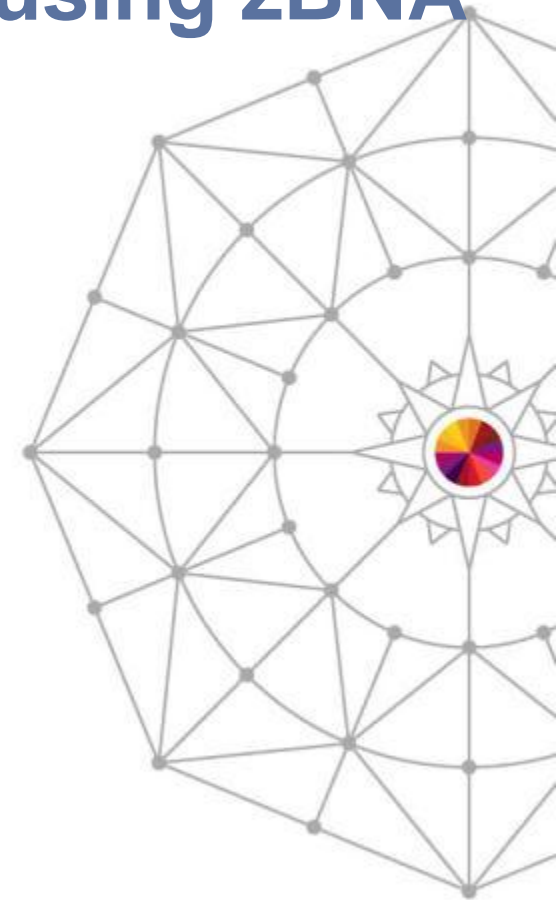


Batch Workload Analysis using zBNA User Experience

Meral Temel
İşbank

12 March 2014
15280





Batch Workload Analysis Using zBNA User Experience

Agenda



- 1 **Who is İşBank ?**
- 2 **Mainframe Configuration**
- 3 **What is zBNA ?**
- 4 **Why Batch ?**
- 5 **Batch Bottlenecks & Analysis Methods & Problems-Experienced & Solutions - Implemented**
- 6 **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 ?

