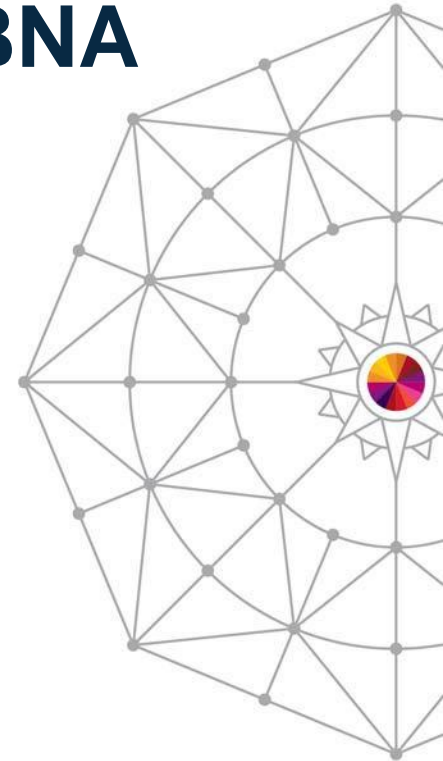


Batch Workload Analysis using zBNA User Experience

Meral Temel
System Architect / z/OS Team Leader
ISBANK



#SHAREorg



SHARE is an independent volunteer-run information technology association
that provides **education, professional networking and industry influence.**








Batch Workload Analysis Using zBNA User Experience

Agenda

- § Who is İşBank ?
- § Mainframe Configuration
- § What is zBNA ?
- § Why Batch ?
- § **Batch Bottlenecks & Analysis Methods & Problems-Experienced & Solutions - Implemented**
- § zBNA Panels & Cases That zBNA Helps

Who Is İŞBANK ?

-  **The Biggest Bank Of Turkey**
-  **5521 ATMs**
-  **1296 Branches In Turkey, 20 Branches Outside Turkey**
-  **Has The Highest Profit According To All Bank Announcements 2013**
-  **Member Of SHARE Inc.**

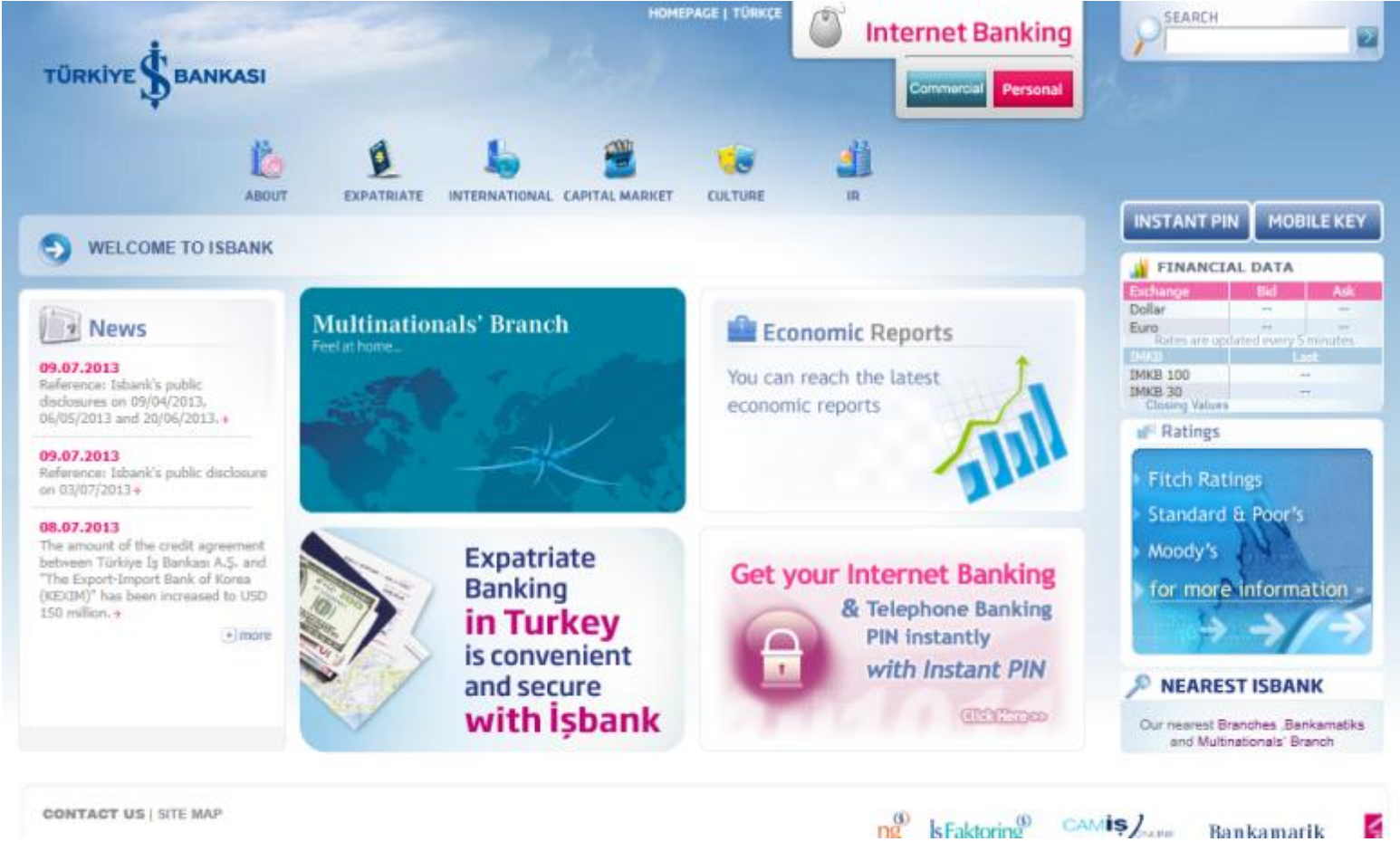
Who Is İŞBANK ?

BRANCHES



Who Is İŞBANK ?

INTERNET BANKING



The screenshot shows the homepage of Türkiye İş Bankası. At the top left is the bank's logo and name. A navigation bar includes links for ABOUT, EXPATRIATE, INTERNATIONAL, CAPITAL MARKET, CULTURE, and İR. A prominent 'Internet Banking' button is available for 'Commercial' and 'Personal' users. A search bar is located in the top right. Below the navigation, a 'WELCOME TO İSBANK' banner is present. The main content area is divided into several sections: 'News' with recent articles from July 2013; 'Multinationals' Branch' with a world map; 'Economic Reports' with a bar chart; 'Expatriate Banking in Turkey is convenient and secure with İşbank' with an image of a passport; 'Get your Internet Banking & Telephone Banking PIN instantly with Instant PIN' with a padlock icon; 'Financial Data' table; 'Ratings' section listing Fitch, Standard & Poor's, and Moody's; and 'NEAREST İSBANK' section. The footer contains 'CONTACT US | SITE MAP' and logos for partners like İsfaktoring, CAMİS, and Bankamarik.

TÜRKİYE İŞ BANKASI

HOME PAGE | TÜRKÇE

Internet Banking

Commercial Personal

ABOUT EXPATRIATE INTERNATIONAL CAPITAL MARKET CULTURE İR

WELCOME TO İSBANK

News

09.07.2013
Reference: İsbank's public disclosures on 09/04/2013, 06/05/2013 and 20/06/2013. +

09.07.2013
Reference: İsbank's public disclosure on 03/07/2013 +

08.07.2013
The amount of the credit agreement between Türkiye İş Bankası A.Ş. and "The Export-Import Bank of Korea (İKEXİM)" has been increased to USD 150 million. +

Multinationals' Branch
Feel at home...

Economic Reports
You can reach the latest economic reports

Expatriate Banking in Turkey is convenient and secure with İşbank

Get your Internet Banking & Telephone Banking PIN instantly with Instant PIN

FINANCIAL DATA

Exchange	Bid	Ask
Dollar	--	--
Euro	--	--
Rates are updated every 5 minutes.		
İMKB	Last	
İMKB 100	--	--
İMKB 30	--	--
Closing Values		

Ratings

- Fitch Ratings
- Standard & Poor's
- Moody's

for more information

NEAREST İSBANK

Our nearest Branches, Bankamatik's and Multinationals' Branch

CONTACT US | SITE MAP

İsfaktoring CAMİS Bankamarik

Who Is İŞBANK ?

