Advanced Technical Support At the Washington Systems Center

Using zCP3000 for Performance Analysis

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zCP3000 is a tool for performance analysis and capacity planning on zSeries. The purpose of the performance analysis phase of the process is to determine the state of the configuration prior to capacity planning. Some of the questions that need to be answered prior to capacity planning are as follows.

- Is the hardware configuration correctly specified?
- Where, if any, are the current bottle necks? Clearly if there's a DASD bottleneck, upgrading the processor may not provide the expected capacity improvement.
- Is there a significant latent demand? One expects that the workload moved to a new processor to immediately remain the same. Latent demand creates a burst of new work when the capacity of the environment improves. It should not be unexpected.
- Does the modeled sample interval represent the business environment? Should there be more than one model interval selected?

Overall Process

- Load EDF Files
- Review Intervals
- Review Physical & Logical Configuration
- Analysis
 - Enterprise Processor
 - CEC (CPC)
 - Partition (SYSid)
 - Workload (application, service class, or collection of service classes)
 - Enterprise BCU (Basic Configurable Unit)
 - Controller
 - Paths
 - DASD
 - Data Set
 - o Enterprise Sysplex

Loading Files

Data is loaded from data files designed for zCP3000. The files come from z/OS and



z/VM. Both CP2KEXTR and CP2KVMXT (the output from these programs were also for CP2000) produce .EDF files: One file per system image (z/OS) or collection of Virtual Machines (z/VM). CP2KEXTR uses an extensive set of SMF record and produces other files for use in other types of analyses. This is explained in the documentation for CP2KEXTR.

Since multiple files (data from multiple partitions) can be processed in zCP3000, there

🚰 z C P	3000 Int	erval Red	oncilia	tion				×
There are	e 48 match	ing intervals	in the file	(\$).			* UI 15 20	C 10
There are	e 288 non r	natching int	ervals in t	he file(s). 1	The table b	elow lists		
these nor	n matching	intervals.						
Pressing	Ok will de	ete these no	m matchin	a intervale	from your	model		
Pressing	Cancel will	abort the l	ad	ig ante taiz	110111 3004	1110-044	-	
Date	Time	Duration	BAMD	CAMD	NEA1	NEB1	WAII	Г
UTC	Offset		1.00	1:00	2:00	2.00	1:00	12
2005-06	02:00:00	00:30:00	N/A	NIA	NIA	NIA	Avail	12
2005-06	02:30:00	00:30:00	N/A	NA	NA	NIA	Avail	12
2005-06	03:00:00	00:30:00	NIA	NIA	NIA	NIA	Avail	ſ
2005-06	03:30:00	00.30.00	N/A	NIA	NIA	NIA	Avail	11
2005-06	04:00:00	00:30:00	NA	NIA	NIA	NIA	Avail	11
2005-06.	04:30:00	00:30:00	N/A	NA	NA	NIA	Avail	11
2005-06	05:00:00	00:30:00	NA	NA	NA	NIA	Avail	11
2005-06	05:30:00	00:30:00	NA	NA	NA	NIA	Avail	11
2005-06.	06:00:00	00:30:00	N/A	NA	NIA	NIA	Avail	1
2005-06.	06:30:00	00:30:00	NA	NA	NA	NIA	Avail	11
2005-06.	07:00:00	00.30.00	N/A	NA	NA	NIA	Avail	11
2005-06.	07:30:00	00.30.00	NA	NA	NA	NIA	Avail	1
2005-06	09:00:00	00:30:00	NA	NA	NA	NA	Avail	11
2005-06.	08:30:00	00:30:00	NA	NA	NA	NIA	Avail	11
2005-06.	09:00:00	00:30:00	NA	NIA	NA	NIA	Avail	1
2005-06.	09:30:00	00:30:00	NIA	NA	N/A	NIA	Avail	1
2005-06	10:00:00	00:30:00	NA	NA	NA	NA	Avail	1
2005-06	10:30:00	00:30:00	NA	NKA	NA	NIA	Avail	11
2005-06.	11:00:00	00.30.00	NA	NA	N/A	NIA	Avail	1
2005-06	11:30:00	00:30:00	NIA	NA	NIA	NA	Avail	1
2005-06	12:00:00	00:30:00	NA	N/A	NA	NIA	Avail	1
	12:30:00	00.30.00	N/A	NIA	NA	NIA	Avail	11
2005-06	14.00.00	00.00.00	1.000	1.444.4	10.000	1.444.4	212.011	

loaded.

First off, zCP3000 checks that the Dates, times, and durations from all the .EDF files match. If zCP3000 finds intervals in any .EDF file that are not in all the .EDF files, the window at the left will appear identifying the intervals that zCP3000 intends to delete. If you press OK, these intervals will be deleted from the model.

are some restrictions and choices when these files are

One oddity is found in the matching of dates and times. The Dates and times in the .EDF file are the local times for the partition. We know of course that one partition could be supporting Paris (UTC +1) and New York (UTC -5 where UTC is Coordinated Universal Time or Zulu time with Greenwich, U.K. as UTC 0.) You will notice

that zCP3000 has identified two different UTC values in the data. The user has to set the preferred *local time* for the analysis.

If the window does not appear, everything matches.

🚰 zCP3000 Messages	Ε
Workloads with max CPU < 1.0%	
BATCH.BATCHBOT in KOE1 has Max Percent of 0.2%	
EATCH.BATFFOHI in ROE1 has Max Percent of 0.4%	
EATCH.BATFFOLO1 in KOE1 has Max Percent of 0.0%	
BATCH.BATTSTLO in EOE1 has Max Percent of 0.9%	
ROSEACH.CICSHIGH in KOE1 has Max Percent of 0.0%	
ROSEACH.CICSMED in HOE1 has Max Percent of 0.0%	
ROSEACH.DOFWIGH in KOE1 has Max Percent of 0.8%	
ROSEACH.MEWWORKI in KOEl has Max Percent of 0.0%	
ROSBACH.MEWWORK in KOEl has Max Percent of 0.0%	
ROSEACH.ONVSHOT1 in KOE1 has Max Percent of 0.04	
ROSEACH.STOND in KOEl has Max Percent of 0.8%	
TSO.TSOHOT in KOEl has Max Percent of 0.9%	
TSO.TSOFFD1 in KOE1 has Max Percent of 0.0%	
TSO.TSOFFD2 in KOE1 has Max Percent of 0.0%	
TSO.TSOFFD in KOE1 has Max Percent of 0.3%	
TSO. TSOSTD1 in EOE1 has May Percent of 0.15	
TSO.TSOSTD2 in KOE1 has Max Percent of 0.0%	
TSO.TSOSTD in KOEl has Max Percent of 0.9%	
BATCH.BATFF0101 in KOE3 has Max Percent of 0.0%	
BATCH.BATFF010 in KOE3 has Max Percent of 0.5%	
DOSEACH.CICSHED in HOE3 has Haw Percent of 0.05	
ROSEACH.MEWWORK1 in KOE3 has Max Percent of 0.0%	
ROSEACH.MEWWORK in KOE3 has Max Percent of 0.0%	
ROSEACH.ONVSFAST1 in EOE3 has Max Percent of 0.00	۱.
ROSBACH.ONVSFAST in KOE3 has Max Percent of 0.2%	
TSO. TSOHOT in KOE3 has Nax Percent of 0.04	
TSO.TSOFFD1 in KOE3 has Max Percent of 0.0%	
TSO.TSOFFD2 in KOE3 has Max Percent of 0.0%	
TSO.TSOPPED in KOE3 has Max Percent of 0.0%	
TSO.TSOSTD1 in KOE3 has Max Percent of 0.0%	
TSO.TSOSTDZ in KOES has Max Percent of 0.0%	
TSO.TSOSTD in KOE3 has Max Percent of 0.0%	
OK Cancel	

Quite often the number of workloads in the EDF files far exceeds the number of active workloads. The installation may have one Work Load Manager (WLM) specification for the entire installation. This means that there may be a number of workloads that are 0 resource consumers for the sample set. There may also be a number of workloads which could be insignificant consumers.