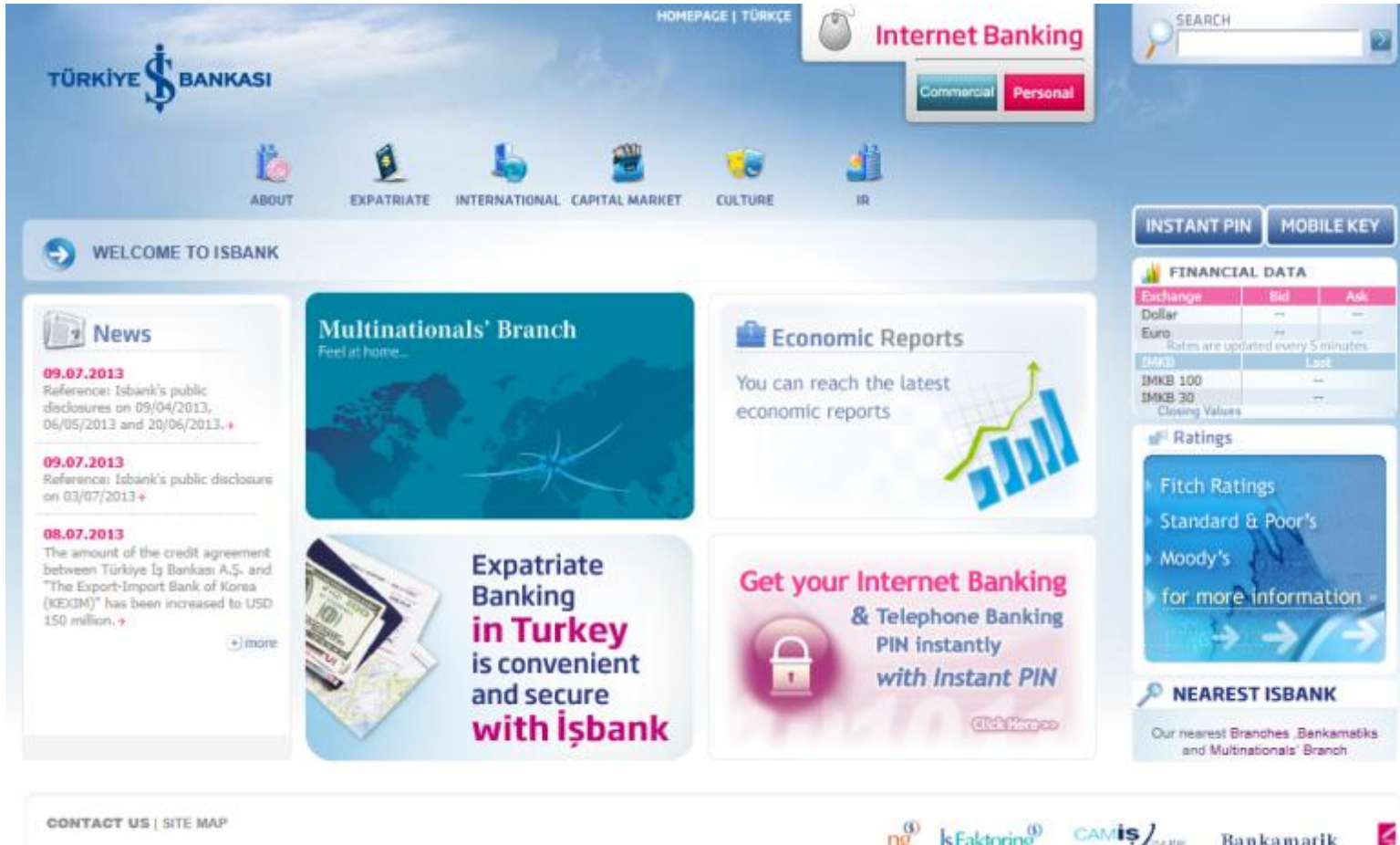


BRANCHES



Who Is İŞBANK ?

INTERNET BANKING



HOME PAGE | TÜRKÇE

TÜRKİYE İŞ BANKASI

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 (KEKİM)" has been increased to USD 150 million. +

more

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

Click Here

SEARCH

INSTANT PIN MOBILE KEY

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

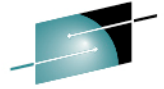
for more information

NEAREST İSBANK

Our nearest Branches, Bankamatik's and Multinationals' Branch

CONTACT US | SITE MAP

İs Faktoring CAMİS Bankamatik



SHARE
Technology - Connections - Results

Who Is İŞBANK ?

ATM



İŞCEP
Mobile Phone Application



İŞBANK IPAD FINANCE CENTER
Application

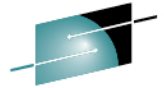


Who Is İŞBANK ?