ATM



İŞCEP Mobile Phone Application



İŞBANK IPAD FINANCE CENTER Application

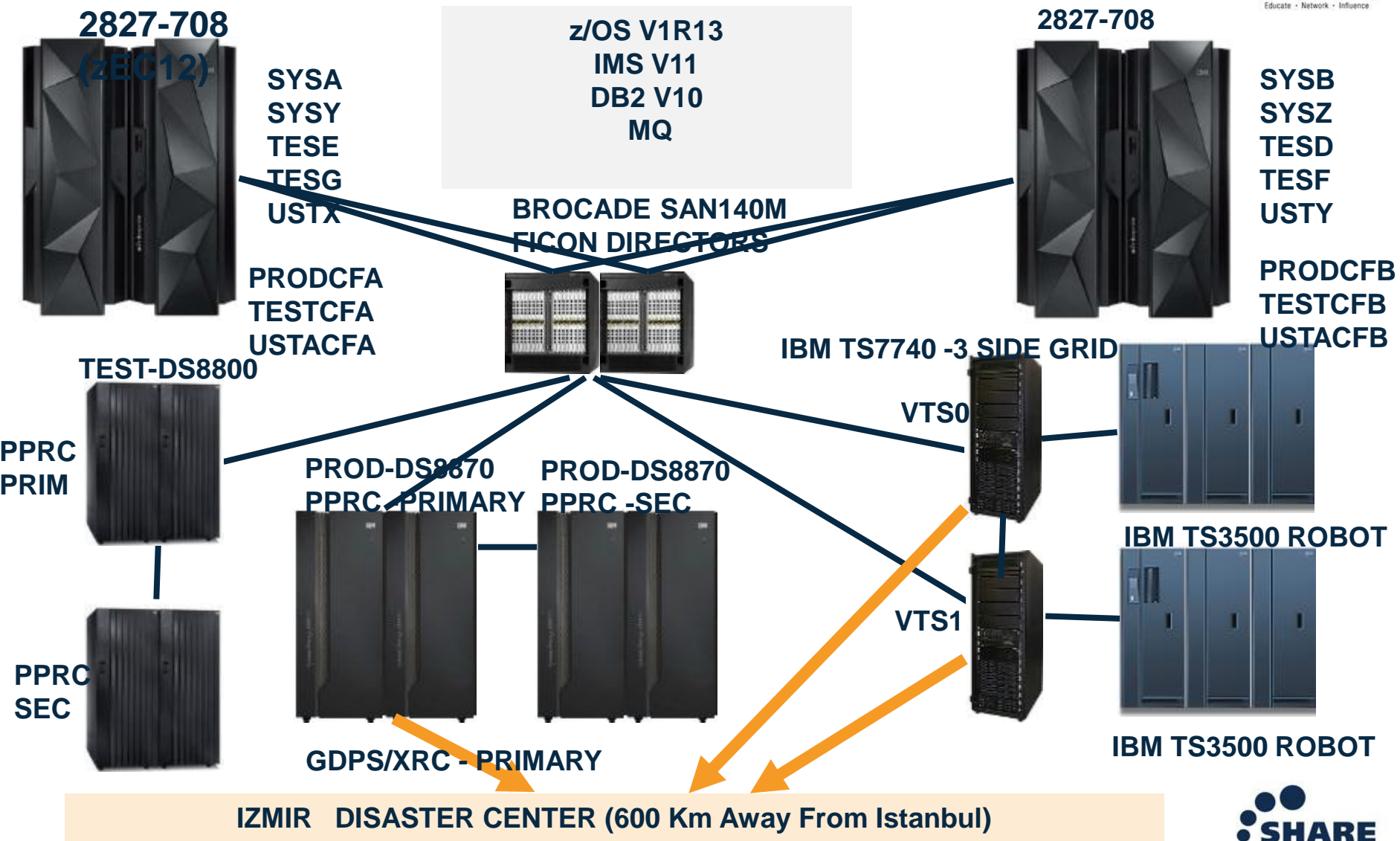


Who Is İŞBANK ?

Credit Cards



İşbank – Mainframe Configuration



PERFORMANCE & RESOURCES



CPU

MEMORY

I/O



Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

BATCH WORKLOAD

ELAPSE TIME

LARGE AMOUNT
OF RESOURCE
CONSUMPTION

BATCH PERFORMANCE IS IMPORTANT, BECAUSE...

- **If Batch Window Does not finish on time, it will go into onlinetime window**
 - Batch job mostly ...**
 - Does Bulk I/O**
 - Does Bulk DB Access**
 - Does Bulk Reads much worse bulk writes**
 - Can cause higher CF lock requests**
 - Can use aggressive CPU resource**
 - Can use internal database services much aggressively**
 - **All Of These Stresses System Resources , That's why we don't want batch to run within onlinetime period ...**
 - **If 4 Hr MSU peak values are during onlinetime , adding batch cpu to this workload have the possibility to cause you pay more...**
 - **If you are using Softcapping, bad batch performance can cause you start onlinetime with your systems SOFTCAPPED....**
 - **Big data can cause much higher increase ratio on batch workload then OLTP**
 - **Some OLTP processes depends on some batch processes to be finished. You may not start new day before finishing some batch processess.**

So batch window MUST FINISH on time before OnlinePeriod Starts.....

BATCH PERFORMANCE IS IMPORTANT, BECAUSE...



- **Batch Job That Has cpu delay is also owning a lock , it can cause critical OLTP workload to suffer from these locks...**

- **Not correctly planned batch window can have the possibility to be reason of highest 4 hr MSU and reason of paying more money....**



Batch ElapseTime can increase because.... *few of them



- CPU Delay
 - Increase in amount of workload that job processes
 - Increase in cpu usage of system during job running time because of other jobs (amount of other jobs, cpu usage of other jobs)

- I/O delay
 - I/O Performance Problem of specific dataset/volume (Lack of buffers...incorrect blocksize....)
 - I/O Performance Problem of general DASD (unbalanced LCUs ,microcode,misconfigured cache size)
 - I/O Performance Problem because of XRC/PPRC effect
 - I/O Performance Problem because of Lack Of Channel Paths, Host Adapters

- ENQ Problems (Waiting For Same Datasets)

- Database Lock Contentions

- Purely Performed System Services
 - Catalog performance, paging, not enough CF paths, CF resources.....
- Lack Of Memory (Job Related, System Related)

- Misconfigured System – WLM Policy, SORT configuration

- Lack Of Parallelism - WLM managed Initiator- Waiting for initiator , Lack Of Static Initiators

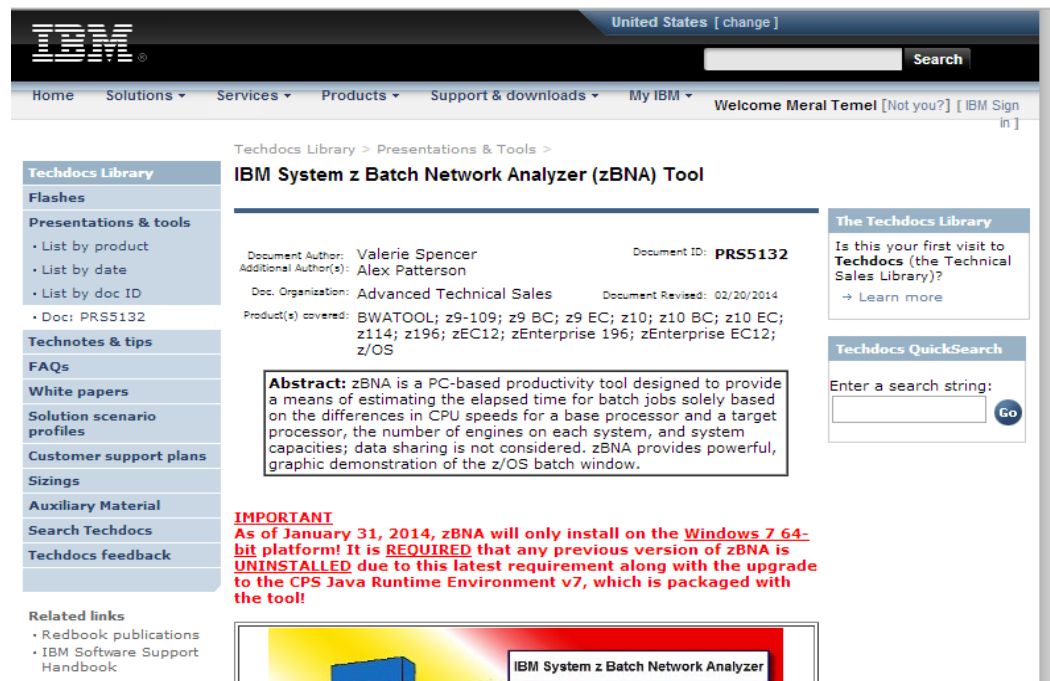
- Uncontrolled workload



What is zBNA ?

