

E29

Using the IMS Log and IMS Performance Analyzer to Tune Your IMS System

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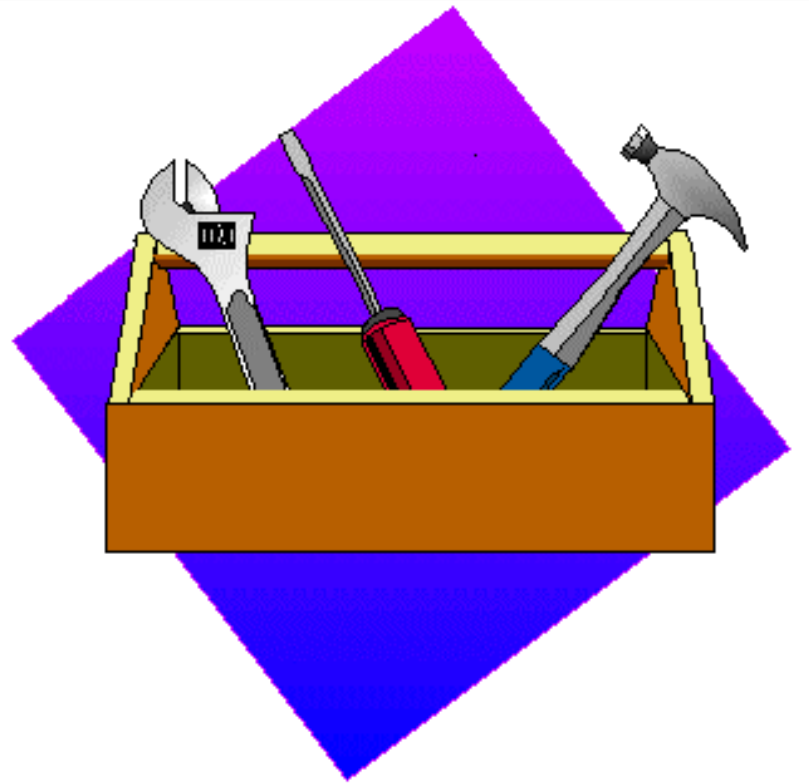
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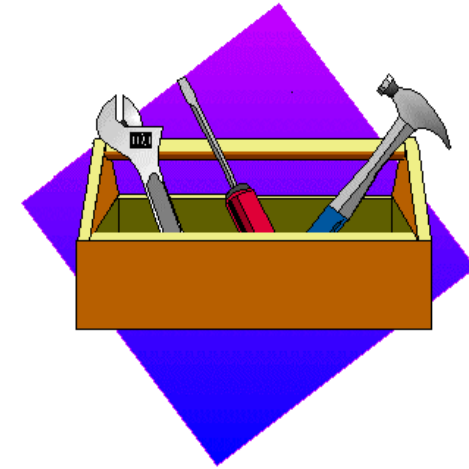
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IMS PA

Performance Reporting Tool
for IMS DB and TM Systems



IMS PA provides ...



- ◆ Information on IMS system performance for:
 - ◆ Tuning
 - ◆ Capacity Planning
 - ◆ Management Reporting
- ◆ Comprehensive reporting from IMS log or monitor data sets via ISPF online interface or batch commands
- ◆ Support for IMS V5 and higher
 - ◆ IMS V6 Shared Queue support - merges logs to produce end to end transaction response times
 - ◆ Fast Path reporting for log (IMS V6+) and monitor (IMS V7)
- ◆ Replacement for IMSPARS and IMSASAP

IMS PA

Log Reporting

- ◆ Transit Time and Resource Usage reporting
 - ◆ Message Queue Transaction and Full Function Database for IMS V5+
 - ◆ Fast Path EMH Transaction and DEDB/MSDB Database for IMS V6+
- ◆ Transaction Transit extracts and graphs
- ◆ Similar functionality to DBFULTA0
- ◆ OTMA and APPC support
- ◆ DBRC time-based log selection

Log Reports

...1/2

Resource Usage & Availability

- Management Exception
- Resource Availability
- CPU Usage
- Internal Resource Usage
- Message Queue Utilization
- Database Update Activity
- Database Trace
- Region Histogram
- DC Queue Manager Trace
- OSAM Sequential Buffering
- ESAF

Transaction (MSGQ) Transit

- Analysis
- Statistics
- Log
- Graphic Summary
- Extract by Interval
- Transaction Exception

User-Written

- User Processors...

- DL/I Call Statistics
- Transaction Statistics
- Chkpt IMS Resource Defns

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Log Reports (Fast Path)

...2/2

Fast Path Resource Usage

- FP Resource Usage and Contention
- FP Database Call Statistics
- IFP Region Occupancy
- EMH Message Statistics
- DEDB Update Activity
- DEDB Update Trace
- VSO Statistics

Fast Path (EMH) Transit

- Analysis
- Log
- Extract by Interval
- Transaction Exception

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Sample Log Reports

- * Transaction (MSGQ) Transit Analysis
- * Transaction (MSGQ) Transit Log
- * Transaction (MSGQ) Exception
- * Management Exception
- * Resource Availability
- * CPU Usage
- * Internal Resource Usage
- * Database Update Activity
- * Database Trace
- * DC Queue Manager Trace
- * User Programs

Transaction (MSGQ) Transit Analysis Report

- ◆ Shows transaction response time averages and peaks
- ◆ Transit Statistics report shows Distributions
- ◆ Extract by Interval feeds Graphing and Export facility

Transit Time Analysis By Transaction Code

Log 08Jun2000 15.06.22.17

Report 13.48 02Aug2000

Transact Code	PSB	Resp Count	Tran Time	Input Queue	Swit Queue	Pgm Exec	---- Queue	Output CQS	--- Local	Total	Input Queue	Swit Queue	Pgm Exec	---- Queue	Output CQS	--- Local	Total	Tran Time	CPU
MENU	PMENU	14,720	23	0	0	12	0	0	0	35	0	0	15	0	0	0	50	72	12
LOGON	PLOGON	14,610	74	2	0	189	0	0	0	192	3	0	251	0	0	0	254	298	55
SECURITY	PSECURE	23	368	2	0	499	0	0	0	501	3	0	605	0	0	0	607	666	119
FIMANCE	PFINANC	146	33	1	0	51	0	0	0	53	2	0	84	2	0	0	87	279	28
STOCK	PSTOCK	66	50	2	0	80	0	0	0	83	3	0	193	1	0	0	196	789	43
MAIL	PMAIL	27	28	57	0	38	0	0	0	95	86	0	54	2	0	0	240	589	22
TIME	PTIME	43	146	2	0	267	1	0	0	272	4	0	351	13	0	0	355	462	77
FACTORY	PFACTORY	155	11	0	0	82	0	0	0	82	0	0	263	0	0	0	263	922	24
INVENTORY	PINVENT	155	11	0	0	82	0	0	0	82	0	0	263	0	0	0	263	922	24

Long Queue times can mean scheduling or resource constraints

IMS V6+ Shared Queues

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Transaction (MSGQ) Transit Log

- ◆ Shows transit activity for each transaction
- ◆ To diagnose individual transactions causing problems
- ◆ Similar to DFSILTA0, but response times in milliseconds