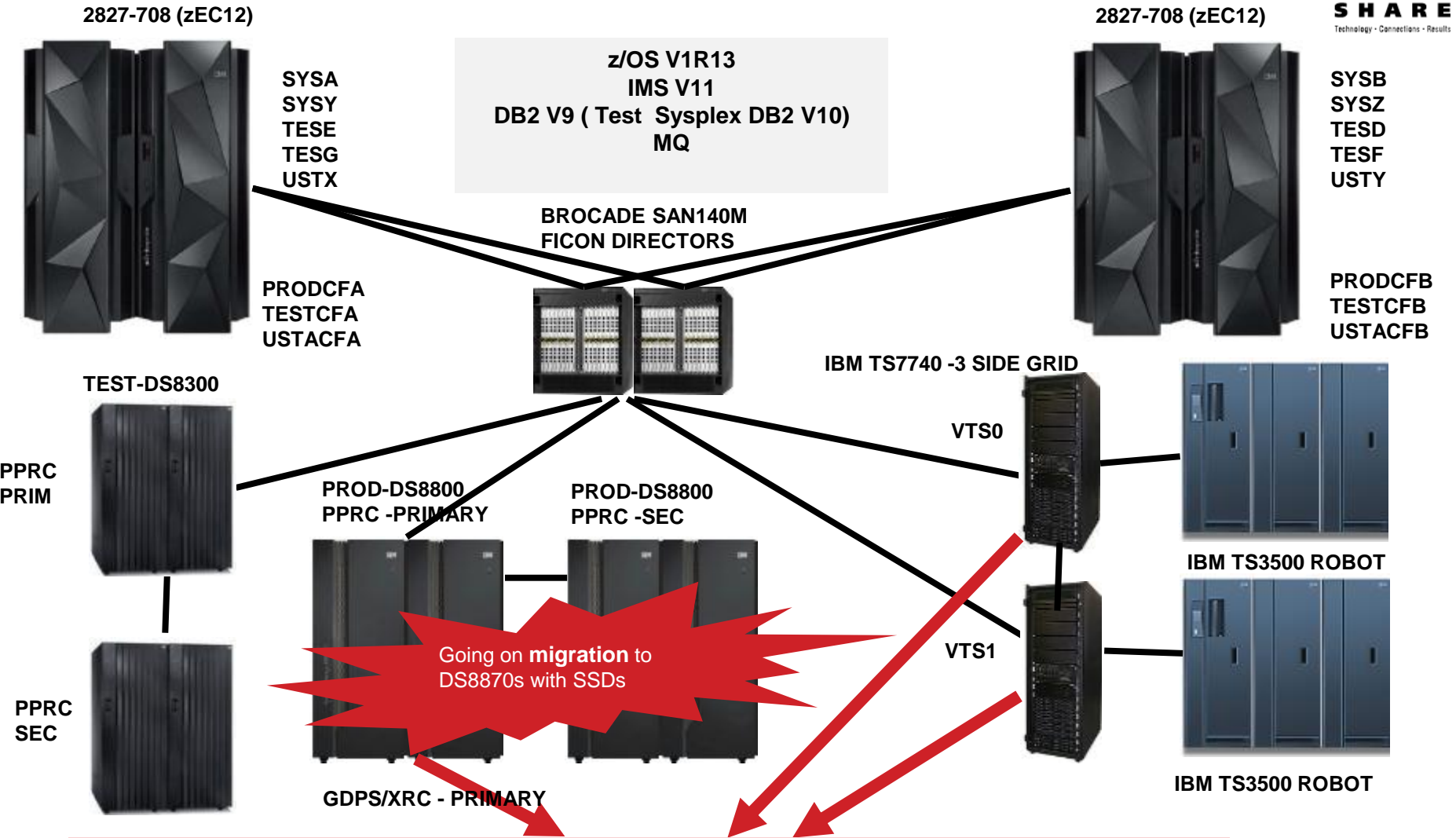
Credit Cards



İşbank – Mainframe Configuration



SHARE
Technology · Connections · Results



IZMIR DISASTER CENTER (600 Km Away From Istanbul)



Batch Performance Is Important Because

- **If Batch Window Does not finish on time, it will go into onlinetime window**
 - Batch jobs 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 owing a lock , it can cause critical OLTP workload to suffer from this 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

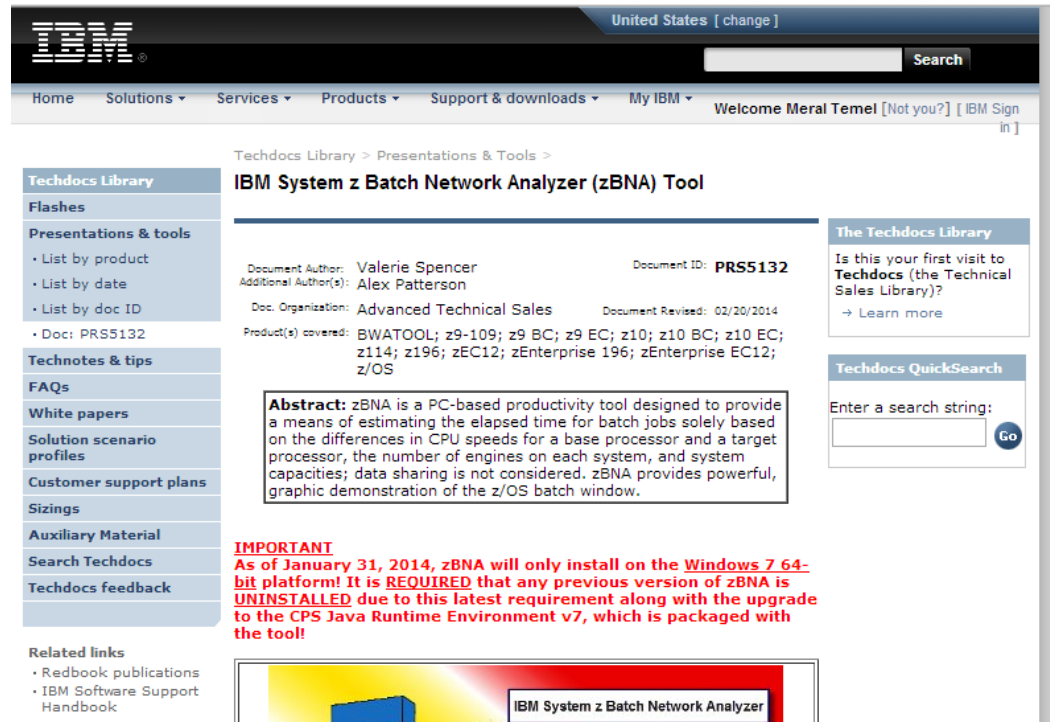
- Uncontrolled workload

What is zBNA ?