- ❑ FREE!!!!!! Tool To Analyze Batch Window
- ❑ Available On Techdocs

<http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS5132>

The screenshot shows the IBM Techdocs website interface. At the top, there is a navigation bar with the IBM logo, a search bar, and links for Home, Solutions, Services, Products, Support & downloads, and My IBM. The main content area is titled 'IBM System z Batch Network Analyzer (zBNA) Tool'. It includes a sidebar with navigation options like 'Techdocs Library', 'Flashes', 'Presentations & tools', 'FAQs', 'White papers', 'Solution scenario profiles', 'Customer support plans', 'Sizings', 'Auxiliary Material', 'Search Techdocs', and 'Techdocs feedback'. The main content area displays document details for PRS5132, including the author (Valerie Spencer), additional author (Alex Patterson), organization (Advanced Technical Sales), and document revision date (02/20/2014). An abstract describes zBNA as a PC-based productivity tool for estimating batch job elapsed time. A red 'IMPORTANT' notice states that as of January 31, 2014, zBNA will only install on the Windows 7 64-bit platform and that previous versions are uninstalled due to the upgrade to the CPS Java Runtime Environment v7. At the bottom, there is a banner for the 'IBM System z Batch Network Analyzer' tool.

15671: System z Batch Network Analyzer (zBNA) Tool Hands-on Lab – Thursday 4:15 PM
 15706: System z Batch Network Analyzer (zBNA) Tool – Because Batch is Back!

zBNA - Some Recent Updates Include:

See C:\CPSTOOLS\zBNA “zBNAnews.pdf” for a complete description

- v1.2.0 – 9/17/13
 - Update with DASD Data Set Information
 - Process SMF 42 records
 - Information on response times, blocking, I/O rates, read:write ratios, more
 - What DASD data sets are used in a job
 - What are the set of jobs that use a DASD data set - LOADS
- v1.3.0 – 12/31/13
 - zEDC BSAM/QSAM Compression Candidates
- v1.4.0 – 1/31/14
 - zBNA requires the new 64-bit IBM CPS Java Runtime Environment
 - Will only install on a Windows 7 64-bit operating system
 - Need to uninstall all of your CPS Java6 material. Admin Authority will no longer be required to install/uninstall IBM CPS Java, zBNA or any other CPS tool

Process Data So Fast!

zBNA Version – Recent Updates By John Burg



zBNA – Some Recent Updates include:

See <C:\CPSTOOLS\zBNA> “zBNAnews.pdf” for a complete description

- v1.4.1 – 2/11/14
 - “Find” and “Find Next” are available on Edit menu and zBNA panels with tables
- v1.4.2 – 3/17/14
 - Report and Action menu changes
- v1.4.3 and v1.4.4 – 5/1/14
 - Added **Block Size** column to table on Job Dataset Report and Life of a Dataset panel
 - Added **IIP CP Time** column to table on Job Information panel for each Step
- v1.4.5 – 5/30/14
 - Misc: Job Class > 1 character, CSV options overwrite, append and cancel, Clear Data function removed but planned to be available 3QT 2014
- v1.4.6 – planned 8/31/14
 - Terse support for the zBNA DAT file (SMF 14s, 15s, 30s, and 42s) – EDF remains as is
 - Terse CP3K Extract DAT file on MVS, then upload to workstation along with EDF file
- v1.5.0 – planned 3QT 2014
 - Alternate Support for Compression

Note: These statements represent the current intention of IBM. IBM reserves the right to change or alter the IBM System z Batch Network Analyzer plans in the future or to exclude certain releases beyond those stated. IBM development plans are subject to change or withdrawal without further notice. Any reliance on this statement of direction is at the relying party's sole risk and does not create any liability or obligation for IBM.



How To Use zBNA ?

❑ Download From Techdocs Website

IBM Techdocs Download: x

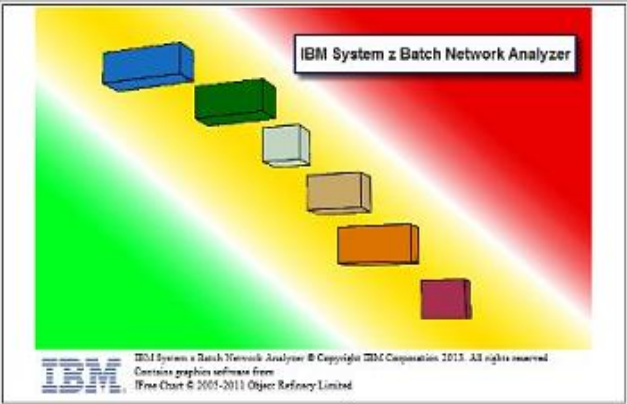
www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PR55132

Search Techdocs
Techdocs feedback



Related links

- Redbook publications
- IBM Software Support Handbook

IMPORTANT
As of January 31, 2014, zBNA will only install on the **Windows 7 64-bit platform!** It is **REQUIRED** that any previous version of zBNA is **UNINSTALLED** due to this latest requirement along with the upgrade to the CPS Java Runtime Environment v7, which is packaged with the tool!



IBM System z Batch Network Analyzer © Copyright IBM Corporation 2013. All rights reserved.
Contains graphics software from
Wise Chart © 2005-2011 Object Refinery Limited

Product Name:	zBNA
Product Version:	1.4.1
Operating System:	Windows 7 64-bit
Change Date:	February 11, 2014
Approximate Size:	133MB
Click on the icon to download the zBNA install package to include the required IBM Java	 zBNAInstallwithJava.exe
Click on the icon to view/download the user's guide	 zBNAAug.pdf

zBNA requires an independent version of the IBM CPS Java Runtime Environment v7 **64-bit**, which is packaged with the tool.

Note:
Please uninstall any previous zBNA package before installing the one above.

zBNA AMAZING TOOL !



- AMAZING GRAPHS!
- DOES SMF 7X, SMF42, SMF14, 15 analysis SOOO FAST!
- USE IT EVERYDAY, IN EVERY BATCH RELATED ANALYSIS-Even for one batch job.
- THE ONLY THING TO PREPARE IS ONE JCL TO CREATE TWO INPUT FILES!
- VERY USER FRIENDLY!
- AMAZING PANEL FUNCTIONS!
- 'LIFE OF DATASET' IS BY ITS OWN CAUSES THIS TOOL WORTH BEING USED DAILY BASIS
- BATCH ELAPSETIME DISTRIBUTION GRAPH , BY ITS OWN, CAUSE THIS TOOL WORTH BEING USED DAILY BASIS

THANKS TO IBM ATS TEAM!



Where & When To Use zBNA ? & Why ?



Why use zBNA?

- Perform "what if" analysis and estimate CPU upgrade effect on batch window
- Identify job time sequences based on a graphical view
- Filter jobs by attributes like CPU time / intensity, job class, service class, etc.
- Review the resource consumption of all the batch jobs
- Drill down to the individual steps to see the resource usage
- Identify candidate jobs for running on different processors
- Identify jobs with speed of engine concerns (top tasks %)
- Identify by job which datasets are used and the datasets performance info
- For any dataset identify every job in the time window using the data set
- Identify top zEDC compression candidates and understand the zEDC card capacity required



Where & When To Use zBNA ? & Why ?



Real Case Samples...