Transaction Transit Log

Log 08Jun2000 15.06.22.16

Report 13.48 02Aug2000

Source		PSB	Region	Cls	Pr	Approx No. DB Calls	Input Transact Arrival	CPU Time (msec)	Userid	Output LTERM	*****Elapsed Time (msec)*****				
Source	Transact Code										Input Queue	Prog Exec	Output Queue	Total Time	Transit Time
LTRM0001	MENU	PMENU	56	12	8	12	15.06.22.458	18	FRED	LTRM0001	2	35	3	40	40
	LOGON	PLOGON	28	7	4	15	15.06.22.472	58	FRED	MASTER	0	35	12	35	
	SECURITY	PSECURE	17	2	4	15	15.06.22.473	24	FRED		1	531		532	
LTRM0002	STOCK	PSTOCK	27	5	8	54	15.06.22.654	124	JENNY	LTRM0002	1	243	2	246	246
LTRM0003	TIME	PTIME	23	12	8	54	15.06.22.756	13	GEORGE	LTRM0003	1	15	1	17	17
LTRM0004	MAIL	PMAIL	265	15	3	54	15.06.23.234	23	JACK	LTRM0004	67	45	1	47	47
LTRM0005	INVENTORY	PINVENT	457	5	8	54	15.06.24.763	124	COLIN	LTRM0005	1	456	2	459	459

Transaction MAIL
Scheduling problem

Transaction SECURITY
Region 17 Processing problem

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Transaction (MSGQ) Exception Report ...1/2

- ◆ Shows transaction transit time averages and peaks
- ◆ Can produce Total Traffic and Exception Traffic extracts

Transaction Exception by Trancode

From 15Aug2000 15.06.22.36 To 15Aug2000 15.33.46.83 Elapsed= 0 Hrs 27 Mins 24.468.313 Secs

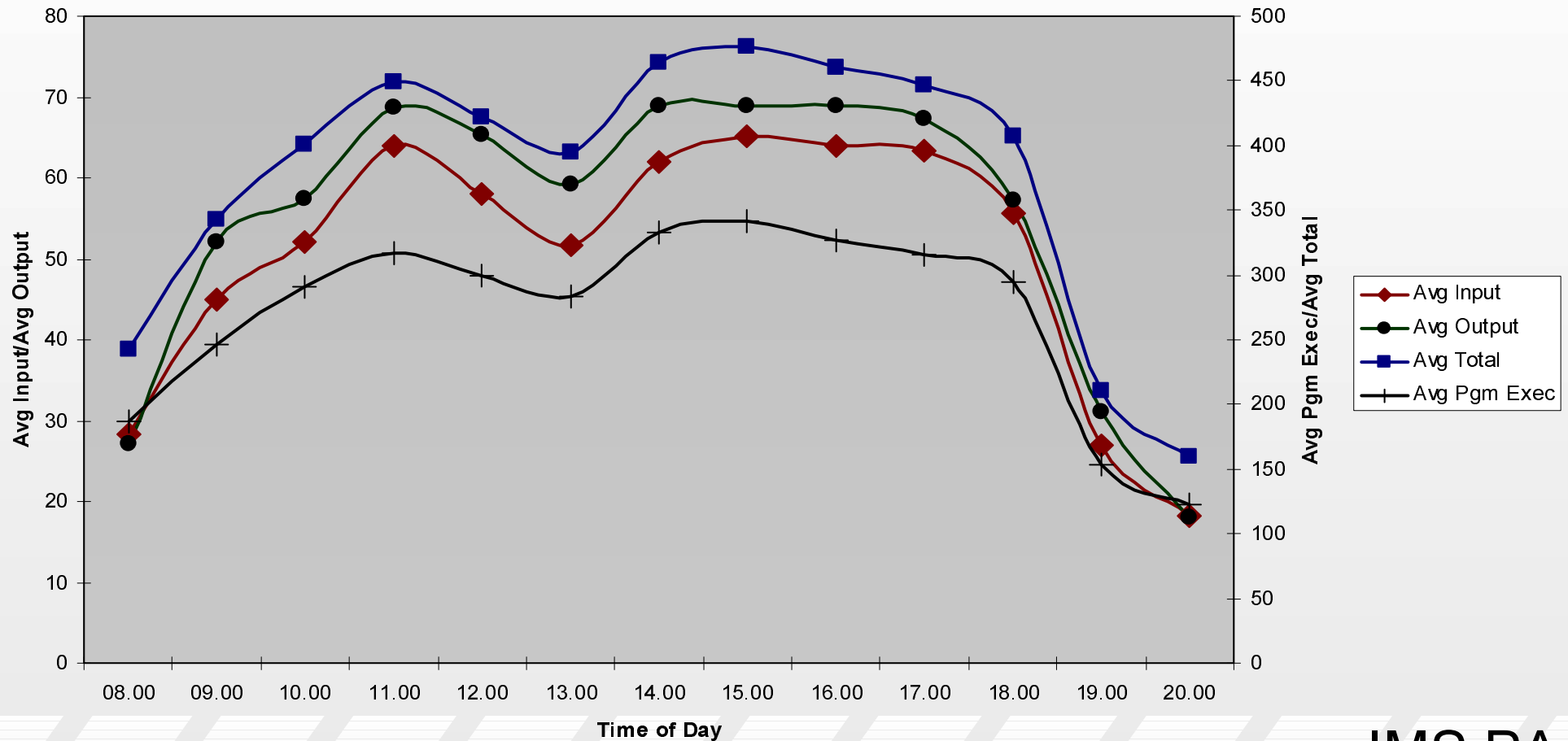
Trancode	PSB	Transact Count	Min -- Avg Transit Time ---					- 90% Peak Transit Time -					Max -- Avg Approximate ---			Tran/ CPU Min	
			Tran Time	Input Queue	Pgm Exec	Output Queue	Total	Input Queue	Pgm Exec	Output Queue	Total	Tran Time	DB Calls	DC Calls	DB Waits		
ACCOUNTS	PACCOUNT	295	5	803	44	0	847	1509	90	0	1556	3557	1	1	0	9	11
INQUIRY	PINQUIRY	571	12	1	34	1	35	2	51	6	54	451	7	3	0	17	21
LOGON	PLOGON	296	5	801	44	0	845	1505	90	0	1553	3557	1	1	0	9	11
MENU	PMENU	309	11	850	1442	1	2294	2131	2891	6	4108	12037	25	3	0	282	11
ORDER	PORDER	634	22	4	105	0	109	16	179	2	184	1486	13	3	0	29	23
PARTS	PPARTS	7645	8	33	87	2	121	86	120	13	184	1360	38	4	0	26	279
PRINT	PPRINT	745	35	1	118	1	120	1	278	9	280	3055	22	3	0	43	27
REPORT	PREPORT	529	30	3	75	1	78	6	112	7	117	821	17	3	0	29	19
STOCK	PSTOCK	704	1	8	374	0	382	42	2787	4	2795	94385	37	3	0	99	26
** Grand Total **		13481	2	578	429	1	1008	3277	3172	11	5409	391925	56	3	0	74	492

Transaction (MSGQ) Exception Report

...2/2

- ◆ Extracts can be processed directly by PC tools

Transit times for all Fast Path transactions



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Management Exception Report

- ◆ Concise survey of selected critical components of IMS system
- ◆ Detailed information on each transaction
- ◆ Compares transaction response time against accumulated averages from previous reports or defined expectations

Management Exception Summary

Trancode	Source of Information	Transact Count	Total Sc.mil	Input Q	Process	Output Q	DB Calls	DC Calls	DB Waits	CPU Time	Transact
				Sc.mil	Sc.mil	Sc.mil				Sc.mil	Sc.mil
FACTORY	This Run	26	765	1	764	0	67.5	6.0	.0	456	.9
FIMANCE	This Run	146	434	2	432	0	43.2	3.0	.0	228	5.3
INVENTORY	This Run	26	489		486					397	.9
LOGON	This Run	14,650	193	3	190	0	17.2	3.0	.0	55	456.9
MAIL	This Run	7,226	199	57	198	0	32.7	3.0	.0	176	345.9
	Average			2							
	Expectation			1							
MENU	This Run	14,720	18	1	16	1	.0	.1	.0	12	537.0
SECURITY	This Run	1,323	237	3	499	0	29.3	11.0	.0	119	134.8
	Average				127						
	Expectation				100						
STOCK	This Run	26	568	1	567	0	56.2	2.0	.0	343	.9
TIME	This Run	6,456	46	1	45	0	1.7	2.0	.0	43	297.9