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



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



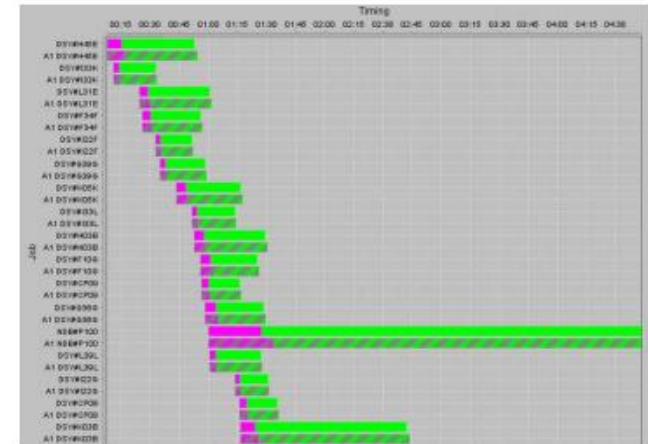
The screenshot shows the IBM Techdocs website interface. At the top, there is a navigation bar with the IBM logo, a search bar, and a user greeting: 'Welcome Meral Temel [Not you?] [IBM Sign in]'. Below the navigation bar, the page title is 'IBM System z Batch Network Analyzer (zBNA) Tool'. The main content area includes a sidebar with a 'Techdocs Library' menu containing categories like 'Flashes', 'Presentations & tools', 'Technotes & tips', '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). It also lists the products covered: BWATOOL; z9-109; z9 BC; z9 EC; z10; z10 BC; z10 EC; z114; z196; zEC12; zEnterprise 196; zEnterprise EC12; z/OS. An abstract box states: 'Abstract: zBNA is a PC-based productivity tool designed to provide a means of estimating the elapsed time for batch jobs solely based on the differences in CPU speeds for a base processor and a target processor, the number of engines on each system, and system capacities; data sharing is not considered. zBNA provides powerful, graphic demonstration of the z/OS batch window.' Below the abstract, an 'IMPORTANT' notice reads: '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!'. At the bottom of the page, there is a banner for the 'IBM System z Batch Network Analyzer' tool.

15207: zBNA Tool – Because Batch is Back, Wednesday, 1:30 PM
 15129: zBNA Hands-on Lab, Wednesday, 3:00 PM

zBNA Version

IBM System z Batch Network Analyzer (zBNA)

- IBM System z Batch Network Analyzer
 - A free, “as is” tool to analyze batch windows
 - Available to Customers, Business Partners and IBMers
 - PC based, providing graphical and text reports
 - Includes Gantt charts and support for Alternate Processors (what if scenarios)
 - zBNA V1.3
 - Support for SMF 42 records to understand the “Life of a Data Set”
 - zBNA V1.4.2
 - Support for SMF 14/15 records to understand zEDC compression candidates



How To Use zBNA ?

❑ Download From Techdocs Website

IBM Techdocs Download: x

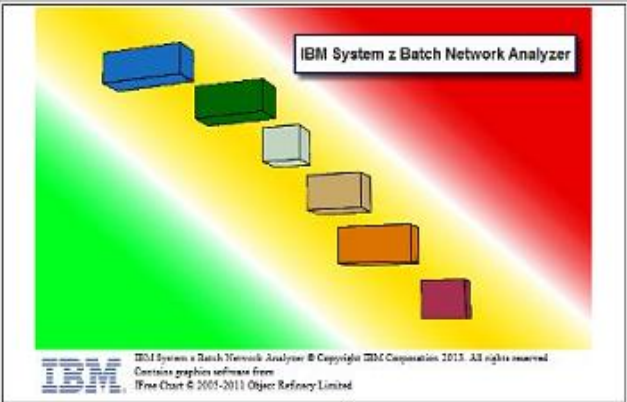
www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PR55132

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 2015. 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 CAUSE 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!....**