- ❑ Daily Basis Batch Window Tracking – Quick and Great Graph
- ❑ Performance Analysis of even one job – ElapseTime distribution
- ❑ Upgrade Plans CPU model – How Will the upgrade effect my batch window ?
- ❑ LPAR Configuration Change Planning – How will LPAR Change effect my batch window ?
(In the backend zPCR algorithms are being used...)
- ❑ Want to do changes in one dataset , which jobs will be effected – Simple way of finding LIFE of a dataset
- ❑ Precreated pdf files, download to PC , when needed use them ... ?
- ❑ zEDC Capacity Planning Study .- Top Candidates & Card Capacity Planning



How To Use zBNA ?



- Download CPEXTRACT From Techdocs Website**
If you are using zPCR ,you have already CPSTOOLS
***Check the site for latest updates and version**

- Download zBNA (PC based tool – like zPCR)**

- Create 2 EDF files : One for SMF 7X and one for 14,15,30,42**

- Load EDF Files to zBNA**

- Start working on.....**

- Great Data & Nice Charts!.... Sooo FAST!!!**



Hints

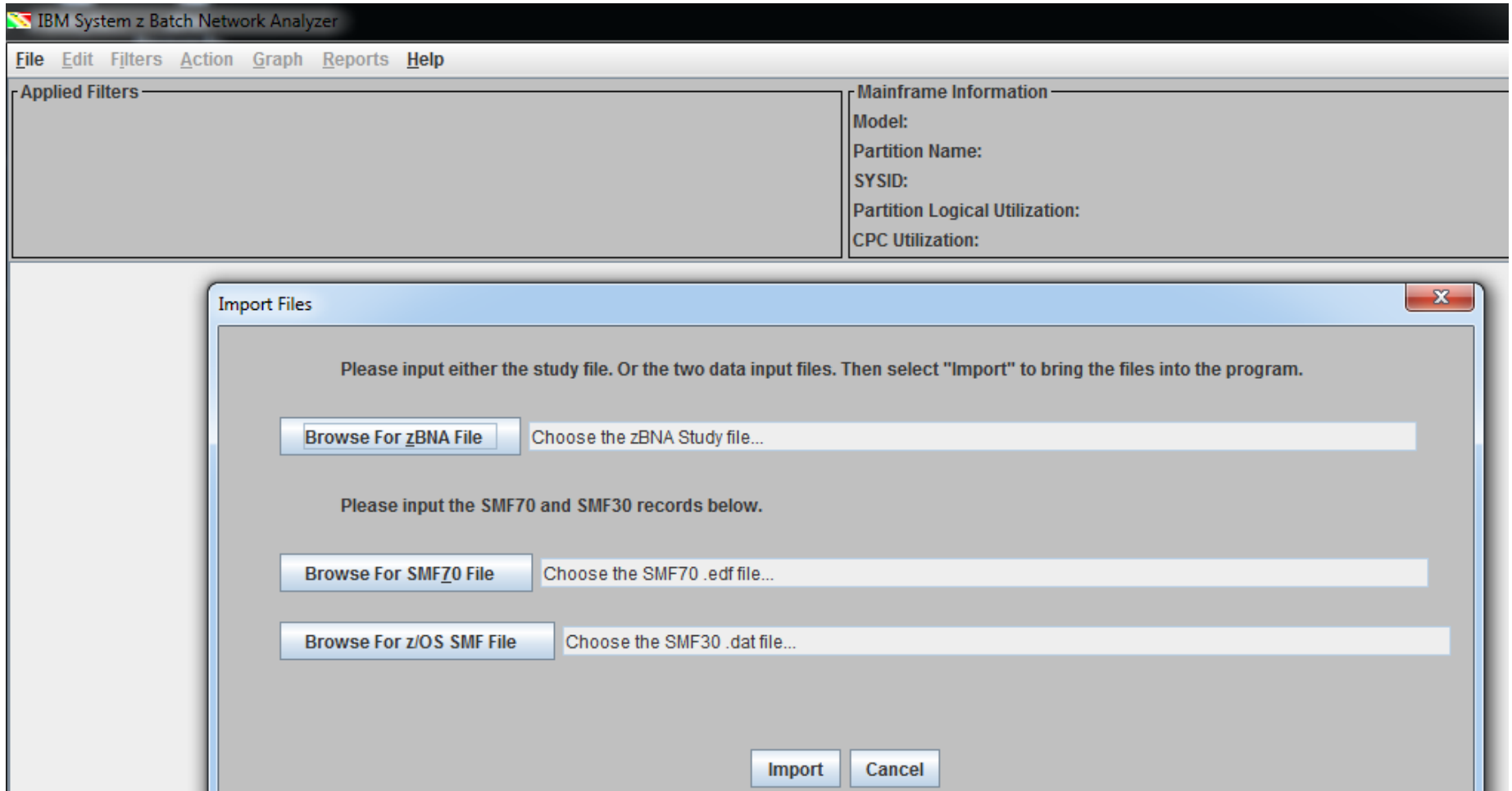
- Depending on your environment and SMF record amount , use small intervals

```
DSLIST - Data Sets Matching IS93081.*ALK                               Data Set - Browsed
Command - Enter Ü/Ü to select action                                Tracks %Used      XT
-----
IS93081.SMF4ALK                                                    5145   99       7
IS93081.ZBNA4ALK                                                    30     66       1
***** End of Data Set list *****
```

- Don't do separate processing – Without SMF7X , you can not process edf for 14,15,30.42 CPEXTRACT RC 4 occurs but Data001 DD (edf file for smf other than 7X) will be empty

```
<----- SYSIN001 DATASET PROCESSED
CP3KEXT: NO BCUMAP PROCESSING REQUESTED
-----PROCESSING RMF DATA FOR WORKLOAD IN GOAL MODE----->
CP3KGOAL: NO TYPE 72 SUBTYPE 3 FOUND IN SPECIFIED INTERVAL
CP3KUTIL SYSID: SYSA MVS: RMF: VOROM
TYPE 014      496496 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 015      308587 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 030 02      4686 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 030 03     41295 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 030 04     41732 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 030 05      6884 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 042 01         3 RECORDS FROM: 02/18/14 00:15 - 02/18/14 02:15
TYPE 042 02       277 RECORDS FROM: 02/18/14 00:30 - 02/19/14 00:00
TYPE 042 04       251 RECORDS FROM: 02/18/14 00:01 - 02/18/14 02:04
TYPE 042 05         50 RECORDS FROM: 02/18/14 00:30 - 02/19/14 00:00
TYPE 042 06    739672 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
TYPE 042 09         1 RECORDS FROM: 02/18/14 00:47 - 02/18/14 00:47
TYPE 042 24      6103 RECORDS FROM: 02/18/14 00:01 - 02/19/14 00:01
CP3KUTIL SYSID: SYSB MVS: RMF: VOROM
TYPE 002         1 RECORDS FROM: 03/11/14 13:04 - 03/11/14 13:04
TYPE 003         1 RECORDS FROM: 03/11/14 13:12 - 03/11/14 13:12
----- PROCESSING PGN001 DATASET ----->
<----- PGN001 DATASET PROCESSED
CP3KT30M: NO T30M001 PROCESSING REQUESTED
CP3KEXTR: PROCESSING COMPLETE
```


Import EDF Files Or Open Previous Study



The screenshot shows the IBM System z Batch Network Analyzer application. The main window has a menu bar with 'File', 'Edit', 'Filters', 'Action', 'Graph', 'Reports', and 'Help'. Below the menu bar are two panels: 'Applied Filters' on the left and 'Mainframe Information' on the right. The 'Mainframe Information' panel contains the following fields: Model, Partition Name, SYSID, Partition Logical Utilization, and CPC Utilization. An 'Import Files' dialog box is open in the foreground. The dialog box has a title bar with a close button. The main text in the dialog reads: 'Please input either the study file. Or the two data input files. Then select "Import" to bring the files into the program.' Below this text are three rows of input fields. Each row starts with a 'Browse For' button followed by a text field. The first row is for the zBNA file, the second for the SMF70 file, and the third for the z/OS SMF file. At the bottom of the dialog are 'Import' and 'Cancel' buttons.

IBM System z Batch Network Analyzer

File Edit Filters Action Graph Reports Help

Applied Filters

Mainframe Information

Model:
Partition Name:
SYSID:
Partition Logical Utilization:
CPC Utilization:

Import Files

Please input either the study file. Or the two data input files. Then select "Import" to bring the files into the program.