Queue times exceed previous averages and user-defined thresholds

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Edit / View Expectations and Averages

- ◆ Expectation Sets for all Exception reporting
- ◆ Averages data sets for the Management Exception report

TranCode	Count	---- Transit Time ----				DB	DC	DB	CPU	Proc
		Total	Input	Proc	Outpt	Calls	Calls	Waits	Time	Rate
									*0.9	
SYSTEM	50127	700	15	545	0	11	4	0	387	867.2
FACTORY	26	765	1	764	0	67	6	0	456	0.9
FINANCE	146	434	2	432	0	43	3	0	228	5.3
INVENTORY	26	489	0	486	0	0	0	0	397	0.9
LOGON	14650	193	3	190	0	17	3	0	55	456.9
MAIL	7226	199	2	198	0	32	3	0	176	345.9
MENU	14720	18	1	16	1	0	1	0	12	537.0
SECURITY	1323	237	3	127	0	29	11	0	119	134.8
STOCK	26	568	1	567	0	56	2	0	343	0.9
TIME	6456	46	1	45	0	2	2	0	43	297.9

Resource Availability Report

- ◆ Indicates the relative amount of time a specific resource is active, idle, or unavailable

Resource Availability-IMSA

Total IMS Up Time		1.15.54 (hh.mm.ss)							
		<-----In Use----->		<-----Idle----->		<--Unavailable-->		<Waiting for Input>	
Region		hh.mm.ss	Pct	hh.mm.ss	Pct	hh.mm.ss	Pct	hh.mm.ss.t	Pct
BMP001	1	47.55	63.1	27.36	36.4	23	.5	BMP (001)	
IMSAM006	6	33.02	43.5	42.52	56.5	0	.0	1.24.4	2.7
IMSAM012	12	38.50	51.2	37.04	48.8	0	.0	1.51.2	3.4
> IMSAM017	17	74.41	98.1	1.13	1.9	0	.0		
		<-----In Use----->		<-----Idle----->		<--Unavailable-->		<Waiting for Input>	
Program		hh.mm.ss	Pct	hh.mm.ss	Pct	hh.mm.ss	Pct	hh.mm.ss.t	
PLOGON		16.19	21.5	59.35	78.5	0	.0	2.43.8	
PMAIL		42.17	55.7	33.14	43.8	23	.5	3.41.6	1008 (001)
PSTOCK		4.41	6.2	1.11.13	93.8	0	.0		
> PSECURE		74.41	98.1	1.13	1.9	0	.0		
		<-----In Use----->		<-----Idle----->		<--Unavailable-->		<Waiting for Input>	
Transact		hh.mm.ss	Pct	hh.mm.ss	Pct	hh.mm.ss	Pct	hh.mm.ss.t	
LOGON		16.19	21.5	59.35	78.5	0	.0	2.43.8	
MAIL		42.17	55.7	33.14	43.8	23	.5	3.41.6	
STOCK		4.41	6.2	1.11.13	93.8	0	.0		
> SECURE		74.41	98.1	1.13	1.9	0	.0		

Transaction SECURE has high Region Occupancy levels in Region 17

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CPU Usage Report

- ◆ Gives statistics for CPU time and elapsed time for Regions, Transactions, and Programs

CPU Usage Report

Region	Jobname	Observ Count	*****CPU Time (msecs)*****			Elapse /CPU Ratio	*****Elapse Time (msecs)*****			Trans /Obs
			Total	Mean	SDev		Total	Mean	SDev	
IMSA	6 IMSAM006	14,124	123,526	23	.29	2.31	256,322	48	.94	1.00
IMSA	12 IMSAM012	12,324	874,526	78	.49	3.54	2,365,322	78	1.52	1.00
IMSA	17 IMSAM017	1,323	157,437	119	1.27	4.19	660,177	499	1.74	1.02

Trancode	Program	Observ Count	*****CPU Time (msecs)*****			Elapse /CPU Ratio	*****Elapse Time (msecs)*****			Trans /Obs
			Total	Mean	SDev		Total	Mean	SDev	
MENU	PMENU	14,124	123,526	23	.29	2.31	256,322	48	.94	1.00
STOCK	PSTOCK	657	299,592	456	1.54	1.21	373,156	568	2.34	1.00
MAIL	PMAIL	12,324	874,526	78	.49	3.54	2,365,322	78	1.52	1.00
SECURE	PSECURE	1,323	157,437	119	1.27	4.19	660,177	499	1.74	1.02

Transaction SECURE has high Elapsed time to CPU time ratio in Region 17

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Internal Resource Usage Reports ...

- ◆ Analyze '45' statistics records to summarize the use of IMS resources and pools

```
/ Message Queue Pool
/ Message Format Buffer Pool
/ OSAM Buffer Pool
/ VSAM Buffer Pool
/ Variable Pools
/ Scheduling Statistics
/ Program Isolation Statistics
- Latch Statistics
- DL/I Call Statistics
- Miscellaneous Statistics
- Storage Statistics
- Fixed Pool Usage Statistics
- Dispatcher/Dynamic SAP Statistics
/ Logical Logger Statistics
/ IRLM System
- IRLM Subsystem (User)
- RACF
```


IRUR: Message Queue Pool Statistics

Internal Resource Usage - IMSA

Message Queue Pool Statistics

Interval : 6.24.20 (HHHH.MM.SS)

	<u>Count</u>	<u>/Transact</u>	<u>/Second</u>
Locate calls from QMGR	593,727	10.52	25.75
Record release calls from QMGR	220,067	3.90	9.54
Locate and alter calls from QMGR	1,022,913	18.12	44.36
Requests to purge the Q pool	7	.00	.00
Address to DRRN translation requests	0	.00	.00
Total requests to QMGR not incl translates	1,836,714	32.54	79.65
Read requests	2,635	.05	.11
Write requests (total)	1,508	.03	.07
Writes done by Purge	103	.00	.00
Writes done for space	1,405	.02	.06
Total I/O requests	4,143	.07	.18
Locate calls satisfied in pool	1,612,600		
Waits for purge to complete	1	.00	.00
Waits because no buffer available	0	.00	.00
Waits for other DECB to read this buffer	30	.00	.00
Waits for other DECB to write this buffer	0	.00	.00
Waits for conflicting ENQ/DEQ buffer requests	0	.00	.00
Total IWAITs	31	.00	.00
Temporary I/O errors	0		
Buffer locked	0		
Buffers unlocked	0		
PCBs unchained from buffers	0	.00	.00
ID of highest dummy record assigned	52		
Calls to queue manager (total)	972,054	17.22	42.15
Calls to reposition a lost buffer	469	.01	.02
Calls to enqueue a message	125,063	2.22	5.42
Calls to dequeue one or more messages	71,400	1.26	3.10
Calls to cancel input or output	24,257	.43	1.05

63.60% of I/O's

2.49% of I/O's

33.91% of I/O's

99.75% of all locate calls

There is a high %age of calls that were satisfied in the Message Queue Pools, so Message Queue I/O should not be a bottleneck

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IRUR: Message Format Buffer Pool Statistics

Internal Resource Usage - IMSA

Message Format Buffer Pool Statistics

Interval: 6.24.20 (HHHH.MM.SS)