The insignificant workloads are defined as those whose maximum CPU consumption for any interval was less than 1%. Press OK and these will be deleted from the model.

Why delete workloads? Foremost, this keeps the workload graphs simpler. Nothing messes up a graph like a lot of workloads in the

legend and nothing in the graph.

When might you retain a small workload? It might me a *significant* workload to an important person or the small CPU workload may have a non trivial storage usage. If you decide to keep all the workloads, you can go through the arduous task of deleting them afterwards. Not usually done.

Interval Selection

When the EDF files are finally loaded, zCP3000 chooses the 90th percentile as the default interval (if there are enough intervals). This is the 90th percentile of the CP data from all the CECs. You can reset the interval to any one you want. You can also influence the choice by checking zAAP, ICF, or IFL data to include any combination of processor time.



The interval chosen will be used globally to describe the resource demand behavior for all the CECs, system images (SYSIDs), and workloads. Hence it is important to review the data carefully to insure the right workloads are active and is in the proper proportion for the selected interval. If you must model separate intervals for separate CECs, you will have to build a separate model for each CEC.

A specific interval is the method of choice in capacity planning. You want to see a large enough number of intervals to view the workload behavior. But you also want a single interval to model. The use of an average across many intervals smoothes out the resource interdependence too much.

Configuration Specification

The input to zCP3000 is ordinarily EDF files. The EDF files come from our CP2KEXTR program for z/OS and CP2KVMXT for z/VM. Each file contains detailed information on the CEC and one partition's workload. When you load the EDF files into zCP3000 (using the File load), the PA Overview window shows each CEC partition structure for the



partition information in the EDF files along with the DASD configuration. The partition definition data in the EDF file is much more extensive than simply the one partition's information. If you double click on a CEC, the current configuration information is displayed as seen on the right above.

In many cases, there are more partitions in the CEC than EDFs in the input. For example, there's no EDF from an internal coupling facility. However, there is information in the EDF about the logical configuration and utilization. There may even be other z/OS partitions for which no EDF was provided. These will automatically be generated by zCP3000. On the CEC window you can visually review the configuration for the selected interval. Return to the Overview window to examine the logical configuration. Right click on any CEC and select the Definition item from the pop up.



What appears is a complete description of the logical configuration. (The logical configuration can be interval dependent. IRD and WLM can change the logical configuration in an attempt to meet the objectives specified.) On the top is the physical processing unit configuration by PU type. zCP3000 makes an attempt to recognize the different PU types configured in each partition. However, often the PU type cannot be distinguished. For example, an IFL PU often appears as an ICF. You can edit the configuration on this window. You can change the physical configuration (on top) and logical configuration, control program and workload mix on the bottom. This information comes from the data in the EDF file.

Enterprise Processor Analysis

On the PA Overview window, press analysis. A list of analysis will be displayed. Each analysis at any level has both a graphic and text. The text does not merely describe the graph; it usually provides intelligent commentary about the specific data shown in the graph using the graph data to illustrate the meaning. We call this SmartText.



In this sample, the analysis displays the MIPS consumed by partition over the samples found in the EDF file. The text can be very interesting. Often we forget why the graph is important... the SmartText reminds us. The graph and SmartText can be saved in a HTML document. The document will be build with a cover and preface. As you see analyses that appear interesting, these can be dynamically included in the document as you review each analysis. This document can later be formatted with MS Word or your favorite word processor as a particularly impressive customer deliverable.

To get to the CEC window, double click on a CEC and press analysis. Here also, as with most windows in zCP3000, there's an analysis button.



This is one such analysis. It shows the utilization for each partition defined in the CEC. As with the processor report in RMF, the physical utilization (part of the PR/SM overhead) is shown. You should step through all the analyses at each level to familiarize yourself with the contents of each.

If you double click on one of the partitions, the System information table appears.



From here you can review the partition (system image) information or by selecting the Workload tab, the workload details. Each of these windows (shown together above), have an analysis button.



The analyses found off these two windows are particularly important in the performance analysis process. These should be reviewed carefully. As a high level indicator, the performance health of the system image, look at the Heath Check Analysis on the System window. This analysis puts the system level data (system performance variables, workload variables, and I/O information through a set of rules which assess the acceptability of the variable.

On the workload table, you can right click on a workload to delete it. You can also change the capture ratio methodology to I/O or System. Setting it to one will show the uncaptured time in the analyses.

If you use the workload window and double click on any workload, you can examine the workload details. Note that some important variables may not be in the EDF (because it may not be in RMF). For example, the number of transactions may not be available for a CICS service class. Using the transaction rate and CPU%, zCP3000 can figure out the MIPS/transaction. Without the transaction rate... no can do. However, you could provide an estimated MIPS/transaction and zCP3000 will compute the other since the three are related.

SYS1: SYS zCP	3000 - 0	CP2000	INC.							
							Analysis			
System Workload	s					1_	Workload Information - SYSBA	АСН. STC	нідн	
Description	WMPU	PRTY	Trans Rate	Input CPU%	Input zAAP%	DASD I/O				Anabeje
SYSTEM.SYSTEM	М	255	0.0	3.8	0.0	147.9	11			Analysis
SYSTEM.SYSSTC	M	254	0.0	11.4	0.0	3,113.9	Markland Name SVSPACH	STOLIGU		
SYSBACH.STCWAWIP	M	57	0.0	7.7	0.0	650.0	WOI KIDAU Wallie. 0100ACH.	этснюн		
SYSBACH.STCHIGH	M	55	0.0	23.8	0.0	2,439.8				
BATCH.BATCHHUT	III M	54	40.0	13.7	0.0	1,912.3	Workload Type: CB-L	•		
STSBACH.DDFHIGH	M	42	19.0	2.6	0.0	0/4.2				
PATCH PATPRDI O	M	43	3.9	2.5	0.0	4 0.0	Multiprocessing Lisage: M		Sysplex:	
SYSBACH OMVBAT	M	42	0.0	15.8	21.1	410.3	mandh occosing cougor	-		
SYSBACH.DDFLOW	M	23	0.0	0.0	0.0	1.4	Driorite	6 C	Ctability Magauro	0.00
or obnorm.opricon		20	0.0	0.0	0.0		Priority:	55	Stability measure:	0.99
							Transactions/Second: 0.03		MIPS/Trans:	31371.67
							Trans Response Time (Sec): 234.530			<u>C</u> ompute
							CPU Utilization (w/o CR): 20.7		CPU% with CR: 23.8	CP MIPS: 941.
									Capture Ratio: 0.871	
							zAAP Utilization (w/o CR): 0.0		Capture Ratio: 0.949	ZAAP MIPS: 0.
							DASD I/Os/Sec: 2439.8		DASD Resp Ms.	2.
CR= 0.871	Τσ	tal: 91.6	21.1		Ci	ancel	Relative I/O Content: 0.061			
ZAAP CR= 0.949		system:	91.0		-	1	DASD Paging Rate: 0.0			
							Central Storage Mb Used: 1401.10			
							Expanded Storage Mb Used: 0.00			
								CPU	+I/O time per Transaction(ms)=265996.319
							Num of active users (MPL): 9.00		MIPS/User:	94.115
							Total Population: 10.		Trans/User:	0.003
							Previous Next			Apply

Enterprise I/O Analysis

In you now return to the Overview window and double click on any BCU, the BCU window will appear.