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
```

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%

zBNA: Top 10 Data Sets

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

Key Batch	Job Name	Steps	Job Class	Acct Code	Intensity	EXCPs	Top Program	Top Pgm %	Condition Code
<input type="checkbox"/>	PPEPILOG	2	R		9.4%	113	IEFIC	0.0%	0000
<input type="checkbox"/>	ALFYVAL	3	A	46890	21.4%	607	IEFIC	0.0%	0000
<input type="checkbox"/>	PPRECONF	5	R		6.1%	1,275	IEFIC	0.0%	0000
<input type="checkbox"/>	TSKMEVHO	18	A	40370	14.9%	8,950	IEFIC	0.0%	0000
<input type="checkbox"/>	DEQAVELU	4	A		1.0%	210	IEFIC	0.0%	0001
<input type="checkbox"/>	TPIPEASY	5	A	38011	1.4%	204	IEFIC	0.0%	0000
<input type="checkbox"/>	HISSFILE	5	A		17.8%	1,762	IEFIC	0.0%	0000
<input type="checkbox"/>	CNMBATCH	11	E	40844	1.0%	193	IEFIC	0.0%	0000
<input type="checkbox"/>	CNMBATCH	5	E	40844	0.0%	119	IEFIC	0.0%	0000
<input type="checkbox"/>	CNMBATCH	11	E	40844	1.9%	192	IEFIC	0.0%	0000
<input type="checkbox"/>	LDWHPR49	16	G	40369	7.7%	27,377	IEFIC	0.0%	0000
<input type="checkbox"/>	IMSPTKNT	7	I		0.3%	408	IEFIC	0.0%	0000
<input type="checkbox"/>	TEDONLGN	7	T	TEDONLGX	19.0%	502,613	IEFIC	0.0%	0000
<input type="checkbox"/>	POSTKONT	9	T		1.2%	343	IEFIC	0.0%	0000
<input type="checkbox"/>	ONLLGECE	27	H		0.1%	142,677	IEFIC	0.0%	0000
<input type="checkbox"/>	BDWJCLGN	235	F		37.9%	24,844	IEFIC	0.0%	0000
<input type="checkbox"/>	IMSPTKNT	7	I		0.4%	408	IEFIC	0.0%	0000



Job Filtering



zBNA Filters
Partition Name: PROD1

Job Thresholds:

Top Program Pct (0-100) %