	Count	/Transact	/Second	
Prefetch requests	97,226	1.72	4.22	
Times prefetch was ignored	204	.00	.01	
Prefetches and block on immediate fetch queue	24			.02% of P/Fetches
Prefetches and block on free block queue	96,998			99.77% of P/Fetches
Immediate fetch requests	191,991	3.40	8.33	
I/O operations caused by immediate fetch	786	.01	.03	
I/fetches and block on free block queue	190,982			100.00% of I/Fetches
I/fetches and block on i/fetch queue	198			.10% of I/Fetches
Free block requests	191,966			
Times free block requests were ignored	0	.00	.00	
Free block reqs and block on i/fetch queue	191,966			
Requests to compress pool	0			
Times there was no dir entry for block	25			
I/O operations to directory	542	.01	.02	
I/O errors on read or point	0			
Blocks freed for lack of FREs	29	.00	.00	
Immediate I/O requests waited due to maximum I/O	2			
Requests satisfied by index/dynamic directory	269			

found in free block queue

FRE allocation is OK

Required blocks almost always

which minimizes I/O

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IRUR: OSAM Buffer Pool Statistics

Internal Resource Usage - IMSA

Enhanced OSAM Buffer Pool Statistics

Interval : 20.00 (HHH.MM.SS)

	Count	/Transact	/Second	
Subpool ID:	OS4K			
Fix options: Prefix/Buffers	N/N			
Buffer Size	4,096			
Buffer count	20			
Locate-type calls	64,456	7.35	53.71	
Requests to create new blocks	0	.00	.00	
Buffer alter calls	554	.06	.46	
Purge calls	457	.05	.38	
Locate-type calls, data already in pool	57,137	6.51	47.61	88.64% of locate calls
Buffers searched by all locate-type calls	72,957	8.32	60.80	
Read I/O requests	7,317	.83	6.10	93.34% of OSAM I/O operations
Single block writes by buffer steal routine	0	.00	.00	.00% of OSAM I/O operations
Blocks written by purge	522	.06	.43	6.66% of OSAM I/O operations
Total count of OSAM I/O operations	7,839	.89	6.53	
Locate calls waited due to busy ID	0	.00	.00	
Locate calls waited due to busy write	0	.00	.00	
Locate calls waited due to busy read	0	.00	.00	
Buffer steal/purge waited for ownership relea	12	.00	.01	
Buffer steal requests waited for buffers	0	.00	.00	
Total I/O errors for this subpool	0	.00	.00	
Buffers locked due to write errors	0	.00	.00	

High %age of locate calls where data was already in the OSAM Buffer Pool, minimizing I/O

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IRUR: VSAM Buffer Pool Statistics

Internal Resource Usage - IMSA

Enhanced VSAM Buffer Pool Statistics

Interval : 1.08.59 (HHHH.MM.SS)

	Count	/Transact	/Second	
Shared resource pool ID/type	VS8K/D			
Fix option: index/block/data	N/Y/Y			
Buffer size	8,192			
Buffers in Subpool	15			
HS buffers in Subpool	75			
Retrieve by RBA calls	43,821	4.92	10.59	63.08% of retrieve calls
Retrieve by Key calls	25,653	2.88	6.20	36.92% of retrieve calls
Total retrieve calls	69,474	7.81	16.78	
Logical records inserted into ESDS	1	.00	.00	.07% of update requests
Logical records inserted into KSDS	7	.00	.00	.46% of update requests
Logical records altered in this subpool	1,524	.17	.37	99.48% of update requests
Total number of updates	1,532	.17	.37	
Nbr of background write requests	9	.00	.00	.01% of calls to VSAM
Nbr of Synch calls	624	.07	.15	.94% of calls to VSAM
Nbr of VSAM get calls	65,581	7.37	15.84	99.03% of calls to VSAM
Nbr of VSAM search buffer calls	7	.00	.00	.01% of calls to VSAM
Total Nbr of VSAM calls	66,221	7.44	16.00	
Nbr of times VSAM found CI in pool	54,853	6.16	13.25	
Nbr of times VSAM read CI from DASD	10,738	1.21	2.59	94.19% of VSAM I/O operation
Nbr of writes initiated by IMS	606	.07	.15	5.32% of VSAM I/O operation
Nbr of writes initiated by VSAM	56	.01	.01	.49% of VSAM I/O operation
Total VSAM I/O operations	11,400	1.28	2.75	
Nbr of successful VSAM reads from HS	4,218	.47	1.02	
Nbr of successful VSAM writes to HS	14,957	1.68	3.61	
Nbr of failed VSAM reads from HS	0	.00	.00	
Nbr of failed VSAM writes to HS	0	.00	.00	
Nbr of PLH waits	0	.00	.00	

Ratio of CI's found in buffer pool to CI's read from DASD is high, minimizing I/O

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IRUR: Variable (Scheduling) Pool Statistics

Internal Resource Usage - IMSA

Variable Pool Statistics	Interval : 1.08.59 (HHHH.MM.SS)		
	<u>Count</u>	<u>/Transact</u>	<u>/Second</u>
DMB pool statistics (DLDP)			
Bytes in DMB pool	983,040		
Bytes allocated at end of report	517,776		
Maximum bytes ever used	517,776		
PSB pool statistics (DLMP)			
Bytes in PSB pool	819,200		
Bytes allocated at end of report	755,624		
Maximum bytes ever used	811,568		
PSB pool (DLI/SAS local) statistics (DPSB)			
Bytes in PSB pool	2,048,000		
Bytes allocated at end of report	1,997,696		
Maximum bytes ever used	2,042,720		
PSB work pool statistics (PSBW)			
Number of bytes in pool	409,600		
Number of bytes allocated at end of report	85,520		
Maximum bytes ever used	236,440		
DMB work pool statistics (DBWP)			
Number of bytes in pool	20,480		
Number of bytes allocated at end of report	0		
Maximum bytes ever used	12,928		
EPCB pool statistics (EPCB)			
Bytes in EPCB pool	131,072		
Bytes allocated at end of report	65,016		
Maximum bytes ever used	95,976		

All pools were used within their maximum specification

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IRUR: Scheduling Statistics

Internal Resource Usage - IMSA

Scheduling Statistics

	<u>Count</u>	<u>/Transact</u>	<u>/Second</u>	
Program conflicts	0	.00	.00	.00% of all conflicts
Database intent conflicts	734	.08	.61	94.47% of all conflicts
Conflicts for miscellaneous reasons	43	.00	.04	5.53% of all conflicts
SMBs tried for scheduling	8,796	1.00	7.33	
Programs scheduled	8,019	.91	6.68	
Total conflicts	777	.09	.65	8.83% of SMBS tried
Number of active BMPs	5			
Number of active MPPs	5			

Interval : 20.00 (HHMM.SS)

Verify that Pool Space failures are not
the cause of the DB Intent (Internal) conflicts

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IRUR: Program Isolation Enqueue/Dequeue

Internal Resource Usage - IMSA

Program Isolation Enqueue/Dequeue Statistics

Interval : 20.00 (HHH.MM.SS)

	<u>Count</u>	<u>/Transact</u>	<u>/Second</u>
Maximum bytes ever used	630,784		
Calls to search for resource id	111,007	12.66	92.50
Synonyms searched	17,900	2.04	14.92
Maximum synonyms searched for a call	71		

Synonym searches are unavoidable due to the hash table size restriction of 256 slots

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IRUR: IRLM System Statistics

Internal Resource Usage - IMSA

IRLM System Statistics

Interval : 1.10.00 (HHH.MM.SS)

