.VXE.HHLG4.J3885Y22	COMP	89357
I3SK.UA592.VXE.HHLG7.J3992Y22	COMP	89311
I4E5SE.P4E5PF31.QQR.PHPEHU.ILOH.J4696Y22	PS	134113

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

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