



```

PPPPPPPP      MM      MM      SSSSSSSS  DDDDDDDD  AAAAAA  TTTTTTTTTT
PPPPPPPP      MM      MM      SSSSSSSS  DDDDDDDD  AAAAAA  TTTTTTTTTT
PP      PP     MMMM    MMMM    SS          DD      DD  AA      AA  TT
PP      PP     MMMM    MMMM    SS          DD      DD  AA      AA  TT
PP      PP     MM      MM      SS          DD      DD  AA      AA  TT
PP      PP     MM      MM      SS          DD      DD  AA      AA  TT
PPPPPPPP      MM      MM      SSSSSS     DD      DD  AA      AA  TT
PPPPPPPP      MM      MM      SSSSSS     DD      DD  AA      AA  TT
PP      MM      MM      SS          DD      DD  AAAAAAAAAA  TT
PP      MM      MM      SS          DD      DD  AAAAAAAAAA  TT
PP      MM      MM      SS          DD      DD  AA      AA  TT
PP      MM      MM      SS          DD      DD  AA      AA  TT
PP      MM      MM      SSSSSSSS  DDDDDDDD  AA      AA  TT
PP      MM      MM      SSSSSSSS  DDDDDDDD  AA      AA  TT

```

```

LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLLL IIIIII  SSSSSSSS

```

```

0000 1 .TITLE PMSDAT - PERFORMANCE MEASUREMENT STATISTICS DATABASE
0000 2 .IDENT 'V04-000'
0000 3
0000 4
0000 5 *****
0000 6
0000 7 *
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0000 25 *
0000 26 *****
0000 27
0000 28 **
0000 29
0000 30 FACILITY: Measurement Database
0000 31
0000 32 ABSTRACT:
0000 33
0000 34 This module contains the global definitions for the performance
0000 35 measurement database. All of the data, as well
0000 36 as the code that updates it, is conditionally assembled by the
0000 37 switch CAS_MEASURE.
0000 38
0000 39 ENVIRONMENT:
0000 40
0000 41
0000 42 AUTHOR: Henry M. Levy , CREATION DATE: 10-October-1977
0000 43
0000 44 MODIFIED BY:
0000 45
0000 46 V03-008 JLV0348 Jake VanNoy 10-APR-1984
0000 47 Modified slightly the PMS symbols for terminal driver.
0000 48
0000 49 V03-007 PRS1008 Paul Senn 24-Feb-1984
0000 50 Added new counters for XQP.
0000 51
0000 52 V03-006 SRB0114 Steve Beckhardt 22-Feb-1984
0000 53 Added PMS$GL_DLCKMSGS_IN and PMS$GL_DLCKMSGS_OUT.
0000 54
0000 55 V03-005 SRB0107 Steve Beckhardt 7-Dec-1983
0000 56 Removed PMS$GL_DIR_LOOK, PMS$GL_DIR_INS, and PMS$GL_DIR_DEL.
0000 57 Added PMS$GL_DIR_IN, PMS$GL_DIR_OUT, and PMS$GL_DLCKMSGS.