Browse For zBNA File Choose the zBNA Study file...

Please input the SMF70 and SMF30 records below.

Browse For SMF70 File Choose the SMF70 .edf file...

Browse For z/OS SMF File Choose the SMF30 .dat file...

Import Cancel

First Panel After Import Or Open Previous Study



IBM System z Batch Network Analyzer - ISBANK

File Edit Filters Action Graph Reports Help

Applied Filters: JOB NAMES: GUN*

Mainframe Information:

- Model: 2827-708
- Partition Name: PROD1
- SYSID: SYSA
- Partition Logical Utilization: 38.9%
- CPC Utilization: 48.9%

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Cla...	Elapsed Ti...	CPU Ti...	zAAP Time	zIIP Time	CPU Intens...	EXCPs	Top Program	Top Pgm %	Condition ...
<input type="checkbox"/>	GUNSONA8	178	S		STCHI	2.4h	435.3s	0.0s	0.0s	5.1%	4,924,752	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSONA4	178	S		STCHI	2.0h	330.8s	0.0s	0.0s	4.5%	4,116,546	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON41	178	S		STCHI	1.2h	179.7s	0.0s	0.0s	4.1%	2,236,628	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON27	178	S		STCHI	47.1m	168.9s	0.0s	0.0s	6.0%	2,346,976	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON62	178	S		STCHI	1.1h	160.6s	0.0s	0.0s	4.1%	2,098,582	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON08	178	S		STCHI	43.9m	146.2s	0.0s	0.0s	5.5%	2,029,375	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON39	178	S		STCHI	38.9m	141.8s	0.0s	0.0s	6.1%	2,004,432	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON54	178	S		STCHI	44.2m	139.1s	0.0s	0.0s	5.2%	1,833,887	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON51	178	S		STCHI	1.2h	135.8s	0.0s	0.0s	3.1%	1,800,294	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON43	178	S		STCHI	48.0m	135.5s	0.0s	0.0s	4.7%	1,804,833	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON64	178	S		STCHI	50.7m	134.1s	0.0s	0.0s	4.4%	1,836,790	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON48	178	S		STCHI	1.1h	133.8s	0.0s	0.0s	3.5%	1,795,767	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON63	178	S		STCHI	43.8m	121.1s	0.0s	0.0s	4.6%	1,671,877	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON32	178	S		STCHI	1.1h	115.1s	0.0s	0.0s	3.0%	1,506,356	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSONA3	178	S		STCHI	41.6m	114.8s	0.0s	0.0s	4.6%	1,777,642	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON83	178	S		STCHI	40.7m	113.9s	0.0s	0.0s	4.7%	1,550,312	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON46	178	S		STCHI	55.6m	111.7s	0.0s	0.0s	3.3%	1,526,744	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON22	178	S		STCHI	51.7m	110.5s	0.0s	0.0s	3.6%	1,485,046	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON80	178	S		STCHI	53.9m	108.6s	0.0s	0.0s	3.4%	1,419,110	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON77	178	S		STCHI	34.7m	107.1s	0.0s	0.0s	5.1%	1,395,090	IEFIIC	0.0%	0000



Top 10 Dataset Reports



IBM System z Batch Network Analyzer - ISBANK

File Edit Filters Action Graph Reports Help

Applied Filters

Mainframe Information

Model: 2827-708
 PROD1
 SYSA
 38.9%
 48.9%

Key Batch	Job Name	Steps	Job Class	Acct Code
<input type="checkbox"/>	PPEPILOG	2	R	
<input type="checkbox"/>	ALFYVAL	3	A	46890
<input type="checkbox"/>	PPRECONF	5	R	
<input type="checkbox"/>	TSKMEVHO	18	A	40370
<input type="checkbox"/>	DEQAVELU	4	A	
<input type="checkbox"/>	TPIPEASY	5	A	38011
<input type="checkbox"/>	HISSFILE	5	A	
<input type="checkbox"/>	CNMBATCH	11	E	40844
<input type="checkbox"/>	CNMBATCH	5	E	40844
<input type="checkbox"/>	CNMBATCH	11	E	40844
<input type="checkbox"/>	LDWHPR49	16	G	40369
<input type="checkbox"/>	IMSPTKNT	7	I	
<input type="checkbox"/>	TEDONLGN	7	T	TEDONLGX
<input type="checkbox"/>	POSTKONT	9	T	
<input type="checkbox"/>	ONLLGECE	27	H	
<input type="checkbox"/>	BDWJCLGN	235	F	
<input type="checkbox"/>	IMSPTKNT	7	I	

zBNA: Top 10 Data Sets

DSN	Total IOTime
IMSPDB1.CPBICRD.DATA	35.1m
PROD.SBMOM.DBKAKLOG.UNLOAD1	24.8m
IMSPDB1.CPBICUS.DATA	19.9m
SBUNLOAD.NEOUNL.DBKKBKRE	539.0s
SBUNLOAD.NEOUNL.DBMUSVHR	482.0s
SBUNLOAD.NEOUNL.DBMUSTP0.UNL10	462.0s
IMSPDB1.DATA.TK002900	432.0s

Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
9.4%	113	IEFIC	0.0%	000C
21.4%	607	IEFIC	0.0%	000C
6.1%	1,275	IEFIC	0.0%	000C
14.9%	8,950	IEFIC	0.0%	000C
1.0%	210	IEFIC	0.0%	0001
1.4%	204	IEFIC	0.0%	000C
17.8%	1,762	IEFIC	0.0%	000C
1.0%	193	IEFIC	0.0%	000C
0.0%	119	IEFIC	0.0%	000C
1.9%	192	IEFIC	0.0%	000C
7.7%	27,377	IEFIC	0.0%	000C
0.3%	408	IEFIC	0.0%	000C
19.0%	502,613	IEFIC	0.0%	000C
1.2%	343	IEFIC	0.0%	000C
0.1%	142,677	IEFIC	0.0%	000C
37.9%	24,844	IEFIC	0.0%	000C
0.4%	408	IEFIC	0.0%	000C



Job Filtering



zBNA Filters

Job Thresholds:

Top Program Pct (0-100) %

GCP Time (secs)

Elapsed Time (secs)

Job Name Include Mask

Service Class	Report Class	Job Class	Account Code
BATCHHI	CLASS3	3	* NONE *
BATCHLOW	CLASSA	5	1
BATCHVIP	CLASSB	6	37123
IREGHI	CLASSD	A	38011
IREGMED	CLASSE	B	40369
STCHI	CLASSF	D	40370
TRXHI	CLASSH	E	40841
TRXLOW	CLASSI	F	40844

Filter by time

From:

To:

Exclude by Job Name



Display Graph Filter by jobname mask (Gun*= My EOD Job mask)



File Edit Filters Action Graph Reports Help

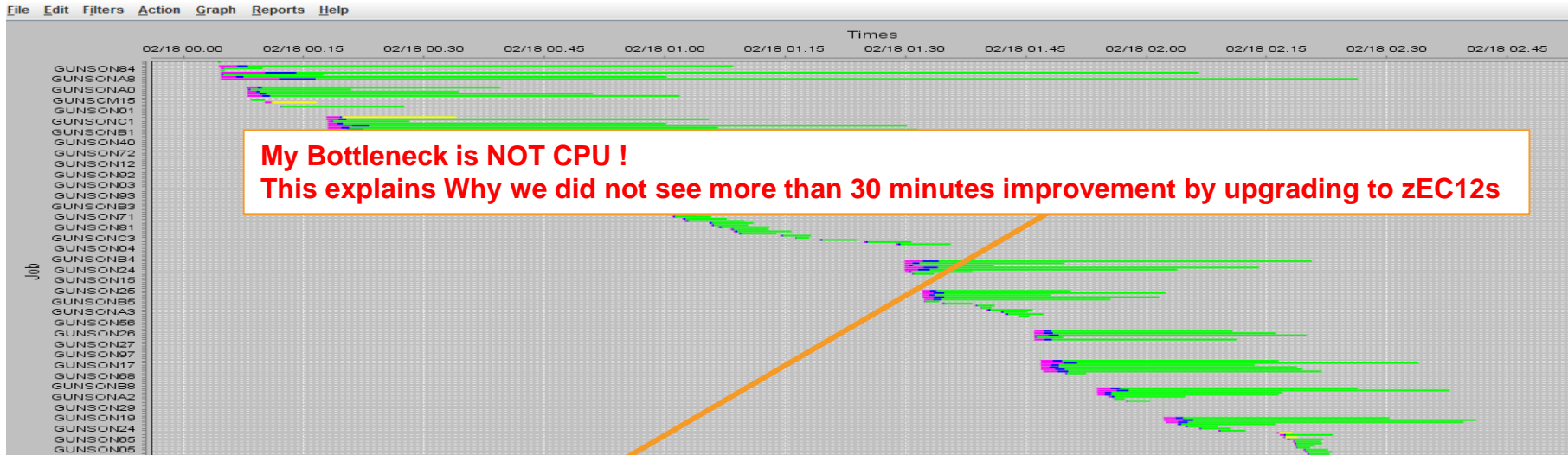


Control Panel

- Execution (CPU)
- CPU Queue Time
- Other Time (< Threshold)
- Other Time (>= Threshold)
- Other Time (Key Job)
- indicate Alternates



What Does This Mean ?