En CP2000 INC ± CP3000 PA Overview En Cet Yew Action (Intel D) of (0) (0) (0) (0) (0)										
	BCUS SYSTEM	DASD WDSN	ise Analys	is - BCU Da	ata					<u>A</u> nalysis
[PRT14][TST3] [PRT2][UNU221]								1		
	BCUid	СТуре	I/O Rate	Max Resp	Avg Resp	Intensity	% Cached	Read %	RdHit %	
Landland Lizn-Lizn-	VA2P40	2105-800	15.45	19.63	3.68	56.83	100.0%	45.5%	99.3%	
	VDSNP	2105-800	10,328.50	124.21	2.53	26,160.20	100.0%	82.9%	94.2%	
Lass-Lass-	VR3-SU VUNENO	101 2105-800	1,601.50	0.04	1.92	3,080.07	0.0%	0.0%	98.3%	
	VMM/PA	28 2105-800	10 460 45	197.68	4 16	43 542 88	100.0%	83.8%	88.5%	
Loomest Loomest Loomest										
	BCUi	d CType	I/O Rate	Max Resp	Avg Resp	Intensity	% Cached	Read %	RdHit %	
	Selecte	d	22,405.92	197.68	3.25	72,840.00	100.0%	82.9%	91.8%	

On this window you can review the BCU information for the Enterprise (averaged across all the system image usage data) or you can view the data from a specific partition. (Use the drop down list near the top which defaults to Enterprise.) Of course there's an analysis button here too.



This analysis shows the I/O intensity for each BCU by partition. An easy way to answer the question: "Who's using which BCU?" This is very nice.

🚰 zCP3000: System Image Analysis - BCU Data

	P	X
A	nalv	sis

BCUs	DASD	WDSN

Adde		Data	Deen	Com	Dice	Dond	1050	Rint	Cint	DIGI	#Alloo	DCUE	Time	Cache	Read	DDUIT	DAUT
1060	OVEDOR	409.75	2.06	2.16	DISC	Penu	0.46	(ms) 1260.79	267.00	1.42	#AllOC 106.7	DCOIU	22000	Status	00.06	1.00	1.1 •
1000	OVERDO	400.70	3.00	2.10	0.00	0.40	0.40	11230.70	105.50	1.42	400.7	VIIIIFA	33909	N	99.00	1.00	1.0
1000	515FU2	425.05	2.07	2.21	0.00	0.45	0.01	1134.00	195.52	1.21	1004.0	VERNER	33909	N	99.75	1.00	1.0
4000	000813	1023.20	1.01	0.01	0.01	0.39	0.00	1033.49	409.30	1.03	19.0	VDSNPUT	33909	N	99.91	1.00	1.0
1809	SYSPU4	120.72	0.30	5.93	0.00	0.43	0.00	805.94	54.49	1.07	1/55.5	VWWPA	33909	N	99.54	1.00	1.0
5606	BETA56	794.50	0.86	0.42	0.03	0.41	0.00	683.32	349.01	1.91	2.5	VDSNP01	33909	N	99.59	1.00	1.0
5883	VWVP403	242.77	2.06	1.31	0.33	0.41	0.01	500.11	182.08	1.26	4.0	VDSNP01	33909	N	99.98	0.98	1.0
5359	HSMBCD	508.08	0.91	0.48	0.06	0.37	0.00	462.35	218.47	1.69	1.0	VDSNP01	33909	N	100.00	1.00	1.0
1C40	ROPR14	391.36	1.15	0.63	0.04	0.47	0.01	450.06	203.51	1.72	7,1	WWVPA	33909	N	23.66	0.98	1.0
1D2B	VWVP647	88.22	3.91	2.14	1.30	0.45	0.02	344.94	156.15	1.14	59.0	WWVPA	33909	N	94.84	0.92	1.0
153C	VWVP002	112.36	2.54	1.34	0.73	0.44	0.03	285.39	134.83	1.23	692.2	WWWPA	33909	N	94.47	0.96	1.0
1E3E	ROPR15	160.98	1.55	1.07	0.03	0.45	0.00	249.52	77.27	1.41	191.8	WWWPA	33909	N	100.00	1.00	0.9
1E1B	VWVP856	61.41	3.89	1.52	1.89	0.46	0.02	238.88	145.54	1.14	12.0	WWVPA	33909	N	94.49	0.85	1.0
1D1F	VMVP645	72.38	3.28	1.59	1.25	0.44	0.00	237.41	122.32	1.15	96.0	WWWPA	33909	N	97.07	0.92	1.0
1A38	VWVP018	62.86	3.76	2.02	1.27	0.47	0.00	236.35	109.38	1.14	258.3	WWWPA	33909	N	95.50	0.93	1.0
1D2C	WWP648	51.81	4.34	1.18	2.73	0.43	0.00	224.86	163.72	1.11	101.0	WWWPA	33909	N	90.83	0.79	1.0
5046	WWPL08	23.26	9.52	2.98	6.10	0.44	0.00	221.44	152.12	1.05	3.0	VDSNP01	33909	N	27.48	0.49	1.0
1A4A	VWVP019	55.72	3.84	1.86	1.51	0.47	0.00	213.96	110.33	1.14	235.9	WWWPA	33909	N	94.42	0.90	1.0
1E20	WWP011	62.56	3.40	1.82	1.09	0.47	0.02	212.70	98.84	1.17	390.3	WWWPA	33909	N	95.29	0.92	1.0
5163	VMVP881	81.11	2.61	0.82	1.27	0.41	0.11	211.70	145.19	1.25	17.0	VDSNP01	33909	N	98.63	0.92	1.0
1900	V/V/P008	88.45	2.39	1.27	0.68	0.44	0.00	211.40	99.06	1.23	741.1	WWWPA	33909	N	92.05	0.95	1.0
173E	VWVP664	52.52	4.00	1.70	1.81	0.45	0.04	210.08	120.80	1.14	96.0	WWPA	33909	N	93.80	0.88	1.0
1535	V///P004	69.53	3.02	1.43	1.11	0.44	0.04	209.98	110.55	1.19	831.5	WWPA	33909	N	93.73	0.93	1.0
1A36	WWP017	62.51	3.16	1.27	1.41	0.46	0.02	197.53	118.14	1.18	296.0	WWWPA	33909	N	95.03	0.92	1.0
566F	SYSCK2	14.10	13.91	7.13	0.40	6.38	0.00	196.13	95.60	1.85	1.0	VDSNP01	33909	N	57.12	1.00	1.0
1536	WWP007	56.37	3.47	1.53	1.47	0.45	0.02	195.60	109.36	1.16	847.0	WWWPA	33909	N	89.97	0.91	1.0
1E23	WWP014	50.87	3.84	2.16	1.20	0.47	0.01	195.34	85.46	1.14	403.9	WWPA	33909	N	95.57	0.92	1.0
5361	SYSP11	102.61	1.87	1.43	0.00	0.40	0.04	191.88	45.15	1.31	548.9	VDSNP01	33909	N	99.41	1.00	1.0
1E1E	WWP859	102.38	1.82	1.09	0.28	0.45	0.00	186.33	74.74	1.33	13.0	WWVPA.	33909	N	99.70	0.98	1.0
153B	WWP006	52.30	3.25	1.41	1.37	0.44	0.03	169.98	96.23	1.17	592.7	WWWPA.	33909	N	91.62	0.91	1.0
153D	\000/P001	55.15	3.02	1.29	1.28	0.44	0.01	166.55	95.41	1 18	794.4	VMM/PA	33909	N	92.38	0.92	1.0
1736	WWP666	36.50	4.35	2.25	1.63	0.45	0.02	158.77	76.65	1.12	87.0	VM/PA	33909	N	92.18	0.92	1.0
1C1A	WWP016	57.51	2.74	1.30	0.98	0.46	0.00	157.58	82.81	1.20	346.4	WWWPA	33909	N	95.72	0.93	1.0
1636	1000/P635	31.41	5.01	1.72	2.73	0.40	0.00	157.36	103.34	1.13	70.0	VMMPA	33909	N	82.89	0.00	1.0
1435	1000/P639	34.13	4.56	1.25	2.1.0	0.46	0.08	155.63	112.97	1.13	83.5	VMM/PA	33909	N	76.88	0.52	1.0
5D4C	1000/P643	64.85	2.30	0.83	0.98	0.40	0.00	149.16	95.33	1.13	107.0	VDSNP01	33909	N	84.64	0.73	1.0
0040	11111 045	A 10000000	2.50	0.00	0.00	0.41	0.00	000000000000000000000000000000000000000	20.00	1.21		CONTRACTOR			54.04	0.52	1.4