```

0000	58	:					
0000	59	:	V03-004	SRB0085	Steve Beckhardt	24-May-1983	
0000	60	:			Added new counters for distributed lock manager.		
0000	61	:					
0000	62	:	V03-003	STJ3067	Steven T. Jeffreys	25-Mar-1983	
0000	63	:			Added PMS\$GL_ERASEIO, total number of erase I/O operations.		
0000	64	:					
0000	65	:	V03-002	TLC1025	Thomas L. Cafarella	1-Mar-1983	13:00
0000	66	:			Add 2 new counters (PMS\$GL_JNLBUFWR and PMS\$GL_JNLWRTFM)		
0000	67	:			to the JOURNALING class of the MONITOR utility.		
0000	68	:					
0000	69	:	V03-001	TLC1022	Thomas L. Cafarella	12-Jul-1982	16:00
0000	70	:			Add counters for the JOURNALING and RECOVERY classes		
0000	71	:			of the MONITOR utility.		
0000	72	:					
0000	73	:	V02-009	SPF0061	Steve Forgey	14-Jan-1981	
0000	74	:			Add CHMK and CHME counters.		
0000	75	:					
0000	76	:	V02-008	SRB0044	Steve Beckhardt	13-Jan-1981	
0000	77	:			Removed two of the lock manager counters. These are now		
0000	78	:			maintained locally in the MONITOR program.		
0000	79	:					
0000	80	:	V02-007	ACG0229	Andrew C. Goldstein,	11-Dec-1981	22:00
0000	81	:			Add counters for directory LRU, quota cache,		
0000	82	:			file ID, and extent cache hits		
0000	83	:					
0000	84	:	V02-006	TLC0005	Thomas L. Cafarella	13-Nov-1981	
0000	85	:			Added counters for MONITOR DECNET class.		
0000	86	:					
0000	87	:	V02-005	SRB0032	Steve Beckhardt	26-Aug-1981	
0000	88	:			Added counters for lock manager		
0000	89	:					
0000	90	:	V04	SPF0001	Steve Forgey	30-Dec-1980	
0000	91	:			Add RTE prompt support		
0000	92	:					
0000	93	:	V03	L.BENSON	15-August-79		
0000	94	:			ADDITIONAL TERMINAL DRIVER INSTRUMENTATION		
0000	95	:					
0000	96	:	V02	K.Perko	4-APRIL-79		
0000	97	:			Terminal Driver Instrumentation		
0000	98	:					
0000	99	:					
0000	100	:					
0000	101	:					
0000	102	:					

VERSION .

03

--

```

0000 104 :
0000 105 : INCLUDE FILES:
0000 106 :
0000 107 :
0000 108 : $CADEF ; define conditional assembly switch
0000 109 :
0000 110 :
0000 111 : MACROS:
0000 112 :
0000 113 :
0000 114 :
0000 115 : EQUATED SYMBOLS:
0000 116 :
0000 117 :
0000 118 :
0000 119 : OWN STORAGE:
0000 120 :
0000 121 :
0000 122 : .PSECT $$$270NP, LONG ; KERNEL WRITE PSECT
0000 123 :
00000002 0000 124 : .IF NE CAS_MEASURE ; check that measurement enabled
0000 125 :
0000 126 :
0000 127 : I/O system counters
0000 128 :
0000 129 : The next two counters must be adjacent.
0000 130 :
0000 131 :
0000 132 PMS$GL_DIRIO:: ; number of direct I/O operations
00000000 0000 133 .LONG 0
00000000 0004 134 PMS$GL_BUFIO:: ; number of buffered I/O operations
00000000 0004 135 .LONG 0
00000000 0008 136 PMS$GL_LOGNAM:: ; number of logical name translations
00000000 0008 137 .LONG 0
00000000 000C 138 PMS$GL_MBREADS:: ; number of mailbox read operations
00000000 000C 139 .LONG 0
00000000 0010 140 PMS$GL_MBWRITES:: ; number of mailbox write operations
00000000 0010 141 .LONG 0
00000000 0014 142 PMS$GL_TREADS:: ; number of terminal reads
00000000 0014 143 .LONG 0
00000000 0018 144 PMS$GL_TWRITES:: ; number of terminal writes
00000000 0018 145 .LONG 0
001C 146 :
001C 147 :
001C 148 : I/O Transaction Performance Measurement Control Block Address
001C 149 :
001C 150 :
00000000 001C 151 PMS$GL_IOPFMPDB:: ; address of performance data block
00000000 001C 152 .LONG 0
0020 153 :
0020 154 :
0020 155 : I/O Request Packet Sequence Number
0020 156 :
0020 157 :
00000000 0020 158 PMS$GL_IOPFMSEQ:: ; master I/O packet sequence number
00000000 0020 159 .LONG 0
0024 160 :

