

IMPROVE EFFICIENCY AND RESPONSIVENESS OF IMS/DB AND IMS/DC APPLICATIONS

Compuware Strobe *for IMS* enables IT professionals to improve the efficiency and responsiveness of their z/OS-based applications that use IMS.

Strobe *for IMS* enables IT professionals to measure, analyze and improve the performance of IMS applications by supplying supplemental Performance Profile reports on IMS modules, database calls and application activity in online and batch message processing regions, fast path regions, local DL/I jobs, DL/I database regions and IMS control regions.

Strobe *for IMS*:

- highlights DL/I calls that are using excessive CPU time or causing excessive wait time in both batch and online applications
- identifies transaction components that use excessive CPU time or cause poor response time
- provides detailed characteristics and statistics on IMS databases responsible for excessive wait time
- identifies resource-consuming IMS system services.

Using this information, application developers, performance analysts and other IT professionals can reduce batch runtimes, improve transaction response times, increase transaction throughput and consistently meet service-level commitments.

A COMPREHENSIVE VIEW OF APPLICATION PERFORMANCE

Because Compuware Strobe and Strobe *for IMS* measure and report on many sources of resource consumption during an application's execution, users can locate sources of inefficiency quickly and easily. Information from Strobe *for IMS* is fully integrated with performance data from other Strobe products, such as Compuware Strobe *for WebSphere MQ*, in a single Performance Profile, giving users a comprehensive view of application performance.

IMPROVE APPLICATION EFFICIENCY AND RESPONSIVENESS

By pinpointing causes of excessive CPU consumption and wait time, Strobe *for IMS* takes the guesswork out of application performance improvement in the IMS environment. Detailed Performance Profile reports make it easy to remedy sources of inefficiency.

Profiles		Reports		Options		Help	
DB2/IMS-SAMPLE: Activity by DL/I Request							
						Expand all	Collapse all
						Find	Print
						CPU %	
						Wait %	
						Solo	Total
						Page	Total
Totals						0.69	0.69
						0.00	0.00
Transaction	Module	Section	PSB	Solo	Total	Page	Total
▼ DSN8CS	IEAVCVT		DSN8IC0	0.69	0.69	0.00	0.00
Function activity				Call parameters			
Line number	Proc name	Request location	DL/I function	PCB type	PCB name/label	Resource name	Solo
		0000008E	ISRT	I/O	IOPCB		Total
							Page
							Total
							0.69
							0.69
							0.00
							0.00

Figure 1: The Performance Profile includes hierarchical reports on CPU usage by DL/I call.

IMPROVE RESOURCE-CONSUMPTIVE DL/I CALLS

In an IMS environment, DL/I calls are often the source of shrinking batch windows or slow online transaction response times. The Performance Profile highlights DL/I calls that are using excessive CPU time or causing excessive wait time in both batch-processing applications and IMS/DC and CICS online applications. Reports show the percentage of CPU time and wait time for which each DL/I call is responsible. They also identify PSBs, PCBs, DL/I function and SSA data. Using this information, IT professionals can improve resource-consumptive calls to achieve greater application efficiency and responsiveness.

IMPROVE RESOURCE-CONSUMPTIVE IMS/DC TRANSACTIONS

Frequently, inefficient IMS transactions are the cause of slow response times. By analyzing the Performance Profile, users can quickly identify which transactions executing in IMS message processing, fast path and control regions are responsible for excessive CPU consumption or poor response times. For each transaction, summary reports show transaction counts, average service time and the percentage of CPU time the transaction consumes. This means users can differentiate between infrequent transactions that use significant resources and frequent transactions that use minimal resources. They can also evaluate response time for transactions.

In addition, *Strobe for IMS* lets users drill down to CPU consumption measurements for specific transaction components — such as user code, IMS or other system services and language runtime routines. With these reports, they can easily target specific resource-consumptive components for performance improvement.

AVOID INEFFICIENT USE OF IMS SYSTEM SERVICES

System service routines that consume a disproportionate amount of CPU time can often be avoided. Performance Profile reports show which program statements are calling resource-consumptive IMS system services. By describing the function each executed module performs, these reports help users gauge the impact of compile and runtime options. They also aid in determining how coding decisions affect the use of these modules.

IMPROVE I/O EFFICIENCY

Inefficient file and database access is a primary cause of application delays. By analyzing the Performance Profile, users can identify which IMS databases are responsible for excessive wait time. Reports on these databases show data set characteristics and I/O statistics, including physical I/O operations, logical VSAM I/O operations, LSR pool statistics, buffers and strings. This detailed information helps users determine what changes they can make to improve application efficiency.