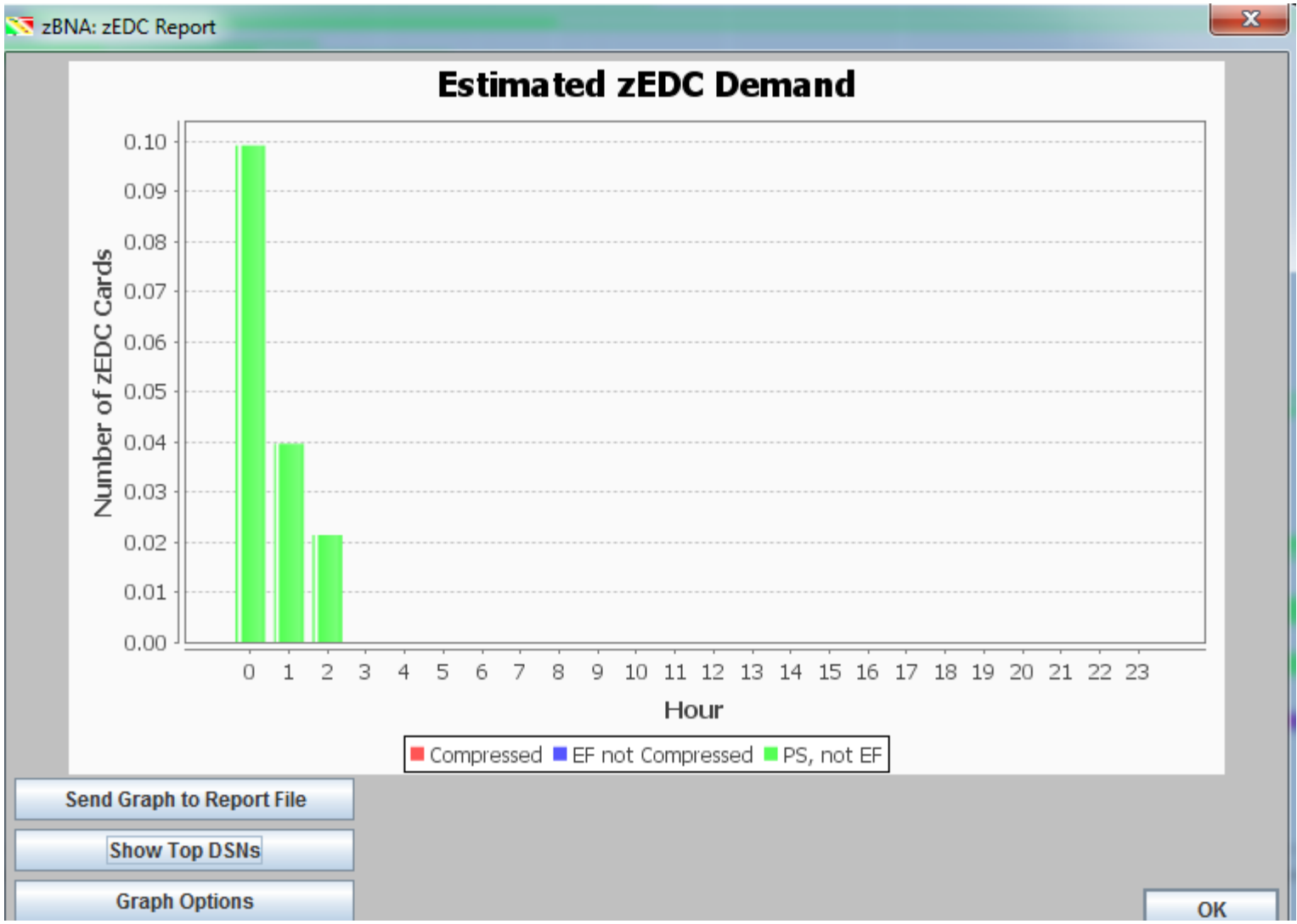


Control Panel

- Execution (CPU)
- CPU Queue Time
- Other Time (< Threshold)
- Other Time (>= Threshold)
- Other Time (Key Job)
- indicate Alternates

- To pan hold down the CTRL and click in the graph area.
- To zoom click and drag over the area you want to zoom to.

Estimate zEDC



Estimate zEDC



zBNA: zEDC Top Data Sets

Edit

Show Compressed Files
 Show EF Files (not compressed)
 Show PS Files (not EF and not EXCP)

Show by Rate or MB?
 by Rate (MB/sec)
 by MB (total)

DSN	File Type	MB
DBA.CONNEXTS.V22.ACTIVE.HWSP1S.P01	PS	329644
DBA.CONNEXTS.V22.ACTIVE.HWSP1S.P02	PS	329247
DBA.CONNEXTS.V22.ACTIVE.HWSP1S.P03	PS	240184
PROD.SBMOM.DBTAKLOG.UNLOAD1	PS	160716
IMSPSYS.IMP1.DFSOLP24	PS	85533
IMSPSYS.IMP1.DFSOLP06	PS	85404
IMSPSYS.IMP1.DFSOLP09	PS	85321
IMSPSYS.IMP1.DFSOLP23	PS	85315
IMSPSYS.IMP1.DFSOLP16	PS	85261
IMSPSYS.IMP1.DFSOLP08	PS	85246
IMSPSYS.IMP1.DFSOLP20	PS	85214
IMSPSYS.IMP1.DFSOLP11	PS	85213
IMSPSYS.IMP1.DFSOLP13	PS	85208
IMSPSYS.IMP1.DFSOLP19	PS	85174
IMSPSYS.IMP1.DFSOLP17	PS	85149
IMSPSYS.IMP1.DFSOLP18	PS	85142
IMSPSYS.IMP1.DFSOLP21	PS	85062
IMSPSYS.IMP1.DFSOLP14	PS	85060
IMSPSYS.IMP1.DFSOLP05	PS	84988

Send Table Data to Report File



Sort - ElapseTime

Longest ElapseTime -> GUNSONA8

IBM System z Batch Network Analyzer - ISBANK

File Edit Filters Action Graph Reports Help

Applied Filters

JOB NAMES: GUN*

Mainframe Information

Model: 2827-708

Partition Name: PROD1

SYSID: SYSA

Partition Logical Utilization: 38.9%

CPC Utilization: 48.9%

Key Batch	Job Name	Steps	Job Class	Acct Code	Service Class	Elapsed Ti...	CPU Time	zAAP Time	zIIP Time	CPU Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
<input type="checkbox"/>	GUNSONA8	178	S		STCHI	2.4h	435.3s	0.0s	0.0s	5.1%	4,924,752	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSONA4	178	S		STCHI	2.0h	330.8s	0.0s	0.0s	4.5%	4,116,546	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON51	178	S		STCHI	1.2h	135.8s	0.0s	0.0s	3.1%	1,800,294	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON41	178	S		STCHI	1.2h	179.7s	0.0s	0.0s	4.1%	2,236,628	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON62	178	S		STCHI	1.1h	160.6s	0.0s	0.0s	4.1%	2,098,582	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON32	178	S		STCHI	1.1h	115.1s	0.0s	0.0s	3.0%	1,506,356	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON48	178	S		STCHI	1.1h	133.8s	0.0s	0.0s	3.5%	1,795,767	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON46	178	S		STCHI	55.6m	111.7s	0.0s	0.0s	3.3%	1,526,744	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON80	178	S		STCHI	53.9m	108.6s	0.0s	0.0s	3.4%	1,419,110	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON22	178	S		STCHI	51.7m	110.5s	0.0s	0.0s	3.6%	1,485,046	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON64	178	S		STCHI	50.7m	134.1s	0.0s	0.0s	4.4%	1,836,790	IEFIIC	0.0%	0000
<input type="checkbox"/>	GUNSON02	178	S		STCHI	50.1m	102.9s	0.0s	0.0s	3.4%	1,350,744	IEFIIC	0.0%	0000