```

```

0024 161 ;
0024 162 ; Counters for DECNET Class of Monitor Utility
0024 163 ;
0024 164 ;
0024 165 ;
0000000 0024 166 PMS$GL_ARRLOCPK:: .LONG 0 ; arriving local packets
0028 167 ;
0000000 0028 168 PMS$GL_DEPLOCPK:: .LONG 0 ; departing local packets
002C 169 ;
0000000 002C 170 PMS$GL_ARRTRAPK:: .LONG 0 ; arriving transit packets
0030 171 ;
0000000 0030 172 PMS$GL_TRCNGLOS:: .LONG 0 ; transit congestion loss
0034 173 ;
0000000 0034 174 PMS$GL_RCVBUFFL:: .LONG 0 ; receiver buffer failures
0038 175 ;
0038 176 ;
0038 177 ;
0038 178 ; Lock Manager Data
0038 179 ;
0038 180 ;
0000000 0038 181 PMS$GL_ENQNEW_LOC:: .LONG 0 ; number of local new lock requests
0038 182 PMS$GL_ENQNEW_IN:: .LONG 0 ; number of incoming new lock requests
0000000 003C 183 PMS$GL_ENQNEW_OUT:: .LONG 0 ; number of outgoing new lock requests
0040 184 PMS$GL_ENQCVT_LOC:: .LONG 0 ; number of local conversion requests
0000000 0040 185 PMS$GL_ENQCVT_IN:: .LONG 0 ; number of incoming conversion requests
0044 186 PMS$GL_ENQCVT_OUT:: .LONG 0 ; number of outgoing conversion requests
0048 187 PMS$GL_DEQ_LOC:: .LONG 0 ; number of local dequeues
0000000 0048 188 PMS$GL_DEQ_IN:: .LONG 0 ; number of incoming dequeues
004C 189 PMS$GL_DEQ_OUT:: .LONG 0 ; number of outgoing dequeues
0050 190 PMS$GL_ENQWAIT:: .LONG 0 ; number of $ENQ requests that wait
0000000 0050 191 PMS$GL_ENQNOTQD:: .LONG 0 ; number of $ENQ requests not queued
0060 192 PMS$GL_BLK_LOC:: .LONG 0 ; number of local blocking ASTs queued
0000000 0060 193 PMS$GL_BLK_IN:: .LONG 0 ; number of incoming blocking ASTs queued
0064 194 PMS$GL_BLK_OUT:: .LONG 0 ; number of outgoing blocking ASTs queued
0068 195 PMS$GL_DIR_IN:: .LONG 0 ; number of incoming directory operations
0000000 0068 196 PMS$GL_DIR_OUT:: .LONG 0 ; number of outgoing directory operations
0074 197 PMS$GL_DLCKMSGS_IN:: .LONG 0 ; number of incoming deadlock
0000000 0074 198 PMS$GL_DLCKMSGS_OUT:: .LONG 0 ; detection messages
007C 199 PMS$GL_DLCKSRCH:: .LONG 0 ; number of outgoing deadlock
0000000 007C 200 PMS$GL_DLCKSRCH:: .LONG 0 ; detection messages
0080 201 PMS$GL_DLCKSRCH:: .LONG 0 ; number of deadlock searches performed

```

PMSDAT  
V04-000

- PERFORMANCE MEASUREMENT STATISTICS<sup>N 5</sup> DAT 16-SEP-1984 00:57:05 VAX/VMS Macro V04-00  
5-SEP-1984 03:46:15 [SYS.SRC]PMSDAT.MAR;1

Page 5  
(2)