GCP Time (secs)

Elapsed Time (secs)

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:

Job Name Include Mask

Exclude by Job Name



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



File Edit Filters Action Graph Reports Help

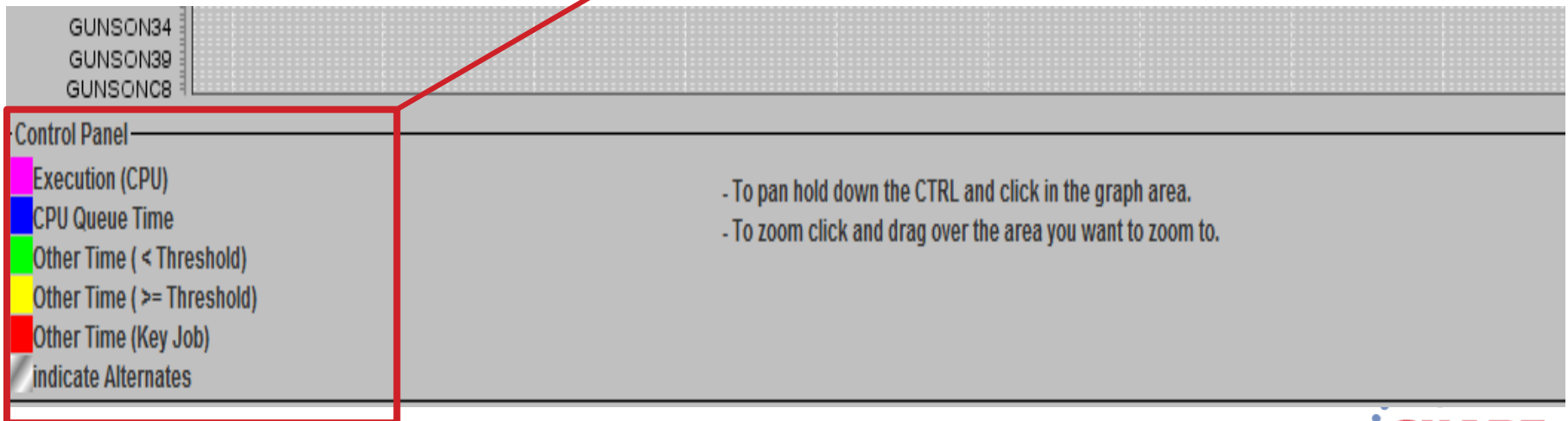
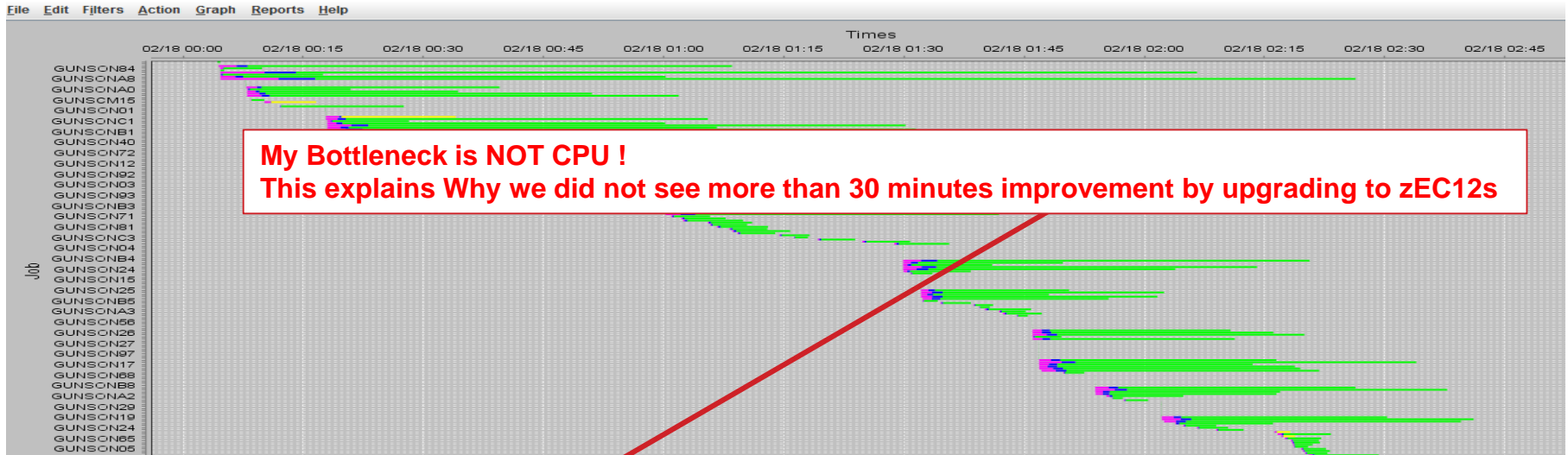


Control Panel

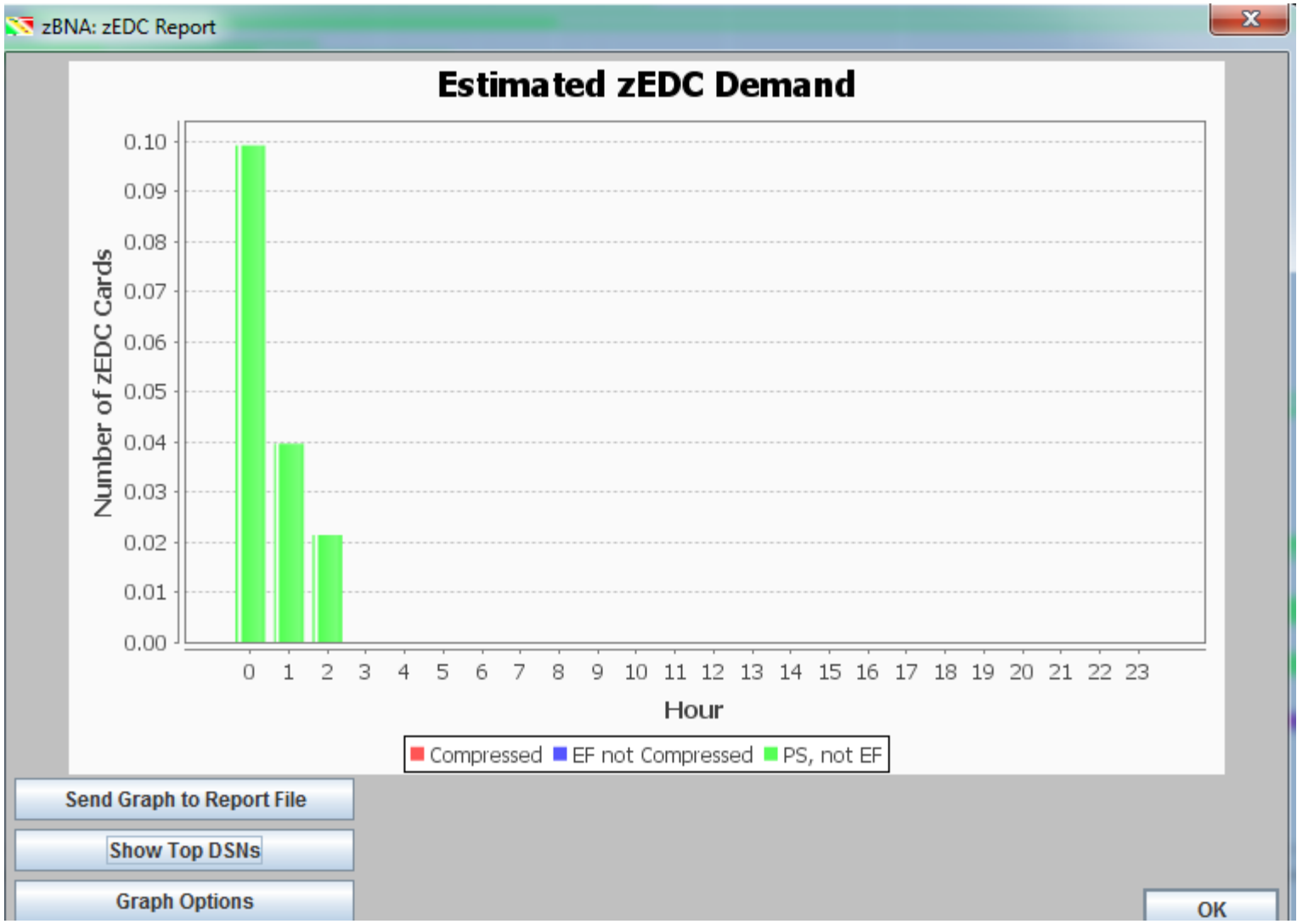
- Execution (CPU)
- CPU Queue Time
- Other Time (< Threshold)
- Other Time (>= Threshold)
- Other Time (Key Job)
- indicate Alternates



What Does This Mean ?



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							Mainframe Information							
JOB NAMES: GUN*							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	DFSRRRC00	34	Step	S		STCHI	GUNSON	506.0s	10.7s	0.0s	