Details Of GUNSONA8 JOB



You need to add step details before using this panel

Job Information

Job Name: GUNSONA8	Job Number: JOB62168	Number of Steps: 178	Key Batch: No
Start Date: Feb 18, 2014	Start Time: 12:04 AM	End Date: Feb 18, 2014	End Time: 2:26 AM
Job Class: S	Service Class: STCHI	Account Code:	Condition Code: 0000
Top Pgm %: 0%	Top Program: IEFIC	Elapsed Time: 8502.43 Seconds	CPU Intensity: 5.1%

Steps

Step Name	Program Name	Step Number	Sub Type	Job Class	Acct Code	Service Class	Report Class	Elapsed Time	CPU Time	zAAP Time	z
INDXFLD	IDCAMS	31	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
SYLDS01	IDCAMS	32	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
YATSRFLA	IEFBR14	33	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
G	DFSRRC00	34	Step	S		STCHI	GUNSON	506.0s	10.7s	0.0s	
G	DFSRRC00	35	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
G	DFSRRC00	36	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
G	DFSRRC00	37	Step	S		STCHI	GUNSON	10.0s	0.3s	0.0s	
G	DFSRRC00	38	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
C	DFSRRC00	39	Step	S		STCHI	GUNSON	179.0s	14.7s	0.0s	



Job Dataset Report



Job Dataset Report
X

File Edit

Job Details:

Job Name: GUNSONA8	Key Batch: No	Elapsed Time: 8502.43 Seconds	CPU Intensity: 5.1%
Start Date: Feb 18, 2014	Start Time: 12:04 AM	End Date: Feb 18, 2014	End Time: 2:26 AM

Step	Step Number	DSN	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disc Time
SORTHAR2	100	PROD.HESPSCA8	0.9s	1283	0.7	0.0	0.0	0.5	
SORTHAR2	100	PROD.HAREKEA8.DATA	28.9s	18076	1.6	0.0	0.0	0.2	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289164	0.0s	2	0.2	0.0	0.0	0.1	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289165	0.0s	2	0.2	0.0	0.0	0.1	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289166	0.0s	2	0.2	0.0	0.0	0.0	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289167	0.0s	2	0.1	0.0	0.0	0.0	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289168	0.0s	2	0.1	0.0	0.0	0.0	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289169	0.0s	2	0.1	0.0	0.0	0.0	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289170	0.0s	2	0.2	0.0	0.0	0.1	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289171	0.0s	2	0.1	0.0	0.0	0.0	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289172	0.0s	2	0.1	0.0	0.0	0.0	
SORTHAR2	100	SYS14049.T000439.RA000.GUNSONA8.R0289173	0.0s	2	0.2	0.0	0.0	0.0	



Life Of Dataset



zBNA: Life of a Dataset

File Edit

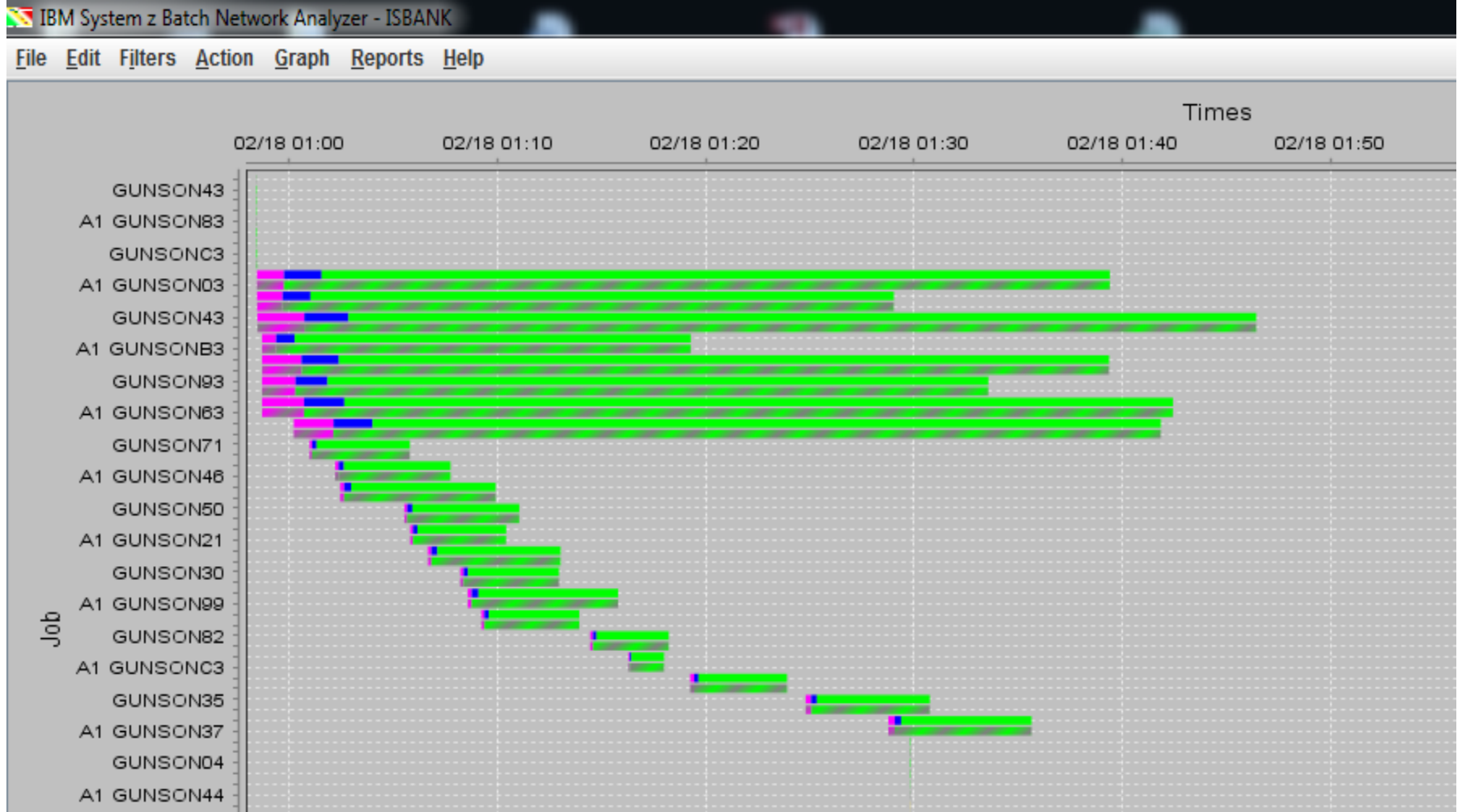
Data Set Details: Data Set: IMSPDB1.CPBCRD.DATA Number of Job Steps: 9