00000000	0080	218	.LONG	0
	0084	219	PMS\$GL_DLCKFND::	
00000000	0084	220	.LONG	0

; number of deadlocks found

PC  
VC

```
0088 222 ;  
0088 223 ; Counters for JOURNALING Class of Monitor Utility  
0088 224 ;  
0088 225 ;  
00000000 0088 226 PMSSGL_JNLJRNL:: .LONG 0 ; number of currently active journals  
00000000 008C 227 PMSSGL_JNLCHNL:: .LONG 0 ; number of journal channels assigned  
00000000 0090 228 PMSSGL_JNLWRTAI:: .LONG 0 ; count of AI journal write operations  
00000000 0094 229 PMSSGL_JNLWRTBI:: .LONG 0 ; count of BI journal write operations  
00000000 0098 230 PMSSGL_JNLWRTAT:: .LONG 0 ; count of AT journal write operations  
00000000 009C 231 PMSSGL_JNLWRTRU:: .LONG 0 ; count of RU journal write operations  
00000000 00A0 232 PMSSGL_JNLDIRIO:: .LONG 0 ; count of journal direct I/Os  
00000000 00A4 233 PMSSGL_JNLBUFIO:: .LONG 0 ; count of journal buffered I/Os  
00000000 00A8 234 PMSSGL_JNLWRTSS:: .LONG 0 ; count of all sec'ary stg j'nal writes  
00000000 00AC 235 PMSSGL_JNLFORNL:: .LONG 0 ; count of FORCEJNL writes (NULL op)  
00000000 00B0 236 PMSSGL_JNLFORFL:: .LONG 0 ; count of FORCEJNL writes (flushed)  
00000000 00B4 237 PMSSGL_JNLBUFWR:: .LONG 0 ; count of Force Modifier writes  
00000000 00B8 238 PMSSGL_JNLWRTFM:: .LONG 0 ; count of buffer-writes  
00BC 239 ;  
00BC 240 ;  
00BC 241 ; Counters for RU Class of Monitor Utility  
00BC 242 ;  
00BC 243 ;  
00BC 244 ;  
00000000 00BC 245 PMSSGL_RUFACTIV:: .LONG 0 ; number of recovery units active  
00000000 00C0 246 PMSSGL_RUFJNL:: .LONG 0 ; number of curr'ly active RU journals  
00000000 00C4 247 PMSSGL_RUFCHNL:: .LONG 0 ; number of current RU journal channels  
00000000 00C8 248 PMSSGL_RUFWRTS:: .LONG 0 ; count of RU journal writes  
00000000 00CC 249 PMSSGL_RUFREADS:: .LONG 0 ; count of RU journal reads  
00000000 00D0 250 PMSSGL_RUFXTNDS:: .LONG 0 ; count of RU journal extends  
00000000 00D4 251 PMSSGL_RUFMARK:: .LONG 0 ; count of Mark IDs written  
00000000 00D8 252 PMSSGL_RUFMRKRB:: .LONG 0 ; count of Mark ID rollbacks  
00000000 00DC 253 PMSSGL_RUFABORT:: .LONG 0 ; count of RU abort operations  
00E0 254 ;
```

```
00E0 256 :  
00E0 257 : CHMK and CHME system service counters  
00E0 258 :  
00E0 259 PMS$GL_CHMK:: ; number of CHMK system services  
00000000 00E0 260 .LONG 0  
00E4 261 PMS$GL_CHME:: ; number of CHME system services  
00000000 00E4 262 .LONG 0
```

```
00E8 264
00E8 265 :
00E8 266 : Memory Management Data
00E8 267 :
00E8 268
00000000 00E8 269 PM$GL_PAGES:: ; number of pages of memory on configuration
00E8 270 .LONG 0
00EC 271
00EC 272 :
00EC 273 : Current Load Data
00EC 274 :
00EC 275
0000 00EC 276 PM$GW_BATCH:: ; number of current batch jobs
00EC 277 .WORD 0
0000 00EE 278 PM$GW_INTJOBS:: ; number of terminal users
00EE 279 .WORD 0
00FO 280
00FO 281 :
00FO 282 : Histogram of characters per terminal read and write.
00FO 283 :
0000011C 00FO 284 PM$AL_READTBL:: ; # of terminal read of various qsizes
00FO 285 .BLKL 11
011C 286
00000148 011C 287 PM$AL_WRITETBL:: ; # of terminal writes of various sizes
011C 288 .BLKL 11
0148 289 :
0148 290 : Totals for # of characters read and written to terminals since system
0148 291 : boot.
0148 292 :
0000014C 0148 293 PM$GL_READCNT:: ; # of characters read.
0148 294 .BLKL 1
00000150 014C 295 PM$GL_WRTCNT:: ; # of characters written.
014C 296 .BLKL 1
00000154 0150 297 PM$GL_PASSALL:: ; # OF READS IN PASSALL MODE
0150 298 .BLKL 1
00000158 0154 299 PM$GL_RWP:: ; # OF READ WITH PROMPT READS
0154 300 .BLKL 1
0000015C 0158 301 PM$GL_LRGRWP:: ; # OF RWP > 12 CHARACTERS
0158 302 .BLKL 1
00000160 015C 303 PM$GL_RWPSUM:: ; # OF RWP CHARACTERS TOTAL
015C 304 .BLKL 1
00000164 0160 305 PM$GL_NOSTDTRM:: ; # OF READS NOT USING STD TERMS.
0160 306 .BLKL 1
00000168 0164 307 PM$GL_RWPNSTD:: ; # OF RWP NOT USING STANDARD TERMS
0164 308 .BLKL 1