If you select a specific system image from the drop down list and press DASD, you'll get a complete overview of the DASD data for that system.

You can sort any column by clicking on the header. Above you see the DASD sorted by Response Time Intensity. The analyses from here will display all the DASD. You can also select some number of the actuators (top ten?) and the analyses will be for only the selected actuators.

If you have SMF 42.6 type data in the EDF file, the Data Set button (WDSN) will be enabled. This will display the available data set information for the selected actuators.

BCUs DASD MOSN VOLSER Disk Type Intensity IO Rate Response Service WWFA28 33009 0.24 0.03 7.90 7.90 WWFA28 33009 0.00 0.00 11.90 III.90 WWFA28 33009 0.00 0.00 11.21 III.21 WWFA33 33009 0.00 0.00 11.05 III.05 WWFA33 33009 0.00 0.00 11.05 III.05 WWFA33 33009 0.00 0.00 16.04 16.04 WWFA33 33009 0.00 0.00 16.04 16.04 WWFA34 33009 0.00 0.00 16.04 16.04 WWFA35 33009 0.00 0.00 16.04 16.04 WWFA35 33009 0.00 0.00 16.04 16.04 SYSP04 455.81 59.70 7.30 7.00 BarcheBa. SYSP104 SYSP11		Jo. System	Image Ana	alysis - BCl	J Data			Analysis
VOLSER Disk Type Intensity VO Rate Response Service WWPA28 33809 0.24 0.03 7.90 7.90 WWPA28 33809 0.00 0.00 11.90 11.90 WWPA21 33809 0.00 0.00 11.90 11.90 WWPA31 33809 0.00 0.00 11.05 11.05 WWPA32 33809 0.00 0.00 11.05 11.05 WWPA32 33809 0.00 0.00 10.85 10.85 P0901 33809 0.00 0.00 10.95 10.95 WWPA33 33809 0.00 0.00 10.95 10.94 P0901 33809 0.00 10.94 14.94 14.94 WVFA33 33809 0.00 10.94 14.94 14.94 VSP06 594.00 165.00 3.60 2.60 BATCH BA. "SYSP06 SYSP14 435.81 59.70 7.30 7.00	CUs DA	SD WDSN	1					
VOLSER Disk Type Intensity I/O Rate Response Service VWVFA28 33909 0.04 0.03 7.90 7.90 VWVFA28 33909 0.00 0.00 11.90 11.90 VWVFA28 33909 0.00 0.00 11.05 11.05 VWVFA23 33909 0.00 0.00 11.12 11.12 VWVFA23 33909 0.00 0.00 10.85 10.85 VWVFA23 33909 0.00 10.00 10.85 10.85 VWVFA23 33909 0.00 10.00 10.85 10.85 VSP01 388.70 112.90 3.00 2.60 FXP164<			-					
VWPA28 33909 0.24 0.03 7.90 7.90 WWPA29 33909 0.00 0.00 11.90 11.90 WWPA30 33909 0.00 0.00 11.05 11.05 WWPA31 33909 0.00 0.00 11.05 11.05 WWPA32 33909 0.00 0.00 11.05 11.05 WWPA33 33909 0.00 0.00 10.05 10.05 WWPA33 33909 0.00 0.00 10.05 10.05 WWPA33 33909 0.00 0.00 10.05 10.05 SYSP04 594.00 165.00 3.60 2.60 BATCH BA.< "SYSP06 SYSP04 358.00 12.240 3.00 2.60 BATCH BA.< "SYSP04 SYSP104 43581 59.70 7.30 7.00 BATCH BA.< "SYSP04 SYSP11 88.83 42.30 2.10 80 BATCH BA.< "SYSP104 WW128 0.00 0.00 3.90 3.50 <th>VOLSER</th> <th>Disk Type</th> <th>Intensity</th> <th>I/O Rate</th> <th>Response</th> <th>Service</th> <th></th> <th></th>	VOLSER	Disk Type	Intensity	I/O Rate	Response	Service		
VWPA29 33909 0.00 0.00 11.90 11.80 WWPA30 33909 0.00 0.00 10.21 10.21 WWPA31 33909 0.00 0.00 11.02 10.21 WWPA32 33909 0.00 0.00 11.12 11.12 WWPA32 33909 0.00 0.00 11.05 10.05 WWPA33 33909 0.00 0.00 10.84 10.84 WWPA33 33909 0.00 0.00 10.04 10.04 WWPA33 33909 0.00 0.00 10.04 10.04 WWPA33 33909 0.00 0.00 10.04 10.04 WWPA34 0.00 0.00 10.04 10.04 SYSP04 35.81 59.70 7.30 7.30 7.00 BATCH BA "SYSP04 SYSP11 88.83 42.30 2.10 1.80 BATCH BA "SYSP04 WW1007 0.00 0.00 3.40 7.80 BATCH BA	WWPA28	33909	0.24	0.03	7.90	7.90	(
VWVPA30 33909 0.00 0.00 10.21 10.21 WVPA31 33909 0.00 0.00 11.05 11.05 WVPA32 33909 0.00 0.00 11.05 11.05 WVPA32 33909 0.00 0.00 11.05 11.05 WVPA33 33909 0.00 0.00 10.85 10.85 DSPE04 2000 0.00 10.04 10.04 WVPA33 33909 0.00 0.00 10.04 WSP04 2000 0.00 10.04 10.04 WSP06 594.00 165.00 3.60 2.60 BATCH BA.< "SYSP06	WWPA29	33909	0.00	0.00	11.90	11.90		
VWVPA31 33909 0.00 0.00 11.05 11.05 WVPA32 33909 0.00 0.00 11.12 11.12 WVPA33 33909 0.00 0.00 10.85 10.85 DPF041 20000 0.00 10.85 10.94 VOLSER Intensity I/O Rate Response Service Workload Data Set Name SYSP06 594.00 165.00 3.60 2.60 BATCH BA "SYSP06 SYSP04 458.81 59.70 7.30 7.00 BATCH BA "SYSP04 SYSP14 458.81 59.70 7.30 7.00 BATCH BA "SYSP10 WBI007 0.00 0.00 8.40 7.60 BATCH BA "SYSP11 WBI007 0.00 0.00 3.90 3.50 BATCH BA "SYSP11 WBI007 0.00 0.00 3.90 3.50 BATCH BA "SYSP11 WBI007 0.00 0.00 3.90 3.50 BATCH BA "SYSP11 WSP04 9.30 <td>WWPA30</td> <td>33909</td> <td>0.00</td> <td>0.00</td> <td>10.21</td> <td>10.21</td> <td></td> <td></td>	WWPA30	33909	0.00	0.00	10.21	10.21		
VVVPA32 33909 0.00 0.00 11.12 11.12 VVVPA33 33909 0.00 0.00 10.01 10.01 VOLSER Intensity I/O Rate Response Service Workload Data Set Name SYSP06 594.00 16.01 10.01 10.01 10.01 SYSP06 594.00 166.00 3.60 2.60 BATCH BA*SYSP06 Service Workload Data Set Name SYSP06 594.00 166.00 3.60 2.60 BATCH BA*SYSP06 Service Workload Service Service Service Data Set Name SYSP04 336.81 59.70 7.30 7.00 BATCH BA*SYSP04 SYSP04 SYSP11 Service Service SYSP11 Service Service SYSP11 Service Service SYSP11 Service	AWPA31	33909	0.00	0.00	11.05	11.05		
VVUPA33 33303 0.00 0.00 10.85 10.85 DPEC04 33000 0.00 10.04 10.04 10.04 VOLSER Intensity I/O Rate Response Service Workload Data Set Name SYSP06 594.00 165.00 3.60 2.60 BATCH.BA "SYSP06 SYSP02 368.70 122.90 3.00 2.60 BATCH.BA "SYSP02 SYSP04 435.81 59.70 7.30 7.00 BATCH.BA "SYSP14 WBI07 0.00 0.00 8.40 7.80 BATCH.BA "SYSP14 WW128 0.00 0.00 8.40 7.80 BATCH.BA "WAWI02 WAW108 0.93 0.30 3.10 2.50 BATCH.BA "WAWI02 WAW108 0.33 0.30 3.10 2.50 BATCH.BA "SORT21 SYSP10 0.00 0.00 3.60 BATCH.BA "SORT21 SYSP15 SYSP10 <t< td=""><td>WWPA32</td><td>33909</td><td>0.00</td><td>0.00</td><td>11.12</td><td>11.12</td><td></td><td></td></t<>	WWPA32	33909	0.00	0.00	11.12	11.12		