A SIMPLE WAY TO MEASURE AND ANALYZE THE PERFORMANCE OF APPLICATIONS USING IMS

Using *Strobe for IMS* could not be simpler. Measurement sessions do not require recompilation, relinking or changes to application JCL. With their low-density sampling technology, *Strobe* and *Strobe for IMS* can be used with confidence in both test and production environments.

Profiles		Reports		Options		Help	
DB2/IMS-SAMPLE: Program CPU Usage							
Expand all Collapse all Find Print							
				CPU %			
				Attrib	Comb	Solo	Total
Totals				0.00	100.00	100.00	100.00
Pseudo-module	Description			Attrib	Comb	Solo	Total
SYSTEM	SYSTEM SERVICES			0.00	100.00	100.00	100.00
Pseudo-section	Description			Attrib	Comb	Solo	Total
.COMMON	COMMON AREA			0.00	1.66	1.66	1.66
.DB2	DB2 SYSTEM SERVICES			0.00	61.46	61.46	61.46
.IEF	ALLOCATE/UNALLOCATE			0.00	0.14	0.14	0.14
IMS	IMS SYSTEM SERVICES			0.00	22.94	22.94	22.94
Module	RMODE	Description	Interval	Attrib	Comb	Solo	Total
DFSCLM10		DC-BUILD AND ROUTE MSGS	2696	0.00	0.14	0.14	0.14
DFSCPY00		DC-CTL INTERREG COMM	8568	0.00	0.14	0.14	0.14
DFSDLA00		DB-CALL ANALYZER	25152	0.00	0.14	0.14	0.14
DFSDSPX0		DISPATCHER CROSS MEMORY	2112	0.00	0.14	0.14	0.14

Figure 2: Performance Profile reports show the percentage of CPU time consumed by each IMS system service.

DB2/IMS-SAMPLE: Attribution of CPU Wait

Pseudo-module	Module
.DB2	DSNVSR
.SVC	SVC 006
.SVC	SVC 214

Was invoked by

Transaction	Module	Section	Return
.IMS	.IMS	DFSISI00	
DSN8CS	.IMS	DFSISI00	
DSN8CS	.NUCLEUS	IEAVCVT	

DFSISI00

DFSISI00, the IMS Subsystem Interface, has two different functions: it provides MVS Subsystem Interface (SSI) support and it is also the online program request handler when DFSPR000 is in batch.

As an MVS subsystem, IMS is informed by MVS of various events. Examples include MVS commands, such as CANCEL JOB xxx, which DFSISI00 will nullify if xxx is an IMS dependent region. Another example is task abnormal terminations, which will cause DFSISI00 to invoke IMS backout if the failing job is an IMS dependent region. DFSISI00 also processes subsystem requests from IMS dependent regions such as Identify, Sign On, and Create Thread, which establish the communication between the dependent region and the IMS control region.

Upon return from whichever path processed the call, DFSISI00 calls DFSECPxx for a second pass, invokes the Data Capture Exit routine if required, and then returns directly to the application program.

Hints

The resources DFSISI00 uses are only partly influenced by IMS and its application programs. The subsystem interface routines are driven by MVS events. The busier the MVS system, the more work DFSISI00 will have to do.

From an IMS point of view, DFSISI00 is driven by call volume. There is slightly more overhead for the AIB interface than the standard interface. The AIB interface should only be used where it is not possible to use the standard interface, as in a Data Capture Exit routine.

Reference Sources

Figure 3: This report reveals which statement invoked these system service routines. Selecting an underlined section calls the iStrobe performance hints and tips, which provide more in-depth information on that section and how to improve application performance. Additional reports would reveal which statement invoked these system service routines.

ANALYZE AND SHARE COMPREHENSIVE INFORMATION

iStrobe makes it easy for application developers and IT professionals to view and analyze Strobe performance information using a standard Internet browser. Users can quickly and conveniently identify and resolve performance inefficiencies in IMS applications. Flexible navigation walks the user through Strobe reports and the application performance analysis process. The iStrobe Help Database guides the user in making IMS application performance improvements.

APM PROBLEM SOLVER SERVICE

The APM Problem Solver service assists in identifying and resolving specific performance problems in mainframe-centric, business-critical applications.

Using Compuware's industry-leading products, experienced Compuware Delivery Consultants work closely with your IT personnel to measure an application's performance, identify performance improvement opportunities and make recommendations for implementing solutions.

With the APM Problem Solver services, organizations not only resolve problems quickly and effectively, but they gain the skills necessary to prevent future application performance degradation.

Compuware's Delivery Consultants are experts in managing APM projects. They have the latest knowledge of APM methodology and technologies and average 10 or more years' experience in OS/390 and z/OS application or system programming, database administration and/or application performance tuning.

To learn more about Compuware Strobe, visit:

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- iStrobe
- AutoStrobe

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