0000016C 0168 309 PM$GL_TTY_CODE1:: ; performance code vector 1
0168 310 .BCKL 1
0000017C 016C 311 PM$GL_TTY_CODE2:: ; performance code vector 2
016C 312 .BCKL 1
0170 313
0170 314 :
0170 315 : The difference between LDPCTX and SWITCH gives the number of
0170 316 : context switches due to waits.
0170 317 :
0170 318
00000000 0170 319 PM$GL_LDPCTX:: ; number of load process context's
0170 320 .LONG 0
```

```
00000000 0174 321 PM$GL_SWITCH:: ; number of switches from current process
0174 322 .LONG 0
0178 323
0178 324
0178 325 ; RTE input prompt
0178 326
00 00 00 01 0178 327 PM$GB_PROMPT::
0178 328 .BYTE 01,00,00,00
017C 329
017C 330
017C 331 ; File system measurement database
017C 332 ; Each vector is indexed by function type. Functions are:
017C 333 ; ACCESS, CREATE, DEACCESS, DELETE, MODIFY, ACPCONTROL,
017C 334 ; LOOKUP, ENTER, ALLOCATION, ATTRIBUTES.
017C 335
00000000 017C 336
00000000 337 .PSECT $$$000PMS,PAGE ; EXEC WRITABLE PSECT
0000 338 PM$GL_FCP:: ; FCP counters
0000 339 PM$GL_FCP2::
0000 340
00000028 0000 341 PM$AL_COUNT: .BLKL 10 ; number of operations
00000050 0028 342 PM$AL_MCNT: .BLKL 10 ; number of modifiers
00000078 0050 343 PM$AL_READ: .BLKL 10 ; number of disk reads
000000A0 0078 344 PM$AL_WRITE: .BLKL 10 ; number of disk writes
000000C8 00A0 345 PM$AL_CACHE: .BLKL 10 ; number of cache hits
000000F0 00C8 346 PM$AL_CPU: .BLKL 10 ; accumulated cpu time
00000118 00F0 347 PM$AL_PFA: .BLKL 10 ; accumulated page faults
0118 348
00000000 0118 349 PM$GL_TURN:: .LONG 0 ; number of window turns
00000000 011C 350 PM$GL_SPLIT:: .LONG 0 ; number of split transfers
00000000 0120 351 PM$GL_HIT:: .LONG 0 ; number of transfers not requiring
0124 352 ; window turns
00000000 0124 353 PM$GL_DIRHIT:: .LONG 0 ; count of directory LRU hits
00000000 0128 354 PM$GL_DIRMISS:: .LONG 0 ; count of directory LRU misses
00000000 012C 355 PM$GL_QUOHIT:: .LONG 0 ; count of quota cache hits
00000000 0130 356 PM$GL_QUOMISS:: .LONG 0 ; count of quota cache misses
00000000 0134 357 PM$GL_FIDHIT:: .LONG 0 ; count of file ID cache hits
00000000 0138 358 PM$GL_FIDMISS:: .LONG 0 ; count of file ID cache misses
00000000 013C 359 PM$GL_EXTHIT:: .LONG 0 ; count of extent cache hits
00000000 0140 360 PM$GL_EXTMISS:: .LONG 0 ; count of extent cache misses
0144 361 PM$GL_FILHDR_HIT:: ; count of file header cache hits
00000000 0144 362 .LONG 0
0148 363 PM$GL_FILHDR_MISS:: ; count of file header cache misses
00000000 0148 364 .LONG 0
014C 365 PM$GL_DIRDATA_HIT:: ; count of directory data block hits
00000000 014C 366 .LONG 0
0150 367 PM$GL_DIRDATA_MISS:: ; count of directory data block misses
00000000 0150 368 .LONG 0
0154 369 PM$GL_STORAGMAP_HIT:: ; count of storage bit map cache hits
00000000 0154 370 .LONG 0
0158 371 PM$GL_STORAGMAP_MISS:: ; count of storage bit map cache misses
0158 372 .LONG 0
00000000 015C 373 PM$GL_OPEN:: .LONG 0 ; number of currently open files
00000000 0160 374 PM$GL_OPENS:: .LONG 0 ; total count of opens
00000000 0164 375 PM$GL_ERASEIO:: .LONG 0 ; total count of erase $QIO's issued
00000000 0168 376 PM$GL_VOLLCK:: .LONG 0 ; count of XQP volume synch locks
00000000 016C 377 PM$GL_VOLWAIT:: .LONG 0 ; # of times XQP had to wait for a
```

```
0170 378 ; volume synch lock
0170 379 PM$GL_SYNCHLCK:: ; count of XQP directory
00000000 0170 380 .LONG 0 ; and file sync locks
0174 381 PM$GL_SYNCHWAIT:: ; # of times XQP had to wait for a
00000000 0174 382 .LONG 0 ; directory or file synch lock
00000000 0178 383 PM$GL_ACCLCK:: .LONG 0 ; count of XQP access locks
017C 384 PM$GL_XQPCACHEWAIT:: ; # of times XQP had to wait for free
00000000 017C 385 .LONG 0 ; space in a cache
0180 386
0000 017C 387 .PSECT $$$270NP, LONG ;
017C 388
01 017C 389 PM$GL_DOSTATS:: .BYTE 1 ; FLAG TO TURN ON/OFF STATISTICS CODE
017D 390
017D 391 .ENDC
017D 392
017D 393 .END
```