	<u>Count</u>	<u>/Transact</u>	<u>/Second</u>
Total global lock requests	3,449,296	32.81	821.32
Child locks propagated	426,707	4.06	101.60
RH to RH notify requests	1,449		
Lock requests	4,751,651	45.27	1131.41
Unlock requests	3,725,018	35.56	886.92
Change requests	122,377		
Synchronous notify requests	1,459		
Asynchronous notify requests	0		
Deadlock exit counter	34		
Timeout exit counter	98		
Synchronously propagated locks	2,867,675		
Synchronously propagated changes	0		
Synchronously propagated unlocks	2,596,893		
Asynchronously propagated locks	703		
Local resource contentions	2,081	0.03	0.51
Global resource contentions	226	0.00	0.05
Contentions granted OK by IRLM	0		
False contentions	474		
Identify requests	13		
Quit requests	8		
Total local deadlocks	16	0.00	0.00
Total global deadlocks	1	0.00	0.00

Resource Contentions to
Total Lock requests
ratio is low

IMS PA

IRUR: Logger Statistics

Internal Resource Usage - IMSA

Logger Statistics

Interval : 20.00 (HHH.MM.SS)

		<u>Count</u>	<u>/Transact</u>	<u>/Second</u>
Logical Logger:	Records written	212,075	24.18	176.73
	Check write requests	15,400	1.76	12.83
	Waits for writes	20	.00	.02
	Buffer waits: chkpt invokers	8	.00	.01
	Buffer waits: non-chkpt invokers	1	.00	.00
	AWEs submitted on WRT	0	.00	.00
Physical Logger:	WADS EXCPVRs	8,607	.98	7.17
	2K segment writes initiated	24,482	2.79	20.40
	OLDS writes initiated	1,766	.20	1.47
	OLDS reads initiated	2	.00	.00
	Internal checkpoint requests	6	.00	.00
	Accumulative wtwt wait time	2,125	.24	1.77

Non-Checkpoint buffer waits is low,
Log Buffer allocation is OK

Logger requests per transaction
is within normal limits

IMS PA

Database Update Activity Report

- ◆ Provides the count of actual updates made to each database
- ◆ Helps determine the cost of database calls

Data Base Update Activity-IMSA

<u>Database</u>	<u>DDname</u>	<u>Blocks Updated</u>	<u>** Generated Update Counts**</u>			<u>DB Open Calls</u>	<u>**** First Update****</u>		<u>***** Last Update*****</u>	
			<u>Inserts</u>	<u>Deletes</u>	<u>Replaces</u>		<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>
MAIL	MAIL	124,637	123,203	67	9	1	02Aug2000	09.45.25.22	02Aug2000	12.05.53.18
USERS	USERS	34,438	12	0	24,345	1	02Aug2000	09.45.23.21	02Aug2000	12.05.54.12
STOCK	STOCK	12,637	465	367	9,736	1	02Aug2000	09.43.23.21	02Aug2000	12.05.23.12
INVENTORY	INVENTORY	12,637	465	367	9,736	1	02Aug2000	09.54.23.19	02Aug2000	12.04.15.43
EMPLOYEE	EMPLOYEE	1,637	23	0	1,239	1	02Aug2000	10.21.25.43	02Aug2000	12.03.53.87
RESULTS	RESULTS	432,654	225,562	217,756	24,345	1	02Aug2000	11.32.21.54	02Aug2000	12.01.54.26

Look for databases with high update activity

Open count should be low, otherwise DMB Pool shortage may exist

Database Trace Report

- ◆ Shows all database changes by application programs

D A T A B A S E T R A C E

Time when	IMS	PSB	DB	D	DL/I	Reason	Segment	Offset				
HHMMSS.TH	Id	Rq	Name	Name	S	Call	For Entry	Image	Ident	on Blk	Hexadecimal Data Display	Interpreted Data
115846.77							Input					
115846.77	IMSA	65		DELIVER			Pgm Sched					
115847.08	IMSA	65	PDELIV	ORDER	1	REPL			OSAM RBN		000001A9	
							Phys REPL Before	Data		0000AB	C7C5E9D8	*GREG*
							Phys REPL After			0000AB	C8C6E5D3	*JOHN*
											Userid:**JOHN	
115847.23	IMSA	65	PSTOCK	ORDER	1	ISRT	Get Sp Req		OSAM RBN		00004BBE	Offset=070E Length=070A
							Free Sp E After	Data		000000	0E180000	* *
							Free Sp E			000E18	000001E8	* *
											Userid:**JOHN	
115847.37	IMSA	65	PSTOCK	ORDER	1	ISRT	Bitmap Upd		OSAM RBN		00000001	
							Space Mgt-New Blk	Data		00097F	00	* *
											Userid:**JOHN	
115847.49	IMSA	65	PSTOCK	ORDER	1	ISRT			OSAM RBN		00004BBE	
							Phys ISRT After	Data		00070E#	070A8006 020004BB E0048400*A NEW ORDER HAS	
										00071E	879C0988 41534CD5 F1F9F9F3*BEEN PLACED FOR	
										00072E	D5F1F9F9 F340F2F1 61F0F161*A WIDGET	
											Userid:**JOHN	
115847.66	IMSA	65	PDELIV	DELIVER			Pgm Term				00000000	

Database ORDER is updated by Transaction DELIVER

IMS PA

DC Queue Manager Trace Report

- ◆ Shows all DC-related activity during the time period
- ◆ Provides details of DC aspects of individual transactions

Start 24Jun2000 16.07.06.31

DC Queue Manager Trace

Time	IMS	Reason for	DRRN 1st DRRN	Data	Data	Data	Data
When	Term	Id	Entry	Record	This Rec	Data	Data
16070631	LTERM001	IMSA	Input (P)	9S	9S	'CHKORDER ORDER=6445 USER=JANE PRIORITY=FAST'	
			Msg Enq(P)	9S			> Transaction arrives from a terminal in system IMSA (front-end) and is Put onto the Shared Queue
			Free DRRNs	9S			
16070817	LTERM001	IMSB	Input (R)	8S	8S		> Transaction is Read off the Shared Queue by system IMSB (back-end) and is scheduled in Region 30
16070819			Get Unique	8S		/Reg 30/	
16070840	LTERM001	IMSB	Pgm Swi (P)	9S	9S	'PARTINQY PART=5372 CHECK=AVAILABILITY ORDER=6445'	
			Msg Enq(P)	9S	2Q	/Reg 30/QBLOCK Allocated/	
16070845	LTERM001	IMSB	Pgm Swi (R)	8S	8S		> Transaction performs program switch which is also Put onto the Shared Queue and is processed in system IMSB by Region 32
16070847			Get Unique	8S		/Reg 32/	
16070867	LTERM001	IMSB	Output (P)	5L	5L	'Jane, ORDER 6445 for PART 5372 is ready for delivery'	
			Msg Enq(P)	5L	2Q	/Reg 30/Q No 4/QBLOCK Allocated/	> Back-end Puts the output message onto the Shared Queue
16070869	LTERM001	IMSA	Output (R)	2L	2L	'	
			Msg Enq(R)	2L	3Q	/Q No 1/QBLOCK Allocated/	> Front-end Reads the output message from the Shared Queue and sends the response back to the terminal
16190869			Get Unique	2L		/Q No 1/	
16190874			Msg Deq	2L	3Q	/Q No 1/QBLOCK Freed/	
			Free DRRNs	2L			