VOLSER Intensity I/O Rate Response Service Workload Data Set Name SYSP06 594.00 165.00 3.60 2.60 BATCH.BA "SYSP06 SYSP02 368.70 122.90 3.00 2.60 BATCH.BA "SYSP04 SYSP14 435.81 59.70 7.30 7.00 BATCH.BA "SYSP14 SYSP14 98.83 42.30 2.10 1.80 BATCH.BA "SYSP14 WBIG07 0.00 0.00 8.40 7.80 BATCH.BA "WRIG07 WAWI28 0.00 0.00 3.60 2.50 BATCH.BA "WAWI02 WAWI08 0.93 0.30 3.10 2.50 BATCH.BA "SORT21 VAWI08 0.93 0.30 3.10 2.50 BATCH.BA "SORT21 SYSP00 0.31 0.10 2.20 BATCH.BA "SORT21 SORT21 VAWI08 0.93 0.30 3.10 2.50 BATCH.BA SYSP5 SMADSNP0.SMA734.LOAD SYSP02 0.31 0.10 3.00 BATCH.BA "WA	WWPA33	33909	0.00	0.00	10.85	10.85		
VOLSKI Intensity Lot Mail Tespinal Software Voltada Tespinal SYSP06 594.00 165.00 3.60 2.60 BATCH BA "SYSP06 SYSP04 435.81 59.70 7.30 7.00 BATCH BA "SYSP04 SYSP11 88.83 42.30 2.10 1.80 BATCH BA "SYSP04 SYSP11 88.83 42.30 2.10 1.80 BATCH BA "SYSP11 WBIG07 0.00 0.00 8.40 7.80 BATCH BA "SYSP11 WBIG07 0.00 0.00 8.40 7.80 BATCH BA "SYSP14 WAW128 0.00 0.00 4.70 4.30 BATCH BA "WAW128 WAW109 0.93 0.30 3.10 2.50 BATCH BA "WAW102 WAW108 0.93 0.30 3.10 2.50 BATCH BA "SYSP5 SYSP10 0.28 0.10 2.80 2.20 BATCH BA "SYSP5.S								
SYSP02 368.70 122.90 3.00 2.60 BATCH.BA *SYSP02 SYSP04 435.81 59.70 7.30 7.00 BATCH.BA *SYSP04 SYSP11 88.83 42.30 2.10 1.80 BATCH.BA *SYSP14 WBIG07 0.00 0.00 8.40 7.80 BATCH.BA *SYSP14 WBIG07 0.00 0.00 8.40 7.80 BATCH.BA *SYSP14 WAW102 0.00 0.00 3.90 3.50 BATCH.BA *WaW102 WAW102 0.00 0.00 4.70 4.30 BATCH.BA *WAW102 WAW108 0.93 0.30 3.10 2.50 BATCH.BA *SYSP5 SYSP10 0.28 0.10 2.80 BATCH.BA *SYSP5.SMADSNP0.SMA734.LOAD SYSP102 0.31 0.10 3.10 3.00 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD WAW137 0.00 0.00 3.60 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD </td <td>VOLSER</td> <td>Intensity</td> <td>I/O Rate</td> <td>Rosnanso</td> <td>Senice</td> <td>Morkload</td> <td>Data Sot Namo</td> <td></td>	VOLSER	Intensity	I/O Rate	Rosnanso	Senice	Morkload	Data Sot Namo	
SYSP04 435.81 59.70 7.30 7.00 BATCH.BA "SYSP04 SYSP11 88.83 42.30 2.10 1.80 BATCH.BA "SYSP11 WBIG07 0.00 0.00 8.40 7.80 BATCH.BA "SYSP14 WWW02 0.00 0.00 3.90 3.50 BATCH.BA "WAW128 WWW02 0.00 0.00 3.90 3.50 BATCH.BA "WAW128 WAW108 0.93 0.30 3.10 2.50 BATCH.BA "WAW108 SORT21 0.00 0.00 3.50 BATCH.BA "SORT21 SYSP06 0.28 0.10 2.80 2.20 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD SYSP06 0.28 0.10 3.10 3.00 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD SYSP02 0.31 0.10 3.10 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD WAW101 0.00 0.00 3.50 3.20 BATCH.BA "SYSP1.DSNLOAD <td>VOLSER</td> <td>Intensity</td> <td>1/O Rate</td> <td>Response</td> <td>Service</td> <td>Workload BATCH BA</td> <td>Data Set Name</td> <td></td>	VOLSER	Intensity	1/O Rate	Response	Service	Workload BATCH BA	Data Set Name	
SYSP11 88.83 42.30 2.10 1.80 BATCH.BA "SYSP11 WBIG07 0.00 0.00 8.40 7.80 BATCH.BA "WBIG07 WAW128 0.00 0.00 8.40 7.80 BATCH.BA "WAW129 WAW122 0.00 0.00 4.70 4.30 BATCH.BA "WAW102 WAW102 0.00 0.00 4.70 4.30 BATCH.BA "WAW102 WAW108 0.93 0.30 3.10 2.50 BATCH.BA "WAW108 SORT21 0.00 0.00 3.50 3.20 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD SYSP06 0.28 0.10 2.80 2.20 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD SYSP502 0.31 0.10 3.10 3.00 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD WAW137 0.00 0.00 3.80 3.40 BATCH.BA "YAW101 SORT26 0.00 0.00 3.50 3.20 BATCH.B	VOLSER SYSP06 SYSP02	Intensity 594.00 368.70	1/0 Rate 165.00 122.90	Response 3.60 3.00	Service 2.60 2.61	Workload BATCH.BA BATCH.BA.	Data Set Name *SYSP06 *SYSP02	
WBIG07 0.00 0.00 8.40 7.80 BATCH BA "WBIG07 WAW128 0.00 0.00 3.90 3.50 BATCH BA "WAW102 WWW102 0.00 0.00 4.70 4.30 BATCH BA "WAW102 WAW108 0.93 0.30 3.10 2.50 BATCH BA "WAW102 WAW108 0.93 0.30 3.10 2.50 BATCH BA "SORT21 SORT21 0.00 0.00 3.50 3.20 BATCH BA "SORT21 SYSP06 0.28 0.10 2.80 2.20 BATCH BA SYSP5.SMADSNP0.SMA734.LOAD SYSP02 0.31 0.10 3.10 3.00 BATCH BA SYSP5.SMADSNP0.SMA734.LOAD WAW137 0.00 0.00 3.50 3.20 BATCH BA SYSP12 WAW101 0.00 0.00 3.50 3.20 BATCH BA SYSP12 SORT36 0.00 1.60 BATCH BA SYSP12 SYSP12 </td <td>VOLSER SYSP06 SYSP02 SYSP04</td> <td>Intensity 594.00 368.70 435.81</td> <td>1/O Rate 165.00 122.90 59.70</td> <td>Response 3.60 3.00 7.30</td> <td>Service 2.60 2.60 7.00</td> <td>Workload BATCH.BA BATCH.BA BATCH.BA</td> <td>Data Set Name *SYSP06 *SYSP02 *SYSP04</td> <td></td>	VOLSER SYSP06 SYSP02 SYSP04	Intensity 594.00 368.70 435.81	1/O Rate 165.00 122.90 59.70	Response 3.60 3.00 7.30	Service 2.60 2.60 7.00	Workload BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04	
WAW128 0.00 0.00 3.90 3.50 BATCH BA WAW128 WAW102 0.00 0.00 4.70 4.30 BATCH BA WAW102 WAW102 0.00 0.00 3.10 2.50 BATCH BA WAW102 WAW103 0.00 3.50 3.10 2.50 BATCH BA "SORT21 0.00 0.00 3.50 3.20 BATCH BA "SORT21 SORT21 0.00 3.60 2.20 BATCH BA "SORT21 SORT21 0.10 2.80 EATCH BA "SYSP5 SMADSNP0.SMA734 LOAD SYSP02 0.31 0.10 3.00 BATCH BA "SYSP7.DSN7101.DSNP.SDSNLOAD VAW137 0.00 0.00 3.80 3.40 BATCH BA "WAW101 WAW101 0.00 0.00 3.50 3.20 BATCH BA "SORT26 SORT25 0.00 0.00 1.60 BATCH BA "SORT26	VOLSER SYSP06 SYSP02 SYSP04 SYSP11	Intensity 594.00 368.70 435.81 88.83	1/0 Rate 165.00 122.90 59.70 42.30	Response 3.60 3.00 7.30 2.10	Service 2.60 2.60 7.00 1.80	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP11	
