

IMPROVE THE PERFORMANCE OF Z/OS-BASED UNIX SYSTEM SERVICES APPLICATIONS

Compuware Strobe for UNIX System Services helps IT organizations deliver efficient and responsive z/OS-based UNIX System Services (z/OS USS) applications, including those using WebSphere, and maintain high performance standards.

Strobe for UNIX System Services helps IT organizations improve application performance by:

- pinpointing user program statements that cause excessive CPU time
- identifying program statements that call resource-consuming z/OS USS modules and Language Environment (LE) runtime routines
- detecting the inefficient use of Hierarchical File System (HFS), z/OS Distributed File Service (zFS) and Network File System (NFS) files.

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

A COMPREHENSIVE VIEW OF APPLICATION PERFORMANCE

In conjunction with Compuware Strobe and its other Strobe products, such as Strobe for Java™ and Strobe for C, Strobe for UNIX System Services measures the activity of z/OS USS applications and produces the Performance Profile, a series of hierarchical reports that details how and where time is spent during an application's execution.

With a single Performance Profile, users quickly gain a comprehensive understanding of performance for internally developed applications as well as third-party packages.

Profiles	Reports	Options	Help					
	CRAWIN	C/C++ DLL MODULE		0.00	2.14	0.00	2.14	
	Pseudo-section	Description		Attrib	Comb	Solo	Total	
▶	.FSU	OS/390 SHELL UTILITIES		0.00	0.30	0.00	0.30	
▶	.ISG	GRS		0.00	0.31	0.00	0.31	
▶	.LELIB	LE/370 LIBRARY SUBROUTNE		0.00	54.03	0.00	54.03	
	.NUCLEUS	MVS NUCLEUS		0.00	0.16	0.00	0.16	
▶	.PRIVATE	PRIVATE AREA		0.00	2.99	0.00	2.99	
▶	.SMS	SYSTEM MANAGER STORAGE		0.00	1.68	0.00	1.68	
▶	.SVC	SUPERVISOR CONTROL		0.00	0.15	0.00	0.15	
▼	.USS	UNIX SYSTEM SERVICES		0.00	2.77	0.00	2.77	
	Module	RMODE	Description	Interval	Attrib	Comb	Solo	Total
	BOPJCST			6380	0.00	0.23	0.00	0.23
▼	BPXINPVT		VECT TBL PRIVAT AREA MOD	46	0.00	2.54	0.00	2.54
	Section	Language	Description	Attrib	Comb	Solo	Total	
	BPXFSRDW		FS READ/WRT SYSCALL	0.00	1.15	0.00	1.15	
	BPXFVNL		VFS/VNODE LAYER	0.00	1.23	0.00	1.23	

Figure 1: Performance Profile reports identify USS system routines using resources. The attribution reports detail the application routine invoking the service.

IMPROVE APPLICATION EFFICIENCY AND RESPONSIVENESS

With *Strobe for UNIX System Services*, IT professionals can improve the performance of user-written programs and third-party applications.

IMPROVE RESOURCE-CONSUMPTIVE USER PROGRAMS

Identifying a single line of inefficient user code can be a challenging and time-consuming task. Performance Profile reports eliminate the guesswork and pinpoint the user program statements that use excessive CPU time within z/OS USS applications. Reports show the CPU time consumed by modules and CSECTs and display procedure names and statement numbers.

DETECT INEFFICIENT USE OF Z/OS USS AND LE RUNTIME ROUTINES

With *Strobe for UNIX System Services*, users can avoid the inefficient use of z/OS USS modules and LE runtime routines. Performance Profile reports identify the individual program statements that call resource-consumptive z/OS USS and LE modules and supply function descriptors to aid in analysis.

IMPROVE I/O EFFICIENCY

Strobe for UNIX System Services identifies the HFS, zFS and NFS files that cause an application to wait. Performance Profile reports highlight files with high physical I/Os (EXCPs), and show detailed data set characteristics and access statistics. This information helps users determine what changes they can make to improve I/O efficiency.