IMS PA

DL/I Call Statistics Report

- ◆ Shows DB/DC DL/I call counts and CPU time for all transactions

DL/I Call Statistics

<u>Trancode</u>	<u>MsgCnt</u>	<u>** D C C A L L S **</u>				<u>***** D B C A L L S *****</u>							<u>Total</u>		
		<u>GU</u>	<u>GN</u>	<u>ISRT</u>	<u>PURG</u>	<u>GU</u>	<u>GN</u>	<u>GNP</u>	<u>GHU</u>	<u>GHN</u>	<u>GHNP</u>	<u>ISRT</u>		<u>DLET</u>	<u>REPL</u>
DSFFDE1A	59	110	59	177	0	295	0	0	59	0	0	0	0	59	1.3
DSFFDE1B	53	102	53	159	0	265	0	0	53	0	0	0	0	53	1.2
DSFFDE1C	36	65	36	108	0	180	0	0	36	0	0	0	0	36	.8
DSFFDE1D	48	89	48	144	0	240	0	0	48	0	0	0	0	48	1.1
DSFFDE1E	47	88	47	141	0	235	0	0	47	0	0	0	0	47	1.0
DSFFDE1F	52	97	52	156	0	260	0	0	52	0	0	0	0	52	1.2
DSFFDE1G	48	86	48	144	0	240	0	0	48	0	0	0	0	48	1.1
DSFFDE1H	47	91	47	141	0	235	0	0	47	0	0	0	0	47	1.1
.....															
<u>Total</u>	<u>21100</u>	<u>36185</u>	<u>6018</u>	<u>44921</u>	<u>0</u>	<u>114655</u>	<u>70540</u>	<u>295820</u>	<u>24573</u>	<u>0</u>	<u>11473</u>	<u>3809</u>	<u>6097</u>	<u>32237</u>	<u>1,042.0</u>

Transaction Statistics Report

- ◆ Provides a comprehensive analysis of the '07' statistics

IMS Transaction Statistics

Report From: 21Jun2000 11:49:21:67

To: 21Jun2000 13:05:39:18

Elapsed: 1.16.17.503.664

Trancode: STOCK

CPU

Scheduling and DL/I Call Summaries

PI Enqueue Summary

DBCTL

WFI

Summary:	CPU	Sched	Trans	DB Cal	DC Cal	DLI Cal	Enqueues	EnqWts	DB IO Elp	LockElp	DB IO Cnt	SUBQ6 Tim
Totals	442994	8145	8287	404976	31889	21249	173158	262	422345		15	2514545
/Tran	53.5	1.0	1.0	48.9	3.8	2.6	11.7	0.0	51.0		0.0	495748.0
/Sched	54.4	1.0	1.0	49.7	3.9	2.6	12.7	0.0	51.9		0.0	1478.3
/Min	5806.6	106.8	108.6	5308.3	418.0	278.5	5341.7	8.1	5535.9		0.2	19289.3
%Totl	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		100.00%	100.00%

DB Calls:	GU	GN	GNP	GHU	GHN	GHNP	ISRT	DLET	REPL	DEQ	Total		
Totals	148257	224873	5076	11641	68	130	4967	339	9625		404976		
/Tran	17.9	27.1	0.6	1.4	0.0	0.0	0.6	0.0	1.2		48.9		
% DLI	32.36%	49.09%	1.11%	2.54%	0.01%	0.03%	1.08%	0.07%	2.10%		88.40%		
DC Calls:	GU	GN	ISRT	PURG									
Totals	15576	3331	11356	1626									
/Tran	1.9	0.4	1.4	0.2									
% DLI	3.40%	0.73%	2.48%	0.35%									
DLI Call:	CMD	GCMD	CHNG	AUTH	SETO	APSB	DPSB	GMSG	ICMD	RCMD	.	.	.
DLI Call:	CHKP	XRST	ROLB	ROLS	SETS	SETU	INIT	INQY	LOG		.	.	.

DL/I Call
Details

Enq/Deq:	TestEnq	TEnqWts	TestDeq	QCmdEnq	QCmdWts	QCmdDeq	UpdatEnq	UEnqWts	UpdatDeq	ExcluEnq	XEnqWts	ExcluDeq
Totals	14931	4					155358	258	82492	2869		8
/Tran	1.0	0.0					10.5	0.0	5.6	0.2		0.0
% DB	4.25%	0.00%					44.27%	0.07%	23.51%	0.82%		0.00%

PI Enqueue/Dequeue Details

IMS PA

Checkpointed IMS Resource Definitions Report

◆ Details all databases, transactions, and terminals defined to IMS

DATABASE DEFINITIONS

<u>DATABASE</u>	<u>RES</u>	<u>INDEX</u>	<u>DATABASE</u>	<u>RES</u>	<u>INDEX</u>	<u>DATABASE</u>	<u>RES</u>	<u>INDEX</u>	<u>DATABASE</u>	<u>RES</u>	<u>INDEX</u>	<u>DATABASE</u>	<u>RES</u>	<u>INDEX</u>	<u>DATABASE</u>	<u>RES</u>	<u>INDEX</u>
DBD01A	RES		DBD01B			DBD01C			DBD01D			DBD01E			DBD01F		
DBD02A			DBD02AI		INDEX	DBD02C			DBD02D			DBD02E			DBD02EI		INDEX

TRANSACTION DEFINITIONS

<u>TRANCODE</u>	<u>PROGRAM</u>	<u>T</u>	<u>TYP</u>	<u>MODE</u>	<u>CLS</u>	<u>NRM</u>	<u>LIM</u>	<u>LIMCT</u>	<u>COUNT</u>	<u>CPU</u>	<u>SIZE</u>	<u>TF</u>	<u>LIMIT</u>	<u>RGN</u>	<u>OPTIONS</u>	
B001	PB001	1	BMP	SNGL	15	0	0	65535	5	4			65535	0	WFI	
C001	PC001	1	MPP	SNGL	1	4	4	65535	3	60						REMOTE
C002	PC002	1	MPP	SNGL	1	4	4	65535	1000	5					NONR WFI INQ	REMOTE
C003	PC003	1	MPP	SNGL	5	12	14	5	65535	65535			1	5	RESP NONR INQ	RESIDENT

SORTED IN LTERM SEQUENCE

<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>
LTM00004	PTM00004	LTM00005	PTM00005	LTM00006	PTM00006	LTM00007	PTM00007	LTM00008	PTM00008		

SORTED IN PTERM SEQUENCE

<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>	<u>VTAMNODE/</u> <u>LINE TRM</u>	<u>LTERM</u>
PTM00001	LTM00001	PTM00002	LTM00002	PTM00003	LTM00003	PTM00004	LTM00004	PTM00005	LTM00005

MISC DEFINITIONS

MISCELLANEOUS DEFINITIONS
CPLOG 92

IMS PA

Sample Log Reports (Fast Path)

- * Fast Path (EMH) Transit Analysis
- * Fast Path (EMH) Transit Log
- * Fast Path (EMH) Transaction Exception
- * Fast Path Resource Usage and Contention
- * IFP Region Occupancy
- * DEDB Update Activity
- * DEDB Update Trace
- * VSO Statistics

Fast Path (EMH) Transit Analysis Report

- ◆ Shows response time performance of Fast Path transactions

Fast Path (EMH) Transit Time Analysis By Transaction Code

From 10Jun2000 19.01.37.44 To 10Jun2000 19.03.43.47 Elapsed= 0 Hrs 2 Mins 06.029.096 Secs

Transact Code	Routing Code	Resp Count	Min --Average Transit Time--				--90% Peak Transit Time--			Max Tran Time	--- Shared EMHQ Time ---						
			Tran Time	Input Queue	Pgm Exec	Outpt Queue	Input Queue	Pgm Exec	Outpt Queue		Global Count	Average Input	Output	90% Input	Peak Output		
BILLING	BILLING	2904	34	75	20	49	144	171	46	113	330	1330	2904	27	9	63	20
ORDER	ORDER	18381	14	222	0	48	271	508	1	110	619	1757	8381	177	7	403	16
PARTS	PARTS	7128	21	64	5	46	115	145	12	105	262	1316	7128	17	7	39	17
STOCK	STOCK	280	40	59	0	54	113	134	1	123	258	343	280	12	6	27	14

Long input queue times may mean not enough IFP regions available to process this transaction

Fast Path (EMH) Transit Log Report

- ◆ Shows transit activity for each Fast Path transaction
- ◆ To diagnose individual transactions causing problems