WAW102 0.00 0.00 4.70 4.30 BATCH.BA WAW102 WAW108 0.93 0.30 3.10 2.50 BATCH.BA "WAW108 SORT21 0.00 0.00 3.50 3.20 BATCH.BA "SORT21 SYSP06 0.28 0.10 2.80 2.20 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD SYSP02 0.31 0.10 3.10 BATCH.BA SYSP5.SMADSNP0.SMA734.LOAD WAW137 0.00 0.00 3.80 BATCH.BA YSP5.SMADSNP0.SMA734.LOAD WAW101 0.00 0.00 3.80 BATCH.BA "WAW101 SORT25 0.00 0.00 3.50 3.20 BATCH.BA "WAW101 SORT25 0.00 0.00 1.50 PATCH.PA*SORT25 SORT25	VOLSER SYSP06 SYSP02 SYSP04 SYSP11 WBIG07	Intensity 594.00 368.70 435.81 88.83 0.00	1/O Rate 165.00 122.90 59.70 42.30 0.00	Response 3.60 3.00 7.30 2.10 8.40	Service 2.60 2.60 7.00 1.80 7.80	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP11 *WBIG07	
VAW108 0.93 0.30 3.10 2.50 BATCH BA 'WWW08 SORT21 0.00 0.00 3.50 3.20 BATCH BA 'SORT21 SYSP06 0.28 0.10 2.80 2.20 BATCH BA 'SORT21 SYSP02 0.31 0.10 3.10 BATCH BA SYSP5.SMADSNP0.SMA734.LOAD WAW137 0.00 0.00 3.80 3.40 BATCH BA SYSP7.DSN101.DSNP.SDSNLOAD WAW137 0.00 0.00 3.50 3.20 BATCH BA 'WAW101 SORT25 0.00 0.00 3.50 3.20 BATCH BA 'SORT21	VOLSER SYSP06 SYSP02 SYSP04 SYSP11 WBIG07 WAWI28	Intensity 594.00 368.70 435.81 88.83 0.00 0.00	1/O Rate 165.00 122.90 59.70 42.30 0.00 0.00	Response 3.60 3.00 7.30 2.10 8.40 3.90	Service 2.60 2.60 7.00 1.80 7.80 3.50	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP11 *WBI007 *WAWI28	
SUR121 U.UU U.UU 3.50 3.20 BATCH_BA "SORT21 SYSP06 0.28 0.20 BATCH_BA "SORT21 SYSP52 SYSP52 0.31 0.10 3.10 BATCH_BA SYSP57.DSN7101.DSNP.SDSNLOAD VAVN37 0.00 0.00 3.80 3.40 BATCH_BA SYSP7.DSN7101.DSNP.SDSNLOAD VAVN37 0.00 0.00 3.50 3.20 BATCH_BA "WAWI37 VAW101 0.00 0.00 1.60 BATCH_BA "WAWI01 SCRT26 0.00 1.60 BATCH_BA "SCRT26	VOLSER BYSP06 BYSP02 BYSP04 BYSP11 WBIG07 WAWI28 WAWI02	Intensity 594.00 388.70 435.81 88.83 0.00 0.00 0.00	1/O Rate 165.00 122.90 59.70 42.30 0.00 0.00 0.00	Response 3.60 3.00 7.30 2.10 8.40 3.90 4.70	Service 2.60 7.00 1.80 7.80 3.50 4.30	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP11 *WK8007 *WAW108	
STSP00 U.20 U.10 Z.80 Z.20 BATCH.BAL. SYSP5.20 STALUAL SYSP02 0.31 0.10 3.10 3.00 BATCH.BAL. SYSP7.DSN7101.DSNP.SDSNLOAD NAW137 0.00 0.00 3.80 3.40 BATCH.BAL. *WAW137 NAW101 0.00 0.00 3.50 3.20 BATCH.BAL. *WAW101 SCR725 0.00 0.00 1.60 BATCH.BAL. *SCR726	VOLSER SYSP06 SYSP02 SYSP04 SYSP11 WBIG07 WAW128 WAW102 WAW108	Intensity 594.00 368.70 435.81 88.83 0.00 0.00 0.00 0.00 0.00	1/O Rate 165.00 122.90 59.70 42.30 0.00 0.00 0.00 0.30	Response 3.60 3.00 7.30 2.10 8.40 3.90 4.70 3.10	Service 2.60 2.60 7.00 1.80 7.80 3.50 4.30 2.50	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP104 *SYSP11 *WAW102 *WAW102	
010702 0.01 0.10 3.10 3.00 PATCHERAL, STOFT/DENTIFICIENT, SUSALCAD VAW137 0.00 0.00 3.80 BATCHERAL, WWAW137 VAW101 0.00 0.00 3.50 BATCHERAL, WWAW137 VAW101 0.00 0.00 1.60 PATCHERAL, WWAW101 SCRT25 0.00 0.00 1.60 PATCHERAL, *SCRT25	VOLSER SYSP06 SYSP02 SYSP11 WAW102 WAW102 WAW102 WAW108 SORT21 SYSP05	Intensity 594.00 368.70 435.81 88.83 0.00 0.00 0.00 0.00 0.93 0.00	I/O Rate 165.00 122.90 59.70 42.30 0.00 0.00 0.00 0.30 0.00 0.30	Response 3.60 3.00 7.30 8.40 3.90 4.70 3.10 3.50 0.55 0.	Service 2.60 2.60 1.80 7.80 3.50 4.30 2.50 3.20	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP04 *SYSP04 *SYSP04 *SYSP04 *SYSP03 *SYSP04 *SYSP11 *SYSP11	
WW01 0.00 0.00 3.50 S.40 Def CH_DR	/OLSER 3YSP06 3YSP02 3YSP04 3YSP11 WAW102 WAW102 WAW102 WAW102 WAW108 3ORT21 3YSP06 3YSP06	Intensity 594.00 368.70 435.81 88.83 0.00 0.00 0.03 0.03 0.00 0.28 0.28	I/O Rate 165.00 122.90 59.70 42.30 0.00 0.00 0.00 0.30 0.00 0.10 0.10	Response 3.60 3.00 2.10 8.40 3.90 4.70 3.10 3.50 2.80	Service 2.60 2.60 1.80 7.80 3.50 4.30 2.50 3.20 2.20	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP11 *WBIG07 *WAW102 *WAW102 *WAW103 *SORT21 SYSP5 SMADSNP0.SMA734 LOAD SYSP5 SMADSNP0.SMA734 LOAD	
	VOLSER SYSP06 SYSP04 SYSP11 V/BIG07 VAW128 VAW128 VAW102 VAW102 SYSP06 SYSP06 SYSP02 VAW132	Intensity 594.00 368.70 435.81 88.83 0.00 0.00 0.00 0.00 0.00 0.00 0.0	1/O Rate 165.00 122.90 0.970 42.30 0.00 0.00 0.00 0.00 0.00 0.10 0.10 0.00	Response 3.60 3.00 7.30 2.10 8.40 3.90 4.70 3.10 3.50 2.80 3.10 3.20	Service 2.60 7.00 1.80 7.80 4.30 2.50 3.20 2.20 3.00 2.20 3.00 2.20 3.00	Workload BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA BATCH.BA	Data Set Name *SYSP06 *SYSP02 *SYSP04 *SYSP11 *WW02 *WWW102 *WWW102 *WWW102 *SORT21 SYSP5.SMADSNP0.SMA734.LOAD SYSP7.DSN7101.DSNP.SDSNLOAD	
	VOLSER SYSP06 SYSP04 SYSP11 WBI07 WAW102 WAW102 WAW102 SORT21 SYSP06 SYSP06 SYSP02 WAW103 WAW103 WAW103	Intensity 594.00 368.70 435.81 88.83 0.00 0.00 0.00 0.00 0.03 0.00 0.28 0.31 0.00 0.28	1/O Rate 165.00 122.90 42.30 0.00 0.00 0.00 0.30 0.00 0.10 0.10 0.00 0.00 0.10 0.00	Response 3.60 7.30 2.10 8.40 4.70 3.10 3.50 2.80 3.10 3.50 3.50	Service 2.60 7.00 1.80 7.80 3.50 4.33 2.55 3.20 2.20 3.00 3.40 3.40	Workload BATCH BA BATCH BA	Data Set Name *SYSP06 *SYSP01 *SYSP04 *SYSP11 *WWW108 *WWW102 *WWW108 *SYSP7.DSNADSNP0.SMA734.LOAD SYSP7.DSN7101.DSNP.SDSNLOAD *WWW103	
	OLSER YSP06 YSP04 YSP11 VBIG07 /AVV102 /AVV102 /AVV102 /AVV102 /AVV102 /AVV103 ORT21 YSP06 YSP02 /AVV137 /AVV137	Intensity 594.00 368.70 435.81 88.83 0.00 0.00 0.00 0.00 0.03 0.00 0.28 0.31 0.00 0.00	1/O Rate 165.00 122.90 59.70 42.30 0.00 0.00 0.30 0.00 0.10 0.10 0.00 0.00 0.10 0.00	Response 3.60 3.00 7.30 2.10 3.90 4.70 3.10 3.50 3.10 3.10 3.80 3.10 3.80 3.10 3.80 3.80 3.80 3.10 3.80 3.80 3.80 3.80 3.80 3.80 3.80 3.90 3.	Service 2.60 7.000 1.80 7.80 3.50 3.50 3.20 3.20 3.20 3.20 3.20 3.20 3.20 3.2	Workload BATCH BA BATCH BA	Data Set Name *SYSP06 *SYSP02 *SYSP11 *WWW108 *SORT21 SYSP5.SMADSNP0.SMA734 LOAD SYSP7.DSN7101.DSNP.SDSNLOAD *WWW37 *WWW101	