Profiles		Reports		Options		Help						
DDNAME	Access method	Record size	Block/CI size	Buffers	LSR Pool	Hiper buffers	RPL string limit	CI splits	CA splits	EXCP count		
▶ .HFS0001	HFS		4,096									
/usr/lpp/cicsts/JAVA131S/J1.3/bin/jvmtcf												
▶ .HFS0002	HFS		4,096									
/usr/lpp/cicsts/JAVA131S/J1.3/bin/libjava.so												
▶ .HFS0003	HFS		4,096									
/usr/lpp/cicsts/JAVA131S/J1.3/bin/libzip.so												
▶ .HFS0004	HFS		4,096									
/usr/lpp/cicsts/JAVA131S/J1.3/bin/libzip.so												
▼ .HFS0005	HFS		4,096							1,503		
/usr/lpp/cicsts/JAVA131S/J1.3/lib/rt.jar												
File Type: HFS - REGFILE						File System Type: HFS						
INode			00001042			I/O Blocks		Bytes				
Device number			00000020			Read		1503		Read		1481094
File size			7865408			Written		0		Written		0

Figure 2: Performance Profile reports identify HFS, zFS and NFS files with high physical I/Os and supply detailed information on file characteristics.

Profiles		Reports		Options		Help					
Pseudo-module		Description				Attrib	Comb	Solo	Total		
▶ .SYSTEM		SYSTEM SERVICES				0.00	11.50	0.00	11.50		
▼ .USER		USER CODE				6.45	90.52	0.00	84.07		
Module		RMODE	Description		Interval	Attrib	Comb	Solo	Total		
▶ /u/b-dl1		SPLIT			219871	1.79	34.21	0.00	32.42		
▶ /u/b-dl2		SPLIT			3015928	3.66	17.35	0.00	13.69		
▼ /u/b-dl3		ANY			2244808	0.18	13.68	0.00	13.50		
Section		Language	Description		Attrib	Comb	Solo	Total			
bk_I-545					0.00	0.14	0.00	0.14			
bk_I-549					0.00	0.31	0.00	0.31			
bk_I-553					0.00	0.20	0.00	0.20			
bk_I-f28					0.00	0.11	0.00	0.11			
▼ bk_I-m39					0.18	9.91	0.00	9.73			
Li	bk_libs/util/ctx_#ctxmem#C			Starting location	Interval	Attrib	Comb	Solo	Total		
number	some text			00001396	2	0.00	0.10	0.00	0.10		
				000013D4	2	0.00	0.10	0.00	0.10		
				000015E0	2	0.00	0.14	0.00	0.14		
				000037D4	2	0.00	1.01	0.00	1.01		
				00003B40	2	0.00	0.20	0.00	0.20		

Figure 3: This example report shows processing by offset in a C function running under USS.

A SIMPLE WAY TO MEASURE APPLICATION PERFORMANCE

Through the Strobe ISPF interface, users can easily select active processes (including child processes) they wish to measure. Or they can defer a measurement session request for job steps that haven't begun to execute. No JCL changes, recompiles or relinks are necessary. Performance data is automatically captured and reported for user programs: z/OS USS modules; LE runtime routines; and HFS, zFS and NFS files. Because of its low-density sampling technology, Strobe can be used with confidence in both production and test environments.

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:

www.compuware.com/strobe

APM PRODUCTS

Z/OS OPERATING ENVIRONMENT

- Strobe
- iStrobe
- AutoStrobe

SUBSYSTEM AND DATABASE ENVIRONMENTS

- Strobe *for CICS*
- Strobe *for DB2*
- Strobe *for IMS*
- Strobe *for WebSphere MQ*
- Strobe *for WebSphere Application Server*
- Strobe *for CA-IDMS*
- Strobe *for ADABAS/NATURAL*
- Strobe *for UNIX System Services*

LANGUAGES

- Strobe *for Java™*
- Strobe *for COBOL*
- Strobe *for C/C++*
- Strobe *for PL/I*
- Strobe *for FORTRAN*
- Strobe *for CA-Optimizer*
- Strobe *for CA Gen*

Compuware Corporation, the technology performance company, provides software, experts and best practices to ensure technology works well and delivers value. Compuware solutions make the world's most important technologies perform at their best for leading organizations worldwide, including 46 of the top 50 Fortune 500 companies and 12 of the top 20 most visited U.S. web sites. Learn more at: compuware.com.

Compuware Corporation World Headquarters • One Campus Martius • Detroit, MI 48226-5099

© 2011 Compuware Corporation

Compuware products and services listed within are trademarks or registered trademarks of Compuware Corporation. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

11.14.11 20125pcg