Fast Path (EMH) Transaction Transit Log

Log 10Jun2000 19.01.37.44

Report 14.50 21Jun2000

<u>Sync Point</u>	<u>Transact</u>	<u>Routing</u>	<u>Logical</u>	<u>User</u>	<u>--Proc-- -DB Call-</u>				<u>----- Transit Time -----</u>			<u>----- Output -----</u>		<u>Total</u>	<u>-SEMHQ</u>	<u>Time-</u>
<u>Time</u>	<u>Code</u>	<u>Code</u>	<u>Terminal</u>	<u>ID</u>	<u>IMID</u>	<u>PST</u>	<u>DEDB</u>	<u>MSDB</u>	<u>In-Q</u>	<u>Proc</u>	<u>Out-Q</u>	<u>Total</u>	<u>Time</u>	<u>Time</u>	<u>Input</u>	<u>Outpt</u>
19.01.37.45	BILLING	BILLING	TCP00012	JANE	IMSB	2	27	0	76	132	43	251	1563	1814	74	12
19.01.37.46	ORDER	ORDER	TCP00007	JOE	IMSB	5	15	0	387	112	41	240	986	1526	277	11
19.01.37.47	PARTS	PARTS	TCP00021	FRANK	IMSA	9	12	0	54	98	47	303	1541	1844	47	13
19.01.37.48	STOCK	STOCK	TCP00004	JIM	IMSA	6	41	0	63	154	39	256	1978	2234	61	10

Transaction ORDER
scheduling problem

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FP (EMH) Transaction Exception Report ...1/2

- ◆ Shows transit activity for each Fast Path transaction
- ◆ To diagnose individual FP transactions causing problems
- ◆ Provides DBFULTA0 reporting and extract capability

Fast Path (EMH) Transaction Exception Log

Log 10Jun2000 19.01.37.44

Report 14.50 21Jun2000

Sync Point Time	S F	Trans Code	Routing Code	P T	User ID	PST ID	Queue Count	-Transit Times (Msec)-				Output (sec)	-DB DEDB	Call- MSDB	--ADS-- Get	--VSO-- Put	Buf Use	--DB Wait-- CI	UW	OB	CB		
19.01.37.45		ORDER	ORDER		Jane	2	7	76	132	43	251	1.56	146	0	57	14	7	2	1	5	2	0	0

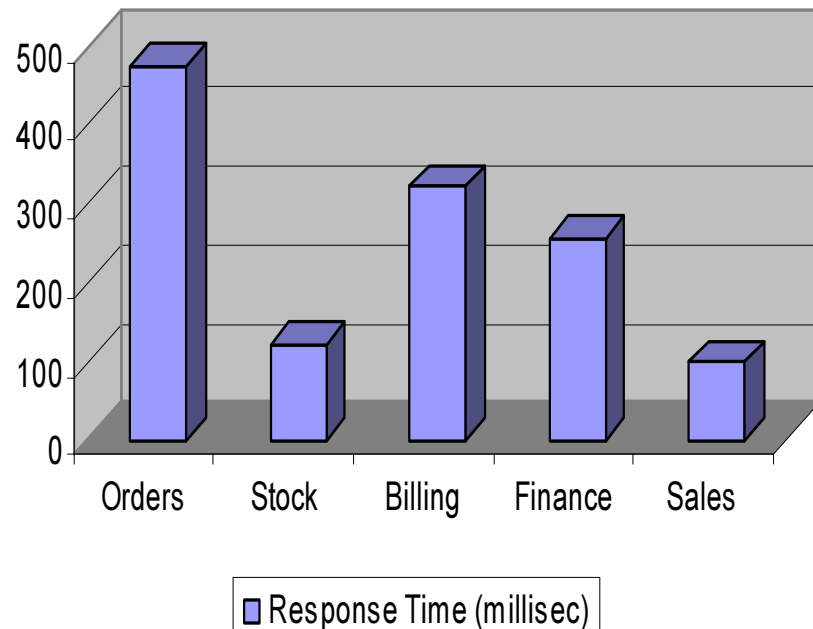
DEDB Calls - GU= 12 GN= 32 GNP= 0 GHU= 57 GHN= 32 GHNP= 0 REPL= 6 ISRT= 2 DLET= 5 FLD= 0 POS= 0 TOTAL=146
 Buffer - NBA= 2 OVFN= 0 STEAL= 0 WAIT= 0 OTHR= 0 NRDB= 0 PBUF= 0 PBWT= 0 ASIO= 0 AIOW= 0
 VSO - VGET= 7 VPUT= 2 DGET= 0
 Shared EMHQ - IMSG Transit= 74 (Msec) OMSG Transit= 12 (Msec) Org IMS ID=IMSB Proc IMSZ ID=IMSA

IMS PA

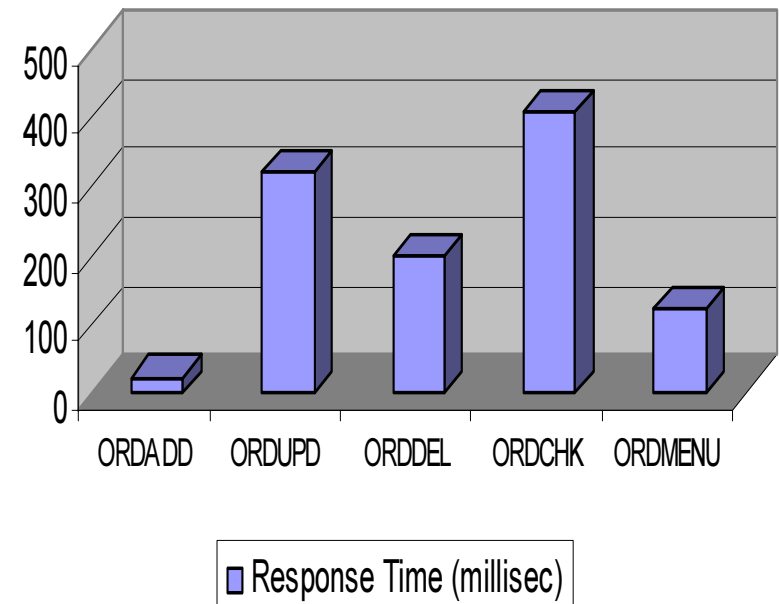
FP (EMH) Transaction Exception Report ...2/2

- ◆ Can produce Total Traffic and Exception Traffic extracts
- ◆ Extracts can be processed directly by PC tools

Average response time for each application during peak period



Average response time for Orders transactions during peak period



IMS PA

Fast Path Resource Usage & Contention Report

- ◆ Shows DEDB usage and contention by transaction code

Fast Path Resource Usage and Contention - IMSA

From 10Jun2000 19.01.37.44 To 10Jun2000 19.03.43.47 Elapsed= 0 Hrs 2 Mins 06.029.096 Secs

Trans Code	Routing Code	Count	---DEDB Calls---				--- ADS I/O ---				--VSO Activity--				-Common Buffer- Usage				Contentions			LGNR	Stat #CI	Totl Sync	Tran Rate /Sec
			Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Wts	Stl	UOW	OBA	Sec				
BILL	BILL	2904	12	16	3	3	2	2	2	2	1	5	2	2	1	1	0	0	23	5	17	1	4	0	23
ORDER	ORDER	18381	6	8	2	3	1	1	1	1	1	1	1	1	1	1	0	0	154	7	13	1	8	0	145
PARTS	PARTS	7128	37	39	16	18	4	6	7	11	7	12	16	22	2	2	1	1	79	2	18	1	2	0	56
STOCK	STOCK	280	5	5	4	4	1	2	2	3	2	4	3	3	1	1	0	0	12	14	22	1	1	0	2