Job	Step	Step Number	Job Number	Step End	Total IOTime	IO Count	Response Time	Queue Time	Pending Time	Connect Time	Disconnect Time
TRDXXMO2	TCRCOLL3	11	JOB64314	02/18/2014 01:04:09	43.3s	5,644	7.7	0.0	0.4	1.0	5.9
GUNSCM3G	CPD100	25	JOB63906	02/18/2014 01:27:43	15.9m	603,395	1.6	0.0	0.3	1.0	0.1
GUNSCM3G	G	28	JOB63906	02/18/2014 01:27:46	0.9s	210	4.1	0.0	0.1	0.2	3.5
GUNSCM3G	TCRCASH2	30	JOB63906	02/18/2014 01:28:08	8.9s	2,500	3.6	0.0	0.1	0.2	2.9
GUNSCM3G	EXTDATE	31	JOB63906	02/18/2014 01:28:13	0.3s	46	7.5	0.0	0.1	2.6	4.6
GUNSCM3G	COKAOTFS	34	JOB63906	02/18/2014 01:38:55	163.0s	35,527	4.6	0.0	0.1	0.2	3.9
GUNSCM3G	CPD700	41	JOB63906	02/18/2014 01:43:00	3.9s	1,903	2.0	0.0	0.1	0.3	1.2
GUNSCM3G	G	47	JOB63906	02/18/2014 01:45:25	7.4s	2,564	2.9	0.0	0.1	0.2	2.3
GUNSCM3G	G	48	JOB63906	02/18/2014 02:46:55	15.3m	2,635,474	0.3	0.0	0.0	0.1	0.0



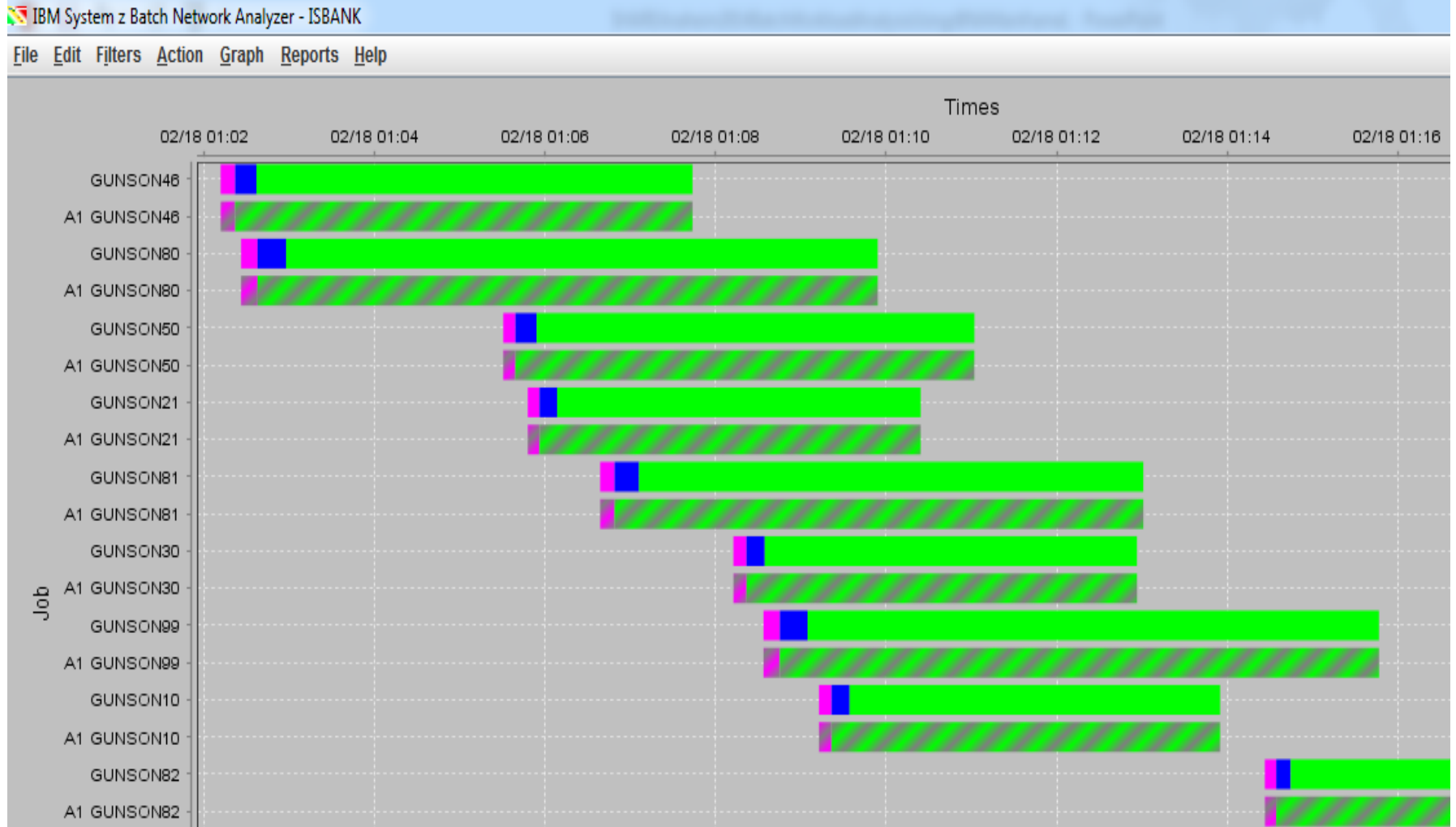
What If Upgrading From 2827-708 To 2827-710

□ A1's in graph shows effect of upgrade



What If Upgrading From 2827-708 To 2827-710

☐ A1's in graph shows effect of upgrade



Generate Graph Report For `What If Analysis` (html)



The analysis follows:

Data

There are 199 jobs in the following table.

Name	Line	Key	Job Name	Program Name	Start	End	Steps	Job Class	Acct Code	Serv Class	Elapsed Time	CPU Time	Top Program	Top Pgm %
B	1		GUNSON46	DFSRR00	2/18/14 12:04 AM	2/18/14 12:04 AM	1	S		STCHI	21	0	IEFIIC	0
A1	1		GUNSON46	DFSRR00	2/18/14 12:04 AM	2/18/14 12:04 AM	1	S		STCHI	21(0.0%)	0		
A2	1		GUNSON46	DFSRR00	2/18/14 12:04 AM	2/18/14 12:04 AM	1	S		STCHI	21(0.0%)	0		
B	2		GUNSCM1C		2/18/14 12:04 AM	2/18/14 12:04 AM	8	S	99999A	BATCHVIP	0	0	IEFIIC	0
A1	2		GUNSCM1C		2/18/14 12:04 AM	2/18/14 12:04 AM	8	S	99999A	BATCHVIP	0(0.0%)	0		
A2	2		GUNSCM1C		2/18/14 12:04 AM	2/18/14 12:04 AM	8	S	99999A	BATCHVIP	0(0.0%)	0		
B	3		GUNSON48		2/18/14 12:04 AM	2/18/14 1:08 AM	178	S		STCHI	3,845	134	IEFIIC	0
A1	3		GUNSON48		2/18/14 12:04 AM	2/18/14 1:08 AM	178	S		STCHI	3,845(0.0%)	133		
A2	3		GUNSON48		2/18/14 12:04 AM	2/18/14 1:08 AM	178	S		STCHI	3,845(0.0%)	133		
B	4		GUNSON84		2/18/14 12:04 AM	2/18/14 12:09 AM	171	S		STCHI	312	20	IEFIIC	0
A1	4		GUNSON84		2/18/14 12:04 AM	2/18/14 12:09 AM	171	S		STCHI	312(0.0%)	20		
A2	4		GUNSON84		2/18/14 12:04 AM	2/18/14 12:09 AM	171	S		STCHI	312(0.0%)	20		
B	5		GUNSONCB		2/18/14 12:04 AM	2/18/14 12:05 AM	2	S		STCHI	28	0	IEFIIC	0
A1	5		GUNSONCB		2/18/14 12:04 AM	2/18/14 12:05 AM	2	S		STCHI	28(0.0%)	0		
A2	5		GUNSONCB		2/18/14 12:04 AM	2/18/14 12:05 AM	2	S		STCHI	28(0.0%)	0		
B	6		GUNSONA4		2/18/14 12:04 AM	2/18/14 2:06 AM	178	S		STCHI	7,313	331	IEFIIC	0
A1	6		GUNSONA4		2/18/14 12:04 AM	2/18/14 2:06 AM	178	S		STCHI	7,312(-0.0%)	330		
A2	6		GUNSONA4		2/18/14 12:04 AM	2/18/14 2:06 AM	178	S		STCHI	7,312(-0.0%)	330		
B	7		GUNSONA1		2/18/14 12:04 AM	2/18/14 12:17 AM	204	S		STCHI	768	5	IEAVAR00	0



Special Thanks To ...



John Burg - IBM WSC