+-----+  
! Psect synopsis !  
+-----+

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 ( 0.)	00 ( 0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$AB\$\$	00000000 ( 0.)	01 ( 1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
\$\$\$27ONP	0000017D ( 381.)	02 ( 2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
\$\$\$000PMS	00000180 ( 384.)	03 ( 3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC PAGE

+-----+  
! Performance indicators !  
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	30	00:00:00.05	00:00:01.40
Command processing	120	00:00:00.49	00:00:04.12
Pass 1	122	00:00:01.32	00:00:05.66
Symbol table sort	0	00:00:00.12	00:00:00.12
Pass 2	85	00:00:00.73	00:00:03.87
Symbol table output	14	00:00:00.08	00:00:00.08
Psect synopsis output	2	00:00:00.04	00:00:00.83
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	376	00:00:02.84	00:00:16.09

The working set limit was 1200 pages.  
4880 bytes (10 pages) of virtual memory were used to buffer the intermediate code.  
There were 10 pages of symbol table space allocated to hold 115 non-local and 0 local symbols.  
393 source lines were read in Pass 1, producing 20 object records in Pass 2.  
8 pages of virtual memory were used to define 7 macros.

+-----+  
! Macro library statistics !  
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	1
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	4

62 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:PMSDAT/OBJ=OBJ\$:PMSDAT MSRC\$:PMSDAT/UPDATE=(ENH\$:PMSDAT)+EXECMLS/LIB