IFP Region Occupancy Report

- ◆ Shows how busy each IFP region is

Fast Path (IFP) Region Occupancy

From 10Jun2000 19.01.37.44 To 10Jun2000 19.03.43.47 Elapsed= 0 Hrs 2 Mins 06.029.096 Secs

-Region-		Program	Tran	<- Processing ->		<---- Idle ---->		<- Not Active ->	
IMID	PST	Name	Count	HH.MM.SS	Pct	HH.MM.SS	Pct	HH.MM.SS	Pct
IMSA	2	COST	18381	2.01	96.0	35	0.9	1.09	3.1
IMSA	6	PARTS	2904	0.43	37.2	1.33	62.8	45	1.3
IMSB	5	STOCK	280	1	0.1	2.05	99.9	22	0.6
IMSB	9	VEHICLE	7128	1.08	58.2	58	41.8	1.25	3.9

High occupancy

Low occupancy

IMS PA

DEDDB Update Activity Report

- ◆ Shows the rate of processing against each DEDDB database
- ◆ Helps determine the cost of DEDDB database calls

DEDDB Update Activity - IMSA

From 14Aug2000 8.54.43.80 To 14Aug2000 8.54.46.00 Elapsed= 0 Hrs 0 Mins 2.201.638 Secs

Database Name	Area Name	Root/DDEP Update	SDEP Insert	ADS Open	New Updates EQE	Updates /sec	--- First Update Date	--- Last Update Time	--- Last Update Date	--- Last Update Time
ACCOUNTS	ACCOUNTS	9	12	0	0	16.2	14Aug2000	8.54.44.57	14Aug2000	8.54.45.86
CLIENTS	CLIENTA1	6	6	0	0	6.1	14Aug2000	8.54.43.86	14Aug2000	8.54.45.80
	CLIENTA2	2	2	0	0	6.8	14Aug2000	8.54.44.62	14Aug2000	8.54.45.21
CLIENTS	*Total*	8	8	0	0	8.2	14Aug2000	8.54.43.86	14Aug2000	8.54.45.80
FINANCE	FINANCE	103	0	1	0	49.9	14Aug2000	8.54.43.94	14Aug2000	8.54.46.00
ORDERS	ORDERS	27	74	0	0	48.9	14Aug2000	8.54.43.94	14Aug2000	8.54.46.00
STOCK	STOCKA1	1	21	0	0	22.0	14Aug2000	8.54.45.39	14Aug2000	8.54.45.39
	STOCKA2	2	43	0	0	154.1	14Aug2000	8.54.44.69	14Aug2000	8.54.45.21
	STOCKA3	2	46	0	0	78.9	14Aug2000	8.54.45.35	14Aug2000	8.54.45.96
	STOCKA4	1	22	0	0	23.0	14Aug2000	8.54.45.43	14Aug2000	8.54.45.43
STOCK	*Total*	6	132	0	0	160.5	14Aug2000	8.54.44.69	14Aug2000	8.54.45.96
System Totals		4804	721	1	0	2509.4	14Aug2000	8.54.43.80	14Aug2000	8.54.46.00

Updates/sec can highlight the busiest Area data sets

IMS PA

DEDB Update Trace Report

- ◆ Shows all DEDB changes by application programs

DEDB Update Trace

Log 15Aug2000 8.54.43.80

<u>Time</u>	<u>Database Name</u>	<u>Area Name</u>	<u>-Region- IMID</u>	<u>PST</u>	<u>Program Name</u>	<u>User ID</u>	<u>Type</u>	<u>RBA of 1st byte</u>	<u>Hexadecimal Data Display</u>			<u>Interpreted Data</u>	
8:54:43.80	ORDERS	ORDERS					OPEN						
8:54:43.81	ORDERS	ORDERS	IMSA	46	ORDER	JANE	SDEP	08B14000	02000000	014E08A5	A8CA00B9	99105C00	Order number 001
									8544363C	C2C1D7F9	F1F24040	F5000F5C	e***BAP912 5***
	ORDERS	ORDERS	IMSA	46	ORDER	JANE	DDEP	007BC000	01820000	00000000	014E08B1	4BF3	*b*****+*.3
	PARTS	PARTSA1	IMSA	46	ORDER	JANE	DDEP	195E5000	00000CF7	F1F8F000	331F000C	083C7BDC	***7180*****##
									40D70041	599C0000	13185CF2	F1F3F7F2	P*****21372
8:54:43.81			IMSA	46	ORDER	JANE	SYNC		TranCode=ART012				

Transaction Log records are grouped because they are written at Syncpoint

IMS PA

VSO Statistics Report

- ◆ Shows VSO activity for each DEDB area
- ◆ Provides castout statistics (IMS V7)

VSO Activity Summary: SHARELVL 0/1 - IMSA

From 10Jun2000 19.01.37.44 To 10Jun2000 19.03.43.47 Elapsed= 0 Hrs 2 Mins 06.029.096 Secs

Database	Area	--IMS from/to VSO DS--		-----VSO DS from/to DASD-----			I/O	I/O Elapsed
Name	Name	Gets	Puts	Gets	Puts	Castouts	Scheduled	HH:MM:SS:TH
STOCK	STOCKA1	12657	9563	827	738	1	628	12:33
	STOCKA2	15684	11573	1353	813	1	793	32:56

VSO Activity Summary: SHARELVL 2/3 - IMSA

From 10Jun2000 19.01.37.44 To 10Jun2000 19.03.43.47 Elapsed= 0 Hrs 2 Mins 06.029.096 Secs

Database	Area	--IMS from/to CF--		---- CF from/to DASD ---		----- Lookaside-Pool Buffer -----					
Name	Name	Gets	Puts	Gets	Puts	Castouts	Searches	Hits	Pct	Hit Valid	Pct
ITEMS	ITEMA1	13476	10635	425	274	1	10213	8563	87.2	6528	63.7
	ITEMA2	14846	11934	681	436	1	10865	7834	74.2	5891	54.2

Look for high ratio of
VSO to DASD Gets

High Lookaside
success rate

IMS PA

DBCTL Reports

Log Reports that apply to DBCTL are:

- * Transaction Statistics
- * Resource Availability
- * CPU Usage
- * Internal Resource Usage
- * Database Update Activity
- * FP Resource Usage and Contention
- * FP Database Call Statistics
- * DEDB Update Activity
- * DEDB Update Trace
- * VSO Statistics

IMS PA Monitor Reports also provide comprehensive DBCTL reporting

Monitor Reporting

- ◆ Summary and Detail reporting
 - ◆ Region
 - ◆ Program
 - ◆ Transaction
 - ◆ Resource
- ◆ Comprehensive IWAIT Analysis
 - ◆ Database
 - ◆ System
- ◆ Reporting on all new IMS V7 monitor records
- ◆ Similar functionality to DFSUTR20 / 30
- ◆ External Subsystem Call statistics
- ◆ Monitor Record Trace

Monitor Reports

...1/2

Region Activity Summary

- Schedule/Transaction
- Region
- Program (PSB)
- Database IWAIT

Region Activity Analysis

- Region Analysis
- Application Detail
- Database IWAIT Analysis
- Performance Exceptions
- Enqueue/Dequeue Trace
- Region Histogram

System Analysis

- Total System IWAIT

Program Analysis

- Program Activity Detail
- Program Trace
- Batch VSAM Statistics



**IMS V7 FP
included**

IMS PA

Monitor Reports

...2/2



Fast Path Analysis

- DEDB Resource Contention
- FP Buffer Statistics
- BALG/Shared EMHQ
- OTHREAD Analysis
- VSO Summary

Monitor Data Analysis

- Monitor Record Trace

Resource Usage

- Buffer Pool and Latch Statistics
- Communication
- MSC
- ESAF

IMS PA

IMS PA 3.1

with IMS V7 support

Product Number 5655-E15