So, not only can you identify the problem actuators, you can identify the datasets on the actuator and the service class that is using the dataset. You can identify the problem and the application causing or suffering the pain... if you have the SMF 42.6 data.

Enterprise Sysplex Analysis

The Sysplex view of the enterprise is the most encompassing. You view the logical structure of the application. The communication between systems participating in the Sysplex is via locks, lists, and structures in the coupling facility (CF). Double click on any CF and the information appears.



View Help			Analysis
Coupling Facility Name: Sysplex Name: CF Machine Type: Utilization: #ICF engines: Storage Defined: Dump Storage: Storage Available: Study Interval	CF11 SYSE 2084 2.40 1 958 10 n 879 1905	BACH -316 % mb 1b mb -09-28	10:00:00
Structure Name	Туре	Size	Reqs/sec
HSA_LOG	LIST	8.0	0.0
			000.0
IXCFPATH1	LIST	34.2	699.0
IXCFPATH1 SYSZWLM_WORKUNIT	LIST CACH	34.2 6.2	0.0
IXCFPATH1 SYSZWLM_WORKUNIT SYSZWLM_117B2084	LIST CACH CACH	34.2 6.2 10.0	0.0
IXCFPATH1 SYSZWLM_WORKUNIT SYSZWLM_117B2084 SYSZWLM_26012084	LIST CACH CACH CACH	34.2 6.2 10.0 10.0	0.0



🖀 CP2000 INC zCP3000 PA Overview	
File Edit View Action Help	Analysis
Sysplex SYSBACH	

The analysis illustrated here is the CF Health Check. It is particularly useful in getting an overall view of the CF behavior. You can also obtain a logical view of the Sysplex by means of the View item on the menu bar. This shows the Sysplex as a logical structure. If the enterprise had multiple Sysplexes, you would see them separated.

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Alternate Processors

After reviewing the performance data, you can take a first look at the impact of a migration from the existing CEC model to a new model. This is done on the Overview window. Right click on a CEC, click on Alternates and select Alternatives.