G	DFSRRRC00	35	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
G	DFSRRRC00	36	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
G	DFSRRRC00	37	Step	S		STCHI	GUNSON	10.0s	0.3s	0.0s	
G	DFSRRRC00	38	Step	S		STCHI	GUNSON	0.0s	0.0s	0.0s	
C	DFSRRRC00	39	Step	S		STCHI	GUNSON	479.0s	14.7s	0.0s	

Job Dataset Report



Job Dataset Report

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	

OK



Life Of Dataset



zBNA: Life of a Dataset

File Edit

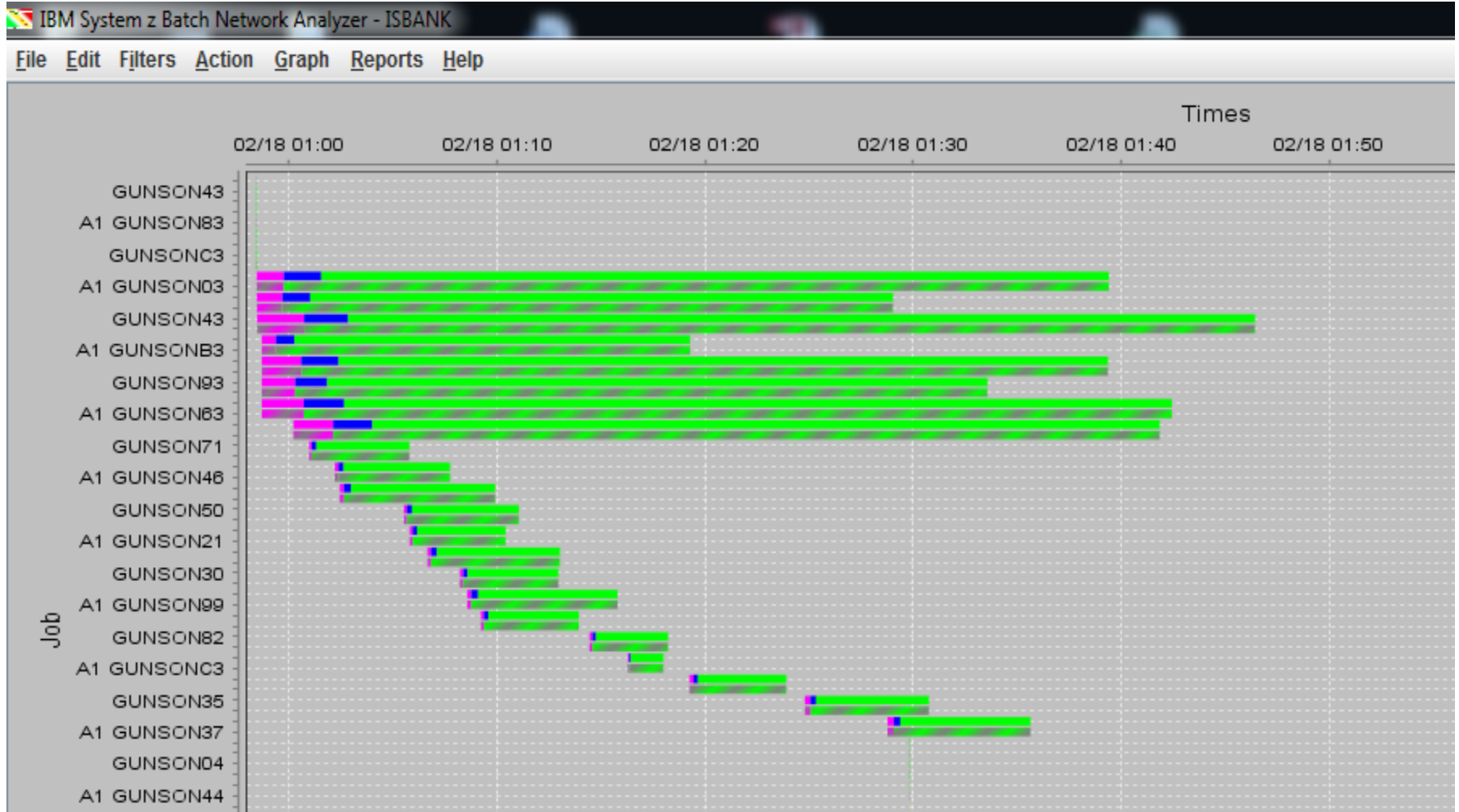
Data Set Details: Data Set: IMSPDB1.CPBCRD.DATA Number of Job Steps: 9

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



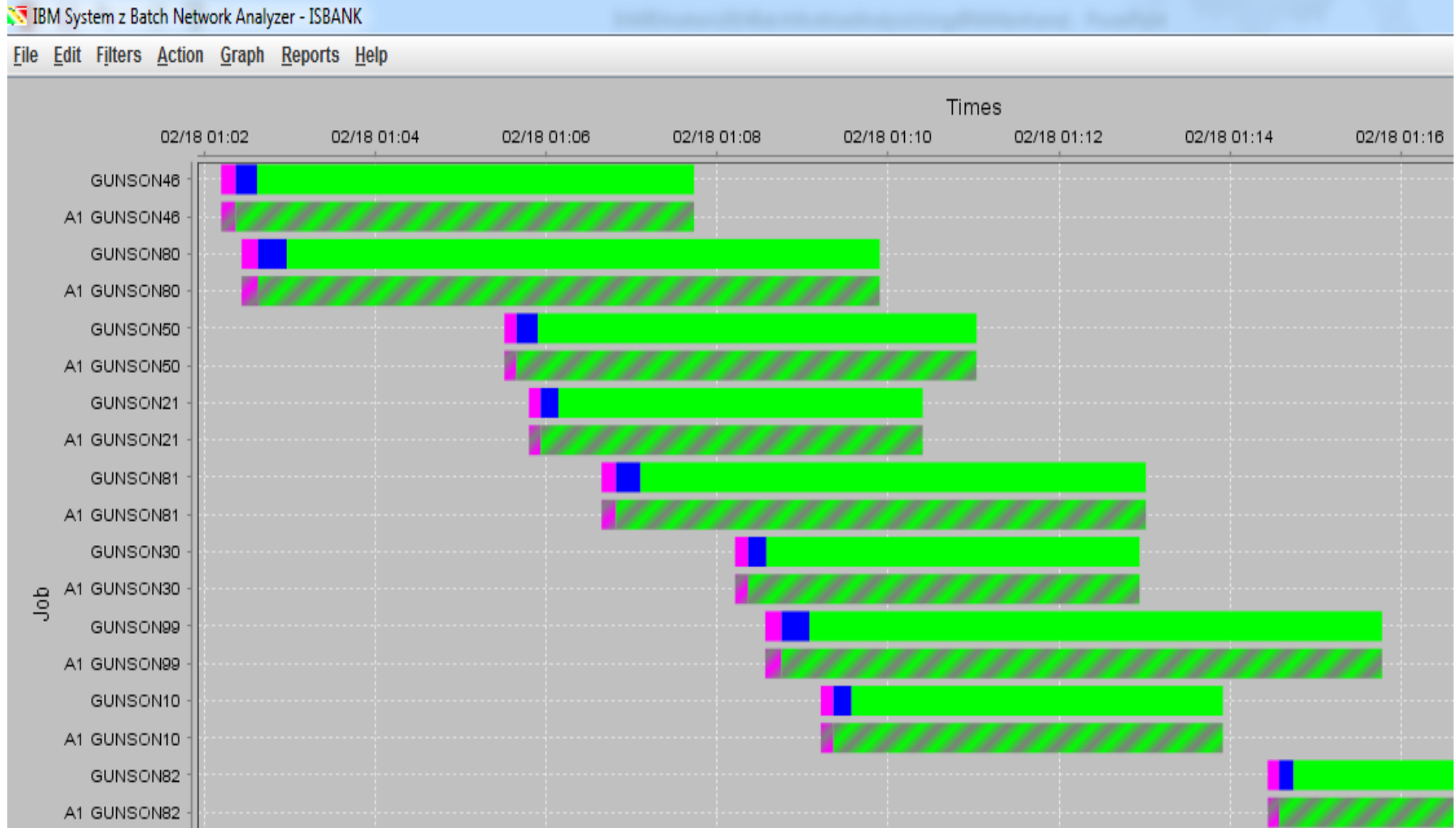
What If Upgrading From 2827-708 To 2827-710

□ 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