🕌 Alter	nate CPUs f	for CECA							. 🗆 🔀
Original Pro	ocessor								
	Model		CPs	6	ZAAPs	IC	CFs	IFLs	MIPS
2084-C24				16.0	2.0		2.0	0.0	5,329.0
Alternate P	rocessors								
	Model		CPS		7AAPs	10	Es	IFLS	MIPS
2084-024	meder		011	18.0	20		2.0	0.0	5,853.1
2094-518				11.0	2.0		2.0	0.0	5 318 0
1									
LPAR Defin	itions for 2094-	711							
LPAR Defin	itions for 2094.	711 CPs	ICES	IFI s	Weight	Can	Miy	MinCan	MayCan
LPAR Defin Name SYS1	itions for 2094	711 CPs	ICFs	IFLs	Weight 500	Cap	Mix	MinCap 3188 9	MaxCap 3900.9
LPAR Defin Name SYS1 - zAAP	itions for 2094 CtiPgm z/OS 1.6	711 CPs 8.0 1.0	ICFs 0.0	IFLs 0.0	Weight 500	Cap	Mix LoIO-Mix	MinCap 3188.9 472.6	MaxCap 3900.9 472.6
LPAR Defin Name SYS1 - zAAP CF11	itions for 2094 CtlPgm 2/0S 1.6 CFCC	711 CPs 8.0 1.0 0.0	ICFs 0.0 1.0	IFLs 0.0	Weight 500 0 Ded	Cap	Mix LoIO-Mix CFCC	MinCap 3188.9 472.6 552.5	MaxCap 3900.9 472.6 552.5
LPAR Defin Name SYS1 - zAAP CF11 CF13	tions for 2094. CtiPgm z/OS 1.6 CFCC CFCC	711 CPs 8.0 1.0 0.0 0.0	ICFs 0.0 1.0 1.0	IFLS 0.0 0.0 0.0	Weight 500 0 Ded 5	Cap	Mix LoIO-Mix CFCC CFCC	MinCap 3188.9 472.6 552.5 549.9	MaxCap 3900.9 472.6 552.5 549.9
LPAR Defin Name SYS1 - zAAP CF11 CF13 PRT1	itions for 2094. CtiPgm z/OS 1.6 CFCC CFCC Z/OS 1.4	711 CPs 8.0 1.0 0.0 0.0 3.0	ICFs 0.0 1.0 1.0 0.0	IFLs 0.0 0.0 0.0 0.0	Weight 500 0 Ded 5 80		Mix LoIO-Mix CFCC CFCC LoIO-Mix	MinCap 3188.9 472.6 552.5 549.9 522.7	MaxCap 3900.9 472.6 552.5 549.9 1498.7
LPAR Defin Name SYS1 - ZAAP CF11 CF13 PRT1 PRT1 PRT3	tions for 2094. CtiPgm z/OS 1.6 CFCC CFCC z/OS 1.4 z/OS 1.4	711 CPs 8.0 1.0 0.0 3.0 1.0	ICFs 0.0 1.0 1.0 0.0 0.0	IFLs 0.0 0.0 0.0 0.0 0.0	Weight 500 0 Ded 5 80 63	Cap	Mix LoIO-Mix CFCC CFCC LoIO-Mix LoIO-Mix	MinCap 3188.9 472.6 552.5 549.9 522.7 418.7	MaxCap 3900.9 472.6 552.5 549.9 1498.7 508.1
LPAR Defin Name SYS1 - zAAP CF11 CF13 PRT1 PRT3 PRT4	ttions for 2094 CttPgm z/OS 1.6 CFCC CFCC z/OS 1.4 z/OS 1.4 z/OS 1.4	711 CPs 8.0 1.0 0.0 3.0 3.0	ICFs 0.0 1.0 1.0 0.0 0.0 0.0	IFLS 0.0 0.0 0.0 0.0 0.0 0.0	Weight 500 0 Ded 5 80 63 125		Mix LoIO-Mix CFCC CFCC LoIO-Mix LoIO-Mix	MinCap 3188.9 472.6 552.5 549.9 522.7 418.7 816.8	MaxCap 3900.9 472.6 552.5 549.9 1498.7 508.1 1498.7
LPAR Defin Name SYS1 - zAAP CF11 CF13 PRT1 PRT3 PRT4 SYS2	itions for 2094. CtiPgm z/OS 1.6 CFCC CFCC z/OS 1.4 z/OS 1.4 z/OS 1.4 z/OS 1.4	711 CPs 8.0 1.0 0.0 0.0 0.0 0.0 0.0 1.0 3.0 1.0	ICFs 0.0 1.0 0.0 0.0 0.0 0.0	IFLS 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Weight 500 0 Ded 5 80 63 125 63		Mix LolO-Mix CFCC CFCC LolO-Mix LolO-Mix LolO-Mix	MinCap 3188.9 472.6 552.5 549.9 622.7 418.7 816.8 396.3	MaxCap 3900.9 472.6 552.5 549.9 1498.7 508.1 1498.7 479.7
LPAR Defin Name SYS1 - ZAAP CF11 CF13 PRT1 PRT3 PRT4 SYS2 - ZAAP	tions for 2094. CtlPgm 2/OS 1.6 CFCC CFCC 2/OS 1.4 2/OS 1.4 2/OS 1.6	711 CPs 8.0 1.0 0.0 0.0 3.0 1.0 1.0	ICFs 0.0 1.0 0.0 0.0 0.0 0.0 0.0	IFLS 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Weight 500 0 Ded 5 80 63 125 63 0		Mix LoIO-Mix CFCC LoIO-Mix LoIO-Mix LoIO-Mix	MinCap 3188.9 472.6 562.5 549.9 522.7 418.7 816.8 395.3 526.4	MaxCap 3900.9 472.6 552.5 549.9 1498.7 508.1 1498.7 479.7 526.4
LPAR Defin Name SYS1 - zAAP CF11 CF13 PRT1 PRT3 PRT4 SYS2 - zAAP TST3	tions for 2094. CtiPgm z/OS 1.6 CFCC CFCC Z/OS 1.4 z/OS 1.6 z/OS 1.4 z/OS 1.6 z/OS 1.4	711 CPs 8.0 1.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0	ICFs 0.0 1.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0	IFLS 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Weight 500 0 0 63 125 63 0 0 10		Mix LoIO-Mix CFCC LoIC-Mix LoIO-Mix LoIO-Mix LoIO-Mix	MinCap 3188 9 472.6 562.5 549.9 522.7 418.7 816.8 3955.3 526.4 66.5	MaxCap 3900.9 472.8 552.5 549.9 1498.7 508.1 1498.7 479.7 526.4 508.1

Processors are added to the alternatives list by pressing New. Since the alternative model may have a different number of PUs, zCP3000 rescales the logical configuration to match the base processor model. The logical configuration for each model can be inspected by selecting that model. You can also change the logical configuration if you are not satisfied with zCP3000's choice.



Once you have selected the models you want, press Apply to exit. This saves what you have done. Then go to the CEC window and look for analyses which compare the base model to the alternatives.

This analysis shows the base processor utilization (for the selected interval) and the projected utilization of the **exact** same work on the alternatives. You'll see three bars for each alternative. The center bar is the utilization scaled to the MIPS rating of the alternative. The bar to each side is the view if the MIPS rating were + or -5% of the expected value. This is a warning that the MIPS rating is really not a single number but is an expected value with a range.

And more

On the Overview window there are a number of additional functions you can perform. Using the Actions menu item:

- You can create a small document containing the key graphs found in zCP3000.
- You can set the Saturation Design Point (SDP) for all system images. The default is 90%.
- zCP3000 uses the zPCR default processor 2084-301 to compute ITRRs. It then scales the ITRR to 450 MIPS. You can reset the scaling processes to match the MIPS requirement of the customer.
- And when you are ready, you can begin the Capacity Planning process. In this step you will specify the growth for the workloads. Before you enter this phase, you should save the model (in a file with qualifier .3pa). This is the subject of yet another zCP3000 monograph.

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